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ERRATA

MPC Line
36945 -45
36949 - 3

For Mizunama read Mizunuma
For Deutschen read Deutschen

OBSERVATORY CODES

The following listing is a revision of that on MPC 31319-31325. The longitudes λ are measured in degrees eastward from Greenwich, and the parallax constants $\rho \cos \phi'$ and $\rho \sin \phi'$ are the product of the geocentric distance (in earth equatorial radii) and the cosine and sine, respectively, of the geocentric latitude. The Minor Planet Center would be pleased to learn of any errors in this list.

Obs.	λ	$\rho \cos \phi'$	$\rho \sin \phi'$	
000	0.0000	0.62411	+0.77873	Greenwich
001	0.15	0.629	+0.774	Crowborough
002	0.62	0.622	+0.781	Rayleigh
003	3.90	0.725	+0.687	Montpellier
004	1.4625	0.72520	+0.68627	Toulouse
005	2.2313	0.65989	+0.74887	Meudon
006	2.1258	0.75107	+0.65811	Fabra Observatory, Barcelona
007	2.3371	0.65947	+0.74922	Paris
008	3.0355	0.80172	+0.59578	Algiers-Bouzaréah
009	7.4417	0.6838	+0.7272	Berne-Uecht
010	6.9267	0.72368	+0.68811	Caussols
011	8.80	0.680	+0.732	Wetzikon
012	4.3582	0.63333	+0.77131	Uccle
013	4.4840	0.61481	+0.78604	Leiden
014	5.3940	0.72888	+0.68237	Marseilles
015	5.1292	0.61576	+0.78529	Utrecht
016	5.9893	0.68006	+0.73076	Besançon
017	6.8496	0.64193	+0.76431	Hoher List
018	6.7612	0.62779	+0.77578	Düsseldorf-Bilk
019	6.9575	0.68331	+0.72779	Neuchâtel
020	7.3004	0.72391	+0.68767	Nice
021	8.3855	0.65701	+0.75138	Karlsruhe
022	7.7748	0.70790	+0.70409	Pino Torinese
023	8.26	0.643	+0.762	Wiesbaden

024	8.7216	0.65211	+0.75570	Heidelberg-Königstuhl
025	9.1975	0.66019	+0.74865	Stuttgart
026	7.4648	0.68489	+0.72640	Berne-Zimmerwald
027	9.1912	0.70254	+0.70929	Milan
028	9.9363	0.64686	+0.76009	Würzburg
029	10.2406	0.59640	+0.80000	Hamburg-Bergedorf
030	11.2554	0.72350	+0.68806	Arcetri Observatory, Florence
031	11.1925	0.63905	+0.76672	Sonneberg
032	11.5842	0.63161	+0.77272	Jena
033	11.7125	0.63089	+0.77334	Karl Schwarzschild Observatory, Tautenburg
034	12.4523	0.74519	+0.66466	Monte Mario Observatory, Rome
035	12.5779	0.56501	+0.82232	Copenhagen
036	12.6514	0.74726	+0.66241	Castel Gandolfo
037	13.7333	0.73660	+0.67416	Collurania Observatory, Teramo
038	13.7704	0.70033	+0.71144	Trieste
039	13.1874	0.56485	+0.82243	Lund
040	13.7298	0.63019	+0.77387	Lohrmann Institute, Dresden
041	11.3808	0.67986	+0.73101	Innsbruck
042	13.0661	0.61169	+0.78847	Potsdam
043	11.5286	0.69770	+0.71422	Asiago Astrophysical Observatory, Padua
044	14.2559	0.75738	+0.65082	Capodimonte Observatory, Naples
045	16.3390	0.66739	+0.74227	Vienna (since 1879)
046	14.2881	0.65922	+0.74965	Kleť Observatory, České Budějovice
047	16.8782	0.61146	+0.78864	Poznań
048	15.83	0.640	+0.765	Hradec Kralove
049	17.6067	0.5088	+0.8580	Uppsala-Kvistaberg
050	18.0582	0.51118	+0.85660	Stockholm (before 1931)
051	18.4766	0.83055	-0.55508	Cape
052	18.3083	0.51224	+0.85597	Stockholm-Saltsjöbaden
053	18.9642	0.67688	+0.73373	Konkoly Observatory, Budapest (since 1934)
054	11.6654	0.56595	+0.82169	Brorfelde
055	19.9596	0.64321	+0.76316	Cracow
056	20.2450	0.65501	+0.75346	Skalná Pleso
057	20.5133	0.71074	+0.70116	Belgrade
058	20.4957	0.57895	+0.81263	Kaliningrad
059	20.2201	0.65500	+0.75364	Lomnický štít
060	21.4200	0.61572	+0.78535	Warsaw-Ostrowik
061	22.30	0.661	+0.746	Uzhgorod

062	22.2293	0.49440	+0.86632	Turku	115	41.4416	0.72492	+0.68699	Zelenchukskaya
063	22.4450	0.49496	+0.86601	Turku-Tuorla	116	11.5958	0.66893	+0.74094	Giesing
064	22.75	0.495	+0.865	Turku-Kevola	117	11.5385	0.66897	+0.74092	Sendling
065	12.63	0.673	+0.739	Traunstein	118	17.2740	0.66558	+0.74394	Astronomical and Geophysical Observatory, Modra
066	23.7169	0.78932	+0.61195	Athens	119	42.8253	0.74729	+0.66264	Abastuman
067	24.0297	0.64632	+0.76058	Lvov University Observatory	120	13.7261	0.70489	+0.70699	Višňan
068	24.0142	0.64627	+0.76062	Lvov Polytechnic Institute	121	36.9369	0.64883	+0.75842	Kharkov University, Chuguevskaya Station
069	24.41	0.549	+0.833	Baldone, near Riga	122	3.5035	0.72017	+0.69176	Pises Observatory
070	25.2865	0.57940	+0.81233	Vilnius (before 1939)	123	44.2917	0.76352	+0.64398	Byurakan
071	24.72	0.748	+0.661	Smolyan	124	2.2550	0.72534	+0.68612	Castres
072	7.17	0.629	+0.774	Scheuren Observatory	125	44.90	0.739	+0.671	Tbilisi
073	26.0967	0.71549	+0.69630	Bucharest	126	9.7903	0.71893	+0.69283	Monte Viseggi
074	26.4058	0.87518	-0.48263	Boyden Observatory, Bloemfontein	127	6.9794	0.6339	+0.7709	Bornheim
075	26.7216	0.52557	+0.84791	Tartu	128	46.10	0.626	+0.779	Saratov
076	27.8768	0.90127	-0.43225	Johannesburg-Hartbeespoort	129	45.88	0.776	+0.629	Ordubad
077	28.0292	0.89819	-0.43876	Yale-Columbia Station, Johannesburg	130	10.2407	0.70013	+0.71181	Lumezzane
078	28.0750	0.89824	-0.43868	Johannesburg	131	4.725	0.7123	+0.6996	Observatoire de l'Ardeche
079	28.2288	0.90120	-0.43251	Radcliffe Observatory, Pretoria	132	5.242	0.7192	+0.6926	Bedoin
080	28.9667	0.75566	+0.65278	Istanbul	133	5.0906	0.72819	+0.68309	Les Tardieux
081	27.8768	0.90127	-0.43225	Leiden Station, Johannesburg	134	11.4842	0.63160	+0.77277	Groszschwabhausen
082	15.63	0.668	+0.741	St. Pölten	135	49.1210	0.56353	+0.82334	Kasan
083	30.50	0.640	+0.767	Golosseevo-Kiev	136	48.8156	0.56282	+0.82383	Engelhardt Observatory, Kasan
084	30.3274	0.50471	+0.86041	Pulkovo	137	34.8147	0.84821	+0.52790	Givatayim Observatory, Raanana
085	30.5023	0.63800	+0.76749	Kiev	138	7.5717	0.67550	+0.73494	Village-Neuf
086	30.7582	0.68987	+0.72152	Odessa	139	7.1108	0.72526	+0.68618	Antibes
087	31.3411	0.86799	+0.49495	Helwan	140	3.6294	0.69945	+0.71241	Augerolles
088	31.82	0.868	+0.500	Kottomia	141	7.3672	0.65646	+0.75189	Hottviller
089	31.9747	0.68359	+0.72743	Nikolaev	142	7.1874	0.62156	+0.78075	Sinsen
090	8.25	0.645	+0.762	Mainz	143	9.0250	0.6930	+0.7186	Gnosca
091	4.2092	0.70363	+0.70829	Observatoire de Nurol, Aurec sur Loire	144	1.6653	0.65550	+0.75267	Bray et Lu
092	18.5546	0.60177	+0.79601	Torun-Piwnice	145	4.5597	0.62734	+0.77614	's-Gravenwezel
093	20.3647	0.3537	+0.9322	Skibotn	146	10.6673	0.71715	+0.69487	Frignano
094	33.9974	0.71565	+0.69620	Crimea-Simeïs	147	8.5814	0.70043	+0.71139	Osservatorio Astronomico di Suno
095	34.02	0.711	+0.701	Crimea-Nauchnij	148	2.0375	0.72481	+0.68667	Guitalens
096	9.4283	0.69967	+0.71215	Merate	149	4.2236	0.65403	+0.75396	Beine-Nauroy
097	34.7625	0.86165	+0.50608	Wise Observatory, Mitzpeh Ramon	150	2.1572	0.65806	+0.75045	Maisons Laffitte
098	11.5694	0.69774	+0.71395	Asiago Observatory, Cima Ekar	151	8.7440	0.67719	+0.73346	Eschenberg Observatory, Winterthur
099	25.53	0.483	+0.873	Lahti	152	23.3596	0.57036	+0.81868	Moletai Astronomical Observatory
100	24.13	0.462	+0.884	Ahtari	153	9.1758	0.66079	+0.74815	Stuttgart-Hoffeld
101	36.2322	0.64403	+0.76246	Kharkov	154	12.1043	0.68923	+0.72250	Cortina
102	36.59	0.565	+0.823	Zvenigorod	155	10.1971	0.55864	+0.82664	Ole Römer Observatory, Aarhus
103	14.47	0.694	+0.715	Ljubljana	156	15.0858	0.79431	+0.60549	Catania Astrophysical Observatory
104	10.8042	0.71985	+0.69202	San Marcello Pistoiese	157	12.8117	0.74166	+0.66864	Frasso Sabino
105	37.5706	0.56403	+0.82302	Moscow	158	7.6033	0.69871	+0.71333	Promiod
106	14.0736	0.69661	+0.71520	Crni Vrh	159	10.5153	0.72065	+0.69115	Monte Agliale
107	11.0030	0.70998	+0.70186	Cavezzo	160	10.8833	0.7225	+0.6890	Castelmartini
108	11.0278	0.72367	+0.68784	Montelupo	161	8.1605	0.70725	+0.70467	Cerrina Tololo Observatory
109	3.0705	0.80241	+0.59481	Algiers-Kouba	162	15.8083	0.76000	+0.64794	Potenza
110	39.15	0.544	+0.835	Rostov	163	6.1492	0.65017	+0.75731	Roeser Observatory, Luxembourg
111	10.9721	0.72439	+0.68710	Piazzano Observatory, Florence	164	6.8861	0.66631	+0.74325	St. Michel sur Meurthe
112	10.9039	0.70232	+0.70950	Pleiade Observatory, Verona	165	1.7553	0.74984	+0.65946	Piera Observatory, Barcelona
113	13.0166	0.63502	+0.77001	Volkssternwarte Drebach, Schoenbrunn	166	16.0117	0.63730	+0.76812	Upice
114	41.4277	0.72489	+0.68702	Engelhardt Observatory, Zelenchukskaya Station	167	8.5727	0.67662	+0.73398	Bulach OBservatory

168	59.50	0.546	+0.835	Kourovskaya	352	136.1778	0.82061	+0.56963	Konan
169	8.4016	0.70737	+0.70453	Airali Observatory	353	135.0648	0.82265	+0.56669	Nishi Kobe
170	1.9206	0.75217	+0.65711	Observatorio de Begues	354	140.0206	0.80109	+0.59674	Kawachi
171	14.4708	0.81087	+0.58328	Flarestar Observatory, San Gwann	355	139.2133	0.81618	+0.57590	Hadano
172	7.0364	0.68593	+0.72539	Onnens	356	141.0867	0.78319	+0.61970	Kogota
173	55.5061	0.93464	-0.35447	Ste. Clotilde, Reunion	357	140.0064	0.80807	+0.58712	Shimotsuma
174	25.5131	0.46536	+0.88219	Nyrola Observatory, Jyväskylä	358	140.1586	0.78856	+0.61296	Nanyo
186	66.8821	0.77679	+0.62781	Kitab	359	135.1719	0.82782	+0.55912	Wakayama
188	66.88	0.781	+0.622	Shokin Majdanak	360	132.9442	0.83314	+0.55138	Kuma Kogen
190	68.68	0.783	+0.619	Gissar	361	134.8956	0.82652	+0.56102	Sumoto
191	68.7811	0.78306	+0.62006	Dushanbe	362	140.6550	0.73673	+0.67398	Ray Observatory
192	69.2936	0.75213	+0.65692	Tashkent	363	130.7703	0.83416	+0.54967	Yamada
193	69.22	0.786	+0.617	Sanglok	364	130.5747	0.85213	+0.52164	YCPM Kagoshima Station
210	76.9573	0.73042	+0.68104	Alma-Ata	365	135.9579	0.82597	+0.56196	Uto Observatory
217	77.88	0.729	+0.683	Assah	366	138.3003	0.81147	+0.58267	Miyasaka Observatory
218	78.4541	0.95444	+0.29768	Hyderabad	367	133.1670	0.81504	+0.57747	Yatsuka
219	78.7283	0.95618	+0.29216	Japal-Rangapur	368	138.8117	0.81213	+0.58191	Ochiai
220	78.8263	0.97627	+0.21634	Vainu Bappu Observatory, Kavalur	369	139.1500	0.8101	+0.5844	Chichibu
223	80.2464	0.97427	+0.22465	Madras	370	133.5273	0.83424	+0.54956	Kochi
236	84.9465	0.55370	+0.82995	Tomsk	371	133.5965	0.82433	+0.56431	Tokyo-Okayama
248	0.0000	0.00000	0.00000	Hipparcos	372	133.8276	0.83450	+0.54920	Geisei
249				SOHO	373	135.3397	0.82866	+0.55797	Oishi
250				Hubble Space Telescope	374	134.7196	0.81915	+0.57174	Minami-Oda Observatory
251	293.24692	0.949577	+0.312734	Arecibo	375	134.8708	0.8206	+0.5697	Uzurano
252	243.20512	0.817719	+0.573979	Goldstone DSS 13, Fort Irwin	376	139.0392	0.81321	+0.58022	Uenohara
253	243.11047	0.815913	+0.576510	Goldstone DSS 14, Fort Irwin	377	135.7933	0.82014	+0.57031	Kwasan Observatory, Kyoto
254	288.51128	0.736973	+0.673692	Haystack, Westford	378	136.0142	0.82437	+0.56426	Murou
286	102.79	0.908	+0.420	Yunnan Observatory	379	137.7708	0.8228	+0.5664	Hamamatsu
292	285.1058	0.76630	+0.64033	Burlington, New Jersey	380	137.0349	0.82190	+0.56772	Ishiki
293	285.5899	0.76936	+0.63668	Burlington remote site	381	137.6283	0.81220	+0.58173	Tokyo-Kiso
294	285.8467	0.76031	+0.64739	Astrophysical Obs., College of Staten Island	382	137.5553	0.80915	+0.58639	Tokyo-Norikura
295	283.0000	0.7789	+0.6251	Catholic University Observatory, Washington	383	137.8959	0.80218	+0.59526	Chirorin
296	286.2515	0.7365	+0.6742	Dudley Observatory (after 1893)	384	138.1792	0.8219	+0.5678	Shimada
297	286.83	0.720	+0.692	Middlebury	385	138.4680	0.82039	+0.56997	Nihondaira Observatory
298	287.3408	0.74943	+0.65988	Van Vleck Observatory	386	138.3217	0.81121	+0.58309	Yatsugatake-Kobuchizawa
299	107.6160	0.99316	-0.11808	Bosscha Observatory, Lembang	387	139.1944	0.81000	+0.58469	Tokyo-Dodaira
301	288.8467	0.70279	+0.70926	Mont Megantic	388	139.5421	0.81330	+0.57991	Tokyo-Mitaka
302	288.88	0.990	+0.150	University of the Andes station	389	139.7447	0.81347	+0.57965	Tokyo (before 1938)
303	289.1329	0.98889	+0.15190	Mérida	390	139.8725	0.80425	+0.59234	Utsunomiya
304	289.2980	0.87559	-0.48217	Las Campanas Observatory	391	140.7824	0.78621	+0.61592	Sendai Observatory, Ayashi Station
305	109.53	0.950	+0.310	Purple Mountain, Hainan Island station	392	141.3667	0.73355	+0.67741	JCPM Sapporo Station
312	112.33	0.957	+0.288	Tsingtao field station, Xisha Islands	393	140.1292	0.8090	+0.5858	JCPM Sakura Station
321	115.7571	0.85078	-0.52378	Craigie	394	142.3208	0.70692	+0.70493	JCPM Hamatonbetsu Station
322	116.1346	0.84882	-0.52702	Perth Observatory, Bickley-MCT	395	142.3583	0.7224	+0.6891	Tokyo-Asahikawa
323	116.1350	0.84882	-0.52703	Perth Observatory, Bickley	396	142.4208	0.7236	+0.6879	Asahikawa
324	116.3277	0.76598	+0.64072	Peking Observatory, Shaho Station	397	141.4761	0.73210	+0.67892	Sapporo Science Center
327	117.5750	0.76278	+0.64470	Peking Observatory, Xinglong Station	398	139.1080	0.80870	+0.58630	Nagatoro
330	118.8209	0.84828	+0.52788	Purple Mountain Observatory, Nanking	399	144.5900	0.73158	+0.67950	Kushiro
334	120.3196	0.80925	+0.58552	Tsingtao	400	143.7827	0.72344	+0.68811	Kitami
337	121.1865	0.85708	+0.51349	Zô-Sé	401	139.4208	0.8088	+0.5861	Oosato
343	127.1258	0.78688	+0.61507	Youchun	402	136.3078	0.81800	+0.57335	Dynic Astronomical Observatory
349	139.5492	0.81036	+0.58397	Ageo	403	137.0556	0.81593	+0.57625	Kani
351	135.8678	0.81939	+0.57135	Sakamoto	404	140.9292	0.7909	+0.6099	Yamamoto

405	139.3292	0.8069	+0.5887	Kamihoriguchi	489	359.87	0.612	+0.788	Hemingford Abbots
406	141.8233	0.72946	+0.68174	Bibai	490	358.00	0.633	+0.772	Wimborne Minster
407	140.3099	0.78426	+0.61837	Kahoku	491	356.9000	0.76131	+0.64644	Centro Astronómico de Yebes
408	138.1747	0.81121	+0.58328	Nyukasa	492	358.47	0.605	+0.795	Mickleover
409	139.5211	0.81234	+0.58124	Kiyose and Mizuho	493	357.4542	0.79753	+0.60182	Calar Alto
410	134.8910	0.81883	+0.57222	Sengamine	494	357.8361	0.61126	+0.78879	Stakenbridge
411	139.4170	0.80739	+0.58805	Oizumi	495	357.66	0.598	+0.800	Altrincham
412	140.5991	0.80011	+0.59803	Iwaki	496	358.6860	0.6311	+0.7731	Bishopstoke
413	149.0661	0.85560	-0.51626	Siding Spring Observatory	497	359.30	0.626	+0.776	Ascot-Loudwater
414	149.0077	0.81694	-0.57499	Mount Stromlo	498	359.26	0.612	+0.788	Northampton
415	149.0624	0.81613	-0.57608	Kambah, near Canberra	499	359.79	0.626	+0.776	Cheam
416	149.13	0.816	-0.575	Barton, near Canberra	500	0.0000	0.00000	0.00000	Geocentric
417	137.1371	0.79611	+0.60317	Yanagida Astronomical Observatory	501	0.3475	0.63237	+0.77208	Herstmonceux
418	150.94	0.858	-0.511	Tamworth	502	0.85	0.617	+0.783	Colchester
419	150.8329	0.83370	-0.55038	Windsor	503	0.0948	0.61400	+0.78667	Cambridge
420	151.2050	0.83126	-0.55404	Sydney	504	4.3944	0.68553	+0.72570	Le Creusot
421	133.7650	0.83244	+0.55262	Mt. Kajigamori, Ootoyo	505	4.5639	0.6229	+0.7797	Simon Stevin
422	151.0461	0.85503	-0.51709	Loomberah	506	9.96	0.598	+0.797	Bendestorf
423	151.1236	0.83179	-0.55324	North Ryde	507	5.22	0.617	+0.783	Nyenheim
424	149.0658	0.81758	-0.57405	Macquarie, near Canberra	508	5.29	0.617	+0.783	Zeist
425	152.93	0.896	-0.443	Taylor Range Observatory, Brisbane	509	5.87	0.732	+0.680	La Seyne sur Mer
426	136.8217	0.85618	-0.51498	Woomera	510	8.0264	0.63184	+0.77258	Siegen
427	138.7283	0.82667	-0.56084	Stockport	511	5.71	0.722	+0.690	Haute Provence
428	153.3970	0.88271	-0.46837	Reedy Creek	512	4.49	0.615	+0.786	Leiden (before 1860)
429	149.0400	0.81761	-0.57402	Hawker	513	4.7855	0.69971	+0.71209	Lyons
430	149.2123	0.85550	-0.51623	Rainbow Observatory, near Coonabarabran	514	8.43	0.652	+0.755	Mundenheim (1907–1913)
431	149.7578	0.83548	-0.54793	Mt. Tarana Observatory, Bathurst	515	7.48	0.650	+0.758	Volkssternwarte Dhaun, near Kirn
432	153.0817	0.86380	-0.50215	Boambee	516	9.9733	0.59539	+0.80075	Hamburg (before 1909)
461	19.8943	0.67153	+0.73869	JATE Asteroid Survey, Piskésető	517	6.1525	0.69340	+0.71823	Geneva
465	174.7801	0.80166	-0.59578	Takapuna	518	9.9727	0.59545	+0.80071	Marine Observatory, Hamburg
466	174.8487	0.8002	-0.5977	Mount Molehill Observatory, Auckland	519	8.29	0.626	+0.776	Meschede
467	174.7766	0.80058	-0.59724	Auckland Observatory	520	7.0966	0.63427	+0.77053	Bonn
468	13.3296	0.74652	+0.66349	Astronomical Observatory, Campo Catino	521	10.8899	0.64562	+0.76116	Bamberg
469	7.3820	0.67873	+0.73205	Courroux	522	7.7677	0.66279	+0.74633	Strasbourg
470	13.3286	0.74929	+0.66006	Ceccano	523	8.65	0.643	+0.765	Frankfurt
471	8.2389	0.56364	+0.82325	Houstrup	524	8.4605	0.6509	+0.7566	Mannheim
472	6.3203	0.71225	+0.69998	Merlette	525	8.7708	0.6331	+0.7715	Marburg
473	13.3164	0.69479	+0.71682	Remanzacco	526	10.1477	0.58426	+0.80886	Kiel
474	170.4650	0.72077	-0.69108	Mount John Observatory, Lake Tekapo	527	9.9431	0.5955	+0.8007	Altona
475	7.6965	0.70747	+0.70443	Turin (before 1913)	528	9.9426	0.62340	+0.77931	Göttingen
476	7.1414	0.70659	+0.70535	Grange Observatory, Bussoleno	529	10.7229	0.50259	+0.86163	Christiania
477	0.4856	0.62103	+0.78117	Galleywood	530	10.6898	0.5911	+0.8039	Lübeck
478	3.0896	0.72548	+0.68597	Lamalou-les-Bains	531	12.4797	0.74545	+0.66434	Collegio Romano, Rome
479	6.0505	0.73020	+0.68096	Sollies-Pont	532	11.6084	0.66853	+0.74130	Munich
480	0.77	0.615	+0.786	Cockfield	533	11.8715	0.70335	+0.70847	Padua
481	7.93	0.596	+0.800	Moorwarfen	534	12.3913	0.62606	+0.77719	Leipzig (since 1861)
482	357.1854	0.55560	+0.82866	St. Andrews	535	13.3578	0.78782	+0.61386	Palermo
483	173.80	0.748	-0.661	Carter Observatory, Black Birch Station	536	13.1062	0.61135	+0.78873	Berlin-Babelsberg
484	174.75	0.753	-0.657	Happy Valley, Wellington	537	13.3642	0.6097	+0.7900	Urania Observatory, Berlin
485	174.7654	0.75256	-0.65635	Carter Observatory, Wellington	538	13.8461	0.70998	+0.70187	Pola
486	175.47	0.765	-0.643	Palmerston North	539	14.1316	0.66968	+0.74024	Kremsmünster
487	355.4444	0.56858	+0.81989	Macnairston Observatory	540	14.2753	0.66470	+0.74477	Linz
488	358.37	0.575	+0.816	Newcastle-upon-Tyne	541	14.3953	0.64306	+0.76331	Prague

542	13.04	0.607	+0.790	Falkensee	595	13.5258	0.69693	+0.71475	Farra d'Isonzo
543	12.3688	0.6260	+0.7772	Leipzig (before 1861)	596	12.6183	0.74446	+0.66545	Colleverde di Guidonia
544	13.4250	0.61040	+0.78945	Wilhelm Foerster Observatory, Berlin	597	9.6630	0.6146	+0.7862	Springe
545	16.3817	0.66767	+0.74200	Vienna (before 1879)	598	11.3333	0.71748	+0.69442	Loiano
546	16.3549	0.66760	+0.74207	Oppolzer Observatory, Vienna	599	13.5625	0.7396	+0.6713	Astronomical Observatory, Campo Imperatore
547	17.0363	0.62904	+0.77479	Breslau	600	11.4708	0.71618	+0.69564	TLC Observatory, Bologna
548	13.3950	0.60999	+0.78976	Berlin (1835–1913)	601	13.7275	0.63009	+0.77395	Engelhardt Observatory, Dresden
549	17.6257	0.50341	+0.86116	Uppsala	602	16.3854	0.66764	+0.74203	Urania Observatory, Vienna
550	11.4196	0.5943	+0.8015	Schwerin	603	10.1300	0.58622	+0.80745	Bothkamp
551	18.1895	0.67201	+0.73808	Hurbanovo, formerly O'Gyalla	604	13.4777	0.61024	+0.78957	Archenhold Sternwarte, Berlin-Treptow
552	11.3418	0.71485	+0.69700	Osservatorio S. Vittore, Bologna	605	7.1130	0.62142	+0.78086	Marl
553	18.9938	0.64002	+0.76574	Chorzów	606	9.9956	0.59353	+0.80212	Norderstedt
554	8.40	0.638	+0.769	Burgsolms Observatory, Wetzlar	607	8.0000	0.6277	+0.7760	Hagen Observatory, Ronkhausen
555	19.83	0.643	+0.762	Cracow-Fort Skala	608	203.7420	0.93623	+0.35156	Haleakala-AMOS
556	11.26	0.675	+0.734	Reintal, near Munich	609	12.8533	0.73772	+0.67314	Osservatorio Polino
557	14.7837	0.64530	+0.76148	Ondřejov	610	11.3431	0.71577	+0.69604	Pianoro
558	21.0303	0.61396	+0.78672	Warsaw	611	8.6531	0.64877	+0.75848	Starkenburg Sternwarte, Heppenheim
559	14.98	0.793	+0.607	Serra La Nave	612	7.10	0.625	+0.778	Lenkerbeck
560	10.93	0.704	+0.708	Madonna di Dossobuono	613	7.0709	0.62504	+0.77800	Heisingen
561	19.8943	0.67153	+0.73869	Piskésető	614	2.467	0.6621	+0.7469	Soisy-sur-Seine
562	15.92	0.668	+0.741	Figl Observatory, Vienna	615	6.9067	0.71233	+0.70014	St. Veran
563	13.60	0.671	+0.739	Seewalchen	616	16.5883	0.65465	+0.75346	Brno
564	11.19	0.671	+0.741	Herrsching	617	2.5725	0.66496	+0.74437	Arbonne la Forêt
565	10.14	0.704	+0.708	Bassano Bresciano	618	5.0077	0.72750	+0.68382	Martignes
566	203.7424	0.93623	+0.35156	Haleakala-NEAT/GEODSS	619	2.0912	0.74950	+0.65984	Sabadell
567	12.71	0.699	+0.715	Chions	620	2.9517	0.77110	+0.63463	Observatorio Astronómico de Mallorca
568	204.5278	0.94171	+0.33725	Mauna Kea	621	7.4858	0.62944	+0.77451	Bergisch Gladbach
569	24.9587	0.49891	+0.86375	Helsinki	622	7.5680	0.68778	+0.72358	Oberwichttrach
570	25.2990	0.5794	+0.8123	Vilnius (since 1939)	623	5.5643	0.63577	+0.76932	Liège
571	10.63	0.704	+0.708	Cavriana	624	9.6167	0.64723	+0.75977	Dertingen
572	6.89	0.631	+0.772	Cologne	625	203.5683	0.93557	+0.35201	Kihei-AMOS Remote Maui Experimental Site
573	9.6612	0.6145	+0.7862	Eldagsen	626	4.9864	0.62847	+0.77524	Geel
574	10.27	0.704	+0.708	Gottolengo	627	5.2146	0.72002	+0.69168	Blauvac
575	6.808	0.68219	+0.72894	La Chaux de Fonds	628	6.8442	0.62477	+0.77820	Mülheim-Ruhr
576	0.38	0.631	+0.774	Burwash	629	20.1511	0.69273	+0.71880	JATE Observatory, Szeged
577	7.50	0.678	+0.734	Metzerlen Observatory	630	7.2367	0.67051	+0.73951	Osenbach
578	27.99	0.898	−0.439	Linden Observatory	631	10.02	0.596	+0.800	Hamburg-Georgswerder
579	8.85	0.711	+0.701	Novi Ligure	632	11.1739	0.72380	+0.68773	San Polo A Mosciano
580	15.4936	0.68242	+0.72862	Graz	633	9.9339	0.71930	+0.69238	Romito
581	22.80	0.830	−0.556	Sedgefield	634	5.1456	0.70182	+0.71007	Crolles
582	1.22	0.617	+0.783	Orwell Park	635	2.9019	0.73605	+0.67467	Pergignan
583	30.27	0.692	+0.720	Odessa-Mayaki	636	6.9794	0.62524	+0.77783	Essen
584	30.2946	0.50213	+0.86189	Leningrad	637	10.0903	0.59326	+0.80232	Hamburg-Himmelsmoor
585	30.53	0.638	+0.767	Kiev comet station	638	8.8933	0.61778	+0.78374	Detmold
586	0.1423	0.73358	+0.67799	Pic du Midi	639	13.7233	0.62933	+0.77456	Dresden
587	9.2302	0.69744	+0.71448	Sormano	640	13.5996	0.6429	+0.7634	Senftenberger Sternwarte
588	11.25	0.715	+0.697	Eremo di Tizzano	641	20.0272	0.82468	−0.56374	Overberg
589	12.64	0.739	+0.673	Santa Lucia Stroncone	642	236.6850	0.6648	+0.7445	Oak Bay, Victoria
590	7.46	0.678	+0.734	Metzerlen	643	243.2794	0.83507	+0.54868	OCA-Anza Observatory
591	9.6258	0.6099	+0.7898	Resse Observatory	644	243.1411	0.83633	+0.54688	Palomar Mountain/NEAT
592	7.01	0.629	+0.774	Solingen	645	254.1800	0.8419	+0.5386	Apache Point-Sloan Digital Sky Survey
593	11.17	0.739	+0.671	Monte Argentario	646	242.4422	0.8286	+0.5581	Lake Cucamonga
594	13.2033	0.74497	+0.66529	Monte Autore	647	245.9683	0.6337	+0.7712	Stone Finder Observatory, Calgary

648	249.3983	0.85211	+0.52205	Winer Mobile Observatory, Sonoita	701	249.7989	0.85383	+0.51922	Sierra Vista
649	265.3003	0.78207	+0.62117	Powell Observatory, Louisburg	702	252.8117	0.8305	+0.5561	Joint Obs. for cometary research, Socorro
650	242.9028	0.83510	+0.54836	Temecula	703	249.2680	0.84532	+0.53321	Catalina Sky Survey
651	249.4198	0.85208	+0.52211	Grasslands Observatory, Tucson	704	253.3409	0.83186	+0.55354	Lincoln Laboratory ETS, New Mexico
652	245.9333	0.6291	+0.7749	Rock Finder Observatory, Calgary	705	254.1800	0.8419	+0.5386	Apache Point
653	237.8678	0.68091	+0.72996	Torus Observatory, Buckley	706	253.9366	0.78294	+0.62043	Salida
654	242.3191	0.82647	+0.56172	Table Mountain Observatory, Wrightwood-PHMC	707	254.56	0.774	+0.633	Chamberlin field station
655	236.383	0.6656	+0.7438	Sooke	708	255.0475	0.77092	+0.63520	Chamberlin Observatory, Denver
656	236.3921	0.66580	+0.74367	Victoria	709	254.2288	0.84025	+0.54110	W & B Observatory, Cloudcroft
657	236.6903	0.66437	+0.74491	Climenhaga Observatory, Victoria	710	254.7336	0.77980	+0.62458	Florissant
658	236.5830	0.66363	+0.74560	Dominion Astrophysical Observatory, Victoria	711	255.9785	0.86114	+0.50731	McDonald Observatory, Fort Davis
659	237.0514	0.66257	+0.74650	Heron Cove Observatory, Orcas	712	255.1189	0.77837	+0.62625	USAF Academy Observatory, Colorado Springs
660	237.7379	0.79038	+0.61059	Leuschner Observatory, Berkeley	713	254.9897	0.76865	+0.63793	Thornton
661	245.7117	0.63251	+0.77222	Rothney Astrophysical Observatory, Priddis	714	246.8173	0.82444	+0.56439	Bagdad
662	238.3545	0.79619	+0.60335	Lick Observatory, Mount Hamilton	715	253.2378	0.84572	+0.53222	Las Cruces
663	248.3136	0.83483	+0.54879	Red Mountain Observatory	716	255.2489	0.77753	+0.62731	Palmer Divide Observatory, Colorado Springs
664	239.2775	0.6840	+0.7273	Manastash Ridge Observatory	717	256.0481	0.86160	+0.50636	Prude Ranch
665	240.9903	0.82215	+0.56781	Wallis Observatory	718	247.7050	0.7600	+0.6480	Univ. of Utah Hansen Planetarium, Tooele
666	241.1692	0.8270	+0.5604	Moorpark College Observatory	719	253.0861	0.82938	+0.55720	Etscorn Observatory
667	240.0092	0.68448	+0.72663	Wanapum Dam	720	259.6261	0.90216	+0.43018	Universidad de Monterrey
668	240.82	0.821	+0.568	San Emigdio Peak	721	259.7312	0.76271	+0.64476	Lime Creek
669	240.82	0.826	+0.563	Ojai	722	264.4192	0.87017	+0.49110	Missouri City
670	240.9558	0.82775	+0.55922	Camarillo	723	263.3300	0.82134	+0.56861	Cottonwood Observatory, Ada
671	242.0022	0.82719	+0.56052	Stony Ridge	724	260.8053	0.94388	+0.33026	National Observatory, Tacubaya
672	241.9403	0.82802	+0.55930	Mount Wilson	725	261.3450	0.8688	+0.4936	Fair Oaks Ranch
673	242.3191	0.82647	+0.56172	Table Mountain Observatory, Wrightwood	726	265.6933	0.69024	+0.72120	Brainerd
674	242.39	0.826	+0.563	Ford Observatory, Wrightwood	727	262.5389	0.81394	+0.57910	Zeno Observatory, Edmond
675	243.1360	0.83634	+0.54686	Palomar Mountain	728	262.6084	0.88610	+0.46194	Corpus Christi
676	242.4661	0.83552	+0.54762	San Clemente	729	262.8792	0.64880	+0.75845	Glenlea Astronomical Observatory, Winnipeg
677	242.8281	0.82746	+0.56012	Lake Arrowhead	730	262.9156	0.67148	+0.73860	University of North Dakota, Grand Forks
678	248.2597	0.83352	+0.55083	Fountain Hills	731	272.6711	0.77290	+0.63244	Rose-Hulman Observatory, Terre Haute
679	244.5367	0.85792	+0.51292	San Pedro Martir	732	263.2300	0.95591	+0.29359	Oaxaca
680	244.78	0.833	+0.554	Los Angeles	733	263.3546	0.83802	+0.54387	Allen, Texas
681	245.8858	0.62954	+0.77459	Calgary	734	263.9986	0.77943	+0.62449	Farpoint Observatory, Eskridge
682	247.6381	0.79932	+0.59932	Kanab	735	264.4064	0.87213	+0.48763	George Observatory, Needville
683	248.9182	0.84751	+0.52922	Goodricke-Pigott Observatory, Tucson	736	263.3357	0.87006	+0.49132	Houston
684	247.5100	0.82512	+0.56356	Prescott	737	275.6633	0.8282	+0.5586	New Bullpen Observatory, Alpharetta
685	247.84	0.816	+0.575	Williams, AZ	738	267.6733	0.7788	+0.6252	Observatory of the State University of Missouri
686	249.2092	0.84512	+0.53359	U. of Minn. Infrared Obs., Mt. Lemmon	739	265.2440	0.77965	+0.62419	Sunflower Observatory, Olathe
687	248.3473	0.81848	+0.57318	Northern Arizona University, Flagstaff	740	265.3383	0.8511	+0.5233	SFA Observatory, Nacogdoches
688	248.4645	0.81938	+0.57193	Lowell Observatory, Anderson Mesa Station	741	266.8503	0.71493	+0.69692	Goodsell Observatory, Northfield
689	248.2601	0.81851	+0.57319	U.S. Naval Observatory, Flagstaff	742	266.3138	0.74900	+0.66041	Drake University, Des Moines
690	248.3367	0.81832	+0.57344	Lowell Observatory, Flagstaff	743	266.7633	0.70857	+0.70328	University of Minnesota, Minneapolis
691	248.4006	0.84946	+0.52649	Steward Observatory, Kitt Peak-Spacewatch	744	273.8378	0.76884	+0.63735	Doyan Rose Observatory, Indianapolis
692	249.0513	0.84679	+0.53036	Steward Observatory, Tucson	745	267.1751	0.7757	+0.6290	Glasgow, Missouri
693	249.2680	0.84532	+0.53321	Catalina Station, Tucson	746	275.2254	0.72551	+0.68597	Brooks Observatory, Mt. Pleasant
694	248.9943	0.84700	+0.53009	Tumamoc Hill, Tucson	747	268.9292	0.86373	+0.50227	Baton Rouge Observatory
695	248.4053	0.84950	+0.52643	Kitt Peak	748	268.4680	0.75014	+0.65912	Van Allen Observatory, Iowa City
696	249.1154	0.85205	+0.52249	Whipple Observatory, Mt. Hopkins	749	276.1642	0.82795	+0.55902	Oakwood
697	248.3842	0.84956	+0.52629	Kitt Peak, McGraw-Hill	750	268.7282	0.71059	+0.70131	Hobbs Observatory, Fall Creek
698	249.28	0.844	+0.532	Mt. Bigelow	751	269.2439	0.78038	+0.62324	Lake Saint Louis
699	248.46331	0.819380	+0.571930	Lowell Observatory-LONEOS	752	275.4647	0.82278	+0.56659	Puckett Observatory, Mountain Town
700	250.3817	0.80656	+0.58960	Chinle	753	270.5921	0.73161	+0.67950	Washburn Observatory, Madison

754	271.4432	0.73762	+0.67303	Yerkes Observatory, Williams Bay	807	289.1941	0.86560	-0.49980	Cerro Tololo Observatory, La Serena
755	274.6478	0.73353	+0.67743	Optec Observatory	808	290.6708	0.85098	-0.52414	El Leoncito
756	272.3257	0.74361	+0.66641	Dearborn Observatory, Evanston	809	289.2704	0.87346	-0.48603	European Southern Observatory, La Silla
757	280.0050	0.8096	+0.5851	High Point	810	288.5154	0.73712	+0.67352	Wallace Observatory, Westford
758	279.2379	0.88044	+0.47257	BCC Observatory, Cocoa	811	289.8952	0.75259	+0.65629	Maria Mitchell Observatory, Nantucket
759	273.1947	0.80946	+0.58530	Nashville	812	288.42	0.840	-0.542	Viña del Mar
760	273.6048	0.77216	+0.63337	Goethe Link Observatory, Brooklyn	813	289.3083	0.83533	-0.54805	Santiago-Quinta Normal (1862-1920)
761	277.6456	0.88138	+0.47083	Zephyrhills	814	288.42	0.746	+0.664	North Scituate
762	274.2008	0.70885	+0.70304	Four Winds Observatory, Lake Leelanau	815	289.3479	0.83539	-0.54799	Santiago-Santa Lucia (1849-1861)
763	280.4658	0.72157	+0.69009	King City	816	285.7583	0.71645	+0.69542	Rand Observatory
764	275.1439	0.83264	+0.55205	Puckett Observatory, Stone Mountain	817	288.6104	0.74018	+0.67017	Sudbury
765	275.5775	0.77669	+0.62784	Cincinnati	818	286.4167	0.7040	+0.7079	Gemeaux Observatory, Laval
766	275.5167	0.73600	+0.67477	Michigan State University Obs., East Lansing	819	284.3850	0.69720	+0.71451	Val-des-Bois
767	276.2697	0.74102	+0.66930	Ann Arbor	820	295.37	0.931	-0.366	Tarija
768	277.08	0.734	+0.675	Dearborn	821	295.4533	0.85270	-0.52103	Córdoba-Bosque Alegre
769	276.9892	0.76716	+0.63936	McMillin Observatory, Columbus	822	295.8035	0.85419	-0.51834	Córdoba
770	274.0786	0.77573	+0.62900	Crescent Moon Observatory, Columbus	823	288.1691	0.73715	+0.67354	Fitchburg
771	277.57	0.922	+0.389	Boyerros Observatory, Havana	824	285.7583	0.71645	+0.69542	Lake Clear
772	284.0865	0.70517	+0.70669	Boltwood Observatory, Stittsville	825	288.2595	0.74033	+0.67003	Granville
773	278.4318	0.74966	+0.65966	Warner and Swasey Observatory, Cleveland	826	288.2282	0.69312	+0.71843	Plessisville
774	278.9250	0.74905	+0.66039	Warner and Swasey Nassau Station, Chardon	827	287.5393	0.66190	+0.74710	Saint-Félicien
775	284.6168	0.76029	+0.64743	Sayre Observatory, South Bethlehem	828	288.9758	0.74656	+0.66310	Assonet
776	284.4669	0.73472	+0.67619	Foggy Bottom, Hamilton	829	290.6979	0.85102	-0.52411	Complejo Astronómico El Leoncito
777	280.6017	0.72454	+0.68695	Toronto	830	288.5697	0.73491	+0.67590	Hudson
778	279.9778	0.76172	+0.64582	Allegheny Observatory, Pittsburgh	831	277.4134	0.87191	+0.48804	Rosemary Hill Observatory, University of Florida
779	280.5779	0.72219	+0.68943	David Dunlap Observatory, Richmond Hill	832	283.1850	0.7653	+0.6416	Etters
780	281.4778	0.78868	+0.61280	Leander McCormick Observatory, Charlottesville	833	301.4633	0.82373	-0.56508	Obs. Astronómico de Mercedes, Buenos Aires
781	281.5075	1.00045	-0.00405	Quito	834	301.5654	0.82398	-0.56473	Buenos Aires-AAAA
782	281.65	0.999	+0.000	Quito, comet astrograph station	835	288.6428	0.73709	+0.67354	Drum Hill Station, Chelmsford
783	282.02	0.783	+0.622	Rixeyville	836	288.5011	0.74708	+0.66252	Furnace Brook Observatory, Cranston
784	282.2148	0.74140	+0.66895	Stull Observatory, Alfred University	837	279.7553	0.89228	+0.44996	Jupiter
785	285.3433	0.76319	+0.64402	Princeton	838	275.8628	0.77000	+0.63596	Dayton
786	282.9345	0.77906	+0.62487	U.S. Naval Obs., Washington (since 1893)	839	302.0678	0.82097	-0.56906	La Plata
787	282.9494	0.77934	+0.62451	U.S. Naval Obs., Washington (before 1893)	840	276.2833	0.73235	+0.67870	Flint
788	284.3667	0.76953	+0.63650	Mount Cuba Observatory, Wilmington	841	279.4423	0.79623	+0.60322	Martin Observatory, Blacksburg
789	284.5940	0.73188	+0.67922	Litchfield Observatory, Clinton	842	282.7678	0.76901	+0.63713	Gettysburg College Observatory
790	284.2835	0.70343	+0.70840	Dominion Observatory, Ottawa	843	273.0650	0.8248	+0.5636	Decatur
791	284.5236	0.76713	+0.63937	Flower and Cook Observatory, Philadelphia	844	303.8102	0.82159	-0.56906	Los Molinos
792	288.30	0.753	+0.657	U. of Rhode Island, Quonochontaug	845	283.5058	0.73942	+0.67107	Ford Observatory, Ithaca
793	286.2200	0.73660	+0.67407	Dudley Observatory, Albany (before 1893)	846	269.6550	0.77984	+0.62393	Principia Astronomical Observatory, Elsalh
794	286.1100	0.74789	+0.66161	Vassar College Observatory, Poughkeepsie	847	275.9750	0.7078	+0.7041	Lunar Cafe Observatory
795	286.0123	0.7589	+0.6491	Rutherford	848	237.0219	0.72412	+0.68741	Tenagra Observatory, Cottage Grove
796	286.45	0.755	+0.654	Stamford	849	265.1694	0.77927	+0.62467	Everstar Observatory, Olathe
797	287.0751	0.75218	+0.65676	Yale Observatory, New Haven	850	274.0783	0.81811	+0.57332	Cordell-Lorenz Observatory, Sewanee
798	287.0154	0.75093	+0.65822	Yale Observatory, Bethany	851	296.4189	0.71284	+0.69900	Burke-Gaffney Observatory, Halifax
799	288.8650	0.73896	+0.67150	Winchester	852	269.4050	0.7805	+0.6231	River Moss Observatory, St. Peters
800	288.4511	0.96006	-0.28021	Harvard Observatory, Arequipa	853	249.1517	0.84365	+0.53544	Biosphere 2 Observatory
801	288.4408	0.73838	+0.67216	Oak Ridge Observatory	854	249.1808	0.84619	+0.53135	Sabino Canyon Observatory, Tucson
802	288.8706	0.73982	+0.67055	Harvard Observatory, Cambridge	855	266.5383	0.7093	+0.7026	Wayside Observatory, Minnetonka
803	288.9167	0.74543	+0.66436	Taunton	857	249.3992	0.85213	+0.52204	Iowa Robotic Observatory, Sonoita
804	289.3121	0.83421	-0.54976	Santiago-San Bernardo	859	316.3097	0.94132	-0.33707	Wykrota Observatory-CEAMIG
805	288.97	0.840	-0.542	Santiago-Cerro El Roble	860	313.0347	0.92108	-0.38842	Valinhos
806	289.4513	0.83584	-0.54738	Santiago-Cerro Calán	861	312.9204	0.92253	-0.38487	Barão Geraldo

862	138.5262	0.80861	+0.58658	Saku	950	342.1176	0.87764	+0.47847	La Palma
863	137.18	0.807	+0.588	Furukawa	951	358.2983	0.62194	+0.78046	Highworth
864	130.7533	0.84257	+0.53680	Kumamoto	952	359.7583	0.7787	+0.6253	Marxuquera
867	134.1222	0.81671	+0.57522	Saji Observatory	953	2.1339	0.74602	+0.66393	Montjoia
868	135.1359	0.83066	+0.55492	Hidaka Observatory	954	343.5033	0.8815	+0.4713	Teide Observatory
869	133.4298	0.83480	+0.54870	Tosa	955	350.6739	0.78146	+0.62188	Sassoeiros
870	313.17	0.934	-0.359	Campiñas	956	356.1908	0.76224	+0.64530	Observatorio Pozuelo
871	134.3925	0.82256	+0.56678	Akou	957	359.3506	0.71047	+0.70137	Merignac
872	134.2411	0.82904	+0.55734	Tokushima	958	358.9717	0.72421	+0.68727	Observatoire de Dax
873	133.7708	0.8235	+0.5654	Kurashiki Observatory	959	1.4653	0.72596	+0.68548	Ramonville Saint Agne
874	314.4208	0.92437	-0.38097	Itajuba	960	0.6108	0.63016	+0.77387	Rolvenden
875	139.2353	0.80896	+0.58593	Yorii	961	356.8206	0.56112	+0.82498	City Observatory, Edinburgh
876	139.2467	0.80762	+0.58774	Honjo	962	359.8188	0.77845	+0.62561	Gandia
877	139.0828	0.81194	+0.58196	Okutama	963	359.7333	0.6084	+0.7909	Werrington
878	136.9142	0.82019	+0.57019	Kagiya	964	358.8433	0.62471	+0.77826	Southend Bradfield
879	137.3535	0.81970	+0.57099	Tokai	965	351.4008	0.79761	+0.60118	Observação Astronomica no Algarve, Portimão
880	316.7771	0.92169	-0.38664	Rio de Janeiro	966	357.2058	0.60960	+0.79009	Church Stretton
881	137.2571	0.81872	+0.57230	Toyota	967	358.9778	0.61508	+0.78585	Greens Norton
882	137.3558	0.81842	+0.57281	JCPM Oi Station	968	0.4250	0.6158	+0.7853	Haverhill
883	138.4215	0.81986	+0.57065	Shizuoka	969	359.8454	0.6235	+0.7792	London-Regents Park
884	138.0792	0.8187	+0.5724	Kawane	970	0.4954	0.62045	+0.78162	Chelmsford
885	138.4667	0.82049	+0.56975	JCPM Yakiimo Station	971	350.8140	0.78134	+0.62204	Lisbon
886	138.9367	0.81836	+0.57280	Mishima	972	357.5833	0.54359	+0.83656	Dun Echt
887	139.3367	0.80745	+0.58798	Ojima	973	359.67	0.622	+0.779	Harrow
888	138.9952	0.81885	+0.57217	Gekko	974	8.9220	0.71542	+0.69637	Genoa
889	140.1427	0.80322	+0.59372	Karasuyama	975	359.6333	0.77292	+0.63239	Valencia
890	140.2500	0.8108	+0.5834	JCPM Tone Station	976	358.48	0.612	+0.788	Leamington Spa
891	140.8633	0.78606	+0.61609	JCPM Kimachi Station	977	351.5483	0.58660	+0.80717	Markree
892	139.4753	0.80852	+0.58650	YGCO Hoshikawa and Nagano Stations	978	357.2454	0.58868	+0.80567	Conder Brow
893	140.8657	0.78626	+0.61583	Sendai Municipal Observatory	979	358.6697	0.62896	+0.77485	South Wonston
894	138.4476	0.81113	+0.58321	Kiyosato	980	357.2200	0.58864	+0.80570	Lancaster
895	140.7203	0.78573	+0.61658	Hatamae	981	353.3522	0.58409	+0.80898	Armagh
896	138.3678	0.81132	+0.58292	Yatsugatake South Base Observatory	982	353.6621	0.59771	+0.79904	Dunsink Observatory, Dublin
897	139.4929	0.80797	+0.58725	YGCO Chiyoda Station	983	353.7946	0.80521	+0.59101	San Fernando
898	138.1883	0.82107	+0.56899	Fujieda	984	357.26	0.631	+0.774	Eastfield
899	142.5500	0.7224	+0.6891	Toma	985	357.53	0.607	+0.790	Telford
900	135.9929	0.81961	+0.57104	Moriyama	986	358.75	0.624	+0.779	Ascot
901	137.0877	0.81664	+0.57525	Tajimi	987	355.37	0.586	+0.807	Archallagan Observatory
902	132.2208	0.82775	+0.55922	Ootake	988	355.7060	0.56225	+0.82421	Glasgow
903	135.1769	0.81738	+0.57418	Fukuchiyama and Kannabe	989	357.69	0.600	+0.797	Wilfred Hall Observatory, Preston
904	135.12	0.824	+0.565	Go-Chome and Kobe-Suma	990	356.3121	0.76260	+0.64487	Madrid
905	135.9246	0.83368	+0.55040	Nachi-Katsuura Observatory	991	356.9278	0.59750	+0.79919	Liverpool (since 1867)
906	145.667	0.8113	-0.5837	Cobram	992	356.9995	0.5973	+0.7993	Liverpool (before 1867)
907	144.9758	0.79082	-0.61001	Melbourne	993	357.50	0.631	+0.774	Woolston Observatory
908	137.2467	0.80352	+0.59330	Toyama	994	359.39	0.629	+0.776	Godalming
910	6.9267	0.72368	+0.68811	Caussols-ODAS	995	358.4177	0.57819	+0.81319	Durham
930	210.4119	0.95374	-0.29967	Tahiti	996	358.7483	0.62025	+0.78179	Oxford
944	354.0828	0.79661	+0.60248	Observatorio Geminis, Dos Hermanas	997	359.15	0.619	+0.783	Hartwell
945	354.3986	0.72671	+0.68474	Observatorio Monte Deva	998	359.7593	0.62226	+0.78020	London-Mill Hill
946	0.7931	0.75662	+0.65170	Ametlla de Mar	999	359.4725	0.71033	+0.70153	Bordeaux-Florac
947	2.1244	0.65268	+0.75511	Saint-Sulpice					
948	0.2189	0.61048	+0.78937	Pymoor					
949	359.8169	0.67454	+0.73577	Durtal					

NEW OBSERVATORY CODES

The following listing is a continuation to the main listing above. The longitudes λ are measured in degrees eastward from Greenwich, and the parallax constants $\rho \cos \phi'$ and $\rho \sin \phi'$ are the product of the geocentric distance (in earth equatorial radii) and the cosine and sine, respectively, of the geocentric latitude.

Obs.	λ	$\rho \cos \phi'$	$\rho \sin \phi'$	
175	7.6083	0.6932	+0.7188	F.-X. Bagnoud Observatory, St-Luc
176	2.8225	0.77098	+0.63475	Observatori Astronomic de Consell
348	135.2669	0.81698	+0.57475	Ayabe
856	242.5540	0.8300	+0.5560	Riverside
858	253.7800	0.8194	+0.5719	Tebbutt Observatory, Edgewood
931	210.3842	0.95330	-0.30100	Punaauia

CORRECTED OBSERVATIONS

The following observations correct those previously published.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Mag.	N Obs.
1999 UK ₃	* 1999 10 22.20050	02 09 08.56	+07 59 19.1	19.1	<i>MPC</i> 36607	16.1 R	1 757
1999 UK ₃	1999 10 22.21689	02 09 07.74	+07 59 15.1	15.1	<i>MPC</i> 36607	16.1 R	1 757
1999 UK ₃	1999 10 23.17827	02 08 20.49	+07 55 21.1	21.1	<i>MPC</i> 36607	16.0 R	1 757
1999 UK ₃	1999 10 23.19581	02 08 19.55	+07 55 19.2	19.2	<i>MPC</i> 36607	15.7 R	1 757
1999 XE ₃₈	1999 12 06.52546	04 29 30.87	+29 46 07.4	7.4	<i>MPS</i> 7982	18.5	2 905
1999 XF ₃₈	1999 12 06.52546	04 31 42.75	+29 19 44.2	44.2	<i>MPS</i> 7982	18	2 905
(879)	1986 11 25.90729	02 37 11.84	+30 30 32.9	32.9	<i>MPC</i> 13982		1 571
(879)	1986 11 25.91909	02 37 11.33	+30 30 23.7	23.7	<i>MPC</i> 13924		1 571
(879)	1986 11 26.84583	02 36 33.77	+30 18 52.0	52.0	<i>MPC</i> 13664		1 571
(879)	1986 11 26.86041	02 36 33.22	+30 18 41.2	41.2	<i>MPC</i> 13664		1 571
(879)	1986 11 27.84236	02 35 55.09	+30 06 29.4	29.4	<i>MPC</i> 13664		1 571
(879)	1986 11 27.85625	02 35 54.45	+30 06 18.9	18.9	<i>MPC</i> 13664		1 571
(879)	1986 11 28.84757	02 35 17.98	+29 54 04.2	4.2	<i>MPC</i> 13982		1 571
(879)	1986 11 28.85798	02 35 17.54	+29 53 56.8	56.8	<i>MPC</i> 13664		1 571

Note 1: time changed by -1 hour. 2: time changed.

DELETED OBSERVATION

The following observation is to be deleted.

Object	Date	UT	α_{2000}	δ_{2000}	Reference	Obs.
2634 T-3	1999 12 08.18899	03 47 56.11	+19 06 14.2	14.2	<i>MPS</i> 8096	691

IDENTIFICATION CHANGES

Continuation to *MPC* 36977.

Object	Date	UT	α_{2000}	δ_{2000}	Originally	Mag.	N Obs.
1931 TR ₄	* 1931 10 12.87549	00 11 31.70	+09 13 52.8	52.8	1931 TT		024
1936 FC ₂	* 1936 03 23.88515	10 46 45.66	-03 46 15.7	15.7	1936 FK		012
1976 KA ₃	* 1976 05 30.88811	14 37 30.38	-07 35 54.5	54.5	1976 JZ ₁	17.0	095
1987 SX ₃₀	* 1987 09 27.88465	00 24 28.51	-06 24 06.2	6.2	1987 SA ₃	16.0 V	095
1989 GW ₈	* 1989 04 11.57604	11 01 44.26	+12 33 55.4	55.4	1989 ER ₁	18	372
1989 GW ₈	1989 04 11.58785	11 01 44.12	+12 33 58.4	58.4	1989 ER ₁		372
1991 EH ₉	* 1991 03 14.15729	10 42 55.30	+06 11 38.9	38.9	1991 EC ₄		809

1991 EH ₉	1991 03 14.16771	10 42 54.82	+06 11 42.1	42.1	1991 EC ₄		809
1991 EH ₉	1991 03 14.17812	10 42 54.35	+06 11 45.5	45.5	1991 EC ₄		809
1991 EJ ₉	* 1991 03 14.15729	10 42 50.42	+06 17 26.6	26.6	1991 ED ₄		809
1991 EJ ₉	1991 03 14.16771	10 42 49.78	+06 17 32.1	32.1	1991 ED ₄		809
1991 EJ ₉	1991 03 14.17812	10 42 49.13	+06 17 37.6	37.6	1991 ED ₄		809
1991 RA ₄₂	* 1991 09 12.81712	21 44 23.58	-00 14 24.7	24.7	1991 RP ₄₁	16.5	095
1992 GT ₈	* 1992 04 06.26806	14 26 30.97	-13 32 56.6	56.6	1992 GW ₃	19.0	809
1992 GT ₈	1992 04 06.28125	14 26 30.32	-13 32 53.0	53.0	1992 GW ₃		809
1992 GT ₈	1992 04 06.29444	14 26 29.74	-13 32 51.3	51.3	1992 GW ₃		809
1992 WB ₁₀	* 1992 11 24.15729	02 14 12.70	+21 32 07.6	7.6	1992 WF ₈		675
1992 WB ₁₀	1992 11 24.18125	02 14 11.53	+21 31 57.9	57.9	1992 WF ₈		675
1993 DN ₃	* 1993 02 22.99792	09 13 15.53	+18 00 46.3	46.3	1993 DA ₃		010
1993 DN ₃	1993 02 23.00984	09 13 14.91	+18 00 47.7	47.7	1993 DA ₃		010
1993 DO ₃	* 1993 02 22.01042	10 13 50.21	+07 13 35.8	35.8	1993 DK ₁		511
1993 DO ₃	1993 02 22.03125	10 13 49.12	+07 13 40.7	40.7	1993 DK ₁		511
1993 HT ₈	* 1993 04 17.43889	12 00 44.12	-02 49 52.6	52.6	1993 FL ₅₀	19.1	413
1993 OC ₁₄	* 1993 07 24.22708	20 06 50.71	-22 09 27.8	27.8	1993 OU ₆		809
1993 TP ₄₈	* 1993 10 15.25833	01 07 10.89	+01 11 22.9	22.9	1993 TN ₁₂		675
1993 UP ₉	* 1993 10 22.21424	00 55 59.33	+06 12 18.8	18.8	1993 TC ₄₅	19.0	809
1993 UP ₉	1993 10 22.23507	00 55 58.25	+06 12 14.1	14.1	1993 TC ₄₅		809
1993 UP ₉	1993 10 22.25590	00 55 57.28	+06 12 09.8	9.8	1993 TC ₄₅		809
1994 CO ₂₀	* 1994 02 10.28472	11 30 49.80	+13 12 45.0	45.0	1994 CJ ₁₃		809
1994 CO ₂₀	1994 02 10.29653	11 30 49.48	+13 12 48.1	48.1	1994 CJ ₁₃		809
1994 CO ₂₀	1994 02 10.30833	11 30 49.11	+13 12 52.0	52.0	1994 CJ ₁₃		809
1996 BH ₁₈	* 1996 01 25.36793	08 27 35.91	+22 19 01.4	1.4	1996 BF ₁₅		691
1996 BH ₁₈	1996 01 25.39033	08 27 34.60	+22 19 06.7	6.7	1996 BF ₁₅	19.4 V	691
1996 BH ₁₈	1996 01 25.41276	08 27 33.29	+22 19 11.9	11.9	1996 BF ₁₅		691
1996 FA ₂₄	* 1996 03 27.55734	12 05 18.25	+02 05 34.6	34.6	1996 FH ₅	16.5 V	400
1996 FA ₂₄	1996 03 27.58796	12 05 16.69	+02 05 47.9	47.9	1996 FH ₅		400
1997 EU ₅₉	* 1997 03 02.80314	12 22 00.25	+08 56 47.2	47.2	1997 DS		327
1997 EU ₅₉	1997 03 02.81284	12 21 59.88	+08 56 52.1	52.1	1997 DS	18.5	327
1997 EU ₅₉	1997 03 02.82258	12 21 59.50	+08 56 56.2	56.2	1997 DS		327
1997 JX ₁₈	* 1997 05 08.12439	10 09 26.75	+11 34 46.1	46.1	1997 EC ₂₆	19.5 V	709
1997 JX ₁₈	1997 05 08.13412	10 09 27.45	+11 34 41.4	41.4	1997 EC ₂₆	19.6 V	709
1997 JX ₁₈	1997 05 08.14135	10 09 27.65	+11 34 38.7	38.7	1997 EC ₂₆	19.7 V	709
1997 JX ₁₈	1997 05 08.14748	10 09 28.16	+11 34 37.1	37.1	1997 EC ₂₆	19.7 V	709
1997 JX ₁₈	1997 05 08.15498	10 09 28.58	+11 34 34.1	34.1	1997 EC ₂₆	20.0 V	709
1997 JX ₁₈	1997 05 08.16192	10 09 29.13	+11 34 30.9	30.9	1997 EC ₂₆	20.3 V	709
1997 JX ₁₈	1997 05 08.16890	10 09 29.44	+11 34 29.7	29.7	1997 EC ₂₆	19.7 V	709
1997 JX ₁₈	1997 05 08.17591	10 09 29.85	+11 34 26.3	26.3	1997 EC ₂₆	20.3 V	709
1997 LG ₁₈	* 1997 06 08.31647	11 30 30.74	+00 05 32.9	32.9	1997 LT ₂		568
1998 MM ₄₈	* 1998 06 26.36183	19 08 51.03	-25 18 04.1	4.1	1998 MC ₃₀	17.9	704
1998 MM ₄₈	1998 06 26.38030	19 08 49.73	-25 18 03.9	3.9	1998 MC ₃₀	17.7	704
1998 MM ₄₈	1998 06 26.39880	19 08 48.57	-25 18 00.9	0.9	1998 MC ₃₀	17.7	704
1998 MM ₄₈	1998 06 26.41724	19 08 47.25	-25 17 58.7	58.7	1998 MC ₃₀	18.4	704
1998 QQ ₁₀₇	* 1998 08 23.28656	21 09 38.71	-22 46 38.6	38.6	1998 QB ₁₁	17.9	704
1998 QQ ₁₀₇	1998 08 23.29862	21 09 38.06	-22 46 40.4	40.4	1998 QB ₁₁	17.9	704
1998 QQ ₁₀₇	1998 08 23.31069	21 09 37.41	-22 46 44.7	44.7	1998 QB ₁₁	18.1	704
1998 QQ ₁₀₇	1998 08 23.32284	21 09 36.76	-22 46 48.5	48.5	1998 QB ₁₁	18.6	704
1998 SV ₁₆₅	* 1998 09 18.31262	23 32 24.14	-08 47 28.6	28.6	1998 RP ₅₁	18.7	704
1998 SV ₁₆₅	1998 09 18.32547	23 32 23.45	-08 47 30.2	30.2	1998 RP ₅₁	18.8	704
1998 SV ₁₆₅	1998 09 18.33853	23 32 22.54	-08 47 33.9	33.9	1998 RP ₅₁	19.1	704
1998 SV ₁₆₅	1998 09 18.35177	23 32 21.80	-08 47 38.2	38.2	1998 RP ₅₁	19.0	704

1998 SV ₁₆₅	1998 09 18.36490	23 32 20.89	-08 47 42.5	1998 RP ₅₁	19.0	704
1999 KS ₁₈	* 1999 05 20.37815	21 05 06.33	-08 06 05.3	1999 JD ₁₂₅	19.0	704
1999 KS ₁₈	1999 05 20.38804	21 05 06.95	-08 05 59.0	1999 JD ₁₂₅	18.9	704
1999 KS ₁₈	1999 05 20.39793	21 05 07.56	-08 05 54.5	1999 JD ₁₂₅	18.1	704
1999 KS ₁₈	1999 05 20.40769	21 05 08.15	-08 05 50.1	1999 JD ₁₂₅	18.1	704
1999 UB ₃₆	* 1999 10 17.66615	01 55 35.78	+09 37 24.1	1999 TM ₁₉	365	365
1999 UB ₃₆	1999 10 17.68281	01 55 34.82	+09 37 22.5	1999 TM ₁₉	365	365
1999 VZ ₇₂	* 1999 11 12.29472	03 33 46.52	+18 20 19.3	1999 VS ₂₈	18.9	704
1999 VZ ₇₂	1999 11 12.30924	03 33 45.59	+18 20 12.9	1999 VS ₂₈	19.8	704
1999 VZ ₇₂	1999 11 12.32355	03 33 44.90	+18 20 04.7	1999 VS ₂₈	19.9	704
1999 VZ ₇₂	1999 11 12.33784	03 33 44.03	+18 19 57.0	1999 VS ₂₈	19.3	704
1999 VZ ₇₂	1999 11 12.35216	03 33 43.23	+18 19 50.3	1999 VS ₂₈	19.4	704
1999 VA ₇₃	* 1999 11 12.31144	03 40 17.79	+20 40 11.2	1999 VB ₃₂	18.6	704
1999 VA ₇₃	1999 11 12.32574	03 40 16.81	+20 40 09.6	1999 VB ₃₂	18.5	704
1999 VA ₇₃	1999 11 12.34004	03 40 15.81	+20 40 08.2	1999 VB ₃₂	18.4	704
1999 VA ₇₃	1999 11 12.35435	03 40 14.83	+20 40 06.9	1999 VB ₃₂	18.7	704
1999 VB ₇₃	* 1999 11 12.36824	05 12 50.49	+23 05 20.0	1999 VZ ₃₇	18.7	704
1999 VB ₇₃	1999 11 12.38253	05 12 49.86	+23 05 16.0	1999 VZ ₃₇	19.1	704
1999 VB ₇₃	1999 11 12.39681	05 12 49.18	+23 05 12.1	1999 VZ ₃₇	19.1	704
1999 VB ₇₃	1999 11 12.41109	05 12 48.48	+23 05 09.7	1999 VZ ₃₇	18.9	704
1999 VC ₇₃	* 1999 11 12.22522	02 20 41.84	+12 04 48.6	1999 VT ₅₆	19.4	704
1999 VC ₇₃	1999 11 12.24015	02 20 41.11	+12 04 43.3	1999 VT ₅₆	19.7	704
1999 VC ₇₃	1999 11 12.25479	02 20 40.37	+12 04 40.3	1999 VT ₅₆	19.6	704
1999 VC ₇₃	1999 11 12.26923	02 20 39.79	+12 04 35.1	1999 VT ₅₆	20.1	704
1999 VC ₇₃	1999 11 12.28368	02 20 39.01	+12 04 30.7	1999 VT ₅₆	20.1	704
1999 VE ₈₈	* 1999 11 08.59323	01 37 46.18	+09 25 22.3	1999 TM ₁₉	18.0	VW365
1999 VE ₈₈	1999 11 08.61163	01 37 45.22	+09 25 20.3	1999 TM ₁₉		W365
1999 VE ₁₃₈	* 1999 11 12.36605	04 59 05.47	+22 58 09.8	1999 VK ₃₆	19.5	704
1999 VE ₁₃₈	1999 11 12.38033	04 59 04.83	+22 58 09.7	1999 VK ₃₆	19.7	704
1999 VE ₁₃₈	1999 11 12.39461	04 59 04.25	+22 58 09.1	1999 VK ₃₆	19.6	704
1999 VE ₁₃₈	1999 11 12.40890	04 59 03.66	+22 58 08.7	1999 VK ₃₆	19.4	704
1999 VE ₁₃₈	1999 11 12.42320	04 59 02.98	+22 58 08.9	1999 VK ₃₆	20.2	704
1999 WO ₁₉	* 1999 11 29.83690	04 31 39.78	+18 15 46.0	1999 WY ₆	18.8	120
1999 WO ₁₉	1999 11 29.85951	04 31 38.26	+18 15 41.4	1999 WY ₆		120
1999 WQ ₁₉	* 1999 11 19.44929	03 48 50.06	+19 49 34.0	1999 WB ₁	20.0	V 734
1999 WQ ₁₉	1999 11 19.46247	03 48 49.31	+19 49 31.8	1999 WB ₁	20.0	V 734
1999 XE ₂₂₃	* 1999 12 12.24176	02 53 48.07	+12 46 36.6	1999 XZ ₁₀₈	19.3	R 703
1999 XE ₂₂₃	1999 12 12.25390	02 53 47.69	+12 46 32.2	1999 XZ ₁₀₈	19.5	R 703
1999 XE ₂₂₃	1999 12 12.26604	02 53 47.25	+12 46 30.6	1999 XZ ₁₀₈	19.6	R 703
1999 XE ₂₂₃	1999 12 12.27814	02 53 46.86	+12 46 29.3	1999 XZ ₁₀₈	19.8	R 703
1999 XY ₂₂₈	* 1999 12 05.23343	04 03 22.75	+21 50 36.9	1999 VX ₃₀	19.2	R 703
1999 XY ₂₂₈	1999 12 05.24574	04 03 22.05	+21 50 35.1	1999 VX ₃₀	19.0	R 703
1999 XY ₂₂₈	1999 12 05.25804	04 03 21.45	+21 50 33.9	1999 VX ₃₀	18.9	R 703
1999 XY ₂₂₈	1999 12 05.27039	04 03 20.75	+21 50 30.9	1999 VX ₃₀	18.4	R 703
1999 XZ ₂₂₈	* 1999 12 05.18613	03 40 59.31	+21 09 32.4	1999 VG ₃₀	19.6	R 703
1999 XZ ₂₂₈	1999 12 05.19844	03 40 58.53	+21 09 28.4	1999 VG ₃₀	19.2	R 703
1999 XZ ₂₂₈	1999 12 05.21079	03 40 57.96	+21 09 27.1	1999 VG ₃₀	19.5	R 703
1999 XZ ₂₂₈	1999 12 05.22314	03 40 57.53	+21 09 24.4	1999 VG ₃₀	19.4	R 703
1999 XA ₂₂₉	* 1999 12 04.26859	03 07 08.15	+18 55 20.4	1999 VY ₃₃	18.6	R 703
1999 XA ₂₂₉	1999 12 04.28072	03 07 07.54	+18 55 19.4	1999 VY ₃₃	19.0	R 703
1999 XA ₂₂₉	1999 12 04.29284	03 07 06.88	+18 55 17.9	1999 VY ₃₃	18.9	R 703
1999 XA ₂₂₉	1999 12 04.30495	03 07 06.18	+18 55 16.0	1999 VY ₃₃	19.8	R 703
1999 XB ₂₂₉	* 1999 12 05.18613	03 32 35.44	+20 39 18.3	1999 VO ₃₂	18.1	R 703

1999 XB ₂₂₉	1999 12 05.19844	03 32 34.95	+20 39 18.7	1999 VO ₃₂	18.4	R 703
1999 XB ₂₂₉	1999 12 05.21079	03 32 34.45	+20 39 18.5	1999 VO ₃₂	19.4	R 703
1999 XB ₂₂₉	1999 12 05.22314	03 32 33.72	+20 39 17.0	1999 VO ₃₂	18.5	R 703
1999 XC ₂₂₉	* 1999 12 07.16528	02 18 37.41	+16 02 30.6	1999 VQ ₆₉	19.0	704
1999 XC ₂₂₉	1999 12 07.18020	02 18 37.03	+16 02 29.8	1999 VQ ₆₉	19.6	704
1999 XC ₂₂₉	1999 12 07.19512	02 18 36.55	+16 02 29.7	1999 VQ ₆₉	19.6	704
1999 XC ₂₂₉	1999 12 07.21004	02 18 36.15	+16 02 29.8	1999 VQ ₆₉	19.0	704
1999 XD ₂₂₉	* 1999 12 08.26298	03 48 22.02	+19 03 04.4	1999 VM ₃₃	19.2	704
1999 XD ₂₂₉	1999 12 08.27539	03 48 21.55	+19 03 02.3	1999 VM ₃₃	20.0	704
1999 XD ₂₂₉	1999 12 08.28782	03 48 20.77	+19 03 00.4	1999 VM ₃₃	19.9	704
1999 XD ₂₂₉	1999 12 08.30018	03 48 20.24	+19 02 58.8	1999 VM ₃₃	19.4	704
1999 XE ₂₂₉	* 1999 12 05.29830	03 44 40.19	+17 30 31.1	1999 XQ ₉	19.4	V 691
1999 XE ₂₂₉	1999 12 05.30228	03 44 39.91	+17 30 30.8	1999 XQ ₉	19.4	V 691
1999 XE ₂₂₉	1999 12 05.30620	03 44 39.65	+17 30 30.6	1999 XQ ₉	19.5	V 691
1999 XF ₂₂₉	* 1999 12 07.08657	00 31 02.05	+04 28 15.6	1999 TR ₃₀	19.3	704
1999 XF ₂₂₉	1999 12 07.10287	00 31 02.42	+04 28 17.5	1999 TR ₃₀	19.7	704
1999 XF ₂₂₉	1999 12 07.11894	00 31 02.72	+04 28 18.8	1999 TR ₃₀	19.4	704
1999 XF ₂₂₉	1999 12 07.13574	00 31 03.09	+04 28 19.7	1999 TR ₃₀	19.3	704

COMETARY IDENTIFICATION

The following cometary identification, by S. Nakano, continues the list on *MPC* 33152:

1999 XW₂₂ = C/1999 T3 (LINEAR)

OBSERVATIONS OF COMETS

Observations are published here for the following observatory codes:

- 046 Kleť. 0.57-m $f/5.2$ reflector + CCD. Observers J. Tichá, M. Tichý and Z. Moravec.
- 049 Kvistaberg. 1.0-m Schmidt + CCD. Observers T. Oja, O. Karlsson, C.-I. Lagerkvist and J. Warell. Measurers J. Warell, C.-I. Lagerkvist, A. Erikson, G. Hahn and S. Mottola.
- 113 Drebach. 0.14-m $f/3.5$ camera. Observers J. Kandler and G. Lehmann.
- 118 Modra. 0.6-m $f/5.5$ reflector + CCD. Observers Š. Gajdoš, A. Galád and J. Tóth.
- 152 Moletai Astronomical Observatory. 0.41-m $f/6.3$ Schmidt-Cassegrain + CCD. Observers K. Černis and R. Janulis. Measurer K. Černis.
- 160 Castelmartini. 0.25-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer E. Prosperi.
- 170 Begues. 0.26-m Schmidt-Cassegrain + CCD. Observer J. Manteca. Measured by S. Alonso.
- 249 SOHO. SOHO-LASCO coronagraphs C2 and C3. Observers K. Schenk, K. Černis and J. D. Shanklin. Measured by D. A. Biesecker and D. Hammer. Reduction by G. V. Williams and B. G. Marsden.
- 294 Staten Island. 0.41-m $f/4.7$ Schmidt-Cassegrain + CCD. Observer I. Robbins. Measured by S. Parello.
- 322 Perth Observatory, Bickley-MCT. 0.25-m $f/4.5$ reflector + CCD. Observers J. D. Biggs and C. Livingston. Measured by J. D. Biggs.
- 348 Ayabe. 0.28-m $f/5.5$ Schmidt-Cassegrain + CCD. Observer N. Otuki.
- 349 Ageo. 0.18-m $f/5.5$ reflector + CCD. Observer K. Kadota.

- 351 Sakamoto. 0.15-m $f/7.0$ lens + CCD. Observer Y. Kitamura.
 352 Konan. 0.25-m $f/6$ reflector + CCD. Observer M. Hotta.
 355 Hadano. 0.28-m $f/5.0$ reflector + CCD. Observer A. Asami.
 360 Kuma Kogen. 0.60-m $f/5.8$ Ritchey-Chrétien + CCD. Observer A. Nakamura.
 367 Yatsuka. 0.26-m $f/4.8$ reflector. Observer H. Abe.
 372 Geisei. 0.60-m $f/3.5$ reflector. Observer T. Seki.
 402 Dynic Astronomical Observatory. 0.60-m $f/3.7$ reflector + CCD. Observer A. Sugie.
 411 Oizumi. 0.41-m $f/4.3$ reflector + CCD. Observer T. Kobayashi.
 413 Siding Spring. 1.0-m $f/8$ reflector + CCD. Observer R. H. McNaught.
 422 Loomberah. 0.25-m $f/4.1$ reflector + CCD. Observer G. J. Garradd.
 423 North Ryde. 0.20-m $f/4$ hyperbolic astrograph + CCD Observer S. G. McAndrew.
 461 JATE Asteroid Survey, Piszkestető. Observers K. Sárneczky, L. Kiss and G. Szabó.
 504 Le Creusot. 0.40-m $f/5$ reflector + CCD. Observer J. C. Merlin.
 540 Linz. 0.3-m $f/5.2$ Schmidt-Cassegrain + CCD. Observers E. Meyer, E. Obermair and H. Raab.
 557 Ondřejov. 0.65-m $f/3.6$ reflector + CCD. Observers P. Pravec, L. Šarounová and P. Kušnirák.
 561 Piszkestető. 0.60-m Schmidt telescope + CCD. Observers J. Kelemen and N. Tibor.
 587 Sormano. 0.5-m reflector + CCD. Observers A. Testa, M. Cavagna, A. Volta, F. Manca and P. Sicoli.
 595 Farra d'Isonzo. 0.40-m $f/4.5$ reflector + CCD. Observer E. Pettarin.
 610 Pianoro. 0.25-m $f/4$ Schmidt-Cassegrain. Observer V. Goretti.
 611 Starkenburg. 0.45-m $f/4.4$ reflector + CCD. Observers E. Schwab, M. Busch and R. Stoss. Measured by M. Busch and R. Stoss.
 627 Blauvac. 0.26-m $f/4.7$ reflector + CCD. Observer R. Roy.
 652 Sandringham, Calgary. 0.35-m $f/7$ Schmidt-Cassegrain + CCD. Observer B. Yeung.
 670 Camarillo. 0.25-m Schmidt-Cassegrain + CCD. Observer J. E. Rogers.
 676 San Clemente. 0.33-m $f/3.3$ Schmidt Cassegrain + CCD. Observer J. E. Root.
 681 Calgary. 0.24-m $f/3.3$ Schmidt-Cassegrain + CCD. Observer G. W. Billings.
 684 Prescott. 0.46-m $f/4.5$ reflector + CCD. Observer P. G. Comba.
 691 Kitt Peak. 0.91-m Spacewatch telescope. Observers J. Montani and N. Danzl and A. E. Gleason.
 695 Kitt Peak. 0.40-m Schmidt-Cassegrain + CCD. Observer N. Reuss. Measurer L. Robinson.
 699 LONEOS. 0.59-m Schmidt + CCD. Observers B. A. Skiff and W. Ferris. Measured by B. W. Koehn.
 703 Catalina Sky Survey. 0.41-m $f/3$ Schmidt + CCD. Observer C. W. Hergenrother.
 704 LINEAR. 1.0-m $f/2.15$ reflector + CCD. Observers M. Blythe, F. Shelly, M. Bezpalko, M. Elowitz and R. Huber. Measured by J. Stuart, H. Viggh and R. Sayer.
 726 Brainerd. 0.28-m Schmidt-Cassigrain + CCD. Observer J. E. Wentworth.
 734 Eskridge. 0.30-m Schmidt-Cassegrain + CCD. Observers G. Hug and G. Bell.
 750 Hobbs Observatory, Fall Creek. 0.6-m $f/5$ telescope + CCD. Observer R. Elliott.

- 808 El Leoncito. 0.5-m $f/7.5$ double astrograph + CCD. Observer C. E. Lopez, J. E. Torres and J. A. Vicentela. Measured by C. E. Lopez.
 809 European Southern Observatory. 1.0-m Schmidt. Observer C.-I. Lagerkvist.
 834 Buenos Aires-AAAA. 0.25-m $f/6.3$ reflector + CCD. Observers R. Caprio, H. Ruggio and R. Mackintosh. Measured by R. Caprio, R. Mackintosh and A. Rotzajt.
 848 Cottage Grove. 0.36-m $f/11$ Schmidt-Cassegrain + CCD. Observer M. Schwartz. Measured by P. R. Holvorcem.
 897 Chiyoda. 0.25-m $f/6.0$ reflector + CCD. Observer T. Kojima.
 900 Moriyama. 0.25-m $f/6.3$ reflector + CCD. Observer Y. Ikari.
 903 Fukuchiyama. 0.25-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer M. Yoshimi.
 952 Marxuquera. 0.25-m $f/6.3$ Schmidt-Cassegrain + CCD. Observer J. J. Gomez D.
 958 Dax. 0.20-m $f/10$ Schmidt-Cassegrain + CCD. Observer P. Dupouy.

Object	Date	UT	α_{2000}	δ_{2000}	Mag.	N Obs.
C/1995 O1 (Hale-Bopp)						
C/1995 O1	1999 09 01.31779		06 58 38.30	-67 58 59.2		834
C/1995 O1	1999 09 01.34015		06 58 38.95	-67 59 08.4		834
C/1995 O1	1999 09 09.30544		07 02 58.27	-68 50 51.7		834
C/1995 O1	1999 09 09.34327		07 02 59.59	-68 51 05.8		834
C/1995 O1	1999 09 10.29318		07 03 27.29	-68 57 25.7		834
C/1995 O1	1999 09 10.33419		07 03 28.34	-68 57 43.6		834
C/1995 O1	1999 09 15.29388		07 05 40.37	-69 31 08.1		834
C/1995 O1	1999 09 30.30317		07 09 54.16	-71 15 34.3		834
C/1995 O1	1999 10 02.31925		07 10 08.87	-71 29 48.3		834
C/1995 O1	1999 10 16.23138		07 09 22.16	-73 07 22.3		834
C/1995 O1	1999 10 16.28495		07 09 21.38	-73 07 45.8		834
C/1995 O1	1999 10 18.27260		07 08 50.72	-73 21 26.5		834
C/1995 O1	1999 10 20.25494		07 08 13.97	-73 34 58.9		834
C/1995 O1	1999 10 26.31474		07 05 39.02	-74 15 25.0		834
C/1995 O1	1999 11 09.26138		06 55 19.14	-75 41 19.1		834
C/1995 O1	1999 11 11.30604		06 53 15.13	-75 52 44.8		834
C/1995 O1	1999 11 17.27255		06 46 24.14	-76 23 56.8		834
C/1995 O1	1999 11 20.22694		06 42 33.66	-76 38 04.1		834
C/1995 O1	1999 11 21.22142		06 41 12.32	-76 42 36.4		834
C/1995 O1	1999 11 21.27252		06 41 07.93	-76 42 50.7		834
C/1995 O1	2000 01 03.45892		05 23 38.93	-77 49 26.4	17.6 N	422
C/1995 O1	2000 01 03.46758		05 23 37.79	-77 49 25.8	17.5 N	422
C/1995 O1	2000 01 03.47129		05 23 37.55	-77 49 25.2	17.4 N	422
C/1995 O1	2000 01 04.13472		05 22 26.37	-77 48 18.3		808
C/1995 O1	2000 01 04.18194		05 22 20.84	-77 48 14.1		808
C/1995 O1	2000 01 08.10833		05 15 36.18	-77 40 38.4		808
C/1995 O1	2000 01 08.17188		05 15 29.64	-77 40 30.2		808
C/1995 O1	2000 01 10.52123		05 11 39.26	-77 34 55.7	13.7 T	423
C/1995 O1	2000 01 10.53233		05 11 38.31	-77 34 53.9	13.7 T	423
C/1995 O1	2000 01 15.48005		05 04 04.15	-77 21 15.0	16.0 N	422
C/1995 O1	2000 01 15.48580		05 04 03.63	-77 21 14.0	16.1 N	422
C/1995 O1	2000 01 15.48688		05 04 03.52	-77 21 13.8	16.1 N	422
C/1995 O1	2000 01 15.49497		05 04 02.85	-77 21 12.3	16.0 N	422
C/1995 O1	2000 01 20.47641		04 57 13.94	-77 04 50.3	13.9 T	423
C/1995 O1	2000 01 20.50418		04 57 11.81	-77 04 44.9	14.0 T	423

C/1997 J2 (Meunier-Dupouy)

C/1997 J2	1998 07 30.87799	21 57 04.50	+19 53 50.8	152
C/1997 J2	1998 07 30.88389	21 57 04.27	+19 53 42.5	1 152
C/1997 J2	1998 08 02.01576	21 54 41.60	+19 11 44.6	1 152
C/1997 J2	1998 08 05.92373	21 50 15.49	+17 50 45.9	152
C/1997 J2	1998 08 05.92911	21 50 15.38	+17 50 44.5	152
C/1997 J2	1998 08 07.94439	21 47 56.34	+17 07 11.2	152
C/1997 J2	1998 08 07.94647	21 47 56.09	+17 07 06.7	152
C/1997 J2	1998 08 11.99646	21 43 15.92	+15 36 09.5	1 152
C/1997 J2	1998 08 12.00091	21 43 15.69	+15 36 03.2	1 152
C/1997 J2	1998 08 13.03334	21 42 04.20	+15 12 14.4	1 152

P/1997 T3 (Lagerkvist-Carsenty)

P/1997 T3	1997 10 05.12569	01 15 19.11	+03 03 54.3	809
P/1997 T3	1997 10 05.16736	01 15 17.94	+03 03 48.1	809
P/1997 T3	1997 10 06.07431	01 14 50.49	+03 01 26.0	809
P/1997 T3	1997 10 28.06389	01 04 02.40	+02 12 28.4	809
P/1997 T3	1997 10 28.10556	01 04 01.24	+02 12 23.9	809

C/1998 G3 (SOHO)

C/1998 G3	1998 04 10.52576	01 41 22.1	+12 00 53	249
Geocentric position (AU)	+0.00736096	+0.00692638	+0.00278696	
C/1998 G3	1998 04 10.56745	01 41 06.8	+11 53 43	249
Geocentric position (AU)	+0.00735799	+0.00693171	+0.00278803	
C/1998 G3	1998 04 10.60910	01 40 51.9	+11 46 33	249
Geocentric position (AU)	+0.00735503	+0.00693702	+0.00278910	
C/1998 G3	1998 04 10.65076	01 40 37.3	+11 39 33	249
Geocentric position (AU)	+0.00735207	+0.00694232	+0.00279017	
C/1998 G3	1998 04 10.73861	01 40 04.1	+11 23 57	249
Geocentric position (AU)	+0.00734584	+0.00695348	+0.00279241	
C/1998 G3	1998 04 10.78850	01 39 44.4	+11 15 07	249
Geocentric position (AU)	+0.00734231	+0.00695980	+0.00279367	
C/1998 G3	1998 04 10.83754	01 39 25.6	+11 06 33	249
Geocentric position (AU)	+0.00733884	+0.00696601	+0.00279491	
C/1998 G3	1998 04 10.88271	01 39 07.2	+10 58 36	249
Geocentric position (AU)	+0.00733565	+0.00697171	+0.00279605	
C/1998 G3	1998 04 10.92912	01 38 47.9	+10 50 13	249
Geocentric position (AU)	+0.00733237	+0.00697756	+0.00279721	
C/1998 G3	1998 04 10.95831	01 38 34.9	+10 44 50	249
Geocentric position (AU)	+0.00733031	+0.00698124	+0.00279794	
C/1998 G3	1998 04 11.02793	01 38 04.5	+10 32 07	249
Geocentric position (AU)	+0.00732541	+0.00698999	+0.00279968	
C/1998 G3	1998 04 11.06953	01 37 45.4	+10 24 22	249
Geocentric position (AU)	+0.00732248	+0.00699521	+0.00280071	
C/1998 G3	1998 04 11.11117	01 37 25.6	+10 16 35	249
Geocentric position (AU)	+0.00731955	+0.00700042	+0.00280174	
C/1998 G3	1998 04 11.15284	01 37 05.2	+10 08 46	249
Geocentric position (AU)	+0.00731663	+0.00700563	+0.00280277	
C/1998 G3	1998 04 11.23622	01 36 23.1	+09 52 53	249
Geocentric position (AU)	+0.00731078	+0.00701604	+0.00280482	
C/1998 G3	1998 04 11.27786	01 36 00.8	+09 44 59	249
Geocentric position (AU)	+0.00730786	+0.00702123	+0.00280584	
C/1998 G3	1998 04 11.31951	01 35 38.4	+09 36 57	249
Geocentric position (AU)	+0.00730495	+0.00702641	+0.00280686	

C/1998 G3	1998 04 11.36119	01 35 15.2	+09 28 56	249
Geocentric position (AU)	+0.00730203	+0.00703158	+0.00280787	
C/1998 G3	1998 04 11.44452	01 34 25.6	+09 12 29	249
Geocentric position (AU)	+0.00729621	+0.00704191	+0.00280989	
C/1998 G3	1998 04 11.48617	01 34 00.0	+09 04 19	249
Geocentric position (AU)	+0.00729331	+0.00704706	+0.00281090	
C/1998 G3	1998 04 11.52784	01 33 31.5	+08 55 15	249
Geocentric position (AU)	+0.00729041	+0.00705220	+0.00281190	
C/1998 G3	1998 04 11.57102	01 33 04.3	+08 47 18	249
Geocentric position (AU)	+0.00728740	+0.00705753	+0.00281294	
C/1998 G3	1998 04 11.61117	01 32 38.9	+08 39 33	249
Geocentric position (AU)	+0.00728461	+0.00706247	+0.00281390	
C/1998 G3	1998 04 11.65284	01 32 08.8	+08 31 07	249
Geocentric position (AU)	+0.00728172	+0.00706759	+0.00281489	
C/1998 G3	1998 04 11.69451	01 31 38.1	+08 22 44	249
Geocentric position (AU)	+0.00727883	+0.00707271	+0.00281588	
C/1998 G3	1998 04 11.73617	01 31 05.4	+08 14 28	249
Geocentric position (AU)	+0.00727594	+0.00707781	+0.00281687	
C/1998 G3	1998 04 11.77784	01 30 33.5	+08 06 14	249
Geocentric position (AU)	+0.00727305	+0.00708291	+0.00281786	
C/1998 G3	1998 04 11.81951	01 29 59.3	+07 57 53	249
Geocentric position (AU)	+0.00727017	+0.00708801	+0.00281884	
C/1998 G3	1998 04 11.98628	01 27 26.3	+07 26 07	249
Geocentric position (AU)	+0.00725866	+0.00710832	+0.00282275	
C/1998 G3	1998 04 12.02784	01 26 41.3	+07 19 22	249
Geocentric position (AU)	+0.00725580	+0.00711337	+0.00282371	
C/1998 G3	1998 04 12.06952	01 26 00.7	+07 11 47	249
Geocentric position (AU)	+0.00725293	+0.00711842	+0.00282468	
C/1998 G3	1998 04 12.11466	01 25 09.9	+07 04 42	249
Geocentric position (AU)	+0.00724983	+0.00712388	+0.00282572	
C/1998 G3	1998 04 12.15840	01 24 21.6	+06 58 52	249
Geocentric position (AU)	+0.00724683	+0.00712917	+0.00282673	
C/1998 G3	1998 04 12.23137	01 22 56.7	+06 50 19	249
Geocentric position (AU)	+0.00724183	+0.00713797	+0.00282840	
C/1998 G3	1998 04 12.27784	01 22 00.0	+06 46 02	249
Geocentric position (AU)	+0.00723865	+0.00714357	+0.00282947	
C/1998 G3	1998 04 12.31951	01 21 08.3	+06 43 42	249
Geocentric position (AU)	+0.00723580	+0.00714858	+0.00283042	
C/1998 G3	1998 04 12.36120	01 20 16.5	+06 42 42	249
Geocentric position (AU)	+0.00723295	+0.00715358	+0.00283136	
C/1998 G3	1998 04 12.44451	01 18 38.5	+06 44 04	249
Geocentric position (AU)	+0.00722727	+0.00716356	+0.00283325	
C/1998 G3	1998 04 12.48618	01 17 56.0	+06 46 51	249
Geocentric position (AU)	+0.00722443	+0.00716854	+0.00283419	
C/1998 G3	1998 04 12.52784	01 17 16.0	+06 50 53	249
Geocentric position (AU)	+0.00722159	+0.00717352	+0.00283513	
C/1998 G3	1998 04 12.56951	01 16 36.0	+06 55 48	249
Geocentric position (AU)	+0.00721876	+0.00717849	+0.00283606	
C/1998 G3	1998 04 12.60791	01 16 02.8	+07 01 06	249
Geocentric position (AU)	+0.00721615	+0.00718306	+0.00283692	
C/1998 G3	1998 04 12.70028	01 14 54.6	+07 15 43	249
Geocentric position (AU)	+0.00720989	+0.00719404	+0.00283897	

C/1998 G3	1998 04 12.73619	01 14 31.1	+07 23 01	249
Geocentric position (AU)	+0.00720746	+0.00719829	+0.00283977	
C/1998 G3	1998 04 12.81951	01 13 44.7	+07 39 42	249
Geocentric position (AU)	+0.00720182	+0.00720815	+0.00284161	
C/1998 G3	1998 04 12.90284	01 13 08.1	+07 55 52	249
Geocentric position (AU)	+0.00719620	+0.00721799	+0.00284344	
C/1998 G3	1998 04 12.98628	01 12 35.6	+08 13 35	249
Geocentric position (AU)	+0.00719058	+0.00722781	+0.00284526	
C/1998 G3	1998 04 13.02784	01 12 24.9	+08 21 21	249
Geocentric position (AU)	+0.00718779	+0.00723270	+0.00284616	
C/1998 G3	1998 04 13.06952	01 12 12.2	+08 30 44	249
Geocentric position (AU)	+0.00718499	+0.00723759	+0.00284707	
C/1998 G3	1998 04 13.11118	01 12 03.6	+08 38 42	249
Geocentric position (AU)	+0.00718219	+0.00724247	+0.00284797	
C/1998 G3	1998 04 13.15284	01 11 52.6	+08 48 03	249
Geocentric position (AU)	+0.00717940	+0.00724734	+0.00284887	
C/1998 G3	1998 04 13.23622	01 11 33.8	+09 05 04	249
Geocentric position (AU)	+0.00717382	+0.00725708	+0.00285066	
C/1998 G3	1998 04 13.27784	01 11 29.4	+09 14 50	249
Geocentric position (AU)	+0.00717103	+0.00726193	+0.00285155	
C/1998 G3	1998 04 13.36119	01 11 18.6	+09 30 57	249
Geocentric position (AU)	+0.00716547	+0.00727163	+0.00285332	
C/1998 G3	1998 04 13.44452	01 11 09.6	+09 48 23	249
Geocentric position (AU)	+0.00715992	+0.00728130	+0.00285509	
C/1998 G3	1998 04 13.48617	01 11 06.7	+09 55 28	249
Geocentric position (AU)	+0.00715715	+0.00728612	+0.00285597	
C/1998 G3	1998 04 13.56953	01 11 01.0	+10 11 59	249
Geocentric position (AU)	+0.00715161	+0.00729576	+0.00285772	
C/1998 G3	1998 04 13.61117	01 11 02.2	+10 20 53	249
Geocentric position (AU)	+0.00714885	+0.00730056	+0.00285859	

C/1998 K2 (LINEAR)

C/1998 K2	1999 12 02.53646	03 29 17.76	-27 14 22.9	897
C/1998 K2	1999 12 02.54866	03 29 17.12	-27 14 15.8	17.5 T 897
C/1998 K2	1999 12 02.55314	03 29 16.95	-27 14 16.0	897
C/1998 K2	1999 12 16.49399	03 19 28.49	-25 31 41.7	17.9 T 402
C/1998 K2	1999 12 16.49778	03 19 28.36	-25 31 40.1	402
C/1998 K2	1999 12 31.14324	03 12 02.49	-23 22 05.0	18.4 T 704
C/1998 K2	1999 12 31.15808	03 12 02.16	-23 21 57.2	18.7 T 704
C/1998 K2	1999 12 31.17341	03 12 01.80	-23 21 48.4	18.9 T 704
C/1998 K2	1999 12 31.18911	03 12 01.36	-23 21 39.7	18.9 T 704
C/1998 K2	1999 12 31.20426	03 12 00.99	-23 21 30.7	18.6 T 704
C/1998 K2	2000 01 08.45736	03 09 14.06	-22 02 26.5	17.5 T 402
C/1998 K2	2000 01 08.45965	03 09 14.09	-22 02 26.1	402
C/1998 K2	2000 01 08.46196	03 09 14.01	-22 02 24.1	402

C/1998 M1 (LINEAR)

C/1998 M1	1999 09 19.33383	21 49 06.65	+14 13 05.2	19.7 T 848
C/1998 M1	1999 09 19.37606	21 49 05.89	+14 12 54.0	19.2 T 848

C/1998 M5 (LINEAR)

C/1998 M5	1999 11 05.81830	10 55 24.80	-08 18 36.1	897
C/1998 M5	1999 11 05.82392	10 55 24.89	-08 18 40.1	15.9 T 897
C/1998 M5	1999 11 05.82837	10 55 24.87	-08 18 42.6	897

C/1998 M5	1999 12 03.86370	10 56 07.48	-13 46 13.5	16.3 T 897
C/1998 M5	1999 12 03.86734	10 56 07.47	-13 46 16.0	897
C/1998 M5	1999 12 09.78924	10 54 41.19	-14 51 31.2	15.4 T 349
C/1998 M5	1999 12 09.80031	10 54 41.07	-14 51 38.2	349
C/1998 M5	1999 12 09.81521	10 54 40.71	-14 51 47.1	349
C/1998 M5	1999 12 18.45469	10 51 26.88	-16 22 54.0	17.1 T 704
C/1998 M5	1999 12 18.46931	10 51 26.42	-16 23 03.0	17.4 T 704
C/1998 M5	1999 12 18.48396	10 51 25.99	-16 23 10.8	17.2 T 704
C/1998 M5	1999 12 18.49863	10 51 25.52	-16 23 21.7	17.0 T 704
C/1998 M5	1999 12 25.81212	10 47 36.46	-17 35 39.1	15.5 T 349
C/1998 M5	1999 12 25.81455	10 47 36.34	-17 35 40.7	349
C/1998 M5	1999 12 25.81688	10 47 36.24	-17 35 41.8	349
C/1998 M5	1999 12 27.77647	10 46 24.80	-17 54 10.1	15.6 T 349
C/1998 M5	1999 12 27.78916	10 46 24.25	-17 54 18.1	349
C/1998 M5	2000 01 04.30000	10 41 10.43	-19 01 02.2	808
C/1998 M5	2000 01 04.33681	10 41 08.71	-19 01 21.1	808
C/1998 M5	2000 01 04.76378	10 40 49.09	-19 04 55.8	15.8 T 402
C/1998 M5	2000 01 04.76506	10 40 49.02	-19 04 56.1	402
C/1998 M5	2000 01 04.76631	10 40 48.94	-19 04 57.2	402
C/1998 M5	2000 01 04.79931	10 40 47.43	-19 05 13.8	15.2 T 360
C/1998 M5	2000 01 04.80174	10 40 47.30	-19 05 15.0	360
C/1998 M5	2000 01 06.32674	10 39 35.22	-19 17 47.1	808
C/1998 M5	2000 01 06.36146	10 39 33.56	-19 18 03.3	808
C/1998 M5	2000 01 07.71616	10 38 27.60	-19 28 58.9	15.9 T 352
C/1998 M5	2000 01 07.71963	10 38 27.48	-19 29 00.7	352
C/1998 M5	2000 01 08.78982	10 37 33.87	-19 37 25.4	900
C/1998 M5	2000 01 08.80254	10 37 33.17	-19 37 30.2	16.0 T 900
C/1998 M5	2000 01 18.71380	10 28 25.28	-20 46 50.7	900
C/1998 M5	2000 01 18.72650	10 28 24.49	-20 46 54.8	15.9 T 900
C/1998 M5	2000 01 20.70988	10 26 24.81	-20 58 48.9	355
C/1998 M5	2000 01 20.71688	10 26 24.32	-20 58 50.8	15.8 T 355
C/1998 M5	2000 01 20.72101	10 26 24.11	-20 58 52.0	355

P/1998 S1 (LINEAR-Mueller)

P/1998 S1	1999 11 17.38484	08 54 58.05	+28 51 40.6	18.3 T 703
P/1998 S1	1999 11 17.40162	08 54 58.38	+28 51 42.3	18.0 T 703
P/1998 S1	1999 11 17.41839	08 54 58.53	+28 51 44.9	18.7 T 703
P/1998 S1	1999 11 17.43508	08 54 58.72	+28 51 46.0	18.0 T 703
P/1998 S1	2000 01 04.68409	08 42 19.89	+30 53 52.1	17.5 T 402
P/1998 S1	2000 01 04.68639	08 42 19.83	+30 53 52.5	402
P/1998 S1	2000 01 04.68869	08 42 19.68	+30 53 52.0	402
P/1998 S1	2000 01 10.28685	08 38 03.10	+31 08 34.8	17.3 T 699
P/1998 S1	2000 01 10.31230	08 38 01.89	+31 08 37.9	699
P/1998 S1	2000 01 10.33774	08 38 00.68	+31 08 43.2	699

C/1998 T1 (LINEAR)

C/1998 T1	1999 08 03.46347	14 01 21.60	-25 00 21.3	13.4 T 897
C/1998 T1	1999 08 03.46624	14 01 21.30	-25 00 16.5	897
C/1998 T1	1999 08 03.47582	14 01 20.38	-25 00 03.5	897
C/1998 T1	1999 12 21.85267	14 07 30.80	-19 23 44.0	16.0 T 349
C/1998 T1	1999 12 21.85426	14 07 30.76	-19 23 44.6	349
C/1998 T1	1999 12 27.85023	14 05 58.86	-19 21 40.8	349
C/1998 T1	1999 12 27.85308	14 05 58.88	-19 21 40.8	15.7 T 349
C/1998 T1	1999 12 27.85447	14 05 58.88	-19 21 41.6	349

C/1998 T1	2000 01 04.78294	14 02 50.48	-19 14 23.6	16.3 T	402
C/1998 T1	2000 01 04.78420	14 02 50.53	-19 14 22.4		402
C/1998 T1	2000 01 04.78547	14 02 50.46	-19 14 22.9		402

P/1998 U4 (Spahr)

P/1998 U4	1999 12 20.83316	08 13 32.39	-15 53 36.9		897
P/1998 U4	1999 12 20.84119	08 13 32.07	-15 53 36.4	18.5 T	897
P/1998 U4	1999 12 20.84833	08 13 31.84	-15 53 36.9		897
P/1998 U4	1999 12 31.37858	08 09 01.79	-16 03 18.8	18.2 T	704
P/1998 U4	1999 12 31.39346	08 09 01.31	-16 03 18.9	18.3 T	704
P/1998 U4	1999 12 31.42320	08 09 00.44	-16 03 19.1	18.5 T	704
P/1998 U4	1999 12 31.43804	08 09 00.01	-16 03 18.4	18.4 T	704
P/1998 U4	2000 01 04.67024	08 06 53.08	-16 01 14.5	18.3 T	402
P/1998 U4	2000 01 04.67962	08 06 52.87	-16 01 13.4		402
P/1998 U4	2000 01 18.63808	07 59 13.92	-15 29 08.0	18.3 T	402
P/1998 U4	2000 01 18.64267	07 59 13.72	-15 29 07.9		402
P/1998 U4	2000 01 18.64728	07 59 13.48	-15 29 07.9		402

C/1998 W3 (LINEAR)

C/1998 W3	1999 12 28.23886	04 06 11.68	+69 02 20.7	19.4 T	704
C/1998 W3	1999 12 28.25535	04 06 09.23	+69 02 17.1	19.8 T	704
C/1998 W3	1999 12 28.27032	04 06 06.89	+69 02 12.3	19.8 T	704

C/1999 E1 (Li)

C/1999 E1	1999 12 03.83069	10 34 57.87	+22 33 53.2	15.6 T	897
C/1999 E1	1999 12 03.83877	10 34 57.90	+22 33 55.7		897
C/1999 E1	1999 12 09.77063	10 37 10.83	+23 16 22.7		349
C/1999 E1	1999 12 09.77368	10 37 10.81	+23 16 21.9	16.5 T	349
C/1999 E1	1999 12 15.50658	10 38 50.82	+24 01 12.9	18.2 T	704
C/1999 E1	1999 12 15.52131	10 38 51.08	+24 01 19.2	18.2 T	704
C/1999 E1	1999 12 15.53605	10 38 51.23	+24 01 27.7	17.5 T	704
C/1999 E1	1999 12 22.08766	10 40 10.12	+24 57 05.1		118
C/1999 E1	1999 12 29.72391	10 40 53.05	+26 07 16.0	15.9 T	402
C/1999 E1	1999 12 29.72643	10 40 53.00	+26 07 17.9		402
C/1999 E1	1999 12 29.72896	10 40 53.05	+26 07 19.5		402
C/1999 E1	1999 12 30.67195	10 40 54.64	+26 16 20.4		900
C/1999 E1	1999 12 30.68459	10 40 54.60	+26 16 27.9	15.2 T	900
C/1999 E1	2000 01 03.37613	10 40 52.77	+26 52 26.5	17.7 T	704
C/1999 E1	2000 01 03.39098	10 40 52.75	+26 52 36.1	17.9 T	704
C/1999 E1	2000 01 03.40581	10 40 52.69	+26 52 45.3	18.0 T	704
C/1999 E1	2000 01 03.42068	10 40 52.64	+26 52 54.1	18.2 T	704
C/1999 E1	2000 01 03.68326	10 40 52.06	+26 55 30.0	16.1 T	900
C/1999 E1	2000 01 03.69527	10 40 52.01	+26 55 37.1		900
C/1999 E1	2000 01 04.74392	10 40 48.88	+27 06 02.8	16.2 T	360
C/1999 E1	2000 01 04.74844	10 40 48.85	+27 06 05.6		360
C/1999 E1	2000 01 04.77247	10 40 48.75	+27 06 19.1	15.9 T	355
C/1999 E1	2000 01 04.77659	10 40 48.72	+27 06 21.9		355
C/1999 E1	2000 01 04.78093	10 40 48.70	+27 06 24.7		355
C/1999 E1	2000 01 07.68448	10 40 34.50	+27 35 39.4	16.1 T	352
C/1999 E1	2000 01 07.68795	10 40 34.51	+27 35 41.9		352
C/1999 E1	2000 01 18.61966	10 38 33.80	+29 28 51.6	16.0 T	900
C/1999 E1	2000 01 18.63231	10 38 33.58	+29 29 00.1		900

C/1999 F2 (Dalcanton)

C/1999 F2	1999 08 17.47772	15 08 03.42	+12 31 43.1	16.4 T	897
C/1999 F2	1999 08 17.51450	15 08 04.30	+12 31 37.2		897

C/1999 H1 (Lee)

C/1999 H1	1999 08 01.78608	07 28 03.35	+37 12 23.3		897
C/1999 H1	1999 08 01.79858	07 28 02.26	+37 12 39.1		897
C/1999 H1	1999 08 07.76918	07 19 00.05	+39 24 57.5		897
C/1999 H1	1999 08 07.78084	07 18 58.95	+39 25 13.2		897
C/1999 H1	1999 08 07.78465	07 18 58.59	+39 25 18.4		897
C/1999 H1	1999 08 18.74493	06 58 45.12	+43 49 43.2		897
C/1999 H1	1999 08 18.75393	06 58 43.97	+43 49 57.3		897
C/1999 H1	1999 08 31.77773	06 19 14.57	+50 15 35.0		897
C/1999 H1	1999 08 31.78074	06 19 13.78	+50 15 41.0		897
C/1999 H1	1999 09 04.66313	06 00 37.03	+52 27 43.2		897
C/1999 H1	1999 09 04.68487	06 00 29.97	+52 28 29.8		897
C/1999 H1	1999 09 17.30846	04 12 59.04	+58 51 11.2		848
C/1999 H1	1999 09 17.30961	04 12 58.20	+58 51 11.3		848
C/1999 H1	1999 09 17.31069	04 12 57.28	+58 51 13.3		848
C/1999 H1	1999 09 18.28959	04 00 39.08	+59 05 35.1		848
C/1999 H1	1999 09 18.29068	04 00 38.26	+59 05 35.9		848
C/1999 H1	1999 09 18.29177	04 00 37.37	+59 05 36.9		848
C/1999 H1	1999 09 19.44821	03 45 22.34	+59 16 46.1		848
C/1999 H1	1999 09 19.44924	03 45 21.42	+59 16 46.6		848
C/1999 H1	1999 09 19.45031	03 45 20.51	+59 16 46.1		848
C/1999 H1	1999 09 23.54909	02 46 58.79	+58 52 15.9		897
C/1999 H1	1999 09 23.57045	02 46 39.85	+58 51 51.2		897
C/1999 H1	1999 10 11.48204	23 34 58.85	+38 47 25.9		897
C/1999 H1	1999 10 11.49884	23 34 53.02	+38 45 59.9		897
C/1999 H1	1999 11 13.50259	22 25 34.44	+09 29 37.7		897
C/1999 H1	1999 11 13.50955	22 25 34.27	+09 29 27.0		897
C/1999 H1	1999 11 13.51649	22 25 34.11	+09 29 16.6		897
C/1999 H1	1999 11 28.46088	22 24 21.54	+04 39 41.7		897
C/1999 H1	1999 11 28.46596	22 24 21.52	+04 39 37.6		897
C/1999 H1	1999 11 28.47994	22 24 21.65	+04 39 25.8	14.2 T	897
C/1999 H1	1999 12 10.38954	22 27 29.36	+02 26 13.7		349
C/1999 H1	1999 12 10.39870	22 27 29.54	+02 26 08.8	15.2 T	349
C/1999 H1	1999 12 22.38332	22 32 45.63	+01 05 20.5	16.7 T	402
C/1999 H1	1999 12 22.38458	22 32 45.66	+01 05 20.0		402
C/1999 H1	1999 12 22.38585	22 32 45.72	+01 05 19.5		402
C/1999 H1	1999 12 24.41234	22 33 47.90	+00 55 31.8	15.8 T	897
C/1999 H1	1999 12 24.42741	22 33 48.37	+00 55 27.2		897
C/1999 H1	1999 12 24.44705	22 33 49.09	+00 55 24.6		897
C/1999 H1	1999 12 26.41355	22 34 51.24	+00 46 47.1		355
C/1999 H1	1999 12 26.41712	22 34 51.36	+00 46 45.9		355
C/1999 H1	2000 01 08.39657	22 42 22.00	+00 08 34.3	16.6 T	402
C/1999 H1	2000 01 08.39784	22 42 22.02	+00 08 33.9		402
C/1999 H1	2000 01 08.39910	22 42 22.04	+00 08 33.9		402

C/1999 H3 (LINEAR)

C/1999 H3	1999 07 23.30408	14 57 19.40	+51 51 10.8	15.9 T	848
C/1999 H3	1999 07 23.31042	14 57 18.73	+51 51 04.9	15.9 T	848
C/1999 H3	1999 07 23.31527	14 57 18.23	+51 50 59.9	15.8 T	848
C/1999 H3	1999 07 31.49287	14 44 19.68	+49 36 40.7	14.7 T	897

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C/1999 H3	1999 07 31.49892	14 44 19.17	+49 36 34.9		897
C/1999 H3	1999 09 23.44681	14 18 08.50	+36 31 53.9		897
C/1999 H3	1999 09 23.45029	14 18 08.44	+36 31 52.5		897
C/1999 H3	1999 12 07.81782	14 32 30.00	+30 16 00.4	15.1 T	897
C/1999 H3	1999 12 07.82655	14 32 29.99	+30 16 01.0		897
C/1999 H3	1999 12 09.82145	14 32 37.13	+30 19 32.6		349
C/1999 H3	1999 12 09.82679	14 32 37.09	+30 19 34.1		349
C/1999 H3	1999 12 09.82968	14 32 37.08	+30 19 34.0	15.2 T	349
C/1999 H3	1999 12 15.86128	14 32 41.67	+30 34 55.6	14.6 T	360
C/1999 H3	1999 12 15.86406	14 32 41.67	+30 34 56.2		360
C/1999 H3	1999 12 25.84007	14 31 42.52	+31 15 43.9	14.9 T	349
C/1999 H3	1999 12 25.86176	14 31 42.32	+31 15 50.9		349
C/1999 H3	1999 12 25.86750	14 31 42.15	+31 15 52.4		349
C/1999 H3	1999 12 29.76699	14 30 52.01	+31 37 02.9	15.2 T	402
C/1999 H3	1999 12 29.76951	14 30 52.02	+31 37 03.9		402
C/1999 H3	1999 12 29.77077	14 30 52.04	+31 37 04.7		402
C/1999 H3	1999 12 31.87468	14 30 17.73	+31 49 44.0	14.8 T	897
C/1999 H3	1999 12 31.87830	14 30 17.69	+31 49 46.3		897
C/1999 H3	2000 01 01.79123	14 30 01.14	+31 55 30.8		349
C/1999 H3	2000 01 01.79554	14 30 01.10	+31 55 32.6	14.9 T	349
C/1999 H3	2000 01 01.79667	14 30 01.07	+31 55 32.7		349
C/1999 H3	2000 01 04.78490	14 28 59.64	+32 15 29.7	14.8 T	360
C/1999 H3	2000 01 04.79045	14 28 59.51	+32 15 32.3		360
C/1999 H3	2000 01 08.83884	14 27 16.91	+32 45 10.3	14.7 T	900
C/1999 H3	2000 01 08.84797	14 27 16.64	+32 45 14.7		900
C/1999 H3	2000 01 20.75908	14 19 47.98	+34 28 30.6	15.3 T	355
C/1999 H3	2000 01 20.76038	14 19 47.88	+34 28 31.4		355
C/1999 H3	2000 01 20.76170	14 19 47.83	+34 28 31.4		355

C/1999 J2 (Skiff)

C/1999 J2	1999 07 23.30223	15 39 39.58	+56 21 42.9	15.7 T	848
C/1999 J2	1999 07 23.31117	15 39 39.35	+56 21 37.2	15.5 T	848
C/1999 J2	1999 07 23.32059	15 39 39.08	+56 21 30.8	15.5 T	848
C/1999 J2	1999 07 26.34553	15 38 10.89	+55 48 44.3	15.7 T	848
C/1999 J2	1999 07 26.36499	15 38 10.33	+55 48 31.1	15.9 T	848
C/1999 J2	1999 07 26.37280	15 38 10.11	+55 48 26.1	15.5 T	848
C/1999 J2	1999 08 03.60030	15 35 01.81	+54 16 57.8	15.9 T	897
C/1999 J2	1999 08 03.60895	15 35 01.73	+54 16 51.3		897
C/1999 J2	1999 08 17.52451	15 32 21.46	+51 37 43.8	15.8 T	897
C/1999 J2	1999 08 18.55297	15 32 16.82	+51 25 53.8		897
C/1999 J2	1999 08 18.55760	15 32 16.78	+51 25 50.6		897
C/1999 J2	1999 08 18.56223	15 32 16.76	+51 25 47.2	15.8 T	897
C/1999 J2	1999 09 15.17144	15 35 14.58	+46 15 47.1	16.5 T	848
C/1999 J2	1999 09 15.18602	15 35 14.83	+46 15 37.8	16.5 T	848
C/1999 J2	1999 09 15.19642	15 35 14.97	+46 15 31.3	16.5 T	848
C/1999 J2	1999 09 17.20962	15 35 47.30	+45 54 01.7	16.2 T	848
C/1999 J2	1999 09 17.22480	15 35 47.54	+45 53 52.0	16.1 T	848
C/1999 J2	1999 09 17.23849	15 35 47.73	+45 53 43.4	16.4 T	848
C/1999 J2	1999 09 18.19109	15 36 03.82	+45 43 37.8	15.8 T	848
C/1999 J2	1999 09 18.20285	15 36 04.01	+45 43 30.3	15.7 T	848
C/1999 J2	1999 09 18.21325	15 36 04.20	+45 43 23.7	16.0 T	848
C/1999 J2	1999 12 07.84322	16 14 48.40	+35 49 11.3	15.2 T	897
C/1999 J2	1999 12 07.84863	16 14 48.56	+35 49 09.8		897

C/1999 J2	1999 12 07.85354	16 14 48.73	+35 49 09.5		897
C/1999 J2	1999 12 22.85966	16 22 29.49	+35 07 56.7	15.7 T	897
C/1999 J2	1999 12 22.86674	16 22 29.61	+35 07 56.2		897
C/1999 J2	1999 12 27.86198	16 24 52.16	+34 59 20.0		349
C/1999 J2	1999 12 27.86529	16 24 52.16	+34 59 19.2	16.1 T	349
C/1999 J2	1999 12 27.86743	16 24 52.30	+34 59 19.3		349
C/1999 J2	2000 01 01.84248	16 27 07.32	+34 53 11.7		349
C/1999 J2	2000 01 01.84538	16 27 07.44	+34 53 12.1		349
C/1999 J2	2000 01 01.85137	16 27 07.51	+34 53 11.6	15.8 T	349

C/1999 J3 (LINEAR)

C/1999 J3	1999 08 31.78403	08 43 01.95	+50 47 01.3	11.4 T	897
C/1999 J3	1999 08 31.78910	08 43 01.69	+50 46 52.9		897
C/1999 J3	1999 10 04.71946	08 01 41.42	+16 32 20.5		897
C/1999 J3	1999 10 04.72348	08 01 40.96	+16 31 49.0		897
C/1999 J3	1999 10 11.81738	07 47 29.42	-02 04 17.9		897
C/1999 J3	1999 10 11.81956	07 47 29.11	-02 04 42.0		897

C/1999 K5 (LINEAR)

C/1999 K5	1999 07 31.50403	18 44 18.11	-20 11 41.1	15.6 T	897
C/1999 K5	1999 07 31.50852	18 44 17.91	-20 11 43.3		897
C/1999 K5	1999 07 31.52192	18 44 17.05	-20 11 52.3		897
C/1999 K5	1999 08 18.60267	18 27 59.94	-23 18 47.4	16.1 T	897

C/1999 K6 (LINEAR)

C/1999 K6	1999 07 23.34167	18 25 35.97	+35 56 49.2	15.2 T	848
C/1999 K6	1999 07 23.34914	18 25 35.62	+35 56 53.1	15.7 T	848
C/1999 K6	1999 07 26.34451	18 23 48.02	+36 24 08.7	15.4 T	848
C/1999 K6	1999 07 26.36602	18 23 47.29	+36 24 18.5	15.7 T	848
C/1999 K6	1999 07 26.37382	18 23 46.96	+36 24 22.2	15.5 T	848
C/1999 K6	1999 07 31.52880	18 21 11.81	+37 01 06.4	15.8 T	897
C/1999 K6	1999 07 31.54501	18 21 11.29	+37 01 13.5		897
C/1999 K6	1999 08 18.61893	18 18 12.48	+37 44 43.5	16.7 T	897
C/1999 K6	1999 08 18.62723	18 18 12.52	+37 44 43.3		897
C/1999 K6	1999 09 15.17267	18 34 05.02	+36 09 39.9	16.2 T	848
C/1999 K6	1999 09 15.18725	18 34 05.88	+36 09 35.2	16.4 T	848
C/1999 K6	1999 09 15.19517	18 34 06.38	+36 09 32.0	16.7 T	848
C/1999 K6	1999 09 16.23369	18 35 09.56	+36 03 50.0	16.6 T	848
C/1999 K6	1999 09 16.24164	18 35 09.99	+36 03 47.8	16.6 T	848
C/1999 K6	1999 09 16.24949	18 35 10.51	+36 03 45.1	16.9 T	848
C/1999 K6	1999 09 23.47795	18 43 20.18	+35 21 57.1	17.3 T	897
C/1999 K6	1999 09 23.49609	18 43 21.37	+35 21 49.1		897
C/1999 K6	1999 10 11.51206	19 09 06.39	+33 29 11.8	16.2 T	897
C/1999 K6	1999 10 11.52227	19 09 07.20	+33 29 10.6		897
C/1999 K6	1999 10 11.52940	19 09 07.99	+33 29 07.3		897
C/1999 K6	1999 12 12.47895	21 10 47.03	+28 49 21.5	16.3 T	897
C/1999 K6	1999 12 12.48527	21 10 47.60	+28 49 21.3		897
C/1999 K6	1999 12 22.39773	21 31 43.22	+28 35 57.8	16.5 T	402
C/1999 K6	1999 12 22.39900	21 31 43.32	+28 35 58.0		402
C/1999 K6	1999 12 22.40026	21 31 43.52	+28 35 58.8		402
C/1999 K6	2000 01 15.38618	22 21 21.94	+28 41 37.2	18.0 T	402
C/1999 K6	2000 01 15.38847	22 21 22.25	+28 41 36.3		402
C/1999 K6	2000 01 15.39078	22 21 22.52	+28 41 36.8		402

C/1999 K8 (LINEAR)

C/1999 K8	1999 09 15.20644	21 17 29.11	+33 04 22.9	14.9 T	848
C/1999 K8	1999 09 15.22108	21 17 28.88	+33 04 13.1	15.2 T	848
C/1999 K8	1999 09 15.23296	21 17 28.78	+33 04 05.6	15.1 T	848
C/1999 K8	1999 09 17.20139	21 17 04.45	+32 42 31.4	14.9 T	848
C/1999 K8	1999 09 17.22292	21 17 04.22	+32 42 17.2	15.2 T	848
C/1999 K8	1999 09 17.23442	21 17 04.08	+32 42 09.9	14.9 T	848
C/1999 K8	1999 09 19.29856	21 16 41.81	+32 19 00.1	14.8 T	848
C/1999 K8	1999 09 19.31450	21 16 41.64	+32 18 49.3	14.8 T	848
C/1999 K8	1999 09 19.33171	21 16 41.38	+32 18 37.8	14.9 T	848
C/1999 K8	1999 09 23.61032	21 16 06.18	+31 29 02.9		897
C/1999 K8	1999 09 23.61381	21 16 06.14	+31 29 00.6	14.8 T	897
C/1999 K8	1999 09 23.62075	21 16 06.09	+31 28 56.9		897
C/1999 K8	1999 10 11.41453	21 16 28.49	+27 47 45.7	14.8 T	897
C/1999 K8	1999 10 11.44514	21 16 28.80	+27 47 22.8		897
C/1999 K8	1999 10 11.47668	21 16 28.97	+27 46 57.7		897
C/1999 K8	1999 11 13.43164	21 29 39.70	+21 05 54.0	14.6 T	897
C/1999 K8	1999 11 13.44037	21 29 40.01	+21 05 47.7		897
C/1999 K8	1999 11 29.46111	21 41 12.26	+18 25 44.0	14.7 T	897
C/1999 K8	1999 11 29.47442	21 41 12.95	+18 25 36.5		897
C/1999 K8	1999 12 10.41618	21 50 37.10	+16 54 44.3	14.7 T	349
C/1999 K8	1999 12 10.41734	21 50 37.12	+16 54 43.9		349
C/1999 K8	1999 12 22.39049	22 02 03.57	+15 33 16.0	14.7 T	402
C/1999 K8	1999 12 22.39175	22 02 03.70	+15 33 14.9		402
C/1999 K8	1999 12 22.39301	22 02 03.76	+15 33 15.3		402
C/1999 K8	1999 12 24.43812	22 04 07.05	+15 21 02.3	14.3 T	900
C/1999 K8	1999 12 24.45104	22 04 07.81	+15 21 02.6		900
C/1999 K8	1999 12 26.41911	22 06 08.23	+15 10 00.7		897
C/1999 K8	1999 12 26.42318	22 06 08.45	+15 09 59.6	14.1 T	897
C/1999 K8	1999 12 27.41236	22 07 09.26	+15 04 37.2	15.2 T	351
C/1999 K8	1999 12 27.42495	22 07 10.33	+15 04 31.5		351
C/1999 K8	1999 12 27.43751	22 07 11.03	+15 04 26.5		351
C/1999 K8	1999 12 30.40620	22 10 16.25	+14 48 59.1	14.9 T	349
C/1999 K8	1999 12 30.41323	22 10 16.84	+14 48 56.6		349
C/1999 K8	1999 12 30.44027	22 10 18.23	+14 48 51.7	15.5 T	351
C/1999 K8	1999 12 30.44598	22 10 18.76	+14 48 49.9		351
C/1999 K8	1999 12 31.71030	22 11 38.49	+14 42 29.7	16.3 N	461
C/1999 K8	1999 12 31.71308	22 11 38.67	+14 42 28.7		461
C/1999 K8	1999 12 31.71622	22 11 38.87	+14 42 27.8		461
C/1999 K8	2000 01 11.38282	22 23 12.85	+13 57 17.7	15.2 T	402
C/1999 K8	2000 01 11.38409	22 23 12.83	+13 57 16.3		402
C/1999 K8	2000 01 11.38535	22 23 12.96	+13 57 17.1		402

C/1999 L3 (LINEAR)

C/1999 L3	1999 12 06.78947	12 19 37.71	-07 04 18.0	13.9 T	349
C/1999 L3	1999 12 06.79282	12 19 37.56	-07 04 17.0		349
C/1999 L3	1999 12 06.80053	12 19 37.29	-07 04 12.9		349
C/1999 L3	1999 12 07.82983	12 18 58.20	-06 56 31.1	13.5 T	897
C/1999 L3	1999 12 07.83361	12 18 58.07	-06 56 29.4		897
C/1999 L3	1999 12 07.83957	12 18 57.84	-06 56 26.7		897
C/1999 L3	1999 12 09.80263	12 17 36.26	-06 40 46.6	14.0 T	349
C/1999 L3	1999 12 09.80661	12 17 36.07	-06 40 44.3		349
C/1999 L3	1999 12 09.80754	12 17 36.01	-06 40 44.1		349

C/1999 L3	1999 12 11.80383	12 16 02.75	-06 23 22.2	13.8 T	349
C/1999 L3	1999 12 11.81139	12 16 02.30	-06 23 17.8		349
C/1999 L3	1999 12 11.81421	12 16 02.14	-06 23 15.8		349
C/1999 L3	1999 12 14.82522	12 13 19.61	-05 53 59.6	13.7 T	351
C/1999 L3	1999 12 14.83047	12 13 19.35	-05 53 57.2		351
C/1999 L3	1999 12 14.84025	12 13 18.60	-05 53 49.9		351
C/1999 L3	1999 12 15.79630	12 12 21.16	-05 43 41.3	14.4 T	903
C/1999 L3	1999 12 15.80111	12 12 20.84	-05 43 38.1		903
C/1999 L3	1999 12 15.83013	12 12 19.03	-05 43 20.6		349
C/1999 L3	1999 12 15.83506	12 12 18.74	-05 43 16.9		349
C/1999 L3	1999 12 15.84045	12 12 18.35	-05 43 13.2	13.7 T	349
C/1999 L3	1999 12 21.82365	12 05 02.29	-04 28 53.8		349
C/1999 L3	1999 12 21.86631	12 04 58.56	-04 28 16.7		349
C/1999 L3	1999 12 21.86730	12 04 58.52	-04 28 16.1	13.6 T	349
C/1999 L3	1999 12 22.83034	12 03 34.58	-04 14 18.3	13.1 T	897
C/1999 L3	1999 12 22.83781	12 03 34.00	-04 14 12.2		897
C/1999 L3	1999 12 25.82513	11 58 46.07	-03 26 53.9	13.6 T	349
C/1999 L3	1999 12 25.82762	11 58 45.82	-03 26 52.1		349
C/1999 L3	1999 12 25.82904	11 58 45.65	-03 26 50.3		349
C/1999 L3	1999 12 27.80042	11 55 10.77	-02 51 58.4	13.4 T	349
C/1999 L3	1999 12 27.80270	11 55 10.51	-02 51 55.5		349
C/1999 L3	1999 12 27.80801	11 55 09.87	-02 51 50.3		349
C/1999 L3	1999 12 29.75079	11 51 16.61	-02 14 19.3	13.3 T	349
C/1999 L3	1999 12 29.75842	11 51 15.64	-02 14 09.4		349
C/1999 L3	1999 12 29.76057	11 51 15.34	-02 14 06.5		349
C/1999 L3	1999 12 29.76185	11 51 15.22	-02 14 05.3	14.0 T	402
C/1999 L3	1999 12 29.76311	11 51 15.04	-02 14 03.8		402
C/1999 L3	1999 12 29.76438	11 51 14.85	-02 14 01.9		402
C/1999 L3	1999 12 30.70050	11 49 14.23	-01 54 45.0		900
C/1999 L3	1999 12 30.70967	11 49 13.00	-01 54 32.7	12.9 T	900
C/1999 L3	1999 12 30.81066	11 48 59.33	-01 52 26.3	13.4 T	351
C/1999 L3	1999 12 30.81519	11 48 58.83	-01 52 19.7		351
C/1999 L3	1999 12 30.82006	11 48 58.18	-01 52 13.9		351
C/1999 L3	1999 12 31.83874	11 46 39.58	-01 30 12.2	12.8 T	897
C/1999 L3	1999 12 31.84572	11 46 38.64	-01 30 02.9		897
C/1999 L3	2000 01 01.15208	11 45 55.83	-01 23 13.6	13.4 T	461
C/1999 L3	2000 01 01.15392	11 45 55.58	-01 23 10.9		461
C/1999 L3	2000 01 01.15561	11 45 55.35	-01 23 08.7		461
C/1999 L3	2000 01 01.15737	11 45 55.09	-01 23 06.4		461
C/1999 L3	2000 01 01.76632	11 44 27.59	-01 09 14.7		349
C/1999 L3	2000 01 01.76772	11 44 27.39	-01 09 12.2	13.2 T	349
C/1999 L3	2000 01 01.78609	11 44 24.68	-01 08 47.5		349
C/1999 L3	2000 01 03.71228	11 39 30.38	-00 22 23.2		900
C/1999 L3	2000 01 03.72145	11 39 28.88	-00 22 09.9	12.9 T	900
C/1999 L3	2000 01 04.75625	11 36 39.23	+00 04 26.1	12.7 T	360
C/1999 L3	2000 01 04.75868	11 36 38.82	+00 04 29.9		360
C/1999 L3	2000 01 07.70588	11 27 47.47	+01 27 06.4	13.8 T	352
C/1999 L3	2000 01 07.70935	11 27 46.66	+01 27 12.7		352
C/1999 L3	2000 01 08.50872	11 25 09.59	+01 51 26.9	16.7 T	691
C/1999 L3	2000 01 08.51261	11 25 08.83	+01 51 33.8	17.0 T	691
C/1999 L3	2000 01 08.51642	11 25 08.12	+01 51 40.9	17.0 T	691
C/1999 L3	2000 01 08.67765	11 24 35.77	+01 56 41.0	13.6 T	351
C/1999 L3	2000 01 08.68198	11 24 34.78	+01 56 49.6		351

C/1999 L3	2000 01 08.70235	11 24 30.83	+01 57 27.4		351	C/1999 S3	1999 09 29.87895	00 56 47.89	+50 37 33.3		958
C/1999 L3	2000 01 08.79986	11 24 10.91	+02 00 28.7		349	C/1999 S3	1999 09 29.89319	00 56 43.56	+50 38 08.4		958
C/1999 L3	2000 01 08.80216	11 24 10.49	+02 00 32.8		349	C/1999 S3	1999 09 29.91868	00 56 35.74	+50 39 11.7		958
C/1999 L3	2000 01 08.80346	11 24 10.23	+02 00 35.2	12.9 T	349	C/1999 S3	1999 10 03.82709	00 35 27.68	+53 08 57.5		958
C/1999 L3	2000 01 08.81719	11 24 07.38	+02 01 00.5	12.6 T	900	C/1999 S3	1999 10 03.87590	00 35 10.71	+53 10 42.1		958
C/1999 L3	2000 01 08.82601	11 24 05.57	+02 01 17.6		900	C/1999 S3	1999 10 03.88454	00 35 07.72	+53 11 00.5		958
C/1999 L3	2000 01 18.64727	10 42 36.24	+08 12 07.6	11.7 T	900	C/1999 S3	1999 10 04.99113	00 28 39.12	+53 49 10.7		958
C/1999 L3	2000 01 18.65467	10 42 33.86	+08 12 27.3		900	C/1999 S3	1999 10 04.99591	00 28 37.40	+53 49 19.8		958
C/1999 L3	2000 01 18.72385	10 42 12.32	+08 15 31.0		903	C/1999 S3	1999 10 05.00123	00 28 35.45	+53 49 30.8		958
C/1999 L3	2000 01 18.72613	10 42 11.67	+08 15 36.4		903	C/1999 S3	1999 10 05.92500	00 23 03.01	+54 19 46.6		958
C/1999 L3	2000 01 18.72865	10 42 10.84	+08 15 43.4	12.0 T	903	C/1999 S3	1999 10 05.92819	00 23 01.86	+54 19 52.9		958
C/1999 L3	2000 01 18.73428	10 42 09.18	+08 15 57.9	12.0 T	402	C/1999 S3	1999 10 05.93351	00 22 59.87	+54 20 03.2		958
C/1999 L3	2000 01 18.73554	10 42 08.80	+08 16 01.2		402	C/1999 S3	1999 10 05.96517	00 22 48.10	+54 21 04.7		958
C/1999 L3	2000 01 18.73680	10 42 08.42	+08 16 04.5		402	C/1999 S3	1999 10 05.96836	00 22 47.11	+54 21 09.7		958
C/1999 L3	2000 01 20.69316	10 31 41.27	+09 44 49.8	12.9 T	355	C/1999 S3	1999 10 06.91157	00 16 59.32	+54 50 27.5		958
C/1999 L3	2000 01 20.69516	10 31 40.57	+09 44 55.5		355	C/1999 S3	1999 10 06.91293	00 16 58.82	+54 50 29.5		958
C/1999 L3	2000 01 20.69779	10 31 39.70	+09 45 02.6		355	C/1999 S3	1999 10 06.91429	00 16 58.32	+54 50 32.3		958
C/1999 N2 (Lynn)						C/1999 S3	1999 10 06.91564	00 16 57.79	+54 50 34.5		958
C/1999 N2	1999 07 31.44079	11 56 31.83	+13 21 03.8		897	C/1999 S3	1999 10 06.91700	00 16 57.29	+54 50 37.1		958
C/1999 N2	1999 07 31.44450	11 56 32.75	+13 21 16.6		897	C/1999 S3	1999 10 06.91835	00 16 56.79	+54 50 39.6		958
C/1999 N2	1999 07 31.44922	11 56 33.79	+13 21 33.5		897	C/1999 S3	1999 10 06.91972	00 16 56.28	+54 50 42.1		958
C/1999 N2	1999 08 03.45355	12 06 57.43	+16 04 33.9		897	C/1999 S3	1999 10 06.92107	00 16 55.77	+54 50 44.4		958
C/1999 N2	1999 08 03.45888	12 06 58.42	+16 04 49.9		897	C/1999 S3	1999 10 06.92244	00 16 55.26	+54 50 46.9		958
C/1999 N2	1999 08 17.43609	12 37 38.31	+24 28 36.1		897	C/1999 S3	1999 10 08.96935	00 03 56.24	+55 48 41.3		958
C/1999 N2	1999 08 17.44389	12 37 39.09	+24 28 48.3		897	C/1999 S3	1999 10 08.97259	00 03 54.87	+55 48 47.6		958
C/1999 N2	1999 08 17.44942	12 37 39.58	+24 28 56.8		897	C/1999 S3	1999 10 08.97582	00 03 53.76	+55 48 51.3		958
C/1999 N2	1999 09 23.39691	13 19 14.25	+34 49 07.5		897	C/1999 S3	1999 10 08.98893	00 03 48.63	+55 49 12.1		958
C/1999 N2	1999 09 23.39991	13 19 14.09	+34 49 08.6		897	C/1999 S3	1999 10 08.99326	00 03 46.89	+55 49 19.0		958
C/1999 N2	1999 09 23.40338	13 19 14.34	+34 49 13.2		897	C/1999 S3	1999 10 10.95192	23 50 57.01	+56 37 04.1		958
C/1999 N4 (LINEAR)						C/1999 S3	1999 10 10.96312	23 50 52.51	+56 37 19.4		958
C/1999 N4	1999 07 23.23315	19 00 36.46	+00 53 35.5	16.9 T	848	C/1999 S3	1999 10 10.97704	23 50 46.88	+56 37 38.0		958
C/1999 N4	1999 07 23.24365	19 00 35.74	+00 53 34.3	17.0 T	848	C/1999 S3	1999 10 11.56905	23 46 50.55	+56 50 34.1		897
C/1999 N4	1999 07 25.23642	18 58 15.00	+00 50 04.0	17.9 T	848	C/1999 S3	1999 10 11.57642	23 46 47.56	+56 50 43.5		897
C/1999 N4	1999 07 25.24570	18 58 14.31	+00 50 02.5	18.0 T	848	C/1999 S3	1999 10 15.89753	23 17 39.86	+58 03 47.3		958
C/1999 N4	1999 07 25.25309	18 58 13.74	+00 50 01.2	18.3 T	848	C/1999 S3	1999 10 15.90903	23 17 35.09	+58 03 53.5		958
C/1999 N4	1999 08 10.58375	18 40 04.15	+00 12 01.1		897	C/1999 S3	1999 10 22.80699	22 32 38.51	+58 48 19.1		958
C/1999 N4	1999 08 10.59205	18 40 03.65	+00 11 58.9	18.1 T	897	C/1999 S3	1999 10 22.81461	22 32 35.69	+58 48 19.4		958
C/1999 N4	1999 08 10.60468	18 40 02.80	+00 11 56.6		897	C/1999 S3	1999 10 26.91782	22 08 38.15	+58 40 42.5		958
C/1999 N4	1999 09 10.80341	18 14 12.65	-01 27 13.6	17.7 T	561	C/1999 S3	1999 10 26.92803	22 08 34.83	+58 40 40.3		958
C/1999 N4	1999 09 10.80778	18 14 12.49	-01 27 14.3	17.6 T	561	C/1999 S3	1999 10 28.81141	21 58 32.35	+58 30 49.7		958
C/1999 N4	1999 09 10.81127	18 14 12.39	-01 27 14.8	17.6 T	561	C/1999 S3	1999 10 31.79489	21 43 56.65	+58 09 07.0		958
C/1999 S2 (McNaught-Watson)						C/1999 S3	1999 10 31.80564	21 43 53.43	+58 09 02.4		958
C/1999 S2	1999 11 22.52366	02 24 43.59	-62 53 19.5		322	C/1999 S3	1999 11 03.75526	21 31 04.12	+57 42 07.0		958
C/1999 S2	1999 11 22.55215	02 24 42.17	-62 53 08.6		322	C/1999 S3	1999 11 03.76621	21 31 01.58	+57 42 00.3		958
C/1999 S3 (LINEAR)						C/1999 S3	1999 11 04.80059	21 26 53.75	+57 31 39.5		958
C/1999 S3	1999 09 26.87740	01 11 08.13	+48 29 42.4		958	C/1999 S3	1999 11 04.80601	21 26 52.44	+57 31 36.2		958
C/1999 S3	1999 09 26.90026	01 11 01.82	+48 30 47.2		958	C/1999 S3	1999 11 04.81144	21 26 51.13	+57 31 33.0		958
C/1999 S3	1999 09 28.83024	01 01 59.88	+49 53 56.6		958	C/1999 S3	1999 11 06.81210	21 19 24.66	+57 10 38.8		958
C/1999 S3	1999 09 28.85091	01 01 53.82	+49 54 49.5		958	C/1999 S3	1999 11 06.81679	21 19 23.56	+57 10 35.2		958
C/1999 S3	1999 09 28.85780	01 01 51.82	+49 55 06.5		958	C/1999 S3	1999 11 06.82144	21 19 22.57	+57 10 32.1		958
C/1999 S3	1999 09 28.86468	01 01 49.77	+49 55 24.3		958	C/1999 S3	1999 11 26.45310	20 35 58.01	+53 56 20.2	12.5 T	897
						C/1999 S3	1999 11 26.45727	20 35 57.80	+53 56 19.3		897
						C/1999 S3	1999 11 27.79541	20 34 28.16	+53 46 40.2		958

C/1999 S3	1999 11 27.82636	20 34 26.25	+53 46 27.1		958	C/1999 S4	1999 10 05.01107	04 59 07.33	+34 52 07.6	958
C/1999 S3	1999 11 29.47857	20 32 47.14	+53 35 30.6	12.6 T	897	C/1999 S4	1999 10 05.03099	04 59 06.57	+34 52 13.0	958
C/1999 S3	1999 11 29.49247	20 32 46.30	+53 35 24.3		897	C/1999 S4	1999 10 05.04491	04 59 05.82	+34 52 16.7	958
C/1999 S3	1999 12 10.40377	20 26 11.56	+52 49 32.3	13.7 T	349	C/1999 S4	1999 10 06.03311	04 58 21.75	+34 56 54.6	958
C/1999 S3	1999 12 10.40740	20 26 11.49	+52 49 32.1		349	C/1999 S4	1999 10 06.04495	04 58 21.14	+34 56 57.7	958
C/1999 S3	1999 12 10.41022	20 26 11.49	+52 49 31.5		349	C/1999 S4	1999 10 07.04420	04 57 34.73	+35 01 37.8	958
C/1999 S3	1999 12 10.46271	20 26 10.48	+52 49 24.1	13.4 T	351	C/1999 S4	1999 10 07.06048	04 57 33.85	+35 01 40.8	958
C/1999 S3	1999 12 10.47023	20 26 10.31	+52 49 24.7		351	C/1999 S4	1999 10 09.05607	04 55 55.27	+35 11 00.0	958
C/1999 S3	1999 12 10.47583	20 26 10.22	+52 49 22.3		351	C/1999 S4	1999 10 09.08031	04 55 53.99	+35 11 05.8	958
C/1999 S3	1999 12 16.38881	20 25 04.62	+52 44 30.9	14.0 T	402	C/1999 S4	1999 10 10.98748	04 54 11.78	+35 19 58.4	958
C/1999 S3	1999 12 16.39006	20 25 04.61	+52 44 31.0		402	C/1999 S4	1999 10 11.00314	04 54 11.10	+35 20 02.8	958
C/1999 S3	1999 12 16.39259	20 25 04.62	+52 44 30.6		402	C/1999 S4	1999 10 11.01951	04 54 10.06	+35 20 05.6	958
C/1999 S3	1999 12 17.72160	20 25 00.90	+52 45 21.2	13.5 T	118	C/1999 S4	1999 10 15.96719	04 49 09.96	+35 42 36.4	958
C/1999 S3	1999 12 17.72667	20 25 00.91	+52 45 21.1		118	C/1999 S4	1999 10 15.98770	04 49 08.42	+35 42 41.7	958
C/1999 S3	1999 12 19.38860	20 25 01.45	+52 47 22.3		349	C/1999 S4	1999 10 16.00359	04 49 07.68	+35 42 46.9	958
C/1999 S3	1999 12 19.40760	20 25 01.35	+52 47 24.3	13.8 T	349	C/1999 S4	1999 10 22.88260	04 40 40.93	+36 12 11.0	958
C/1999 S3	1999 12 21.48444	20 25 09.58	+52 51 27.2		355	C/1999 S4	1999 10 22.91563	04 40 38.25	+36 12 19.7	958
C/1999 S3	1999 12 21.48999	20 25 09.61	+52 51 28.2		355	C/1999 S4	1999 10 22.93184	04 40 36.98	+36 12 24.0	958
C/1999 S3	1999 12 21.49275	20 25 09.61	+52 51 28.3		355	C/1999 S4	1999 10 31.93228	04 26 49.82	+36 44 28.6	958
C/1999 S3	1999 12 23.40493	20 25 23.93	+52 56 42.5		349	C/1999 S4	1999 10 31.95064	04 26 47.95	+36 44 31.8	958
C/1999 S3	1999 12 23.40794	20 25 23.98	+52 56 42.9	14.0 T	349	C/1999 S4	1999 10 31.96638	04 26 46.30	+36 44 35.2	958
C/1999 S3	1999 12 23.41147	20 25 23.93	+52 56 43.9		349	C/1999 S4	1999 11 05.01302	04 19 33.46	+36 55 20.8	958
C/1999 S3	1999 12 24.39164	20 25 33.70	+52 59 57.4	14.3 T	402	C/1999 S4	1999 11 05.03578	04 19 30.90	+36 55 24.3	958
C/1999 S3	1999 12 24.39289	20 25 33.77	+52 59 58.2		402	C/1999 S4	1999 11 07.90783	04 14 01.71	+37 01 12.9	958
C/1999 S3	1999 12 24.39416	20 25 33.74	+52 59 58.1		402	C/1999 S4	1999 11 07.93754	04 13 58.46	+37 01 17.7	958
C/1999 S3	1999 12 25.42107	20 25 45.83	+53 03 46.0	13.6 T	900	C/1999 S4	1999 11 07.97790	04 13 53.48	+37 01 21.4	958
C/1999 S3	1999 12 25.43035	20 25 45.84	+53 03 46.2		900	C/1999 S4	1999 11 20.78785	03 46 14.47	+37 03 42.5	14.3 T 372
C/1999 S3	1999 12 26.39280	20 25 58.40	+53 07 41.4		897	C/1999 S4	1999 11 26.49336	03 32 44.79	+36 50 02.4	897
C/1999 S3	1999 12 26.40207	20 25 58.49	+53 07 43.6	13.9 T	897	C/1999 S4	1999 11 26.49700	03 32 44.29	+36 50 01.9	897
C/1999 S3	1999 12 26.41133	20 25 58.65	+53 07 45.8		897	C/1999 S4	1999 11 26.82924	03 31 56.26	+36 48 55.4	958
C/1999 S3	1999 12 27.38498	20 26 13.04	+53 12 07.0	13.9 T	351	C/1999 S4	1999 11 26.85856	03 31 52.01	+36 48 49.6	958
C/1999 S3	1999 12 27.39054	20 26 13.10	+53 12 07.5		351	C/1999 S4	1999 11 26.89988	03 31 45.83	+36 48 41.0	958
C/1999 S3	1999 12 27.39576	20 26 13.15	+53 12 09.2		351	C/1999 S4	1999 11 27.92011	03 29 18.58	+36 45 05.2	958
C/1999 S3	1999 12 28.42117	20 26 29.55	+53 17 04.7	13.6 T	351	C/1999 S4	1999 11 27.93787	03 29 15.96	+36 45 00.7	958
C/1999 S3	1999 12 28.42528	20 26 29.62	+53 17 05.3		351	C/1999 S4	1999 11 27.95276	03 29 13.71	+36 44 57.0	958
C/1999 S3	1999 12 28.42963	20 26 29.67	+53 17 06.2		351	C/1999 S4	1999 11 28.57281	03 27 43.87	+36 42 37.3	15.0 T 897
C/1999 S3	1999 12 30.38906	20 27 05.49	+53 27 38.5	14.6 T	349	C/1999 S4	1999 11 28.58102	03 27 42.66	+36 42 35.3	897
C/1999 S3	1999 12 30.39162	20 27 05.49	+53 27 40.3		349	C/1999 S4	1999 11 29.60283	03 25 14.32	+36 38 26.3	15.1 T 352
C/1999 S3	1999 12 30.39432	20 27 05.54	+53 27 41.4		349	C/1999 S4	1999 11 29.60631	03 25 13.84	+36 38 25.5	352
C/1999 S3	1999 12 31.41605	20 27 26.23	+53 33 46.9	14.4 T	351	C/1999 S4	1999 11 29.63542	03 25 09.54	+36 38 19.8	14.2 T 372
C/1999 S3	1999 12 31.42005	20 27 26.37	+53 33 49.1		351	C/1999 S4	1999 12 03.76677	03 15 08.81	+36 18 19.4	958
C/1999 S3	1999 12 31.42752	20 27 26.62	+53 33 50.9		351	C/1999 S4	1999 12 03.77317	03 15 07.78	+36 18 15.5	958
C/1999 S3	1999 12 31.69549	20 27 32.27	+53 35 29.4	16.0 N	461	C/1999 S4	1999 12 03.79372	03 15 04.88	+36 18 06.9	958
C/1999 S3	1999 12 31.70017	20 27 32.37	+53 35 31.2		461	C/1999 S4	1999 12 05.81203	03 10 12.38	+36 06 32.4	958
C/1999 S3	1999 12 31.70388	20 27 32.45	+53 35 32.5		461	C/1999 S4	1999 12 05.81683	03 10 11.98	+36 06 32.9	952
C/1999 S3	2000 01 08.40637	20 30 50.99	+54 34 41.4	14.4 T	402	C/1999 S4	1999 12 05.82111	03 10 11.36	+36 06 31.2	952
C/1999 S3	2000 01 08.40762	20 30 51.07	+54 34 42.4		402	C/1999 S4	1999 12 05.82326	03 10 11.02	+36 06 31.1	952
C/1999 S3	2000 01 08.40888	20 30 51.10	+54 34 42.2		402	C/1999 S4	1999 12 05.82539	03 10 10.67	+36 06 29.9	952
C/1999 S4 (LINEAR)						C/1999 S4	1999 12 05.82966	03 10 10.04	+36 06 28.7	952
C/1999 S4	1999 10 04.03621	04 59 49.06	+34 47 34.1		958	C/1999 S4	1999 12 05.83181	03 10 09.73	+36 06 27.6	952
C/1999 S4	1999 10 04.05918	04 59 48.14	+34 47 40.9		958	C/1999 S4	1999 12 05.83350	03 10 09.03	+36 06 26.4	958
C/1999 S4	1999 10 04.07835	04 59 47.16	+34 47 43.9		958	C/1999 S4	1999 12 05.83394	03 10 09.41	+36 06 27.0	952
						C/1999 S4	1999 12 05.83606	03 10 09.12	+36 06 26.3	952

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C/1999 S4	1999 12 05.85332	03 10 06.44	+36 06 19.8		958	C/1999 S4	1999 12 21.53947	02 34 30.98	+34 02 46.1		355
C/1999 S4	1999 12 06.99453	03 07 21.72	+35 59 14.9		958	C/1999 S4	1999 12 21.54313	02 34 30.54	+34 02 44.8		355
C/1999 S4	1999 12 07.59479	03 05 55.54	+35 55 23.9		372	C/1999 S4	1999 12 21.74809	02 34 05.29	+34 00 49.0	16.2 N	610
C/1999 S4	1999 12 07.65575	03 05 46.78	+35 54 59.4	14.7 T	349	C/1999 S4	1999 12 21.75503	02 34 04.43	+34 00 45.2		610
C/1999 S4	1999 12 07.65865	03 05 46.39	+35 54 58.5		349	C/1999 S4	1999 12 21.76198	02 34 03.57	+34 00 41.4		610
C/1999 S4	1999 12 07.66075	03 05 46.07	+35 54 57.6		349	C/1999 S4	1999 12 21.76892	02 34 02.71	+34 00 37.6		610
C/1999 S4	1999 12 07.81500	03 05 24.19	+35 53 58.6		958	C/1999 S4	1999 12 21.80535	02 33 58.19	+34 00 17.5		610
C/1999 S4	1999 12 07.86012	03 05 17.71	+35 53 39.2	15.8 N	610	C/1999 S4	1999 12 22.46940	02 32 36.40	+33 54 05.1	14.9 T	402
C/1999 S4	1999 12 07.86210	03 05 17.56	+35 53 38.3		958	C/1999 S4	1999 12 22.47066	02 32 36.24	+33 54 04.7		402
C/1999 S4	1999 12 07.86359	03 05 17.21	+35 53 37.7		610	C/1999 S4	1999 12 22.47192	02 32 36.07	+33 54 03.9		402
C/1999 S4	1999 12 07.86706	03 05 16.72	+35 53 36.3		610	C/1999 S4	1999 12 22.63729	02 32 15.69	+33 52 29.4	14.7 T	349
C/1999 S4	1999 12 07.87053	03 05 16.23	+35 53 34.9		610	C/1999 S4	1999 12 22.63846	02 32 15.51	+33 52 29.0		349
C/1999 S4	1999 12 07.87401	03 05 15.73	+35 53 33.4		610	C/1999 S4	1999 12 23.49267	02 30 32.08	+33 44 24.8		349
C/1999 S4	1999 12 09.13416	03 02 15.99	+35 45 03.0	15.4 T	294	C/1999 S4	1999 12 23.49410	02 30 31.92	+33 44 23.5		349
C/1999 S4	1999 12 09.17012	03 02 10.77	+35 44 47.8	16.1 T	294	C/1999 S4	1999 12 23.50092	02 30 31.11	+33 44 20.1	14.8 T	900
C/1999 S4	1999 12 09.18519	03 02 08.53	+35 44 41.3	16.1 T	294	C/1999 S4	1999 12 23.50635	02 30 30.44	+33 44 16.6	14.5 T	349
C/1999 S4	1999 12 09.58409	03 01 12.08	+35 41 54.2	14.8 T	352	C/1999 S4	1999 12 23.51377	02 30 29.59	+33 44 12.6		900
C/1999 S4	1999 12 09.58756	03 01 11.63	+35 41 53.1		352	C/1999 S4	1999 12 25.39248	02 26 47.18	+33 26 10.9		411
C/1999 S4	1999 12 09.61760	03 01 07.25	+35 41 40.5	14.8 T	897	C/1999 S4	1999 12 25.40663	02 26 45.50	+33 26 02.9		411
C/1999 S4	1999 12 09.65708	03 01 01.61	+35 41 23.4		897	C/1999 S4	1999 12 25.42605	02 26 43.19	+33 25 51.7		411
C/1999 S4	1999 12 10.47049	02 59 06.95	+35 35 35.3		349	C/1999 S4	1999 12 25.45542	02 26 39.66	+33 25 34.8	14.5 T	900
C/1999 S4	1999 12 10.50353	02 59 02.27	+35 35 20.3	14.6 T	349	C/1999 S4	1999 12 25.47205	02 26 37.69	+33 25 25.1		900
C/1999 S4	1999 12 10.50496	02 59 02.11	+35 35 19.9		349	C/1999 S4	1999 12 25.50722	02 26 33.58	+33 25 04.3		897
C/1999 S4	1999 12 11.49308	02 56 43.45	+35 28 02.8	15.0 T	900	C/1999 S4	1999 12 25.51851	02 26 32.24	+33 24 57.8		897
C/1999 S4	1999 12 11.50576	02 56 41.65	+35 27 56.8		900	C/1999 S4	1999 12 25.52251	02 26 31.75	+33 24 55.3	14.1 T	897
C/1999 S4	1999 12 11.89541	02 55 47.43	+35 24 59.6		958	C/1999 S4	1999 12 26.41737	02 24 48.76	+33 16 15.1		411
C/1999 S4	1999 12 11.94863	02 55 39.84	+35 24 36.3		958	C/1999 S4	1999 12 26.42282	02 24 48.09	+33 16 11.7		411
C/1999 S4	1999 12 11.99028	02 55 34.15	+35 24 17.7		958	C/1999 S4	1999 12 26.42870	02 24 47.43	+33 16 08.0		411
C/1999 S4	1999 12 12.93682	02 53 22.92	+35 16 58.8		958	C/1999 S4	1999 12 27.52201	02 22 43.51	+33 05 27.5	15.0 T	351
C/1999 S4	1999 12 15.51396	02 47 31.65	+34 56 08.1	15.0 T	355	C/1999 S4	1999 12 27.53142	02 22 42.44	+33 05 23.1		351
C/1999 S4	1999 12 15.51493	02 47 31.47	+34 56 07.5	14.9 T	360	C/1999 S4	1999 12 27.53675	02 22 41.87	+33 05 18.2		351
C/1999 S4	1999 12 15.51638	02 47 31.34	+34 56 06.5		355	C/1999 S4	1999 12 27.56199	02 22 38.97	+33 05 03.5		352
C/1999 S4	1999 12 15.51736	02 47 31.15	+34 56 06.2		360	C/1999 S4	1999 12 29.78526	02 18 35.72	+32 43 08.3		958
C/1999 S4	1999 12 15.51846	02 47 31.04	+34 56 05.5		355	C/1999 S4	1999 12 29.81238	02 18 32.42	+32 42 52.5		958
C/1999 S4	1999 12 15.82663	02 46 49.75	+34 53 29.9		958	C/1999 S4	1999 12 29.85005	02 18 28.61	+32 42 31.0		958
C/1999 S4	1999 12 15.85717	02 46 45.75	+34 53 14.4		958	C/1999 S4	1999 12 30.42061	02 17 27.97	+32 36 52.3	14.6 T	349
C/1999 S4	1999 12 16.44435	02 45 27.22	+34 48 16.9	15.1 T	402	C/1999 S4	1999 12 30.42338	02 17 27.65	+32 36 50.9		349
C/1999 S4	1999 12 16.44561	02 45 27.07	+34 48 16.1		402	C/1999 S4	1999 12 30.43649	02 17 26.30	+32 36 43.5		349
C/1999 S4	1999 12 16.44689	02 45 26.91	+34 48 15.5		402	C/1999 S4	1999 12 30.47690	02 17 22.10	+32 36 19.0	14.7 T	351
C/1999 S4	1999 12 17.10818	02 43 59.26	+34 42 34.8	15.6 T	294	C/1999 S4	1999 12 30.48140	02 17 21.56	+32 36 15.7		351
C/1999 S4	1999 12 17.14068	02 43 54.93	+34 42 18.0	15.8 T	294	C/1999 S4	1999 12 30.48582	02 17 21.18	+32 36 13.8		351
C/1999 S4	1999 12 19.61760	02 38 33.01	+34 20 22.6		349	C/1999 S4	1999 12 30.97819	02 16 29.13	+32 31 19.7		046
C/1999 S4	1999 12 19.64462	02 38 29.58	+34 20 08.1	14.6 T	349	C/1999 S4	1999 12 30.97938	02 16 29.02	+32 31 18.6		046
C/1999 S4	1999 12 20.43873	02 36 48.90	+34 12 56.0	14.6 T	897	C/1999 S4	1999 12 30.98245	02 16 28.72	+32 31 16.8		046
C/1999 S4	1999 12 20.45910	02 36 46.42	+34 12 44.8		897	C/1999 S4	1999 12 31.39804	02 15 45.78	+32 27 11.3	14.9 T	897
C/1999 S4	1999 12 20.46722	02 36 45.42	+34 12 39.5		897	C/1999 S4	1999 12 31.40915	02 15 44.67	+32 27 05.1		897
C/1999 S4	1999 12 20.78101	02 36 05.95	+34 09 47.0	13.5 T	504	C/1999 S4	1999 12 31.80625	02 15 03.59	+32 23 07.7	15.4 T	461
C/1999 S4	1999 12 20.78248	02 36 05.75	+34 09 46.2	13.9 T	504	C/1999 S4	1999 12 31.80909	02 15 03.28	+32 23 06.1		461
C/1999 S4	1999 12 20.78390	02 36 05.60	+34 09 45.2	14.1 T	504	C/1999 S4	1999 12 31.81112	02 15 03.06	+32 23 04.8		461
C/1999 S4	1999 12 20.78869	02 36 04.90	+34 09 42.4	14.6 T	504	C/1999 S4	2000 01 02.19667	02 12 42.92	+32 09 20.2	17.0 T	704
C/1999 S4	1999 12 20.79091	02 36 04.70	+34 09 41.6	14.1 T	504	C/1999 S4	2000 01 02.22287	02 12 40.42	+32 09 05.7	16.7 T	704
C/1999 S4	1999 12 20.79321	02 36 04.40	+34 09 40.6	14.0 T	504	C/1999 S4	2000 01 02.73856	02 11 49.66	+32 03 58.8		046
C/1999 S4	1999 12 21.53771	02 34 31.23	+34 02 47.0		355	C/1999 S4	2000 01 02.73987	02 11 49.52	+32 03 58.0		046

C/1999 S4	2000 01 02.74090	02 11 49.43	+32 03 57.5		046	C/1999 S4	2000 01 06.81772	02 05 28.17	+31 23 52.1		610
C/1999 S4	2000 01 02.74216	02 11 49.30	+32 03 56.8		046	C/1999 S4	2000 01 06.86601	02 05 23.90	+31 23 23.7	14.4 N	170
C/1999 S4	2000 01 03.07017	02 11 17.34	+32 00 43.9	17.2 T	704	C/1999 S4	2000 01 06.89190	02 05 21.58	+31 23 07.9	14.5 N	170
C/1999 S4	2000 01 03.08536	02 11 16.03	+32 00 34.9	16.1 T	704	C/1999 S4	2000 01 06.90156	02 05 20.65	+31 23 03.5	14.2 N	170
C/1999 S4	2000 01 03.09989	02 11 14.62	+32 00 26.0	16.5 T	704	C/1999 S4	2000 01 07.38779	02 04 37.99	+31 18 20.0		348
C/1999 S4	2000 01 03.10051	02 11 14.55	+32 00 25.4	14.1 T	704	C/1999 S4	2000 01 07.39278	02 04 37.55	+31 18 17.2	14.9 T	348
C/1999 S4	2000 01 03.10061	02 11 14.54	+32 00 25.8	15.5 T	704	C/1999 S4	2000 01 07.45185	02 04 32.27	+31 17 42.0	14.8 T	402
C/1999 S4	2000 01 03.11509	02 11 13.01	+32 00 17.3	17.7 T	704	C/1999 S4	2000 01 07.45311	02 04 32.16	+31 17 41.4		402
C/1999 S4	2000 01 03.11572	02 11 13.03	+32 00 16.1	13.9 T	704	C/1999 S4	2000 01 07.45437	02 04 32.06	+31 17 40.7		402
C/1999 S4	2000 01 03.11583	02 11 13.04	+32 00 16.2	15.5 T	704	C/1999 S4	2000 01 07.56735	02 04 22.11	+31 16 34.4	14.9 T	352
C/1999 S4	2000 01 03.13031	02 11 10.94	+32 00 06.0	16.5 T	704	C/1999 S4	2000 01 07.57082	02 04 21.83	+31 16 32.8		352
C/1999 S4	2000 01 03.13092	02 11 11.54	+32 00 06.2	13.7 T	704	C/1999 S4	2000 01 08.08671	02 03 37.49	+31 11 35.2	17.4 T	704
C/1999 S4	2000 01 03.13102	02 11 11.44	+32 00 06.5	15.1 T	704	C/1999 S4	2000 01 08.10174	02 03 36.20	+31 11 26.1	16.7 T	704
C/1999 S4	2000 01 03.13135	02 11 11.35	+32 00 06.4	14.1 T	734	C/1999 S4	2000 01 08.11679	02 03 34.88	+31 11 17.3	17.4 T	704
C/1999 S4	2000 01 03.13723	02 11 10.66	+32 00 02.5	13.9 T	734	C/1999 S4	2000 01 08.13187	02 03 33.64	+31 11 06.6	16.7 T	704
C/1999 S4	2000 01 03.14032	02 11 10.43	+32 00 00.7	13.9 T	734	C/1999 S4	2000 01 08.22032	02 03 25.63	+31 10 14.9	16.7 T	750
C/1999 S4	2000 01 03.15948	02 11 08.60	+31 59 50.0	15.7 T	670	C/1999 S4	2000 01 08.22934	02 03 24.72	+31 10 08.2	18.4 T	750
C/1999 S4	2000 01 03.16140	02 11 08.36	+31 59 48.3		670	C/1999 S4	2000 01 08.23951	02 03 23.93	+31 10 04.0	16.0 T	750
C/1999 S4	2000 01 03.16406	02 11 08.18	+31 59 47.0	15.1 T	676	C/1999 S4	2000 01 08.25522	02 03 22.70	+31 09 54.8	15.8 T	750
C/1999 S4	2000 01 03.17097	02 11 07.45	+31 59 43.0		670	C/1999 S4	2000 01 08.45089	02 03 06.10	+31 08 02.4		349
C/1999 S4	2000 01 03.19043	02 11 05.47	+31 59 31.2		670	C/1999 S4	2000 01 08.45229	02 03 05.94	+31 08 01.3	14.8 T	349
C/1999 S4	2000 01 03.22741	02 11 01.83	+31 59 09.1		670	C/1999 S4	2000 01 08.45446	02 03 05.78	+31 08 00.1		349
C/1999 S4	2000 01 03.25234	02 10 59.53	+31 58 54.6	15.5 T	676	C/1999 S4	2000 01 08.50317	02 03 01.72	+31 07 32.8	14.7 T	351
C/1999 S4	2000 01 03.42219	02 10 43.20	+31 57 13.8		900	C/1999 S4	2000 01 08.50884	02 03 01.06	+31 07 28.8		351
C/1999 S4	2000 01 03.43015	02 10 42.18	+31 57 11.9		413	C/1999 S4	2000 01 08.51642	02 03 00.63	+31 07 24.9		351
C/1999 S4	2000 01 03.43529	02 10 41.67	+31 57 08.9		413	C/1999 S4	2000 01 09.20200	02 02 02.72	+31 00 48.2	16.1 T	750
C/1999 S4	2000 01 03.43885	02 10 41.35	+31 57 06.6		413	C/1999 S4	2000 01 09.21256	02 02 01.81	+31 00 41.8	16.1 T	750
C/1999 S4	2000 01 03.48884	02 10 36.59	+31 56 33.7	14.6 T	355	C/1999 S4	2000 01 09.22313	02 02 00.94	+31 00 35.4	16.1 T	750
C/1999 S4	2000 01 03.49159	02 10 36.32	+31 56 31.7	14.8 T	351	C/1999 S4	2000 01 12.81700	01 57 16.27	+30 26 44.0	15.1 T	118
C/1999 S4	2000 01 03.49316	02 10 36.18	+31 56 31.3		355	C/1999 S4	2000 01 12.85385	01 57 13.43	+30 26 23.2	15.1 T	118
C/1999 S4	2000 01 03.49524	02 10 35.99	+31 56 30.4		355	C/1999 S4	2000 01 13.71052	01 56 09.83	+30 18 30.2	15.5 N	046
C/1999 S4	2000 01 03.49819	02 10 35.66	+31 56 29.0		351	C/1999 S4	2000 01 13.71174	01 56 09.74	+30 18 29.7	13.9 T	046
C/1999 S4	2000 01 03.50625	02 10 34.81	+31 56 23.8	15.0 T	360	C/1999 S4	2000 01 13.71376	01 56 09.61	+30 18 28.7		046
C/1999 S4	2000 01 03.50704	02 10 34.81	+31 56 24.3		351	C/1999 S4	2000 01 13.71588	01 56 09.46	+30 18 27.2		046
C/1999 S4	2000 01 03.50868	02 10 34.58	+31 56 22.4		360	C/1999 S4	2000 01 14.57670	01 55 07.07	+30 10 36.1	15.2 T	903
C/1999 S4	2000 01 03.53681	02 10 31.89	+31 56 05.4	14.6 T	367	C/1999 S4	2000 01 14.59118	01 55 06.01	+30 10 29.5		903
C/1999 S4	2000 01 03.54167	02 10 31.39	+31 56 02.2		367	C/1999 S4	2000 01 15.39661	01 54 09.43	+30 03 13.7	14.9 T	402
C/1999 S4	2000 01 03.54545	02 10 31.01	+31 56 00.1	14.5 T	349	C/1999 S4	2000 01 15.39786	01 54 09.36	+30 03 13.3		402
C/1999 S4	2000 01 03.54896	02 10 30.69	+31 55 58.1		367	C/1999 S4	2000 01 15.39912	01 54 09.25	+30 03 12.5		402
C/1999 S4	2000 01 03.55034	02 10 30.59	+31 55 57.4		349	C/1999 S4	2000 01 16.76472	01 52 36.20	+29 51 04.0	15.6 T	118
C/1999 S4	2000 01 03.55987	02 10 29.66	+31 55 51.8		349	C/1999 S4	2000 01 16.77132	01 52 35.82	+29 51 00.9		118
C/1999 S4	2000 01 03.58266	02 10 27.41	+31 55 38.1	14.3 T	900	C/1999 S4	2000 01 16.77875	01 52 35.31	+29 50 57.2		118
C/1999 S4	2000 01 04.76147	02 08 35.81	+31 44 01.0	15.2 T	610	C/1999 S4	2000 01 16.83281	01 52 31.64	+29 50 28.2	14.7 N	170
C/1999 S4	2000 01 04.76564	02 08 35.41	+31 43 58.6		610	C/1999 S4	2000 01 16.85231	01 52 30.36	+29 50 17.1	15.3 N	170
C/1999 S4	2000 01 04.76980	02 08 35.01	+31 43 56.1		610	C/1999 S4	2000 01 16.88787	01 52 27.97	+29 49 58.6	14.7 N	170
C/1999 S4	2000 01 04.77814	02 08 34.21	+31 43 51.3		610	C/1999 S4	2000 01 18.52531	01 50 42.10	+29 35 46.5	14.6 T	900
C/1999 S4	2000 01 04.78300	02 08 33.75	+31 43 48.4		610	C/1999 S4	2000 01 18.53452	01 50 41.53	+29 35 42.1		900
C/1999 S4	2000 01 04.91728	02 08 21.18	+31 42 29.4		952	C/1999 S4	2000 01 18.57238	01 50 39.24	+29 35 22.2	15.0 T	903
C/1999 S4	2000 01 04.92277	02 08 20.64	+31 42 25.9		952	C/1999 S4	2000 01 18.57646	01 50 38.85	+29 35 19.3		903
C/1999 S4	2000 01 04.93041	02 08 19.91	+31 42 21.1		952	C/1999 S4	2000 01 18.57906	01 50 38.84	+29 35 18.1		903
C/1999 S4	2000 01 06.80729	02 05 29.13	+31 23 58.1	14.8 T	610	C/1999 S4	2000 01 19.09125	01 50 06.86	+29 30 56.4	16.1 T	750
C/1999 S4	2000 01 06.81078	02 05 28.80	+31 23 56.1		610	C/1999 S4	2000 01 19.10273	01 50 06.16	+29 30 50.7	16.1 T	750
C/1999 S4	2000 01 06.81425	02 05 28.48	+31 23 54.1		610	C/1999 S4	2000 01 22.38911	01 46 54.53	+29 03 41.7	15.3 T	402

C/1999 S4	2000 01 22.39038	01 46 54.42	+29 03 41.2		402
C/1999 S4	2000 01 22.39164	01 46 54.37	+29 03 40.5		402

C/1999 T1 (McNaught-Hartley)

C/1999 T1	1999 11 02.55810	01 42 54.65	-42 11 06.0		372
C/1999 T1	1999 11 04.58206	01 41 07.88	-42 19 57.4		897
C/1999 T1	1999 11 04.58468	01 41 07.90	-42 19 57.6		897
C/1999 T1	1999 11 07.59583	01 38 30.63	-42 31 29.6	16.5 T	372
C/1999 T1	1999 11 13.53064	01 33 28.10	-42 48 36.7		897
C/1999 T1	1999 11 13.53953	01 33 27.62	-42 48 38.3		897
C/1999 T1	1999 11 28.47408	01 22 09.30	-43 00 06.2	15.9 T	423
C/1999 T1	1999 11 28.49075	01 22 08.62	-43 00 05.2	15.8 T	423
C/1999 T1	1999 11 28.51296	01 22 07.72	-43 00 04.8	15.9 T	423
C/1999 T1	1999 11 29.49766	01 21 28.73	-42 59 20.8	15.9 T	423
C/1999 T1	1999 11 29.50876	01 21 28.32	-42 59 20.4	16.0 T	423
C/1999 T1	1999 11 29.51111	01 21 28.25	-42 59 21.6	15.3 T	372
C/1999 T1	1999 11 30.48723	01 20 50.47	-42 58 23.8		897
C/1999 T1	1999 11 30.48900	01 20 50.52	-42 58 24.2		897
C/1999 T1	1999 11 30.49078	01 20 50.40	-42 58 24.7		897
C/1999 T1	1999 12 03.47938	01 18 59.86	-42 54 37.4	15.3 T	372
C/1999 T1	1999 12 12.43869	01 14 21.52	-42 34 38.1	16.2 T	897
C/1999 T1	1999 12 12.44154	01 14 21.40	-42 34 37.0		897
C/1999 T1	1999 12 12.44618	01 14 21.16	-42 34 37.0		897
C/1999 T1	1999 12 13.39347	01 13 56.64	-42 31 46.0		372
C/1999 T1	1999 12 13.54045	01 13 52.74	-42 31 20.0		372
C/1999 T1	1999 12 15.43230	01 13 07.02	-42 25 19.2	15.7 T	423
C/1999 T1	1999 12 15.44897	01 13 06.54	-42 25 16.3	16.2 T	423
C/1999 T1	1999 12 15.46562	01 13 06.21	-42 25 12.9	16.2 T	423
C/1999 T1	1999 12 18.43777	01 12 02.04	-42 14 50.1	16.2 T	423
C/1999 T1	1999 12 18.44887	01 12 01.79	-42 14 48.2	16.3 T	423
C/1999 T1	1999 12 20.45458	01 11 24.02	-42 07 14.9	15.9 T	423
C/1999 T1	1999 12 20.46013	01 11 23.96	-42 07 13.8	16.0 T	423
C/1999 T1	1999 12 21.41768	01 11 07.75	-42 03 27.1		897
C/1999 T1	1999 12 21.42252	01 11 07.60	-42 03 26.4	15.8 T	897
C/1999 T1	1999 12 24.42832	01 10 22.61	-41 50 54.0	16.2 T	402
C/1999 T1	1999 12 24.42959	01 10 22.63	-41 50 54.3		402
C/1999 T1	1999 12 24.43086	01 10 22.62	-41 50 54.3		402
C/1999 T1	1999 12 27.41927	01 09 47.85	-41 37 35.3	15.3 T	360
C/1999 T1	1999 12 27.42188	01 09 47.81	-41 37 34.7		360
C/1999 T1	1999 12 27.42465	01 09 47.79	-41 37 34.2		360
C/1999 T1	1999 12 27.44219	01 09 47.56	-41 37 28.1	15.2 T	372
C/1999 T1	1999 12 27.46233	01 09 47.35	-41 37 23.0		372
C/1999 T1	1999 12 29.42344	01 09 30.07	-41 28 10.2	15.6 T	372
C/1999 T1	2000 01 04.40799	01 09 03.96	-40 58 09.0	15.3 T	372
C/1999 T1	2000 01 11.42066	01 09 23.35	-40 19 53.8	14.9 T	372

C/1999 T2 (LINEAR)

C/1999 T2	1999 10 15.80174	22 56 36.29	+29 15 04.1	16.5 T	958
C/1999 T2	1999 10 15.80314	22 56 36.00	+29 15 02.7		958
C/1999 T2	1999 10 15.82903	22 56 34.08	+29 14 56.8		958
C/1999 T2	1999 10 15.87902	22 56 30.23	+29 14 43.6		958
C/1999 T2	1999 10 22.76767	22 47 58.75	+28 42 34.6		958
C/1999 T2	1999 10 22.79803	22 47 56.50	+28 42 26.0		958
C/1999 T2	1999 10 24.96114	22 45 25.19	+28 31 32.0		958

C/1999 T2	1999 10 24.99333	22 45 23.00	+28 31 21.9		958
C/1999 T2	1999 10 25.01159	22 45 21.71	+28 31 17.7		958
C/1999 T2	1999 10 26.87693	22 43 15.31	+28 21 37.2		958
C/1999 T2	1999 10 26.90928	22 43 13.28	+28 21 26.9		958
C/1999 T2	1999 10 31.81260	22 37 59.14	+27 55 22.7		958
C/1999 T2	1999 10 31.82608	22 37 58.27	+27 55 18.3		958
C/1999 T2	1999 10 31.85133	22 37 56.66	+27 55 10.7		958
C/1999 T2	1999 11 03.77478	22 35 02.59	+27 39 17.2		958
C/1999 T2	1999 11 03.79619	22 35 01.40	+27 39 10.4		958
C/1999 T2	1999 11 03.81530	22 35 00.26	+27 39 03.3		958
C/1999 T2	1999 11 04.84444	22 34 01.39	+27 33 26.6		958
C/1999 T2	1999 11 04.86633	22 34 00.23	+27 33 17.8		958
C/1999 T2	1999 11 04.89412	22 33 58.58	+27 33 12.8		958
C/1999 T2	1999 11 06.82935	22 32 11.56	+27 22 34.5		958
C/1999 T2	1999 11 06.84844	22 32 10.63	+27 22 28.1		958
C/1999 T2	1999 11 07.80137	22 31 19.65	+27 17 15.6		958
C/1999 T2	1999 11 07.81906	22 31 18.69	+27 17 15.0		958
C/1999 T2	1999 11 29.49729	22 16 57.56	+25 29 07.3	16.2 T	897
C/1999 T2	1999 11 29.50655	22 16 57.31	+25 29 06.0		897
C/1999 T2	1999 11 29.51581	22 16 57.22	+25 29 03.9		897
C/1999 T2	1999 12 09.41794	22 13 25.03	+24 52 08.9	16.5 T	402
C/1999 T2	1999 12 09.42172	22 13 25.02	+24 52 09.0		402
C/1999 T2	1999 12 24.41078	22 11 09.35	+24 17 53.8	16.6 T	402
C/1999 T2	1999 12 24.41456	22 11 09.39	+24 17 53.5		402
C/1999 T2	1999 12 26.45449	22 11 05.95	+24 15 25.5	16.3 T	897
C/1999 T2	1999 12 26.46770	22 11 05.91	+24 15 24.5		897
C/1999 T2	2000 01 08.40141	22 11 55.75	+24 12 40.0	16.4 T	402
C/1999 T2	2000 01 08.40266	22 11 55.80	+24 12 39.9		402
C/1999 T2	2000 01 08.40392	22 11 55.78	+24 12 39.7		402
C/1999 T2	2000 01 08.40569	22 11 55.93	+24 12 40.4		349
C/1999 T2	2000 01 08.41293	22 11 55.89	+24 12 41.0	15.9 T	349

C/1999 T3 (LINEAR)

C/1999 T3	1999 11 09.22125	02 41 47.50	+16 08 05.9	18.4 T	704
C/1999 T3	1999 11 09.23740	02 41 46.72	+16 07 51.8	17.7 T	704
C/1999 T3	1999 11 09.25245	02 41 45.97	+16 07 42.3	17.8 T	704
C/1999 T3	1999 11 09.28169	02 41 44.54	+16 07 22.6	18.1 T	704
C/1999 T3	1999 11 16.21378	02 36 17.50	+14 52 50.5	18.0 T	704
C/1999 T3	1999 11 16.22886	02 36 16.81	+14 52 40.8	18.5 T	704
C/1999 T3	1999 11 16.24312	02 36 16.12	+14 52 31.1	18.2 T	704
C/1999 T3	1999 11 16.25736	02 36 15.44	+14 52 23.1	18.0 T	704
C/1999 T3	1999 11 16.27158	02 36 14.78	+14 52 13.6	18.2 T	704
C/1999 T3	1999 11 16.28247	02 36 14.32	+14 52 10.1	17.5 T	691
C/1999 T3	1999 11 16.31419	02 36 12.82	+14 51 49.6	17.6 T	691
C/1999 T3	1999 11 16.34114	02 36 11.53	+14 51 30.4	17.3 T	691
C/1999 T3	1999 12 06.13344	02 22 15.51	+11 25 52.5	18.3 N	704
C/1999 T3	1999 12 06.14780	02 22 14.91	+11 25 45.8	18.7 N	704
C/1999 T3	1999 12 06.16325	02 22 14.36	+11 25 36.4	18.5 N	704
C/1999 T3	1999 12 06.17764	02 22 13.78	+11 25 25.2	18.8 N	704
C/1999 T3	1999 12 06.19212	02 22 13.24	+11 25 17.2	18.6 N	704
C/1999 T3	1999 12 07.15090	02 21 38.16	+11 15 55.8	18.0 N	704
C/1999 T3	1999 12 07.16583	02 21 37.63	+11 15 47.1	18.2 N	704
C/1999 T3	1999 12 07.18075	02 21 37.08	+11 15 39.4	18.3 N	704

C/1999 T3	1999 12 07.19566	02 21 36.51	+11 15 29.3	18.3 N	704
C/1999 T3	1999 12 07.21057	02 21 35.99	+11 15 21.1	18.1 N	704
C/1999 T3	1999 12 15.53646	02 16 58.39	+09 57 14.0	17.8 T	360
C/1999 T3	1999 12 15.54080	02 16 58.23	+09 57 11.5		360
C/1999 T3	1999 12 22.47616	02 13 46.23	+08 57 08.5	17.1 T	402
C/1999 T3	1999 12 22.47868	02 13 46.23	+08 57 07.5		402
C/1999 T3	1999 12 22.47994	02 13 46.16	+08 57 07.9		402
C/1999 T3	1999 12 25.52904	02 12 33.39	+08 32 17.3	17.1 T	897
C/1999 T3	1999 12 25.54688	02 12 33.05	+08 32 07.9		897
C/1999 T3	2000 01 03.51458	02 09 42.23	+07 24 51.4	17.7 T	360
C/1999 T3	2000 01 03.51875	02 09 42.17	+07 24 49.7		360
C/1999 T3	2000 01 05.07463	02 09 19.14	+07 14 02.0	18.4 T	704
C/1999 T3	2000 01 05.09005	02 09 18.92	+07 13 55.5	18.4 T	704
C/1999 T3	2000 01 05.12025	02 09 18.45	+07 13 43.4	18.3 T	704
C/1999 T3	2000 01 05.13520	02 09 18.25	+07 13 37.9	18.0 T	704
C/1999 T3	2000 01 07.47610	02 08 47.17	+06 57 53.9	17.6 T	402
C/1999 T3	2000 01 07.47736	02 08 47.18	+06 57 53.1		402
C/1999 T3	2000 01 07.47863	02 08 47.11	+06 57 53.0		402
C/1999 T3	2000 01 08.08061	02 08 39.95	+06 53 56.3	18.5 T	704
C/1999 T3	2000 01 08.09584	02 08 39.65	+06 53 50.4	19.2 T	704
C/1999 T3	2000 01 08.11085	02 08 39.56	+06 53 43.9	18.7 T	704
C/1999 T3	2000 01 08.12592	02 08 39.40	+06 53 38.6	18.7 T	704
C/1999 T3	2000 01 08.14109	02 08 39.20	+06 53 31.9	19.0 T	704
C/1999 T3	2000 01 12.82184	02 07 52.51	+06 24 10.1	17.1 T	113
C/1999 T3	2000 01 12.85847	02 07 52.18	+06 23 56.0	17.2 T	113
C/1999 T3	2000 01 12.88242	02 07 52.05	+06 23 48.1	17.0 T	113

C/1999 U1 (Ferris)

C/1999 U1	1999 11 05.33151	04 21 46.10	+09 19 16.8	17.8 T	704
C/1999 U1	1999 11 05.34821	04 21 45.07	+09 19 19.8	18.0 T	704
C/1999 U1	1999 11 05.36488	04 21 44.04	+09 19 22.8	18.0 T	704
C/1999 U1	1999 11 05.38155	04 21 42.97	+09 19 25.6	17.9 T	704
C/1999 U1	1999 11 05.39825	04 21 41.93	+09 19 29.0	18.0 T	704
C/1999 U1	1999 11 12.33009	04 14 24.43	+09 42 06.6	17.5 T	699
C/1999 U1	1999 11 12.36067	04 14 22.47	+09 42 12.6		699
C/1999 U1	1999 11 12.39128	04 14 20.43	+09 42 18.7		699
C/1999 U1	1999 11 17.32210	04 09 01.47	+09 58 58.0	16.1 T	703
C/1999 U1	1999 11 17.33726	04 09 00.48	+09 59 01.5	16.4 T	703
C/1999 U1	1999 11 17.35193	04 08 59.58	+09 59 01.7	16.2 T	703
C/1999 U1	1999 11 17.36653	04 08 58.54	+09 59 06.5	16.4 T	703
C/1999 U1	1999 11 29.60640	03 55 44.63	+10 42 24.0	16.6 T	897
C/1999 U1	1999 11 29.62296	03 55 43.52	+10 42 28.1		897
C/1999 U1	1999 11 29.62649	03 55 43.34	+10 42 28.1	16.8 T	352
C/1999 U1	1999 11 29.62996	03 55 43.10	+10 42 30.0		352
C/1999 U1	1999 12 16.48552	03 38 46.32	+11 46 11.5	17.1 T	402
C/1999 U1	1999 12 16.48678	03 38 46.24	+11 46 12.1		402
C/1999 U1	1999 12 16.48806	03 38 46.14	+11 46 12.6		402
C/1999 U1	1999 12 25.58295	03 30 51.76	+12 22 23.9	17.4 T	897
C/1999 U1	1999 12 25.59400	03 30 51.23	+12 22 26.7		897
C/1999 U1	1999 12 26.50049	03 30 07.64	+12 26 06.3		355
C/1999 U1	1999 12 26.50466	03 30 07.41	+12 26 07.5		355
C/1999 U1	1999 12 27.56423	03 29 17.18	+12 30 26.8		900
C/1999 U1	1999 12 27.57226	03 29 16.77	+12 30 27.8		900

C/1999 U1	2000 01 04.55590	03 23 29.77	+13 03 27.6	17.4 T	360
C/1999 U1	2000 01 04.56007	03 23 29.59	+13 03 28.4		360
C/1999 U1	2000 01 05.14566	03 23 06.48	+13 05 54.9	18.7 T	704
C/1999 U1	2000 01 05.16023	03 23 05.84	+13 06 00.7	18.7 T	704
C/1999 U1	2000 01 05.17483	03 23 05.35	+13 06 03.9	19.0 T	704
C/1999 U1	2000 01 05.18935	03 23 04.77	+13 06 06.0	18.7 T	704
C/1999 U1	2000 01 05.20386	03 23 04.10	+13 06 10.3	18.4 T	704
C/1999 U1	2000 01 06.21105	03 22 25.00	+13 10 24.9	17.2 T	699
C/1999 U1	2000 01 06.24162	03 22 23.88	+13 10 31.3		699
C/1999 U1	2000 01 06.27219	03 22 22.66	+13 10 39.6		699
C/1999 U1	2000 01 07.15144	03 21 49.31	+13 14 21.9	18.8 T	704
C/1999 U1	2000 01 07.16667	03 21 48.82	+13 14 25.8	19.2 T	704
C/1999 U1	2000 01 07.18178	03 21 48.18	+13 14 31.2	18.9 T	704
C/1999 U1	2000 01 07.19692	03 21 47.60	+13 14 33.5	18.7 T	704
C/1999 U1	2000 01 07.21201	03 21 46.99	+13 14 36.3	18.8 T	704
C/1999 U1	2000 01 07.48244	03 21 36.92	+13 15 45.8	17.2 T	402
C/1999 U1	2000 01 07.48497	03 21 36.85	+13 15 47.0		402
C/1999 U1	2000 01 07.48749	03 21 36.70	+13 15 47.8		402
C/1999 U1	2000 01 22.43020	03 14 03.17	+14 20 31.9	17.5 T	402
C/1999 U1	2000 01 22.43249	03 14 02.93	+14 20 33.7		402
C/1999 U1	2000 01 22.43991	03 14 02.87	+14 20 34.8		402

P/1999 U3 (LINEAR)

P/1999 U3	1999 11 01.09093	03 27 00.96	+58 25 42.1		958
P/1999 U3	1999 11 01.10655	03 27 00.88	+58 25 46.5		958
P/1999 U3	1999 11 01.12791	03 27 00.32	+58 25 49.2		958
P/1999 U3	1999 11 03.89265	03 26 29.51	+58 34 53.3		958
P/1999 U3	1999 11 03.91145	03 26 29.26	+58 34 56.4		958
P/1999 U3	1999 11 03.93252	03 26 28.76	+58 35 01.0		958
P/1999 U3	1999 11 04.59355	03 26 19.12	+58 36 33.6	16.5 T	897
P/1999 U3	1999 11 04.62909	03 26 18.34	+58 36 38.0		897
P/1999 U3	1999 11 30.50197	03 17 51.29	+56 14 04.6	15.6 T	897
P/1999 U3	1999 11 30.50892	03 17 51.13	+56 13 59.5		897
P/1999 U3	1999 11 30.51587	03 17 51.07	+56 13 54.4		897
P/1999 U3	1999 12 07.66917	03 17 38.00	+54 31 16.1		349
P/1999 U3	1999 12 07.67255	03 17 38.14	+54 31 11.7		349
P/1999 U3	1999 12 07.67376	03 17 37.95	+54 31 10.0	16.3 T	349
P/1999 U3	1999 12 11.55689	03 18 20.10	+53 27 10.9		900
P/1999 U3	1999 12 11.55944	03 18 20.22	+53 27 07.5	15.1 T	900
P/1999 U3	1999 12 15.52326	03 19 40.88	+52 17 08.5	15.8 T	360
P/1999 U3	1999 12 15.52569	03 19 40.94	+52 17 05.6		360
P/1999 U3	1999 12 16.51796	03 20 07.08	+51 58 58.5	16.0 T	402
P/1999 U3	1999 12 16.52049	03 20 07.14	+51 58 55.6		402
P/1999 U3	1999 12 16.52312	03 20 07.16	+51 58 52.6		402
P/1999 U3	1999 12 17.21351	03 20 26.70	+51 46 08.6	16.8 T	704
P/1999 U3	1999 12 17.22811	03 20 27.11	+51 45 52.4	17.0 T	704
P/1999 U3	1999 12 17.24266	03 20 27.47	+51 45 35.8	17.4 T	704
P/1999 U3	1999 12 17.25725	03 20 27.82	+51 45 19.4	17.4 T	704
P/1999 U3	1999 12 17.27178	03 20 28.23	+51 45 03.5	17.3 T	704
P/1999 U3	1999 12 21.96627	03 23 12.48	+50 16 22.0		118
P/1999 U3	1999 12 21.97362	03 23 12.76	+50 16 12.8		118
P/1999 U3	1999 12 25.55715	03 25 52.48	+49 06 53.9		897
P/1999 U3	1999 12 25.57208	03 25 53.18	+49 06 36.1		897

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P/1999 U3	1999 12 26.56353	03 26 42.22	+48 47 14.6		355
P/1999 U3	1999 12 26.57203	03 26 42.66	+48 47 04.4		355
P/1999 U3	1999 12 27.56766	03 27 34.10	+48 27 37.2	14.6 T	402
P/1999 U3	1999 12 27.56892	03 27 34.17	+48 27 35.8		402
P/1999 U3	1999 12 27.57018	03 27 34.23	+48 27 34.0		402
P/1999 U3	1999 12 29.59939	03 29 25.10	+47 47 51.2	16.1 T	348
P/1999 U3	1999 12 29.60483	03 29 25.50	+47 47 44.2		348
P/1999 U3	2000 01 03.62088	03 34 34.80	+46 09 48.5	15.4 T	349
P/1999 U3	2000 01 03.62221	03 34 34.94	+46 09 47.4		349
P/1999 U3	2000 01 03.62372	03 34 34.93	+46 09 45.8		349
P/1999 U3	2000 01 03.89288	03 34 53.13	+46 04 32.4		587
P/1999 U3	2000 01 03.89635	03 34 53.34	+46 04 29.0	15.2 T	587
P/1999 U3	2000 01 04.53958	03 35 36.78	+45 52 03.9	15.1 T	360
P/1999 U3	2000 01 04.54201	03 35 36.90	+45 52 00.9		360
P/1999 U3	2000 01 04.57522	03 35 39.06	+45 51 21.6	15.2 T	402
P/1999 U3	2000 01 04.57774	03 35 39.21	+45 51 18.8		402
P/1999 U3	2000 01 04.58027	03 35 39.36	+45 51 15.4		402
P/1999 U3	2000 01 12.84161	03 45 58.26	+43 15 07.7	16.0 T	113
P/1999 U3	2000 01 12.86649	03 46 00.22	+43 14 39.4	15.8 T	113
P/1999 U3	2000 01 18.46111	03 53 55.60	+41 34 29.4	15.5 T	360
P/1999 U3	2000 01 18.46354	03 53 55.80	+41 34 26.7		360
P/1999 U3	2000 01 18.82706	03 54 28.04	+41 28 04.5		611
P/1999 U3	2000 01 18.83156	03 54 28.37	+41 27 59.4		611
P/1999 U3	2000 01 18.83438	03 54 28.64	+41 27 56.1		611
P/1999 U3	2000 01 21.12472	03 57 55.11	+40 48 39.0	17.0 T	704
P/1999 U3	2000 01 21.13949	03 57 56.45	+40 48 23.6	16.4 T	704
P/1999 U3	2000 01 21.16904	03 57 59.11	+40 47 52.3	16.1 T	704

C/1999 U4 (Catalina-Skiff)

C/1999 U4	1999 11 03.82956	02 06 52.45	+20 18 04.2		958
C/1999 U4	1999 11 03.87174	02 06 51.05	+20 18 03.9		958
C/1999 U4	1999 11 07.86355	02 04 42.76	+20 20 07.7		958
C/1999 U4	1999 11 07.88072	02 04 42.03	+20 20 10.5		958
C/1999 U4	1999 11 07.89456	02 04 41.68	+20 20 09.2		958
C/1999 U4	1999 11 27.86486	01 54 45.43	+20 28 00.4		958
C/1999 U4	1999 11 27.90292	01 54 44.28	+20 27 59.9		958
C/1999 U4	1999 11 28.51353	01 54 27.94	+20 28 15.5	17.0 T	897
C/1999 U4	1999 11 28.52049	01 54 27.87	+20 28 15.8		897
C/1999 U4	1999 11 28.52743	01 54 27.65	+20 28 15.1		897
C/1999 U4	1999 12 16.41880	01 47 49.14	+20 37 27.2	17.6 T	402
C/1999 U4	1999 12 16.42006	01 47 49.07	+20 37 28.0		402
C/1999 U4	1999 12 16.42258	01 47 49.08	+20 37 28.5		402
C/1999 U4	1999 12 22.46014	01 46 13.84	+20 42 15.5	17.6 T	402
C/1999 U4	1999 12 22.46140	01 46 13.86	+20 42 16.2		402
C/1999 U4	1999 12 22.46567	01 46 13.79	+20 42 15.2		402
C/1999 U4	1999 12 26.58711	01 45 21.29	+20 46 12.8	18.0 T	897
C/1999 U4	1999 12 26.62090	01 45 20.80	+20 46 16.0		897
C/1999 U4	1999 12 29.85814	01 44 47.10	+20 49 46.7		958
C/1999 U4	1999 12 29.90763	01 44 46.53	+20 49 51.6		958
C/1999 U4	2000 01 08.42442	01 43 45.63	+21 02 41.3	17.7 T	402
C/1999 U4	2000 01 08.42672	01 43 45.62	+21 02 41.8		402
C/1999 U4	2000 01 08.42903	01 43 45.55	+21 02 41.9		402

C/1999 U4	2000 01 12.81054	01 43 36.67	+21 09 55.4	17.0 T	113
C/1999 U4	2000 01 12.84670	01 43 36.66	+21 09 59.0	17.3 T	113

P/1999 V1 (Catalina)

P/1999 V1	1999 12 14.47628	10 02 05.39	+05 38 17.2	19.4 T	704
P/1999 V1	1999 12 14.49191	10 02 05.74	+05 38 08.5	19.5 T	704
P/1999 V1	1999 12 14.50764	10 02 05.90	+05 37 59.7	18.7 T	704
P/1999 V1	1999 12 16.45909	10 02 34.52	+05 22 20.7	17.6 T	699
P/1999 V1	1999 12 16.48455	10 02 35.00	+05 22 07.5		699
P/1999 V1	1999 12 16.51002	10 02 35.21	+05 21 56.9		699
P/1999 V1	1999 12 20.81293	10 03 20.77	+04 48 23.3		897
P/1999 V1	1999 12 20.81913	10 03 20.94	+04 48 20.7	17.4 T	897
P/1999 V1	1999 12 20.82648	10 03 20.86	+04 48 17.8		897
P/1999 V1	2000 01 01.69826	10 03 20.30	+03 24 17.0	18.0 T	372
P/1999 V1	2000 01 04.71712	10 02 50.51	+03 05 11.5	17.3 T	402
P/1999 V1	2000 01 04.72172	10 02 50.39	+03 05 10.1		402
P/1999 V1	2000 01 04.72633	10 02 50.38	+03 05 08.1		402
P/1999 V1	2000 01 04.72795	10 02 50.32	+03 05 07.7	17.6 T	360
P/1999 V1	2000 01 04.73333	10 02 50.26	+03 05 05.6		360
P/1999 V1	2000 01 04.73715	10 02 50.21	+03 05 04.2		360
P/1999 V1	2000 01 05.38945	10 02 42.19	+03 01 04.3	18.9 T	704
P/1999 V1	2000 01 05.40425	10 02 41.89	+03 00 59.4	18.7 T	704
P/1999 V1	2000 01 05.41958	10 02 41.75	+03 00 53.6	18.6 T	704
P/1999 V1	2000 01 05.43491	10 02 41.39	+03 00 48.6	18.6 T	704
P/1999 V1	2000 01 08.38134	10 01 58.41	+02 43 23.8	18.8 T	704
P/1999 V1	2000 01 08.39645	10 01 58.14	+02 43 18.8	19.3 T	704
P/1999 V1	2000 01 08.41209	10 01 57.79	+02 43 13.2	19.2 T	704
P/1999 V1	2000 01 08.42726	10 01 57.45	+02 43 07.4	19.5 T	704
P/1999 V1	2000 01 08.44236	10 01 57.17	+02 43 03.4	19.2 T	704
P/1999 V1	2000 01 18.72368	09 58 04.56	+01 50 35.8	18.7 T	402
P/1999 V1	2000 01 18.72598	09 58 04.50	+01 50 35.0		402
P/1999 V1	2000 01 18.72829	09 58 04.49	+01 50 34.1		402

P/1999 X1 (Hug-Bell)

P/1999 X1	1999 12 15.71007	08 22 49.46	+20 42 47.3	17.5 T	372
P/1999 X1	1999 12 15.75069	08 22 48.56	+20 43 03.4	18.7 T	360
P/1999 X1	1999 12 15.75486	08 22 48.47	+20 43 04.7		360
P/1999 X1	1999 12 15.75955	08 22 48.35	+20 43 06.4		360
P/1999 X1	1999 12 15.85019	08 22 45.78	+20 43 43.0	18.4 T	897
P/1999 X1	1999 12 15.85847	08 22 45.60	+20 43 46.3		897
P/1999 X1	1999 12 15.86412	08 22 45.33	+20 43 48.0		897
P/1999 X1	1999 12 17.17238	08 22 12.18	+20 52 47.9	18 T	046
P/1999 X1	1999 12 17.17480	08 22 11.99	+20 52 49.7		046
P/1999 X1	1999 12 17.18073	08 22 11.86	+20 52 50.5		046
P/1999 X1	1999 12 17.35093	08 22 07.67	+20 54 01.4	19.8 T	734
P/1999 X1	1999 12 17.35787	08 22 07.24	+20 54 06.2	19.8 T	734
P/1999 X1	1999 12 17.36942	08 22 07.07	+20 54 11.3	19.7 T	734
P/1999 X1	1999 12 17.40652	08 22 05.86	+20 54 26.5	19.7 T	734
P/1999 X1	1999 12 19.70151	08 20 59.13	+21 10 43.8		411
P/1999 X1	1999 12 19.72873	08 20 58.30	+21 10 57.0		411
P/1999 X1	1999 12 19.75072	08 20 57.50	+21 11 06.0		411
P/1999 X1	1999 12 26.18851	08 17 04.14	+21 58 59.2	18.5 T	734
P/1999 X1	1999 12 26.22383	08 17 02.57	+21 59 15.8	18.6 T	734
P/1999 X1	1999 12 26.32625	08 16 58.12	+22 00 07.0	18.7 T	734

P/1999 X1	1999 12 26.34546	08 16 57.32	+22 00 12.2	18.7 T	734
P/1999 X1	1999 12 29.66722	08 14 32.54	+22 25 54.4	18.3 T	402
P/1999 X1	1999 12 29.67183	08 14 32.33	+22 25 56.7		402
P/1999 X1	1999 12 29.68104	08 14 31.80	+22 26 01.9		402
P/1999 X1	1999 12 31.40309	08 13 10.99	+22 39 24.5	19.2 T	734
P/1999 X1	1999 12 31.41015	08 13 10.68	+22 39 28.4	18.9 T	734
P/1999 X1	2000 01 03.58289	08 10 34.01	+23 04 15.8	18.3 T	897
P/1999 X1	2000 01 03.59385	08 10 33.51	+23 04 18.4		897
P/1999 X1	2000 01 03.60295	08 10 33.06	+23 04 24.4		897
P/1999 X1	2000 01 03.67708	08 10 28.85	+23 05 00.2	17.8 T	372
P/1999 X1	2000 01 04.64618	08 09 39.44	+23 12 31.5	18.8 T	360
P/1999 X1	2000 01 04.64987	08 09 39.09	+23 12 33.8	18.2 T	897
P/1999 X1	2000 01 04.65139	08 09 39.14	+23 12 34.2		360
P/1999 X1	2000 01 04.65712	08 09 38.82	+23 12 36.3		360
P/1999 X1	2000 01 04.65715	08 09 38.83	+23 12 35.8	18.0 T	402
P/1999 X1	2000 01 04.65944	08 09 38.68	+23 12 37.1		402
P/1999 X1	2000 01 04.66083	08 09 38.51	+23 12 38.0		897
P/1999 X1	2000 01 04.66175	08 09 38.58	+23 12 37.8		402
P/1999 X1	2000 01 04.67228	08 09 37.92	+23 12 42.3		897
P/1999 X1	2000 01 05.94931	08 08 31.13	+23 22 36.9		587
P/1999 X1	2000 01 05.96211	08 08 30.44	+23 22 43.0		587
P/1999 X1	2000 01 06.02662	08 08 26.82	+23 23 12.6		587
P/1999 X1	2000 01 07.28236	08 07 19.92	+23 32 53.8	18.9 T	734
P/1999 X1	2000 01 07.28834	08 07 19.49	+23 32 58.8	18.8 T	734
P/1999 X1	2000 01 07.29398	08 07 19.32	+23 32 59.7	19.1 T	734
P/1999 X1	2000 01 07.30019	08 07 18.89	+23 33 02.6	18.8 T	734
P/1999 X1	2000 01 07.90741	08 06 46.37	+23 37 43.0		587
P/1999 X1	2000 01 07.98206	08 06 42.25	+23 38 16.5		587
P/1999 X1	2000 01 07.99294	08 06 41.63	+23 38 21.5	18.7 T	587
P/1999 X1	2000 01 11.46277	08 03 30.37	+24 04 37.0	19.7 T	695
P/1999 X1	2000 01 11.46678	08 03 30.17	+24 04 36.7	20.0 T	695
P/1999 X1	2000 01 11.47777	08 03 29.49	+24 04 44.2	20.1 T	695
P/1999 X1	2000 01 11.48341	08 03 29.17	+24 04 46.2	19.7 T	695
P/1999 X1	2000 01 16.47072	07 58 49.79	+24 40 54.4	18.9 T	734
P/1999 X1	2000 01 16.47943	07 58 49.12	+24 40 58.7	18.7 T	734

C/1999 XS₈₇ (LINEAR)

C/1999 XS ₈₇	1999 11 04.39752	06 46 03.08	+24 08 16.4	18.2 N	704
C/1999 XS ₈₇	1999 11 04.41377	06 46 03.31	+24 08 11.1	18.2 N	704
C/1999 XS ₈₇	1999 11 04.42993	06 46 03.52	+24 08 05.9	18.0 N	704
C/1999 XS ₈₇	1999 11 04.44652	06 46 03.81	+24 08 00.8	17.8 N	704
C/1999 XS ₈₇	1999 11 04.46266	06 46 03.99	+24 07 54.7	17.9 N	704
C/1999 XS ₈₇	1999 11 05.41708	06 46 16.96	+24 02 58.1	17.9 N	704
C/1999 XS ₈₇	1999 11 05.43348	06 46 17.13	+24 02 53.4	18.0 N	704
C/1999 XS ₈₇	1999 11 05.46614	06 46 17.53	+24 02 43.1	18.3 N	704
C/1999 XS ₈₇	1999 12 07.37830	06 40 43.95	+21 14 14.5	17.3 N	704
C/1999 XS ₈₇	1999 12 07.39301	06 40 43.52	+21 14 08.6	17.2 N	704
C/1999 XS ₈₇	1999 12 07.40772	06 40 43.02	+21 14 04.8	17.5 N	704
C/1999 XS ₈₇	1999 12 07.42241	06 40 42.49	+21 13 59.5	17.3 N	704
C/1999 XS ₈₇	1999 12 08.38020	06 40 13.32	+21 09 01.8	17.4 N	704
C/1999 XS ₈₇	1999 12 08.39272	06 40 12.87	+21 08 57.7	17.5 N	704
C/1999 XS ₈₇	1999 12 08.40525	06 40 12.49	+21 08 53.2	17.5 N	704
C/1999 XS ₈₇	1999 12 08.41782	06 40 12.08	+21 08 49.0	17.5 N	704

C/1999 XS ₈₇	1999 12 08.43034	06 40 11.66	+21 08 44.6	17.3 N	704
C/1999 XS ₈₇	2000 01 05.24126	06 23 23.67	+18 54 22.3	17.8 N	704
C/1999 XS ₈₇	2000 01 05.25588	06 23 23.19	+18 54 18.7	17.6 N	704
C/1999 XS ₈₇	2000 01 05.27047	06 23 22.66	+18 54 14.8	17.8 N	704
C/1999 XS ₈₇	2000 01 05.28513	06 23 22.18	+18 54 09.8	18.6 N	704
C/1999 XS ₈₇	2000 01 06.22168	06 22 49.68	+18 50 12.3	17.9 N	704
C/1999 XS ₈₇	2000 01 06.23658	06 22 49.12	+18 50 08.1	18.2 N	704
C/1999 XS ₈₇	2000 01 06.25114	06 22 48.52	+18 50 04.0	18.0 N	704
C/1999 XS ₈₇	2000 01 07.22128	06 22 15.59	+18 45 59.9	18.0 N	704
C/1999 XS ₈₇	2000 01 07.22138	06 22 15.56	+18 45 59.7	17.8 N	704
C/1999 XS ₈₇	2000 01 07.23596	06 22 14.94	+18 45 55.4	18.7 N	704
C/1999 XS ₈₇	2000 01 07.23607	06 22 15.03	+18 45 55.4	18.6 N	704
C/1999 XS ₈₇	2000 01 07.25075	06 22 14.46	+18 45 52.7	18.1 N	704
C/1999 XS ₈₇	2000 01 07.25086	06 22 14.46	+18 45 53.5	17.9 N	704
C/1999 XS ₈₇	2000 01 07.26546	06 22 13.92	+18 45 46.9	19.1 N	704
C/1999 XS ₈₇	2000 01 07.26557	06 22 13.97	+18 45 48.0	18.5 N	704
C/1999 XS ₈₇	2000 01 07.28014	06 22 13.38	+18 45 44.9	17.7 N	704
C/1999 XS ₈₇	2000 01 07.28024	06 22 13.35	+18 45 45.0	17.7 N	704
C/1999 XS ₈₇	2000 01 09.23295	06 21 08.71	+18 37 42.3	18.1 N	704
C/1999 XS ₈₇	2000 01 09.24813	06 21 08.15	+18 37 37.9	18.0 N	704
C/1999 XS ₈₇	2000 01 09.26315	06 21 07.60	+18 37 34.8	18.2 N	704
C/1999 XS ₈₇	2000 01 09.27814	06 21 07.12	+18 37 31.4	18.5 N	704
C/1999 XS ₈₇	2000 01 09.29312	06 21 06.43	+18 37 28.2	19.0 N	704
C/1999 XS ₈₇	2000 01 11.97845	06 19 42.07	+18 26 44.4		046
C/1999 XS ₈₇	2000 01 11.98148	06 19 41.92	+18 26 43.9		046
C/1999 XS ₈₇	2000 01 11.98493	06 19 41.80	+18 26 42.6	16.5 T	046
C/1999 XS ₈₇	2000 01 11.98766	06 19 41.76	+18 26 41.9		046
C/1999 XS ₈₇	2000 01 11.98934	06 19 41.70	+18 26 41.4		046
C/1999 XS ₈₇	2000 01 11.99145	06 19 41.61	+18 26 40.8		046
C/1999 XS ₈₇	2000 01 12.90534	06 19 14.29	+18 23 08.0	17.0 T	046
C/1999 XS ₈₇	2000 01 12.90720	06 19 14.25	+18 23 07.7		046
C/1999 XS ₈₇	2000 01 12.90934	06 19 14.19	+18 23 07.1		046
C/1999 XS ₈₇	2000 01 12.91110	06 19 14.11	+18 23 06.7		046
C/1999 XS ₈₇	2000 01 15.42831	06 18 02.53	+18 13 35.5	16.6 T	402
C/1999 XS ₈₇	2000 01 15.43083	06 18 02.43	+18 13 35.1		402
C/1999 XS ₈₇	2000 01 15.43336	06 18 02.36	+18 13 34.4		402
C/1999 XS ₈₇	2000 01 15.69435	06 17 55.05	+18 12 38.4	16.5 T	349
C/1999 XS ₈₇	2000 01 15.70991	06 17 54.53	+18 12 34.3		349
C/1999 XS ₈₇	2000 01 22.48196	06 15 13.80	+17 48 57.1	17.4 T	402
C/1999 XS ₈₇	2000 01 22.48322	06 15 13.68	+17 48 57.7		402
C/1999 XS ₈₇	2000 01 22.48448	06 15 13.74	+17 48 57.4		402

C/1999 Y1 (LINEAR)

C/1999 Y1	1999 12 20.22291	03 47 47.39	+73 27 48.0	17.5 N	704
C/1999 Y1	1999 12 20.23836	03 47 43.66	+73 27 40.6	17.8 N	704
C/1999 Y1	1999 12 20.25352	03 47 40.15	+73 27 32.7	18.2 N	704
C/1999 Y1	1999 12 20.26879	03 47 36.54	+73 27 23.7	18.0 N	704
C/1999 Y1	1999 12 20.28362	03 47 32.98	+73 27 16.3	17.7 N	704
C/1999 Y1	1999 12 21.61326	03 42 29.86	+73 14 02.4	16.9 T	900
C/1999 Y1	1999 12 21.62868	03 42 26.40	+73 13 52.1		900
C/1999 Y1	1999 12 21.73458	03 42 03.30	+73 12 45.9	16.2 T	046
C/1999 Y1	1999 12 21.73720	03 42 02.69	+73 12 45.0		046
C/1999 Y1	1999 12 21.74013	03 42 01.98	+73 12 42.8		046

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C/1999 Y1	1999 12 21.74228	03 42 01.45	+73 12 41.5		046
C/1999 Y1	1999 12 21.74421	03 42 01.08	+73 12 40.2		046
C/1999 Y1	1999 12 21.89279	03 41 27.79	+73 11 10.1	17.3 T	595
C/1999 Y1	1999 12 21.89556	03 41 27.17	+73 11 08.5		595
C/1999 Y1	1999 12 21.89836	03 41 26.54	+73 11 06.0		595
C/1999 Y1	1999 12 21.90110	03 41 25.88	+73 11 04.0		595
C/1999 Y1	1999 12 21.90669	03 41 24.46	+73 11 01.8		595
C/1999 Y1	1999 12 21.92890	03 41 19.69	+73 10 46.5	16 T	118
C/1999 Y1	1999 12 21.93315	03 41 18.65	+73 10 43.9		118
C/1999 Y1	1999 12 21.93670	03 41 17.98	+73 10 42.2		118
C/1999 Y1	1999 12 22.07917	03 40 46.25	+73 09 12.7		611
C/1999 Y1	1999 12 22.08472	03 40 44.91	+73 09 08.6		611
C/1999 Y1	1999 12 22.08854	03 40 44.26	+73 09 06.6		611
C/1999 Y1	1999 12 22.61043	03 38 49.35	+73 03 38.8	16.7 T	900
C/1999 Y1	1999 12 22.62322	03 38 46.59	+73 03 30.8		900
C/1999 Y1	1999 12 22.77468	03 38 13.93	+73 01 53.0	16.3 T	046
C/1999 Y1	1999 12 22.77704	03 38 13.49	+73 01 51.9		046
C/1999 Y1	1999 12 22.77970	03 38 12.91	+73 01 50.0		046
C/1999 Y1	1999 12 22.78196	03 38 12.39	+73 01 48.7		046
C/1999 Y1	1999 12 22.78486	03 38 11.73	+73 01 47.3		046
C/1999 Y1	1999 12 22.90942	03 37 44.44	+73 00 27.0		118
C/1999 Y1	1999 12 22.91279	03 37 43.69	+73 00 24.8		118
C/1999 Y1	1999 12 22.91667	03 37 42.82	+73 00 22.1	17 T	118
C/1999 Y1	1999 12 23.08554	03 37 06.89	+72 58 33.1	17.3 T	652
C/1999 Y1	1999 12 23.08898	03 37 06.27	+72 58 32.0	17.5 T	652
C/1999 Y1	1999 12 23.09013	03 37 05.89	+72 58 30.7	17.2 T	652
C/1999 Y1	1999 12 23.10015	03 37 04.34	+72 58 24.3	17.1 T	652
C/1999 Y1	1999 12 23.10832	03 37 02.31	+72 58 18.9	17.4 T	652
C/1999 Y1	1999 12 23.16926	03 36 48.52	+72 57 39.0	16.0 T	681
C/1999 Y1	1999 12 23.17574	03 36 47.17	+72 57 35.2	16.0 T	681
C/1999 Y1	1999 12 23.18345	03 36 45.55	+72 57 29.8	16.1 T	681
C/1999 Y1	1999 12 23.56068	03 35 24.58	+72 53 23.1		900
C/1999 Y1	1999 12 23.56972	03 35 22.68	+72 53 17.6	16.3 T	900
C/1999 Y1	1999 12 24.02914	03 33 45.84	+72 48 11.8	17.3 T	726
C/1999 Y1	1999 12 24.03609	03 33 44.53	+72 48 07.8	17.3 T	726
C/1999 Y1	1999 12 24.03956	03 33 43.86	+72 48 03.8	17.2 T	726
C/1999 Y1	1999 12 24.04303	03 33 42.90	+72 48 02.8	17.3 T	726
C/1999 Y1	1999 12 24.04649	03 33 42.16	+72 47 59.9	17.3 T	726
C/1999 Y1	1999 12 24.05564	03 33 40.55	+72 47 54.4	17.7 T	726
C/1999 Y1	1999 12 24.06258	03 33 38.87	+72 47 49.6	17.3 T	726
C/1999 Y1	1999 12 24.06550	03 33 38.35	+72 47 45.9	17.3 T	652
C/1999 Y1	1999 12 24.06719	03 33 38.08	+72 47 45.8	16.7 T	652
C/1999 Y1	1999 12 24.06865	03 33 37.51	+72 47 44.7	17.1 T	652
C/1999 Y1	1999 12 24.06952	03 33 37.32	+72 47 44.0	17.1 T	726
C/1999 Y1	1999 12 24.07646	03 33 35.87	+72 47 39.6	17.1 T	726
C/1999 Y1	1999 12 24.52323	03 32 02.33	+72 42 39.8	16.6 T	900
C/1999 Y1	1999 12 24.53604	03 31 59.64	+72 42 30.7		900
C/1999 Y1	1999 12 25.56219	03 28 30.20	+72 30 41.9	16.7 T	900
C/1999 Y1	1999 12 25.57330	03 28 28.20	+72 30 33.1		900
C/1999 Y1	1999 12 25.58578	03 28 25.43	+72 30 24.3		355
C/1999 Y1	1999 12 25.58917	03 28 24.72	+72 30 22.1		355
C/1999 Y1	1999 12 25.59262	03 28 24.08	+72 30 20.1		355
C/1999 Y1	1999 12 26.04153	03 26 54.82	+72 25 01.7	17.2 T	726

C/1999 Y1	1999 12 26.04500	03 26 54.12	+72 24 59.8	17.5 T	726
C/1999 Y1	1999 12 26.04847	03 26 53.44	+72 24 56.4	17.1 T	726
C/1999 Y1	1999 12 26.05194	03 26 52.67	+72 24 54.5	17.1 T	726
C/1999 Y1	1999 12 26.05542	03 26 52.11	+72 24 52.0	17.3 T	726
C/1999 Y1	1999 12 26.05888	03 26 51.22	+72 24 49.3	17.2 T	726
C/1999 Y1	1999 12 26.06513	03 26 50.03	+72 24 45.5	17.1 T	726
C/1999 Y1	1999 12 26.07207	03 26 48.66	+72 24 40.1	17.2 T	726
C/1999 Y1	1999 12 26.07902	03 26 47.28	+72 24 35.4	17.1 T	726
C/1999 Y1	1999 12 26.08596	03 26 45.98	+72 24 30.8	17.2 T	726
C/1999 Y1	1999 12 26.09291	03 26 44.59	+72 24 25.5	17.1 T	726
C/1999 Y1	1999 12 26.09985	03 26 43.30	+72 24 20.4	17.2 T	726
C/1999 Y1	1999 12 26.64057	03 24 56.76	+72 17 51.6	16.9 T	897
C/1999 Y1	1999 12 26.65447	03 24 53.97	+72 17 41.4		897
C/1999 Y1	1999 12 26.68563	03 24 47.91	+72 17 19.1		897
C/1999 Y1	1999 12 27.10696	03 23 26.97	+72 12 11.9	15.8 T	681
C/1999 Y1	1999 12 27.11695	03 23 25.02	+72 12 04.1	16.0 T	681
C/1999 Y1	1999 12 27.12616	03 23 23.21	+72 11 57.6	15.9 T	681
C/1999 Y1	1999 12 27.44236	03 22 22.94	+72 08 05.2	16.4 T	360
C/1999 Y1	1999 12 27.44479	03 22 22.46	+72 08 03.4		360
C/1999 Y1	1999 12 27.44526	03 22 22.37	+72 08 03.7		348
C/1999 Y1	1999 12 27.44722	03 22 21.95	+72 08 01.8		360
C/1999 Y1	1999 12 27.45990	03 22 19.48	+72 07 52.2		348
C/1999 Y1	1999 12 27.48854	03 22 14.19	+72 07 31.3	16.7 T	367
C/1999 Y1	1999 12 27.49167	03 22 13.57	+72 07 29.1		367
C/1999 Y1	1999 12 27.49479	03 22 12.92	+72 07 26.5		367
C/1999 Y1	1999 12 27.49792	03 22 12.31	+72 07 24.8		367
C/1999 Y1	1999 12 27.49813	03 22 12.31	+72 07 24.0	17.4 T	351
C/1999 Y1	1999 12 27.50444	03 22 11.05	+72 07 19.7		897
C/1999 Y1	1999 12 27.50521	03 22 10.81	+72 07 18.2		351
C/1999 Y1	1999 12 27.51275	03 22 09.48	+72 07 12.4		351
C/1999 Y1	1999 12 27.52141	03 22 07.71	+72 07 07.0		897
C/1999 Y1	1999 12 27.52164	03 22 07.70	+72 07 07.3	17.0 T	348
C/1999 Y1	1999 12 27.53148	03 22 05.83	+72 06 59.0	16.8 T	897
C/1999 Y1	1999 12 27.55125	03 22 02.08	+72 06 44.9	16.9 T	402
C/1999 Y1	1999 12 27.55251	03 22 01.78	+72 06 44.2		402
C/1999 Y1	1999 12 27.55377	03 22 01.57	+72 06 42.9		402
C/1999 Y1	1999 12 27.55503	03 22 01.36	+72 06 42.2		402
C/1999 Y1	1999 12 27.58050	03 21 56.64	+72 06 22.8		903
C/1999 Y1	1999 12 27.58581	03 21 55.87	+72 06 19.5	16.7 T	903
C/1999 Y1	1999 12 27.73663	03 21 26.85	+72 04 26.3		349
C/1999 Y1	1999 12 27.73985	03 21 26.23	+72 04 23.3	16.4 T	349
C/1999 Y1	1999 12 27.74323	03 21 25.73	+72 04 20.9		349
C/1999 Y1	1999 12 27.79197	03 21 16.81	+72 03 45.3	2 557	
C/1999 Y1	1999 12 27.79432	03 21 16.35	+72 03 43.5		557
C/1999 Y1	1999 12 27.79897	03 21 15.55	+72 03 40.2	2 557	
C/1999 Y1	1999 12 27.80130	03 21 15.10	+72 03 38.3		557
C/1999 Y1	1999 12 27.80362	03 21 14.61	+72 03 36.4		557
C/1999 Y1	1999 12 28.14991	03 20 09.79	+71 59 17.9	17.6 T	704
C/1999 Y1	1999 12 28.16636	03 20 07.09	+71 59 05.8	17.5 T	704
C/1999 Y1	1999 12 28.18297	03 20 03.87	+71 58 52.8	18.3 T	704
C/1999 Y1	1999 12 28.20039	03 20 00.41	+71 58 39.9	17.7 T	704
C/1999 Y1	1999 12 28.21583	03 19 57.46	+71 58 28.4	17.7 T	704
C/1999 Y1	1999 12 29.45035	03 16 13.60	+71 42 43.0	16.9 T	372

C/1999 Y1	1999 12 29.58601	03 15 49.26	+71 40 57.6	16.9 T	402
C/1999 Y1	1999 12 29.58727	03 15 49.04	+71 40 56.4		402
C/1999 Y1	1999 12 29.58853	03 15 48.85	+71 40 55.6		402
C/1999 Y1	1999 12 29.66900	03 15 34.61	+71 39 52.8	16.4 T	349
C/1999 Y1	1999 12 29.67330	03 15 33.76	+71 39 49.0		349
C/1999 Y1	1999 12 29.68463	03 15 31.58	+71 39 40.0		349
C/1999 Y1	1999 12 30.52031	03 13 06.51	+71 28 43.9	16.7 T	351
C/1999 Y1	1999 12 30.52869	03 13 05.38	+71 28 38.6		351
C/1999 Y1	1999 12 30.53568	03 13 03.28	+71 28 30.5		351
C/1999 Y1	1999 12 30.60803	03 12 51.25	+71 27 34.6	16.7 T	900
C/1999 Y1	1999 12 30.62068	03 12 49.11	+71 27 24.1		900
C/1999 Y1	1999 12 31.46617	03 10 26.90	+71 16 06.3	16.6 T	897
C/1999 Y1	1999 12 31.48066	03 10 24.47	+71 15 54.9		897
C/1999 Y1	2000 01 01.61563	03 07 19.43	+71 00 27.1	16.7 T	372
C/1999 Y1	2000 01 03.09149	03 03 31.03	+70 39 55.6	15.9 N	681
C/1999 Y1	2000 01 03.13403	03 03 24.55	+70 39 19.7	16.1 N	681
C/1999 Y1	2000 01 03.53438	03 02 24.44	+70 33 40.4	16.3 T	360
C/1999 Y1	2000 01 03.53698	03 02 24.10	+70 33 38.1		360
C/1999 Y1	2000 01 03.54540	03 02 22.83	+70 33 31.2	16.6 T	900
C/1999 Y1	2000 01 03.54787	03 02 22.46	+70 33 28.9	16.4 T	355
C/1999 Y1	2000 01 03.55128	03 02 22.02	+70 33 26.0		355
C/1999 Y1	2000 01 03.55478	03 02 21.50	+70 33 23.1		355
C/1999 Y1	2000 01 03.55521	03 02 21.41	+70 33 22.8	16.8 T	367
C/1999 Y1	2000 01 03.55764	03 02 21.03	+70 33 21.0		367
C/1999 Y1	2000 01 03.55808	03 02 20.89	+70 33 20.5		900
C/1999 Y1	2000 01 03.56007	03 02 20.58	+70 33 18.5		367
C/1999 Y1	2000 01 03.64670	03 02 07.91	+70 32 03.9		349
C/1999 Y1	2000 01 03.65101	03 02 07.15	+70 32 00.1	16.5 T	349
C/1999 Y1	2000 01 03.65241	03 02 06.74	+70 32 00.2		349
C/1999 Y1	2000 01 04.58350	02 59 51.80	+70 18 41.9	16.6 T	402
C/1999 Y1	2000 01 04.58475	02 59 51.58	+70 18 40.9		402
C/1999 Y1	2000 01 04.58601	02 59 51.47	+70 18 40.0		402
C/1999 Y1	2000 01 05.87154	02 56 52.79	+70 00 02.9		118
C/1999 Y1	2000 01 05.87730	02 56 52.01	+69 59 57.7	15.8 T	118
C/1999 Y1	2000 01 07.14422	02 54 04.56	+69 41 18.3		046
C/1999 Y1	2000 01 07.14595	02 54 04.35	+69 41 17.1		046
C/1999 Y1	2000 01 07.14696	02 54 04.19	+69 41 15.6		046
C/1999 Y1	2000 01 07.14794	02 54 04.07	+69 41 15.0		046
C/1999 Y1	2000 01 07.39656	02 53 32.43	+69 37 36.5		348
C/1999 Y1	2000 01 07.40679	02 53 31.21	+69 37 28.2	16.2 T	348
C/1999 Y1	2000 01 07.46800	02 53 23.26	+69 36 32.8	16.7 T	402
C/1999 Y1	2000 01 07.46926	02 53 23.08	+69 36 31.5		402
C/1999 Y1	2000 01 07.47052	02 53 22.90	+69 36 30.2		402
C/1999 Y1	2000 01 08.45845	02 51 19.84	+69 21 46.0	16.5 T	349
C/1999 Y1	2000 01 08.46071	02 51 19.48	+69 21 45.0		349
C/1999 Y1	2000 01 08.46796	02 51 18.51	+69 21 38.5		349
C/1999 Y1	2000 01 08.52589	02 51 12.09	+69 20 46.8	16.6 T	351
C/1999 Y1	2000 01 08.53172	02 51 10.77	+69 20 40.1		351
C/1999 Y1	2000 01 08.53772	02 51 10.52	+69 20 35.4		351
C/1999 Y1	2000 01 08.58176	02 51 04.84	+69 19 56.7	16.5 T	903
C/1999 Y1	2000 01 08.58653	02 51 04.21	+69 19 52.1		903
C/1999 Y1	2000 01 08.60508	02 51 02.03	+69 19 33.6		903
C/1999 Y1	2000 01 15.41726	02 39 07.96	+67 35 07.9	17.2 T	402

C/1999 Y1	2000 01 15.41978	02 39 07.75	+67 35 05.1		402
C/1999 Y1	2000 01 15.42230	02 39 07.55	+67 35 03.0		402
C/1999 Y1	2000 01 16.80008	02 37 08.31	+67 13 34.0		118
C/1999 Y1	2000 01 16.80173	02 37 08.22	+67 13 32.3	15.8 T	118
C/1999 Y1	2000 01 16.80274	02 37 08.07	+67 13 31.4		118
C/1999 Y1	2000 01 18.44063	02 34 56.53	+66 47 55.1	16.3 T	360
C/1999 Y1	2000 01 18.44306	02 34 56.35	+66 47 52.9		360
C/1999 Y1	2000 01 18.55509	02 34 47.60	+66 46 07.1	16.5 T	900
C/1999 Y1	2000 01 18.56782	02 34 46.59	+66 45 55.5		900
C/1999 Y1	2000 01 18.59188	02 34 44.68	+66 45 32.0		903
C/1999 Y1	2000 01 18.59525	02 34 44.41	+66 45 29.5	16.5 T	903
C/1999 Y1	2000 01 18.59860	02 34 44.21	+66 45 24.1		903
C/1999 Y1	2000 01 19.11562	02 34 05.27	+66 37 21.4		750
C/1999 Y1	2000 01 19.12167	02 34 04.76	+66 37 12.9		750
C/1999 Y1	2000 01 19.13922	02 34 03.53	+66 36 59.1	16.7 T	750
C/1999 Y1	2000 01 19.14611	02 34 02.89	+66 36 51.9		750
C/1999 Y1	2000 01 19.15504	02 34 02.32	+66 36 43.2		750
C/1999 Y1	2000 01 22.39844	02 30 20.73	+65 45 59.8	17.0 T	402
C/1999 Y1	2000 01 22.39970	02 30 20.63	+65 45 58.7		402
C/1999 Y1	2000 01 22.40096	02 30 20.63	+65 45 56.6		402

C/1999 Y2 (SOHO)

C/1999 Y2	1999 12 28.27923	18 28 15.1	-26 09 36		249
Geocentric position (AU)	-0.00340535	-0.00871093	-0.00385929		
C/1999 Y2	1999 12 28.32090	18 27 43.7	-25 59 07		249
Geocentric position (AU)	-0.00339810	-0.00871203	-0.00385843		
C/1999 Y2	1999 12 28.34590	18 27 23.4	-25 52 54		249
Geocentric position (AU)	-0.00339374	-0.00871268	-0.00385792		
C/1999 Y2	1999 12 28.36256	18 27 12.1	-25 48 39		249
Geocentric position (AU)	-0.00339084	-0.00871312	-0.00385758		
C/1999 Y2	1999 12 28.38756	18 26 51.4	-25 42 31		249
Geocentric position (AU)	-0.00338647	-0.00871377	-0.00385706		
C/1999 Y2	1999 12 28.40425	18 26 41.4	-25 37 35		249
Geocentric position (AU)	-0.00338356	-0.00871421	-0.00385672		
C/1999 Y2	1999 12 28.44590	18 26 06.7	-25 26 25		249
Geocentric position (AU)	-0.00337628	-0.00871529	-0.00385586		
C/1999 Y2	1999 12 28.47090	18 25 48.3	-25 19 14		249
Geocentric position (AU)	-0.00337190	-0.00871594	-0.00385534		
C/1999 Y2	1999 12 28.48757	18 25 38.5	-25 15 13		249
Geocentric position (AU)	-0.00336898	-0.00871637	-0.00385499		
C/1999 Y2	1999 12 28.52923	18 25 05.2	-25 02 39		249
Geocentric position (AU)	-0.00336167	-0.00871744	-0.00385413		
C/1999 Y2	1999 12 28.57090	18 24 37.2	-24 51 02		249
Geocentric position (AU)	-0.00335436	-0.00871851	-0.00385326		
C/1999 Y2	1999 12 28.58756	18 24 23.7	-24 45 30		249
Geocentric position (AU)	-0.00335142	-0.00871894	-0.00385291		
C/1999 Y2	1999 12 28.60424	18 24 11.6	-24 40 54		249
Geocentric position (AU)	-0.00334848	-0.00871937	-0.00385257		
C/1999 Y2	1999 12 28.61256	18 24 08.5	-24 37 46		249
Geocentric position (AU)	-0.00334703	-0.00871958	-0.00385239		
C/1999 Y2	1999 12 28.62090	18 24 05.5	-24 35 24		249
Geocentric position (AU)	-0.00334555	-0.00871979	-0.00385222		

C/1999 Y2	1999 12 28.62925	18 23 56.7	-24 32 44	249
Geocentric position (AU)	-0.00334408	-0.00872001	-0.00385205	
C/1999 Y2	1999 12 28.66258	18 23 38.5	-24 22 19	249
Geocentric position (AU)	-0.00333820	-0.00872085	-0.00385135	
C/1999 Y2	1999 12 28.68757	18 23 27.3	-24 14 07	249
Geocentric position (AU)	-0.00333380	-0.00872149	-0.00385083	
C/1999 Y2	1999 12 28.71257	18 23 09.3	-24 06 08	249
Geocentric position (AU)	-0.00332938	-0.00872212	-0.00385030	
C/1999 Y2	1999 12 28.72924	18 22 59.4	-24 01 05	249
Geocentric position (AU)	-0.00332643	-0.00872254	-0.00384995	
C/1999 Y2	1999 12 28.74795	18 22 49.8	-23 54 04	249
Geocentric position (AU)	-0.00332312	-0.00872302	-0.00384956	
C/1999 Y2	1999 12 28.77144	18 22 42.2	-23 46 23	249
Geocentric position (AU)	-0.00331896	-0.00872361	-0.00384907	
C/1999 Y2	1999 12 28.78756	18 22 31.3	-23 40 17	249
Geocentric position (AU)	-0.00331611	-0.00872401	-0.00384873	

C/2000 A1 (Montani)

C/2000 A1	2000 01 04.30049	08 04 13.11	+22 58 39.9	19.1 N	704
C/2000 A1	2000 01 04.31506	08 04 12.87	+22 58 42.2	19.4 N	704
C/2000 A1	2000 01 04.32961	08 04 12.68	+22 58 44.4	19.5 N	704
C/2000 A1	2000 01 04.35887	08 04 12.15	+22 58 47.9	19.7 N	704
C/2000 A1	2000 01 05.36809	08 03 56.93	+23 00 53.9	20.5 N	691
C/2000 A1	2000 01 05.39108	08 03 56.60	+23 00 57.1	20.2 N	691
C/2000 A1	2000 01 05.41418	08 03 56.23	+23 01 01.0	20.6 N	691
C/2000 A1	2000 01 12.32564	08 02 08.15	+23 15 21.2	18.9 T	691
C/2000 A1	2000 01 12.33195	08 02 08.07	+23 15 21.9	19.6 T	691
C/2000 A1	2000 01 12.33793	08 02 07.94	+23 15 22.7	18.9 T	691
C/2000 A1	2000 01 13.00740	08 01 57.24	+23 16 46.7	18.3 T	046
C/2000 A1	2000 01 13.00917	08 01 57.20	+23 16 46.3		046
C/2000 A1	2000 01 13.01324	08 01 57.14	+23 16 47.3		046
C/2000 A1	2000 01 13.01456	08 01 57.11	+23 16 47.8		046
C/2000 A1	2000 01 13.01596	08 01 57.08	+23 16 47.8		046
C/2000 A1	2000 01 13.03596	08 01 56.75	+23 16 50.7		046
C/2000 A1	2000 01 13.03808	08 01 56.72	+23 16 50.3	18.2 T	046
C/2000 A1	2000 01 13.32826	08 01 52.07	+23 17 26.9	20.1 N	691
C/2000 A1	2000 01 13.33436	08 01 51.97	+23 17 28.0	19.8 N	691
C/2000 A1	2000 01 13.34087	08 01 51.88	+23 17 28.2	20.1 N	691
C/2000 A1	2000 01 13.42702	08 01 50.42	+23 17 39.1	19.7 N	691
C/2000 A1	2000 01 13.43298	08 01 50.35	+23 17 39.5	20.0 N	691
C/2000 A1	2000 01 13.43894	08 01 50.33	+23 17 41.2	19.5 N	691
C/2000 A1	2000 01 14.01993	08 01 40.93	+23 18 51.2	18.1 N	046
C/2000 A1	2000 01 14.02233	08 01 40.92	+23 18 52.1		046
C/2000 A1	2000 01 14.02404	08 01 40.90	+23 18 52.6		046
C/2000 A1	2000 01 14.02694	08 01 40.88	+23 18 53.0		046
C/2000 A1	2000 01 14.02866	08 01 40.83	+23 18 53.1		046
C/2000 A1	2000 01 14.03031	08 01 40.78	+23 18 53.0		046
C/2000 A1	2000 01 14.26556	08 01 36.98	+23 19 22.6	19.5 N	691
C/2000 A1	2000 01 14.27382	08 01 36.86	+23 19 23.4	20.0 N	691
C/2000 A1	2000 01 14.28153	08 01 36.74	+23 19 24.0	20.4 N	691
C/2000 A1	2000 01 14.99777	08 01 25.13	+23 20 53.4	19.1 T	595
C/2000 A1	2000 01 15.02052	08 01 24.73	+23 20 56.3		595
C/2000 A1	2000 01 15.03905	08 01 24.51	+23 20 57.2		595

C/2000 A1	2000 01 15.24087	08 01 21.33	+23 21 23.8	20.2 T	691
C/2000 A1	2000 01 15.24795	08 01 21.22	+23 21 25.1	19.6 T	691
C/2000 A1	2000 01 15.25445	08 01 21.02	+23 21 25.8	19.6 T	691
C/2000 A1	2000 01 15.26041	08 01 20.91	+23 21 26.1	19.8 T	691
C/2000 A1	2000 01 18.59867	08 00 26.77	+23 28 15.0	18.5 T	402
C/2000 A1	2000 01 18.61020	08 00 26.57	+23 28 17.2		402
C/2000 A1	2000 01 18.65359	08 00 25.83	+23 28 23.4		402

C/2000 B1 (SOHO)

C/2000 B1	2000 01 24.38756	20 52 13.8	-22 29 38		249
Geocentric position (AU)	+0.00282182	-0.00764708	-0.00265045		
C/2000 B1	2000 01 24.40423	20 52 06.9	-22 27 22		249
Geocentric position (AU)	+0.00282610	-0.00764516	-0.00264931		
C/2000 B1	2000 01 24.42923	20 51 55.0	-22 24 16		249
Geocentric position (AU)	+0.00283253	-0.00764228	-0.00264760		
C/2000 B1	2000 01 24.44590	20 51 47.6	-22 21 49		249
Geocentric position (AU)	+0.00283682	-0.00764036	-0.00264646		
C/2000 B1	2000 01 24.47090	20 51 34.5	-22 18 26		249
Geocentric position (AU)	+0.00284325	-0.00763747	-0.00264475		
C/2000 B1	2000 01 24.48756	20 51 26.3	-22 16 33		249
Geocentric position (AU)	+0.00284753	-0.00763554	-0.00264360		
C/2000 B1	2000 01 24.51256	20 51 13.4	-22 12 47		249
Geocentric position (AU)	+0.00285396	-0.00763265	-0.00264189		
C/2000 B1	2000 01 24.52923	20 51 05.0	-22 10 42		249
Geocentric position (AU)	+0.00285884	-0.00763189	-0.00264123		
C/2000 B1	2000 01 24.57091	20 50 44.1	-22 05 14		249
Geocentric position (AU)	+0.00286957	-0.00762706	-0.00263837		
C/2000 B1	2000 01 24.61256	20 50 24.4	-21 59 45		249
Geocentric position (AU)	+0.00288029	-0.00762221	-0.00263550		
C/2000 B1	2000 01 24.63756	20 50 09.7	-21 56 48		249
Geocentric position (AU)	+0.00288673	-0.00761930	-0.00263379		
C/2000 B1	2000 01 24.65423	20 49 59.3	-21 54 33		249
Geocentric position (AU)	+0.00289102	-0.00761736	-0.00263264		
C/2000 B1	2000 01 24.67923	20 49 48.8	-21 50 40		249
Geocentric position (AU)	+0.00289745	-0.00761444	-0.00263092		
C/2000 B1	2000 01 24.69590	20 49 39.3	-21 48 25		249
Geocentric position (AU)	+0.00290175	-0.00761249	-0.00262977		
C/2000 B1	2000 01 24.72090	20 49 26.0	-21 44 49		249
Geocentric position (AU)	+0.00290818	-0.00760956	-0.00262804		
C/2000 B1	2000 01 24.73757	20 49 17.3	-21 42 35		249
Geocentric position (AU)	+0.00291248	-0.00760760	-0.00262689		
C/2000 B1	2000 01 24.76256	20 49 02.7	-21 39 08		249
Geocentric position (AU)	+0.00291831	-0.00760347	-0.00262467		
C/2000 B1	2000 01 24.77923	20 48 54.3	-21 36 48		249
Geocentric position (AU)	+0.00292260	-0.00760150	-0.00262352		
C/2000 B1	2000 01 24.82091	20 48 31.0	-21 31 04		249
Geocentric position (AU)	+0.00293333	-0.00759659	-0.00262064		
C/2000 B1	2000 01 24.84590	20 48 17.2	-21 28 11		249
Geocentric position (AU)	+0.00294038	-0.00759485	-0.00261941		

4P/Faye

4P	1999 09 19.80455	08 45 17.62	+10 39 34.2	349
4P	1999 09 19.80900	08 45 18.12	+10 39 31.0	349
4P	1999 09 19.81009	08 45 18.17	+10 39 29.9	349

P	1999	10	20.80336	09	34	53.75	+06	01	00.5		349
P	1999	10	20.80563	09	34	53.78	+06	01	01.3		349
P	1999	11	04.83315	09	53	24.29	+03	54	57.4	14.7 T	897
P	1999	11	04.83683	09	53	24.48	+03	54	55.8		897
P	1999	11	09.42444	09	58	15.10	+03	19	05.0	15.5 T	703
P	1999	11	09.43665	09	58	15.97	+03	18	58.9	15.5 T	703
P	1999	11	09.44889	09	58	16.80	+03	18	53.1	15.7 T	703
P	1999	11	09.46110	09	58	17.61	+03	18	46.8	15.7 T	703
P	1999	12	03.82417	10	16	52.94	+00	39	28.7	16.0 T	897
P	1999	12	03.82727	10	16	52.95	+00	39	27.2		897
P	1999	12	14.44729	10	20	47.12	−00	07	58.0	18.7 T	704
P	1999	12	14.46261	10	20	47.42	−00	08	02.9	18.7 T	704
P	1999	12	14.47796	10	20	47.54	−00	08	07.8	19.1 T	704
P	1999	12	14.49349	10	20	47.86	−00	08	09.8	19.0 T	704
P	1999	12	14.50928	10	20	48.07	−00	08	15.9	18.1 T	704
P	1999	12	29.75531	10	21	25.27	−00	45	05.8	16.9 T	402
P	1999	12	29.75910	10	21	25.38	−00	45	05.6		402
P	1999	12	31.85502	10	21	02.49	−00	46	56.4		897
P	1999	12	31.85781	10	21	02.41	−00	46	56.1	17.2 T	897
P	2000	01	09.39270	10	18	21.77	−00	45	47.8	18.0 T	704
P	2000	01	09.40753	10	18	21.25	−00	45	45.7	18.0 T	704
P	2000	01	09.43725	10	18	20.41	−00	45	44.1	18.6 T	704
P	2000	01	11.38596	10	17	29.10	−00	43	27.1	18.0 T	704
P	2000	01	11.40133	10	17	28.62	−00	43	27.4	18.6 T	704
P	2000	01	11.41657	10	17	28.08	−00	43	25.2	19.3 T	704
P	2000	01	11.43179	10	17	27.69	−00	43	24.6	19.2 T	704

10P	1999 07 31.48088	17 04 38.90	-17 50 19.2	13.8 T	897
10P	1999 07 31.48817	17 04 39.17	-17 50 27.8		897
10P	1999 09 11.94846	18 19 34.26	-29 33 32.0		834
10P	1999 09 21.05643	18 45 17.82	-30 51 16.1		834
10P	1999 09 21.08050	18 45 22.00	-30 51 25.4		834
10P	1999 09 22.04079	18 48 12.70	-30 57 37.1		834
10P	1999 09 22.06849	18 48 17.56	-30 57 46.1		834
10P	1999 09 30.01973	19 12 31.39	-31 33 38.4		834
10P	1999 10 03.99786	19 25 00.19	-31 41 18.3		834
10P	1999 10 04.02314	19 25 04.84	-31 41 20.3		834
10P	1999 10 15.98303	20 03 16.80	-31 24 01.5		834
10P	1999 10 16.02036	20 03 23.93	-31 23 53.5		834
10P	1999 10 20.02617	20 16 12.92	-31 05 14.5		834
10P	1999 10 20.06090	20 16 19.56	-31 05 03.7		834
10P	1999 10 21.43767	20 20 43.01	-30 57 21.3		897
10P	1999 10 21.44114	20 20 43.67	-30 57 20.1		897
10P	1999 10 27.03990	20 38 26.34	-30 18 36.7		834
10P	1999 10 27.07632	20 38 33.24	-30 18 18.2		834
10P	1999 10 27.99846	20 41 26.74	-30 10 55.6		834
10P	1999 10 28.06307	20 41 38.76	-30 10 24.0		834
10P	1999 11 13.38784	21 31 07.96	-27 18 57.4	12.1 T	897
10P	1999 11 13.39915	21 31 09.89	-27 18 48.7		897
10P	1999 11 17.01075	21 41 36.94	-26 32 03.8		834
10P	1999 11 17.04250	21 41 42.23	-26 31 39.7		834
10P	1999 11 22.00814	21 55 44.72	-25 23 31.5		834

10P	1999 11 28.42983	22 13 20.31	-23 49 51.9	13.3 T	897
10P	1999 12 11.39905	22 47 00.86	-20 26 33.3	14.6 T	900
10P	1999 12 11.41046	22 47 02.46	-20 26 23.2		900
10P	1999 12 23.39050	23 16 08.88	-17 09 21.6		349
10P	1999 12 23.39726	23 16 09.81	-17 09 15.6	15.4 T	349
10P	1999 12 24.37653	23 18 27.95	-16 52 57.2	14.4 T	897
10P	1999 12 24.39043	23 18 29.91	-16 52 44.6		897
10P	1999 12 24.41474	23 18 33.19	-16 52 19.0	14.6 T	900
10P	1999 12 24.42351	23 18 34.31	-16 52 10.6		900
10P	1999 12 27.43003	23 25 34.34	-16 02 10.6	13.6 T	360
10P	1999 12 27.43247	23 25 34.69	-16 02 08.1		360
10P	1999 12 27.45856	23 25 38.11	-16 01 42.8	16.2 T	351
10P	1999 12 27.46463	23 25 38.80	-16 01 33.2		351
10P	1999 12 27.47836	23 25 41.06	-16 01 17.2		351
10P	2000 01 03.73895	23 42 11.23	-14 00 39.3		587
10P	2000 01 03.76597	23 42 14.74	-14 00 11.0		587
10P	2000 01 03.77257	23 42 15.64	-14 00 04.3		587

37P	1999 09 04.71976	00 34 11.18	+09 26 37.4	14.4	T	897
37P	1999 09 04.72924	00 34 10.60	+09 26 37.4			897
37P	1999 10 10.51125	23 58 07.51	+08 02 30.4	16.4	T	897
37P	1999 10 10.55038	23 58 05.63	+08 02 23.4			897
37P	1999 11 04.45817	23 48 19.04	+07 00 11.3	17.2	T	897
37P	1999 11 28.50010	23 55 10.68	+07 13 20.2	17.4	T	897

50P	1999 10 08.65288	07 17 23.29	+44 15 22.7	15.9	T	897
50P	1999 10 08.66121	07 17 24.49	+44 15 25.3			897
50P	1999 11 09.77914	08 09 42.06	+47 22 46.0	16.7	T	897
50P	1999 11 09.78943	08 09 42.46	+47 22 48.5			897
50P	1999 12 02.66696	08 20 25.31	+49 50 57.6	16.7	T	897
50P	1999 12 02.67707	08 20 25.22	+49 51 01.2			897
50P	1999 12 17.36317	08 12 54.07	+51 10 03.4	17.7	T	704
50P	1999 12 17.37791	08 12 53.22	+51 10 07.5	18.3	T	704
50P	1999 12 17.39278	08 12 52.26	+51 10 10.7	18.4	T	704
50P	1999 12 17.40751	08 12 51.50	+51 10 14.1	18.6	T	704
50P	1999 12 17.42230	08 12 50.55	+51 10 18.7	18.2	T	704
50P	1999 12 23.68374	08 06 32.58	+51 30 47.4			900
50P	1999 12 23.69687	08 06 31.29	+51 30 48.6			900
50P	1999 12 25.61417	08 04 18.56	+51 34 52.7	16.3	T	900
50P	1999 12 25.62434	08 04 17.72	+51 34 53.6			900
50P	1999 12 27.57735	08 01 54.86	+51 37 51.2	16.4	T	897
50P	1999 12 27.64078	08 01 49.84	+51 37 56.3			897
50P	2000 01 04.56319	07 51 17.30	+51 36 19.1	16.4	T	367
50P	2000 01 04.56632	07 51 17.00	+51 36 19.3			367
50P	2000 01 04.56944	07 51 16.79	+51 36 19.4			367
50P	2000 01 04.97718	07 50 42.50	+51 35 36.7	17.1	T	610
50P	2000 01 04.98134	07 50 42.14	+51 35 36.4	17.2	T	610
50P	2000 01 04.98551	07 50 41.79	+51 35 36.1	17.1	T	610
50P	2000 01 04.98968	07 50 41.44	+51 35 35.8	16.9	T	610
50P	2000 01 04.99384	07 50 41.08	+51 35 35.5	16.8	T	610
50P	2000 01 18.88843	07 31 49.66	+50 35 42.7			611

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M.P.C. 37401

59P/Kearns-Kwee						
59P	1999 10 11.82604	07 51 15.84	+27 54 08.1	17.3 T	897	
59P	1999 10 11.82845	07 51 16.09	+27 54 05.5		897	
59P	1999 11 05.79345	08 23 13.67	+26 07 02.6	15.6 T	897	
59P	1999 11 05.80949	08 23 14.47	+26 06 58.1		897	
59P	1999 12 02.68236	08 39 50.07	+24 34 08.9	16.4 T	897	
59P	1999 12 02.69293	08 39 50.19	+24 34 07.3		897	
59P	1999 12 15.40827	08 39 54.20	+24 04 52.3	18.4 T	704	
59P	1999 12 15.43873	08 39 53.66	+24 04 45.6	19.6 T	704	
59P	1999 12 15.46888	08 39 53.14	+24 04 40.4	19.9 T	704	
59P	1999 12 21.70203	08 38 03.10	+23 53 27.7	15.8 T	900	
59P	1999 12 21.71477	08 38 02.84	+23 53 25.2		900	
59P	1999 12 22.71175	08 37 38.87	+23 51 45.8		900	
59P	1999 12 22.72379	08 37 38.46	+23 51 44.1		900	
59P	1999 12 27.72617	08 35 13.16	+23 43 48.0	15.7 T	900	
59P	1999 12 27.73882	08 35 12.70	+23 43 47.1		900	
59P	1999 12 29.69299	08 34 05.40	+23 40 49.2	15.9 T	402	
59P	1999 12 29.69677	08 34 05.33	+23 40 48.7		402	
59P	1999 12 29.72802	08 34 04.12	+23 40 45.9		349	
59P	1999 12 29.73505	08 34 03.76	+23 40 46.0	16.2 T	349	
59P	2000 01 01.52556	08 32 18.32	+23 36 34.9		897	
59P	2000 01 01.53192	08 32 18.04	+23 36 35.0	16.0 T	897	
59P	2000 01 01.64965	08 32 13.24	+23 36 26.2	17.0 T	372	
59P	2000 01 01.66615	08 32 12.53	+23 36 25.5		372	
59P	2000 01 03.30416	08 31 05.52	+23 33 59.5	17.8 T	704	
59P	2000 01 03.31885	08 31 04.80	+23 33 58.0	18.5 T	704	
59P	2000 01 03.33357	08 31 04.16	+23 33 56.7	18.3 T	704	
59P	2000 01 03.34830	08 31 03.49	+23 33 55.4	18.6 T	704	
59P	2000 01 03.36314	08 31 02.82	+23 33 53.9	18.5 T	704	
59P	2000 01 04.30368	08 30 22.98	+23 32 31.6	17.9 T	704	
59P	2000 01 04.31826	08 30 22.30	+23 32 30.1	18.5 T	704	
59P	2000 01 04.33281	08 30 21.63	+23 32 27.8	18.7 T	704	
59P	2000 01 04.34750	08 30 20.91	+23 32 26.1	19.0 T	704	
59P	2000 01 04.36211	08 30 20.16	+23 32 23.6	18.9 T	704	
59P	2000 01 04.57778	08 30 11.15	+23 32 06.0	16.0 T	367	
59P	2000 01 04.58090	08 30 11.00	+23 32 05.8		367	
59P	2000 01 04.58403	08 30 10.87	+23 32 05.2		367	
59P	2000 01 04.66285	08 30 07.36	+23 31 59.5	16.0 T	360	
59P	2000 01 04.66806	08 30 07.13	+23 31 59.0		360	
59P	2000 01 05.01573	08 29 51.88	+23 31 27.7	17.0 T	610	
59P	2000 01 05.01921	08 29 51.70	+23 31 27.1		610	
59P	2000 01 05.02269	08 29 51.52	+23 31 26.6		610	
59P	2000 01 05.02616	08 29 51.34	+23 31 26.1		610	
59P	2000 01 05.02963	08 29 51.15	+23 31 25.5		610	
59P	2000 01 07.61080	08 27 54.59	+23 27 35.6	16.3 T	352	
59P	2000 01 07.61427	08 27 54.45	+23 27 35.4		352	
59P	2000 01 08.32034	08 27 21.22	+23 26 29.7	17.5 T	750	
59P	2000 01 08.33241	08 27 20.53	+23 26 29.5	15.0 T	750	
59P	2000 01 08.35937	08 27 19.24	+23 26 27.8	16.6 T	750	
59P	2000 01 08.63359	08 27 06.64	+23 26 03.5	16.2 T	351	
59P	2000 01 08.63855	08 27 05.97	+23 26 02.4		351	
59P	2000 01 09.23518	08 26 38.04	+23 25 05.7	17.3 T	750	
59P	2000 01 09.24500	08 26 37.56	+23 25 05.2	17.8 T	750	

59P	2000 01 09.25162	08 26 37.20	+23 25 04.3	17.8 T	750
59P	2000 01 18.58512	08 18 47.51	+23 09 27.0	16.0 T	900
59P	2000 01 18.59781	08 18 46.84	+23 09 26.1		900
59P	2000 01 18.61664	08 18 45.71	+23 09 22.8	15.9 T	903
59P	2000 01 18.62488	08 18 45.33	+23 09 20.7		903
59P	2000 01 18.96309	08 18 27.95	+23 08 44.3		611

63P/Wild 1						
63P	1999 11 20.85556	12 03 41.26	+08 32 43.1			372
63P	1999 12 02.82323	12 26 07.02	+04 52 10.3	16.2 T		372
63P	1999 12 03.80913	12 27 55.14	+04 33 51.0			897
63P	1999 12 03.81488	12 27 55.75	+04 33 45.1	15.0 T		897
63P	1999 12 09.84837	12 38 46.86	+02 41 14.7			349
63P	1999 12 09.85042	12 38 47.13	+02 41 13.2	15.2 T		349
63P	1999 12 09.85147	12 38 47.25	+02 41 11.3			349
63P	1999 12 11.81875	12 42 15.55	+02 04 24.9	16.5 T		372
63P	1999 12 15.80880	12 49 11.65	+00 49 40.4	16.5 T		903
63P	1999 12 15.81661	12 49 12.53	+00 49 31.3			903
63P	1999 12 15.82222	12 49 13.05	+00 49 26.0	16.4 T		372
63P	1999 12 15.87051	12 49 17.80	+00 48 30.2			897
63P	1999 12 15.87260	12 49 18.05	+00 48 29.0			897
63P	1999 12 17.21816	12 51 36.37	+00 23 15.4	15.7 T		118
63P	1999 12 17.22206	12 51 36.73	+00 23 10.9			118
63P	1999 12 21.86124	12 59 25.22	-01 03 52.6			349
63P	1999 12 21.86223	12 59 25.36	-01 03 53.1	15.1 T		349
63P	1999 12 27.83164	13 09 08.44	-02 56 01.4			349
63P	1999 12 27.83774	13 09 08.91	-02 56 07.6	15.3 T		349
63P	1999 12 31.86273	13 15 28.07	-04 11 43.9	14.8 T		897
63P	1999 12 31.86883	13 15 28.76	-04 11 51.6			897
63P	2000 01 01.83417	13 16 57.89	-04 29 58.7	15.1 T		349
63P	2000 01 01.86064	13 17 00.35	-04 30 29.4			349
63P	2000 01 04.77810	13 21 25.30	-05 25 14.4	14.6 T		402
63P	2000 01 04.77936	13 21 25.40	-05 25 15.9			402
63P	2000 01 04.78062	13 21 25.52	-05 25 17.3			402
63P	2000 01 05.50487	13 22 30.30	-05 38 54.1	13.0 T		699
63P	2000 01 05.51506	13 22 31.14	-05 39 04.7			699
63P	2000 01 05.52527	13 22 31.96	-05 39 15.7			699

74P/Smirnova-Chernykh						
74P	1999 11 30.66140	07 37 39.08	+25 03 42.1	15.9 T		897
74P	1999 11 30.66919	07 37 38.98	+25 03 43.1			897
74P	1999 12 06.75120	07 35 39.85	+25 19 18.3	16.4 T		349
74P	1999 12 06.75975	07 35 39.65	+25 19 19.2			349
74P	1999 12 06.76111	07 35 39.60	+25 19 19.9			349
74P	1999 12 15.33434	07 31 43.26	+25 43 07.6	18.0 T		704
74P	1999 12 15.35067	07 31 42.74	+25 43 12.5	17.9 T		704
74P	1999 12 15.36650	07 31 42.18	+25 43 14.8	18.0 T		704
74P	1999 12 15.38205	07 31 41.64	+25 43 17.3	17.9 T		704
74P	1999 12 15.39780	07 31 41.03	+25 43 19.9	18.1 T		704
74P	1999 12 15.44407	07 31 39.62	+25 43 27.1	16.5 T		684
74P	1999 12 15.44938	07 31 39.43	+25 43 27.9	16.4 T		684
74P	1999 12 15.45626	07 31 39.21	+25 43 29.1			684
74P	1999 12 15.73770	07 31 30.18	+25 44 15.9	16.0 T		903
74P	1999 12 15.78764	07 31 28.52	+25 44 25.4			903

74P	1999 12 16.36287	07 31 09.93	+25 46 05.3		684
74P	1999 12 16.36664	07 31 09.81	+25 46 05.9	16.4 T	684
74P	1999 12 16.93105	07 30 51.27	+25 47 42.7	15.9 T	504
74P	1999 12 16.95575	07 30 50.41	+25 47 47.2	16.1 T	504
74P	1999 12 16.98324	07 30 49.46	+25 47 51.3	15.4 T	504
74P	1999 12 17.35650	07 30 36.87	+25 48 56.6		684
74P	1999 12 17.37892	07 30 36.09	+25 49 00.5		684
74P	1999 12 17.38432	07 30 35.91	+25 49 01.5		684
74P	1999 12 17.87442	07 30 19.37	+25 50 24.9	16.2 T	627
74P	1999 12 17.89280	07 30 18.78	+25 50 28.7	16.4 T	627
74P	1999 12 17.92160	07 30 17.70	+25 50 34.5	15.9 T	627
74P	1999 12 22.68013	07 27 25.54	+26 04 19.2		900
74P	1999 12 22.69300	07 27 25.03	+26 04 22.4		900
74P	1999 12 27.55322	07 24 12.26	+26 18 17.7	15.7 T	897
74P	1999 12 27.56760	07 24 11.60	+26 18 19.9		897
74P	1999 12 27.69375	07 24 06.28	+26 18 42.6		900
74P	1999 12 27.70640	07 24 05.74	+26 18 45.7	15.2 T	900
74P	1999 12 29.64560	07 22 44.81	+26 24 11.6	15.8 T	402
74P	1999 12 29.64685	07 22 44.77	+26 24 11.9		402
74P	1999 12 29.64811	07 22 44.70	+26 24 12.1		402
74P	1999 12 29.71208	07 22 41.91	+26 24 22.8		349
74P	1999 12 29.71535	07 22 41.73	+26 24 23.7	15.7 T	349
74P	1999 12 29.72028	07 22 41.57	+26 24 24.5		349
74P	1999 12 30.64114	07 22 02.46	+26 26 58.5	15.9 T	900
74P	1999 12 30.65378	07 22 01.87	+26 27 01.1		900
74P	2000 01 03.29771	07 19 23.45	+26 36 55.5	16.7 T	704
74P	2000 01 03.31242	07 19 22.80	+26 36 59.3	17.2 T	704
74P	2000 01 03.32711	07 19 22.10	+26 37 01.1	17.8 T	704
74P	2000 01 03.34187	07 19 21.44	+26 37 03.6	17.0 T	704
74P	2000 01 03.35668	07 19 20.68	+26 37 05.7	17.6 T	704
74P	2000 01 04.29433	07 18 39.34	+26 39 34.3	16.3 T	704
74P	2000 01 04.30891	07 18 38.62	+26 39 37.4	17.1 T	704
74P	2000 01 04.32345	07 18 37.99	+26 39 40.4	17.1 T	704
74P	2000 01 04.33812	07 18 37.31	+26 39 42.7	17.3 T	704
74P	2000 01 04.35271	07 18 36.49	+26 39 44.6	16.9 T	704
74P	2000 01 04.55035	07 18 27.95	+26 40 15.4	15.2 T	367
74P	2000 01 04.55347	07 18 27.83	+26 40 15.7		367
74P	2000 01 04.55659	07 18 27.69	+26 40 16.2		367
74P	2000 01 04.61076	07 18 25.24	+26 40 25.3	15.9 T	360
74P	2000 01 04.61597	07 18 24.99	+26 40 26.2		360
74P	2000 01 07.22377	07 16 28.43	+26 47 08.0	17.5 T	704
74P	2000 01 07.22436	07 16 28.41	+26 47 08.7	16.9 T	704
74P	2000 01 07.22447	07 16 28.39	+26 47 08.4	17.6 T	704
74P	2000 01 07.23902	07 16 27.69	+26 47 11.4	17.8 T	704
74P	2000 01 07.23913	07 16 27.65	+26 47 11.9	18.3 T	704
74P	2000 01 07.25324	07 16 27.00	+26 47 14.5	18.2 T	704
74P	2000 01 07.25384	07 16 27.01	+26 47 15.2	18.1 T	704
74P	2000 01 07.25395	07 16 26.96	+26 47 14.9	18.0 T	704
74P	2000 01 07.26797	07 16 26.19	+26 47 15.3	18.0 T	704
74P	2000 01 07.26856	07 16 26.31	+26 47 16.3	17.4 T	704
74P	2000 01 07.26867	07 16 26.25	+26 47 17.0	18.2 T	704
74P	2000 01 07.28278	07 16 25.42	+26 47 18.7	18.0 T	704
74P	2000 01 07.28338	07 16 25.52	+26 47 19.1	17.5 T	704

74P	2000 01 07.28349	07 16 25.38	+26 47 17.1	18.2 T	704
74P	2000 01 07.30608	07 16 24.62	+26 47 20.8	16.5 T	704
74P	2000 01 07.30619	07 16 24.65	+26 47 21.1	17.3 T	704
74P	2000 01 07.32092	07 16 23.94	+26 47 24.1	17.5 T	704
74P	2000 01 07.32104	07 16 23.89	+26 47 23.5	17.8 T	704
74P	2000 01 07.33560	07 16 23.24	+26 47 26.6	17.7 T	704
74P	2000 01 07.33571	07 16 23.18	+26 47 27.2	17.7 T	704
74P	2000 01 07.35028	07 16 22.53	+26 47 28.7	17.5 T	704
74P	2000 01 07.35040	07 16 22.51	+26 47 29.6	18.0 T	704
74P	2000 01 07.36500	07 16 21.76	+26 47 30.5	17.3 T	704
74P	2000 01 07.36512	07 16 21.69	+26 47 32.5	18.1 T	704
74P	2000 01 07.60132	07 16 11.28	+26 48 06.2	15.0 T	352
74P	2000 01 07.60479	07 16 11.09	+26 48 06.9		352
74P	2000 01 07.64798	07 16 09.11	+26 48 13.7	15.1 T	900
74P	2000 01 07.65713	07 16 08.68	+26 48 14.9		900
74P	2000 01 08.29815	07 15 39.95	+26 49 50.4	16.6 T	704
74P	2000 01 08.31334	07 15 39.25	+26 49 53.5	17.2 T	704
74P	2000 01 08.32845	07 15 38.52	+26 49 54.8	17.6 T	704
74P	2000 01 08.34374	07 15 37.75	+26 49 57.8	17.3 T	704
74P	2000 01 08.35880	07 15 37.02	+26 49 59.6	17.7 T	704

84P/Giclas

84P	1999 11 30.64462	05 09 46.80	+13 57 53.3	15.2 T	897
84P	1999 11 30.65285	05 09 46.38	+13 57 54.8		897
84P	1999 12 07.68553	05 03 52.00	+14 24 26.6	15.6 T	349
84P	1999 12 07.68762	05 03 51.84	+14 24 26.6		349
84P	1999 12 07.68969	05 03 51.71	+14 24 27.1		349
84P	1999 12 14.21610	04 58 30.38	+14 52 52.1	17.1 T	704
84P	1999 12 14.23054	04 58 29.60	+14 52 57.7	18.3 T	704
84P	1999 12 14.24502	04 58 28.84	+14 53 01.6	17.9 T	704
84P	1999 12 14.25948	04 58 28.08	+14 53 05.2	17.8 T	704
84P	1999 12 25.60477	04 50 39.42	+15 49 19.1	15.3 T	897
84P	1999 12 25.61363	04 50 39.12	+15 49 21.1		897
84P	2000 01 03.63285	04 46 39.27	+16 38 12.8		349
84P	2000 01 03.63954	04 46 39.20	+16 38 15.1	15.4 T	349
84P	2000 01 04.54740	04 46 23.07	+16 43 18.0	15.5 T	360
84P	2000 01 04.54983	04 46 23.02	+16 43 18.9		360
84P	2000 01 04.93058	04 46 16.64	+16 45 23.4	15.5 T	049
84P	2000 01 04.94011	04 46 16.47	+16 45 26.7	15.6 T	049
84P	2000 01 04.94939	04 46 16.31	+16 45 29.5	15.7 T	049
84P	2000 01 05.15670	04 46 13.20	+16 46 39.9	17.6 T	704
84P	2000 01 05.17131	04 46 12.92	+16 46 47.6	18.7 T	704
84P	2000 01 05.18583	04 46 12.68	+16 46 53.1	18.9 T	704
84P	2000 01 05.20034	04 46 12.38	+16 46 56.7	18.1 T	704
84P	2000 01 05.21486	04 46 11.99	+16 47 04.4	18.5 T	704
84P	2000 01 06.15374	04 45 58.19	+16 52 15.6	17.7 T	704
84P	2000 01 06.16841	04 45 57.92	+16 52 21.2	19.1 T	704
84P	2000 01 06.18300	04 45 57.62	+16 52 26.2	19.6 T	704
84P	2000 01 06.19758	04 45 57.41	+16 52 32.0	18.8 T	704
84P	2000 01 06.21221	04 45 56.95	+16 52 40.6	18.9 T	704

106P/Schuster

106P	1999 11 13.44641	00 13 22.27	-16 40 18.0	13.4 T	897
106P	1999 11 13.45337	00 13 22.22	-16 40 04.8		897

2000 JAN. 24

M.P.C. 37403

106P	1999 11 13.46031	00 13 22.23	-16 39 51.8		897	106P	2000 01 18.48982	01 33 09.01	+17 38 20.2	15.1 T	900
106P	1999 11 30.53644	00 20 05.18	-07 15 25.5	13.9 T	897	106P	2000 01 18.50105	01 33 10.38	+17 38 37.1		900
106P	1999 11 30.55032	00 20 05.77	-07 14 57.4		897	114P/Wiseman-Skiff					
106P	1999 12 10.43306	00 29 13.95	-01 44 51.2	14.5 T	349	114P	1999 10 10.63227	02 32 20.50	+47 12 07.8	16.9 T	897
106P	1999 12 10.43509	00 29 14.09	-01 44 46.7		349	114P	1999 10 10.63987	02 32 20.50	+47 12 09.5		897
106P	1999 12 10.43847	00 29 14.30	-01 44 39.9		349	114P	1999 10 10.64469	02 32 20.43	+47 12 10.3		897
106P	1999 12 21.50818	00 43 18.65	+04 13 31.5		355	114P	1999 11 28.58713	02 22 23.75	+39 42 29.9	13.8 T	897
106P	1999 12 21.51015	00 43 18.85	+04 13 35.5		355	114P	1999 11 28.59565	02 22 23.84	+39 42 17.8		897
106P	1999 12 21.51780	00 43 19.50	+04 13 49.9		355	114P	1999 11 29.59169	02 22 37.47	+39 18 43.5		352
106P	1999 12 22.73575	00 45 05.89	+04 52 05.2	14.6 T	046	114P	1999 11 29.59516	02 22 37.45	+39 18 39.1		352
106P	1999 12 22.73701	00 45 05.97	+04 52 07.5		046	114P	1999 12 07.64532	02 26 03.38	+35 58 03.4	14.0 T	349
106P	1999 12 22.73840	00 45 06.11	+04 52 10.3		046	114P	1999 12 07.65027	02 26 03.55	+35 57 55.4		349
106P	1999 12 22.73953	00 45 06.23	+04 52 12.2		046	114P	1999 12 07.65322	02 26 03.62	+35 57 50.6		349
106P	1999 12 22.76777	00 45 08.65	+04 53 06.0		118	114P	1999 12 09.11523	02 27 00.84	+35 20 10.5	15.4 T	294
106P	1999 12 22.77339	00 45 09.11	+04 53 16.4	14.8 T	118	114P	1999 12 09.14941	02 27 01.96	+35 19 17.8	15.6 T	294
106P	1999 12 23.42223	00 46 06.64	+05 13 34.6		349	114P	1999 12 09.15935	02 27 02.29	+35 19 02.4	15.6 T	294
106P	1999 12 23.43979	00 46 08.20	+05 14 07.4		349	114P	1999 12 09.57216	02 27 19.37	+35 08 22.0		352
106P	1999 12 23.44130	00 46 08.28	+05 14 10.1	14.6 T	349	114P	1999 12 09.57564	02 27 19.56	+35 08 17.3		352
106P	1999 12 23.46816	00 46 10.63	+05 15 01.3	14.3 T	900	114P	1999 12 09.57911	02 27 19.64	+35 08 12.2		352
106P	1999 12 23.47748	00 46 11.49	+05 15 18.9		900	114P	1999 12 10.44981	02 27 57.86	+34 45 38.7	14.0 T	349
106P	1999 12 24.45371	00 47 39.49	+05 45 40.9	14.0 T	897	114P	1999 12 10.45856	02 27 58.15	+34 45 25.0		349
106P	1999 12 24.47528	00 47 41.37	+05 46 20.9		897	114P	1999 12 10.46407	02 27 58.37	+34 45 16.0		349
106P	1999 12 28.44264	00 53 54.53	+07 47 59.3	14.8 T	351	114P	1999 12 11.53164	02 28 46.92	+34 17 35.3	13.8 T	900
106P	1999 12 28.45074	00 53 55.33	+07 48 11.8		351	114P	1999 12 11.54081	02 28 47.34	+34 17 21.3		900
106P	1999 12 28.45902	00 53 56.18	+07 48 27.7		351	114P	1999 12 13.75534	02 30 39.42	+33 19 51.7		160
106P	1999 12 31.43402	00 58 51.51	+09 17 40.5	15.1 T	351	114P	1999 12 17.09353	02 33 51.70	+31 53 49.1	15.4 T	294
106P	1999 12 31.43801	00 58 52.02	+09 17 47.2		351	114P	1999 12 17.11872	02 33 53.24	+31 53 11.0	15.7 T	294
106P	1999 12 31.44321	00 58 52.65	+09 17 56.1		351	114P	1999 12 19.59072	02 36 34.12	+30 50 17.6		349
106P	2000 01 01.46343	01 00 36.93	+09 48 06.6		897	114P	1999 12 19.59403	02 36 34.32	+30 50 12.7	14.0 T	349
106P	2000 01 01.47384	01 00 38.06	+09 48 24.7		897	114P	1999 12 19.61206	02 36 35.52	+30 49 44.4		349
106P	2000 01 01.48426	01 00 39.06	+09 48 43.2	13.9 T	897	114P	1999 12 20.79981	02 37 59.15	+30 19 53.0		504
106P	2000 01 02.48263	01 02 22.70	+10 18 02.9	14.1 T	367	114P	1999 12 20.80205	02 37 59.27	+30 19 49.1		504
106P	2000 01 02.48875	01 02 23.32	+10 18 13.6		367	114P	1999 12 20.80492	02 37 59.53	+30 19 45.3		504
106P	2000 01 02.49260	01 02 23.71	+10 18 20.2		367	114P	1999 12 20.80854	02 37 59.78	+30 19 39.3		504
106P	2000 01 03.81580	01 04 43.40	+10 56 51.7		587	114P	1999 12 20.81061	02 37 59.86	+30 19 36.8	14.7 T	504
106P	2000 01 03.82135	01 04 43.97	+10 57 00.6	13.8 T	587	114P	1999 12 20.81270	02 38 00.01	+30 19 33.8	14.2 T	504
106P	2000 01 04.47604	01 05 53.92	+11 15 57.8	14.8 T	360	114P	1999 12 21.47923	02 38 47.84	+30 02 58.6		897
106P	2000 01 04.47882	01 05 54.21	+11 16 02.6		360	114P	1999 12 21.48618	02 38 48.39	+30 02 48.0	13.9 T	897
106P	2000 01 07.07834	01 10 38.26	+12 30 19.7	16.6 T	704	114P	1999 12 21.49313	02 38 48.73	+30 02 36.2		897
106P	2000 01 07.09315	01 10 40.04	+12 30 43.6	16.7 T	704	114P	1999 12 22.48325	02 40 02.12	+29 38 06.7	13.8 T	402
106P	2000 01 07.10793	01 10 41.79	+12 31 09.0	16.9 T	704	114P	1999 12 22.48453	02 40 02.20	+29 38 04.6		402
106P	2000 01 07.12272	01 10 43.04	+12 31 33.6	17.3 T	704	114P	1999 12 22.48577	02 40 02.31	+29 38 02.6		402
106P	2000 01 07.13748	01 10 44.75	+12 31 53.3	16.9 T	704	114P	1999 12 22.64664	02 40 13.83	+29 34 02.4		349
106P	2000 01 08.43510	01 13 09.92	+13 08 27.2	14.9 T	349	114P	1999 12 22.64885	02 40 14.03	+29 33 58.8		349
106P	2000 01 08.43841	01 13 10.34	+13 08 33.1		349	114P	1999 12 22.65075	02 40 14.13	+29 33 55.7	14.0 T	349
106P	2000 01 08.44396	01 13 10.92	+13 08 43.6		349	114P	1999 12 23.51075	02 41 20.40	+29 12 53.7		349
106P	2000 01 08.47447	01 13 14.31	+13 09 30.2	15.2 T	351	114P	1999 12 23.51358	02 41 20.67	+29 12 49.2		349
106P	2000 01 08.48153	01 13 15.07	+13 09 44.2		351	114P	1999 12 23.53293	02 41 22.04	+29 12 20.3	14.1 T	349
106P	2000 01 08.48582	01 13 15.64	+13 09 50.8		351	114P	1999 12 27.55044	02 46 50.92	+27 36 19.8	13.8 T	351
106P	2000 01 11.39116	01 18 49.28	+14 30 11.9	15.1 T	402	114P	1999 12 27.55471	02 46 51.41	+27 36 13.1		351
106P	2000 01 11.39242	01 18 49.50	+14 30 15.4		402	114P	1999 12 27.57160	02 46 52.75	+27 35 50.9		352
106P	2000 01 11.39369	01 18 49.64	+14 30 16.9		402	114P	1999 12 27.57926	02 46 53.40	+27 35 38.5		351

114P	1999 12 30.44554	02 51 09.35	+26 30 02.1	14.4 T	349
114P	1999 12 30.44824	02 51 09.54	+26 29 58.9		349
114P	1999 12 30.45387	02 51 10.07	+26 29 51.5		349
114P	1999 12 30.49234	02 51 13.52	+26 29 00.1	13.8 T	351
114P	1999 12 30.49678	02 51 13.78	+26 28 52.4		351
114P	1999 12 30.50087	02 51 14.19	+26 28 47.6		351
114P	1999 12 31.43646	02 52 41.31	+26 07 56.7	13.4 T	897
114P	1999 12 31.45010	02 52 42.59	+26 07 38.6		897
114P	2000 01 02.49582	02 55 58.36	+25 23 06.3	13.4 T	367
114P	2000 01 02.49756	02 55 58.52	+25 23 03.7		367
114P	2000 01 02.50311	02 55 59.05	+25 22 56.5		367
114P	2000 01 03.15414	02 57 02.87	+25 09 04.8	16.6 T	704
114P	2000 01 03.16887	02 57 04.38	+25 08 47.9	16.2 T	704
114P	2000 01 03.18357	02 57 05.73	+25 08 26.5	16.2 T	704
114P	2000 01 03.19844	02 57 07.05	+25 08 10.4	16.8 T	704
114P	2000 01 03.52465	02 57 39.65	+25 01 15.0	14.2 T	360
114P	2000 01 03.52708	02 57 39.88	+25 01 11.9		360
114P	2000 01 03.56006	02 57 43.09	+25 00 29.7	13.4 T	351
114P	2000 01 03.56471	02 57 43.51	+25 00 24.3		351
114P	2000 01 03.57028	02 57 44.01	+25 00 17.5		351
114P	2000 01 03.59248	02 57 46.21	+24 59 47.4	14.0 T	349
114P	2000 01 03.59475	02 57 46.39	+24 59 44.7		349
114P	2000 01 03.60373	02 57 47.25	+24 59 33.2		349
114P	2000 01 03.85845	02 58 13.00	+24 54 11.6		587
114P	2000 01 03.86319	02 58 13.48	+24 54 06.3	13.2 T	587
114P	2000 01 04.08321	02 58 35.59	+24 49 33.4	16.6 T	704
114P	2000 01 04.09825	02 58 37.51	+24 49 14.0	16.7 T	704
114P	2000 01 04.11328	02 58 38.91	+24 48 55.1	17.3 T	704
114P	2000 01 04.12830	02 58 40.14	+24 48 36.2	16.7 T	704
114P	2000 01 04.14331	02 58 41.54	+24 48 16.0	17.0 T	704
114P	2000 01 07.41875	03 04 20.42	+23 41 56.8		348
114P	2000 01 07.42223	03 04 20.78	+23 41 52.0	14.4 T	348
114P	2000 01 07.58650	03 04 37.60	+23 38 37.3		352
114P	2000 01 07.59023	03 04 37.93	+23 38 33.1		352
114P	2000 01 08.47520	03 06 13.07	+23 21 22.2	14.3 T	349
114P	2000 01 08.47640	03 06 13.17	+23 21 20.5		349
114P	2000 01 08.48080	03 06 13.63	+23 21 15.4		349
114P	2000 01 08.55545	03 06 21.29	+23 19 49.5	14.4 T	351
114P	2000 01 08.55962	03 06 21.69	+23 19 43.1		351
114P	2000 01 08.56354	03 06 22.37	+23 19 39.2		351
114P	2000 01 13.74749	03 16 01.27	+21 44 54.0	16.0 N	046
114P	2000 01 13.74856	03 16 01.40	+21 44 52.8	14.4 T	046
114P	2000 01 13.74953	03 16 01.51	+21 44 51.9		046
114P	2000 01 13.75091	03 16 01.66	+21 44 50.6		046
114P	2000 01 13.90715	03 16 19.28	+21 42 08.2		611
114P	2000 01 13.91256	03 16 19.96	+21 42 01.1		611

117P/Helin-Roman-Alu 1

117P	1999 12 03.54462	02 44 42.14	+10 53 10.3	18.1 T	360
117P	1999 12 03.54913	02 44 42.04	+10 53 10.1		360
117P	1999 12 12.49359	02 40 52.93	+10 50 53.5	17.5 T	897
117P	1999 12 12.52973	02 40 52.02	+10 50 53.9		897

134P/Kowal-Vávrová

134P	1999 08 03.55473	18 25 02.27	-17 23 44.9		897
134P	1999 08 03.59201	18 25 01.63	-17 23 47.1	17.1 T	897

136P/Mueller 3

136P	1999 11 29.61345	03 22 18.48	+04 57 08.2		352
136P	1999 11 29.61692	03 22 18.35	+04 57 08.1	17.4 T	352
136P	1999 12 07.58950	03 17 46.11	+04 57 35.6	17.4 T	897
136P	1999 12 07.60800	03 17 45.49	+04 57 36.0		897
136P	1999 12 26.52110	03 10 58.07	+05 29 58.4	18.3 T	897
136P	1999 12 26.56038	03 10 57.70	+05 30 06.3		897

141P/Machholz 2

141P-D	1999 10 25.37368	17 56 55.12	-11 58 54.0	17.0 T	897
141P-D	1999 10 25.38540	17 56 56.56	-11 58 53.4		897
141P-D	1999 10 28.39667	18 04 12.45	-11 59 40.4	16.8 T	897
141P-D	1999 10 28.40880	18 04 14.35	-11 59 39.8		897
141P-D	1999 11 13.38125	18 48 42.29	-11 49 57.0	15.7 T	897
141P-D	1999 11 13.38389	18 48 42.99	-11 49 57.3		897
141P-A	1999 11 28.38844	19 40 27.10	-11 27 09.6	15.8 T	897
141P-A	1999 11 28.39539	19 40 28.49	-11 27 11.3		897
141P-A	1999 11 29.36340	19 44 09.83	-11 26 27.1	15.2 T	897
141P-A	1999 12 03.41250	20 00 07.96	-11 25 23.9	14.5 T	372
141P-A	1999 12 06.42132	20 12 39.6	-11 27 08	14.0 T	372
141P-A	1999 12 06.42490	20 12 40.69	-11 27 07.5		372
141P-A	1999 12 06.42847	20 12 41.6	-11 27 09		372
141P-A	1999 12 07.37950	20 16 47.27	-11 28 13.9	13.3 T	897
141P-A	1999 12 07.38235	20 16 48.00	-11 28 13.6		897
141P-A	1999 12 10.37358	20 30 08.63	-11 33 39.2	13.5 T	402
141P-A	1999 12 10.37616	20 30 09.33	-11 33 39.0		402
141P-A	1999 12 10.37874	20 30 10.05	-11 33 39.4		402
141P-A	1999 12 12.36696	20 39 28.71	-11 39 07.3		897
141P-A	1999 12 12.36954	20 39 29.44	-11 39 06.3		897
141P-A	1999 12 12.37170	20 39 30.11	-11 39 07.6	13.5 T	897
141P-A	1999 12 13.38576	20 44 24.2	-11 42 33	13.5 T	372
141P-A	1999 12 13.38576	20 44 24.23	-11 42 32.4	14 T	372
141P-A	1999 12 16.36962	20 59 30.77	-11 55 13.6	13.3 T	402
141P-A	1999 12 16.37088	20 59 31.22	-11 55 13.8		402
141P-A	1999 12 16.37214	20 59 31.51	-11 55 14.1		402
141P-A	1999 12 20.36906	21 21 39.75	-12 18 36.8	12.3 T	897
141P-A	1999 12 20.37535	21 21 41.84	-12 18 40.3		897
141P-A	1999 12 20.39688	21 21 49.6	-12 18 48		372
141P-A	1999 12 20.40018	21 21 50.63	-12 18 49.5	12.5 T	372
141P-A	1999 12 20.40347	21 21 51.8	-12 18 51	12.5 T	372
141P-A	1999 12 22.37792	21 33 47.24	-12 33 08.4	13.0 T	402
141P-A	1999 12 22.37918	21 33 47.75	-12 33 09.1		402
141P-A	1999 12 22.38044	21 33 48.21	-12 33 09.7		402
141P-A	1999 12 22.71027	21 35 52.30	-12 35 43.7	13.0 T	046
141P-A	1999 12 22.71155	21 35 52.66	-12 35 44.2		046
141P-A	1999 12 22.71238	21 35 53.01	-12 35 44.8		046
141P-A	1999 12 22.71355	21 35 53.36	-12 35 46.3		046
141P-A	1999 12 23.35435	21 39 57.59	-12 40 49.8		349
141P-A	1999 12 23.36384	21 40 01.37	-12 40 54.3		349
141P-A	1999 12 23.36625	21 40 02.24	-12 40 54.9	12.0 T	349

141P-A	1999 12 23.38646	21 40 09.86	-12 41 01.6		372
141P-A	1999 12 23.38674	21 40 09.94	-12 41 04.8		349
141P-A	1999 12 24.35478	21 46 29.41	-12 49 01.6	12.5 T	897
141P-A	1999 12 24.36868	21 46 34.83	-12 49 09.7		897
141P-A	1999 12 24.37082	21 46 35.77	-12 49 11.0	12.8 T	402
141P-A	1999 12 24.37266	21 46 36.53	-12 49 12.0		402
141P-A	1999 12 24.37449	21 46 37.24	-12 49 12.5		402
141P-A	1999 12 24.39434	21 46 45.03	-12 49 23.0	12.4 T	900
141P-A	1999 12 24.40197	21 46 47.99	-12 49 26.3		900
141P-A	1999 12 25.40221	21 53 33.51	-12 58 01.8	12.4 T	900
141P-A	1999 12 25.40905	21 53 36.21	-12 58 05.0		900
141P-A	1999 12 27.40052	22 07 46.40	-13 16 01.8	11.1 T	360
141P-A	1999 12 27.40243	22 07 47.26	-13 16 02.1		360
141P-A	1999 12 27.40420	22 07 47.85	-13 16 04.1	12.7 T	897
141P-A	1999 12 27.41115	22 07 50.83	-13 16 08.2		897
141P-A	1999 12 27.41146	22 07 51.15	-13 16 06.8	9 T	372
141P-A	1999 12 27.41809	22 07 54.07	-13 16 12.3		897
141P-A	1999 12 28.39189	22 15 12.14	-13 25 16.5	13.5 T	351
141P-A	1999 12 28.40838	22 15 19.61	-13 25 20.7		351
141P-A	1999 12 29.38603	22 22 55.23	-13 34 33.4	9.5 T	372
141P-A	1999 12 29.40045	22 23 02.02	-13 34 41.6		372
141P-A	1999 12 30.36658	22 30 48.42	-13 43 46.8	13.2 T	349
141P-A	1999 12 30.37334	22 30 51.73	-13 43 49.2		349
141P-A	1999 12 30.38039	22 30 55.17	-13 43 53.7		349
141P-A	1999 12 30.38259	22 30 56.10	-13 43 54.1		349
141P-A	1999 12 31.67387	22 41 45.49	-13 55 50.4	14.4 N	461
141P-A	1999 12 31.67545	22 41 46.28	-13 55 51.5		461
141P-A	1999 12 31.67708	22 41 47.11	-13 55 52.0		461
141P-A	2000 01 03.38758	23 06 08.21	-14 18 52.6	11.6 T	900
141P-A	2000 01 03.39651	23 06 13.28	-14 18 58.5		900
141P-A	2000 01 03.71800	23 09 16.01	-14 21 27.1		587
141P-A	2000 01 03.72321	23 09 18.96	-14 21 29.8		587
141P-A	2000 01 03.72587	23 09 20.48	-14 21 31.1		587
141P-A	2000 01 05.70071	23 28 43.60	-14 34 40.6		046
141P-A	2000 01 05.70191	23 28 44.35	-14 34 41.0		046
141P-A	2000 01 05.70244	23 28 44.61	-14 34 42.0		046
141P-A	2000 01 05.70309	23 28 45.06	-14 34 41.9		046
141P-A	2000 01 06.69117	23 38 53.43	-14 39 44.7	12.2 T	540
141P-A	2000 01 06.69365	23 38 54.89	-14 39 45.6		540
141P-A	2000 01 06.69549	23 38 56.00	-14 39 46.3		540
141P-A	2000 01 06.69749	23 38 57.29	-14 39 46.0		540
141P-A	2000 01 06.69944	23 38 58.52	-14 39 46.8		540
141P-A	2000 01 06.69962	23 38 58.59	-14 39 46.9		046
141P-A	2000 01 06.70037	23 38 59.06	-14 39 47.9		046
141P-A	2000 01 06.70200	23 39 00.15	-14 39 47.4		046
141P-A	2000 01 06.70288	23 39 00.68	-14 39 47.9		046
141P-A	2000 01 06.70367	23 39 01.13	-14 39 48.5		046
141P-A	2000 01 06.70429	23 39 01.54	-14 39 48.4		046
141P-A	2000 01 07.79661	23 50 32.92	-14 43 52.2		587
141P-A	2000 01 07.79918	23 50 34.57	-14 43 52.6		587
141P-A	2000 01 08.38377	23 56 53.29	-14 45 19.4		349
141P-A	2000 01 08.38529	23 56 54.15	-14 45 21.1	12.6 T	349
141P-A	2000 01 08.39061	23 56 57.66	-14 45 21.5		349

141P-A	2000 01 11.37700	00 30 22.70	-14 43 42.6	13.5 T	402
141P-A	2000 01 11.37792	00 30 23.14	-14 43 43.1		402
141P-A	2000 01 11.37883	00 30 24.01	-14 43 42.0		402
141P-A	2000 01 12.71147	00 45 48.45	-14 37 29.8		046
141P-A	2000 01 12.71226	00 45 49.05	-14 37 27.6		046
141P-A	2000 01 12.71279	00 45 49.26	-14 37 28.6		046
141P-A	2000 01 12.71404	00 45 50.39	-14 37 28.7		046
141P-A	2000 01 12.71447	00 45 50.59	-14 37 27.2		046
141P-A	2000 01 12.71535	00 45 51.29	-14 37 26.0		046
141P-A	2000 01 12.71587	00 45 51.77	-14 37 26.9		046
141P-A	2000 01 15.37718	01 17 02.24	-14 13 35.2	14.2 T	402
141P-A	2000 01 15.37845	01 17 02.97	-14 13 35.2		402
141P-A	2000 01 15.37971	01 17 03.90	-14 13 33.9		402
141P-A	2000 01 18.46930	01 52 57.09	-13 27 31.4	13.0 T	900
141P-A	2000 01 18.47596	01 53 01.66	-13 27 26.0		900

142P/Ge-Wang

142P	1999 10 08.59142	02 16 08.00	+03 38 13.7	18.3 T	897
142P	1999 10 08.59758	02 16 07.87	+03 38 10.0		897

Note 1: rereduction of observations on *MPC* 32379. 2: poor sky.

OBSERVATIONS OF MINOR PLANETS

The summary lists, for each observatory code, the designation of each object observed (an asterisk signifying a new discovery), with three numbers indicating the number of observations, the number of different nights on which the object was observed and the arc (in days) covered by the observations; at the end of each observatory listing there is a count of the total number of observations, of the number of objects and of the number of discoveries followed by an asterisk, together with the total range of dates covered by the observations.

010 Caussols

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Observers C. Pollas, D. Albanese

Measurer E. W. Elst

0.9-m Schmidt telescope

1995 SC₅₄, 3, 1, 0; 1995 SF₅₄, 3, 1, 0; 1996 XX₃₁, 3, 1, 0; 1997 GC₂₂, 3, 1, 0; 1997 GP₄₀, 3, 1, 0; 1998 BL₁₄, 5, 2, 2; 1998 FZ₆₃, 2, 1, 0; 1998 MV₁₃, 3, 1, 0; 1998 MU₃₇, 3, 1, 0; 1998 SC₄₉, 3, 1, 0; 1998 SU₁₂₈, 3, 1, 0; 1998 SJ₁₃₂, 3, 1, 0; 1998 SX₁₃₇, 3, 1, 0; 1999 TM, 2, 1, 0; 1999 UD₁, 2, 1, 0; 1999 UL₁₆, 3, 1, 0; 1999 VK₁₁, 3, 1, 0; 1999 VF₇₁, 3, 1, 0; 1999 XZ₂₁, 3, 1, 0; 1999 XA₂₄, 1, 1, 0; 1999 XN₁₅₆, 7, 3, 4; 1999 XK₁₆₉, 2, 1, 0; 1999 XG₁₈₈, 3, 1, 0; [69, 23, 0*, 1992/10/23-1996/02/16]

012 Uccle

E. W. Elst, Koninklijke Sterrenwacht van België, Ringlaan 3, B-1180 Brussels, Belgium [Thierry.Pauwels@oma.be] (1)

T. Pauwels, Koninklijke Sterrenwacht van België, Ringlaan 3, B-1180 Brussels, Belgium [Thierry.Pauwels@oma.be] (2)

Observers E. W. Elst, T. Pauwels, S. Ipatov, H. Boffin

Measurers E. W. Elst, T. Pauwels

0.85-m *f*/2.5 Schmidt + CCD

GSC-1.2

{1} 1991 RD₁₈, 2, 1, 0; 1995 BQ₂, 2, 1, 0; 1997 GQ₇, 2, 1, 0; 1999 UH₁₅, 2, 1, 0; 1999 UC₂₇ *, 4, 2, 2; 1999 VF₁, 2, 1, 0; 1999 VY₆₀, 2, 1, 0; 1999 VM₆₃, 2, 1, 0; 1999 XP₄₃, 2, 1, 0; 1999 XU₄₃, 4, 1,

0; 1999 XT₁₁₇, 4, 2, 3; 1999 XW₁₁₇, 4, 1, 0; 1999 XD₁₁₈, 2, 1, 0; 1999 XJ₁₁₉, 4, 2, 2; 1999 XK₁₁₉, 2, 1, 0; 1999 XL₁₁₉, 4, 2, 2; 1999 XB₁₂₀, 2, 1, 0; *[46, 17, 1*, 1999/10/13–1999/11/15]*

{2} 1989 CB₆, 4, 1, 0; 1990 SX₆, 9, 2, 1; 1997 RG₉, 9, 2, 1; 1999 VO₁, 4, 1, 0; 1999 VE₆₄, 6, 1, 0; 1999 VR₇₂, 5, 1, 0; 1999 XB₁₀, 3, 1, 0; 1999 XR₂₆, 6, 1, 0; 1999 XV₁₁₇, 3, 1, 0; 1999 XZ₁₁₇, 6, 2, 5; 1999 XA₁₁₈, 6, 2, 5; 1999 XB₁₁₈, 3, 1, 0; 1999 XR₁₃₇ *, 8, 2, 5; 1999 XS₁₃₇ *, 7, 2, 5; 1999 XT₁₃₇ *, 6, 2, 5; 1999 XU₁₃₇ *, 7, 2, 5; 1999 XV₁₃₇ *, 7, 2, 5; 1999 XA₂₁₈, 7, 2, 1; 2000 AX₄, 8, 2, 1; (2383), 3, 1, 0; (5100), 11, 2, 1; (5440), 4, 1, 0; *[132, 22, 5*, 1999/11/15–2000/01/06]*

033 Tautenburg

F. Börngen, Thüringer Landessternwarte, Sternwarte 5, D-07778 Tautenburg, Germany [**boerg@tls-tautenburg.de**]

1.3-m Schmidt telescope

PPM

1991 RQ₉, 2, 1, 0; 1994 WG₁, 2, 1, 0; 1998 KX₄₆, 2, 1, 0; 1998 QB₄₈, 2, 1, 0; 1998 RJ₁, 2, 1, 0; 1998 SG₁₆₄, 2, 1, 0; 1998 WB₇, 2, 1, 0; 1999 UN₂₅, 2, 1, 0; 1999 VD₂₄, 2, 1, 0; 1999 XL, 2, 1, 0; 1999 XN₂₅, 2, 1, 0; 1999 XF₂₀₅, 2, 1, 0; (12693), 2, 1, 0; *[26, 13, 0*, 1993/11/12–1995/10/25]*

046 Kleť

J. Tichá, Hvězdárna Kleť, Zátkovo nábreží 4, CZ-37001 České Budějovice, Czech

Republic [**klet@klet.cz**]

Observers J. Tichá, M. Tichý, Z. Moravec

Measurers M. Tichý, Z. Moravec

0.57-m *f*/5.2 reflector + CCD

USNO-A2.0

1977 UA, 6, 2, 1; 1980 SF, 9, 3, 2; 1981 EX₃₁, 10, 2, 7; 1984 UJ₁, 3, 1, 0; 1986 WZ, 6, 2, 1; 1988 GQ, 9, 3, 29; 1990 UO₁, 3, 1, 0; 1991 VM₅, 5, 1, 0; 1993 QP₉, 5, 1, 0; 1995 SB₂₅, 5, 1, 0; 1995 TB, 10, 3, 29; 1995 UJ₂, 4, 1, 0; 1995 UW₂, 5, 2, 2; 1995 UE₄, 7, 2, 2; 1995 WE₆, 6, 2, 2; 1996 DL₁, 6, 2, 1; 1997 JN₁₆, 7, 4, 1, 0; 1997 PY₁, 3, 1, 0; 1997 QK, 3, 1, 0; 1997 TB₁₂, 6, 2, 1; 1997 VB₁, 10, 3, 21; 1998 PJ, 6, 2, 1; 1998 QC₂₆, 6, 2, 1; 1998 RP₁₉, 3, 1, 0; 1998 ST₇₃, 3, 1, 0; 1998 SW₁₄₀, 7, 2, 1; 1998 TH₆, 5, 2, 1; 1998 TJ₆, 12, 3, 38; 1998 UJ₁, 7, 2, 1; 1998 UO₆, 6, 2, 1; 1998 VG, 6, 2, 1; 1998 VU, 6, 2, 1; 1998 XK, 8, 3, 2; 1998 XN, 10, 2, 1; 1998 XE₁₂, 18, 2, 1; 1998 YW₁, 8, 2, 1; 1999 JR₁₃₆ *, 3, 1, 0; 1999 ND₄₃, 5, 1, 0; 1999 PJ₁, 6, 1, 0; 1999 RV₂, 4, 1, 0; 1999 RF₆₂, 5, 1, 0; 1999 RE₁₁₇, 4, 1, 0; 1999 TD₅, 2, 1, 0; 1999 TQ₁₁, 6, 2, 1; 1999 UM₃, 4, 1, 0; 1999 UU₃, 4, 1, 0; 1999 VQ₁₁, 4, 1, 0; 1999 VS₂₄, 6, 2, 2; 1999 VD₂₅, 3, 1, 0; 1999 VR₂₅, 9, 3, 4; 1999 VO₄₀, 4, 1, 0; 1999 VR₅₉, 5, 1, 0; 1999 WF₁, 6, 2, 3; 1999 WH₁, 7, 2, 1; 1999 WJ₁, 6, 2, 1; 1999 WK₁, 6, 2, 4; 1999 WL₁, 6, 2, 2; 1999 WM₁, 6, 2, 2; 1999 WP₁, 7, 2, 3; 1999 WT₂, 5, 2, 1; 1999 WV₂, 6, 2, 2; 1999 WE₅, 12, 4, 27; 1999 WJ₇, 12, 3, 15; 1999 WE₈, 5, 1, 0; 1999 XX₈, 4, 1, 0; 1999 XQ₃₅, 4, 1, 0; 1999 XS₃₅, 10, 2, 15; 1999 XA₃₈, 3, 1, 0; 1999 XB₆₉, 11, 2, 1; 1999 XN₇₅, 13, 3, 2; 1999 XX₉₆, 15, 3, 3; 1999 XY₁₂₀, 6, 2, 1; 1999 XV₁₃₁, 8, 2, 1; 1999 XK₁₃₆, 4, 1, 0; 1999 XL₁₃₆, 13, 3, 17; 1999 XJ₁₄₁, 4, 1, 0; 1999 XK₁₄₁, 5, 1, 0; 1999 XL₁₄₁, 3, 1, 0; 1999 XM₁₄₁, 7, 1, 0; 1999 XA₁₄₃, 9, 2, 9; 1999 XU₁₅₆, 7, 2, 3; 1999 XO₁₆₄, 15, 2, 1; 1999 XT₁₆₅, 9, 2, 1; 1999 XN₂₀₇, 13, 3, 2; 1999 XZ₂₁₄, 9, 3, 3; 1999 YB, 4, 1, 0; 1999 YC, 6, 1, 0; 1999 YD, 13, 2, 11; 1999 YT, 11, 3, 3; 1999 YE₃, 10, 2, 3; 1999 YF₃, 9, 2, 3; 1999 YG₃, 24, 4, 24; 1999 YJ₅, 11, 2, 1; 1999 YK₅, 10, 2, 1; 1999 YA₉, 9, 2, 1; 1999 YR₁₄, 8, 2, 10; 1999 YS₁₄, 6, 1, 0; 1999 YT₁₄, 3, 1, 0; 2000 AQ₁ *, 25, 7, 11; 2000 AA₆, 14, 3, 9; 2000 AB₆, 13, 3, 9; 2000 AC₆, 8, 2, 7; 2000 AD₆, 8, 2, 7; 2000 AE₆, 10, 2, 7; 2000 AF₆, 7, 2, 7; 2000 AG₆, 13, 2, 2; 2000 AP₆ *, 14, 3, 8; 2000 AQ₆ *, 19, 5, 9; 2000 AW₆, 6, 2, 1; 2000 AP₁₄, 14, 2, 1; 2000 AY₁₈, 6, 2, 1; 2000 AM₂₅, 8, 2, 1; 2000 AQ₂₈, 7, 2, 1; 2000 AT₃₇, 8, 2, 1; 2000 AM₃₉, 18, 3, 2; 2000 AD₄₂ *, 26, 7, 9; 2000 AL₄₃ *, 20, 6, 8; 2000 AN₄₈, 10, 2, 1; 2000 AX₅₀ *, 26, 7, 8; 2000 AW₉₃, 12, 3, 3; 2000 AX₉₃, 12, 3, 3; 2000 AY₉₃, 12, 3, 3; 2000 AZ₉₃, 9, 2, 3; 2000 AA₉₆, 10, 2, 1; 2000 AN₁₀₈, 12, 2, 1; 2000 AD₁₂₁, 3, 1, 0; 2000 AJ₁₂₄, 16, 2, 1; 2000 AL₁₂₄, 10, 2, 1; 2000 AJ₁₅₃, 19, 4, 5; 2000 AK₁₅₃, 14, 3, 4; 2000 AH₁₆₈ *, 16, 3, 2; 2000 AJ₁₆₈ *, 11, 3, 2; 2000 AK₁₆₈ *, 13, 3, 2; 2000 AL₁₆₈ *, 15, 3, 2; 2000 AM₁₆₈ *, 18, 3, 2; 2000 AN₁₆₈ *, 15, 3, 2; 2000 AG₂₀₄ *, 9, 2, 1; 2000 AH₂₀₄ *, 11, 2, 1; 2000 AJ₂₀₄ *, 11, 2, 1; 2000 AK₂₀₄ *, 12, 2, 1; 2000 AL₂₀₄ *, 12, 2, 1; 2000 AD₂₀₅, 14, 3, 2; 2000 AE₂₀₅, 16, 4, 5; 2000 AF₂₀₅, 17, 4, 5; 2000 AH₂₀₅, 8, 2, 1; 2000 AT₂₁₂, 3, 1, 0; 2000 AB₂₂₉, 30, 7, 9; 2000 AC₂₂₉, 16, 4, 5; (167), 3, 1, 0; (1217), 6, 2, 1; (4258), 3, 1, 0; (4876), 3, 1, 0; (9130), 3, 1, 0; (9751), 3, 1, 0; (9990), 4, 2, 9; (12879), 3, 1, 0; (12883), 4, 1, 0; *[1381, 157, 18*, 1995/12/17–2000/01/15]*

049 Kvistaberg

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Observers T. Oja, O. Karlsson, C.-I. Lagerkvist, J. Warell

Measurers J. Warell, C.-I. Lagerkvist, A. Erikson, G. Hahn, S. Mottola

1.0m Schmidt + CCD

USNO-SA2.0

1979 QT₁, 3, 1, 0; 1979 QA₂, 3, 1, 0; 1994 WE₄, 3, 1, 0; 1997 CF₂₉, 3, 1, 0; 1997 EQ₂, 3, 1, 0; 1997 GH₇, 6, 2, 10; 1998 QT₁₈, 6, 2, 1; 1998 QP₃₁, 3, 1, 0; 1998 SD₁₃₀, 3, 1, 0; 1999 ND₄₃, 3, 1, 0; 1999 RH₂₇, 3, 1, 0; 1999 TX₁₆, 3, 1, 0; 1999 TR₃₀, 3, 1, 0; 1999 VQ₉, 3, 1, 0; 1999 VA₂₇, 3, 1, 0; 1999 VE₂₇, 3, 1, 0; 1999 VQ₃₀, 3, 1, 0; 1999 VT₃₀, 3, 1, 0; 1999 VE₃₁, 3, 1, 0; 1999 VS₃₃, 3, 1, 0; 1999 VW₃₃, 3, 1, 0; 1999 VN₃₈, 3, 1, 0; 1999 VJ₃₉, 3, 1, 0; 1999 VK₃₉, 3, 1, 0; 1999 VM₄₀, 6, 2, 6; 1999 VX₅₀, 3, 1, 0; 1999 VO₆₈, 3, 1, 0; 1999 WM₁, 3, 1, 0; 1999 WY₃, 3, 1, 0; 1999 WG₈, 3, 1, 0; 1999 WB₉, 3, 1, 0; 1999 WH₁₁, 3, 1, 0; 1999 WK₁₃, 3, 1, 0; 1999 XE, 3, 1, 0; 1999 XD₅, 3, 1, 0; 1999 XS₅, 3, 1, 0; 1999 XZ₅, 3, 1, 0; 1999 XB₆, 3, 1, 0; 1999 XF₆, 3, 1, 0; 1999 XM₈, 12, 3, 11; 1999 XN₈, 6, 2, 7; 1999 XE₃₉, 3, 1, 0; 1999 XJ₄₈, 3, 1, 0; 1999 XD₅₀, 3, 1, 0; 1999 XC₅₁, 3, 1, 0; 1999 XF₅₃, 3, 1, 0; 1999 XJ₅₃, 3, 1, 0; 1999 XV₅₃, 3, 1, 0; 1999 XD₆₂, 6, 2, 5; 1999 XW₇₀, 3, 1, 0; 1999 XT₇₂, 3, 1, 0; 1999 XZ₈₆, 3, 1, 0; 1999 XQ₉₃, 3, 1, 0; 1999 XP₁₈₁, 3, 1, 0; 1999 XA₂₂₅, 3, 1, 0; 2000 AP₂₉, 6, 2, 4; 2000 AC₃₁, 6, 2, 4; 2000 AX₅₅, 3, 1, 0; 2000 AO₈₄, 3, 1, 0; 2000 AH₉₃, 3, 1, 0; 2000 AM₁₁₂, 6, 2, 1; 2000 AH₁₅₁ *, 9, 3, 10; (462), 3, 1, 0; (530), 6, 2, 1; (2331), 3, 1, 0; (2587), 3, 1, 0; (2590), 3, 1, 0; (2853), 3, 1, 0; (2874), 3, 1, 0; (4229), 3, 1, 0; (5317), 3, 1, 0; (6578), 3, 1, 0; (6779), 3, 1, 0; (6980), 3, 1, 0; (7545), 6, 1, 0; (9437), 3, 1, 0; (9829), 3, 1, 0; (12218), 3, 1, 0; (12431), 6, 2, 12; (12873), 3, 1, 0; *[288, 80, 1*, 1999/11/14–2000/01/16]*

057 Belgrade

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Observers V. Protitch-Benishek, Vl. Benishek, I. Graovac

0.14-m *f*/10 Askania astrograph + CCD

GSC

1999 RH₂₇, 7, 1, 0; 1999 US₃, 14, 1, 0; *[21, 2, 0*, 1999/12/08–1999/12/12]*

095 Crimean Astrophysical Observatory

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Observer L. V. Zhuravleva

0.4-m *f*/4 double astrograph

PPM

1994 AC, 1, 1, 0; 1996 TD₁₁, 3, 2, 3; 1996 UZ, 3, 2, 3; 1996 UA₁, 1, 1, 0; 1996 VU₆, 3, 2, 3; 1996 VA₈, 2, 2, 3; 1996 VZ₈, 2, 2, 3; 1996 VC₉, 3, 2, 3; 1996 VP₃₀, 3, 2, 3; 1996 VA₄₀ *, 2, 2, 3; 1996 VB₄₀ *, 2, 2, 3; 1996 VC₄₀ *, 2, 2, 3; 1996 VD₄₀ *, 2, 2, 3; 1996 VE₄₀ *, 2, 2, 3; 1996 VF₄₀ *, 2, 2, 3; 1996 VG₄₀ *, 2, 2, 3; 1996 VH₄₀ *, 3, 2, 3; 1996 VJ₄₀ *, 2, 2, 3; 1996 VK₄₀ *, 2, 2, 3; 1996 VL₄₀ *, 2, 2, 3; 1996 VM₄₀ *, 2, 2, 3; 1996 VN₄₀ *, 3, 2, 3; 1996 VO₄₀ *, 2, 2, 3; 1996 VP₄₀ *, 3, 2, 3; 1996 VQ₄₀ *, 2, 2, 3; 1996 VR₄₀ *, 2, 2, 3; 1996 VS₄₀ *, 3, 2, 3; 1996 VU₄₀ *, 3, 2, 3; 1996 VV₄₀ *, 2, 2, 3; 1996 VW₄₀ *, 3, 2, 3; 1996 VX₄₀ *, 2, 2, 3; 1996 VY₄₀ *, 3, 2, 3; 1996 VZ₄₀ *, 2, 2, 3; 1996 VA₄₁ *, 2, 2, 3; 1996 VB₄₁ *, 2, 2, 3; 1998 AH₅, 1, 1, 0; 1998 DE₃₄, 1, 1, 0; 1998 FC₇₄, 2, 2, 3; 1998 HS₁₉, 1, 1, 0; 1998 HO₄₂, 1, 1, 0; 1999 FX₃₂, 1, 1, 0; 1999 JX₂₆, 3, 2, 3; 1999 JF₃₇, 3, 2, 3; 1999 JO₅₇, 1, 1, 0; 1999 JK₆₄, 2, 1, 0; 1999 JF₇₀, 1, 1, 0; 1999 JO₁₀₃, 1, 1, 0; 1999 ND₉, 1, 1, 0; 1999 RH₃₅, 2, 1, 0; 1999 VY₂₂, 2, 1, 0; 1999 VO₇₂, 2, 1, 0; 1999 XR₂, 2, 1, 0; 1999 XM₉₆, 2, 1, 0; (41), 2, 2, 3; (116), 3, 2, 3; (140), 2, 2, 3; (158), 3, 2, 3; (470), 1, 1, 0; (478), 1, 1, 0; (503), 2, 2, 3; (738), 3, 2, 3; (767), 2, 2, 3; (820), 2, 2, 3; (834), 1, 1, 0; (975), 2, 1, 0; (977), 2, 2, 3; (979), 3, 2, 3; (992), 3, 2, 3; (995), 1, 1, 0; (1024), 3, 2, 3; (1048), 3, 2, 3; (1085), 1, 1, 0; (1200), 2, 2, 3; (1449), 1, 1, 0; (1464), 2, 2, 3; (1473), 1, 1, 0; (1539), 1, 1, 0; (1542), 2, 1, 0; (1605), 2, 2, 3; (1773), 1, 1, 0; (1856), 2, 2, 3; (1933), 1, 1, 0; (2002), 2, 2, 3; (2014), 2, 2, 3; (2046), 3, 2, 3; (2093), 1, 1, 0; (2115), 3, 2, 3; (2116), 2, 2, 3; (2183), 1, 1, 0; (2198), 2, 2, 3; (2249), 1, 1, 0; (2578), 3, 2, 3; (2619), 2, 2, 3; (2717), 3, 2, 3; (2778), 2, 2, 3; (2803), 3, 2, 3; (2911), 1, 1, 0; (2914), 1, 1, 0; (2988), 1, 1, 0; (3132), 1, 1, 0; (3259), 1, 1, 0; (3282), 1, 1, 0; (3328), 3, 2, 3; (3418), 2, 2, 3; (3531), 2, 2, 3; (3533), 2, 2, 3; (3544), 2, 2, 3; (3545), 3, 2, 3; (3633), 2, 1, 0; (3648), 3, 2, 3; (3788), 2, 2, 3; (4163), 1, 1, 0; (4353), 3, 2, 3; (4377), 3, 2, 3; (4616), 1, 1, 0; (4658), 3, 2, 3; (4677), 2, 2, 3; (4683), 3, 2, 3; (4830), 1, 1, 0; (4841), 2, 2, 3; (4884), 1, 1, 0; (4892), 2, 2, 3; (4955), 3, 2, 3; (5008), 1, 1, 0; (5013), 3, 2, 3; (5033), 3,

2, 3; (5057), 2, 2, 3; (5162), 1, 1, 0; (5313), 1, 1, 0; (5320), 2, 2, 3; (5344), 2, 2, 3; (5532), 1, 1, 0; (5593), 1, 1, 0; (5689), 1, 1, 0; (5802), 3, 2, 3; (5843), 1, 1, 0; (5878), 2, 2, 3; (5887), 1, 1, 0; (5910), 1, 1, 0; (5915), 2, 2, 3; (6072), 2, 2, 3; (6538), 3, 2, 3; (7232), 3, 2, 3; (7268), 2, 2, 3; (7278), 2, 2, 3; (7285), 2, 2, 3; (7339), 1, 1, 0; (7346), 2, 2, 3; (7366), 3, 2, 3; (7387), 1, 1, 0; (7431), 3, 2, 3; (7438), 1, 1, 0; (7445), 2, 2, 3; (7549), 3, 2, 3; (7615), 1, 1, 0; (8175), 2, 2, 3; (8334), 1, 1, 0; (8337), 3, 2, 3; (8389), 1, 1, 0; (8543), 3, 2, 3; (8571), 3, 2, 3; (8815), 2, 2, 3; (8974), 2, 1, 0; (9278), 3, 2, 3; (10269), 2, 1, 0; (10388), 1, 1, 0; (10608), 3, 2, 3; (10716), 3, 2, 3; (10991), 1, 1, 0; (10992), 2, 2, 3; (11047), 2, 2, 3; (11132), 2, 1, 0; (11339), 2, 1, 0; (11341), 3, 2, 3; (11415), 2, 2, 3; (11419), 3, 2, 3; (11442), 3, 2, 3; [360, 179, 27*, 1991/11/05–1996/11/15]

097 Wise Observatory, Mitzpeh Ramon

A. Gal-Yam, Wise Observatory, Tel-Aviv University, IL-69978 Tel-Aviv, Israel
[avishay@wise1.tau.ac.il]

Observer A. Gal-Yam

Measurer I. Manulis

1.0-m $f/7$ reflector + CCD

USNO-A2.0

1999 RC197, 3, 1, 0; [3, 1, 0*, 1999/08/09]

098 Asiago Observatory, Cima Ekar

U. Munari, Osservatorio Astronomico di Padova, Sede di Asiago, I-36012 Asiago
(VI), Italy [munari@astras.pd.astro.it]

Observers U. Munari, F. Castellani, M. Tombelli, P. Antolini

Measurers F. Castellani, M. Tombelli, G. Forti

0.67-m $f/3.2$ Schmidt

1992 YK, 2, 1, 0; 1998 QS₉, 3, 1, 0; 1999 VG₂₄, 2, 1, 0; [7, 3, 0*, 1994/09/05–1995/09/26]

104 San Marcello Pistoiese

L. Tesi, Osservatorio di Pian dei Termini, Viale Panoramico 45, I-51028 San
Marcello Pistoiese (PT), Italy [iau@arcetri.astro.it]

Observers L. Tesi, A. Boattini, M. Tombelli, A. Carnoia, V. Cecchini, P. Maffucci

Measurers G. Forti, L. Tesi, A. Boattini, M. Tombelli

0.40-m $f/5$ reflector + CCD

GSC

1990 TW₁₁, 2, 1, 0; 1993 FE₈, 7, 3, 4; 1993 FW₉, 4, 2, 1; 1994 PG, 2, 1, 0; 1994 QC, 6, 2, 13; 1995 FS, 6, 2, 33; 1995 SH₃₂, 5, 2, 1; 1996 CX₈, 2, 1, 0; 1997 ER₁₁, 3, 1, 0; 1997 EQ₄₀, 6, 2, 1; 1997 FQ₁, 9, 3, 3; 1998 HK₄₅, 3, 1, 0; 1998 KV₂, 5, 2, 9; 1998 MC₃₂, 4, 2, 1; 1998 OJ, 5, 2, 19; 1998 OK, 3, 1, 0; 1998 OD₁, 4, 2, 12; 1998 OE₁, 6, 2, 23; 1998 OV₁₂, 7, 2, 1; 1998 QV₅₁, 4, 2, 1; 1998 QO₅₃, 3, 1, 0; 1998 RO₇₈, 4, 2, 1; 1998 SL₂, 2, 1, 0; 1998 SV₁₀, 3, 1, 0; 1998 SC₃₆, 6, 2, 1; 1998 SZ₁₆₃, 4, 2, 1; 1998 VK₃₃, 2, 1, 0; 1998 VO₃₃, 5, 3, 3; 1998 XP₂, 3, 1, 0; 1998 XE₁₂, 4, 1, 0; 1998 YE₁₀, 4, 2, 1; 1999 AF₂₄, 2, 1, 0; 1999 HF₁, 7, 2, 1; 1999 ST₉, 3, 1, 0; 1999 SC₁₀, 3, 1, 0; 1999 TN₁₀, 3, 1, 0; 1999 TB₂₆, 4, 1, 0; 1999 TS₂₆, 4, 1, 0; 1999 VW₂₀, 3, 1, 0; 1999 VB₇₂, 4, 1, 0; 1999 WJ₇, 3, 1, 0; 1999 XV₁₃₅, 2, 1, 0; 1999 XK₁₄₂, 7, 2, 4; 1999 YD, 3, 1, 0; 1999 YT, 3, 1, 0; 1999 YK₅, 3, 1, 0; 1999 YK₉ *, 4, 2, 1; 1999 YL₉ *, 6, 3, 6; 1999 YN₁₂ *, 9, 4, 16; 1999 YY₁₃ *, 11, 4, 15; 1999 YR₁₄, 3, 1, 0; 1999 YT₁₄, 2, 1, 0; 1999 YM₁₆ *, 10, 3, 13; 1999 YQ₁₇ *, 7, 3, 6; 2000 AD, 4, 2, 1; 2000 AT₁, 10, 3, 3; 2000 AS₂ *, 4, 2, 1; 2000 AT₂ *, 4, 2, 1; 2000 AU₂ *, 4, 2, 1; 2000 AV₂ *, 4, 2, 1; 2000 AW₂ *, 10, 4, 15; 2000 AX₂ *, 6, 3, 15; 2000 AY₂ *, 9, 3, 15; 2000 AZ₂ *, 12, 4, 14; 2000 AA₃ *, 7, 3, 13; 2000 AB₃ *, 8, 3, 8; 2000 AW₄ *, 10, 4, 10; 2000 AX₄ *, 7, 3, 8; 2000 AY₄ *, 8, 3, 8; 2000 AZ₄ *, 12, 4, 13; 2000 AA₅ *, 14, 5, 8; 2000 AB₅ *, 10, 4, 13; 2000 AA₆, 4, 1, 0; 2000 AB₆, 3, 1, 0; 2000 AH₆ *, 7, 3, 13; 2000 AX₁₇, 8, 3, 2; 2000 AD₁₈, 2, 1, 0; 2000 AN₃₂, 9, 4, 6; 2000 AW₃₂, 5, 2, 1; 2000 AX₃₂, 9, 3, 3; 2000 AO₄₃ *, 7, 3, 15; 2000 AZ₅₃, 7, 1, 0; 2000 AG₅₈, 4, 2, 1; 2000 AH₅₈, 4, 2, 1; 2000 AV₆₉, 7, 2, 1; 2000 AW₉₃, 3, 1, 0; 2000 AY₉₃, 2, 1, 0; 2000 AZ₁₅₀ *, 4, 2, 1; 2000 AA₁₅₁ *, 4, 2, 1; 2000 AB₁₅₁ *, 5, 2, 1; 2000 AC₁₅₁ *, 6, 3, 10; 2000 AD₁₅₁ *, 4, 2, 1; 2000 AZ₂₀₄ *, 9, 3, 5; (1824), 2, 1, 0; (5026), 2, 1, 0; (5440), 4, 2, 1; (9636), 6, 2, 1; (9638), 7, 2, 2; (11537), 4, 1, 0; (12273), 2, 1, 0; (12840), 3, 1, 0; [527, 101, 30*, 1999/10/10–2000/01/16]

106 Črni vrh

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Observers H. Mikuž, S. Matičič, J. Skvarč

0.36-m $f/6.7$ Schmidt-Cassegrain + CCD

USNO-A2.0, ACT, GSC-1.1

1991 SE₁, 2, 1, 0; 1993 UY₂, 3, 1, 0; 1994 GK₉, 3, 1, 0; 1995 DR₂, 3, 1, 0; 1997 JH₆, 2, 1, 0; 1998 DQ₁₀, 3, 1, 0; 1998 QR₈, 3, 1, 0; 1998 QY₁₉, 3, 1, 0; 1998 QW₂₂, 3, 1, 0; 1998 QE₂₃, 3, 1, 0; 1998 QQ₃₅, 3, 1, 0; 1998 QR₃₉, 2, 1, 0; 1998 QF₄₉, 2, 1, 0; 1998 QV₆₇, 3, 1, 0; 1998 QT₇₆, 3, 1, 0; 1998 QD₇₉, 3, 1, 0; 1998 RU₄₇, 12, 4, 18; 1998 RK₅₅, 3, 1, 0; 1998 RK₆₈, 3, 1, 0; 1998 RA₇₃, 2, 1, 0; 1998 RB₇₇, 3, 1, 0; 1998 RY₇₇, 3, 1, 0; 1998 RZ₇₉, 3, 1, 0; 1998 SW₁, 3, 1, 0; 1998 SG₁₀, 3, 1, 0; 1998 SJ₂₄, 3, 1, 0; 1998 SH₂₅, 3, 1, 0; 1998 SN₂₅, 3, 1, 0; 1998 SS₂₇, 3, 1, 0; 1998 SG₄₃, 3, 1, 0; 1998 SR₄₃, 3, 1, 0; 1998 SN₅₄, 3, 1, 0; 1998 SG₆₀, 3, 1, 0; 1998 SA₆₁, 3, 1, 0; 1998 SO₆₁, 6, 2, 1; 1998 SK₆₃, 3, 1, 0; 1998 SV₆₅, 3, 1, 0; 1998 SZ₁₁₄, 3, 1, 0; 1998 SK₁₁₉, 3, 1, 0; 1998 SY₁₂₇, 3, 1, 0; 1998 SU₁₂₈, 3, 1, 0; 1998 SO₁₂₉, 3, 1, 0; 1998 SD₁₃₁, 3, 1, 0; 1998 SE₁₃₂, 3, 1, 0; 1998 SC₁₃₂, 3, 1, 0; 1998 SK₁₃₂, 2, 1, 0; 1998 SW₁₃₂, 3, 1, 0; 1998 SH₁₃₄, 3, 1, 0; 1998 SV₁₃₄, 3, 1, 0; 1998 SR₁₃₉, 3, 1, 0; 1998 SZ₁₄₀, 3, 1, 0; 1998 SA₁₄₄, 2, 1, 0; 1998 ST₁₄₄, 2, 1, 0; 1998 SQ₁₄₅, 3, 1, 0; 1998 ST₁₄₅, 3, 1, 0; 1998 SV₁₆₃, 3, 1, 0; 1998 SZ₁₆₃, 3, 1, 0; 1998 SK₁₆₄, 2, 1, 0; 1998 SV₁₆₄, 3, 1, 0; 1998 TA, 3, 1, 0; 1998 TT₅, 3, 1, 0; 1998 TX₅, 3, 1, 0; 1998 TV₆, 3, 1, 0; 1998 TP₁₇, 3, 1, 0; 1998 TX₁₇, 3, 1, 0; 1998 TY₁₇, 2, 1, 0; 1998 TE₂₉, 3, 1, 0; 1998 TL₃₂, 3, 1, 0; 1998 UD₈, 3, 1, 0; 1998 UR₁₆, 3, 1, 0; 1998 UK₂₀, 3, 1, 0; 1998 UL₂₀, 2, 1, 0; 1998 US₂₄, 3, 1, 0; 1998 VU₆, 2, 1, 0; 1998 VQ₇, 3, 1, 0; 1998 VT₁₀, 3, 1, 0; 1998 VO₁₈, 2, 1, 0; 1998 VR₂₇, 3, 1, 0; 1998 VY₂₉, 3, 1, 0; 1998 VD₃₀, 3, 1, 0; 1998 VM₃₂, 3, 1, 0; 1998 VF₃₅, 3, 1, 0; 1998 WX₄, 3, 1, 0; 1998 WN₁₁, 3, 1, 0; 1998 WV₁₈, 3, 1, 0; 1998 XW₃, 3, 1, 0; 1998 XS₃₁, 2, 1, 0; 1998 XJ₄₀, 3, 1, 0; 1998 XO₇₉, 2, 1, 0; 1999 TD₅, 2, 1, 0; 1999 TB₈, 1, 1, 0; 1999 TG₁₇, 3, 1, 0; 1999 UK₃, 3, 1, 0; 1999 UU₃, 3, 1, 0; 1999 UN₄, 3, 1, 0; 1999 UG₁₁, 3, 1, 0; 1999 VK₃, 1, 0; 1999 VO₂, 3, 1, 0; 1999 VB₆, 3, 1, 0; 1999 VC₆, 3, 1, 0; 1999 VF₆, 3, 1, 0; 1999 VG₆, 3, 1, 0; 1999 VH₆, 3, 1, 0; 1999 VJ₆, 3, 1, 0; 1999 VK₆, 3, 1, 0; 1999 VJ₇, 3, 1, 0; 1999 VF₈, 3, 1, 0; 1999 VH₈, 3, 1, 0; 1999 VJ₈, 3, 1, 0; 1999 VE₉, 2, 1, 0; 1999 VQ₉, 6, 2, 1; 1999 VR₉, 9, 2, 1; 1999 VZ₉, 3, 1, 0; 1999 VF₁₀, 3, 1, 0; 1999 VH₁₀, 6, 2, 1; 1999 VJ₁₀, 3, 1, 0; 1999 VK₁₀, 3, 1, 0; 1999 VL₁₀, 3, 1, 0; 1999 VM₁₀, 6, 2, 1; 1999 VN₁₀, 6, 2, 1; 1999 VQ₁₀, 6, 2, 1; 1999 VS₁₀, 3, 1, 0; 1999 VT₁₀, 3, 1, 0; 1999 VV₁₀, 3, 1, 0; 1999 VY₁₁, 3, 1, 0; 1999 VA₁₂, 3, 1, 0; 1999 VU₂₀, 3, 1, 0; 1999 VK₂₁, 2, 1, 0; 1999 VR₂₂, 3, 1, 0; 1999 VT₂₂, 3, 1, 0; 1999 VE₂₃, 3, 1, 0; 1999 VO₂₃, 3, 1, 0; 1999 VP₂₃, 3, 1, 0; 1999 VS₂₃, 1, 1, 0; 1999 VU₂₃, 3, 1, 0; 1999 VV₂₃, 2, 1, 0; 1999 VW₂₃, 3, 1, 0; 1999 VY₂₃, 3, 1, 0; 1999 VM₂₄, 3, 1, 0; 1999 VO₂₄, 3, 1, 0; 1999 VQ₂₄, 3, 1, 0; 1999 VX₂₄, 2, 1, 0; 1999 VZ₂₄, 2, 1, 0; 1999 VA₂₅, 3, 1, 0; 1999 VB₂₅, 3, 1, 0; 1999 VC₂₅, 3, 1, 0; 1999 VM₂₅, 3, 1, 0; 1999 VF₂₈, 3, 1, 0; 1999 VS₃₀, 3, 1, 0; 1999 VC₃₁, 3, 1, 0; 1999 VJ₃₄, 3, 1, 0; 1999 VM₃₄, 3, 1, 0; 1999 VU₃₅, 3, 1, 0; 1999 VB₃₆, 3, 1, 0; 1999 VC₃₆, 3, 1, 0; 1999 VM₃₆, 3, 1, 0; 1999 VF₄₇, 3, 1, 0; 1999 VV₄₈, 3, 1, 0; 1999 VA₅₃, 3, 1, 0; 1999 VB₅₃, 2, 1, 0; 1999 VF₅₃, 3, 1, 0; 1999 VH₅₃, 2, 1, 0; 1999 VR₆₂, 3, 1, 0; 1999 VC₇₂, 3, 1, 0; 1999 VK₇₂, 5, 2, 2; 1999 WB, 3, 1, 0; 1999 WF, 3, 1, 0; 1999 WL, 3, 1, 0; 1999 WY, 3, 1, 0; 1999 WA₁, 3, 1, 0; 1999 WS₃, 3, 1, 0; 1999 WW₃, 3, 1, 0; 1999 WY₃, 6, 2, 1; 1999 WC₄, 3, 1, 0; 1999 WD₄, 2, 1, 0; 1999 WK₄, 3, 1, 0; 1999 WL₄, 3, 1, 0; 1999 WN₄, 3, 1, 0; 1999 WP₄, 3, 1, 0; 1999 WS₄, 2, 1, 0; 1999 WT₄, 2, 1, 0; 1999 WW₄, 3, 1, 0; 1999 WX₄, 3, 1, 0; 1999 WZ₄, 3, 1, 0; 1999 WA₅, 3, 1, 0; 1999 WB₅, 6, 2, 1; 1999 WC₅, 3, 1, 0; 1999 WD₅, 3, 1, 0; 1999 WV₈, 3, 1, 0; 1999 WW₈, 3, 1, 0; 1999 WX₈, 3, 1, 0; 1999 WY₈, 3, 1, 0; 1999 WB₉, 3, 1, 0; 1999 WQ₉, 3, 1, 0; 1999 WS₉, 2, 1, 0; 1999 WT₉, 3, 1, 0; 1999 WU₉, 3, 1, 0; 1999 WV₉, 3, 1, 0; 1999 WW₉, 2, 1, 0; 1999 WY₉, 2, 1, 0; 1999 WZ₉, 3, 1, 0; 1999 WA₁₀, 3, 1, 0; 1999 WD₁₀, 5, 2, 1; 1999 WE₁₀, 2, 1, 0; 1999 WL₁₁, 3, 1, 0; 1999 WS₁₃, 3, 1, 0; 1999 WF₁₈, 3, 1, 0; 1999 XM, 3, 1, 0; 1999 XW, 3, 1, 0; 1999 XX, 2, 1, 0; 1999 XY, 3, 1, 0; 1999 XZ, 2, 1, 0; 1999 XD₁, 3, 1, 0; 1999 XF₁, 3, 1, 0; 1999 XH₁, 3, 1, 0; 1999 XR₁, 3, 1, 0; 1999 XV₁, 3, 1, 0; 1999 XW₁, 3, 1, 0; 1999 XY₁, 3, 1, 0; 1999 XZ₁, 3, 1, 0; 1999 XA₂, 3, 1, 0; 1999 XB₂, 3, 1, 0; 1999 XG₂, 3, 1, 0; 1999 XQ₅, 2, 1, 0; 1999 XJ₇, 3, 1, 0; 1999 XK₇, 2, 1, 0; 1999 XL₇, 3, 1, 0; 1999 XM₇, 3, 1, 0; 1999 XN₇, 2, 1, 0; 1999 XO₇, 3, 1, 0; 1999 XP₇, 3, 1, 0; 1999 XQ₇, 3, 1, 0; 1999 XR₇, 3, 1, 0; 1999 XS₇, 3, 1, 0; 1999 XU₇, 3, 1, 0; 1999 XD₈, 2, 1, 0; 1999 XE₈, 3, 1, 0; 1999 XF₈, 3, 1, 0; 1999 XG₈, 3, 1, 0; 1999 XH₈, 3, 1, 0; 1999 XK₈, 3, 1, 0; 1999 XL₈, 3, 1, 0; 1999 XN₈, 3, 1, 0; 1999 XV₈, 2, 1, 0; 1999 XZ₈, 3, 1, 0; 1999 XU₁₁, 3, 1, 0; 1999 XY₁₁, 2, 1, 0; 1999 XF₁₃, 3, 1, 0; 1999 XR₁₃, 3, 1, 0; 1999 XS₁₃, 3, 1, 0; 1999 XW₁₃, 3, 1, 0; 1999 XX₁₄, 3, 1, 0; 1999 XC₁₅, 3, 1, 0; 1999 XS₁₅, 3, 1, 0; 1999 XU₁₅, 3, 1, 0; 1999 XV₁₅, 3, 1, 0; 1999 XX₁₅, 3, 1, 0; 1999 XY₁₅, 3, 1, 0; 1999 XE₁₆, 3, 1, 0; 1999 XP₂₀, 3, 1, 0; 1999 XF₂₄, 3, 1, 0; 1999 XL₂₄, 3, 1, 0; 1999 XA₂₅, 2, 1, 0; 1999 XF₂₅, 2, 1, 0; 1999 XU₂₈, 2, 1, 0; 1999 XF₂₉, 3, 1, 0; 1999 XP₃₁, 3, 1, 0; 1999 XX₃₁, 6, 2, 1; 1999 XF₃₂, 2, 1, 0; 1999 XG₃₂, 3, 1, 0; 1999 XO₃₂, 3, 1, 0; 1999 XR₃₂, 3, 1, 0; 1999 XV₃₂, 3, 1, 0; 1999 XB₃₃, 3, 1, 0; 1999 XG₃₃, 3, 1, 0; 1999 XN₃₃, 3, 1, 0; 1999 XO₃₃, 3, 1, 0; 1999 XQ₃₃, 3, 1, 0; 1999 XA₃₄, 3, 1, 0; 1999 XF₃₄, 3, 1, 0; 1999 XH₃₄, 3, 1, 0; 1999 XT₃₄, 3, 1, 0; 1999 XA₃₅, 3, 1, 0; 1999 XO₃₅, 3, 1, 0; 1999 XW₃₅, 3, 1, 0; 1999 XD₃₆, 3, 1, 0; 1999 XE₃₆, 6, 2, 1; 1999 XL₃₆, 2, 1, 0; 1999 XM₃₆, 3, 1, 0; 1999 XN₃₆, 2, 1, 0; 1999 XP₃₆, 3, 1, 0; 1999 XQ₃₆, 3, 1, 0; 1999 XR₃₆, 3, 1, 0; 1999 XT₃₆, 2, 1, 0; 1999 XU₃₆, 2, 1, 0; 1999 XV₃₆, 2, 1, 0; 1999 XX₃₆, 3, 1, 0; 1999 XC₃₇, 3, 1, 0; 1999 XD₃₇, 3, 1, 0; 1999 XE₃₇, 2, 1, 0; 1999 XF₃₇, 3, 1, 0; 1999 XJ₃₇, 3, 1, 0; 1999 XL₃₇, 3, 1, 0; 1999 XO₃₇, 3, 1, 0; 1999 XB₃₉, 3, 1, 0; 1999 XD₃₉, 2, 1, 0; 1999 XZ₄₁, 3, 1, 0; 1999 XQ₅₆, 3, 1, 0; 1999 XH₇₂, 3, 1, 0; 1999 XX₇₃, 3, 1, 0; 1999 XG₇₄, 3, 1, 0; 1999 XU₇₅, 2, 1, 0; 1999 XU₈₂, 3, 1, 0; 1999 XJ₈₃, 2, 1, 0; 1999 XJ₈₄, 3, 1, 0; 1999 XE₈₅, 6, 2, 1; 1999 XG₈₅, 3, 1, 0; 1999 XS₈₅, 3, 1, 0; 1999 XA₈₆, 2, 1, 0; 1999 XD₈₆, 3, 1, 0; 1999 XE₈₆, 6, 2, 2; 1999 XK₈₆, 3, 1, 0; 1999 XL₈₆, 2, 1, 0; 1999 XN₈₆, 3, 1,

0; 1999 XQ₈₆, 3, 1, 0; 1999 XS₈₆, 3, 1, 0; 1999 XU₈₆, 3, 1, 0; 1999 XV₈₆, 3, 1, 0; 1999 XX₈₆, 3, 1, 0; 1999 XY₈₆, 3, 1, 0; 1999 XZ₈₆, 3, 1, 0; 1999 XC₈₇, 3, 1, 0; 1999 XF₈₇, 3, 1, 0; 1999 XS₉₀, 2, 1, 0; 1999 XT₉₀, 3, 1, 0; 1999 XJ₉₁, 5, 2, 1; 1999 XK₉₁, 6, 2, 2; 1999 XL₉₁, 3, 1, 0; 1999 XR₉₁, 3, 1, 0; 1999 XG₉₃, 3, 1, 0; 1999 XH₉₃, 3, 1, 0; 1999 XJ₉₃, 3, 1, 0; 1999 XK₉₃, 2, 1, 0; 1999 XL₉₃, 3, 1, 0; 1999 XO₉₃, 3, 1, 0; 1999 XP₉₃, 3, 1, 0; 1999 XQ₉₃, 3, 1, 0; 1999 XT₉₃, 2, 1, 0; 1999 XU₉₃, 2, 1, 0; 1999 XF₉₄, 3, 1, 0; 1999 XM₉₄, 3, 1, 0; 1999 XR₉₄, 3, 1, 0; 1999 XU₉₄, 3, 1, 0; 1999 XJ₉₅, 3, 1, 0; 1999 XK₉₅, 3, 1, 0; 1999 XM₉₅, 3, 1, 0; 1999 XO₉₅, 2, 1, 0; 1999 XS₉₅, 3, 1, 0; 1999 XU₉₅, 3, 1, 0; 1999 XW₉₅, 3, 1, 0; 1999 XA₉₆, 2, 1, 0; 1999 XB₉₆, 3, 1, 0; 1999 XC₉₆, 2, 1, 0; 1999 XZ₉₇, 3, 1, 0; 1999 XB₉₈, 3, 1, 0; 1999 XD₉₈, 3, 1, 0; 1999 XT₉₈, 3, 1, 0; 1999 XW₉₈, 3, 1, 0; 1999 XY₉₈, 2, 1, 0; 1999 XL₉₉, 3, 1, 0; 1999 XE₁₀₀, 3, 1, 0; 1999 XK₁₀₀, 3, 1, 0; 1999 XV₁₀₀, 2, 1, 0; 1999 XJ₁₀₁, 3, 1, 0; 1999 XT₁₀₁, 3, 1, 0; 1999 XW₁₀₁, 3, 1, 0; 1999 XB₁₀₂, 6, 2, 1; 1999 XD₁₀₃, 3, 1, 0; 1999 XB₁₀₄, 3, 1, 0; 1999 XC₁₀₄, 3, 1, 0; 1999 XD₁₀₄, 3, 1, 0; 1999 XO₁₀₄, 3, 1, 0; 1999 XR₁₀₄, 3, 1, 0; 1999 XX₁₀₄, 3, 1, 0; 1999 XA₁₀₅, 3, 1, 0; 1999 XE₁₀₅, 3, 1, 0; 1999 XJ₁₀₅, 3, 1, 0; 1999 XK₁₀₅, 3, 1, 0; 1999 XN₁₀₅, 3, 1, 0; 1999 XW₁₀₅, 3, 1, 0; 1999 XC₁₀₆, 6, 2, 1; 1999 XS₁₀₉, 3, 1, 0; 1999 XZ₁₂₅, 3, 1, 0; 1999 XU₁₂₇, 2, 1, 0; 1999 XQ₁₃₄, 2, 1, 0; 1999 XU₁₃₄, 2, 1, 0; 1999 XX₁₃₅, 3, 1, 0; 1999 XB₁₃₆, 3, 1, 0; 1999 XT₁₃₆, 3, 1, 0; 1999 XU₁₃₆, 2, 1, 0; 1999 XX₁₃₆, 3, 1, 0; 1999 XY₁₃₆, 2, 1, 0; 1999 XA₁₃₇, 2, 1, 0; 1999 XA₁₄₃, 3, 1, 0; 1999 XQ₁₆₆, 3, 1, 0; 1999 XF₁₇₅, 3, 1, 0; 1999 XY₁₇₅, 3, 1, 0; 1999 XQ₁₇₇, 6, 2, 1; 1999 XD₁₈₀, 5, 2, 1; 1999 XE₁₈₀, 3, 1, 0; 1999 XP₁₉₅, 6, 2, 1; 1999 XN₁₉₆, 3, 1, 0; 1999 XY₁₉₆, 3, 1, 0; 1999 XD₂₀₃, 6, 2, 2; 1999 XU₂₀₃, 3, 1, 0; 1999 XO₂₀₅, 3, 1, 0; 1999 XK₂₁₇, 6, 2, 1; 1999 YT₃, 3, 1, 0; 1999 YF₃, 3, 1, 0; 1999 YM₅ *, 9, 3, 6; 1999 YV₈ *, 9, 3, 5; 2000 AD₄, 5, 2, 1; 2000 AB₆, 3, 1, 0; 2000 AW₁₂, 6, 2, 1; 2000 AB₁₃, 6, 2, 1; 2000 AH₂₇, 6, 2, 2; 2000 AM₄₃ *, 6, 2, 1; 2000 AN₄₃ *, 6, 2, 1; 2000 AP₅₀, 6, 2, 2; 2000 AX₉₃, 3, 1, 0; 2000 AD₁₄₇ *, 6, 2, 2; 2000 AB₂₂₉, 3, 1, 0; 2098 P-L, 3, 1, 0; 2589 P-L, 3, 1, 0; 3087 P-L, 3, 1, 0; 4526 P-L, 3, 1, 0; 4646 P-L, 6, 2, 1; 5565 P-L, 3, 1, 0; 6576 P-L, 9, 3, 6; 6640 P-L, 2, 1, 0; 6761 P-L, 3, 1, 0; 4206 T-1, 3, 1, 0; 4214 T-1, 3, 1, 0; 4235 T-1, 3, 1, 0; 1083 T-2, 3, 1, 0; 1607 T-2, 3, 1, 0; 5030 T-2, 3, 1, 0; 5205 T-2, 6, 2, 2; 1078 T-3, 2, 1, 0; 2139 T-3, 3, 1, 0; 4203 T-3, 3, 1, 0; 4303 T-3, 3, 1, 0; (596), 3, 1, 0; (690), 3, 1, 0; (1162), 2, 1, 0; (1528), 3, 1, 0; (1658), 2, 1, 0; (1970), 3, 1, 0; (2710), 3, 1, 0; (3251), 3, 1, 0; (3716), 3, 1, 0; (3746), 2, 1, 0; (3872), 2, 1, 0; (4258), 3, 1, 0; (6284), 2, 1, 0; (8937), 3, 1, 0; (9031), 3, 1, 0; (12406), 6, 2, 1; (12447), 3, 1, 0; (12683), 3, 1, 0; (12703), 3, 1, 0; (12764), 6, 2, 1; (12775), 3, 1, 0; (12828), 2, 1, 0; (12909), 2, 1, 0; (12913), 3, 1, 0; (12918), 3, 1, 0; (12921), 3, 1, 0; (12936), 2, 1, 0; (12965), 3, 1, 0; [1491, 480, 5*, 1999/10/06–2000/01/08]

107 Cavezzo

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Observers M. Nicolini, P. Negrelli

Measurer M. Nicolini

0.40-m $f/5.5$ reflector + CCD

GSC

1999 XO₂₁₉, 5, 2, 1; 2000 BB *, 5, 2, 1; [10, 2, 1*, 2000/01/16]

108 Montelupo

M. Tombelli, Via Bozzeto 26, I-50056 Montelupo (Fi), Italy

[iauarcetri.astro.it]

Observers M. Tombelli, A. Boattini, L. Tesi, D. Guidetti, E. Masotti, G. Forti

Measurers M. Tombelli, A. Boattini, L. Tesi, S. Bartolini, G. Forti

0.30-m $f/5.7$ Schmidt-Cassegrain + CCD

GSC

1998 OK, 3, 1, 0; 1999 WK₁₃, 3, 1, 0; (12813), 3, 1, 0; [9, 3, 0*, 1999/12/06–1999/12/13]

113 Volkssternwarte Drebach, Schönbrunn

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0.50-m $f/4.0$ reflector + CCD, 0.18-m $f/9.0$ refractor + CCD

USNO-A2.0

1976 DB₁, 4, 2, 6; 1982 UD₄, 2, 1, 0; 1988 VN₇, 3, 1, 0; 1989 AJ₆, 2, 1, 0; 1989 CB₆, 4, 2, 1; 1990 TW₁₁, 6, 2, 6; 1990 TD₁₂, 2, 1, 0; 1990 TW₁₂, 4, 2, 3; 1991 RQ₄, 2, 1, 0; 1991 RG₇, 4, 2, 1; 1991 TQ₂, 5, 2, 7; 1992 GC₈, 2, 1, 0; 1992 HS₄, 3, 1, 0; 1992 RD₁, 2, 1, 0; 1992 SF₁₁, 2, 1, 0; 1992 SS₁₆, 3, 1, 0; 1992 SQ₂₃, 4, 2, 3; 1992 SQ₂₄, 2, 1, 0; 1994 RR₁₁, 2, 1, 0; 1995 EF₈, 2, 1, 0; 1995 SO₅₄, 6, 3, 7; 1995 VD₂, 1, 0; 1998 RO₇₈, 3, 1, 0; 1999 RH₂₇, 5, 1, 0; 1999 RW₃₂, 2, 1, 0; 1999 RC₃₆, 2, 1, 0; 1999 VT₂₄, 8, 2, 3; 1999 XA₁₄₃, 5, 1, 0; 1999 YG₃, 5, 1, 0; 2000 AB₆, 5, 1, 0; 2000 AC₆, 3, 1, 0; 2000 AH₂₉, 3, 1, 0; 2000 AX₉₆, 4, 2, 1; 2000 AC₂₀₄ *, 4, 2, 1; (317), 3, 1, 0; (561), 2, 1, 0; (777), 2, 1, 0; (2118), 2, 1, 0; (2958), 2, 1, 0; (3616), 2, 1, 0; (4396), 2, 1, 0; (4500),

2, 1, 0; (4876), 2, 1, 0; (5730), 2, 1, 0; (7357), 2, 1, 0; (7632), 2, 1, 0; (9358), 2, 1, 0; (9706), 2, 1, 0; (12021), 2, 1, 0; (12841), 3, 1, 0; [151, 50, 1*, 2000/01/02–2000/01/13]

118 Modra

A. Galád, AGO MFF UK, P.O. Box 4, SK-90001 Modra, Slovakia

[ago@fmph.uniba.sk]

Observers A. Galád, P. Kolény, J. Tóth, L. Kornoš, Š. Gajdoš, D. Kalmančok

0.6-m $f/5.5$ reflector + CCD

USNO-A2.0, GSC

1986 TV₆, 2, 1, 0; 1991 TK, 3, 1, 0; 1995 RC, 1, 1, 0; 1997 BR, 3, 1, 0; 1998 VF, 5, 2, 20; 1999 RH₂₇, 2, 1, 0; 1999 VU, 5, 2, 14; 1999 VO₁₁, 6, 2, 14; 1999 VQ₁₁, 3, 1, 0; 1999 VY₂₇, 4, 2, 14; 1999 VM₄₀, 2, 1, 0; 1999 WK₁₃, 9, 4, 19; 1999 XO₃₅, 5, 2, 21; 1999 XQ₃₅, 3, 1, 0; 1999 XS₃₅, 6, 2, 14; 1999 XU₃₅, 6, 3, 5; 1999 XK₉₈, 3, 1, 0; 1999 XD₁₀₆, 8, 3, 21; 1999 XK₁₃₆, 5, 2, 5; 1999 XL₁₃₆, 5, 2, 2; 1999 XE₁₃₇ *, 7, 2, 3; 1999 XF₁₃₇ *, 6, 2, 3; 1999 XJ₁₄₁, 2, 1, 0; 1999 XK₁₄₁, 5, 2, 1, 0; 1999 XM₁₄₁, 3, 1, 0; 1999 XA₁₄₃, 3, 1, 0; 1999 YA, 6, 2, 1; 1999 YB, 8, 3, 20; 1999 YC, 8, 3, 15; 1999 YT, 3, 1, 0; 1999 YE₃, 3, 1, 0; 1999 YF₃, 5, 2, 1; 1999 YG₃, 9, 3, 15; 1999 YN₄, 3, 1, 0; 1999 YK₅, 2, 1, 0; 2000 AA₆, 4, 2, 1; 2000 AB₆, 6, 2, 1; 2000 AC₆, 3, 1, 0; 2000 AD₆, 3, 1, 0; 2000 AE₆, 3, 1, 0; 2000 AF₆, 3, 1, 0; 2000 AG₆, 3, 1, 0; 2000 AC₄₈ *, 8, 3, 6; 2000 AX₇₉, 6, 2, 5; 2000 AW₉₃, 3, 1, 0; 2000 AX₉₃, 3, 1, 0; 2000 AB₂₂₉, 4, 1, 0; (3838), 2, 1, 0; (11066), 2, 1, 0; (12711), 3, 1, 0; [214, 50, 3*, 1999/12/13–2000/01/12]

120 Višnjan

K. Korlević, Istarska 5, HR-51463 Višnjan, Croatia [korado@visnjan.hr]

Observers K. Korlević, P. Korlević, P. Radovan, A. Ritosa, M. Dusic, M. Jurić,

V. Jelić

Measurers K. Korlević, M. Jurić

0.41-m $f/4.3$ reflector + CCD

USNO-SA1.0

1981 DN, 4, 2, 1; 1985 PB₂, 2, 1, 0; 1988 PV₁, 2, 1, 0; 1988 RH₆, 2, 1, 0; 1988 SB₂, 2, 1, 0; 1989 GU₃, 2, 1, 0; 1990 SX₃, 4, 2, 1; 1991 PT₉, 4, 1, 0; 1991 RG₁₇, 4, 2, 6; 1991 SG, 2, 1, 0; 1991 UN₁, 2, 1, 0; 1992 EW₁₆, 2, 1, 0; 1992 HS₄, 4, 2, 5; 1992 RO₃, 2, 1, 0; 1992 UJ₅, 3, 1, 0; 1992 UC₆, 2, 1, 0; 1992 UG₇, 2, 1, 0; 1992 WE₁, 4, 2, 10; 1992 YY₁, 2, 1, 0; 1993 BD, 2, 1, 0; 1993 BE₅, 2, 1, 0; 1993 FQ₁, 6, 2, 2; 1993 FB₁₀, 2, 1, 0; 1993 FS₁₂, 2, 1, 0; 1993 FS₂₆, 3, 1, 0; 1993 HR₁, 2, 1, 0; 1993 LS₁, 4, 2, 1; 1993 TN₂, 2, 1, 0; 1993 TQ₂₉, 2, 1, 0; 1993 TM₃₁, 2, 1, 0; 1994 PQ₁₅, 2, 1, 0; 1994 PL₂₆, 2, 1, 0; 1994 PS₃₂, 3, 1, 0; 1995 CJ, 4, 2, 1; 1995 QB₂, 8, 4, 13; 1995 TR, 2, 1, 0; 1995 UY₈, 2, 1, 0; 1995 WK₄, 4, 2, 18; 1995 XV, 2, 1, 0; 1996 BB₁, 2, 1, 0; 1996 BJ₄, 9, 4, 12; 1996 EG₁, 2, 1, 0; 1996 GN₇, 4, 2, 4; 1996 HF₁₈, 2, 1, 0; 1996 SO₈, 2, 1, 0; 1997 BV₃, 6, 2, 2; 1997 BM₈, 8, 4, 6; 1997 EQ₂, 2, 1, 0; 1997 EY₂, 4, 2, 5; 1997 GA₁₄, 2, 1, 0; 1997 GX₂₂, 3, 1, 0; 1997 HW₇, 2, 1, 0; 1997 JB₁₅, 3, 1, 0; 1997 JT₁₆, 4, 2, 14; 1997 LO₃, 2, 1, 0; 1997 NK₁, 2, 1, 0; 1997 PL₅, 2, 1, 0; 1998 KS₁, 2, 1, 0; 1998 KD₄₇, 2, 1, 0; 1998 MZ₄₁, 2, 1, 0; 1998 OT₁, 2, 1, 0; 1998 OZ₁₄, 2, 1, 0; 1998 QK₁, 4, 2, 10; 1998 QN₁, 2, 1, 0; 1998 QZ₁₃, 2, 1, 0; 1998 QB₂₆, 5, 2, 1; 1998 QM₃₇, 2, 1, 0; 1998 QK₃₉, 2, 1, 0; 1998 QM₄₂, 2, 1, 0; 1998 QL₄₈, 8, 1, 0; 1998 QU₄₈, 3, 1, 0; 1998 QP₅₁, 5, 2, 1; 1998 QE₅₄, 2, 1, 0; 1998 QZ₅₄, 2, 1, 0; 1998 QF₅₅, 3, 1, 0; 1998 QM₅₇, 2, 1, 0; 1998 QL₆₆, 2, 1, 0; 1998 QW₇₀, 2, 1, 0; 1998 QO₈₇, 2, 1, 0; 1998 RJ₁, 5, 2, 491; 1998 RA₅, 4, 1, 0; 1998 RJ₄₀, 7, 3, 14; 1998 RQ₄₂, 2, 1, 0; 1998 RS₄₈, 2, 1, 0; 1998 RL₅₀, 2, 1, 0; 1998 RZ₅₅, 2, 1, 0; 1998 RY₅₇, 3, 2, 1; 1998 RP₆₆, 6, 2, 5; 1998 RP₆₉, 2, 1, 0; 1998 RL₇₃, 2, 1, 0; 1998 RB₇₇, 2, 1, 0; 1998 RN₇₈, 4, 2, 1; 1998 SL₄, 2, 1, 0; 1998 SN₂₅, 8, 2, 12; 1998 SN₂₇, 2, 1, 0; 1998 SS₂₇, 2, 1, 0; 1998 SL₄₂, 2, 1, 0; 1998 SC₄₆, 2, 1, 0; 1998 SL₄₇, 2, 1, 0; 1998 SL₅₄, 3, 1, 0; 1998 SY₅₉, 3, 1, 0; 1998 SX₆₆, 2, 1, 0; 1998 SQ₇₀, 2, 1, 0; 1998 ST₇₂, 2, 1, 0; 1998 SN₁₁₄, 2, 1, 0; 1998 SM₁₁₅, 11, 5, 7; 1998 SH₁₃₄, 4, 1, 0; 1998 SV₁₃₄, 2, 1, 0; 1998 SS₁₄₃, 2, 1, 0; 1998 SA₁₄₄, 2, 1, 0; 1998 ST₁₄₅, 4, 2, 1; 1998 SE₁₄₇, 2, 1, 0; 1998 SD₁₅₉, 2, 1, 0; 1998 SV₁₆₄, 3, 1, 0; 1998 TX₅, 4, 2, 4; 1998 TH₂₉, 2, 1, 0; 1998 UK₁, 2, 1, 0; 1998 UV₆, 4, 2, 4; 1998 UD₇, 2, 1, 0; 1998 UL₈, 3, 1, 0; 1998 UR₁₆, 8, 4, 7; 1998 UN₂₀, 2, 1, 0; 1998 VL₇, 2, 1, 0; 1998 VH₂₆, 8, 4, 9; 1998 VQ₂₇, 4, 2, 4; 1999 SH₁₁, 3, 1, 0; 1999 TT, 3, 1, 0; 1999 TJ₁₈, 2, 1, 0; 1999 TP₂₁, 2, 1, 0; 1999 TB₂₆, 3, 1, 0; 1999 UN₃, 4, 2, 24; 1999 UD₁₅, 2, 1, 0; 1999 VS₁, 2, 1, 0; 1999 VW₅, 3, 2, 2; 1999 VC₆, 2, 1, 0; 1999 VD₆, 2, 1, 0; 1999 VE₈, 7, 2, 4; 1999 VK₉, 2, 1, 0; 1999 VQ₉, 2, 1, 0; 1999 VU₉, 4, 1, 0; 1999 VN₁₂, 2, 1, 0; 1999 VZ₂₁, 2, 1, 0; 1999 VJ₂₆, 2, 1, 0; 1999 VO₃₀, 2, 1, 0; 1999 VJ₃₂, 2, 1, 0; 1999 VF₃₄, 2, 1, 0; 1999 VO₃₄, 4, 2, 11; 1999 VP₃₄, 4, 2, 11; 1999 VM₃₅, 4, 1, 0; 1999 VL₃₆, 2, 1, 0; 1999 VP₃₆, 2, 1, 0; 1999 VB₃₇, 2, 1, 0; 1999 VQ₃₇, 4, 2, 1; 1999 VC₄₇, 2, 1, 0; 1999 VN₅₃, 2, 1, 0; 1999 VN₅₄, 2, 1, 0; 1999 VQ₅₈, 2, 1, 0; 1999 VF₆₁, 2, 1, 0; 1999 VP₆₁, 6, 2, 6; 1999 VN₆₄, 2, 1, 0; 1999 VU₇₀, 2, 1, 0; 1999 VO₇₂, 5, 2, 12; 1999 VD₉₇, 2, 1, 0; 1999 WP₂, 1, 0; 1999 WS₁, 3, 1, 0; 1999 WU₁, 2, 1, 0; 1999 WY₁, 3, 2, 2; 1999 WW₂, 2, 1, 0; 1999 WE₆, 2, 1, 0; 1999 WG₆, 2, 1, 0; 1999 WH₆, 2, 1, 0; 1999 WM₆, 1, 1, 0; 1999 WN₆, 2, 1, 0; 1999 WO₆, 4, 1, 0; 1999 WQ₆, 4, 1, 0; 1999 WT₆, 2, 1, 0; 1999 WV₆, 2, 1, 0; 1999 WW₆, 2, 1, 0; 1999 WX₆, 2,

1, 0; 1999 WY₆, 6, 2, 7; 1999 WZ₆, 2, 1, 0; 1999 WA₇, 4, 2, 11; 1999 WB₇, 2, 1, 0; 1999 WC₇, 2, 1, 0; 1999 WJ₇, 8, 2, 1; 1999 WM₇, 2, 1, 0; 1999 WO₇, 2, 1, 0; 1999 WR₇, 4, 2, 21; 1999 WV₇, 4, 2, 1; 1999 WW₇, 4, 1, 0; 1999 WX₇, 2, 1, 0; 1999 WY₇, 2, 1, 0; 1999 WJ₁₀, 2, 1, 0; 1999 WO₁₃, 2, 1, 0; 1999 WP₁₃, 2, 1, 0; 1999 WL₁₈, 2, 1, 0; 1999 WN₁₉ *, 3, 2, 1; 1999 WP₁₉ *, 3, 2, 1; 1999 XW₁, 2, 1, 0; 1999 XM₄, 2, 1, 0; 1999 XL₁₅, 2, 1, 0; 1999 XO₁₅, 4, 2, 32; 1999 XP₁₅, 2, 1, 0; 1999 XS₁₅, 2, 1, 0; 1999 XT₁₅, 2, 1, 0; 1999 XU₁₅, 4, 2, 13; 1999 XV₁₅, 4, 2, 13; 1999 XX₁₅, 2, 1, 0; 1999 XY₁₅, 12, 4, 16; 1999 XZ₁₅, 7, 2, 12; 1999 XP₂₂, 8, 3, 17; 1999 XW₂₆, 2, 1, 0; 1999 XG₂₈, 2, 1, 0; 1999 XX₃₁, 5, 2, 1; 1999 XH₃₂, 6, 3, 4; 1999 XO₃₂, 4, 2, 1; 1999 XP₃₂, 4, 2, 1; 1999 XT₃₂, 3, 1, 0; 1999 XC₃₃, 6, 3, 7; 1999 XH₃₃, 5, 2, 1; 1999 XN₃₃, 4, 2, 1; 1999 XR₃₃, 2, 1, 0; 1999 XU₃₃, 4, 2, 1; 1999 XV₃₃, 2, 1, 0; 1999 XA₃₄, 5, 2, 1; 1999 XQ₃₄, 8, 3, 4; 1999 XR₃₄, 3, 1, 0; 1999 XT₃₄, 5, 2, 13; 1999 XJ₃₆, 4, 2, 13; 1999 XC₃₇, 2, 1, 0; 1999 XA₃₈, 9, 2, 1; 1999 XB₅₅, 7, 4, 4; 1999 XQ₅₆, 5, 2, 7; 1999 XV₅₇, 4, 2, 1; 1999 XT₅₉, 2, 1, 0; 1999 XG₆₀, 2, 1, 0; 1999 XG₆₅, 5, 3, 10; 1999 XA₆₈, 6, 3, 11; 1999 XE₆₈, 4, 2, 1; 1999 XW₇₀, 2, 1, 0; 1999 XV₇₈, 4, 2, 1; 1999 XK₈₃, 5, 2, 1; 1999 XQ₈₃, 5, 2, 5; 1999 XU₈₃, 8, 3, 4; 1999 XV₈₃, 6, 2, 2; 1999 XC₈₄, 4, 2, 2; 1999 XK₈₄, 3, 1, 0; 1999 XV₈₄, 6, 3, 10; 1999 XN₈₅, 7, 3, 6; 1999 XO₈₅, 6, 3, 5; 1999 XE₈₆, 4, 2, 11; 1999 XZ₈₆, 4, 2, 4; 1999 XV₈₈, 6, 2, 4; 1999 XP₈₉, 5, 2, 2; 1999 XM₉₄, 4, 2, 1; 1999 XO₉₄, 2, 1, 0; 1999 XQ₉₄, 7, 3, 28; 1999 XH₉₆, 2, 1, 0; 1999 XF₁₀₁, 6, 3, 5; 1999 XJ₁₀₁, 2, 1, 0; 1999 XX₁₀₁, 11, 3, 6; 1999 XZ₁₀₁, 10, 5, 7; 1999 XA₁₀₃, 6, 3, 5; 1999 XC₁₀₃, 3, 1, 0; 1999 XM₁₀₃, 3, 1, 0; 1999 XW₁₀₅, 5, 2, 12; 1999 XF₁₀₈, 3, 1, 0; 1999 XQ₁₂₇, 4, 2, 14; 1999 XX₁₃₉, 3, 1, 0; 1999 XX₁₄₀, 3, 1, 0; 1999 XE₁₄₄ *, 6, 3, 18; 1999 XT₁₄₄ *, 3, 2, 1; 1999 XQ₁₅₄, 2, 1, 0; 1999 XH₁₅₈, 4, 2, 8; 1999 XR₁₆₀, 2, 1, 0; 1999 XP₁₆₂, 4, 1, 0; 1999 XQ₁₆₄, 2, 1, 0; 1999 XG₁₇₁, 7, 2, 2; 1999 XM₁₇₁, 4, 2, 1; 1999 XV₁₇₆, 4, 2, 1; 1999 XX₁₇₆, 6, 3, 5; 1999 XY₁₉₆, 2, 1, 0; 1999 XD₂₁₇, 2, 1, 0; 1999 XJ₂₁₇, 3, 1, 0; 1999 XW₂₁₈, 3, 1, 0; 1999 YV₄, 2, 1, 0; 1999 YH₅, 2, 1, 0; 1999 YE₉ *, 6, 3, 4; 1999 YF₉ *, 12, 5, 17; 1999 YG₉ *, 8, 3, 17; 1999 YH₉ *, 11, 5, 13; 1999 YK₉, 4, 2, 5; 1999 YL₉, 6, 3, 8; 1999 YM₁₂, 3, 1, 0; 1999 YA₁₃ *, 6, 2, 2; 1999 YB₁₃ *, 6, 2, 2; 1999 YC₁₃ *, 9, 2, 2; 1999 YJ₁₃ *, 6, 3, 4; 1999 YR₁₃ *, 12, 5, 18; 1999 YS₁₃ *, 6, 3, 4; 1999 YT₁₃ *, 8, 3, 3; 1999 YU₁₃ *, 8, 3, 3; 1999 YV₁₃ *, 10, 5, 17; 1999 YW₁₃ *, 8, 3, 3; 1999 YJ₁₄, 2, 1, 0; 2000 AB *, 15, 6, 17; 2000 AC *, 11, 5, 6; 2000 AR₁ *, 7, 3, 3; 2000 AS₁ *, 6, 3, 3; 2000 AT₁ *, 4, 2, 1; 2000 AU₁ *, 7, 3, 14; 2000 AV₁ *, 7, 3, 4; 2000 AW₁ *, 4, 2, 1; 2000 AX₁ *, 6, 3, 14; 2000 AY₁ *, 9, 4, 14; 2000 AZ₁ *, 4, 2, 1; 2000 AR₄ *, 8, 4, 13; 2000 AS₄ *, 10, 4, 13; 2000 AJ₅ *, 6, 3, 13; 2000 AK₅ *, 11, 5, 7; 2000 AL₅ *, 6, 3, 2; 2000 AM₅ *, 6, 3, 2; 2000 AN₅ *, 8, 4, 14; 2000 AO₅ *, 9, 4, 12; 2000 AP₅ *, 6, 3, 2; 2000 AL₂₆, 2, 1, 0; 2000 AO₂₈, 6, 3, 7; 2000 AV₃₃, 4, 2, 1; 2000 AD₃₇, 2, 1, 0; 2000 AK₄₈, 4, 2, 10; 2000 AY₄₉ *, 8, 4, 13; 2000 AZ₄₉ *, 10, 5, 8; 2000 AA₅₀ *, 6, 3, 7; 2000 AB₅₀ *, 7, 3, 7; 2000 AC₅₀ *, 6, 3, 7; 2000 AD₅₀ *, 9, 4, 6; 2000 AE₅₀ *, 7, 3, 6; 2000 AF₅₀ *, 7, 3, 6; 2000 AG₅₀ *, 7, 3, 6; 2000 AH₅₀ *, 7, 4, 11; 2000 AJ₅₀ *, 9, 4, 11; 2000 AK₅₀ *, 6, 3, 5; 2000 AL₅₀ *, 7, 3, 5; 2000 AM₅₀ *, 5, 2, 1; 2000 AN₅₀ *, 9, 4, 10; 2000 AO₅₀ *, 8, 4, 10; 2000 AT₅₀, 7, 4, 5; 2000 AU₅₀, 7, 2, 1; 2000 AU₅₄, 6, 2, 1; 2000 AQ₅₅, 2, 1, 0; 2000 AM₅₇, 4, 2, 1; 2000 AC₅₈, 6, 3, 6; 2000 AR₅₉, 2, 1, 0; 2000 AA₆₀, 4, 2, 1; 2000 AK₆₀, 4, 2, 5; 2000 AU₆₀, 4, 2, 1; 2000 AT₆₁, 6, 3, 3; 2000 AU₆₁, 6, 3, 3; 2000 AH₆₄, 5, 2, 1; 2000 AA₈₅, 7, 2, 1; 2000 AP₈₆, 5, 2, 1; 2000 AY₉₁, 4, 2, 2; 2000 AW₉₃, 3, 1, 0; 2000 AZ₉₄, 2, 1, 0; 2000 AH₉₅, 3, 1, 0; 2000 AH₉₆, 2, 1, 0; 2000 AK₁₂₂, 4, 2, 4; 2000 AW₁₂₅, 11, 4, 4; 2000 AY₁₂₅, 10, 4, 4; 2000 AS₁₂₆, 8, 3, 3; 2000 AU₁₂₆, 4, 2, 1; 2000 AX₁₂₆, 7, 3, 3; 2000 AA₁₂₇, 4, 2, 1; 2000 AQ₁₂₇, 4, 2, 1; 2000 AD₁₃₁, 6, 3, 10; 2000 AW₁₃₆, 3, 1, 0; 2000 AB₁₃₇, 3, 1, 0; 2000 AU₁₄₄, 7, 3, 6; 2000 AX₁₄₆, 5, 2, 1; 2000 AE₁₅₃ *, 10, 4, 8; 2000 AF₁₆₈ *, 4, 2, 1; 2000 AD₂₀₄ *, 6, 3, 9; 2000 AC₂₀₅ *, 7, 3, 3; 2000 AJ₂₀₅ *, 7, 3, 2; 2000 AK₂₀₅ *, 6, 3, 3; 2000 AR₂₀₅ *, 5, 2, 2; 2000 AS₂₀₅ *, 5, 2, 1; 2000 AT₂₀₅ *, 5, 2, 1; 2000 AU₂₀₅ *, 5, 2, 1; 2000 AV₂₀₅ *, 7, 2, 1; 2000 BC *, 5, 2, 1; 2000 BD *, 7, 2, 1; 2000 BE *, 4, 2, 1; 2000 BF *, 4, 2, 1; 4525 P-L, 2, 1, 0; 6063 P-L, 2, 1, 0; 6538 P-L, 2, 1, 0; 6607 P-L, 8, 4, 8; (827), 2, 1, 0; (846), 2, 1, 0; (848), 4, 2, 1; (933), 3, 1, 0; (1079), 2, 1, 0; (1148), 2, 1, 0; (1415), 2, 1, 0; (1444), 6, 2, 26; (1643), 7, 3, 16; (1704), 2, 1, 0; (1742), 2, 1, 0; (1763), 6, 3, 13; (1820), 2, 1, 0; (1829), 2, 1, 0; (1844), 2, 1, 0; (1860), 6, 3, 20; (1892), 2, 1, 0; (1956), 2, 1, 0; (1970), 2, 1, 0; (2003), 4, 2, 1; (2071), 8, 4, 8; (2097), 2, 1, 0; (2110), 2, 1, 0; (2132), 2, 1, 0; (2242), 2, 1, 0; (2377), 2, 1, 0; (2418), 2, 1, 0; (2513), 2, 1, 0; (2519), 4, 2, 1; (2528), 2, 1, 0; (2534), 4, 2, 7; (2609), 10, 5, 6; (2671), 8, 4, 7; (2739), 7, 3, 4; (2863), 9, 4, 5; (2887), 2, 1, 0; (2946), 2, 1, 0; (2985), 2, 1, 0; (3111), 2, 1, 0; (3290), 9, 4, 5; (3338), 2, 1, 0; (3355), 3, 1, 0; (3456), 5, 2, 1; (3465), 2, 1, 0; (3473), 2, 1, 0; (3504), 2, 1, 0; (3705), 9, 4, 16; (3766), 2, 1, 0; (3797), 4, 2, 7; (3920), 2, 1, 0; (3928), 2, 1, 0; (3941), 2, 1, 0; (4027), 6, 3, 4; (4098), 2, 1, 0; (4213), 2, 1, 0; (4214), 2, 1, 0; (4327), 3, 1, 0; (4389), 12, 5, 18; (4420), 2, 1, 0; (4441), 2, 1, 0; (4643), 3, 1, 0; (4646), 3, 1, 0; (4655), 4, 2, 7; (4757), 2, 1, 0; (4861), 3, 1, 0; (4929), 7, 3, 25; (4983), 2, 1, 0; (4994), 2, 1, 0; (5002), 6, 3, 2; (5026), 2, 1, 0; (5055), 2, 1, 0; (5063), 2, 1, 0; (5077), 5, 2, 1; (5371), 2, 1, 0; (5463), 3, 1, 0; (5554), 4, 2, 1; (5581), 2, 1, 0; (5594), 5, 3, 11; (5631), 2, 1, 0; (5658), 4, 2, 1; (5739), 2, 1, 0; (5755), 2, 1, 0; (5759), 3, 1, 0; (5763), 2, 1, 0; (5769), 4, 2, 8; (5791), 2, 1, 0; (5800), 7, 2, 4; (5846), 2, 1, 0; (5970), 4, 2, 4; (6018), 2, 1, 0; (6114), 2, 1, 0; (6135), 4, 2, 1; (6154), 5, 2, 2; (6216), 3, 1, 0; (6230), 6, 3, 8; (6262), 6, 3, 5; (6299), 2, 1, 0; (6375), 2, 1, 0; (6385), 3, 1, 0; (6507), 2, 1, 0; (6556), 2, 1, 0; (6661), 2, 1, 0; (6685), 2, 1, 0; (6709), 2, 1, 0; (6771), 4, 2, 2; (6792), 3, 1, 0; (6815), 2, 1, 0; (6902), 2, 1, 0; (6914), 2, 1, 0; (6960), 2, 1, 0; (6973), 2, 1, 0; (6978), 2, 1, 0; (6992), 4, 2, 1; (7024), 5, 2, 5; (7208), 2, 1, 0; (7210), 2, 1, 0; (7361), 4, 2, 1; (7382), 5, 2, 11; (7400), 2, 1, 0; (7478), 2, 1, 0; (7492), 3, 1, 0; (7584), 3, 1, 0; (7632), 2, 1, 0; (7677), 6, 3, 13; (7732), 6, 3, 6; (7776), 5, 2, 1; (7796), 4, 2, 14; (7817), 11, 5, 7; (7830), 4, 2, 1; (7873), 3, 1,

0; (7924), 2, 1, 0; (7943), 5, 2, 26; (7944), 2, 1, 0; (8317), 2, 1, 0; (9008), 3, 1, 0; (9011), 4, 2, 7; (9130), 2, 1, 0; (9220), 4, 2, 4; (9234), 2, 1, 0; (9258), 2, 1, 0; (9303), 2, 1, 0; (9304), 2, 1, 0; (9308), 2, 1, 0; (9345), 2, 1, 0; (9368), 2, 1, 0; (9371), 4, 2, 18; (9379), 2, 1, 0; (9408), 7, 2, 4; (9470), 2, 1, 0; (9516), 2, 1, 0; (9524), 4, 2, 1; (9530), 2, 1, 0; (9543), 2, 1, 0; (9559), 2, 1, 0; (9579), 4, 2, 7; (9604), 4, 2, 1; (9623), 2, 1, 0; (9645), 2, 1, 0; (9700), 4, 2, 1; (9721), 4, 2, 18; (9754), 2, 1, 0; (9757), 2, 1, 0; (9779), 2, 1, 0; (9786), 4, 2, 1; (9806), 2, 1, 0; (9849), 2, 1, 0; (9854), 3, 1, 0; (9912), 10, 4, 5; (10761), 4, 2, 1; (11254), 3, 1, 0; (12004), 2, 1, 0; (12218), 3, 1, 0; (12390), 2, 1, 0; (12429), 2, 1, 0; (12467), 2, 1, 0; (12470), 2, 1, 0; (12491), 2, 1, 0; (12493), 10, 5, 6; (12563), 2, 1, 0; (12568), 2, 1, 0; (12569), 2, 1, 0; (12643), 2, 1, 0; (12674), 3, 1, 0; (12710), 2, 1, 0; (12714), 2, 1, 0; (12745), 4, 2, 1; (12791), 2, 1, 0; (12800), 6, 2, 2; (12820), 8, 3, 2; (12833), 2, 1, 0; (12893), 2, 1, 0; (12895), 2, 1, 0; (12899), 2, 1, 0; [2272, 591, 69*, 1998/04/21-2000/01/17]

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Observers Yu. N. Krugly, F. P. Velichko

Measurers Yu. N. Krugly, I. A. Tereschenko

0.70-m $f/4$ reflector + CCD

USNO

1998 SN₇₄, 20, 1, 0; [20, 1, 0*, 1996/04/20]

127 Bornheim

N. Ehring, Stationenweg 54, D-53332 Bornheim, Germany [norbert.ehring@t-online.de]

0.30-m $f/3.2$ FFC + CCD

USNO-A2.0

1991 BZ₃, 3, 1, 0; 1992 EX₉, 4, 2, 6; 1993 MK, 4, 2, 2; 1995 SQ₁, 4, 2, 6; 1995 UP₃, 4, 2, 6; 1997 KC, 6, 3, 6; 1998 MD₃₈, 6, 2, 6; 1998 MV₄₂, 4, 2, 2; 1999 RH₂₇, 5, 2, 2; 1999 VV₄₆, 6, 2, 6; (12209), 2, 1, 0; (12214), 2, 1, 0; (12328), 3, 1, 0; (12625), 3, 1, 0; [56, 14, 0*, 1999/11/15-2000/01/11]

130 Lumezzane

S. Foglia, F. Bisleri 11, I-20418 Milan, Italy [s.foglia@libero.it]

Observers G. Pizzetti, W. Marinello, C. Cremaschini

Measurers W. Marinello, G. Pizzetti

0.40-m $f/4$ reflector + CCD

USNO-A1.0

1990 SY₃, 5, 1, 0; (186), 4, 1, 0; (1276), 3, 1, 0; (3109), 3, 1, 0; (3445), 4, 1, 0; (3951), 3, 1, 0; [22, 6, 0*, 1999/12/07-2000/01/05]

132 Bedoin

P. Antonini, 47 rue Guillaume Puy, F-84000 Avignon, France

[Pierre.Antonini@wanadoo.fr]

0.305-m $f/3.0$ reflector + CCD

USNO

1991 PM₁₆, 3, 1, 0; 1997 GL₃₄, 2, 1, 0; 1998 QJ₂, 2, 1, 0; 1998 SW₁₄₀, 4, 1, 0; 2000 AN₄₈, 3, 1, 0; [14, 5, 0*, 1998/08/19-2000/01/11]

133 Les Tardieux

M. Boeuf, Les Tardieux, St Julien, F-13500 Martigues, France

[Michel.Boeuf@wanadoo.fr]

0.20-m $f/3.5$ reflector + CCD

GSC

1988 TV₁, 3, 1, 0; 1998 SV₁₃₄, 3, 1, 0; 1999 WY₃, 3, 1, 0; 1999 XA₈₄, 5, 2, 3; 1999 XJ₁₀₅, 2, 1, 0; (3986), 2, 1, 0; (4965), 3, 1, 0; [21, 7, 0*, 1999/12/12-2000/01/07]

143 Gnosca

S. Sposetti, CH-6525 Gnosca, Switzerland [spo@bluewin.ch]

0.20-m $f/7.1$ reflector + CCD

USNO-SA1.0, GSC

1998 HL₉₁, 2, 1, 0; 1998 SM₅₈, 4, 1, 0; 1999 WD₆, 2, 1, 0; 1999 WR₈, 2, 1, 0; 1999 WW₈, 4, 1, 0; 1999 WY₈, 3, 1, 0; 1999 WZ₈, 2, 1, 0; 1999 WA₉, 4, 3, 19; 2000 AB₂ *, 19, 5, 9; 2000 AC₂ *, 12, 4, 8; 2000 AD₂ *, 13, 5, 13; 2000 AF₄₂ *, 9, 4, 8; 2000 AG₄₂ *, 8, 4, 7; 2000 AH₄₂ *, 14, 4, 7; 2000 AE₄₈ *, 11, 5, 13; 2000 AF₄₈ *, 11, 3, 8; 2000 AG₄₈ *, 8, 2, 2; 2000 AH₄₈ *, 13, 4, 8; [141, 18, 10*, 1999/10/31–2000/01/15]

145 's-Gravenwezel Observatory

T. Alderweireldt, Rozenlaan 14, B-2970 's-Gravenwezel, Belgium

[Tom.Alderweireldt@ping.be]

0.25-m $f/3.3$ Schmidt-Cassegrain + CCD

USNO-SA2.0

1998 WV₁₈, 4, 1, 0; 1999 US₃, 10, 1, 0; 2000 AS₈₁, 4, 1, 0; 2000 AK₁₉₅, 4, 1, 0; [22, 4, 0*, 1999/12/21–2000/01/09]

151 Eschenberg Observatory, Winterthur

M. Griesser, Breitenstrasse 2, CH-8542 Wiesendangen, Switzerland

[griesser@spectraweb.ch]

0.25-m $f/8.0$ reflector + CCD

GSC

1989 AJ₆, 4, 1, 0; 1991 RG₇, 3, 1, 0; 1999 RH₂₇, 24, 4, 12; 1999 VM₄₀, 7, 1, 0; 1999 YT, 6, 1, 0; 1999 YG₃, 21, 4, 8; 1999 YK₅, 23, 4, 12; (317), 4, 1, 0; (699), 4, 1, 0; (2129), 3, 1, 0; [99, 10, 0*, 2000/01/03–2000/01/19]

159 Monte Agliale

M. M. M. Santangelo, Monte Agliale Astronomical Observatory, Borgo a Mozzano, Lucca, Italy [ilra@comune.lucca.it]

Observers M. M. M. Santangelo, S. Donati

0.51-m $f/4.5$ Newtonian reflector + CCD

USNO-A1.0, USNO-A2.0

1995 BQ₈, 3, 1, 0; 1997 AQ₁, 4, 1, 0; 1997 FM₃, 5, 1, 0; 1999 SD₁₂ *, 23, 3, 19; 1999 VZ₂, 9, 2, 17; 1999 WR₂, 2, 1, 0; 1999 WL₈, 4, 1, 0; 1999 WM₈, 8, 2, 17; 1999 XR₃₇, 3, 1, 0; 1999 XS₃₇, 4, 1, 0; 1999 XW₉₀, 10, 2, 1; 1999 XO₁₀₁, 14, 3, 3; 1999 XZ₁₄₃ *, 11, 2, 4; 1999 XS₁₄₄ *, 13, 3, 11; 1999 YY₁₄ *, 15, 3, 11; 2000 AC₂₇, 15, 3, 10; 2000 AP₂₀₅ *, 7, 2, 3; 2000 AQ₂₀₅ *, 8, 2, 3; [158, 18, 6*, 1999/09/11–2000/01/16]

161 Cerrini Tololo Observatory

P. Camaiti, via Maria Vittoria 35, I-10123 Torino, Italy [P.Camaiti@flashnet.it]

0.28-m Schmidt-Cassegrain + CCD

GSC

(474), 1, 1, 0; [1, 1, 0*, 2000/01/21]

162 Potenza

A. M. Giambersio, 22 R. Scotellaro Street, I-85100 Potenza, Italy

[agiamber@tin.it]

0.20-m $f/6.3$ reflector + CCD

GSC

(2), 4, 2, 2; [4, 1, 0*, 2000/01/19–2000/01/21]

164 St. Michel sur Meurthe

L. Bernasconi, 244 rue du Closé, F-88470 St. Michel sur Meurthe, France

[laurent.bernasconi.51@wanadoo.fr]

0.212-m $f/3.9$ reflector + CCD

USNO

1999 SO₁₁, 3, 1, 0; 1999 SS₁₁, 3, 1, 0; [6, 2, 0*, 1999/10/16–1999/10/17]

165 Piera Observatory, Barcelona

J. Guarro, Balmes 2, E-08784 Piera, Barcelona, Spain

[jguarro@astro.gea.cesca.es]

0.40-m $f/2$ Schmidt + CCD

GSC

1999 YZ₈ *, 8, 3, 3; [8, 1, 1*, 1999/12/29–2000/01/02]

169 Rosignano

S. Puccini, Airali Observatory, Via Montegrappa 16, I-15030 Rosignano, Italy

[starfield@tin.it]

Observer S. Puccini

0.25-m Schmidt-Cassegrain + CCD

GSC

1991 PC₆, 4, 1, 0; 1999 XU₉₇, 7, 2, 3; [11, 2, 0*, 1999/12/30–2000/01/07]

170 Observatorio de Begues

J. Manteca, c/Santpere, no. Casa 22, E-08859 Begues, Barcelona, Spain

[jmantecav@nexo.es]

Observer J. Manteca

Measurer S. Alonso

0.28-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC-1.1

(302), 4, 1, 0; (765), 3, 1, 0; (1655), 2, 1, 0; (1892), 3, 1, 0; [12, 4, 0*, 2000/01/18–2000/01/19]

171 Flarestar Observatory, San Gwann

S. M. Brincat, Fl. 5 Ent. B, Silver Jubilee Apt., Ta' Zwej, San Gwann SGN 09,

Malta [sbrincat@orbit.net.mt]

0.25-m $f/2.6$ Schmidt-Cassegrain + CCD

GSC-ACT

1998 MD₃₈, 3, 1, 0; 1999 SY₅, 2, 1, 0; 2000 AC₈₄, 6, 2, 3; (1036), 2, 1, 0; (6493), 2, 1, 0; (7485), 3, 1, 0; [18, 6, 0*, 1999/12/16–2000/01/08]

174 Nyrola Observatory, Jyväskylä

A. Oksanen, Verkkoniementie 30, SF-40950 Muurame, Finland

[Arto.Oksanen@tietoenator.com]

Observers M. Moilanen, H. Hyvonen, A. Oksanen

0.40-m $f/3.3$ Schmidt-Cassegrain + CCD

USNO-A2.0

1999 RG₃₆, 3, 1, 0; 1999 XN₃₇, 2, 1, 0; 2000 AR₅₉, 2, 1, 0; 2000 AG₁₅₃ *, 4, 2, 1; (1500), 2, 1, 0; (5970), 2, 1, 0; [15, 6, 1*, 2000/01/07–2000/01/10]

175 F.-X. Bagnoud Observatory, St-Luc

R. Behrend, F.-X. Bagnoud Observatory, CH-3961 St-Luc, Switzerland

[raoul.behrend@obs.unige.ch]

Observers B. Confino, R. Behrend

Measurer R. Behrend

0.60-m $f/3.8$ reflector + CCD

GSC-1.1

1982 FN, 4, 1, 0; (1031), 7, 2, 1; (1367), 3, 1, 0; (5962), 3, 1, 0; [17, 4, 0*, 1999/07/15–1999/07/17]

176 Observatori Astronomic de Consell

À. López, Apartado de correos 122, E-07320 Santa Maria, Mallorca, Spain

[obsconsell@wanadoo.es]

Observers À. López, R. Pacheco

0.2-m $f/3.3$ Schmidt-Cassegrain + CCD

USNO-SA2

1999 XL₉₃, 6, 2, 3; 1999 XK₁₇₄, 6, 2, 3; 1999 YZ₈, 3, 1, 0; 2000 AO₃₁, 6, 2, 1; [21, 4, 0*, 2000/01/03–2000/01/08]

292 Burlington

T. Handley, 13 Linden Road, Burlington, NJ 08016, U.S.A.

0.30-m Schmidt-Cassegrain + focal reducer + CCD

GSC

1998 NT, 3, 1, 0; [3, 1, 0*, 2000/01/15]

294 Astrophysical Observatory, College of Staten Island

I. Robbins, The College of Staten Island, 2800 Victory Boulevard, Staten Island, NY 10314, U.S.A. [robbins@postbox.csi.cuny.edu]

Observer I. Robbins

Measurers K. Rowan, I. Robbins

0.41-m $f/6.0$ Schmidt-Cassegrain + CCD

GSC

1999 XX₁₃₆, 6, 2, 3; (1709), 4, 2, 1; (4464), 4, 2, 1; [14, 3, 0*, 1999/12/08–1999/12/20]

303 Mérida

O. Naranjo, Dept. de Física, Universidad de los Andes, Mérida 5101, Venezuela [naranjo@ciens.ula.ve]

1.0-m Schmidt

1998 FY₄₁, 1, 1, 0; [1, 1, 0*, 1992/08/04]

327 Peking Observatory, Xinglong Station

J. Zhu, Peking Astronomical Observatory, Chinese Academy of Sciences,

Zhongguancun, Peking 100101, Peoples Republic of China

[zj@bac.pku.edu.cn]

Observers J. Zhu, X. M. Teng, X. Zhou, X. Y. Li, C. H. Liu

Measurers J. Zhu, X. M. Teng, X. Y. Li

0.60-m Schmidt + CCD

1989 UN, 3, 1, 0; 1992 ED₁₈, 3, 1, 0; 1993 OM₈, 6, 2, 1; 1994 CN₉, 3, 1, 0; 1994 EJ₆, 3, 1, 0; 1994 LB₈, 4, 1, 0; 1994 PD₃₂, 3, 1, 0; 1995 SH₅₃, 3, 1, 0; 1995 WA₂, 3, 1, 0; 1997 AL₂₀, 4, 1, 0; 1997 CS₁₉, 3, 1, 0; 1997 EF₄₆, 3, 1, 0; 1997 HP₁₁, 3, 1, 0; 1997 XW₃, 6, 2, 16; 1998 BL₁₄, 3, 1, 0; 1998 EW₁₂, 3, 1, 0; 1998 FB₅₁, 3, 1, 0; 1998 FE₅₁, 3, 1, 0; 1998 FM₅₁, 3, 1, 0; 1998 FN₅₁, 3, 1, 0; 1998 FP₅₁, 3, 1, 0; 1998 HA₉₈, 3, 1, 0; 1998 KB₄, 3, 1, 0; 1998 QL₄₄, 3, 1, 0; 1998 QY₆₅, 3, 1, 0; 1998 QE₇₁, 4, 1, 0; 1998 RQ₅₃, 3, 1, 0; 1998 SY₅₇, 2, 1, 0; 1999 OP₂, 8, 3, 2; 1999 RU₂₇, 5, 1, 0; 1999 RV₃₁, 4, 1, 0; 1999 RG₃₃, 3, 1, 0; 1999 RV₃₉, 3, 1, 0; 1999 RB₄₀, 4, 1, 0; 1999 RA₄₄, 3, 1, 0; 1999 RB₄₄, 3, 1, 0; 1999 RH₁₀₅, 6, 2, 2; 1999 RT₁₃₀, 6, 1, 0; 1999 RH₁₆₃, 3, 1, 0; 1999 RG₁₆₅, 3, 1, 0; 1999 RV₁₉₃, 3, 1, 0; 1999 RC₁₉₇, 3, 1, 0; 1999 SV₆, 6, 2, 1; 1999 TU₁, 6, 2, 1; 1999 TH₂₁, 4, 1, 0; 1999 TA₃₁, 6, 2, 1; 1999 TE₃₁, 4, 1, 0; 1999 TG₃₂, 3, 1, 0; 1999 UV, 6, 2, 1; 1999 UT₃₄, 3, 1, 0; 1999 VQ₂, 3, 1, 0; 1999 VH₁₀, 3, 1, 0; 1999 VV₁₀, 3, 1, 0; 1999 VJ₁₁, 3, 1, 0; 1999 VQ₂₃, 3, 1, 0; 1999 VA₂₇, 3, 1, 0; 1999 VJ₂₉, 3, 1, 0; 1999 VB₃₁, 3, 1, 0; 1999 VC₃₅, 3, 1, 0; 1999 VB₃₇, 3, 1, 0; 1999 VR₅₉, 3, 1, 0; 1999 VB₇₂, 6, 2, 1; 1999 VC₇₂, 3, 1, 0; 1999 VL₇₂, 3, 1, 0; 1999 VM₇₂, 3, 1, 0; 1999 XT₁₈, 4, 1, 0; 1999 XT₁₉, 6, 2, 5; 1999 XU₁₉, 12, 4, 20; 1999 XP₃₆, 3, 1, 0; 1999 XC₄₈, 3, 1, 0; 1999 XT₅₀, 3, 1, 0; 1999 XW₆₇, 3, 1, 0; 1999 XB₇₈, 6, 2, 1; 1999 XC₉₁, 3, 1, 0; 1999 XH₁₀₅, 6, 2, 5; 1999 XR₁₁₀, 3, 1, 0; 1999 XC₁₃₅, 6, 2, 1; 1999 XD₁₇₇, 3, 1, 0; 1999 XB₂₁₃, 6, 2, 1; 1999 XG₂₂₉ *, 6, 2, 1; 1999 YR₁₇ *, 6, 2, 2; 1999 YS₁₇ *, 6, 2, 1; 2000 AW₁₃₆, 6, 2, 6; 4225 T-1, 3, 1, 0; (378), 6, 2, 1; (1763), 6, 2, 5; (2131), 6, 2, 1; (3669), 7, 2, 4; (6111), 6, 2, 1; (6931), 6, 2, 1; (9540), 7, 2, 1; (11844), 6, 2, 2; (12777), 3, 1, 0; (12861), 7, 2, 24; [389, 94, 3*, 1995/08/27–2000/01/10]

348 Ayabe

N. Otuki, 21-8 Kyuta, Sato-Cho, Ayabe, Kyoto-fu, 623-0005 Japan

[loomoon@crocus.ocn.ne.jp]

0.28-m $f/5.5$ Schmidt-Cassegrain + CCD

GSC

1999 WK₁₃, 2, 1, 0; 1999 XO₃₅, 6, 3, 13; 1999 YT, 2, 1, 0; 1999 YK₅, 2, 1, 0; 2000 AX₉₃, 2, 1, 0; 2000 AB₂₂₉, 3, 1, 0; [17, 6, 0*, 1999/12/16–2000/01/18]

349 Ageo

K. Kadota, 77-1-3-12-204, Koshikiya, Ageo, Saitama-ken, 362-0064 Japan [kenic-k@astroarts.co.jp]

Observer K. Kadota

Measurers S. Yoshida, K. Kadota

0.18-m $f/5.5$ reflector + CCD

USNO-A1.0

(1864), 3, 1, 0; [3, 1, 0*, 2000/01/08]

355 Hadano

A. Asami, 28-1 Nishitawara, Hadano, Kanagawa-Ken, 257 Japan [asami@st.rim.or.jp]

0.2-m $f/6.0$ reflector + CCD, 0.28-m $f/5.0$ reflector + CCD

GSC

1999 RH₂₇, 6, 2, 10; 1999 US₃, 9, 3, 19; 1999 WK₁₃, 2, 1, 0; 1999 XO₃₅, 3, 1, 0; 1999 XK₁₃₆, 3, 1, 0; 1999 XN₁₃₆, 3, 1, 0; 1999 YK₅, 3, 1, 0; [29, 7, 0*, 1999/12/15–2000/01/03]

360 Kuma Kogen Astronomical Observatory

A. Nakamura, Shimo-Hatanokawa, Kuma, Kamiukena-Gun, Ehime-Ken, 791-1212 Japan [a-nakamu@mx2.nisiq.net]

0.60-m $f/5.8$ Ritchey-Chrétien + CCD

GSC-ACT, USNO-A2.0

1994 YL, 6, 2, 14; 1997 BR, 3, 1, 0; 1997 FQ₁, 6, 2, 7; 1997 GR₂₄, 5, 2, 19; 1997 GZ₂₅, 7, 3, 26; 1997 OY, 2, 1, 0; 1997 WU₂₂, 6, 2, 19; 1998 KN, 5, 2, 7; 1998 KB₅, 3, 1, 0; 1998 XB, 3, 1, 0; 1998 YC₁, 4, 2, 8; 1999 GJ₄, 3, 1, 0; 1999 LD₃₁, 6, 2, 20; 1999 NC₄₃, 3, 1, 0; 1999 TD₅, 6, 2, 19; 1999 TX₁₆, 3, 1, 0; 1999 VV, 3, 1, 0; 1999 VO₁₁, 3, 1, 0; 1999 VQ₁₁, 3, 1, 0; 1999 VA₂₆, 6, 2, 6; 1999 WO, 9, 3, 20; 1999 WA₂, 3, 1, 0; 1999 WK₁₃, 3, 1, 0; 1999 XO₃₅, 6, 2, 12; 1999 XP₃₅, 6, 2, 20; 1999 XR₃₅, 3, 1, 0; 1999 XW₃₇, 12, 4, 26; 1999 XX₃₇, 8, 3, 19; 1999 XY₃₇, 8, 3, 19; 1999 XL₁₃₆, 3, 1, 0; 1999 XR₁₉₉, 5, 2, 6; 1999 YA, 3, 1, 0; 1999 YB, 3, 1, 0; 1999 YC, 3, 1, 0; 1999 YD, 3, 1, 0; 1999 YF₃, 3, 1, 0; 1999 YG₃, 3, 1, 0; 1999 YK₅, 6, 2, 14; 2000 AC₆, 3, 1, 0; 2000 AE₆, 3, 1, 0; (4748), 2, 1, 0; (9499), 3, 1, 0; (9615), 2, 1, 0; (12711), 3, 1, 0; (12796), 2, 1, 0; [194, 45, 0*, 1999/12/07–2000/01/18]

369 Chichibu

N. Sato, 743-27, Kitairiso Sayama, Saitama-Ken 350-13, Japan

[mx05524@niftyserve.or.jp]

0.31-m $f/4.0$ reflector + CCD, 0.25-m $f/4.2$ Wright-Schmidt + CCD

GSC

1998 HV₉₅, 2, 1, 0; [2, 1, 0*, 1997/01/09]

376 Uenohara

N. Kawasato, 3-11-10, Hana-Koganei, Kodaira, Tokyo, 187 Japan

0.30-m reflector + CCD

GSC

1999 XD₃₈, 3, 1, 0; 1999 XH₃₈, 3, 1, 0; 1999 XJ₃₈, 2, 1, 0; [8, 3, 0*, 1999/12/11]

385 Nihondaira Observatory

T. Urata, 1-8, Dobayashi 1 Chome, Shimizu, Shizuoka-Ken 424-0851, Japan

[urata@sannet.ne.jp]

0.31-m $f/4.0$ reflector + CCD

GSC-1.1, USNO-A2.0

1985 RA, 2, 1, 0; 1997 AQ₆, 3, 1, 0; 1998 SS₂, 2, 1, 0; 1999 UR₁, 2, 1, 0; 1999 VQ₃₂, 3, 1, 0; 1999 WK₈, 7, 3, 11; 1999 XE₃₈, 10, 4, 15; 1999 XF₃₈, 6, 3, 15; 1999 XS₄₅, 3, 1, 0; 1999 XZ₁₀₃, 6, 3, 15; 1999 XA₁₀₄, 8, 4, 14; 1999 XB₁₀₄, 5, 3, 14; 1999 XK₁₀₅, 2, 1, 0; 1999 XL₁₀₅, 2, 1, 0; 1999 XN₁₀₅, 4, 2, 1; 1999 XO₁₀₅, 4, 2, 1; 1999 XP₁₀₅, 2, 2, 11; 1999 XN₁₄₄ *, 8, 5, 15; 1999 XO₁₄₄ *, 11, 5, 19; 1999 XP₁₄₄ *, 6, 3, 10; 1999 XQ₁₄₄ *, 6, 3, 11; 1999 XR₁₄₄ *, 4, 2, 1; 1999 XV₁₆₇, 2, 1, 0; [108, 23, 5*, 1999/11/29–2000/01/03]

402 Dynic Astronomical Observatory

A. Sugie, Dynic Astronomical Observatory, Taga 283-1, Taga, Inukami-Gun, Shiga-Ken, 522-0341 Japan [hhf00201@niftyserve.or.jp]

Observers A. Sugie, Y. Ikari

0.60-m $f/5.0$ reflector + CCD

GSC

1998 XS₁₆, 3, 1, 0; 1999 RC₃₁, 3, 1, 0; 1999 UG₅, 2, 1, 0; 1999 VN₂₃, 3, 1, 0; 1999 VM₄₀, 3, 1, 0; 1999 WY₃, 3, 1, 0; 1999 WS₁, 3, 1, 0; 1999 WK₁₃, 5, 2, 6; 1999 XW₈, 3, 1, 0; 1999 XO₃₅, 9, 3, 23; 1999 XQ₃₅, 3, 1, 0; 1999 XS₃₅, 6, 2, 2; 1999 XV₃₇, 6, 2, 7; 1999 XD₁₀₆, 12, 4, 19; 1999 XO₁₃₅, 3, 1, 0; 1999 XK₁₃₆, 9, 3, 19; 1999 XL₁₃₆, 6, 2, 9; 1999 XM₁₃₆, 9, 3, 20; 1999 XJ₁₄₁, 6, 2, 2; 1999 XA₁₄₃, 3, 1, 0; 1999 YA₈, 3, 8; 1999 YB₆, 2, 6; 1999 YC₆, 2, 2; 1999 YD₆, 2, 6; 1999 YT₇, 2, 10; 1999 YO₁, 3, 1, 0; 1999 YF₃, 3, 1, 0; 1999 YG₃, 9, 3, 24; 1999 YE₅, 9, 3, 15; 1999 YJ₅, 3, 1, 0; 1999 YK₅, 10, 3, 24; 1999 YR₁₄, 7, 2, 4; 1999 YS₁₄, 4, 1, 0; 1999 YT₁₄, 4, 1, 0; 2000 AA₆, 10, 3, 4; 2000 AB₆, 7, 2, 4; 2000 AC₆, 5, 2, 10; 2000 AD₆, 3, 1, 0; 2000 AF₆, 3, 1, 0; 2000 AW₉₃, 7, 2, 10; 2000 AX₉₃, 3, 1, 0; 2000 AY₉₃, 3, 1, 0; 2000 AZ₉₃, 4, 1, 0; 2000 AB₂₂₉, 4, 1, 0; (3581), 3, 1, 0; (6199), 3, 1, 0; [240, 46, 0*, 1999/12/09–2000/01/22]

411 Oizumi

T. Kobayashi, 1717-2 Shimo-Koizumi, Oizumi-machi, Ora-gun, Gunma-ken, 370-

0515 Japan [kobataka@sannet.ne.jp]

0.25-m $f/4.4$ reflector + CCD, 0.41-m $f/4.3$ reflector + CCD

GSC

1998 SK₁₁₈, 4, 2, 1; 1999 VM₁₀, 2, 1, 0; 1999 WG₃, 3, 1, 0; 1999 WK₃, 2, 1, 0; 1999 WL₃, 2, 1, 0; 1999 WN₃, 2, 1, 0; 1999 WO₃, 2, 1, 0; 1999 WP₃, 2, 1, 0; 1999 WR₃, 2, 1, 0; 1999 WS₃, 2, 1, 0; 1999 WT₃, 2, 1, 0; 1999 WY₃, 2, 1, 0; 1999 WZ₃, 2, 1, 0; 1999 WA₄, 2, 1, 0; 1999 WB₄, 2, 1, 0; 1999 WC₄, 2, 1, 0; 1999 WD₄, 2, 1, 0; 1999 WF₄, 2, 1, 0; 1999 WM₄, 2, 1, 0; 1999 WO₄, 2, 1, 0; 1999 WR₄, 2, 1, 0; 1999 WS₄, 2, 1, 0; 1999 WV₄, 2, 1, 0; 1999 WZ₄, 2, 1, 0; 1999 WA₅, 2, 1, 0; 1999 WC₅, 2, 1, 0; 1999 WH₈, 2, 1, 0; 1999 WJ₈, 2, 1, 0; 1999 WQ₉, 2, 1, 0; 1999 WR₉, 2, 1, 0; 1999 WU₉, 2, 1, 0; 1999 WV₉, 2, 1, 0; 1999 WW₉, 2, 1, 0; 1999 WX₉, 4, 2, 1; 1999 WZ₉, 2, 1, 0; 1999 WB₁₀, 2, 1, 0; 1999 WD₁₀, 2, 1, 0; 1999 WE₁₀, 4, 2, 13; 1999 XW₂, 1, 0; 1999 XX₂, 2, 1, 0; 1999 XY₂, 2, 1, 0; 1999 XZ₂, 2, 1, 0; 1999 XA₁, 2, 1, 0; 1999 XB₁, 4, 2, 7; 1999 XD₁, 2, 1, 0; 1999 XF₁, 2, 1, 0; 1999 XG₁, 2, 1, 0; 1999 XH₁, 2, 1, 0; 1999 XK₁, 2, 1, 0; 1999 XC₈, 2, 1, 0; 1999 XF₈, 2, 1, 0; 1999 XJ₈, 2, 1, 0; 1999 XK₈, 2, 1, 0; 1999 XX₃₅, 5, 2, 8; 1999 XY₃₅, 4, 2, 13; 1999 XZ₃₅, 4, 2, 13; 1999 XB₃₆, 4, 2, 13; 1999 XC₃₆, 7, 3, 13; 1999 XE₃₆, 2, 1, 0; 1999 XF₃₆, 4, 2, 14; 1999 XG₃₆, 4, 2, 15; 1999 XH₃₆, 4, 2, 13; 1999 XF₉₅, 4, 2, 16; 1999 XG₉₅, 4, 2, 15; 1999 XH₉₅, 3, 2, 15; 1999 XJ₉₅, 4, 2, 16; 1999 XK₉₅, 4, 2, 15; 1999 XL₉₅, 2, 1, 0; 1999 XM₉₅, 4, 2, 15; 1999 XN₉₅, 4, 2, 15; 1999 XO₉₅, 2, 1, 0; 1999 XP₉₅, 4, 2, 16; 1999 XQ₉₅, 4, 2, 15; 1999 XR₉₅, 4, 2, 16; 1999 XS₉₅, 4, 2, 15; 1999 XT₉₅, 4, 2, 15; 1999 XU₉₅, 4, 2, 15; 1999 XV₉₅, 2, 1, 0; 1999 XW₉₅, 4, 2, 15; 1999 XX₉₅, 4, 2, 15; 1999 XZ₉₅, 4, 2, 15; 1999 XA₉₆, 4, 2, 15; 1999 XB₉₆, 4, 2, 15; 1999 XC₉₆, 4, 2, 15; 1999 XS₁₀₄, 2, 1, 0; 1999 XT₁₀₄, 2, 1, 0; 1999 XU₁₀₄, 2, 1, 0; 1999 XV₁₀₄, 2, 1, 0; 1999 XW₁₀₄, 4, 2, 8; 1999 XX₁₀₄, 2, 1, 0; 1999 XS₁₀₅, 2, 1, 0; 1999 XT₁₀₅, 2, 1, 0; 1999 XU₁₀₅, 4, 2, 16; 1999 XV₁₀₅, 4, 2, 16; 1999 XW₁₀₅, 2, 1, 0; 1999 XX₁₀₅, 4, 2, 16; 1999 XY₁₀₅, 4, 2, 16; 1999 XZ₁₀₅, 4, 2, 16; 1999 XA₁₀₆, 4, 2, 16; 1999 XB₁₀₆, 6, 3, 16; 1999 XC₁₀₆, 2, 1, 0; 1999 XN₁₆₄, 4, 2, 1; 1999 XW₁₇₀, 4, 2, 1; 1999 XV₁₇₂, 4, 2, 2; 1999 XM₁₇₆, 4, 2, 1; 1999 XR₁₇₆, 4, 2, 1; 1999 XV₁₇₆, 4, 2, 1; 1999 XC₁₇₇, 4, 2, 1; 1999 XE₁₇₈, 4, 2, 2; 1999 XP₁₉₅, 4, 2, 1; 1999 YF₅ *, 4, 2, 2; 1999 YG₅ *, 4, 2, 2; 1999 YM₉ *, 4, 2, 1; 1999 YN₉ *, 4, 2, 1; 1999 YO₉ *, 4, 2, 1; 1999 YP₉ *, 4, 2, 1; 1999 YQ₉ *, 4, 2, 1; 1999 YR₉ *, 4, 2, 1; 1999 YS₉ *, 4, 2, 1; 1999 YT₉ *, 4, 2, 1; 1999 YU₉ *, 4, 2, 1; 2000 AE₂ *, 4, 2, 1; 2000 AF₂ *, 4, 2, 1; 2000 AH₂ *, 4, 2, 1; 2000 AJ₂ *, 4, 2, 1; 2000 AK₂ *, 4, 2, 1; 2000 AL₂ *, 4, 2, 1; 2000 AM₂ *, 4, 2, 1; 2000 AN₂ *, 4, 2, 1; 2000 AO₂ *, 4, 2, 1; 2000 AP₂ *, 4, 2, 1; 2000 AQ₂ *, 4, 2, 1; 2000 AT₆₄, 4, 2, 3; 2000 AH₁₃₃, 4, 2, 4; 2000 AZ₁₄₆ *, 4, 2, 4; 2000 AA₁₄₇ *, 4, 2, 4; [431, 137, 24*, 1999/12/12–2000/01/08]

413 Siding Spring

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Siding Spring Observatory, Coonabarabran, NSW 2357, Australia

[rmn@aaocbn.aao.gov.au] (1)

A. Gnädig, c/o Archenhold-Sternwarte, Alt-Treptow 1, D-12435 Berlin, Germany

[doppler@mind.de] (5)

Observer K. S. Russell, M. Hartley, R. H. McNaught

Measurers A. Gnädig, A. Knöfel, R. H. McNaught

1.2-m U.K. Schmidt, 1.0-m $f/8$ reflector + CCD

USNO-A2.0, GSC-ACT, PPM

{1} 1985 RA, 3, 1, 0; 1994 AW₁, 3, 1, 0; 1998 WF₁, 2, 1, 0; 1999 HF₁, 2, 1, 0; 1999 JB, 2, 1, 0; 1999 NC₄₃, 2, 1, 0; 1999 OW₃, 2, 1, 0; 1999 RM₂₈, 2, 1, 0; 1999 TC₅, 6, 2, 4; 1999 TN₁₁, 2, 1, 0; 1999 TN₁₂, 2, 1, 0; 1999 TR₁₉, 3, 1, 0; 1999 TS₁₉, 2, 1, 0; 1999 VQ₆, 6, 2, 4; 1999 VM₁₁, 4, 1, 0; 1999 VP₁₁, 3, 1, 0; 1999 VY₇₂ *, 8, 3, 53; 1999 VG₈₆, 2, 1, 0; 1999 WA₂, 2, 1, 0; 1999 WC₂, 2, 1,

0; 1999 XP₃₅, 4, 2, 4; 1999 XR₃₅, 7, 2, 4; 1999 XK₁₃₆, 3, 1, 0; 1999 XL₁₃₆, 2, 1, 0; 1999 XK₁₄₁, 2, 1, 0; 1999 XL₁₄₁, 2, 1, 0; 1999 XN₁₄₁, 5, 3, 12; 1999 XO₁₄₁, 2, 1, 0; 1999 YA₆, 3, 12; 1999 YC₄, 4, 1, 0; 1999 YD₂, 2, 1, 0; 1999 YJ₉, 4, 1, 0; 1999 YA₁₃, 2, 1, 0; 1999 YR₁₄, 2, 1, 0; 1999 YS₁₄, 2, 1, 0; 1999 YT₁₄, 2, 1, 0; [111, 36, 1*, 1993/09/11–2000/01/03]

{5} 1998 FC₁₂₇, 2, 1, 0; 1998 SN₇₄, 2, 1, 0; 1999 WS₁, 2, 1, 0; 1999 WK₁₃, 2, 1, 0; [8, 4, 0*, 1979/11/18–1992/06/05]

422 Loomberah

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[loomberah@ozemail.com.au]

0.45-m $f/5.4$ reflector + CCD, 0.25-m $f/4.1$ reflector + CCD

GSC-ACT

1995 YV₃, 3, 1, 0; 1998 PF₁, 1, 1, 0; 1999 TY₁₆, 6, 3, 28; 1999 XP₃₅, 5, 2, 12; 1999 XO₁₃₅, 2, 1, 0; 1999 XA₁₄₃, 3, 1, 0; 1999 YT₃, 3, 1, 0; 1999 YS₁₄, 1, 1, 0; 1999 YT₁₄, 1, 1, 0; 2000 AA₆, 3, 1, 0; 2000 AB₆, 4, 2, 10; 2000 AC₆, 3, 1, 0; 2000 AD₆, 3, 1, 0; 2000 AE₆, 3, 1, 0; 2000 AF₆, 2, 1, 0; 2000 AG₆, 10, 2, 3; 2000 AW₉₃, 3, 1, 0; 2000 AX₉₃, 6, 2, 7; 2000 AY₉₃, 4, 1, 0; 2000 AJ₁₅₃, 3, 1, 0; 2000 AK₁₅₃, 7, 2, 3; 2000 AD₂₀₅, 7, 2, 4; 2000 AE₂₀₅, 7, 2, 4; 2000 AF₂₀₅, 5, 2, 4; 2000 AH₂₀₅, 2, 1, 0; 2000 AB₂₂₉, 8, 3, 7; (87), 4, 1, 0; (433), 1, 1, 0; [110, 28, 0*, 1999/12/18–2000/01/15]

423 North Ryde

S. G. McAndrew, 2/32 Twin Rd, North Ryde, NSW 2113, Australia

[sgmcandrew@ozemail.com.au]

0.20-m $f/4$ hyperbolic astrograph + CCD

GSC

1983 AC₁, 8, 3, 4; 1991 AG₂, 3, 2, 20; 1991 FG₄, 4, 2, 10; 1992 AV₁, 8, 4, 14; 1992 BT₂, 4, 2, 1; 1994 PN₁, 4, 2, 1; 1995 SB₁, 1, 1, 0; 1998 QN₇₅, 4, 2, 1; 1999 SZ₅, 3, 2, 1; 1999 VN₂₄, 2, 1, 0; (12687), 1, 1, 0; [42, 11, 0*, 1999/11/30–2000/01/14]

426 Woomera

F. B. Zoltowski, 10 Gundawarra St., P.O. Box 84, Woomera, SA 5720, Australia

[fbzolt@CompuServe.com]

0.30-m $f/10$ Schmidt-Cassegrain + CCD

USNO-SA2.0

1999 NK₆₄ *, 3, 1, 0; 1999 RW₄₉, 3, 1, 0; [6, 2, 1*, 1999/07/09]

428 Reedy Creek

J. Broughton, 18 Branch Crescent, Reedy Creek, QLD 4228, Australia

[reedyck@one.net.au]

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1999 SL₂, 2, 1, 0; 1999 TY₁₆, 2, 2, 15; 1999 WC₂, 2, 1, 0; 1999 XB₈, 3, 2, 4; 1999 XN₁₅₃, 5, 2, 1; 2000 AF₅ *, 4, 2, 2; 2000 AT₁₁₂, 5, 2, 2; [23, 7, 1*, 1999/12/03–2000/01/11]

429 Hawker

J. B. Child, 64 Woolner Circuit, Hawker, ACT 2614, Australia

[jbchild@dynamite.com.au]

0.32-m $f/4.8$ reflector + CCD

GSC-1.2

(12446), 6, 3, 36; [6, 1, 0*, 1999/11/28–2000/01/03]

461 JATE Asteroid Survey, Piskésető

L. Kiss, Pf. 596, H-6701 Szeged, Hungary [l.kiss@physx.u-szeged.hu]

Observers K. Sárneczky, K. Sziládi, L. Kiss

Measurer K. Sárneczky

0.60-m Schmidt + CCD

USNO-A2.0

A913 CF, 3, 1, 0; 1981 DR, 11, 3, 2; 1995 QC₃, 3, 1, 0; 1996 PA, 3, 1, 0; 1997 BR, 3, 1, 0; 1998 MR₂, 3, 1, 0; 1998 QB₃₅, 4, 1, 0; 1998 QE₉₁, 6, 2, 1; 1998 SF₅₈, 3, 1, 0; 1998 UH, 6, 2, 1; 1998 UO₁, 3, 1, 0; 1999 RH₂₇, 4, 1, 0; 1999 SU₆, 3, 1, 0; 1999 SC₁₀, 3, 1, 0; 1999 TD₁₀, 3,

1, 0; 1999 UG₅, 3, 1, 0; 1999 YK₅, 4, 1, 0; 1999 YF₇, 6, 2, 1; 1999 YR₁₄, 4, 1, 0; 1999 YS₁₄, 3, 1, 0; 1999 YT₁₄, 3, 1, 0; 1999 YV₁₄ *, 6, 2, 1; 1999 YW₁₄ *, 6, 2, 1; 1999 YX₁₄ *, 6, 2, 1; 1999 YC₁₅ *, 6, 2, 1; 1999 YD₁₅ *, 7, 2, 1; 1999 YN₁₇ *, 5, 2, 1; 2000 AO *, 5, 2, 1; 2000 AA₂ *, 6, 2, 1; 2000 AO₄ *, 6, 2, 1; 2000 AP₄ *, 7, 2, 1; 2000 AK₂₆ *, 3, 2, 1; 2000 AE₄₅ *, 4, 2, 1; 2000 AF₄₅ *, 4, 2, 1; 2000 AP₁₁₃, 3, 1, 0; (1999), 3, 1, 0; (8103), 3, 1, 0; (9560), 3, 1, 0; (12707), 6, 2, 1; [173, 39, 13*, 1999/12/29–2000/01/02]

467 Auckland Observatory

I. P. Griffin, Auckland Observatory, P.O. Box 24-180, Royal Oak, Auckland, New Zealand [iang@stardome.org.nz]

Observers I. P. Griffin, R. Greatrex, M. Arthur

0.50-m $f/6.4$ Cassegrain reflector + CCD

USNO-A2.0

1999 SL₈, 3, 1, 0; 1999 XB₂₂₁, 4, 1, 0; 2000 AB₂₂₉, 4, 1, 0; [11, 3, 0*, 1999/09/10–2000/01/17]

468 Astronomical Observatory, Campo Catino

F. Mallia, Via dei Siculi 37, I-04100 Latina, Italy [pa0115@panservice.it]

Observers A.Cassetti, G. Masi, F. Mallia, A. Cassetti, M. Di Sora

Measurers A.Cassetti, G. Masi, F. Mallia, A. Cassetti, F.Rossi, M. Di Sora

0.25-m $f/3$ reflector + CCD

GSC, USNO-A2.0

1999 VQ₈₆, 2, 1, 0; 1999 XS₃₈, 2, 1, 0; 1999 XF₁₀₄, 2, 1, 0; (8930), 2, 1, 0; (8985), 2, 1, 0; (12798), 1, 1, 0; [11, 6, 0*, 1999/10/08–2000/01/04]

482 St. Andrews

F. Vincent, Physics & Astronomy, University of St. Andrews, Fife KY16 9SS,

Scotland [fv@st-and.ac.uk]

0.25-m $f/6$ Schmidt-Cassegrain + CCD

GSC-1.2

1999 RH₂₇, 11, 3, 8; 1999 US₃, 16, 4, 3; (3607), 15, 4, 3; [42, 3, 0*, 1999/11/06–1999/12/12]

504 Le Creusot

J.-C. Merlin, 18 rue P. Mendès-France, F-71200 Le Creusot, France

[merlin@obsmp.fr]

0.40-m $f/5.1$ reflector + CCD

GSC

1998 SW₁₄₀, 7, 3, 4; 1999 XL₁₃₇, 3, 1, 0; 2000 AN₄₈ *, 10, 3, 8; [20, 3, 1*, 1999/12/16–2000/01/13]

511 Haute Provence

E. W. Elst, Royal Observatory, B-1180 Brussels, Belgium [ericelst@ksb-orb.oma.be]

Observers E. W. Elst, G. Traversa

Measurer E. W. Elst

0.6-m Schmidt

1993 DK₁, 2, 1, 0; 1993 PA₃, 2, 1, 0; 1999 XR₃₃, 2, 1, 0; [6, 3, 0*, 1991/02/11–1993/02/25]

517 Geneva

R. Behrend, Geneva Observatory, CH-1290 Sauverny, Switzerland

[Raoul.Behrend@Obs.UniGe.ch]

0.20-m $f/10.0$ reflector + CCD

GSC-1.1

(12181), 4, 1, 0; [4, 1, 0*, 1999/12/16]

540 Linz

E. Meyer, F. Marklstrasse 1/62, A-4040 Linz, Austria [erich.meyer@ooenet.at]

Observers E. Meyer, E. Obermair

Measurer H. Raab

0.60-m $f/3.0$ reflector + CCD

USNO-A2.0, GSC-1.1, USNO-SA2.0

1996 BZ, 4, 1, 0; 1997 PG₃, 6, 1, 0; 1999 TX₁₆, 4, 1, 0; 1999 VO₁₁, 3, 1, 0; 1999 XN₂₀₇, 6, 2, 1; 1999 YC, 4, 1, 0; 1999 YF₃, 4, 1, 0; 1999 YG₃, 14, 3, 23; 1999 YR₁₄, 3, 1, 0; 1999 YE₁₇, 6, 1, 0; 2000 AC₆, 4, 1, 0; 2000 AZ₉₃, 8, 2, 1; 2000 AH₂₀₅, 3, 1, 0; [69, 13, 0*, 1999/12/22–2000/01/14]

552 San Vittore

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

[ermes.colombini@iol.it]

Observers C. Vacchi, G. Sassi, E. Colombini, R. Di Luca

0.45-m $f/3.3$ reflector + CCD

GSC

1993 GB, 3, 1, 0; 1997 QU₁, 2, 1, 0; 1998 SN₁₂₉, 2, 1, 0; [7, 3, 0*, 1996/02/24–2000/01/06]

557 Ondřejov

P. Pravec, Astronomical Institute, Czech Academy of Sciences, CZ-25165 Ondřejov, Czech Republic [ppravec@asu.cas.cz]

Observers P. Pravec, L. Šarounová, P. Kušnirák, D. Ondřích, M. Prouza

0.65-m $f/3.6$ reflector + CCD

USNO-SA1.0, USNO-SA2.0

1990 WN₃, 2, 1, 0; 1993 FE₅₉, 4, 1, 0; 1997 SN₁, 3, 1, 0; 1997 VW₁, 4, 1, 0; 1998 QQ₆₀, 3, 1, 0; 1998 RK₄₇, 4, 2, 1; 1998 SU₂, 4, 2, 1; 1999 FQ₃, 3, 1, 0; 1999 RL₆₅, 2, 1, 0; 1999 UO₇, 2, 1, 0; 1999 VK, 2, 1, 0; 1999 VY, 7, 2, 90; 1999 VQ₂₄, 4, 2, 3; 1999 VN₂₆, 2, 1, 0; 1999 VK₃₄, 3, 1, 0; 1999 VQ₈₁, 3, 1, 0; 1999 VD₉₃, 2, 1, 0; 1999 WQ, 9, 3, 18; 1999 WX, 8, 2, 6; 1999 WF₃, 2, 1, 0; 1999 WZ₁₂, 4, 2, 4; 1999 WA₁₃, 2, 1, 0; 1999 XU₁, 3, 1, 0; 1999 XA₈, 2, 1, 0; 1999 XX₆₂, 2, 1, 0; 1999 XH₈₃, 2, 1, 0; 1999 XN₈₃, 8, 2, 5; 1999 XH₁₀₅, 4, 1, 0; 1999 XO₁₂₇, 2, 1, 0; 1999 XV₁₂₇, 6, 2, 7; 1999 XW₁₂₇, 10, 3, 14; 1999 XK₁₄₁, 5, 1, 0; 1999 XL₁₄₁, 2, 1, 0; 1999 XA₁₄₃, 3, 1, 0; 1999 XX₁₅₆, 6, 3, 15; 1999 XU₁₇₃, 7, 2, 3; 1999 XD₂₀₇, 3, 1, 0; 1999 XN₂₀₇, 8, 2, 3; 1999 XJ₂₂₉ *, 8, 2, 3; 1999 YB, 3, 1, 0; 1999 YC, 3, 1, 0; 1999 YD, 5, 1, 0; 1999 YT, 3, 1, 0; 1999 YE₃, 4, 1, 0; 1999 YF₃, 3, 1, 0; 1999 YJ₅, 3, 1, 0; 1999 YK₅, 8, 2, 1; 1999 YN₅ *, 8, 2, 3; 1999 YR₁₄, 4, 1, 0; 2000 AA₆, 3, 1, 0; 2000 AC₆, 4, 1, 0; 2000 AD₆, 2, 1, 0; 2000 AG₆, 6, 1, 0; 2000 AM₃₅, 5, 2, 1; 2000 AW₄₉ *, 8, 3, 6; 2000 AX₄₉ *, 6, 3, 6; 2000 AW₉₃, 3, 1, 0; 2000 AX₉₃, 3, 1, 0; 2000 AY₉₃, 2, 1, 0; 2000 AJ₁₅₃, 4, 1, 0; 2000 AK₁₅₃, 2, 1, 0; 2000 AB₂₀₄ *, 6, 2, 6; 2000 AD₂₀₅, 3, 1, 0; 2000 AE₂₀₅, 6, 2, 3; 2000 AF₂₀₅, 6, 2, 3; 2000 AH₂₀₅, 6, 2, 3; 2000 AB₂₂₉, 8, 2, 6; 2000 AC₂₂₉, 6, 2, 3; (885), 2, 1, 0; (1716), 3, 1, 0; (12711), 4, 1, 0; (12772), 3, 1, 0; [305, 72, 5*, 1997/11/01–2000/01/14]

561 Piskéštető

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[kelemen@ogyalla.konkoly.hu]

0.60-m Schmidt telescope + CCD

USNO-A2.0

1981 EV₂₉, 6, 2, 4; 1991 TD₄, 6, 2, 4; 1997 BU₈, 3, 1, 0; 1997 EE₇, 3, 1, 0; 1998 DJ₂₀, 3, 1, 0; 1998 KS₄₇, 6, 2, 4; 1999 FW₂₅, 4, 1, 0; 1999 RU₁, 3, 1, 0; 1999 RW₄₅, 3, 1, 0; 1999 RO₈₇, 3, 1, 0; 1999 RW₁₇₇, 3, 1, 0; 1999 RY₁₇₇, 3, 1, 0; 6703 P-L, 5, 2, 4; (11580), 3, 1, 0; (11590), 3, 1, 0; (11757), 6, 2, 4; (11848), 3, 1, 0; (12067), 3, 1, 0; (12242), 6, 2, 4; [75, 19, 0*, 1999/05/16–1999/09/11]

565 Bassano Bresciano

U. Quadri, Osservatorio di Bassano Bresciano, Via S. Michele 4, I-25020 Bassano Bresciano (BS), Italy [astrofil@astbo1.bo.cnr.it]

Observers U. Quadri, L. Strabla, R. Girelli

0.40-m $f/2.5$ Schmidt + CCD

GSC

(532), 2, 1, 0; (6460), 2, 1, 0; [4, 2, 0*, 1999/12/13]

566 Haleakala-NEAT/GEODSS

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

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Observers E. F. Helin, S. H. Pravdo, K. J. Lawrence, D. L. Rabinowitz, S. Groom,
C. Clark, R. Bamberg, S. Levin, J. Lorre, S. Shaklan, R. Byrd, A. Esquibel,
C. Cotton, D. Bascon

1-m $f/2.2$ Ritchey-Chrétien + CCD

1978 UJ₅, 3, 1, 0; 1978 VO₃, 3, 1, 0; 1987 SX₁₀, 3, 1, 0; 1988 BO₃, 3, 1, 0; 1990 WN₃, 3, 1, 0;
1992 ER₁, 3, 1, 0; 1992 GN₂, 3, 1, 0; 1992 PZ₃, 3, 1, 0; 1993 FJ₃₃, 3, 1, 0; 1994 GK₉, 3, 1, 0;
1994 PA₂₃, 6, 2, 1; 1995 BF₂, 3, 1, 0; 1995 UQ₃, 3, 1, 0; 1995 UC₁₇, 3, 1, 0; 1995 WK₃, 3, 1, 0;
1995 WY₄, 3, 1, 0; 1995 YC₂, 3, 1, 0; 1996 FH₅, 6, 1, 0; 1996 XW₃₄, 3, 1, 0; 1997 CW₁, 3, 1, 0;
1997 CL₂₄, 3, 1, 0; 1997 HR₁, 3, 1, 0; 1997 XW₃, 3, 1, 0; 1998 BL₁₄, 3, 1, 0; 1998 FA₁₁, 3, 1, 0;
1998 FR₄₆, 3, 1, 0; 1998 FW₅₀, 3, 1, 0; 1998 FA₅₁, 3, 1, 0; 1998 FB₅₁, 3, 1, 0; 1998 FD₅₂, 3, 1, 0;
1998 FN₅₂, 3, 1, 0; 1998 FO₅₂, 3, 1, 0; 1998 FN₅₅, 6, 2, 28; 1998 HR₁₀, 3, 1, 0; 1998 HT₇₈, 3, 1, 0;
1998 HB₈₇, 3, 1, 0; 1998 HV₉₅, 3, 1, 0; 1998 HW₁₀₀, 3, 1, 0; 1998 HJ₁₃₃, 3, 1, 0; 1998 HK₁₃₃, 3, 1,
0; 1998 HQ₁₃₄, 3, 1, 0; 1998 HS₁₃₅, 6, 2, 29; 1998 KB₉, 3, 1, 0; 1998 KD₂₁, 3, 1, 0; 1998 KA₆₅, 3,
1, 0; 1998 MX₁₉, 6, 2, 32; 1998 MJ₃₃, 3, 1, 0; 1998 QF₇, 3, 1, 0; 1998 QS₉, 3, 1, 0; 1998 QV₂₂, 6,
2, 35; 1998 QG₂₉, 3, 1, 0; 1998 QL₃₁, 3, 1, 0; 1998 QO₃₅, 3, 1, 0; 1998 QV₃₇, 3, 1, 0; 1998 QD₃₈,
3, 1, 0; 1998 QF₄₄, 3, 1, 0; 1998 QN₄₄, 3, 1, 0; 1998 QT₄₆, 3, 1, 0; 1998 QY₅₅, 3, 1, 0; 1998 QJ₇₀,
3, 1, 0; 1998 QO₇₅, 3, 1, 0; 1998 QL₈₄, 3, 1, 0; 1998 QW₈₆, 3, 1, 0; 1998 QW₉₀, 3, 1, 0; 1998 RC₁,
3, 1, 0; 1998 RJ₆, 3, 1, 0; 1998 RU₄₇, 6, 2, 34; 1998 RT₅₈, 6, 2, 31; 1998 RO₆₀, 6, 2, 2; 1998 RK₆₆,
3, 1, 0; 1998 RZ₇₁, 3, 1, 0; 1998 RF₇₄, 3, 1, 0; 1998 RG₇₅, 3, 1, 0; 1998 RZ₇₅, 3, 1, 0; 1998 SV₉, 3,
1, 0; 1998 SY₁₅, 3, 1, 0; 1998 SP₂₂, 3, 1, 0; 1998 SH₁₀₆, 3, 1, 0; 1998 SQ₁₀₈, 3, 1, 0; 1998 SU₁₂₄,
3, 1, 0; 1998 SV₁₂₈, 3, 1, 0; 1998 SN₁₂₉, 3, 1, 0; 1998 SX₁₃₂, 3, 1, 0; 1998 SB₁₃₉, 3, 1, 0;
1998 SY₁₃₉, 3, 1, 0; 1998 SL₁₄₂, 3, 1, 0; 1998 SA₁₆₃, 3, 1, 0; 1998 SU₁₆₃, 3, 1, 0; 1998 TK₆, 2,
57; 1998 UF₁₄, 3, 1, 0; 1998 VU₂₉, 3, 1, 0; 1998 VU₃₀, 3, 1, 0; 1998 WJ₈, 3, 1, 0; 1998 WW₂₀, 3,
1, 0; 1998 XW₃, 3, 1, 0; 1998 XQ₁₂, 3, 1, 0; 1999 NM₉, 3, 1, 0; 1999 PQ₁, 3, 1, 0; 1999 RZ₂, 3, 1,
0; 1999 RL₂₅, 3, 1, 0; 1999 RJ₃₁, 6, 1, 0; 1999 RL₃₁, 3, 1, 0; 1999 RV₃₁, 3, 1, 0; 1999 RK₃₇, 6, 2,
28; 1999 RU₄₃, 3, 1, 0; 1999 RE₄₆, 3, 1, 0; 1999 RF₆₂, 3, 1, 0; 1999 RL₆₄, 3, 1, 0; 1999 RD₈₅, 3,
1, 0; 1999 RF₈₈, 3, 1, 0; 1999 RJ₈₈, 3, 1, 0; 1999 RK₁₀₄, 3, 1, 0; 1999 RG₁₃₂, 3, 1, 0; 1999 RT₁₇₇,
3, 1, 0; 1999 RX₁₉₆, 3, 1, 0; 1999 RC₁₉₇, 3, 1, 0; 1999 RW₂₀₅, 3, 1, 0; 1999 RA₂₀₈, 3, 1, 0;
1999 RX₂₀₉, 3, 1, 0; 1999 RF₂₁₁, 6, 2, 29; 1999 RV₂₁₁, 3, 1, 0; 1999 SH₆, 6, 2, 28; 1999 SA₉, 3, 1,
0; 1999 TB₂, 3, 1, 0; 1999 TR₉, 3, 1, 0; 1999 TF₁₄, 3, 1, 0; 1999 TB₂₁, 3, 1, 0; 1999 TF₂₉, 3, 1, 0;
1999 TX₃₀, 3, 1, 0; 1999 US₃, 3, 1, 0; 1999 UO₇, 6, 2, 449; 1999 UN₂₅, 3, 1, 0; 1999 VH₆, 3, 1, 0;
1999 VK₆, 3, 1, 0; 1999 VS₇, 3, 1, 0; 1999 VH₁₀, 3, 1, 0; 1999 VZ₁₁, 6, 2, 23;
1999 VA₁₂, 3, 1, 0; 1999 VJ₂₂, 3, 1, 0; 1999 VR₂₃, 3, 1, 0; 1999 VT₂₃, 3, 1, 0; 1999 VO₃₀, 3, 1, 0;
1999 VT₃₅, 3, 1, 0; 1999 VK₄₉, 3, 1, 0; 1999 VO₅₀, 3, 1, 0; 1999 VP₆₀, 3, 1, 0; 1999 VS₆₁, 3, 1,
0; 1999 VJ₆₂, 3, 1, 0; 1999 VN₇₂, 3, 1, 0; 1999 WF₃, 3, 1, 0; 1999 WS₃, 3, 1, 0; 1999 WU₈, 3, 1, 0;
1999 WY₉, 3, 1, 0; 1999 XW₁, 3, 1, 0; 1999 XR₁₃, 3, 1, 0; 1999 XW₁₃, 6, 2, 31; 1999 XX₁₅, 3, 1,
0; 1999 XR₃₂, 3, 1, 0; 1999 XF₄₀, 3, 1, 0; 1999 XC₉₁, 3, 1, 0; 1999 XM₉₆, 3, 1, 0; 1999 XZ₉₇, 3, 1,
0; 1999 XK₁₀₀, 3, 1, 0; 1999 XE₁₀₉, 3, 1, 0; 1999 XO₁₁₆, 3, 1, 0; 1999 XO₁₂₀, 3, 1, 0; 1999 XA₁₃₀,
3, 1, 0; 1999 XA₁₃₇, 3, 1, 0; 1999 XT₁₇₂, 6, 2, 472; 1999 XK₁₇₃, 3, 1, 0; 1999 XH₂₁₀, 3, 1, 0;
1999 YZ, 3, 1, 0; 2512 P-L, 3, 1, 0; 4235 T-1, 3, 1, 0; 3035 T-2, 3, 1, 0; 3356 T-2, 3, 1, 0; (12693),
3, 1, 0; [588, 178, 0*, 1995/12/19–1999/02/18]

568 Mauna Kea

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U.S.A. [jewitt@galileo.ifa.hawaii.edu] (1)

D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822,

U.S.A. [tholen@hale.ifa.hawaii.edu] (2)

C. Veillet, Canada-France-Hawaii Telescope Corporation, P.O. Box 1597, Kamuela,
HI 96743, U.S.A. [veillet@cfht.hawaii.edu] (3)

B. Gladman, Observatoire de Nice, Department Cassini, BP 229, F-06304 Nice
Cedex 4, France [gladman@obs-nice.fr] (6)

Observers C. A. Trujillo, D. C. Jewitt, J. X. Luu, S. S. Sheppard, D. J. Tholen,
C. Veillet, J. Kavelaars, A. Morbidelli

Measurers C. A. Trujillo, D. J. Tholen, C. Veillet, B. Gladman, H. Scholl

2.24-m reflector + CCD, 3.6-m Canada-France-Hawaii Telescope

USNO-A2.0

{1} 1999 RV₂₁₄ *, 8, 3, 34; 1999 RW₂₁₄ *, 9, 4, 64; 1999 RX₂₁₄ *, 11, 5, 65; 1999 RY₂₁₄ *, 11,
5, 65; 1999 RZ₂₁₄ *, 9, 4, 65; 1999 RB₂₁₅ *, 13, 5, 66; 1999 RC₂₁₅ *, 9, 4, 64; 1999 RD₂₁₅ *, 9,
4, 65; 1999 RE₂₁₅ *, 7, 4, 64; 1999 RF₂₁₅ *, 8, 4, 65; 1999 RG₂₁₅ *, 8, 4, 34; 1999 RH₂₁₅ *, 10,
5, 66; 1999 RJ₂₁₅ *, 11, 5, 63; 1999 RK₂₁₅ *, 11, 5, 65; [134, 14, 14*, 1999/09/06–1999/11/12]

{2} 1999 JD₁₃, 2, 1, 0; 1999 OW₃, 4, 2, 1; 1999 RM₄₅, 2, 1, 0; 1999 VP₆, 2, 1, 0; 1999 XX₁₄₃, 2,
1, 0; 1999 XA₁₅₂ *, 17, 7, 41; 2000 AG₆, 4, 2, 1; 2000 AD₂₂₉, 2, 1, 0; (3806), 1, 1, 0; (6696), 2,
1, 0; [38, 10, 1*, 1999/12/08–2000/01/18]

{3} 1999 CV₁₁₈, 3, 2, 1; 1999 CF₁₁₉, 3, 2, 1; 1999 CG₁₁₉, 3, 2, 1; 1999 CL₁₁₉, 3, 2, 1; 1999 CN₁₁₉,
3, 2, 1; 1999 CX₁₃₁, 3, 2, 1; 1999 RQ₃₆, 4, 2, 1; [22, 7, 0*, 1999/12/29–1999/12/31]

{6} 1998 FS₁₄₄, 3, 1, 0; 1998 WS₃₁, 3, 1, 0; 1999 CY₁₁₈, 6, 2, 1; 1999 CZ₁₁₈, 6, 2, 1; 1999 CH₁₁₉,
5, 2, 4; 1999 CQ₁₃₃, 6, 2, 1; 1999 CO₁₅₃, 6, 2, 1; [35, 7, 0*, 2000/01/01–2000/01/06]

586 Pic du Midi

C. Cavadore, MitterWeg Str2, Garching bei Muenchen, 85748 Germany

[ccavadore@eso.org]

Observers F. Colas, J. Lecacheux

Measurer C. Cavadore

1.05 m $f/6$ reflector + CCD

USNO-A1

1997 NU₆, 6, 1, 0; [6, 1, 0*, 2000/01/21]

587 Sormano

P. Sicoli, Via Valli 9, I-23846 Garbagnate Monastero (Lecco), Italy

[sormano@tin.it]

Observers A. Testa, M. Cavagna, F. Manca, G. Ventre, P. Sicoli, V. Giuliani,
P. Chiavenna

0.5-m reflector + CCD

1995 AB₃, 3, 2, 17; 1997 OJ₂, 2, 1, 0; 1998 QY₂₂, 4, 2, 7; 1999 VC₁₂, 2, 1, 0; 1999 WS₁, 2, 1, 0;
1999 XS₃₅, 2, 1, 0; 1999 XY₉₃, 5, 2, 2; 1999 XK₁₃₆, 2, 1, 0; 1999 XL₁₃₆, 5, 2, 4; 1999 XK₁₄₁, 2,
1, 0; 1999 XA₁₄₃, 2, 1, 0; 1999 XN₂₀₇, 2, 1, 0; 1999 YA₂, 2, 1, 0; 1999 YB₂, 2, 1, 0; 1999 YD₂, 2, 1,
0; 1999 YF₃, 2, 1, 0; 1999 YG₃, 2, 1, 0; 1999 YJ₅, 2, 1, 0; 1999 YK₅, 2, 1, 0; 1999 YR₁₄, 6, 3,
12; 2000 AA₃, 6, 2, 2; 2000 AG₅ *, 11, 5, 12; 2000 AA₆, 6, 2, 6; 2000 AB₆, 4, 2, 6; 2000 AC₆, 4,
2, 6; 2000 AD₆, 2, 1, 0; 2000 AE₆, 3, 1, 0; 2000 AF₆, 4, 2, 10; 2000 AG₆, 4, 2, 2; 2000 AY₂₇ *,
11, 4, 10; 2000 AW₉₃, 3, 1, 0; 2000 AX₉₃, 2, 1, 0; 2000 AE₂₀₅, 2, 1, 0; 2000 AF₂₀₅, 2, 1, 0;
2000 AH₂₀₅, 3, 1, 0; 2000 AB₂₂₉, 2, 1, 0; 2000 AC₂₂₉, 3, 1, 0; (6916), 2, 1, 0; [127, 38, 2*,
1995/01/15–2000/01/17]

589 Santa Lucia Stroncone

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

[vagnozzi@freenet.hut.fi]

Observers A. Vagnozzi, G. Bernabei, V. Risoldi, V. Scirri

0.50-m $f/2.8$ Ritchey-Chrétien + CCD

GSC

1995 WT₆, 7, 2, 1; 1999 TD₆, 8, 2, 1; [15, 2, 0*, 2000/01/02–2000/01/03]

595 Farra d'Isonzo

L. Bittesini, Via dei Conventi 10, I-34070 Farra D'Isonzo (GO), Italy

[ccaf@tmedia.it]

Observers A. Toso, E. Pettarin, G. Lombardi, C. Tonini, L. Drigo, G. Ierman,
M. Spolaor, F. Piani, W. Boschini, L. Bianchini, L. Bittesini, A. Olivieri,
F. Devetti

Measurers G. Lombardi, L. Drigo, E. Pettarin, M. Spolaor, C. Tonini, L. Drigo,
A. Olivieri

0.4-m $f/4.5$ reflector + CCD

GSC, USNO-SA1.0

1995 WO₃, 4, 2, 1; 1995 XA₅, 5, 2, 1; 1998 KW₂₅, 3, 1, 0; 1998 OJ₁, 4, 2, 3; 1998 QS₅₃, 5, 2, 1;
1999 VA₂₀, 2, 1, 0; 1999 WL₉, 2, 1, 0; 1999 WM₉, 3, 1, 0; 1999 XO₃₅, 3, 1, 0; 1999 XF₁₀₄, 3, 1,
0; 1999 XK₁₄₁, 4, 1, 0; 1999 XL₁₄₁, 3, 1, 0; 1999 XN₂₀₇, 3, 1, 0; 1999 YA₃, 3, 1, 0; 1999 YE₃, 4,
1, 0; 1999 YF₃, 4, 1, 0; 1999 YJ₅, 2, 1, 0; 1999 YK₅, 5, 1, 0; 2000 AQ₄ *, 8, 3, 4; 2000 AA₆, 7, 2,
1; 2000 AB₆, 9, 2, 1; 2000 AC₆, 5, 1, 0; 2000 AE₆, 3, 1, 0; 2000 AF₆, 4, 1, 0; 2000 AC₄₈, 6, 2, 1;
2000 AY₉₃, 3, 1, 0; 2000 AJ₁₅₃, 3, 1, 0; 2000 AK₁₅₃, 3, 1, 0; 2000 AF₂₀₅, 4, 1, 0; 2000 AB₂₂₉, 4,
1, 0; [121, 30, 1*, 1999/11/13–2000/01/24]

596 Colleverde di Guidonia

V. S. Casulli, Via M. Rosa 1, I-00010 Colleverde di Guidonia (RM), Italy
[v.casulli@priminet.it]

0.40-m $f/3.2$ reflector + CCD

GSC

1997 DC, 3, 1, 0; 1997 FR, 7, 2, 1; 1999 WD₃, 4, 1, 0; 1999 XS₂₀₅, 7, 2, 1; 1999 YH₅ *, 10, 3, 3; [31, 5, 1*, 1999/12/29–2000/01/04]

599 Campo Imperatore-CINEOS

A. Carusi, Istituto di Astrofisica Spaziale, Via Fosso del Cavaliere, I-00133 Rome, Italy [carusi@saturn.ias.fra.cnr.it]

Observers A. Boattini, A. Di Clemente

Measurers A. Boattini, G. Forti

0.60-m $f/3$ Schmidt + CCD

GSC

1995 OH, 3, 2, 1; 1998 HD₃₂, 2, 1, 0; 1998 QU₉, 2, 1, 0; 1999 RE₁₁₂, 2, 1, 0; 1999 SS₂, 2, 1, 0; 1999 XS₁₁₈, 2, 1, 0; [13, 6, 0*, 1997/01/15–1997/03/18]

608 Haleakala-AMOS

P. Kervin, Air Force Maui Optical Station, 535 Lipoa Parkway, Suite 200, Kihei, Maui, HI 96753, U.S.A. [paul@ulua.mhpc.af.mil]

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A. [efh@temblor.jpl.nasa.gov]

Observers A. Alday, K. Moore, M. Tranilla, T. Goggia, A. Sylva

Measurers J. Africano, P. Sydney, D. Nishimoto, A. Angara, B. McCarthy,

P. Kervin, B. Kraszewski, V. Soo Hoo, B. Africano

1.2-m reflector + CCD

1988 BO₃, 2, 1, 0; 1995 XZ, 2, 1, 0; 1996 TC₅₁, 2, 1, 0; 1998 RA₇₈, 2, 1, 0; [8, 4, 0*, 1995/12/29–1997/10/20]

609 Osservatorio Polino

G. Iatterì, Via Val Serra 45h, Terni, Italy

Observers G. Iatterì, V. Scirri, G. Bernabei

0.40-m $f/2.9$ reflector + CCD

GSC

1999 WG₉, 8, 4, 30; [8, 1, 0*, 1999/12/11–2000/01/10]

610 Pianoro

V. Goretti, Via Resistenza 93, I-40065 Pianoro (BO), Italy

[astrofil@astboi.bo.cnr.it]

0.25-m $f/4$ Schmidt-Cassegrain + CCD

GSC, USNO-A2.0

1988 DE, 5, 1, 0; 1993 TJ₂, 10, 2, 4; 1995 UQ₄, 10, 2, 3; 1996 XQ₅, 5, 1, 0; 1997 WU₂₂, 20, 4, 7; 1998 JB₂, 5, 1, 0; 1998 SU₁₀, 5, 1, 0; 1999 ND₄₃, 25, 5, 20; 1999 RH₂₇, 30, 6, 20; 1999 TD₅, 5, 1, 0; 1999 US₃, 47, 3, 16; 1999 VM₄₀, 5, 1, 0; 1999 WY, 15, 3, 5; 1999 XO₃₅, 25, 5, 20; 1999 XS₃₅, 10, 2, 13; 1999 YF₃, 5, 1, 0; 1999 YG₃, 5, 1, 0; 1999 YK₅, 5, 1, 0; 2000 AB₆, 9, 2, 2; (699), 15, 3, 14; (1060), 5, 1, 0; (1726), 5, 1, 0; (1943), 5, 1, 0; (2355), 5, 1, 0; (2787), 5, 1, 0; (3485), 5, 1, 0; (3790), 5, 1, 0; (3800), 5, 1, 0; (3838), 9, 2, 16; (4246), 5, 1, 0; (4613), 5, 1, 0; (5066), 20, 4, 18; (6178), 10, 2, 5; (6909), 5, 1, 0; (7064), 5, 1, 0; (12711), 10, 2, 3; (12829), 5, 1, 0; (12830), 5, 1, 0; [380, 38, 0*, 1999/11/05–2000/01/10]

611 Starkenburg Sternwarte, Heppenheim

M. Busch, Giessener Strasse 4, D-64646 Heppenheim, Germany [mab@iez.com]

Observers M. Busch, R. Stoss, S. Kluegl, E. Schwab, A. Seib, L. Šarounová,

L. Vašta, R. Kresken, P. Geffert

Measurers R. Stoss, M. Busch

0.45-m $f/4.4$ reflector + CCD, 0.30-m $f/6.3$ reflector + CCD

USNO-SA2.0, GSC-ACT, GSC-1.1

1989 BA, 1, 1, 0; 1995 WU₁, 2, 1, 0; 1997 GM₄₀, 1, 1, 0; 1999 ML, 3, 1, 0; 1999 VV₄₆, 1, 1, 0; 1999 XO₇, 2, 1, 0; 1999 XJ₁₃₃, 2, 1, 0; 1999 XJ₁₄₁, 1, 1, 0; 1999 XK₁₄₁, 2, 1, 0; 1999 XA₁₄₃, 3, 1, 0; 1999 XF₁₄₄, 2, 1, 0; 1999 YE₃, 3, 1, 0; 1999 YG₃, 2, 1, 0; 2000 AA₆, 2, 1, 0; 2000 AG₆, 7, 1, 0; (7187), 1, 1, 0; [35, 16, 0*, 1999/09/03–2000/01/13]

619 Sabadell

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[astrosab@redestb.es]

Observers F. Casarramona, G. Estraviz

Measurer F. Casarramona

0.51-m $f/3.9$ reflector + CCD

GSC

1993 OC₂, 4, 2, 2; 1998 QZ₁₅, 4, 1, 0; [8, 2, 0*, 1999/12/18–2000/01/05]

620 Observatorio Astronómico de Mallorca

À. López, Observatori Astronòmic de Mallorca, Camí de l'observatori s/n, E-07144 Costitx, Balears, Spain [astroam@dinky.bitel.es]

Observers À. López, R. Pacheco, S. Sanchez, J. Rodriguez

Measurers À. López, R. Pacheco, J. Rodriguez, S. S=Elnech

0.30-m $f/3.3$ Schmidt-Cassegrain + CCD, 0.25-m $f/6$ Schmidt-Cassegrain + CCD

GSC, USNO-SA1, USNO-SA2

1998 PO, 6, 2, 4; 2000 AZ₁₄₁, 3, 1, 0; [9, 2, 0*, 1999/12/13–2000/01/12]

621 Bergisch Gladbach

W. Bickel, Schau ins Land 21, D-51429 Bergisch Gladbach, Germany [0220455671-0001@t-online.de]

0.60-m $f/5$ reflector + CCD

USNO-A2.0

1991 FU₃, 6, 2, 3; 1998 VG₄₄, 4, 3, 59; 1999 TN₂₁, 13, 4, 14; 1999 UD₃, 16, 4, 14; 1999 UE₃, 9, 3, 14; 1999 UG₃, 12, 4, 15; 1999 UH₃, 7, 3, 15; 1999 UH₁₁, 8, 3, 4; 1999 UJ₁₁, 13, 5, 54; 1999 VS₂, 3, 1, 0; 1999 VT₂, 3, 1, 0; 1999 VV₂, 11, 4, 57; 1999 VW₂, 6, 2, 3; (3941), 4, 1, 0; [115, 14, 0*, 1999/10/31–2000/01/13]

627 Blauvac

R. Roy, Le Badassier St Esteve, F-84570 Blauvac, France [Rene.Roy@wanadoo.fr]

0.26-m $f/4.7$ reflector + CCD

USNO-SA1.0, GSC

1999 XQ₃₇, 3, 1, 0; 1999 XL₁₃₇, 5, 1, 0; 2000 AN₄₈, 2, 1, 0; (3616), 3, 1, 0; (6310), 3, 1, 0; (7187), 3, 1, 0; (12791), 4, 1, 0; [23, 7, 0*, 1999/12/16–2000/01/11]

628 Mülheim-Ruhr

A. Martin, Turtle Star Observatory, Friedhostr. 15, D-45478 Mülheim-Ruhr, Germany [axelm@bph.ruhr-uni-bochum.de]

Observers A. Boeker, A. Martin

0.2-m Schmidt-Cassegrain + CCD

USNO-A2.0

1989 WU, 8, 2, 2; [8, 1, 0*, 2000/01/05–2000/01/07]

629 JATE Observatory, Szeged

L. Kiss, Pf. 596, H-6725 Szeged, Hungary [l.kiss@physx.u-szeged.hu]

Observer K. Sárneczky

0.28-m Schmidt-Cassegrain + CCD

GSC

1975 TU₃, 1, 1, 0; 1992 SQ₂₃, 2, 1, 0; [3, 2, 0*, 1999/10/31–1999/11/01]

632 San Polo A Mosciano

L. Ferrini, C/O Villa Mirinda, Via San Polo A Mosciano, Firenze, Italy
[ferrini@dada.it]

Observers M. Mannucci, N. Montigiani, F. Carnati

Measurers M. Mannucci, N. Montigiani

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

USNO-A2.0

(2920), 6, 1, 0; (7637), 5, 1, 0; [11, 2, 0*, 1999/12/17]

639 Dresden

S. Gebhard, Duckwitzstrasse 27d, D-01129 Dresden, Germany [Gebhard@t-online.de]

0.35-m $f/7.3$ reflector + CCD

USNO-A2.0

1999 RH₂₇, 9, 3, 6; [9, 1, 0*, 2000/01/06–2000/01/12]

644 Palomar Mountain/NEAT

S. Pravdo, Jet Propulsion Laboratory, MS 306-438, 4800 Oak Grove Drive, Pasadena, CA 91109, U.S.A. [spravdo@mail1.jpl.nasa.gov]

Observers S. Pravdo, D. L. Rabinowitz

1.2-m Oschin Schmidt + CCD

1999 LO₃₂, 3, 1, 0; 1999 LR₃₂, 3, 1, 0; 1999 LM₃₃ *, 3, 1, 0; 1999 LP₃₃ *, 3, 1, 0; 1999 LQ₃₃ *, 3, 1, 0; [15, 5, 3*, 1999/06/10]

649 Powell Observatory, Louisburg

L. Robinson, 14680 W 144 St., Olathe, KS 66062, U.S.A.

[lrobinns@ix.netcom.com]

Observers R. Alonzi, S. Granger, S. Kranz

0.30-m Schmidt-Cassegrain + CCD

GSC-1.1

1997 SG₇, 5, 1, 0; 1998 MP₂₄, 3, 1, 0; 1999 VS, 4, 1, 0; 1999 XP₉₁, 10, 3, 3; 1999 XE₁₃₉, 6, 2, 1; 1999 XW₂₂₄, 3, 1, 0; 1999 XK₂₂₆, 6, 2, 2; 1999 YL₅, 4, 1, 0; 1999 YT₈, 3, 1, 0; 2000 AT₄ *, 20, 4, 9; 2000 AU₄, 3, 1, 0; 2000 AH₅, 5, 2, 7; (640), 3, 1, 0; (7619), 5, 2, 1; (8875), 2, 1, 0; (9045), 6, 2, 1; (9234), 4, 1, 0; (9245), 3, 1, 0; [95, 18, 1*, 1999/11/04–2000/01/23]

651 Grasslands Observatory, Tucson

J. E. McGaha, 5100 Sabino Foothills, Tucson, AZ 85750, U.S.A.

[jmcgaha@azstarnet.com]

0.62-m $f/5.1$ Newtonian + CCD

GSC-1.1

1998 MY₄₅, 6, 2, 2; 1999 WC, 8, 3, 24; 1999 XF₈, 5, 2, 2; 1999 XG₈, 7, 2, 2; 1999 XX₁₄, 6, 2, 2; 1999 XJ₁₄₁, 2, 1, 0; 1999 XK₁₄₁, 5, 2, 2; 1999 XL₁₄₁, 6, 2, 2; 1999 XN₁₄₁, 2, 1, 0; 1999 XA₁₄₃, 3, 1, 0; 1999 XN₂₀₇, 6, 2, 4; 1999 YA, 3, 1, 0; 1999 YT, 3, 1, 0; 1999 YA₁ *, 8, 3, 15; 1999 YB₁ *, 8, 3, 15; 1999 YB₃, 2, 1, 0; 1999 YJ₅, 2, 1, 0; 1999 YK₅, 2, 1, 0; 1999 YZ₁₄ *, 6, 2, 4; 1999 YP₁₇ *, 6, 2, 7; 2000 AA₆, 2, 1, 0; 2000 AB₆, 3, 1, 0; 2000 AC₆, 3, 1, 0; 2000 AD₆, 3, 1, 0; 2000 AE₆, 3, 1, 0; 2000 AF₆, 3, 1, 0; 2000 AG₆, 3, 1, 0; 2000 AU₂₇, 3, 1, 0; 2000 AZ₂₇, 3, 1, 0; 2000 AG₄₆ *, 5, 2, 1; 2000 AD₄₈ *, 6, 2, 2; 2000 AW₉₃, 3, 1, 0; 2000 AX₉₃, 3, 1, 0; 2000 AY₉₃, 2, 1, 0; 2000 AZ₉₃, 3, 1, 0; 2000 AH₁₅₃ *, 6, 2, 2; 2000 AJ₁₅₃, 3, 1, 0; 2000 AK₁₅₃, 3, 1, 0; 2000 AD₂₀₅, 3, 1, 0; 2000 AE₂₀₅, 2, 1, 0; 2000 AF₂₀₅, 5, 2, 5; 2000 AH₂₀₅, 5, 2, 5; 2000 AB₂₂₉, 3, 1, 0; 2000 AC₂₂₉, 2, 1, 0; 2000 AD₂₂₉, 3, 1, 0; (7942), 3, 1, 0; [182, 46, 7*, 1999/12/16–2000/01/16]

652 Sandringham, Calgary

B. Yeung, 139 Sandringham Place NW, Calgary, Alberta T3K 3V8, Canada

[cyber_bill@sprynet.com]

0.35-m $f/7$ Schmidt-Cassegrain + CCD

1998 QB, 2, 1, 0; 1999 XL₃₂, 2, 1, 0; 1999 XY₁₀₃, 2, 1, 0; 1999 XN₁₃₆, 12, 2, 5; 1999 XZ₁₇₂, 2, 1, 0; 1999 XD₂₂₈, 2, 1, 0; 1999 YE₃, 6, 1, 0; 1999 YQ₄ *, 14, 6, 23; 1999 YM₉, 2, 1, 0; 2000 AW₃₃, 2, 1, 0; 2000 AF₆₁, 3, 1, 0; 2000 AQ₁₅₈, 2, 1, 0; 2000 AT₁₅₉, 2, 1, 0; 2000 AE₂₀₄ *, 5, 2, 13; (3596), 1, 1, 0; (5028), 1, 1, 0; [60, 16, 2*, 1999/12/17–2000/01/24]

653 Torus Observatory, Buckley

R. J. Williams, 224th Ave. E., Buckley, WA 98321, U.S.A.

[richjwilliams@msn.com]

0.4-m $f/10$ Cassegrain reflector + CCD

GSC

1999 VH₄₉, 2, 1, 0; [2, 1, 0*, 1999/10/21]

658 Dominion Astrophysical Observatory, Victoria

D. D. Balam, Dept. of Physics, University of Victoria, P.O. Box 3055, Victoria, BC V8W 3P6, Canada [universe@uvvm.uvic.ca]

1.82-m Plaskett telescope + CCD

USNO-A2.0

1999 XO₃₅, 3, 1, 0; 1999 YR₁₄, 2, 1, 0; 2000 AC₆, 3, 1, 0; 2000 AF₆, 3, 1, 0; 2000 AZ₉₃, 3, 1, 0; 2000 AD₂₀₅, 2, 1, 0; 2000 AE₂₀₅, 2, 1, 0; [18, 7, 0*, 2000/01/24]

670 Camarillo

J. E. Rogers, 441 Rowland Avenue, Camarillo, CA 93010, U.S.A.

[johnerogers@csi.com]

0.30-m $f/6.7$ Helin Telescope + CCD

GSC-1.1

1997 WU₂₂, 8, 3, 19; 1999 GJ₄, 5, 2, 1; 1999 RH₂₇, 11, 4, 17; 1999 US₃, 3, 2, 1; 1999 VM₄₀, 10, 4, 17; 1999 WC₂, 4, 2, 1; 1999 WK₁₃, 7, 3, 7; 1999 XG₈, 5, 2, 1; 1999 XO₃₅, 12, 5, 17; 1999 XS₃₅, 3, 1, 0; 1999 XK₁₃₆, 5, 2, 4; 1999 XL₁₃₆, 2, 1, 0; 1999 XA₁₄₃, 4, 2, 1; 1999 YB, 4, 2, 3; 1999 YC, 15, 5, 17; 1999 YD, 8, 3, 2; 1999 YT, 9, 4, 3; 1999 YE₃, 5, 2, 1; 1999 YF₃, 6, 2, 1; 2000 AA₆, 9, 3, 2; 2000 AB₆, 8, 3, 2; 2000 AC₆, 5, 2, 1; 2000 AD₆, 3, 1, 0; 2000 AX₉₃, 3, 2, 1; 2000 AB₂₂₉, 2, 1, 0; 2000 AC₂₂₉, 2, 1, 0; (7942), 2, 1, 0; (12711), 5, 2, 18; [165, 28, 0*, 1999/12/16–2000/01/11]

672 Mount Wilson

J. Bacon, 3555 Don Mills Rd., Unit 6-1725, Willowdale, ON M2H 3N3, Canada

jbacon@inforamp.net

Observers J. Bacon, W. A. McCarthy, G. Thomas

Measurer J. Bacon

0.61-m $f/3.5$ reflector + CCD

GSC

(832), 2, 1, 0; [2, 1, 0*, 1999/12/14]

673 Table Mountain Observatory

W. M. Owen, Jr., Jet Propulsion Laboratory 301-150, 4800 Oak Grove Drive, Pasadena, CA 91109-8099, U.S.A. [wmo@wansor.jpl.nasa.gov] (1)

M. D. Hicks, Jet Propulsion Laboratory, MS 183-501, 4800 Oak Grove Drive, Pasadena, CA 91109, U.S.A. [hicksm@scn1.jpl.nasa.gov] (4)

Observers G. L. Grasdalen, A. U. Tonomous, M. Hicks, W. M. Owen, Jr.

Measurer W. M. Owen, Jr.

0.61-m $f/16$ reflector + CCD

ACT

{1} (1), 4, 1, 0; (2), 18, 3, 4; (6), 21, 5, 7; (7), 13, 3, 2; (13), 14, 3, 6; (14), 7, 3, 4; (18), 2, 1, 0; (29), 7, 2, 3; (43), 5, 2, 1; (44), 3, 1, 0; (63), 3, 1, 0; (81), 6, 1, 0; (85), 3, 1, 0; (87), 16, 6, 7; (110), 18, 5, 6; (146), 8, 2, 1; (150), 6, 2, 4; (185), 2, 1, 0; (187), 5, 1, 0; (195), 2, 1, 0; (198), 3, 1, 0; (202), 4, 1, 0; (216), 6, 2, 6; (238), 6, 2, 3; (283), 3, 2, 4; (308), 5, 1, 0; (375), 17, 5, 7; (532), 13, 3, 4; (554), 19, 5, 6; (568), 19, 5, 6; (690), 27, 6, 7; (760), 4, 1, 0; (814), 20, 4, 5; [309, 33, 0*, 1999/12/09–1999/12/16]

{4} 1999 XA₁₄₃, 3, 1, 0; 1999 YT, 2, 1, 0; 2000 AB₆, 2, 1, 0; 2000 AG₆, 3, 1, 0; 2000 AX₉₃, 3, 1, 0; 2000 AD₂₂₉, 5, 1, 0; [18, 6, 0*, 2000/01/04–2000/01/07]

675 Palomar

A. Boattini, Istituto di Astrofisica Spaziale, Via Fosso del Cavaliere, I-00133 Rome, Italy [boattini@ias.rm.cnr.it] (1)

2000 JAN. 24

M.P.C. 37417

E. F. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.
[efh@alps.jpl.nasa.gov] (2)

C. S. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.
[cshoemaker@flagmail.wr.usgs.gov] (3)

C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands [vanhouten@rulhl1.leidenuniv.nl] (4)

A. Gnädig, c/o Archenhold-Sternwarte, Alt-Treptow 1, D-12435 Berlin, Germany
[doppler@mind.de] (5)

E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001,
U.S.A. [elgb@lowell.edu] (6)

9 = 6 + 3

Observers T. Gehrels (4, L), E. F. Helin (2, S), K. Lawrence (2, S),
C. S. Shoemaker (3, S), E. M. Shoemaker (3, S)

Measurers A. Boattini (1), G. Forti (1), R. Gal (1), A. Gnädig (5),
K. Lawrence (2), B. A. Skiff (6), C. J. van Houten (4), I. van Houten-
Groeneveld (4), A. Wisse (4)

1.2-m Oschin Schmidt (L), 0.46-m Schmidt (S)

{1} 1994 BP, 2, 1, 0; 1997 PQ₄, 2, 1, 0; 1997 UK₅, 8, 4, 2002; 1998 YD₁₀, 2, 1, 0; [14, 4, 0*,
1950/03/21–1995/03/29]

{2} 1994 EE₃, 4, 2, 3; 1994 EB₈, 2, 1, 0; 1998 KS₅₃, 2, 1, 0; 1998 TW₃₂, 3, 2, 2; 1999 WS₁, 4, 2,
2; 1999 XJ₁₂₀, 2, 1, 0; [17, 6, 0*, 1991/12/07–1994/11/01]

{4} 2188 P-L *, 8, 8, 32; 2224 P-L *, 9, 6, 32; 2512 P-L *, 10, 8, 32; 2513 P-L *, 7, 6, 32;
2567 P-L *, 8, 8, 32; 2802 P-L *, 6, 6, 32; 3001 P-L *, 7, 5, 5; 3047 P-L *, 14, 7, 30; 3060 P-L *,
4, 4, 4; 3567 P-L *, 4, 3, 4; 4617 P-L *, 10, 7, 28; 6572 P-L *, 8, 8, 32; 6639 P-L *, 8, 8, 32;
6764 P-L *, 8, 4, 4; 9071 P-L *, 3, 3, 4; 1086 T-1 *, 6, 5, 9; 1259 T-1 *, 8, 6, 23; 3044 T-1 *,
5, 4, 9; 3204 T-1 *, 12, 8, 51; 3256 T-1 *, 14, 9, 53; 4097 T-1 *, 5, 4, 9; 4131 T-1 *, 11, 8, 53;
4197 T-1 *, 4, 3, 7; 4225 T-1 *, 11, 7, 51; 4237 T-1 *, 4, 3, 3; 1186 T-2 *, 15, 8, 16; 1305 T-2 *,
16, 7, 16; 1417 T-2 *, 7, 4, 11; 2192 T-2 *, 23, 8, 16; 3356 T-2 *, 10, 6, 15; 3699 T-2 *, 7, 4, 6;
4079 T-2 *, 22, 8, 16; 5167 T-2 *, 14, 7, 15; 1041 T-3 *, 10, 5, 11; 1085 T-3 *, 11, 6, 15; 3326 T-3 *,
12, 7, 15; 3337 T-3 *, 13, 7, 15; 3500 T-3 *, 13, 7, 15; 3524 T-3 *, 11, 6, 15; 4213 T-3 *, 13, 7, 15;
5155 T-3 *, 9, 5, 11; [400, 41, 41*, 1960/09/24–1977/10/22]

{5} 1937 UD, 2, 1, 0; 1973 SX, 6, 3, 743; 1973 SS₁, 4, 2, 394; 1988 TA, 2, 1, 0; 1991 SS₁, 2, 1, 0;
1996 RS₂₈, 2, 1, 0; 1996 RA₃₃, 3, 2, 2060; 1997 GH₂₈, 4, 2, 1251; 1997 VG₁, 2, 1, 0; 1998 KH₁₇,
2, 1, 0; 1998 SQ, 2, 1, 0; 1998 SU₅₂, 2, 1, 0; 1998 SN₇₄, 2, 1, 0; 1998 SZ₁₃₈, 2, 1, 0; 1998 UZ₈,
6, 4, 4351; 1998 UQ₁₆, 8, 4, 1215; 1998 US₂₄, 4, 2, 9265; 1998 WX₉, 6, 3, 827; 1998 XO₇₉, 9, 5,
6072; 1999 JB, 2, 1, 0; 1999 JD₆, 2, 1, 0; 1999 RG₃₃, 2, 1, 0; 1999 VL₁₂, 3, 2, 20; 9602 P-L, 1, 1,
0; [80, 22, 0*, 1949/11/21–1997/03/13]

{6} 1996 HE₁, 2, 1, 0; 1998 HO₂₇, 2, 1, 0; 1998 QE₇₁, 2, 1, 0; 1999 XR₁₃, 2, 1, 0; 3047 P-L, 2, 1,
0; [10, 5, 0*, 1950/04/22–1955/10/23]

{9} 1989 YO₃, 2, 1, 0; 1992 EF₂₂, 1, 1, 0; 1994 EB₈, 2, 1, 0; 1996 RQ, 1, 1, 0; 1998 HA₁₄₈, 2, 1, 0;
1998 KM₄₁, 2, 1, 0; 1998 OW₁₁, 1, 1, 0; 1998 QU₉, 2, 1, 0; 1998 QY₉₀, 1, 1, 0; 1998 RC₆₉, 2, 1, 0;
1998 RX₇₉, 2, 1, 0; 1998 SC₁₂₅, 1, 1, 0; 1998 VP₃₁, 2, 1, 0; 1999 RK₄₀, 2, 1, 0; 1999 RE₁₂₃, 2, 1, 0;
1999 ST₁, 2, 1, 0; 1999 WU₁₈, 1, 1, 0; 1999 XZ₉₇, 2, 1, 0; [30, 18, 0*, 1986/03/04–1994/11/07]

678 Fountain Hills

C. W. Juels, P.O. Box 19960, Fountain Hills, AZ 85269, U.S.A.
[cwjuels@futureone.com]

0.32-m *f*/5.5 reflector + CCD
GSC-1.1

1994 PL₁₂, 4, 2, 1; 1999 VC₁₂, 2, 1, 0; 1999 VT₂₂, 4, 2, 1; 1999 VD₈₁, 4, 2, 1; 1999 XK₉, 4, 2, 1;
1999 XR₁₈, 4, 2, 2; 1999 XP₁₉, 4, 2, 2; 1999 XO₃₁, 4, 2, 1; 1999 XP₃₁, 5, 2, 1; 1999 XO₃₆, 2, 1,
0; 1999 XS₃₆, 2, 1, 0; 1999 XK₃₇, 4, 2, 14; 1999 XY₉₃, 4, 2, 1; 1999 XZ₉₃, 4, 2, 1; 1999 XB₁₃₄,
4, 2, 1; 1999 XR₁₄₂, 4, 2, 1; 1999 XA₁₄₃, 4, 1, 0; 1999 XB₁₄₃ *, 4, 2, 2; 1999 XC₁₄₃ *, 4, 2,
2; 1999 XD₁₄₃ *, 4, 2, 2; 1999 XE₁₄₃ *, 4, 2, 2; 1999 XF₁₄₃ *, 6, 3, 12; 1999 XG₁₄₃ *, 4, 2,
1; 1999 XH₁₄₃ *, 8, 4, 16; 1999 XJ₁₄₃ *, 8, 4, 12; 1999 XK₁₄₃ *, 6, 3, 12; 1999 XL₁₄₃ *, 8, 4,
16; 1999 XS₁₄₃ *, 13, 4, 3; 1999 XF₁₄₄ *, 4, 2, 1; 1999 XG₁₄₄ *, 4, 2, 1; 1999 XH₁₄₄ *, 4, 2,
1; 1999 XJ₁₄₄ *, 4, 2, 1; 1999 XK₁₄₄ *, 4, 2, 1; 1999 XL₁₄₄ *, 4, 2, 1; 1999 XM₁₄₄ *, 4, 2, 1;

1999 XY₁₇₂, 4, 2, 1; 1999 XR₁₇₃, 4, 2, 1; 1999 XY₁₇₃, 4, 2, 1; 1999 XY₁₇₇, 4, 2, 1; 1999 XJ₁₇₈, 4,
2, 1; 1999 XM₁₇₈, 5, 2, 1; 1999 XG₂₀₅, 4, 2, 1; 1999 XK₂₁₇, 4, 2, 1; 1999 XP₂₂₅, 4, 2, 1; 1999 YT,
3, 1, 0; 1999 YV *, 4, 2, 1; 1999 YW *, 4, 2, 1; 1999 YX *, 4, 2, 1; 1999 YY *, 4, 2, 1; 1999 YZ *,
4, 2, 1; 1999 YZ₈, 4, 2, 1; 1999 YX₁₃ *, 6, 3, 11; 2000 AD, 4, 2, 1; 2000 AE *, 4, 2, 1; 2000 AF *,
4, 2, 1; 2000 AG *, 6, 3, 9; 2000 AH *, 4, 2, 1; 2000 AJ *, 6, 3, 9; 2000 AK *, 6, 3, 9; 2000 AL *,
4, 2, 1; 2000 AM *, 6, 3, 9; 2000 AN *, 6, 3, 9; 2000 AB₆, 2, 1, 0; 2000 AR₉, 4, 2, 1; 2000 AO₃₀,
4, 2, 1; 2000 AP₅₀ *, 4, 2, 1; 2000 AQ₅₀ *, 6, 3, 6; 2000 AR₅₀ *, 6, 3, 6; 2000 AS₅₀ *, 4, 2, 1;
2000 AT₅₀ *, 6, 3, 6; 2000 AU₅₀ *, 4, 2, 1; 2000 AV₅₀ *, 6, 3, 6; 2000 AX₉₃, 3, 1, 0; 2000 AF₁₃₇,
4, 2, 2; 2000 AB₂₂₉, 3, 1, 0; (12929), 2, 1, 0; [338, 76, 40*, 1999/11/09–2000/01/11]

681 Calgary

G. W. Billings, 2320 Cherokee Dr NW, Calgary, Alberta T2L 0X7, Canada
[gbillings@talisman-energy.com]

0.36-m *f*/7 Schmidt-Cassegrain + CCD
USNO-A2.0

1999 VR₆₉, 3, 1, 0; 1999 XO₈, 2, 1, 0; 1999 XG₁₁₅, 8, 3, 7; 1999 XN₂₀₇, 3, 1, 0; 1999 YQ₄, 6, 2,
5; 2000 AX₉₃, 4, 1, 0; [26, 6, 0*, 1999/12/04–2000/01/16]

683 Goodricke-Pigott Observatory, Tucson

R. A. Tucker, 5500 West Nebraska Street, Tucson, AZ 85746, U.S.A.
[tucker@noao.edu]

0.35-m *f*/11 Schmidt-Cassegrain + CCD
GSC

1998 KF₅₆, 3, 1, 0; 1998 MW₁₅, 5, 2, 3; 1999 UM₂₆, 3, 1, 0; 1999 XR₁₂₇, 5, 2, 8; 1999 XS₁₂₇, 5, 2,
8; 1999 XC₁₄₁, 3, 1, 0; 1999 YJ₉ *, 12, 4, 5; (5655), 6, 2, 2; [42, 8, 1*, 1999/10/07–2000/01/05]

684 Prescott

P. G. Comba, 1411 Galaxy Lane, Prescott, AZ 86303, U.S.A.
[comba@northlink.com]

0.46-m *f*/4.5 reflector + CCD
GSC

1991 OO, 4, 2, 1; 1993 FJ₂₀, 2, 1, 0; 1997 FB, 4, 2, 1; 1997 HP₂, 5, 2, 1; 1997 KH, 2, 1, 0;
1997 LZ₄, 4, 2, 1; 1998 OT₁, 5, 2, 1; 1998 QH, 4, 2, 1; 1998 QM₂₈, 4, 2, 1; 1998 QO₂₈, 4, 2, 1;
1998 QQ₆₀, 4, 2, 1; 1998 RO₄₉, 5, 2, 1; 1998 RB₇₇, 3, 1, 0; 1998 SC₂₈, 2, 1, 0; 1998 SL₅₄, 4, 2,
1; 1998 SY₅₉, 2, 1, 0; 1999 TC₃₆, 4, 2, 2; 1999 XR₁, 4, 2, 2; 1999 XW₇, 4, 2, 1; 1999 XE₁₆, 6, 3,
3; 1999 XT₁₈, 2, 1, 0; 1999 XG₃₁, 2, 1, 0; 1999 XW₈₅, 4, 2, 1; 1999 XP₉₀, 6, 3, 4; 1999 XD₉₅,
3, 1, 0; 1999 XD₁₀₃, 4, 2, 1; 1999 XE₁₀₆, 6, 3, 12; 1999 XD₁₁₅, 2, 1, 0; 1999 XG₁₃₇ *, 4, 2, 1;
1999 XH₁₃₇ *, 4, 2, 1; 1999 XJ₁₃₇ *, 4, 2, 1; 1999 XK₁₃₇ *, 5, 2, 1; 1999 XL₁₃₇ *, 11, 5, 20;
1999 YG₃, 2, 1, 0; 1999 YF₄ *, 5, 2, 2; 1999 YX₄ *, 7, 3, 3; 1999 YY₄ *, 6, 3, 3; 1999 YZ₄ *, 7, 3,
3; 1999 YA₅ *, 7, 3, 3; 1999 YB₅ *, 4, 2, 2; 1999 YH₅, 2, 1, 0; 1999 YJ₅, 3, 1, 0; 1999 YK₅, 2, 1,
0; 1999 YT₈, 4, 2, 1; 1999 YW₈ *, 5, 2, 1; 1999 YX₈ *, 4, 2, 1; 1999 YY₈ *, 5, 2, 1; 1999 YS₁₂, 4,
2, 1; 1999 YQ₁₄ *, 6, 3, 8; 2000 AS₁, 2, 1, 0; 2000 AC₃ *, 4, 2, 1; 2000 AD₃ *, 6, 3, 5; 2000 AX₅,
2, 1, 0; 2000 AJ₆ *, 5, 2, 2; 2000 AK₆ *, 6, 3, 3; 2000 AL₆ *, 5, 2, 2; 2000 AM₆ *, 8, 4, 7;
2000 AN₆ *, 8, 4, 7; 2000 AO₆ *, 4, 2, 2; 2000 AJ₄₈ *, 5, 2, 1; 2000 AK₄₈ *, 4, 2, 1; 2000 AL₄₈ *,
4, 2, 1; 2000 AM₄₈ *, 5, 2, 1; 2000 AY₅₀ *, 5, 2, 1; 2000 AZ₅₀ *, 4, 2, 1; 2000 AA₅₁ *, 6, 3,
2; 2000 AA₅₈, 2, 1, 0; 2000 AB₅₈, 4, 2, 1; 2000 AR₆₀, 6, 3, 3; 2000 AZ₆₇, 2, 1, 0; 2000 AE₈₇,
4, 2, 1; 2000 AH₁₃₁ *, 4, 2, 1; 2000 AJ₁₃₁ *, 4, 2, 1; 2000 AK₁₃₁ *, 4, 2, 1; 2000 AC₁₄₇ *, 4,
2, 1; 2000 AE₁₅₁ *, 6, 3, 2; 2000 AF₁₅₁ *, 6, 3, 2; 2000 AG₁₅₁ *, 8, 3, 2; 2000 AL₁₅₃ *, 4, 2,
1; 2000 AM₁₅₃ *, 5, 2, 1; 2000 AO₁₆₈ *, 5, 2, 1; 2000 AP₁₆₈ *, 5, 2, 1; 2000 AQ₁₆₈ *, 4, 2,
1; 2000 AR₁₆₈ *, 4, 2, 1; 2000 AS₁₆₈ *, 4, 2, 1; 2000 AE₂₀₄, 2, 1, 0; 2000 AL₂₀₅ *, 4, 2, 1;
2000 AM₂₀₅ *, 5, 2, 1; 2000 AN₂₀₅ *, 4, 2, 1; 2000 BA *, 4, 2, 1; 4274 P-L, 2, 1, 0; (2003), 2, 1,
0; (2013), 6, 3, 5; (3049), 4, 2, 3; (4128), 4, 2, 1; (5026), 2, 1, 0; (6415), 3, 1, 0; (7024), 2, 1, 0;
(7830), 2, 1, 0; (8494), 3, 1, 0; (9404), 2, 1, 0; [425, 101, 48*, 1999/11/28–2000/01/16]

688 Lowell Observatory, Anderson Mesa Station

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U.S.A. [buie@lowell.edu] (1)

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L. H. Wasserman, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff,
AZ 86001, U.S.A. [lhw@lowell.edu] (5)

Observers M. W. Buie, B. A. Skiff, L. H. Wasserman

1.8-m reflector + CCD, 0.8-m reflector + CCD

USNO-A2.0

{1} 1999 VQ₂₃, 4, 1, 0; 1999 XW₁, 3, 1, 0; [7, 2, 0*, 1997/03/13–1998/04/19]

{4} 1996 GT₂, 2, 1, 0; [2, 1, 0*, 1997/08/01]

{5} 1998 RX₅₉, 2, 1, 0; 1999 NT₅₄, 3, 1, 0; 1999 WP₁, 2, 1, 0; 1999 WA₅, 2, 1, 0; 1999 XQ₃₃, 2, 1, 0; 1999 XC₃₄, 2, 1, 0; 1999 XM₁₃₆, 2, 1, 0; 1999 XO₁₅₆, 2, 1, 0; 1999 YO₁, 2, 1, 0; 2000 AQ₂₈, 2, 1, 0; 2000 AN₃₀, 2, 1, 0; 2000 AC₉₆, 2, 1, 0; 2000 AT₁₂₅, 2, 1, 0; (2285), 3, 1, 0; (7071), 1, 1, 0; (7225), 2, 1, 0; (11254), 2, 1, 0; (12828), 2, 1, 0; [37, 18, 0*, 2000/01/04–2000/01/05]

691 Kitt Peak, Steward Observatory

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U.S.A. [bob@lpl.arizona.edu]

Observers J. L. Montani, J. V. Scotti, R. S. McMillan, N. Danzl, T. Gehrels,

A. E. Gleason, M. T. Read

0.91-m Spacewatch telescope + CCD

USNO-A1.0

1971 UR₃, 3, 1, 0; 1977 DL₄, 3, 1, 0; 1977 QO₃, 6, 2, 2; 1977 TQ₆, 3, 1, 0; 1978 RD₂, 3, 1, 0; 1978 VV₃, 9, 3, 8; 1978 VZ₈, 3, 1, 0; 1979 MO₂, 3, 1, 0; 1979 MS₅, 6, 2, 9; 1979 QF₂, 9, 3, 17; 1980 FH₄, 6, 2, 6; 1980 UW₁, 3, 1, 0; 1981 EP₁₄, 6, 2, 5; 1981 EL₁₆, 6, 2, 1; 1981 EH₃₂, 6, 2, 5; 1981 EV₄₅, 3, 1, 0; 1981 UB₂₃, 3, 1, 0; 1982 TJ₁₂, 4, 14; 1984 BZ₆, 3, 1, 0; 1985 RF₃, 3, 1, 0; 1986 QO₂, 3, 1, 0; 1986 TQ₅, 6, 2, 6; 1987 SP₁₁, 3, 1, 0; 1988 CO₇, 6, 2, 31; 1988 PV₁, 6, 2, 11; 1988 SU₁, 6, 2, 8; 1988 VA₅, 3, 1, 0; 1989 AG₆, 3, 1, 0; 1990 QB₁₉, 6, 2, 4; 1990 SX₆, 6, 2, 1; 1990 SU₁₆, 6, 2, 15; 1990 TG₂, 6, 2, 16; 1990 VM₂, 3, 1, 0; 1990 VE₄, 3, 1, 0; 1990 WZ₃, 3, 1, 0; 1991 LY₁, 9, 3, 29; 1991 PD₁₁, 3, 1, 0; 1991 PJ₁₅, 3, 1, 0; 1991 RA₄, 3, 1, 0; 1991 RC₆, 3, 1, 0; 1991 SE₁, 9, 3, 14; 1991 UE₂, 3, 1, 0; 1991 VY₄, 9, 3, 11; 1992 AT₂, 3, 1, 0; 1992 EA₈, 6, 2, 6; 1992 EQ₁₃, 3, 1, 0; 1992 EK₁₄, 3, 1, 0; 1992 GE₅, 3, 1, 0; 1992 PK₂, 6, 2, 28; 1992 RP₅, 3, 1, 0; 1992 SS₁₆, 3, 1, 0; 1992 SQ₂₃, 3, 1, 0; 1992 US₁, 3, 1, 0; 1992 UW₂, 3, 1, 0; 1992 UJ₅, 24, 6, 25; 1992 UC₆, 6, 2, 7; 1992 YR₂, 3, 1, 0; 1993 BD₃, 3, 1, 0; 1993 FB₁₀, 3, 1, 0; 1993 FM₁₀, 15, 5, 10; 1993 FR₁₂, 6, 2, 25; 1993 FC₁₃, 9, 3, 12; 1993 FD₁₆, 3, 1, 0; 1993 FX₂₁, 3, 1, 0; 1993 FP₂₃, 12, 4, 29; 1993 FV₂₄, 18, 5, 24; 1993 FM₂₈, 3, 1, 0; 1993 FQ₄₃, 3, 1, 0; 1993 FP₄₈, 6, 2, 14; 1993 FV₈₀, 3, 1, 0; 1993 GK₁, 3, 1, 0; 1993 NW₁, 6, 2, 5; 1993 OX₂, 3, 1, 0; 1993 OQ₅, 3, 1, 0; 1993 RC₅, 6, 2, 9; 1993 RA₈, 3, 1, 0; 1993 TX₁₄, 3, 1, 0; 1993 TK₁₇, 3, 1, 0; 1993 TH₁₉, 3, 1, 0; 1993 TV₁₉, 15, 5, 10; 1993 TU₂₉, 3, 1, 0; 1993 TZ₂₉, 6, 2, 3; 1993 TN₃₀, 6, 2, 6; 1993 UW₆, 3, 1, 0; 1994 AU₆, 9, 3, 7; 1994 ER₅, 3, 1, 0; 1994 EJ₆, 9, 3, 38; 1994 EC₇, 3, 1, 0; 1994 GK₉, 9, 3, 17; 1994 PC₉, 3, 1, 0; 1994 PJ₁₂, 9, 3, 15; 1994 PT₁₆, 6, 2, 7; 1994 PT₂₀, 3, 1, 0; 1994 PY₂₁, 3, 1, 0; 1994 PN₂₅, 3, 1, 0; 1994 PG₃₁, 3, 1, 0; 1994 PA₃₆, 3, 1, 0; 1994 PV₃₉, 3, 1, 0; 1994 RO₆, 3, 1, 0; 1994 ST₇, 3, 1, 0; 1994 SS₈, 6, 2, 31; 1994 SZ₉, 3, 1, 0; 1994 UZ₁, 3, 1, 0; 1994 UE₈, 6, 2, 5; 1994 VS₁, 9, 2, 4; 1994 WO₃, 3, 1, 0; 1994 WF₁, 9, 3, 9; 1994 WC₂, 3, 1, 0; 1995 BQ₈, 3, 1, 0; 1995 BJ₁₁, 3, 1, 0; 1995 FM₁₁, 3, 1, 0; 1995 PA₃, 3, 1, 0; 1995 QS₃, 3, 1, 0; 1995 SE₁, 6, 2, 18; 1995 SO₁₆, 9, 3, 14; 1995 SO₅₄, 6, 2, 8; 1995 UM₆, 6, 2, 4; 1995 UY₈, 6, 2, 26; 1995 UK₂₈, 3, 1, 0; 1995 VG₁₀, 3, 1, 0; 1995 WA₃, 9, 3, 12; 1995 WE₃, 3, 1, 0; 1995 WP₃, 6, 2, 31; 1995 WK₄, 3, 1, 0; 1995 WL₄₂, 3, 1, 0; 1995 XS₁, 3, 1, 0; 1995 YJ₃, 3, 1, 0; 1995 YQ₁, 3, 1, 0; 1995 YH₁₂, 3, 1, 0; 1995 YS₂₁, 6, 2, 5; 1996 AS₁, 3, 1, 0; 1996 AH₉, 3, 1, 0; 1996 BV₂, 3, 1, 0; 1996 DM₂, 12, 4, 25; 1996 EK₉, 3, 1, 0; 1996 HE₁, 3, 1, 0; 1996 HF₁₁, 12, 4, 13; 1996 HF₁₈, 3, 1, 0; 1996 HL₂₀, 6, 2, 26; 1996 HC₂₅, 3, 1, 0; 1996 JC₆, 6, 2, 37; 1996 XK₃, 3, 1, 0; 1996 XT₁₉, 3, 1, 0; 1996 YW₃, 3, 1, 0; 1997 AN₅, 6, 2, 6; 1997 AX₇, 9, 3, 19; 1997 AR₁₇, 3, 1, 0; 1997 AY₁₇, 3, 1, 0; 1997 AZ₁₇, 3, 1, 0; 1997 BD₃, 3, 1, 0; 1997 CX₃, 3, 1, 0; 1997 CO₁, 6, 2, 9; 1997 CZ₂, 3, 1, 0; 1997 CJ₅, 3, 1, 0; 1997 CE₆, 3, 1, 0; 1997 CG₁₉, 3, 1, 0; 1997 CS₁₉, 6, 2, 6; 1997 CD₂₂, 3, 1, 0; 1997 CL₂₆, 3, 1, 0; 1997 EF₃, 3, 1, 0; 1997 EY₂, 6, 2, 8; 1997 ES₁₇, 3, 1, 0; 1997 EE₂₃, 3, 1, 0; 1997 EL₂₈, 3, 1, 0; 1997 EE₂₉, 3, 1, 0; 1997 EE₃₂, 9, 3, 17; 1997 ET₄₁, 3, 1, 0; 1997 FQ₁, 3, 1, 0; 1997 FB₃, 3, 1, 0; 1997 FZ₃, 6, 2, 8; 1997 FB₄, 6, 2, 7; 1997 FR₄, 6, 2, 9; 1997 GT₁, 3, 1, 0; 1997 GX₅, 6, 2, 9; 1997 GE₈, 6, 2, 8; 1997 GL₁₄, 9, 3, 16; 1997 GE₁₅, 6, 2, 8; 1997 GT₁₅, 6, 2, 41; 1997 GD₁₇, 6, 2, 9; 1997 GC₂₂, 6, 2, 18; 1997 GP₄₀, 6, 2, 5; 1997 GQ₄₁, 12, 4, 26; 1997 HD₉, 3, 1, 0; 1997 HA₁₀, 3, 1, 0; 1997 HS₁₂, 6, 2, 4; 1997 JU₃, 3, 1, 0; 1997 JN₁₂, 3, 1, 0; 1997 JT₁₅, 9, 3, 20; 1997 KG₉, 3, 9; 1997 NJ₆, 6, 2, 1; 1997 PY₃, 3, 1, 0; 1997 PG₃, 3, 1, 0; 1997 QS₄, 3, 1, 0; 1998 EL₂, 6, 2, 4; 1998 EQ₂, 3, 1, 0; 1998 EB₈, 3, 1, 0; 1998 FW₉, 6, 2, 5; 1998 FP₁₀, 3, 1, 0; 1998 FV₁₀, 3, 1, 0; 1998 FW₁₄, 3, 1, 0; 1998 FF₁₆, 3, 1, 0; 1998 FX₄₇, 3, 1, 0; 1998 FE₄₉, 6, 2, 5; 1998 FL₄₉, 3, 1, 0; 1998 FT₅₇, 3, 1, 0; 1998 FG₅₈, 6, 2, 12; 1998 FD₆₁, 3, 1, 0; 1998 FO₆₁, 3, 1, 0; 1998 FS₆₂, 3, 1, 0; 1998 FK₆₅, 6, 2, 18; 1998 FS₆₅, 3, 1, 0; 1998 FA₇₀, 3, 1, 0; 1998 FM₇₀, 3, 1, 0; 1998 FG₇₅, 6, 2, 5; 1998 FM₇₈, 9, 3, 40; 1998 GF₆, 6, 2, 4; 1998 HY₁₃, 3, 1, 0; 1998 HN₃₂, 3, 1, 0; 1998 HU₃₂, 3, 1, 0; 1998 HT₄₂, 3, 1, 0; 1998 HS₅₁, 6, 2, 4; 1998 HT₅₁, 3, 1, 0; 1998 HU₅₁, 3, 1, 0; 1998 HO₅₂, 3, 1, 0; 1998 HG₅₃, 6, 2, 11; 1998 HB₈₇, 3, 1, 0; 1998 HB₈₈, 6, 2, 30; 1998 HL₉₃, 6, 2, 23; 1998 HK₉₄, 3, 1, 0; 1998 HC₉₉, 3, 1, 0; 1998 HO₁₀₂, 3, 1, 0; 1998 HS₁₄₈, 3, 1, 0; 1998 HT₁₄₉, 3, 1, 0; 1998 JX₉, 3, 18; 1998 JP₁, 3, 1, 0; 1998 JT₁, 3, 1, 0; 1998 JP₂, 6, 2, 4; 1998 JK₄, 3, 1, 0; 1998 KB₃, 3, 1, 0; 1998 KN₆, 6, 2,

6; 1998 KJ₁, 3, 1, 0; 1998 KP₁, 3, 1, 0; 1998 KL₂, 9, 3, 43; 1998 KD₅, 3, 1, 0; 1998 KT₆, 6, 2, 6; 1998 KK₉, 9, 3, 19; 1998 KH₃₂, 3, 1, 0; 1998 KU₃₃, 9, 3, 10; 1998 KZ₃₃, 3, 1, 0; 1998 KG₃₅, 6, 2, 24; 1998 KM₃₉, 3, 1, 0; 1998 KE₄₇, 6, 2, 30; 1998 KK₄₇, 6, 2, 9; 1998 MA₈, 3, 1, 0; 1998 MR₂₃, 3, 1, 0; 1998 ME₂₉, 6, 2, 5; 1998 ML₃₁, 6, 2, 6; 1998 MC₃₂, 6, 2, 9; 1998 MT₃₂, 3, 1, 0; 1998 MR₃₅, 9, 3, 40; 1998 MU₃₇, 6, 2, 6; 1998 MV₃₇, 3, 1, 0; 1998 MZ₃₇, 3, 1, 0; 1998 OM₃, 3, 1, 0; 1998 OQ₃, 3, 1, 0; 1998 OJ₃, 6, 2, 19; 1998 OY₃, 3, 1, 0; 1998 OQ₄, 3, 1, 0; 1998 OG₇, 6, 2, 5; 1998 OG₉, 6, 2, 6; 1998 ON₁₁, 3, 1, 0; 1998 OU₁₄, 6, 2, 3; 1998 PL₃, 3, 1, 0; 1998 PO₆, 6, 2, 6; 1998 PA₁, 6, 2, 22; 1998 QS₁₁, 3, 1, 0; 1998 QV₁₂, 9, 3, 14; 1998 QS₁₃, 6, 2, 18; 1998 QU₁₃, 6, 2, 7; 1998 QF₁₄, 3, 1, 0; 1998 QW₁₅, 3, 1, 0; 1998 QS₂₅, 3, 1, 0; 1998 QM₂₈, 3, 1, 0; 1998 QP₃₁, 15, 5, 22; 1998 QT₃₂, 6, 2, 6; 1998 QE₃₅, 3, 1, 0; 1998 QO₃₅, 6, 2, 6; 1998 QL₃₆, 3, 1, 0; 1998 QM₃₇, 9, 3, 11; 1998 QD₃₈, 6, 2, 6; 1998 QK₃₈, 6, 2, 25; 1998 QL₃₈, 3, 1, 0; 1998 QQ₃₈, 6, 2, 9; 1998 QE₃₉, 12, 4, 12; 1998 QT₃₉, 3, 1, 0; 1998 QS₄₁, 3, 1, 0; 1998 QP₄₂, 9, 3, 18; 1998 QF₄₈, 9, 3, 14; 1998 QL₄₈, 3, 1, 0; 1998 QF₅₁, 9, 3, 4; 1998 QL₅₇, 3, 1, 0; 1998 QM₅₇, 6, 2, 3; 1998 QR₇₁, 3, 1, 0; 1998 QY₇₄, 3, 1, 0; 1998 QC₇₅, 3, 1, 0; 1998 QS₇₇, 3, 1, 0; 1998 RJ₁, 6, 1, 0; 1998 RX₁₂, 3, 1, 0; 1998 RP₁₉, 6, 2, 6; 1998 RQ₁₉, 3, 1, 0; 1998 RR₂₉, 3, 1, 0; 1998 RO₄₀, 3, 1, 0; 1998 RD₄₄, 3, 1, 0; 1998 RO₄₄, 3, 1, 0; 1998 RJ₅₀, 6, 2, 6; 1998 RW₅₀, 12, 4, 11; 1998 RR₅₉, 6, 2, 7; 1998 RW₆₁, 3, 1, 0; 1998 RN₆₂, 3, 1, 0; 1998 RL₆₅, 9, 3, 22; 1998 RR₆₇, 6, 2, 10; 1998 RQ₆₈, 15, 5, 31; 1998 RC₆₉, 3, 1, 0; 1998 RP₇₀, 6, 2, 26; 1998 RF₇₁, 3, 1, 0; 1998 RM₇₂, 3, 1, 0; 1998 RA₇₃, 3, 1, 0; 1998 RL₇₃, 3, 1, 0; 1998 RT₇₄, 3, 1, 0; 1998 RW₇₅, 9, 3, 8; 1998 RR₇₇, 9, 3, 12; 1998 SH₄, 6, 2, 6; 1998 SA₂₄, 3, 1, 0; 1998 SC₂₄, 6, 2, 3; 1998 SS₂₇, 6, 2, 7; 1998 SC₂₈, 3, 1, 0; 1998 SQ₃₇, 6, 2, 5; 1998 SL₄₂, 6, 2, 7; 1998 SO₄₃, 9, 3, 12; 1998 SR₄₃, 15, 5, 10; 1998 SM₄₆, 3, 1, 0; 1998 SF₅₃, 6, 2, 4; 1998 SA₅₆, 3, 1, 0; 1998 SG₆₀, 6, 2, 9; 1998 SR₆₃, 9, 3, 11; 1998 ST₇₄, 6, 2, 2; 1998 SN₁₁₄, 6, 2, 7; 1998 SP₁₁₅, 6, 2, 9; 1998 SA₁₂₆, 12, 4, 15; 1998 ST₁₃₂, 3, 1, 0; 1998 SP₁₃₃, 3, 1, 0; 1998 SV₁₃₄, 6, 2, 3; 1998 SF₁₃₆, 9, 3, 3; 1998 SM₁₃₈, 9, 3, 10; 1998 SW₁₄₀, 6, 2, 9; 1998 SS₁₄₃, 3, 1, 0; 1998 SY₁₄₃, 3, 1, 0; 1998 SA₁₄₄, 3, 1, 0; 1998 TX₅, 3, 1, 0; 1998 TN₃₀, 6, 2, 8; 1998 TR₃₃, 6, 2, 3; 1998 UO₁₅, 6, 2, 6; 1998 UR₁₆, 3, 1, 0; 1998 VH₂₆, 3, 1, 0; 1998 VC₃₄, 3, 1, 0; 1998 VG₄₄, 3, 1, 0; 1998 WN₁₁, 6, 2, 5; 1998 XM₆, 3, 1, 0; 1998 XA₇, 3, 1, 0; 1998 XE₁₂, 3, 1, 0; 1999 JK₄₉, 3, 1, 0; 1999 JR₅₀, 3, 1, 0; 1999 JY₅₂, 3, 1, 0; 1999 JC₅₄, 3, 1, 0; 1999 JW₈₀, 3, 1, 0; 1999 JQ₁₁₃, 3, 1, 0; 1999 JB₁₁₄, 3, 1, 0; 1999 JN₁₁₆, 3, 1, 0; 1999 JX₁₁₉, 3, 1, 0; 1999 JE₁₂₁, 3, 1, 0; 1999 JA₁₂₇, 3, 1, 0; 1999 KO₁₇, 3, 1, 0; 1999 LO₃₂ *, 3, 1, 0; 1999 LR₃₂ *, 3, 1, 0; 1999 LK₃₃ *, 3, 1, 0; 1999 LP₃₃, 3, 1, 0; 1999 LQ₃₃, 3, 1, 0; 1999 LP₃₄ *, 6, 2, 6; 1999 LU₃₄ *, 3, 1, 0; 1999 LV₃₄ *, 3, 1, 0; 1999 LW₃₄ *, 6, 2, 5; 1999 LX₃₄ *, 3, 1, 0; 1999 LA₃₅, 3, 1, 0; 1999 LB₃₅, 3, 1, 0; 1999 LC₃₅, 3, 1, 0; 1999 LD₃₅, 3, 1, 0; 1999 LE₃₅, 3, 1, 0; 1999 LF₃₅, 3, 1, 0; 1999 LG₃₅, 3, 1, 0; 1999 ME₂ *, 6, 2, 2; 1999 NP₂, 3, 1, 0; 1999 NA₉, 3, 1, 0; 1999 NQ₂₀, 3, 1, 0; 1999 NV₂₃, 3, 1, 0; 1999 ND₂₄, 3, 1, 0; 1999 NQ₂₇, 3, 1, 0; 1999 NC₄₉, 3, 1, 0; 1999 NN₆₄, 3, 1, 0; 1999 OQ₄, 3, 1, 0; 1999 OR₄, 3, 1, 0; 1999 OS₄, 3, 1, 0; 1999 OT₄, 3, 1, 0; 1999 OW₄, 3, 1, 0; 1999 OY₄, 3, 1, 0; 1999 PY₃, 3, 1, 0; 1999 PJ₇ *, 6, 2, 5; 1999 PK₇ *, 6, 2, 5; 1999 PM₇ *, 6, 2, 5; 1999 PN₇ *, 6, 2, 5; 1999 PO₇ *, 6, 2, 5; 1999 PP₇ *, 6, 2, 5; 1999 PQ₇, 3, 1, 0; 1999 PS₇, 3, 1, 0; 1999 PT₇, 3, 1, 0; 1999 PU₇, 3, 1, 0; 1999 PV₇, 3, 1, 0; 1999 PW₇, 3, 1, 0; 1999 PX₇, 3, 1, 0; 1999 PY₇, 3, 1, 0; 1999 PZ₇, 3, 1, 0; 1999 PA₈, 3, 1, 0; 1999 PB₈, 3, 1, 0; 1999 PC₈, 3, 1, 0; 1999 PH₈ *, 6, 2, 5; 1999 PJ₈, 3, 1, 0; 1999 PK₈, 3, 1, 0; 1999 QP₆, 6, 2, 7; 1999 QH₂, 6, 2, 4; 1999 QZ₂ *, 3, 1, 0; 1999 QA₃ *, 3, 1, 0; 1999 QB₃ *, 3, 1, 0; 1999 RN₆, 2, 4; 1999 RN₁, 3, 1, 0; 1999 RW₁, 3, 1, 0; 1999 RK₃, 3, 1, 0; 1999 RC₁₀, 3, 1, 0; 1999 RJ₁₀, 3, 1, 0; 1999 RX₁₀, 3, 1, 0; 1999 RL₁₁, 3, 1, 0; 1999 RX₁₄, 3, 1, 0; 1999 RB₁₅, 6, 2, 4; 1999 RS₁₅, 3, 1, 0; 1999 RJ₁₆, 3, 1, 0; 1999 RU₁₆, 3, 1, 0; 1999 RU₁₈, 3, 1, 0; 1999 RC₂₀, 3, 1, 0; 1999 RO₂₀, 3, 1, 0; 1999 RU₂₀, 6, 2, 11; 1999 RH₂₁, 6, 2, 8; 1999 RY₂₁, 12, 4, 13; 1999 RA₂₂, 6, 2, 8; 1999 RG₂₃, 6, 2, 12; 1999 RU₂₇, 3, 1, 0; 1999 RX₂₇, 3, 1, 0; 1999 RP₃₂, 3, 1, 0; 1999 RC₃₄, 3, 1, 0; 1999 RC₃₇, 6, 2, 3; 1999 RA₃₈, 3, 1, 0; 1999 RM₃₈, 3, 1, 0; 1999 RT₃₈, 3, 1, 0; 1999 RJ₃₉, 3, 1, 0; 1999 RV₄₁, 6, 2, 4; 1999 RA₄₃, 3, 1, 0; 1999 RC₄₇, 3, 1, 0; 1999 RG₅₅, 3, 1, 0; 1999 RN₈₁, 9, 3, 5; 1999 RV₈₁, 6, 2, 4; 1999 RX₈₁, 6, 2, 11; 1999 RE₈₂, 6, 2, 6; 1999 RS₈₄, 6, 2, 4; 1999 RC₈₅, 6, 2, 7; 1999 RV₈₅, 6, 2, 1; 1999 RS₈₆, 3, 1, 0; 1999 RS₈₇, 6, 2, 3; 1999 RY₈₇, 6, 2, 12; 1999 RW₈₈,

3, 18; 1999 TT₂₅, 3, 1, 0; 1999 TW₂₅, 6, 2, 5; 1999 TB₂₆, 3, 1, 0; 1999 TD₂₆, 3, 1, 0; 1999 TF₂₆, 3, 1, 0; 1999 TH₂₆, 3, 1, 0; 1999 TL₂₆, 6, 2, 4; 1999 TP₂₆, 3, 1, 0; 1999 TU₂₆, 3, 1, 0; 1999 TY₂₆, 3, 1, 0; 1999 TK₂₇, 3, 1, 0; 1999 TM₂₇, 3, 1, 0; 1999 TN₂₇, 9, 3, 19; 1999 TP₂₇, 6, 2, 5; 1999 TQ₂₇, 6, 2, 14; 1999 TW₂₇, 6, 2, 10; 1999 TN₃₂, 3, 1, 0; 1999 TS₃₄, 9, 3, 14; 1999 TR₃₅, 3, 1, 0; 1999 UT, 6, 2, 3; 1999 UA₁, 12, 4, 15; 1999 UC₁, 3, 1, 0; 1999 UF₁, 3, 1, 0; 1999 UR₁, 3, 1, 0; 1999 UK₂, 3, 1, 0; 1999 UY₂, 3, 1, 0; 1999 UE₃, 3, 1, 0; 1999 UB₄, 6, 2, 5; 1999 UC₄, 9, 2, 9; 1999 UD₄, 6, 2, 5; 1999 UH₆, 3, 1, 0; 1999 UO₆, 3, 1, 0; 1999 UY₆, 9, 3, 8; 1999 UO₇, 3, 1, 0; 1999 US₇, 3, 1, 0; 1999 UW₇, 9, 3, 48; 1999 UX₇, 9, 3, 20; 1999 UY₇, 3, 1, 0; 1999 UZ₇, 9, 3, 30; 1999 UA₈, 6, 2, 4; 1999 UB₈, 6, 2, 4; 1999 UD₈, 12, 4, 38; 1999 UF₈, 6, 2, 5; 1999 UG₈, 3, 1, 0; 1999 UJ₈, 6, 2, 5; 1999 UL₈, 6, 2, 8; 1999 UM₈, 6, 2, 34; 1999 UO₈, 6, 2, 30; 1999 UQ₈, 6, 2, 32; 1999 UT₈, 3, 1, 0; 1999 UV₈, 6, 2, 27; 1999 UA₉, 3, 1, 0; 1999 UB₉, 3, 1, 0; 1999 UD₉, 3, 1, 0; 1999 UE₉, 6, 2, 30; 1999 UG₉, 3, 1, 0; 1999 UH₉, 6, 2, 4; 1999 UJ₉, 9, 3, 38; 1999 UM₁₁, 3, 1, 0; 1999 UN₁₁, 3, 1, 0; 1999 UR₁₁, 3, 1, 0; 1999 UT₁₁, 3, 1, 0; 1999 UV₁₁, 3, 1, 0; 1999 UW₁₁, 3, 1, 0; 1999 UX₁₁, 9, 3, 20; 1999 UY₁₁, 3, 1, 0; 1999 UZ₁₁, 3, 1, 0; 1999 UA₁₂, 3, 1, 0; 1999 UB₁₂, 3, 1, 0; 1999 UE₁₂, 9, 3, 6; 1999 UF₁₂, 3, 1, 0; 1999 UG₁₂, 3, 1, 0; 1999 UH₁₂, 3, 1, 0; 1999 UJ₁₂, 3, 1, 0; 1999 UK₁₂, 3, 1, 0; 1999 UL₁₂, 6, 2, 5; 1999 UM₁₂, 6, 2, 5; 1999 UM₁₅, 3, 1, 0; 1999 UJ₁₆, 3, 1, 0; 1999 UQ₁₆, 3, 1, 0; 1999 UO₁₇, 3, 1, 0; 1999 UD₁₈, 3, 1, 0; 1999 UH₁₈, 6, 2, 6; 1999 UN₁₈, 3, 1, 0; 1999 UE₁₉, 3, 1, 0; 1999 UF₂₀, 3, 1, 0; 1999 UL₂₀, 3, 1, 0; 1999 UY₂₀, 3, 1, 0; 1999 UD₂₇ *, 6, 2, 6; 1999 UE₂₇ *, 6, 2, 6; 1999 UF₂₇ *, 12, 4, 15; 1999 UG₂₇ *, 6, 2, 6; 1999 UH₂₇ *, 6, 2, 6; 1999 UJ₂₇ *, 6, 2, 6; 1999 UK₂₇ *, 6, 2, 6; 1999 UL₂₇ *, 12, 4, 15; 1999 UM₂₇ *, 12, 4, 15; 1999 UN₂₇ *, 6, 2, 6; 1999 UO₂₇ *, 6, 2, 6; 1999 UP₂₇ *, 6, 2, 6; 1999 UQ₂₇ *, 6, 2, 6; 1999 UR₂₇ *, 6, 2, 6; 1999 US₂₇ *, 6, 2, 6; 1999 UT₂₇ *, 6, 2, 6; 1999 UV₂₇ *, 6, 2, 6; 1999 UW₂₇ *, 6, 2, 6; 1999 UX₂₇ *, 12, 4, 15; 1999 UY₂₇ *, 6, 2, 6; 1999 UZ₂₇ *, 6, 2, 6; 1999 UA₂₈ *, 6, 2, 6; 1999 UB₂₈ *, 6, 2, 6; 1999 UC₂₈ *, 6, 2, 6; 1999 UD₂₈ *, 6, 2, 6; 1999 UE₂₈ *, 6, 2, 6; 1999 UF₂₈ *, 6, 2, 6; 1999 UG₂₈ *, 6, 2, 6; 1999 UH₂₈ *, 6, 2, 6; 1999 UJ₂₈ *, 6, 2, 6; 1999 UK₂₈ *, 6, 2, 5; 1999 UL₂₈ *, 6, 2, 5; 1999 UM₂₈ *, 6, 2, 5; 1999 UN₂₈ *, 6, 2, 5; 1999 UO₂₈ *, 6, 2, 5; 1999 UP₂₈ *, 6, 2, 5; 1999 UQ₂₈ *, 6, 2, 5; 1999 UR₂₈ *, 6, 2, 5; 1999 US₂₈ *, 6, 2, 5; 1999 UT₂₈ *, 15, 4, 12; 1999 UU₂₈ *, 6, 2, 5; 1999 UV₂₈ *, 6, 2, 5; 1999 UW₂₈ *, 15, 4, 11; 1999 UX₂₈ *, 15, 4, 11; 1999 UY₂₈ *, 6, 2, 5; 1999 UZ₂₈ *, 12, 4, 12; 1999 UA₂₉ *, 12, 4, 12; 1999 UB₂₉ *, 12, 4, 11; 1999 UC₂₉ *, 6, 2, 5; 1999 UD₂₉ *, 6, 2, 5; 1999 UE₂₉ *, 6, 2, 5; 1999 UF₂₉ *, 6, 2, 5; 1999 UG₂₉ *, 6, 2, 5; 1999 UH₂₉ *, 6, 2, 5; 1999 UJ₂₉ *, 6, 2, 5; 1999 UK₂₉ *, 6, 2, 5; 1999 UL₂₉ *, 6, 2, 5; 1999 UM₂₉ *, 6, 2, 5; 1999 UN₂₉ *, 6, 2, 5; 1999 UO₂₉ *, 6, 2, 5; 1999 UP₂₉ *, 6, 2, 5; 1999 UQ₂₉ *, 6, 2, 5; 1999 UR₂₉ *, 6, 2, 5; 1999 US₂₉ *, 6, 2, 5; 1999 UT₂₉ *, 6, 2, 5; 1999 UY₂₉ *, 6, 2, 5; 1999 UZ₂₉ *, 15, 4, 12; 1999 UA₃₀ *, 12, 4, 12; 1999 UB₃₀ *, 6, 2, 5; 1999 UC₃₀ *, 12, 4, 12; 1999 UD₃₀ *, 15, 4, 12; 1999 UE₃₀ *, 6, 2, 5; 1999 UF₃₀ *, 12, 4, 11; 1999 UG₃₀ *, 6, 2, 5; 1999 UH₃₀ *, 12, 4, 11; 1999 UJ₃₀ *, 6, 2, 5; 1999 UK₃₀ *, 6, 2, 5; 1999 UL₃₀ *, 6, 2, 5; 1999 UM₃₀ *, 6, 2, 5; 1999 UN₃₀ *, 6, 2, 5; 1999 UO₃₀ *, 6, 2, 5; 1999 UP₃₀ *, 6, 2, 5; 1999 UQ₃₀ *, 6, 2, 5; 1999 UR₃₀ *, 6, 2, 5; 1999 US₃₀ *, 6, 2, 5; 1999 UT₃₀ *, 6, 2, 5; 1999 UY₃₀ *, 6, 2, 5; 1999 UZ₃₀ *, 6, 2, 5; 1999 UA₃₁ *, 6, 2, 5; 1999 UB₃₁ *, 6, 2, 5; 1999 UC₃₁ *, 6, 2, 5; 1999 UD₃₁ *, 6, 2, 5; 1999 UE₃₁ *, 6, 2, 5; 1999 UF₃₁ *, 6, 2, 5; 1999 UG₃₁ *, 6, 2, 5; 1999 UH₃₁ *, 6, 2, 5; 1999 UJ₃₁ *, 6, 2, 5; 1999 UK₃₁ *, 6, 2, 5; 1999 UL₃₁ *, 6, 2, 5; 1999 UM₃₁ *, 6, 2, 5; 1999 UN₃₁ *, 6, 2, 5; 1999 UO₃₁ *, 6, 2, 5; 1999 UP₃₁ *, 6, 2, 5; 1999 UQ₃₁ *, 6, 2, 5; 1999 UR₃₁ *, 6, 2, 5; 1999 US₃₁ *, 6, 2, 5; 1999 UT₃₁ *, 6, 2, 5; 1999 UY₃₁ *, 6, 2, 5; 1999 UZ₃₁ *, 6, 2, 5; 1999 UA₃₂ *, 6, 2, 5; 1999 UB₃₂ *, 6, 2, 5; 1999 UC₃₂ *, 6, 2, 5; 1999 UD₃₂ *, 6, 2, 5; 1999 UE₃₂ *, 6, 2, 5; 1999 UF₃₂ *, 6, 2, 5; 1999 UG₃₂ *, 6, 2, 5; 1999 UH₃₂ *, 6, 2, 5; 1999 UJ₃₂ *, 6, 2, 5; 1999 UK₃₂ *, 6, 2, 5; 1999 UL₃₂ *, 6, 2, 5; 1999 UM₃₂ *, 6, 2, 5; 1999 UN₃₂ *, 6, 2, 5; 1999 UO₃₂ *, 6, 2, 5; 1999 UP₃₂ *, 6, 2, 5; 1999 UQ₃₂ *, 6, 2, 5; 1999 UR₃₂ *, 6, 2, 5; 1999 US₃₂ *, 6, 2, 5; 1999 UT₃₂ *, 6, 2, 5; 1999 UU₃₂ *, 6, 2, 5; 1999 UV₃₂ *, 6, 2, 5; 1999 UW₃₂ *, 6, 2, 5; 1999 UX₃₂ *, 6, 2, 5; 1999 UY₃₂ *, 6, 2, 5; 1999 UZ₃₂ *, 6, 2, 5; 1999 UA₃₃ *, 6, 2, 5; 1999 UB₃₃ *, 6, 2, 5; 1999 UC₃₃ *, 6, 2, 5; 1999 UD₃₃ *, 6, 2, 5; 1999 UE₃₃ *, 6, 2, 5; 1999 UF₃₃ *, 6, 2, 5; 1999 UG₃₃ *, 6, 2, 5; 1999 UH₃₃ *, 6, 2, 5; 1999 UJ₃₃ *, 6, 2, 5; 1999 UK₃₃ *, 6, 2, 5; 1999 UL₃₃ *, 6, 2, 5; 1999 UM₃₃ *, 6, 2, 5; 1999 UN₃₃ *, 6, 2, 5; 1999 UO₃₃ *, 6, 2, 5; 1999 UP₃₃ *, 6, 2, 5; 1999 UQ₃₃ *, 6, 2, 5; 1999 UR₃₃ *, 6, 2, 5; 1999 US₃₃ *, 6, 2, 5; 1999 UT₃₃ *, 6, 2, 5; 1999 UY₃₃ *, 6, 2, 5; 1999 UZ₃₃ *, 6, 2, 5; 1999 UA₃₄ *, 6, 2, 5; 1999 UB₃₄ *, 6, 2, 5; 1999 UC₃₄ *, 6, 2, 5; 1999 UD₃₄ *, 6, 2, 5; 1999 UE₃₄ *, 6, 2, 5; 1999 UF₃₄ *, 6, 2, 5; 1999 UG₃₄ *, 6, 2, 5; 1999 UH₃₄ *, 6, 2, 5; 1999 UJ₃₄ *, 6, 2, 5; 1999 UK₃₄ *, 6, 2, 5; 1999 UL₃₄ *, 6, 2, 5; 1999 UM₃₄ *, 6, 2, 5; 1999 UN₃₄ *, 6, 2, 5; 1999 UO₃₄ *, 6, 2, 5; 1999 UP₃₄ *, 6, 2, 5; 1999 UQ₃₄ *, 6, 2, 5; 1999 UR₃₄ *, 6, 2, 5; 1999 US₃₄ *, 6, 2, 5; 1999 UT₃₄ *, 6, 2, 5; 1999 UY₃₄ *, 6, 2, 5; 1999 UZ₃₄ *, 6, 2, 5; 1999 UA₃₅ *, 6, 2, 5; 1999 UB₃₅ *, 6, 2, 5; 1999 UC₃₅ *, 6, 2, 5; 1999 UD₃₅ *, 6, 2, 5; 1999 UE₃₅ *, 6, 2, 5; 1999 UF₃₅ *, 6, 2, 5; 1999 UG₃₅ *, 6, 2, 5; 1999 UH₃₅ *, 6, 2, 5; 1999 UJ₃₅ *, 6, 2, 5; 1999 UK₃₅ *, 6, 2, 5; 1999 UL₃₅ *, 6, 2, 5; 1999 UM₃₅ *, 6, 2, 5; 1999 UN₃₅ *, 6, 2, 7; 1999 UO₃₅ *, 6, 2, 7; 1999 UP₃₅ *, 6, 2, 7; 1999 UQ₃₅ *, 6, 2, 7; 1999 UR₃₅ *, 6, 2, 7; 1999 US₃₅ *, 6, 2, 7; 1999 UT₃₅ *, 6, 2, 7; 1999 UY₃₅ *, 6, 2, 6; 1999 UZ₃₅ *, 6, 2, 6; 1999 UA₃₆ *, 6, 2,

6; 1999 VA, 6, 2, 26; 1999 VB, 9, 3, 25; 1999 VF, 3, 1, 0; 1999 VQ, 3, 1, 0; 1999 VR, 3, 1, 0; 1999 VP₁, 12, 3, 9; 1999 VQ₁, 6, 2, 5; 1999 VY₁, 3, 1, 0; 1999 VZ₁, 6, 2, 19; 1999 VC₂, 3, 1, 0; 1999 VE₂, 3, 1, 0; 1999 VA₃, 6, 2, 3; 1999 VB₃, 15, 5, 33; 1999 VC₃, 12, 4, 41; 1999 VD₃, 3, 1, 0; 1999 VX₃, 6, 2, 3; 1999 VF₃, 6, 2, 3; 1999 VG₃, 6, 2, 3; 1999 VH₃, 3, 1, 0; 1999 VJ₃, 6, 2, 3; 1999 VK₃, 3, 1, 0; 1999 VL₃, 3, 1, 0; 1999 VM₃, 12, 4, 32; 1999 VN₃, 3, 1, 0; 1999 VO₃, 3, 1, 0; 1999 VR₃, 6, 2, 7; 1999 VS₃, 3, 1, 0; 1999 VT₃, 3, 1, 0; 1999 VV₃, 3, 1, 0; 1999 VW₃, 3, 1, 0; 1999 VX₃, 3, 1, 0; 1999 VA₅, 6, 2, 4; 1999 VB₅, 3, 1, 0; 1999 VC₅, 3, 1, 0; 1999 VD₅, 3, 1, 0; 1999 VF₅, 9, 3, 9; 1999 VG₅, 6, 2, 19; 1999 VP₅, 3, 1, 0; 1999 VR₅, 9, 3, 2; 1999 VS₅, 6, 2, 7; 1999 VC₇, 6, 2, 10; 1999 VE₇, 6, 2, 8; 1999 VJ₇, 3, 1, 0; 1999 VK₇, 3, 1, 0; 1999 VR₇, 6, 2, 27; 1999 VS₇, 6, 2, 5; 1999 VT₇, 6, 2, 12; 1999 VU₇, 3, 1, 0; 1999 VW₇, 6, 2, 26; 1999 VE₈, 3, 1, 0; 1999 VK₈, 3, 1, 0; 1999 VM₈, 3, 1, 0; 1999 VG₈, 3, 1, 0; 1999 VK₉, 6, 2, 31; 1999 VM₉, 3, 1, 0; 1999 VN₉, 3, 1, 0; 1999 VO₉, 6, 2, 29; 1999 VR₉, 3, 1, 0; 1999 VJ₁₀, 3, 1, 0; 1999 VQ₁₀, 9, 3, 12; 1999 VD₁₁, 6, 2, 18; 1999 VH₁₁, 3, 1, 0; 1999 VJ₁₁, 3, 1, 0; 1999 VK₁₁, 3, 1, 0; 1999 VP₁₁, 3, 1, 0; 1999 VH₁₂, 6, 2, 4; 1999 VM₁₂, 6, 2, 32; 1999 VN₁₂, 9, 3, 14; 1999 VO₁₂, 6, 1, 0; 1999 VQ₁₂, 3, 1, 0; 1999 VR₁₂, 6, 2, 44; 1999 VT₁₂, 6, 2, 34; 1999 VV₁₂, 3, 1, 0; 1999 VU₁₄, 3, 1, 0; 1999 VX₁₄, 3, 1, 0; 1999 VA₁₅, 3, 1, 0; 1999 VA₁₆, 3, 1, 0; 1999 VG₁₆, 3, 1, 0; 1999 VH₁₆, 3, 1, 0; 1999 VJ₁₆, 3, 1, 0; 1999 VK₁₆, 3, 1, 0; 1999 VM₁₆, 3, 1, 0; 1999 VO₁₆, 3, 1, 0; 1999 VP₁₆, 3, 1, 0; 1999 VR₁₆, 3, 1, 0; 1999 VV₁₆, 3, 1, 0; 1999 VA₁₇, 3, 1, 0; 1999 VC₁₇, 3, 1, 0; 1999 VD₁₇, 3, 1, 0; 1999 VE₁₇, 3, 1, 0; 1999 VG₁₇, 3, 1, 0; 1999 VK₁₇, 3, 1, 0; 1999 VN₁₇, 3, 1, 0; 1999 VO₁₇, 3, 1, 0; 1999 VP₁₇, 3, 1, 0; 1999 VQ₁₇, 6, 2, 5; 1999 VU₁₇, 9, 3, 8; 1999 VA₁₈, 3, 1, 0; 1999 VC₁₈, 6, 2, 5; 1999 VD₁₈, 3, 1, 0; 1999 VE₁₈, 3, 1, 0; 1999 VF₁₈, 6, 2, 5; 1999 VG₁₈, 3, 1, 0; 1999 VH₁₈, 6, 2, 5; 1999 VO₁₈, 3, 1, 0; 1999 VP₁₈, 3, 1, 0; 1999 VV₁₈, 3, 1, 0; 1999 VA₁₉, 3, 1, 0; 1999 VB₁₉, 3, 1, 0; 1999 VE₁₉, 3, 1, 0; 1999 VF₁₉, 3, 1, 0; 1999 VL₁₉, 3, 1, 0; 1999 VP₁₉, 6, 2, 5; 1999 VQ₁₉, 6, 2, 6; 1999 VR₁₉, 6, 2, 26; 1999 VS₁₉, 6, 2, 11; 1999 VZ₁₉, 6, 2, 9; 1999 VA₂₀, 6, 2, 7; 1999 VD₂₀, 3, 1, 0; 1999 VE₂₀, 3, 1, 0; 1999 VF₂₀, 6, 2, 5; 1999 VA₂₁, 3, 1, 0; 1999 VC₂₁, 3, 1, 0; 1999 VM₂₁, 3, 1, 0; 1999 VN₂₁, 3, 1, 0; 1999 VO₂₁, 3, 1, 0; 1999 VP₂₁, 3, 1, 0; 1999 VQ₂₁, 3, 1, 0; 1999 VV₂₁, 3, 1, 0; 1999 VW₂₁, 6, 2, 6; 1999 VY₂₁, 9, 3, 10; 1999 VZ₂₁, 6, 2, 5; 1999 VA₂₂, 3, 1, 0; 1999 VB₂₂, 6, 2, 18; 1999 VN₂₂, 3, 1, 0; 1999 VC₂₃, 3, 1, 0; 1999 VL₂₃, 3, 1, 0; 1999 VY₂₃, 3, 1, 0; 1999 VE₂₄, 6, 2, 7; 1999 VW₂₄, 6, 2, 9; 1999 VM₂₅, 3, 1, 0; 1999 VB₂₆, 3, 1, 0; 1999 VC₂₆, 6, 2, 10; 1999 VD₂₆, 3, 1, 0; 1999 VF₂₆, 9, 3, 40; 1999 VH₂₆, 6, 2, 11; 1999 VJ₂₆, 3, 1, 0; 1999 VL₂₆, 3, 1, 0; 1999 VM₂₆, 3, 1, 0; 1999 VN₂₆, 3, 1, 0; 1999 VP₂₆, 3, 1, 0; 1999 VR₂₆, 3, 1, 0; 1999 VS₂₆, 3, 1, 0; 1999 VU₂₆, 3, 1, 0; 1999 VV₂₆, 3, 1, 0; 1999 VX₂₆, 3, 1, 0; 1999 VY₂₆, 3, 1, 0; 1999 VA₂₇, 3, 1, 0; 1999 VB₂₇, 6, 2, 23; 1999 VD₂₇, 3, 1, 0; 1999 VF₂₇, 3, 1, 0; 1999 VG₂₇, 3, 1, 0; 1999 VH₂₇, 3, 1, 0; 1999 VM₂₇, 3, 1, 0; 1999 VV₂₇, 3, 1, 0; 1999 VD₂₈, 6, 2, 13; 1999 VG₂₈, 6, 2, 13; 1999 VH₂₈, 6, 2, 14; 1999 VK₂₈, 6, 2, 31; 1999 VL₂₈, 3, 1, 0; 1999 VQ₂₈, 6, 2, 18; 1999 VV₂₈, 3, 1, 0; 1999 VY₂₈, 9, 3, 31; 1999 VC₂₉, 3, 1, 0; 1999 VD₂₉, 3, 1, 0; 1999 VH₂₉, 3, 1, 0; 1999 VK₂₉, 3, 1, 0; 1999 VQ₂₉, 3, 1, 0; 1999 VT₂₉, 3, 1, 0; 1999 VU₂₉, 3, 1, 0; 1999 VV₂₉, 3, 1, 0; 1999 VX₂₉, 9, 3, 30; 1999 VY₂₉, 3, 1, 0; 1999 VB₃₀, 6, 2, 31; 1999 VC₃₀, 3, 1, 0; 1999 VD₃₀, 3, 1, 0; 1999 VJ₃₀, 3, 1, 0; 1999 VM₃₀, 6, 2, 10; 1999 VN₃₀, 6, 2, 11; 1999 VO₃₀, 3, 1, 0; 1999 VQ₃₀, 3, 1, 0; 1999 VR₃₀, 3, 1, 0; 1999 VS₃₀, 3, 1, 0; 1999 VT₃₀, 6, 2, 6; 1999 VU₃₀, 3, 1, 0; 1999 VV₃₀, 6, 2, 9; 1999 VW₃₀, 3, 1, 0; 1999 VZ₃₀, 3, 1, 0; 1999 VC₃₁, 3, 1, 0; 1999 VE₃₁, 3, 1, 0; 1999 VF₃₁, 3, 1, 0; 1999 VG₃₁, 3, 1, 0; 1999 VH₃₁, 6, 2, 34; 1999 VJ₃₁, 3, 1, 0; 1999 VV₃₁, 3, 1, 0; 1999 VZ₃₁, 3, 1, 0; 1999 VA₃₂, 3, 1, 0; 1999 VB₃₂, 3, 1, 0; 1999 VC₃₂, 6, 2, 30; 1999 VE₃₂, 3, 1, 0; 1999 VF₃₂, 6, 2, 30; 1999 VH₃₂, 3, 1, 0; 1999 VJ₃₂, 6, 2, 12; 1999 VK₃₂, 3, 1, 0; 1999 VM₃₂, 6, 2, 31; 1999 VN₃₂, 3, 1, 0; 1999 VO₃₂, 6, 2, 6; 1999 VR₃₂, 3, 1, 0; 1999 VS₃₂, 3, 1, 0; 1999 VT₃₂, 3, 1, 0; 1999 VV₃₂, 3, 1, 0; 1999 VW₃₂, 6, 2, 13; 1999 VZ₃₂, 3, 1, 0; 1999 VA₃₃, 6, 2, 23; 1999 VB₃₃, 12, 4, 15; 1999 VC₃₃, 6, 2, 36; 1999 VE₃₃, 3, 1, 0; 1999 VF₃₃, 3, 1, 0; 1999 VG₃₃, 6, 2, 5; 1999 VH₃₃, 3, 1, 0; 1999 VJ₃₃, 6, 2, 10; 1999 VK₃₃, 6, 2, 28; 1999 VL₃₃, 3,

1999 VF₄₄, 3, 1, 0; 1999 VG₄₄, 3, 1, 0; 1999 VH₄₄, 3, 1, 0; 1999 VJ₄₄, 3, 1, 0; 1999 VG₄₅, 3, 1, 0; 1999 VM₄₅, 3, 1, 0; 1999 VQ₄₅, 3, 1, 0; 1999 VH₄₆, 3, 1, 0; 1999 VX₄₆, 9, 3, 34; 1999 VB₄₇, 3, 1, 0; 1999 VC₄₇, 3, 1, 0; 1999 VD₄₇, 6, 2, 1; 1999 VE₄₇, 3, 1, 0; 1999 VF₄₇, 3, 1, 0; 1999 VH₄₇, 6, 2, 1; 1999 VM₄₉, 3, 1, 0; 1999 VP₅₀, 3, 1, 0; 1999 VT₅₀, 3, 1, 0; 1999 VU₅₀, 3, 1, 0; 1999 VS₅₀, 3, 1, 0; 1999 VX₅₀, 3, 1, 0; 1999 VY₅₂, 3, 1, 0; 1999 VT₅₂, 6, 2, 13; 1999 VH₅₃, 3, 1, 0; 1999 VM₅₃, 3, 1, 0; 1999 VS₅₃, 6, 2, 5; 1999 VO₅₃, 3, 1, 0; 1999 VP₅₃, 6, 2, 8; 1999 VQ₅₃, 6, 2, 8; 1999 VR₅₃, 3, 1, 0; 1999 VS₅₃, 3, 1, 0; 1999 VT₅₃, 6, 2, 9; 1999 VU₅₃, 3, 1, 0; 1999 VV₅₃, 3, 1, 0; 1999 VW₅₃, 3, 1, 0; 1999 VX₅₃, 6, 2, 9; 1999 VY₅₃, 3, 1, 0; 1999 VZ₅₃, 3, 1, 0; 1999 VB₅₄, 6, 2, 8; 1999 VC₅₄, 6, 2, 5; 1999 VD₅₄, 3, 1, 0; 1999 VE₅₄, 6, 2, 9; 1999 VF₅₄, 3, 1, 0; 1999 VG₅₄, 3, 1, 0; 1999 VH₅₄, 6, 2, 8; 1999 VJ₅₄, 3, 1, 0; 1999 VM₅₄, 6, 2, 4; 1999 VN₅₄, 3, 1, 0; 1999 VO₅₄, 6, 2, 8; 1999 VP₅₄, 3, 1, 0; 1999 VQ₅₄, 3, 1, 0; 1999 VR₅₄, 3, 1, 0; 1999 VS₅₄, 3, 1, 0; 1999 VT₅₄, 3, 1, 0; 1999 VU₅₄, 6, 2, 9; 1999 VV₅₄, 6, 2, 5; 1999 VW₅₄, 6, 2, 5; 1999 VX₅₄, 6, 2, 8; 1999 VY₅₄, 6, 2, 8; 1999 VZ₅₄, 6, 2, 5; 1999 VA₅₅, 3, 1, 0; 1999 VB₅₅, 3, 1, 0; 1999 VC₅₅, 6, 2, 4; 1999 VD₅₅, 3, 1, 0; 1999 VE₅₅, 3, 1, 0; 1999 VF₅₅, 6, 2, 4; 1999 VG₅₅, 3, 1, 0; 1999 VH₅₅, 3, 1, 0; 1999 VM₅₅, 6, 2, 6; 1999 VN₅₅, 3, 1, 0; 1999 VO₅₅, 3, 1, 0; 1999 VP₅₅, 3, 1, 0; 1999 VQ₅₅, 3, 1, 0; 1999 VR₅₅, 3, 1, 0; 1999 VS₅₅, 3, 1, 0; 1999 VT₅₅, 3, 1, 0; 1999 VU₅₅, 6, 2, 1; 1999 VV₅₅, 3, 1, 0; 1999 VX₅₅, 6, 2, 4; 1999 VY₅₅, 3, 1, 0; 1999 VZ₅₅, 3, 1, 0; 1999 VB₅₆, 3, 1, 0; 1999 VC₅₆, 3, 1, 0; 1999 VD₅₆, 3, 1, 0; 1999 VE₅₆, 3, 1, 0; 1999 VF₅₆, 3, 1, 0; 1999 VG₅₆, 3, 1, 0; 1999 VH₅₆, 3, 1, 0; 1999 VM₅₆, 3, 1, 0; 1999 VN₅₆, 3, 1, 0; 1999 VO₅₆, 3, 1, 0; 1999 VP₅₆, 3, 1, 0; 1999 VQ₅₆, 3, 1, 0; 1999 VR₅₆, 3, 1, 0; 1999 VS₅₆, 3, 1, 0; 1999 VT₅₆, 3, 1, 0; 1999 VU₅₆, 3, 1, 0; 1999 VV₅₆, 3, 1, 0; 1999 VW₅₆, 3, 1, 0; 1999 VX₅₆, 3, 1, 0; 1999 VY₅₆, 3, 1, 0; 1999 VZ₅₆, 3, 1, 0; 1999 VA₅₇, 3, 1, 0; 1999 VB₅₇, 3, 1, 0; 1999 VC₅₇, 3, 1, 0; 1999 VD₅₇, 3, 1, 0; 1999 VE₅₇, 3, 1, 0; 1999 VF₅₇, 3, 1, 0; 1999 VG₅₇, 3, 1, 0; 1999 VH₅₇, 3, 1, 0; 1999 VM₅₇, 3, 1, 0; 1999 VN₅₇, 3, 1, 0; 1999 VO₅₇, 3, 1, 0; 1999 VP₅₇, 3, 1, 0; 1999 VQ₅₇, 3, 1, 0; 1999 VR₅₇, 3, 1, 0; 1999 VS₅₇, 3, 1, 0; 1999 VT₅₇, 3, 1, 0; 1999 VU₅₇, 3, 1, 0; 1999 VV₅₇, 3, 1, 0; 1999 VW₅₇, 3, 1, 0; 1999 VX₅₇, 3, 1, 0; 1999 VY₅₇, 3, 1, 0; 1999 VZ₅₇, 3, 1, 0; 1999 VA₅₈, 9, 3, 5; 1999 VB₅₈, 3, 1, 0; 1999 VC₅₈, 3, 1, 0; 1999 VD₅₈, 3, 1, 0; 1999 VE₅₈, 3, 1, 0; 1999 VF₅₈, 6, 1, 0; 1999 VG₅₈, 3, 1, 0; 1999 VH₅₈, 3, 1, 0; 1999 VM₅₈, 3, 1, 0; 1999 VN₅₈, 3, 1, 0; 1999 VO₅₈, 6, 2, 6; 1999 VP₅₈, 3, 1, 0; 1999 VQ₅₈, 3, 1, 0; 1999 VR₅₈, 3, 1, 0; 1999 VS₅₈, 3, 1, 0; 1999 VT₅₈, 3, 1, 0; 1999 VU₅₈, 3, 1, 0; 1999 VV₅₈, 3, 1, 0; 1999 VW₅₈, 3, 1, 0; 1999 VX₅₈, 3, 1, 0; 1999 VY₅₈, 3, 1, 0; 1999 VZ₅₈, 3, 1, 0; 1999 VA₅₉, 3, 1, 0; 1999 VB₅₉, 3, 1, 0; 1999 VC₅₉, 3, 1, 0; 1999 VD₅₉, 3, 1, 0; 1999 VE₅₉, 3, 1, 0; 1999 VF₅₉, 3, 1, 0; 1999 VG₅₉, 3, 1, 0; 1999 VH₅₉, 3, 1, 0; 1999 VM₅₉, 3, 1, 0; 1999 VN₅₉, 3, 1, 0; 1999 VO₅₉, 3, 1, 0; 1999 VP₅₉, 3, 1, 0; 1999 VQ₅₉, 3, 1, 0; 1999 VR₅₉, 3, 1, 0; 1999 VS₅₉, 3, 1, 0; 1999 VT₅₉, 3, 1, 0; 1999 VU₅₉, 3, 1, 0; 1999 VV₅₉, 3, 1, 0; 1999 VW₅₉, 3, 1, 0; 1999 VX₅₉, 3, 1, 0; 1999 VY₅₉, 3, 1, 0; 1999 VZ₅₉, 3, 1, 0; 1999 VA₆₀, 3, 1, 0; 1999 VB₆₀, 3, 1, 0; 1999 VC₆₀, 3, 1, 0; 1999 VD₆₀, 3, 1, 0; 1999 VE₆₀, 3, 1, 0; 1999 VF₆₀, 3, 1, 0; 1999 VG₆₀, 3, 1, 0; 1999 VH₆₀, 3, 1, 0; 1999

[illegible]

[illegible]

1999 VE₁₃₃ *, 6, 2, 4; 1999 VF₁₃₃ *, 6, 2, 4; 1999 VG₁₃₃ *, 6, 2, 4; 1999 VH₁₃₃ *, 6, 2, 4;
1999 VJ₁₃₃ *, 6, 2, 4; 1999 VK₁₃₃ *, 6, 2, 4; 1999 VL₁₃₃ *, 6, 2, 4; 1999 VM₁₃₃ *, 6, 2, 4;
1999 VN₁₃₃ *, 6, 2, 4; 1999 VO₁₃₃ *, 6, 2, 4; 1999 VP₁₃₃ *, 6, 2, 4; 1999 VQ₁₃₃ *, 6, 2, 4;
1999 VR₁₃₃ *, 6, 2, 4; 1999 VS₁₃₃ *, 6, 2, 4; 1999 VT₁₃₃ *, 6, 2, 4; 1999 VU₁₃₃ *, 6, 2, 4;
1999 VV₁₃₃ *, 6, 2, 4; 1999 VW₁₃₃ *, 6, 2, 4; 1999 VX₁₃₃ *, 6, 2, 4; 1999 VY₁₃₃ *, 6, 2, 4;
1999 VZ₁₃₃ *, 6, 2, 4; 1999 VA₁₃₄ *, 6, 2, 4; 1999 VB₁₃₄ *, 6, 2, 4; 1999 VC₁₃₄ *, 6, 2, 4;
1999 VD₁₃₄ *, 6, 2, 4; 1999 VE₁₃₄ *, 6, 2, 4; 1999 VF₁₃₄ *, 6, 2, 4; 1999 VG₁₃₄ *, 6, 2, 4;
1999 VH₁₃₄ *, 6, 2, 4; 1999 VJ₁₃₄ *, 6, 2, 4; 1999 VK₁₃₄ *, 6, 2, 4; 1999 VL₁₃₄ *, 6, 2, 4;
1999 VM₁₃₄ *, 6, 2, 4; 1999 VN₁₃₄ *, 6, 2, 4; 1999 VO₁₃₄ *, 6, 2, 4; 1999 VP₁₃₄ *, 6, 2, 4;
1999 VQ₁₃₄ *, 6, 2, 4; 1999 VR₁₃₄ *, 6, 2, 4; 1999 VS₁₃₄ *, 6, 2, 4; 1999 VT₁₃₄ *, 6, 2, 4;
1999 VU₁₃₄ *, 6, 2, 4; 1999 VV₁₃₄ *, 6, 2, 4; 1999 VW₁₃₄ *, 6, 2, 4; 1999 VX₁₃₄ *, 6, 2, 4;
1999 VY₁₃₄ *, 6, 2, 4; 1999 VZ₁₃₄ *, 6, 2, 4; 1999 VA₁₃₅ *, 6, 2, 4; 1999 VB₁₃₅ *, 6, 2, 4;
1999 VC₁₃₅ *, 6, 2, 4; 1999 VD₁₃₅ *, 6, 2, 4; 1999 VE₁₃₅ *, 6, 2, 4; 1999 VF₁₃₅ *, 6, 2, 1;
1999 VG₁₃₅ *, 6, 2, 1; 1999 WF₃, 1, 0; 1999 WL₃, 3, 1, 0; 1999 WM₁, 9, 3, 28; 1999 WN₁, 9, 3,
28; 1999 WP₁, 3, 1, 0; 1999 WS₁, 3, 1, 0; 1999 WZ₁, 6, 2, 6; 1999 WD₂, 6, 1, 0; 1999 WG₂, 6, 2,
5; 1999 WM₂, 3, 1, 0; 1999 WN₂, 3, 1, 0; 1999 WY₂, 3, 1, 0; 1999 WZ₂, 3, 1, 0; 1999 WC₃, 6, 2,
2; 1999 WE₃, 6, 2, 4; 1999 WF₃, 9, 3, 28; 1999 WG₃, 6, 2, 23; 1999 WL₃, 3, 1, 0; 1999 WQ₃, 3,
1, 0; 1999 WZ₃, 3, 1, 0; 1999 WK₄, 3, 1, 0; 1999 WL₄, 3, 1, 0; 1999 WK₅, 3, 1, 0; 1999 WM₅, 3,
1, 0; 1999 WG₆, 9, 3, 5; 1999 WK₆, 6, 2, 38; 1999 WM₆, 3, 1, 0; 1999 WW₇, 6, 2, 5; 1999 WB₈,
12, 4, 66; 1999 WD₈, 6, 2, 27; 1999 WE₈, 9, 3, 28; 1999 WF₈, 6, 2, 18; 1999 WG₈, 3, 1, 0;
1999 WQ₈, 3, 1, 0; 1999 WX₈, 6, 2, 5; 1999 WB₉, 6, 2, 9; 1999 WW₉, 3, 1, 0; 1999 WG₁₀, 6, 2,
4; 1999 WT₁₀, 6, 2, 6; 1999 WU₁₀, 3, 1, 0; 1999 WX₁₀, 6, 2, 1; 1999 WZ₁₀, 3, 1, 0; 1999 WB₁₁,
12, 4, 66; 1999 WC₁₁, 12, 3, 41; 1999 WH₁₁, 3, 1, 0; 1999 WR₁₁, 3, 1, 0; 1999 WS₁₁, 6, 2, 4;
1999 WT₁₁, 3, 1, 0; 1999 WE₁₃, 6, 2, 4; 1999 WG₁₃, 6, 2, 29; 1999 WH₁₃, 6, 2, 4; 1999 WJ₁₃,
6, 2, 34; 1999 WY₁₃, 3, 1, 0; 1999 WZ₁₃, 3, 1, 0; 1999 WA₁₄, 3, 1, 0; 1999 WG₁₄, 3, 1, 0;
1999 WQ₁₄, 3, 1, 0; 1999 WR₁₄, 3, 1, 0; 1999 WS₁₄, 3, 1, 0; 1999 WT₁₄, 3, 1, 0; 1999 WU₁₄,
3, 1, 0; 1999 WV₁₄, 6, 2, 31; 1999 WA₁₅, 6, 2, 4; 1999 WH₁₅, 6, 2, 11; 1999 WJ₁₅, 6, 2, 6;
1999 WN₁₅, 6, 2, 6; 1999 WP₁₅, 6, 2, 11; 1999 WR₁₅, 6, 2, 4; 1999 WU₁₅, 3, 1, 0; 1999 WW₁₆, 6,
2, 6; 1999 WG₁₆, 6, 2, 4; 1999 WL₁₆, 3, 1, 0; 1999 WO₁₆, 3, 1, 0; 1999 WW₁₇, 6, 2, 25;
1999 WX₁₇, 6, 2, 4; 1999 WY₁₇, 12, 4, 37; 1999 WB₁₈, 6, 2, 4; 1999 WE₁₈, 3, 1, 0; 1999 WO₁₈ *,
9, 3, 21; 1999 WP₁₈ *, 6, 2, 7; 1999 WQ₁₈ *, 6, 2, 7; 1999 WR₁₈ *, 12, 4, 31; 1999 WS₁₈ *, 6,
2, 7; 1999 WT₁₈ *, 9, 3, 13; 1999 WU₁₈ *, 12, 4, 26; 1999 WV₁₈ *, 6, 2, 7; 1999 WW₁₈ *, 6,
2, 7; 1999 WX₁₈ *, 9, 3, 16; 1999 WY₁₈ *, 6, 2, 7; 1999 WZ₁₈ *, 9, 3, 13; 1999 WA₁₉ *, 6, 2,
7; 1999 WB₁₉ *, 6, 2, 7; 1999 WC₁₉ *, 9, 3, 16; 1999 WD₁₉ *, 6, 2, 7; 1999 WE₁₉ *, 12, 4, 31;
1999 WF₁₉ *, 6, 2, 7; 1999 WG₁₉ *, 6, 2, 7; 1999 WH₁₉ *, 9, 3, 23; 1999 WJ₁₉ *, 12, 4, 27;
1999 WK₁₉ *, 9, 3, 22; 1999 WL₁₉ *, 9, 3, 13; 1999 WM₁₉ *, 6, 2, 7; 1999 XQ₆, 6, 2, 4; 1999 XR₆,
6, 2, 23; 1999 XY₆, 6, 2, 8; 1999 XX₁, 9, 3, 28; 1999 XF₂, 3, 1, 0; 1999 XK₂, 9, 3, 23; 1999 XE₃, 9,
3, 10; 1999 XQ₃, 6, 2, 1; 1999 XW₃, 6, 2, 5; 1999 XF₄, 6, 2, 34; 1999 XH₄, 6, 2, 5; 1999 XJ₄, 6, 2,
5; 1999 XM₄, 6, 2, 5; 1999 XS₄, 12, 4, 23; 199

6, 2, 11; 1999 XN₄₅, 6, 2, 11; 1999 XY₄₅, 3, 1, 0; 1999 XA₄₆, 3, 1, 0; 1999 XB₄₆, 6, 2, 33; 1999 XG₄₆, 3, 1, 0; 1999 XH₄₆, 3, 1, 0; 1999 XJ₄₆, 9, 3, 28; 1999 XK₄₆, 6, 2, 25; 1999 XN₄₆, 3, 1, 0; 1999 XO₄₆, 6, 2, 28; 1999 XP₄₆, 6, 2, 26; 1999 XQ₄₆, 9, 3, 43; 1999 XS₄₆, 9, 3, 38; 1999 XU₄₆, 3, 1, 0; 1999 XW₄₆, 3, 1, 0; 1999 XZ₄₆, 6, 2, 10; 1999 XA₄₇, 6, 2, 9; 1999 XB₄₇, 9, 3, 35; 1999 XD₄₇, 3, 1, 0; 1999 XE₄₇, 6, 2, 9; 1999 XF₄₇, 6, 2, 9; 1999 XG₄₇, 6, 2, 10; 1999 XH₄₇, 6, 2, 11; 1999 XJ₄₇, 6, 2, 2; 1999 XL₄₇, 6, 2, 2; 1999 XM₄₇, 6, 2, 10; 1999 XN₄₇, 3, 1, 0; 1999 XO₄₇, 3, 1, 0; 1999 XP₄₇, 6, 2, 10; 1999 XQ₄₇, 3, 1, 0; 1999 XR₄₇, 3, 1, 0; 1999 XT₄₇, 3, 1, 0; 1999 XU₄₇, 12, 4, 42; 1999 XV₄₇, 3, 1, 0; 1999 XW₄₇, 6, 2, 11; 1999 XX₄₇, 3, 1, 0; 1999 XY₄₇, 3, 1, 0; 1999 XZ₄₇, 6, 2, 27; 1999 XB₄₈, 3, 1, 0; 1999 XD₄₈, 15, 5, 42; 1999 XE₄₈, 3, 1, 0; 1999 XF₄₈, 3, 1, 0; 1999 XK₄₈, 9, 3, 41; 1999 XL₄₈, 3, 1, 0; 1999 XO₄₈, 3, 1, 0; 1999 XS₄₈, 3, 1, 0; 1999 XU₄₈, 3, 1, 0; 1999 XV₄₈, 3, 1, 0; 1999 XX₄₈, 6, 2, 33; 1999 XY₄₈, 3, 1, 0; 1999 XZ₄₈, 3, 1, 0; 1999 XA₄₉, 9, 3, 35; 1999 XB₄₉, 6, 2, 34; 1999 XC₄₉, 9, 3, 27; 1999 XE₄₉, 3, 1, 0; 1999 XF₄₉, 6, 2, 8; 1999 XH₄₉, 3, 1, 0; 1999 XJ₄₉, 6, 2, 9; 1999 XK₄₉, 3, 1, 0; 1999 XL₄₉, 9, 3, 27; 1999 XM₄₉, 6, 2, 9; 1999 XO₄₉, 3, 1, 0; 1999 XQ₄₉, 3, 1, 0; 1999 XR₄₉, 3, 1, 0; 1999 XU₄₉, 9, 3, 27; 1999 XV₄₉, 3, 1, 0; 1999 XX₄₉, 3, 1, 0; 1999 XZ₄₉, 3, 1, 0; 1999 XD₅₀, 3, 1, 0; 1999 XH₅₀, 3, 1, 0; 1999 XJ₅₀, 6, 2, 27; 1999 XK₅₀, 9, 3, 28; 1999 XL₅₀, 3, 1, 0; 1999 XN₅₀, 3, 1, 0; 1999 XO₅₀, 6, 2, 5; 1999 XP₅₀, 6, 2, 25; 1999 XQ₅₀, 6, 2, 13; 1999 XR₅₀, 6, 2, 5; 1999 XS₅₀, 6, 2, 25; 1999 XT₅₀, 6, 2, 6; 1999 XV₅₀, 6, 2, 4; 1999 XY₅₀, 6, 2, 27; 1999 XE₅₁, 6, 2, 2; 1999 XK₅₁, 3, 1, 0; 1999 XM₅₁, 3, 1, 0; 1999 XN₅₁, 3, 1, 0; 1999 XO₅₁, 3, 1, 0; 1999 XQ₅₁, 3, 1, 0; 1999 XV₅₁, 3, 1, 0; 1999 XY₅₁, 3, 1, 0; 1999 XB₅₂, 3, 1, 0; 1999 XD₅₂, 3, 1, 0; 1999 XZ₅₂, 3, 1, 0; 1999 XH₅₃, 6, 2, 2; 1999 XJ₅₃, 3, 1, 0; 1999 XQ₅₃, 3, 1, 0; 1999 XT₅₃, 3, 1, 0; 1999 XU₅₃, 6, 2, 18; 1999 XV₅₃, 6, 2, 14; 1999 XW₅₃, 6, 2, 2; 1999 XX₅₃, 6, 2, 5; 1999 XY₅₃, 3, 1, 0; 1999 XZ₅₃, 6, 2, 6; 1999 XA₅₄, 3, 1, 0; 1999 XB₅₄, 3, 1, 0; 1999 XC₅₄, 9, 3, 24; 1999 XD₅₄, 6, 2, 9; 1999 XF₅₄, 6, 2, 6; 1999 XG₅₄, 3, 1, 0; 1999 XH₅₄, 9, 3, 25; 1999 XK₅₄, 3, 1, 0; 1999 XM₅₄, 12, 4, 25; 1999 XN₅₄, 6, 2, 18; 1999 XO₅₄, 6, 2, 6; 1999 XP₅₄, 3, 1, 0; 1999 XW₅₄, 3, 1, 0; 1999 XB₅₇, 3, 1, 0; 1999 XQ₅₇, 9, 3, 11; 1999 XZ₅₇, 3, 1, 0; 1999 XC₅₈, 6, 2, 6; 1999 XW₆₀, 3, 1, 0; 1999 XY₆₁, 3, 1, 0; 1999 XZ₆₁, 6, 2, 8; 1999 XB₆₂, 3, 1, 0; 1999 XC₆₂, 6, 2, 41; 1999 XD₆₂, 6, 2, 27; 1999 XE₆₂, 3, 1, 0; 1999 XF₆₂, 6, 2, 11; 1999 XG₆₂, 6, 2, 22; 1999 XH₆₂, 6, 2, 23; 1999 XL₆₃, 6, 2, 18; 1999 XG₆₅, 3, 1, 0; 1999 XN₆₆, 3, 1, 0; 1999 XZ₆₈, 3, 1, 0; 1999 XA₆₉, 3, 1, 0; 1999 XC₆₉, 6, 2, 10; 1999 XD₆₉, 3, 1, 0; 1999 XL₆₉, 6, 2, 6; 1999 XQ₆₉, 3, 1, 0; 1999 XV₆₉, 6, 2, 20; 1999 XW₆₉, 3, 1, 0; 1999 XA₇₀, 6, 2, 24; 1999 XF₇₀, 6, 2, 16; 1999 XG₇₀, 6, 2, 6; 1999 XH₇₀, 6, 2, 6; 1999 XJ₇₀, 6, 2, 6; 1999 XS₇₁, 6, 2, 6; 1999 XU₇₁, 6, 2, 6; 1999 XW₇₁, 6, 2, 6; 1999 XX₇₁, 3, 1, 0; 1999 XA₇₂, 6, 2, 10; 1999 XJ₇₂, 3, 1, 0; 1999 XK₇₂, 6, 2, 6; 1999 XM₇₂, 3, 1, 0; 1999 XO₇₂, 9, 3, 9; 1999 XR₇₂, 6, 2, 6; 1999 XS₇₂, 9, 3, 26; 1999 XV₇₂, 6, 2, 6; 1999 XP₇₃, 6, 2, 12; 1999 XS₇₃, 3, 1, 0; 1999 XT₇₃, 6, 2, 11; 1999 XV₇₃, 3, 1, 0; 1999 XA₇₄, 9, 3, 16; 1999 XC₇₄, 9, 3, 17; 1999 XD₇₄, 6, 2, 3; 1999 XL₇₄, 3, 1, 0; 1999 XT₇₄, 9, 3, 6; 1999 XU₇₄, 9, 3, 10; 1999 XZ₇₄, 3, 1, 0; 1999 XB₇₅, 3, 1, 0; 1999 XO₇₅, 3, 1, 0; 1999 XP₇₅, 3, 1, 0; 1999 XT₇₅, 9, 3, 17; 1999 XS₇₆, 6, 2, 6; 1999 XV₇₆, 6, 2, 4; 1999 XF₇₇, 6, 2, 6; 1999 XM₇₉, 3, 1, 0; 1999 XZ₇₉, 6, 2, 5; 1999 XK₈₀, 3, 1, 0; 1999 XU₈₀, 6, 2, 10; 1999 XV₈₀, 3, 1, 0; 1999 XJ₈₁, 6, 2, 6; 1999 XM₈₁, 6, 2, 10; 1999 XD₈₂, 3, 1, 0; 1999 XN₈₂, 6, 2, 6; 1999 XV₈₃, 3, 1, 0; 1999 XZ₈₃, 6, 2, 5; 1999 XE₈₄, 6, 2, 5; 1999 XO₈₄, 9, 3, 12; 1999 XQ₈₄, 3, 1, 0; 1999 XR₈₄, 6, 2, 5; 1999 XX₈₄, 6, 2, 1; 1999 XF₈₅, 6, 2, 6; 1999 XH₈₅, 6, 2, 5; 1999 XJ₈₅, 6, 2, 6; 1999 XS₈₅, 3, 1, 0; 1999 XD₈₆, 6, 2, 32; 1999 XE₈₆, 9, 3, 12; 1999 XQ₈₆, 6, 2, 15; 1999 XR₈₆, 6, 2, 3; 1999 XS₈₆, 3, 1, 0; 1999 XU₈₆, 6, 2, 12; 1999 XV₈₆, 3, 1, 0; 1999 XX₈₆, 9, 3, 12; 1999 XY₈₆, 12, 3, 13; 1999 XZ₈₆, 3, 1, 0; 1999 XC₈₇, 15, 4, 34; 1999 XE₈₇, 12, 4, 14; 1999 XF₈₇, 9, 3, 17; 1999 XW₈₈, 3, 1, 0; 1999 XH₈₉, 6, 2, 3; 1999 XK₈₉, 3, 1, 0; 1999 XP₈₉, 9, 3, 12; 1999 XS₈₉, 9, 3, 6; 1999 XW₉₀, 3, 1, 0; 1999 XB₉₁, 3, 1, 0; 1999 XC₉₁, 3, 1, 0; 1999 XF₉₁, 6, 2, 13; 1999 XG₉₁, 3, 1, 0; 1999 XJ₉₁, 6, 2, 4; 1999 XL₉₁, 3, 1, 0; 1999 XM₉₁, 3, 1, 0; 1999 XP₉₁, 12, 4, 18; 1999 XR₉₁, 15, 5, 37; 1999 XS₉₁, 3, 1, 0; 1999 XW₉₁, 3, 1, 0; 1999 XC₉₃, 6, 2, 11; 1999 XH₉₃, 6, 2, 9; 1999 XK₉₃, 6, 2, 4; 1999 XL₉₃, 9, 3, 4; 1999 XN₉₃, 12, 4, 29; 1999 XN₉₃, 6, 2, 3; 1999 XS₉₃, 18, 6, 10; 1999 XO₉₃, 15, 5, 11; 1999 XY₉₃, 6, 2, 3; 1999 XY₉₄, 24, 7, 19; 1999 XA₉₅, 3, 1, 0; 1999 XE₉₅, 3, 1, 0; 1999 XG₉₇, 3, 1, 0; 1999 XD₉₈, 6, 2, 6; 1999 XK₉₈, 3, 1, 0; 1999 XS₉₈, 6, 2, 5; 1999 XH₉₉, 6, 2, 3; 1999 XL₉₉, 6, 2, 5; 1999 XJ₁₀₁, 6, 2, 3; 1999 XK₁₀₁, 6, 2, 3; 1999 XO₁₀₁, 3, 1, 0; 1999 XZ₁₀₁, 6, 2, 3; 1999 XC₁₀₃, 6, 2, 6; 1999 XV₁₀₃, 6, 2, 6; 1999 XD₁₀₄, 3, 1, 0; 1999 XX₁₀₄, 3, 1, 0; 1999 XW₁₀₅, 6, 2, 16; 1999 XC₁₀₆, 6, 2, 23; 1999 XN₁₀₇, 3, 1, 0; 1999 XM₁₀₈, 3, 1, 0; 1999 XE₁₁₀, 6, 2, 5; 1999 XJ₁₁₀, 3, 1, 0; 1999 XD₁₁₁, 3, 1, 0; 1999 XW₁₁₃, 3, 1, 0; 1999 XD₁₁₅, 9, 3, 12; 1999 XL₁₁₅, 6, 2, 26; 1999 XU₁₁₈, 3, 1, 0; 1999 XX₁₁₈, 3, 1, 0; 1999 XF₁₂₁, 3, 1, 0; 1999 XH₁₂₁, 3, 1, 0; 1999 XM₁₂₁, 3, 1, 0; 1999 XP₁₂₁, 3, 1, 0; 1999 XZ₁₂₇, 12, 4, 7; 1999 XB₁₃₀, 3, 1, 0; 1999 XV₁₃₅, 3, 1, 0; 1999 XT₁₃₆, 3, 1, 0; 1999 XQ₁₃₇, 12, 3, 14; 1999 XW₁₃₇, 6, 2, 2, 5; 1999 XX₁₃₇, 6, 2, 5; 1999 XY₁₃₇, 6, 2, 5; 1999 XZ₁₃₇, 6, 2, 5; 1999 XA₁₃₈, 6, 2, 2, 5; 1999 XB₁₃₈, 6, 2, 5; 1999 XC₁₃₈, 6, 2, 5; 1999 XD₁₃₈, 9, 3, 11; 1999 XE₁₃₈, 9, 3, 15; 1999 XF₁₃₈, 6, 2, 5; 1999 XG₁₃₈, 6, 2, 5; 1999 XH₁₃₈, 6, 2, 5; 1999 XJ₁₃₈, 6, 2, 4; 1999 XK₁₃₈, 6, 2, 2; 1999 XL₁₃₈, 6, 2, 3; 1999 XM₁₃₈, 6, 2, 3; 1999 XN₁₃₈, 6, 2, 3; 1999 XO₁₃₈, 6, 2, 3; 1999 XP₁₃₈, 6, 2, 3; 1999 XQ₁₃₈, 6, 2, 2; 1999 XR₁₃₈, 6, 2, 2; 1999 XS₁₃₈, 6, 2, 2; 1999 XT₁₃₈, 12, 4, 13; 1999 XU₁₃₈, 12, 4, 13; 1999 XV₁₃₈, 6, 2, 2; 1999 XW₁₃₈, 6, 2, 2; 1999 XZ₁₃₈, 6, 2, 2; 1999 XY₁₃₈, 12, 4, 34; 1999 XZ₁₃₈, 12, 4, 13; 1999 XA₁₃₉, 6, 2, 2; 1999 XB₁₃₉, 6, 2, 2; 1999 XC₁₃₉, 6, 2, 1; 1999 XD₁₃₉, 6, 2, 1; 1999 XE₁₃₉, 12, 4, 11; 1999 XF₁₃₉, 6, 2, 1; 1999 XG₁₃₉, 6, 2, 1; 1999 XH₁₃₉, 12,

4, 29; 1999 XJ₁₃₉, 6, 2, 6; 1999 XK₁₃₉, 6, 2, 6; 1999 XL₁₃₉, 6, 2, 6; 1999 XM₁₃₉, 6, 2, 6; 1999 XN₁₃₉, 6, 2, 6; 1999 XO₁₃₉, 6, 2, 6; 1999 XP₁₃₉, 9, 3, 35; 1999 XQ₁₃₉, 6, 2, 6; 1999 XR₁₃₉, 12, 4, 39; 1999 XS₁₃₉, 6, 2, 6; 1999 XT₁₃₉, 6, 2, 6; 1999 XU₁₃₉, 6, 2, 6; 1999 XV₁₃₉, 6, 2, 6; 1999 XW₁₃₉, 6, 2, 6; 1999 XX₁₃₉, 6, 2, 6; 1999 XY₁₃₉, 6, 2, 6; 1999 XZ₁₃₉, 9, 3, 15; 1999 XA₁₄₀, 6, 2, 6; 1999 XB₁₄₀, 6, 2, 6; 1999 XC₁₄₀, 6, 2, 6; 1999 XD₁₄₀, 9, 3, 13; 1999 XE₁₄₀, 9, 3, 13; 1999 XF₁₄₀, 6, 2, 6; 1999 XG₁₄₀, 9, 3, 13; 1999 XH₁₄₀, 6, 2, 6; 1999 XJ₁₄₀, 6, 2, 6; 1999 XK₁₄₀, 12, 4, 36; 1999 XL₁₄₀, 6, 2, 6; 1999 XM₁₄₀, 6, 2, 6; 1999 XN₁₄₀, 12, 4, 31; 1999 XO₁₄₀, 15, 5, 36; 1999 XP₁₄₀, 6, 2, 6; 1999 XQ₁₄₀, 15, 5, 40; 1999 XR₁₄₀, 6, 2, 6; 1999 XS₁₄₀, 6, 2, 6; 1999 XT₁₄₀, 6, 2, 6; 1999 XU₁₄₀, 6, 2, 6; 1999 XV₁₄₀, 6, 2, 6; 1999 XW₁₄₀, 6, 2, 6; 1999 XX₁₄₀, 12, 4, 15; 1999 XY₁₄₀, 6, 2, 6; 1999 XZ₁₄₀, 6, 2, 6; 1999 XA₁₄₁, 9, 3, 6; 1999 XB₁₄₁, 6, 2, 6; 1999 XC₁₄₁, 6, 2, 5; 1999 XD₁₄₁, 6, 2, 5; 1999 XE₁₄₁, 6, 2, 5; 1999 XF₁₄₁, 6, 2, 5; 1999 XG₁₄₁, 15, 5, 44; 1999 XH₁₄₁, 6, 2, 4; 1999 XO₁₄₁, 20, 5, 16; 1999 XT₁₄₃, 21, 7, 23; 1999 XS₁₄₄, 3, 1, 0; 1999 XU₁₄₄, 6, 2, 7; 1999 XV₁₄₄, 6, 2, 7; 1999 XW₁₄₄, 6, 2, 7; 1999 XX₁₄₄, 6, 2, 7; 1999 XY₁₄₄, 6, 2, 6; 1999 XZ₁₄₄, 6, 2, 6; 1999 XA₁₄₅, 12, 4, 34; 1999 XB₁₄₅, 12, 4, 33; 1999 XC₁₄₅, 12, 4, 33; 1999 XD₁₄₅, 6, 2, 6; 1999 XE₁₄₅, 12, 4, 33; 1999 XF₁₄₅, 6, 2, 6; 1999 XG₁₄₅, 6, 2, 6; 1999 XH₁₄₅, 6, 2, 6; 1999 XI₁₄₅, 6, 2, 6; 1999 XK₁₄₅, 6, 2, 6; 1999 XL₁₄₅, 6, 2, 6; 1999 XM₁₄₅, 6, 2, 6; 1999 XN₁₄₅, 6, 2, 6; 1999 XO₁₄₅, 6, 2, 6; 1999 XP₁₄₅, 6, 2, 6; 1999 XQ₁₄₅, 6, 2, 6; 1999 XR₁₄₅, 6, 2, 6; 1999 XS₁₄₅, 6, 2, 6; 1999 XT₁₄₅, 6, 2, 6; 1999 XU₁₄₅, 6, 2, 6; 1999 XV₁₄₅, 12, 4, 38; 1999 XW₁₄₅, 6, 2, 6; 1999 XX₁₄₅, 6, 2, 6; 1999 XY₁₄₅, 6, 2, 6; 1999 XZ₁₄₅, 6, 2, 6; 1999 XA₁₄₆, 6, 2, 6; 1999 XB₁₄₆, 6, 2, 6; 1999 XC₁₄₆, 6, 2, 6; 1999 XD₁₄₆, 6, 2, 6; 1999 XE₁₄₆, 6, 2, 6; 1999 XF₁₄₆, 6, 2, 6; 1999 XG₁₄₆, 6, 2, 6; 1999 XH₁₄₆, 6, 2, 6; 1999 XJ₁₄₆, 6, 2, 6; 1999 XK₁₄₆, 6, 2, 6; 1999 XL₁₄₆, 6, 2, 6; 1999 XM₁₄₆, 6, 2, 6; 1999 XN₁₄₆, 12, 3, 29; 1999 XO₁₄₆, 9, 3, 14; 1999 XP₁₄₆, 6, 2, 6; 1999 XQ₁₄₆, 6, 2, 6; 1999 XR₁₄₆, 6, 2, 6; 1999 XS₁₄₆, 6, 2, 6; 1999 XT₁₄₆, 6, 2, 6; 1999 XU₁₄₆, 6, 2, 6; 1999 XV₁₄₆, 6, 2, 6; 1999 XW₁₄₆, 6, 2, 6; 1999 XX₁₄₆, 6, 2, 6; 1999 XY₁₄₆, 6, 2, 6; 1999 XZ₁₄₆, 6, 2, 6; 1999 XA₁₄₇, 6, 2, 6; 1999 XB₁₄₇, 6, 2, 6; 1999 XC₁₄₇, 6, 2, 6; 1999 XD₁₄₇, 6, 2, 6; 1999 XE₁₄₇, 6, 2, 6; 1999 XF₁₄₇, 6, 2, 6; 1999 XG₁₄₇, 6, 2, 6; 1999 XH₁₄₇, 6, 2, 6; 1999 XJ₁₄₇, 6, 2, 6; 1999 XK₁₄₇, 6, 2, 6; 1999 XL₁₄₇, 6, 2, 6; 1999 XM₁₄₇, 6, 2, 6; 1999 XN₁₄₇, 6, 2, 6; 1999 XO₁₄₇, 6, 2, 6; 1999 XP₁₄₇, 6, 2, 6; 1999 XQ₁₄₇, 6, 2, 6; 1999 XR₁₄₇, 6, 2, 6; 1999 XS₁₄₇, 6, 2, 6; 1999 XT₁₄₇, 6, 2, 6; 1999 XU₁₄₇, 6, 2, 6; 1999 XV₁₄₇, 6, 2, 6; 1999 XW₁₄₇, 6, 2, 6; 1999 XX₁₄₇, 6, 2, 6; 1999 XY₁₄₇, 6, 2, 6; 1999 XZ₁₄₇, 6, 2, 6; 1999 XA₁₄₈, 6, 2, 6; 1999 XB₁₄₈, 6, 2, 6; 1999 XC₁₄₈, 6, 2, 6; 1999 XD₁₄₈, 6, 2, 6; 1999 XE₁₄₈, 6, 2, 6; 1999 XF₁₄₈, 6, 2, 6; 1999 XG₁₄₈, 6, 2, 6; 1999 XH₁₄₈, 6, 2, 6; 1999 XJ₁₄₈, 6, 2, 6; 1999 XK₁₄₈, 6, 2, 6; 1999 XL₁₄₈, 6, 2, 6; 1999 XM₁₄₈, 6, 2, 6; 1999 XN₁₄₈, 6, 2, 6; 1999 XO₁₄₈, 9, 2, 6; 1999 XP₁₄₈, 6, 2, 6; 1999 XQ₁₄₈, 6, 2, 6; 1999 XR₁₄₈, 6, 2, 6; 1999 XS₁₄₈, 6, 2, 6; 1999 XT₁₄₈, 6, 2, 6; 1999 XU₁₄₈, 6, 2, 6; 1999 XV₁₄₈, 6, 2, 6; 1999 XW₁₄₈, 12, 4, 34; 1999 XX₁₄₈, 6, 2, 6; 1999 XY₁₄₈, 6, 2, 5; 1999 XZ₁₄₈, 6, 2, 5; 1999 XA₁₄₉, 6, 2, 5; 1999 XB₁₄₉, 6, 2, 5; 1999 XC₁₄₉, 6, 2, 5; 1999 XD₁₄₉, 6, 2, 5; 1999 XE₁₄₉, 6, 2, 5; 1999 XF₁₄₉, 6, 2, 5; 1999 XG₁₄₉, 6, 2, 5; 1999 XH₁₄₉, 9, 3, 28; 1999 XJ₁₄₉, 6, 2, 5; 1999 XK₁₄₉, 6, 2, 5; 1999 XL₁₄₉, 6, 2, 5; 1999 XM₁₄₉, 6, 2, 5; 1999 XN₁₄₉, 6, 2, 5; 1999 XO₁₄₉, 6, 2, 5; 1999 XP₁₄₉, 6, 2, 5; 1999 XQ₁₄₉, 6, 2, 5; 1999 XR₁₄₉, 6, 2, 5; 1999 XS₁₄₉, 6, 2, 5; 1999 XT₁₄₉, 6, 2, 5; 1999 XU₁₄₉, 6, 2, 5; 1999 XV₁₄₉, 6, 2, 5; 1999 XW₁₄₉, 6, 2, 5; 1999 XX₁₄₉, 6, 2, 5; 1999 XY₁₄₉, 6, 2, 5; 1999 XZ₁₄₉, 6, 2, 5; 1999 XA₁₅₀, 6, 2, 5; 1999 XB₁₅₀, 6, 2, 5; 1999 XC₁₅₀, 6, 2, 5; 1999 XD₁₅₀, 6, 2, 5; 1999 XE₁₅₀, 6, 2, 5; 1999 XF₁₅₀, 6, 2, 5; 1999 XG₁₅₀, 6, 2, 5; 1999 XH₁₅₀, 6, 2, 5; 1999 XJ₁₅₀, 6, 2, 5; 1999 XK₁₅₀, 6, 2, 5; 1999 XL₁₅₀, 6, 2, 5; 1999 XM₁₅₀,

3; 1999 XC₂₁₆ *, 6, 2, 3; 1999 XD₂₁₆ *, 6, 2, 3; 1999 XE₂₁₆ *, 6, 2, 3; 1999 XF₂₁₆ *, 6, 2, 3; 1999 XG₂₁₆ *, 6, 2, 3; 1999 XH₂₁₆ *, 6, 2, 3; 1999 XJ₂₁₆ *, 6, 2, 3; 1999 XK₂₁₆ *, 6, 2, 3; 1999 XL₂₁₆ *, 6, 2, 3; 1999 XM₂₁₆ *, 6, 2, 3; 1999 XN₂₁₆ *, 6, 2, 3; 1999 XO₂₁₆ *, 6, 2, 3; 1999 XP₂₁₆ *, 6, 2, 3; 1999 XQ₂₁₆ *, 6, 2, 3; 1999 XR₂₁₆ *, 6, 2, 3; 1999 XS₂₁₆ *, 6, 2, 3; 1999 XT₂₁₆ *, 6, 2, 3; 1999 XU₂₁₆ *, 6, 2, 3; 1999 XV₂₁₆ *, 6, 2, 3; 1999 XW₂₁₆ *, 6, 2, 3; 1999 XX₂₁₆ *, 6, 2, 3; 1999 XY₂₁₆ *, 9, 3, 14; 1999 XZ₂₁₆ *, 6, 2, 3; 1999 XA₂₁₇ *, 6, 2, 3; 1999 XB₂₁₇ *, 6, 2, 3; 1999 XC₂₁₇ *, 12, 4, 18; 1999 XD₂₁₇ *, 12, 4, 20; 1999 XE₂₁₇ *, 6, 2, 3; 1999 XF₂₁₇ *, 15, 5, 24; 1999 XG₂₁₇ *, 9, 3, 12; 1999 XH₂₁₇ *, 6, 2, 3; 1999 XJ₂₁₇ *, 12, 4, 20; 1999 XK₂₁₇ *, 12, 4, 27; 1999 XL₂₁₇ *, 12, 4, 26; 1999 XM₂₁₇ *, 6, 2, 3; 1999 XN₂₁₇ *, 9, 3, 23; 1999 XO₂₁₇ *, 15, 5, 29; 1999 XP₂₁₇ *, 18, 6, 29; 1999 XQ₂₁₇ *, 6, 2, 3; 1999 XR₂₁₇ *, 12, 4, 31; 1999 XS₂₁₇ *, 15, 5, 29; 1999 XT₂₁₇ *, 12, 4, 24; 1999 XU₂₁₇ *, 18, 6, 29; 1999 XV₂₁₇ *, 18, 6, 29; 1999 XW₂₁₇ *, 6, 2, 3; 1999 XX₂₁₇ *, 6, 2, 3; 1999 XY₂₁₇ *, 6, 2, 3; 1999 XZ₂₁₇ *, 6, 2, 3; 1999 XA₂₁₈ *, 6, 2, 3; 1999 XB₂₁₈ *, 6, 2, 3; 1999 XC₂₁₈ *, 6, 2, 3; 1999 XD₂₁₈ *, 6, 2, 3; 1999 XE₂₁₈ *, 6, 2, 3; 1999 XF₂₁₈ *, 6, 2, 3; 1999 XG₂₁₈ *, 6, 2, 3; 1999 XH₂₁₈ *, 6, 2, 3; 1999 XJ₂₁₈ *, 6, 2, 3; 1999 XK₂₁₈ *, 6, 2, 3; 1999 XL₂₁₈ *, 6, 2, 3; 1999 XM₂₁₈ *, 12, 4, 20; 1999 XN₂₁₈ *, 6, 2, 3; 1999 XO₂₁₈ *, 6, 2, 3; 1999 XQ₂₁₈ *, 6, 2, 3; 1999 XR₂₁₈ *, 15, 4, 3; 1999 XS₂₁₈ *, 21, 6, 30; 1999 XT₂₁₈ *, 6, 2, 1; 1999 XU₂₁₈ *, 12, 4, 3; 1999 XV₂₁₈ *, 21, 6, 30; 1999 XW₂₁₈ *, 21, 6, 32; 1999 XX₂₁₈ *, 6, 2, 1; 1999 XY₂₁₈ *, 6, 2, 1; 1999 XZ₂₁₈ *, 6, 2, 1; 1999 XA₂₁₉ *, 6, 2, 1; 1999 XB₂₁₉ *, 9, 3, 12; 1999 XC₂₁₉ *, 6, 2, 1; 1999 XD₂₁₉ *, 6, 2, 1; 1999 XE₂₁₉ *, 6, 2, 1; 1999 XF₂₁₉ *, 6, 2, 1; 1999 XG₂₁₉ *, 6, 2, 1; 1999 XH₂₁₉ *, 12, 4, 30; 1999 XJ₂₁₉ *, 6, 2, 1; 1999 XK₂₁₉ *, 15, 5, 18; 1999 XL₂₁₉ *, 6, 2, 1; 1999 XM₂₁₉ *, 15, 5, 22; 1999 XN₂₁₉ *, 6, 2, 1; 1999 XO₂₁₉ *, 21, 6, 26; 1999 XF₂₂₃ *, 6, 2, 4; 1999 XG₂₂₃ *, 6, 2, 4; 1999 XH₂₂₃ *, 6, 2, 4; 1999 XJ₂₂₃ *, 6, 2, 4; 1999 XK₂₂₃ *, 6, 2, 4; 1999 XL₂₂₃ *, 6, 2, 4; 1999 XM₂₂₃ *, 6, 2, 4; 1999 XN₂₂₃ *, 6, 2, 4; 1999 XO₂₂₃ *, 6, 2, 4; 1999 XP₂₂₃ *, 6, 2, 4; 1999 XQ₂₂₃ *, 6, 2, 4; 1999 XR₂₂₃ *, 6, 2, 4; 1999 XS₂₂₃ *, 6, 2, 4; 1999 XT₂₂₃ *, 6, 2, 4; 1999 XU₂₂₃ *, 6, 2, 4; 1999 XV₂₂₃ *, 6, 2, 4; 1999 XW₂₂₃ *, 6, 2, 4; 1999 XX₂₂₃ *, 6, 2, 4; 1999 XY₂₂₃ *, 9, 2, 4; 1999 XZ₂₂₃ *, 6, 2, 4; 1999 XA₂₂₄ *, 9, 2, 4; 1999 XB₂₂₄ *, 18, 5, 24; 1999 XC₂₂₄ *, 9, 2, 4; 1999 XD₂₂₄ *, 6, 2, 4; 1999 XE₂₂₄ *, 12, 4, 26; 1999 XF₂₂₄ *, 6, 2, 4; 1999 XG₂₂₄ *, 6, 2, 4; 1999 XH₂₂₄ *, 6, 2, 4; 1999 XJ₂₂₄ *, 6, 2, 4; 1999 XK₂₂₄ *, 6, 2, 4; 1999 XL₂₂₄ *, 6, 2, 4; 1999 XM₂₂₄ *, 12, 4, 23; 1999 XN₂₂₄ *, 6, 2, 4; 1999 XO₂₂₄ *, 6, 2, 4; 1999 XP₂₂₄ *, 6, 2, 4; 1999 XQ₂₂₄ *, 6, 2, 4; 1999 XR₂₂₄ *, 6, 2, 4; 1999 XS₂₂₄ *, 6, 2, 4; 1999 XT₂₂₄ *, 6, 2, 4; 1999 XU₂₂₄ *, 6, 2, 4; 1999 XV₂₂₄ *, 9, 2, 4; 1999 XW₂₂₄ *, 9, 3, 18; 1999 XX₂₂₄ *, 15, 5, 29; 1999 XY₂₂₄ *, 6, 2, 4; 1999 XZ₂₂₄ *, 6, 2, 4; 1999 XA₂₂₅ *, 6, 2, 4; 1999 XB₂₂₅ *, 15, 4, 18; 1999 XC₂₂₅ *, 15, 4, 24; 1999 XD₂₂₅ *, 12, 4, 24; 1999 XE₂₂₅ *, 15, 5, 29; 1999 XF₂₂₅ *, 6, 2, 4; 1999 XG₂₂₅ *, 9, 2, 4; 1999 XH₂₂₅ *, 9, 2, 4; 1999 XJ₂₂₅ *, 9, 2, 4; 1999 XK₂₂₅ *, 6, 2, 4; 1999 XL₂₂₅ *, 9, 2, 4; 1999 XM₂₂₅ *, 6, 2, 4; 1999 XN₂₂₅ *, 9, 2, 4; 1999 XO₂₂₅ *, 12, 4, 20; 1999 XP₂₂₅ *, 15, 4, 29; 1999 XQ₂₂₅ *, 6, 2, 4; 1999 XR₂₂₅ *, 18, 6, 29; 1999 XS₂₂₅ *, 15, 4, 31; 1999 XT₂₂₅ *, 6, 2, 4; 1999 XU₂₂₅ *, 15, 5, 29; 1999 XV₂₂₅ *, 9, 3, 23; 1999 XW₂₂₅ *, 6, 2, 4; 1999 XX₂₂₅ *, 6, 2, 4; 1999 XY₂₂₅ *, 15, 5, 28; 1999 XZ₂₂₅ *, 9, 3, 20; 1999 XA₂₂₆ *, 6, 2, 4; 1999 XB₂₂₆ *, 6, 2, 3; 1999 XC₂₂₆ *, 6, 2, 3; 1999 XD₂₂₆ *, 6, 2, 3; 1999 XE₂₂₆ *, 6, 2, 3; 1999 XF₂₂₆ *, 6, 2, 3; 1999 XG₂₂₆ *, 9, 3, 12; 1999 XH₂₂₆ *, 9, 3, 12; 1999 XJ₂₂₆ *, 6, 2, 3; 1999 XK₂₂₆ *, 6, 2, 3; 1999 XL₂₂₆ *, 6, 2, 3; 1999 XM₂₂₆ *, 6, 2, 3; 1999 XN₂₂₆ *, 15, 5, 28; 1999 XO₂₂₆ *, 6, 2, 3; 1999 XP₂₂₆ *, 12, 4, 28; 1999 XQ₂₂₆ *, 12, 4, 25; 1999 XR₂₂₆ *, 6, 2, 3; 1999 XS₂₂₆ *, 24, 8, 31; 1999 XT₂₂₆ *, 6, 2, 3; 1999 XU₂₂₆ *, 12, 4, 29; 1999 XV₂₂₆ *, 9, 3, 16; 1999 XW₂₂₆ *, 6, 2, 2; 1999 XX₂₂₆ *, 6, 2, 2; 1999 XY₂₂₆ *, 6, 2, 2; 1999 XZ₂₂₆ *, 6, 2, 2; 1999 XA₂₂₇ *, 6, 2, 2; 1999 XB₂₂₇ *, 6, 2, 2; 1999 XC₂₂₇ *, 6, 2, 2; 1999 XD₂₂₇ *, 12, 4, 26; 1999 XE₂₂₇ *, 6, 2, 2; 1999 XF₂₂₇ *, 6, 2, 2; 1999 XG₂₂₇ *, 6, 2, 2; 1999 XH₂₂₇ *, 6, 2, 2; 1999 XJ₂₂₇ *, 6, 2, 2; 1999 XK₂₂₇ *, 15, 5, 27; 1999 XL₂₂₇ *, 12, 4, 16; 1999 XM₂₂₇ *, 6, 2, 2; 1999 XN₂₂₇ *, 6, 2, 2; 1999 XO₂₂₇ *, 6, 2, 2; 1999 XP₂₂₇ *, 9, 2, 2; 1999 XQ₂₂₇ *, 6, 2, 2; 1999 XR₂₂₇ *, 6, 2, 2; 1999 XS₂₂₇ *, 6, 2, 2; 1999 XT₂₂₇ *, 6, 2, 3; 1999 XU₂₂₇ *, 12, 4, 26; 1999 XV₂₂₇ *, 9, 3, 23; 1999 XW₂₂₇ *, 6, 2, 3; 1999 XD₂₂₈ *, 6, 2, 4; 1999 XE₂₂₈ *, 6, 2, 4; 1999 XF₂₂₈ *, 6, 2, 4; 1999 XG₂₂₈ *, 6, 2, 4; 1999 XH₂₂₈ *, 6, 2, 4; 1999 XJ₂₂₈ *, 6, 2, 4; 1999 XK₂₂₈ *, 6, 2, 4; 1999 XL₂₂₈ *, 6, 2, 4; 1999 XM₂₂₈ *, 6, 2, 4; 1999 XN₂₂₈ *, 6, 2, 4; 1999 XO₂₂₈ *, 6, 2, 4; 1999 XP₂₂₈ *, 6, 2, 4; 1999 XQ₂₂₈ *, 6, 2, 4; 1999 XR₂₂₈ *, 6, 2, 4; 1999 XS₂₂₈ *, 6, 2, 4; 1999 XT₂₂₈ *, 6, 2, 4; 1999 XU₂₂₈ *, 6, 2, 4; 1999 XV₂₂₈ *, 6, 2, 4; 1999 XW₂₂₈ *, 6, 2, 4; 1999 XX₂₂₈ *, 6, 2, 4; 1999 YW₁ *, 6, 2, 1; 1999 YX₁ *, 6, 2, 1; 1999 YY₁ *, 6, 2, 1; 1999 YZ₁ *, 6, 2, 1; 1999 YA₂ *, 6, 2, 1; 1999 YB₂ *, 6, 2, 1; 1999 YC₂ *, 6, 2, 1; 1999 YD₂ *, 6, 2, 1; 1999 YE₂ *, 6, 2, 1; 1999 YF₂ *, 6, 2, 1; 1999 YG₂ *, 6, 2, 1; 1999 YH₂ *, 6, 2, 1; 1999 YJ₂ *, 6, 2, 1; 1999 YK₂ *, 12, 4, 21; 1999 YL₂ *, 6, 2, 1; 1999 YM₂ *, 6, 2, 1; 1999 YN₂ *, 15, 4, 21; 1999 YO₂ *, 6, 2, 1; 1999 YP₂ *, 6, 2, 1; 1999 YQ₂ *, 12, 4, 21; 1999 YR₂ *, 6, 2, 1; 1999 YS₂ *, 6, 2, 1; 1999 YT₂ *, 12, 4, 23; 1999 YU₂ *, 6, 2, 1; 1999 YV₂ *, 6, 2, 1; 1999 YW₂ *, 6, 2, 1; 1999 YX₂ *, 6, 2, 1; 1999 YG₄ *, 3, 1, 0; 1999 YH₄ *, 6, 2, 5; 1999 YQ₄ *, 12, 3, 2; 1999 YR₄ *, 3, 1, 0; 1999 YU₄ *, 6, 2, 9; 1999 YJ₇ *, 6, 2, 4; 1999 YK₇ *, 6, 2, 4; 1999 YL₇ *, 6, 2, 4; 1999 YM₇ *, 6, 2, 4; 1999 YN₇ *, 12, 4, 14; 1999 YO₇ *, 6, 2, 4; 1999 YP₇ *, 6, 2, 4; 1999 YQ₇ *, 6, 2, 4; 1999 YR₇ *, 6, 2, 4; 1999 YS₇ *, 6, 2, 4; 1999 YT₇ *, 9, 3, 9; 1999 YU₇ *, 9, 3, 14; 1999 YV₇ *, 6, 2, 4; 1999 YW₇ *, 6, 2, 4; 1999 YX₇ *, 6, 2, 4; 1999 YY₇ *, 6, 2, 4; 1999 YZ₇ *, 9, 3, 11; 1999 YA₈ *, 9, 3, 11; 1999 YB₈ *, 9, 3, 11; 1999 YC₈ *, 6, 2, 4; 1999 YD₈ *, 6, 2, 4; 1999 YE₈ *, 6, 2, 4; 1999 YF₈ *,

9, 3, 12; 1999 YG₈ *, 6, 2, 4; 1999 YH₈ *, 15, 5, 15; 1999 YJ₈ *, 9, 3, 9; 1999 YK₈ *, 15, 5, 15; 1999 YL₈ *, 12, 4, 17; 1999 YM₈ *, 12, 4, 12; 1999 YN₈ *, 12, 4, 15; 1999 YO₈ *, 18, 6, 19; 1999 YP₈ *, 15, 5, 15; 1999 YQ₈ *, 12, 4, 15; 1999 YR₈ *, 15, 5, 17; 1999 YS₈ *, 18, 6, 19; 1999 YU₈ *, 3, 1, 0; 1999 YZ₈ *, 9, 3, 11; 1999 YA₉ *, 18, 5, 15; 1999 YC₉ *, 9, 3, 11; 1999 YL₉ *, 6, 2, 6; 1999 YV₉ *, 9, 3, 16; 1999 YW₉ *, 6, 2, 6; 1999 YX₉ *, 6, 2, 6; 1999 YY₉ *, 6, 2, 6; 1999 YZ₉ *, 6, 2, 6; 1999 YA₁₀ *, 6, 2, 6; 1999 YB₁₀ *, 6, 2, 6; 1999 YC₁₀ *, 6, 2, 6; 1999 YD₁₀ *, 9, 3, 16; 1999 YE₁₀ *, 6, 2, 6; 1999 YF₁₀ *, 12, 4, 16; 1999 YG₁₀ *, 6, 2, 6; 1999 YH₁₀ *, 6, 2, 6; 1999 YJ₁₀ *, 6, 2, 6; 1999 YK₁₀ *, 6, 2, 6; 1999 YL₁₀ *, 6, 2, 6; 1999 YM₁₀ *, 6, 2, 6; 1999 YN₁₀ *, 6, 2, 6; 1999 YO₁₀ *, 6, 2, 6; 1999 YP₁₀ *, 6, 2, 6; 1999 YQ₁₀ *, 9, 3, 15; 1999 YR₁₀ *, 9, 3, 9; 1999 YS₁₀ *, 9, 3, 9; 1999 YT₁₀ *, 6, 2, 6; 1999 YU₁₀ *, 6, 2, 6; 1999 YV₁₀ *, 9, 3, 15; 1999 YW₁₀ *, 6, 2, 6; 1999 YX₁₀ *, 9, 3, 15; 1999 YY₁₀ *, 6, 2, 6; 1999 YZ₁₀ *, 6, 2, 6; 1999 YA₁₁ *, 9, 3, 9; 1999 YB₁₁ *, 6, 2, 6; 1999 YC₁₁ *, 12, 4, 16; 1999 YD₁₁ *, 6, 2, 6; 1999 YE₁₁ *, 12, 4, 16; 1999 YF₁₁ *, 12, 4, 16; 1999 YG₁₁ *, 6, 2, 6; 1999 YH₁₁ *, 6, 2, 6; 1999 YJ₁₁ *, 6, 2, 6; 1999 YK₁₁ *, 6, 2, 6; 1999 YL₁₁ *, 6, 2, 6; 1999 YM₁₁ *, 6, 2, 6; 1999 YN₁₁ *, 6, 2, 6; 1999 YO₁₁ *, 6, 2, 6; 1999 YP₁₁ *, 6, 2, 6; 1999 YQ₁₁ *, 6, 2, 6; 1999 YR₁₁ *, 6, 2, 6; 1999 YS₁₁ *, 6, 2, 6; 1999 YT₁₁ *, 6, 2, 6; 1999 YU₁₁ *, 6, 2, 6; 1999 YV₁₁ *, 6, 2, 6; 1999 YW₁₁ *, 6, 2, 6; 1999 YX₁₁ *, 6, 2, 6; 1999 YZ₁₁ *, 6, 2, 6; 1999 YA₁₂ *, 6, 2, 6; 1999 YB₁₂ *, 6, 2, 6; 1999 YC₁₂ *, 6, 2, 6; 1999 YD₁₂ *, 6, 2, 6; 1999 YE₁₂ *, 6, 2, 6; 1999 YF₁₂ *, 6, 2, 6; 1999 YG₁₂ *, 6, 2, 6; 1999 YH₁₂ *, 9, 3, 11; 1999 YJ₁₂ *, 6, 2, 6; 1999 YK₁₂ *, 6, 2, 6; 1999 YL₁₂ *, 6, 2, 6; 1999 YM₁₂ *, 6, 2, 6; 1999 YO₁₂ *, 9, 3, 11; 1999 YP₁₂ *, 6, 2, 6; 1999 YQ₁₂ *, 12, 4, 15; 1999 YR₁₂ *, 9, 3, 14; 1999 YS₁₂ *, 12, 4, 15; 1999 YT₁₂ *, 6, 2, 2; 1999 YU₁₂ *, 6, 2, 2; 1999 YV₁₂ *, 6, 2, 2; 1999 YW₁₂ *, 6, 2, 2; 1999 YX₁₂ *, 6, 2, 2; 1999 YY₁₂ *, 6, 2, 2; 1999 YZ₁₂ *, 9, 3, 10; 1999 YD₁₃ *, 3, 1, 0; 1999 YG₁₃ *, 6, 2, 7; 1999 YH₁₃ *, 6, 2, 2; 1999 YZ₁₃ *, 6, 2, 7; 1999 YA₁₄ *, 6, 2, 7; 1999 YB₁₄ *, 9, 3, 11; 1999 YC₁₄ *, 9, 3, 12; 1999 YD₁₄ *, 6, 2, 3; 1999 YE₁₄ *, 6, 2, 3; 1999 YF₁₄ *, 9, 3, 9; 1999 YG₁₄ *, 9, 3, 9; 1999 YH₁₄ *, 9, 3, 9; 1999 YJ₁₄ *, 12, 4, 12; 1999 YK₁₄ *, 3, 1, 0; 1999 YL₁₄ *, 6, 2, 5; 1999 YA₁₅ *, 6, 2, 4; 1999 YB₁₅ *, 9, 3, 10; 1999 YE₁₅ *, 6, 2, 5; 1999 YF₁₅ *, 6, 2, 5; 1999 YG₁₅ *, 6, 2, 5; 1999 YH₁₅ *, 6, 2, 5; 1999 YJ₁₅ *, 6, 2, 5; 1999 YK₁₅ *, 6, 2, 5; 1999 YL₁₅ *, 6, 2, 5; 1999 YM₁₅ *, 6, 2, 5; 1999 YN₁₅ *, 6, 2, 5; 1999 YO₁₅ *, 6, 2, 5; 1999 YP₁₅ *, 6, 2, 5; 1999 YQ₁₅ *, 6, 2, 5; 1999 YR₁₅ *, 6, 2, 5; 1999 YS₁₅ *, 6, 2, 5; 1999 YT₁₅ *, 6, 2, 5; 1999 YU₁₅ *, 6, 2, 5; 1999 YV₁₅ *, 6, 2, 5; 1999 YW₁₅ *, 6, 2, 5; 1999 YX₁₅ *, 6, 2, 5; 1999 YZ₁₅ *, 6, 2, 5; 1999 YA₁₆ *, 6, 2, 5; 1999 YB₁₆ *, 9, 3, 12; 1999 YC₁₆ *, 6, 2, 5; 1999 YD₁₆ *, 6, 2, 5; 1999 YE₁₆ *, 6, 2, 5; 1999 YF₁₆ *, 6, 2, 5; 1999 YG₁₆ *, 6, 2, 5; 1999 YH₁₆ *, 9, 3, 12; 1999 YJ₁₆ *, 6, 2, 5; 1999 YK₁₆ *, 9, 3, 16; 1999 YL₁₆ *, 6, 2, 5; 1999 YN₁₆ *, 6, 2, 6; 1999 YO₁₆ *, 6, 2, 7; 1999 YP₁₆ *, 9, 3, 11; 1999 YQ₁₆ *, 6, 2, 6; 1999 YR₁₆ *, 9, 3, 11; 1999 YS₁₆ *, 12, 4, 11; 1999 YT₁₆ *, 9, 3, 11; 1999 YU₁₆ *, 9, 3, 11; 1999 YV₁₆ *, 9, 3, 11; 1999 YW₁₆ *, 9, 3, 11; 1999 YX₁₆ *, 6, 2, 6; 1999 YZ₁₆ *, 9, 3, 11; 1999 YA₁₇ *, 6, 2, 6; 1999 YB₁₇ *, 6, 2, 6; 1999 YC₁₇ *, 6, 2, 6; 1999 YD₁₇ *, 12, 4, 16; 1999 YE₁₇ *, 9, 3, 13; 1999 YF₁₇ *, 9, 3, 9; 1999 YG₁₇ *, 9, 3, 9; 1999 YH₁₇ *, 6, 2, 6; 1999 YJ₁₇ *, 9, 3, 13; 1999 YK₁₇ *, 12, 4, 16; 1999 YL₁₇ *, 6, 2, 6; 1999 YM₁₇ *, 9, 3, 9; 1999 YO₁₇ *, 3, 1, 0; 2000 AC₃ *, 1, 0; 2000 AD₃ *, 6, 2, 5; 2000 AM₆ *, 2, 9; 2000 AP₆ *, 6, 2, 1; 2000 AQ₆ *, 6, 2, 1; 2000 AR₆ *, 12, 4, 14; 2000 AS₆ *, 6, 2, 1; 2000 AT₆ *, 9, 3, 11; 2000 AU₆ *, 6, 2, 1; 2000 AV₆ *, 6, 2, 1; 2000 AW₆ *, 6, 2, 1; 2000 AX₆ *, 6, 2, 1; 2000 AY₆ *, 6, 2, 1; 2000 AZ₆ *, 6, 2, 1; 2000 AA₁ *, 6, 2, 1; 2000 AB₁ *, 9, 3, 14; 2000 AC₁ *, 6, 2, 1; 2000 AD₁ *, 6, 2, 1; 2000 AE₁ *, 6, 2, 1; 2000 AF₁ *, 9, 3, 11; 2000 AH₁ *, 12, 3, 2; 2000 AS₂ *, 9, 2, 5; 2000 AV₂ *, 6, 2, 5; 2000 AW₂ *, 3, 1, 0; 2000 AZ₃ *, 9, 3, 7; 2000 AD₄ *, 6, 2, 6; 2000 AJ₄ *, 15, 5, 12; 2000 AK₄ *, 6, 2, 1; 2000 AL₄ *, 6, 2, 1; 2000 AM₄ *, 6, 2, 1; 2000 AN₄ *, 9, 3, 7; 2000 AW₄ *, 6, 2, 3; 2000 AD₅ *, 3, 1, 0; 2000 AL₅ *, 6, 2, 3; 2000 AQ₅ *, 6, 2, 3; 2000 AR₅ *, 6, 2, 3; 2000 AS₅ *, 6, 2, 2; 2000 AT₅ *, 6, 2, 2; 2000 AU₅ *, 6, 2, 1; 2000 AV₅ *, 6, 2, 1; 2000 AW₅ *, 12, 4, 11; 2

[illegible]

2, 6; 2000 AL ₂₁₁	*	6, 2, 6; 2000 AM ₂₁₁	*	6, 2, 6; 2000 AN ₂₁₁	*	6, 2, 6; 2000 AO ₂₁₁	*	6, 2, 6; 2000 AP ₂₁₁	*	6, 2, 6; 2000 AQ ₂₁₁	*	6, 2, 6; 2000 AR ₂₁₁	*	6, 2, 6; 2000 AS ₂₁₁	*	6, 2, 6; 2000 AT ₂₁₁	*	6, 2, 6; 2000 AV ₂₁₁	*	6, 2, 6; 2000 AX ₂₁₁	*	6, 2, 6; 2000 AY ₂₁₁	*	6, 2, 6; 2000 AZ ₂₁₁	*
2, 7; 2000 AB ₂₁₂	*	6, 2, 3; 2000 AC ₂₁₂	*	6, 2, 7; 2000 AD ₂₁₂	*	6, 2, 7; 2000 AE ₂₁₂	*	6, 2, 7; 2000 AF ₂₁₂	*	6, 2, 7; 2000 AG ₂₁₂	*	6, 2, 7; 2000 AH ₂₁₂	*	6, 2, 7; 2000 AI ₂₁₂	*	6, 2, 7; 2000 AJ ₂₁₂	*	6, 2, 7; 2000 AK ₂₁₂	*	6, 2, 7; 2000 AL ₂₁₂	*	6, 2, 7; 2000 AM ₂₁₂	*	6, 2, 7; 2000 AN ₂₁₂	*
2, 4; 2000 AO ₂₁₂	*	6, 2, 6; 2000 AP ₂₁₂	*	6, 2, 4; 2000 AQ ₂₁₂	*	6, 2, 6; 2000 AR ₂₁₂	*	6, 2, 6; 2000 AS ₂₁₂	*	6, 2, 6; 2000 AT ₂₁₂	*	6, 2, 6; 2000 AV ₂₁₂	*	6, 2, 6; 2000 AX ₂₁₂	*	6, 2, 6; 2000 AY ₂₁₂	*	6, 2, 6; 2000 AZ ₂₁₂	*	6, 2, 6; 2000 AA ₂₁₃	*	6, 2, 6; 2000 AB ₂₁₃	*	6, 2, 6; 2000 AC ₂₁₃	*
5; 2000 AW ₂₁₂	*	6, 2, 7; 2000 AX ₂₁₂	*	6, 2, 6; 2000 AY ₂₁₂	*	6, 2, 7; 2000 AZ ₂₁₂	*	6, 2, 7; 2000 AA ₂₁₃	*	6, 2, 6; 2000 AB ₂₁₃	*	6, 2, 6; 2000 AC ₂₁₃	*	6, 2, 6; 2000 AD ₂₁₃	*	6, 2, 6; 2000 AE ₂₁₃	*	6, 2, 6; 2000 AF ₂₁₃	*	6, 2, 6; 2000 AG ₂₁₃	*	6, 2, 6; 2000 AH ₂₁₃	*	6, 2, 6; 2000 AI ₂₁₃	*
2; 2000 AN ₂₁₃	*	6, 2, 7; 2000 AO ₂₁₃	*	6, 2, 7; 2000 AP ₂₁₃	*	6, 2, 5; 2000 AQ ₂₁₃	*	6, 2, 5; 2000 AR ₂₁₃	*	6, 2, 5; 2000 AS ₂₁₃	*	6, 2, 5; 2000 AT ₂₁₃	*	6, 2, 5; 2000 AV ₂₁₃	*	6, 2, 5; 2000 AX ₂₁₃	*	6, 2, 5; 2000 AY ₂₁₃	*	6, 2, 5; 2000 AZ ₂₁₃	*	6, 2, 5; 2000 AA ₂₁₄	*	6, 2, 5; 2000 AB ₂₁₄	*
4; 2000 AD ₂₁₄	*	6, 2, 5; 2000 AE ₂₁₄	*	6, 2, 5; 2000 AF ₂₁₄	*	6, 2, 5; 2000 AG ₂₁₄	*	6, 2, 5; 2000 AH ₂₁₄	*	6, 2, 5; 2000 AI ₂₁₄	*	6, 2, 5; 2000 AJ ₂₁₄	*	6, 2, 5; 2000 AK ₂₁₄	*	6, 2, 5; 2000 AL ₂₁₄	*	6, 2, 5; 2000 AM ₂₁₄	*	6, 2, 5; 2000 AN ₂₁₄	*	6, 2, 5; 2000 AO ₂₁₄	*	6, 2, 5; 2000 AP ₂₁₄	*
7; 2000 AH ₂₁₄	*	6, 2, 7; 2000 AI ₂₁₄	*	6, 2, 7; 2000 AJ ₂₁₄	*	6, 2, 7; 2000 AK ₂₁₄	*	6, 2, 7; 2000 AL ₂₁₄	*	6, 2, 7; 2000 AM ₂₁₄	*	6, 2, 7; 2000 AN ₂₁₄	*	6, 2, 7; 2000 AO ₂₁₄	*	6, 2, 7; 2000 AP ₂₁₄	*	6, 2, 7; 2000 AQ ₂₁₄	*	6, 2, 7; 2000 AR ₂₁₄	*	6, 2, 7; 2000 AS ₂₁₄	*	6, 2, 7; 2000 AT ₂₁₄	*
7; 2000 AM ₂₁₄	*	6, 2, 7; 2000 AN ₂₁₄	*	6, 2, 7; 2000 AO ₂₁₄	*	6, 2, 7; 2000 AP ₂₁₄	*	6, 2, 7; 2000 AQ ₂₁₄	*	6, 2, 7; 2000 AR ₂₁₄	*	6, 2, 7; 2000 AS ₂₁₄	*	6, 2, 7; 2000 AT ₂₁₄	*	6, 2, 7; 2000 AU ₂₁₄	*	6, 2, 7; 2000 AV ₂₁₄	*	6, 2, 7; 2000 AW ₂₁₄	*	6, 2, 7; 2000 AX ₂₁₄	*	6, 2, 7; 2000 AY ₂₁₄	*
3; 2000 AL ₂₁₅	*	6, 2, 3; 2000 AM ₂₁₅	*	6, 2, 3; 2000 AN ₂₁₅	*	6, 2, 3; 2000 AO ₂₁₅	*	6, 2, 3; 2000 AP ₂₁₅	*	6, 2, 3; 2000 AQ ₂₁₅	*	6, 2, 3; 2000 AR ₂₁₅	*	6, 2, 3; 2000 AS ₂₁₅	*	6, 2, 3; 2000 AT ₂₁₅	*	6, 2, 3; 2000 AV ₂₁₅	*	6, 2, 3; 2000 AW ₂₁₅	*	6, 2, 3; 2000 AX ₂₁₅	*	6, 2, 3; 2000 AY ₂₁₅	*
3; 2000 AT ₂₁₅	*	6, 2, 3; 2000 AU ₂₁₅	*	6, 2, 3; 2000 AV ₂₁₅	*	9, 3, 2; 2000 AW ₂₁₅	*	6, 2, 3; 2000 AX ₂₁₅	*	6, 2, 3; 2000 AY ₂₁₅	*	6, 2, 3; 2000 AZ ₂₁₅	*	6, 2, 3; 2000 BA ₂₁₆	*	6, 2, 3; 2000 BB ₂₁₆	*	6, 2, 3; 2000 BC ₂₁₆	*	6, 2, 3; 2000 BD ₂₁₆	*	6, 2, 3; 2000 BE ₂₁₆	*	6, 2, 3; 2000 BF ₂₁₆	*
1; 2000 AX ₂₁₅	*	6, 2, 1; 2000 AY ₂₁₅	*	6, 2, 1; 2000 AZ<																					

2; 2000 AH₂₂₂ *, 6, 2, 4; 2000 AJ₂₂₂ *, 6, 2, 4; 2000 AK₂₂₂ *, 6, 2, 4; 2000 AL₂₂₂ *, 6, 2, 4; 2000 AM₂₂₂ *, 6, 2, 3; 2000 AN₂₂₂ *, 6, 2, 4; 2000 AO₂₂₂ *, 6, 2, 4; 2000 AP₂₂₂ *, 6, 2, 2; 2000 AQ₂₂₂ *, 6, 2, 4; 2000 AR₂₂₂ *, 6, 2, 6; 2000 AS₂₂₂ *, 6, 2, 4; 2000 AT₂₂₂ *, 6, 2, 2; 2000 AU₂₂₂ *, 6, 2, 1; 2000 AV₂₂₂ *, 6, 2, 4; 2000 AW₂₂₂ *, 6, 2, 4; 2000 AX₂₂₂ *, 6, 2, 4; 2000 AY₂₂₂ *, 6, 2, 6; 2000 AZ₂₂₂ *, 6, 2, 3; 2000 AA₂₂₃ *, 6, 2, 6; 2000 AB₂₂₃ *, 9, 3, 6; 2000 AC₂₂₃ *, 9, 3, 6; 2000 AD₂₂₃ *, 6, 2, 6; 2000 AE₂₂₃ *, 6, 2, 6; 2000 AF₂₂₃ *, 6, 2, 6; 2000 AG₂₂₃ *, 6, 2, 3; 2000 AH₂₂₃ *, 6, 2, 3; 2000 AJ₂₂₃ *, 6, 2, 6; 2000 AK₂₂₃ *, 9, 3, 6; 2000 AL₂₂₃ *, 6, 2, 3; 2000 AM₂₂₃ *, 6, 2, 6; 2000 AN₂₂₃ *, 9, 3, 6; 2000 AO₂₂₃ *, 6, 2, 2; 2000 AP₂₂₃ *, 6, 2, 3; 2000 AQ₂₂₃ *, 6, 2, 2; 2000 AR₂₂₃ *, 6, 2, 3; 2000 AS₂₂₃ *, 6, 2, 3; 2000 AT₂₂₃ *, 6, 2, 3; 2000 AU₂₂₃ *, 6, 2, 3; 2000 AV₂₂₃ *, 6, 2, 3; 2000 AW₂₂₃ *, 6, 2, 2; 2000 AX₂₂₃ *, 6, 2, 3; 2000 AY₂₂₃ *, 6, 2, 3; 2000 AZ₂₂₃ *, 6, 2, 3; 2000 AA₂₂₄ *, 6, 2, 2; 2000 AB₂₂₄ *, 6, 2, 5; 2000 AC₂₂₄ *, 6, 2, 5; 2000 AD₂₂₄ *, 6, 2, 5; 2000 AE₂₂₄ *, 6, 2, 2; 2000 AF₂₂₄ *, 6, 2, 5; 2000 AG₂₂₄ *, 6, 2, 5; 2000 AH₂₂₄ *, 6, 2, 5; 2000 AJ₂₂₄ *, 6, 2, 2; 2000 AK₂₂₄ *, 6, 2, 1; 2000 AL₂₂₄ *, 6, 2, 1; 2000 AM₂₂₄ *, 6, 2, 1; 2000 AN₂₂₄ *, 6, 2, 2; 2000 AO₂₂₄ *, 6, 2, 1; 2000 AP₂₂₄ *, 6, 2, 1; 2000 AQ₂₂₄ *, 6, 2, 1; 2000 AR₂₂₄ *, 6, 2, 1; 2000 AS₂₂₄ *, 6, 2, 1; 2000 AT₂₂₄ *, 6, 2, 2; 2000 AU₂₂₄ *, 6, 2, 2; 2000 AV₂₂₄ *, 6, 2, 2; 2000 AW₂₂₄ *, 6, 2, 2; 2000 AX₂₂₄ *, 6, 2, 2; 2000 AY₂₂₄ *, 6, 2, 2; 2000 AZ₂₂₄ *, 6, 2, 2; 2000 AA₂₂₅ *, 6, 2, 2; 2000 AB₂₂₅ *, 6, 2, 2; 2000 AC₂₂₅ *, 6, 2, 2; 2000 AD₂₂₅ *, 6, 2, 2; 2000 AE₂₂₅ *, 6, 2, 2; 2000 AF₂₂₅ *, 6, 2, 2; 2000 AG₂₂₅ *, 6, 2, 2; 2000 AH₂₂₅ *, 9, 3, 3; 2000 AJ₂₂₅ *, 9, 3, 3; 2000 AK₂₂₅ *, 6, 2, 3; 2000 AL₂₂₅ *, 18, 4, 3; 2000 AM₂₂₅ *, 9, 2, 2; 2000 AN₂₂₅ *, 6, 2, 3; 2000 AO₂₂₅ *, 6, 2, 3; 2000 AP₂₂₅ *, 6, 2, 3; 2000 AQ₂₂₅ *, 6, 2, 3; 2000 AR₂₂₅ *, 6, 2, 3; 2000 AS₂₂₅ *, 6, 2, 3; 2000 AT₂₂₅ *, 6, 2, 3; 2000 AU₂₂₅ *, 6, 2, 2; 2000 AV₂₂₅ *, 6, 2, 3; 2000 AW₂₂₅ *, 6, 2, 3; 2000 AX₂₂₅ *, 6, 2, 3; 2000 AY₂₂₅ *, 6, 2, 2; 2000 AZ₂₂₅ *, 6, 2, 3; 2000 AA₂₂₆ *, 6, 2, 3; 2000 AB₂₂₆ *, 6, 2, 3; 2000 AC₂₂₆ *, 6, 2, 2; 2000 AD₂₂₆ *, 6, 2, 3; 2000 AE₂₂₆ *, 6, 2, 3; 2000 AF₂₂₆ *, 6, 2, 3; 2000 AG₂₂₆ *, 6, 2, 3; 2000 AH₂₂₆ *, 6, 2, 3; 2000 AJ₂₂₆ *, 6, 2, 3; 2000 AK₂₂₆ *, 6, 2, 3; 2000 AL₂₂₆ *, 6, 2, 2; 2000 AM₂₂₆ *, 6, 2, 3; 2000 AN₂₂₆ *, 6, 2, 3; 2000 AO₂₂₆ *, 6, 2, 3; 2000 AP₂₂₆ *, 6, 2, 2; 2000 AQ₂₂₆ *, 6, 2, 3; 2000 AR₂₂₆ *, 6, 2, 1; 2000 AS₂₂₆ *, 15, 3, 2; 2000 AT₂₂₆ *, 9, 2, 2; 2000 AU₂₂₆ *, 6, 2, 7; 2000 AV₂₂₆ *, 6, 2, 7; 2000 AW₂₂₆ *, 6, 2, 7; 2000 AX₂₂₆ *, 6, 2, 2; 2000 AY₂₂₆ *, 6, 2, 7; 2000 AZ₂₂₆ *, 6, 2, 7; 2000 AA₂₂₇ *, 6, 2, 7; 2000 AB₂₂₇ *, 6, 2, 2; 2000 AC₂₂₇ *, 6, 2, 6; 2000 AD₂₂₇ *, 6, 2, 6; 2000 AE₂₂₇ *, 6, 2, 6; 2000 AF₂₂₇ *, 6, 2, 2; 2000 AG₂₂₇ *, 6, 2, 6; 2000 AH₂₂₇ *, 6, 2, 6; 2000 AJ₂₂₇ *, 6, 2, 6; 2000 AK₂₂₇ *, 6, 2, 6; 2000 AL₂₂₇ *, 6, 2, 6; 2000 AM₂₂₇ *, 6, 2, 6; 2000 AN₂₂₇ *, 6, 2, 6; 2000 AO₂₂₇ *, 6, 2, 2; 2000 AP₂₂₇ *, 6, 2, 6; 2000 AQ₂₂₇ *, 6, 2, 6; 2000 AR₂₂₇ *, 6, 2, 6; 2000 AS₂₂₇ *, 6, 2, 4; 2000 AV₂₂₇ *, 6, 2, 4; 2000 AW₂₂₇ *, 6, 2, 4; 2000 AX₂₂₇ *, 6, 2, 4; 2000 AY₂₂₇ *, 6, 2, 3; 2000 AZ₂₂₇ *, 6, 2, 3; 2000 AA₂₂₈ *, 6, 2, 2; 2000 AB₂₂₈ *, 6, 2, 3; 2000 AC₂₂₈ *, 6, 2, 3; 2000 AD₂₂₈ *, 6, 2, 3; 2000 AE₂₂₈ *, 6, 2, 3; 2000 AF₂₂₈ *, 6, 2, 3; 2000 AG₂₂₈ *, 6, 2, 3; 2000 AH₂₂₈ *, 6, 2, 3; 2000 AJ₂₂₈ *, 6, 2, 3; 2000 AK₂₂₈ *, 6, 2, 3; 2000 AL₂₂₈ *, 6, 2, 3; 2000 AM₂₂₈ *, 6, 2, 3; 2000 AN₂₂₈ *, 6, 2, 3; 2000 AO₂₂₈ *, 6, 2, 3; 2000 AP₂₂₈ *, 6, 2, 3; 2000 BB₆ *, 6, 2, 3; 2649 P-L, 6, 2, 5; 2785 P-L, 15, 5, 24; 4080 P-L, 3, 1, 0; 4647 P-L, 3, 1, 0; 6020 P-L, 3, 1, 0; 6063 P-L, 3, 1, 0; 6529 P-L, 3, 1, 0; 6577 P-L, 3, 1, 0; 6587 P-L, 12, 4, 41; 6625 P-L, 3, 1, 0; 6634 P-L, 3, 1, 0; 6790 P-L, 6, 2, 15; 6801 P-L, 3, 1, 0; 2183 T-1, 6, 2, 26; 3109 T-1, 3, 1, 0; 3243 T-1, 6, 2, 1; 3770 T-1, 3, 1, 0; 4206 T-1, 3, 1, 0; 1038 T-2, 3, 1, 0; 1114 T-2, 3, 1, 0; 1329 T-2, 3, 1, 0; 2104 T-2, 3, 1, 0; 3200 T-2, 3, 1, 0; 3234 T-2, 6, 2, 27; 4230 T-2, 3, 1, 0; 5104 T-2, 6, 2, 26; 5153 T-2, 6, 2, 22; 5179 T-2, 6, 2, 4; 2220 T-3, 3, 1, 0; 2634 T-3, 3, 1, 0; 3378 T-3, 3, 1, 0; 4358 T-3, 6, 2, 10; (290), 3, 1, 0; (797), 3, 1, 0; (969), 6, 2, 7; (993), 6, 2, 18; (1007), 3, 1, 0; (1010), 3, 1, 0; (1032), 3, 1, 0; (1063), 6, 2, 6; (1079), 9, 3, 6; (1119), 3, 1, 0; (1253), 3, 1, 0; (1319), 6, 2, 13; (1357), 6, 2, 16; (1478), 3, 1, 0; (1482), 3, 1, 0; (1483), 3, 1, 0; (1487), 3, 1, 0; (1511), 3, 1, 0; (1537), 6, 2, 30; (1592), 9, 3, 11; (1623), 3, 1, 0; (1664), 3, 1, 0; (1704), 6, 2, 6; (1726), 6, 2, 37; (1743), 3, 1, 0; (1745), 3, 1, 0; (1747), 3, 1, 0; (1748), 3, 1, 0; (1770), 3, 1, 0; (1779), 3, 1, 0; (1791), 3, 1, 0; (1792), 6, 2, 27; (1821), 9, 3, 12; (1824), 3, 1, 0; (1944), 3, 1, 0; (1956), 3, 1, 0; (1977), 3, 1, 0; (1991), 6, 2, 6; (2071), 6, 2, 3; (2147), 6, 2, 6; (2153), 6, 2, 26; (2155), 3, 1, 0; (2191), 9, 3, 28; (2253), 6, 2, 6; (2277), 6, 2, 7; (2294), 3, 1, 0; (2331), 6, 2, 15; (2379), 9, 3, 12; (2476), 3, 1, 0; (2485), 15, 5, 29; (2505), 3, 1, 0; (2512), 3, 1, 0; (2528), 6, 2, 9; (2536), 6, 2, 4; (2551), 3, 1, 0; (2556), 3, 1, 0; (2587), 12, 4, 23; (2589), 3, 1, 0; (2590), 6, 2, 4; (2611), 6, 2, 43; (2616), 3, 1, 0; (2639), 6, 2, 6; (2673), 3, 1, 0; (2725), 3, 1, 0; (2729), 6, 2, 26; (2806), 3, 1, 0; (2833), 6, 2, 23; (2846), 6, 2, 6; (2874), 9, 3, 28; (2882), 3, 1, 0; (2943), 3, 1, 0; (2946), 3, 1, 0; (2958), 9, 3, 14; (2972), 3, 1, 0; (3001), 6, 2, 3; (3035), 9, 3, 12; (3045), 3, 1, 0; (3049), 12, 4, 21; (3061), 9, 3, 11; (3063), 9, 3, 10; (3098), 3, 1, 0; (3195), 9, 3, 9; (3247), 3, 1, 0; (3251), 3, 1, 0; (3274), 3, 1, 0; (3291), 3, 1, 0; (3306), 3, 1, 0; (3338), 6, 2, 3; (3437), 3, 1, 0; (3473), 6, 2, 9; (3502), 3, 1, 0; (3504), 6, 2, 14; (3615), 3, 1, 0; (3616), 3, 1, 0; (3699), 6, 2, 5; (3786), 3, 1, 0; (3789), 6, 2, 3; (3804), 3, 1, 0; (3920), 6, 2, 2; (3948), 6, 2, 5; (3980), 3, 1, 0; (3986), 6, 2, 4; (3999), 3, 1, 0; (4003), 3, 1, 0; (4005), 12, 4, 67; (4042), 6, 2, 26; (4073), 3, 1, 0; (4079), 6, 2, 19; (4088), 3, 1, 0; (4108), 12, 4, 62; (4151), 3, 1, 0; (4153), 9, 3, 10; (4211), 3, 1, 0; (4241), 3, 1, 0; (4277), 6, 2, 3; (4296), 6, 2, 1; (4305), 3, 1, 0; (4329), 6, 2, 12; (4347), 3, 1, 0; (4376), 3, 1, 0; (4378), 3, 1, 0; (4394), 6, 2, 5; (4408), 9, 3, 17; (4493), 3, 1, 0; (4562), 3, 1, 0; (4579), 9, 3, 26; (4629), 3, 1, 0; (4637), 6, 2, 9; (4655), 9, 3, 9; (4739), 3, 1, 0; (4757), 6, 2, 6; (4802), 3, 1, 0; (4833), 3, 1, 0; (4894), 3, 1,

0; (4906), 6, 2, 6; (4921), 6, 2, 30; (4929), 3, 1, 0; (4938), 3, 1, 0; (4965), 3, 1, 0; (4971), 3, 1, 0; (5009), 3, 1, 0; (5019), 3, 1, 0; (5100), 9, 3, 4; (5210), 3, 1, 0; (5284), 3, 1, 0; (5286), 3, 1, 0; (5337), 3, 1, 0; (5341), 9, 3, 11; (5365), 6, 2, 1; (5375), 15, 4, 29; (5386), 12, 4, 16; (5421), 6, 2, 26; (5440), 3, 1, 0; (5472), 6, 2, 4; (5501), 3, 1, 0; (5522), 3, 1, 0; (5594), 3, 1, 0; (5652), 6, 2, 5; (5679), 6, 2, 18; (5733), 3, 1, 0; (5741), 3, 1, 0; (5800), 3, 1, 0; (5846), 3, 1, 0; (5857), 3, 1, 0; (5880), 6, 2, 23; (5919), 3, 1, 0; (5933), 9, 3, 12; (5969), 3, 1, 0; (5970), 3, 1, 0; (5989), 12, 4, 8; (6003), 6, 2, 5; (6048), 3, 1, 0; (6082), 6, 2, 14; (6118), 21, 5, 23; (6193), 3, 1, 0; (6201), 9, 3, 7; (6287), 3, 1, 0; (6300), 3, 1, 0; (6301), 21, 7, 29; (6340), 3, 1, 0; (6378), 9, 3, 16; (6416), 6, 2, 6; (6444), 3, 1, 0; (6482), 6, 2, 5; (6497), 3, 1, 0; (6507), 6, 2, 9; (6520), 3, 1, 0; (6527), 3, 1, 0; (6638), 6, 2, 30; (6696), 3, 1, 0; (6755), 3, 1, 0; (6779), 6, 2, 23; (6789), 3, 1, 0; (6791), 3, 1, 0; (6814), 3, 1, 0; (6815), 3, 1, 0; (6829), 3, 1, 0; (6848), 3, 1, 0; (6868), 6, 2, 9; (6881), 6, 2, 26; (6895), 3, 1, 0; (6933), 3, 1, 0; (6953), 3, 1, 0; (6983), 3, 1, 0; (6986), 3, 1, 0; (7008), 6, 2, 1; (7024), 3, 1, 0; (7036), 3, 1, 0; (7063), 3, 1, 0; (7064), 6, 2, 38; (7100), 3, 1, 0; (7179), 3, 1, 0; (7191), 3, 1, 0; (7205), 3, 1, 0; (7208), 3, 1, 0; (7332), 3, 1, 0; (7354), 6, 2, 24; (7453), 6, 2, 6; (7478), 6, 2, 6; (7509), 3, 1, 0; (7524), 6, 2, 6; (7534), 3, 1, 0; (7547), 3, 1, 0; (7579), 3, 1, 0; (7584), 3, 1, 0; (7600), 3, 1, 0; (7636), 3, 1, 0; (7639), 3, 1, 0; (7645), 3, 1, 0; (7656), 3, 1, 0; (7689), 3, 1, 0; (7696), 6, 2, 15; (7755), 3, 1, 0; (7830), 6, 2, 1; (7935), 9, 3, 11; (7942), 21, 6, 10; (7943), 6, 2, 10; (8543), 3, 1, 0; (8854), 6, 2, 41; (8925), 3, 1, 0; (8927), 3, 1, 0; (9009), 3, 1, 0; (9011), 9, 3, 9; (9012), 15, 5, 26; (9042), 6, 2, 56; (9103), 9, 3, 11; (9131), 3, 1, 0; (9155), 3, 1, 0; (9163), 3, 1, 0; (9166), 6, 2, 26; (9182), 3, 1, 0; (9207), 6, 2, 26; (9220), 3, 1, 0; (9246), 6, 2, 6; (9251), 3, 1, 0; (9252), 3, 1, 0; (9259), 3, 1, 0; (9280), 9, 3, 12; (9285), 3, 1, 0; (9287), 9, 3, 11; (9300), 3, 1, 0; (9303), 6, 2, 8; (9307), 9, 3, 12; (9311), 3, 1, 0; (9330), 3, 1, 0; (9340), 6, 2, 6; (9358), 3, 1, 0; (9371), 6, 2, 3; (9383), 6, 2, 6; (9386), 3, 1, 0; (9388), 6, 2, 30; (9437), 21, 6, 26; (9442), 6, 2, 3; (9484), 6, 2, 9; (9496), 9, 3, 11; (9530), 3, 1, 0; (9543), 3, 1, 0; (9559), 9, 3, 11; (9577), 6, 2, 10; (9579), 9, 3, 13; (9591), 3, 1, 0; (9623), 3, 1, 0; (9625), 3, 1, 0; (9630), 6, 2, 3; (9646), 6, 2, 2; (9652), 6, 2, 7; (9660), 3, 1, 0; (9679), 6, 2, 7; (9696), 3, 1, 0; (9706), 6, 2, 4; (9721), 6, 2, 3; (9736), 3, 1, 0; (9751), 3, 1, 0; (9777), 3, 1, 0; (9797), 3, 1, 0; (10179), 15, 5, 10; (10235), 3, 1, 0; (10612), 6, 2, 17; (10761), 6, 2, 6; (11259), 3, 1, 0; (11370), 6, 2, 1; (11377), 6, 2, 5; (11379), 3, 1, 0; (11385), 9, 3, 10; (11390), 12, 4, 26; (11483), 3, 1, 0; (11576), 3, 1, 0; (11582), 3, 1, 0; (11617), 3, 1, 0; (11661), 6, 2, 12; (11708), 3, 1, 0; (11807), 3, 1, 0; (11824), 3, 1, 0; (11826), 3, 1, 0; (11860), 3, 1, 0; (11862), 6, 2, 7; (11922), 3, 1, 0; (11942), 3, 1, 0; (11954), 6, 2, 5; (12035), 3, 1, 0; (12037), 3, 1, 0; (12045), 6, 2, 1; (12062), 3, 1, 0; (12091), 6, 2, 5; (12106), 3, 1, 0; (12140), 3, 1, 0; (12154), 3, 1, 0; (12183), 3, 1, 0; (12191), 3, 1, 0; (12202), 9, 2, 30; (12205), 6, 2, 36; (12213), 3, 1, 0; (12218), 21, 5, 18; (12247), 3, 1, 0; (12251), 6, 2, 6; (12255), 9, 3, 4; (12260), 3, 1, 0; (12273), 3, 1, 0; (12286), 6, 2, 31; (12290), 3, 1, 0; (12291), 3, 1, 0; (12292), 3, 1, 0; (12310), 3, 1, 0; (12344), 3, 1, 0; (12345), 3, 1, 0; (12359), 6, 2, 31; (12360), 3, 1, 0; (12361), 3, 1, 0; (12364), 3, 1, 0; (12366), 3, 1, 0; (12385), 9, 3, 10; (12406), 6, 2, 5; (12414), 3, 1, 0; (12417), 6, 2, 2; (12429), 3, 1, 0; (12439), 3, 1, 0; (12458), 3, 1, 0; (12473), 3, 1, 0; (12477), 6, 2, 18; (12492), 6, 2, 11; (12495), 3, 1, 0; (12511), 3, 1, 0; (12512), 6, 2, 2; (12517), 3, 1, 0; (12524), 9, 3, 12; (12534), 3, 1, 0; (12537), 3, 1, 0; (12546), 6, 2, 23; (12549), 9, 3, 5; (12563), 6, 2, 7; (12567), 3, 1, 0; (12586), 3, 1, 0; (12605), 3, 1, 0; (12616), 3, 1, 0; (12619), 3, 1, 0; (12620), 6, 2, 26; (12621), 3, 1, 0; (12634), 3, 1, 0; (12645), 9, 3, 28; (12657), 3, 1, 0; (12658), 3, 1, 0; (12663), 3, 1, 0; (12664), 9, 3, 20; (12678), 6, 2, 5; (12679), 6, 2, 10; (12695), 9, 3, 15; (12699), 3, 1, 0; (12715), 3, 1, 0; (12718), 3, 1, 0; (12732), 3, 1, 0; (12749), 3, 1, 0; (12757), 3, 1, 0; (12759), 3, 1, 0; (12781), 3, 1, 0; (12803), 3, 1, 0; (12807), 3, 1, 0; (12815), 12, 4, 16; (12822), 12, 4, 16; (12841), 6, 2, 4; (12850), 6, 2, 12; (12860), 3, 1, 0; (12869), 3, 1, 0; (12873), 12, 4, 23; (12876), 3, 1, 0; (12878), 9, 3, 16; (12889), 6, 2, 37; (12899), 6, 2, 6; (12900), 3, 1, 0; (12904), 3, 1, 0; (12907), 6, 2, 6; (12911), 9, 3, 15; (12924), 3, 1, 0; (12930), 3, 1, 0; (12941), 3, 1, 0; (12952), 3, 1, 0; (12958), 6, 2, 11; (12969), 3, 1, 0; (12971), 3, 1, 0; [27244, 4745, 2299*, 1996/12/03-2000/01/16]

693 University of Arizona, Catalina Station

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Observers M. Hicks, K. Lawrence, T. McConnochie
1.54-m reflector + CCD

1999 XN₂₀₇, 2, 1, 0; 2000 AN₂₈, 2, 1, 0; 2000 AD₂₀₅, 2, 1, 0; 2000 AE₂₀₅, 2, 1, 0; 2000 AF₂₀₅, 2, 1, 0; 2000 AH₂₀₅, 2, 1, 0; 2000 AC₂₂₉, 2, 1, 0; [14, 7, 0*, 2000/01/15]

695 Kitt Peak

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Observers M. W. Buie (1), S. D. Kern (1), R. M. Wagner (1), M. Bielecki (1), L. Wasserman (1), D. Davis (8), B. Gladman (8), C. Neese (8), J. W. Parker (9), A. Block (0), J. A. Stansberry (9), N. Reuss (0), E. P. Rubenstein (2), C. R. Smith (2), L.-G. Strolger (2), C. W. Hergenrother (5)

Measurers M. W. Buie (1), L. H. Wasserman (1), S. D. Kern (1), B. Gladman (8), J. W. Parker (9), L. Robinson (0), G. Fedon (0), E. P. Rubenstein (2), L. - G. Strolger (2), C. W. Hergenrother (5)

4-m reflector + CCD, 2.3-m reflector + CCD, 0.9-m reflector + CCD, 0.40-m Schmidt-Cassegrain + CCD

GSC-1.1, USNO-A2.0

{0} 1999 XD₉₅, 3, 1, 0; 1999 YM₄, 3, 1, 0; 1999 YW₄, 3, 1, 0; 1999 YL₅, 3, 1, 0; 1999 YT₈, 2, 1, 0; 1999 YU₈, 3, 1, 0; 2000 AU₄, 2, 1, 0; 2000 AE₄₂ *, 7, 2, 6; 2000 AW₅₀, 3, 1, 0; [29, 9, 1*, 1999/12/23–2000/01/11]

{1} 1999 VC₄₇, 2, 1, 0; 1999 VS₅₈, 2, 1, 0; 1999 VK₆₁, 2, 1, 0; 1999 WK₂, 2, 1, 0; 1999 XK₂₆, 2, 1, 0; 1999 XC₁₀₇, 2, 1, 0; 1999 XG₁₁₅, 2, 1, 0; (12773), 2, 1, 0; [16, 8, 0*, 1999/11/10–1999/12/04]

{2} 1999 TC₃₆ *, 7, 4, 3; [7, 1, 1*, 1999/09/30–1999/10/03]

{5} 1998 QL₇₃, 3, 1, 0; [3, 1, 0*, 1999/09/13]

{8} 1999 RA₂₁₅ *, 6, 2, 1; [6, 1, 1*, 1999/09/13–1999/09/14]

{9} 1996 SZ₄, 4, 2, 3; 1997 CS₂₉, 8, 2, 1; 1997 CU₂₉, 9, 2, 1; 1998 WS₃₁, 4, 1, 0; 1999 CF₁₁₉, 4, 1, 0; 1999 CL₁₁₉, 5, 2, 1; [34, 6, 0*, 1999/11/30–1999/12/31]

696 F. L. Whipple Observatory, Mount Hopkins

M. Holman, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. [mholman@cfa.harvard.edu]

Observers C. Ernst, M. Holman

Measurer C. Ernst

1.2-m $f/8$ reflector + CCD

USNO-A1.0

1999 XX₁₄₃ *, 5, 2, 2; 1999 XY₁₄₃ *, 5, 2, 1; [10, 2, 2*, 1999/12/13–1999/12/15]

697 Kitt Peak, McGraw-Hill Observatory

R. L. Allen, Dept. of Astronomy, University of Michigan, Ann Arbor, MI 48109 [rhiannon@astro.lsa.umich.edu]

Observers R. L. Allen, M. Allen

Measurer R. L. Allen

2.4-m Hiltner Telescope + CCD

USNO-A2.0

1997 CU₂₉, 5, 2, 2; 1998 TF₃₅, 3, 2, 1; 1998 WS₃₁, 5, 3, 3; 1999 TR₁₁, 4, 2, 2; 1999 TC₃₆, 3, 3, 2; [20, 5, 0*, 2000/01/02–2000/01/05]

699 Lowell Observatory–LONEOS

E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff AZ 86001, U.S.A. [elgb@lowell.edu]

Observers B. W. Koehn, B. A. Skiff, M. E. Van Ness, W. D. Ferris

Measurer B. W. Koehn

0.59-m LONEOS Schmidt + CCD

USNO-A2.0

1953 GJ, 3, 1, 0; 1973 SY₅, 3, 1, 0; 1975 VZ₈, 3, 1, 0; 1976 QK₁, 3, 1, 0; 1977 TO₆, 3, 1, 0; 1977 XF₂, 6, 1, 0; 1978 UJ₅, 3, 1, 0; 1978 VA, 3, 1, 0; 1978 VO₂, 3, 1, 0; 1978 VB₃, 3, 1, 0; 1978 VP₃, 6, 2, 12; 1978 VL₄, 2, 1, 0; 1978 VH₅, 3, 1, 0; 1978 VQ₉, 3, 1, 0; 1978 VM₁₁, 3, 1, 0; 1979 MQ₃, 6, 2, 33; 1979 MS₅, 3, 1, 0; 1979 QT₁, 3, 1, 0; 1979 QA₂, 3, 1, 0; 1979 QF₂, 6, 2, 17; 1980 CJ, 6, 2, 14; 1980 TZ₅, 6, 2, 8; 1981 DR₁, 6, 2, 538; 1981 EP₂, 3, 1, 0; 1981 EV₂, 6, 2, 51; 1981 ER₄, 3, 1, 0; 1981 EC₅, 3, 1, 0; 1981 EL₁₆, 3, 1, 0; 1981 EN₂₂, 3, 1, 0; 1981 EB₃₆, 3, 1, 0; 1981 QK₃, 3, 1, 0; 1981 UQ₂₂, 6, 2, 55; 1981 UB₂₃, 6, 2, 17; 1981 UC₂₃, 12, 4, 54; 1981 UZ₂₄, 3, 1, 0; 1982 QP, 6, 2, 13; 1982 RR, 3, 1, 0; 1982 ST₇, 6, 2, 12; 1982 UA₆, 3, 1, 0; 1982 UO₆, 3, 1, 0; 1982 VP₃, 3, 1, 0; 1983 RL₃, 3, 1, 0; 1983 XE, 6, 2, 17; 1984 AU, 3, 1, 0; 1984 ST₅, 3, 1, 0; 1984 SZ₅, 3, 1, 0; 1985 PG, 3, 1, 0; 1985 PH, 3, 1, 0; 1985 PB₂, 3, 1, 0; 1985 RP, 3, 1, 0; 1985 SX₂, 3, 1, 0; 1986 PX, 3, 1, 0; 1986 QW₁, 3, 1, 0; 1986 QR₅, 6, 2, 19; 1986 TG₁, 3, 1, 0; 1986 WZ, 3, 1, 0; 1987 QS₅, 3, 1, 0; 1987 SL₃, 3, 1, 0; 1987 SO₅, 3, 1, 0; 1987 WJ₁, 3, 1, 0; 1988 BO₃, 3, 1, 0; 1988 BL₅, 3, 1, 0; 1988 PE, 3, 1, 0; 1988 PU, 3, 1, 0; 1988 PW₂, 3, 1, 0; 1988 RB₂, 6, 2, 17; 1988 RJ₅, 3, 1, 0; 1988 RJ₆, 3, 1, 0; 1988 RO₆, 3, 1, 0; 1988 RL₉, 6, 2, 19; 1988 SU₁, 3, 1, 0; 1988 SB₂, 3, 1, 0; 1988 VR₂, 3, 1, 0; 1988 VX₂, 3, 1, 0; 1988 VA₅, 3, 1, 0; 1989 AA, 3, 1, 0; 1989 AF₃, 3, 1, 0; 1989 AJ₆, 3, 1, 0; 1989 BH, 6, 2, 470; 1989 DB, 3, 1, 0; 1989 DC, 3, 1, 0; 1989 GM₁, 3, 1, 0; 1989 GN₃, 3, 1, 0; 1989 RX, 3, 1, 0; 1989 RP₁, 6, 2, 412; 1989 SD, 3, 1, 0; 1989 SR, 2, 1, 0; 1989 SM₁, 3, 1, 0; 1989 TH₁, 3, 1, 0; 1989 TU₃, 3, 1, 0; 1989 UN, 3, 1, 0; 1989 UA₁, 3, 1, 0; 1989 UA₆, 3, 1, 0; 1989 WA₁, 3, 1, 0; 1989 YC₆, 3, 1, 0; 1990 CE, 3, 1, 0; 1990 DW, 3, 1, 0; 1990 EV₁, 6, 2, 1; 1990 ES₆, 3, 1, 0; 1990 FD₃, 3, 1, 0; 1990 GD, 3, 1, 0; 1990 OB₅, 6, 2, 1; 1990 QE₇, 3, 1, 0; 1990 QN₇, 3, 1, 0; 1990 QO₈, 3, 1, 0; 1990 QP₁₀, 3, 1, 0; 1990 RU₉, 6, 2, 51; 1990 RF₁₇, 6, 2, 21; 1990 SQ₁, 3, 1, 0; 1990 SY₃, 3, 1, 0; 1990 SN₆, 3, 1, 0; 1990 SN₈, 6, 2, 545; 1990 SX₈, 3, 1, 0; 1990 SP₁₅, 3, 1, 0; 1990 SU₁₆, 6, 2, 90; 1990 TT, 3, 1, 0; 1990 TC₂, 3, 1, 0; 1990 TF₆, 6, 2, 1; 1990 TW₁₁, 3, 1, 0; 1990 UK₅, 3, 1, 0; 1990 VV₂, 6, 2, 30; 1990 VP₆, 3, 1, 0; 1990 VF₈, 3, 1, 0; 1990 WS₁, 3, 1, 0; 1990 WN₃, 6, 2, 18; 1990 YP, 3, 1, 0; 1991 AG₂, 6, 2, 1; 1991 BK, 3, 1, 0; 1991 BD₁, 3, 1, 0; 1991 EF₂, 3, 1, 0; 1991 EL₄, 3, 1, 0; 1991 EO₅, 6, 2, 13; 1991 FG, 3, 1, 0; 1991 FL₂, 3, 1, 0; 1991 FW₃, 3, 1, 0; 1991 GT₄, 6, 2, 17; 1991 GS₆, 6, 2, 7; 1991 LB, 3, 1, 0; 1991 LF₂, 3, 1, 0; 1991 NB₁, 3, 1, 0; 1991 PF₅, 3, 1, 0; 1991 PG₁₁, 3, 1, 0; 1991 PH₁₈, 3, 1, 0; 1991 PO₁₈, 3, 1, 0; 1991 RA, 3, 1, 0; 1991 RL₁, 3, 1, 0; 1991 RX₁, 6, 2, 24; 1991 RY₂, 3, 1, 0; 1991 RK₃, 3, 1, 0; 1991 RN₄, 3, 1, 0; 1991 RQ₄, 6, 2, 48; 1991 RQ₅, 6, 2, 48; 1991 RT₅, 3, 1, 0; 1991 RA₁₄, 3, 1, 0; 1991 RH₁₄, 3, 1, 0; 1991 RK₁₅, 3, 1, 0; 1991 RF₁₇, 6, 2, 10; 1991 RD₁₈, 3, 1, 0; 1991 RB₁₉, 3, 1, 0; 1991 RW₂₁, 3, 1, 0; 1991 RJ₂₉, 3, 1, 0; 1991 SV₁, 6, 2, 18; 1991 TY, 3, 1, 0; 1991 TQ₂, 3, 1, 0; 1991 UR₁, 3, 1, 0; 1991 UE₂, 3, 1, 0; 1991 VE₂, 2, 1, 0; 1991 VO₃, 3, 1, 0; 1991 VP₃, 6, 2, 24; 1991 XD, 3, 1, 0; 1991 YC, 3, 1, 0; 1992 AJ₁, 2, 1, 0; 1992 BP₂, 3, 1, 0; 1992 CS₂, 3, 1, 0; 1992 CG₃, 3, 1, 0; 1992 DD₄, 3, 1, 0; 1992 DD₈, 3, 1, 0; 1992 EO, 3, 1, 0; 1992 ER₁, 12, 4, 501; 1992 EP₇, 3, 1, 0; 1992 EW₇, 3, 1, 0; 1992 EZ₇, 6, 2, 1; 1992 EW₉, 6, 2, 19; 1992 EX₉, 3, 1, 0; 1992 ER₁₁, 3, 1, 0; 1992 EW₁₇, 3, 1, 0; 1992 ED₁₈, 9, 3, 480; 1992 GA, 3, 1, 0; 1992 GO, 3, 1, 0; 1992 GE₅, 9, 3, 498; 1992 GC₈, 3, 1, 0; 1992 HD₄, 3, 1, 0; 1992 JU₂, 3, 1, 0; 1992 LQ, 6, 2, 55; 1992 OV₆, 3, 1, 0; 1992 PH₂, 3, 1, 0; 1992 PV₂, 3, 1, 0; 1992 PC₃, 3, 1, 0; 1992 PZ₃, 3, 1, 0; 1992 RU, 3, 1, 0; 1992 RD₁, 3, 1, 0; 1992 RE₂, 3, 1, 0; 1992 RX₆, 3, 1, 0; 1992 SQ₁, 2, 1, 0; 1992 SB₁₃, 3, 1, 0; 1992 SS₁₆, 3, 1, 0; 1992 UJ₅, 6, 2, 12; 1992 UU₅, 3, 1, 0; 1992 UC₆, 3, 1, 0; 1992 UE₆, 3, 1, 0; 1992 UM₉, 2, 1, 0; 1992 XK, 6, 2, 95; 1992 YK, 3, 1, 0; 1993 BD, 9, 3, 490; 1993 BT₁₄, 3, 1, 0; 1993 FL₁, 3, 1, 0; 1993 FQ₁, 3, 1, 0; 1993 FP₁₀, 3, 1, 0; 1993 FS₁₁, 3, 1, 0; 1993 FR₁₃, 3, 1, 0; 1993 FV₁₃, 3, 1, 0; 1993 FS₂₆, 3, 1, 0; 1993 FO₂₇, 3, 1, 0; 1993 FP₂₉, 3, 1, 0; 1993 FS₃₁, 3, 1, 0; 1993 FT₄₂, 6, 2, 28; 1993 FS₄₇, 9, 3, 28; 1993 FE₅₉, 3, 1, 0; 1993 FD₆₇, 3, 1, 0; 1993 FX₇₉, 3, 1, 0; 1993 GK₁, 3, 1, 0; 1993 HW₁, 3, 1, 0; 1993 JB₁, 3, 1, 0; 1993 LF, 3, 1, 0; 1993 LS₁, 3, 1, 0; 1993 NB, 3, 1, 0; 1993 NA₂, 3, 1, 0; 1993 OQ₅, 3, 1, 0; 1993 PV₅, 3, 1, 0; 1993 QH₄, 3, 1, 0; 1993 QX₄, 3, 1, 0; 1993 RS, 3, 1, 0; 1993 RD₂, 3, 1, 0; 1993 RA₃, 3, 1, 0; 1993 RU₆, 6, 1, 0; 1993 RQ₅, 3, 1, 0; 1993 SU₄, 3, 1, 0; 1993 SA₆, 3, 1, 0; 1993 SU₆, 3, 1, 0; 1993 TJ, 3, 1, 0; 1993 TN₂, 3, 1, 0; 1993 TH₁₄, 3, 1, 0; 1993 TL₁₇, 3, 1, 0; 1993 TJ₂₁, 6, 2, 27; 1993 TD₃₇, 3, 1, 0; 1993 VU₁, 3, 1, 0; 1993 VD₄, 3, 1, 0; 1993 VU₇, 3, 1, 0; 1994 BC₁, 3, 1, 0; 1994 CF₂, 3, 1, 0; 1994 CN₉, 3, 1, 0; 1994 EC₂, 9, 3, 3; 1994 EJ₆, 3, 1, 0; 1994 GK₉, 12, 4, 504; 1994 GO₉, 3, 1, 0; 1994 JV₄, 3, 1, 0; 1994 LB₈, 6, 2, 449; 1994 PS, 6, 2, 19; 1994 PJ₁, 3, 1, 0; 1994 PL₄, 3, 1, 0; 1994 PD₁₈, 2, 1, 0; 1994 PG₁₈, 3, 1, 0; 1994 PU₂₉, 3, 1, 0; 1994 PD₃₂, 3, 1, 0; 1994 PO₃₂, 3, 1, 0; 1994 PL₃₄, 3, 1, 0; 1994 PA₃₆, 3, 1, 0; 1994 QR, 3, 1, 0; 1994 QV, 3, 1, 0; 1994 QX, 6, 1, 0; 1994 SH₁₁, 3, 1, 0; 1994 TH₁, 3, 1, 0; 1994 TO₁₅, 3, 1, 0; 1994 UQ₁, 3, 1, 0; 1994 VA, 3, 1, 0; 1994 VR₂, 3, 1, 0; 1994 VW₂, 3, 1, 0; 1994 VU₆, 3, 1, 0; 1994 VP₇, 6, 2, 29; 1994 WS₁, 3, 1, 0; 1994 WV₁, 3, 1, 0; 1994 WF₂, 3, 1, 0; 1994 WW₂, 3, 1, 0; 1994 WP₁₃, 3, 1, 0; 1994 YG, 1, 1, 0; 1994 YK₂, 3, 1, 0; 1994 YM₂, 3, 1, 0; 1995 BQ₂, 6, 2, 23; 1995 BQ₈, 3, 1, 0; 1995 BW₁₁, 9, 3, 37; 1995 CB, 6, 2, 51; 1995 CJ, 3, 1, 0; 1995 DA₃, 3, 1, 0; 1995 DZ₃, 3, 1, 0; 1995 EF, 3, 1, 0; 1995 EP₁, 3, 1, 0; 1995 EY₇, 3, 1, 0; 1995 GC₇, 3, 1, 0; 1995 KE₂, 6, 2, 79; 1995 OH, 3, 1, 0; 1995 QB₂, 3, 1, 0; 1995 QN₂, 2, 1, 0; 1995 QV₃, 6, 2, 49; 1995 SP, 3, 1, 0; 1995 SB₁, 3, 1, 0; 1995 SH₅₃, 9, 3, 72; 1995 ST₅₃, 3, 1, 0; 1995 SF₅₄, 3, 1, 0; 1995 SO₅₄, 3, 1, 0; 1995 UE, 3, 1, 0; 1995 UO₃, 3, 1, 0; 1995 UQ₄, 3, 1, 0; 1995 UP₇, 3, 1, 0; 1995 UB₈, 6, 2, 19; 1995 UL₈, 3, 1, 0; 1995 UN₈, 3, 1, 0;

1995 UY₈, 3, 1, 0; 1995 UC₄₅, 6, 2, 59; 1995 UE₄₅, 9, 2, 1; 1995 UC₄₇, 3, 1, 0; 1995 VA, 3, 1, 0; 1995 VZ, 3, 1, 0; 1995 WM, 3, 1, 0; 1995 WK₁, 3, 1, 0; 1995 WS₁, 3, 1, 0; 1995 WZ₁, 3, 1, 0; 1995 WA₂, 3, 1, 0; 1995 WD₂, 3, 1, 0; 1995 WG₂, 3, 1, 0; 1995 WO₃, 3, 1, 0; 1995 WB₅, 3, 1, 0; 1995 WK₅, 1, 1, 0; 1995 WS₇, 3, 1, 0; 1995 WT₈, 6, 2, 54; 1995 WP₈, 3, 1, 0; 1995 WB₉, 3, 1, 0; 1995 WX₄₂, 6, 2, 23; 1995 XZ, 3, 1, 0; 1995 YB, 3, 1, 0; 1995 YX, 1, 1, 0; 1995 YY, 3, 1, 0; 1995 YA₁, 6, 2, 16; 1995 YH₁, 3, 1, 0; 1995 YQ₁, 12, 4, 28; 1995 YO₃, 3, 1, 0; 1995 YX₃, 3, 1, 0; 1995 YM₄, 6, 2, 28; 1995 YO₇, 6, 2, 3; 1995 YH₁₂, 6, 2, 13; 1995 YS₂₁, 6, 2, 17; 1996 AX₁, 3, 1, 0; 1996 AJ₂, 3, 1, 0; 1996 AP₃, 3, 1, 0; 1996 AW₄, 2, 1, 0; 1996 AD₁₀, 6, 2, 62; 1996 BV₂, 6, 2, 52; 1996 BO₃, 6, 2, 22; 1996 BM₅, 3, 1, 0; 1996 BM₁₇, 3, 1, 0; 1996 CD₂, 3, 1, 0; 1996 CO₂, 6, 2, 23; 1996 CJ₇, 3, 1, 0; 1996 DD₁, 9, 3, 23; 1996 DH₁, 3, 1, 0; 1996 DM₂, 6, 2, 12; 1996 DQ₂, 3, 1, 0; 1996 EB, 6, 2, 5; 1996 EL₁, 3, 1, 0; 1996 EG₂, 3, 1, 0; 1996 FH₅, 9, 3, 72; 1996 GV₁, 3, 1, 0; 1996 GT₂, 6, 2, 32; 1996 LF, 3, 1, 0; 1996 OO₁, 3, 1, 0; 1996 PA, 3, 1, 0; 1996 RC₂₄, 3, 1, 0; 1996 RD₃₃, 3, 1, 0; 1996 TW, 3, 1, 0; 1996 TN₄₉, 3, 1, 0; 1996 VO₄, 3, 1, 0; 1996 XM₂, 3, 1, 0; 1996 XZ₃₁, 3, 1, 0; 1996 XH₃₃, 3, 1, 0; 1997 AV, 3, 1, 0; 1997 AQ₁, 6, 2, 28; 1997 AD₂, 3, 1, 0; 1997 AJ₂, 3, 1, 0; 1997 AH₅, 2, 1, 0; 1997 AN₅, 3, 1, 0; 1997 AM₇, 3, 1, 0; 1997 AU₁₀, 3, 1, 0; 1997 AC₁₃, 3, 1, 0; 1997 AM₁₃, 3, 1, 0; 1997 AS₁₃, 12, 4, 25; 1997 AC₁₈, 6, 2, 79; 1997 AN₂₃, 6, 1, 0; 1997 BC₃, 3, 1, 0; 1997 BD₃, 6, 2, 1; 1997 BG₃, 3, 1, 0; 1997 CS, 3, 1, 0; 1997 CE₈, 6, 2, 552; 1997 CC₁₇, 3, 1, 0; 1997 CS₁₉, 3, 1, 0; 1997 CV₂₁, 3, 1, 0; 1997 CL₂₆, 3, 1, 0; 1997 CY₂₇, 3, 1, 0; 1997 CF₂₉, 3, 1, 0; 1997 CK₂₉, 3, 1, 0; 1997 DL, 3, 1, 0; 1997 EQ₂, 3, 1, 0; 1997 ER₅, 6, 2, 17; 1997 EO₇, 3, 1, 0; 1997 EK₁₆, 6, 2, 17; 1997 EW₂₅, 3, 1, 0; 1997 EO₃₀, 6, 2, 23; 1997 EB₅₄, 1, 1, 0; 1997 EB₅₇, 3, 1, 0; 1997 FG₄, 3, 1, 0; 1997 FH₄, 12, 4, 483; 1997 FM₄, 3, 1, 0; 1997 FC₅, 3, 1, 0; 1997 GU₃, 3, 1, 0; 1997 GB₇, 3, 1, 0; 1997 GQ₇, 3, 1, 0; 1997 GZ₉, 3, 1, 0; 1997 GS₁₆, 3, 1, 0; 1997 GF₁₇, 3, 1, 0; 1997 GB₁₉, 3, 1, 0; 1997 GX₂₁, 3, 1, 0; 1997 GC₂₂, 2, 1, 0; 1997 GQ₂₂, 3, 1, 0; 1997 GS₂₂, 3, 1, 0; 1997 GZ₂₂, 6, 2, 25; 1997 GJ₂₃, 3, 1, 0; 1997 GA₂₆, 3, 1, 0; 1997 GP₃₆, 3, 1, 0; 1997 GA₃₈, 3, 1, 0; 1997 GQ₄₀, 3, 1, 0; 1997 GQ₄₁, 6, 2, 12; 1997 HQ₁, 3, 1, 0; 1997 HY₉, 12, 4, 472; 1997 HP₁₁, 2, 1, 0; 1997 JV₇, 6, 2, 21; 1997 JB₁₅, 3, 1, 0; 1997 JJ₁₅, 3, 1, 0; 1997 JT₁₅, 6, 2, 17; 1997 KA, 3, 1, 0; 1997 KU₂, 6, 2, 21; 1997 LB₁, 3, 1, 0; 1997 LU₁, 3, 1, 0; 1997 LH₉, 3, 1, 0; 1997 LE₁₀, 12, 4, 502; 1997 MG₁, 6, 2, 21; 1997 MJ₂, 3, 1, 0; 1997 MC₃, 5, 1, 0; 1997 MV₄, 3, 1, 0; 1997 MR₈, 3, 1, 0; 1997 MB₉, 3, 1, 0; 1997 NG₃, 3, 1, 0; 1997 NG₆, 3, 1, 0; 1997 NE₁₁, 3, 1, 0; 1997 OA, 6, 2, 33; 1997 OZ₁, 3, 1, 0; 1997 OV₂, 3, 1, 0; 1997 PV₃, 3, 1, 0; 1997 PL₅, 3, 1, 0; 1997 QF, 3, 1, 0; 1997 QQ₂, 9, 3, 105; 1997 QG₄, 3, 1, 0; 1997 RF, 3, 1, 0; 1997 RB₇, 3, 1, 0; 1997 SH, 3, 1, 0; 1997 SM₃, 3, 1, 0; 1997 SL₁₆, 3, 1, 0; 1997 SG₂₅, 3, 1, 0; 1997 TK₁, 3, 1, 0; 1997 TB₂₈, 6, 2, 34; 1997 WQ₁₁, 3, 1, 0; 1997 WB₃₇, 3, 1, 0; 1998 BL₁₄, 6, 2, 40; 1998 DT₇, 3, 1, 0; 1998 DQ₁₀, 6, 1, 0; 1998 EP₃, 3, 1, 0; 1998 EE₁₀, 3, 1, 0; 1998 EQ₁₀, 3, 1, 0; 1998 FM₈, 3, 1, 0; 1998 FB₁₂, 3, 1, 0; 1998 FG₃₀, 3, 1, 0; 1998 FN₄₃, 3, 1, 0; 1998 FL₄₉, 3, 1, 0; 1998 FQ₄₉, 3, 1, 0; 1998 FW₅₀, 3, 1, 0; 1998 FN₅₂, 3, 1, 0; 1998 FO₅₂, 3, 1, 0; 1998 FM₅₄, 3, 1, 0; 1998 FN₅₅, 3, 1, 0; 1998 FZ₅₅, 3, 1, 0; 1998 FS₅₇, 3, 1, 0; 1998 FL₆₀, 3, 1, 0; 1998 FD₆₁, 2, 1, 0; 1998 FG₆₁, 3, 1, 0; 1998 FS₆₃, 3, 1, 0; 1998 FZ₆₃, 6, 2, 116; 1998 FP₆₄, 3, 1, 0; 1998 FC₆₆, 3, 1, 0; 1998 FK₆₇, 6, 1, 0; 1998 FS₆₈, 3, 1, 0; 1998 FQ₆₉, 3, 1, 0; 1998 FA₇₀, 3, 1, 0; 1998 FR₇₂, 3, 1, 0; 1998 FG₇₇, 3, 1, 0; 1998 FM₇₈, 3, 1, 0; 1998 FS₇₈, 3, 1, 0; 1998 FV₉₀, 6, 2, 13; 1998 FB₁₀₆, 3, 1, 0; 1998 FP₁₁₃, 3, 1, 0; 1998 FK₁₁₅, 3, 1, 0; 1998 FC₁₁₆, 3, 1, 0; 1998 FC₁₁₇, 3, 1, 0; 1998 FB₁₁₈, 3, 1, 0; 1998 FC₁₁₈, 3, 1, 0; 1998 FN₁₂₆, 3, 1, 0; 1998 GO₁, 3, 1, 0; 1998 HX₂, 9, 2, 1; 1998 HT₄, 3, 1, 0; 1998 HU₅, 3, 1, 0; 1998 HU₆, 3, 1, 0; 1998 HL₇, 3, 1, 0; 1998 HT₈, 3, 1, 0; 1998 HB₁₁, 6, 2, 54; 1998 HG₂₆, 3, 1, 0; 1998 HO₂₇, 9, 2, 1; 1998 HD₃₂, 3, 1, 0; 1998 HR₃₄, 3, 1, 0; 1998 HT₄₂, 3, 1, 0; 1998 HU₄₃, 3, 1, 0; 1998 HW₅₀, 3, 1, 0; 1998 HJ₅₁, 8, 2, 1; 1998 HU₅₁, 3, 1, 0; 1998 HO₅₂, 6, 2, 23; 1998 HM₆₁, 12, 4, 61; 1998 HX₆₁, 6, 2, 31; 1998 HR₆₇, 3, 1, 0; 1998 HQ₇₃, 3, 1, 0; 1998 HT₇₈, 3, 1, 0; 1998 HX₇₈, 3, 1, 0; 1998 HK₈₂, 3, 1, 0; 1998 HF₈₄, 3, 1, 0; 1998 HB₈₇, 3, 1, 0; 1998 HF₈₉, 3, 1, 0; 1998 HE₉₀, 3, 1, 0; 1998 HL₉₁, 6, 2, 1; 1998 HQ₉₃, 3, 1, 0; 1998 HK₉₄, 3, 1, 0; 1998 HV₉₇, 3, 1, 0; 1998 HA₉₈, 3, 1, 0; 1998 HY₁₀₀, 6, 2, 27; 1998 HS₁₀₂, 3, 1, 0; 1998 HC₁₀₈, 6, 2, 29; 1998 HX₁₁₀, 18, 5, 97; 1998 HN₁₁₁, 6, 2, 13; 1998 HB₁₁₄, 3, 1, 0; 1998 HO₁₁₇, 6, 2, 1; 1998 HA₁₂₀, 6, 2, 442; 1998 HA₁₂₁, 6, 2, 26; 1998 HN₁₂₃, 6, 2, 10; 1998 HK₁₂₄, 3, 1, 0; 1998 HQ₁₃₄, 6, 2, 13; 1998 HN₁₃₉, 9, 3, 96; 1998 HP₁₃₉, 3, 1, 0; 1998 HC₁₄₁, 3, 1, 0; 1998 HK₁₄₃, 6, 2, 1; 1998 HA₁₄₈, 3, 1, 0; 1998 HD₁₄₉, 3, 1, 0; 1998 HT₁₄₉, 6, 2, 96; 1998 JJ₁, 9, 3, 23; 1998 JT₁, 3, 1, 0; 1998 JY₁, 3, 1, 0; 1998 JF₂, 3, 1, 0; 1998 JP₂, 6, 2, 10; 1998 JK₄, 2, 17; 1998 KZ, 3, 1, 0; 1998 KJ₃, 3, 1, 0; 1998 KP₃, 3, 1, 0; 1998 KB₄, 6, 2, 17; 1998 KC₅, 3, 1, 0; 1998 KE₅, 3, 1, 0; 1998 KD₈, 6, 2, 578; 1998 KA₉, 15, 5, 155; 1998 KB₉, 9, 3, 96; 1998 KC₁₄, 6, 2, 27; 1998 KD₂₁, 3, 1, 0; 1998 KJ₂₅, 6, 2, 67; 1998 KW₂₅, 3, 1, 0; 1998 KQ₂₈, 3, 1, 0; 1998 KU₃₃, 3, 1, 0; 1998 KZ₃₃, 3, 1, 0; 1998 KD₃₈, 6, 2, 1; 1998 KS₃₈, 3, 1, 0; 1998 KS₄₀, 3, 1, 0; 1998 KM₄₁, 3, 1, 0; 1998 KT₄₃, 3, 1, 0; 1998 KA₄₅, 3, 1, 0; 1998 KW₄₆, 6, 2, 1; 1998 KV₄₇, 3, 1, 0; 1998 KX₄₇, 3, 1, 0; 1998 KZ₄₇, 3, 1, 0; 1998 KS₄₈, 9, 3, 27; 1998 KG₅₁, 6, 2, 21; 1998 KS₅₁, 3, 1, 0; 1998 KO₅₃, 6, 2, 421; 1998 KS₅₃, 6, 2, 83; 1998 KR₅₄, 3, 1, 0; 1998 KT₅₅, 9, 3, 46; 1998 KC₅₆, 9, 2, 1; 1998 KM₅₈, 3, 1, 0; 1998 KN₆₃, 6, 2, 475; 1998 MQ₈, 6, 2, 10; 1998 MR₁₅, 3, 1, 0; 1998 MP₂₃, 9, 3, 96; 1998 MZ₂₃, 9, 3, 12; 1998 MS₂₄, 9, 3, 23; 1998 MF₃₂, 3, 1, 0; 1998 MN₃₃, 6, 2, 27; 1998 MF₃₇, 6, 2, 19; 1998 MN₃₇, 3, 1, 0; 1998 MS₃₇, 3, 1, 0; 1998 MH₄₇, 3, 1, 0; 1998 NT, 3, 1, 0; 1998 NV, 3, 1, 0; 1998 OM, 3, 1, 0; 1998 OR, 3, 1, 0; 1998 OS, 3, 1, 0; 1998 OZ₄, 3, 1, 0; 1998 OZ₆, 3, 1, 0; 1998 OE₇, 3, 1, 0; 1998 OG₇, 3, 1, 0; 1998 OR₈, 3, 1, 0; 1998 OQ₁₀, 3, 1, 0; 1998 ON₁₁, 3, 1, 0; 1998 OA₁₂, 3, 1, 0; 1998 OG₁₂, 5, 2, 7; 1998 OB₁₃, 6, 2, 32; 1998 ON₁₃, 3, 1, 0; 1998 OH₁₄, 3, 1, 0; 1998 OZ₁₄, 3, 1, 0; 1998 PC, 3, 1, 0; 1998 PL, 3, 1, 0; 1998 PV, 9, 3, 54;

1998 QB, 3, 1, 0; 1998 QU₂, 6, 2, 19; 1998 QF₃, 3, 1, 0; 1998 QF₇, 6, 2, 20; 1998 QU₇, 6, 2, 25; 1998 QC₈, 6, 2, 28; 1998 QQ₈, 6, 2, 17; 1998 QK₉, 3, 1, 0; 1998 QS₉, 3, 1, 0; 1998 QB₁₀, 6, 2, 43; 1998 QX₁₀, 3, 1, 0; 1998 QU₁₀, 3, 1, 0; 1998 QX₁₀, 12, 4, 540; 1998 QA₁₄, 3, 1, 0; 1998 QB₁₈, 12, 4, 522; 1998 QT₁₈, 3, 1, 0; 1998 QY₂₁, 3, 1, 0; 1998 QA₂₂, 6, 2, 32; 1998 QW₂₂, 3, 1, 0; 1998 QF₂₃, 3, 1, 0; 1998 QP₂₃, 3, 1, 0; 1998 QM₃₀, 3, 1, 0; 1998 QG₃₁, 3, 1, 0; 1998 QP₃₁, 9, 3, 25; 1998 QK₃₄, 9, 3, 52; 1998 QB₃₅, 6, 2, 18; 1998 QM₃₇, 6, 2, 12; 1998 QW₃₇, 3, 1, 0; 1998 QC₃₈, 6, 2, 10; 1998 QF₃₈, 3, 1, 0; 1998 QS₃₈, 3, 1, 0; 1998 QF₄₀, 3, 1, 0; 1998 QN₄₁, 6, 2, 19; 1998 QD₄₂, 3, 1, 0; 1998 QM₄₂, 3, 1, 0; 1998 QB₄₃, 6, 2, 20; 1998 QU₄₅, 3, 1, 0; 1998 QG₄₆, 3, 1, 0; 1998 QW₄₈, 9, 3, 54; 1998 QW₅₀, 6, 2, 13; 1998 QZ₅₀, 3, 1, 0; 1998 QT₅₁, 3, 1, 0; 1998 QK₅₂, 3, 1, 0; 1998 QB₅₃, 9, 3, 95; 1998 QN₅₃, 9, 3, 27; 1998 QR₅₃, 3, 1, 0; 1998 QW₅₃, 3, 1, 0; 1998 QA₅₄, 3, 1, 0; 1998 QE₅₄, 3, 1, 0; 1998 QK₅₄, 3, 1, 0; 1998 QZ₅₄, 3, 1, 0; 1998 QB₅₅, 9, 3, 28; 1998 QF₅₅, 3, 1, 0; 1998 QO₆₀, 3, 1, 0; 1998 QY₆₀, 6, 2, 1; 1998 QX₆₃, 3, 1, 0; 1998 QH₆₅, 6, 2, 48; 1998 QW₆₅, 12, 4, 113; 1998 QY₆₅, 3, 1, 0; 1998 QK₆₆, 6, 2, 40; 1998 QL₆₆, 6, 2, 40; 1998 QS₆₆, 3, 1, 0; 1998 QX₆₆, 6, 2, 31; 1998 QV₆₇, 3, 1, 0; 1998 QG₆₉, 3, 1, 0; 1998 QV₆₉, 3, 1, 0; 1998 QF₇₀, 3, 1, 0; 1998 QW₇₀, 3, 1, 0; 1998 QD₇₃, 3, 1, 0; 1998 QO₇₅, 3, 1, 0; 1998 QT₇₅, 6, 2, 29; 1998 QI₇₆, 3, 1, 0; 1998 QY₇₆, 3, 1, 0; 1998 QX₇₇, 3, 1, 0; 1998 QD₇₉, 9, 3, 426; 1998 QL₈₄, 3, 1, 0; 1998 QF₈₅, 3, 1, 0; 1998 QW₈₅, 3, 1, 0; 1998 QG₈₆, 3, 1, 0; 1998 QY₈₇, 3, 1, 0; 1998 QJ₈₈, 3, 1, 0; 1998 QU₈₈, 9, 3, 45; 1998 QE₈₉, 3, 1, 0; 1998 QP₈₉, 3, 1, 0; 1998 QE₉₀, 3, 1, 0; 1998 QF₉₀, 9, 3, 59; 1998 QG₉₀, 3, 1, 0; 1998 QS₉₃, 3, 1, 0; 1998 QM₉₄, 3, 1, 0; 1998 QX₉₄, 3, 1, 0; 1998 QC₉₅, 3, 1, 0; 1998 QN₉₆, 6, 2, 42; 1998 QZ₉₆, 3, 1, 0; 1998 QO₁₀₀, 6, 2, 25; 1998 QC₁₀₁, 3, 1, 0; 1998 QP₁₀₂, 12, 4, 407; 1998 QL₁₀₃, 3, 1, 0; 1998 QU₁₀₃, 6, 2, 12; 1998 QL₁₀₅, 3, 1, 0; 1998 QM₁₀₆, 3, 1, 0; 1998 QR₁₀₇, 3, 1, 0; 1998 RE, 3, 1, 0; 1998 RM, 3, 1, 0; 1998 RC₁, 3, 1, 0; 1998 RJ₁, 6, 2, 12; 1998 RB₂, 3, 1, 0; 1998 RL₆, 3, 1, 0; 1998 RV₁₂, 3, 1, 0; 1998 RU₁₅, 3, 1, 0; 1998 RR₁₆, 3, 1, 0; 1998 RT₁₆, 9, 3, 72; 1998 RS₁₇, 9, 3, 492; 1998 RM₁₈, 3, 1, 0; 1998 RW₁₉, 3, 1, 0; 1998 RL₂₀, 3, 1, 0; 1998 RU₂₀, 12, 4, 144; 1998 RF₃₁, 6, 2, 16; 1998 RO₃₁, 3, 1, 0; 1998 RK₃₃, 3, 1, 0; 1998 RP₃₄, 12, 4, 85; 1998 RS₃₈, 12, 4, 384; 1998 RA₃₉, 3, 1, 0; 1998 RJ₃₉, 3, 1, 0; 1998 RO₄₄, 3, 1, 0; 1998 RK₄₇, 6, 1, 0; 1998 RY₄₇, 3, 1, 0; 1998 RG₄₉, 3, 1, 0; 1998 RQ₄₉, 3, 1, 0; 1998 RY₅₁, 3, 1, 0; 1998 RK₅₅, 3, 1, 0; 1998 RZ₅₅, 3, 1, 0; 1998 RC₅₆, 3, 1, 0; 1998 RJ₅₇, 3, 1, 0; 1998 RL₅₇, 3, 1, 0; 1998 RT₅₈, 3, 1, 0; 1998 RV₅₈, 3, 1, 0; 1998 RU₅₉, 3, 1, 0; 1998 RN₆₀, 6, 2, 22; 1998 RO₆₀, 3, 1, 0; 1998 RW₆₀, 3, 1, 0; 1998 RY₆₀, 3, 1, 0; 1998 RL₆₁, 3, 1, 0; 1998 RD₆₂, 3, 1, 0; 1998 RN₆₂, 3, 1, 0; 1998 RX₆₂, 3, 1, 0; 1998 RY₆₂, 3, 1, 0; 1998 RC₆₆, 3, 1, 0; 1998 RK₆₆, 6, 2, 437; 1998 RZ₆₆, 3, 1, 0; 1998 RE₆₇, 3, 1, 0; 1998 RA₆₈, 3, 1, 0; 1998 RS₆₈, 3, 1, 0; 1998 RG₆₉, 6, 2, 438; 1998 RP₆₉, 6, 2, 27; 1998 RH₇₁, 3, 1, 0; 1998 RM₇₁, 3, 1, 0; 1998 RA₇₂, 3, 1, 0; 1998 RR₇₂, 3, 1, 0; 1998 RL₇₃, 3, 1, 0; 1998 RQ₇₃, 3, 1, 0; 1998 RP₇₄, 3, 1, 0; 1998 RJ₇₅, 6, 2, 5; 1998 RK₇₅, 3, 1, 0; 1998 RH₇₆, 3, 1, 0; 1998 RB₇₇, 3, 1, 0; 1998 RR₇₇, 3, 1, 0; 1998 RY₇₇, 3, 1, 0; 1998 RD₇₉, 3, 1, 0; 1998 RL₇₉, 3, 1, 0; 1998 RZ₇₉, 3, 1, 0; 1998 SQ₃, 1, 0; 1998 SN₁, 6, 2, 44; 1998 SV₁, 3, 1, 0; 1998 SG₅, 3, 1, 0; 1998 SQ₁₄, 3, 1, 0; 1998 SV₁₄, 3, 1, 0; 1998 SY₁₅, 3, 1, 0; 1998 SX₁₆, 3, 1, 0; 1998 SG₂₄, 3, 1, 0; 1998 SH₂₅, 3, 1, 0; 1998 SY₂₅, 3, 1, 0; 1998 SN₂₇, 3, 1, 0; 1998 SS₂₇, 6, 2, 31; 1998 SB₂₈, 3, 1, 0; 1998 SE₄₇, 3, 1, 0; 1998 SF₅₃, 3, 1, 0; 1998 SY₅₃, 3, 1, 0; 1998 SN₅₄, 3, 1, 0; 1998 ST₅₆, 3, 1, 0; 1998 SY₅₇, 3, 1, 0; 1998 SH₅₈, 3, 1, 0; 1998 SM₅₈, 2, 1, 0; 1998 SR₅₈, 3, 1, 0; 1998 SU₅₉, 3, 1, 0; 1998 SY₅₉, 3, 1, 0; 1998 SE₆₀, 3, 1, 0; 1998 SC₆₀, 6, 2, 12; 1998 SK₆₁, 3, 1, 0; 1998 SQ₆₁, 3, 1, 0; 1998 SS₆₁, 3, 1, 0; 1998 SY₆₁, 9, 3, 498

3, 1, 0; 1998 YF₇, 3, 1, 0; 1998 YF₁₂, 3, 1, 0; 1999 AM₆, 3, 1, 0; 1999 AG₂₄, 3, 1, 0; 1999 DC, 3, 1, 0; 1999 FW₂₅, 3, 1, 0; 1999 GP₉, 3, 1, 0; 1999 JJ, 3, 1, 0; 1999 JN₁₇, 3, 1, 0; 1999 JS₂₄, 3, 1, 0; 1999 JK₄₁, 3, 1, 0; 1999 JS₅₄, 3, 1, 0; 1999 JG₅₈, 3, 1, 0; 1999 JB₉₃, 3, 1, 0; 1999 JA₁₃₆, 3, 1, 0; 1999 JE₁₃₆ *, 3, 1, 0; 1999 JF₁₃₆ *, 3, 1, 0; 1999 JM₁₃₆ *, 3, 1, 0; 1999 JN₁₃₆ *, 3, 1, 0; 1999 JQ₁₃₆ *, 3, 1, 0; 1999 JS₁₃₆, 3, 1, 0; 1999 JT₁₃₆, 3, 1, 0; 1999 JU₁₃₆, 3, 1, 0; 1999 JV₁₃₆, 3, 1, 0; 1999 KR₄, 3, 1, 0; 1999 KK₆, 6, 2, 1; 1999 KA₈, 3, 1, 0; 1999 KV₁₆, 3, 1, 0; 1999 KY₁₆, 3, 1, 0; 1999 LT₈, 3, 1, 0; 1999 LV₈, 3, 1, 0; 1999 LE₉, 3, 1, 0; 1999 LK₁₀, 3, 1, 0; 1999 LS₁₁, 3, 1, 0; 1999 LM₃₂ *, 3, 1, 0; 1999 LP₃₂ *, 3, 1, 0; 1999 LQ₃₂ *, 3, 1, 0; 1999 LS₃₂ *, 3, 1, 0; 1999 LT₃₂ *, 3, 1, 0; 1999 LU₃₂ *, 3, 1, 0; 1999 LY₃₂, 3, 1, 0; 1999 LA₃₃, 3, 1, 0; 1999 LB₃₃, 3, 1, 0; 1999 LC₃₃, 3, 1, 0; 1999 LD₃₃, 3, 1, 0; 1999 LE₃₃, 3, 1, 0; 1999 LF₃₃, 3, 1, 0; 1999 LG₃₃, 3, 1, 0; 1999 LH₃₃, 3, 1, 0; 1999 LJ₃₃, 3, 1, 0; 1999 LL₃₃ *, 3, 1, 0; 1999 LM₃₃, 3, 1, 0; 1999 LT₃₄ *, 3, 1, 0; 1999 LV₃₄ *, 3, 1, 0; 1999 LZ₃₄ *, 3, 1, 0; 1999 LH₃₅, 3, 1, 0; 1999 MJ₁, 3, 1, 0; 1999 NT, 2, 1, 0; 1999 NP₂, 3, 1, 0; 1999 NT₄, 3, 1, 0; 1999 NV₆, 3, 1, 0; 1999 NS₁₇, 3, 1, 0; 1999 NX₁₇, 3, 1, 0; 1999 NB₁₈, 3, 1, 0; 1999 NG₁₈, 3, 1, 0; 1999 NH₁₈, 3, 1, 0; 1999 ND₂₃, 6, 2, 2; 1999 ND₂₄, 3, 1, 0; 1999 NG₃₃, 3, 1, 0; 1999 NS₃₃, 3, 1, 0; 1999 NP₃₉, 3, 1, 0; 1999 NF₄₀, 3, 1, 0; 1999 NK₄₁, 3, 1, 0; 1999 NC₄₉, 3, 1, 0; 1999 NC₅₇, 6, 2, 1; 1999 NM₆₄, 3, 1, 0; 1999 NO₆₄, 3, 1, 0; 1999 NP₆₄, 3, 1, 0; 1999 NQ₆₄, 3, 1, 0; 1999 NR₆₄, 3, 1, 0; 1999 NS₆₄, 3, 1, 0; 1999 NT₆₄, 3, 1, 0; 1999 NU₆₄, 3, 1, 0; 1999 NV₆₄, 3, 1, 0; 1999 NW₆₄, 3, 1, 0; 1999 NX₆₄, 3, 1, 0; 1999 NY₆₄, 3, 1, 0; 1999 NZ₆₄, 3, 1, 0; 1999 NA₆₅, 3, 1, 0; 1999 NB₆₅, 3, 1, 0; 1999 NC₆₅, 3, 1, 0; 1999 ND₆₅, 3, 1, 0; 1999 OY₂, 3, 1, 0; 1999 OB₃, 3, 1, 0; 1999 OG₃, 3, 1, 0; 1999 OH₃, 3, 1, 0; 1999 OJ₃, 3, 1, 0; 1999 OP₄, 3, 1, 0; 1999 OU₄, 3, 1, 0; 1999 OV₄, 3, 1, 0; 1999 OX₄, 3, 1, 0; 1999 OZ₄, 3, 1, 0; 1999 OA₅, 3, 1, 0; 1999 OB₅, 3, 1, 0; 1999 OC₅, 3, 1, 0; 1999 OD₅, 3, 1, 0; 1999 OE₅ *, 3, 1, 0; 1999 PX₃, 3, 1, 0; 1999 PP₄, 3, 1, 0; 1999 PT₄, 3, 1, 0; 1999 PR₇, 3, 1, 0; 1999 PY₇ *, 3, 1, 0; 1999 PZ₇ *, 3, 1, 0; 1999 PA₈ *, 3, 1, 0; 1999 PB₈ *, 3, 1, 0; 1999 PC₈ *, 3, 1, 0; 1999 PD₈ *, 3, 1, 0; 1999 PE₈ *, 3, 1, 0; 1999 PF₈ *, 3, 1, 0; 1999 PG₈ *, 3, 1, 0; 1999 PJ₈ *, 3, 1, 0; 1999 PK₈ *, 3, 1, 0; 1999 QQ₁, 3, 1, 0; 1999 QV₁, 5, 2, 1; 1999 RS, 3, 1, 0; 1999 RU₁, 3, 1, 0; 1999 RW₁, 3, 1, 0; 1999 RD₂, 3, 1, 0; 1999 RE₂, 3, 1, 0; 1999 RD₃, 3, 1, 0; 1999 RK₉, 3, 1, 0; 1999 RC₁₀, 3, 1, 0; 1999 RJ₁₀, 15, 5, 100; 1999 RX₁₀, 3, 1, 0; 1999 RL₁₁, 3, 1, 0; 1999 RO₁₄, 3, 1, 0; 1999 RX₁₄, 3, 1, 0; 1999 RS₁₅, 3, 1, 0; 1999 RE₁₆, 3, 1, 0; 1999 RJ₁₆, 3, 1, 0; 1999 RY₁₇, 3, 1, 0; 1999 RN₁₈, 3, 1, 0; 1999 RR₁₈, 3, 1, 0; 1999 RT₁₉, 3, 1, 0; 1999 RZ₂₀, 3, 1, 0; 1999 RY₂₁, 3, 1, 0; 1999 RB₂₂, 3, 1, 0; 1999 RH₂₃, 3, 1, 0; 1999 RB₂₄, 3, 1, 0; 1999 RK₂₅, 3, 1, 0; 1999 RL₂₅, 3, 1, 0; 1999 RN₂₅, 3, 1, 0; 1999 RX₂₅, 3, 1, 0; 1999 RG₂₇, 6, 2, 2; 1999 RD₃₁, 6, 2, 16; 1999 RJ₃₁, 6, 2, 541; 1999 RK₃₁, 3, 1, 0; 1999 RM₃₁, 3, 1, 0; 1999 RR₃₁, 3, 1, 0; 1999 RJ₃₂, 3, 1, 0; 1999 RW₃₂, 3, 1, 0; 1999 RO₃₄, 3, 1, 0; 1999 RZ₃₄, 6, 2, 59; 1999 RT₃₅, 3, 1, 0; 1999 RG₃₆, 3, 1, 0; 1999 RW₃₇, 3, 1, 0; 1999 RC₃₈, 3, 1, 0; 1999 RN₃₈, 3, 1, 0; 1999 RO₃₈, 6, 2, 1; 1999 RJ₃₉, 3, 1, 0; 1999 RL₃₉, 3, 1, 0; 1999 RM₃₉, 3, 1, 0; 1999 RN₃₉, 3, 1, 0; 1999 RV₃₉, 5, 2, 33; 1999 RC₄₀, 3, 1, 0; 1999 RK₄₀, 3, 1, 0; 1999 RZ₄₁, 3, 1, 0; 1999 RH₄₂, 3, 1, 0; 1999 RL₄₂, 3, 1, 0; 1999 RP₄₂, 3, 1, 0; 1999 RW₄₂, 3, 1, 0; 1999 RC₄₃, 3, 1, 0; 1999 RT₄₃, 3, 1, 0; 1999 RU₄₃, 9, 3, 612; 1999 RB₄₄, 3, 1, 0; 1999 RH₄₄, 3, 1, 0; 1999 RT₄₄, 6, 2, 1; 1999 RC₄₅, 3, 1, 0; 1999 RE₄₆, 3, 1, 0; 1999 RE₄₇, 6, 2, 1; 1999 RF₄₇, 6, 2, 71; 1999 RN₄₇, 6, 2, 69; 1999 RT₄₇, 3, 1, 0; 1999 RG₄₈, 3, 1, 0; 1999 RC₄₉, 3, 1, 0; 1999 RS₅₀, 3, 1, 0; 1999 RV₅₀, 3, 1, 0; 1999 RB₅₂, 3, 1, 0; 1999 RW₅₂, 3, 1, 0; 1999 RG₅₅, 3, 1, 0; 1999 RS₅₇, 3, 1, 0; 1999 RF₆₂, 3, 1, 0; 1999 RL₆₄, 3, 1, 0; 1999 RA₈₃, 3, 1, 0; 1999 RU₈₃, 3, 1, 0; 1999 RV₈₅, 3, 1, 0; 1999 RG₈₆, 3, 1, 0; 1999 RA₈₇, 6, 2, 11; 1999 RJ₈₇, 3, 1, 0; 1999 RS₈₉, 6, 2, 10; 1999 RV₉₀, 6, 2, 24; 1999 RR₉₀, 3, 1, 0; 1999 RU₉₀, 3, 1, 0; 1999 RB₉₃, 3, 1, 0; 1999 RJ₉₃, 3, 1, 0; 1999 RO₉₄, 9, 3, 130; 1999 RS₉₅, 6, 2, 14; 1999 RV₉₅, 3, 1, 0; 1999 RE₁₀₂, 3, 1, 0; 1999 RN₁₀₂, 3, 1, 0; 1999 RA₁₀₃, 3, 1, 0; 1999 RQ₁₁₂, 3, 1, 0; 1999 RW₁₁₄, 3, 1, 0; 1999 RZ₁₁₅, 9, 3, 43; 1999 RE₁₁₇, 3, 1, 0; 1999 RT₁₁₇, 3, 1, 0; 1999 RE₁₂₀, 3, 1, 0; 1999 RF₁₂₅, 3, 1, 0; 1999 RX₁₂₇, 3, 1, 0; 1999 RT₁₂₈, 3, 1, 0; 1999 RS₁₂₉, 3, 1, 0; 1999 RV₁₂₉, 3, 1, 0; 1999 RL₁₃₀, 3, 1, 0; 1999 RA₁₃₃, 3, 1, 0; 1999 RB₁₃₃, 6, 2, 55; 1999 RX₁₃₄, 3, 1, 0; 1999 RJ₁₃₅, 3, 1, 0; 1999 RZ₁₃₈, 3, 1, 0; 1999 RP₁₃₉, 3, 1, 0; 1999 RE₁₄₂, 3, 1, 0; 1999 RJ₁₄₂, 3, 1, 0; 1999 RV₁₄₂, 3, 1, 0; 1999 RQ₁₄₅, 6, 2, 14; 1999 RY₁₄₇, 3, 1, 0; 1999 RA₁₄₉, 6, 2, 23; 1999 RC₁₄₉, 6, 2, 1; 1999 RW₁₄₉, 3, 1, 0; 1999 RM₁₅₁, 3, 1, 0; 1999 RX₁₅₂, 3, 1, 0; 1999 RS₁₅₆, 3, 1, 0; 1999 RA₁₅₈, 6, 2, 107; 1999 RB₁₅₈, 3, 1, 0; 1999 RF₁₅₉, 3, 1, 0; 1999 RN₁₆₀, 3, 1, 0; 1999 RO₁₆₁, 3, 1, 0; 1999 RO₁₆₁, 3, 1, 0; 1999 RO₁₆₂, 3, 1, 0; 1999 RJ₁₆₃, 3, 1, 0; 1999 RV₁₆₅, 3, 1, 0; 1999 RJ₁₆₆, 3, 1, 0; 1999 RJ₁₆₇, 2, 1, 0; 1999 RZ₁₆₇, 9, 3, 49; 1999 RA₁₆₈, 3, 1, 0; 1999 RV₁₆₈, 6, 2, 1; 1999 RH₁₆₉, 3, 1, 0; 1999 RH₁₇₀, 3, 1, 0; 1999 RO₁₇₂, 6, 2, 19; 1999 RM₁₇₆, 3, 1, 0; 1999 RN₁₇₈, 3, 1, 0; 1999 RW₁₇₉, 3, 1, 0; 1999 RE₁₉₀, 3, 1, 0; 1999 RS₁₉₀, 3, 1, 0; 1999 RZ₁₉₀, 6, 2, 26; 1999 RC₁₉₃, 3, 1, 0; 1999 RV₁₉₃, 3, 1, 0; 1999 RS₁₉₄, 3, 1, 0; 1999 RX₁₉₆, 6, 2, 32; 1999 RM₁₉₉, 3, 1, 0; 1999 RO₁₉₉, 3, 1, 0; 1999 RA₂₀₄, 3, 1, 0; 1999 RW₂₀₅, 3, 1, 0; 1999 RR₂₀₆, 3, 1, 0; 1999 RT₂₀₆, 3, 1, 0; 1999 RU₂₀₆, 3, 1, 0; 1999 RC₂₀₇, 3, 1, 0; 1999 RR₂₀₇, 3, 1, 0; 1999 RY₂₀₇, 6, 1, 0; 1999 RA₂₀₈, 3, 1, 0; 1999 RC₂₀₈, 3, 1, 0; 1999 RC₂₀₉, 3, 1, 0; 1999 RX₂₀₉, 3, 1, 0; 1999 RO₂₁₀, 3, 1, 0; 1999 RS₂₁₀, 3, 1, 0; 1999 RF₂₁₁, 6, 2, 557; 1999 RS₂₁₁, 3, 1, 0; 1999 RD₂₁₂, 3, 1, 0; 1999 RA₂₁₃, 3, 1, 0; 1999 RM₂₁₄, 3, 1, 0; 1999 RO₂₁₄, 3, 1, 0; 1999 RL₂₁₅ *, 6, 2, 1; 1999 ST₁, 3, 1, 0; 1999 SU₁, 3, 1, 0; 1999 SF₂, 3, 1, 0; 1999 SH₂, 3, 1, 0; 1999 SV₂, 3, 1, 0; 1999 SP₃, 3, 1, 0; 1999 SP₄, 3, 1, 0; 1999 SB₅, 6, 2, 1; 1999 SP₅, 3, 1, 0; 1999 SH₆, 3, 1, 0; 1999 SV₆, 3, 1, 0; 1999 SR₇, 6, 2, 61; 1999 ST₈, 3, 1, 0; 1999 SS₉, 3, 1, 0; 1999 SA₁₀, 3, 1, 0; 1999 SR₁₀, 3, 1, 0; 1999 SH₁₁, 3, 1, 0; 1999 SO₁₁, 3, 1, 0; 1999 SQ₁₁, 3, 1, 0; 1999 SV₁₁, 3, 1, 0; 1999 TD, 3, 1, 0; 1999 TF, 3, 1, 0; 1999 TM, 3, 1, 0; 1999 TN, 3, 1, 0; 1999 TW, 3, 1, 0;

1999 TG₁, 3, 1, 0; 1999 TJ₁, 3, 1, 0; 1999 TM₁, 2, 1, 0; 1999 TY₁, 6, 2, 11; 1999 TP₂, 3, 1, 0; 1999 TR₂, 3, 1, 0; 1999 TS₂, 3, 1, 0; 1999 TZ₂, 3, 1, 0; 1999 TA₄, 3, 1, 0; 1999 TF₄, 3, 1, 0; 1999 TM₄, 3, 1, 0; 1999 TK₅, 6, 2, 33; 1999 TR₅, 2, 1, 0; 1999 TU₅, 3, 1, 0; 1999 TV₅, 3, 1, 0; 1999 TC₇, 3, 1, 0; 1999 TO₇, 3, 1, 0; 1999 TV₇, 3, 1, 0; 1999 TG₈, 3, 1, 0; 1999 TH₈, 6, 2, 48; 1999 TC₉, 3, 1, 0; 1999 TJ₉, 3, 1, 0; 1999 TK₉, 3, 1, 0; 1999 TL₉, 3, 1, 0; 1999 TM₉, 3, 1, 0; 1999 TO₉, 3, 1, 0; 1999 TR₉, 3, 1, 0; 1999 TX₉, 3, 1, 0; 1999 TR₁₀, 3, 1, 0; 1999 TT₁₀, 3, 1, 0; 1999 TD₁₁, 6, 2, 18; 1999 TL₁₁, 3, 1, 0; 1999 TF₁₁, 3, 1, 0; 1999 TQ₁₁, 6, 2, 553; 1999 TS₁₁, 3, 1, 0; 1999 TD₁₂, 3, 1, 0; 1999 TP₁₂, 6, 2, 597; 1999 TX₁₂, 3, 1, 0; 1999 TB₁₃, 3, 1, 0; 1999 TF₁₃, 3, 1, 0; 1999 TK₁₃, 3, 1, 0; 1999 TT₁₃, 3, 1, 0; 1999 TH₁₄, 3, 1, 0; 1999 TK₁₄, 3, 1, 0; 1999 TN₁₄, 3, 1, 0; 1999 TX₁₄, 3, 1, 0; 1999 TY₁₄, 3, 1, 0; 1999 TZ₁₄, 3, 1, 0; 1999 TD₁₅, 3, 1, 0; 1999 TV₁₅, 3, 1, 0; 1999 TP₁₆, 3, 1, 0; 1999 TA₁₇, 3, 1, 0; 1999 TM₁₇, 3, 1, 0; 1999 TO₁₇, 3, 1, 0; 1999 TY₁₇, 3, 1, 0; 1999 TF₁₈, 5, 2, 23; 1999 TR₁₈, 3, 1, 0; 1999 TY₁₈, 3, 1, 0; 1999 TZ₁₈, 3, 1, 0; 1999 TF₁₉, 3, 1, 0; 1999 TH₁₉, 3, 1, 0; 1999 TH₂₀, 3, 1, 0; 1999 TH₂₁, 6, 2, 73; 1999 TN₂₅, 3, 1, 0; 1999 TZ₂₆, 3, 1, 0; 1999 TC₂₇, 3, 1, 0; 1999 TE₂₇, 3, 1, 0; 1999 TL₂₇, 3, 1, 0; 1999 TM₂₇, 3, 1, 0; 1999 TS₂₇, 3, 1, 0; 1999 TW₂₇, 3, 1, 0; 1999 TZ₂₇, 3, 1, 0; 1999 TW₂₈, 3, 1, 0; 1999 TF₂₉, 6, 2, 468; 1999 TO₂₉, 3, 1, 0; 1999 TR₃₀, 3, 1, 0; 1999 TE₃₁, 3, 1, 0; 1999 TK₃₁, 3, 1, 0; 1999 TO₃₁, 6, 2, 19; 1999 TM₃₂, 6, 2, 35; 1999 TQ₃₃, 3, 1, 0; 1999 TD₃₄, 3, 1, 0; 1999 TQ₃₄, 6, 2, 14; 1999 TW₃₄, 3, 1, 0; 1999 TB₃₅, 3, 1, 0; 1999 TR₃₅, 3, 1, 0; 1999 UG, 3, 1, 0; 1999 US, 6, 2, 19; 1999 UT, 6, 2, 55; 1999 UC₁, 3, 1, 0; 1999 UE₁, 3, 1, 0; 1999 UJ₁, 2, 1, 0; 1999 UN₁, 3, 1, 0; 1999 UR₁, 3, 1, 0; 1999 UV₁, 3, 1, 0; 1999 UY₁, 3, 1, 0; 1999 UF₂, 3, 1, 0; 1999 UK₂, 6, 2, 69; 1999 UW₂, 3, 1, 0; 1999 UZ₂, 3, 1, 0; 1999 UE₃, 6, 2, 12; 1999 UK₃, 3, 1, 0; 1999 UL₃, 6, 2, 59; 1999 UN₃, 3, 1, 0; 1999 UO₃, 3, 1, 0; 1999 UP₃, 3, 1, 0; 1999 US₃, 3, 1, 0; 1999 UG₃, 3, 1, 0; 1999 UA₄, 6, 2, 53; 1999 UE₄, 3, 1, 0; 1999 UG₄, 3, 1, 0; 1999 UH₄, 3, 1, 0; 1999 UL₄, 6, 2, 17; 1999 UP₄, 6, 2, 27; 1999 UR₄, 3, 1, 0; 1999 UX₅, 6, 2, 76; 1999 UB₆, 3, 1, 0; 1999 UK₆, 3, 1, 0; 1999 UL₆, 3, 1, 0; 1999 UN₆, 6, 2, 49; 1999 UO₆, 3, 1, 0; 1999 UO₇, 9, 3, 496; 1999 UJ₈, 3, 1, 0; 1999 UL₈, 3, 1, 0; 1999 UN₈, 3, 1, 0; 1999 UP₈, 3, 1, 0; 1999 US₈, 3, 1, 0; 1999 UT₈, 3, 1, 0; 1999 UY₈, 3, 1, 0; 1999 UE₉, 6, 2, 10; 1999 UH₉, 3, 1, 0; 1999 UK₉, 6, 2, 10; 1999 UG₁₁, 6, 2, 60; 1999 UJ₁₁, 3, 1, 0; 1999 UM₁₁, 3, 1, 0; 1999 UN₁₂, 3, 1, 0; 1999 UR₁₂, 3, 1, 0; 1999 UV₁₂, 6, 2, 81; 1999 UF₁₃, 6, 2, 47; 1999 UH₁₃, 6, 2, 69; 1999 UL₁₃, 3, 1, 0; 1999 UU₁₃, 3, 1, 0; 1999 UY₁₃, 3, 1, 0; 1999 UA₁₄, 3, 1, 0; 1999 UF₁₄, 6, 2, 18; 1999 UN₁₄, 3, 1, 0; 1999 UO₁₄, 3, 1, 0; 1999 UD₁₅, 3, 1, 0; 1999 UF₁₅, 6, 2, 46; 1999 UQ₁₅, 3, 1, 0; 1999 UV₁₅, 3, 1, 0; 1999 UC₁₆, 3, 1, 0; 1999 UG₁₆, 3, 1, 0; 1999 UV₁₆, 6, 2, 22; 1999 UD₁₇, 6, 2, 25; 1999 UE₁₇, 3, 1, 0; 1999 UH₁₈, 3, 1, 0; 1999 UP₂₃, 3, 1, 0; 1999 UR₂₃, 3, 1, 0; 1999 UE₂₄, 3, 1, 0; 1999 UJ₂₄, 3, 1, 0; 1999 UK₂₄, 6, 2, 27; 1999 UN₂₄, 3, 1, 0; 1999 UP₂₄, 3, 1, 0; 1999 UQ₂₄, 9, 3, 48; 1999 UC₂₅, 9, 3, 76; 1999 UQ₂₅, 3, 1, 0; 1999 UR₂₅, 3, 1, 0; 1999 UT₂₅, 3, 1, 0; 1999 UX₂₅, 3, 1, 0; 1999 UM₂₆, 3, 1, 0; 1999 UA₂₇, 3, 1, 0; 1999 UN₃₅, 3, 1, 0; 1999 VG, 3, 1, 0; 1999 VJ, 5, 2, 26; 1999 VP, 9, 3, 17; 1999 VQ, 12, 4, 490; 1999 VW, 6, 2, 7; 1999 VZ, 3, 1, 0; 1999 VE₁, 3, 1, 0; 1999 VF₁, 6, 2, 55; 1999 VM₁, 3, 1, 0; 1999 VT₁, 15, 5, 524; 1999 VV₁, 6, 2, 1; 1999 VA₂, 6, 2, 59; 1999 VE₂, 3, 1, 0; 1999 VG₂, 3, 1, 0; 1999 VH₂, 3, 1, 0; 1999 VJ₂, 3, 1, 0; 1999 VM₂, 9, 3, 22; 1999 VO₂, 3, 1, 0; 1999 VV₂, 3, 1, 0; 1999 VZ₂, 3, 1, 0; 1999 VG₃, 8, 3, 55; 1999 VM₃, 3, 1, 0; 1999 VK₄, 6, 2, 99; 1999 VL₄, 6, 2, 18; 1999 VU₄, 3, 1, 0; 1999 VW₄, 6, 2, 9; 1999 VC₅, 3, 1, 0; 1999 VE₅, 12, 4, 15; 1999 VF₅, 3, 1, 0; 1999 VJ₅, 6, 2, 615; 1999 VL₅, 6, 2, 28; 1999 VN₅, 9, 3, 78; 1999 VO₅, 3, 1, 0; 1999 VP₅, 6, 2, 7; 1999 VV₅

12, 4, 90; 1999 VO₂₂, 6, 2, 48; 1999 VP₂₂, 3, 1, 0; 1999 VQ₂₂, 3, 1, 0; 1999 VR₂₂, 9, 3, 103; 1999 VS₂₂, 6, 2, 28; 1999 VT₂₂, 6, 2, 60; 1999 VV₂₂, 3, 1, 0; 1999 VW₂₂, 3, 1, 0; 1999 VZ₂₂, 3, 1, 0; 1999 VA₂₃, 9, 3, 59; 1999 VG₂₃, 9, 3, 28; 1999 VL₂₃, 3, 1, 0; 1999 VO₂₃, 12, 4, 115; 1999 VP₂₃, 9, 3, 555; 1999 VQ₂₃, 6, 2, 54; 1999 VR₂₃, 9, 3, 567; 1999 VS₂₃, 6, 2, 1; 1999 VT₂₃, 6, 2, 54; 1999 VU₂₃, 6, 2, 59; 1999 VV₂₃, 6, 2, 58; 1999 VW₂₃, 6, 2, 54; 1999 VY₂₃, 6, 2, 553; 1999 VE₂₄, 6, 2, 7; 1999 VF₂₄, 3, 1, 0; 1999 VG₂₄, 3, 1, 0; 1999 VH₂₄, 3, 1, 0; 1999 VJ₂₄, 9, 3, 79; 1999 VK₂₄, 3, 1, 0; 1999 VL₂₄, 3, 1, 0; 1999 VM₂₄, 3, 1, 0; 1999 VN₂₄, 3, 1, 0; 1999 VO₂₄, 3, 1, 0; 1999 VQ₂₅, 6, 2, 23; 1999 VC₂₆, 3, 1, 0; 1999 VD₂₆, 3, 1, 0; 1999 VO₂₆, 3, 1, 0; 1999 VP₂₆, 3, 1, 0; 1999 VQ₂₆, 3, 1, 0; 1999 VR₂₆, 3, 1, 0; 1999 VS₂₆, 3, 1, 0; 1999 VV₂₆, 3, 1, 0; 1999 VJ₂₇, 3, 1, 0; 1999 VK₂₇, 3, 1, 0; 1999 VM₂₇, 3, 1, 0; 1999 VN₂₇, 3, 1, 0; 1999 VO₂₇, 6, 2, 48; 1999 VS₂₇, 3, 1, 0; 1999 VT₂₇, 6, 2, 21; 1999 VD₂₈, 3, 1, 0; 1999 VF₂₈, 6, 2, 62; 1999 VH₂₈, 3, 1, 0; 1999 VK₂₈, 3, 1, 0; 1999 VL₂₈, 3, 1, 0; 1999 VN₂₈, 3, 1, 0; 1999 VP₂₈, 9, 3, 55; 1999 VQ₂₈, 12, 4, 78; 1999 VT₂₈, 6, 2, 20; 1999 VU₂₈, 6, 2, 32; 1999 VW₂₈, 3, 1, 0; 1999 VX₂₈, 6, 2, 7; 1999 VY₂₈, 6, 2, 20; 1999 VA₂₉, 6, 2, 20; 1999 VE₂₉, 6, 2, 23; 1999 VJ₂₉, 3, 1, 0; 1999 VK₂₉, 6, 2, 14; 1999 VL₂₉, 9, 3, 20; 1999 VO₂₉, 3, 1, 0; 1999 VR₂₉, 6, 2, 20; 1999 VS₂₉, 6, 2, 20; 1999 VV₂₉, 3, 1, 0; 1999 VX₂₉, 3, 1, 0; 1999 VD₃₀, 3, 1, 0; 1999 VM₃₀, 3, 1, 0; 1999 VO₃₀, 3, 1, 0; 1999 VP₃₀, 3, 1, 0; 1999 VQ₃₀, 3, 1, 0; 1999 VS₃₀, 3, 1, 0; 1999 VT₃₀, 6, 2, 1; 1999 VU₃₁, 3, 1, 0; 1999 VD₃₂, 3, 1, 0; 1999 VG₃₂, 3, 1, 0; 1999 VJ₃₂, 3, 1, 0; 1999 VE₃₃, 3, 1, 0; 1999 VM₃₄, 3, 1, 0; 1999 VS₃₄, 6, 2, 470; 1999 VX₃₄, 3, 1, 0; 1999 VM₃₅, 6, 2, 447; 1999 VA₃₆, 3, 1, 0; 1999 VD₃₆, 3, 1, 0; 1999 VP₃₆, 3, 1, 0; 1999 VV₃₈, 3, 1, 0; 1999 VX₃₈, 3, 1, 0; 1999 VZ₃₈, 3, 1, 0; 1999 VP₃₉, 3, 1, 0; 1999 VO₄₃, 6, 2, 12; 1999 VX₄₃, 3, 1, 0; 1999 VJ₄₅, 3, 1, 0; 1999 VP₄₅, 3, 1, 0; 1999 VR₄₅, 6, 2, 21; 1999 VT₄₅, 3, 1, 0; 1999 VF₄₆, 3, 1, 0; 1999 VH₄₆, 9, 3, 25; 1999 VL₄₆, 3, 1, 0; 1999 VU₄₆, 3, 1, 0; 1999 VV₄₆, 3, 1, 0; 1999 VX₄₆, 3, 1, 0; 1999 VN₄₇, 3, 1, 0; 1999 VQ₄₇, 6, 2, 26; 1999 VR₄₇, 3, 1, 0; 1999 VS₄₇, 6, 2, 24; 1999 VT₄₇, 3, 1, 0; 1999 VU₄₇, 3, 1, 0; 1999 VE₄₈, 6, 2, 24; 1999 VH₄₈, 3, 1, 0; 1999 VQ₄₈, 6, 2, 26; 1999 VT₄₈, 6, 2, 27; 1999 VU₄₈, 6, 2, 49; 1999 VX₄₈, 9, 3, 466; 1999 VB₄₉, 3, 1, 0; 1999 VC₄₉, 3, 1, 0; 1999 VF₄₉, 6, 2, 25; 1999 VK₄₉, 6, 2, 484; 1999 VR₄₉, 3, 1, 0; 1999 VA₅₀, 3, 1, 0; 1999 VB₅₀, 3, 1, 0; 1999 VC₅₀, 3, 1, 0; 1999 VD₅₀, 3, 1, 0; 1999 VE₅₀, 3, 1, 0; 1999 VG₅₀, 3, 1, 0; 1999 VN₅₀, 3, 1, 0; 1999 VO₅₀, 18, 6, 476; 1999 VP₅₀, 3, 1, 0; 1999 VR₅₀, 3, 1, 0; 1999 VS₅₀, 3, 1, 0; 1999 VV₅₀, 6, 2, 586; 1999 VW₅₀, 3, 1, 0; 1999 VM₅₁, 3, 1, 0; 1999 VY₅₁, 3, 1, 0; 1999 VY₅₁, 3, 1, 0; 1999 VP₅₂, 3, 1, 0; 1999 VN₅₃, 3, 1, 0; 1999 VM₅₄, 3, 1, 0; 1999 VM₅₅, 3, 1, 0; 1999 VH₅₆, 3, 1, 0; 1999 VJ₅₆, 3, 1, 0; 1999 VL₅₆, 3, 1, 0; 1999 VS₅₆, 3, 1, 0; 1999 VT₅₆, 3, 1, 0; 1999 VU₅₇, 6, 2, 26; 1999 VU₅₇, 6, 2, 27; 1999 VY₅₇, 3, 1, 0; 1999 VD₅₈, 9, 3, 27; 1999 VF₅₈, 6, 2, 20; 1999 VH₅₈, 15, 5, 78; 1999 VJ₅₈, 6, 2, 20; 1999 VK₅₈, 6, 2, 539; 1999 VL₅₈, 6, 2, 7; 1999 VM₅₈, 3, 1, 0; 1999 VO₅₈, 3, 1, 0; 1999 VQ₅₈, 12, 4, 32; 1999 VR₅₈, 3, 1, 0; 1999 VS₅₈, 6, 2, 536; 1999 VT₅₈, 9, 3, 27; 1999 VW₅₈, 6, 2, 16; 1999 VV₅₉, 3, 1, 0; 1999 VS₆₀, 3, 1, 0; 1999 VY₆₀, 3, 1, 0; 1999 VC₆₂, 3, 1, 0; 1999 VW₆₂, 3, 1, 0; 1999 VF₆₃, 6, 2, 24; 1999 VM₆₃, 6, 2, 110; 1999 VO₆₃, 6, 2, 17; 1999 VN₆₄, 3, 1, 0; 1999 VP₆₅, 3, 1, 0; 1999 VY₆₅, 3, 1, 0; 1999 VZ₆₅, 3, 1, 0; 1999 VN₆₆, 3, 1, 0; 1999 VO₆₆, 12, 4, 88; 1999 VY₆₆, 3, 1, 0; 1999 VZ₆₆, 3, 1, 0; 1999 VB₆₇, 3, 1, 0; 1999 VE₆₇, 12, 4, 88; 1999 VN₆₇, 3, 1, 0; 1999 VU₆₇, 6, 2, 20; 1999 VV₆₇, 3, 1, 0; 1999 VY₆₇, 3, 1, 0; 1999 VZ₆₇, 3, 1, 0; 1999 VC₆₈, 3, 1, 0; 1999 VD₆₈, 6, 2, 531; 1999 VL₆₈, 6, 2, 11; 1999 VM₆₈, 3, 1, 0; 1999 VV₆₈, 3, 1, 0; 1999 VR₆₉, 6, 2, 24; 1999 VT₇₀, 9, 3, 27; 1999 VA₇₁, 6, 2, 27; 1999 VE₇₁, 3, 1, 0; 1999 VB₇₂, 3, 1, 0; 1999 VC₇₂, 3, 1, 0; 1999 VD₇₂, 6, 2, 12; 1999 VE₇₂, 3, 1, 0; 1999 VJ₇₂, 3, 1, 0; 1999 VK₇₂, 3, 1, 0; 1999 VM₇₂, 3, 1, 0; 1999 VN₇₂, 3, 1, 0; 1999 VO₇₂, 3, 1, 0; 1999 VP₇₂, 3, 1, 0; 1999 VR₇₂, 3, 1, 0; 1999 VY₇₂, 6, 2, 543; 1999 VY₇₉, 3, 1, 0; 1999 VY₈₀, 3, 1, 0; 1999 VD₈₁, 3, 1, 0; 1999 VG₈₁, 3, 1, 0; 1999 VJ₈₁, 6, 2, 16; 1999 VQ₈₁, 3, 1, 0; 1999 VP₈₂, 12, 4, 54; 1999 VV₈₅, 3, 1, 0; 1999 VG₈₆, 6, 2, 33; 1999 VV₈₆, 3, 1, 0; 1999 VL₈₇, 6, 2, 22; 1999 VP₈₇, 3, 1, 0; 1999 VQ₈₇, 3, 1, 0; 1999 VT₈₇, 9, 3, 31; 1999 VP₈₉, 3, 1, 0; 1999 VU₈₉, 3, 1, 0; 1999 VT₉₀, 3, 1, 0; 1999 VD₉₇, 9, 3, 110; 1999 VP₁₁₄, 3, 1, 0; 1999 VS₁₁₄, 6, 2, 24; 1999 VE₁₁₅, 3, 1, 0; 1999 VH₁₃₅ *, 9, 3, 54; 1999 VJ₁₃₅ *, 6, 2, 1; 1999 VK₁₃₅ *, 6, 2, 1; 1999 VL₁₃₅ *, 9, 3, 21; 1999 VM₁₃₅ *, 9, 3, 21; 1999 WB, 6, 2, 17; 1999 WE, 2, 1, 0; 1999 WF, 6, 2, 58; 1999 WS, 6, 2, 23; 1999 WY, 6, 2, 1; 1999 WA₁, 9, 3, 54; 1999 WC₁, 3, 1, 0; 1999 WG₁, 3, 1, 0; 1999 WQ₁, 6, 2, 59; 1999 WS₁, 12, 4, 102; 1999 WU₁, 9, 3, 27; 1999 WB₂, 3, 1, 0; 1999 WJ₂, 6, 2, 48; 1999 WN₂, 3, 1, 0; 1999 WS₂, 9, 3, 25; 1999 WY₂, 3, 1, 0; 1999 WC₃, 3, 1, 0; 1999 WW₄, 3, 1, 0; 1999 WZ₅, 3, 1, 0; 1999 WE₆, 3, 1, 0; 1999 WG₆, 3, 1, 0; 1999 WH₆, 3, 1, 0; 1999 WM₆, 3, 1, 0; 1999 WN₆, 3, 1, 0; 1999 WT₆, 3, 1, 0; 1999 WB₇, 3, 1, 0; 1999 WN₇, 6, 2, 24; 1999 WA₈, 3, 1, 0; 1999 WF₈, 3, 1, 0; 1999 WM₈, 3, 1, 0; 1999 WO₈, 3, 1, 0; 1999 WR₈, 12, 4, 451; 1999 WU₈, 9, 3, 587; 1999 WV₈, 6, 2, 26; 1999 WW₈, 6, 2, 44; 1999 WX₈, 9, 3, 44; 1999 WY₈, 6, 2, 43; 1999 WZ₈, 3, 1, 0; 1999 WD₉, 3, 1, 0; 1999 WN₉, 3, 1, 0; 1999 WO₉, 3, 1, 0; 1999 WV₉, 6, 1, 0; 1999 WY₉, 3, 1, 0; 1999 WG₁₁, 3, 1, 0; 1999 WA₁₃, 3, 1, 0; 1999 WK₁₃, 6, 2, 17; 1999 WS₁₃, 3, 1, 0; 1999 WT₁₄, 3, 1, 0; 1999 WF₁₈, 3, 1, 0; 1999 WN₁₈ *, 6, 2, 7; 1999 XA₅, 2, 52; 1999 XL₃, 3, 1, 0; 1999 XN₁, 3, 1, 0; 1999 XV₁, 9, 3, 78; 1999 XW₁, 6, 2, 28; 1999 XX₁, 3, 1, 0; 1999 XY₁, 9, 3, 33; 1999 XZ₁, 9, 3, 33; 1999 XA₂, 9, 3, 48; 1999 XB₂, 6, 2, 33; 1999 XH₂, 3, 1, 0; 1999 XR₂, 5, 2, 614; 1999 XU₂, 6, 2, 28; 1999 XV₂, 9, 3, 51; 1999 XW₂, 6, 2, 51; 1999 XZ₂, 6, 2, 20; 1999 XA₃, 6, 2, 20; 1999 XC₃, 6, 2, 35; 1999 XD₃, 3, 1, 0; 1999 XF₃, 6, 2, 20; 1999 XG₃, 6, 2, 35; 1999 XH₃, 3, 1, 0; 1999 XJ₃, 3, 1, 0; 1999 XK₃, 3, 1, 0; 1999 XR₃, 3, 1, 0; 1999 XS₃, 6, 2, 28; 1999 XV₃, 6, 2, 20; 1999 XW₃, 3, 1, 0; 1999 XL₄, 6, 2, 20; 1999 XM₄, 3, 1, 0; 1999 XO₄, 3, 1, 0; 1999 XR₄, 3, 1, 0; 1999 XT₄, 3, 1, 0; 1999 XV₄, 3, 1, 0; 1999 XC₅, 6, 2, 31; 1999 XD₅, 6, 2, 17; 1999 XL₅, 6, 1, 0; 1999 XM₅, 6, 2, 20; 1999 XW₅, 3, 1, 0; 1999 XX₅,

3, 1, 0; 1999 XL₆, 3, 1, 0; 1999 XY₆, 3, 1, 0; 1999 XH₇, 3, 1, 0; 1999 XJ₇, 3, 1, 0; 1999 XK₇, 9, 3, 22; 1999 XM₇, 3, 1, 0; 1999 XN₇, 3, 1, 0; 1999 XO₇, 3, 1, 0; 1999 XP₇, 3, 1, 0; 1999 XQ₇, 3, 1, 0; 1999 XR₇, 9, 3, 63; 1999 XS₇, 6, 2, 26; 1999 XT₇, 6, 2, 37; 1999 XU₇, 9, 3, 50; 1999 XY₇, 6, 2, 83; 1999 XB₈, 3, 1, 0; 1999 XH₈, 3, 1, 0; 1999 XN₈, 3, 1, 0; 1999 XO₈, 3, 1, 0; 1999 XV₈, 6, 2, 43; 1999 XX₈, 3, 1, 0; 1999 XZ₈, 3, 1, 0; 1999 XK₉, 3, 1, 0; 1999 XC₁₀, 3, 1, 0; 1999 XE₁₀, 6, 2, 18; 1999 XF₁₀, 3, 1, 0; 1999 XL₁₀, 3, 1, 0; 1999 XR₁₀, 3, 1, 0; 1999 XS₁₀, 3, 1, 0; 1999 XT₁₀, 3, 1, 0; 1999 XW₁₀, 3, 1, 0; 1999 XX₁₀, 3, 1, 0; 1999 XY₁₀, 3, 1, 0; 1999 XE₁₁, 3, 1, 0; 1999 XN₁₁, 3, 1, 0; 1999 XP₁₁, 3, 1, 0; 1999 XQ₁₁, 3, 1, 0; 1999 XT₁₁, 3, 1, 0; 1999 XW₁₁, 3, 1, 0; 1999 XX₁₁, 6, 2, 60; 1999 XZ₁₁, 3, 1, 0; 1999 XA₁₂, 3, 1, 0; 1999 XB₁₂, 6, 2, 60; 1999 XC₁₂, 6, 2, 53; 1999 XD₁₂, 3, 1, 0; 1999 XU₁₂, 3, 1, 0; 1999 XY₁₂, 9, 2, 17; 1999 XE₁₃, 3, 1, 0; 1999 XF₁₃, 6, 2, 55; 1999 XH₁₃, 3, 1, 0; 1999 XK₁₃, 3, 1, 0; 1999 XL₁₃, 3, 1, 0; 1999 XN₁₃, 6, 2, 31; 1999 XR₁₃, 9, 3, 460; 1999 XS₁₃, 9, 3, 55; 1999 XW₁₃, 6, 2, 53; 1999 XY₁₃, 3, 1, 0; 1999 XB₁₄, 3, 1, 0; 1999 XK₁₄, 6, 2, 19; 1999 XL₁₄, 3, 1, 0; 1999 XA₁₅, 9, 3, 44; 1999 XD₁₅, 3, 1, 0; 1999 XF₁₅, 3, 1, 0; 1999 XV₁₅, 3, 1, 0; 1999 XB₁₆, 3, 1, 0; 1999 XD₁₆, 3, 1, 0; 1999 XG₁₆, 9, 3, 52; 1999 XJ₁₆, 3, 1, 0; 1999 XH₁₇, 3, 1, 0; 1999 XT₁₇, 3, 1, 0; 1999 XH₁₈, 3, 1, 0; 1999 XK₁₈, 6, 2, 30; 1999 XL₁₈, 3, 1, 0; 1999 XO₁₈, 3, 1, 0; 1999 XP₁₈, 3, 1, 0; 1999 XR₁₈, 6, 2, 96; 1999 XU₁₈, 3, 1, 0; 1999 XV₁₈, 3, 1, 0; 1999 XB₁₉, 3, 1, 0; 1999 XO₁₉, 3, 1, 0; 1999 XP₁₉, 3, 1, 0; 1999 XS₁₉, 3, 1, 0; 1999 XT₁₉, 3, 1, 0; 1999 XZ₁₉, 3, 1, 0; 1999 XB₂₀, 6, 2, 18; 1999 XP₂₀, 3, 1, 0; 1999 XU₂₀, 3, 1, 0; 1999 XY₂₀, 3, 1, 0; 1999 XB₂₁, 3, 1, 0; 1999 XD₂₁, 3, 1, 0; 1999 XJ₂₁, 6, 2, 23; 1999 XX₂₁, 3, 1, 0; 1999 XZ₂₁, 3, 1, 0; 1999 XP₂₂, 3, 1, 0; 1999 XU₂₂, 3, 1, 0; 1999 XE₂₃, 3, 1, 0; 1999 XU₂₃, 6, 2, 48; 1999 XV₂₃, 3, 1, 0; 1999 XX₂₃, 3, 1, 0; 1999 XZ₂₃, 3, 1, 0; 1999 XA₂₄, 3, 1, 0; 1999 XB₂₄, 3, 1, 0; 1999 XP₂₄, 3, 1, 0; 1999 XQ₂₄, 3, 1, 0; 1999 XS₂₄, 3, 1, 0; 1999 XT₂₄, 6, 2, 20; 1999 XU₂₄, 6, 2, 20; 1999 XW₂₄, 3, 1, 0; 1999 XY₂₄, 3, 1, 0; 1999 XZ₂₄, 3, 1, 0; 1999 XA₂₅, 3, 1, 0; 1999 XB₂₅, 6, 2, 20; 1999 XC₂₅, 3, 1, 0; 1999 XD₂₅, 6, 2, 20; 1999 XF₂₅, 3, 1, 0; 1999 XG₂₅, 6, 2, 20; 1999 XJ₂₅, 6, 2, 20; 1999 XK₂₅, 6, 2, 20; 1999 XL₂₅, 3, 1, 0; 1999 XN₂₅, 9, 3, 22; 1999 XP₂₅, 3, 1, 0; 1999 XQ₂₅, 3, 1, 0; 1999 XR₂₅, 3, 1, 0; 1999 XS₂₅, 9, 3, 55; 1999 XE₂₆, 3, 1, 0; 1999 XG₂₆, 3, 1, 0; 1999 XC₂₇, 3, 1, 0; 1999 XE₂₇, 3, 1, 0; 1999 XJ₂₇, 3, 1, 0; 1999 XK₂₇, 3, 1, 0; 1999 XM₂₇, 3, 1, 0; 1999 XO₂₇, 3, 1, 0; 1999 XP₂₇, 3, 1, 0; 1999 XR₂₇, 6, 2, 20; 1999 XW₂₇, 9, 3, 48; 1999 XZ₂₇, 3, 1, 0; 1999 XD₂₈, 3, 1, 0; 1999 XG₂₈, 3, 1, 0; 1999 XM₂₈, 3, 1, 0; 1999 XT₂₈, 3, 1, 0; 1999 XU₂₈, 6, 2, 31; 1999 XW₂₈, 3, 1, 0; 1999 XC₂₉, 3, 1, 0; 1999 XD₂₉, 6, 2, 1; 1999 XE₂₉, 6, 2, 17; 1999 XF₂₉, 3, 1, 0; 1999 XH₂₉, 9, 3, 18; 1999 XJ₂₉, 3, 1, 0; 1999 XO₂₉, 3, 1, 0; 1999 XP₂₉, 3, 1, 0; 1999 XQ₂₉, 6, 2, 17; 1999 XS₂₉, 6, 2, 17; 1999 XT₂₉, 3, 1, 0; 1999 XU₂₉, 6, 2, 17; 1999 XV₂₉, 3, 1, 0; 1999 XW₃₀, 3, 1, 0; 1999 XX₃₀, 3, 1, 0; 1999 XY₃₀, 3, 1, 0; 1999 XO₃₁, 3, 1, 0; 1999 XP₃₁, 3, 1, 0; 1999 XW₃₁, 6, 2, 20; 1999 XA₃₂, 3, 1, 0; 1999 XC₃₂, 3, 1, 0; 1999 XD₃₂, 3, 1, 0; 1999 XF₃₂, 3, 1, 0; 1999 XG₃₂, 3, 1, 0; 1999 XH₃₂, 3, 1, 0; 1999 XK₃₂, 3, 1, 0; 1999 XO₃₂, 3, 1, 0; 1999 XP₃₂, 2, 1, 0; 1999 XQ₃₂, 3, 1, 0; 1999 XS₃₂, 3, 1, 0; 1999 XV₃₂, 3, 1, 0; 1999 XW₃₂, 3, 1, 0; 1999 XX₃₂, 3, 1, 0; 1999 XY₃₂, 3, 1, 0; 1999 XF₃₃, 3, 1, 0; 1999 XG₃₃, 3, 1, 0; 1999 XJ₃₃, 3, 1, 0; 1999 XK₃₃, 3, 1, 0; 1999 XO₃₃, 3, 1, 0; 1999 XR₃₃, 9, 3, 124; 1999 XS₃₃, 3, 1, 0; 1999 XV₃₃, 3, 1, 0; 1999 XC₃₄, 3, 1, 0; 1999 XF₃₄, 3, 1, 0; 1999 XJ₃₄, 3, 1, 0; 1999 XN₃₄, 3, 1, 0; 1999 XQ₃₄, 3, 1, 0; 1999 XS₃₄, 3, 1, 0; 1999 XU₃₅, 3, 1, 0; 1999 XB₃₆, 3, 1, 0; 1999 XH₃₆, 3, 1, 0; 1999 XP₃₆, 3, 1, 0; 1999 XQ₃₆, 3, 1, 0; 1999 XR₃₆, 6, 2, 60; 1999 XS₃₆, 3, 1, 0; 1999 XV₃₆, 3, 1, 0; 1999 X

3, 1, 0; 1999 XM₁₀₃, 3, 1, 0; 1999 XN₁₀₃, 3, 1, 0; 1999 XQ₁₀₃, 3, 1, 0; 1999 XC₁₀₄, 3, 1, 0; 1999 XD₁₀₄, 3, 1, 0; 1999 XR₁₀₄, 6, 2, 16; 1999 XT₁₀₄, 3, 1, 0; 1999 XD₁₀₅, 6, 2, 54; 1999 XE₁₀₅, 3, 1, 0; 1999 XW₁₀₅, 3, 1, 0; 1999 XC₁₀₆, 9, 3, 25; 1999 XM₁₀₆, 3, 1, 0; 1999 XN₁₀₆, 3, 1, 0; 1999 XO₁₀₆, 3, 1, 0; 1999 XP₁₀₆, 3, 1, 0; 1999 XW₁₀₆, 3, 1, 0; 1999 XN₁₀₇, 3, 1, 0; 1999 XR₁₀₇, 3, 1, 0; 1999 XE₁₀₉, 3, 1, 0; 1999 XF₁₀₉, 6, 2, 20; 1999 XH₁₀₉, 3, 1, 0; 1999 XL₁₀₉, 9, 3, 55; 1999 XP₁₀₉, 6, 2, 20; 1999 XQ₁₀₉, 3, 1, 0; 1999 XS₁₀₉, 9, 3, 55; 1999 XT₁₀₉, 3, 1, 0; 1999 XU₁₀₉, 3, 1, 0; 1999 XY₁₀₉, 6, 2, 20; 1999 XZ₁₀₉, 6, 2, 20; 1999 XB₁₁₀, 6, 2, 20; 1999 XM₁₁₀, 6, 2, 20; 1999 XR₁₁₀, 3, 1, 0; 1999 XU₁₁₀, 3, 1, 0; 1999 XV₁₁₀, 3, 1, 0; 1999 XY₁₁₀, 3, 1, 0; 1999 XB₁₁₁, 9, 3, 55; 1999 XG₁₁₁, 3, 1, 0; 1999 XK₁₁₁, 3, 1, 0; 1999 XL₁₁₂, 3, 1, 0; 1999 XM₁₁₂, 3, 1, 0; 1999 XD₁₁₃, 3, 1, 0; 1999 XJ₁₁₃, 3, 1, 0; 1999 XL₁₁₃, 3, 1, 0; 1999 XM₁₁₃, 6, 2, 33; 1999 XR₁₁₃, 6, 2, 21; 1999 XU₁₁₃, 6, 2, 47; 1999 XQ₁₁₄, 6, 2, 27; 1999 XR₁₁₄, 9, 3, 53; 1999 XS₁₁₄, 3, 1, 0; 1999 XT₁₁₄, 6, 2, 26; 1999 XV₁₁₄, 3, 1, 0; 1999 XW₁₁₄, 3, 1, 0; 1999 XA₁₁₅, 6, 2, 26; 1999 XB₁₁₅, 3, 1, 0; 1999 XT₁₁₅, 3, 1, 0; 1999 XU₁₁₅, 3, 1, 0; 1999 XW₁₁₅, 3, 1, 0; 1999 XY₁₁₅, 6, 2, 28; 1999 XZ₁₁₅, 3, 1, 0; 1999 XA₁₁₆, 3, 1, 0; 1999 XE₁₁₆, 3, 1, 0; 1999 XF₁₁₆, 6, 2, 28; 1999 XJ₁₁₆, 6, 1, 0; 1999 XK₁₁₆, 3, 1, 0; 1999 XM₁₁₆, 6, 2, 28; 1999 XO₁₁₆, 6, 2, 28; 1999 XP₁₁₆, 6, 2, 28; 1999 XU₁₁₆, 3, 1, 0; 1999 XN₁₁₆, 3, 1, 0; 1999 XA₁₁₇, 3, 1, 0; 1999 XC₁₁₇, 3, 1, 0; 1999 XE₁₁₇, 3, 1, 0; 1999 XJ₁₁₇, 6, 2, 49; 1999 XM₁₁₇, 3, 1, 0; 1999 XT₁₁₇, 3, 1, 0; 1999 XZ₁₁₇, 3, 1, 0; 1999 XA₁₁₈, 3, 1, 0; 1999 XC₁₁₈, 3, 1, 0; 1999 XD₁₁₈, 3, 1, 0; 1999 XE₁₁₈, 3, 1, 0; 1999 XH₁₁₈, 6, 2, 20; 1999 XO₁₁₈, 3, 1, 0; 1999 XR₁₁₈, 3, 1, 0; 1999 XS₁₁₈, 3, 1, 0; 1999 XU₁₁₈, 3, 1, 0; 1999 XX₁₁₈, 3, 1, 0; 1999 XC₁₁₉, 3, 1, 0; 1999 XY₁₁₉, 3, 1, 0; 1999 XB₁₂₀, 3, 1, 0; 1999 XE₁₂₀, 6, 2, 20; 1999 XF₁₂₀, 3, 1, 0; 1999 XY₁₂₀, 3, 1, 0; 1999 XD₁₂₁, 3, 1, 0; 1999 XF₁₂₁, 6, 2, 15; 1999 XX₁₂₁, 3, 1, 0; 1999 XA₁₂₂, 6, 2, 28; 1999 XC₁₂₂, 6, 2, 27; 1999 XD₁₂₂, 3, 1, 0; 1999 XE₁₂₂, 3, 1, 0; 1999 XG₁₂₂, 3, 1, 0; 1999 XH₁₂₂, 3, 1, 0; 1999 XJ₁₂₂, 3, 1, 0; 1999 XL₁₂₂, 3, 1, 0; 1999 XM₁₂₂, 6, 2, 28; 1999 XO₁₂₂, 6, 2, 29; 1999 XR₁₂₂, 3, 1, 0; 1999 XS₁₂₂, 6, 2, 28; 1999 XW₁₂₂, 3, 1, 0; 1999 XZ₁₂₂, 3, 1, 0; 1999 XD₁₂₃, 9, 3, 53; 1999 XF₁₂₃, 3, 1, 0; 1999 XM₁₂₃, 3, 1, 0; 1999 XO₁₂₃, 6, 2, 53; 1999 XP₁₂₃, 6, 2, 27; 1999 XR₁₂₃, 3, 1, 0; 1999 XU₁₂₃, 3, 1, 0; 1999 XW₁₂₃, 6, 2, 26; 1999 XB₁₂₄, 3, 1, 0; 1999 XK₁₂₄, 3, 1, 0; 1999 XM₁₂₄, 3, 1, 0; 1999 XQ₁₂₄, 3, 1, 0; 1999 XR₁₂₄, 3, 1, 0; 1999 XT₁₂₄, 3, 1, 0; 1999 XW₁₂₄, 3, 1, 0; 1999 XB₁₂₅, 3, 1, 0; 1999 XD₁₂₅, 6, 2, 26; 1999 XH₁₂₅, 3, 1, 0; 1999 XR₁₂₅, 3, 1, 0; 1999 XV₁₂₅, 3, 1, 0; 1999 XY₁₂₅, 3, 1, 0; 1999 XZ₁₂₅, 3, 1, 0; 1999 XE₁₂₆, 3, 1, 0; 1999 XG₁₂₆, 3, 1, 0; 1999 XA₁₂₇, 3, 1, 0; 1999 XD₁₂₇, 3, 1, 0; 1999 XE₁₂₇, 3, 1, 0; 1999 XF₁₂₇, 3, 1, 0; 1999 XH₁₂₇, 3, 1, 0; 1999 XJ₁₂₇, 6, 2, 29; 1999 XK₁₂₇, 6, 2, 25; 1999 XR₁₂₇, 6, 2, 8; 1999 XT₁₂₇, 12, 4, 32; 1999 XU₁₂₇, 6, 2, 17; 1999 XW₁₂₇, 3, 1, 0; 1999 XA₁₃₄, 3, 1, 0; 1999 XB₁₃₄, 6, 2, 10; 1999 XD₁₃₄, 3, 1, 0; 1999 XE₁₃₄, 9, 3, 28; 1999 XG₁₃₄, 3, 1, 0; 1999 XK₁₃₄, 3, 1, 0; 1999 XL₁₃₄, 3, 1, 0; 1999 XT₁₃₄, 6, 2, 12; 1999 XG₁₃₅, 9, 3, 28; 1999 XB₁₃₆, 3, 1, 0; 1999 XD₁₃₆, 3, 1, 0; 1999 XG₁₃₆, 3, 1, 0; 1999 XO₁₃₆, 3, 1, 0; 1999 XP₁₃₆, 9, 3, 472; 1999 XQ₁₃₆, 6, 2, 334; 1999 XR₁₃₆, 6, 2, 31; 1999 XS₁₃₆, 6, 2, 7; 1999 XT₁₃₆, 12, 4, 28; 1999 XU₁₃₆, 9, 3, 28; 1999 XV₁₃₆, 9, 3, 29; 1999 XW₁₃₆, 3, 1, 0; 1999 XX₁₃₆, 9, 3, 28; 1999 XY₁₃₆, 6, 2, 17; 1999 XZ₁₃₆, 6, 2, 10; 1999 XA₁₃₇, 6, 2, 17; 1999 XB₁₃₇ *, 9, 3, 34; 1999 XC₁₃₇ *, 6, 2, 2; 1999 XD₁₃₇ *, 9, 3, 32; 1999 XE₁₃₇, 12, 4, 89; 1999 XF₁₃₇ *, 6, 2, 2; 1999 XG₁₃₇ *, 6, 2, 6; 1999 XH₁₃₇ *, 6, 2, 2; 1999 XI₁₃₇ *, 6, 2, 2; 1999 XJ₁₃₇ *, 9, 3, 15; 1999 XK₁₃₇, 6, 2, 79; 1999 XL₁₃₇, 3, 1, 0; 1999 XM₁₃₇, 6, 2, 20; 1999 XN₁₃₇, 3, 1, 0; 1999 XO₁₃₇, 3, 1, 0; 1999 XS₁₃₇, 3, 1, 0; 1999 XT₁₃₇, 3, 1, 0; 1999 XU₁₃₇, 6, 2, 20; 1999 XV₁₃₇, 6, 2, 20; 1999 XW₁₃₇, 3, 1, 0; 1999 XZ₁₃₇, 3, 1, 0; 1999 XA₁₄₁, 3, 1, 0; 1999 XE₁₄₁, 3, 1, 0; 1999 XS₁₄₁, 6, 2, 5; 1999 XU₁₄₁, 3, 1, 0; 1999 XX₁₄₁, 3, 1, 0; 1999 XY₁₄₁, 3, 1, 0; 1999 XZ₁₄₁, 3, 1, 0; 1999 XB₁₄₃, 12, 3, 84; 1999 XC₁₄₃, 9, 3, 96; 1999 XD₁₄₃, 6, 2, 16; 1999 XE₁₄₃, 9, 3, 16; 1999 XF₁₄₃, 6, 2, 12; 1999 XG₁₄₃, 3, 1, 0; 1999 XH₁₄₃, 3, 1, 0; 1999 XJ₁₄₃, 9, 3, 25; 1999 XK₁₄₃, 6, 2, 21; 1999 XL₁₄₃, 6, 2, 478; 1999 XO₁₄₃, 3, 1, 0; 1999 XS₁₄₃, 6, 2, 10; 1999 XU₁₄₃, 3, 1, 0; 1999 XF₁₄₄, 3, 1, 0; 1999 XG₁₄₄, 12, 4, 39; 1999 XH₁₄₄, 9, 3, 35; 1999 XJ₁₄₄, 3, 1, 0; 1999 XK₁₄₄, 3, 1, 0; 1999 XL₁₄₄, 9, 3, 28; 1999 XM₁₄₄, 6, 2, 10; 1999 XZ₁₅₀ *, 12, 3, 5; 1999 XA₁₅₁ *, 12, 3, 5; 1999 XB₁₅₁ *, 12, 3, 5; 1999 XC₁₅₁ *, 6, 2, 4; 1999 XD₁₅₁ *, 9, 2, 4; 1999 XE₁₅₁ *, 12, 3, 5; 1999 XF₁₅₁ *, 12, 3, 5; 1999 XG₁₅₁ *, 6, 2, 4; 1999 XH₁₅₁ *, 6, 2, 4; 1999 XJ₁₅₁ *, 9, 3, 13; 1999 XK₁₅₁, 3, 1, 0; 1999 XL₁₅₂ *, 15, 4, 84; 1999 XM₁₅₂ *, 9, 2, 1; 1999 XN₁₅₂ *, 15, 3, 97; 1999 XO₁₅₂ *, 6, 2, 1; 1999 XQ₁₅₂ *, 12, 3, 36; 1999 XZ₁₅₂, 3, 1, 0; 1999 XR₁₅₂, 3, 1, 0; 1999 XS₁₅₂, 3, 1, 0; 1999 XT₁₅₂, 6, 2, 10; 1999 XS₁₅₃, 3, 1, 0; 1999 XF₁₅₇, 6, 2, 56; 1999 XL₁₅₇, 9, 3, 45; 1999 XR₁₅₉, 6, 2, 55; 1999 XV₁₆₀, 3, 1, 0; 1999 XE₁₆₁, 3, 1, 0; 1999 XJ₁₆₁, 3, 1, 0; 1999 XL₁₆₁, 3, 1, 0; 1999 XU₁₆₁, 3, 1, 0; 1999 XN₁₆₂, 3, 1, 0; 1999 XM₁₆₂, 3, 1, 0; 1999 XV₁₆₃, 3, 1, 0; 1999 XW₁₆₃, 3, 1, 0; 1999 XE₁₆₄, 3, 1, 0; 1999 XH₁₆₄, 3, 1, 0; 1999 XJ₁₆₄, 6, 2, 12; 1999 XN₁₆₄, 3, 1, 0; 1999 XO₁₆₄, 3, 1, 0; 1999 XP₁₆₄, 3, 1, 0; 1999 XQ₁₆₄, 3, 1, 0; 1999 XV₁₆₄, 6, 2, 28; 1999 XW₁₆₄, 3, 1, 0; 1999 XY₁₆₄, 3, 1, 0; 1999 XA₁₆₅, 3, 1, 0; 1999 XC₁₆₅, 3, 1, 0; 1999 XK₁₆₅, 3, 1, 0; 1999 XS₁₆₅, 3, 1, 0; 1999 XT₁₆₅, 3, 1, 0; 1999 XU₁₆₅, 3, 1, 0; 1999 XA₁₆₆, 6, 2, 33; 1999 XD₁₆₆, 6, 2, 31; 1999 XE₁₆₆, 9, 3, 96; 1999 XF₁₆₆, 6, 2, 29; 1999 XG₁₆₆, 3, 1, 0; 1999 XJ₁₆₆, 6, 2, 26; 1999 XK₁₆₆, 3, 1, 0; 1999 XL₁₆₆, 6, 2, 26; 1999 XR₁₆₆, 3, 1, 0; 1999 XV₁₆₆, 6, 2, 26; 1999 XW₁₆₆, 3, 1, 0; 1999 XZ₁₆₆, 3, 1, 0; 1999 XL₁₆₈, 12, 4, 495; 1999 XJ₁₆₉, 3, 1, 0; 1999 XK₁₆₉, 3, 1, 0; 1999 XA₁₇₂, 3, 1, 0; 1999 XE₁₇₂, 3, 1, 0; 1999 XL₁₇₂, 3, 1, 0; 1999 XM₁₇₂, 3, 1, 0; 1999 XT₁₇₂, 3, 1, 0; 1999 XV₁₇₂, 3, 1, 0; 1999 XW₁₇₂, 3, 1, 0; 1999 XY₁₇₂, 3, 1, 0; 1999 XZ₁₇₂, 3, 1, 0; 1999 XA₁₇₃, 3, 1, 0; 1999 XC₁₇₃, 3, 1, 0; 1999 XD₁₇₃, 6, 2, 28; 1999 XJ₁₇₃, 3, 1, 0; 1999 XK₁₇₃, 3, 1, 0; 1999 XL₁₇₃, 6, 2, 28; 1999 XM₁₇₃, 3, 1, 0; 1999 XN₁₇₃, 3, 1, 0; 1999 XO₁₇₃, 3, 1, 0; 1999 XP₁₇₃, 3, 1, 0; 1999 XR₁₇₃, 6, 2, 28; 1999 XS₁₇₃, 6, 2, 28; 1999 XT₁₇₃, 6, 1, 0; 1999 XU₁₇₃, 6, 2, 28; 1999 XV₁₇₃, 3, 1, 0; 1999 XX₁₇₃, 3, 1, 0;

1999 XZ₁₇₃, 3, 1, 0; 1999 XA₁₇₄, 6, 2, 406; 1999 XC₁₇₄, 6, 2, 28; 1999 XE₁₇₄, 3, 1, 0; 1999 XK₁₇₄, 6, 2, 12; 1999 XT₁₇₄, 6, 2, 39; 1999 XL₁₇₅, 6, 2, 23; 1999 XH₁₇₆, 3, 1, 0; 1999 XR₁₇₆, 3, 1, 0; 1999 XU₁₇₆, 3, 1, 0; 1999 XV₁₇₆, 3, 1, 0; 1999 XD₁₇₇, 3, 1, 0; 1999 XJ₁₇₇, 3, 1, 0; 1999 XQ₁₇₇, 3, 1, 0; 1999 XR₁₇₇, 3, 1, 0; 1999 XU₁₇₇, 3, 1, 0; 1999 XV₁₇₇, 3, 1, 0; 1999 XY₁₇₇, 3, 1, 0; 1999 XA₁₇₈, 3, 1, 0; 1999 XE₁₇₈, 3, 1, 0; 1999 XJ₁₇₈, 6, 2, 28; 1999 XL₁₇₈, 3, 1, 0; 1999 XM₁₇₈, 3, 1, 0; 1999 XN₁₇₈, 3, 1, 0; 1999 XP₁₇₈, 3, 1, 0; 1999 XV₁₇₈, 3, 1, 0; 1999 XD₁₇₉, 3, 1, 0; 1999 XF₁₇₉, 3, 1, 0; 1999 XX₁₈₀, 3, 1, 0; 1999 XL₁₈₁, 6, 2, 10; 1999 XJ₁₈₇, 3, 1, 0; 1999 XK₁₈₇, 3, 1, 0; 1999 XN₁₈₇, 3, 1, 0; 1999 XG₁₈₈, 6, 2, 17; 1999 XJ₁₉₁, 3, 1, 0; 1999 XU₁₉₇, 3, 1, 0; 1999 XX₂₀₀, 3, 1, 0; 1999 XR₂₀₂, 3, 1, 0; 1999 XW₂₀₂, 3, 1, 0; 1999 XZ₂₀₂, 3, 1, 0; 1999 XD₂₀₃, 6, 2, 13; 1999 XE₂₀₃, 3, 1, 0; 1999 XK₂₀₃, 3, 1, 0; 1999 XL₂₀₃, 3, 1, 0; 1999 XU₂₀₃, 3, 1, 0; 1999 XC₂₀₄, 3, 1, 0; 1999 XF₂₀₄, 3, 1, 0; 1999 XH₂₀₄, 3, 1, 0; 1999 XM₂₀₄, 3, 1, 0; 1999 XS₂₀₄, 3, 1, 0; 1999 XW₂₀₄, 3, 1, 0; 1999 XX₂₀₄, 3, 1, 0; 1999 XY₂₀₄, 3, 1, 0; 1999 XZ₂₀₄, 3, 1, 0; 1999 XB₂₀₅, 3, 1, 0; 1999 XF₂₀₅, 3, 1, 0; 1999 XG₂₀₅, 3, 1, 0; 1999 XJ₂₀₅, 3, 1, 0; 1999 XK₂₀₅, 3, 1, 0; 1999 XV₂₀₅, 3, 1, 0; 1999 XM₂₀₆, 3, 1, 0; 1999 XX₂₀₆, 3, 1, 0; 1999 XZ₂₀₇, 3, 1, 0; 1999 XN₂₀₇, 3, 1, 0; 1999 XU₂₁₁, 3, 1, 0; 1999 XW₂₁₁, 3, 1, 0; 1999 XA₂₁₂, 3, 1, 0; 1999 XG₂₁₂, 6, 2, 23; 1999 XH₂₁₂, 9, 3, 31; 1999 XJ₂₁₂, 3, 1, 0; 1999 XK₂₁₂, 3, 1, 0; 1999 XM₂₁₂, 3, 1, 0; 1999 XN₂₁₂, 6, 2, 33; 1999 XT₂₁₂, 3, 1, 0; 1999 XV₂₁₂, 9, 3, 48; 1999 XW₂₁₂, 3, 1, 0; 1999 XZ₂₁₂, 3, 1, 0; 1999 XY₂₁₂, 9, 3, 33; 1999 XA₂₁₃, 3, 1, 0; 1999 XC₂₁₃, 6, 2, 10; 1999 XZ₂₁₃, 3, 1, 0; 1999 XK₂₁₇, 3, 1, 0; 1999 XN₂₁₇, 6, 2, 12; 1999 XN₂₁₈, 3, 1, 0; 1999 XL₂₂₀, 3, 1, 0; 1999 XO₂₂₀, 3, 1, 0; 1999 XQ₂₂₀, 3, 1, 0; 1999 XR₂₂₀, 3, 1, 0; 1999 XB₂₂₁, 3, 1, 0; 1999 XK₂₂₄, 3, 1, 0; 1999 XJ₂₂₅, 3, 1, 0; 1999 XP₂₂₅, 3, 1, 0; 1999 XU₂₂₅, 3, 1, 0; 1999 XV₂₂₅, 3, 1, 0; 1999 XY₂₂₅, 6, 2, 432; 1999 XM₂₂₆, 6, 2, 12; 1999 XL₂₂₇, 3, 1, 0; 1999 XU₂₂₇, 3, 1, 0; 1999 XZ₂₂₇ *, 6, 2, 4; 1999 XA₂₂₈ *, 6, 2, 1; 1999 XB₂₂₈ *, 6, 2, 1; 1999 XD₂₂₈, 6, 2, 13; 1999 XG₂₂₈, 3, 1, 0; 1999 XH₂₂₉ *, 6, 2, 8; 1999 XZ₂₂₉ *, 3, 1, 0; 1999 XA₂₃₀ *, 3, 1, 0; 1999 XE₂₃₀ *, 3, 1, 0; 1999 XD₂₃₀ *, 3, 1, 0; 1999 XE₂₃₀ *, 3, 1, 0; 1999 XG₂₃₀ *, 3, 1, 0; 1999 XH₂₃₀ *, 3, 1, 0; 1999 XJ₂₃₀ *, 3, 1, 0; 1999 XK₂₃₀ *, 3, 1, 0; 1999 XP₂₃₀ *, 3, 1, 0; 1999 XQ₂₃₀ *, 3, 1, 0; 1999 XZ₂₃₀ *, 3, 1, 0; 1999 XS₂₃₀ *, 3, 1, 0; 1999 YB *, 3, 1, 0; 1999 YE, 3, 1, 0; 1999 YG, 6, 2, 21; 1999 YH, 6, 2, 1; 1999 YS, 3, 1, 0; 1999 YV, 9, 3, 54; 1999 YW, 6, 2, 10; 1999 YX, 12, 4, 52; 1999 YY, 6, 2, 21; 1999 YZ, 12, 4, 54; 1999 YP₁, 3, 1, 0; 1999 YT₂, 3, 1, 0; 1999 YV₃, 3, 1, 0; 1999 YW₃, 6, 1, 0; 1999 YY₃, 3, 1, 0; 1999 YV₄, 6, 2, 12; 1999 YA₅, 3, 1, 0; 1999 YE₅, 6, 2, 33; 1999 YH₅, 6, 2, 5; 1999 YN₇, 9, 3, 49; 1999 YZ₈, 3, 1, 0; 1999 YA₉, 3, 1, 0; 1999 YE₉, 3, 1, 0; 1999 YG₉, 3, 1, 0; 1999 YH₉, 3, 1, 0; 1999 YM₉, 3, 1, 0; 1999 YN₉, 3, 1, 0; 1999 YO₉, 3, 1, 0; 1999 YP₉, 3, 1, 0; 1999 YR₉, 3, 1, 0; 1999 YS₉, 3, 1, 0; 1999 YT₉, 6, 2, 4; 1999 YU₉, 3, 1, 0; 1999 YA₁₁, 6, 2, 10; 1999 YD₁₃ *, 6, 2, 1; 1999 YE₁₃ *, 6, 2, 1; 1999 YF₁₃ *, 6, 2, 1; 1999 YG₁₃ *, 9, 2, 1; 1999 YJ₁₃, 3, 1, 0; 1999 YS₁₃, 6, 1, 0; 1999 YT₁₃, 3, 1, 0; 1999 YU₁₃, 3, 1, 0; 1999 YV₁₃, 3, 1, 0; 1999 YR₁₄ *, 3, 1, 0; 1999 YS₁₄ *, 3, 1, 0; 1999 YT₁₄ *, 3, 1, 0; 1999 YH₁₆, 3, 1, 0; 1999 YE₁₈ *, 6, 2, 5; 2000 AB, 3, 1, 0; 2000 AC, 3, 1, 0; 2000 AD, 6, 2, 12; 2000 AE, 3, 1, 0; 2000 AF, 6, 2, 17; 2000 AG, 3, 1, 0; 2000 AJ, 3, 1, 0; 2000 AM, 3, 1, 0; 2000 AN, 3, 1, 0; 2000 AO, 3, 1, 0; 2000 AP, 3, 1, 0; 2000 AQ, 3, 1, 0; 2000 AR, 3, 1, 0; 2000 AS, 3, 1, 0; 2000 AT, 3, 1, 0; 2000 AU, 3, 1, 0; 2000 AV, 3, 1, 0; 2000 AW, 3, 1, 0; 2000 AX, 3, 1, 0; 2000 AY, 3, 1, 0; 2000 AZ, 3, 1, 0; 2000 BA, 3, 1, 0; 2000 BB, 3, 1, 0; 2000 BC, 3, 1, 0; 2000 BD, 3, 1, 0; 2000 BE, 3, 1, 0; 2000 BF, 3, 1, 0; 2000 BG, 3, 1, 0; 2000 BH, 3, 1, 0; 2000 BI, 3, 1, 0; 2000 BJ, 3, 1, 0; 2000 BK, 3, 1, 0; 2000 BL, 3, 1, 0; 2000 BM, 3, 1, 0; 2000 BN, 3, 1, 0; 2000 BO, 3, 1, 0; 2000 BP, 3, 1, 0; 2000 BQ, 3, 1, 0; 2000 BR, 3, 1, 0; 2000 BS, 3, 1, 0; 2000 BT, 3, 1, 0; 2000 BU, 3, 1, 0; 2000 BV, 3, 1, 0; 2000 BW, 3, 1,

2000 AQ₆₄, 3, 1, 0; 2000 AS₆₄, 3, 1, 0; 2000 AT₆₄, 3, 1, 0; 2000 AU₆₄, 3, 1, 0; 2000 AJ₆₅, 3, 1, 0; 2000 AK₆₅, 3, 1, 0; 2000 AL₆₅, 3, 1, 0; 2000 AZ₆₅, 3, 1, 0; 2000 AB₆₆, 3, 1, 0; 2000 AM₆₆, 3, 1, 0; 2000 AN₆₆, 3, 1, 0; 2000 AO₆₆, 3, 1, 0; 2000 AV₆₆, 3, 1, 0; 2000 AY₆₆, 3, 1, 0; 2000 AA₆₇, 3, 1, 0; 2000 AM₆₇, 3, 1, 0; 2000 AA₆₈, 3, 1, 0; 2000 AE₆₈, 3, 1, 0; 2000 AF₆₈, 3, 1, 0; 2000 AH₆₈, 3, 1, 0; 2000 AN₈₅, 3, 1, 0; 2000 AO₈₅, 3, 1, 0; 2000 AV₈₅, 3, 1, 0; 2000 AX₈₅, 3, 1, 0; 2000 AC₈₇, 3, 1, 0; 2000 AD₈₇, 3, 1, 0; 2000 AF₈₈, 3, 1, 0; 2000 AL₉₁, 3, 1, 0; 2000 AN₉₁, 3, 1, 0; 2000 AQ₉₁, 3, 1, 0; 2000 AH₉₃, 3, 1, 0; 2000 AM₉₆, 3, 1, 0; 2000 AN₉₆, 3, 1, 0; 2000 AP₉₆, 3, 1, 0; 2000 AR₉₆, 3, 1, 0; 2000 AS₉₆, 3, 1, 0; 2000 AT₉₆, 3, 1, 0; 2000 AU₉₆, 3, 1, 0; 2000 AV₉₆, 3, 1, 0; 2000 AX₉₆, 3, 1, 0; 2000 AY₉₆, 3, 1, 0; 2000 AA₉₇, 3, 1, 0; 2000 AB₉₇, 3, 1, 0; 2000 AC₉₇, 6, 2, 5; 2000 AD₉₇, 3, 1, 0; 2000 AE₉₇, 3, 1, 0; 2000 AG₉₇, 3, 1, 0; 2000 AH₉₇, 3, 1, 0; 2000 AJ₉₇, 3, 1, 0; 2000 AK₉₇, 3, 1, 0; 2000 AL₉₇, 3, 1, 0; 2000 AM₉₇, 3, 1, 0; 2000 AN₉₇, 3, 1, 0; 2000 AP₉₇, 3, 1, 0; 2000 AQ₉₇, 3, 1, 0; 2000 AR₉₇, 3, 1, 0; 2000 AT₉₇, 3, 1, 0; 2000 AV₉₇, 9, 3, 36; 2000 AW₉₇, 3, 1, 0; 2000 AX₉₇, 3, 1, 0; 2000 AZ₉₇, 3, 1, 0; 2000 AB₉₈, 3, 1, 0; 2000 AC₉₈, 3, 1, 0; 2000 AD₉₈, 3, 1, 0; 2000 AG₉₈, 3, 1, 0; 2000 AH₉₈, 3, 1, 0; 2000 AN₉₈, 3, 1, 0; 2000 AW₉₈, 3, 1, 0; 2000 AX₉₈, 3, 1, 0; 2000 AY₉₈, 6, 2, 20; 2000 AZ₉₈, 3, 1, 0; 2000 AF₉₉, 5, 1, 0; 2000 AL₉₉, 3, 1, 0; 2000 AN₉₉, 3, 1, 0; 2000 AP₉₉, 3, 1, 0; 2000 AS₉₉, 3, 1, 0; 2000 AC₁₀₀, 3, 1, 0; 2000 AE₁₀₀, 3, 1, 0; 2000 AG₁₀₀, 3, 1, 0; 2000 AH₁₀₀, 3, 1, 0; 2000 AJ₁₀₀, 3, 1, 0; 2000 AL₁₀₀, 3, 1, 0; 2000 AN₁₀₀, 3, 1, 0; 2000 AO₁₀₀, 6, 2, 23; 2000 AV₁₀₀, 3, 1, 0; 2000 AX₁₀₀, 3, 1, 0; 2000 AZ₁₀₀, 3, 1, 0; 2000 AD₁₀₁, 3, 1, 0; 2000 AE₁₀₁, 3, 1, 0; 2000 AF₁₀₁, 3, 1, 0; 2000 AA₁₀₂, 3, 1, 0; 2000 AE₁₀₂, 3, 1, 0; 2000 AF₁₀₂, 3, 1, 0; 2000 AM₁₀₂, 3, 1, 0; 2000 AN₁₀₂, 3, 1, 0; 2000 AQ₁₀₂, 3, 1, 0; 2000 AM₁₀₃, 3, 1, 0; 2000 AN₁₁₆, 3, 1, 0; 2000 AY₁₁₆, 3, 1, 0; 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701 Sierra Vista

D. Healy, Junk Bond Observatory, 6929 Madera Dr, Sierra Vista, AZ 85635, U.S.A.
[76443.1440@compuserve.com]

Observer D. Healy

Measurer J. Medkeff

0.40-m $f/5$ Schmidt-Cassegrain + CCD

GSC-ACT

1998 HX, 3, 1, 0; [3, 1, 0*, 1999/10/19]

703 Catalina Sky Survey

C. W. Hergenrother, Space Sciences Building, University of Arizona, Tucson, AZ
85721, U.S.A. [chergen@pirl.lpl.arizona.edu]

Observers S. M. Larson, T. B. Spahr, C. W. Hergenrother, J. W. Brownlee,
P. D. Spahr, F. B. Zoltowski

0.41-m $f/3$ Schmidt + CCD

USNO-SA1.0, USNO-SA2.0, USNO-SA2.1, USNO-A2.0

1967 KC, 8, 2, 29; 1976 DB₁, 4, 1, 0; 1977 QO₃, 4, 1, 0; 1977 UA, 8, 2, 29; 1978 VZ₈, 8, 2, 33; 1978 VM₁₁, 4, 1, 0; 1979 MQ₃, 8, 2, 25; 1979 QF₂, 4, 1, 0; 1980 CJ, 4, 1, 0; 1981 EF₂, 4, 1, 0; 1981 EV₂, 8, 2, 13; 1981 ER₄, 4, 1, 0; 1981 EU₄, 4, 1, 0; 1981 EY₆, 4, 1, 0; 1981 ED₉, 4, 1, 0; 1981 EZ₁₉, 4, 1, 0; 1981 EJ₂₉, 4, 1, 0; 1981 EN₃₀, 4, 1, 0; 1981 EE₃₆, 12, 3, 63; 1981 ER₄₇, 4, 1, 0; 1981 QJ₂, 4, 1, 0; 1982 TJ, 8, 2, 24; 1982 UE₁₂, 4, 1, 0; 1982 VY₃, 4, 1, 0; 1982 VG₄, 8, 2, 31; 1983 XE, 4, 1, 0; 1984 SG₆, 4, 1, 0; 1985 RT, 4, 1, 0; 1986 QQ₃, 4, 1, 0; 1986 QR₅, 4, 1, 0; 1986 WZ, 4, 1, 0; 1987 RG₁, 4, 1, 0; 1987 XC, 4, 1, 0; 1988 BG, 4, 1, 0; 1988 BY₃, 4, 1, 0; 1988 BF₅, 4, 1, 0; 1988 CB₄, 12, 3, 53; 1988 DG₂, 4, 1, 0; 1988 NW, 4, 1, 0; 1988 PU, 4, 1, 0; 1988 RL₁₂, 4, 1, 0; 1988 SU₁, 12, 3, 64; 1988 XY₄, 4, 1, 0; 1989 DB, 4, 1, 0; 1989 GM₁, 4, 1, 0; 1989 RX, 4, 1, 0; 1989 SD, 4, 1, 0; 1989 SN₄, 4, 1, 0; 1989 UA, 4, 1, 0; 1989 WA₁, 4, 1, 0; 1989 YO₃, 4, 1, 0; 1990 DU₄, 4, 1, 0; 1990 EV₁, 4, 1, 0; 1990 GD, 4, 1, 0; 1990 GN, 4, 1, 0; 1990 KD, 4, 1, 0; 1990 QY₅, 4, 1, 0; 1990 QO₈, 4, 1, 0; 1990 RJ₅, 4, 1, 0; 1990 SX₃, 4, 1, 0; 1990 SW₈, 4, 1, 0; 1990 ST₁₅, 4, 1, 0; 1990 SU₁₆, 4, 1, 0; 1990 TT, 4, 1, 0; 1990 TG₂, 12, 3, 75; 1990 TF₆, 8, 2, 27; 1990 TS₉, 12, 2, 27; 1990 TD₁₂, 4, 1, 0; 1990 VE, 4, 1, 0; 1990 VN₁, 4, 1, 0; 1990 VV₂, 12, 3, 55; 1990 VE₄, 4, 1, 0; 1990 VD₈, 4, 1, 0; 1990 VU₈, 4, 1, 0; 1990 WP₁, 8, 2, 61; 1991 BD₁, 4, 1, 0; 1991 EO₅, 8, 2, 23; 1991 FL₂, 4, 1, 0; 1991 FU₃, 4, 1, 0; 1991 NG₅, 4, 1, 0; 1991 PE₂, 4, 1, 0; 1991 PX₆, 4, 1, 0; 1991 PG₇, 4, 1, 0; 1991 PE₈, 4, 1, 0; 1991 PG₁₁, 4, 1, 0; 1991 RE₁, 4, 1, 0; 1991 RQ₄, 4, 1, 0; 1991 RQ₅, 8, 2, 13; 1991 RT₅, 4, 1, 0; 1991 RS₈, 4, 1, 0; 1991 RL₉, 4, 1, 0; 1991 RG₁₄, 4, 1, 0; 1991 RD₁₈, 4, 1, 0; 1991 UJ₂, 4, 1, 0; 1991 VP₃, 4, 1, 0; 1991 VY₄, 4, 1, 0; 1991 VA₅, 4, 1, 0; 1992 DC₇, 4, 1, 0; 1992 EZ₇, 4, 1, 0; 1992 EV₃₂, 4, 1, 0; 1992 GO, 4, 1, 0; 1992 GE₅, 4, 1, 0; 1992 GC₈, 4, 1, 0; 1992 JQ, 4, 1, 0; 1992 LQ, 4, 1, 0; 1992 PV₂, 4, 1, 0; 1992 PC₃, 4, 1, 0; 1992 PT₃, 4, 1, 0; 1992 PZ₃, 8, 2, 64; 1992 SQ₂₄, 4, 1, 0; 1992 UG₇, 4, 1, 0; 1992 UR₈, 4, 1, 0; 1992 WS₆, 8, 2, 29; 1992 YY₁, 7, 2, 510; 1993 BD, 4, 1, 0; 1993 BE₅, 4, 1, 0; 1993 FV₁, 8, 2, 1; 1993 FY₁₂, 4, 1, 0; 1993 FC₁₃, 8, 2, 22; 1993 FV₁₃, 4, 1, 0; 1993 FD₁₆, 8, 2, 27; 1993 FX₂₁, 4, 1, 0; 1993 FO₂₃, 4, 1, 0; 1993 FM₂₈, 4, 1, 0; 1993 FV₃₃, 4, 1, 0; 1993 FH₃₄, 4, 1, 0; 1993 FV₄₈, 4, 1, 0; 1993 FW₄₉, 8, 2, 5; 1993 FE₅₉, 4, 1, 0; 1993 FN₆₂, 8, 2, 31; 1993 FD₆₇, 8, 2, 34; 1993 FG₇₆, 4, 1, 0; 1993 FV₈₀, 4, 1, 0; 1993 GN, 4, 1, 0; 1993 LF, 8, 2, 29; 1993 LC₁, 4, 1, 0; 1993 NW₁, 4, 1, 0; 1993 OU₁, 4, 1, 0; 1993 OD₂, 4, 1, 0; 1993 QO₄, 4, 1, 0; 1993 RA₈, 4, 1, 0; 1993 SU₄, 4, 1, 0; 1993 SA₆, 4, 1, 0; 1993 TJ₂, 4, 1, 0; 1993 TH₁₄, 4, 1, 0; 1993 TK₁₇, 8, 2, 32; 1993 TJ₂₁, 4, 1, 0; 1993 UK, 4, 1, 0; 1993 UY₂, 4, 1, 0; 1994 AY₁₀, 4, 1, 0; 1994 BD₁, 4, 1, 0; 1994 CN₉, 4, 1, 0; 1994 CU₁₀, 4, 1, 0; 1994 EK₁, 4, 1, 0; 1994 ER₅, 4, 1, 0; 1994 EJ₆, 4, 1, 0; 1994 EC₇, 12, 2, 29; 1994 FY, 4, 1, 0; 1994 JV₄, 4, 1, 0; 1994 LC, 4, 1, 0; 1994 LB₈, 4, 1, 0; 1994 NB, 4, 1, 0; 1994 PS, 4, 1, 0; 1994 PP₁₅, 4, 1, 0; 1994 PK₂₀, 4, 1, 0; 1994 PO₃₀, 4, 1, 0; 1994 PD₃₂, 4, 1, 0; 1994 PA₃₆, 4, 1, 0; 1994 TD₃, 4, 1, 0; 1994 VW₂, 4, 1, 0; 1994 WO, 8, 2, 44; 1994 WB₃, 4, 1, 0; 1994 WE₄, 4, 1, 0; 1994 XM₂, 4, 1, 0; 1994 YL, 8, 2,

28; 1995 CB, 12, 2, 3; 1995 DN₁, 4, 1, 0; 1995 KE₂, 4, 1, 0; 1995 OH, 12, 3, 24; 1995 PA, 4, 1, 0; 1995 QV₃, 4, 1, 0; 1995 SA₁, 4, 1, 0; 1995 SE₁, 4, 1, 0; 1995 SO₁₆, 4, 1, 0; 1995 SY₃₀, 4, 1, 0; 1995 SW₃₄, 4, 1, 0; 1995 SE₅₃, 4, 1, 0; 1995 ST₅₃, 4, 1, 0; 1995 SF₅₄, 8, 2, 38; 1995 TQ₆, 4, 1, 0; 1995 UQ₄, 4, 1, 0; 1995 US₄, 4, 1, 0; 1995 UG₇, 4, 1, 0; 1995 UV₈, 4, 1, 0; 1995 UY₈, 4, 1, 0; 1995 UQ₁₂, 4, 1, 0; 1995 VA, 16, 4, 91; 1995 VP₁₇, 4, 1, 0; 1995 WJ₁, 8, 2, 30; 1995 WS₁, 4, 1, 0; 1995 WZ₁, 12, 3, 14; 1995 WP₃, 4, 1, 0; 1995 WB₅, 4, 1, 0; 1995 WX₄₂, 4, 1, 0; 1995 YX, 4, 1, 0; 1995 YF₁, 4, 1, 0; 1995 YT₂, 8, 2, 35; 1995 YX₃, 4, 1, 0; 1995 YO₇, 4, 1, 0; 1995 YH₁₂, 8, 2, 24; 1996 AA, 4, 1, 0; 1996 AK, 8, 2, 28; 1996 AZ, 4, 1, 0; 1996 AP₃, 4, 1, 0; 1996 BE₁, 4, 1, 0; 1996 BF₁, 7, 2, 3; 1996 BH₂, 4, 1, 0; 1996 DD₁, 4, 1, 0; 1996 DH₁, 4, 1, 0; 1996 EG₁, 4, 1, 0; 1996 EL₁, 4, 1, 0; 1996 FH₅, 8, 2, 30; 1996 GT₂, 4, 1, 0; 1996 HE₁, 4, 1, 0; 1996 HB₁₂, 4, 1, 0; 1996 HF₁₈, 4, 1, 0; 1996 XL₁, 8, 2, 2; 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1998 KQ₄₄, 8, 2, 27; 1998 KQ₄₅, 8, 2, 28; 1998 KU₄₅, 4, 1, 0; 1998 KX₄₆, 8, 2, 13; 1998 KE₄₇, 4, 1, 0; 1998 KV₄₇, 4, 1, 0; 1998 KB₅₁, 4, 1, 0; 1998 KS₅₁, 4, 1, 0; 1998 KL₅₂, 8, 2, 11; 1998 KS₅₃, 4, 1, 0; 1998 KP₅₄, 4, 1, 0; 1998 KR₅₄, 4, 1, 0; 1998 KT₅₅, 12, 3, 4; 1998 KC₅₆, 4, 1, 0; 1998 KJ₅₈, 8, 2, 12; 1998 KG₆₄, 4, 1, 0; 1998 LP₂, 8, 2, 33; 1998 MC, 4, 1, 0; 1998 MN₇, 4, 1, 0; 1998 MA₈, 4, 1, 0; 1998 MQ₈, 8, 2, 36; 1998 MD₉, 4, 1, 0; 1998 MQ₁₁, 4, 1, 0; 1998 MR₁₅, 4, 1, 0; 1998 MP₂₃, 8, 2, 34; 1998 MN₂₉, 4, 1, 0; 1998 MJ₃₃, 8, 2, 29; 1998 MN₃₃, 4, 1, 0; 1998 MP₃₃, 12, 3, 65; 1998 MN₃₅, 4, 1, 0; 1998 MR₃₅, 4, 1, 0; 1998 MA₄₆, 3, 1, 0; 1998 NF, 8, 2, 28; 1998 NH, 4, 1, 0; 1998 OJ, 4, 1, 0; 1998 OY₄, 4, 1, 0; 1998 OW₅, 4, 1, 0; 1998 OG₇, 8, 2, 28; 1998 OL₈, 8, 2, 16; 1998 OR₈, 4, 1, 0; 1998 OQ₁₀

2000 JAN. 24

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1, 0; 1998 QW₈₆, 4, 1, 0; 1998 QQ₈₇, 4, 1, 0; 1998 QU₁₀₃, 8, 2, 34; 1998 QL₁₀₅, 4, 1, 0; 1998 RJ₁, 4, 1, 0; 1998 RU₁₆, 4, 1, 0; 1998 RM₁₈, 4, 1, 0; 1998 RQ₁₉, 4, 1, 0; 1998 RP₃₄, 8, 2, 40; 1998 RS₃₈, 4, 1, 0; 1998 RK₄₇, 4, 1, 0; 1998 RF₅₃, 4, 1, 0; 1998 RE₅₅, 7, 2, 24; 1998 RT₅₈, 8, 1, 0; 1998 RK₆₆, 4, 1, 0; 1998 RU₆₆, 4, 1, 0; 1998 RK₆₈, 4, 1, 0; 1998 RP₇₀, 4, 1, 0; 1998 RX₇₁, 4, 1, 0; 1998 RC₇₄, 1, 0; 1998 RZ₇₆, 4, 1, 0; 1998 RF₇₇, 4, 1, 0; 1998 RD₇₉, 4, 1, 0; 1998 RC₈₀, 4, 1, 0; 1998 SQ₄, 4, 1, 0; 1998 SV₁, 4, 1, 0; 1998 SV₁₄, 4, 1, 0; 1998 SN₂₅, 4, 1, 0; 1998 SG₄₉, 4, 1, 0; 1998 SP₅₃, 4, 1, 0; 1998 ST₅₄, 4, 1, 0; 1998 SL₅₇, 4, 1, 0; 1998 SY₅₇, 4, 1, 0; 1998 SM₇₃, 4, 1, 0; 1998 SH₇₆, 4, 1, 0; 1998 SM₁₀₇, 4, 1, 0; 1998 SH₁₁₆, 4, 1, 0; 1998 SJ₁₂₂, 4, 1, 0; 1998 SV₁₂₆, 4, 1, 0; 1998 SW₁₃₂, 4, 1, 0; 1998 SH₁₃₄, 4, 1, 0; 1998 SD₁₃₉, 4, 1, 0; 1998 SY₁₃₉, 4, 1, 0; 1998 SE₁₄₄, 4, 1, 0; 1998 SK₁₆₄, 4, 1, 0; 1998 SV₁₆₄, 4, 1, 0; 1998 TA₈, 2, 18; 1998 TU₆, 4, 1, 0; 1998 UH₃₁, 4, 1, 0; 1998 VF₄, 1, 0; 1998 VG₄, 1, 0; 1998 VH₅, 4, 1, 0; 1998 VL₇, 4, 1, 0; 1998 LV₂₇, 4, 1, 0; 1998 VZ₃₀, 4, 1, 0; 1998 VF₃₅, 4, 1, 0; 1998 VE₃₇, 4, 1, 0; 1998 WJ₈, 4, 1, 0; 1998 WT₂₀, 4, 1, 0; 1998 XL₅, 4, 1, 0; 1998 XS₂₇, 8, 1, 0; 1998 XD₅₁, 4, 1, 0; 1998 XS₇₃, 4, 1, 0; 1998 YR₄, 1, 0; 1998 YX₄, 1, 0; 1999 JN₁₇, 4, 1, 0; 1999 JK₄₁, 4, 1, 0; 1999 JD₅₀, 4, 1, 0; 1999 JY₅₈, 4, 1, 0; 1999 JQ₆₄, 8, 1, 0; 1999 JL₈₀, 4, 1, 0; 1999 JF₉₄, 4, 1, 0; 1999 JW₉₅, 4, 1, 0; 1999 JH₉₈, 4, 1, 0; 1999 JX₁₁₈, 4, 1, 0; 1999 JC₁₂₀, 4, 1, 0; 1999 JW₁₂₀, 4, 1, 0; 1999 JO₁₂₁, 4, 1, 0; 1999 JX₁₂₁, 4, 1, 0; 1999 JH₁₂₇, 4, 1, 0; 1999 JG₁₃₆, 4, 1, 0; 1999 JH₁₃₆, 4, 1, 0; 1999 JJ₁₃₆, 4, 1, 0; 1999 JK₁₃₆, 4, 1, 0; 1999 JL₁₃₆, 4, 1, 0; 1999 JO₁₃₆, 4, 1, 0; 1999 JP₁₃₆, 4, 1, 0; 1999 JW₁₃₆, 4, 1, 0; 1999 JY₁₃₆, 4, 1, 0; 1999 JY₁₃₆, 4, 1, 0; 1999 JZ₁₃₆, 4, 1, 0; 1999 KH₇, 4, 1, 0; 1999 KM₁₁, 4, 1, 0; 1999 KK₁₅, 4, 1, 0; 1999 LF₆, 4, 1, 0; 1999 LO₇, 8, 2, 1; 1999 LN₃₂, 4, 1, 0; 1999 LV₃₂, 4, 1, 0; 1999 LW₃₂, 4, 1, 0; 1999 LX₃₂, 4, 1, 0; 1999 LK₃₃, 4, 1, 0; 1999 LN₃₃, 4, 1, 0; 1999 LO₃₃, 4, 1, 0; 1999 LR₃₃, 4, 1, 0; 1999 LS₃₃, 8, 1, 0; 1999 LT₃₃, 4, 1, 0; 1999 LU₃₃, 8, 1, 0; 1999 LV₃₃, 8, 1, 0; 1999 LW₃₃, 8, 1, 0; 1999 LX₃₃, 8, 1, 0; 1999 LY₃₃, 8, 1, 0; 1999 LZ₃₃, 8, 1, 0; 1999 LA₃₄, 8, 1, 0; 1999 LB₃₄, 4, 1, 0; 1999 LC₃₄, 4, 1, 0; 1999 LD₃₄, 4, 1, 0; 1999 LE₃₄, 4, 1, 0; 1999 LF₃₄, 4, 1, 0; 1999 LG₃₄, 4, 1, 0; 1999 LH₃₄, 4, 1, 0; 1999 LJ₃₄, 4, 1, 0; 1999 LK₃₄, 4, 1, 0; 1999 LL₃₄, 4, 1, 0; 1999 LM₃₄, 4, 1, 0; 1999 LN₃₄, 4, 1, 0; 1999 LO₃₄, 4, 1, 0; 1999 LP₃₄, 4, 1, 0; 1999 LR₃₄, 4, 1, 0; 1999 LS₃₄, 4, 1, 0; 1999 NZ₅, 4, 1, 0; 1999 NG₆, 4, 1, 0; 1999 NA₉, 4, 1, 0; 1999 ND₉, 4, 1, 0; 1999 NS₉, 4, 1, 0; 1999 NP₁₇, 4, 1, 0; 1999 NO₁₈, 4, 1, 0; 1999 NL₁₉, 4, 1, 0; 1999 NQ₂₀, 4, 1, 0; 1999 NB₂₁, 4, 1, 0; 1999 NH₂₁, 4, 1, 0; 1999 NV₂₃, 4, 1, 0; 1999 NQ₂₇, 4, 1, 0; 1999 NS₃₃, 4, 1, 0; 1999 NF₃₅, 4, 1, 0; 1999 NF₄₀, 4, 1, 0; 1999 NJ₄₁, 4, 1, 0; 1999 NU₄₁, 4, 1, 0; 1999 NV₄₁, 4, 1, 0; 1999 NK₄₉, 4, 1, 0; 1999 NX₅₄, 4, 1, 0; 1999 OB₄, 1, 0; 1999 OL₄, 1, 0; 1999 OW₄, 4, 1, 0; 1999 OZ₁, 8, 2, 14; 1999 OG₂, 4, 1, 0; 1999 OJ₂, 4, 1, 0; 1999 OM₂, 4, 1, 0; 1999 OQ₂, 4, 1, 0; 1999 OS₂, 4, 1, 0; 1999 OB₃, 4, 1, 0; 1999 OG₃, 4, 1, 0; 1999 OJ₃, 4, 1, 0; 1999 PZ₄, 1, 0; 1999 PV₄, 4, 1, 0; 1999 PD₈, 4, 1, 0; 1999 PE₈, 4, 1, 0; 1999 PF₈, 4, 1, 0; 1999 PG₈, 4, 1, 0; 1999 QQ₁, 4, 1, 0; 1999 QV₁, 4, 1, 0; 1999 QZ₂, 4, 1, 0; 1999 QA₃, 4, 1, 0; 1999 QB₃, 4, 1, 0; 1999 RM₄, 4, 1, 0; 1999 RV₄, 4, 1, 0; 1999 RD₁₀, 8, 2, 1; 1999 RJ₁₀, 4, 1, 0; 1999 RZ₂₀, 8, 1, 0

3, 67; 1999 RC₂₀₈, 12, 3, 53; 1999 RG₂₀₈, 12, 54, 0; 1999 RH₂₀₈, 32, 8, 99; 1999 RH₂₀₉, 4, 1, 0; 1999 RM₂₀₉, 8, 2, 55; 1999 RX₂₀₉, 12, 3, 54; 1999 RB₂₁₀, 12, 3, 54; 1999 RS₂₁₀, 8, 2, 55; 1999 RD₂₁₁, 12, 3, 68; 1999 RF₂₁₁, 8, 2, 55; 1999 RJ₂₁₁, 4, 1, 0; 1999 RM₂₁₁, 4, 1, 0; 1999 RN₂₁₁, 8, 2, 65; 1999 RQ₂₁₁, 4, 1, 0; 1999 RS₂₁₁, 4, 1, 0; 1999 RV₂₁₁, 8, 2, 60; 1999 RA₂₁₂, 8, 2, 12; 1999 RC₂₁₂, 4, 1, 0; 1999 RD₂₁₂, 12, 3, 67; 1999 RO₂₁₂, 16, 4, 54; 1999 RM₂₁₅, 4, 1, 0; 1999 SN₁, 4, 1, 0; 1999 ST₁, 4, 1, 0; 1999 SZ₁, 8, 2, 25; 1999 SH₂, 4, 1, 0; 1999 SQ₂, 4, 1, 0; 1999 SX₃, 4, 1, 0; 1999 SZ₃, 4, 1, 0; 1999 SG₄, 8, 2, 72; 1999 SX₄, 4, 1, 0; 1999 SH₆, 4, 1, 0; 1999 SN₆, 8, 2, 59; 1999 SA₁₀, 4, 1, 0; 1999 SU₁₀, 8, 2, 73; 1999 SB₁₁, 8, 2, 73; 1999 SH₁₁, 4, 1, 0; 1999 SJ₁₁, 4, 1, 0; 1999 SN₁₁, 4, 1, 0; 1999 SO₁₁, 4, 1, 0; 1999 ST₁₁, 4, 1, 0; 1999 SU₁₁, 4, 1, 0; 1999 SV₁₁, 4, 1, 0; 1999 SD₁₂, 4, 1, 0; 1999 TF₈, 8, 2, 78; 1999 TD₂, 4, 1, 0; 1999 TP₂, 4, 1, 0; 1999 TZ₂, 4, 1, 0; 1999 TM₄, 4, 1, 0; 1999 TS₄, 4, 1, 0; 1999 TG₆, 4, 1, 0; 1999 TC₇, 4, 1, 0; 1999 TP₇, 4, 1, 0; 1999 TS₇, 8, 2, 58; 1999 TV₇, 4, 1, 0; 1999 TF₈, 4, 1, 0; 1999 TS₈, 4, 1, 0; 1999 TV₈, 8, 2, 30; 1999 TB₉, 4, 1, 0; 1999 TM₉, 8, 2, 32; 1999 TR₉, 4, 1, 0; 1999 TG₁₁, 4, 1, 0; 1999 TP₁₁, 8, 2, 19; 1999 TQ₁₁, 8, 2, 46; 1999 TH₁₂, 4, 1, 0; 1999 TY₁₂, 4, 1, 0; 1999 TB₁₃, 4, 1, 0; 1999 TF₁₃, 4, 1, 0; 1999 TH₁₃, 4, 1, 0; 1999 TX₁₃, 4, 1, 0; 1999 TG₁₄, 4, 1, 0; 1999 TZ₁₄, 4, 1, 0; 1999 TG₁₆, 4, 1, 0; 1999 TZ₁₆, 4, 1, 0; 1999 TY₁₇, 4, 1, 0; 1999 TU₁₈, 4, 1, 0; 1999 TJ₁₉, 4, 1, 0; 1999 TG₂₀, 4, 1, 0; 1999 TH₂₀, 4, 1, 0; 1999 TO₂₀, 4, 1, 0; 1999 TP₂₀, 4, 1, 0; 1999 TQ₂₀, 8, 2, 30; 1999 TH₂₄, 4, 1, 0; 1999 TW₂₄, 4, 1, 0; 1999 TG₂₅, 4, 1, 0; 1999 TM₂₅, 4, 1, 0; 1999 TN₂₅, 8, 2, 18; 1999 TG₂₅, 3, 1, 0; 1999 TV₂₅, 8, 2, 18; 1999 TZ₂₅, 8, 2, 18; 1999 TB₂₆, 4, 1, 0; 1999 TE₂₆, 12, 3, 51; 1999 TF₂₆, 8, 2, 32; 1999 TL₂₆, 4, 1, 0; 1999 TE₂₇, 16, 4, 54; 1999 TG₂₇, 12, 3, 54; 1999 TH₂₇, 4, 1, 0; 1999 TK₂₇, 4, 1, 0; 1999 TM₂₇, 12, 3, 36; 1999 TN₂₇, 4, 1, 0; 1999 TP₂₇, 4, 1, 0; 1999 TQ₂₇, 8, 2, 26; 1999 TS₂₇, 8, 2, 26; 1999 TW₂₇, 4, 1, 0; 1999 TX₂₇, 4, 1, 0; 1999 TZ₂₇, 8, 2, 28; 1999 TF₂₈, 8, 2, 13; 1999 TV₂₈, 4, 1, 0; 1999 TW₂₈, 4, 1, 0; 1999 TD₂₉, 8, 2, 29; 1999 TG₂₉, 4, 1, 0; 1999 TF₃₀, 4, 1, 0; 1999 TR₃₀, 8, 2, 29; 1999 TX₃₀, 12, 3, 42; 1999 TA₃₁, 12, 3, 42; 1999 TE₃₁, 8, 2, 29; 1999 TK₃₁, 4, 1, 0; 1999 TO₃₁, 4, 1, 0; 1999 TR₃₁, 4, 1, 0; 1999 TG₃₂, 4, 1, 0; 1999 TM₃₂, 8, 2, 31; 1999 TN₃₂, 4, 1, 0; 1999 TB₃₃, 4, 1, 0; 1999 TN₃₃, 4, 1, 0; 1999 TQ₃₃, 4, 1, 0; 1999 TW₃₃, 4, 1, 0; 1999 TU₃₄, 4, 1, 0; 1999 TR₃₄, 4, 1, 0; 1999 TS₃₄, 8, 2, 30; 1999 TW₃₄, 13, 3, 36; 1999 UT₄, 4, 1, 0; 1999 UN₄, 4, 1, 0; 1999 UQ₄, 4, 1, 0; 1999 UV₄, 4, 1, 0; 1999 UG₂, 8, 2, 44; 1999 UK₂, 4, 1, 0; 1999 UW₂, 4, 1, 0; 1999 UC₃, 4, 1, 0; 1999 UU₃, 4, 1, 0; 1999 UA₄, 8, 2, 28; 1999 UJ₄, 7, 2, 30; 1999 UE₄, 8, 2, 28; 1999 UG₄, 4, 1, 0; 1999 UH₄, 8, 2, 28; 1999 UJ₄, 4, 1, 0; 1999 UL₄, 4, 1, 0; 1999 UN₄, 4, 1, 0; 1999 UQ₄, 4, 1, 0; 1999 UU₄, 8, 2, 28; 1999 UV₄, 4, 1, 0; 1999 UG₅, 4, 1, 0; 1999 UG₅, 4, 1, 0; 1999 UX₅, 4, 1, 0; 1999 UB₆, 8, 2, 29; 1999 UD₆, 8, 2, 8; 1999 UG₆, 4, 1, 0; 1999 UK₆, 8, 2, 28; 1999 UL₆, 4, 1, 0; 1999 UN₆, 4, 1, 0; 1999 UO₆, 4, 1, 0; 1999 US₆, 4, 1, 0; 1999 US₇, 4, 1, 0; 1999 UW₇, 4, 1, 0; 1999 UX₇, 4, 1, 0; 1999 UZ₇, 4, 1, 0; 1999 UD₈, 8, 2, 62; 1999 UG₈, 8, 2, 20; 1999 UH₈, 4, 1, 0; 1999 UJ₈, 4, 1, 0; 1999 UM₈, 4, 1, 0; 1999 UN₈, 4, 1, 0; 1999 UQ₈, 4, 1, 0; 1999 UT₈, 4, 1, 0; 1999 UU₈, 4, 1, 0; 1999 UX₈, 4, 1, 0; 1999 UY₈, 8, 2, 62; 1999 UD₉, 4, 1, 0;

1999 VA₁₁, 4, 1, 0; 1999 VB₁₁, 4, 1, 0; 1999 VD₁₁, 4, 1, 0; 1999 VF₁₁, 4, 1, 0; 1999 VG₁₁, 8, 2, 34;
1999 VH₁₁, 4, 1, 0; 1999 VK₁₁, 8, 2, 35; 1999 VR₁₁, 4, 1, 0; 1999 VS₁₁, 4, 1, 0; 1999 VT₁₁, 8, 2,
28; 1999 VU₁₁, 4, 1, 0; 1999 VY₁₁, 8, 2, 12; 1999 VZ₁₁, 8, 2, 12; 1999 VA₁₂, 4, 1, 0; 1999 VB₁₂, 4,
1, 0; 1999 VC₁₂, 4, 1, 0; 1999 VD₁₂, 4, 1, 0; 1999 VE₁₂, 8, 2, 26; 1999 VH₁₂, 4, 1, 0; 1999 VI₁₂, 4,
1, 0; 1999 VO₁₂, 4, 1, 0; 1999 VP₁₂, 4, 1, 0; 1999 VQ₁₂, 4, 1, 0; 1999 VT₁₂, 4, 1, 0; 1999 VU₁₂,
12, 4, 1, 0; 1999 VV₁₂, 4, 1, 0; 1999 VW₁₂, 4, 1, 0; 1999 VX₁₂, 8, 2, 32; 1999 VY₁₂, 8, 2, 43;
1999 VL₁₈, 4, 1, 0; 1999 VA₁₉, 4, 1, 0; 1999 VE₁₉, 4, 1, 0; 1999 VF₁₉, 4, 1, 0; 1999 VG₁₉, 8, 2, 33;
1999 VH₁₉, 4, 1, 0; 1999 VP₁₉, 4, 1, 0; 1999 VR₁₉, 4, 1, 0; 1999 VS₁₉, 4, 1, 0; 1999 VU₁₉, 4, 1, 0;
1999 VV₁₉, 4, 1, 0; 1999 VX₁₉, 8, 2, 24; 1999 VA₂₀, 4, 1, 0; 1999 VB₂₀, 8, 2, 24; 1999 VE₂₀, 4, 1,
0; 1999 VF₂₀, 4, 1, 0; 1999 VH₂₀, 8, 2, 48; 1999 VL₂₀, 4, 1, 0; 1999 VM₂₀, 8, 2, 51; 1999 VN₂₀, 4,
10; 1999 VP₂₀, 8, 2, 51; 1999 VR₂₀, 4, 1, 0; 1999 VS₂₀, 4, 1, 0; 1999 VV₂₀, 4, 1, 0; 1999 VA₂₁,
8, 2, 25; 1999 VE₂₁, 12, 3, 42; 1999 VH₂₁, 8, 2, 28; 1999 VM₂₁, 4, 1, 0; 1999 VN₂₁, 8, 2, 27;
1999 VP₂₁, 4, 1, 0; 1999 VR₂₁, 4, 1, 0; 1999 VU₂₁, 4, 1, 0; 1999 VW₂₁, 4, 1, 0; 1999 VB₂₂, 4,
1, 0; 1999 VC₂₂, 4, 1, 0; 1999 VH₂₂, 4, 1, 0; 1999 VJ₂₂, 4, 1, 0; 1999 VK₂₂, 4, 1, 0; 1999 VL₂₂,
4, 1, 0; 1999 VM₂₂, 8, 2, 18; 1999 VN₂₂, 4, 1, 0; 1999 VO₂₂, 12, 3, 53; 1999 VP₂₂, 8, 2, 46;
1999 VS₂₂, 8, 2, 34; 1999 VT₂₂, 4, 1, 0; 1999 VY₂₂, 8, 2, 44; 1999 VA₂₃, 4, 1, 0; 1999 VC₂₃,
4, 1, 0; 1999 VE₂₃, 4, 1, 0; 1999 VF₂₃, 8, 2, 16; 1999 VG₂₃, 8, 2, 16; 1999 VJ₂₃, 8, 2, 20;
1999 VK₂₃, 8, 2, 27; 1999 VL₂₃, 4, 1, 0; 1999 VO₂₃, 8, 2, 29; 1999 VP₂₃, 4, 1, 0; 1999 VQ₂₃,
12, 3, 47; 1999 VR₂₃, 4, 1, 0; 1999 VS₂₃, 8, 2, 29; 1999 VT₂₃, 8, 2, 20; 1999 VU₂₃, 4, 1, 0;
1999 VV₂₃, 4, 1, 0; 1999 VW₂₃, 8, 2, 16; 1999 VX₂₃, 4, 1, 0; 1999 VY₂₃, 4, 1, 0; 1999 VZ₂₃,
4, 1, 0; 1999 VC₂₄, 8, 2, 16; 1999 VD₂₄, 12, 3, 36; 1999 VE₂₄, 12, 3, 44; 1999 VF₂₄, 8, 2, 1;
1999 VG₂₄, 4, 1, 0; 1999 VJ₂₄, 4, 1, 0; 1999 VK₂₄, 8, 2, 33; 1999 VO₂₄, 8, 2, 55; 1999 VJ₂₅, 4, 1,
0; 1999 VM₂₅, 4, 1, 0; 1999 VO₂₅, 4, 1, 0; 1999 VQ₂₅, 4, 1, 0; 1999 VR₂₅, 4, 1, 0; 1999 VF₂₆, 8, 2,
35; 1999 VH₂₆, 8, 2, 35; 1999 VJ₂₆, 4, 1, 0; 1999 VK₂₆, 4, 1, 0; 1999 VL₂₆, 4, 1, 0; 1999 VM₂₆, 8,
2, 35; 1999 VO₂₆, 4, 1, 0; 1999 VP₂₆, 4, 1, 0; 1999 VR₂₆, 4, 1, 0; 1999 VS₂₆, 8, 2, 36; 1999 VU₂₆,
8, 2, 35; 1999 VC₂₇, 4, 1, 0; 1999 VJ₂₇, 12, 3, 71; 1999 VK₂₇, 8, 2, 33; 1999 VN₂₇, 8, 2, 33;
1999 VO₂₇, 4, 1, 0; 1999 VT₂₇, 4, 1, 0; 1999 VU₂₇, 4, 1, 0; 1999 VA₂₈, 4, 1, 0; 1999 VD₂₈, 4, 1,
0; 1999 VF₂₈, 4, 1, 0; 1999 VG₂₈, 4, 1, 0; 1999 VP₂₈, 12, 3, 30; 1999 VQ₂₈, 8, 2, 30; 1999 VR₂₈,
4, 1, 0; 1999 VT₂₈, 12, 3, 30; 1999 VU₂₈, 12, 3, 30; 1999 VV₂₈, 8, 2, 5; 1999 VW₂₈, 12, 3, 30;
1999 VX₂₈, 8, 2, 5; 1999 VY₂₈, 8, 2, 25; 1999 VZ₂₈, 12, 3, 30; 1999 VA₂₉, 8, 2, 33; 1999 VD₂₉,
8, 2, 25; 1999 VE₂₉, 12, 3, 30; 1999 VK₂₉, 4, 1, 0; 1999 VL₂₉, 4, 10; 1999 VO₂₉, 8, 2, 26;
1999 VP₂₉, 8, 2, 26; 1999 VQ₂₉, 4, 1, 0; 1999 VR₂₉, 8, 2, 26; 1999 VS₂₉, 8, 2, 26; 1999 VV₂₉,
8, 2, 10; 1999 VX₂₉, 8, 2, 10; 1999 VY₂₉, 4, 1, 0; 1999 VA₃₀, 8, 2, 25; 1999 VD₃₀, 4, 1, 0;
1999 VE₃₀, 4, 1, 0; 1999 VL₃₀, 4, 1, 0; 1999 VM₃₀, 4, 1, 0; 1999 VP₃₀, 4, 1, 0; 1999 VQ₃₀, 4, 1,
0; 1999 VT₃₀, 4, 1, 0; 1999 VU₃₀, 4, 1, 0; 1999 VW₃₀, 4, 1, 0; 1999 VX₃₀, 4, 1, 0; 1999 VA₃₁, 4,
1, 0; 1999 VC₃₁, 4, 1, 0; 1999 VE₃₁, 4, 1, 0; 1999 VJ₃₁, 4, 1, 0; 1999 VN₃₁, 4, 1, 0; 1999 VT₃₁,
4, 1, 0; 1999 VU₃₁, 8, 2, 30; 1

0; 1999 VJ₅₈, 4, 1, 0; 1999 VK₅₈, 8, 2, 33; 1999 VL₅₈, 4, 1, 0; 1999 VM₅₈, 8, 2, 33; 1999 VN₅₈, 4, 1, 0; 1999 VO₅₈, 4, 1, 0; 1999 VQ₅₈, 4, 1, 0; 1999 VR₅₈, 4, 1, 0; 1999 VS₅₈, 8, 2, 33; 1999 VT₅₈, 4, 1, 0; 1999 VU₅₈, 8, 2, 33; 1999 VV₅₈, 4, 1, 0; 1999 VY₅₈, 4, 1, 0; 1999 VZ₅₈, 4, 1, 0; 1999 VB₅₉, 4, 1, 0; 1999 VC₅₉, 8, 2, 36; 1999 VD₅₉, 8, 2, 33; 1999 VE₅₉, 4, 1, 0; 1999 VF₅₉, 4, 1, 0; 1999 VG₅₉, 8, 2, 13; 1999 VH₅₉, 8, 2, 13; 1999 VI₅₉, 8, 2, 13; 1999 VJ₆₀, 12, 3, 36; 1999 VK₆₀, 8, 2, 13; 1999 VL₆₀, 4, 1, 0; 1999 VM₆₀, 4, 1, 0; 1999 VN₆₀, 4, 1, 0; 1999 VO₆₀, 12, 3, 63; 1999 VP₆₀, 3, 1, 0; 1999 VQ₆₀, 8, 2, 28; 1999 VR₆₀, 12, 3, 63; 1999 VS₆₀, 8, 2, 35; 1999 VT₆₀, 8, 2, 28; 1999 VU₆₀, 8, 2, 28; 1999 VV₆₀, 12, 3, 63; 1999 VY₆₀, 8, 2, 35; 1999 VZ₆₀, 8, 2, 28; 1999 VA₆₁, 8, 2, 33; 1999 VB₆₁, 8, 2, 13; 1999 VC₆₁, 8, 2, 13; 1999 VD₆₁, 8, 2, 13; 1999 VE₆₁, 8, 2, 13; 1999 VF₆₁, 8, 2, 13; 1999 VG₆₁, 8, 2, 13; 1999 VH₆₁, 8, 2, 13; 1999 VI₆₁, 8, 2, 13; 1999 VJ₆₁, 8, 2, 13; 1999 VK₆₁, 8, 2, 13; 1999 VL₆₁, 8, 2, 13; 1999 VM₆₁, 8, 2, 13; 1999 VN₆₁, 8, 2, 13; 1999 VO₆₁, 8, 2, 13; 1999 VP₆₁, 8, 2, 13; 1999 VQ₆₁, 8, 2, 13; 1999 VR₆₁, 8, 2, 13; 1999 VS₆₁, 8, 2, 13; 1999 VT₆₁, 8, 2, 13; 1999 VU₆₁, 8, 2, 13; 1999 VV₆₁, 8, 2, 13; 1999 VY₆₁, 8, 2, 13; 1999 VZ₆₁, 8, 2, 13; 1999 VA₆₂, 4, 1, 0; 1999 VB₆₂, 4, 1, 0; 1999 VC₆₂, 4, 1, 0; 1999 VD₆₂, 4, 1, 0; 1999 VE₆₂, 4, 1, 0; 1999 VF₆₂, 4, 1, 0; 1999 VG₆₂, 4, 1, 0; 1999 VH₆₂, 4, 1, 0; 1999 VI₆₂, 4, 1, 0; 1999 VJ₆₂, 4, 1, 0; 1999 VK₆₂, 4, 1, 0; 1999 VL₆₂, 4, 1, 0; 1999 VM₆₂, 4, 1, 0; 1999 VN₆₂, 4, 1, 0; 1999 VO₆₂, 4, 1, 0; 1999 VP₆₂, 4, 1, 0; 1999 VQ₆₂, 4, 1, 0; 1999 VR₆₂, 4, 1, 0; 1999 VS₆₂, 4, 1, 0; 1999 VT₆₂, 4, 1, 0; 1999 VU₆₂, 4, 1, 0; 1999 VV₆₂, 4, 1, 0; 1999 VY₆₂, 4, 1, 0; 1999 VZ₆₂, 4, 1, 0; 1999 VA₆₃, 4, 1, 0; 1999 VB₆₃, 4, 1, 0; 1999 VC₆₃, 4, 1, 0; 1999 VD₆₃, 4, 1, 0; 1999 VE₆₃, 4, 1, 0; 1999 VF₆₃, 4, 1, 0; 1999 VG₆₃, 4, 1, 0; 1999 VH₆₃, 4, 1, 0; 1999 VI₆₃, 4, 1, 0; 1999 VJ₆₃, 4, 1, 0; 1999 VK₆₃, 4, 1, 0; 1999 VL₆₃, 4, 1, 0; 1999 VM₆₃, 4, 1, 0; 1999 VN₆₃, 4, 1, 0; 1999 VO₆₃, 4, 1, 0; 1999 VP₆₃, 4, 1, 0; 1999 VQ₆₃, 4, 1, 0; 1999 VR₆₃, 4, 1, 0; 1999 VS₆₃, 4, 1, 0; 1999 VT₆₃, 4, 1, 0; 1999 VU₆₃, 4, 1, 0; 1999 VV₆₃, 4, 1, 0; 1999 VY₆₃, 4, 1, 0; 1999 VZ₆₃, 4, 1, 0; 1999 VA₆₄, 4, 1, 0; 1999 VB₆₄, 4, 1, 0; 1999 VC₆₄, 4, 1, 0; 1999 VD₆₄, 4, 1, 0; 1999 VE₆₄, 4, 1, 0; 1999 VF₆₄, 4, 1, 0; 1999 VG₆₄, 4, 1, 0; 1999 VH₆₄, 4, 1, 0; 1999 VI₆₄, 4, 1, 0; 1999 VJ₆₄, 4, 1, 0; 1999 VK₆₄, 4, 1, 0; 1999 VL₆₄, 4, 1, 0; 1999 VM₆₄, 4, 1, 0; 1999 VN₆₄, 4, 1, 0; 1999 VO₆₄, 4, 1, 0; 1999 VP₆₄, 4, 1, 0; 1999 VQ₆₄, 4, 1, 0; 1999 VR₆₄, 4, 1, 0; 1999 VS₆₄, 4, 1, 0; 1999 VT₆₄, 4, 1, 0; 1999 VU₆₄, 4, 1, 0; 1999 VV₆₄, 4, 1, 0; 1999 VY₆₄, 4, 1, 0; 1999 VZ₆₄, 4, 1, 0; 1999 VA₆₅, 4, 1, 0; 1999 VB₆₅, 4, 1, 0; 1999 VC₆₅, 4, 1, 0; 1999 VD₆₅, 4, 1, 0; 1999 VE₆₅, 4, 1, 0; 1999 VF₆₅, 4, 1, 0; 1999 VG₆₅, 4, 1, 0; 1999 VH₆₅, 4, 1, 0; 1999 VI₆₅, 4, 1, 0; 1999 VJ₆₅, 4, 1, 0; 1999 VK₆₅, 4, 1, 0; 1999 VL₆₅, 4, 1, 0; 1999 VM₆₅, 4, 1, 0; 1999 VN₆₅, 4, 1, 0; 1999 VO₆₅, 4, 1, 0; 1999 VP₆₅, 4, 1, 0; 1999 VQ₆₅, 4, 1, 0; 1999 VR₆₅, 4, 1, 0; 1999 VS₆₅, 4, 1, 0; 1999 VT₆₅, 4, 1, 0; 1999 VU₆₅, 4, 1, 0; 1999 VV₆₅, 4, 1, 0; 1999 VY₆₅, 4, 1, 0; 1999 VZ₆₅, 4, 1, 0; 1999 VA₆₆, 4, 1, 0; 1999 VB₆₆, 4, 1, 0; 1999 VC₆₆, 4, 1, 0; 1999 VD₆₆, 4, 1, 0; 1999 VE₆₆, 4, 1, 0; 1999 VF₆₆, 4, 1, 0; 1999 VG₆₆, 4, 1, 0; 1999 VH₆₆, 4, 1, 0; 1999 VI₆₆, 4, 1, 0; 1999 VJ₆₆, 4, 1, 0; 1999 VK₆₆, 4, 1, 0; 1999 VL₆₆, 4, 1, 0; 1999 VM₆₆, 4, 1, 0; 1999 VN₆₆, 4, 1, 0; 1999 VO₆₆, 4, 1, 0; 1999 VP₆₆, 4, 1, 0; 1999 VQ₆₆, 4, 1,

8, 2, 34; 1999 WE₁₈, 8, 2, 20; 1999 WF₁₈, 4, 1, 0; 1999 WG₁₈, 4, 1, 0; 1999 WN₁₈, 4, 1, 0; 1999 WF₁₉, 4, 1, 0; 1999 XL, 4, 1, 0; 1999 XM, 4, 1, 0; 1999 XV, 4, 1, 0; 1999 XN₁, 8, 2, 17; 1999 XT₁, 12, 3, 36; 1999 XU₁, 8, 2, 33; 1999 XV₁, 4, 1, 0; 1999 XW₁, 4, 1, 0; 1999 XX₁, 4, 1, 0; 1999 XY₁, 8, 2, 11; 1999 XB₂, 8, 2, 14; 1999 XH₂, 4, 1, 0; 1999 XR₂, 12, 3, 67; 1999 XS₂, 8, 2, 13; 1999 XU₂, 8, 2, 23; 1999 XV₂, 16, 4, 165; 1999 XW₂, 8, 2, 14; 1999 XB₄, 4, 1, 0; 1999 XE₄, 4, 1, 0; 1999 XO₄, 4, 1, 0; 1999 XR₄, 4, 1, 0; 1999 XW₄, 4, 1, 0; 1999 XD₅, 4, 1, 0; 1999 XM₅, 4, 1, 0; 1999 XX₅, 4, 1, 0; 1999 XM₆, 4, 1, 0; 1999 XJ₇, 4, 1, 0; 1999 XL₇, 8, 2, 35; 1999 XM₇, 4, 1, 0; 1999 XQ₇, 4, 1, 0; 1999 XS₇, 4, 1, 0; 1999 XX₇, 4, 1, 0; 1999 XY₇, 4, 1, 0; 1999 XO₈, 4, 1, 0; 1999 XQ₈, 8, 2, 41; 1999 XV₈, 4, 1, 0; 1999 XX₈, 8, 2, 3; 1999 XZ₈, 4, 1, 0; 1999 XZ₉, 4, 1, 0; 1999 XE₁₀, 4, 1, 0; 1999 XL₁₀, 4, 1, 0; 1999 XS₁₀, 8, 2, 41; 1999 XW₁₀, 8, 2, 1; 1999 XD₁₁, 4, 1, 0; 1999 XE₁₁, 4, 1, 0; 1999 XF₁₁, 4, 1, 0; 1999 XG₁₁, 4, 1, 0; 1999 XH₁₁, 4, 1, 0; 1999 XK₁₁, 4, 1, 0; 1999 XL₁₁, 4, 1, 0; 1999 XM₁₁, 4, 1, 0; 1999 XN₁₁, 4, 1, 0; 1999 XS₁₁, 4, 1, 0; 1999 XC₁₂, 4, 1, 0; 1999 XL₁₂, 4, 1, 0; 1999 XY₁₂, 4, 1, 0; 1999 XE₁₃, 4, 1, 0; 1999 XF₁₃, 4, 1, 0; 1999 XL₁₃, 4, 1, 0; 1999 XM₁₃, 4, 1, 0; 1999 XN₁₃, 8, 2, 16; 1999 XR₁₃, 4, 1, 0; 1999 XS₁₃, 4, 1, 0; 1999 XV₁₃, 12, 3, 4; 1999 XW₁₃, 12, 2, 1; 1999 XY₁₃, 8, 2, 3; 1999 XB₁₄, 4, 1, 0; 1999 XC₁₄, 4, 1, 0; 1999 XM₁₄, 4, 1, 0; 1999 XG₁₅, 4, 1, 0; 1999 XM₁₅, 4, 1, 0; 1999 XV₁₅, 4, 1, 0; 1999 XX₁₅, 12, 3, 24; 1999 XZ₁₅, 4, 1, 0; 1999 XD₁₆, 2, 1, 0; 1999 XG₁₆, 4, 1, 0; 1999 XH₁₆, 4, 1, 0; 1999 XJ₁₆, 4, 1, 0; 1999 XD₁₇, 4, 1, 0; 1999 XK₁₇, 4, 1, 0; 1999 XZ₁₇, 4, 1, 0; 1999 XG₁₈, 4, 1, 0; 1999 XM₁₈, 8, 2, 35; 1999 XO₁₈, 4, 1, 0; 1999 XR₁₈, 4, 1, 0; 1999 XT₁₈, 4, 1, 0; 1999 XU₁₈, 4, 1, 0; 1999 XV₁₈, 8, 2, 31; 1999 XB₁₉, 4, 1, 0; 1999 XC₁₉, 4, 1, 0; 1999 XE₁₉, 4, 1, 0; 1999 XK₁₉, 8, 2, 30; 1999 XL₁₉, 8, 2, 30; 1999 XP₁₉, 8, 2, 30; 1999 XB₂₀, 8, 2, 51; 1999 XE₂₀, 4, 1, 0; 1999 XJ₂₀, 8, 2, 28; 1999 XL₂₀, 8, 2, 29; 1999 XN₂₀, 8, 2, 28; 1999 XS₂₀, 4, 1, 0; 1999 XU₂₀, 8, 2, 28; 1999 XW₂₀, 8, 2, 30; 1999 XY₂₀, 4, 1, 0; 1999 XB₂₁, 8, 2, 28; 1999 XC₂₁, 4, 1, 0; 1999 XD₂₁, 4, 1, 0; 1999 XO₂₁, 4, 1, 0; 1999 XJ₂₂, 4, 1, 0; 1999 XK₂₂, 4, 1, 0; 1999 XL₂₂, 4, 1, 0; 1999 XM₂₂, 4, 1, 0; 1999 XP₂₂, 8, 2, 19; 1999 XT₂₂, 12, 3, 63; 1999 XU₂₂, 8, 2, 27; 1999 XX₂₂, 4, 1, 0; 1999 XB₂₃, 4, 1, 0; 1999 XD₂₃, 4, 1, 0; 1999 XF₂₃, 4, 1, 0; 1999 XJ₂₃, 4, 1, 0; 1999 XM₂₃, 4, 1, 0; 1999 XN₂₃, 8, 2, 33; 1999 XO₂₃, 4, 1, 0; 1999 XP₂₃, 4, 1, 0; 1999 XS₂₃, 4, 1, 0; 1999 XT₂₃, 4, 1, 0; 1999 XU₂₃, 8, 2, 36; 1999 XV₂₃, 4, 1, 0; 1999 XW₂₃, 12, 3, 36; 1999 XX₂₃, 12, 3, 36; 1999 XY₂₃, 8, 2, 23; 1999 XZ₂₃, 7, 2, 36; 1999 XA₂₄, 12, 3, 23; 1999 XB₂₄, 16, 4, 36; 1999 XF₂₄, 4, 1, 0; 1999 XG₂₄, 4, 1, 0; 1999 XH₂₄, 4, 1, 0; 1999 XJ₂₄, 4, 1, 0; 1999 XL₂₄, 8, 2, 33; 1999 XN₂₄, 4, 1, 0; 1999 XP₂₄, 8, 2, 33; 1999 XQ₂₄, 4, 1, 0; 1999 XT₂₄, 8, 2, 33; 1999 XU₂₄, 4, 1, 0; 1999 XV₂₄, 4, 1, 0; 1999 XW₂₄, 8, 2, 33; 1999 XX₂₄, 4, 1, 0; 1999 XY₂₄, 8, 2, 30; 1999 XA₂₅, 12, 3, 77; 1999 XB₂₅, 4, 1, 0; 1999 XC₂₅, 4, 1, 0; 1999 XD₂₅, 4, 1, 0; 1999 XE₂₅, 4, 1, 0; 1999 XF₂₅, 4, 1, 0; 1999 XG₂₅, 4, 1, 0; 1999 XH₂₅, 4, 1, 0; 1999 XL₂₅, 8, 2, 30; 1999 XM₂₅, 8, 2, 33; 1999 XN₂₅, 4, 1, 0; 1999 XP₂₅, 4, 1, 0; 1999 XQ₂₅, 4, 1, 0; 1999 XR₂₅, 4, 1, 0; 1999 XS₂₅, 8, 2, 35; 1999 XT₂₅, 4, 1, 0; 1999 XU₂₅, 4, 1, 0; 1999 XW₂₅, 4, 1, 0; 1999 XX₂₅, 4, 1, 0; 1999 XZ₂₅, 4, 1, 0; 1999 XC₂₆, 4, 1, 0; 1999 XD₂₆, 12, 3, 63; 1999 XE₂₆, 12, 3, 36; 1999 XG₂₆, 12, 3, 36; 1999 XH₂₆, 4, 1, 0; 1999 XJ₂₆, 4, 1, 0; 1999 XK₂₆, 16, 4, 44; 1999 XN₂₆, 12, 3, 36; 1999 XO₂₆, 8, 2, 20; 1999 XP₂₆, 8, 2, 20; 1999 XR₂₆, 8, 2, 33; 1999 XS₂₆, 4, 1, 0; 1999 XT₂₆, 4, 1, 0; 1999 XU₂₆, 4, 1, 0; 1999 XV₂₆, 12, 3, 57; 1999 XY₂₆, 4, 1, 0; 1999 XZ₂₆, 8, 2, 33; 1999 XB₂₇, 4, 1, 0; 1999 XC₂₇, 4, 1, 0; 1999 XE₂₇, 4, 1, 0; 1999 XF₂₇, 4, 1, 0; 1999 XG₂₇, 4, 1, 0; 1999 XJ₂₇, 4, 1, 0; 1999 XK₂₇, 4, 1, 0; 1999 XL₂₇, 4, 1, 0; 1999 XM₂₇, 4, 1, 0; 1999 XN₂₇, 4, 1, 0; 1999 XO₂₇, 4, 1, 0; 1999 XP₂₇, 8, 2, 33; 1999 XQ₂₇, 4, 1, 0; 1999 XT₂₇, 4, 1, 0; 1999 XV₂₇, 8, 2, 35; 1999 XY₂₇, 8, 2, 13; 1999 XZ₂₇, 8, 2, 23; 1999 XC₂₈, 8, 2, 33; 1999 XG₂₈, 4, 1, 0; 1999 XT₂₈, 4, 1, 0; 1999 XW₂₈, 4, 1, 0; 1999 XF₂₉, 4, 1, 0; 1999 XQ₂₉, 4, 1, 0; 1999 XR₂₉, 4, 1, 0; 1999 XG₃₁, 4, 1, 0; 1999 XU₃₁, 8, 2, 29; 1999 XW₃₁, 4, 1, 0; 1999 XN₃₂, 4, 1, 0; 1999 XO₃₂, 4, 1, 0; 1999 XR₃₂, 4, 1, 0; 1999 XS₃₂, 4, 1, 0; 1999 XV₃₂, 4, 1, 0; 1999 XW₃₂, 4, 1, 0; 1999 XX₃₂, 4, 1, 0; 1999 XN₃₃, 4, 1, 0; 1999 XP₃₃, 4, 1, 0; 1999 XQ₃₃, 4, 1, 0; 1999 XR₃₃, 4, 1, 0; 1999 XS₃₃, 4, 1, 0; 1999 XV₃₃, 8, 2, 29; 1999 XA₃₄, 4, 1, 0; 1999 XB₃₄, 4, 1, 0; 1999 XC₃₄, 4, 1, 0; 1999 XF₃₄, 8, 2, 29; 1999 XG₃₄, 4, 1, 0; 1999 XJ₃₄, 4, 1, 0; 1999 XN₃₄, 4, 1, 0; 1999 XT₃₄, 4, 1, 0; 1999 XX₃₄, 4, 1, 0; 1999 XA₃₅, 4, 1, 0; 1999 XC₃₅, 4, 1, 0; 1999 XF₃₅, 4, 1, 0; 1999 XY₃₅, 4, 1, 0; 1999 XH₃₆, 4, 1, 0; 1999 XL₃₆, 4, 1, 0; 1999 XM₃₆, 8, 2, 25; 1999 XN₃₆, 4, 1, 0; 1999 XO₃₆, 8, 2, 24; 1999 XP₃₆, 8, 2, 24; 1999 XQ₃₆, 8, 2, 24; 1999 XR₃₆, 8, 2, 67; 1999 XS₃₆, 4, 1, 0; 1999 XV₃₆, 4, 1, 0; 1999 XW₃₆, 4, 1, 0; 1999 XX₃₆, 4, 1, 0; 1999 XB₃₇, 4, 1, 0; 1999 XC₃₇, 4, 1, 0; 1999 XJ₃₇, 4, 1, 0; 1999 XL₃₇, 8, 2, 16; 1999 XE₃₇, 4, 1, 0; 1999 XF₃₇, 4, 1, 0; 1999 XG₃₇, 4, 1, 0; 1999 XJ₃₇, 4, 1, 0; 1999 XL₃₇, 4, 1, 0; 1999 XM₃₇, 4, 1, 0; 1999 XN₃₇, 4, 1, 0; 1999 XQ₃₇, 4, 1, 0; 1999 XR₃₇, 4, 1, 0; 1999 XS₃₇, 8, 2, 21; 1999 XP₃₈, 8, 2, 18; 1999 XQ₃₈, 8, 2, 1; 1999 XS₃₈, 4, 1, 0; 1999 XV₃₈, 4, 1, 0; 1999 XD₃₉, 4, 1, 0; 1999 XQ₃₉, 4, 1, 0; 1999 XD₄₀, 4, 1, 0; 1999 XF₄₀, 8, 2, 28; 1999 XG₄₀, 8, 2, 20; 1999 XL₄₀, 4, 1, 0; 1999 XM₄₀, 4, 1, 0; 1999 XO₄₀, 8, 2, 36; 1999 XR₄₀, 4, 1, 0; 1999 XS₄₀, 4, 1, 0; 1999 XT₄₀, 4, 1, 0; 1999 XU₄₀, 4, 1, 0; 1999 XY₄₀, 4, 1, 0; 1999 XB₄₁, 4, 1, 0; 1999 XC₄₁, 4, 1, 0; 1999 XD₄₁, 4, 1, 0; 1999 XH₄₁, 4, 1, 0; 1999 XJ₄₁, 4, 1, 0; 1999 XT₄₁, 4, 1, 0; 1999 XU₄₁, 4, 1, 0; 1999 XV₄₁, 4, 1, 0; 1999 XW₄₁, 8, 2, 36; 1999 XZ₄₁, 12, 3, 30; 1999 XA₄₂, 4, 1, 0; 1999 XC₄₂, 4, 1, 0; 1999 XD₄₂, 4, 1, 0; 1999 XE₄₂, 4, 1, 0; 1999 XH₄₂, 8, 2, 5; 1999 XJ₄₂, 4, 1, 0; 1999 XK₄₂, 12, 3, 30; 1999 XM₄₂, 8, 2, 25; 1999 XO₄₂, 4, 1, 0; 1999 XQ₄₂, 4, 1, 0; 1999 XR₄₂, 12, 3, 30; 1999 XT₄₂, 12, 3, 30; 1999 XW₄₂, 4, 1, 0; 1999 XX₄₂, 4, 1, 0; 1999 XZ₄₂, 12, 3, 31; 1999 XB₄₃, 4, 1, 0; 1999 XC₄₃, 4, 1, 0; 1999 XD₄₃, 12, 3, 31; 1999 XE₄₃, 4, 1, 0; 1999 XF₄₃, 4, 1, 0; 1999 XG₄₃, 12, 3, 30; 1999 XH₄₃, 8, 2, 25; 1999 XJ₄₃, 8, 2, 5; 1999 XK₄₃, 8, 2, 5; 1999 XL₄₃, 12, 3, 31; 1999 XN₄₃, 4, 1, 0; 1999 XO₄₃, 4, 1, 0;

0; 1999 XP₄₃, 12, 3, 31; 1999 XQ₄₃, 8, 2, 26; 1999 XR₄₃, 4, 1, 0; 1999 XS₄₃, 4, 1, 0; 1999 XT₄₃, 4, 1, 0; 1999 XU₄₃, 8, 2, 26; 1999 XV₄₃, 4, 1, 0; 1999 XW₄₃, 4, 1, 0; 1999 XX₄₃, 8, 2, 26; 1999 XY₄₃, 4, 1, 0; 1999 XZ₄₃, 4, 1, 0; 1999 XA₄₄, 8, 2, 26; 1999 XB₄₄, 4, 1, 0; 1999 XD₄₄, 8, 2, 26; 1999 XE₄₄, 4, 1, 0; 1999 XG₄₄, 4, 1, 0; 1999 XH₄₄, 8, 2, 26; 1999 XJ₄₄, 4, 1, 0; 1999 XK₄₄, 8, 2, 5; 1999 XL₄₄, 11, 3, 31; 1999 XM₄₄, 8, 2, 26; 1999 XV₄₄, 8, 2, 25; 1999 XW₄₄, 4, 1, 0; 1999 XZ₄₄, 8, 2, 25; 1999 XA₄₅, 8, 2, 25; 1999 XB₄₅, 4, 1, 0; 1999 XC₄₅, 4, 1, 0; 1999 XD₄₅, 4, 1, 0; 1999 XF₄₅, 8, 2, 57; 1999 XG₄₅, 4, 1, 0; 1999 XH₄₅, 4, 1, 0; 1999 XJ₄₅, 4, 1, 0; 1999 XK₄₅, 4, 1, 0; 1999 XL₄₅, 4, 1, 0; 1999 XN₄₅, 4, 1, 0; 1999 XO₄₅, 4, 1, 0; 1999 XP₄₅, 8, 2, 26; 1999 XS₄₅, 8, 2, 31; 1999 XT₄₅, 8, 2, 26; 1999 XW₄₅, 4, 1, 0; 1999 XX₄₅, 4, 1, 0; 1999 XY₄₅, 4, 1, 0; 1999 XA₄₆, 8, 2, 26; 1999 XB₄₆, 12, 3, 31; 1999 XE₄₆, 4, 1, 0; 1999 XH₄₆, 4, 1, 0; 1999 XJ₄₆, 8, 2, 26; 1999 XL₄₆, 4, 1, 0; 1999 XN₄₆, 4, 1, 0; 1999 XO₄₆, 4, 1, 0; 1999 XP₄₆, 4, 1, 0; 1999 XQ₄₆, 4, 1, 0; 1999 XS₄₆, 4, 1, 0; 1999 XU₄₆, 4, 1, 0; 1999 XY₄₆, 8, 2, 26; 1999 XZ₄₆, 4, 1, 0; 1999 XA₄₇, 4, 1, 0; 1999 XB₄₇, 4, 1, 0; 1999 XD₄₇, 8, 2, 26; 1999 XE₄₇, 4, 1, 0; 1999 XF₄₇, 4, 1, 0; 1999 XG₄₇, 8, 2, 26; 1999 XH₄₇, 4, 1, 0; 1999 XK₄₇, 4, 1, 0; 1999 XL₄₇, 4, 1, 0; 1999 XM₄₇, 4, 1, 0; 1999 XN₄₇, 4, 1, 0; 1999 XO₄₇, 4, 1, 0; 1999 XP₄₇, 4, 1, 0; 1999 XR₄₇, 12, 2, 36; 1999 XT₄₇, 8, 2, 26; 1999 XU₄₇, 4, 1, 0; 1999 XV₄₇, 8, 2, 1; 1999 XW₄₇, 4, 1, 0; 1999 XZ₄₇, 4, 1, 0; 1999 XB₄₈, 4, 1, 0; 1999 XC₄₈, 4, 1, 0; 1999 XD₄₈, 4, 1, 0; 1999 XE₄₈, 4, 1, 0; 1999 XM₄₈, 4, 1, 0; 1999 XS₄₈, 4, 1, 0; 1999 XV₄₈, 4, 1, 0; 1999 XX₄₈, 4, 1, 0; 1999 XZ₄₈, 8, 2, 36; 1999 XB₄₉, 4, 1, 0; 1999 XE₄₉, 4, 1, 0; 1999 XF₄₉, 4, 1, 0; 1999 XH₄₉, 4, 1, 0; 1999 XJ₄₉, 7, 2, 1; 1999 XM₄₉, 4, 1, 0; 1999 XO₄₉, 4, 1, 0; 1999 XQ₄₉, 4, 1, 0; 1999 XV₄₉, 4, 1, 0; 1999 XW₄₉, 4, 1, 0; 1999 XY₄₉, 4, 1, 0; 1999 XE₅₀, 4, 1, 0; 1999 XJ₅₀, 4, 1, 0; 1999 XN₅₀, 4, 1, 0; 1999 XQ₅₀, 4, 1, 0; 1999 XT₅₀, 4, 1, 0; 1999 XV₅₀, 4, 1, 0; 1999 XC₅₁, 8, 2, 35; 1999 XD₅₁, 4, 1, 0; 1999 XF₅₁, 4, 1, 0; 1999 XG₅₁, 4, 1, 0; 1999 XJ₅₁, 8, 2, 35; 1999 XN₅₁, 4, 1, 0; 1999 XP₅₁, 6, 2, 1; 1999 XS₅₁, 4, 1, 0; 1999 XT₅₁, 4, 1, 0; 1999 XU₅₁, 4, 1, 0; 1999 XV₅₁, 4, 1, 0; 1999 XW₅₁, 4, 1, 0; 1999 XY₅₁, 4, 1, 0; 1999 XA₅₂, 4, 1, 0; 1999 XB₅₂, 8, 2, 1; 1999 XD₅₂, 4, 1, 0; 1999 XE₅₂, 8, 1, 0; 1999 XG₅₂, 4, 1, 0; 1999 XH₅₂, 4, 1, 0; 1999 XM₅₂, 4, 1, 0; 1999 XQ₅₂, 4, 1, 0; 1999 XR₅₂, 4, 1, 0; 1999 XS₅₂, 4, 1, 0; 1999 XV₅₂, 4, 1, 0; 1999 XW₅₂, 4, 1, 0; 1999 XZ₅₂, 4, 1, 0; 1999 XA₅₃, 8, 2, 27; 1999 XB₅₃, 4, 1, 0; 1999 XD₅₃, 4, 1, 0; 1999 XE₅₃, 4, 1, 0; 1999 XF₅₃, 4, 1, 0; 1999 XG₅₃, 4, 1, 0; 1999 XH₅₃, 4, 1, 0; 1999 XJ₅₃, 4, 1, 0; 1999 XK₅₃, 4, 1, 0; 1999 XL₅₃, 4, 1, 0; 1999 XM₅₃, 4, 1, 0; 1999 XR₅₃, 4, 1, 0; 1999 XA₅₄, 4, 1, 0; 1999 XE₅₄, 8, 2, 35; 1999 XF₅₄, 4, 1, 0; 1999 XG₅₄, 4, 1, 0; 1999 XH₅₄, 4, 1, 0; 1999 XK₅₄, 4, 1, 0; 1999 XN₅₄, 4, 1, 0; 1999 XP₅₄, 4, 1, 0; 1999 XR₅₄, 4, 1, 0; 1999 XS₅₄, 4, 1, 0; 1999 XY₅₄, 4, 1, 0; 1999 XA₅₅, 4, 1, 0; 1999 XB₅₅, 4, 1, 0; 1999 XD₅₅, 4, 1, 0; 1999 XF₅₅, 4, 1, 0; 1999 XH₅₅, 4, 1, 0; 1999 XJ₅₅, 4, 1, 0; 1999 XU₅₅, 8, 2, 26; 1999 XH₅₆, 4, 1, 0; 1999 XQ₅₆, 4, 1, 0; 1999 XG₅₆, 4, 1, 0; 1999 XS₅₆, 4, 1, 0; 1999 XZ₅₆, 8, 2, 62; 1999 XC₅₇, 4, 1, 0; 1999 XW₅₇, 4, 1, 0; 1999 XB₅₈, 4, 1, 0; 1999 XF₅₈, 4, 1, 0; 1999 XG₅₈, 4, 1, 0; 1999 XT₅₈, 4, 1, 0; 1999 XE₆₁, 4, 1, 0; 1999 XZ₆₁, 4, 1, 0; 1999 XB₆₂, 4, 1, 0; 1999 XC₆₂, 4, 1, 0; 1999 XD₆₂, 4, 1, 0; 1999 XF₆₂, 4, 1, 0; 1999 XK₆₂, 4, 1, 0; 1999 XL₆₂, 4, 1, 0; 1999 XM₆₂, 4, 1, 0; 1999 XO₆₂, 4, 1, 0; 1999 XN₇₂, 4, 1, 0; 1999 XO₇₂, 4, 1, 0; 1999 XL₇₃, 4, 1, 0; 1999 XM₇₃, 4, 1, 0; 1999 XQ₇₃, 4, 1, 0; 1999 XR₇₃, 4, 1, 0; 1999 XS₇₃, 4, 1, 0; 1999 XT₇₃, 4, 1, 0; 1999 XV₇₃, 4, 1, 0; 1999 XX₇₃, 4, 1, 0; 1999 XY₇₃, 4, 1, 0; 1999 XZ₇₃, 4, 1, 0; 1999 XA₇₄, 4, 1, 0; 1999 XD₇₄, 4, 1, 0; 1999 XG₇₄, 4, 1, 0; 1999 XK₇₄, 4, 1, 0; 1999 XL₇₄, 4, 1, 0; 1999 XT₇₄, 4, 1, 0; 1999 XZ₇₄, 4, 1, 0; 1999 XA₇₅,

1999 XY₁₁₃, 4, 1, 0; 1999 XR₁₁₄, 4, 1, 0; 1999 XG₁₁₅, 12, 3, 31; 1999 XJ₁₁₅, 4, 1, 0; 1999 XL₁₁₅, 4, 1, 0; 1999 XR₁₁₅, 8, 2, 67; 1999 XW₁₁₅, 4, 1, 0; 1999 XD₁₁₆, 4, 1, 0; 1999 XF₁₁₆, 4, 1, 0; 1999 XJ₁₁₆, 8, 2, 16; 1999 XK₁₁₆, 8, 2, 1; 1999 XM₁₁₆, 4, 1, 0; 1999 XO₁₁₆, 8, 2, 41; 1999 XP₁₁₆, 4, 1, 0; 1999 XX₁₁₆, 4, 1, 0; 1999 XY₁₁₆, 4, 1, 0; 1999 XZ₁₁₆, 8, 2, 5; 1999 XA₁₁₇, 4, 1, 0; 1999 XD₁₁₇, 8, 2, 5; 1999 XF₁₁₇, 4, 1, 0; 1999 XJ₁₁₇, 8, 2, 5; 1999 XK₁₁₇, 4, 1, 0; 1999 XM₁₁₇, 8, 2, 4; 1999 XO₁₁₇, 8, 2, 5; 1999 XS₁₁₇, 4, 1, 0; 1999 XT₁₁₇, 8, 2, 5; 1999 XW₁₁₇, 8, 2, 5; 1999 XZ₁₁₇, 4, 1, 0; 1999 XA₁₁₈, 4, 1, 0; 1999 XC₁₁₈, 8, 2, 5; 1999 XD₁₁₈, 8, 2, 5; 1999 XE₁₁₈, 8, 2, 5; 1999 XG₁₁₈, 4, 1, 0; 1999 XH₁₁₈, 4, 1, 0; 1999 XP₁₁₈, 4, 1, 0; 1999 XF₁₁₉, 4, 1, 0; 1999 XH₁₁₉, 4, 1, 0; 1999 XJ₁₁₉, 4, 1, 0; 1999 XK₁₁₉, 8, 2, 5; 1999 XL₁₁₉, 8, 2, 5; 1999 XP₁₁₉, 8, 2, 5; 1999 XB₁₂₀, 4, 1, 0; 1999 XF₁₂₀, 4, 1, 0; 1999 XJ₁₂₀, 4, 1, 0; 1999 XO₁₂₀, 4, 1, 0; 1999 XY₁₂₀, 4, 1, 0; 1999 XD₁₂₁, 4, 1, 0; 1999 XT₁₂₁, 4, 1, 0; 1999 XV₁₂₁, 4, 1, 0; 1999 XX₁₂₁, 8, 2, 67; 1999 XA₁₂₂, 4, 1, 0; 1999 XD₁₂₂, 8, 2, 67; 1999 XM₁₂₂, 4, 1, 0; 1999 XS₁₂₂, 4, 1, 0; 1999 XB₁₂₃, 4, 1, 0; 1999 XF₁₂₃, 4, 1, 0; 1999 XP₁₂₃, 4, 1, 0; 1999 XU₁₂₃, 4, 1, 0; 1999 XV₁₂₃, 4, 1, 0; 1999 XF₁₂₄, 4, 1, 0; 1999 XZ₁₂₄, 8, 2, 5; 1999 XC₁₂₅, 8, 2, 5; 1999 XU₁₂₅, 4, 1, 0; 1999 XD₁₂₆, 4, 1, 0; 1999 XP₁₂₆, 4, 1, 0; 1999 XG₁₂₇, 4, 1, 0; 1999 XH₁₂₇, 4, 1, 0; 1999 XL₁₂₇, 8, 2, 22; 1999 XW₁₂₇, 4, 1, 0; 1999 XW₁₂₈, 4, 1, 0; 1999 XY₁₂₈, 4, 1, 0; 1999 XZ₁₂₈, 4, 1, 0; 1999 XB₁₂₉, 4, 1, 0; 1999 XD₁₂₉, 4, 1, 0; 1999 XG₁₂₉, 4, 1, 0; 1999 XK₁₂₉, 4, 1, 0; 1999 XM₁₂₉, 4, 1, 0; 1999 XN₁₃₀, 4, 1, 0; 1999 XO₁₃₀, 4, 1, 0; 1999 XR₁₃₀, 4, 1, 0; 1999 XT₁₃₄, 4, 1, 0; 1999 XX₁₃₄, 4, 1, 0; 1999 XN₁₃₅, 4, 1, 0; 1999 XG₁₃₆, 4, 1, 0; 1999 XO₁₃₆, 4, 1, 0; 1999 XP₁₃₆, 4, 1, 0; 1999 XQ₁₃₆, 8, 2, 30; 1999 XR₁₃₆, 12, 3, 24; 1999 XS₁₃₆, 8, 2, 30; 1999 XU₁₃₆, 4, 1, 0; 1999 XC₁₃₇, 4, 1, 0; 1999 XQ₁₃₇, 4, 1, 0; 1999 XR₁₃₇, 4, 1, 0; 1999 XS₁₃₇, 8, 2, 5; 1999 XT₁₃₇, 12, 3, 31; 1999 XU₁₃₇, 4, 1, 0; 1999 XV₁₃₇, 12, 3, 31; 1999 XD₁₃₈, 4, 1, 0; 1999 XE₁₃₉, 4, 1, 0; 1999 XN₁₃₉, 4, 1, 0; 1999 XC₁₄₁, 12, 3, 44; 1999 XL₁₄₁ *, 4, 1, 0; 1999 XP₁₄₁, 4, 1, 0; 1999 XB₁₄₃, 8, 2, 28; 1999 XC₁₄₃, 8, 2, 29; 1999 XE₁₄₃, 4, 1, 0; 1999 XF₁₄₃, 4, 1, 0; 1999 XJ₁₄₃, 4, 1, 0; 1999 XP₁₄₃, 4, 1, 0; 1999 XA₁₄₄, 4, 1, 0; 1999 XH₁₄₄, 4, 1, 0; 1999 XL₁₄₄, 8, 2, 59; 1999 XN₁₄₄, 4, 1, 0; 1999 XP₁₄₄, 4, 1, 0; 1999 XN₁₄₆, 8, 2, 1; 1999 XB₁₄₇, 4, 1, 0; 1999 XZ₁₅₀, 4, 1, 0; 1999 XD₁₅₁, 8, 2, 28; 1999 XN₁₅₂, 8, 2, 34; 1999 XP₁₅₂, 4, 1, 0; 1999 XS₁₆₀ *, 4, 1, 0; 1999 XC₁₆₁, 4, 1, 0; 1999 XR₁₆₂ *, 8, 2, 6; 1999 XS₁₆₂ *, 8, 2, 6; 1999 XU₁₆₃ *, 8, 2, 7; 1999 XV₁₆₃ *, 8, 2, 7; 1999 XW₁₆₃ *, 12, 3, 34; 1999 XX₁₆₃, 16, 4, 63; 1999 XE₁₆₄, 4, 1, 0; 1999 XG₁₆₄, 4, 1, 0; 1999 XH₁₆₄, 4, 1, 0; 1999 XK₁₆₄, 4, 1, 0; 1999 XL₁₆₄, 4, 1, 0; 1999 XM₁₆₄, 8, 2, 27; 1999 XN₁₆₄, 4, 1, 0; 1999 XO₁₆₄, 4, 1, 0; 1999 XP₁₆₄, 4, 1, 0; 1999 XX₁₆₄, 4, 1, 0; 1999 XY₁₆₄, 4, 1, 0; 1999 XC₁₆₅, 4, 1, 0; 1999 XD₁₆₅, 3, 1, 0; 1999 XN₁₆₅, 4, 1, 0; 1999 XT₁₆₅, 4, 1, 0; 1999 XU₁₆₅, 4, 1, 0; 1999 XA₁₆₆, 4, 1, 0; 1999 XE₁₆₆, 8, 2, 6; 1999 XF₁₆₆, 4, 1, 0; 1999 XJ₁₆₆, 4, 1, 0; 1999 XK₁₆₆, 4, 1, 0; 1999 XL₁₆₆, 8, 2, 6; 1999 XU₁₆₆, 4, 1, 0; 1999 XW₁₆₆, 8, 2, 26; 1999 XY₁₆₆, 4, 1, 0; 1999 XZ₁₆₆, 4, 1, 0; 1999 XA₁₆₇, 4, 1, 0; 1999 XF₁₆₇, 4, 1, 0; 1999 XJ₁₆₇, 8, 2, 24; 1999 XN₁₆₇, 4, 1, 0; 1999 XO₁₆₇, 4, 1, 0; 1999 XZ₁₆₇, 4, 1, 0; 1999 XA₁₆₈, 4, 1, 0; 1999 XD₁₆₈, 4, 1, 0; 1999 XJ₁₆₈, 8, 2, 5; 1999 XL₁₆₈, 4, 1, 0; 1999 XT₁₆₈, 4, 1, 0; 1999 XX₁₆₈, 4, 1, 0; 1999 XC₁₆₉, 4, 1, 0; 1999 XT₁₆₉, 4, 1, 0; 1999 XU₁₆₉, 4, 1, 0; 1999 XV₁₆₉, 4, 1, 0; 1999 XY₁₆₉, 4, 1, 0; 1999 XZ₁₆₉, 4, 1, 0; 1999 XA₁₇₀, 4, 1, 0; 1999 XM₁₇₁, 4, 1, 0; 1999 XT₁₇₁, 4, 1, 0; 1999 XW₁₇₁, 4, 1, 0; 1999 XN₁₇₂, 4, 1, 0; 1999 XW₁₇₂, 4, 1, 0; 1999 XZ₁₇₂, 4, 1, 0; 1999 XK₁₇₃, 4, 1, 0; 1999 XO₁₇₃, 4, 1, 0; 1999 XP₁₇₃, 4, 1, 0; 1999 XQ₁₇₃, 4, 1, 0; 1999 XR₁₇₃, 8, 2, 26; 1999 XS₁₇₃, 8, 2, 26; 1999 XT₁₇₃, 4, 1, 0; 1999 XV₁₇₃, 4, 1, 0; 1999 XX₁₇₃, 4, 1, 0; 1999 XA₁₇₄, 4, 1, 0; 1999 XJ₁₇₄, 4, 1, 0; 1999 XK₁₇₄, 8, 2, 26; 1999 XM₁₇₄, 4, 1, 0; 1999 XN₁₇₄, 4, 1, 0; 1999 XO₁₇₄, 4, 1, 0; 1999 XQ₁₇₄, 8, 2, 26; 1999 XR₁₇₄, 4, 1, 0; 1999 XS₁₇₄, 4, 1, 0; 1999 XU₁₇₄, 4, 1, 0; 1999 XD₁₇₅, 4, 1, 0; 1999 XK₁₇₅, 4, 1, 0; 1999 XD₁₇₆, 4, 1, 0; 1999 XP₁₇₆, 8, 2, 20; 1999 XU₁₇₆, 4, 1, 0; 1999 XX₁₇₆, 4, 1, 0; 1999 XD₁₇₇, 8, 2, 34; 1999 XJ₁₇₇, 4, 1, 0; 1999 XK₁₇₇, 4, 1, 0; 1999 XK₁₇₈, 4, 1, 0; 1999 XL₁₇₈, 4, 1, 0; 1999 XS₁₇₈, 4, 1, 0; 1999 XZ₁₇₈, 4, 1, 0; 1999 XD₁₇₉, 4, 1, 0; 1999 XF₁₇₉, 4, 1, 0; 1999 XO₁₇₉, 4, 1, 0; 1999 XD₁₈₀, 4, 1, 0; 1999 XH₁₈₀, 4, 1, 0; 1999 XB₁₈₁, 4, 1, 0; 1999 XF₁₈₁, 4, 1, 0; 1999 XP₁₈₁, 4, 1, 0; 1999 XR₁₈₁, 4, 1, 0; 1999 XT₁₈₁, 4, 1, 0; 1999 XB₁₈₂, 4, 1, 0; 1999 XY₁₉₆, 4, 1, 0; 1999 XF₂₀₅, 4, 1, 0; 1999 XS₂₀₅, 4, 1, 0; 1999 XM₂₀₆, 4, 1, 0; 1999 XX₂₀₆, 4, 1, 0; 1999 XU₂₁₁, 4, 1, 0; 1999 XJ₂₁₂, 4, 1, 0; 1999 XY₂₁₂, 4, 1, 0; 1999 XE₂₁₃, 4, 1, 0; 1999 XS₂₁₄, 4, 1, 0; 1999 XP₂₁₅, 4, 1, 0; 1999 XU₂₁₅, 4, 1, 0; 1999 XR₂₂₁, 4, 1, 0; 1999 XU₂₂₁, 4, 1, 0; 1999 XU₂₂₅, 4, 1, 0; 1999 XY₂₂₇, 4, 1, 0; 1999 XA₂₂₈, 4, 1, 0; 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704 Lincoln Laboratory Experimental Test System, New Mexico

G. Stokes, MIT Lincoln Laboratory, 244 Wood Street, Lexington, MA 02420,

U.S.A. [stokes@ll.mit.edu]

Observers M. Blythe, F. Shelly, M. Bezpalko, M. Elowitz, R. Huber

Measurers J. Stuart, H. Viggh, R. Sayer, J. B. Evans

1.0-m $f/2.15$ reflector + CCD

USNO-SA1.0

1934 JP, 7, 2, 1; 1953 GJ, 5, 1, 0; 1967 KC, 22, 5, 39; 1973 QO₁, 20, 3, 20; 1973 SX, 4, 1, 0; 1973 SZ, 7, 2, 1; 1973 SF₁, 14, 3, 24; 1973 SR₁, 3, 1, 0; 1973 SY₁, 14, 3, 20; 1973 SB₂, 18, 4, 20; 1973 SX₂, 10, 2, 1; 1973 SY₅, 13, 3, 28; 1974 QF, 3, 1, 0; 1975 TE, 20, 4, 24; 1975 TJ₃, 4, 1, 0; 1975 TU₃, 10, 2, 3; 1975 VW₅, 5, 1, 0; 1975 VZ₈, 4, 1, 0; 1976 DB₁, 5, 1, 0; 1976 QK₁, 5, 1, 0; 1976 YN₇, 4, 1, 0; 1977 QN₁, 7, 2, 22; 1977 QO₃, 30, 6, 624; 1977 TU₃, 5, 1, 0; 1977 TQ₆, 10, 2, 2; 1977 UA, 10, 2, 32; 1977 XF₂, 10, 2, 2; 1978 NC, 4, 1, 0; 1978 NF, 4, 1, 0; 1978 PX₃, 4, 1, 0; 1978 PG₄, 8, 2, 2; 1978 RD₂, 10, 2, 2; 1978 SF₅, 6, 2, 18; 1978 SD₇, 9, 2, 3; 1978 SJ₇, 5, 1, 0; 1978 ST₇, 5, 1, 0; 1978 SB₈, 19, 4, 24; 1978 UJ₅, 23, 5, 96; 1978 UN₅, 10, 2, 20; 1978 VA, 10, 2, 1; 1978 VO₂, 15, 3, 52; 1978 VB₃, 4, 1, 0; 1978 VL₃, 24, 5, 26; 1978 VO₃, 25, 5, 575; 1978 VP₃, 10, 2, 1; 1978 VV₃, 5, 1, 0; 1978 VB₄, 14, 3, 64; 1978 VL₄, 15, 3, 8; 1978 VX₄, 6, 2, 2; 1978 VH₅, 10, 2, 1; 1978 VE₈, 19, 4, 56; 1978 VZ₈, 15, 4, 1000; 1978 VC₉, 7, 2, 2; 1978 VP₉, 3, 1, 0; 1978 VQ₉, 9, 2, 18; 1978 VN₁₀, 9, 2, 8; 1978 VM₁₁, 15, 3, 20; 1978 WU, 8, 2, 3; 1979 HN₅, 4, 1, 0; 1979 MZ₁, 8, 2, 2; 1979 MO₂, 3, 1, 0; 1979 MQ₃, 22, 5, 565; 1979 MS₄, 3, 1, 0; 1979 MS₅, 8, 2, 1; 1979 MA₇, 9, 2, 478; 1979 MD₈, 13, 3, 2; 1979 OH₁, 9, 1, 0; 1979 QA₂, 10, 2, 2; 1979 QF₂, 19, 3, 457; 1980 CJ, 10, 2, 25; 1980 FQ₁, 10, 2, 2; 1980 LC₁, 4, 1, 0; 1980 RC, 4, 1, 0; 1980 UW₁, 14, 3, 5; 1981 DN, 5, 1, 0; 1981 DR, 8, 2, 2; 1981 DF₁, 8, 2, 18; 1981 DN₁, 5, 1, 0; 1981 DR₁, 32, 7, 501; 1981 DM₂, 8, 2, 18; 1981 EK₁, 4, 1, 0; 1981 EF₂, 12, 3, 20; 1981 EO₂, 4, 1, 0; 1981 EP₂, 5, 1, 0; 1981 EV₂, 33, 7, 500; 1981 EU₃, 10, 2, 8; 1981 ER₄, 30, 5, 53; 1981 EU₄, 15, 3, 22; 1981 EC₅, 9, 2, 2; 1981 EN₅, 12, 2, 2; 1981 EY₆, 5, 1, 0; 1981 EB₈, 10, 2, 2; 1981 ED₉, 24, 5, 64; 1981 EV₉, 15, 3, 20; 1981 ES₁₁, 3, 1, 0; 1981 EJ₁₃, 15, 3, 20; 1981 EN₁₃, 5, 1, 0; 1981 EP₁₄, 9, 2, 8; 1981 EA₁₆, 9, 2, 20; 1981 EF₁₆, 5, 1, 0; 1981 EL₁₆, 12, 3, 20; 1981 EB₁₇, 12, 3, 20; 1981 EK₁₇, 7, 1, 0; 1981 EA₁₉, 10, 2, 3; 1981 EN₂₁, 16, 4, 4; 1981 EZ₂₂, 7, 2, 19; 1981 ER<

1981 EM₃₇, 9, 2, 2; 1981 EN₄₂, 3, 1, 0; 1981 EB₄₃, 10, 2, 454; 1981 EF₄₇, 3, 1, 0; 1981 ER₄₇, 10, 2, 1; 1981 QJ₂, 9, 2, 2; 1981 QJ₃, 7, 2, 1; 1981 QK₃, 5, 1, 0; 1981 QD₄, 9, 2, 18; 1981 SE₇, 10, 2, 1; 1981 UA, 4, 1, 0; 1981 UQ₂₂, 10, 2, 27; 1981 UB₂₃, 11, 3, 23; 1981 UC₂₃, 7, 2, 7; 1981 UZ₂₄, 17, 3, 19; 1981 UT₂₉, 4, 1, 0; 1981 VL, 20, 4, 20; 1981 VN, 4, 1, 0; 1982 BJ₁₃, 12, 3, 20; 1982 KH₁, 5, 1, 0; 1982 RR, 5, 1, 0; 1982 SQ₇, 4, 1, 0; 1982 ST₇, 25, 5, 24; 1982 TJ, 10, 2, 1; 1982 TK₁, 7, 2, 25; 1982 UD₄, 9, 2, 2; 1982 UA₆, 5, 1, 0; 1982 UO₆, 10, 2, 28; 1982 US₆, 4, 1, 0; 1982 UH₉, 5, 1, 0; 1982 UE₁₂, 9, 2, 3; 1982 VU₂, 14, 3, 5; 1982 VN₃, 9, 2, 2; 1982 VG₄, 18, 4, 64; 1983 AA, 3, 1, 0; 1983 AC₁, 10, 2, 23; 1984 AU, 29, 6, 554; 1984 BZ₆, 4, 1, 0; 1984 CE, 10, 2, 2; 1984 EQ, 4, 1, 0; 1984 QB, 5, 1, 0; 1984 SS, 10, 2, 23; 1984 SO₄, 3, 1, 0; 1984 ST₅, 38, 8, 592; 1984 SZ₅, 10, 2, 1; 1984 SE₆, 15, 3, 20; 1984 UR, 9, 2, 18; 1984 UJ₁, 18, 4, 3; 1984 WJ₁, 10, 2, 2; 1984 YE₄, 5, 1, 0; 1985 CD₂, 8, 2, 7; 1985 PG, 5, 1, 0; 1985 PH, 5, 1, 0; 1985 PT, 10, 2, 2; 1985 PB₂, 9, 2, 4; 1985 RA, 28, 6, 123; 1985 RP, 17, 4, 28; 1985 RT, 4, 1, 0; 1985 RD₃, 8, 2, 4; 1985 TS, 10, 2, 2; 1985 UA₅, 3, 1, 0; 1986 EK₁, 5, 1, 0; 1986 PX, 10, 2, 2; 1986 PY, 9, 2, 2; 1986 PE₁, 5, 1, 0; 1986 PL₁, 13, 3, 23; 1986 QW₁, 10, 1, 0; 1986 QO₂, 5, 1, 0; 1986 QQ₃, 20, 4, 56; 1986 QS₃, 5, 1, 0; 1986 QR₅, 8, 2, 3; 1986 TR, 5, 1, 0; 1986 TG₁, 3, 1, 0; 1986 TV₆, 15, 3, 20; 1986 WZ, 18, 4, 96; 1987 BF, 5, 1, 0; 1987 BX₁, 15, 3, 63; 1987 QH, 9, 2, 2; 1987 QS₅, 9, 2, 18; 1987 RR, 10, 2, 4; 1987 RG₁, 9, 2, 1; 1987 SJ₂, 5, 1, 0; 1987 SL₃, 10, 2, 18; 1987 SO₅, 10, 2, 2; 1987 SX₁₀, 5, 1, 0; 1987 SP₁₂, 5, 1, 0; 1987 UA₁, 8, 2, 1; 1987 VG, 14, 3, 20; 1987 VR, 5, 1, 0; 1987 WD, 5, 1, 0; 1987 WJ₁, 10, 2, 19; 1987 XC, 8, 2, 2; 1988 BG, 23, 4, 105; 1988 BO₃, 10, 2, 3; 1988 BY₃, 10, 2, 2; 1988 BG₅, 17, 3, 23; 1988 BH₅, 8, 2, 1; 1988 BL₅, 3, 1, 0; 1988 CF, 15, 3, 20; 1988 CB₄, 14, 3, 58; 1988 DE, 10, 2, 22; 1988 DB₅, 13, 3, 23; 1988 FM, 5, 1, 0; 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1989 GQ₆, 8, 2, 3; 1989 HA, 10, 2, 3; 1989 HC, 5, 1, 0; 1989 OL, 4, 1, 0; 1989 PF, 15, 3, 3; 1989 PU, 4, 1, 0; 1989 QH, 20, 4, 25; 1989 RX, 12, 3, 28; 1989 RD₁, 5, 1, 0; 1989 RP₁, 10, 2, 421; 1989 RY₁, 3, 1, 0; 1989 SD, 15, 3, 20; 1989 SB₁, 8, 2, 2; 1989 SM₁, 23, 5, 63; 1989 ST₄, 11, 3, 20; 1989 SZ₄, 9, 2, 1; 1989 TZ, 5, 1, 0; 1989 TN₁, 3, 1, 0; 1989 TR₂, 10, 2, 2; 1989 TU₃, 10, 2, 2; 1989 TA₄, 10, 2, 1; 1989 TB₅, 9, 2, 3; 1989 TF₁₄, 8, 2, 4; 1989 TN₁₆, 5, 1, 0; 1989 UN, 14, 3, 559; 1989 UA₁, 5, 1, 0; 1989 UA₆, 18, 4, 24; 1989 VM₁, 14, 3, 23; 1989 WU, 31, 7, 124; 1989 WA₁, 24, 5, 583; 1989 WB₃, 8, 2, 2; 1989 YO₃, 25, 6, 562; 1989 YC₆, 10, 2, 3; 1989 YE₆, 10, 2, 1; 1990 BA₂, 10, 2, 18; 1990 CE, 15, 3, 24; 1990 DW, 5, 1, 0; 1990 DZ, 4, 1, 0; 1990 DU₄, 17, 4, 63; 1990 EJ, 10, 2, 18; 1990 EV₁, 25, 5, 562; 1990 EL₂, 3, 1, 0; 1990 EN₃, 8, 2, 3; 1990 EN₄, 4, 1, 0; 1990 EU₄, 15, 3, 20; 1990 ES₆, 5, 1, 0; 1990 FK₁, 10, 2, 4; 1990 FD₃, 5, 1, 0; 1990 HE, 5, 1, 0; 1990 KR, 3, 1, 0; 1990 MR, 13, 3, 3; 1990 OY, 5, 1, 0; 1990 OX₁, 5, 1, 0; 1990 OB₄, 14, 3, 20; 1990 OS₄, 3, 1, 0; 1990 QE, 15, 3, 20; 1990 QE₄, 5, 1, 0; 1990 QT₄, 10, 2, 35; 1990 QB₅, 5, 1, 0; 1990 QE₇, 10, 2, 1; 1990 QO₈, 14, 3, 19; 1990 QP₈, 7, 2, 1; 1990 QB₁₉, 3, 1, 0; 1990 RT₂, 5, 1, 0; 1990 RY₂, 4, 1, 0; 1990 RJ₅, 4, 1, 0; 1990 RO₇, 17, 4, 26; 1990 RR₇, 15, 3, 24; 1990 RN₈, 4, 1, 0; 1990 RP₉, 4, 1, 0; 1990 RU₉, 18, 4, 571; 1990 RF₁₇, 8, 2, 24; 1990 SY, 10, 2, 18; 1990 SE₁, 3, 1, 0; 1990 SQ₁, 10, 2, 18; 1990 SS₃, 10, 2, 22; 1990 SX₃, 15, 3, 20; 1990 SY₃, 14, 3, 20; 1990 SE₄, 25, 5, 65; 1990 SF₄, 15, 3, 24; 1990 SE₅, 12, 3, 5; 1990 SF₅, 13, 3, 24; 1990 SX₆, 8, 2, 1; 1990 ST₇, 10, 2, 1; 1990 SC₈, 9, 2, 2; 1990 SN₈, 10, 2, 562; 1990 SQ₈, 10, 2, 3; 1990 SG₁₂, 9, 2, 2; 1990 ST₁₄, 13, 3, 20; 1990 ST₁₅, 8, 2, 20; 1990 SU₁₆, 14, 3, 4; 1990 SK₂₈, 3, 1, 0; 1990 TZ₁, 3, 1, 0; 1990 TG₂, 19, 4, 97; 1990 TO₄, 5, 1, 0; 1990 TF₆, 9, 2, 113; 1990 TF₈, 4, 1, 0; 1990 TS₉, 5, 1, 0; 1990 TW₁₁, 9, 2, 2; 1990 TD₁₂, 10, 2, 2; 1990 TW₁₂, 19, 4, 38; 1990 UA₁, 15, 3, 28; 1990 UO₁, 5, 1, 0; 1990 UU₁, 4, 1, 0; 1990 UJ₄, 4, 1, 0; 1990 VE, 20, 4, 590; 1990 VL₁, 9, 2, 3; 1990 VN₁, 9, 2, 18; 1990 VM₂, 10, 2, 2; 1990 VV₂, 25, 5, 168; 1990 VM₃, 10, 2, 6; 1990 VE₄, 25, 5, 974; 1990 VS₄, 5, 1, 0; 1990 VC₆, 10, 2, 4; 1990 VP₆, 13, 3, 26; 1990 VT₆, 18, 4, 29; 1990 VD₈, 20, 4, 51; 1990 VF₈, 10, 2, 2; 1990 VU₈, 4, 1, 0; 1990 VW₈, 5, 1, 0; 1990 WZ, 4, 1, 0; 1990 WG₁, 29, 5, 56; 1990 WP₁, 9, 2, 17; 1990 WS₁, 10, 2, 3; 1990 WN₃, 23, 5, 532; 1990 WO₄, 15, 3, 24; 1990 YP, 18, 3, 20; 1991 AF₂, 5, 1, 0; 1991 AG₂, 14, 2, 24; 1991 BZ, 14, 3, 22; 1991 CL, 5, 1, 0; 1991 EJ, 13, 3, 20; 1991 EM, 3, 1, 0; 1991 EF₂, 14, 3, 25; 1991 EK₄, 14, 3, 23; 1991 EO₅, 19, 4, 78; 1991 FG, 9, 2, 25; 1991 FL₂, 5, 1, 0; 1991 FU₃, 8, 2, 29; 1991 FW₃, 3, 1, 0; 1991 GT₄, 5, 1, 0; 1991 GS₆, 4, 1, 0; 1991 GR₇, 3, 1, 0; 1991 GF₈, 5, 1, 0; 1991 HN, 14, 3, 20; 1991 LB, 4, 1, 0; 1991 LR, 11, 3, 26; 1991 LU₁, 10, 2, 2; 1991 LY₁, 8, 2, 8; 1991 LF₂, 4, 1, 0; 1991 LL₂, 4, 1, 0; 1991 LJ₃, 3, 1, 0; 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1991 RX₁, 10, 2, 3; 1991 RC₂, 4, 1, 0; 1991 RO₂, 20, 4, 23; 1991 RS₂, 4, 1, 0; 1991 RU₂, 4, 1, 0; 1991 RY₂, 18, 4, 91; 1991 RK₃, 15, 3, 122; 1991 RO₃, 10, 3, 24; 1991 RA₄, 9, 2, 2; 1991 RG₄, 3, 1, 0; 1991 RN₄, 10, 2, 2; 1991 RQ₄, 14, 3, 95; 1991 RQ₅, 24, 5, 95; 1991 RT₅, 9, 2, 18; 1991 RC₆, 5, 1, 0; 1991 RG₇, 8, 2, 1; 1991 RS₈, 4, 1, 0; 1991 RY₈, 4, 1, 0; 1991 RL₉, 19, 4, 52; 1991 RQ₉, 19, 4, 5; 1991 RF₁₁, 17, 4, 24; 1991 RJ₁₁, 8, 2, 2; 1991 RS₁₃, 3, 1, 0; 1991 RA₁₄, 5, 1, 0; 1991 RH₁₄, 10, 2, 2; 1991 RA₁₅, 4, 1, 0; 1991 RE₁₅, 10, 2, 3; 1991 RK₁₅, 10, 2, 3; 1991 RR₁₆, 9, 2, 18; 1991 RF₁₇, 16, 3, 21; 1991 RG₁₇, 9, 2, 3; 1991 RX₁₇, 14, 3, 24; 1991 RD₁₈, 41, 7, 65; 1991 RJ₂₀, 14, 3, 4; 1991 RW₂₁, 5, 1, 0; 1991 SA, 8, 2, 2; 1991 SB, 8, 2, 1; 1991 ST, 4, 1, 0; 1991 SZ, 15, 3, 20; 1991 SE₁, 9, 2, 1; 1991 SV₁, 10, 2, 18; 1991 SE₂, 8, 2, 1; 1991 TK, 8, 2, 1; 1991 TS, 13, 3, 22; 1991 TY, 10, 2, 2; 1991 TQ₁, 3, 1, 0; 1991 TC₂, 5, 1, 0; 1991 TG₂, 9, 2, 59; 1991 TQ₂, 9, 2, 1; 1991 TU₅, 20, 4, 20; 1991 UR, 4, 1, 0; 1991 UN₁, 5, 1, 0; 1991 UR₁, 9, 2, 4; 1991 UE₂, 10, 2, 2; 1991 UJ₂, 5, 1, 0; 1991 UY₃, 15, 3, 23; 1991 VY, 20, 4, 24; 1991 VD₁, 10, 2, 2; 1991 VQ₁, 5, 1, 0; 1991 VY₁, 5, 1, 0; 1991 VE₂, 10, 2, 2; 1991 VE₃, 10, 2, 2; 1991 VO₃, 8, 2, 3; 1991 VT₃, 5, 1, 0; 1991 VJ₄, 5, 1, 0; 1991 VY₄, 24, 5, 509; 1991 VA₅, 19, 4, 82; 1991 VC₅, 5, 1, 0; 1991 VM₅, 14, 3, 4; 1991 VH₆, 10, 2, 24; 1991 VD₁₀, 21, 5, 26; 1991 WD, 5, 1, 0; 1991 XD, 5, 1, 0; 1991 YC, 10, 2, 4; 1992 AJ₁, 15, 2, 1; 1992 AV₁, 14, 3, 26; 1992 AO₂, 4, 1, 0; 1992 AT₂, 14, 3, 4; 1992 BD, 15, 2, 14; 1992 BT₂, 4, 1, 0; 1992 BQ₂, 10, 2, 25; 1992 BT₂, 15, 3, 26; 1992 BM₄, 5, 1, 0; 1992 CH, 10, 2, 18; 1992 CN₂, 20, 4, 20; 1992 CS₂, 9, 2, 1; 1992 CD₃, 15, 3, 28; 1992 DU₅, 10, 2, 2; 1992 DZ₅, 13, 3, 23; 1992 DD₈, 10, 2, 2; 1992 DF₈, 8, 2, 3; 1992 DJ₈, 4, 1, 0; 1992 DM₉, 3, 1, 0; 1992 EX, 15, 3, 28; 1992 ER₁, 29, 6, 512; 1992 EB₄, 13, 3, 28; 1992 EJ₆, 7, 2, 3; 1992 ES₆, 10, 2, 3; 1992 EP₇, 13, 3, 24; 1992 EW₇, 4, 1, 0; 1992 EZ₇, 9, 2, 23; 1992 EC₈, 13, 3, 478; 1992 EW₉, 9, 2, 3; 1992 EX₉, 10, 2, 22; 1992 EP₁₀, 4, 1, 0; 1992 EY₁₀, 10, 3, 38; 1992 EG₁₁, 9, 2, 3; 1992 EZ₁₁, 18, 4, 23; 1992 EN₁₂, 8, 2, 2; 1992 EO₁₂, 14, 3, 52; 1992 EQ₁₃, 15, 3, 31; 1992 ED₁₄, 7, 2, 3; 1992 EW₁₆, 9, 2, 3; 1992 EW₁₇, 7, 2, 3; 1992 ED₁₈, 20, 4, 505; 1992 EA₂₆, 10, 2, 18; 1992 EZ₂₈, 4, 1, 0; 1992 EE₃₂, 14, 3, 23; 1992 EV₃₂, 5, 1, 0; 1992 GA, 10, 2, 2; 1992 GO, 9, 2, 396; 1992 GE₅, 15, 3, 456; 1992 HC₂, 20, 4, 52; 1992 HA₄, 6, 2, 1; 1992 HD₄, 14, 3, 28; 1992 HS₄, 14, 3, 5; 1992 JQ, 9, 2, 2; 1992 JL₁, 7, 2, 2; 1992 JB₂, 6, 2, 1; 1992 LE, 4, 1, 0; 1992 LQ, 25, 5, 62; 1992 NS, 4, 1, 0; 1992 OB, 8, 2, 18; 1992 OL₃, 8, 2, 1; 1992 OV₆, 9, 2, 3; 1992 OY₇, 5, 1, 0; 1992 OB₉, 4, 1, 0; 1992 OT₉, 5, 1, 0; 1992 PF, 10, 2, 647; 1992 PB₁, 19, 3, 24; 1992 PU₁, 13, 3, 29; 1992 PA₂, 4, 1, 0; 1992 PB₂, 7, 2, 1; 1992 PH₂, 13, 3, 24; 1992 PK₂, 3, 1, 0; 1992 PV₂, 15, 3, 24; 1992 PC₃, 10, 2, 2; 1992 PE₃, 5, 1, 0; 1992 PT₃, 45, 11, 654; 1992 PZ₃, 24, 5, 90; 1992 PR₆, 7, 2, 3; 1992 RH₃, 10, 2, 1; 1992 RO₃, 4, 1, 0; 1992 RP₅, 18, 4, 575; 1992 RX₆, 4, 1, 0; 1992 RJ₇, 3, 1, 0; 1992 SO, 5, 1, 0; 1992 SB₁, 5, 1, 0; 1992 SQ₁, 5, 1, 0; 1992 SF₁₁, 13, 3, 4; 1992 SY₁₂, 5, 1, 0; 1992 SB₁₃, 10, 2, 3; 1992 SG₁₃, 5, 1, 0; 1992 SS₁₆, 8, 2, 1; 1992 SA₁₇, 5, 1, 0; 1992 SY₁₇, 10, 2, 3; 1992 SQ₂₃, 9, 2, 2; 1992 SC₂₄, 9, 2, 2; 1992 SM₂₆, 5, 1, 0; 1992 UH₁, 15, 3, 20; 1992 US₁, 10, 2, 2; 1992 UT₂, 10, 2, 1; 1992 UW₂, 10, 2, 2; 1992 UH₃, 3, 1, 0; 1992 UR₄, 25, 5, 83; 1992 UJ₅, 4, 1, 0; 1992 UU₅, 10, 2, 2; 1992 UZ₅, 5, 1, 0; 1992 UC₆, 25, 5, 41; 1992 UE₆, 9, 2, 18; 1992 UG₇, 4, 1, 0; 1992 UO₇, 10, 2, 3; 1992 UR₈, 21, 4, 98; 1992 UM₉, 10, 2, 2; 1992 VN, 13, 3, 51; 1992 WM, 20, 4, 51; 1992 WR, 5, 1, 0; 1992 WZ, 18, 4, 20; 1992 WE₁, 40, 8, 624; 1992 WF₁, 5, 1, 0; 1992 WK₁, 4, 1, 0; 1992 WY₁, 15, 3, 22; 1992 WL₃, 4, 1, 0; 1992 WR₅, 5, 1, 0; 1992 WS₆, 29, 6, 572; 1992 WC₉, 10, 2, 3; 1992 YC, 15, 3, 56; 1992 YK, 10, 2, 20; 1992 YY₁, 14, 3, 559; 1992 YR₂, 15, 3, 8; 1993 BD, 18, 4, 507; 1993 BJ₂, 15, 3, 23; 1993 BE₅, 19, 4, 3; 1993 BQ₅, 14, 3, 52; 1993 BU₇, 8, 2, 1; 1993 BT₁₄, 10, 2, 2; 1993 DX₂, 4, 1, 0; 1993 EJ, 10, 2, 18; 1993 FQ₁, 10, 2, 2; 1993 FV₁, 5, 1, 0; 1993 FM₆, 7, 2, 2; 1993 FH₇, 4, 1, 0; 1993 FO₇, 15, 3, 505; 1993 FT₇, 5, 1, 0; 1993 FE₈, 10, 2, 1; 1993 FK₉, 3, 1, 0; 1993 FW₉, 10, 2, 1; 1993 FB₁₀, 15, 3, 3; 1993 FP₁₀, 7, 2, 1; 1993 FS₁₀, 13, 3, 28; 1993 FR₁₁, 8, 2, 3; 1993 FS₁₁, 5, 1, 0; 1993 FU₁₁, 11, 3, 560; 1993 FE₁₂,

11, 3, 24; 1993 TZ₂₉, 10, 2, 4; 1993 TN₃₀, 7, 2, 2; 1993 TJ₃₁, 15, 3, 23; 1993 TM₃₁, 8, 2, 2; 1993 TD₃₇, 5, 1, 0; 1993 TK₃₇, 10, 2, 3; 1993 TU₃₈, 4, 1, 0; 1993 TW₃₈, 13, 3, 28; 1993 TX₃₈, 6, 2, 1; 1993 UK, 10, 2, 2; 1993 UY₂, 29, 5, 62; 1993 UV₄, 6, 2, 4; 1993 UX₄, 13, 3, 20; 1993 UW₆, 9, 2, 1; 1993 UZ₇, 10, 2, 24; 1993 VU₁, 9, 2, 3; 1993 VD₄, 5, 1, 0; 1993 VU₇, 14, 3, 24; 1993 XG, 5, 1, 0; 1993 XM, 5, 1, 0; 1993 YF, 5, 1, 0; 1994 AM, 10, 2, 3; 1994 AN₉, 3, 1, 0; 1994 AV₁₀, 5, 1, 0; 1994 BC₁, 9, 2, 3; 1994 BD₁, 9, 2, 95; 1994 BJ₄, 5, 1, 0; 1994 CG₁, 14, 3, 20; 1994 CY₁, 5, 1, 0; 1994 CN₉, 15, 3, 44; 1994 CV₉, 4, 1, 0; 1994 CD₁₈, 14, 3, 16; 1994 EK₁, 15, 3, 11; 1994 EL₁, 8, 2, 1; 1994 ER₅, 10, 2, 7; 1994 EJ₆, 19, 4, 52; 1994 EZ₆, 4, 1, 0; 1994 EC₇, 27, 6, 95; 1994 FB, 10, 2, 2; 1994 FY, 5, 1, 0; 1994 GN, 9, 2, 1; 1994 GB₁, 19, 4, 24; 1994 GK₉, 24, 5, 501; 1994 GO₉, 10, 2, 162; 1994 GU₉, 10, 2, 24; 1994 JB, 4, 1, 0; 1994 JC, 9, 2, 9; 1994 JU, 10, 2, 2; 1994 JV₄, 14, 3, 58; 1994 JU₈, 5, 1, 0; 1994 KA, 14, 3, 38; 1994 LB₈, 15, 3, 56; 1994 NA, 4, 1, 0; 1994 NB, 4, 1, 0; 1994 NF₁, 5, 1, 0; 1994 PG, 16, 4, 28; 1994 PS, 9, 2, 3; 1994 PJ₁, 8, 2, 3; 1994 PN₁, 9, 2, 22; 1994 PC₂, 8, 2, 2; 1994 PE₂, 17, 4, 23; 1994 PL₃, 9, 2, 2; 1994 PL₄, 14, 3, 24; 1994 PK₅, 5, 1, 0; 1994 PK₈, 9, 2, 1; 1994 PC₉, 15, 2, 8; 1994 PX₉, 3, 1, 0; 1994 PE₁₁, 4, 1, 0; 1994 PJ₁₁, 4, 1, 0; 1994 PL₁₁, 9, 2, 2; 1994 PC₁₃, 13, 3, 2; 1994 PK₁₄, 7, 2, 2; 1994 PP₁₅, 21, 5, 507; 1994 PQ₁₅, 10, 2, 3; 1994 PC₁₆, 3, 1, 0; 1994 PE₁₆, 9, 2, 2; 1994 PT₁₆, 8, 2, 2; 1994 PD₁₈, 8, 2, 2; 1994 PG₁₈, 13, 3, 24; 1994 PH₁₈, 3, 1, 0; 1994 PG₁₉, 8, 2, 1; 1994 PM₂₁, 8, 2, 2; 1994 PY₂₁, 4, 1, 0; 1994 PA₂₃, 18, 4, 457; 1994 PL₂₃, 13, 3, 5; 1994 PN₂₅, 20, 3, 5; 1994 PY₂₅, 4, 1, 0; 1994 PL₂₆, 3, 1, 0; 1994 PW₂₆, 10, 2, 3; 1994 PO₂₈, 3, 1, 0; 1994 PS₂₈, 12, 3, 23; 1994 PC₂₉, 3, 1, 0; 1994 PU₂₉, 8, 2, 3; 1994 PW₃₁, 11, 3, 28; 1994 PX₃₁, 4, 1, 0; 1994 PD₃₂, 20, 4, 457; 1994 PL₃₂, 9, 2, 2; 1994 PO₃₂, 9, 2, 3; 1994 PS₃₂, 9, 2, 1; 1994 PL₃₄, 20, 4, 14; 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1997 GM₄₁, 18, 4, 64; 1997 GQ₄₁, 9, 2, 1; 1997 GD₄₂, 9, 2, 24; 1997 HQ₂, 20, 4, 28; 1997 HO₁, 5, 1, 0; 1997 HQ₁, 10, 2, 1; 1997 HP₂, 8, 2, 2; 1997 HZ₂, 2, 1, 0; 1997 HR₇, 4, 1, 0; 1997 HX₇, 5, 1, 0; 1997 HP₈, 5, 1, 0; 1997 HY₉, 9, 2, 365; 1997 HP₁₁, 8, 2, 1006; 1997 HV₁₁, 7, 2, 3; 1997 HS₁₂, 11, 3, 456; 1997 HD₁₃, 9, 2, 1; 1997 HS₁₃, 4, 1, 0; 1997 JL₇, 2, 1; 1997 JR₃, 3, 1, 0; 1997 JN₂, 13, 4, 956; 1997 JG₂, 2, 1, 0; 1997 JH₆, 7, 2, 5; 1997 JU₇, 3, 1, 0; 1997 JV₇, 8, 2, 22; 1997 JZ₇, 5, 1, 0; 1997 JH₁₀, 5, 1, 0; 1997 JA₁₁, 14, 3, 28; 1997 JW₁₁, 2, 1, 0; 1997 JH₁₃, 4, 1, 0; 1997 JL₁₃, 14, 3, 24; 1997 JY₁₃, 12, 3, 50; 1997 JD₁₄, 9, 2, 24; 1997 JM₁₄, 8, 2, 476; 1997 JS₁₄, 5, 1, 0; 1997 JB₁₅, 13, 3, 23; 1997 JD₁₅, 5, 1, 0; 1997 JT₁₅, 10, 2, 1; 1997 JJ₁₆, 8, 2, 1; 1997 JN₁₆, 9, 2, 2; 1997 JT₁₆, 15, 3, 23; 1997 JE₁₈, 12, 2, 1; 1997 JH₁₈, 4, 1, 0; 1997 JY₁₈, 4, 1, 0; 1997 KA₁₂, 3, 28; 1997 KC₁₀, 10, 2, 1; 1997 KG₁₀, 10, 2, 1; 1997 KH₆, 6, 2, 1; 1997 KP₁, 9, 1, 0; 1997 KU₂, 10, 2, 3; 1997 KQ₃, 4, 1, 0; 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1997 SS₃₁, 3, 1, 0; 1997 SY₃₂, 3, 1, 0; 1997 TY₅, 4, 1, 0; 1997 TW₁₅, 3, 1, 0; 1997 TS₁₇, 8, 2, 5; 1997 TR₁₈, 4, 1, 0; 1997 TA₂₈, 5, 1, 0; 1997 TB₂₈, 7, 2, 3; 1997 UJ₄, 1, 0; 1997 UT₂, 4, 1, 0; 1997 UW₁₈, 5, 1, 0; 1997 UY₂₀, 3, 1, 0; 1997 UC₂₂, 24, 4, 6; 1997 VB₁, 10, 2, 1; 1997 VG₁, 10, 2, 1; 1997 WW₇, 8, 2, 3; 1997 WU₂₂, 11, 2, 4; 1998 BL₁₄, 4, 1, 0; 1998 CE₂, 8, 2, 26; 1998 DQ₁₀, 28, 5, 95; 1998 DO₂₃, 4, 1, 0; 1998 DQ₂₃, 3, 1, 0; 1998 DQ₂₇, 17, 4, 11; 1998 DB₃₆, 9, 2, 2; 1998 DN₃₇, 7, 2, 29; 1998 EL₂, 26, 6, 57; 1998 EQ₆, 14, 3, 534; 1998 EW₆, 5, 1, 0; 1998 EA₉, 9, 2, 18; 1998 EE₁₀, 4, 1, 0; 1998 EZ₁₀, 5, 1, 0; 1998 EW₁₂, 8, 2, 96; 1998 FK₂, 5, 1, 0; 1998 FB₃, 3, 1, 0; 1998 FA₁₁, 20, 4, 63; 1998 FZ₁₁, 15, 2, 26; 1998 FB₁₂, 10, 2, 63; 1998 FC₁₂, 12, 3, 23; 1998 FL₁₂, 4, 1, 0; 1998 FG₃₀, 5, 1, 0; 1998 FY₃₅, 8, 2, 2; 1998 FM₄₅, 4, 1, 0; 1998 FP₄₅, 5, 1, 0; 1998 FS₄₅, 10, 2, 26; 1998 FZ₄₆, 4, 1, 0; 1998 FR₄₈, 13, 3, 43; 1998 FL₄₉, 10, 2, 3; 1998 FL₅₀, 10, 2, 22; 1998 FU₅₀, 5, 1, 0; 1998 FW₅₀, 5, 1, 0; 1998 FB₅₁, 5, 1, 0; 1998 FC₅₁, 5, 1, 0; 1998 FE₅₁, 5, 1, 0; 1998 FM₅₁, 14, 2, 27; 1998 FN₅₁, 14, 2, 26; 1998 FF₅₁, 5, 1, 0; 1998 FW₅₁, 5, 1, 0; 1998 FA₅₂, 4, 1, 0; 1998 FC₅₂, 9, 2, 21; 1998 FD₅₂, 5, 1, 0; 1998 FN₅₂, 8, 2, 22; 1998 FO₅₂, 14, 3, 529; 1998 FM₅₄, 5, 1, 0; 1998 FE₅₅, 8, 2, 1; 1998 FU₅₅, 4, 1, 0; 1998 FV₅₅, 4, 1, 0; 1998 FZ₅₅, 9, 2, 12; 1998 FL₆₀, 13, 3, 565; 1998 FD₆₁, 4, 1, 0; 1998 FG₆₁, 15, 3, 533; 1998 FZ₆₃, 18, 4, 62; 1998 FP₆₄, 22, 5, 172; 1998 FQ₆₄, 10, 2, 2; 1998 FK₆₅, 17, 4, 59; 1998 FT₆₅, 10, 2, 2; 1998 FC₆₆, 15, 2, 3; 1998 FK₆₇, 9, 2, 88; 1998 FS₆₈, 3, 1, 0; 1998 FA₆₉, 10, 2, 2; 1998 FA₇₀, 20, 4, 598; 1998 FC₇₁, 10, 2, 590; 1998 FZ₇₁, 5, 1, 0; 1998 FB₇₂, 4, 1, 0; 1998 FR₇₂, 24, 5, 601; 1998 FV₇₂, 9, 2, 8; 1998 FF₇₃, 5, 1, 0; 1998 FE₇₄, 9, 2, 1; 1998 FG₇₅, 4, 1, 0; 1998 FG₇₇, 10, 2, 2; 1998 FM₇₈, 5, 1, 0; 1998 FS₇₈, 3, 1, 0; 1998 FV₇₈, 20, 4, 45; 1998 FT₇₉, 10, 2, 25; 1998 FF₈₀, 4, 1, 0; 1998 FV₉₀, 18, 4, 561; 1998 FO₁₀₃, 5, 1, 0; 1998 FB₁₀₆, 28, 6, 624; 1998 FN₁₀₉, 24, 4, 105; 1998 FT₁₁₀, 5, 1, 0; 1998 FF₁₁₃, 25, 5, 629; 1998 FS₁₁₃, 19, 4, 62; 1998 FC₁₁₆, 4, 1, 0; 1998 FD₁₁₆, 5, 1, 0; 1998 FB₁₁₈, 8, 2, 95; 1998 FW₁₁₈, 30, 7, 653; 1998 FU₁₂₀, 9, 2, 52; 1998 FG₁₂₁, 8, 2, 1; 1998 FT₁₂₁, 13, 3, 555; 1998 FQ₁₂₂, 34, 7, 601; 1998 FN₁₂₆, 9, 2, 2; 1998 FP₁₃₀, 5, 1, 0; 1998 FB₁₃₄, 19, 4, 31; 1998 FG₁₀, 2, 2; 1998 GK₅, 1, 0; 1998 GK₁, 4, 1, 0; 1998 GO₁, 4, 1, 0; 1998 HX₁₉, 4, 118; 1998 HX₂, 5, 1, 0; 1998 HF₄, 7, 2, 58; 1998 HH₄, 5, 1, 0; 1998 HT₄, 44, 9, 616; 1998 HU₅, 34, 7, 654; 1998 HU₆, 23, 5, 63; 1998 HL₇,

3, 1, 0; 1998 HD₈, 5, 1, 0; 1998 HT₈, 18, 4, 596; 1998 HR₁₀, 13, 3, 30; 1998 HB₁₁, 41, 8, 654; 1998 HY₁₃, 12, 3, 13; 1998 HQ₁₉, 15, 3, 5; 1998 HQ₂₃, 4, 1, 0; 1998 HG₂₆, 34, 8, 1037; 1998 HO₂₇, 24, 5, 116; 1998 HQ₂₇, 10, 2, 2; 1998 HF₃₀, 3, 1, 0; 1998 HO₃₀, 34, 7, 648; 1998 HD₃₂, 45, 9, 116; 1998 HE₃₂, 15, 3, 41; 1998 HN₃₂, 5, 1, 0; 1998 HK₃₃, 4, 1, 0; 1998 HO₃₃, 10, 1, 0; 1998 HL₃₄, 14, 3, 598; 1998 HR₃₄, 30, 7, 649; 1998 HC₃₆, 10, 2, 2; 1998 HK₃₆, 10, 2, 2; 1998 HY₃₇, 23, 5, 597; 1998 HE₃₈, 13, 3, 96; 1998 HO₃₈, 9, 2, 92; 1998 HC₄₀, 10, 2, 4; 1998 HC₄₂, 14, 3, 8; 1998 HT₄₂, 5, 1, 0; 1998 HV₄₄, 4, 1, 0; 1998 HK₄₅, 3, 1, 0; 1998 HN₄₉, 8, 2, 2; 1998 HW₅₀, 9, 2, 29; 1998 HE₅₁, 14, 3, 23; 1998 HJ₅₁, 18, 2, 2; 1998 HR₅₁, 8, 2, 10; 1998 HS₅₁, 28, 6, 95; 1998 HT₅₁, 20, 4, 58; 1998 HU₅₁, 10, 2, 8; 1998 HH₅₂, 5, 1, 0; 1998 HO₅₂, 23, 5, 622; 1998 HU₅₂, 8, 2, 4; 1998 HK₅₆, 5, 1, 0; 1998 HR₅₉, 8, 2, 3; 1998 HM₆₁, 5, 1, 0; 1998 HX₆₁, 9, 2, 48; 1998 HP₆₄, 9, 2, 553; 1998 HR₆₇, 15, 3, 51; 1998 HQ₇₃, 10, 2, 53; 1998 HL₇₉, 8, 2, 26; 1998 HH₈₀, 9, 2, 2; 1998 HK₈₂, 14, 3, 521; 1998 HQ₈₂, 5, 1, 0; 1998 HF₈₄, 10, 2, 15; 1998 HZ₈₄, 5, 1, 0; 1998 HE₈₇, 14, 3, 13; 1998 HP₈₉, 10, 2, 21; 1998 HE₉₀, 10, 2, 21; 1998 HR₉₀, 4, 1, 0; 1998 HL₉₁, 26, 6, 93; 1998 HO₉₂, 4, 1, 0; 1998 HA₉₃, 10, 2, 2; 1998 HL₉₃, 10, 2, 7; 1998 HQ₉₃, 13, 3, 565; 1998 HK₉₄, 7, 2, 3; 1998 HA₉₅, 4, 1, 0; 1998 HV₉₅, 27, 6, 592; 1998 HF₉₆, 17, 3, 24; 1998 HV₉₇, 13, 3, 22; 1998 HA₉₈, 10, 2, 95; 1998 HC₉₈, 8, 2, 2; 1998 HC₉₉, 25, 5, 613; 1998 HQ₁₀₀, 8, 2, 2; 1998 HW₁₀₀, 5, 1, 0; 1998 HY₁₀₀, 20, 5, 564; 1998 HG₁₀₁, 8, 2, 23; 1998 HW₁₀₁, 5, 1, 0; 1998 HZ₁₀₁, 3, 1, 0; 1998 HF₁₀₂, 25, 4, 42; 1998 HO₁₀₂, 8, 2, 37; 1998 HS₁₀₂, 9, 2, 498; 1998 HE₁₀₃, 19, 4, 70; 1998 HC₁₀₈, 27, 6, 654; 1998 HX₁₁₀, 39, 8, 627; 1998 HN₁₁₁, 31, 7, 590; 1998 HH₁₁₃, 9, 2, 562; 1998 HJ₁₁₃, 9, 2, 25; 1998 HK₁₁₃, 10, 2, 593; 1998 HB₁₁₄, 41, 9, 658; 1998 HO₁₁₇, 10, 2, 3; 1998 HA₁₂₀, 5, 1, 0; 1998 HA₁₂₁, 13, 3, 495; 1998 HE₁₂₃, 14, 3, 5; 1998 HN₁₂₃, 31, 7, 594; 1998 HK₁₂₄, 14, 3, 25; 1998 HN₁₂₈, 5, 1, 0; 1998 HJ₁₃₃, 5, 1, 0; 1998 HQ₁₃₄, 32, 7, 592; 1998 HB₁₃₇, 5, 1, 0; 1998 HN₁₃₉, 38, 8, 116; 1998 HP₁₃₉, 37, 9, 122; 1998 HC₁₄₁, 20, 4, 590; 1998 HK₁₄₃, 34, 7, 655; 1998 HR₁₄₃, 5, 1, 0; 1998 HY₁₄₇, 14, 3, 7; 1998 HA₁₄₈, 47, 10, 169; 1998 HK₁₄₈, 9, 2, 1; 1998 HO₁₄₈, 7, 2, 1; 1998 HS₁₄₈, 3, 1, 0; 1998 HU₁₄₈, 15, 3, 41; 1998 HW₁₄₈, 9, 2, 27; 1998 HD₁₄₉, 9, 2, 10; 1998 HT₁₄₉, 24, 5, 121; 1998 HU₁₄₉, 12, 3, 20; 1998 JE₂₃, 5, 116; 1998 JQ₁₀, 2, 2; 1998 JS₄, 20, 4, 564; 1998 JT₉, 9, 2, 1; 1998 JX₁₅, 3, 543; 1998 JP₁, 28, 6, 574; 1998 JT₁, 34, 6, 574; 1998 JZ₁, 8, 2, 20; 1998 JB₂, 20, 4, 63; 1998 JF₂, 34, 7, 113; 1998 JP₂, 35, 7, 63; 1998 JQ₂, 4, 1, 0; 1998 JY₂, 5, 1, 0; 1998 JJ₄, 3, 1, 0; 1998 KB₃, 1, 0; 1998 KN₄, 4, 1, 0; 1998 KZ₅, 1, 0; 1998 KP₁, 23, 5, 63; 1998 KS₁, 10, 2, 1; 1998 KK₂, 22, 5, 84; 1998 KL₂, 4, 1, 0; 1998 KQ₂, 15, 3, 22; 1998 KJ₃, 9, 2, 561; 1998 KP₃, 10, 2, 1; 1998 KA₄, 16, 4, 63; 1998 KB₄, 10, 2, 32; 1998 KS₄, 14, 3, 5; 1998 KU₄, 33, 6, 54; 1998 KW₄, 4, 1, 0; 1998 KB₅, 3, 1, 0; 1998 KE₅, 13, 3, 26; 1998 KZ₅, 5, 1, 0; 1998 KA₆, 9, 2, 40; 1998 KT₆, 3, 1, 0; 1998 KX₆, 8, 2, 1; 1998 KC₈, 15, 3, 58; 1998 KD₈, 23, 5, 552; 1998 KA₉, 12, 3, 470; 1998 KB₉, 28, 6, 121; 1998 KK₉, 18, 4, 52; 1998 KD₁₀, 2, 9, 5, 575; 1998 KJ₁₀, 4, 1, 0; 1998 KX₁₀, 13, 3, 570; 1998 KC₁₄, 13, 3, 31; 1998 KO₁₄, 10, 2, 24; 1998 KK₁₅, 14, 3, 585; 1998 KV₁₈, 9, 2, 9; 1998 KD₂₁, 11, 3, 560; 1998 KS₂₃, 4, 1, 0; 1998 KJ₂₅, 14, 3, 586; 1998 KW₂₅, 5, 1, 0; 1998 KC₂₆, 3, 1, 0; 1998 KF₂₈, 10, 2, 29; 1998 KQ₂₈, 13, 3, 80; 1998 KJ₃₃, 18, 4, 58; 1998 KU₃₃, 14, 3, 1011; 1998 KZ₃₃, 30, 6, 88; 1998 KF₃₅, 9, 2, 1; 1998 KC₃₅, 15, 3, 13; 1998 KJ₃₅, 5, 1, 0; 1998 KL₃₅, 4, 1, 0; 1998 KQ₃₅, 15, 3, 13; 1998 KF₃₆, 13, 2, 27; 1998 KK₃₆, 10, 2, 510; 1998 KT₃₆, 4, 1, 0; 1998 KL₃₇, 5, 1, 0; 1998 KD₃₈, 19, 4, 118; 1998 KK₃₈, 5, 1, 0; 1998 KT₃₈, 5, 1, 0; 1998 KZ₃₈, 5, 1, 0; 1998 KE₄₀, 5, 1, 0; 1998 KS₄₀, 4, 1, 0; 1998 KM₄₁, 15, 3, 116; 1998 KT₄₁, 4, 1, 0; 1998 KS₄₃, 13, 3, 63; 1998 KH₄₄, 20, 4, 98; 1998 KR<

0; 1998 OE₁, 3, 1, 0; 1998 OJ₁, 9, 3, 28; 1998 ON₁, 12, 3, 28; 1998 OT₁, 14, 2, 2; 1998 OH₂, 7, 2, 1; 1998 OJ₂, 13, 3, 23; 1998 OJ₃, 5, 1, 0; 1998 OO₃, 4, 1, 0; 1998 OV₃, 4, 1, 0; 1998 OY₃, 3, 1, 0; 1998 OB₄, 10, 2, 2; 1998 OQ₄, 3, 1, 0; 1998 OY₄, 15, 3, 28; 1998 OZ₄, 14, 3, 28; 1998 OU₅, 9, 2, 52; 1998 OW₅, 15, 3, 117; 1998 OZ₆, 8, 2, 2; 1998 OE₇, 1998 OG₇, 39, 8, 96; 1998 OP₇, 6, 2, 1; 1998 OG₈, 5, 1, 0; 1998 OL₈, 17, 4, 67; 1998 OR₈, 25, 4, 8; 1998 OG₉, 17, 4, 52; 1998 OH₉, 4, 1, 0; 1998 OP₉, 5, 1, 0; 1998 OB₁₀, 5, 1, 0; 1998 ON₁₁, 10, 2, 7; 1998 OW₁₁, 15, 3, 116; 1998 OA₁₂, 12, 3, 62; 1998 OD₁₂, 5, 1, 0; 1998 OR₁₂, 15, 3, 478; 1998 OS₁₂, 5, 1, 0; 1998 OV₁₂, 14, 3, 23; 1998 OB₁₃, 25, 5, 94; 1998 OM₁₃, 15, 3, 20; 1998 ON₁₃, 10, 2, 2; 1998 OR₁₃, 4, 1, 0; 1998 OS₁₃, 4, 1, 0; 1998 OY₁₃, 11, 3, 20; 1998 OB₁₄, 4, 1, 0; 1998 OH₁₄, 10, 2, 4; 1998 OU₁₄, 7, 2, 1; 1998 OZ₁₄, 10, 2, 2; 1998 PC, 4, 1, 0; 1998 PH, 15, 3, 20; 1998 PJ, 3, 1, 0; 1998 PL, 8, 2, 1; 1998 PO, 18, 4, 58; 1998 PR, 13, 3, 20; 1998 PS, 3, 1, 0; 1998 PV, 28, 6, 562; 1998 PJ₁, 5, 1, 0; 1998 QB, 15, 3, 20; 1998 QE, 10, 2, 1; 1998 QH, 8, 2, 18; 1998 QR, 25, 5, 62; 1998 QT, 13, 3, 20; 1998 QW, 9, 2, 3; 1998 QY, 9, 2, 3; 1998 QK₁, 10, 2, 3; 1998 QN₁, 8, 2, 1; 1998 QP₁, 4, 1, 0; 1998 QR₁, 5, 1, 0; 1998 QV₁, 8, 2, 1; 1998 QJ₂, 10, 2, 3; 1998 QN₂, 15, 2, 1; 1998 QU₂, 9, 2, 3; 1998 QF₃, 4, 1, 0; 1998 QE₄, 14, 3, 23; 1998 QJ₄, 5, 1, 0; 1998 QN₄, 9, 2, 18; 1998 QK₅, 4, 1, 0; 1998 QT₅, 10, 2, 18; 1998 QY₅, 4, 1, 0; 1998 QN₇, 3, 1, 0; 1998 QU₇, 16, 4, 94; 1998 QV₇, 14, 3, 23; 1998 QC₈, 8, 2, 20; 1998 QK₈, 10, 2, 3; 1998 QQ₈, 15, 3, 24; 1998 QT₈, 10, 2, 1; 1998 QM₉, 9, 2, 1; 1998 QS₉, 10, 2, 18; 1998 QU₉, 5, 1, 0; 1998 QV₉, 4, 1, 0; 1998 QO₁₀, 14, 3, 24; 1998 QT₁₀, 14, 3, 28; 1998 QU₁₀, 10, 2, 3; 1998 QX₁₀, 29, 5, 94; 1998 QY₁₀, 8, 2, 1; 1998 QE₁₁, 3, 1, 0; 1998 QS₁₁, 10, 2, 1; 1998 QZ₁₁, 10, 2, 2; 1998 QE₁₂, 14, 3, 54; 1998 QG₁₂, 15, 3, 960; 1998 QT₁₂, 13, 3, 20; 1998 QV₁₂, 8, 2, 2; 1998 QJ₁₃, 5, 1, 0; 1998 QS₁₃, 3, 1, 0; 1998 QY₁₃, 3, 1, 0; 1998 QZ₁₃, 27, 6, 64; 1998 QA₁₄, 29, 5, 94; 1998 QE₁₄, 7, 2, 3; 1998 QF₁₄, 15, 4, 1442; 1998 QA₁₅, 18, 3, 24; 1998 QZ₁₅, 14, 3, 20; 1998 QJ₁₆, 19, 3, 20; 1998 QK₁₆, 18, 4, 24; 1998 QM₁₆, 9, 2, 22; 1998 QP₁₆, 4, 1, 0; 1998 QT₁₆, 9, 2, 2; 1998 QC₁₇, 20, 4, 23; 1998 QF₁₇, 14, 3, 23; 1998 QP₁₇, 8, 2, 3; 1998 QU₁₇, 4, 1, 0; 1998 QV₁₇, 9, 2, 2; 1998 QZ₁₇, 10, 2, 8; 1998 QJ₁₈, 4, 1, 0; 1998 QL₁₈, 20, 4, 20; 1998 QT₁₈, 10, 2, 2; 1998 QA₁₉, 4, 1, 0; 1998 QK₁₉, 12, 3, 23; 1998 QL₁₉, 14, 3, 20; 1998 QV₁₉, 15, 3, 23; 1998 QY₁₉, 8, 2, 25; 1998 QZ₁₉, 12, 3, 23; 1998 QM₂₀, 9, 2, 3; 1998 QD₂₁, 13, 3, 50; 1998 QG₂₁, 4, 1, 0; 1998 QX₂₁, 13, 3, 20; 1998 QA₂₂, 25, 5, 94; 1998 QS₂₂, 14, 3, 49; 1998 QW₂₂, 14, 3, 22; 1998 QB₂₃, 25, 5, 49; 1998 QD₂₃, 11, 3, 20; 1998 QE₂₃, 3, 1, 0; 1998 QF₂₃, 14, 3, 21; 1998 QL₂₃, 14, 3, 20; 1998 QP₂₃, 4, 1, 0; 1998 QT₂₃, 14, 3, 362; 1998 QN₂₄, 7, 2, 986; 1998 QN₂₅, 9, 2, 22; 1998 QS₂₅, 29, 6, 62; 1998 QA₂₆, 10, 2, 22; 1998 QB₂₆, 5, 1, 0; 1998 QC₂₆, 4, 1, 0; 1998 QE₂₆, 5, 1, 0; 1998 QF₂₆, 5, 1, 0; 1998 QK₂₆, 10, 2, 2; 1998 QL₂₆, 23, 4, 975; 1998 QX₂₇, 7, 2, 20; 1998 QM₂₈, 7, 2, 2; 1998 QL₂₉, 5, 1, 0; 1998 QM₂₉, 5, 1, 0; 1998 QL₃₀, 5, 1, 0; 1998 QM₃₀, 10, 2, 1; 1998 QN₃₀, 4, 1, 0; 1998 QY₃₀, 9, 2, 1; 1998 QL₃₁, 7, 2, 31; 1998 QP₃₁, 19, 5, 50; 1998 QZ₃₂, 13, 2, 25; 1998 QT₃₂, 9, 2, 2; 1998 QV₃₂, 8, 2, 1; 1998 QW₃₂, 9, 2, 3; 1998 QX₃₂, 23, 5, 64; 1998 QL₃₃, 10, 2, 18; 1998 QS₃₃, 19, 4, 58; 1998 QK₃₄, 8, 2, 62; 1998 QS₃₄, 12, 3, 24; 1998 QV₃₄, 9, 2, 1; 1998 QW₃₄, 3, 1, 0; 1998 QY₃₄, 8, 2, 1; 1998 QB₃₅, 10, 2, 18; 1998 QO₃₅, 19, 4, 52; 1998 QX₃₅, 10, 2, 1; 1998 QZ₃₅, 15, 3, 20; 1998 QL₃₆, 14, 3, 57; 1998 QT₃₆, 9, 2, 1; 1998 QH₃₇, 9, 2, 1; 1998 QK₃₇, 25, 5, 5; 1998 QL₃₇, 15, 3, 24; 1998 QM₃₇, 5, 1, 0; 1998 QV₃₇, 4, 1, 0; 1998 QW₃₇, 10, 2, 1; 1998 QX₃₇, 14, 3, 20; 1998 QC₃₈, 15, 3, 21; 1998 QD₃₈, 19, 4, 51; 1998 QF₃₈, 5, 1, 0; 1998 QQ₃₈, 5, 1, 0; 1998 QV₃₈, 9, 2, 20; 1998 QA₃₉, 8, 2, 18; 1998 QE₃₉, 14, 3, 3; 1998 QK₃₉, 4, 1, 0; 1998 QR₃₉, 8, 2, 18; 1998 QT₃₉, 4, 1, 0; 1998 QZ₃₉, 12, 3, 20; 1998 QB₄₀, 12, 3, 28; 1998 QD₄₀, 10, 2, 1; 1998 QF₄₀, 22, 5, 64; 1998 QJ₄₀, 15, 4, 3; 1998 QP₄₀, 10, 2, 18; 1998 QV₄₀, 18, 4, 23; 1998 QM₄₁, 9, 2, 1; 1998 QN₄₁, 22, 5, 62; 1998 QS₄₁, 9, 2, 2; 1998 QT₄₁, 4, 1, 0; 1998 QB₄₂, 8, 2, 3; 1998 QK₄₂, 7, 2, 19; 1998 QM₄₂, 5, 1, 0; 1998 QN₄₂, 15, 3, 20; 1998 QB₄₃, 15, 3, 28; 1998 QK₄₃, 5, 1, 0; 1998 QN₄₃, 13, 3, 20; 1998 QP₄₃, 5, 1, 0; 1998 QR₄₃, 3, 1, 0; 1998 QU₄₃, 3, 1, 0; 1998 QY₄₃, 4, 1, 0; 1998 QB₄₄, 10, 2, 18; 1998 QH₄₄, 3, 1, 0; 1998 QJ₄₄, 19, 4, 41; 1998 QL₄₄, 24, 5, 52; 1998 QM₄₄, 12, 3, 23; 1998 QQ₄₄, 12, 3, 24; 1998 QS₄₄, 20, 4, 20; 1998 QD₄₅, 8, 2, 3; 1998 QJ₄₅, 5, 1, 0; 1998 QM₄₅, 2, 1, 0; 1998 QS₄₅, 7, 2, 1; 1998 QU₄₅, 5, 1, 0; 1998 QW₄₅, 15, 3, 2; 1998 QA₄₆, 4, 1, 0; 1998 QG₄₆, 3, 1, 0; 1998 QF₄₇, 8, 2, 22; 1998 QU₄₇, 19, 4, 52; 1998 QV₄₇, 3, 1, 0; 1998 QY₄₇, 3, 1, 0; 1998 QJ₄₈, 9, 2, 9; 1998 QF₄₈, 13, 3, 556; 1998 QL₄₈, 17, 4, 58; 1998 QW₄₈, 4, 1, 0; 1998 QE₄₉, 10, 2, 1; 1998 QF₄₉, 5, 1, 0; 1998 QJ₄₉, 14, 3, 24; 1998 QB₅₀, 8, 2, 18; 1998 QN₅₀, 6, 2, 1; 1998 QO₅₀, 13, 3, 28; 1998 QU₅₀, 5, 1, 0; 1998 QW₅₀, 15, 3, 59; 1998 QX₅₀, 14, 3, 19; 1998 QZ₅₀, 14, 3, 23; 1998 QC₅₁, 5, 1, 0; 1998 QF₅₁, 5, 1, 0; 1998 QP₅₁, 8, 2, 1; 1998 QT₅₁, 15, 3, 22; 1998 QV₅₁, 10, 2, 2; 1998 QX₅₁, 4, 1, 0; 1998 QB₅₂, 14, 3, 4; 1998 QY₅₂, 10, 2, 23; 1998 QH₅₂, 14, 3, 20; 1998 QK₅₂, 10, 2, 3; 1998 QM₅₂, 3, 1, 0; 1998 QU₅₂, 21, 3, 2; 1998 QB₅₃, 5, 1, 0; 1998 QK₅₃, 14, 3, 5; 1998 QN₅₃, 28, 6, 89; 1998 QO₅₃, 14, 2, 534; 1998 QR₅₃, 8, 2, 1; 1998 QS₅₃, 8, 2, 32; 1998 QW₅₃, 13, 3, 24; 1998 QA₅₄, 4, 1, 0; 1998 QE₅₄, 10, 2, 2; 1998 QG₅₄, 3, 1, 0; 1998 QK₅₄, 9, 2, 364; 1998 QV₅₄, 11, 3, 572; 1998 QY₅₄, 4, 1, 0; 1998 QZ₅₄, 8, 2, 4; 1998 QB₅₅, 14, 3, 21; 1998 QF₅₅, 10, 2, 3; 1998 QO₅₅, 4, 1, 0; 1998 QT₅₅, 5, 1, 0; 1998 QY₅₅, 8, 2, 1; 1998 QZ₅₅, 4, 1, 0; 1998 QM₅₇, 10, 2, 1; 1998 QP₅₇, 13, 3, 23; 1998 QO₆₀, 5, 1, 0; 1998 QK₆₁, 15, 3, 475; 1998 QL₆₁, 10, 2, 6; 1998 QH₆₅, 5, 1, 0; 1998 QW₆₅, 13, 3, 554; 1998 QL₆₆, 24, 5, 555; 1998 QV₆₇, 13, 3, 28; 1998 QK₆₈, 17, 4, 64; 1998 QJ₆₉, 4, 1, 0; 1998 QP₆₉, 10, 2, 3; 1998 QV₆₉, 9, 2, 475; 1998 QZ₆₉, 18, 4, 28; 1998 QC₇₀, 15, 3, 23; 1998 QF₇₀, 5, 1, 0; 1998 QJ₇₀, 19, 4, 162; 1998 QM₇₀, 5, 1, 0; 1998 QP₇₀, 4, 1, 0; 1998 QU₇₀, 4, 1, 0; 1998 QW₇₀, 23, 5, 482; 1998 QX₇₀, 9, 2, 476; 1998 QC₇₁, 10, 2, 2; 1998 QE₇₁, 9, 2, 50; 1998 QF₇₁, 3, 1, 0; 1998 QQ₇₁, 5, 1, 0; 1998 QR₇₁, 18, 4, 502; 1998 QR₇₂, 9, 2, 482; 1998 QX₇₂,

3, 1, 0; 1998 QZ₇₂, 9, 2, 441; 1998 QB₇₃, 8, 2, 4; 1998 QD₇₃, 10, 2, 507; 1998 QE₇₃, 15, 3, 20; 1998 QG₇₃, 10, 2, 1; 1998 QJ₇₃, 5, 1, 0; 1998 QL₇₃, 30, 6, 505; 1998 QO₇₃, 4, 1, 0; 1998 QV₇₃, 15, 3, 28; 1998 QD₇₄, 9, 2, 1; 1998 QF₇₄, 11, 3, 482; 1998 QG₇₄, 12, 3, 28; 1998 QO₇₄, 29, 6, 507; 1998 QS₇₄, 5, 1, 0; 1998 QV₇₄, 10, 2, 3; 1998 QY₇₄, 10, 2, 504; 1998 QC₇₅, 19, 4, 455; 1998 QK₇₅, 28, 5, 26; 1998 QN₇₅, 10, 2, 23; 1998 QO₇₅, 21, 5, 505; 1998 QT₇₅, 9, 2, 473; 1998 QM₇₆, 19, 4, 24; 1998 QT₇₆, 15, 3, 508; 1998 QY₇₆, 9, 2, 441; 1998 QB₇₇, 5, 1, 0; 1998 QH₇₇, 15, 3, 20; 1998 QR₇₇, 9, 2, 3; 1998 QS₇₇, 15, 3, 5; 1998 QW₇₇, 8, 2, 18; 1998 QX₇₇, 10, 2, 2; 1998 QE₇₈, 13, 3, 20; 1998 QD₇₉, 23, 5, 93; 1998 QF₈₀, 10, 2, 526; 1998 QA₈₄, 3, 1, 0; 1998 QE₈₄, 5, 1, 0; 1998 QL₈₄, 10, 2, 475; 1998 QQ₈₄, 20, 4, 26; 1998 QT₈₄, 10, 2, 482; 1998 QF₈₅, 23, 5, 503; 1998 QJ₈₅, 14, 3, 483; 1998 QL₈₅, 9, 2, 482; 1998 QN₈₅, 5, 1, 0; 1998 QO₈₅, 9, 1, 0; 1998 QW₈₅, 13, 3, 24; 1998 QZ₈₅, 3, 1, 0; 1998 QB₈₆, 9, 2, 475; 1998 QG₈₆, 10, 2, 2; 1998 QK₈₆, 13, 3, 23; 1998 QN₈₆, 10, 2, 2; 1998 QU₈₆, 11, 2, 482; 1998 QW₈₆, 28, 6, 555; 1998 QA₈₇, 15, 3, 482; 1998 QB₈₇, 14, 3, 20; 1998 QH₈₇, 7, 2, 505; 1998 QO₈₇, 20, 5, 504; 1998 QO₈₇, 9, 2, 112; 1998 QY₈₇, 9, 2, 112; 1998 QJ₈₈, 14, 3, 162; 1998 QP₈₈, 4, 1, 0; 1998 QU₈₈, 9, 2, 474; 1998 QF₈₉, 17, 4, 532; 1998 QW₈₉, 5, 1, 0; 1998 QE₉₀, 8, 2, 371; 1998 QF₉₀, 8, 2, 162; 1998 QT₉₀, 15, 3, 20; 1998 QU₉₀, 9, 2, 3; 1998 QY₉₀, 4, 1, 0; 1998 QN₉₂, 5, 1, 0; 1998 QU₉₂, 6, 2, 4; 1998 QR₉₃, 3, 1, 0; 1998 QS₉₃, 5, 1, 0; 1998 QM₉₄, 10, 2, 1; 1998 QC₉₅, 9, 2, 59; 1998 QK₉₅, 18, 4, 50; 1998 QF₉₆, 8, 2, 2; 1998 QM₉₆, 5, 1, 0; 1998 QV₉₆, 13, 3, 24; 1998 QA₉₈, 9, 2, 3; 1998 QC₉₈, 3, 1, 0; 1998 QD₉₉, 9, 2, 1; 1998 QE₉₉, 10, 2, 35; 1998 QO₁₀₀, 13, 2, 28; 1998 QP₁₀₀, 14, 3, 20; 1998 QW₁₀₀, 25, 5, 88; 1998 QQ₁₀₁, 20, 3, 21; 1998 QZ₁₀₁, 3, 1, 0; 1998 QP₁₀₂, 33, 7, 506; 1998 QZ₁₀₂, 12, 3, 23; 1998 QL₁₀₃, 4, 1, 0; 1998 QM₁₀₃, 4, 1, 0; 1998 QQ₁₀₃, 4, 1, 0; 1998 QU₁₀₃, 16, 3, 389; 1998 QF₁₀₄, 8, 2, 22; 1998 QJ₁₀₄, 5, 1, 0; 1998 QK₁₀₄, 5, 1, 0; 1998 QO₁₀₄, 13, 3, 20; 1998 QQ₁₀₄, 19, 4, 56; 1998 QW₁₀₄, 5, 1, 0; 1998 QL₁₀₅, 18, 4, 51; 1998 QO₁₀₅, 10, 2, 19; 1998 QM₁₀₆, 5, 1, 0; 1998 QQ₁₀₇, 10, 2, 444; 1998 QR₁₀₇, 3, 1, 0; 1998 RM, 10, 2, 28; 1998 RV, 10, 2, 18; 1998 RX, 9, 2, 18; 1998 RC₁, 3, 1, 0; 1998 RJ₁, 19, 4, 506; 1998 RP₁, 4, 1, 0; 1998 RB₂, 4, 1, 0; 1998 RE₂, 13, 3, 23; 1998 RQ₂, 4, 1, 0; 1998 RA₅, 9, 2, 6; 1998 RD₅, 13, 3, 20; 1998 RP₅, 9, 2, 3; 1998 RB₆, 4, 1, 0; 1998 RF₆, 13, 3, 484; 1998 RJ₆, 10, 2, 6; 1998 RL₆, 5, 1, 0; 1998 RM₆, 7, 2, 3; 1998 RZ₈, 4, 1, 0; 1998 RF₉, 5, 1, 0; 1998 RL₉, 3, 1, 0; 1998 RX₁₂, 7, 2, 1; 1998 RU₁₅, 10, 2, 2; 1998 RF₁₆, 9, 2, 22; 1998 RH₁₆, 4, 1, 0; 1998 RR₁₆, 10, 2, 501; 1998 RT₁₆, 5, 1, 0; 1998 RU₁₆, 18, 4, 484; 1998 RD₁₇, 22, 5, 473; 1998 RJ₁₇, 3, 1, 0; 1998 RS₁₇, 8, 2, 2; 1998 RV₁₇, 4, 1, 0; 1998 RM₁₉, 4, 1, 0; 1998 RP₁₉, 14, 3, 3; 1998 RQ₁₉, 23, 5, 457; 1998 RL₂₀, 12, 3, 476; 1998 RU₂₀, 5, 1, 0; 1998 RE₂₂, 9, 2, 6; 1998 RO₂₂, 10, 2, 2; 1998 RF₂₃, 16, 4, 508; 1998 RC₂₄, 7, 2, 23; 1998 RE₂₄, 4, 1, 0; 1998 RP₂₆, 14, 3, 446; 1998 RY₂₉, 4, 1, 0; 1998 RF₃₁, 5, 1, 0; 1998 RO₃₁, 14, 3, 25; 1998 RX₃₂, 4, 1, 0; 1998 RK₃₃, 5, 1, 0; 1998 RP₃₃, 10, 2, 55; 1998 RQ₃₃, 20, 2, 502; 1998 RM₃₄, 9, 2, 2; 1998 RP₃₄, 10, 2, 478; 1998 RZ₃₄, 3, 1, 0; 1998 RN₃₅, 10, 2, 1; 1998 RE₃₇, 5, 1, 0; 1998 RB₃₈, 5, 1, 0; 1998 RG₃₈, 4, 1, 0; 1998 RO₃₈, 15, 3, 20; 1998 RS₃₈, 14, 3, 163; 1998 RA₃₉, 4, 1, 0; 1998 RJ₄₀, 14, 3, 502; 1998 RO₄₀, 25, 4, 56; 1998 RD₄₁, 10, 2, 485; 1998 RJ₄₂, 5, 1, 0; 1998 RQ₄₂, 5, 1, 0; 1998 RV₄₂, 21, 5, 501; 1998 RD₄₃, 10, 2, 1; 1998 RO₄₄, 17, 4, 56; 1998 RJ₄₅, 9, 2, 471; 1998 RO₄₅, 5, 1, 0; 1998 RE₄₇, 4, 1, 0; 1998 RK₄₇, 9, 2, 2; 1998 RM₄₇, 4, 1, 0; 1998 RP₄₇, 9, 2, 18; 1998 RQ₄₇, 9, 2, 474; 1998 RU₄₇, 19, 4, 506; 1998 RY₄₇, 3, 1, 0; 1998 RS₄₈, 10, 2, 2; 1998 RG₄₉, 5, 1, 0; 1998 RQ₄₉, 3, 1, 0; 1998 RJ₅₀, 9, 2, 2; 1998 RT₅₀, 10, 2, 18; 1998 RW₅₀, 17, 3, 5; 1998 RC₅₁, 8, 2, 1; 1998 RD₅₁, 13, 3, 23; 1998 RY₅₁, 4, 1, 0; 1998 RJ₅₂, 13, 3, 20; 1998 RQ₅₂, 10, 2, 4; 1998 RZ₅₂, 14, 3, 28; 1998 RC₅₃, 9, 2, 1; 1998 RF₅₃, 13, 3,

1998 SA₁₀, 5, 1, 0; 1998 SG₁₀, 9, 2, 19; 1998 SU₁₀, 10, 2, 2; 1998 SV₁₀, 3, 1, 0; 1998 SL₁₁, 5, 1, 0; 1998 SC₁₂, 10, 3, 28; 1998 SL₁₂, 11, 3, 2; 1998 SY₁₂, 7, 2, 1; 1998 SF₁₃, 8, 2, 19; 1998 SV₁₄, 9, 2, 3; 1998 SY₁₅, 26, 6, 499; 1998 SX₁₆, 9, 2, 2; 1998 SK₂₂, 10, 2, 4; 1998 SN₂₂, 8, 2, 24; 1998 SR₂₂, 22, 4, 24; 1998 SX₂₂, 12, 3, 2; 1998 SY₂₂, 4, 1, 0; 1998 SH₂₃, 20, 24; 1998 SV₂₃, 9, 2, 4; 1998 SW₂₃, 5, 1, 0; 1998 SX₂₃, 9, 2, 3; 1998 SA₂₄, 24, 4, 496; 1998 SC₂₄, 8, 2, 1; 1998 SG₂₄, 4, 1, 0; 1998 SJ₂₄, 14, 3, 5; 1998 SP₂₄, 5, 1, 0; 1998 SU₂₄, 5, 1, 0; 1998 SH₂₅, 14, 3, 20; 1998 SN₂₅, 10, 2, 2; 1998 SY₂₅, 10, 2, 1; 1998 SN₂₆, 14, 3, 485; 1998 SN₂₇, 10, 2, 50; 1998 SS₂₇, 25, 5, 51; 1998 SA₂₈, 14, 3, 20; 1998 SB₂₈, 3, 1, 0; 1998 SG₃₀, 3, 1, 0; 1998 SB₃₂, 13, 3, 24; 1998 SK₃₅, 4, 1, 0; 1998 SV₃₆, 4, 1, 0; 1998 SZ₃₆, 8, 2, 2; 1998 SU₃₇, 8, 2, 5; 1998 SL₄₂, 10, 2, 2; 1998 SY₄₂, 4, 1, 0; 1998 SC₄₃, 4, 1, 0; 1998 SR₄₃, 10, 2, 1; 1998 SS₄₃, 8, 2, 3; 1998 SW₄₃, 9, 2, 1; 1998 SE₄₄, 15, 3, 371; 1998 SC₄₆, 9, 2, 1; 1998 SM₄₆, 12, 3, 3; 1998 SE₄₇, 9, 2, 1; 1998 SL₄₇, 10, 2, 980; 1998 SC₄₉, 18, 4, 502; 1998 SG₄₉, 5, 1, 0; 1998 ST₅₀, 19, 4, 24; 1998 SU₅₂, 25, 4, 51; 1998 SP₅₃, 13, 3, 499; 1998 SQ₅₃, 7, 2, 18; 1998 SX₅₃, 12, 3, 494; 1998 SY₅₃, 10, 2, 3; 1998 SL₅₄, 7, 2, 1; 1998 SN₅₄, 10, 2, 1; 1998 ST₅₄, 8, 2, 19; 1998 SZ₅₄, 7, 2, 4; 1998 SA₅₅, 8, 2, 1; 1998 SP₅₆, 15, 3, 20; 1998 ST₅₆, 24, 4, 395; 1998 SK₅₇, 5, 1, 0; 1998 SL₅₇, 9, 2, 102; 1998 SN₅₇, 10, 2, 2; 1998 SY₅₇, 23, 5, 491; 1998 SD₅₈, 20, 4, 28; 1998 SE₅₈, 10, 2, 1; 1998 SF₅₈, 5, 1, 0; 1998 SH₅₈, 10, 2, 3; 1998 SM₅₈, 8, 2, 1; 1998 SQ₅₈, 4, 1, 0; 1998 SR₅₈, 4, 1, 0; 1998 SB₅₉, 4, 1, 0; 1998 SE₅₉, 19, 4, 58; 1998 SF₅₉, 4, 1, 0; 1998 SU₅₉, 15, 3, 24; 1998 SY₅₉, 9, 2, 1; 1998 SZ₅₉, 10, 2, 2; 1998 SG₆₀, 14, 3, 51; 1998 SN₆₀, 12, 3, 4; 1998 SX₆₀, 9, 2, 18; 1998 SA₆₁, 22, 5, 495; 1998 SF₆₁, 4, 1, 0; 1998 SK₆₁, 10, 2, 2; 1998 SL₆₁, 5, 1, 0; 1998 SO₆₁, 13, 3, 2; 1998 SQ₆₁, 9, 2, 3; 1998 SR₆₁, 5, 1, 0; 1998 SS₆₁, 9, 2, 26; 1998 ST₆₁, 5, 1, 0; 1998 SY₆₁, 14, 3, 492; 1998 SU₆₂, 8, 2, 1; 1998 SB₆₃, 5, 1, 0; 1998 SK₆₃, 10, 2, 49; 1998 SM₆₃, 9, 2, 3; 1998 SY₆₃, 5, 1, 0; 1998 SM₆₄, 5, 1, 0; 1998 SN₆₄, 14, 3, 28; 1998 SV₆₅, 18, 4, 28; 1998 SA₆₆, 4, 1, 0; 1998 SB₆₆, 4, 1, 0; 1998 SJ₆₆, 4, 1, 0; 1998 SP₆₆, 4, 1, 0; 1998 SX₆₆, 9, 2, 2; 1998 SD₆₇, 4, 1, 0; 1998 SN₆₇, 3, 1, 0; 1998 SZ₆₇, 5, 1, 0; 1998 SD₆₈, 5, 1, 0; 1998 SQ₆₈, 4, 1, 0; 1998 SQ₇₀, 8, 2, 2; 1998 SR₇₀, 5, 1, 0; 1998 ST₇₂, 10, 2, 2; 1998 SZ₇₂, 5, 1, 0; 1998 ST₇₃, 10, 2, 2; 1998 SL₇₄, 5, 1, 0; 1998 SW₇₄, 10, 2, 2; 1998 SD₇₆, 5, 1, 0; 1998 SH₇₆, 18, 4, 498; 1998 SH₇₉, 9, 2, 2; 1998 SZ₈₀, 5, 1, 0; 1998 SQ₈₁, 5, 1, 0; 1998 SM₈₇, 6, 2, 2; 1998 SQ₉₇, 4, 1, 0; 1998 SS₁₀₃, 18, 3, 491; 1998 SV₁₀₅, 5, 1, 0; 1998 SH₁₀₆, 17, 3, 40; 1998 SZ₁₀₆, 9, 2, 2; 1998 SM₁₀₇, 5, 1, 0; 1998 SN₁₀₈, 17, 4, 28; 1998 SJ₁₀₉, 5, 1, 0; 1998 SD₁₁₀, 4, 1, 0; 1998 SR₁₁₁, 5, 1, 0; 1998 SN₁₁₄, 9, 2, 2; 1998 SZ₁₁₄, 14, 2, 2; 1998 SL₁₁₅, 3, 1, 0; 1998 SM₁₁₅, 10, 2, 3; 1998 SY₁₁₅, 4, 1, 0; 1998 SH₁₁₆, 5, 1, 0; 1998 SR₁₁₇, 5, 1, 0; 1998 SS₁₁₇, 10, 2, 2; 1998 SQ₁₁₈, 4, 1, 0; 1998 SR₁₁₈, 5, 1, 0; 1998 SB₁₁₉, 19, 4, 5; 1998 SK₁₁₉, 7, 2, 19; 1998 ST₁₁₉, 4, 1, 0; 1998 SK₁₂₁, 9, 2, 24; 1998 SN₁₂₁, 4, 1, 0; 1998 SC₁₂₂, 5, 1, 0; 1998 SD₁₂₂, 14, 3, 28; 1998 SH₁₂₂, 8, 2, 2; 1998 SJ₁₂₂, 7, 2, 399; 1998 SZ₁₂₂, 6, 2, 1; 1998 SF₁₂₃, 9, 2, 18; 1998 SK₁₂₃, 8, 2, 2; 1998 SM₁₂₃, 10, 3, 20; 1998 SN₁₂₃, 8, 2, 2; 1998 ST₁₂₃, 14, 3, 28; 1998 SR₁₂₄, 8, 2, 2; 1998 SC₁₂₅, 4, 1, 0; 1998 SA₁₂₆, 3, 1, 0; 1998 SV₁₂₆, 9, 2, 2; 1998 SF₁₂₇, 23, 4, 37; 1998 SY₁₂₇, 10, 2, 2; 1998 SU₁₂₈, 22, 5, 423; 1998 SV₁₂₈, 4, 1, 0; 1998 SO₁₂₉, 14, 3, 20; 1998 SU₁₂₉, 20, 4, 52; 1998 SA₁₃₀, 4, 1, 0; 1998 SD₁₃₀, 5, 1, 0; 1998 SE₁₃₀, 23, 3, 2; 1998 SG₁₃₀, 4, 1, 0; 1998 SK₁₃₀, 3, 1, 0; 1998 SN₁₃₀, 9, 2, 2; 1998 SS₁₃₀, 5, 1, 0; 1998 SD₁₃₁, 23, 5, 24; 1998 ST₁₃₁, 4, 1, 0; 1998 SE₁₃₂, 15, 3, 3; 1998 SG₁₃₂, 4, 1, 0; 1998 SJ₁₃₂, 4, 1, 0; 1998 ST₁₃₂, 5, 1, 0; 1998 SW₁₃₂, 15, 3, 28; 1998 SX₁₃₂, 19, 4, 421; 1998 SA₁₃₃, 5, 1, 0; 1998 SG₁₃₃, 5, 1, 0; 1998 SP₁₃₃, 8, 2, 2; 1998 SZ₁₃₃, 3, 1, 0; 1998 SH₁₃₄, 8, 2, 1; 1998 SN₁₃₄, 8, 2, 3; 1998 SV₁₃₄, 12, 3, 4; 1998 SE₁₃₅, 6, 2, 24; 1998 SN₁₃₅, 5, 1, 0; 1998 SO₁₃₅, 9, 2, 18; 1998 SF₁₃₆, 4, 1, 0; 1998 SA₁₃₇, 4, 1, 0; 1998 SR₁₃₇, 5, 1, 0; 1998 SC₁₃₈, 8, 2, 1; 1998 SF₁₃₈, 10, 2, 1; 1998 SM₁₃₈, 5, 1, 0; 1998 SN₁₃₈, 3, 1, 0; 1998 SA₁₃₉, 7, 2, 2; 1998 SD₁₃₉, 11, 3, 20; 1998 SR₁₃₉, 13, 3, 2; 1998 SY₁₃₉, 8, 2, 8; 1998 SB₁₄₀, 4, 1, 0; 1998 SZ₁₄₀, 14, 2, 1; 1998 SF₁₄₁, 9, 2, 2; 1998 SP₁₄₃, 9, 2, 2; 1998 SA₁₄₄, 5, 1, 0; 1998 SD₁₄₄, 3, 1, 0; 1998 SE₁₄₄, 5, 1, 0; 1998 SQ₁₄₄, 5, 1, 0; 1998 ST₁₄₄, 9, 2, 4; 1998 SV₁₄₄, 5, 1, 0; 1998 SA₁₄₅, 5, 1, 0; 1998 SL₁₄₅, 4, 1, 0; 1998 SQ₁₄₅, 12, 3, 26; 1998 ST₁₄₅, 17, 4, 4; 1998 ST₁₄₆, 5, 1, 0; 1998 SX₁₄₆, 4, 1, 0; 1998 SE₁₄₇, 10, 2, 3; 1998 SK₁₅₇, 6, 2, 1; 1998 SD₁₅₉, 19, 4, 422; 1998 SG₁₅₉, 3, 1, 0; 1998 ST₁₆₀, 7, 2, 1; 1998 SR₁₆₂, 8, 2, 4; 1998 SA₁₆₃, 5, 1, 0; 1998 SE₁₆₃, 4, 1, 0; 1998 SV₁₆₃, 9, 2, 18; 1998 SX₁₆₃, 10, 2, 18; 1998 SZ₁₆₃, 3, 1, 0; 1998 SG₁₆₄, 9, 2, 8; 1998 SK₁₆₄, 12, 3, 22; 1998 SV₁₆₄, 21, 5, 49; 1998 TA₁₉, 3, 22; 1998 TK₁₄, 3, 398; 1998 TR₁, 6, 2, 24; 1998 TU₁, 9, 2, 1; 1998 TV₁, 5, 1, 0; 1998 TZ₁, 4, 1, 0; 1998 TC₂, 4, 1, 0; 1998 TX₂, 10, 2, 1; 1998 TG₃, 8, 2, 25; 1998 TM₅, 3, 1, 0; 1998 TT₅, 12, 2, 19; 1998 TX₅, 15, 2, 1; 1998 TA₆, 8, 2, 20; 1998 TU₆, 3, 1, 0; 1998 TV₆, 22, 4, 21; 1998 TU₁₂, 10, 2, 18; 1998 TO₁₅, 15, 3, 26; 1998 TP₁₇, 12, 3, 2; 1998 TX₁₇, 12, 3, 24; 1998 TY₁₇, 7, 2, 3; 1998 TD₁₈, 9, 2, 4; 1998 TZ₁₈, 5, 1, 0; 1998 TT₂₆, 4, 1, 0; 1998 TD₂₇, 5, 1, 0; 1998 TE₂₉, 9, 2, 28; 1998 TH₂₉, 5, 1, 0; 1998 TQ₃₀, 3, 1, 0; 1998 TR₃₀, 12, 3, 24; 1998 TT₃₀, 3, 1, 0; 1998 TW₃₀, 5, 1, 0; 1998 TA₃₂, 4, 1, 0; 1998 TL₃₂, 5, 1, 0; 1998 TW₃₂, 4, 1, 0; 1998 TN₃₃, 5, 1, 0; 1998 TR₃₃, 3, 1, 0; 1998 TA₃₄, 15, 3, 26; 1998 TD₃₄, 10, 2, 3; 1998 TG₃₄, 5, 1, 0; 1998 TW₃₄, 13, 3, 28; 1998 UE₂₃, 5, 26; 1998 UL₁₁, 3, 20; 1998 UK₁, 9, 2, 2; 1998 UO₂, 5, 1, 0; 1998 UC₄, 19, 4, 4; 1998 UK₄, 5, 1, 0; 1998 UO₅, 4, 1, 0; 1998 UV₆, 9, 2, 2; 1998 UD₇, 8, 2, 1; 1998 US₇, 9, 2, 25; 1998 UX₇, 4, 1, 0; 1998 UY₇, 8, 2, 20; 1998 UD₈, 10, 2, 2; 1998 UL₈, 5, 1, 0; 1998 UM₈, 8, 2, 3; 1998 UZ₈, 4, 1, 0; 1998 UN₁₅, 4, 1, 0; 1998 UB₁₆, 5, 1, 0; 1998 UQ₁₆, 17, 4, 51; 1998 UR₁₆, 10, 2, 1; 1998 UM₁₈, 5, 1, 0; 1998 UW₁₉, 8, 2, 2; 1998 UJ₂₀, 3, 1, 0; 1998 UK₂₀, 5, 1, 0; 1998 UL₂₀, 15, 3, 28; 1998 UM₂₀, 9, 2, 3; 1998 UN₂₀, 10, 2, 3; 1998 UR₂₀, 8, 2, 2; 1998 UV₂₀, 19, 4, 26; 1998 UP₂₁, 10, 2, 3; 1998 UZ₂₁, 3, 1, 0; 1998 UT₂₃, 13, 3, 447; 1998 UC₂₄, 5, 1, 0; 1998 UM₂₄, 9, 2, 3; 1998 US₂₄, 10, 2, 1; 1998 UT₂₄, 5, 1, 0; 1998 UV₂₄, 10, 2, 2; 1998 UM₂₆, 5, 1, 0; 1998 UY₂₆, 4, 1, 0; 1998 UA₂₇, 8, 2,

3; 1998 UU₂₈, 9, 2, 19; 1998 UZ₂₈, 4, 1, 0; 1998 UH₃₁, 5, 1, 0; 1998 UG₃₄, 4, 1, 0; 1998 UF₃₇, 8, 2, 1; 1998 UJ₄₀, 9, 2, 399; 1998 VC₄, 4, 1, 0; 1998 VF₁₅, 3, 20; 1998 VK₃, 4, 1, 0; 1998 VB₄, 3, 1, 0; 1998 VH₅, 4, 1, 0; 1998 VJ₅, 11, 3, 19; 1998 VX₅, 8, 2, 2; 1998 VM₆, 15, 3, 5; 1998 VG₆, 13, 3, 5; 1998 VL₇, 10, 2, 2; 1998 VQ₇, 5, 1, 0; 1998 VD₉, 8, 2, 24; 1998 VT₁₀, 10, 3, 23; 1998 VN₁₁, 4, 1, 0; 1998 VP₁₅, 3, 1, 0; 1998 VL₁₆, 10, 2, 19; 1998 VO₁₈, 9, 2, 2; 1998 VP₂₀, 13, 3, 4; 1998 VB₂₆, 9, 2, 2; 1998 VH₂₆, 12, 3, 5; 1998 VL₂₇, 9, 2, 1; 1998 VQ₂₇, 9, 2, 2; 1998 VR₂₇, 9, 2, 2; 1998 VB₂₈, 9, 2, 2; 1998 VQ₂₉, 9, 2, 28; 1998 VY₂₉, 15, 3, 24; 1998 VD₃₀, 5, 1, 0; 1998 VU₃₀, 10, 2, 391; 1998 VN₃₁, 8, 2, 399; 1998 VM₃₂, 4, 1, 0; 1998 VO₃₂, 10, 2, 2; 1998 VN₃₃, 3, 1, 0; 1998 VR₃₄, 3, 1, 0; 1998 VF₃₅, 13, 3, 28; 1998 VL₃₇, 4, 1, 0; 1998 VZ₃₇, 3, 1, 0; 1998 VQ₃₈, 10, 2, 1; 1998 VP₄₄, 5, 1, 0; 1998 WO₁, 3, 1, 0; 1998 WR₃, 4, 1, 0; 1998 WH₄, 5, 1, 0; 1998 WX₄, 10, 2, 24; 1998 WJ₈, 10, 2, 18; 1998 WX₉, 10, 2, 1; 1998 WU₁₀, 5, 1, 0; 1998 WN₁₁, 8, 2, 1; 1998 WQ₁₁, 3, 1, 0; 1998 WD₁₂, 3, 1, 0; 1998 WQ₁₄, 4, 1, 0; 1998 WA₁₅, 15, 3, 28; 1998 WS₁₆, 5, 1, 0; 1998 WJ₁₇, 6, 2, 1; 1998 WK₁₇, 15, 3, 25; 1998 WA₁₈, 4, 1, 0; 1998 WR₂₁, 15, 3, 24; 1998 WA₃₂, 3, 1, 0; 1998 XK₁₀, 10, 2, 3; 1998 XP₂, 5, 1, 0; 1998 XW₃, 9, 2, 14; 1998 XW₃, 9, 2, 14; 1998 XC₄, 4, 1, 0; 1998 XL₅, 5, 1, 0; 1998 XM₆, 4, 1, 0; 1998 XR₉, 4, 1, 0; 1998 XQ₁₂, 5, 1, 0; 1998 XA₁₃, 18, 4, 386; 1998 XE₁₃, 10, 2, 2; 1998 XS₁₆, 3, 1, 0; 1998 XG₂₄, 5, 1, 0; 1998 XP₂₇, 9, 2, 3; 1998 XS₂₇, 10, 2, 2; 1998 XS₃₁, 26, 6, 27; 1998 XJ₄₀, 8, 2, 4; 1998 XG₄₈, 5, 1, 0; 1998 XD₅₁, 4, 1, 0; 1998 XU₅₁, 5, 1, 0; 1998 XH₅₉, 5, 1, 0; 1998 XT₆₂, 4, 1, 0; 1998 XU₆₈, 10, 2, 53; 1998 XS₇₃, 8, 2, 20; 1998 XO₇₇, 4, 1, 0; 1998 XG₇₉, 16, 4, 24; 1998 XO₇₉, 9, 2, 4; 1998 XG₈₀, 15, 3, 4; 1998 XO₈₉, 2, 738; 1998 XP₉₂, 9, 2, 1; 1998 XR₉₂, 10, 2, 1; 1998 YR₁₄, 3, 26; 1998 YX₁₄, 5, 1, 0; 1998 YW₁₅, 15, 4, 26; 1998 YF₃, 3, 1, 0; 1998 YG₃, 5, 1, 0; 1998 YH₄, 4, 1, 0; 1998 YU₆, 15, 3, 28; 1998 YW₆, 7, 2, 20; 1998 YB₇, 14, 3, 26; 1998 YC₉, 14, 3, 26; 1998 YL₈, 4, 1, 0; 1998 YR₈, 5, 1, 0; 1998 YT₂₀, 5, 1, 0; 1998 YQ₂₃, 15, 3, 26; 1998 AE₆, 8, 2, 25; 1998 AZ₉, 4, 1, 0; 1998 AM₂₀, 10, 2, 2; 1998 CL₁₀, 3, 1, 0; 1998 FQ₃, 13, 3, 387; 1998 GP₉, 5, 1, 0; 1998 JJ₅, 1, 0; 1998 JM₈, 7, 2, 2; 1998 JS₂₄, 5, 1, 0; 1998 JK₄₉, 4, 1, 0; 1998 JD₅₀, 4, 1, 0; 1998 JR₅₀, 4, 1, 0; 1998 JY₅₂, 4, 1, 0; 1998 JC₅₄, 5, 1, 0; 1998 JS₅₄, 4, 1, 0; 1998 JG₅₈, 5, 1, 0; 1998 JY₅₈, 5, 1, 0; 1998 JQ₆₄, 5, 1, 0; 1998 JL₈₀, 4, 1, 0; 1998 JW₈₀, 5, 1, 0; 1998 JB₉₃, 5, 1, 0; 1998 JF₉₄, 5, 1, 0; 1998 JW₉₅, 5, 1, 0; 1998 JH₉₈, 5, 1, 0; 1998 JQ₁₁₃, 5, 1, 0; 1998 JB₁₁₄, 5, 1, 0; 1998 JN₁₁₆, 4, 1, 0; 1998 JX₁₁₈, 4, 1, 0; 1998 JX₁₁₉, 4, 1, 0; 1998 JC₁₂₀, 5, 1, 0; 1998 JW₁₂₀, 4, 1, 0; 1998 JE₁₂₁, 5, 1, 0; 1998 JO₁₂₁, 4, 1, 0; 1998 JX₁₂₁, 5, 1, 0; 1998 JA₁₂₇, 5, 1, 0; 1998 JI₁₂₇, 5, 1, 0; 1998 JA₁₃₆, 5, 1, 0; 1998 JE₁₃₆, 5, 1, 0; 1998 JF₁₃₆, 5, 1, 0; 1998 JI₁₃₆, 5, 1, 0; 1998 JH₁₃₆, 4, 1, 0; 1998 JJ₁₃₆, 5, 1, 0; 1998 JK₁₃₆, 4, 1, 0; 1998 JI₁₃₆, 4, 1, 0; 1998 JM₁₃₆, 5, 1, 0; 1998 JO₁₃₆, 4, 1, 0; 1998 JP₁₃₆, 5, 1, 0; 1998 JS₁₃₆, 5, 1, 0; 1998 JT₁₃₆, 5, 1, 0; 1998 JU₁₃₆, 5, 1, 0; 1998 JV₁₃₆, 5, 1, 0; 1998 JW₁₃₆, 5, 1, 0; 1998 JX₁₃₆, 5, 1, 0; 1998 JY₁₃₆, 5, 1, 0; 1998 JZ₁₃₆, 5, 1, 0; 1998 KH₇, 4, 1, 0; 1998 KA₈, 5, 1, 0; 1998 KM₁₁, 5, 1, 0; 1998 KV₁₆, 5, 1, 0; 1998 KY₁₆, 5, 1, 0; 1998 KO₁₇, 5, 1, 0; 1998 LT₈, 5, 1, 0; 1998 LV₈, 4, 1, 0; 1998 LE₉, 5, 1, 0; 1998 LK₁₀, 5, 1, 0; 1998 LS₁₁, 5, 1, 0; 1998 LM₃₂, 5, 1, 0; 1998 LN₃₂, 5, 1, 0; 1998 LV₃₂, 4, 1, 0; 1998 LQ₃₂, 5, 1, 0; 1998 LS₃₂, 5, 1, 0; 1998 LT₃₂, 5, 1, 0; 1998 LU₃₂, 5, 1, 0; 1998 LV₃₂, 5, 1, 0; 1998 LW₃₂, 5, 1, 0; 1998 LX₃₂, 4, 1, 0; 1998 LY₃₂, 5, 1, 0; 1998 LZ₃₂, 5, 1, 0; 1998 LA₃₃, 5, 1, 0; 1998 LB₃₃, 5, 1, 0; 1998 LC₃₃, 5, 1, 0; 1998 LD₃₃, 5, 1, 0; 1998 LE₃₃, 5, 1, 0; 1998 LF₃₃, 5, 1, 0; 1998 LG₃₃, 5, 1, 0; 1998 LH₃₃, 5, 1, 0; 1998 LJ₃₃, 5, 1, 0; 1998 LL₃₃, 5, 1, 0; 1998 LN₃₃, 4, 1, 0; 1998 LO₃₃,

1999 RE₂, 15, 3, 67; 1999 RQ₂, 4, 1, 0; 1999 RR₂, 9, 2, 20; 1999 RV₂, 4, 1, 0; 1999 RB₃, 10, 2, 21; 1999 RC₃, 7, 2, 2; 1999 RF₃, 8, 2, 2; 1999 RK₃, 5, 1, 0; 1999 RL₃, 8, 2, 1; 1999 RK₇, 4, 1, 0; 1999 RK₈, 3, 1, 0; 1999 RE₉, 4, 1, 0; 1999 RA₁₀, 4, 1, 0; 1999 RG₁₀, 5, 1, 0; 1999 RJ₁₀, 32, 7, 591; 1999 RU₁₀, 4, 1, 0; 1999 RT₁₁, 9, 2, 9; 1999 RL₁₂, 3, 1, 0; 1999 RS₁₂, 5, 1, 0; 1999 RL₁₃, 3, 1, 0; 1999 RB₁₄, 8, 2, 7; 1999 RJ₁₄, 3, 1, 0; 1999 RO₁₄, 14, 3, 33; 1999 RQ₁₄, 4, 1, 0; 1999 RS₁₄, 3, 1, 0; 1999 RU₁₅, 6, 2, 7; 1999 RC₁₆, 9, 2, 22; 1999 RE₁₆, 4, 1, 0; 1999 RK₁₆, 4, 1, 0; 1999 RT₁₆, 5, 1, 0; 1999 RW₁₆, 3, 1, 0; 1999 RV₁₇, 4, 1, 0; 1999 RD₁₈, 5, 1, 0; 1999 RP₁₈, 3, 1, 0; 1999 RR₁₈, 5, 1, 0; 1999 RP₁₉, 3, 1, 0; 1999 RY₁₉, 4, 1, 0; 1999 RN₂₀, 5, 1, 0; 1999 RP₂₁, 4, 1, 0; 1999 RT₂₁, 5, 1, 0; 1999 RU₂₁, 4, 1, 0; 1999 RV₂₁, 5, 1, 0; 1999 RY₂₁, 9, 2, 66; 1999 RB₂₂, 9, 2, 23; 1999 RL₂₂, 9, 2, 2; 1999 RS₂₂, 4, 1, 0; 1999 RN₂₃, 5, 1, 0; 1999 RR₂₃, 3, 1, 0; 1999 RW₂₃, 9, 2, 9; 1999 RS₂₄, 5, 1, 0; 1999 RZ₂₄, 3, 1, 0; 1999 RC₂₅, 5, 1, 0; 1999 RK₂₅, 12, 3, 175; 1999 RL₂₅, 20, 3, 95; 1999 RN₂₅, 5, 1, 0; 1999 RV₂₅, 8, 2, 25; 1999 RX₂₅, 5, 1, 0; 1999 RG₂₆, 8, 2, 7; 1999 RN₂₆, 5, 1, 0; 1999 RE₂₇, 4, 1, 0; 1999 RG₂₇, 5, 1, 0; 1999 RH₂₇, 10, 2, 1; 1999 RL₂₇, 15, 3, 51; 1999 RP₂₇, 4, 1, 0; 1999 RV₂₇, 4, 1, 0; 1999 RU₂₇, 8, 2, 23; 1999 RW₂₇, 5, 1, 0; 1999 RX₂₇, 5, 1, 0; 1999 RD₂₈, 4, 1, 0; 1999 RE₂₈, 5, 1, 0; 1999 RT₂₈, 9, 2, 11; 1999 RQ₂₉, 5, 1, 0; 1999 RS₂₉, 4, 1, 0; 1999 RA₃₁, 23, 3, 106; 1999 RJ₃₁, 9, 2, 20; 1999 RL₃₁, 27, 5, 618; 1999 RM₃₁, 12, 2, 11; 1999 RU₃₁, 5, 1, 0; 1999 RV₃₁, 3, 1, 0; 1999 RF₃₂, 3, 1, 0; 1999 RH₃₂, 9, 2, 7; 1999 RQ₃₂, 5, 1, 0; 1999 RW₃₂, 5, 1, 0; 1999 RA₃₃, 8, 2, 2; 1999 RP₃₃, 4, 1, 0; 1999 RL₃₄, 4, 1, 0; 1999 RU₃₄, 5, 1, 0; 1999 RV₃₄, 2, 56; 1999 RX₃₄, 15, 3, 59; 1999 RZ₃₄, 10, 2, 19; 1999 RD₃₅, 4, 1, 0; 1999 RE₃₅, 10, 2, 21; 1999 RH₃₅, 8, 1, 0; 1999 RM₃₅, 5, 1, 0; 1999 RP₃₅, 8, 2, 9; 1999 RW₃₅, 10, 2, 5; 1999 RC₃₆, 5, 1, 0; 1999 RG₃₆, 14, 3, 28; 1999 RH₃₆, 3, 1, 0; 1999 RN₃₆, 20, 4, 24; 1999 RR₃₆, 10, 2, 2; 1999 RT₃₆, 4, 1, 0; 1999 RC₃₇, 4, 1, 0; 1999 RE₃₇, 15, 3, 25; 1999 RW₃₇, 5, 1, 0; 1999 RX₃₇, 4, 1, 0; 1999 RZ₃₇, 5, 1, 0; 1999 RA₃₈, 5, 1, 0; 1999 RC₃₈, 14, 3, 569; 1999 RD₃₈, 5, 1, 0; 1999 RF₃₈, 5, 1, 0; 1999 RG₃₈, 5, 1, 0; 1999 RH₃₈, 5, 1, 0; 1999 RM₃₈, 5, 1, 0; 1999 RN₃₈, 24, 5, 656; 1999 RO₃₈, 11, 3, 1013; 1999 RT₃₈, 9, 2, 2; 1999 RU₃₈, 17, 4, 27; 1999 RV₃₈, 3, 1, 0; 1999 RH₃₉, 10, 2, 2; 1999 RJ₃₉, 34, 7, 48; 1999 RL₃₉, 5, 1, 0; 1999 RM₃₉, 26, 6, 565; 1999 RN₃₉, 20, 4, 39; 1999 RO₃₉, 5, 1, 0; 1999 RP₃₉, 16, 4, 956; 1999 RV₃₉, 20, 4, 11; 1999 RW₃₉, 17, 4, 95; 1999 RY₃₉, 13, 3, 61; 1999 RB₄₀, 7, 2, 33; 1999 RK₄₀, 5, 1, 0; 1999 RF₄₁, 3, 1, 0; 1999 RV₄₁, 5, 1, 0; 1999 RX₄₁, 9, 2, 63; 1999 RC₄₂, 5, 1, 0; 1999 RF₄₂, 4, 1, 0; 1999 RH₄₂, 7, 2, 18; 1999 RJ₄₂, 14, 3, 560; 1999 RK₄₂, 5, 1, 0; 1999 RL₄₂, 13, 3, 53; 1999 RN₄₂, 8, 2, 2; 1999 RP₄₂, 17, 4, 53; 1999 RQ₄₂, 15, 3, 65; 1999 RA₄₂, 10, 2, 3; 1999 RX₄₂, 10, 2, 2; 1999 RZ₄₂, 5, 1, 0; 1999 RQ₄₃, 4, 1, 0; 1999 RS₄₃, 13, 3, 24; 1999 RT₄₃, 8, 2, 2; 1999 RU₄₃, 13, 3, 564; 1999 RW₄₃, 4, 1, 0; 1999 RZ₄₃, 15, 3, 64; 1999 RA₄₄, 25, 5, 58; 1999 RB₄₄, 13, 3, 30; 1999 RC₄₄, 13, 3, 51; 1999 RD₄₄, 8, 2, 65; 1999 RM₄₄, 5, 1, 0; 1999 RN₄₄, 15, 2, 8; 1999 RS₄₄, 9, 2, 3; 1999 RB₄₅, 5, 1, 0; 1999 RJ₄₅, 14, 2, 2; 1999 RE₄₆, 18, 4, 549; 1999 RF₄₇, 18, 4, 553; 1999 RG₄₇, 5, 1, 0; 1999 RT₄₇, 4, 1, 0; 1999 RX₄₇, 16, 4, 122; 1999 RG₄₈, 4, 1, 0; 1999 RC₄₉, 5, 1, 0; 1999 RG₄₉, 5, 1, 0; 1999 RV₄₉, 5, 1, 0; 1999 RS₅₀, 5, 1, 0; 1999 RV₅₀, 5, 1, 0; 1999 RB₅₂, 3, 1, 0; 1999 RW₅₂, 3, 1, 0; 1999 RR₅₆, 16, 4, 67; 1999 RS₅₇, 4, 1, 0; 1999 RF₆₂, 9, 2, 9; 1999 RL₆₄, 10, 2, 41; 1999 RQ₇₅, 3, 1, 0; 1999 RM₇₆, 5, 1, 0; 1999 RV₈₁, 7, 2, 2; 1999 RP₈₂, 3, 1, 0; 1999 RA₈₃, 9, 2, 29; 1999 RJ₈₃, 4, 1, 0; 1999 RU₈₃, 5, 1, 0; 1999 RP₈₄, 4, 1, 0; 1999 RV₈₅, 14, 3, 43; 1999 RV₈₆, 8, 2, 44; 1999 RW₈₆, 2, 1, 0; 1999 RA₈₇, 5, 1, 0; 1999 RF₈₈, 9, 2, 523; 1999 RJ₈₈, 22, 5, 530; 1999 RT₈₈, 14, 3, 115; 1999 RS₈₉, 24, 5, 178; 1999 RC₉₀, 5, 1, 0; 1999 RR₉₀, 23, 5, 576; 1999 RU₉₀, 23, 4, 66; 1999 RN₉₁, 5, 1, 0; 1999 RO₉₁, 5, 1, 0; 1999 RT₉₁, 3, 1, 0; 1999 RZ₉₁, 3, 1, 0; 1999 RH₉₂, 3, 1, 0; 1999 RM₉₂, 10, 2, 38; 1999 RP₉₂, 5, 1, 0; 1999 RQ₉₂, 9, 2, 2; 1999 RJ₉₃, 5, 1, 0; 1999 RT₉₃, 5, 1, 0; 1999 RV₉₃, 4, 1, 0; 1999 RC₉₄, 4, 1, 0; 1999 RH₉₄, 3, 1, 0; 1999 RO₉₄, 15, 2, 36; 1999 RG₉₅, 5, 1, 0; 1999 RH₉₅, 4, 1, 0; 1999 RM₉₅, 4, 1, 0; 1999 RR₉₅, 8, 2, 8; 1999 RS₉₅, 5, 1, 0; 1999 RV₉₅, 18, 4, 66; 1999 RZ₉₅, 5, 1, 0; 1999 RD₉₆, 4, 1, 0; 1999 RL₉₆, 9, 2, 36; 1999 RM₉₆, 5, 1, 0; 1999 RH₉₈, 3, 1, 0; 1999 RS₉₈, 5, 1, 0; 1999 RX₉₈, 3, 1, 0; 1999 RZ₉₈, 5, 1, 0; 1999 RB₉₉, 5, 1, 0; 1999 RE₁₀₃, 3, 1, 0; 1999 RK₁₀₄, 10, 2, 389; 1999 RD₁₀₅, 9, 2, 96; 1999 RE₁₀₅, 4, 1, 0; 1999 RF₁₀₅, 13, 3, 39; 1999 RH₁₀₅, 13, 3, 60; 1999 RJ₁₀₅, 14, 3, 65; 1999 RL₁₀₅, 7, 2, 96; 1999 RU₁₀₅, 8, 2, 20; 1999 RV₁₀₅, 4, 1, 0; 1999 RL₁₀₆, 4, 1, 0; 1999 RL₁₀₇, 5, 1, 0; 1999 RM₁₀₇, 18, 4, 65; 1999 RO₁₀₇, 5, 1, 0; 1999 RX₁₀₈, 5, 1, 0; 1999 RJ₁₀₉, 4, 1, 0; 1999 RN₁₀₉, 3, 1, 0; 1999 RS₁₀₉, 3, 1, 0; 1999 RV₁₀₉, 5, 1, 0; 1999 RH₁₁₀, 10, 2, 2; 1999 RE₁₁₂, 19, 5, 120; 1999 RQ₁₁₂, 19, 5, 120; 1999 RR₁₁₃, 5, 1, 0; 1999 RW₁₁₄, 5, 1, 0; 1999 RJ₁₁₄, 7, 2, 7; 1999 RZ₁₁₅, 22, 5, 119; 1999 RT₁₁₇, 5, 1, 0; 1999 RX₁₁₈, 5, 1, 0; 1999 RQ₁₂₃, 8, 2, 2; 1999 RO₁₂₄, 8, 2, 2; 1999 RL₁₂₅, 3, 1, 0; 1999 RY₁₂₅, 3, 1, 0; 1999 RZ₁₂₅, 3, 1, 0; 1999 RX₁₂₇, 13, 3, 108; 1999 RH₁₃₀, 3, 1, 0; 1999 RL₁₃₀, 12, 3, 64; 1999 RT₁₃₀, 8, 2, 3; 1999 RB₁₃₃, 3, 1, 0; 1999 RX₁₃₄, 3, 1, 0; 1999 RD₁₃₅, 3, 1, 0; 1999 RO₁₃₅, 3, 1, 0; 1999 RW₁₃₅, 4, 1, 0; 1999 RA₁₃₇, 4, 1, 0; 1999 RZ₁₃₈, 12, 3, 118; 1999 RE₁₄₂, 5, 1, 0; 1999 RJ₁₄₂, 13, 2, 25; 1999 RV₁₄₂, 31, 6, 178; 1999 RM₁₄₃, 9, 2, 2; 1999 RN₁₄₃, 4, 3, 2; 1999 RV₁₄₃, 17, 4, 532; 1999 RB₁₄₄, 3, 1, 0; 1999 RO₁₄₄, 3, 1, 0; 1999 RQ₁₄₅, 10, 2, 531; 1999 RM₁₄₆, 10, 2, 8; 1999 RY₁₄₇, 13, 3, 78; 1999 RA₁₄₉, 4, 1, 0; 1999 RP₁₅₀, 12, 3, 9; 1999 RM₁₅₁, 18, 4, 536; 1999 RB₁₅₂, 3, 1, 0; 1999 RF₁₅₂, 8, 2, 7; 1999 RM₁₅₂, 7, 2, 7; 1999 RO₁₅₂, 5, 1, 0; 1999 RY₁₅₂, 5, 1, 0; 1999 RS₁₅₄, 3, 1, 0; 1999 RL₁₅₅, 17, 4, 68; 1999 RA₁₅₆, 4, 1, 0; 1999 RD₁₅₆, 3, 1, 0; 1999 RL₁₅₆, 7, 1, 0; 1999 RS₁₅₆, 7, 2, 472; 1999 RA₁₅₈, 18, 4, 66; 1999 RF₁₅₉, 9, 2, 8; 1999 RV₁₅₉, 3, 1, 0; 1999 RY₁₅₉, 4, 1, 0; 1999 RC₁₆₀, 3, 1, 0; 1999 RL₁₆₂, 8, 2, 41; 1999 RN₁₆₂, 12, 2, 2; 1999 RO₁₆₂, 27, 5, 121; 1999 RR₁₆₂, 5, 1, 0; 1999 RZ₁₆₂, 3, 1, 0; 1999 RD₁₆₃, 9, 2, 7; 1999 RH₁₆₃, 10, 2, 25; 1999 RZ₁₆₃, 5, 1, 0; 1999 RR₁₆₅, 4, 1, 0; 1999 RV₁₆₅, 5, 1, 0; 1999 RY₁₆₆, 13, 3, 46; 1999 RH₁₆₇, 3, 1, 0; 1999 RQ₁₆₇, 5, 1,

0; 1999 RZ₁₆₇, 17, 4, 68; 1999 RK₁₆₈, 17, 4, 32; 1999 RU₁₆₈, 23, 5, 552; 1999 RD₁₆₉, 9, 2, 7; 1999 RV₁₆₉, 4, 1, 0; 1999 RJ₁₇₂, 5, 1, 0; 1999 RO₁₇₂, 12, 3, 43; 1999 RT₁₇₅, 9, 2, 29; 1999 RK₁₇₆, 4, 1, 0; 1999 RM₁₇₆, 5, 1, 0; 1999 RP₁₇₆, 9, 2, 39; 1999 RE₁₇₇, 3, 1, 0; 1999 RG₁₇₇, 4, 1, 0; 1999 RT₁₇₇, 4, 1, 0; 1999 RN₁₇₈, 11, 3, 63; 1999 RU₁₇₈, 4, 1, 0; 1999 RW₁₈₀, 3, 1, 0; 1999 RY₁₈₀, 17, 3, 9; 1999 RK₁₈₁, 4, 1, 0; 1999 RF₁₈₂, 8, 2, 3; 1999 RS₁₈₂, 5, 1, 0; 1999 RT₁₈₂, 10, 2, 29; 1999 RX₁₈₄, 9, 2, 39; 1999 RN₁₈₇, 5, 1, 0; 1999 RF₁₉₀, 3, 1, 0; 1999 RO₁₉₀, 9, 2, 9; 1999 RS₁₉₀, 10, 2, 29; 1999 RZ₁₉₀, 17, 3, 76; 1999 RY₁₉₁, 5, 1, 0; 1999 RA₁₉₂, 8, 2, 47; 1999 RF₁₉₂, 5, 1, 0; 1999 RC₁₉₃, 23, 5, 119; 1999 RO₁₉₃, 5, 1, 0; 1999 RQ₁₉₃, 8, 2, 1; 1999 RR₁₉₃, 12, 3, 6; 1999 RS₁₉₃, 14, 4, 89; 1999 RU₁₉₃, 10, 2, 73; 1999 RV₁₉₃, 19, 4, 116; 1999 RX₁₉₃, 3, 1, 0; 1999 RB₁₉₄, 6, 2, 2; 1999 RG₁₉₄, 4, 1, 0; 1999 RH₁₉₄, 6, 2, 2; 1999 RK₁₉₄, 10, 2, 2; 1999 RR₁₉₄, 6, 2, 52; 1999 RS₁₉₄, 5, 1, 0; 1999 RB₁₉₅, 5, 1, 0; 1999 RE₁₉₅, 19, 4, 118; 1999 RV₁₉₅, 5, 1, 0; 1999 RF₁₉₆, 12, 3, 9; 1999 RS₁₉₆, 5, 1, 0; 1999 RT₁₉₆, 5, 1, 0; 1999 RU₁₉₆, 8, 2, 467; 1999 RX₁₉₆, 19, 4, 521; 1999 RC₁₉₇, 5, 1, 0; 1999 RG₁₉₇, 10, 2, 15; 1999 RH₁₉₇, 23, 5, 116; 1999 RL₁₉₇, 19, 4, 472; 1999 RO₁₉₇, 5, 1, 0; 1999 RU₁₉₇, 17, 4, 472; 1999 RV₁₉₇, 10, 1, 0; 1999 RG₁₉₉, 25, 5, 98; 1999 RM₁₉₉, 10, 2, 532; 1999 RO₁₉₉, 8, 2, 11; 1999 RP₁₉₉, 10, 2, 2; 1999 RZ₁₉₉, 13, 3, 85; 1999 RY₂₀₀, 5, 1, 0; 1999 RB₂₀₁, 5, 1, 0; 1999 RK₂₀₁, 4, 1, 0; 1999 RL₂₀₁, 9, 2, 117; 1999 RQ₂₀₁, 5, 1, 0; 1999 RS₂₀₁, 3, 1, 0; 1999 RW₂₀₁, 38, 8, 647; 1999 RE₂₀₂, 8, 2, 2; 1999 RJ₂₀₂, 20, 4, 583; 1999 RL₂₀₂, 4, 1, 0; 1999 RF₂₀₄, 24, 4, 553; 1999 RP₂₀₄, 4, 1, 0; 1999 RQ₂₀₄, 10, 2, 2; 1999 RK₂₀₅, 9, 2, 169; 1999 RP₂₀₅, 4, 1, 0; 1999 RV₂₀₅, 17, 4, 583; 1999 RB₂₀₆, 4, 1, 0; 1999 RL₂₀₆, 9, 2, 8; 1999 RR₂₀₆, 21, 5, 116; 1999 RU₂₀₆, 19, 4, 103; 1999 RY₂₀₆, 28, 6, 171; 1999 RG₂₀₇, 5, 1, 0; 1999 RJ₂₀₇, 18, 5, 96; 1999 RP₂₀₇, 5, 1, 0; 1999 RQ₂₀₇, 4, 1, 0; 1999 RR₂₀₇, 35, 8, 647; 1999 RW₂₀₇, 5, 1, 0; 1999 RY₂₀₇, 4, 1, 0; 1999 RA₂₀₈, 27, 6, 601; 1999 RC₂₀₈, 17, 4, 63; 1999 RH₂₀₈, 15, 3, 64; 1999 RN₂₀₈, 4, 1, 0; 1999 RT₂₀₈, 3, 1, 0; 1999 RW₂₀₈, 5, 1, 0; 1999 RB₂₀₉, 5, 1, 0; 1999 RC₂₀₉, 5, 1, 0; 1999 RH₂₀₉, 5, 1, 0; 1999 RM₂₀₉, 14, 3, 104; 1999 RX₂₀₉, 15, 3, 104; 1999 RB₂₁₀, 35, 6, 170; 1999 RD₂₁₀, 5, 1, 0; 1999 RS₂₁₀, 26, 6, 541; 1999 RD₂₁₁, 13, 3, 33; 1999 RV₂₁₁, 20, 4, 98; 1999 RO₂₁₁, 10, 2, 3; 1999 RQ₂₁₁, 17, 4, 170; 1999 RU₂₁₁, 5, 1, 0; 1999 RV₂₁₁, 14, 3, 96; 1999 RA₂₁₂, 17, 4, 98; 1999 RC₂₁₂, 8, 2, 2; 1999 RD₂₁₂, 20, 4, 98; 1999 RH₂₁₂, 4, 1, 0; 1999 RK₂₁₂, 9, 1, 0; 1999 RO₂₁₂, 41, 9, 95; 1999 RA₂₁₃, 20, 5, 98; 1999 RP₂₁₃, 5, 1, 0; 1999 RM₂₁₄, 5, 1, 0; 1999 RN₂₁₄, 14, 2, 2; 1999 RO₂₁₄, 3, 1, 0; 1999 RM₂₁₅ *, 3, 1, 0; 1999 SE₄, 1, 0; 1999 SG₂₃, 4, 63; 1999 SH₅, 1, 0; 1999 SJ₅, 1, 0; 1999 SL₃₀, 6, 63; 1999 SH₁, 8, 2, 8; 1999 SN₁, 8, 2, 29; 1999 SO₁, 5, 1, 0; 1999 SQ₁, 5, 1, 0; 1999 ST₁, 14, 3, 27; 1999 SU₁, 4, 1, 0; 1999 SZ₁, 16, 3, 39; 1999 SA₂, 5, 1, 0; 1999 SB₂, 4, 1, 0; 1999 SC₂, 9, 2, 64; 1999 SF₂, 10, 2, 2; 1999 SG₂, 15, 3, 12; 1999 SH₂, 18, 4, 53; 1999 SO₂, 9, 2, 12; 1999 SS₂, 8, 2, 8; 1999 SV₂, 4, 1, 0; 1999 SB₃, 8, 2, 8; 1999 SC₃, 10, 2, 12; 1999 SD₃, 4, 1, 0; 1999 SK₃, 24, 5, 64; 1999 SN₃, 5, 1, 0; 1999 SP₃, 30, 5, 62; 1999 SS₃, 8, 2, 12; 1999 SU₃, 4, 1, 0; 1999 SX₃, 4, 1, 0; 1999 SY₃, 9, 2, 2; 1999 SZ₃, 9, 2, 438; 1999 SC₄, 14, 3, 52; 1999 SL₄, 9, 2, 169; 1999 SM₄, 4, 1, 0; 1999 SO₄, 23, 5, 63; 1999 SP₄, 14, 3, 54; 1999 SQ₄, 5, 1, 0; 1999 SR₄, 5, 1, 0; 1999 SS₄, 10, 2, 4; 1999 SB₅, 24, 5, 61; 1999 SD₅, 4, 1, 0; 1999 SP₅, 12, 3, 27; 1999 SR₅, 12, 3, 62; 1999 SX₅, 37, 8, 593; 1999 SY₅, 4, 1, 0; 1999 SZ₅, 9, 2, 2; 1999 SH₆, 7, 2, 58; 1999 SL₆, 9, 2, 21; 1999 SN₆, 10, 2, 117; 1999 SU₆, 18, 4, 60; 1999 SW₆, 9, 2, 4; 1999 SZ₆, 15, 3, 63; 1999 SR₇, 17, 4, 570; 1999 SL₈, 10, 2, 498; 1999 SA₉, 3, 1, 0; 1999 SN₉, 4, 1, 0; 1999 SR₉, 8, 2, 647; 1999 SS₉, 20, 4, 63; 1999 ST₉, 9, 2, 11; 1999 SA₁₀, 15, 4, 116; 1999 SO₁₀, 18, 4, 65; 1999 SR₁₀, 8, 2, 7; 1999 SU₁₀, 19, 4, 99; 1999 SW₁₀, 8, 2, 2; 1999 SB₁₁, 7, 2, 3; 1999 SH₁₁, 5, 1, 0; 1999 SJ₁₁, 10, 2, 3; 1999 SN₁₁, 14, 3

0; 1999 TN₈, 9, 2, 10; 1999 TO₈, 10, 2, 10; 1999 TQ₈, 13, 3, 11; 1999 TS₈, 5, 1, 0; 1999 TT₈, 12, 3, 63; 1999 TU₈, 10, 2, 509; 1999 TV₈, 13, 3, 98; 1999 TX₈, 4, 1, 0; 1999 TA₉, 14, 3, 11; 1999 TB₉, 17, 4, 64; 1999 TC₉, 33, 7, 89; 1999 TF₉, 10, 2, 2; 1999 TG₉, 2, 2; 1999 TJ₉, 10, 2, 3; 1999 TK₉, 11, 3, 51; 1999 TL₉, 14, 3, 51; 1999 TM₉, 4, 1, 0; 1999 TN₉, 9, 2, 9; 1999 TO₉, 15, 3, 11; 1999 TP₉, 19, 4, 54; 1999 TQ₉, 24, 5, 63; 1999 TR₉, 20, 4, 53; 1999 TS₉, 23, 5, 59; 1999 TT₉, 9, 2, 4; 1999 TV₉, 5, 1, 0; 1999 TW₉, 3, 1, 0; 1999 TX₉, 20, 3, 9; 1999 TZ₉, 8, 2, 54; 1999 TG₁₀, 5, 1, 0; 1999 TH₁₀, 5, 1, 0; 1999 TI₁₀, 5, 1, 0; 1999 TJ₁₀, 20, 4, 54; 1999 TK₁₀, 14, 3, 52; 1999 TL₁₀, 14, 3, 7; 1999 TM₁₀, 14, 3, 1, 0; 1999 TN₁₀, 14, 3, 1, 0; 1999 TO₁₀, 14, 3, 1, 0; 1999 TP₁₀, 14, 3, 1, 0; 1999 TQ₁₀, 14, 3, 1, 0; 1999 TR₁₀, 14, 3, 1, 0; 1999 TS₁₀, 14, 3, 1, 0; 1999 TT₁₀, 14, 3, 1, 0; 1999 TV₁₀, 14, 3, 1, 0; 1999 TW₁₀, 14, 3, 1, 0; 1999 TX₁₀, 14, 3, 1, 0; 1999 TZ₁₀, 14, 3, 1, 0; 1999 TG₁₁, 10, 2, 49; 1999 TH₁₁, 10, 2, 2; 1999 TI₁₁, 10, 2, 2; 1999 TJ₁₁, 3, 1, 0; 1999 TK₁₁, 19, 4, 54; 1999 TL₁₁, 19, 4, 54; 1999 TM₁₁, 19, 4, 54; 1999 TN₁₁, 10, 2, 3; 1999 TO₁₁, 5, 1, 0; 1999 TP₁₁, 10, 2, 3; 1999 TQ₁₁, 5, 1, 0; 1999 TR₁₁, 10, 2, 3; 1999 TS₁₁, 9, 2, 1; 1999 TU₁₁, 9, 2, 543; 1999 TV₁₁, 24, 5, 61; 1999 TW₁₁, 24, 5, 61; 1999 TX₁₁, 24, 5, 61; 1999 TZ₁₁, 24, 5, 61; 1999 TG₁₂, 10, 2, 4; 1999 TH₁₂, 10, 2, 3; 1999 TI₁₂, 10, 2, 3; 1999 TJ₁₂, 10, 2, 3; 1999 TK₁₂, 10, 2, 3; 1999 TL₁₂, 10, 2, 3; 1999 TM₁₂, 10, 2, 3; 1999 TN₁₂, 10, 2, 3; 1999 TO₁₂, 10, 2, 3; 1999 TP₁₂, 10, 2, 3; 1999 TQ₁₂, 10, 2, 3; 1999 TR₁₂, 10, 2, 3; 1999 TS₁₂, 9, 2, 2; 1999 TU₁₂, 17, 3, 63; 1999 TV₁₂, 17, 3, 63; 1999 TW₁₂, 17, 3, 63; 1999 TX₁₂, 17, 3, 63; 1999 TZ₁₂, 17, 3, 63; 1999 TG₁₃, 10, 2, 7; 1999 TH₁₃, 10, 2, 7; 1999 TI₁₃, 10, 2, 7; 1999 TJ₁₃, 10, 2, 7; 1999 TK₁₃, 10, 2, 7; 1999 TL₁₃, 10, 2, 7; 1999 TM₁₃, 10, 2, 7; 1999 TN₁₃, 10, 2, 7; 1999 TO₁₃, 10, 2, 7; 1999 TP₁₃, 10, 2, 7; 1999 TQ₁₃, 10, 2, 7; 1999 TR₁₃, 10, 2, 7; 1999 TS₁₃, 10, 2, 7; 1999 TU₁₃, 10, 2, 7; 1999 TV₁₃, 10, 2, 7; 1999 TW₁₃, 10, 2, 7; 1999 TX₁₃, 10, 2, 7; 1999 TZ₁₃, 10, 2, 7; 1999 TG₁₄, 10, 2, 7; 1999 TH₁₄, 10, 2, 7; 1999 TI₁₄, 10, 2, 7; 1999 TJ₁₄, 10, 2, 7; 1999 TK₁₄, 10, 2, 7; 1999 TL₁₄, 10, 2, 7; 1999 TM₁₄, 10, 2, 7; 1999 TN₁₄, 10, 2, 7; 1999 TO₁₄, 10, 2, 7; 1999 TP₁₄, 10, 2, 7; 1999 TQ₁₄, 10, 2, 7; 1999 TR₁₄, 10, 2, 7; 1999 TS₁₄, 10, 2, 7; 1999 TU₁₄, 10, 2, 7; 1999 TV₁₄, 10, 2, 7; 1999 TW₁₄, 10, 2, 7; 1999 TX₁₄, 10, 2, 7; 1999 TZ₁₄, 10, 2, 7; 1999 TG₁₅, 10, 2, 7; 1999 TH₁₅, 10, 2, 7; 1999 TI₁₅, 10, 2, 7; 1999 TJ₁₅, 10, 2, 7; 1999 TK₁₅, 10, 2, 7; 1999 TL₁₅, 10, 2, 7; 1999 TM₁₅, 10, 2, 7; 1999 TN₁₅, 10, 2, 7; 1999 TO₁₅, 10, 2, 7; 1999 TP₁₅, 10, 2, 7; 1999 TQ₁₅, 10, 2, 7; 1999 TR₁₅, 10, 2, 7; 1999 TS₁₅, 10, 2, 7; 1999 TU₁₅, 10, 2, 7; 1999 TV₁₅, 10, 2, 7; 1999 TW₁₅, 10, 2, 7; 1999 TX₁₅, 10, 2, 7; 1999 TZ₁₅, 10, 2, 7; 1999 TG₁₆, 10, 2, 7; 1999 TH₁₆, 10, 2, 7; 1999 TI₁₆, 10, 2, 7; 1999 TJ₁₆, 10, 2, 7; 1999 TK₁₆, 10, 2, 7; 1999 TL₁₆, 10, 2, 7; 1999 TM₁₆, 10, 2, 7; 1999 TN₁₆, 10, 2, 7; 1999 TO₁₆, 10, 2, 7; 1999 TP₁₆, 10, 2, 7; 1999 TQ₁₆, 10, 2, 7; 1999 TR₁₆, 10, 2, 7; 1999 TS₁₆, 10, 2, 7; 1999 TU₁₆, 10, 2, 7; 1999 TV₁₆, 10, 2, 7; 1999 TW₁₆, 10, 2, 7; 1999 TX₁₆, 10, 2, 7; 1999 TZ₁₆, 10, 2, 7; 1999 TG₁₇, 10, 2, 7; 1999 TH₁₇, 10, 2, 7; 1999 TI₁₇, 10, 2, 7; 1999 TJ₁₇, 10, 2, 7; 1999 TK₁₇, 10, 2, 7; 1999 TL₁₇, 10, 2, 7; 1999 TM₁₇, 10, 2, 7; 1999 TN₁₇, 10, 2, 7; 1999 TO₁₇, 10, 2, 7; 1999 TP₁₇, 10, 2, 7; 1999 TQ₁₇, 10, 2, 7; 1999 TR₁₇, 10, 2, 7; 1999 TS₁₇, 10, 2, 7; 1999 TU₁₇, 10, 2, 7; 1999 TV₁₇, 10, 2, 7; 1999

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53; 1999 VG₁, 28, 6, 96; 1999 VH₁, 4, 1, 0; 1999 VJ₁, 3, 1, 0; 1999 VK₁, 21, 5, 60; 1999 VM₁, 14, 3, 52; 1999 VN₁, 18, 4, 518; 1999 VO₁, 12, 3, 2; 1999 VP₁, 5, 1, 0; 1999 VS₁, 10, 2, 8; 1999 VT₁, 5, 1, 0; 1999 VV₁, 18, 4, 592; 1999 VW₁, 21, 5, 123; 1999 VY₁, 13, 3, 7; 1999 VZ₁, 9, 2, 7; 1999 VA₂, 27, 6, 95; 1999 VC₂, 20, 4, 58; 1999 VD₂, 20, 4, 56; 1999 VE₂, 19, 4, 61; 1999 VF₂, 28, 6, 539; 1999 VG₂, 17, 4, 62; 1999 VH₂, 19, 4, 51; 1999 VJ₂, 5, 1, 0; 1999 VM₂, 25, 5, 98; 1999 VO₂, 22, 5, 527; 1999 VP₂, 4, 1, 0; 1999 VQ₂, 24, 5, 63; 1999 VS₂, 7, 2, 41; 1999 VV₂, 9, 2, 2; 1999 VW₂, 8, 2, 2; 1999 VX₂, 24, 5, 93; 1999 VY₂, 24, 5, 527; 1999 VZ₂, 8, 2, 95; 1999 VB₃, 8, 2, 22; 1999 VG₃, 15, 3, 457; 1999 VM₃, 14, 3, 21; 1999 VS₃, 3, 1, 0; 1999 VV₃, 5, 1, 0; 1999 VX₃, 4, 1, 0; 1999 VA₄, 8, 2, 49; 1999 VD₄, 13, 3, 46; 1999 VH₄, 9, 2, 44; 1999 VK₄, 24, 5, 171; 1999 VL₄, 29, 6, 44; 1999 VR₄, 16, 4, 63; 1999 VS₄, 7, 2, 7; 1999 VT₄, 8, 2, 7; 1999 VU₄, 9, 2, 7; 1999 VV₄, 29, 6, 62; 1999 VW₄, 32, 7, 95; 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9, 2, 2; 1999 VY₂₁, 13, 3, 13; 1999 VZ₂₁, 15, 3, 4; 1999 VA₂₂, 19, 4, 8; 1999 VB₂₂, 8, 2, 7; 1999 VC₂₂, 23, 5, 63; 1999 VE₂₂, 13, 3, 49; 1999 VG₂₂, 3, 1, 0; 1999 VH₂₂, 18, 4, 64; 1999 VJ₂₂, 20, 5, 605; 1999 VK₂₂, 32, 7, 168; 1999 VL₂₂, 8, 2, 95; 1999 VM₂₂, 29, 6, 95; 1999 VN₂₂, 33, 7, 95; 1999 VO₂₂, 17, 4, 95; 1999 VP₂₂, 18, 4, 95; 1999 VQ₂₂, 20, 4, 96; 1999 VR₂₂, 13, 3, 96; 1999 VS₂₂, 34, 7, 96; 1999 VT₂₂, 9, 2, 90; 1999 VU₂₂, 4, 1, 0; 1999 VV₂₂, 9, 2, 23; 1999 VZ₂₂, 12, 3, 119; 1999 VX₂₂, 5, 1, 0; 1999 VY₂₂, 24, 5, 593; 1999 VZ₂₂, 14, 3, 39; 1999 VA₂₃, 15, 3, 35; 1999 VC₂₃, 25, 5, 88; 1999 VD₂₃, 12, 3, 13; 1999 VE₂₃, 25, 5, 65; 1999 VF₂₃, 19, 4, 66; 1999 VG₂₃, 24, 5, 44; 1999 VH₂₃, 5, 1, 0; 1999 VJ₂₃, 36, 8, 86; 1999 VK₂₃, 15, 3, 12; 1999 VL₂₃, 28, 6, 128; 1999 VN₂₃, 24, 5, 62; 1999 VO₂₃, 18, 4, 100; 1999 VP₂₃, 28, 6, 568; 1999 VQ₂₃, 19, 4, 64; 1999 VR₂₃, 40, 8, 625; 1999 VS₂₃, 19, 4, 63; 1999 VT₂₃, 17, 4, 604; 1999 VU₂₃, 19, 4, 67; 1999 VV₂₃, 20, 4, 67; 1999 VW₂₃, 15, 3, 67; 1999 VX₂₃, 20, 4, 49; 1999 VY₂₃, 26, 6, 74; 1999 VZ₂₃, 25, 5, 73; 1999 VA₂₄, 9, 2, 2; 1999 VB₂₄, 10, 2, 2; 1999 VC₂₄, 14, 3, 44; 1999 VD₂₄, 38, 8, 624; 1999 VE₂₄, 32, 7, 91; 1999 VF₂₄, 17, 4, 104; 1999 VG₂₄, 17, 4, 954; 1999 VH₂₄, 20, 4, 64; 1999 VJ₂₄, 37, 8, 91; 1999 VK₂₄, 33, 7, 616; 1999 VL₂₄, 27, 4, 90; 1999 VM₂₄, 23, 5, 66; 1999 VN₂₄, 24, 5, 108; 1999 VO₂₄, 44, 9, 561; 1999 VP₂₄, 5, 1, 0; 1999 VQ₂₄, 9, 2, 1; 1999 VR₂₄, 5, 1, 0; 1999 VS₂₄, 20, 4, 51; 1999 VT₂₄, 25, 5, 53; 1999 VU₂₄, 15, 3, 56; 1999 VV₂₄, 19, 4, 51; 1999 VW₂₄, 14, 3, 51; 1999 VX₂₄, 25, 5, 52; 1999 VY₂₄, 29, 6, 505; 1999 VZ₂₄, 20, 4, 62; 1999 VA₂₅, 43, 9, 590; 1999 VB₂₅, 15, 3, 23; 1999 VC₂₅, 21, 5, 50; 1999 VD₂₅, 40, 5, 62; 1999 VE₂₅, 19, 4, 58; 1999 VG₂₅, 28, 6, 91; 1999 VH₂₅, 25, 5, 51; 1999 VJ₂₅, 20, 4, 51; 1999 VK₂₅, 20, 5, 62; 1999 VM₂₅, 23, 5, 534; 1999 VN₂₅, 29, 6, 91; 1999 VO₂₅, 10, 2, 2; 1999 VP₂₅, 5, 1, 0; 1999 VQ₂₅, 44, 9, 44; 1999 VR₂₅, 14, 3, 63; 1999 VY₂₅, 15, 4, 61; 1999 VA₂₆, 14, 3, 12; 1999 VB₂₆, 28, 6, 98; 1999 VC₂₆, 15, 3, 7; 1999 VD₂₆, 15, 3, 7; 1999 VE₂₆, 13, 3, 8; 1999 VF₂₆, 14, 3, 8; 1999 VJ₂₆, 15, 3, 8; 1999 VK₂₆, 10, 2, 3; 1999 VL₂₆, 15, 3, 8; 1999 VM₂₆, 13, 3, 8; 1999 VN₂₆, 13, 3, 8; 1999 VO₂₆, 14, 3, 8; 1999 VP₂₆, 13, 3, 7; 1999 VQ₂₆, 15, 2, 8; 1999 VR₂₆, 22, 5, 58; 1999 VS₂₆, 14, 3, 7; 1999 VU₂₆, 20, 4, 41; 1999 VV₂₆, 14, 3, 7; 1999 VX₂₆, 15, 3, 8; 1999 VY₂₆, 13, 3, 8; 1999 VZ₂₆, 18, 4, 8; 1999 VA₂₇, 10, 2, 3; 1999 VB₂₇, 15, 3, 8; 1999 VC₂₇, 17, 4, 8; 1999 VD₂₇, 5, 1, 0; 1999 VE₂₇, 4, 1, 0; 1999 VF₂₇, 25, 5, 95; 1999 VK₂₇, 30, 6, 97; 1999 VL₂₇, 10, 2, 2; 1999 VM₂₇, 10, 2, 9; 1999 VN₂₇, 18, 4, 63; 1999 VO₂₇, 15, 3, 12; 1999 VR₂₇, 44, 9, 653; 1999 VS₂₇, 19, 4, 44; 1999 VT₂₇, 28, 6, 95; 1999 VU₂₇, 18, 4, 33; 1999 VV₂₇, 15, 3, 11; 1999 VX₂₇, 16, 4, 8; 1999 VY₂₇, 8, 2, 62; 1999 VZ₂₇, 4, 1, 0; 1999 VA₂₈, 23, 5, 34; 1999 VB₂₈, 15, 3, 8; 1999 VC₂₈, 9, 2, 1; 1999 VD₂₈, 10, 2, 41; 1999 VE₂₈, 38, 8, 86; 1999 VF₂₈, 28, 6, 55; 1999 VH₂₈, 18, 4, 28; 1999 VK₂₈, 5, 1, 0; 1999 VL₂₈, 9, 2, 7; 1999 VN₂₈, 9, 2, 5; 1999 VP₂₈, 10, 2, 7; 1999 VQ₂₈, 25, 5, 76; 1999 VR₂₈, 9, 2, 7; 1999 VT₂₈, 14, 3, 25; 1999 VU₂₈, 20, 4, 35; 1999 VV₂₈, 19, 4, 35; 1999 VW₂₈, 19, 4, 25; 1999 VX₂₈, 19, 4, 35; 1999 VY₂₈, 20, 4, 25; 1999 VZ₂₈, 14, 3, 25; 1999 VA₂₉, 19, 3, 7; 1999 VB₂₉, 15, 3, 7; 1999 VC₂₉, 17, 3, 7; 1999 VD₂₉, 13, 3, 7; 1999 VE₂₉, 26, 6, 35; 1999 VF₂₉, 15, 3, 26; 1999 VJ₂₉, 10, 2, 7; 1999 VK₂₉, 17, 4, 35; 1999 VL₂₉, 27, 6, 37; 1999 VO₂₉, 13, 3, 11; 1999 VP₂₉, 10, 2, 2; 1999 VQ₂₉, 5, 1, 0; 1999 VR₂₉, 12, 3, 35; 1999 VS₂₉, 4, 1, 0; 1999 VT₂₉, 18, 4, 62; 1999 VU₂₉, 5, 1, 0; 1999 VV₂₉, 13, 3, 41; 1999 VW₂₉, 5, 1, 0; 1999 VX₂₉, 5, 1, 0; 1999 VY₂₉, 17, 4, 565; 1999 VA₃₀, 10, 2, 7; 1999 VB₃₀, 18, 3, 8; 1999 VC₃₀, 14, 3, 8; 1999 VD₃₀, 14, 3, 8; 1999 VE₃₀, 5, 1, 0; 1999 VF₃₀, 10, 2, 7; 1999 VL₃₀, 9, 2, 7; 1999 VM₃₀, 10, 2, 7; 1999 VN₃₀, 10, 2, 8; 1999 VO₃₀, 19, 4, 574; 1999 VP₃₀, 19, 4, 42; 1999 VQ₃₀, 20, 4, 91; 1999 VR₃₀, 10, 2, 7; 1999 VS₃₀, 15, 3, 44; 1999 VT₃₀, 18, 4, 51; 1999 VU₃₀, 5, 1, 0; 1999 VV₃₀, 17, 4, 58; 1999 VW₃₀, 9, 2, 7; 1999 VX₃₀, 10, 2, 7; 1999 VZ₃₀, 10, 2, 7; 1999 VA₃₁, 10, 2, 7; 1999 VB₃₁, 18, 4, 58; 1999 VC₃₁,

20, 4, 58; 1999 VN₃₆, 2, 5, 56; 1999 VO₃₆, 28, 5, 56; 1999 VP₃₆, 19, 4, 58; 1999 VQ₃₆, 11, 3, 56; 1999 VR₃₆, 19, 4, 58; 1999 VS₃₆, 18, 4, 58; 1999 VT₃₆, 18, 4, 56; 1999 VU₃₆, 8, 2, 8; 1999 VV₃₆, 12, 3, 56; 1999 VW₃₆, 34, 6, 56; 1999 VX₃₆, 23, 5, 623; 1999 VY₃₆, 20, 4, 58; 1999 VZ₃₆, 12, 3, 56; 1999 VB₃₇, 25, 5, 56; 1999 VB₃₇, 23, 5, 57; 1999 VC₃₇, 22, 5, 56; 1999 VD₃₇, 46, 10, 1003; 1999 VE₃₇, 29, 6, 56; 1999 VF₃₇, 24, 5, 592; 1999 VG₃₇, 15, 3, 51; 1999 VH₃₇, 16, 4, 58; 1999 VJ₃₇, 11, 3, 51; 1999 VK₃₇, 19, 4, 58; 1999 VL₃₇, 19, 4, 58; 1999 VM₃₇, 15, 3, 50; 1999 VO₃₇, 20, 4, 48; 1999 VP₃₇, 9, 2, 1; 1999 VQ₃₇, 15, 3, 48; 1999 VR₃₇, 17, 4, 56; 1999 VT₃₇, 10, 2, 7; 1999 VT₃₇, 28, 6, 559; 1999 VV₃₇, 35, 7, 56; 1999 VW₃₇, 19, 4, 92; 1999 VY₃₇, 15, 3, 50; 1999 VZ₃₈, 20, 4, 42; 1999 VB₃₈, 5, 1, 0; 1999 VH₃₈, 5, 1, 0; 1999 VJ₃₈, 4, 1, 0; 1999 VK₃₈, 13, 3, 11; 1999 VL₃₈, 7, 2; 1999 VM₃₈, 9, 2, 4; 1999 VN₃₈, 10, 2, 8; 1999 VO₃₈, 15, 3, 13; 1999 VP₃₈, 8, 2, 8; 1999 VQ₃₈, 10, 2, 6; 1999 VR₃₈, 18, 4, 598; 1999 VS₃₈, 8, 2, 8; 1999 VV₃₈, 15, 3, 8; 1999 VW₃₈, 10, 2, 7; 1999 VX₃₈, 14, 3, 8; 1999 VZ₃₈, 14, 3, 13; 1999 VA₃₉, 4, 1, 0; 1999 VB₃₉, 10, 2, 7; 1999 VC₃₉, 8, 2, 7; 1999 VD₃₉, 5, 1, 0; 1999 VE₃₉, 10, 2, 7; 1999 VF₃₉, 14, 3, 13; 1999 VG₃₉, 17, 4, 456; 1999 VJ₃₉, 12, 3, 56; 1999 VK₃₉, 4, 1, 0; 1999 VL₃₉, 4, 1, 0; 1999 VM₃₉, 8, 2, 8; 1999 VN₃₉, 5, 1, 0; 1999 VO₃₉, 9, 2, 7; 1999 VP₃₉, 21, 5, 575; 1999 VQ₃₉, 6, 2, 7; 1999 VR₃₉, 5, 1, 0; 1999 VS₃₉, 14, 3, 64; 1999 VT₃₉, 40, 3, 1, 0; 1999 VU₃₉, 4, 1, 0; 1999 VV₃₉, 24, 5, 41; 1999 VJ₄₀, 30, 6, 564; 1999 VK₄₀, 30, 7, 35; 1999 VL₄₀, 15, 3, 13; 1999 VM₄₀, 5, 1, 0; 1999 VO₄₀, 8, 2, 10; 1999 VQ₄₀, 5, 1, 0; 1999 VF₄₁, 13, 3, 13; 1999 VH₄₁, 5, 1, 0; 1999 VJ₄₁, 5, 1, 0; 1999 VK₄₁, 7, 2, 9; 1999 VG₄₂, 5, 1, 0; 1999 VY₄₂, 4, 1, 0; 1999 VM₄₂, 4, 1, 0; 1999 VT₄₂, 9, 2, 10; 1999 VU₄₂, 4, 1, 0; 1999 VV₄₂, 5, 1, 0; 1999 VZ₄₂, 5, 1, 0; 1999 VA₄₃, 3, 1, 0; 1999 VB₄₃, 10, 2, 2; 1999 VC₄₃, 4, 1, 0; 1999 VD₄₃, 13, 3, 13; 1999 VE₄₃, 8, 2, 2; 1999 VF₄₃, 3, 1, 0; 1999 VH₄₃, 3, 1, 0; 1999 VJ₄₃, 19, 5, 64; 1999 VK₄₃, 19, 4, 41; 1999 VL₄₃, 34, 7, 64; 1999 VM₄₃, 17, 4, 39; 1999 VN₄₃, 9, 2, 4; 1999 VO₄₃, 4, 1, 0; 1999 VP₄₃, 9, 2, 4; 1999 VQ₄₃, 4, 1, 0; 1999 VR₄₃, 23, 5, 64; 1999 VS₄₃, 9, 2, 4; 1999 VT₄₃, 21, 5, 43; 1999 VU₄₃, 28, 6, 95; 1999 VV₄₃, 5, 1, 0; 1999 VA₄₄, 10, 2, 11; 1999 VB₄₄, 5, 1, 0; 1999 VE₄₄, 4, 1, 0; 1999 VF₄₄, 10, 2, 4; 1999 VG₄₄, 9, 2, 2; 1999 VH₄₄, 10, 2, 2; 1999 VJ₄₄, 10, 2, 9; 1999 VK₄₄, 5, 1, 0; 1999 VN₄₄, 9, 1, 0; 1999 VV₄₄, 18, 4, 594; 1999 VX₄₄, 9, 2, 32; 1999 VC₄₅, 4, 1, 0; 1999 VD₄₅, 24, 6, 95; 1999 VE₄₅, 9, 2, 9; 1999 VF₄₅, 4, 1, 0; 1999 VG₄₅, 9, 2, 9; 1999 VH₄₅, 5, 1, 0; 1999 VM₄₅, 45, 9, 2, 2; 1999 VO₄₅, 5, 1, 0; 1999 VP₄₅, 5, 1, 0; 1999 VR₄₅, 24, 5, 97; 1999 VS₄₅, 14, 95; 1999 VT₄₅, 22, 5, 96; 1999 VU₄₆, 4, 1, 0; 1999 VV₄₆, 24, 5, 56; 1999 VX₄₆, 9, 2, 1; 1999 VY₄₆, 34, 6, 62; 1999 VZ₄₆, 7, 2, 1; 1999 VA₄₆, 8, 2, 1; 1999 VB₄₆, 4, 1, 0; 1999 VC₄₆, 5, 1, 0; 1999 VD₄₆, 10, 2, 1; 1999 VE₄₆, 9, 2, 8; 1999 VF₄₆, 31, 6, 37; 1999 VG₄₆, 33, 7, 88; 1999 VH₄₆, 7, 2, 7; 1999 VJ₄₆, 50, 11, 91; 1999 VK₄₆, 22, 5, 29; 1999 VL₄₆, 16, 3, 50; 1999 VM₄₆, 15, 3, 50; 1999 VN₄₆, 3, 1, 0; 1999 VO₄₆, 47, 8, 2, 5; 1999 VP₄₆, 17, 4, 169; 1999 VR₄₆, 5, 1, 0; 1999 VS₄₆, 25, 5, 91; 1999 VT₄₆, 13, 3, 96; 1999 VU₄₆, 3, 1, 0; 1999 VV₄₆, 14, 3, 93; 1999 VZ₄₆, 9, 2, 29; 1999 VA₄₇, 30, 6, 96; 1999 VB₄₇, 13, 3, 93; 1999 VC₄₇, 5, 1, 0; 1999 VD₄₇, 14, 3, 93; 1999 VE₄₇, 60, 13, 624; 1999 VF₄₇, 29, 6, 87; 1999 VG₄₇, 22, 5, 35; 1999 VH₄₇, 4, 1, 0; 1999 VJ₄₇, 10, 2, 2; 1999 VK₄₇, 31, 7, 624; 1999 VL

1, 0; 1999 VG₅₇, 4, 1, 0; 1999 VJ₅₇, 4, 1, 0; 1999 VK₅₇, 3, 1, 0; 1999 VL₅₇, 3, 1, 0; 1999 VP₅₇, 4, 1, 0; 1999 VS₅₇, 11, 3, 1, 1; 1999 VU₅₇, 13, 3, 26; 1999 VW₅₇, 12, 3, 27; 1999 VX₅₇, 15, 3, 8; 1999 VY₅₇, 23, 4, 35; 1999 VZ₅₇, 25, 4, 26; 1999 VA₅₈, 14, 3, 51; 1999 VD₅₈, 24, 5, 37; 1999 VE₅₈, 10, 2, 7; 1999 VG₅₈, 10, 2, 7; 1999 VH₅₈, 44, 10, 92; 1999 VJ₅₈, 14, 3, 7; 1999 VK₅₈, 19, 4, 574; 1999 VL₅₈, 25, 5, 35; 1999 VM₅₈, 26, 6, 37; 1999 VN₅₈, 19, 4, 477; 1999 VO₅₈, 20, 3, 8; 1999 VQ₅₈, 33, 7, 41; 1999 VR₅₈, 19, 4, 56; 1999 VS₅₈, 10, 2, 7; 1999 VT₅₈, 36, 7, 83; 1999 VU₅₈, 10, 2, 8; 1999 VV₅₈, 15, 3, 8; 1999 VW₅₈, 23, 5, 81; 1999 VX₅₈, 10, 2, 7; 1999 VY₅₈, 16, 4, 979; 1999 VZ₅₈, 23, 5, 56; 1999 VA₅₉, 8, 2, 8; 1999 VB₅₉, 14, 3, 57; 1999 VC₅₉, 15, 3, 26; 1999 VD₅₉, 4, 1, 0; 1999 VE₅₉, 4, 1, 0; 1999 VF₅₉, 10, 2, 7; 1999 VG₅₉, 14, 3, 26; 1999 VH₅₉, 15, 3, 41; 1999 VI₅₉, 17, 4, 7; 1999 VJ₅₉, 8, 2, 1; 1999 VK₅₉, 5, 7, 2; 1999 VL₅₉, 10, 2, 1; 1999 VM₅₉, 14, 3, 41; 1999 VN₅₉, 5, 1, 0; 1999 VO₅₉, 15, 3, 41; 1999 VP₅₉, 23, 4, 11; 1999 VQ₅₉, 10, 3, 9; 1999 VR₅₉, 13, 3, 9; 1999 VS₅₉, 24, 5, 61; 1999 VT₅₉, 20, 4, 1, 0; 1999 VU₅₉, 13, 3, 9; 1999 VV₅₉, 24, 5, 61; 1999 VW₅₉, 4, 1, 0; 1999 VX₅₉, 20, 4, 1, 0; 1999 VY₅₉, 3, 1, 0; 1999 VZ₅₉, 11, 3, 11; 1999 VA₆₀, 10, 2, 4; 1999 VB₆₀, 18, 4, 63; 1999 VC₆₀, 22, 4, 32; 1999 VD₆₀, 12, 3, 11; 1999 VE₆₀, 7, 2, 5; 1999 VF₆₀, 3, 1, 0; 1999 VG₆₀, 3, 1, 0; 1999 VH₆₀, 7, 2, 7; 1999 VI₆₀, 4, 1, 0; 1999 VJ₆₀, 18, 4, 42; 1999 VK₆₀, 15, 3, 565; 1999 VL₆₀, 23, 5, 38; 1999 VM₆₀, 8, 2, 27; 1999 VN₆₀, 29, 6, 96; 1999 VO₆₀, 4, 1, 0; 1999 VQ₆₀, 13, 3, 58; 1999 VR₆₀, 26, 6, 89; 1999 VS₆₀, 16, 4, 59; 1999 VT₆₀, 18, 4, 59; 1999 VU₆₀, 3, 1, 0; 1999 VV₆₀, 8, 2, 7; 1999 VW₆₀, 19, 4, 57; 1999 VX₆₀, 17, 4, 58; 1999 VY₆₀, 3, 1, 0; 1999 VZ₆₀, 4, 1, 0; 1999 VA₆₁, 38, 9, 5; 1999 VB₆₁, 3, 1, 0; 1999 VC₆₁, 3, 1, 0; 1999 VD₆₁, 4, 1, 0; 1999 VE₆₁, 14, 3, 59; 1999 VF₆₁, 13, 3, 456; 1999 VG₆₁, 3, 1, 0; 1999 VH₆₁, 8, 2, 7; 1999 VI₆₁, 4, 1, 0; 1999 VJ₆₁, 7, 2, 7; 1999 VK₆₁, 24, 5, 58; 1999 VL₆₁, 2, 7; 1999 VM₆₁, 6, 2, 8; 1999 VN₆₁, 1, 0; 1999 VO₆₁, 4, 1, 0; 1999 VP₆₁, 13, 3, 41; 1999 VQ₆₁, 10, 3, 9; 1999 VR₆₁, 13, 3, 9; 1999 VS₆₁, 24, 5, 58; 1999 VT₆₁, 20, 4, 1, 0; 1999 VU₆₁, 13, 3, 9; 1999 VV₆₁, 24, 5, 58; 1999 VW₆₁, 19, 4, 57; 1999 VX₆₁, 17, 4, 58; 1999 VY₆₁, 3, 1, 0; 1999 VZ₆₁, 4, 1, 0; 1999 VA₆₂, 8, 2, 7; 1999 VB₆₂, 6, 2, 8; 1999 VC₆₂, 5, 1, 0; 1999 VD₆₂, 4, 1, 0; 1999 VE₆₂, 4, 1, 0; 1999 VF₆₂, 4, 1, 0; 1999 VG₆₂, 13, 3, 41; 1999 VH₆₂, 30, 7, 594; 1999 VI₆₂, 10, 2, 52; 1999 VJ₆₂, 15, 4, 57; 1999 VK₆₂, 3, 1, 0; 1999 VL₆₂, 3, 1, 0; 1999 VM₆₂, 3, 1, 0; 1999 VN₆₂, 3, 1, 0; 1999 VO₆₂, 3, 1, 0; 1999 VP₆₂, 7, 2, 7; 1999 VQ₆₂, 4, 1, 0; 1999 VR₆₂, 24, 5, 95; 1999 VS₆₂, 8, 2, 12; 1999 VT₆₂, 4, 1, 0; 1999 VU₆₂, 11, 9, 88; 1999 VV₆₂, 27, 6, 95; 1999 VW₆₂, 28, 6, 62; 1999 VX₆₂, 4, 1, 0; 1999 VY₆₂, 3, 1, 0; 1999 VZ₆₂, 4, 1, 0; 1999 VA₆₃, 3, 1, 0; 1999 VB₆₃, 4, 1, 0; 1999 VC₆₃, 5, 1, 0; 1999 VD₆₃, 40, 9, 95; 1999 VE₆₃, 3, 1, 0; 1999 VF₆₃, 3, 1, 0; 1999 VG₆₃, 3, 1, 0; 1999 VH₆₃, 3, 1, 0; 1999 VI₆₃, 17, 4, 59; 1999 VJ₆₃, 29, 7, 168; 1999 VK₆₃, 37, 8, 95; 1999 VL₆₃, 32, 6, 37; 1999 VM₆₃, 18, 4, 7; 1999 VN₆₃, 14, 3, 6; 1999 VO₆₃, 11, 3, 7; 1999 VP₆₃, 8, 2, 7; 1999 VQ₆₃, 9, 2, 6; 1999 VR₆₃, 31, 7, 88; 1999 VS₆₃, 3, 1, 0; 1999 VT₆₃, 3, 1, 0; 1999 VU₆₃, 3, 1, 0; 1999 VV₆₃, 3, 1, 0; 1999 VW₆₃, 9, 2, 7; 1999 VX₆₃, 31, 7, 88; 1999 VY₆₃, 3, 1, 0; 1999 VZ₆₃, 3, 1, 0; 1999 VA₆₄, 9, 2, 7; 1999 VB₆₄, 20, 4, 28; 1999 VC₆₄, 10, 2, 8; 1999 VD₆₄, 7, 2, 947; 1999 VE₆₄, 3, 1, 0; 1999 VF₆₄, 5, 1, 0; 1999 VG₆₄, 11, 3, 28; 1999 VH

4, 1, 0; 1999 VG₇₂ *, 8, 2, 7; 1999 VH₇₂ *, 22, 5, 58; 1999 VJ₇₂ *, 15, 3, 51; 1999 VK₇₂ *, 16, 3, 50; 1999 VL₇₂ *, 24, 4, 14; 1999 VN₇₂ *, 27, 6, 573; 1999 VO₇₂ *, 12, 3, 52; 1999 VP₇₂ *, 14, 3, 31; 1999 VQ₇₂ *, 4, 1, 0; 1999 VR₇₂ *, 44, 8, 88; 1999 VS₇₂ *, 23, 5, 35; 1999 VT₇₂ *, 14, 3, 13; 1999 VY₇₂ *, 31, 7, 621; 1999 VZ₇₂ *, 10, 2, 5; 1999 VA₇₃ *, 10, 2, 11; 1999 VB₇₃ *, 13, 3, 58; 1999 VH₇₃ *, 3, 1, 0; 1999 VP₇₃ *, 9, 2, 3; 1999 VJ₇₅ *, 16, 4, 37; 1999 VR₇₅ *, 13, 3, 28; 1999 VE₇₇ *, 12, 3, 24; 1999 VH₇₇ *, 4, 1, 0; 1999 VJ₇₇ *, 10, 2, 2; 1999 VK₇₇ *, 8, 2, 2; 1999 VL₇₇ *, 9, 2, 2; 1999 VM₇₇ *, 9, 2, 2; 1999 VN₇₇ *, 8, 2, 2; 1999 VO₇₇ *, 9, 2, 2; 1999 VP₇₇ *, 10, 2, 2; 1999 VQ₇₇ *, 9, 2, 2; 1999 VR₇₇ *, 9, 2, 2; 1999 VS₇₇ *, 7, 2, 2; 1999 VT₇₇ *, 8, 2, 2; 1999 VU₇₇ *, 9, 2, 2; 1999 VV₇₇ *, 9, 2, 2; 1999 VW₇₇ *, 8, 2, 2; 1999 VX₇₇ *, 8, 2, 2; 1999 VY₇₇ *, 23, 5, 62; 1999 VZ₇₇ *, 20, 2, 1; 1999 VA₇₈ *, 8, 2, 1; 1999 VB₇₈ *, 20, 4, 96; 1999 VC₇₈ *, 10, 2, 1; 1999 VD₇₈ *, 10, 2, 1; 1999 VE₇₈ *, 10, 2, 1; 1999 VF₇₈ *, 8, 2, 1; 1999 VG₇₈ *, 6, 2, 1; 1999 VH₇₈ *, 9, 2, 1; 1999 VJ₇₈ *, 9, 2, 1; 1999 VK₇₈ *, 10, 2, 1; 1999 VL₇₈ *, 7, 2, 1; 1999 VM₇₈ *, 8, 2, 1; 1999 VN₇₈ *, 10, 2, 1; 1999 VO₇₈ *, 8, 2, 1; 1999 VP₇₈ *, 10, 2, 1; 1999 VQ₇₈ *, 8, 2, 1; 1999 VR₇₈ *, 10, 2, 1; 1999 VS₇₈ *, 15, 3, 33; 1999 VT₇₈ *, 8, 2, 1; 1999 VU₇₈ *, 22, 5, 40; 1999 VV₇₈ *, 10, 2, 1; 1999 VW₇₈ *, 9, 2, 1; 1999 VX₇₈ *, 18, 4, 8; 1999 VY₇₈ *, 18, 4, 62; 1999 VZ₇₈ *, 9, 2, 1; 1999 VA₇₉ *, 9, 2, 1; 1999 VB₇₉ *, 9, 2, 1; 1999 VC₇₉ *, 8, 2, 1; 1999 VD₇₉ *, 10, 2, 1; 1999 VE₇₉ *, 8, 2, 1; 1999 VF₇₉ *, 8, 2, 1; 1999 VG₇₉ *, 10, 2, 1; 1999 VH₇₉ *, 19, 4, 10; 1999 VJ₇₉ *, 7, 2, 1; 1999 VK₇₉ *, 7, 2, 1; 1999 VL₇₉ *, 10, 2, 1; 1999 VM₇₉ *, 6, 2, 1; 1999 VN₇₉ *, 9, 2, 1; 1999 VO₇₉ *, 8, 2, 1; 1999 VP₇₉ *, 8, 2, 1; 1999 VQ₇₉ *, 8, 2, 1; 1999 VR₇₉ *, 18, 4, 10; 1999 VS₇₉ *, 9, 2, 1; 1999 VT₇₉ *, 6, 2, 1; 1999 VU₇₉ *, 22, 5, 39; 1999 VV₇₉ *, 7, 2, 1; 1999 VW₇₉ *, 14, 4, 10; 1999 VX₇₉ *, 20, 4, 10; 1999 VY₇₉ *, 31, 7, 95; 1999 VZ₇₉ *, 7, 2, 1; 1999 VA₈₀ *, 10, 2, 1; 1999 VB₈₀ *, 10, 2, 1; 1999 VC₈₀ *, 10, 2, 1; 1999 VD₈₀ *, 8, 2, 1; 1999 VE₈₀ *, 9, 2, 1; 1999 VF₈₀ *, 10, 2, 1; 1999 VG₈₀ *, 7, 2, 1; 1999 VH₈₀ *, 7, 2, 1; 1999 VJ₈₀ *, 9, 2, 1; 1999 VK₈₀ *, 10, 2, 1; 1999 VL₈₀ *, 10, 2, 1; 1999 VM₈₀ *, 8, 2, 1; 1999 VN₈₀ *, 9, 2, 1; 1999 VO₈₀ *, 9, 2, 1; 1999 VP₈₀ *, 7, 2, 1; 1999 VQ₈₀ *, 9, 2, 1; 1999 VR₈₀ *, 10, 2, 1; 1999 VS₈₀ *, 9, 2, 1; 1999 VT₈₀ *, 10, 2, 1; 1999 VU₈₀ *, 6, 2, 1; 1999 VV₈₀ *, 11, 3, 33; 1999 VX₈₀ *, 8, 2, 1; 1999 VY₈₀ *, 26, 6, 68; 1999 VZ₈₀ *, 8, 2, 1; 1999 VA₈₁ *, 8, 2, 1; 1999 VB₈₁ *, 9, 2, 1; 1999 VD₈₁ *, 20, 4, 62; 1999 VE₈₁ *, 10, 2, 1; 1999 VF₈₁ *, 24, 5, 63; 1999 VG₈₁ *, 28, 6, 63; 1999 VH₈₁ *, 26, 6, 63; 1999 VJ₈₁ *, 25, 5, 63; 1999 VK₈₁ *, 7, 2, 1; 1999 VL₈₁ *, 9, 2, 1; 1999 VM₈₁ *, 9, 2, 7; 1999 VN₈₁ *, 9, 2, 7; 1999 VO₈₁ *, 10, 2, 7; 1999 VP₈₁ *, 35, 7, 171; 1999 VQ₈₁ *, 29, 7, 98; 1999 VR₈₁ *, 8, 2, 7; 1999 VS₈₁ *, 10, 2, 7; 1999 VT₈₁ *, 8, 2, 7; 1999 VU₈₁ *, 10, 2, 7; 1999 VV₈₁ *, 7, 2, 7; 1999 VX₈₁ *, 9, 2, 7; 1999 VY₈₁ *, 8, 2, 7; 1999 VZ₈₁ *, 10, 2, 7; 1999 VA₈₂ *, 7, 2, 7; 1999 VB₈₂ *, 9, 2, 7; 1999 VC₈₂ *, 8, 2, 7; 1999 VD₈₂ *, 10, 2, 7; 1999 VE₈₂ *, 9, 2, 7; 1999 VF₈₂ *, 9, 2, 7; 1999 VG₈₂ *, 8, 2, 7; 1999 VH₈₂ *, 7, 2, 7; 1999 VJ₈₂ *, 7, 2, 7; 1999 VK₈₂ *, 6, 2, 7; 1999 VL₈₂ *, 7, 2, 7; 1999 VM₈₂ *, 7, 2, 7; 1999 VN₈₂ *, 7, 2, 7; 1999 VO₈₂ *, 8, 2, 7; 1999 VP₈₂ *, 24, 5, 63; 1999 VQ₈₂ *, 8, 2, 5; 1999 VR₈₂ *, 8, 2, 32; 1999 VS₈₄ *, 13, 3, 34; 1999 VL₈₄ *, 7, 2, 3; 1999 VX₈₄ *, 5, 1, 0; 1999 VZ₈₄ *, 7, 2, 3; 1999 VJ₈₅ *, 10, 2, 3; 1999 VR₈₅ *, 9, 2, 3; 1999 VS₈₅ *, 10, 2, 3; 1999 VT₈₅ *, 10, 2, 3; 1999 VU₈₅ *, 13, 3, 35; 1999 VV₈₅ *, 29, 6, 95; 1999 VW₈₅ *, 9, 2, 3; 1999 VX₈₅ *, 9, 2, 3; 1999 VY₈₅ *, 12, 2, 3; 1999 VZ₈₅ *, 14, 3, 32; 1999 VA₈₆ *, 13, 2, 3; 1999 VB₈₆ *, 10, 2, 3; 1999 VC₈₆ *, 7, 2, 3; 1999 VD₈₆ *, 8, 2, 3; 1999 VE₈₆ *, 9, 2, 3; 1999 VF₈₆ *, 10, 8, 2, 3; 1999 VG₈₆ *, 30, 7, 595; 1999 VH₈₆ *, 7, 2, 2; 1999 VJ₈₆ *, 6, 2, 2; 1999 VK₈₆ *, 10, 2, 2; 1999 VL₈₆ *, 10, 2, 2; 1999 VM₈₆ *, 8, 2, 2; 1999 VN₈₆ *, 10, 2, 2; 1999 VO₈₆ *, 11, 3, 39; 1999 VP₈₆ *, 8, 2, 2; 1999 VQ₈₆ *, 14, 3, 39; 1999 VR₈₆ *, 6, 2, 5; 1999 VS₈₆ *, 8, 2, 3; 1999 VT₈₆ *, 7, 2, 3; 1999 VU₈₆ *, 8, 2, 3; 1999 VV₈₆ *, 20, 4, 65; 1999 VW₈₆ *, 7, 2, 3; 1999 VX₈₆ *, 18, 4, 65; 1999 VY₈₆ *, 10, 2, 3; 1999 VZ₈₆ *, 10, 2, 3; 1999 VA₈₇ *, 8, 2, 3; 1999 VB₈₇ *, 9, 2, 3; 1999 VC₈₇ *, 8, 2, 1; 1999 VD₈₇ *, 6, 2, 1; 1999 VE₈₇ *, 10, 2, 4; 1999 VG₈₇ *, 15, 3, 34; 1999 VH₈₇ *, 15, 3, 34; 1999 VJ₈₇ *, 19, 4, 64; 1999 VK₈₇ *, 9, 2, 4; 1999 VL₈₇ *, 39, 8, 98; 1999 VM₈₇ *, 10, 2, 4; 1999 VN₈₇ *, 7, 2, 3; 1999 VO₈₇ *, 10, 2, 3; 1999 VP₈₇ *, 25, 5, 64; 1999 VQ₈₇ *, 19, 4, 64; 1999 VR₈₇ *, 10, 2, 3; 1999 VS₈₇ *, 22, 5, 67; 1999 VT₈₇ *, 24, 6, 67; 1999 VU₈₇ *, 14, 2, 1; 1999 VV₈₇ *, 9, 2, 1; 1999 VW₈₇ *, 10, 2, 1; 1999 VX₈₇ *, 8, 2, 1; 1999 VY₈₇ *, 10, 2, 2; 1999 VZ₈₇ *, 25, 5, 62; 1999 VA₈₈ *, 9, 2, 6; 1999 VB₈₈ *, 6, 2, 6; 1999 VC₈₈ *, 8, 2, 6; 1999 VD₈₈ *, 29, 6, 62; 1999 VE₈₈ *, 7, 2, 5; 1999 VG₈₈ *, 8, 2, 5; 1999 VH₈₈ *, 6, 2, 5; 1999 VJ₈₈ *, 7, 2, 5; 1999 VK₈₈ *, 15, 2, 5; 1999 VL₈₈ *, 10, 2, 5; 1999 VM₈₈ *, 10, 2, 5; 1999 VN₈₈ *, 7, 2, 5; 1999 VO₈₈ *, 9, 2, 5; 1999 VP₈₈ *, 7, 2, 5; 1999 VQ₈₈ *, 8, 2, 5; 1999 VR₈₈ *, 7, 2, 5; 1999 VS₈₈ *, 9, 2, 5; 1999 VT₈₈ *, 9, 2, 5; 1999 VU₈₈ *, 9, 2, 5; 1999 VV₈₈ *, 7, 2, 5; 1999 VW₈₈ *, 7, 2, 5; 1999 VX₈₈ *, 9, 2, 5; 1999 VY₈₈ *, 6, 2, 5; 1999 VZ₈₈ *, 8, 2, 5; 1999 VA₈₉ *, 10, 2, 5; 1999 VB₈₉ *, 9, 2, 5; 1999 VC₈₉ *, 9, 2, 5; 1999 VD₈₉ *, 8, 2, 5; 1999 VE₈₉ *, 10, 2, 5; 1999 VF₈₉ *, 9, 2, 5; 1999 VG₈₉ *, 10, 2, 5; 1999 VH₈₉ *, 9, 2, 5; 1999 VJ₈₉ *, 8, 2, 5; 1999 VK₈₉ *, 8, 2, 5; 1999 VL₈₉ *, 8, 2, 4; 1999 VM₈₉ *, 18, 4, 9; 1999 VN₈₉ *, 9, 2, 4; 1999 VO₈₉ *, 8, 2, 4; 1999 VP₈₉ *, 29, 6, 96; 1999 VQ₈₉ *, 10, 2, 4; 1999 VR₈₉ *, 10, 2, 4; 1999 VS₈₉ *, 9, 2, 4; 1999 VT₈₉ *, 9, 2, 4; 1999 VU₈₉ *, 13, 3, 60; 1999 VV₈₉ *, 10, 2, 4; 1999 VW₈₉ *, 20, 4, 9; 1999 VX₈₉ *, 6, 2, 4; 1999 VY₈₉ *, 8, 2, 4; 1999 VZ₈₉ *, 8, 2, 4; 1999 VA₉₀ *, 8, 2, 4; 1999 VB₉₀ *, 6, 2, 4; 1999 VC₉₀ *, 7, 2, 4; 1999 VD₉₀ *, 9, 2, 4; 1999 VE₉₀ *, 8, 2, 4; 1999 VF₉₀ *, 8, 2, 4; 1999 VG₉₀ *, 8, 2, 4; 1999 VH₉₀ *, 9, 2, 4; 1999 VJ₉₀ *, 10, 2, 4; 1999 VK₉₀ *, 9, 2, 4; 1999 VL₉₀ *, 9, 2, 4; 1999 VM₉₀ *, 8, 2, 4; 1999 VN₉₀ *, 10, 2, 4; 1999 VO₉₀ *, 8, 2, 4; 1999 VP₉₀ *, 10,

2, 4; 1999 VQ₉₀ *, 9, 2, 4; 1999 VR₉₀ *, 9, 2, 4; 1999 VS₉₀ *, 9, 2, 4; 1999 VT₉₀ *, 28, 6, 63; 1999 VU₉₀ *, 10, 2, 4; 1999 VV₉₀ *, 8, 2, 4; 1999 VW₉₀ *, 7, 2, 4; 1999 VX₉₀ *, 6, 2, 4; 1999 VY₉₀ *, 9, 2, 4; 1999 VZ₉₀ *, 8, 2, 4; 1999 VA₉₁ *, 7, 2, 4; 1999 VB₉₁ *, 8, 2, 4; 1999 VC₉₁ *, 8, 2, 4; 1999 VD₉₁ *, 8, 2, 4; 1999 VE₉₁ *, 6, 2, 4; 1999 VF₉₁ *, 8, 2, 4; 1999 VG₉₁ *, 8, 2, 4; 1999 VH₉₁ *, 8, 2, 4; 1999 VJ₉₁ *, 9, 2, 4; 1999 VK₉₁ *, 8, 2, 4; 1999 VL₉₁ *, 8, 2, 4; 1999 VM₉₁ *, 8, 2, 4; 1999 VN₉₁ *, 8, 2, 4; 1999 VO₉₁ *, 7, 2, 4; 1999 VP₉₁ *, 8, 2, 4; 1999 VQ₉₁ *, 9, 2, 3; 1999 VR₉₁ *, 10, 2, 2; 1999 VS₉₁ *, 7, 2, 2; 1999 VT₉₁ *, 7, 2, 2; 1999 VU₉₁ *, 7, 2, 2; 1999 VV₉₁ *, 10, 2, 3; 1999 VW₉₁ *, 9, 2, 3; 1999 VX₉₁ *, 9, 2, 3; 1999 VY₉₁ *, 8, 2, 3; 1999 VZ₉₁ *, 10, 2, 3; 1999 VA₉₂ *, 10, 2, 3; 1999 VB₉₂ *, 8, 2, 3; 1999 VC₉₂ *, 8, 2, 3; 1999 VD₉₂ *, 8, 2, 3; 1999 VE₉₂ *, 9, 2, 3; 1999 VF₉₂ *, 7, 2, 3; 1999 VG₉₂ *, 8, 2, 3; 1999 VH₉₂ *, 8, 2, 3; 1999 VJ₉₂ *, 9, 2, 3; 1999 VK₉₂ *, 10, 2, 3; 1999 VL₉₂ *, 9, 2, 3; 1999 VM₉₂ *, 9, 2, 3; 1999 VN₉₂ *, 10, 2, 3; 1999 VO₉₂ *, 8, 2, 3; 1999 VP₉₂ *, 8, 2, 3; 1999 VQ₉₂ *, 8, 2, 3; 1999 VR₉₂ *, 9, 2, 3; 1999 VS₉₂ *, 8, 2, 3; 1999 VT₉₂ *, 8, 2, 3; 1999 VU₉₂ *, 8, 2, 3; 1999 VV₉₂ *, 10, 2, 3; 1999 VW₉₂ *, 8, 2, 3; 1999 VX₉₂ *, 9, 2, 3; 1999 VY₉₂ *, 8, 2, 3; 1999 VZ₉₂ *, 10, 2, 3; 1999 VA₉₃ *, 8, 2, 3; 1999 VB₉₃ *, 9, 2, 3; 1999 VC₉₃ *, 10, 2, 3; 1999 VD₉₃ *, 9, 2, 3; 1999 VE₉₃ *, 10, 2, 3; 1999 VF₉₃ *, 8, 2, 3; 1999 VG₉₃ *, 8, 2, 3; 1999 VH₉₃ *, 7, 2, 3; 1999 VJ₉₃ *, 9, 2, 3; 1999 VK₉₃ *, 9, 2, 3; 1999 VL₉₃ *, 9, 2, 3; 1999 VM₉₃ *, 8, 2, 3; 1999 VN₉₃ *, 8, 2, 3; 1999 VO₉₃ *, 7, 2, 3; 1999 VP₉₃ *, 8, 2, 3; 1999 VQ₉₃ *, 8, 2, 3; 1999 VR₉₃ *, 9, 2, 3; 1999 VS₉₃ *, 7, 2, 3; 1999 VT₉₃ *, 7, 2, 3; 1999 VU₉₃ *, 9, 2, 3; 1999 VV₉₃ *, 9, 2, 3; 1999 VX₉₃ *, 7, 2, 3; 1999 VY₉₃ *, 8, 2, 3; 1999 VZ₉₃ *, 10, 2, 3; 1999 VA₉₄ *, 10, 2, 3; 1999 VB₉₄ *, 10, 2, 3; 1999 VC₉₄ *, 8, 2, 3; 1999 VD₉₄ *, 9, 2, 3; 1999 VE₉₄ *, 9, 2, 3; 1999 VF₉₄ *, 8, 2, 3; 1999 VG₉₄ *, 9, 2, 3; 1999 VH₉₄ *, 10, 2, 3; 1999 VJ₉₄ *, 10, 2, 3; 1999 VK₉₄ *, 9, 2, 3; 1999 VL₉₄ *, 9, 2, 3; 1999 VM₉₄ *, 10, 2, 3; 1999 VN₉₄ *, 7, 2, 3; 1999 VO₉₄ *, 8, 2, 3; 1999 VP₉₄ *, 9, 2, 3; 1999 VQ₉₄ *, 10, 2, 3; 1999 VR₉₄ *, 9, 2, 3; 1999 VS₉₄ *, 9, 2, 3; 1999 VT₉₄ *, 10, 2, 3; 1999 VU₉₄ *, 7, 2, 3; 1999 VV₉₄ *, 7, 2, 3; 1999 VW₉₄ *, 8, 2, 3; 1999 VX₉₄ *, 9, 2, 3; 1999 VY₉₄ *, 10, 2, 3; 1999 VZ₉₄ *, 9, 2, 3; 1999 VA₉₅ *, 10, 2, 3; 1999 VB₉₅ *, 10, 2, 3; 1999 VC₉₅ *, 8, 2, 3; 1999 VD₉₅ *, 10, 2, 3; 1999 VE₉₅ *, 7, 2, 3; 1999 VF₉₅ *, 10, 2, 3; 1999 VG₉₅ *, 10, 2, 3; 1999 VH₉₅ *, 10, 2, 3; 1999 VJ₉₅ *, 8, 2, 3; 1999 VK₉₅ *, 10, 2, 3; 1999 VL₉₅ *, 10, 2, 3; 1999 VM₉₅ *, 9, 2, 3; 1999 VN₉₅ *, 10, 2, 3; 1999 VO₉₅ *, 7, 2, 3; 1999 VP₉₅ *, 7, 2, 3; 1999 VQ₉₅ *, 10, 2, 3; 1999 VR₉₅ *, 8, 2, 3; 1999 VS₉₅ *, 8, 2, 3; 1999 VT₉₅ *, 9, 2, 3; 1999 VU₉₅ *, 10, 2, 3; 1999 VV₉₅ *, 10, 2, 3; 1999 VX₉₅ *, 8, 2, 3; 1999 VY₉₅ *, 9, 2, 3; 1999 VZ₉₅ *, 8, 2, 3; 1999 VA₉₆ *, 7, 2, 1; 1999 VB₉₆ *, 6, 2, 3; 1999 VC₉₆ *, 9, 2, 3; 1999 VD₉₆ *, 8, 2, 3; 1999 VE₉₆ *, 6, 2, 3; 1999 VF₉₆ *, 16, 4, 37; 1999 VG₉₆ *, 6, 2, 3; 1999 VH₉₆ *, 9, 2, 3; 1999 VJ₉₆ *, 6, 2, 3; 1999 VK₉₆ *, 9, 2, 3; 1999 VL₉₆ *, 8, 2, 3; 1999 VM₉₆ *, 8, 2, 3; 1999 VN₉₆ *, 9, 2, 3; 1999 VO₉₆ *, 7, 2, 3; 1999 VP₉₆ *, 7, 2, 3; 1999 VQ₉₆ *, 8, 2, 3; 1999 VR₉₆ *, 9, 2, 3; 1999 VS₉₆ *, 10, 2, 3; 1999 VT₉₆ *, 7, 2, 3; 1999 VU₉₆ *, 10, 2, 3; 1999 VV₉₆ *, 9, 2, 3; 1999 VW₉₆ *, 9, 2, 3; 1999 VX₉₆ *, 9, 2, 3; 1999 VY₉₆ *, 9, 2, 3; 1999 VZ₉₆ *, 8, 2, 3; 1999 VA₉₇ *, 7, 2, 3; 1999 VB₉₇ *, 8, 2, 3; 1999 VC₉₇ *, 34, 7, 93; 1999 VD₉₇ *, 9, 2, 3; 1999 VE₉₇ *, 9, 2, 3; 1999 VF₉₇ *, 7, 2, 3; 1999 VG₉₇ *, 10, 2, 3; 1999 VH₉₇ *, 6, 2, 3; 1999 VJ₉₇ *, 7, 2, 3; 1999 VK₉₇ *, 7, 2, 3; 1999 VL₉₇ *, 7, 2, 3; 1999 VM₉₇ *, 6, 2, 3; 1999 VN₉₇ *, 8, 2, 3; 1999 VO₉₇ *, 8, 2, 3; 1999 VP₉₇ *, 6, 2, 3; 1999 VQ₉₇ *, 6, 2, 3; 1999 VR₉₇ *, 6, 2, 3; 1999 VS₉₇ *, 8, 2, 3; 1999 VT₉₇ *, 6, 2, 3; 1999 VU₉₇ *, 7, 2, 3; 1999 VV₉₇ *, 8, 2, 3; 1999 VW₉₇ *, 6, 2, 3; 1999 VX₉₇ *, 6, 2, 3; 1999 VY₉₇ *, 7, 2, 3; 1999 VZ₉₇ *, 9, 2, 3; 1999 VA₉₈ *, 9, 2, 3; 1999 VB₉₈ *, 9, 2, 3; 1999 VC₉₈ *, 9, 2, 3; 1999 VD₉₈ *, 9, 2, 3; 1999 VE₉₈ *, 8, 2, 3; 1999 VF₉₈ *, 8, 2, 3; 1999 VG₉₈ *, 8, 2, 3; 1999 VH₉₈ *, 8, 2, 3; 1999 VJ₉₈ *, 7, 2, 3; 1999 VK₉₈ *, 7, 2, 3; 1999 VL₉₈ *, 9, 2, 3; 1999 VM₉₈ *, 8, 2, 3; 1999 VN₉₈ *, 8, 2, 3; 1999 VO₉₈ *, 8, 2, 3; 1999 VP₉₈ *, 8, 2, 3; 1999 VQ₉₈ *, 7, 2, 3; 1999 VR₉₈ *, 8, 2, 3; 1999 VS₉₈ *, 7, 2, 3; 1999 VT₉₈ *, 6, 2, 3; 1999 VU₉₈ *, 9, 2, 3; 1999 VV₉₈ *, 8, 2, 3; 1999 VW₉₈ *, 7, 2, 3; 1999 VX₉₈ *, 8, 2, 3; 1999 VY₉₈ *, 8, 2, 3; 1999 VZ₉₈ *, 8, 2, 3; 1999 VA₉₉ *, 8, 2, 3; 1999 VB₉₉ *, 8, 2, 3; 1999 VC₉₉ *, 8, 2, 3; 1999 VD₉₉ *, 8, 2, 3; 1999 VE₉₉ *, 6, 2, 3; 1999 VF₉₉ *, 6, 2, 3; 1999 VG₉₉ *, 7, 2, 3; 1999 VH

3; 1999 VJ₁₀₂ *, 8, 2, 3; 1999 VK₁₀₂ *, 7, 2, 3; 1999 VL₁₀₂ *, 8, 2, 3; 1999 VM₁₀₂ *, 7, 2, 3; 1999 VN₁₀₂ *, 9, 2, 3; 1999 VO₁₀₂ *, 7, 2, 3; 1999 VP₁₀₂ *, 7, 2, 3; 1999 VQ₁₀₂ *, 7, 2, 3; 1999 VR₁₀₂ *, 7, 2, 3; 1999 VS₁₀₂ *, 8, 2, 3; 1999 VT₁₀₂ *, 9, 2, 3; 1999 VU₁₀₂ *, 9, 2, 3; 1999 VV₁₀₂ *, 8, 2, 3; 1999 VW₁₀₂ *, 9, 2, 3; 1999 VX₁₀₂ *, 7, 2, 3; 1999 VY₁₀₂ *, 9, 2, 3; 1999 VZ₁₀₂ *, 8, 2, 3; 1999 VA₁₀₃ *, 7, 2, 3; 1999 VB₁₀₃ *, 9, 2, 3; 1999 VC₁₀₃ *, 9, 2, 3; 1999 VD₁₀₃ *, 9, 2, 3; 1999 VE₁₀₃ *, 9, 2, 3; 1999 VF₁₀₃ *, 7, 2, 3; 1999 VG₁₀₃ *, 9, 2, 3; 1999 VH₁₀₃ *, 8, 2, 3; 1999 VJ₁₀₃ *, 6, 2, 3; 1999 VK₁₀₃ *, 8, 2, 3; 1999 VL₁₀₃ *, 9, 2, 3; 1999 VM₁₀₃ *, 8, 2, 3; 1999 VN₁₀₃ *, 7, 2, 3; 1999 VO₁₀₃ *, 8, 2, 3; 1999 VP₁₀₃ *, 7, 2, 3; 1999 VQ₁₀₃ *, 7, 2, 3; 1999 VR₁₀₃ *, 8, 2, 3; 1999 VS₁₀₃ *, 7, 2, 3; 1999 VT₁₀₃ *, 8, 2, 3; 1999 VU₁₀₃ *, 9, 2, 3; 1999 VV₁₀₃ *, 9, 2, 3; 1999 VW₁₀₃ *, 8, 2, 3; 1999 VX₁₀₃ *, 9, 2, 3; 1999 VY₁₀₃ *, 8, 2, 3; 1999 VZ₁₀₃ *, 9, 2, 3; 1999 VA₁₀₄ *, 9, 2, 3; 1999 VB₁₀₄ *, 8, 2, 3; 1999 VC₁₀₄ *, 8, 2, 3; 1999 VD₁₀₄ *, 9, 2, 3; 1999 VE₁₀₄ *, 7, 2, 3; 1999 VF₁₀₄ *, 9, 2, 3; 1999 VG₁₀₄ *, 8, 2, 3; 1999 VH₁₀₄ *, 8, 2, 3; 1999 VJ₁₀₄ *, 8, 2, 3; 1999 VK₁₀₄ *, 8, 2, 3; 1999 VL₁₀₄ *, 6, 2, 3; 1999 VM₁₀₄ *, 8, 2, 3; 1999 VN₁₀₄ *, 8, 2, 3; 1999 VO₁₀₄ *, 7, 2, 3; 1999 VP₁₀₄ *, 7, 2, 3; 1999 VQ₁₀₄ *, 8, 2, 3; 1999 VR₁₀₄ *, 8, 2, 3; 1999 VS₁₀₄ *, 8, 2, 3; 1999 VT₁₀₄ *, 7, 2, 3; 1999 VU₁₀₄ *, 6, 2, 3; 1999 VV₁₀₄ *, 8, 2, 3; 1999 VW₁₀₄ *, 7, 2, 3; 1999 VX₁₀₄ *, 7, 2, 3; 1999 VY₁₀₄ *, 7, 2, 3; 1999 VZ₁₀₄ *, 9, 2, 3; 1999 VA₁₀₅ *, 10, 2, 3; 1999 VB₁₀₅ *, 8, 2, 3; 1999 VC₁₀₅ *, 10, 2, 3; 1999 VD₁₀₅ *, 10, 2, 3; 1999 VE₁₀₅ *, 10, 2, 3; 1999 VF₁₀₅ *, 8, 2, 3; 1999 VG₁₀₅ *, 8, 2, 3; 1999 VH₁₀₅ *, 9, 2, 3; 1999 VJ₁₀₅ *, 10, 2, 3; 1999 VK₁₀₅ *, 8, 2, 3; 1999 VL₁₀₅ *, 10, 2, 3; 1999 VM₁₀₅ *, 9, 2, 3; 1999 VN₁₀₅ *, 10, 2, 3; 1999 VO₁₀₅ *, 10, 2, 3; 1999 VP₁₀₅ *, 10, 2, 3; 1999 VQ₁₀₅ *, 8, 2, 3; 1999 VR₁₀₅ *, 10, 2, 3; 1999 VS₁₀₅ *, 9, 2, 3; 1999 VT₁₀₅ *, 10, 2, 3; 1999 VU₁₀₅ *, 10, 2, 3; 1999 VV₁₀₅ *, 10, 2, 3; 1999 VW₁₀₅ *, 7, 2, 3; 1999 VX₁₀₅ *, 7, 2, 3; 1999 VY₁₀₅ *, 8, 2, 3; 1999 VZ₁₀₅ *, 10, 2, 3; 1999 VA₁₀₆ *, 9, 2, 3; 1999 VB₁₀₆ *, 10, 2, 3; 1999 VC₁₀₆ *, 10, 2, 3; 1999 VD₁₀₆ *, 8, 2, 3; 1999 VE₁₀₆ *, 9, 2, 3; 1999 VF₁₀₆ *, 8, 2, 3; 1999 VG₁₀₆ *, 10, 2, 3; 1999 VH₁₀₆ *, 9, 2, 3; 1999 VJ₁₀₆ *, 9, 2, 3; 1999 VK₁₀₆ *, 8, 2, 3; 1999 VL₁₀₆ *, 9, 2, 3; 1999 VM₁₀₆ *, 9, 2, 3; 1999 VN₁₀₆ *, 10, 2, 3; 1999 VO₁₀₆ *, 9, 2, 3; 1999 VP₁₀₆ *, 10, 2, 3; 1999 VQ₁₀₆ *, 9, 2, 3; 1999 VR₁₀₆ *, 8, 2, 3; 1999 VS₁₀₆ *, 9, 2, 3; 1999 VT₁₀₆ *, 9, 2, 3; 1999 VU₁₀₆ *, 8, 2, 3; 1999 VV₁₀₆ *, 9, 2, 3; 1999 VW₁₀₆ *, 9, 2, 3; 1999 VX₁₀₆ *, 10, 2, 3; 1999 VY₁₀₆ *, 9, 2, 3; 1999 VZ₁₀₆ *, 9, 2, 3; 1999 VA₁₀₇ *, 10, 2, 3; 1999 VB₁₀₇ *, 9, 2, 3; 1999 VC₁₀₇ *, 8, 2, 3; 1999 VD₁₀₇ *, 8, 2, 3; 1999 VE₁₀₇ *, 8, 2, 3; 1999 VF₁₀₇ *, 8, 2, 3; 1999 VG₁₀₇ *, 10, 2, 3; 1999 VH₁₀₇ *, 10, 2, 3; 1999 VJ₁₀₇ *, 9, 2, 3; 1999 VK₁₀₇ *, 8, 2, 3; 1999 VL₁₀₇ *, 9, 2, 3; 1999 VM₁₀₇ *, 9, 2, 3; 1999 VN₁₀₇ *, 8, 2, 3; 1999 VO₁₀₇ *, 10, 2, 3; 1999 VP₁₀₇ *, 10, 2, 3; 1999 VQ₁₀₇ *, 8, 2, 3; 1999 VR₁₀₇ *, 9, 2, 3; 1999 VS₁₀₇ *, 8, 2, 1; 1999 VT₁₀₇ *, 10, 2, 3; 1999 VU₁₀₇ *, 8, 2, 3; 1999 VV₁₀₇ *, 9, 2, 3; 1999 VW₁₀₇ *, 9, 2, 3; 1999 VX₁₀₇ *, 10, 2, 3; 1999 VY₁₀₇ *, 7, 2, 3; 1999 VZ₁₀₇ *, 9, 2, 3; 1999 VA₁₀₈ *, 8, 2, 3; 1999 VB₁₀₈ *, 9, 2, 3; 1999 VC₁₀₈ *, 6, 2, 3; 1999 VD₁₀₈ *, 10, 2, 3; 1999 VE₁₀₈ *, 10, 2, 3; 1999 VF₁₀₈ *, 8, 2, 3; 1999 VG₁₀₈ *, 6, 2, 3; 1999 VH₁₀₈ *, 8, 2, 3; 1999 VJ₁₀₈ *, 9, 2, 3; 1999 VK₁₀₈ *, 8, 2, 3; 1999 VL₁₀₈ *, 6, 2, 1; 1999 VM₁₀₈ *, 9, 2, 1; 1999 VN₁₀₈ *, 9, 2, 3; 1999 VO₁₀₈ *, 10, 2, 3; 1999 VP₁₀₈ *, 9, 2, 3; 1999 VQ₁₀₈ *, 10, 2, 3; 1999 VR₁₀₈ *, 9, 2, 3; 1999 VS₁₀₈ *, 8, 2, 3; 1999 VT₁₀₈ *, 8, 2, 3; 1999 VU₁₀₈ *, 10, 2, 3; 1999 VV₁₀₈ *, 10, 2, 3; 1999 VW₁₀₈ *, 10, 2, 3; 1999 VX₁₀₈ *, 9, 2, 3; 1999 VY₁₀₈ *, 8, 2, 3; 1999 VZ₁₀₈ *, 9, 2, 3; 1999 VA₁₀₉ *, 7, 2, 3; 1999 VB₁₀₉ *, 9, 2, 3; 1999 VC₁₀₉ *, 9, 2, 3; 1999 VD₁₀₉ *, 8, 2, 3; 1999 VE₁₀₉ *, 6, 2, 3; 1999 VF₁₀₉ *, 9, 2, 3; 1999 VG₁₀₉ *, 8, 2, 3; 1999 VH₁₀₉ *, 8, 2, 3; 1999 VJ₁₀₉ *, 9, 2, 3; 1999 VK₁₀₉ *, 10, 2, 3; 1999 VL₁₀₉ *, 8, 2, 3; 1999 VM₁₀₉ *, 9, 2, 3; 1999 VN₁₀₉ *, 9, 2, 3; 1999 VO₁₀₉ *, 10, 2, 3; 1999 VP₁₀₉ *, 10, 2, 3; 1999 VQ₁₀₉ *, 9, 2, 3; 1999 VR₁₀₉ *, 9, 2, 3; 1999 VS₁₀₉ *, 10, 2, 3; 1999 VT₁₀₉ *, 6, 2, 3; 1999 VU₁₀₉ *, 8, 2, 3; 1999 VV₁₀₉ *, 7, 2, 3; 1999 VW₁₀₉ *, 8, 2, 3; 1999 VX₁₀₉ *, 7, 2, 3; 1999 VY₁₀₉ *, 8, 2, 3; 1999 VZ₁₀₉ *, 7, 2, 3; 1999 VA₁₁₀ *, 8, 2, 3; 1999 VB₁₁₀ *, 9, 2, 3; 1999 VC₁₁₀ *, 9, 2, 3; 1999 VD₁₁₀ *, 8, 2, 3; 1999 VE₁₁₀ *, 8, 2, 3; 1999 VF₁₁₀ *, 9, 2, 3; 1999 VG₁₁₀ *, 7, 2, 3; 1999 VH₁₁₀ *, 9, 2, 3; 1999 VJ₁₁₀ *, 8, 2, 3; 1999 VK₁₁₀ *, 9, 2, 3; 1999 VL₁₁₀ *, 8, 2, 3; 1999 VM₁₁₀ *, 7, 2, 3; 1999 VN₁₁₀ *, 7, 2, 3; 1999 VO₁₁₀ *, 6, 2, 3; 1999 VP₁₁₀ *, 8, 2, 3; 1999 VQ₁₁₀ *, 8, 2, 3; 1999 VR₁₁₀ *, 7, 2, 3; 1999 VS₁₁₀ *, 9, 2, 3; 1999 VT₁₁₀ *, 8, 2, 3; 1999 VU₁₁₀ *, 7, 2, 3; 1999 VV₁₁₀ *, 9, 2, 3; 1999 VW₁₁₀ *, 6, 2, 3; 1999 VX₁₁₀ *, 7, 2, 3; 1999 VY₁₁₀ *, 8, 2, 3; 1999 VZ₁₁₀ *, 7, 2, 3; 1999 VA₁₁₁ *, 8, 2, 3; 1999 VB₁₁₁ *, 6, 2, 3; 1999 VC₁₁₁ *, 8, 2, 3; 1999 VD₁₁₁ *, 9, 2, 3; 1999 VE₁₁₁ *, 10, 2, 3; 1999 VF₁₁₁ *, 10, 2, 3; 1999 VG₁₁₁ *, 8, 2, 3; 1999 VH₁₁₁ *, 7, 2, 3; 1999 VJ₁₁₁ *, 9, 2, 3; 1999 VK₁₁₁ *, 8, 2, 3; 1999 VL₁₁₁ *, 12, 3, 57; 1999 VM₁₁₁ *, 9, 2, 3; 1999 VN₁₁₁ *, 9, 2, 3; 1999 VO₁₁₁ *, 10, 2, 3; 1999 VP₁₁₁ *, 9, 2, 3; 1999 VQ₁₁₁ *, 9, 2, 3; 1999 VR₁₁₁ *, 10, 2, 3; 1999 VS₁₁₁ *, 7, 2, 3; 1999 VT₁₁₁ *, 10, 2, 3; 1999 VU₁₁₁ *, 24, 5, 56; 1999 VV₁₁₁ *, 9, 2, 3; 1999 VW₁₁₁ *, 9, 2, 3; 1999 VX₁₁₁ *, 9, 2, 3; 1999 VY₁₁₁ *, 7, 2, 3; 1999 VZ₁₁₁ *, 23, 5, 56; 1999 VA₁₁₂ *, 8, 2, 3; 1999 VB₁₁₂ *, 9, 2, 3; 1999 VC₁₁₂ *, 8, 2, 3; 1999 VD₁₁₂ *, 6, 2, 3; 1999 VE₁₁₂ *, 10, 2, 3; 1999 VF₁₁₂ *, 8, 2, 3; 1999 VG₁₁₂ *, 8, 2, 3; 1999 VH₁₁₂ *, 10, 2, 3; 1999 VJ₁₁₂ *, 8, 2, 3; 1999 VK₁₁₂ *, 6, 2, 3; 1999 VL₁₁₂ *, 25, 5, 56; 1999 VM₁₁₂ *, 20, 5, 56; 1999 VN₁₁₂ *, 7, 2, 3; 1999 VO₁₁₂ *, 8, 2, 3; 1999 VP₁₁₂ *, 9, 2, 3; 1999 VQ₁₁₂ *, 12, 2, 3; 1999 VR₁₁₂ *, 10, 2, 3; 1999 VS₁₁₂ *, 8, 2, 3; 1999 VT₁₁₂ *, 9, 2, 3; 1999 VU₁₁₂ *, 20, 4, 56; 1999 VV₁₁₂ *, 9, 2, 3; 1999 VW₁₁₂ *, 7, 2, 3; 1999 VX₁₁₂ *, 6, 2, 3; 1999 VY₁₁₂ *, 9, 2, 3; 1999 VZ₁₁₂ *, 24, 5, 58; 1999 VA₁₁₃ *, 19, 5, 56; 1999 VB₁₁₃ *, 8, 2, 3; 1999 VC₁₁₃ *, 7, 2, 3; 1999 VD₁₁₃ *, 7, 2, 3; 1999 VE₁₁₃ *,

6, 2, 3; 1999 VF₁₁₃ *, 8, 2, 3; 1999 VG₁₁₃ *, 8, 2, 3; 1999 VH₁₁₃ *, 8, 2, 3; 1999 VJ₁₁₃ *, 8, 2, 3; 1999 VK₁₁₃ *, 7, 2, 3; 1999 VL₁₁₃ *, 6, 2, 3; 1999 VM₁₁₃ *, 7, 2, 3; 1999 VZ₁₁₃ *, 21, 4, 98; 1999 VE₁₁₄ *, 12, 3, 67; 1999 VP₁₁₄ *, 3, 1, 0; 1999 VS₁₁₄ *, 25, 5, 93; 1999 VU₁₁₄ *, 14, 3, 95; 1999 VW₁₁₄ *, 4, 1, 0; 1999 VZ₁₁₅ *, 3, 1, 0; 1999 VG₁₁₇ *, 8, 2, 61; 1999 VB₁₂₀ *, 5, 1, 0; 1999 VW₁₂₄ *, 13, 3, 4; 1999 VX₁₂₄ *, 8, 2, 4; 1999 VY₁₂₄ *, 8, 2, 3; 1999 VZ₁₂₄ *, 8, 2, 3; 1999 VA₁₂₅ *, 9, 2, 3; 1999 VB₁₂₅ *, 7, 2, 3; 1999 VC₁₂₅ *, 9, 2, 3; 1999 VD₁₂₅ *, 18, 4, 101; 1999 VE₁₂₅ *, 24, 5, 94; 1999 VF₁₂₆ *, 8, 2, 36; 1999 VG₁₃₄ *, 6, 2, 5; 1999 VN₁₃₄ *, 12, 3, 27; 1999 VH₁₃₅ *, 19, 4, 64; 1999 VK₁₃₅ *, 19, 4, 64; 1999 VL₁₃₅ *, 21, 5, 64; 1999 VM₁₃₅ *, 17, 4, 63; 1999 VN₁₃₅ *, 8, 2, 7; 1999 VO₁₃₅ *, 11, 2, 7; 1999 VP₁₃₅ *, 9, 2, 7; 1999 VQ₁₃₅ *, 7, 2, 6; 1999 VR₁₃₅ *, 8, 2, 6; 1999 VS₁₃₅ *, 9, 2, 5; 1999 VT₁₃₅ *, 10, 2, 5; 1999 VU₁₃₅ *, 7, 2, 5; 1999 VV₁₃₅ *, 9, 2, 5; 1999 VW₁₃₅ *, 9, 2, 5; 1999 VX₁₃₅ *, 9, 2, 5; 1999 VY₁₃₅ *, 9, 2, 5; 1999 VZ₁₃₅ *, 7, 2, 5; 1999 VA₁₃₆ *, 8, 2, 5; 1999 VB₁₃₆ *, 7, 2, 5; 1999 VC₁₃₆ *, 6, 2, 5; 1999 VD₁₃₆ *, 10, 2, 5; 1999 VE₁₃₆ *, 7, 2, 5; 1999 VF₁₃₆ *, 11, 2, 5; 1999 VG₁₃₆ *, 6, 2, 5; 1999 VH₁₃₆ *, 8, 2, 5; 1999 VJ₁₃₆ *, 6, 2, 5; 1999 VK₁₃₆ *, 6, 2, 5; 1999 VL₁₃₆ *, 9, 2, 5; 1999 VM₁₃₆ *, 7, 2, 5; 1999 VN₁₃₆ *, 8, 2, 5; 1999 VO₁₃₆ *, 27, 5, 56; 1999 VP₁₃₆ *, 8, 2, 5; 1999 VQ₁₃₆ *, 9, 2, 5; 1999 VR₁₃₆ *, 6, 2, 2; 1999 VS₁₃₆ *, 7, 2, 2; 1999 VT₁₃₆ *, 6, 2, 2; 1999 VU₁₃₆ *, 9, 2, 2; 1999 VV₁₃₆ *, 8, 2, 2; 1999 VW₁₃₆ *, 9, 2, 2; 1999 VX₁₃₆ *, 7, 2, 2; 1999 VY₁₃₆ *, 9, 2, 2; 1999 VZ₁₃₆ *, 10, 2, 2; 1999 VA₁₃₇ *, 9, 2, 2; 1999 VB₁₃₇ *, 9, 2, 2; 1999 VC₁₃₇ *, 9, 2, 2; 1999 VD₁₃₇ *, 7, 2, 2; 1999 VE₁₃₇ *, 7, 2, 2; 1999 VF₁₃₇ *, 8, 2, 2; 1999 VG₁₃₇ *, 10, 2, 2; 1999 VH₁₃₇ *, 9, 2, 2; 1999 VJ₁₃₇ *, 8, 2, 2; 1999 VK₁₃₇ *, 10, 2, 2; 1999 VL₁₃₇ *, 9, 2, 2; 1999 VM₁₃₇ *, 9, 2, 2; 1999 VN₁₃₇ *, 7, 2, 2; 1999 VO₁₃₇ *, 7, 2, 2; 1999 VP₁₃₇ *, 9, 2, 2; 1999 VQ₁₃₇ *, 9, 2, 2; 1999 VR₁₃₇ *, 6, 2, 2; 1999 VS₁₃₇ *, 8, 2, 2; 1999 VT₁₃₇ *, 9, 2, 2; 1999 VU₁₃₇ *, 27, 6, 62; 1999 VV₁₃₇ *, 20, 5, 53; 1999 VW₁₃₇ *, 8, 2, 2; 1999 VX₁₃₇ *, 10, 2, 1; 1999 VY₁₃₇ *, 15, 2, 1; 1999 VZ₁₃₇ *, 8, 2, 1; 1999 WB₃₆ *, 7, 91; 1999 WC₃₆ *, 15, 3, 80; 1999 WD₁₅ *, 3, 457; 1999 WE₁₂ *, 3, 66; 1999 WF₁₈ *, 4, 58; 1999 WG₂₈ *, 6, 51; 1999 WH₁₈ *, 4, 49; 1999 WK₂₄ *, 5, 89; 1999 WL₂₀ *, 4, 52; 1999 WM₂₀ *, 4, 50; 1999 WN₁₄ *, 3, 12; 1999 WO₁₂ *, 3, 7; 1999 WP₂₄ *, 5, 64; 1999 WQ₈ *, 2, 48; 1999 WR₂₉ *, 6, 483; 1999 WS₂₃ *, 5, 564; 1999 WT₁₉ *, 4, 42; 1999 WV₂₀ *, 4, 51; 1999 WX₁₄ *, 3, 49; 1999 WY₄ *, 1, 0; 1999 WA₁ *, 24, 5, 63; 1999 WC₁ *, 15, 3, 63; 1999 WE₁ *, 17, 4, 51; 1999 WG₁ *, 14, 3, 9; 1999 WH₁ *, 10, 2, 2; 1999 WJ₁ *, 14, 3, 51; 1999 WK₁ *, 17, 4, 51; 1999 WL₁ *, 15, 3, 52; 1999 WM₁ *, 22, 5, 95; 1999 WN₁ *, 7, 2, 2; 1999 WP₁ *, 20, 4, 51; 1999 WQ₁ *, 23, 5, 120; 1999 WR₁ *, 24, 5, 63; 1999 WS₁ *, 33, 7, 94; 1999 WT₁ *, 15, 3, 13; 1999 WU₁ *, 32, 6, 89; 1999 WV₁ *, 23, 5, 64; 1999 WY₁ *, 25, 5, 41; 1999 WZ₁ *, 23, 5, 64; 1999 WA₂ *, 10, 2, 3; 1999 WB₂ *, 10, 2, 18; 1999 WD₂ *, 17, 4, 8; 1999 WE₂ *, 25, 5, 12; 1999 WJ₂ *, 30, 6, 78; 1999 WK₂ *, 23, 5, 59; 1999 WL₂ *, 13, 3, 13; 1999 WM₂ *, 24, 5, 58; 1999 WN₂ *, 30, 7, 64; 1999 WO₂ *, 27, 6, 62; 1999 WP₂ *, 20, 4, 50; 1999 WQ₂ *, 23, 5, 51; 1999 WR₂ *, 19, 4, 41; 1999 WS₂ *, 34, 7, 93; 1999 WT₂ *, 9, 2, 2; 1999 WV₂ *, 18, 4, 63; 1999 WY₂ *, 30, 7, 592; 1999 WZ₂ *, 4, 1, 0; 1999 WY₂ *, 17, 4, 64; 1999 WZ₂ *, 5, 1, 0; 1999 WA₃ *, 25, 5, 61; 1999 WB₃ *, 14, 3, 14; 1999 WC₃ *, 14, 3, 50; 1999 WD₃ *, 17, 4, 53; 1999 WE₃ *, 3, 1, 0; 1999 WF₃ *, 13, 3, 13; 1999 WG₃ *, 8, 2, 2; 1999 WH₃ *, 29, 6, 62; 1999 WJ₃ *, 13, 3, 20; 1999 WK₃ *, 23, 5, 68; 1999 WL₃ *, 25, 5, 61; 1999 WM₃ *, 32, 6, 51; 1999 WN₃ *, 29, 6, 63; 1999 WO₃ *, 29, 6, 63; 1999 WP₃ *, 23, 5, 50; 1999 WQ₃ *, 20, 4, 52; 1999 WR₃ *, 20, 4, 64; 1999 WS₃ *, 25, 5, 64; 1999 WT₃ *, 24, 5, 51; 1999 WU₃ *, 30, 6, 68; 1999 WV₃ *, 25, 5, 51; 1999 WW₃ *, 20, 4, 23; 1999 WX₃ *, 22, 5, 64; 1999 WY₃ *, 20, 4, 52; 1999 WZ₃ *, 22, 5, 64; 1999 WA₄ *, 39, 7, 51; 1999 WB₄ *, 33, 7, 51; 1999 WC₄ *, 25, 5, 49; 1999 WD₄ *, 13, 3, 49; 1999 WE₄ *, 20, 4, 51; 1999 WF₄ *, 13, 3, 24; 1999 WH₄ *, 5, 1, 0; 1999 WJ₄ *, 32, 7, 509; 1999 WK₄ *, 24, 5, 64; 1999 WL₄ *, 15, 3, 51; 1999 WM₄ *, 24, 5, 49; 1999 WN₄ *, 29, 6, 83; 1999 WO₄ *, 23, 5, 50; 1999 WQ₄ *, 20, 4, 52; 1999 WR₄ *, 19, 4, 32; 1999 WS₄ *, 20, 4, 49; 1999 WT₄ *, 24, 4, 49; 1999 WU₄ *, 20, 4, 20; 1999 WV₄ *, 15, 3, 23; 1999 WW₄ *, 28, 6, 918; 1999 WX₄ *, 19, 4, 50; 1999 WY₄ *, 24, 5, 61; 1999 WZ₄ *, 15, 3, 23; 1999 WB₅ *, 23, 5, 52; 1999 WC₅ *, 20, 4, 52; 1999 WD₅ *, 30, 6, 85; 1999 WE₅ *, 12, 3, 30; 1999 WF₅ *, 3, 1, 0; 1999 WG₅ *, 3, 1, 0; 1999 WH₅ *, 8, 2, 4; 1999 WJ₅ *, 19, 4, 103; 1999 WK₅ *, 19, 4, 59; 1999 WL₅ *, 13, 3, 64

1999 WX₉, 8, 2, 1; 1999 WY₉, 19, 4, 633; 1999 WZ₉, 13, 3, 20; 1999 WA₁₀, 20, 4, 61; 1999 WB₁₀, 22, 5, 52; 1999 WC₁₀, 22, 5, 29; 1999 WD₁₀, 4, 1, 0; 1999 WE₁₀, 10, 2, 1; 1999 WG₁₀, 5, 1, 0; 1999 WH₁₀, 5, 1, 0; 1999 WJ₁₀, 13, 3, 7; 1999 WQ₁₀, 3, 1, 0; 1999 WT₁₀, 10, 2, 3; 1999 WU₁₀, 5, 1, 0; 1999 WY₁₀, 27, 6, 57; 1999 WZ₁₀, 23, 5, 63; 1999 WA₁₁, 10, 2, 5; 1999 WB₁₁, 24, 5, 13; 1999 WC₁₁, 14, 3, 3; 1999 WD₁₁, 7, 2, 3; 1999 WE₁₁, 9, 2, 6; 1999 WF₁₁, 7, 2, 1; 1999 WG₁₁, 23, 4, 13; 1999 WH₁₁, 20, 3, 3; 1999 WJ₁₁, 9, 2, 3; 1999 WL₁₁, 18, 4, 60; 1999 WM₁₁, 19, 4, 20; 1999 WN₁₁, 21, 5, 82; 1999 WO₁₁, 15, 3, 20; 1999 WP₁₁, 30, 6, 51; 1999 WQ₁₁, 5, 1, 0; 1999 WS₁₁, 12, 3, 39; 1999 WT₁₁, 14, 3, 62; 1999 WB₁₂, 4, 1, 0; 1999 WE₁₂, 4, 1, 0; 1999 WK₁₂, 7, 2, 2; 1999 WL₁₂, 5, 1, 0; 1999 WM₁₂, 7, 2, 4; 1999 WR₁₂, 10, 2, 4; 1999 WS₁₂, 4, 1, 0; 1999 WV₁₂, 9, 2, 6; 1999 WW₁₂, 8, 1, 0; 1999 WY₁₂, 9, 2, 1; 1999 WA₁₃, 19, 4, 80; 1999 WB₁₃, 12, 3, 61; 1999 WC₁₃, 6, 2, 3; 1999 WE₁₃, 13, 3, 41; 1999 WF₁₃, 8, 2, 5; 1999 WG₁₃, 9, 2, 3; 1999 WH₁₃, 9, 2, 3; 1999 WJ₁₃, 8, 2, 5; 1999 WK₁₃, 5, 1, 0; 1999 WL₁₃, 30, 6, 90; 1999 WM₁₃, 17, 4, 52; 1999 WN₁₃, 22, 5, 63; 1999 WO₁₃, 21, 5, 63; 1999 WP₁₃, 25, 6, 64; 1999 WR₁₃, 17, 4, 50; 1999 WS₁₃, 25, 5, 114; 1999 WA₁₄, 9, 2, 2; 1999 WB₁₄, 7, 2, 3; 1999 WG₁₄, 11, 3, 2; 1999 WP₁₄, 10, 2, 3; 1999 WQ₁₄, 8, 2, 3; 1999 WT₁₄, 15, 3, 4; 1999 WV₁₄, 14, 3, 5; 1999 WZ₁₄, 8, 2, 3; 1999 WA₁₅, 9, 2, 59; 1999 WB₁₅, 10, 2, 3; 1999 WH₁₅, 6, 2, 7; 1999 WJ₁₅, 8, 2, 3; 1999 WN₁₅, 5, 1, 0; 1999 WR₁₅, 4, 1, 0; 1999 WX₁₅, 3, 1, 0; 1999 WY₁₅, 9, 2, 3; 1999 WL₁₆, 5, 1, 0; 1999 WM₁₆, 9, 2, 2; 1999 WS₁₆, 8, 2, 3; 1999 WT₁₆, 10, 2, 3; 1999 WV₁₆, 8, 2, 3; 1999 WA₁₇, 8, 2, 3; 1999 WE₁₇, 3, 1, 0; 1999 WF₁₇, 23, 5, 95; 1999 WG₁₇, 6, 2, 3; 1999 WJ₁₇, 9, 2, 9; 1999 WL₁₇, 8, 2, 31; 1999 WM₁₇, 9, 2, 9; 1999 WV₁₇, 45, 9, 171; 1999 WW₁₇, 5, 1, 0; 1999 WX₁₇, 7, 2, 37; 1999 WY₁₇, 8, 2, 3; 1999 WB₁₈, 3, 1, 0; 1999 WC₁₈, 8, 2, 3; 1999 WD₁₈, 6, 2, 5; 1999 WE₁₈, 19, 4, 33; 1999 WF₁₈, 19, 4, 51; 1999 WG₁₈, 14, 3, 58; 1999 WH₁₈, 19, 4, 53; 1999 WJ₁₈, 18, 4, 61; 1999 WK₁₈, 9, 2, 1; 1999 WL₁₈, 9, 2, 20; 1999 WN₁₈, 13, 3, 120; 1999 WO₁₈, 3, 1, 0; 1999 WR₁₈, 9, 2, 3; 1999 WE₁₉, 3, 1, 0; 1999 WF₁₉, 13, 3, 28; 1999 WJ₁₉, 4, 1, 0; 1999 WL₁₉, 5, 1, 0; 1999 XA₁₀, 10, 2, 23; 1999 XJ₁₀, 3, 1, 0; 1999 XL₁₀, 13, 3, 56; 1999 XM₁₀, 24, 5, 62; 1999 XS₁₀, 8, 2, 3; 1999 XV₁₀, 23, 5, 100; 1999 XW₁₀, 15, 3, 49; 1999 XX₁₀, 8, 2, 1; 1999 XY₁₀, 14, 3, 62; 1999 XZ₁₀, 12, 3, 49; 1999 XA₁₁, 12, 3, 49; 1999 XB₁₁, 8, 2, 1; 1999 XC₁₁, 7, 2, 1; 1999 XD₁₁, 17, 4, 62; 1999 XE₁₁, 18, 4, 24; 1999 XF₁₁, 8, 2, 1; 1999 XG₁₁, 4, 1, 0; 1999 XH₁₁, 28, 6, 62; 1999 XK₁₁, 16, 4, 23; 1999 XL₁₁, 10, 3, 50; 1999 XM₁₁, 13, 3, 76; 1999 XP₁₁, 18, 4, 116; 1999 XR₁₁, 13, 3, 3; 1999 XS₁₁, 13, 3, 20; 1999 XT₁₁, 25, 4, 44; 1999 XU₁₁, 9, 2, 13; 1999 XV₁₁, 20, 4, 28; 1999 XW₁₁, 27, 6, 624; 1999 XX₁₁, 29, 6, 93; 1999 XY₁₁, 15, 3, 115; 1999 XZ₁₁, 14, 3, 64; 1999 XA₁₂, 15, 3, 39; 1999 XB₁₂, 18, 4, 67; 1999 XF₁₂, 18, 4, 52; 1999 XG₁₂, 28, 6, 93; 1999 XH₁₂, 23, 5, 96; 1999 XK₁₂, 4, 1, 0; 1999 XL₁₂, 9, 2, 3; 1999 XO₁₂, 5, 1, 0; 1999 XP₁₂, 4, 1, 0; 1999 XR₁₂, 34, 7, 618; 1999 XS₁₂, 24, 5, 566; 1999 XU₁₂, 28, 6, 95; 1999 XV₁₂, 20, 4, 95; 1999 XW₁₂, 20, 4, 93; 1999 XZ₁₂, 12, 3, 62; 1999 XA₁₃, 10, 2, 13; 1999 XB₁₃, 10, 2, 2; 1999 XC₁₃, 25, 5, 63; 1999 XD₁₃, 5, 1, 0; 1999 XE₁₃, 19, 4, 40; 1999 XF₁₃, 22, 5, 64; 1999 XG₁₃, 18, 4, 63; 1999 XH₁₃, 8, 2, 50; 1999 XJ₁₃, 7, 2, 13; 1999 XK₁₃, 5, 1, 0; 1999 XL₁₃, 24, 5, 69; 1999 XR₁₃, 9, 2, 27; 1999 XA₁₄, 23, 5, 484; 1999 XB₁₄, 18, 4, 450; 1999 XC₁₄, 4, 1, 0; 1999 XD₁₄, 19, 4, 62; 1999 XE₁₄, 14, 3, 29; 1999 XF₁₄, 28, 6, 96; 1999 XG₁₄, 10, 2, 5; 1999 XH₁₄, 13, 3, 8; 1999 XJ₁₄, 9, 2, 2; 1999 XK₁₄, 15, 3, 13; 1999 XL₁₄, 25, 5, 63; 1999 XM₁₄, 24, 5, 63; 1999 XR₁₄, 10, 2, 2; 1999 XS₁₄, 12, 3, 13; 1999 XT₁₄, 10, 2, 2; 1999 XV₁₄, 10, 2, 2; 1999 XW₁₄, 8, 2, 2; 1999 XY₁₄, 8, 2, 2; 1999 XZ₁₄, 20, 3, 4; 1999 XA₁₅, 10, 2, 2; 1999 XB₁₅, 5, 1, 0; 1999 XC₁₅, 14, 3, 62; 1999 XD₁₅, 19, 4, 13; 1999 XE₁₅, 15, 3, 3; 1999 XF₁₅, 19, 3, 3; 1999 XG₁₅, 15, 2, 2; 1999 XH₁₅, 8, 2, 2; 1999 XK₁₅, 22, 3, 4; 1999 XL₁₅, 19, 4, 61; 1999 XM₁₅, 25, 5, 63; 1999 XN₁₅, 13, 3, 8; 1999 XO₁₅, 5, 1, 0; 1999 XP₁₅, 20, 4, 53; 1999 XQ₁₅, 23, 5, 52; 1999 XR₁₅, 23, 4, 13; 1999 XS₁₅, 4, 1, 0; 1999 XT₁₅, 12, 3, 8; 1999 XV₁₅, 4, 1, 0; 1999 XW₁₅, 15, 3, 53; 1999 XZ₁₅, 30, 6, 64; 1999 XA₁₆, 4, 1, 0; 1999 XB₁₆, 3, 53; 1999 XC₁₆, 12, 3, 6; 1999 XD₁₆, 5, 1, 0; 1999 XE₁₆, 24, 5, 56; 1999 XF₁₆, 8, 2, 7; 1999 XG₁₆, 10, 2, 3; 1999 XH₁₆, 12, 3, 13; 1999 XJ₁₆, 10, 2, 3; 1999 XK₁₆, 10, 2, 3; 1999 XL₁₆, 24, 5, 62; 1999 XM₁₆, 24, 5, 62; 1999 XN₁₆, 9, 2, 2; 1999 XO₁₆, 10, 2, 2; 1999 XP₁₆, 10, 2, 2; 1999 XQ₁₆, 10, 2, 2; 1999 XR₁₆, 8, 2, 2; 1999 XS₁₆, 12, 3, 13; 1999 XT₁₆, 29, 6, 62; 1999 XU₁₆, 10, 2, 2; 1999 XV₁₆, 10, 2, 2; 1999 XW₁₆, 8, 2, 2; 1999 XZ₁₆, 10, 2, 2; 1999 XA₁₇, 19, 4, 53; 1999 XB₁₇, 4, 1, 0; 1999 XC₁₇, 10, 2, 2; 1999 XD₁₇, 10, 2, 3; 1999 XF₁₇, 9, 2, 2; 1999 XH₁₇, 21, 5, 62; 1999 XJ₁₇, 18, 4, 63; 1999 XK₁₇, 23, 4, 72; 1999 XL₁₇, 25, 5, 63; 1999 XM₁₇, 34, 7, 507; 1999 XN₁₇, 30, 6, 63; 1999 XO₁₇, 10, 2, 59; 1999 XP₁₇, 15, 3, 47; 1999 XQ₁₇, 10, 2, 18; 1999 XR₁₇, 5, 1, 0; 1999 XS₁₇, 5, 1, 0; 1999 XT₁₇, 9, 2, 59; 1999 XU₁₇, 10, 2, 18; 1999 XV₁₇, 18, 4, 60; 1999 XW₁₇, 11, 3, 17; 1999 XY₁₇, 11, 3, 168; 1999 XZ₁₇, 19, 4, 115; 1999 XA₁₈, 16, 4, 63; 1999 XC₁₈, 9, 2, 2; 1999 XD₁₈, 24, 5, 52; 1999 XE₁₈, 28, 5, 63; 1999 XF₁₈, 17, 4, 21; 1999 XG₁₈, 27, 6, 64; 1999 XH₁₈, 17, 4, 50; 1999 XJ₁₈, 9, 2, 1; 1999 XK₁₈, 12, 3, 48; 1999 XL₁₈, 20, 4, 52; 1999 XM₁₈, 5, 1, 0; 1999 XO₁₈, 13, 3, 62; 1999 XQ₁₈, 33, 7, 171; 1999 XS₁₈, 3, 1, 0; 1999 XV₁₈, 20, 4, 62; 1999 XW₁₈, 7, 2, 55; 1999 XZ₁₈, 9, 2, 61; 1999 XA₁₉, 9, 2, 57; 1999 XB₁₉, 12, 3, 35; 1999 XC₁₉, 20, 5, 58; 1999 XD₁₉, 19, 4, 93; 1999 XE₁₉, 17, 5, 58; 1999 XF₁₉, 8, 2, 2; 1999 XG₁₉, 20, 4, 53; 1999 XH₁₉, 4, 1, 0; 1999 XI₁₉, 3, 1, 0; 1999 XJ₁₉, 4, 1, 0; 1999 XK₁₉, 10, 2, 2; 1999 XL₁₉, 10, 2, 2; 1999 XM₁₉, 22, 4, 93; 1999 XN₁₉, 20, 4, 93; 1999 XO₁₉, 14, 3, 22; 1999 XP₁₉, 15, 3, 84; 1999 XQ₁₉, 13, 3, 62; 1999 XR₁₉, 13, 3, 22; 1999 XS₁₉, 10, 2, 2; 1999 XT₁₉, 9, 2, 2; 1999 XU₁₉, 20, 5, 91; 1999 XV₁₉, 5, 1, 0; 1999 XW₁₉, 10, 2, 2; 1999 XY₁₉, 4, 1, 0; 1999 XZ₁₉, 28, 6, 127; 1999 XA₂₀, 19, 4, 91; 1999 XB₂₀, 20, 5, 91; 1999 XC₂₀, 19, 4, 83; 1999 XD₂₀, 19, 4, 67; 1999 XE₂₀, 5, 1, 0; 1999 XF₂₀, 17, 4, 504; 1999 XG₂₀, 4, 1, 0; 1999 XH₂₀, 12, 3, 61; 1999 XJ₂₀, 13, 3, 23; 1999 XK₂₀, 14, 3, 22; 1999 XL₂₀, 13, 3, 23; 1999 XM₂₀, 13, 3, 28; 1999 XN₂₀, 13, 3, 23; 1999 XO₂₀, 14, 3, 28; 1999 XP₂₀, 10, 2, 2; 1999 XQ₂₀, 15, 3, 24; 1999 XR₂₀, 5, 1, 0; 1999 XS₂₀, 14, 3, 64; 1999 XT₂₀, 29, 5, 67; 1999 XU₂₀, 15, 3, 27;

1999 XV₁₂, 3, 1, 0; 1999 XW₁₂, 4, 1, 0; 1999 XX₁₂, 17, 4, 68; 1999 XY₁₂, 19, 4, 63; 1999 XB₁₃, 5, 1, 0; 1999 XF₁₃, 15, 3, 63; 1999 XH₁₃, 4, 1, 0; 1999 XK₁₃, 20, 4, 63; 1999 XL₁₃, 8, 2, 39; 1999 XM₁₃, 4, 1, 0; 1999 XN₁₃, 17, 4, 63; 1999 XO₁₃, 22, 5, 53; 1999 XP₁₃, 8, 2, 24; 1999 XR₁₃, 18, 4, 395; 1999 XS₁₃, 23, 5, 100; 1999 XT₁₃, 12, 3, 23; 1999 XV₁₃, 12, 3, 63; 1999 XW₁₃, 14, 3, 67; 1999 XY₁₃, 9, 2, 39; 1999 XB₁₄, 14, 3, 67; 1999 XC₁₄, 6, 2, 28; 1999 XD₁₄, 4, 1, 0; 1999 XF₁₄, 17, 4, 55; 1999 XG₁₄, 17, 4, 55; 1999 XH₁₄, 10, 2, 4; 1999 XJ₁₄, 19, 4, 49; 1999 XK₁₄, 15, 3, 62; 1999 XV₁₄, 10, 2, 3; 1999 XW₁₄, 5, 1, 0; 1999 XX₁₄, 40, 4, 21; 1999 XY₁₄, 20, 4, 55; 1999 XZ₁₄, 23, 5, 61; 1999 XA₁₅, 19, 4, 62; 1999 XC₁₅, 9, 2, 1; 1999 XD₁₅, 9, 2, 3; 1999 XE₁₅, 14, 3, 20; 1999 XF₁₅, 8, 2, 3; 1999 XG₁₅, 11, 3, 63; 1999 XH₁₅, 19, 4, 28; 1999 XJ₁₅, 34, 8, 1034; 1999 XK₁₅, 24, 5, 53; 1999 XL₁₅, 28, 6, 64; 1999 XM₁₅, 25, 4, 51; 1999 XN₁₅, 31, 7, 63; 1999 XO₁₅, 23, 4, 40; 1999 XP₁₅, 18, 4, 51; 1999 XQ₁₅, 20, 4, 29; 1999 XR₁₅, 17, 4, 63; 1999 XS₁₅, 9, 2, 30; 1999 XT₁₅, 17, 4, 31; 1999 XU₁₅, 19, 4, 48; 1999 XV₁₅, 19, 4, 48; 1999 XX₁₅, 17, 4, 559; 1999 XY₁₅, 5, 1, 0; 1999 XZ₁₅, 14, 3, 51; 1999 XB₁₆, 5, 1, 0; 1999 XD₁₆, 15, 3, 27; 1999 XE₁₆, 23, 5, 62; 1999 XF₁₆, 14, 3, 63; 1999 XG₁₆, 25, 5, 111; 1999 XJ₁₆, 14, 3, 67; 1999 XQ₁₆, 15, 3, 61; 1999 XR₁₆, 10, 2, 1; 1999 XS₁₆, 15, 3, 3; 1999 XV₁₆, 15, 3, 61; 1999 XX₁₆, 21, 5, 58; 1999 XA₁₇, 14, 3, 53; 1999 XC₁₇, 12, 3, 4; 1999 XD₁₇, 24, 3, 4; 1999 XE₁₇, 6, 2, 1; 1999 XF₁₇, 25, 5, 56; 1999 XG₁₇, 14, 3, 4; 1999 XH₁₇, 9, 2, 17; 1999 XJ₁₇, 19, 4, 6; 1999 XK₁₇, 5, 1, 0; 1999 XP₁₇, 10, 2, 16; 1999 XT₁₇, 19, 4, 62; 1999 XZ₁₇, 10, 2, 2; 1999 XB₁₈, 8, 2, 8; 1999 XE₁₈, 10, 2, 3; 1999 XF₁₈, 8, 2, 59; 1999 XG₁₈, 4, 1, 0; 1999 XH₁₈, 15, 3, 60; 1999 XJ₁₈, 5, 1, 0; 1999 XL₁₈, 5, 1, 0; 1999 XM₁₈, 30, 6, 628; 1999 XO₁₈, 19, 4, 116; 1999 XP₁₈, 15, 3, 54; 1999 XR₁₈, 25, 5, 115; 1999 XT₁₈, 5, 1, 0; 1999 XU₁₈, 23, 5, 98; 1999 XV₁₈, 47, 10, 169; 1999 XB₁₉, 10, 2, 44; 1999 XC₁₉, 7, 2, 36; 1999 XD₁₉, 18, 4, 62; 1999 XE₁₉, 10, 2, 8; 1999 XK₁₉, 5, 1, 0; 1999 XL₁₉, 14, 3, 5; 1999 XN₁₉, 4, 1, 0; 1999 XO₁₉, 17, 4, 11; 1999 XP₁₉, 25, 5, 94; 1999 XR₁₉, 14, 3, 11; 1999 XS₁₉, 9, 2, 2; 1999 XU₁₉, 14, 3, 11; 1999 XX₁₉, 5, 1, 0; 1999 XZ₁₉, 10, 2, 2; 1999 XA₂₀, 25, 5, 63; 1999 XE₂₀, 14, 3, 63; 1999 XF₂₀, 8, 2, 2; 1999 XJ₂₀, 30, 5, 63; 1999 XL₂₀, 20, 4, 61; 1999 XM₂₀, 5, 1, 0; 1999 XN₂₀, 9, 2, 2; 1999 XO₂₀, 14, 3, 12; 1999 XP₂₀, 10, 2, 63; 1999 XS₂₀, 14, 3, 63; 1999 XU₂₀, 29, 6, 508; 1999 XW₂₀, 13, 3, 59; 1999 XY₂₀, 30, 6, 95; 1999 XB₂₁, 19, 4, 61; 1999 XC₂₁, 28, 6, 59; 1999 XD₂₁, 15, 3, 63; 1999 XE₂₁, 5, 1, 0; 1999 XJ₂₁, 3, 1, 0; 1999 XO₂₁, 8, 2, 39; 1999 XQ₂₁, 15, 3, 27; 1999 XV₂₁, 10, 2, 3; 1999 XW₂₁, 18, 4, 52; 1999 XX₂₁, 18, 4, 51; 1999 XZ₂₁, 15, 3, 420; 1999 XA₂₂, 15, 3, 25; 1999 XE₂₂, 10, 2, 2; 1999 XF₂₂, 10, 2, 3; 1999 XG₂₂, 4, 1, 0; 1999 XK₂₂, 8, 2, 13; 1999 XL₂₂, 14, 3, 51; 1999 XP₂₂, 25, 5, 62; 1999 XT₂₂, 22, 5, 61; 1999 XU₂₂, 25, 5, 79; 1999 XZ₂₂, 5, 1, 0; 1999 XE₂₃, 5, 1, 0; 1999 XJ₂₃, 10, 2, 2; 1999 XN₂₃, 30, 6, 560; 1999 XH₂₃, 13, 3, 62; 1999 XJ₂₃, 11, 3, 64; 1999 XM₂₃, 9, 2, 2; 1999 XN₂₃, 23, 5, 509; 1999 XO₂₃, 13, 3, 8; 1999 XR₂₃, 27, 2, 39; 1999 XT₂₃, 10, 2, 1; 1999 XU₂₃, 33, 7, 96; 1999 XZ₂₃, 25, 5, 60; 1999 XA₂₄, 29, 6, 93; 1999 XX₂₃, 31, 7, 98; 1999 XY₂₃, 18, 4, 93; 1999 XZ₂₃, 15, 3, 93; 1999 XA₂₄, 29, 6, 67; 1999 XB₂₄, 20, 4, 62; 1999 XF₂₄, 20, 3, 50; 1999 XJ₂₄, 10, 2, 3; 1999 XK₂₄, 8, 2, 18; 1999 XL₂₄, 24, 5, 64; 1999 XN₂₄, 10, 2, 2; 1999 XO₂₄, 5, 1, 0; 1999 XP₂₄, 25, 5, 62; 1999 XQ₂₄, 24, 5, 63; 1999 XS₂₄, 20, 4, 13; 1999 XT₂₄, 34, 7, 616; 1999 XU₂₄, 29, 6, 63; 1999 XV₂₄, 10, 2, 5; 1999 XW₂₄, 22, 5, 63; 1999 XX₂₄, 14, 3, 12; 1999 XY₂₄, 35, 6, 65; 1999 XZ₂₄, 23, 5, 65; 1999 XA₂₅, 23, 5, 63; 1999 XB₂₅, 9, 2, 2; 1999 XC₂₅, 14, 3, 62; 1999 XD₂₅, 23, 5, 64; 1999 XE₂₅, 5, 1, 0; 1999 XF₂₅, 23, 4, 40; 1999 XG₂₅, 20, 4, 63; 1999 XH₂₅, 14, 3, 23; 1999 XJ₂₅, 25, 5, 63; 1999 XK₂₅, 24,

1999 XJ₃₂, 14, 3, 51; 1999 XK₃₂, 13, 3, 5; 1999 XL₃₂, 8, 2, 2; 1999 XM₃₂, 9, 2, 2; 1999 XN₃₂, 14, 3, 50; 1999 XO₃₂, 23, 5, 4; 1999 XP₃₂, 6, 2, 1; 1999 XQ₃₂, 10, 2, 2; 1999 XR₃₂, 5, 1, 0; 1999 XS₃₂, 10, 2, 2; 1999 XT₃₂, 10, 2, 2; 1999 XV₃₂, 15, 3, 51; 1999 XW₃₂, 10, 2, 2; 1999 XX₃₂, 15, 3, 51; 1999 XY₃₂, 10, 2, 2; 1999 XZ₃₂, 10, 2, 2; 1999 XA₃₃, 10, 2, 2; 1999 XB₃₃, 9, 2, 51; 1999 XC₃₃, 10, 2, 2; 1999 XE₃₃, 3, 1, 0; 1999 XF₃₃, 10, 2, 2; 1999 XG₃₃, 15, 3, 52; 1999 XH₃₃, 10, 2, 2; 1999 XK₃₃, 8, 2, 4; 1999 XL₃₃, 14, 3, 52; 1999 XM₃₃, 18, 4, 508; 1999 XN₃₃, 10, 2, 2; 1999 XO₃₃, 20, 4, 50; 1999 XP₃₃, 10, 2, 2; 1999 XQ₃₃, 5, 1, 0; 1999 XR₃₃, 32, 7, 556; 1999 XS₃₃, 14, 3, 51; 1999 XU₃₃, 10, 2, 3; 1999 XV₃₃, 14, 3, 51; 1999 XA₃₄, 10, 2, 2; 1999 XB₃₄, 14, 3, 22; 1999 XC₃₄, 20, 4, 507; 1999 XF₃₄, 15, 3, 50; 1999 XG₃₄, 10, 2, 3; 1999 XH₃₄, 14, 3, 51; 1999 XJ₃₄, 25, 5, 52; 1999 XL₃₄, 10, 2, 2; 1999 XN₃₄, 13, 3, 52; 1999 XP₃₄, 11, 3, 4; 1999 XQ₃₄, 14, 3, 508; 1999 XR₃₄, 10, 2, 2; 1999 XS₃₄, 18, 3, 2; 1999 XT₃₄, 15, 3, 52; 1999 XU₃₄, 10, 2, 2; 1999 XV₃₄, 10, 2, 2; 1999 XW₃₄, 10, 2, 2; 1999 XX₃₄, 10, 2, 2; 1999 XA₃₅, 8, 2, 2; 1999 XB₃₅, 10, 2, 3; 1999 XL₃₅, 17, 4, 67; 1999 XM₃₅, 12, 3, 51; 1999 XN₃₅, 8, 2, 46; 1999 XO₃₅, 4, 1, 0; 1999 XP₃₅, 5, 1, 0; 1999 XS₃₅, 14, 3, 9; 1999 XU₃₅, 30, 6, 64; 1999 XV₃₅, 16, 4, 36; 1999 XW₃₅, 29, 6, 62; 1999 XX₃₅, 21, 2, 2; 1999 XY₃₅, 14, 3, 20; 1999 XZ₃₅, 14, 3, 5; 1999 XA₃₆, 28, 6, 86; 1999 XB₃₆, 15, 3, 20; 1999 XC₃₆, 16, 4, 24; 1999 XD₃₆, 25, 5, 52; 1999 XE₃₆, 13, 3, 2; 1999 XF₃₆, 19, 4, 49; 1999 XG₃₆, 14, 3, 20; 1999 XH₃₆, 23, 5, 53; 1999 XJ₃₆, 6, 2, 63; 1999 XK₃₆, 9, 2, 63; 1999 XL₃₆, 24, 5, 53; 1999 XM₃₆, 13, 3, 92; 1999 XN₃₆, 5, 1, 0; 1999 XO₃₆, 5, 1, 0; 1999 XP₃₆, 14, 3, 90; 1999 XQ₃₆, 10, 2, 71; 1999 XR₃₆, 5, 1, 0; 1999 XS₃₆, 3, 1, 0; 1999 XT₃₆, 4, 1, 0; 1999 XU₃₆, 15, 3, 64; 1999 XV₃₆, 4, 1, 0; 1999 XW₃₆, 8, 2, 18; 1999 XX₃₆, 19, 4, 64; 1999 XZ₃₆, 21, 5, 63; 1999 XA₃₇, 19, 4, 64; 1999 XB₃₇, 19, 4, 89; 1999 XC₃₇, 29, 6, 100; 1999 XD₃₇, 25, 5, 63; 1999 XE₃₇, 24, 5, 63; 1999 XF₃₇, 15, 3, 63; 1999 XG₃₇, 17, 4, 39; 1999 XH₃₇, 13, 3, 37; 1999 XJ₃₇, 20, 4, 63; 1999 XK₃₇, 14, 3, 39; 1999 XL₃₇, 25, 5, 65; 1999 XM₃₇, 15, 3, 20; 1999 XN₃₇, 5, 1, 0; 1999 XO₃₇, 15, 4, 67; 1999 XP₃₇, 38, 8, 510; 1999 XQ₃₇, 24, 5, 62; 1999 XR₃₇, 10, 2, 13; 1999 XS₃₇, 29, 6, 62; 1999 XV₃₇, 10, 2, 62; 1999 XX₃₇, 9, 2, 1; 1999 XY₃₇, 35, 6, 54; 1999 XA₃₈, 18, 4, 51; 1999 XB₃₈, 29, 6, 51; 1999 XC₃₈, 16, 4, 61; 1999 XD₃₈, 6, 2, 52; 1999 XE₃₈, 24, 5, 90; 1999 XF₃₈, 15, 3, 20; 1999 XG₃₈, 9, 2, 1; 1999 XH₃₈, 7, 2, 1; 1999 XJ₃₈, 8, 2, 1; 1999 XK₃₈, 23, 5, 51; 1999 XL₃₈, 4, 1, 0; 1999 XR₃₈, 14, 3, 48; 1999 XS₃₈, 28, 6, 62; 1999 XV₃₈, 19, 4, 67; 1999 XA₃₉, 15, 3, 28; 1999 XB₃₉, 19, 3, 28; 1999 XD₃₉, 29, 6, 506; 1999 XE₃₉, 17, 4, 64; 1999 XF₃₉, 8, 2, 27; 1999 XG₃₉, 19, 4, 64; 1999 XH₃₉, 13, 3, 63; 1999 XL₃₉, 30, 6, 63; 1999 XM₃₉, 5, 1, 0; 1999 XN₃₉, 25, 5, 68; 1999 XO₃₉, 25, 5, 62; 1999 XU₃₉, 17, 4, 68; 1999 XW₃₉, 19, 4, 24; 1999 XY₃₉, 4, 1, 0; 1999 XZ₃₉, 20, 4, 26; 1999 XA₄₀, 20, 4, 55; 1999 XB₄₀, 10, 2, 24; 1999 XD₄₀, 19, 4, 24; 1999 XF₄₀, 14, 3, 445; 1999 XG₄₀, 15, 3, 53; 1999 XJ₄₀, 10, 2, 2; 1999 XL₄₀, 10, 2, 2; 1999 XM₄₀, 5, 1, 0; 1999 XO₄₀, 22, 5, 63; 1999 XU₄₀, 14, 3, 53; 1999 XV₄₀, 26, 6, 93; 1999 XY₄₀, 10, 2, 2; 1999 XZ₄₀, 5, 1, 0; 1999 XB₄₁, 10, 2, 2; 1999 XC₄₁, 18, 4, 13; 1999 XD₄₁, 18, 3, 11; 1999 XF₄₁, 9, 2, 3; 1999 XH₄₁, 9, 2, 2; 1999 XJ₄₁, 10, 2, 2; 1999 XL₄₁, 8, 2, 27; 1999 XN₄₁, 5, 1, 0; 1999 XR₄₁, 3, 1, 0; 1999 XT₄₁, 9, 2, 13; 1999 XU₄₁, 15, 3, 13; 1999 XV₄₁, 14, 2, 2; 1999 XW₄₁, 15, 3, 13; 1999 XX₄₁, 28, 6, 36; 1999 XY₄₁, 10, 2, 3; 1999 XZ₄₁, 23, 5, 64; 1999 XA₄₂, 14, 3, 7; 1999 XB₄₂, 15, 2, 1; 1999 XC₄₂, 15, 2, 1; 1999 XD₄₂, 24, 4, 26; 1999 XE₄₂, 20, 3, 3; 1999 XH₄₂, 23, 5, 64; 1999 XJ₄₂, 10, 2, 2; 1999 XK₄₂, 9, 2, 6; 1999 XL₄₂, 7, 2, 6; 1999 XM₄₂, 10, 2, 2; 1999 XO₄₂, 23, 5, 456; 1999 XP₄₂, 17, 4, 41; 1999 XQ₄₂, 3, 1, 0; 1999 XR₄₂, 5, 1, 0; 1999 XT₄₂, 19, 4, 13; 1999 XV₄₂, 8, 2, 3; 1999 XW₄₂, 5, 1, 0; 1999 XX₄₂, 10, 2, 2; 1999 XZ₄₂, 20, 4, 13; 1999 XB₄₃, 10, 2, 51; 1999 XD₄₃, 18, 4, 62; 1999 XF₄₃, 29, 6, 541; 1999 XG₄₃, 15, 3, 25; 1999 XH₄₃, 15, 3, 13; 1999 XJ₄₃, 9, 2, 3; 1999 XK₄₃, 5, 1, 0; 1999 XL₄₃, 10, 2, 2; 1999 XO₄₃, 18, 4, 62; 1999 XP₄₃, 15, 3, 13; 1999 XQ₄₃, 10, 2, 2; 1999 XR₄₃, 13, 3, 13; 1999 XS₄₃, 4, 1, 0; 1999 XU₄₃, 20, 4, 64; 1999 XV₄₃, 10, 2, 2; 1999 XW₄₃, 10, 2, 2; 1999 XX₄₃, 10, 2, 2; 1999 XZ₄₃, 10, 2, 2; 1999 XA₄₄, 10, 2, 2; 1999 XB₄₄, 22, 5, 456; 1999 XD₄₄, 14, 3, 53; 1999 XE₄₄, 19, 4, 543; 1999 XF₄₄, 15, 3, 13; 1999 XH₄₄, 14, 3, 62; 1999 XK₄₄, 5, 1, 0; 1999 XL₄₄, 15, 3, 13; 1999 XM₄₄, 14, 3, 11; 1999 XQ₄₄, 14, 3, 13; 1999 XT₄₄, 9, 2, 3; 1999 XU₄₄, 9, 2, 6; 1999 XV₄₄, 10, 2, 2; 1999 XW₄₄, 10, 2, 2; 1999 XX₄₄, 10, 2, 3; 1999 XY₄₄, 10, 2, 3; 1999 XZ₄₄, 15, 3, 11; 1999 XA₄₅, 10, 2, 2; 1999 XB₄₅, 8, 2, 8; 1999 XD₄₅, 24, 5, 83; 1999 XE₄₅, 5, 1, 0; 1999 XF₄₅, 10, 2, 2; 1999 XG₄₅, 15, 2, 2; 1999 XH₄₅, 23, 5, 63; 1999 XJ₄₅, 15, 3, 62; 1999 XK₄₅, 9, 2, 2; 1999 XL₄₅, 4, 1, 0; 1999 XM₄₅, 14, 3, 8; 1999 XN₄₅, 5, 1, 0; 1999 XP₄₅, 14, 3, 13; 1999 XQ₄₅, 3, 1, 0; 1999 XS₄₅, 19, 4, 13; 1999 XT₄₅, 19, 4, 41; 1999 XX₄₅, 10, 2, 3; 1999 XY₄₅, 10, 2, 2; 1999 XZ₄₅, 5, 1, 0; 1999 XA₄₆, 5, 1, 0; 1999 XB₄₆, 5, 1, 0; 1999 XD₄₆, 14, 3, 7; 1999 XH₄₆, 9, 2, 2; 1999 XJ₄₆, 15, 3, 7; 1999 XK₄₆, 8, 2, 3; 1999 XL₄₆, 10, 2, 7; 1999 XN₄₆, 15, 3, 12; 1999 XO₄₆, 15, 3, 52; 1999 XP₄₆, 8, 2, 8; 1999 XQ₄₆, 14, 3, 8; 1999 XS₄₆, 21, 4, 13; 1999 XT₄₆, 10, 2, 3; 1999 XU₄₆, 10, 2, 13; 1999 XW₄₆, 15, 3, 2; 1999 XY₄₆, 15, 3, 2; 1999 XZ₄₆, 9, 2, 456; 1999 XA₄₇, 14, 3, 2; 1999 XB₄₇, 15, 3, 13; 1999 XD₄₇, 9, 2, 2; 1999 XG₄₇, 13, 3, 13; 1999 XH₄₇, 5, 1, 0; 1999 XJ₄₇, 5, 1, 0; 1999 XK₄₇, 4, 1, 0; 1999 XL₄₇, 15, 3, 13; 1999 XN₄₇, 11, 3, 7; 1999 XO₄₇, 10, 2, 2; 1999 XP₄₇, 15, 3, 13; 1999 XQ₄₇, 4, 1, 0; 1999 XR₄₇, 34, 6, 61; 1999 XT₄₇, 9, 2, 2; 1999 XU₄₇, 10, 2, 13; 1999 XV₄₇, 13, 3, 8; 1999 XW₄₇, 17, 4, 63; 1999 XY₄₇, 9, 2, 3; 1999 XZ₄₇, 15, 3, 13; 1999 XA₄₈, 9, 2, 2; 1999 XC₄₈, 15, 2, 2; 1999 XD₄₈, 24, 4, 13; 1999 XE₄₈, 10, 1, 0; 1999 XF₄₈, 10, 1, 0; 1999 XH₄₈, 9, 2, 457; 1999 XJ₄₈, 18, 3, 52; 1999 XK₄₈, 15, 3, 13; 1999 XL₄₈, 12, 3, 13; 1999 XO₄₈, 5, 1, 0; 1999 XN₄₈, 10, 2, 3; 1999 XS₄₈, 14, 3, 13; 1999 XU₄₈, 9, 2, 1; 1999 XV₄₈, 10, 2, 2; 1999 XX₄₈, 23, 5, 64; 1999 XZ₄₈, 23, 5, 61; 1999 XA₄₉, 17, 4, 64; 1999 XB₄₉, 10, 2, 13; 1999 XC₄₉, 8, 2, 2; 1999 XE₄₉, 5, 1, 0; 1999 XF₄₉, 20, 4, 41; 1999 XH₄₉, 7, 2, 13; 1999 XJ₄₉, 9, 2, 2; 1999 XK₄₉, 10, 2, 2; 1999 XL₄₉, 9, 2, 2; 1999 XM₄₉, 18, 4, 62; 1999 XN₄₉, 8, 2, 3; 1999 XO₄₉, 15, 3, 7;

1999 XP₄₉, 8, 2, 3; 1999 XQ₄₉, 10, 2, 2; 1999 XR₄₉, 6, 2, 2; 1999 XS₄₉, 7, 2, 3; 1999 XT₄₉, 9, 2, 3; 1999 XU₄₉, 4, 1, 0; 1999 XV₄₉, 7, 2, 7; 1999 XW₄₉, 10, 2, 3; 1999 XX₄₉, 5, 1, 0; 1999 XY₄₉, 19, 4, 13; 1999 XZ₄₉, 5, 1, 0; 1999 XB₅₀, 5, 1, 0; 1999 XC₅₀, 5, 1, 0; 1999 XD₅₀, 14, 3, 7; 1999 XE₅₀, 10, 2, 2; 1999 XF₅₀, 8, 2, 3; 1999 XG₅₀, 15, 3, 7; 1999 XH₅₀, 10, 2, 3; 1999 XJ₅₀, 12, 3, 52; 1999 XK₅₀, 9, 2, 2; 1999 XL₅₀, 4, 1, 0; 1999 XN₅₀, 13, 3, 8; 1999 XO₅₀, 5, 1, 0; 1999 XP₅₀, 9, 2, 2; 1999 XQ₅₀, 10, 2, 2; 1999 XS₅₀, 8, 2, 2; 1999 XT₅₀, 20, 4, 63; 1999 XU₅₀, 4, 1, 0; 1999 XV₅₀, 11, 3, 13; 1999 XY₅₀, 4, 1, 0; 1999 XZ₅₀, 4, 1, 0; 1999 XA₅₁, 3, 1, 0; 1999 XC₅₁, 28, 6, 64; 1999 XD₅₁, 10, 2, 2; 1999 XF₅₁, 5, 1, 0; 1999 XH₅₁, 9, 2, 3; 1999 XJ₅₁, 25, 5, 61; 1999 XK₅₁, 10, 2, 3; 1999 XL₅₁, 10, 2, 3; 1999 XM₅₁, 10, 2, 3; 1999 XN₅₁, 10, 2, 7; 1999 XO₅₁, 5, 1, 0; 1999 XP₅₁, 15, 3, 58; 1999 XS₅₁, 9, 2, 3; 1999 XT₅₁, 14, 3, 8; 1999 XV₅₁, 8, 2, 3; 1999 XW₅₁, 17, 4, 11; 1999 XY₅₁, 10, 2, 3; 1999 XA₅₂, 8, 2, 2; 1999 XB₅₂, 10, 2, 2; 1999 XD₅₂, 27, 6, 61; 1999 XE₅₂, 9, 2, 2; 1999 XH₅₂, 13, 3, 58; 1999 XK₅₂, 9, 2, 2; 1999 XM₅₂, 25, 5, 62; 1999 XN₅₂, 9, 2, 2; 1999 XQ₅₂, 13, 3, 8; 1999 XR₅₂, 20, 4, 64; 1999 XT₅₂, 8, 2, 2; 1999 XU₅₂, 13, 3, 55; 1999 XV₅₂, 5, 1, 0; 1999 XA₅₃, 11, 3, 8; 1999 XB₅₃, 21, 5, 58; 1999 XD₅₃, 14, 3, 56; 1999 XE₅₃, 18, 4, 14; 1999 XF₅₃, 8, 2, 3; 1999 XH₅₃, 11, 3, 55; 1999 XJ₅₃, 15, 3, 8; 1999 XK₅₃, 21, 5, 63; 1999 XL₅₃, 10, 2, 3; 1999 XM₅₃, 15, 3, 52; 1999 XQ₅₃, 4, 1, 0; 1999 XR₅₃, 5, 1, 0; 1999 XT₅₃, 3, 1, 0; 1999 XY₅₃, 15, 3, 8; 1999 XZ₅₃, 4, 1, 0; 1999 XA₅₄, 10, 2, 2; 1999 XB₅₄, 10, 2, 2; 1999 XC₅₄, 8, 2, 52; 1999 XD₅₄, 18, 4, 457; 1999 XE₅₄, 21, 5, 506; 1999 XF₅₄, 8, 2, 2; 1999 XG₅₄, 25, 4, 63; 1999 XH₅₄, 14, 3, 13; 1999 XK₅₄, 5, 1, 0; 1999 XM₅₄, 5, 1, 0; 1999 XN₅₄, 8, 2, 11; 1999 XP₅₄, 13, 3, 52; 1999 XQ₅₄, 3, 1, 0; 1999 XS₅₄, 5, 1, 0; 1999 XU₅₄, 10, 2, 3; 1999 XW₅₄, 9, 2, 5; 1999 XZ₅₄, 9, 2, 5; 1999 XA₅₅, 5, 1, 0; 1999 XB₅₅, 10, 2, 3; 1999 XE₅₅, 10, 2, 3; 1999 XF₅₅, 5, 1, 0; 1999 XH₅₅, 19, 4, 61; 1999 XJ₅₅, 8, 2, 5; 1999 XM₅₅, 18, 4, 58; 1999 XS₅₅, 8, 2, 3; 1999 XU₅₅, 28, 6, 64; 1999 XW₅₅, 10, 2, 3; 1999 XX₅₅, 10, 2, 3; 1999 XB₅₆, 4, 1, 0; 1999 XC₅₆, 3, 1, 0; 1999 XD₅₆, 4, 1, 0; 1999 XE₅₆, 16, 4, 58; 1999 XH₅₆, 13, 3, 61; 1999 XJ₅₆, 15, 3, 8; 1999 XK₅₆, 12, 3, 8; 1999 XN₅₆, 8, 2, 3; 1999 XO₅₆, 22, 5, 64; 1999 XQ₅₆, 18, 4, 52; 1999 XS₅₆, 18, 4, 57; 1999 XT₅₆, 10, 2, 3; 1999 XU₅₆, 3, 1, 0; 1999 XV₅₆, 9, 2, 3; 1999 XW₅₆, 24, 5, 63; 1999 XZ₅₆, 21, 5, 64; 1999 XB₅₇, 9, 2, 2; 1999 XC₅₇, 10, 2, 2; 1999 XE₅₇, 16, 4, 63; 1999 XJ₅₇, 4, 1, 0; 1999 XL₅₇, 9, 2, 2; 1999 XQ₅₇, 12, 3, 14; 1999 XU₅₇, 4, 1, 0; 1999 XV₅₇, 9, 2, 1; 1999 XW₅₇, 13, 3, 63; 1999 XZ₅₇, 5, 1, 0; 1999 XB₅₈, 8, 2, 11; 1999 XF₅₈, 17, 4, 63; 1999 XG₅₈, 11, 3, 57; 1999 XO₅₈, 9, 2, 2; 1999 XP₅₈, 24, 5, 58; 1999 XQ₅₈, 8, 2, 1; 1999 XR₅₈, 3, 1, 0; 1999 XS₅₈, 12, 3, 8; 1999 XT₅₈, 14, 3, 58; 1999 XV₅₈, 20, 5, 63; 1999 XW₅₈, 9, 2, 3; 1999 XX₅₈, 10, 2, 3; 1999 XZ₅₈, 4, 1, 0; 1999 XA₅₉, 19, 4, 58; 1999 XB₅₉, 6, 2, 3; 1999 XD₅₉, 13, 3, 62; 1999 XE₅₉, 10, 2, 3; 1999 XF₅₉, 10, 2, 3; 1999 XG₅₉, 14, 3, 58; 1999 XH₅₉, 7, 2, 7; 1999 XJ₅₉, 25, 6, 92; 1999 XK₅₉, 9, 2, 3; 1999 XL₅₉, 15, 4, 58; 1999 XT₅₉, 13, 3, 63; 1999 XU₅₉, 13, 3, 57; 1999 XW₅₉, 19, 4, 58; 1999 XX₅₉, 16, 4, 61; 1999 XZ₅₉, 8, 2, 3; 1999 XB₆₀, 7, 2, 3; 1999 XF₆₀, 9, 2, 3; 1999 XG₆₀, 5, 1, 0; 1999 XJ₆₀, 11, 3, 63; 1999 XK₆₀, 28, 6, 64; 1999 XL₆₀, 5, 1, 0; 1999 XN₆₀, 3, 1, 0; 1999 XR₆₀, 10, 2, 1; 1999 XS₆₀, 9, 2, 1; 1999 XT₆₀, 20, 4, 58; 1999 XV₆₀, 8, 2, 1; 1999 XW₆₀, 15, 4, 63; 1999 XZ₆₀, 3, 1, 0; 1999 XA₆₁, 7, 2, 1; 1999 XG₆₁, 14, 3, 58; 1999 XH₆₁, 15, 3, 63; 1999 XD₆₁, 7, 2, 3; 1999 XE₆₁, 24, 5, 63; 1999 XF₆₁, 15, 3, 63; 1999 XJ₆₁, 9, 2, 2; 1999 XJ₆₁, 18, 4, 58; 1999 XK₆₁, 15, 3, 63; 1999 XM₆₁, 3, 1, 0; 1999 XO₆₁, 11, 3, 64; 1999 XQ₆₁, 11, 3, 63; 1999 XS₆₁, 7, 2, 1; 1999 XZ₆₁, 7, 2, 2; 1999 XY₆₁, 9, 2, 1; 1999 XZ₆₁, 19, 4, 42; 1999 XC₆₂, 13, 3, 13; 1999 XD₆₂, 17, 3, 13; 1999 XE₆₂, 8, 2, 3; 1999 XG₆₂, 10, 2, 3; 1999 XH₆₂, 7, 2, 3; 1999 XK₆₂, 10, 2, 3; 19

15, 4, 53; 1999 XM₇₁, 13, 3, 51; 1999 XP₇₁, 20, 4, 52; 1999 XQ₇₁, 12, 3, 58; 1999 XR₇₁, 13, 3, 58; 1999 XS₇₁, 15, 3, 64; 1999 XT₇₁, 8, 2, 1; 1999 XU₇₁, 15, 3, 56; 1999 XV₇₁, 15, 3, 58; 1999 XW₇₁, 12, 3, 58; 1999 XA₇₂, 4, 1, 0; 1999 XE₇₂, 13, 3, 61; 1999 XG₇₂, 8, 2, 1; 1999 XJ₇₂, 9, 2, 2; 1999 XK₇₂, 10, 3, 58; 1999 XL₇₂, 8, 2, 1; 1999 XM₇₂, 22, 5, 973; 1999 XN₇₂, 12, 3, 51; 1999 XO₇₂, 10, 2, 57; 1999 XP₇₂, 10, 2, 1; 1999 XQ₇₂, 9, 2, 1; 1999 XR₇₂, 8, 2, 1; 1999 XS₇₂, 13, 3, 63; 1999 XT₇₂, 19, 4, 52; 1999 XY₇₂, 4, 1, 0; 1999 XZ₇₂, 19, 4, 64; 1999 XD₇₃, 5, 1, 0; 1999 XE₇₃, 8, 2, 1; 1999 XF₇₃, 8, 2, 1; 1999 XG₇₃, 7, 2, 1; 1999 XK₇₃, 16, 4, 58; 1999 XL₇₃, 17, 4, 58; 1999 XM₇₃, 3, 1, 0; 1999 XO₇₃, 13, 3, 61; 1999 XP₇₃, 18, 4, 57; 1999 XQ₇₃, 15, 3, 48; 1999 XR₇₃, 8, 2, 1; 1999 XS₇₃, 9, 2, 2; 1999 XV₇₃, 13, 3, 63; 1999 XW₇₃, 15, 3, 50; 1999 XY₇₃, 10, 2, 1; 1999 XZ₇₃, 15, 3, 48; 1999 XA₇₄, 8, 2, 2; 1999 XC₇₄, 22, 5, 581; 1999 XD₇₄, 9, 2, 2; 1999 XG₇₄, 10, 2, 1; 1999 XH₇₄, 12, 3, 52; 1999 XJ₇₄, 4, 1, 0; 1999 XL₇₄, 9, 2, 1; 1999 XM₇₄, 18, 4, 52; 1999 XN₇₄, 6, 2, 1; 1999 XO₇₄, 24, 5, 64; 1999 XQ₇₄, 3, 1, 0; 1999 XR₇₄, 20, 4, 64; 1999 XU₇₄, 10, 2, 2; 1999 XY₇₄, 4, 1, 0; 1999 XZ₇₄, 10, 2, 2; 1999 XB₇₅, 7, 2, 1; 1999 XD₇₅, 10, 2, 1; 1999 XE₇₅, 13, 3, 52; 1999 XF₇₅, 9, 2, 1; 1999 XG₇₅, 10, 2, 1; 1999 XH₇₅, 10, 2, 1; 1999 XO₇₅, 8, 2, 1; 1999 XP₇₅, 9, 2, 2; 1999 XR₇₅, 9, 2, 1; 1999 XT₇₅, 4, 1, 0; 1999 XU₇₅, 10, 2, 1; 1999 XW₇₅, 10, 2, 1; 1999 XY₇₅, 10, 2, 2; 1999 XZ₇₅, 10, 2, 1; 1999 XA₇₆, 10, 2, 1; 1999 XD₇₆, 23, 5, 52; 1999 XE₇₆, 10, 2, 1; 1999 XF₇₆, 10, 2, 1; 1999 XG₇₆, 14, 3, 23; 1999 XJ₇₆, 13, 3, 52; 1999 XO₇₆, 14, 3, 507; 1999 XQ₇₆, 14, 3, 64; 1999 XR₇₆, 7, 2, 1; 1999 XU₇₆, 8, 2, 1; 1999 XZ₇₆, 9, 2, 1; 1999 XF₇₇, 10, 2, 1; 1999 XH₇₇, 10, 2, 2; 1999 XJ₇₇, 5, 1, 0; 1999 XK₇₇, 4, 1, 0; 1999 XM₇₇, 9, 2, 1; 1999 XN₇₇, 10, 2, 2; 1999 XO₇₇, 14, 3, 21; 1999 XP₇₇, 5, 1, 0; 1999 XR₇₇, 10, 2, 1; 1999 XS₇₇, 4, 1, 0; 1999 XT₇₇, 13, 3, 20; 1999 XV₇₇, 17, 4, 21; 1999 XY₇₇, 8, 2, 3; 1999 XA₇₈, 7, 2, 3; 1999 XB₇₈, 19, 4, 53; 1999 XC₇₈, 7, 2, 3; 1999 XD₇₈, 19, 4, 56; 1999 XE₇₈, 24, 5, 57; 1999 XH₇₈, 14, 3, 56; 1999 XJ₇₈, 20, 4, 56; 1999 XL₇₈, 9, 2, 53; 1999 XM₇₈, 8, 2, 8; 1999 XN₇₈, 10, 2, 3; 1999 XS₇₈, 11, 3, 56; 1999 XV₇₈, 5, 1, 0; 1999 XA₇₉, 9, 2, 3; 1999 XH₇₉, 6, 2, 3; 1999 XR₇₉, 13, 3, 50; 1999 XT₇₉, 4, 1, 0; 1999 XA₈₀, 3, 1, 0; 1999 XB₈₀, 3, 1, 0; 1999 XF₈₀, 7, 2, 3; 1999 XO₈₀, 9, 2, 1; 1999 XR₈₀, 4, 1, 0; 1999 XV₈₀, 15, 3, 57; 1999 XZ₈₀, 5, 1, 0; 1999 XB₈₁, 19, 4, 23; 1999 XE₈₁, 4, 1, 0; 1999 XF₈₁, 6, 2, 1; 1999 XJ₈₁, 3, 1, 0; 1999 XK₈₁, 5, 1, 0; 1999 XM₈₁, 5, 1, 0; 1999 XP₈₁, 10, 2, 1; 1999 XR₈₁, 10, 2, 1; 1999 XT₈₁, 10, 2, 2; 1999 XU₈₁, 10, 2, 1; 1999 XV₈₁, 8, 2, 1; 1999 XW₈₁, 6, 2, 2; 1999 XX₈₁, 12, 3, 500; 1999 XY₈₁, 12, 3, 1001; 1999 XZ₈₁, 10, 2, 1; 1999 XJ₈₂, 8, 2, 1; 1999 XN₈₂, 7, 2, 57; 1999 XO₈₂, 17, 4, 52; 1999 XQ₈₂, 16, 3, 2; 1999 XR₈₂, 8, 2, 1; 1999 XS₈₂, 15, 3, 61; 1999 XT₈₂, 13, 3, 4; 1999 XU₈₂, 13, 3, 62; 1999 XV₈₂, 13, 3, 64; 1999 XW₈₂, 13, 3, 64; 1999 XX₈₂, 8, 2, 1; 1999 XY₈₂, 23, 3, 61; 1999 XZ₈₂, 23, 2, 1; 1999 XA₈₃, 17, 4, 4; 1999 XB₈₃, 8, 2, 1; 1999 XD₈₃, 10, 2, 1; 1999 XE₈₃, 8, 2, 1; 1999 XG₈₃, 10, 2, 1; 1999 XH₈₃, 10, 2, 2; 1999 XJ₈₃, 14, 3, 62; 1999 XK₈₃, 10, 2, 2; 1999 XM₈₃, 10, 2, 1; 1999 XN₈₃, 10, 2, 1; 1999 XP₈₃, 8, 2, 1; 1999 XQ₈₃, 8, 2, 1; 1999 XR₈₃, 8, 2, 1; 1999 XT₈₃, 12, 3, 4; 1999 XU₈₃, 15, 3, 5; 1999 XV₈₃, 5, 1, 0; 1999 XX₈₃, 8, 2, 1; 1999 XZ₈₃, 19, 3, 5; 1999 XA₈₄, 13, 3, 4; 1999 XB₈₄, 8, 2, 1; 1999 XC₈₄, 15, 3, 5; 1999 XE₈₄, 14, 3, 5; 1999 XG₈₄, 17, 4, 4; 1999 XH₈₄, 9, 2, 1; 1999 XJ₈₄, 13, 3, 48; 1999 XK₈₄, 15, 3, 49; 1999 XL₈₄, 13, 3, 2; 1999 XM₈₄, 22, 4, 508; 1999 XN₈₄, 13, 3, 2; 1999 XO₈₄, 10, 2, 1; 1999 XP₈₄, 10, 2, 1; 1999 XQ₈₄, 20, 3, 5; 1999 XR₈₄, 8, 2, 1; 1999 XS₈₄, 8, 2, 1; 1999 XZ₈₄, 22, 3, 2; 1999 XX₈₄, 10, 2, 1; 1999 XY₈₄, 8, 2, 1; 1999 XZ₈₄, 11, 3, 4; 1999 XA₈₅, 8, 2, 1; 1999 XC₈₅, 22, 4, 24; 1999 XD₈₅, 17, 4, 51; 1999 XE₈₅, 13, 3, 2; 1999 XF₈₅, 17, 3, 5; 1999 XG₈₅, 15, 3, 48; 1999 XH₈₅, 10, 2, 1; 1999 XJ₈₅, 9, 2, 1; 1999 XL₈₅, 10, 2, 1; 1999 XM₈₅, 8, 2, 1; 1999 XN₈₅, 10, 2, 4; 1999 XO₈₅, 10, 2, 1; 1999 XP₈₅, 8, 2, 1; 1999 XQ₈₅, 10, 2, 2; 1999 XR₈₅, 21, 5, 508; 1999 XS₈₅, 8, 2, 48; 1999 XU₈₅, 13, 2, 1; 1999 XW₈₅, 5, 1, 0; 1999 XX₈₅, 10, 2, 2; 1999 XZ₈₅, 10, 2, 1; 1999 XA₈₆, 5, 1, 0; 1999 XD₈₆, 20, 4, 53; 1999 XE₈₆, 15, 3, 5; 1999 XH₈₆, 9, 2, 2; 1999 XJ₈₆, 9, 2, 1; 1999 XK₈₆, 10, 2, 1; 1999 XL₈₆, 14, 3, 5; 1999 XN₈₆, 10, 2, 49; 1999 XO₈₆, 5, 1, 0; 1999 XQ₈₆, 15, 3, 48; 1999 XR₈₆, 10, 2, 1; 1999 XS₈₆, 20, 3, 48; 1999 XZ₈₆, 8, 2, 1; 1999 XV₈₆, 5, 1, 0; 1999 XW₈₆, 10, 2, 1; 1999 XX₈₆, 9, 2, 50; 1999 XY₈₆, 13, 3, 49; 1999 XZ₈₆, 20, 3, 50; 1999 XC₈₇, 14, 3, 48; 1999 XE₈₇, 15, 3, 48; 1999 XF₈₇, 5, 1, 0; 1999 XJ₈₇, 3, 1, 0; 1999 XK₈₇, 12, 2, 17; 1999 XL₈₇, 9, 2, 19; 1999 XM₈₇, 10, 3, 16; 1999 XN₈₇, 30, 6, 61; 1999 XO₈₇, 17, 4, 507; 1999 XQ₈₇, 13, 3, 2; 1999 XV₈₇, 10, 2, 4; 1999 XZ₈₇, 13, 3, 64; 1999 XC₈₈, 19, 3, 65; 1999 XE₈₈, 5, 1, 0; 1999 XF₈₈, 9, 2, 1; 1999 XG₈₈, 8, 2, 2; 1999 XH₈₈, 7, 2, 1; 1999 XJ₈₈, 11, 3, 2; 1999 XK₈₈, 8, 2, 1; 1999 XL₈₈, 9, 2, 1; 1999 XO₈₈, 12, 3, 501; 1999 XQ₈₈, 8, 2, 1; 1999 XS₈₈, 7, 2, 1; 1999 XV₈₈, 10, 2, 4; 1999 XW₈₈, 8, 2, 2; 1999 XY₈₈, 9, 2, 1; 1999 XZ₈₈, 13, 3, 4; 1999 XA₈₉, 6, 2, 4; 1999 XB₈₉, 7, 2, 1; 1999 XC₈₉, 13, 3, 5; 1999 XE₈₉, 10, 2, 1; 1999 XH₈₉, 19, 3, 5; 1999 XJ₈₉, 17, 4, 4; 1999 XK₈₉, 12, 3, 5; 1999 XM₈₉, 8, 2, 1; 1999 XN₈₉, 7, 2, 1; 1999 XO₈₉, 13, 3, 2; 1999 XP₈₉, 10, 2, 5; 1999 XQ₈₉, 7, 2, 1; 1999 XR₈₉, 8, 2, 2; 1999 XS₈₉, 10, 2, 1; 1999 XT₈₉, 10, 2, 2; 1999 XU₈₉, 8, 2, 1; 1999 XW₈₉, 8, 2, 1; 1999 XX₈₉, 8, 2, 1; 1999 XY₈₉, 8, 2, 1; 1999 XA₉₀, 12, 3, 23; 1999 XB₉₀, 19, 3, 2; 1999 XC₉₀, 13, 3, 419; 1999 XD₉₀, 8, 2, 1; 1999 XE₉₀, 8, 2, 1; 1999 XF₉₀, 8, 2, 1; 1999 XG₉₀, 15, 3, 5; 1999 XH₉₀, 3, 1, 0; 1999 XJ₉₀, 25, 5, 29; 1999 XK₉₀, 6, 2, 1; 1999 XL₉₀, 9, 2, 1; 1999 XM₉₀, 10, 2, 2; 1999 XN₉₀, 7, 2, 1; 1999 XO₉₀, 5, 1, 0; 1999 XP₉₀, 8, 2, 1; 1999 XR₉₀, 13, 3, 51; 1999 XS₉₀, 20, 4, 5; 1999 XT₉₀, 6, 2, 1; 1999 XV₉₀, 23, 4, 5; 1999 XW₉₀, 15, 3, 3; 1999 XX₉₀, 8, 2, 1; 1999 XY₉₀, 10, 2, 2; 1999 XZ₉₀, 8, 2, 1; 1999 XA₉₁, 10, 2, 1; 1999 XB₉₁, 3, 1, 0; 1999 XC₉₁, 11, 3, 79; 1999 XD₉₁, 10, 2, 1; 1999 XJ₉₁, 15, 2, 1; 1999 XK₉₁, 14, 3, 49; 1999 XL₉₁, 13, 3, 49; 1999 XP₉₁, 4, 1, 0; 1999 XQ₉₁, 15, 2, 1; 1999 XR₉₁, 10, 2, 1; 1999 XU₉₁, 8, 2, 28; 1999 XV₉₁, 9, 2, 28; 1999 XW₉₁, 10, 2, 22; 1999 XX₉₁, 10, 3, 15; 1999 XB₉₂, 23, 4, 5; 1999 XD₉₂, 7, 2, 1; 1999 XH₉₂, 5, 1, 0; 1999 XK₉₂,

16, 4, 1009; 1999 XL₉₂, 13, 2, 2; 1999 XM₉₂, 8, 2, 1; 1999 XN₉₂, 8, 2, 1; 1999 XO₉₂, 5, 1, 0; 1999 XQ₉₂, 5, 1, 0; 1999 XS₉₂, 10, 3, 64; 1999 XV₉₂, 7, 2, 1; 1999 XW₉₂, 10, 2, 2; 1999 XX₉₂, 8, 2, 1; 1999 XY₉₂, 8, 2, 1; 1999 XZ₉₂, 9, 2, 1; 1999 XA₉₃, 12, 3, 2; 1999 XB₉₃, 8, 2, 1; 1999 XC₉₃, 8, 2, 4; 1999 XE₉₃, 8, 2, 1; 1999 XG₉₃, 22, 5, 52; 1999 XH₉₃, 20, 4, 55; 1999 XJ₉₃, 15, 3, 52; 1999 XK₉₃, 14, 3, 48; 1999 XL₉₃, 15, 3, 49; 1999 XM₉₃, 9, 2, 49; 1999 XN₉₃, 10, 2, 1; 1999 XO₉₃, 20, 4, 49; 1999 XP₉₃, 24, 5, 49; 1999 XQ₉₃, 14, 3, 48; 1999 XS₉₃, 10, 2, 1; 1999 XT₉₃, 12, 3, 51; 1999 XU₉₃, 15, 3, 48; 1999 XV₉₃, 10, 2, 1; 1999 XX₉₃, 18, 4, 55; 1999 XY₉₃, 10, 2, 2; 1999 XZ₉₃, 10, 2, 1; 1999 XA₉₄, 13, 3, 2; 1999 XB₉₄, 33, 7, 417; 1999 XC₉₄, 17, 4, 49; 1999 XD₉₄, 9, 2, 2; 1999 XF₉₄, 15, 3, 48; 1999 XG₉₄, 7, 2, 1; 1999 XH₉₄, 4, 1, 0; 1999 XJ₉₄, 8, 2, 1; 1999 XK₉₄, 10, 2, 1; 1999 XL₉₄, 13, 3, 20; 1999 XM₉₄, 12, 3, 4; 1999 XN₉₄, 9, 2, 2; 1999 XO₉₄, 14, 3, 5; 1999 XP₉₄, 14, 3, 49; 1999 XQ₉₄, 14, 3, 51; 1999 XR₉₄, 18, 4, 5; 1999 XS₉₄, 20, 4, 49; 1999 XT₉₄, 10, 2, 2; 1999 XU₉₄, 10, 2, 2; 1999 XX₉₄, 8, 2, 1; 1999 XY₉₄, 5, 1, 0; 1999 XZ₉₄, 10, 2, 2; 1999 XA₉₅, 28, 6, 594; 1999 XC₉₅, 10, 2, 23; 1999 XD₉₅, 10, 2, 35; 1999 XE₉₅, 4, 1, 0; 1999 XF₉₅, 16, 4, 25; 1999 XG₉₅, 14, 3, 20; 1999 XH₉₅, 14, 3, 20; 1999 XJ₉₅, 25, 5, 82; 1999 XK₉₅, 5, 1, 0; 1999 XM₉₅, 9, 2, 18; 1999 XN₉₅, 19, 4, 24; 1999 XO₉₅, 19, 4, 20; 1999 XP₉₅, 3, 1, 0; 1999 XQ₉₅, 19, 4, 25; 1999 XR₉₅, 25, 5, 51; 1999 XS₉₅, 9, 2, 18; 1999 XT₉₅, 24, 5, 49; 1999 XV₉₅, 10, 2, 18; 1999 XW₉₅, 17, 4, 65; 1999 XX₉₅, 19, 4, 49; 1999 XY₉₅, 18, 4, 49; 1999 XZ₉₅, 15, 3, 47; 1999 XA₉₆, 14, 3, 20; 1999 XB₉₆, 9, 2, 18; 1999 XC₉₆, 13, 3, 20; 1999 XE₉₆, 20, 4, 53; 1999 XF₉₆, 22, 5, 91; 1999 XG₉₆, 26, 6, 62; 1999 XH₉₆, 15, 3, 51; 1999 XK₉₆, 15, 3, 51; 1999 XL₉₆, 27, 6, 56; 1999 XM₉₆, 35, 6, 643; 1999 XN₉₆, 20, 4, 62; 1999 XO₉₆, 20, 4, 62; 1999 XP₉₆, 24, 5, 56; 1999 XQ₉₆, 20, 4, 51; 1999 XR₉₆, 24, 5, 62; 1999 XS₉₆, 15, 3, 51; 1999 XT₉₆, 14, 3, 53; 1999 XU₉₆, 34, 3, 51; 1999 XV₉₆, 15, 3, 51; 1999 XX₉₆, 13, 3, 53; 1999 XY₉₆, 21, 5, 56; 1999 XZ₉₆, 13, 3, 51; 1999 XA₉₇, 13, 3, 51; 1999 XB₉₇, 13, 3, 51; 1999 XC₉₇, 19, 2, 56; 1999 XD₉₇, 21, 5, 51; 1999 XF₉₇, 28, 3, 51; 1999 XG₉₇, 19, 4, 62; 1999 XH₉₇, 35, 4, 62; 1999 XJ₉₇, 34, 4, 56; 1999 XM₉₇, 20, 4, 56; 1999 XN₉₇, 12, 3, 49; 1999 XO₉₇, 20, 4, 62; 1999 XP₉₇, 30, 6, 62; 1999 XQ₉₇, 21, 5, 62; 1999 XR₉₇, 10, 2, 1; 1999 XS₉₇, 12, 3, 57; 1999 XT₉₇, 15, 3, 56; 1999 XU₉₇, 18, 4, 62; 1999 XV₉₇, 13, 3, 51; 1999 XW₉₇, 13, 3, 20; 1999 XX₉₇, 15, 3, 51; 1999 XY₉₇, 13, 3, 51; 1999 XZ₉₇, 23, 5, 62; 1999 XA₉₈, 10, 2, 1; 1999 XB₉₈, 14, 3, 3; 1999 XD₉₈, 20, 4, 53; 1999 XE₉₈, 15, 3, 51; 1999 XF₉₈, 9, 2, 1; 1999 XH₉₈, 19, 4, 62; 1999 XJ₉₈, 10, 2, 1; 1999 XK₉₈, 15, 3, 64; 1999 XL₉₈, 14, 3, 49; 1999 XM₉₈, 15, 3, 49; 1999 XN₉₈, 19, 4, 49; 1999 XO₉₈, 14, 3, 51; 1999 XP₉₈, 22, 5, 62; 1999 XQ₉₈, 15, 3, 51; 1999 XR₉₈, 8, 2, 1; 1999 XS₉₈, 10, 2, 1; 1999 XT₉₈, 18, 4, 68; 1999 XU₉₈, 20, 5, 51; 1999 XV₉₈, 10, 2, 1; 1999 XW₉₈, 15, 3, 51; 1999 XZ₉₈, 13, 3, 51; 1999 XA₉₉, 30, 6, 68; 1999 XB₉₉, 30, 6, 68; 1999 XC₉₉, 11, 3, 51; 1999 XD₉₉, 9, 2, 1; 1999 XE₉₉, 19, 5, 62; 1999 XG₉₉, 10, 2, 1; 1999 XH₉₉, 10, 2, 1; 1999 XJ₉₉, 7, 2, 1; 1999 XK₉₉, 9, 2, 1; 1999 XL₉₉, 17, 4, 49; 1999 XM₉₉, 9, 2, 1; 1999 XN₉₉, 15, 3, 62; 1999 XO₉₉, 10, 2, 1; 1999 XP₉₉, 21, 5, 64; 1999 XQ₉₉, 19, 4, 53; 1999 XR₉₉, 18, 4, 62; 1999 XS₉₉, 39, 7, 51; 1999 XU₉₉, 15, 3, 505; 1999 XV₉₉, 9, 2, 1; 1999 XW₉₉, 9, 2, 1; 1999 XX₉₉, 10, 2, 1; 1999 XZ₉₉, 9, 2, 1; 1999 XB₁₀₀, 9, 2, 1; 1999 XC₁₀₀, 21, 5, 52; 1999 XD₁₀₀, 7, 2, 1; 1999 XE₁₀₀, 20, 4, 62; 1999 XF₁₀₀, 10, 2, 1; 1999 XG₁₀₀, 14, 3, 49; 1999 XH₁₀₀, 18, 4, 62; 1999 XJ₁₀₀, 21, 5, 557; 1999 XO₁₀₀, 9, 2, 1; 1999 XQ₁₀₀, 7, 2, 1; 1999 XR₁₀₀, 10, 2, 1; 1999 XS₁₀₀, 9, 2, 1; 1999 XT₁₀₀, 28, 3, 2; 1999 XU₁₀₀, 13, 3, 62; 1999 XV₁₀₀, 10, 2, 1; 1999 XX₁₀₀, 7, 2, 1; 1999 XY₁₀₀, 9, 2, 1; 1999 XZ₁₀₀, 10, 2, 1; 1999 XA₁₀₁, 10, 2, 1; 1999 XB₁₀₁, 10, 2, 1; 1999 XC₁₀₁, 10, 2, 1; 1999 XE₁₀₁, 10, 2, 1; 1999 XF₁₀₁, 13, 3, 5; 1999 XG₁₀₁, 19, 4, 505; 1999 XH₁₀₁, 14, 3, 20; 1999 XJ₁₀₁, 10, 2, 1; 1999 XL₁₀₁, 10, 2, 1; 19

3, 44; 1999 XR₁₀₆, 24, 5, 95; 1999 XT₁₀₆, 14, 3, 10; 1999 XW₁₀₆, 28, 6, 95; 1999 XX₁₀₆, 34, 7, 98; 1999 XZ₁₀₆, 10, 2, 2; 1999 XA₁₀₇, 9, 2, 2; 1999 XC₁₀₇, 20, 4, 594; 1999 XD₁₀₇, 21, 5, 557; 1999 XE₁₀₇, 9, 2, 3; 1999 XK₁₀₇, 36, 7, 95; 1999 XN₁₀₇, 15, 3, 53; 1999 XQ₁₀₇, 24, 5, 95; 1999 XR₁₀₇, 30, 6, 63; 1999 XT₁₀₇, 19, 4, 64; 1999 XU₁₀₇, 10, 2, 2; 1999 XF₁₀₈, 19, 4, 33; 1999 XH₁₀₈, 9, 2, 5; 1999 XR₁₀₈, 10, 2, 2; 1999 XU₁₀₈, 23, 5, 64; 1999 XX₁₀₈, 9, 2, 5; 1999 XY₁₀₈, 14, 3, 32; 1999 XE₁₀₉, 35, 7, 64; 1999 XF₁₀₉, 28, 5, 65; 1999 XH₁₀₉, 14, 3, 40; 1999 XL₁₀₉, 20, 4, 62; 1999 XP₁₀₉, 19, 4, 31; 1999 XQ₁₀₉, 15, 3, 29; 1999 XR₁₀₉, 3, 1, 0; 1999 XS₁₀₉, 29, 6, 63; 1999 XT₁₀₉, 29, 6, 62; 1999 XU₁₀₉, 15, 3, 29; 1999 XY₁₀₉, 27, 6, 64; 1999 XZ₁₀₉, 29, 6, 372; 1999 XB₁₁₀, 19, 4, 40; 1999 XD₁₁₀, 9, 2, 7; 1999 XE₁₁₀, 10, 2, 33; 1999 XJ₁₁₀, 10, 2, 2; 1999 XK₁₁₀, 8, 2, 3; 1999 XM₁₁₀, 9, 2, 19; 1999 XQ₁₁₀, 15, 4, 64; 1999 XR₁₁₀, 18, 4, 62; 1999 XT₁₁₀, 7, 2, 2; 1999 XU₁₁₀, 41, 9, 561; 1999 XV₁₁₀, 17, 4, 64; 1999 XW₁₁₀, 10, 2, 35; 1999 XY₁₁₀, 25, 5, 40; 1999 XB₁₁₁, 20, 4, 61; 1999 XD₁₁₁, 14, 3, 28; 1999 XK₁₁₁, 18, 4, 65; 1999 XR₁₁₁, 6, 2, 3; 1999 XS₁₁₁, 7, 2, 1; 1999 XV₁₁₁, 11, 3, 13; 1999 XW₁₁₁, 12, 3, 7; 1999 XX₁₁₁, 8, 2, 8; 1999 XY₁₁₁, 9, 2, 7; 1999 XA₁₁₂, 5, 1, 0; 1999 XB₁₁₂, 23, 5, 61; 1999 XE₁₁₂, 13, 3, 8; 1999 XF₁₁₂, 6, 2, 1; 1999 XH₁₁₂, 28, 6, 62; 1999 XK₁₁₂, 15, 3, 24; 1999 XL₁₁₂, 10, 2, 18; 1999 XM₁₁₂, 5, 1, 0; 1999 XP₁₁₂, 15, 3, 64; 1999 XD₁₁₃, 20, 4, 98; 1999 XE₁₁₃, 10, 2, 1; 1999 XJ₁₁₃, 14, 3, 63; 1999 XL₁₁₃, 5, 1, 0; 1999 XM₁₁₃, 17, 4, 122; 1999 XN₁₁₃, 10, 2, 62; 1999 XP₁₁₃, 18, 3, 63; 1999 XR₁₁₃, 14, 3, 89; 1999 XU₁₁₃, 10, 2, 63; 1999 XW₁₁₃, 9, 2, 62; 1999 XQ₁₁₄, 9, 2, 61; 1999 XR₁₁₄, 9, 2, 18; 1999 XT₁₁₄, 10, 2, 62; 1999 XV₁₁₄, 10, 2, 62; 1999 XW₁₁₄, 10, 2, 62; 1999 XA₁₁₅, 14, 3, 103; 1999 XD₁₁₅, 9, 2, 5; 1999 XG₁₁₅, 15, 3, 13; 1999 XJ₁₁₅, 13, 3, 29; 1999 XL₁₁₅, 18, 4, 53; 1999 XN₁₁₅, 9, 2, 2; 1999 XO₁₁₅, 4, 1, 0; 1999 XQ₁₁₅, 3, 1, 0; 1999 XY₁₁₅, 14, 3, 29; 1999 XT₁₁₅, 16, 4, 64; 1999 XU₁₁₅, 12, 3, 91; 1999 XW₁₁₅, 24, 5, 93; 1999 XJ₁₁₅, 8, 2, 29; 1999 XD₁₁₆, 30, 6, 66; 1999 XE₁₁₆, 15, 3, 29; 1999 XF₁₁₆, 20, 4, 64; 1999 XJ₁₁₆, 25, 5, 66; 1999 XL₁₁₆, 3, 1, 0; 1999 XM₁₁₆, 10, 2, 22; 1999 XO₁₁₆, 14, 3, 478; 1999 XP₁₁₆, 23, 5, 64; 1999 XU₁₁₆, 20, 4, 64; 1999 XW₁₁₆, 15, 3, 35; 1999 XZ₁₁₆, 19, 4, 64; 1999 XY₁₁₆, 24, 5, 64; 1999 XZ₁₁₆, 10, 2, 35; 1999 XA₁₁₇, 27, 6, 64; 1999 XK₁₁₇, 19, 4, 559; 1999 XD₁₁₇, 10, 2, 35; 1999 XE₁₁₇, 9, 2, 25; 1999 XF₁₁₇, 7, 2, 2; 1999 XJ₁₁₇, 28, 6, 93; 1999 XK₁₁₇, 15, 4, 91; 1999 XM₁₁₇, 13, 3, 40; 1999 XO₁₁₇, 17, 4, 42; 1999 XP₁₁₇, 5, 1, 0; 1999 XS₁₁₇, 9, 2, 11; 1999 XT₁₁₇, 13, 3, 42; 1999 XV₁₁₇, 5, 1, 0; 1999 XW₁₁₇, 3, 1, 0; 1999 XZ₁₁₇, 15, 3, 2; 1999 XA₁₁₈, 15, 3, 2; 1999 XB₁₁₈, 9, 2, 2; 1999 XC₁₁₈, 19, 4, 35; 1999 XD₁₁₈, 10, 2, 35; 1999 XE₁₁₈, 29, 6, 64; 1999 XF₁₁₈, 9, 2, 1; 1999 XG₁₁₈, 10, 2, 1; 1999 XH₁₁₈, 20, 4, 35; 1999 XO₁₁₈, 15, 3, 13; 1999 XP₁₁₈, 27, 6, 42; 1999 XQ₁₁₈, 12, 3, 35; 1999 XR₁₁₈, 23, 5, 35; 1999 XS₁₁₈, 22, 5, 42; 1999 XU₁₁₈, 13, 3, 35; 1999 XW₁₁₈, 10, 2, 6; 1999 XX₁₁₈, 10, 2, 2; 1999 XA₁₁₉, 5, 1, 0; 1999 XC₁₁₉, 10, 2, 2; 1999 XF₁₁₉, 5, 1, 0; 1999 XG₁₁₉, 3, 1, 0; 1999 XH₁₁₉, 10, 2, 1; 1999 XJ₁₁₉, 9, 2, 29; 1999 XK₁₁₉, 5, 1, 0; 1999 XP₁₁₉, 15, 3, 1; 1999 XY₁₁₉, 14, 3, 29; 1999 XB₁₂₀, 29, 6, 64; 1999 XE₁₂₀, 27, 6, 64; 1999 XF₁₂₀, 21, 5, 62; 1999 XJ₁₂₀, 32, 7, 125; 1999 XN₁₂₀, 12, 3, 29; 1999 XO₁₂₀, 32, 7, 90; 1999 XP₁₂₀, 5, 1, 0; 1999 XR₁₂₀, 8, 2, 2; 1999 XT₁₂₀, 24, 5, 64; 1999 XX₁₂₀, 5, 1, 0; 1999 XY₁₂₀, 30, 7, 90; 1999 XZ₁₂₀, 4, 1, 0; 1999 XD₁₂₁, 20, 4, 42; 1999 XF₁₂₁, 20, 4, 37; 1999 XH₁₂₁, 3, 1, 0; 1999 XJ₁₂₁, 15, 3, 31; 1999 XK₁₂₁, 10, 2, 29; 1999 XM₁₂₁, 13, 3, 23; 1999 XP₁₂₁, 10, 2, 23; 1999 XQ₁₂₁, 23, 5, 62; 1999 XS₁₂₁, 7, 2, 23; 1999 XT₁₂₁, 24, 5, 29; 1999 XU₁₂₁, 4, 1, 0; 1999 XV₁₂₁, 21, 5, 122; 1999 XX₁₂₁, 20, 4, 167; 1999 XA₁₂₂, 23, 5, 64; 1999 XB₁₂₂, 19, 4, 60; 1999 XD₁₂₂, 4, 1, 0; 1999 XE₁₂₂, 3, 1, 0; 1999 XG₁₂₂, 12, 3, 22; 1999 XL₁₂₂, 8, 2, 2; 1999 XM₁₂₂, 8, 2, 1; 1999 XO₁₂₂, 11, 3, 25; 1999 XS₁₂₂, 3, 1, 0; 1999 XW₁₂₂, 19, 4, 25; 1999 XD₁₂₃, 11, 3, 71; 1999 XF₁₂₃, 4, 1, 0; 1999 XM₁₂₃, 13, 3, 25; 1999 XO₁₂₃, 17, 4, 25; 1999 XP₁₂₃, 5, 1, 0; 1999 XR₁₂₃, 4, 1, 0; 1999 XT₁₂₃, 13, 3, 25; 1999 XV₁₂₃, 17, 4, 505; 1999 XW₁₂₃, 14, 3, 25; 1999 XF₁₂₄, 3, 1, 0; 1999 XK₁₂₄, 14, 3, 25; 1999 XM₁₂₄, 14, 3, 20; 1999 XR₁₂₄, 4, 1, 0; 1999 XW₁₂₄, 6, 2, 5; 1999 XX₁₂₄, 14, 3, 25; 1999 XB₁₂₅, 5, 1, 0; 1999 XD₁₂₅, 13, 3, 42; 1999 XH₁₂₅, 9, 2, 1; 1999 XQ₁₂₅, 3, 1, 0; 1999 XR₁₂₅, 18, 4, 62; 1999 XT₁₂₅, 12, 3, 31; 1999 XU₁₂₅, 13, 3, 48; 1999 XV₁₂₅, 10, 2, 29; 1999 XY₁₂₅, 15, 3, 20; 1999 XZ₁₂₅, 24, 5, 570; 1999 XB₁₂₆, 19, 4, 62; 1999 XD₁₂₆, 7, 2, 19; 1999 XE₁₂₆, 9, 2, 20; 1999 XK₁₂₆, 18, 4, 25; 1999 XL₁₂₆, 4, 1, 0; 1999 XM₁₂₆, 8, 2, 19; 1999 XO₁₂₆, 10, 2, 29; 1999 XP₁₂₆, 30, 6, 91; 1999 XQ₁₂₆, 19, 4, 505; 1999 XR₁₂₆, 5, 1, 0; 1999 XS₁₂₆, 4, 1, 0; 1999 XT₁₂₆, 15, 3, 20; 1999 XV₁₂₆, 18, 4, 70; 1999 XW₁₂₆, 8, 2, 1; 1999 XY₁₂₆, 4, 1, 0; 1999 XA₁₂₇, 16, 4, 25; 1999 XB₁₂₇, 14, 3, 20; 1999 XC₁₂₇, 9, 2, 29; 1999 XD₁₂₇, 5, 1, 0; 1999 XE₁₂₇, 15, 3, 29; 1999 XF₁₂₇, 43, 9, 98; 1999 XH₁₂₇, 19, 4, 39; 1999 XJ₁₂₇, 29, 5, 39; 1999 XK₁₂₇, 11, 3, 39; 1999 XL₁₂₇, 15, 3, 23; 1999 XM₁₂₇, 3, 1, 0; 1999 XN₁₂₇, 14, 3, 51; 1999 XP₁₂₇, 13, 3, 30; 1999 XQ₁₂₇, 29, 6, 63; 1999 XR₁₂₇, 8, 2, 40; 1999 XS₁₂₇, 8, 2, 22; 1999 XT₁₂₇, 18, 4, 40; 1999 XU₁₂₇, 20, 4, 41; 1999 XV₁₂₇, 10, 3, 28; 1999 XW₁₂₇, 5, 1, 0; 1999 XD₁₂₈, 14, 3, 5; 1999 XJ₁₂₈, 9, 2, 3; 1999 XN₁₂₈, 13, 3, 48; 1999 XP₁₂₈, 7, 2, 21; 1999 XQ₁₂₈, 19, 5, 56; 1999 XS₁₂₈, 18, 4, 21; 1999 XT₁₂₈, 3, 1, 0; 1999 XV₁₂₈, 10, 2, 18; 1999 XW₁₂₈, 8, 2, 18; 1999 XX₁₂₈, 20, 3, 21; 1999 XY₁₂₈, 14, 2, 1; 1999 XZ₁₂₈, 22, 4, 21; 1999 XA₁₂₉, 9, 2, 1; 1999 XB₁₂₉, 19, 3, 19; 1999 XC₁₂₉, 8, 2, 1; 1999 XD₁₂₉, 7, 2, 1; 1999 XF₁₂₉, 14, 3, 2; 1999 XG₁₂₉, 7, 2, 18; 1999 XH₁₂₉, 7, 2, 19; 1999 XM₁₂₉, 4, 1, 0; 1999 XN₁₂₉, 4, 1, 0; 1999 XO₁₂₉, 5, 1, 0; 1999 XP₁₂₉, 8, 2, 18; 1999 XR₁₂₉, 8, 2, 18; 1999 XS₁₂₉, 10, 2, 18; 1999 XT₁₂₉, 8, 2, 18; 1999 XU₁₂₉, 13, 3, 18; 1999 XV₁₂₉, 9, 2, 18; 1999 XW₁₂₉, 4, 1, 0; 1999 XY₁₂₉, 9, 2, 20; 1999 XA₁₃₀, 17, 4, 585; 1999 XB₁₃₀, 22, 5, 60; 1999 XD₁₃₀, 3, 1, 0; 1999 XF₁₃₀, 10, 2, 18; 1999 XG₁₃₀, 5, 1, 0; 1999 XH₁₃₀, 16, 3, 20; 1999 XJ₁₃₀, 14, 3, 20; 1999 XK₁₃₀, 8, 2, 2; 1999 XL₁₃₀, 10, 2, 2; 1999 XM₁₃₀, 9, 2, 20; 1999 XN₁₃₀, 10, 2, 18; 1999 XO₁₃₀, 13, 3, 19;

1999 XR₁₃₀, 10, 3, 18; 1999 XS₁₃₀, 8, 2, 2; 1999 XT₁₃₀, 3, 1, 0; 1999 XU₁₃₀, 7, 2, 1; 1999 XY₁₃₀, 8, 2, 18; 1999 XZ₁₃₀, 18, 4, 20; 1999 XC₁₃₁, 3, 1, 0; 1999 XG₁₃₁, 14, 3, 20; 1999 XJ₁₃₁, 4, 1, 0; 1999 XN₁₃₁, 9, 2, 3; 1999 XP₁₃₁, 8, 2, 1; 1999 XT₁₃₁, 6, 1, 0; 1999 XU₁₃₁, 10, 1, 0; 1999 XV₁₃₁, 5, 1, 0; 1999 XX₁₃₁, 4, 1, 0; 1999 XY₁₃₁, 10, 3, 20; 1999 XZ₁₃₁, 3, 1, 0; 1999 XB₁₃₂, 12, 3, 20; 1999 XC₁₃₂, 4, 1, 0; 1999 XD₁₃₂, 3, 1, 0; 1999 XE₁₃₂, 13, 3, 20; 1999 XG₁₃₂, 13, 3, 20; 1999 XH₁₃₂, 10, 2, 24; 1999 XJ₁₃₂, 20, 4, 48; 1999 XM₁₃₂, 14, 3, 20; 1999 XN₁₃₂, 4, 1, 0; 1999 XQ₁₃₂, 5, 1, 0; 1999 XS₁₃₂, 14, 3, 24; 1999 XU₁₃₂, 8, 2, 18; 1999 XV₁₃₂, 10, 2, 18; 1999 XW₁₃₂, 5, 1, 0; 1999 XB₁₃₃, 13, 3, 18; 1999 XC₁₃₃, 8, 2, 15; 1999 XD₁₃₃, 13, 3, 18; 1999 XE₁₃₃, 20, 3, 18; 1999 XF₁₃₃, 5, 1, 0; 1999 XG₁₃₃, 14, 3, 37; 1999 XH₁₃₃, 10, 2, 18; 1999 XJ₁₃₃, 14, 3, 37; 1999 XK₁₃₃, 9, 2, 1; 1999 XL₁₃₃, 15, 3, 18; 1999 XN₁₃₃, 5, 1, 0; 1999 XO₁₃₃, 12, 3, 62; 1999 XP₁₃₃, 3, 1, 0; 1999 XQ₁₃₃, 12, 3, 16; 1999 XR₁₃₃, 12, 3, 20; 1999 XT₁₃₃, 8, 2, 18; 1999 XU₁₃₃, 8, 1, 0; 1999 XV₁₃₃, 5, 1, 0; 1999 XW₁₃₃, 17, 3, 37; 1999 XY₁₃₃, 18, 3, 24; 1999 XA₁₃₄, 20, 4, 21; 1999 XB₁₃₄, 15, 3, 20; 1999 XD₁₃₄, 8, 2, 18; 1999 XE₁₃₄, 8, 2, 18; 1999 XF₁₃₄, 4, 1, 0; 1999 XG₁₃₄, 19, 4, 64; 1999 XH₁₃₄, 7, 2, 18; 1999 XK₁₃₄, 10, 2, 24; 1999 XL₁₃₄, 9, 2, 18; 1999 XQ₁₃₄, 15, 3, 61; 1999 XR₁₃₄, 12, 3, 68; 1999 XT₁₃₄, 10, 2, 1; 1999 XU₁₃₄, 5, 1, 0; 1999 XW₁₃₄, 13, 3, 2; 1999 XY₁₃₄, 20, 4, 64; 1999 XZ₁₃₄, 3, 1, 0; 1999 XA₁₃₅, 15, 3, 2; 1999 XB₁₃₅, 11, 3, 62; 1999 XC₁₃₅, 14, 3, 67; 1999 XE₁₃₅, 10, 2, 2; 1999 XG₁₃₅, 13, 3, 62; 1999 XH₁₃₅, 9, 2, 2; 1999 XJ₁₃₅, 14, 3, 4; 1999 XK₁₃₅, 9, 2, 1; 1999 XL₁₃₅, 7, 2, 1; 1999 XM₁₃₅, 4, 1, 0; 1999 XO₁₃₅, 9, 2, 4; 1999 XP₁₃₅, 10, 2, 1; 1999 XS₁₃₅, 12, 3, 55; 1999 XS₁₃₅, 7, 2, 1; 1999 XV₁₃₅, 12, 3, 2; 1999 XW₁₃₅, 3, 1, 0; 1999 XX₁₃₅, 18, 4, 99; 1999 XZ₁₃₅, 13, 3, 59; 1999 XG₁₃₆, 10, 2, 1; 1999 XH₁₃₆, 3, 1, 0; 1999 XD₁₃₆, 20, 4, 24; 1999 XM₁₃₆, 5, 1, 0; 1999 XN₁₃₆, 14, 3, 12; 1999 XO₁₃₆, 28, 6, 53; 1999 XP₁₃₆, 24, 5, 51; 1999 XQ₁₃₆, 29, 6, 420; 1999 XR₁₃₆, 20, 4, 51; 1999 XS₁₃₆, 18, 4, 53; 1999 XT₁₃₆, 25, 5, 62; 1999 XU₁₃₆, 28, 6, 63; 1999 XV₁₃₆, 22, 5, 62; 1999 XW₁₃₆, 10, 2, 1; 1999 XX₁₃₆, 24, 5, 63; 1999 XY₁₃₆, 25, 5, 64; 1999 XZ₁₃₆, 24, 5, 63; 1999 XA₁₃₇, 25, 5, 63; 1999 XB₁₃₇, 9, 2, 27; 1999 XC₁₃₇, 15, 3, 62; 1999 XD₁₃₇, 15, 3, 62; 1999 XH₁₃₇, 16, 4, 25; 1999 XJ₁₃₇, 5, 1, 0; 1999 XK₁₃₇, 9, 2, 1; 1999 XL₁₃₇, 20, 4, 25; 1999 XO₁₃₇, 20, 5, 67; 1999 XQ₁₃₇, 18, 4, 51; 1999 XR₁₃₇, 20, 4, 116; 1999 XS₁₃₇, 10, 2, 35; 1999 XT₁₃₇, 29, 6, 35; 1999 XU₁₃₇, 4, 1, 0; 1999 XV₁₃₇, 30, 6, 35; 1999 XW₁₃₇, 5, 1, 0; 1999 XX₁₃₇, 8, 2, 7; 1999 XB₁₃₈, 8, 2, 3; 1999 XD₁₃₈, 10, 2, 2; 1999 XQ₁₃₈, 10, 2, 1; 1999 XT₁₃₈, 5, 1, 0; 1999 XZ₁₃₈, 9, 2, 1; 1999 XB₁₃₉, 14, 3, 28; 1999 XC₁₃₉, 9, 2, 1; 1999 XE₁₃₉, 12, 3, 49; 1999 XF₁₃₉, 18, 4, 28; 1999 XG₁₃₉, 10, 2, 1; 1999 XH₁₃₉, 8, 2, 3; 1999 XJ₁₃₉, 10, 2, 3; 1999 XP₁₃₉, 8, 2, 449; 1999 XR₁₃₉, 9, 2, 1; 1999 XU₁₃₉, 10, 2, 2; 1999 XV₁₃₉, 16, 4, 32; 1999 XX₁₃₉, 11, 3, 4; 1999 XZ₁₃₉, 8, 2, 1; 1999 XB₁₄₀, 12, 3, 4; 1999 XD₁₄₀, 8, 2, 1; 1999 XF₁₄₀, 8, 2, 1; 1999 XG₁₄₀, 7, 1, 0; 1999 XH₁₄₀, 10, 2, 1; 1999 XJ₁₄₀, 10, 1, 0; 1999 XZ₁₄₀, 15, 2, 1; 1999 XA₁₄₁, 23, 5, 64; 1999 XG₁₄₁, 3, 1, 0; 1999 XH₁₄₁, 18, 3, 29; 1999 XJ₁₄₁, 8, 2, 7; 1999 XK₁₄₁, 26, 4, 4; 1999 XL₁₄₁, 18, 4, 51; 1999 XM₁₄₁, 28, 6, 7; 1999 XN₁₄₁, 11, 3, 4; 1999 XP₁₄₁, 18, 4, 30; 1999 XQ₁₄₁, 8, 2, 5; 1999 XR₁₄₁, 6, 2, 5; 1999 XS₁₄₁, 19, 4, 24; 1999 XT₁₄₁, 9, 2, 5; 1999 XU₁₄₁, 25, 5, 29; 1999 XV₁₄₁, 15, 4, 28; 1999 XW₁₄₁, 24, 5, 28; 1999 XX₁₄₁, 28, 5, 23; 1999 XY₁₄₁, 21, 5, 64; 1999 XZ₁₄₁, 28, 7, 65; 1999 XA₁₄₂, 24, 5, 9; 1999 XB₁₄₂, 30, 5, 23; 1999 XC₁₄₂, 22, 5, 21; 1999 XD₁₄₂, 9, 2, 3; 1999 XE₁₄₂, 44, 5, 49; 1999 XF₁₄₂, 9, 2, 3; 1999 XG₁₄₂, 21, 5, 40; 1999 XH₁₄₂, 9, 2, 3; 1999 XJ₁₄₂, 8, 2, 3; 1999 XK₁₄₂, 15, 3, 21; 1999 XL₁₄₂, 13, 3, 3; 1999 XM₁₄₂, 37, 4, 40; 1999 XN₁₄₂, 33, 7, 23; 1999 XO₁₄₂, 26, 6, 19; 1999 XP₁₄₂, 15, 4, 23; 1999 XQ₁₄₂, 14, 4, 27; 1999 XR₁₄₂, 9, 2, 3; 1999 XS₁₄₂, 9, 2, 2; 1999 XT₁₄₂, 20, 4, 26; 1999 XU₁₄₂, 10, 2, 2; 1999 XV₁₄₂, 19, 4, 21; 1999 XW₁₄₂, 22, 5, 68; 1999 XX₁₄₂, 7, 2, 1; 1999 XY₁₄₂, 9, 2, 1; 1999 XZ₁₄₂, 7, 2, 1; 1999 XA₁₄₃, 30, 5, 23; 1999 XB₁₄₃, 29, 5, 118; 1999 XC₁₄₃, 20, 4, 96; 1999 XD₁₄₃, 20, 4, 36; 1999 XE₁₄₃, 34, 7, 98; 1999 XF₁₄₃, 20, 4, 67; 1999 XG₁₄₃, 23, 5,

7; 1999 XJ₁₅₃ *, 8, 2, 7; 1999 XK₁₅₃ *, 36, 8, 51; 1999 XL₁₅₃ *, 9, 2, 7; 1999 XM₁₅₃ *, 6, 2, 7; 1999 XN₁₅₃ *, 10, 2, 7; 1999 XO₁₅₃ *, 19, 4, 31; 1999 XP₁₅₃ *, 7, 2, 7; 1999 XQ₁₅₃ *, 6, 2, 7; 1999 XR₁₅₃ *, 13, 3, 29; 1999 XS₁₅₃ *, 17, 4, 30; 1999 XT₁₅₃ *, 18, 4, 31; 1999 XU₁₅₃ *, 8, 2, 6; 1999 XV₁₅₃ *, 8, 2, 6; 1999 XW₁₅₃ *, 7, 2, 6; 1999 XX₁₅₃ *, 7, 2, 6; 1999 XY₁₅₃ *, 10, 2, 6; 1999 XZ₁₅₃ *, 19, 4, 34; 1999 XA₁₅₄ *, 29, 6, 63; 1999 XB₁₅₄ *, 9, 2, 6; 1999 XC₁₅₄ *, 11, 2, 6; 1999 XD₁₅₄ *, 19, 3, 28; 1999 XE₁₅₄ *, 9, 2, 6; 1999 XF₁₅₄ *, 30, 7, 63; 1999 XG₁₅₄ *, 15, 3, 29; 1999 XH₁₅₄ *, 19, 4, 29; 1999 XI₁₅₄ *, 22, 5, 50; 1999 XJ₁₅₄ *, 9, 2, 6; 1999 XL₁₅₄ *, 10, 2, 6; 1999 XM₁₅₄ *, 22, 5, 63; 1999 XN₁₅₄ *, 8, 2, 6; 1999 XO₁₅₄ *, 19, 4, 29; 1999 XP₁₅₄ *, 10, 2, 6; 1999 XQ₁₅₄ *, 7, 2, 6; 1999 XR₁₅₄ *, 20, 4, 29; 1999 XS₁₅₄ *, 8, 2, 6; 1999 XT₁₅₄ *, 19, 4, 29; 1999 XU₁₅₄ *, 8, 2, 6; 1999 XV₁₅₄ *, 13, 2, 6; 1999 XW₁₅₄ *, 6, 2, 6; 1999 XX₁₅₄ *, 23, 5, 63; 1999 XY₁₅₄ *, 7, 2, 6; 1999 XZ₁₅₄ *, 19, 4, 29; 1999 XA₁₅₅ *, 25, 5, 50; 1999 XB₁₅₅ *, 30, 7, 63; 1999 XC₁₅₅ *, 8, 2, 6; 1999 XD₁₅₅ *, 18, 5, 64; 1999 XE₁₅₅ *, 21, 5, 58; 1999 XF₁₅₅ *, 20, 4, 29; 1999 XG₁₅₅ *, 23, 5, 29; 1999 XH₁₅₅ *, 20, 4, 29; 1999 XJ₁₅₅ *, 10, 2, 6; 1999 XK₁₅₅ *, 8, 2, 6; 1999 XL₁₅₅ *, 19, 4, 29; 1999 XM₁₅₅ *, 8, 2, 6; 1999 XN₁₅₅ *, 15, 3, 28; 1999 XO₁₅₅ *, 7, 2, 6; 1999 XP₁₅₅ *, 24, 5, 65; 1999 XQ₁₅₅ *, 8, 2, 6; 1999 XR₁₅₅ *, 9, 2, 6; 1999 XS₁₅₅ *, 10, 2, 6; 1999 XT₁₅₅ *, 35, 7, 93; 1999 XU₁₅₅ *, 25, 6, 63; 1999 XV₁₅₅ *, 9, 2, 6; 1999 XW₁₅₅ *, 21, 5, 29; 1999 XX₁₅₅ *, 23, 5, 50; 1999 XY₁₅₅ *, 17, 4, 29; 1999 XZ₁₅₅ *, 22, 5, 49; 1999 XA₁₅₆ *, 16, 4, 29; 1999 XB₁₅₆ *, 21, 5, 64; 1999 XC₁₅₆ *, 24, 5, 29; 1999 XD₁₅₆ *, 27, 6, 63; 1999 XE₁₅₆ *, 22, 5, 57; 1999 XF₁₅₆ *, 23, 5, 52; 1999 XG₁₅₆ *, 14, 3, 28; 1999 XH₁₅₆ *, 20, 4, 29; 1999 XI₁₅₆ *, 33, 7, 63; 1999 XJ₁₅₆ *, 6, 2, 6; 1999 XL₁₅₆ *, 18, 4, 29; 1999 XM₁₅₆ *, 10, 2, 6; 1999 XN₁₅₆ *, 32, 7, 507; 1999 XO₁₅₆ *, 26, 6, 63; 1999 XP₁₅₆ *, 8, 2, 6; 1999 XQ₁₅₆ *, 10, 3, 28; 1999 XR₁₅₆ *, 24, 5, 983; 1999 XS₁₅₆ *, 14, 4, 29; 1999 XT₁₅₆ *, 17, 4, 29; 1999 XU₁₅₆ *, 29, 6, 52; 1999 XV₁₅₆ *, 12, 3, 28; 1999 XW₁₅₆ *, 12, 3, 28; 1999 XX₁₅₆ *, 33, 6, 52; 1999 XY₁₅₆ *, 20, 4, 29; 1999 XZ₁₅₆ *, 18, 4, 29; 1999 XA₁₅₇ *, 14, 2, 6; 1999 XB₁₅₇ *, 26, 5, 50; 1999 XC₁₅₇ *, 22, 5, 52; 1999 XD₁₅₇ *, 16, 4, 29; 1999 XE₁₅₇ *, 20, 5, 50; 1999 XF₁₅₇ *, 22, 5, 507; 1999 XG₁₅₇ *, 8, 2, 6; 1999 XH₁₅₇ *, 6, 2, 6; 1999 XJ₁₅₇ *, 12, 2, 6; 1999 XK₁₅₇ *, 20, 4, 29; 1999 XL₁₅₇ *, 29, 6, 507; 1999 XM₁₅₇ *, 24, 5, 64; 1999 XN₁₅₇ *, 17, 4, 29; 1999 XO₁₅₇ *, 16, 4, 29; 1999 XP₁₅₇ *, 16, 4, 29; 1999 XQ₁₅₇ *, 18, 4, 29; 1999 XR₁₅₇ *, 29, 6, 52; 1999 XS₁₅₇ *, 17, 4, 29; 1999 XT₁₅₇ *, 17, 4, 29; 1999 XU₁₅₇ *, 8, 2, 6; 1999 XV₁₅₇ *, 10, 2, 6; 1999 XW₁₅₇ *, 24, 5, 63; 1999 XX₁₅₇ *, 22, 5, 50; 1999 XY₁₅₇ *, 22, 5, 64; 1999 XZ₁₅₇ *, 29, 6, 63; 1999 XA₁₅₈ *, 16, 4, 29; 1999 XB₁₅₈ *, 10, 2, 6; 1999 XC₁₅₈ *, 16, 4, 29; 1999 XD₁₅₈ *, 18, 4, 29; 1999 XE₁₅₈ *, 15, 4, 29; 1999 XF₁₅₈ *, 35, 7, 508; 1999 XG₁₅₈ *, 29, 7, 63; 1999 XH₁₅₈ *, 15, 4, 29; 1999 XJ₁₅₈ *, 9, 2, 6; 1999 XK₁₅₈ *, 9, 2, 6; 1999 XL₁₅₈ *, 8, 2, 6; 1999 XM₁₅₈ *, 8, 2, 6; 1999 XN₁₅₈ *, 9, 2, 6; 1999 XO₁₅₈ *, 7, 2, 6; 1999 XP₁₅₈ *, 7, 2, 6; 1999 XQ₁₅₈ *, 15, 4, 29; 1999 XR₁₅₈ *, 16, 4, 29; 1999 XS₁₅₈ *, 9, 2, 6; 1999 XT₁₅₈ *, 18, 4, 29; 1999 XU₁₅₈ *, 7, 2, 6; 1999 XV₁₅₈ *, 9, 2, 6; 1999 XW₁₅₈ *, 9, 2, 6; 1999 XX₁₅₈ *, 8, 2, 6; 1999 XY₁₅₈ *, 9, 2, 6; 1999 XZ₁₅₈ *, 7, 2, 6; 1999 XA₁₅₉ *, 21, 5, 29; 1999 XB₁₅₉ *, 9, 2, 6; 1999 XC₁₅₉ *, 16, 4, 28; 1999 XD₁₅₉ *, 8, 2, 6; 1999 XE₁₅₉ *, 18, 5, 29; 1999 XF₁₅₉ *, 7, 2, 6; 1999 XG₁₅₉ *, 10, 2, 6; 1999 XH₁₅₉ *, 17, 4, 29; 1999 XJ₁₅₉ *, 22, 5, 63; 1999 XK₁₅₉ *, 17, 4, 30; 1999 XL₁₅₉ *, 16, 4, 29; 1999 XM₁₅₉ *, 9, 2, 6; 1999 XN₁₅₉ *, 17, 4, 29; 1999 XO₁₅₉ *, 22, 5, 63; 1999 XP₁₅₉ *, 7, 2, 6; 1999 XQ₁₅₉ *, 17, 4, 29; 1999 XR₁₅₉ *, 26, 6, 975; 1999 XS₁₅₉ *, 27, 6, 64; 1999 XT₁₅₉ *, 17, 4, 29; 1999 XU₁₅₉ *, 16, 4, 29; 1999 XV₁₅₉ *, 18, 4, 29; 1999 XW₁₅₉ *, 18, 4, 29; 1999 XX₁₅₉ *, 8, 2, 6; 1999 XY₁₅₉ *, 7, 2, 6; 1999 XZ₁₅₉ *, 33, 7, 66; 1999 XA₁₆₀ *, 13, 3, 28; 1999 XB₁₆₀ *, 17, 4, 29; 1999 XC₁₆₀ *, 18, 4, 29; 1999 XD₁₆₀ *, 8, 2, 6; 1999 XE₁₆₀ *, 17, 4, 29; 1999 XF₁₆₀ *, 18, 5, 32; 1999 XG₁₆₀ *, 10, 2, 6; 1999 XH₁₆₀ *, 22, 5, 32; 1999 XJ₁₆₀ *, 18, 4, 29; 1999 XK₁₆₀ *, 7, 2, 6; 1999 XL₁₆₀ *, 15, 4, 29; 1999 XM₁₆₀ *, 8, 2, 6; 1999 XN₁₆₀ *, 18, 4, 29; 1999 XO₁₆₀ *, 7, 2, 6; 1999 XP₁₆₀ *, 16, 4, 29; 1999 XQ₁₆₀ *, 17, 4, 29; 1999 XR₁₆₀ *, 22, 5, 918; 1999 XS₁₆₀ *, 3, 1, 0; 1999 XT₁₆₀ *, 17, 4, 29; 1999 XU₁₆₀ *, 18, 4, 30; 1999 XV₁₆₀ *, 21, 5, 33; 1999 XW₁₆₀ *, 17, 4, 29; 1999 XX₁₆₀ *, 6, 2, 6; 1999 XY₁₆₀ *, 16, 4, 30; 1999 XZ₁₆₀ *, 14, 4, 30; 1999 XA₁₆₁ *, 10, 2, 4; 1999 XB₁₆₁ *, 24, 5, 21; 1999 XC₁₆₁ *, 26, 6, 23; 1999 XD₁₆₁ *, 16, 4, 4; 1999 XE₁₆₁ *, 20, 2, 2; 1999 XF₁₆₁ *, 14, 2, 2; 1999 XG₁₆₁ *, 18, 2, 2; 1999 XH₁₆₁ *, 11, 2, 2; 1999 XJ₁₆₁ *, 28, 5, 27; 1999 XK₁₆₁ *, 8, 2, 2; 1999 XL₁₆₁ *, 15, 3, 21; 1999 XM₁₆₁ *, 7, 2, 2; 1999 XN₁₆₁ *, 30, 7, 51; 1999 XO₁₆₁ *, 8, 2, 1; 1999 XP₁₆₁ *, 8, 2, 1; 1999 XQ₁₆₁ *, 8, 2, 1; 1999 XR₁₆₁ *, 16, 4, 51; 1999 XS₁₆₁ *, 14, 2, 1; 1999 XT₁₆₁ *, 9, 2, 1; 1999 XU₁₆₁ *, 24, 6, 557; 1999 XV₁₆₁ *, 8, 2, 1; 1999 XW₁₆₁ *, 10, 2, 1; 1999 XX₁₆₁ *, 10, 2, 1; 1999 XY₁₆₁ *, 7, 2, 1; 1999 XZ₁₆₁ *, 10, 2, 1; 1999 XA₁₆₂ *, 8, 2, 1; 1999 XB₁₆₂ *, 15, 2, 1; 1999 XC₁₆₂ *, 12, 2, 1; 1999 XD₁₆₂ *, 6, 2, 1; 1999 XE₁₆₂ *, 9, 4, 22; 1999 XF₁₆₂ *, 10, 2, 1; 1999 XG₁₆₂ *, 8, 2, 1; 1999 XH₁₆₂ *, 14, 3, 17; 1999 XJ₁₆₂ *, 29, 6, 81; 1999 XK₁₆₂ *, 30, 6, 39; 1999 XL₁₆₂ *, 10, 2, 1; 1999 XM₁₆₂ *, 10, 2, 1; 1999 XN₁₆₂ *, 8, 2, 1; 1999 XO₁₆₂ *, 7, 2, 1; 1999 XP₁₆₂ *, 22, 5, 37; 1999 XQ₁₆₂ *, 8, 2, 3; 1999 XG₁₆₃ *, 13, 3, 4; 1999 XO₁₆₃ *, 8, 2, 2; 1999 XU₁₆₃ *, 20, 4, 27; 1999 XV₁₆₃ *, 15, 3, 20; 1999 XW₁₆₃ *, 20, 4, 29; 1999 XX₁₆₃ *, 34, 7, 95; 1999 XY₁₆₃ *, 7, 2, 7; 1999 XZ₁₆₃ *, 9, 2, 7; 1999 XA₁₆₄ *, 10, 2, 7; 1999 XB₁₆₄ *, 14, 4, 29; 1999 XC₁₆₄ *, 16, 4, 29; 1999 XD₁₆₄ *, 8, 2, 7; 1999 XE₁₆₄ *, 24, 4, 29; 1999 XF₁₆₄ *, 15, 4, 29; 1999 XG₁₆₄ *, 20, 4, 27; 1999 XH₁₆₄ *, 20, 4, 27; 1999 XI₁₆₄ *, 19, 4, 29; 1999 XJ₁₆₄ *, 19, 4, 29; 1999 XK₁₆₄ *, 21, 5, 28; 1999 XL₁₆₄ *, 20, 4, 27; 1999 XM₁₆₄ *, 19, 4, 27; 1999 XN₁₆₄ *, 17, 4, 27; 1999 XO₁₆₄ *, 18, 4, 27; 1999 XP₁₆₄ *, 17, 4, 27; 1999 XQ₁₆₄ *, 19, 4, 29; 1999 XR₁₆₄ *, 10, 2, 7; 1999 XS₁₆₄ *, 16, 4, 27; 1999 XT₁₆₄ *, 10, 2, 7; 1999 XU₁₆₄ *, 23, 5, 32; 1999 XV₁₆₄ *, 19, 4, 29; 1999 XW₁₆₄ *, 19, 4, 29; 1999 XX₁₆₄ *, 19, 4, 29; 1999 XY₁₆₄ *, 28, 6, 53; 1999 XZ₁₆₄ *, 7, 2, 7; 1999 XA₁₆₅ *, 19, 4, 29; 1999 XB₁₆₅ *, 8, 2, 7; 1999 XC₁₆₅ *, 18, 4, 29; 1999 XD₁₆₅ *, 23, 5, 507; 1999 XE₁₆₅ *, 18, 4, 29; 1999 XF₁₆₅ *,

9, 2, 7; 1999 XG₁₆₅ *, 9, 2, 7; 1999 XH₁₆₅ *, 9, 2, 7; 1999 XJ₁₆₅ *, 19, 4, 29; 1999 XK₁₆₅ *, 17, 4, 29; 1999 XL₁₆₅ *, 9, 2, 7; 1999 XM₁₆₅ *, 9, 2, 7; 1999 XN₁₆₅ *, 13, 3, 26; 1999 XO₁₆₅ *, 9, 2, 7; 1999 XP₁₆₅ *, 9, 2, 7; 1999 XQ₁₆₅ *, 19, 4, 27; 1999 XR₁₆₅ *, 20, 5, 32; 1999 XS₁₆₅ *, 22, 5, 507; 1999 XT₁₆₅ *, 26, 5, 29; 1999 XU₁₆₅ *, 22, 5, 507; 1999 XZ₁₆₅ *, 6, 2, 7; 1999 XA₁₆₆ *, 6, 2, 7; 1999 XB₁₆₆ *, 7, 2, 7; 1999 XC₁₆₆ *, 6, 2, 6; 1999 XD₁₆₆ *, 7, 2, 6; 1999 XE₁₆₆ *, 12, 3, 24; 1999 XF₁₆₆ *, 9, 2, 5; 1999 XG₁₆₆ *, 10, 2, 5; 1999 XH₁₆₆ *, 9, 2, 5; 1999 XI₁₆₆ *, 23, 5, 91; 1999 XJ₁₆₆ *, 27, 5, 29; 1999 XK₁₆₆ *, 7, 2, 5; 1999 XL₁₆₆ *, 9, 2, 5; 1999 XM₁₆₆ *, 23, 5, 64; 1999 XN₁₆₆ *, 21, 5, 123; 1999 XO₁₆₆ *, 13, 3, 25; 1999 XP₁₆₆ *, 7, 2, 5; 1999 XQ₁₆₆ *, 6, 2, 5; 1999 XR₁₆₆ *, 10, 2, 5; 1999 XS₁₆₆ *, 20, 4, 25; 1999 XT₁₆₆ *, 19, 4, 90; 1999 XU₁₆₆ *, 8, 2, 5; 1999 XV₁₆₆ *, 9, 2, 5; 1999 XW₁₆₆ *, 32, 7, 123; 1999 XY₁₆₆ *, 20, 4, 25; 1999 XZ₁₆₆ *, 23, 5, 497; 1999 XA₁₆₇ *, 8, 2, 5; 1999 XB₁₆₇ *, 10, 2, 5; 1999 XC₁₆₇ *, 15, 3, 24; 1999 XD₁₆₇ *, 20, 4, 25; 1999 XE₁₆₇ *, 35, 7, 92; 1999 XF₁₆₇ *, 10, 2, 5; 1999 XG₁₆₇ *, 34, 7, 90; 1999 XH₁₆₇ *, 14, 2, 5; 1999 XI₁₆₇ *, 10, 2, 5; 1999 XJ₁₆₇ *, 24, 4, 25; 1999 XK₁₆₇ *, 33, 7, 51; 1999 XL₁₆₇ *, 19, 4, 25; 1999 XM₁₆₇ *, 29, 6, 62; 1999 XN₁₆₇ *, 17, 4, 51; 1999 XO₁₆₇ *, 35, 7, 51; 1999 XP₁₆₇ *, 8, 2, 5; 1999 XQ₁₆₇ *, 10, 2, 5; 1999 XR₁₆₇ *, 25, 5, 51; 1999 XS₁₆₇ *, 8, 2, 5; 1999 XT₁₆₇ *, 7, 2, 5; 1999 XU₁₆₇ *, 19, 4, 25; 1999 XV₁₆₇ *, 20, 4, 25; 1999 XW₁₆₇ *, 18, 4, 25; 1999 XZ₁₆₇ *, 19, 4, 25; 1999 XA₁₆₈ *, 25, 5, 51; 1999 XB₁₆₈ *, 34, 7, 62; 1999 XC₁₆₈ *, 23, 5, 51; 1999 XD₁₆₈ *, 34, 7, 62; 1999 XE₁₆₈ *, 24, 5, 51; 1999 XF₁₆₈ *, 28, 6, 62; 1999 XG₁₆₈ *, 29, 5, 25; 1999 XH₁₆₈ *, 15, 4, 25; 1999 XI₁₆₈ *, 25, 5, 51; 1999 XJ₁₆₈ *, 6, 2, 5; 1999 XK₁₆₈ *, 9, 3, 42; 1999 XL₁₆₈ *, 8, 2, 5; 1999 XM₁₆₈ *, 21, 5, 504; 1999 XN₁₆₈ *, 9, 2, 5; 1999 XO₁₆₈ *, 9, 2, 5; 1999 XP₁₆₈ *, 7, 2, 5; 1999 XQ₁₆₈ *, 8, 2, 5; 1999 XR₁₆₈ *, 9, 2, 5; 1999 XS₁₆₈ *, 8, 2, 5; 1999 XT₁₆₈ *, 9, 2, 5; 1999 XU₁₆₈ *, 28, 6, 62; 1999 XV₁₆₈ *, 19, 5, 49; 1999 XW₁₆₈ *, 9, 2, 5; 1999 XZ₁₆₈ *, 8, 2, 5; 1999 XA₁₆₉ *, 30, 6, 91; 1999 XB₁₆₉ *, 18, 4, 25; 1999 XC₁₆₉ *, 9, 2, 5; 1999 XD₁₆₉ *, 18, 4, 25; 1999 XE₁₆₉ *, 43, 8, 505; 1999 XF₁₆₉ *, 29, 6, 91; 1999 XG₁₆₉ *, 17, 4, 25; 1999 XH₁₆₉ *, 20, 4, 25; 1999 XI₁₆₉ *, 29, 6, 91; 1999 XJ₁₆₉ *, 10, 2, 5; 1999 XK₁₆₉ *, 34, 7, 505; 1999 XL₁₆₉ *, 30, 6, 31; 1999 XM₁₆₉ *, 24, 4, 25; 1999 XN₁₆₉ *, 20, 4, 25; 1999 XO₁₆₉ *, 19, 4, 25; 1999 XP₁₆₉ *, 27, 6, 51; 1999 XQ₁₆₉ *, 17, 4, 25; 1999 XR₁₆₉ *, 22, 5, 27; 1999 XS₁₆₉ *, 19, 4, 25; 1999 XT₁₆₉ *, 20, 4, 25; 1999 XU₁₆₉ *, 19, 4, 25; 1999 XV₁₆₉ *, 18, 4, 25; 1999 XW₁₆₉ *, 18, 4, 25; 1999 XZ₁₆₉ *, 23, 5, 51; 1999 XA₁₇₀ *, 23, 5, 51; 1999 XB₁₇₀ *, 22, 5, 49; 1999 XC₁₇₀ *, 19, 4, 25; 1999 XD₁₇₀ *, 18, 4, 25; 1999 XE₁₇₀ *, 16, 4, 25; 1999 XF₁₇₀ *, 16, 4, 25; 1999 XG₁₇₀ *, 17, 4, 25; 1999 XH₁₇₀ *, 9, 2, 5; 1999 XI₁₇₀ *, 20, 5, 51; 1999 XJ₁₇₀ *, 9, 2, 5; 1999 XK₁₇₀ *, 23, 5, 51; 1999 XL₁₇₀ *, 23, 5, 51; 1999 XM₁₇₀ *, 25, 6, 29; 1999 XN₁₇₀ *, 17, 4, 25; 1999 XO₁₇₀ *, 27, 6, 51; 1999 XP₁₇₀ *, 6, 2, 5; 1999 XQ₁₇₀ *, 17, 4, 49; 1999 XR₁₇₀ *, 33, 7, 416; 1999 XS₁₇₀ *, 17, 4, 25; 1999 XT₁₇₀ *, 23, 5, 25; 1999 XU₁₇₀ *, 24, 6, 62; 1999 XV₁₇₀ *, 23, 5, 62; 1999 XW₁₇₀ *, 20, 5, 25; 1999 XZ₁₇₀ *, 16, 4, 25; 1999 XA₁₇₁ *, 17, 4, 25; 1999 XB₁₇₁ *, 16, 4, 25; 1999 XC₁₇₁ *, 25, 6, 53; 1999 XD₁₇₁ *, 17, 4, 25; 1999 XE₁₇₁ *, 17, 4, 25; 1999 XF₁₇₁ *, 19, 5, 27; 1999 XG₁₇₁ *, 16, 4, 25; 1999 XH₁₇₁ *, 27, 6, 31; 1999 XI₁₇₁ *, 16, 4, 25; 1999 XJ₁₇₁ *, 13, 3, 24; 1999 XK₁₇₁ *, 28, 6, 31; 1999 XL₁₇₁ *, 24, 5, 29; 1999 XM₁₇₁ *, 8, 2, 5; 1999 XN₁₇₁ *, 10, 2, 5; 1999 XO₁₇₁ *, 16, 4, 25; 1999 XP₁₇₁ *, 16, 4, 25; 1999 XQ₁₇₁ *, 25, 5, 29; 1999 XR₁₇₁ *, 15, 4, 25; 1999 XS₁₇₁ *, 18, 4, 25; 1999 XT₁₇₁ *, 32, 6, 53; 1999 XU₁₇₁ *, 20, 4, 25; 1999 XV₁₇₁ *, 18, 4, 25; 1999 XW₁₇₁ *, 19, 4, 29; 1999 XZ₁₇₁ *, 17, 4, 29; 1999 XA₁₇₂ *, 30, 6, 53; 1999 XB₁₇₂ *, 17, 4, 25; 1999 XC₁₇₂ *, 20, 4, 29; 1999 XD₁₇₂ *, 17, 4, 25; 1999 XE₁₇₂ *, 10, 2, 5; 1999 XF₁₇₂ *, 9, 2, 5; 1999 XG₁₇₂ *, 18, 4, 25; 1999 XH₁₇₂ *, 28, 6, 29; 1999 XI₁₇₂ *, 20, 4, 25; 1999 XJ₁₇₂ *, 18, 4, 25; 1999 XK₁₇₂ *, 20, 4, 25; 1999 XL₁₇₂ *, 20, 4, 25; 1999 XM₁₇₂ *, 30, 6, 29; 1999 XN₁₇₂ *, 20, 4, 25; 1999 XO₁₇₂ *, 9, 2, 5; 1999 XP₁₇₂ *, 9, 2, 5; 1999 XQ₁₇₂ *, 7, 2, 5; 1999 XR₁₇₂ *, 30, 6, 29; 1999 XS₁₇₂ *, 9, 2, 5; 1999 XT₁₇₂ *, 14, 3, 397; 1999 XU₁₇₂ *, 9, 2, 5; 1999 XV₁₇₂ *, 25, 5, 29; 1999 XW₁₇₂ *, 20, 4, 25; 1999 XZ₁₇₂ *, 10, 2, 5; 1999 XA<

5; 1999 XD₁₇₆ *, 15, 3, 24; 1999 XE₁₇₆ *, 10, 2, 5; 1999 XF₁₇₆ *, 9, 2, 5; 1999 XG₁₇₆ *, 10, 2, 5; 1999 XH₁₇₆ *, 22, 5, 416; 1999 XJ₁₇₆ *, 17, 3, 25; 1999 XK₁₇₆ *, 8, 2, 5; 1999 XL₁₇₆ *, 10, 2, 5; 1999 XM₁₇₆ *, 10, 2, 5; 1999 XN₁₇₆ *, 7, 2, 5; 1999 XO₁₇₆ *, 8, 2, 5; 1999 XP₁₇₆ *, 16, 4, 62; 1999 XQ₁₇₆ *, 10, 2, 5; 1999 XR₁₇₆ *, 8, 2, 5; 1999 XS₁₇₆ *, 10, 2, 5; 1999 XT₁₇₆ *, 8, 2, 5; 1999 XU₁₇₆ *, 15, 3, 23; 1999 XV₁₇₆ *, 20, 4, 25; 1999 XW₁₇₆ *, 19, 4, 25; 1999 XX₁₇₆ *, 20, 4, 27; 1999 XY₁₇₆ *, 10, 2, 5; 1999 XZ₁₇₆ *, 9, 2, 5; 1999 XA₁₇₇ *, 9, 2, 5; 1999 XB₁₇₇ *, 9, 2, 5; 1999 XC₁₇₇ *, 15, 3, 23; 1999 XD₁₇₇ *, 20, 4, 48; 1999 XE₁₇₇ *, 9, 2, 5; 1999 XF₁₇₇ *, 10, 2, 5; 1999 XG₁₇₇ *, 10, 2, 5; 1999 XH₁₇₇ *, 10, 2, 5; 1999 XJ₁₇₇ *, 15, 3, 23; 1999 XK₁₇₇ *, 18, 4, 25; 1999 XL₁₇₇ *, 34, 6, 29; 1999 XM₁₇₇ *, 27, 6, 29; 1999 XN₁₇₇ *, 18, 4, 25; 1999 XO₁₇₇ *, 8, 2, 5; 1999 XP₁₇₇ *, 24, 4, 25; 1999 XQ₁₇₇ *, 24, 5, 29; 1999 XR₁₇₇ *, 19, 4, 25; 1999 XS₁₇₇ *, 19, 4, 25; 1999 XT₁₇₇ *, 16, 4, 25; 1999 XU₁₇₇ *, 16, 4, 25; 1999 XV₁₇₇ *, 24, 5, 49; 1999 XW₁₇₇ *, 15, 4, 25; 1999 XX₁₇₇ *, 7, 2, 5; 1999 XY₁₇₇ *, 14, 4, 25; 1999 XZ₁₇₇ *, 18, 4, 25; 1999 XA₁₇₈ *, 24, 5, 29; 1999 XB₁₇₈ *, 23, 5, 29; 1999 XC₁₇₈ *, 18, 4, 29; 1999 XD₁₇₈ *, 18, 4, 25; 1999 XE₁₇₈ *, 19, 4, 25; 1999 XF₁₇₈ *, 16, 4, 25; 1999 XG₁₇₈ *, 9, 2, 5; 1999 XH₁₇₈ *, 19, 4, 25; 1999 XJ₁₇₈ *, 19, 4, 25; 1999 XK₁₇₈ *, 19, 4, 25; 1999 XL₁₇₈ *, 18, 4, 25; 1999 XM₁₇₈ *, 19, 4, 25; 1999 XN₁₇₈ *, 18, 4, 25; 1999 XO₁₇₈ *, 7, 2, 5; 1999 XP₁₇₈ *, 18, 4, 25; 1999 XQ₁₇₈ *, 19, 4, 25; 1999 XR₁₇₈ *, 18, 4, 25; 1999 XS₁₇₈ *, 18, 4, 25; 1999 XT₁₇₈ *, 16, 4, 25; 1999 XU₁₇₈ *, 18, 4, 25; 1999 XV₁₇₈ *, 7, 2, 5; 1999 XW₁₇₈ *, 7, 2, 5; 1999 XX₁₇₈ *, 8, 2, 5; 1999 XY₁₇₈ *, 16, 4, 25; 1999 XZ₁₇₈ *, 11, 3, 24;

1999 XA₁₇₉ *, 7, 2, 5; 1999 XB₁₇₉ *, 9, 2, 5; 1999 XC₁₇₉ *, 9, 2, 5; 1999 XD₁₇₉ *, 19, 4, 25; 1999 XE₁₇₉ *, 9, 2, 5; 1999 XF₁₇₉ *, 13, 3, 24; 1999 XG₁₇₉ *, 9, 2, 5; 1999 XH₁₇₉ *, 8, 2, 5; 1999 XJ₁₇₉ *, 7, 2, 5; 1999 XK₁₇₉ *, 6, 2, 5; 1999 XL₁₇₉ *, 12, 3, 23; 1999 XM₁₇₉ *, 8, 2, 5; 1999 XN₁₇₉ *, 11, 3, 24; 1999 XO₁₇₉ *, 21, 5, 29; 1999 XP₁₇₉ *, 17, 4, 29; 1999 XQ₁₇₉ *, 18, 5, 27; 1999 XR₁₇₉ *, 32, 5, 28; 1999 XS₁₇₉ *, 15, 4, 25; 1999 XT₁₇₉ *, 19, 5, 28; 1999 XU₁₇₉ *, 16, 4, 29; 1999 XV₁₇₉ *, 18, 4, 25; 1999 XW₁₇₉ *, 16, 4, 25; 1999 XX₁₇₉ *, 8, 2, 5; 1999 XY₁₇₉ *, 8, 2, 5; 1999 XZ₁₇₉ *, 7, 2, 5; 1999 XA₁₈₀ *, 6, 2, 5; 1999 XB₁₈₀ *, 12, 3, 23; 1999 XC₁₈₀ *, 9, 2, 5; 1999 XD₁₈₀ *, 13, 3, 24; 1999 XE₁₈₀ *, 9, 2, 5; 1999 XF₁₈₀ *, 9, 2, 5; 1999 XG₁₈₀ *, 14, 3, 24; 1999 XH₁₈₀ *, 12, 3, 24; 1999 XJ₁₈₀ *, 13, 3, 23; 1999 XK₁₈₀ *, 13, 3, 23; 1999 XL₁₈₀ *, 9, 2, 5; 1999 XM₁₈₀ *, 9, 2, 5; 1999 XN₁₈₀ *, 8, 2, 5; 1999 XO₁₈₀ *, 9, 2, 5; 1999 XP₁₈₀ *, 9, 2, 5; 1999 XQ₁₈₀ *, 8, 2, 5; 1999 XR₁₈₀ *, 8, 2, 5; 1999 XS₁₈₀ *, 8, 2, 5; 1999 XT₁₈₀ *, 8, 2, 5; 1999 XU₁₈₀ *, 8, 2, 5; 1999 XV₁₈₀ *, 8, 2, 5; 1999 XW₁₈₀ *, 12, 3, 23; 1999 XX₁₈₀ *, 8, 2, 5; 1999 XY₁₈₀ *, 8, 2, 3; 1999 XZ₁₈₀ *, 10, 2, 3; 1999 XA₁₈₁ *, 8, 2, 3; 1999 XB₁₈₁ *, 14, 3, 21; 1999 XC₁₈₁ *, 8, 2, 3; 1999 XD₁₈₁ *, 9, 2, 3; 1999 XE₁₈₁ *, 8, 2, 3; 1999 XF₁₈₁ *, 10, 2, 3; 1999 XG₁₈₁ *, 25, 5, 95; 1999 XH₁₈₁ *, 8, 2, 3; 1999 XJ₁₈₁ *, 8, 2, 3; 1999 XK₁₈₁ *, 20, 4, 63; 1999 XL₁₈₁ *, 26, 6, 498; 1999 XM₁₈₁ *, 10, 2, 3; 1999 XN₁₈₁ *, 25, 5, 63; 1999 XO₁₈₁ *, 10, 2, 3; 1999 XP₁₈₁ *, 17, 4, 60; 1999 XQ₁₈₁ *, 9, 2, 3; 1999 XR₁₈₁ *, 20, 4, 22; 1999 XS₁₈₁ *, 9, 2, 3; 1999 XT₁₈₁ *, 15, 3, 21; 1999 XU₁₈₁ *, 7, 2, 3; 1999 XV₁₈₁ *, 10, 2, 3; 1999 XW₁₈₁ *, 10, 2, 3; 1999 XX₁₈₁ *, 8, 2, 3; 1999 XY₁₈₁ *, 10, 2, 3; 1999 XZ₁₈₁ *, 10, 2, 3; 1999 XA₁₈₂ *, 10, 2, 3; 1999 XB₁₈₂ *, 11, 3, 21; 1999 XC₁₈₂ *, 10, 2, 3; 1999 XD₁₈₂ *, 13, 3, 21; 1999 XE₁₈₂ *, 15, 3, 44; 1999 XF₁₈₂ *, 10, 2, 3; 1999 XG₁₈₂ *, 9, 2, 3; 1999 XH₁₈₂ *, 9, 2, 3; 1999 XJ₁₈₂ *, 19, 4, 21; 1999 XK₁₈₂ *, 9, 2, 3; 1999 XL₁₈₂ *, 7, 2, 3; 1999 XM₁₈₂ *, 9, 2, 3; 1999 XN₁₈₂ *, 10, 2, 3; 1999 XO₁₈₂ *, 9, 2, 3; 1999 XP₁₈₂ *, 24, 5, 97; 1999 XQ₁₈₂ *, 10, 2, 3; 1999 XR₁₈₂ *, 22, 5, 23; 1999 XS₁₈₂ *, 10, 2, 3; 1999 XT₁₈₂ *, 9, 2, 3; 1999 XU₁₈₂ *, 9, 2, 3; 1999 XV₁₈₂ *, 19, 4, 62; 1999 XW₁₈₂ *, 10, 2, 3; 1999 XX₁₈₂ *, 9, 2, 3; 1999 XY₁₈₂ *, 10, 2, 3; 1999 XZ₁₈₂ *, 10, 2, 3; 1999 XA₁₈₃ *, 10, 2, 3; 1999 XB₁₈₃ *, 20, 4, 23; 1999 XC₁₈₃ *, 18, 4, 23; 1999 XD₁₈₃ *, 10, 2, 3; 1999 XE₁₈₃ *, 9, 2, 3; 1999 XF₁₈₃ *, 10, 2, 3; 1999 XG₁₈₃ *, 9, 2, 3; 1999 XH₁₈₃ *, 9, 2, 3; 1999 XJ₁₈₃ *, 19, 4, 23; 1999 XK₁₈₃ *, 8, 2, 3; 1999 XL₁₈₃ *, 9, 2, 3; 1999 XM₁₈₃ *, 10, 2, 3; 1999 XN₁₈₃ *, 9, 2, 3; 1999 XO₁₈₃ *, 9, 2, 3; 1999 XP₁₈₃ *, 9, 2, 3; 1999 XQ₁₈₃ *, 10, 2, 3; 1999 XR₁₈₃ *, 9, 2, 3; 1999 XS₁₈₃ *, 8, 2, 3; 1999 XT₁₈₃ *, 24, 5, 62; 1999 XU₁₈₃ *, 10, 2, 3; 1999 XV₁₈₃ *, 10, 2, 3; 1999 XW₁₈₃ *, 19, 4, 23; 1999 XX₁₈₃ *, 8, 2, 3; 1999 XY₁₈₃ *, 18, 4, 62; 1999 XZ₁₈₃ *, 10, 2, 3; 1999 XA₁₈₄ *, 8, 2, 3; 1999 XB₁₈₄ *, 10, 2, 3; 1999 XC₁₈₄ *, 10, 2, 3; 1999 XD₁₈₄ *, 9, 2, 3; 1999 XE₁₈₄ *, 9, 2, 3; 1999 XF₁₈₄ *, 9, 2, 3; 1999 XG₁₈₄ *, 10, 2, 3; 1999 XH₁₈₄ *, 7, 2, 3; 1999 XJ₁₈₄ *, 9, 2, 3; 1999 XK₁₈₄ *, 15, 3, 21; 1999 XL₁₈₄ *, 10, 2, 3; 1999 XM₁₈₄ *, 10, 2, 3; 1999 XN₁₈₄ *, 20, 4, 23; 1999 XO₁₈₄ *, 17, 4, 23; 1999 XP₁₈₄ *, 19, 4, 23; 1999 XQ₁₈₄ *, 19, 4, 23; 1999 XR₁₈₄ *, 8, 2, 3; 1999 XS₁₈₄ *, 18, 4, 23; 1999 XT₁₈₄ *, 24, 5, 91; 1999 XU₁₈₄ *, 9, 2, 3; 1999 XV₁₈₄ *, 8, 2, 3; 1999 XW₁₈₄ *, 9, 2, 3; 1999 XX₁₈₄ *, 8, 2, 3; 1999 XY₁₈₄ *, 7, 2, 3; 1999 XZ₁₈₄ *, 8, 2, 3; 1999 XA₁₈₅ *, 9, 2, 3; 1999 XB₁₈₅ *, 9, 2, 3; 1999 XC₁₈₅ *, 7, 2, 3; 1999 XD₁₈₅ *, 15, 4, 62; 1999 XE₁₈₅ *, 7, 2, 3; 1999 XF₁₈₅ *, 8, 2, 3; 1999 XG₁₈₅ *, 9, 2, 3; 1999 XH₁₈₅ *, 11, 2, 3; 1999 XJ₁₈₅ *, 7, 2, 3; 1999 XK₁₈₅ *, 7, 2, 3; 1999 XL₁₈₅ *, 7, 2, 3; 1999 XM₁₈₅ *, 12, 3, 21; 1999 XN₁₈₅ *, 9, 2, 3; 1999 XO₁₈₅ *, 8, 2, 3; 1999 XP₁₈₅ *, 8, 2, 3; 1999 XQ₁₈₅ *, 7, 2, 3; 1999 XR₁₈₅ *, 7, 2, 3; 1999 XS₁₈₅ *, 7, 2, 3; 1999 XT₁₈₅ *, 17, 4, 23; 1999 XU₁₈₅ *, 6, 2, 3; 1999 XV₁₈₅ *, 11, 3, 21; 1999 XW₁₈₅ *, 8, 2, 3; 1999 XX₁₈₅ *, 8, 2, 3; 1999 XY₁₈₅ *, 8, 2, 3; 1999 XZ₁₈₅ *, 8, 2, 3; 1999 XA₁₈₆ *, 19, 5, 23; 1999 XB₁₈₆ *, 9, 2, 3; 1999 XC₁₈₆ *, 7, 2, 3; 1999 XD₁₈₆ *, 7, 2, 3; 1999 XE₁₈₆ *, 14, 3, 21; 1999 XF₁₈₆ *, 17, 4, 23; 1999 XG₁₈₆ *, 8, 2, 3; 1999 XH₁₈₆ *, 9, 2, 3; 1999 XJ₁₈₆ *, 8, 2, 3; 1999 XK₁₈₆ *, 8, 2, 3; 1999 XL₁₈₆ *, 9, 2, 3; 1999 XM₁₈₆ *, 17, 4, 23; 1999 XN₁₈₆ *, 19, 5, 49; 1999 XO₁₈₆ *, 15, 4, 23; 1999 XP₁₈₆ *, 8, 2, 3; 1999 XQ₁₈₆ *, 15, 4, 23; 1999 XR₁₈₆ *, 8, 2, 3; 1999 XS₁₈₆ *, 11, 3, 21; 1999 XT₁₈₆ *, 7, 2, 3; 1999 XU₁₈₆ *, 6, 2, 3; 1999 XV₁₈₆ *, 7, 2, 3;

1999 XW₁₈₆ *, 10, 3, 21; 1999 XX₁₈₆ *, 25, 4, 23; 1999 XY₁₈₆ *, 15, 2, 3; 1999 XZ₁₈₆ *, 21, 4, 23; 1999 XA₁₈₇ *, 19, 3, 21; 1999 XB₁₈₇ *, 20, 2, 3; 1999 XC₁₈₇ *, 13, 2, 3; 1999 XD₁₈₇ *, 12, 2, 3; 1999 XE₁₈₇ *, 22, 4, 23; 1999 XF₁₈₇ *, 13, 2, 3; 1999 XG₁₈₇ *, 17, 2, 3; 1999 XH₁₈₇ *, 10, 2, 3; 1999 XJ₁₈₇ *, 15, 2, 3; 1999 XK₁₈₇ *, 14, 2, 3; 1999 XL₁₈₇ *, 9, 2, 3; 1999 XM₁₈₇ *, 23, 4, 23; 1999 XN₁₈₇ *, 15, 2, 3; 1999 XO₁₈₇ *, 9, 2, 3; 1999 XP₁₈₇ *, 19, 4, 23; 1999 XQ₁₈₇ *, 14, 3, 21; 1999 XR₁₈₇ *, 10, 2, 3; 1999 XS₁₈₇ *, 10, 2, 3; 1999 XT₁₈₇ *, 9, 2, 3; 1999 XU₁₈₇ *, 10, 2, 3; 1999 XV₁₈₇ *, 10, 2, 3; 1999 XW₁₈₇ *, 9, 2, 3; 1999 XX₁₈₇ *, 10, 2, 3; 1999 XY₁₈₇ *, 18, 4, 62; 1999 XZ₁₈₇ *, 9, 2, 3; 1999 XA₁₈₈ *, 8, 2, 3; 1999 XB₁₈₈ *, 13, 3, 21; 1999 XC₁₈₈ *, 10, 2, 3; 1999 XD₁₈₈ *, 9, 2, 3; 1999 XE₁₈₈ *, 9, 2, 3; 1999 XF₁₈₈ *, 17, 4, 23; 1999 XG₁₈₈ *, 25, 5, 499; 1999 XH₁₈₈ *, 11, 3, 21; 1999 XJ₁₈₈ *, 8, 2, 3; 1999 XK₁₈₈ *, 20, 4, 23; 1999 XL₁₈₈ *, 18, 4, 23; 1999 XM₁₈₈ *, 18, 4, 23; 1999 XN₁₈₈ *, 8, 2, 3; 1999 XO₁₈₈ *, 9, 2, 3; 1999 XP₁₈₈ *, 20, 4, 23; 1999 XQ₁₈₈ *, 18, 4, 23; 1999 XR₁₈₈ *, 19, 4, 23; 1999 XS₁₈₈ *, 19, 4, 23; 1999 XT₁₈₈ *, 9, 2, 3; 1999 XU₁₈₈ *, 19, 4, 23; 1999 XV₁₈₈ *, 15, 3, 21; 1999 XW₁₈₈ *, 14, 3, 44; 1999 XX₁₈₈ *, 14, 3, 21; 1999 XY₁₈₈ *, 8, 2, 3; 1999 XZ₁₈₈ *, 8, 2, 3; 1999 XA₁₈₉ *, 10, 2, 3; 1999 XB₁₈₉ *, 19, 4, 62; 1999 XC₁₈₉ *, 18, 4, 62; 1999 XD₁₈₉ *, 10, 2, 3; 1999 XE₁₈₉ *, 14, 3, 21; 1999 XF₁₈₉ *, 10, 2, 3; 1999 XG₁₈₉ *, 9, 2, 3; 1999 XH₁₈₉ *, 9, 2, 3; 1999 XJ₁₈₉ *, 20, 4, 23; 1999 XK₁₈₉ *, 19, 4, 23; 1999 XL₁₈₉ *, 8, 2, 3; 1999 XM₁₈₉ *, 19, 4, 23; 1999 XN₁₈₉ *, 25, 5, 51; 1999 XO₁₈₉ *, 9, 2, 3; 1999 XP₁₈₉ *, 7, 2, 3; 1999 XQ₁₈₉ *, 15, 4, 23; 1999 XR₁₈₉ *, 18, 4, 23; 1999 XS₁₈₉ *, 8, 2, 3; 1999 XT₁₈₉ *, 8, 2, 3; 1999 XU₁₈₉ *, 19, 4, 23; 1999 XV₁₈₉ *, 13, 3, 21; 1999 XW₁₈₉ *, 7, 2, 3; 1999 XX₁₈₉ *, 9, 2, 3; 1999 XY₁₈₉ *, 8, 2, 3; 1999 XZ₁₈₉ *, 10, 2, 3; 1999 XA₁₉₀ *, 9, 2, 3; 1999 XB₁₉₀ *, 9, 2, 3; 1999 XC₁₉₀ *, 9, 2, 3; 1999 XD₁₉₀ *, 14, 3, 23; 1999 XE₁₉₀ *, 9, 2, 3; 1999 XF₁₉₀ *, 9, 2, 3; 1999 XG₁₉₀ *, 6, 2, 3; 1999 XH₁₉₀ *, 8, 2, 3; 1999 XJ₁₉₀ *, 8, 2, 3; 1999 XK₁₉₀ *, 19, 4, 23; 1999 XL₁₉₀ *, 10, 2, 3; 1999 XM₁₉₀ *, 16, 4, 23; 1999 XN₁₉₀ *, 17, 5, 49; 1999 XO₁₉₀ *, 23, 5, 505; 1999 XP₁₉₀ *, 16, 4, 23; 1999 XQ₁₉₀ *, 11, 3, 23; 1999 XR₁₉₀ *, 9, 2, 3; 1999 XS₁₉₀ *, 18, 4, 23; 1999 XT₁₉₀ *, 32, 6, 51; 1999 XU₁₉₀ *, 10, 2, 3; 1999 XV₁₉₀ *, 15, 4, 23; 1999 XW₁₉₀ *, 21, 5, 51; 1999 XX₁₉₀ *, 14, 3, 21; 1999 XY₁₉₀ *, 16, 4, 23; 1999 XZ₁₉₀ *, 8, 2, 3; 1999 XA₁₉₁ *, 9, 2, 3; 1999 XB₁₉₁ *, 7, 2, 3; 1999 XC₁₉₁ *, 6, 2, 3; 1999 XD₁₉₁ *, 15, 4, 22; 1999 XE₁₉₁ *, 11, 3, 21; 1999 XF₁₉₁ *, 8, 2, 3; 1999 XG₁₉₁ *, 12, 3, 21; 1999 XH₁₉₁ *, 13, 3, 21; 1999 XJ₁₉₁ *, 19, 4, 40; 1999 XK₁₉₁ *, 8, 2, 3; 1999 XL₁₉₁ *, 9, 2, 3; 1999 XM₁₉₁ *, 9, 2, 3; 1999 XN₁₉₁ *, 7, 2, 3; 1999 XO₁₉₁ *, 9, 2, 3; 1999 XP₁₉₁ *, 8, 2, 3; 1999 XQ₁₉₁ *, 9, 2, 3; 1999 XR₁₉₁ *, 10, 2, 3; 1999 XS₁₉₁ *, 6, 2, 3; 1999 XT₁₉₁ *, 12, 3, 21; 1999 XU₁₉₁ *, 11, 3, 21; 1999 XV₁₉₁ *, 9, 3, 23; 1999 XW₁₉₁ *, 16, 4, 23; 1999 XX₁₉₁ *, 19, 4, 23; 1999 XY₁₉₁ *, 20, 4, 23; 1999 XZ₁₉₁ *, 15, 4, 23; 1999 XA₁₉₂ *, 9, 2, 3; 1999 XB₁₉₂ *, 9, 2, 3; 1999 XC₁₉₂ *, 17, 4, 23; 1999 XD₁₉₂ *, 23, 5, 49; 1999 XE₁₉₂ *, 20, 4, 23; 1999 XF₁₉₂ *, 17, 4, 23; 1999 XG₁₉₂ *, 9, 2, 3; 1999 XH₁₉₂ *, 16, 4, 23; 1999 XJ₁₉₂ *, 15, 4, 23; 1999 XK₁₉₂ *, 11, 3, 21; 1999 XL₁₉₂ *, 9, 2, 3; 1999 XM₁₉₂ *, 6, 2, 3; 1999 XN₁₉₂ *, 10, 2, 3; 1999 XO₁₉₂ *, 6, 2, 3; 1999 XP₁₉₂ *, 6, 2, 3; 1999 XQ₁₉₂ *, 7, 2, 3; 1999 XR₁₉₂ *, 12, 3, 21; 1999 XS₁₉₂ *, 17, 4, 27; 1999 XT₁₉₂ *, 10, 2, 3; 1999 XU₁₉₂ *, 10, 2, 3; 1999 XV₁₉₂ *, 9, 2, 3; 1999 XW₁₉₂ *, 10, 2, 3; 1999 XX₁₉₂ *, 17, 4, 62; 1999 XY₁₉₂ *, 11, 3, 21; 1999 XZ₁₉₂ *, 9, 2, 3; 1999 XA₁₉₃ *, 23, 5, 504; 1999 XB₁₉₃ *, 8, 2, 3; 1999 XC₁₉₃ *, 8, 2, 3; 1999 XD₁₉₃ *, 9, 2, 3; 1999 XE₁₉₃ *, 18, 4, 23; 1999 XF₁₉₃ *, 12, 3, 23; 1999 XG₁₉₃ *, 17, 4, 23; 1999 XH₁₉₃ *, 17, 4, 23; 1999 XJ₁₉₃ *, 7, 2, 3; 1999 XK₁₉₃ *, 18, 4, 23; 1999 XL₁₉₃ *, 9, 2, 3; 1999 XM₁₉₃ *, 13, 3, 21; 1999 XN₁₉₃ *, 7, 2, 3; 1999 XO₁₉₃ *, 7, 2, 3; 1999 XP₁₉₃ *, 24, 5, 61; 1999 XQ₁₉₃ *, 8, 2, 3; 1999 XR₁₉₃ *, 6, 2, 3; 1999 XS₁₉₃ *, 9, 2, 3; 1999 XT₁₉₃ *, 8, 2, 3; 1999 XU₁₉₃ *, 16, 4, 23; 1999 XV₁₉₃ *, 9, 2, 3; 1999 XW₁₉₃ *, 7, 2, 3; 1999 XX₁₉₃ *, 8, 2, 3; 1999 XY₁₉₃ *, 8, 2, 3; 1999 XZ₁₉₃ *, 10, 2, 3; 1999 XA₁₉₄ *, 14, 4, 23; 1999 XB₁₉₄ *, 10, 2, 3; 1999 XC₁₉₄ *, 19, 4, 23; 1999 XD₁₉₄ *, 12, 2, 3; 1999 XE₁₉₄ *, 8, 2, 3; 1999 XF₁₉₄ *, 9, 2, 3; 1999 XG₁₉₄ *, 13, 3, 21; 1999 XH₁₉₄ *, 10, 2, 3; 1999 XJ₁₉₄ *, 8, 2, 3; 1999 XK₁₉₄ *, 8, 2, 3; 1999 XL₁₉₄ *, 10, 2, 3; 1999 XM₁₉₄ *, 18, 4, 23; 1999 XN₁₉₄ *, 8, 2, 3; 1999 XO₁₉₄ *, 13, 3, 21; 1999 XP₁₉₄ *, 16, 4, 23; 1999 XQ₁₉₄ *, 17, 4, 23; 1999 XR₁₉₄ *, 10, 2, 3; 1999 XS<

2, 3; 1999 XT₁₉₇ *, 13, 3, 21; 1999 XU₁₉₇ *, 13, 3, 40; 1999 XV₁₉₇ *, 10, 2, 3; 1999 XW₁₉₇ *, 8, 2, 3; 1999 XX₁₉₇ *, 10, 2, 3; 1999 XY₁₉₇ *, 8, 2, 3; 1999 XZ₁₉₇ *, 14, 2, 3; 1999 XA₁₉₈ *, 15, 3, 21; 1999 XB₁₉₈ *, 14, 2, 3; 1999 XC₁₉₈ *, 13, 2, 3; 1999 XD₁₉₈ *, 8, 2, 3; 1999 XE₁₉₈ *, 8, 2, 3; 1999 XF₁₉₈ *, 10, 3, 21; 1999 XG₁₉₈ *, 6, 2, 3; 1999 XH₁₉₈ *, 6, 2, 3; 1999 XJ₁₉₈ *, 7, 2, 3; 1999 XK₁₉₈ *, 8, 2, 3; 1999 XL₁₉₈ *, 8, 2, 3; 1999 XM₁₉₈ *, 15, 4, 23; 1999 XN₁₉₈ *, 6, 2, 3; 1999 XO₁₉₈ *, 20, 5, 23; 1999 XP₁₉₈ *, 6, 2, 3; 1999 XQ₁₉₈ *, 16, 4, 23; 1999 XR₁₉₈ *, 6, 2, 3; 1999 XS₁₉₈ *, 6, 2, 3; 1999 XT₁₉₈ *, 14, 4, 23; 1999 XU₁₉₈ *, 7, 2, 3; 1999 XV₁₉₈ *, 15, 4, 23; 1999 XW₁₉₈ *, 8, 2, 3; 1999 XX₁₉₈ *, 7, 2, 3; 1999 XY₁₉₈ *, 17, 4, 23; 1999 XZ₁₉₈ *, 7, 2, 3; 1999 XA₁₉₉ *, 7, 2, 3; 1999 XB₁₉₉ *, 8, 2, 3; 1999 XC₁₉₉ *, 7, 2, 3; 1999 XD₁₉₉ *, 7, 2, 3; 1999 XE₁₉₉ *, 6, 2, 3; 1999 XF₁₉₉ *, 12, 3, 18; 1999 XG₁₉₉ *, 8, 2, 3; 1999 XH₁₉₉ *, 13, 3, 21; 1999 XJ₁₉₉ *, 6, 2, 3; 1999 XK₁₉₉ *, 7, 2, 3; 1999 XL₁₉₉ *, 13, 3, 21; 1999 XM₁₉₉ *, 6, 2, 3; 1999 XN₁₉₉ *, 12, 3, 21; 1999 XO₁₉₉ *, 7, 2, 3; 1999 XP₁₉₉ *, 10, 3, 23; 1999 XQ₁₉₉ *, 7, 2, 3; 1999 XR₁₉₉ *, 8, 2, 3; 1999 XS₁₉₉ *, 6, 2, 3; 1999 XT₁₉₉ *, 8, 2, 3; 1999 XU₁₉₉ *, 16, 4, 22; 1999 XV₁₉₉ *, 7, 2, 3; 1999 XW₁₉₉ *, 6, 2, 3; 1999 XX₁₉₉ *, 7, 2, 3; 1999 XY₁₉₉ *, 8, 2, 3; 1999 XZ₁₉₉ *, 6, 2, 3; 1999 XA₂₀₀ *, 7, 2, 3; 1999 XB₂₀₀ *, 8, 2, 3; 1999 XC₂₀₀ *, 6, 2, 3; 1999 XD₂₀₀ *, 8, 2, 3; 1999 XE₂₀₀ *, 8, 2, 3; 1999 XF₂₀₀ *, 7, 2, 3; 1999 XG₂₀₀ *, 6, 2, 3; 1999 XH₂₀₀ *, 7, 2, 3; 1999 XJ₂₀₀ *, 8, 2, 3; 1999 XK₂₀₀ *, 7, 2, 3; 1999 XL₂₀₀ *, 6, 2, 3; 1999 XM₂₀₀ *, 6, 2, 3; 1999 XN₂₀₀ *, 8, 2, 3; 1999 XO₂₀₀ *, 15, 4, 23; 1999 XP₂₀₀ *, 8, 2, 3; 1999 XQ₂₀₀ *, 7, 2, 3; 1999 XR₂₀₀ *, 7, 2, 3; 1999 XS₂₀₀ *, 10, 3, 21; 1999 XT₂₀₀ *, 6, 2, 3; 1999 XU₂₀₀ *, 17, 4, 23; 1999 XV₂₀₀ *, 7, 2, 3; 1999 XW₂₀₀ *, 19, 4, 23; 1999 XX₂₀₀ *, 18, 4, 23; 1999 XY₂₀₀ *, 9, 2, 3; 1999 XZ₂₀₀ *, 16, 4, 23; 1999 XA₂₀₁ *, 7, 2, 3; 1999 XB₂₀₁ *, 7, 2, 3; 1999 XC₂₀₁ *, 7, 2, 3; 1999 XD₂₀₁ *, 8, 2, 3; 1999 XE₂₀₁ *, 8, 2, 3; 1999 XF₂₀₁ *, 8, 2, 3; 1999 XG₂₀₁ *, 8, 2, 3; 1999 XH₂₀₁ *, 14, 4, 23; 1999 XJ₂₀₁ *, 8, 2, 3; 1999 XK₂₀₁ *, 9, 2, 3; 1999 XL₂₀₁ *, 8, 2, 3; 1999 XM₂₀₁ *, 7, 2, 3; 1999 XN₂₀₁ *, 8, 2, 3; 1999 XO₂₀₁ *, 8, 2, 3; 1999 XP₂₀₁ *, 9, 2, 3; 1999 XQ₂₀₁ *, 8, 2, 3; 1999 XR₂₀₁ *, 7, 2, 3; 1999 XS₂₀₁ *, 17, 4, 19; 1999 XT₂₀₁ *, 9, 2, 3; 1999 XU₂₀₁ *, 9, 2, 3; 1999 XV₂₀₁ *, 8, 2, 3; 1999 XW₂₀₁ *, 6, 2, 3; 1999 XX₂₀₁ *, 7, 2, 3; 1999 XY₂₀₁ *, 7, 2, 3; 1999 XZ₂₀₁ *, 7, 2, 3; 1999 XA₂₀₂ *, 6, 2, 3; 1999 XB₂₀₂ *, 13, 4, 23; 1999 XC₂₀₂ *, 6, 2, 3; 1999 XD₂₀₂ *, 7, 2, 3; 1999 XE₂₀₂ *, 7, 2, 3; 1999 XF₂₀₂ *, 7, 2, 3; 1999 XG₂₀₂ *, 8, 2, 3; 1999 XH₂₀₂ *, 7, 2, 3; 1999 XJ₂₀₂ *, 20, 4, 23; 1999 XK₂₀₂ *, 10, 2, 3; 1999 XL₂₀₂ *, 10, 2, 3; 1999 XM₂₀₂ *, 8, 2, 3; 1999 XN₂₀₂ *, 9, 2, 3; 1999 XO₂₀₂ *, 9, 2, 3; 1999 XP₂₀₂ *, 13, 2, 3; 1999 XQ₂₀₂ *, 9, 2, 3; 1999 XR₂₀₂ *, 10, 2, 3; 1999 XS₂₀₂ *, 8, 2, 3; 1999 XT₂₀₂ *, 20, 4, 27; 1999 XU₂₀₂ *, 10, 2, 3; 1999 XV₂₀₂ *, 10, 2, 3; 1999 XW₂₀₂ *, 10, 2, 3; 1999 XX₂₀₂ *, 10, 2, 3; 1999 XY₂₀₂ *, 9, 2, 3; 1999 XZ₂₀₂ *, 9, 2, 3; 1999 XA₂₀₃ *, 12, 3, 21; 1999 XB₂₀₃ *, 8, 2, 3; 1999 XC₂₀₃ *, 13, 2, 3; 1999 XD₂₀₃ *, 14, 3, 44; 1999 XE₂₀₃ *, 19, 4, 27; 1999 XF₂₀₃ *, 10, 2, 3; 1999 XG₂₀₃ *, 10, 2, 3; 1999 XH₂₀₃ *, 9, 2, 3; 1999 XJ₂₀₃ *, 12, 3, 21; 1999 XK₂₀₃ *, 10, 2, 3; 1999 XL₂₀₃ *, 10, 2, 3; 1999 XM₂₀₃ *, 22, 5, 27; 1999 XN₂₀₃ *, 9, 2, 3; 1999 XO₂₀₃ *, 6, 2, 3; 1999 XP₂₀₃ *, 8, 2, 3; 1999 XQ₂₀₃ *, 8, 2, 3; 1999 XR₂₀₃ *, 13, 3, 21; 1999 XS₂₀₃ *, 7, 2, 3; 1999 XT₂₀₃ *, 9, 2, 3; 1999 XU₂₀₃ *, 14, 3, 21; 1999 XV₂₀₃ *, 9, 2, 3; 1999 XW₂₀₃ *, 8, 2, 3; 1999 XX₂₀₃ *, 8, 2, 3; 1999 XY₂₀₃ *, 10, 2, 3; 1999 XZ₂₀₃ *, 9, 2, 3; 1999 XA₂₀₄ *, 10, 2, 3; 1999 XB₂₀₄ *, 13, 3, 21; 1999 XC₂₀₄ *, 12, 3, 21; 1999 XD₂₀₄ *, 9, 2, 3; 1999 XE₂₀₄ *, 10, 2, 3; 1999 XF₂₀₄ *, 15, 3, 23; 1999 XG₂₀₄ *, 14, 3, 23; 1999 XH₂₀₄ *, 9, 2, 3; 1999 XJ₂₀₄ *, 10, 2, 3; 1999 XK₂₀₄ *, 10, 2, 3; 1999 XL₂₀₄ *, 9, 2, 3; 1999 XM₂₀₄ *, 10, 2, 3; 1999 XN₂₀₄ *, 8, 2, 3; 1999 XO₂₀₄ *, 7, 2, 3; 1999 XP₂₀₄ *, 10, 2, 3; 1999 XQ₂₀₄ *, 10, 2, 3; 1999 XR₂₀₄ *, 7, 2, 3; 1999 XS₂₀₄ *, 10, 2, 3; 1999 XT₂₀₄ *, 9, 2, 3; 1999 XU₂₀₄ *, 8, 2, 3; 1999 XV₂₀₄ *, 10, 2, 3; 1999 XW₂₀₄ *, 10, 2, 3; 1999 XX₂₀₄ *, 8, 2, 3; 1999 XY₂₀₄ *, 10, 2, 3; 1999 XZ₂₀₄ *, 9, 2, 3; 1999 XA₂₀₅ *, 10, 2, 3; 1999 XB₂₀₅ *, 15, 3, 21; 1999 XC₂₀₅ *, 9, 2, 3; 1999 XD₂₀₅ *, 10, 2, 3; 1999 XE₂₀₅ *, 10, 2, 3; 1999 XF₂₀₅ *, 14, 3, 21; 1999 XG₂₀₅ *, 15, 3, 21; 1999 XH₂₀₅ *, 9, 2, 3; 1999 XJ₂₀₅ *, 9, 2, 3; 1999 XK₂₀₅ *, 25, 5, 29; 1999 XL₂₀₅ *, 9, 2, 3; 1999 XM₂₀₅ *, 9, 2, 3; 1999 XN₂₀₅ *, 20, 4, 27; 1999 XO₂₀₅ *, 10, 2, 3; 1999 XP₂₀₅ *, 10, 2, 3; 1999 XQ₂₀₅ *, 15, 3, 21; 1999 XR₂₀₅ *, 9, 2, 3; 1999 XS₂₀₅ *, 13, 3, 21; 1999 XT₂₀₅ *, 10, 2, 3; 1999 XU₂₀₅ *, 10, 2, 3; 1999 XV₂₀₅ *, 15, 3, 18; 1999 XW₂₀₅ *, 8, 2, 3; 1999 XX₂₀₅ *, 7, 2, 3; 1999 XY₂₀₅ *, 9, 2, 3; 1999 XZ₂₀₅ *, 10, 2, 3; 1999 XA₂₀₆ *, 9, 2, 3; 1999 XB₂₀₆ *, 8, 2, 3; 1999 XC₂₀₆ *, 7, 2, 3; 1999 XD₂₀₆ *, 10, 2, 3; 1999 XE₂₀₆ *, 17, 4, 22; 1999 XF₂₀₆ *, 19, 4, 22; 1999 XG₂₀₆ *, 20, 4, 22; 1999 XH₂₀₆ *, 13, 3, 21; 1999 XJ₂₀₆ *, 8, 2, 3; 1999 XK₂₀₆ *, 18, 4, 22; 1999 XL₂₀₆ *, 17, 4, 22; 1999 XM₂₀₆ *, 14, 3, 21; 1999 XN₂₀₆ *, 9, 2, 3; 1999 XO₂₀₆ *, 9, 2, 3; 1999 XP₂₀₆ *, 12, 3, 21; 1999 XQ₂₀₆ *, 7, 2, 3; 1999 XR₂₀₆ *, 9, 2, 3; 1999 XS₂₀₆ *, 10, 2, 3; 1999 XT₂₀₆ *, 10, 2, 3; 1999 XU₂₀₆ *, 11, 3, 21; 1999 XV₂₀₆ *, 10, 2, 3; 1999 XW₂₀₆ *, 9, 2, 3; 1999 XX₂₀₆ *, 20, 5, 391; 1999 XY₂₀₆ *, 10, 2, 3; 1999 XZ₂₀₆ *, 16, 4, 23; 1999 XA₂₀₇ *, 18, 4, 23; 1999 XB₂₀₇ *, 8, 2, 3; 1999 XC₂₀₇ *, 8, 2, 3; 1999 XD₂₀₇ *, 13, 3, 21; 1999 XE₂₀₇ *, 8, 2, 3; 1999 XF₂₀₇ *, 6, 2, 3; 1999 XG₂₀₇ *, 8, 2, 3; 1999 XH₂₀₇ *, 13, 3, 23; 1999 XJ₂₀₇ *, 9, 2, 3; 1999 XK₂₀₇ *, 6, 2, 3; 1999 XL₂₀₇ *, 8, 2, 3; 1999 XM₂₀₇ *, 9, 2, 3; 1999 XN₂₀₇ *, 8, 2, 3; 1999 XO₂₀₇ *, 8, 2, 3; 1999 XP₂₀₇ *, 8, 2, 3; 1999 XQ₂₀₇ *, 8, 2, 3; 1999 XR₂₀₇ *, 8, 2, 3; 1999 XS₂₀₇ *, 8, 2, 3; 1999 XT₂₀₇ *, 6, 2, 3; 1999 XU₂₀₇ *, 8, 2, 3; 1999 XV₂₀₇ *, 6, 2, 3; 1999 XW₂₀₇ *, 8, 2, 3; 1999 XX₂₀₇ *, 8, 2, 2; 1999 XY₂₀₇ *, 7, 2, 2; 1999 XZ₂₀₇ *, 9, 2, 2; 1999 XA₂₀₈ *, 6, 2, 2; 1999 XB₂₀₈ *, 8, 2, 2; 1999 XC₂₀₈ *, 9, 2, 2; 1999 XD₂₀₈ *, 9, 2, 2; 1999 XE₂₀₈ *, 10, 2, 2; 1999 XF₂₀₈ *, 14, 2, 2; 1999 XG₂₀₈ *, 9, 2, 2; 1999 XH₂₀₈ *, 18, 4, 22; 1999 XJ₂₀₈ *, 10, 2, 2; 1999 XK₂₀₈ *, 24, 5, 97; 1999 XL₂₀₈ *, 10, 2, 2; 1999 XM₂₀₈ *, 7, 2, 2; 1999 XN₂₀₈ *, 7, 2, 2; 1999 XO₂₀₈ *, 8, 2, 2; 1999 XP₂₀₈ *, 7, 2, 2;

1999 XQ₂₀₈ *, 7, 2, 2; 1999 XR₂₀₈ *, 9, 2, 2; 1999 XS₂₀₈ *, 10, 2, 2; 1999 XT₂₀₈ *, 9, 2, 2; 1999 XU₂₀₈ *, 9, 2, 2; 1999 XV₂₀₈ *, 9, 2, 2; 1999 XW₂₀₈ *, 10, 3, 20; 1999 XX₂₀₈ *, 10, 2, 2; 1999 XY₂₀₈ *, 9, 2, 2; 1999 XZ₂₀₈ *, 24, 5, 97; 1999 XA₂₀₉ *, 9, 2, 2; 1999 XB₂₀₉ *, 7, 2, 2; 1999 XC₂₀₉ *, 19, 4, 62; 1999 XD₂₀₉ *, 9, 2, 2; 1999 XE₂₀₉ *, 6, 2, 2; 1999 XF₂₀₉ *, 14, 3, 17; 1999 XG₂₀₉ *, 8, 2, 2; 1999 XH₂₀₉ *, 10, 2, 2; 1999 XJ₂₀₉ *, 20, 4, 59; 1999 XK₂₀₉ *, 10, 2, 2; 1999 XL₂₀₉ *, 9, 2, 2; 1999 XM₂₀₉ *, 9, 2, 2; 1999 XN₂₀₉ *, 9, 2, 2; 1999 XO₂₀₉ *, 10, 2, 2; 1999 XP₂₀₉ *, 12, 3, 17; 1999 XQ₂₀₉ *, 6, 2, 2; 1999 XR₂₀₉ *, 18, 4, 20; 1999 XS₂₀₉ *, 7, 2, 2; 1999 XT₂₀₉ *, 17, 4, 59; 1999 XU₂₀₉ *, 7, 2, 2; 1999 XV₂₀₉ *, 9, 2, 2; 1999 XW₂₀₉ *, 11, 3, 17; 1999 XX₂₀₉ *, 8, 2, 2; 1999 XY₂₀₉ *, 17, 4, 39; 1999 XZ₂₀₉ *, 11, 3, 17; 1999 XA₂₁₀ *, 9, 2, 2; 1999 XB₂₁₀ *, 8, 2, 2; 1999 XC₂₁₀ *, 12, 3, 17; 1999 XD₂₁₀ *, 9, 2, 2; 1999 XE₂₁₀ *, 9, 2, 2; 1999 XF₂₁₀ *, 13, 3, 39; 1999 XG₂₁₀ *, 10, 2, 2; 1999 XH₂₁₀ *, 23, 5, 81; 1999 XJ₂₁₀ *, 8, 2, 2; 1999 XK₂₁₀ *, 11, 3, 17; 1999 XL₂₁₀ *, 10, 2, 2; 1999 XM₂₁₀ *, 8, 2, 2; 1999 XN₂₁₀ *, 19, 4, 39; 1999 XO₂₁₀ *, 19, 4, 39; 1999 XP₂₁₀ *, 12, 3, 17; 1999 XQ₂₁₀ *, 14, 3, 17; 1999 XR₂₁₀ *, 9, 2, 2; 1999 XS₂₁₀ *, 13, 3, 17; 1999 XT₂₁₀ *, 9, 2, 2; 1999 XU₂₁₀ *, 10, 2, 2; 1999 XV₂₁₀ *, 7, 2, 2; 1999 XW₂₁₀ *, 10, 2, 2; 1999 XX₂₁₀ *, 8, 2, 2; 1999 XY₂₁₀ *, 18, 3, 17; 1999 XZ₂₁₀ *, 10, 2, 2; 1999 XA₂₁₁ *, 9, 2, 2; 1999 XB₂₁₁ *, 17, 4, 39; 1999 XC₂₁₁ *, 15, 3, 17; 1999 XD₂₁₁ *, 10, 2, 2; 1999 XE₂₁₁ *, 10, 2, 2; 1999 XF₂₁₁ *, 20, 5, 39; 1999 XG₂₁₁ *, 7, 2, 2; 1999 XH₂₁₁ *, 7, 2, 2; 1999 XJ₂₁₁ *, 6, 2, 2; 1999 XK₂₁₁ *, 6, 2, 2; 1999 XL₂₁₁ *, 7, 2, 2; 1999 XM₂₁₁ *, 6, 2, 2; 1999 XN₂₁₁ *, 7, 2, 2; 1999 XO₂₁₁ *, 7, 2, 2; 1999 XP₂₁₁ *, 7, 2, 2; 1999 XQ₂₁₁ *, 16, 4, 18; 1999 XR₂₁₁ *, 8, 2, 2; 1999 XS₂₁₁ *, 7, 2, 2; 1999 XT₂₁₁ *, 10, 2, 2; 1999 XU₂₁₁ *, 20, 4, 21; 1999 XV₂₁₁ *, 10, 2, 2; 1999 XW₂₁₁ *, 13, 3, 17; 1999 XX₂₁₁ *, 9, 2, 2; 1999 XY₂₁₁ *, 10, 2, 2; 1999 XZ₂₁₁ *, 7, 2, 2; 1999 XA₂₁₂ *, 10, 2, 2; 1999 XB₂₁₂ *, 9, 2, 2; 1999 XC₂₁₂ *, 9, 2, 2; 1999 XD₂₁₂ *, 8, 2, 2; 1999 XE₂₁₂ *, 8, 2, 2; 1999 XF₂₁₂ *, 27, 6, 101; 1999 XG₂₁₂ *, 19, 4, 24; 1999 XH₂₁₂ *, 30, 7, 113; 1999 XJ₂₁₂ *, 27, 6, 63; 1999 XK₂₁₂ *, 21, 5, 61; 1999 XL₂₁₂ *, 8, 2, 1; 1999 XM₂₁₂ *, 28, 6, 63; 1999 XN₂₁₂ *, 20, 4, 24; 1999 XO₂₁₂ *, 10, 2, 1; 1999 XP₂₁₂ *, 10, 2, 1; 1999 XQ₂₁₂ *, 9, 2, 1; 1999 XR₂₁₂ *, 7, 2, 1; 1999 XS₂₁₂ *, 10, 2, 1; 1999 XT₂₁₂ *, 16, 4, 41; 1999 XU₂₁₂ *, 9, 2, 1; 1999 XV₂₁₂ *, 26, 6, 63; 1999 XW₂₁₂ *, 8, 2, 1; 1999 XX₂₁₂ *, 7, 2, 1; 1999 XY₂₁₂ *, 22, 4, 33; 1999 XZ₂₁₂ *, 10, 2, 1; 1999 XA₂₁₃ *, 28, 6, 67; 1999 XB₂₁₃ *, 30, 6, 65; 1999 XC₂₁₃ *, 8, 2, 1; 1999 XD₂₁₃ *, 6, 2, 1; 1999 XE₂₁₃ *, 11, 3, 24; 1999 XF₂₁₃ *, 9, 2, 1; 1999 XG₂₁₃ *, 28, 6, 67; 1999 XH₂₁₃ *, 29, 6, 67; 1999 XJ₂₁₃ *, 23, 5, 37; 1999 XK₂₁₃ *, 10, 2, 1; 1999 XL₂₁₃ *, 10, 2, 1; 1999 XM₂₁₃ *, 9, 2, 1; 1999 XN₂₁₃ *, 28, 6, 66; 1999 XO₂₁₃ *, 21, 5, 31; 1999 XP₂₁₃ *, 18, 4, 23; 1999 XQ₂₁₃ *, 14, 3, 22; 1999 XR₂₁₃ *, 25, 5, 50; 1999 XS₂₁₃ *, 23, 5, 28; 1999 XT₂₁₃ *, 20, 5, 32; 1999 XU₂₁₃ *, 8, 2, 1; 1999 XV₂₁₃ *, 7, 2, 1; 1999 XW₂₁₃ *, 23, 5, 31; 1999 XX₂₁₃ *, 8, 2, 1; 1999 XY₂₁₃ *, 23, 5, 31; 1999 XZ₂₁₃ *, 24, 5, 507; 1999 XA₂₁₄ *, 19, 4, 28; 1999 XB₂₁₄ *, 16, 4, 28; 1999 XC₂₁₄ *, 8, 2, 1; 1999 XD₂₁₄ *, 23, 5, 37; 1999 XE₂₁₄ *, 7, 2, 1; 1999 XF₂₁₄ *, 6, 2, 1; 1999 XG₂₁₄ *, 23, 5, 31; 1999 XH₂₁₄ *, 8, 2, 1; 1999 XJ₂₁₄ *, 17, 4, 23; 1999 XK₂₁₄ *, 6, 2, 1; 1999 XL₂₁₄ *, 6, 2, 1; 1999 XM₂₁₄ *, 21, 5, 49; 1999 XN₂₁₄ *, 10, 2, 1; 1999 XO₂₁₄ *, 10, 2, 1; 1999 XP₂₁₄ *, 8, 2, 1; 1999 XQ₂₁₄ *, 9, 2, 1; 1999 XR₂₁₄ *, 12, 3, 31; 1999 XS₂₁₄ *, 25, 4, 21; 1999 XT₂₁₄ *, 8, 2, 1; 1999 XU₂₁₄ *, 26, 6, 53; 1999 XV₂₁₄ *, 9, 2, 1; 1999 XW₂₁₄ *, 20, 3, 22; 1999 XX₂₁₄ *, 6, 2, 1; 1999 XY₂₁₄ *, 28, 6, 51; 1999 XZ₂₁₄ *, 19, 4, 24; 1999 XA₂₁₅ *, 23, 5, 32; 1999 XB₂₁₅ *, 7, 2, 1; 1999 XC₂₁₅ *, 9, 2, 1; 1999 XD₂₁₅ *, 28, 5, 33; 1999 XE₂₁₅ *, 13, 2, 1; 1999 XF₂₁₅ *, 12, 2, 1; 1999 XG₂₁₅ *, 11, 2, 1; 1999 XH₂₁₅ *, 21, 5, 31; 1999 XJ₂₁₅ *, 21, 6, 504; 1999 XK₂₁₅ *, 18, 4, 28; 1999 XL₂₁₅ *, 18, 4, 24; 1999 XM₂₁₅ *, 8, 2, 1; 1999 XN₂₁₅ *, 31, 7, 559; 1999 XO₂₁₅ *, 7, 2, 1; 1999 XP₂₁₅ *, 21, 5, 36; 1999 XQ₂₁₅ *, 7, 2, 1; 1999 XR₂₁₅ *, 16, 4, 26; 1999 XS₂₁₅ *, 19, 4, 28; 1999 XT₂₁₅ *, 20, 4, 28; 1999 XZ₂₁₅ *, 20, 4, 20; 1999 XW₂₁₅ *, 10, 2, 2; 1999 XX₂₁₅ *, 6, 2, 4; 1999 XY₂₁₅ *, 6, 2, 4; 1999 XZ₂₁₆ *, 13, 3, 28; 1999 XA₂₁₆ *, 15, 2, 1; 1999 XS₂₁₆ *, 10, 2, 1; 1999 XU₂₁₆ *, 14, 3, 28; 1999 XD₂₁₇ *, 3, 1, 0; 1999 XJ₂₁₇ *, 4, 1, 0; 1999 XK₂₁₇ *, 12, 3, 29; 1999 XN₂₁₇ *, 14, 3, 27; 1999 XO₂₁₇ *, 10, 1, 0; 1999 XW₂₁₇ *, 19, 4, 6; 1999 XY₂₁₇ *, 7, 2, 1; 1999 XD₂₁₈ *, 12, 2, 1; 1999 XJ₂₁₈ *, 5, 1

1999 XL₂₂₂ *, 15, 4, 20; 1999 XM₂₂₂ *, 7, 2, 1; 1999 XN₂₂₂ *, 15, 4, 20; 1999 XO₂₂₂ *, 17, 4, 20; 1999 XP₂₂₂ *, 15, 4, 20; 1999 XQ₂₂₂ *, 15, 4, 49; 1999 XR₂₂₂ *, 7, 2, 1; 1999 XS₂₂₂ *, 6, 2, 1; 1999 XT₂₂₂ *, 12, 3, 20; 1999 XU₂₂₂ *, 13, 3, 18; 1999 XV₂₂₂ *, 7, 2, 1; 1999 XW₂₂₂ *, 8, 2, 1; 1999 XX₂₂₂ *, 8, 2, 1; 1999 XY₂₂₂ *, 18, 4, 20; 1999 XZ₂₂₂ *, 20, 4, 20; 1999 XA₂₂₃ *, 10, 2, 1; 1999 XB₂₂₃ *, 19, 4, 20; 1999 XC₂₂₃ *, 10, 2, 1; 1999 XD₂₂₃ *, 9, 2, 1; 1999 XT₂₂₃ *, 8, 2, 1; 1999 XX₂₂₃ *, 14, 2, 1; 1999 XY₂₂₃ *, 9, 2, 1; 1999 XG₂₂₄ *, 18, 4, 6; 1999 XH₂₂₄ *, 14, 2, 1; 1999 XM₂₂₄ *, 11, 2, 1; 1999 XE₂₂₅ *, 3, 1, 0; 1999 XJ₂₂₅ *, 15, 3, 27; 1999 XN₂₂₅ *, 10, 2, 1; 1999 XP₂₂₅ *, 12, 3, 30; 1999 XU₂₂₅ *, 8, 2, 2; 1999 XV₂₂₅ *, 12, 2, 1; 1999 XY₂₂₅ *, 11, 3, 29; 1999 XC₂₂₆ *, 10, 2, 1; 1999 XF₂₂₆ *, 10, 2, 1; 1999 XG₂₂₆ *, 4, 1, 0; 1999 XH₂₂₆ *, 4, 1, 0; 1999 XM₂₂₆ *, 10, 2, 1; 1999 XS₂₂₆ *, 4, 1, 0; 1999 XX₂₂₆ *, 15, 3, 28; 1999 XK₂₂₇ *, 3, 1, 0; 1999 XL₂₂₇ *, 9, 2, 505; 1999 XM₂₂₇ *, 10, 2, 2; 1999 XO₂₂₇ *, 4, 1, 0; 1999 XS₂₂₇ *, 7, 2, 2; 1999 XU₂₂₇ *, 5, 1, 0; 1999 XX₂₂₇ *, 19, 4, 81; 1999 XY₂₂₇ *, 24, 5, 20; 1999 XZ₂₂₇ *, 22, 5, 116; 1999 XA₂₂₈ *, 17, 4, 62; 1999 XB₂₂₈ *, 15, 3, 100; 1999 XC₂₂₈ *, 7, 2, 6; 1999 XD₂₂₈ *, 8, 2, 1; 1999 XG₂₂₈ *, 8, 2, 1; 1999 XL₂₂₈ *, 8, 2, 1; 1999 XQ₂₂₈ *, 10, 2, 1; 1999 XR₂₂₈ *, 10, 2, 1; 1999 XS₂₂₈ *, 14, 3, 28; 1999 XU₂₂₈ *, 9, 2, 1; 1999 XK₂₂₉ *, 3, 1, 0; 1999 XL₂₂₉ *, 4, 1, 0; 1999 XM₂₂₉ *, 5, 1, 0; 1999 XN₂₂₉ *, 4, 1, 0; 1999 XO₂₂₉ *, 5, 1, 0; 1999 XP₂₂₉ *, 4, 1, 0; 1999 XQ₂₂₉ *, 5, 1, 0; 1999 XR₂₂₉ *, 5, 1, 0; 1999 XS₂₂₉ *, 4, 1, 0; 1999 XT₂₂₉ *, 3, 1, 0; 1999 XU₂₂₉ *, 3, 1, 0; 1999 XV₂₂₉ *, 4, 1, 0; 1999 XW₂₂₉ *, 5, 1, 0; 1999 XX₂₂₉ *, 5, 1, 0; 1999 XY₂₂₉ *, 5, 1, 0; 1999 XZ₂₂₉ *, 5, 1, 0; 1999 XA₂₃₀ *, 5, 1, 0; 1999 XC₂₃₀ *, 4, 1, 0; 1999 XF₂₃₀ *, 3, 1, 0; 1999 XG₂₃₀ *, 5, 1, 0; 1999 XH₂₃₀ *, 8, 2, 1; 1999 XJ₂₃₀ *, 5, 1, 0; 1999 XK₂₃₀ *, 5, 1, 0; 1999 XL₂₃₀ *, 5, 1, 0; 1999 XM₂₃₀ *, 5, 1, 0; 1999 XN₂₃₀ *, 5, 1, 0; 1999 XO₂₃₀ *, 5, 1, 0; 1999 XP₂₃₀ *, 5, 1, 0; 1999 XQ₂₃₀ *, 4, 1, 0; 1999 XR₂₃₀ *, 5, 1, 0; 1999 XS₂₃₀ *, 3, 1, 0; 1999 XT₂₃₀ *, 7, 2, 1; 1999 XU₂₃₀ *, 4, 1, 0; 1999 XV₂₃₀ *, 5, 1, 0; 1999 XW₂₃₀ *, 4, 1, 0; 1999 XX₂₃₀ *, 5, 1, 0; 1999 XY₂₃₀ *, 5, 1, 0; 1999 XZ₂₃₀ *, 5, 1, 0; 1999 XA₂₃₁ *, 5, 1, 0; 1999 XB₂₃₁ *, 5, 1, 0; 1999 XC₂₃₁ *, 5, 1, 0; 1999 XD₂₃₁ *, 3, 1, 0; 1999 XE₂₃₁ *, 5, 1, 0; 1999 XF₂₃₁ *, 5, 1, 0; 1999 XG₂₃₁ *, 5, 1, 0; 1999 XH₂₃₁ *, 5, 1, 0; 1999 XJ₂₃₁ *, 3, 1, 0; 1999 XK₂₃₁ *, 5, 1, 0; 1999 XL₂₃₁ *, 5, 1, 0; 1999 XM₂₃₁ *, 5, 1, 0; 1999 XN₂₃₁ *, 5, 1, 0; 1999 XO₂₃₁ *, 5, 1, 0; 1999 XP₂₃₁ *, 4, 1, 0; 1999 XQ₂₃₁ *, 5, 1, 0; 1999 XR₂₃₁ *, 4, 1, 0; 1999 XS₂₃₁ *, 3, 1, 0; 1999 XT₂₃₁ *, 3, 1, 0; 1999 XU₂₃₁ *, 3, 1, 0; 1999 XV₂₃₁ *, 3, 1, 0; 1999 XW₂₃₁ *, 3, 1, 0; 1999 XX₂₃₁ *, 5, 1, 0; 1999 XY₂₃₁ *, 4, 1, 0; 1999 XZ₂₃₁ *, 5, 1, 0; 1999 YA *, 23, 6, 21; 1999 YB, 14, 3, 18; 1999 YC *, 21, 3, 3; 1999 YD *, 30, 5, 17; 1999 YE *, 15, 4, 25; 1999 YF *, 7, 2, 1; 1999 YG *, 25, 5, 61; 1999 YH *, 18, 4, 25; 1999 YJ *, 23, 5, 62; 1999 YK *, 24, 4, 25; 1999 YL *, 15, 2, 1; 1999 YM *, 17, 4, 26; 1999 YN *, 25, 5, 63; 1999 YO *, 17, 4, 25; 1999 YP *, 8, 2, 1; 1999 YQ *, 10, 2, 1; 1999 YR *, 9, 2, 1; 1999 YS *, 25, 5, 18; 1999 YT *, 33, 7, 24; 1999 YU *, 11, 3, 3; 1999 YV, 15, 3, 63; 1999 YW, 19, 4, 63; 1999 YX, 28, 6, 63; 1999 YY, 25, 5, 67; 1999 YZ, 34, 7, 571; 1999 YA₁ *, 4, 1, 0; 1999 YB₁ *, 8, 2, 21; 1999 YC₁ *, 10, 2, 2; 1999 YD₁ *, 18, 4, 60; 1999 YE₁ *, 20, 4, 14; 1999 YF₁ *, 8, 2, 1; 1999 YG₁ *, 10, 2, 1; 1999 YH₁ *, 9, 2, 1; 1999 YJ₁ *, 9, 2, 1; 1999 YK₁ *, 10, 2, 1; 1999 YL₁ *, 13, 3, 11; 1999 YM₁ *, 10, 2, 1; 1999 YN₁ *, 10, 3, 11; 1999 YO₁ *, 25, 5, 49; 1999 YP₁ *, 16, 4, 63; 1999 YQ₁ *, 9, 2, 1; 1999 YR₁ *, 22, 6, 30; 1999 YS₁ *, 8, 2, 1; 1999 YT₁ *, 23, 5, 29; 1999 YU₁ *, 20, 4, 25; 1999 YV₁ *, 20, 4, 26; 1999 YZ₁ *, 8, 2, 3; 1999 YQ₂ *, 3, 1, 0; 1999 YT₂ *, 10, 2, 1; 1999 YU₂ *, 9, 2, 2; 1999 YZ₂ *, 7, 2, 2; 1999 YA₃ *, 8, 2, 1; 1999 YB₃ *, 25, 5, 28; 1999 YC₃ *, 10, 2, 1; 1999 YD₃ *, 10, 2, 1; 1999 YE₃ *, 15, 3, 3; 1999 YF₃ *, 10, 2, 1; 1999 YG₃ *, 4, 1, 0; 1999 YH₃ *, 21, 5, 29; 1999 YJ₃ *, 19, 4, 14; 1999 YK₃ *, 9, 2, 2; 1999 YL₃ *, 9, 2, 1; 1999 YM₃ *, 9, 2, 1; 1999 YN₃ *, 10, 2, 1; 1999 YO₃ *, 8, 2, 1; 1999 YP₃ *, 19, 4, 22; 1999 YQ₃ *, 8, 2, 1; 1999 YR₃ *, 8, 2, 1; 1999 YS₃ *, 18, 4, 24; 1999 YT₃ *, 19, 4, 59; 1999 YU₃ *, 14, 3, 9; 1999 YV₃ *, 13, 3, 9; 1999 YW₃ *, 15, 3, 9; 1999 YX₃ *, 12, 3, 9; 1999 YY₃ *, 30, 6, 94; 1999 YZ₃ *, 15, 2, 1; 1999 YA₄ *, 19, 4, 12; 1999 YB₄ *, 13, 3, 9; 1999 YC₄ *, 12, 3, 9; 1999 YD₄ *, 19, 4, 12; 1999 YE₄ *, 14, 3, 9; 1999 YG₄ *, 9, 2, 1; 1999 YH₄ *, 8, 2, 3; 1999 YJ₄ *, 8, 2, 3; 1999 YL₄ *, 3, 1, 0; 1999 YM₄ *, 4, 1, 0; 1999 YN₄ *, 49, 7, 32; 1999 YO₄ *, 29, 5, 11; 1999 YP₄ *, 14, 4, 10; 1999 YQ₄ *, 9, 2, 1; 1999 YR₄ *, 10, 2, 2; 1999 YS₄ *, 9, 2, 1; 1999 YU₄ *, 7, 2, 2; 1999 YV₄ *, 5, 1, 0; 1999 YX₄ *, 4, 1, 0; 1999 YY₄ *, 9, 2, 1; 1999 YZ₄ *, 30, 3, 5; 1999 YA₅ *, 5, 29; 1999 YB₅ *, 19, 1, 0; 1999 YC₅ *, 3, 1, 0; 1999 YD₅ *, 8, 2, 1; 1999 YE₅ *, 18, 4, 33; 1999 YF₅ *, 18, 4, 24; 1999 YG₅ *, 13, 3, 29; 1999 YH₅ *, 13, 3, 23; 1999 YJ₅ *, 41, 5, 11; 1999 YK₅ *, 19, 4, 3; 1999 YL₅ *, 7, 2, 28; 1999 YM₅ *, 20, 4, 24; 1999 YN₅ *, 11, 3, 28; 1999 YO₅ *, 7, 2, 3; 1999 YP₅ *, 10, 2, 3; 1999 YQ₅ *, 10, 2, 3; 1999 YR₅ *, 8, 2, 3; 1999 YS₅ *, 6, 2, 3; 1999 YT₅ *, 10, 2, 3; 1999 YU₅ *, 6, 2, 3; 1999 YV₅ *, 10, 2, 3; 1999 YW₅ *, 25, 6, 65; 1999 YX₅ *, 8, 2, 2; 1999 YY₅ *, 8, 2, 2; 1999 YZ₅ *, 7, 2, 2; 1999 YA₆ *, 6, 2, 2; 1999 YB₆ *, 20, 4, 21; 1999 YC₆ *, 9, 2, 1; 1999 YD₆ *, 7, 2, 1; 1999 YE₆ *, 8, 2, 1; 1999 YF₆ *, 6, 2, 1; 1999 YG₆ *, 9, 2, 1; 1999 YH₆ *, 7, 2, 1; 1999 YJ₆ *, 7, 2, 1; 1999 YK₆ *, 10, 2, 1; 1999 YL₆ *, 10, 2, 1; 1999 YM₆ *, 10, 2, 1; 1999 YN₆ *, 19, 4, 60; 1999 YO₆ *, 14, 3, 22; 1999 YP₆ *, 10, 2, 1; 1999 YQ₆ *, 14, 3, 22; 1999 YR₆ *, 9, 2, 1; 1999 YS₆ *, 12, 3, 22; 1999 YT₆ *, 10, 2, 1; 1999 YU₆ *, 17, 4, 20; 1999 YV₆ *, 10, 2, 1; 1999 YW₆ *, 9, 2, 1; 1999 YX₆ *, 10, 2, 1; 1999 YY₆ *, 13, 3, 22; 1999 YZ₆ *, 13, 3, 22; 1999 YA₇ *, 9, 2, 1; 1999 YB₇ *, 13, 3, 22; 1999 YC₇ *, 7, 2, 1; 1999 YD₇ *, 10, 2, 1; 1999 YE₇ *, 9, 2, 1; 1999 YF₇ *, 18, 4, 39; 1999 YG₇ *, 7, 2, 1; 1999 YH₇ *, 5, 1, 0; 1999 YN₇ *, 24, 5, 63; 1999 YU₇ *, 4, 1, 0; 1999 YY₇ *, 11, 3, 30; 1999 YB₈ *, 9, 2, 2; 1999 YD₈ *, 4, 1, 0; 1999 YO₈ *, 4, 1, 0; 1999 YP₈ *, 4, 1, 0; 1999 YS₈ *, 4, 1, 0; 1999 YT₈ *, 9, 2, 2; 1999 YV₈ *, 10, 2, 1; 1999 YW₈ *, 20, 4, 5; 1999 YZ₈ *, 9, 2, 1; 1999 YA₉ *, 20, 4, 35; 1999 YC₉ *, 12, 3, 8; 1999 YD₉ *, 5, 1, 0; 1999 YE₉ *, 15, 3, 31; 1999 YF₉ *, 9, 2, 2; 1999 YG₉ *, 9, 2, 2; 1999 YH₉ *, 8, 2, 2; 1999 YJ₉ *, 21, 5, 84; 1999 YK₉ *, 12, 3, 5; 1999 YL₉ *, 14, 3, 31; 1999 YM₉ *, 10, 2, 1; 1999 YN₉ *, 10, 2, 1; 1999 YO₉ *, 10, 2, 1; 1999 YP₉ *, 5, 1, 0; 1999 YQ₉ *, 5, 1, 0; 1999 YR₉ *, 10, 2,

1; 1999 YS₉ *, 5, 1, 0; 1999 YT₉ *, 5, 1, 0; 1999 YU₉ *, 5, 1, 0; 1999 YV₉ *, 4, 1, 0; 1999 YA₁₁ *, 19, 4, 57; 1999 YU₁₁ *, 8, 2, 1; 1999 YL₁₂ *, 11, 3, 52; 1999 YM₁₂ *, 8, 1, 0; 1999 YO₁₂ *, 7, 2, 28; 1999 YS₁₂ *, 3, 1, 0; 1999 YW₁₂ *, 3, 1, 0; 1999 YA₁₃ *, 15, 3, 20; 1999 YB₁₃ *, 13, 3, 20; 1999 YC₁₃ *, 8, 2, 2; 1999 YD₁₃ *, 4, 1, 0; 1999 YF₁₃ *, 10, 2, 1; 1999 YG₁₃ *, 15, 2, 1; 1999 YJ₁₃ *, 10, 2, 1; 1999 YL₁₃ *, 8, 2, 2; 1999 YM₁₃ *, 25, 5, 102; 1999 YN₁₃ *, 10, 2, 2; 1999 YO₁₃ *, 7, 2, 2; 1999 YP₁₃ *, 11, 3, 3; 1999 YQ₁₃ *, 8, 2, 2; 1999 YR₁₃ *, 10, 2, 2; 1999 YS₁₃ *, 8, 2, 1; 1999 YT₁₃ *, 4, 1, 0; 1999 YU₁₃ *, 9, 2, 2; 1999 YV₁₃ *, 10, 2, 2; 1999 YW₁₃ *, 6, 2, 2; 1999 YX₁₃ *, 4, 1, 0; 1999 YZ₁₃ *, 5, 1, 0; 1999 YC₁₄ *, 7, 2, 1; 1999 YG₁₄ *, 3, 1, 0; 1999 YJ₁₄ *, 8, 2, 2; 1999 YK₁₄ *, 7, 2, 3; 1999 YL₁₄ *, 10, 2, 3; 1999 YM₁₄ *, 8, 2, 3; 1999 YN₁₄ *, 8, 2, 3; 1999 YO₁₄ *, 8, 2, 2; 1999 YP₁₄ *, 9, 2, 2; 1999 YQ₁₄ *, 7, 2, 2; 1999 YS₁₄ *, 5, 1, 0; 1999 YT₁₄ *, 5, 1, 0; 1999 YU₁₄ *, 3, 1, 0; 1999 YY₁₄ *, 8, 2, 2; 1999 YE₁₅ *, 3, 1, 0; 1999 YK₁₆ *, 5, 1, 0; 1999 YA₁₇ *, 8, 2, 1; 1999 YE₁₇ *, 7, 2, 1; 1999 YO₁₇ *, 8, 2, 6; 1999 YT₁₇ *, 8, 2, 3; 1999 YU₁₇ *, 7, 2, 3; 1999 YV₁₇ *, 8, 2, 2; 1999 YW₁₇ *, 7, 2, 3; 1999 YX₁₇ *, 10, 2, 1; 1999 YY₁₇ *, 9, 2, 1; 1999 YZ₁₇ *, 6, 2, 1; 1999 YA₁₈ *, 6, 2, 3; 1999 YB₁₈ *, 7, 2, 1; 1999 YC₁₈ *, 8, 2, 2; 1999 YD₁₈ *, 8, 2, 2; 2000 AA, 18, 4, 31; 2000 AB, 9, 2, 1; 2000 AC, 9, 2, 1; 2000 AD, 9, 2, 2; 2000 AE, 10, 2, 2; 2000 AF, 15, 3, 32; 2000 AG, 20, 4, 32; 2000 AH, 10, 2, 1; 2000 AJ, 13, 2, 1; 2000 AK, 10, 2, 1; 2000 AM, 8, 2, 2; 2000 AN, 9, 2, 1; 2000 AD₁ *, 9, 2, 2; 2000 AF₁ *, 3, 1, 0; 2000 AG₁ *, 14, 3, 2; 2000 AJ₁ *, 13, 3, 2; 2000 AK₁ *, 10, 2, 1; 2000 AL₁ *, 8, 2, 1; 2000 AM₁ *, 14, 3, 2; 2000 AN₁ *, 10, 2, 1; 2000 AO₁ *, 15, 3, 24; 2000 AP₁ *, 12, 3, 2; 2000 AQ₁ *, 4, 1, 0; 2000 AR₁ *, 8, 2, 1; 2000 AS₁ *, 9, 2, 2; 2000 AT₁ *, 3, 1, 0; 2000 AU₁ *, 9, 2, 2; 2000 AV₁ *, 9, 2, 1; 2000 AW₁ *, 14, 3, 2; 2000 AX₁ *, 13, 3, 4; 2000 AY₁ *, 7, 2, 2; 2000 AZ₁ *, 13, 3, 4; 2000 AB₂ *, 8, 2, 1; 2000 AC₂ *, 8, 2, 1; 2000 AD₂ *, 7, 2, 1; 2000 AE₂ *, 5, 1, 0; 2000 AL₂ *, 5, 1, 0; 2000 AO₂ *, 10, 2, 27; 2000 AR₂ *, 9, 2, 2; 2000 AS₂ *, 19, 4, 8; 2000 AT₂ *, 11, 3, 5; 2000 AU₂ *, 13, 3, 5; 2000 AW₂ *, 10, 2, 2; 2000 AX₂ *, 9, 2, 2; 2000 AY₂ *, 10, 2, 2; 2000 AZ₂ *, 4, 1, 0; 2000 AB₃ *, 10, 2, 2; 2000 AC₃ *, 5, 1, 0; 2000 AD₃ *, 5, 1, 0; 2000 AE₃ *, 19, 4, 26; 2000 AF₃ *, 8, 2, 1; 2000 AG₃ *, 15, 3, 2; 2000 AH₃ *, 14, 3, 2; 2000 AJ₃ *, 7, 2, 1; 2000 AK₃ *, 7, 2, 1; 2000 AL₃ *, 15, 3, 2; 2000 AM₃ *, 11, 3, 2; 2000 AN₃ *, 7, 2, 1; 2000 AO₃ *, 10, 2, 1; 2000 AP₃ *, 9, 2, 1; 2000 AQ₃ *, 10, 2, 1; 2000 AR₃ *, 9, 2, 2; 2000 AS₃ *, 9, 2, 2; 2000 AT₃ *, 8, 2, 1; 2000 AU₃ *, 9, 2, 1; 2000 AV₃ *, 19, 4, 6; 2000 AW₃ *, 8, 2, 1; 2000 AX₃ *, 7, 2, 1; 2000 AY₃ *, 10, 2, 1; 2000 AZ₃ *, 12, 3, 3; 2000 AA₄ *, 15, 3, 5; 2000 AB₄ *, 7, 2, 1; 2000 AC₄ *, 7, 2, 1; 2000 AD₄ *, 16, 4, 5; 2000 AE₄ *, 8, 2, 1; 2000 AF₄ *, 6, 2, 1; 2000 AG₄ *, 10, 2, 1; 2000 AH₄ *, 7, 2, 1; 2000 AP₄ *, 8, 2, 2; 2000 AQ₄ *, 5, 1, 0; 2000 AS₄ *, 3, 1, 0; 2000 AT₄ *, 6, 2, 1; 2000 AU₄ *, 9, 2, 2; 2000 AV₄ *, 10, 2, 1; 2000 AW₄ *, 9, 2, 2; 2000 AX₄ *, 10, 2, 2; 2000 AY₄ *, 4, 1, 0; 2000 AA₅ *, 9, 2, 1; 2000 AB₅ *, 10, 2, 1; 2000 AC₅ *, 8, 2, 1; 2000 AD₅ *, 10, 2, 1; 2000 AE₅ *, 8, 2, 2; 2000 AF₅ *, 10, 2, 1; 2000 AG₅ *, 13, 3, 28; 2000 AH₅ *, 8, 2, 1; 2000 AJ₅ *, 4, 1, 0; 2000 AK₅ *, 14, 3, 5; 2000 AL₅ *, 9, 2, 1; 2000 AM₅ *, 8, 2, 1; 2000 AN₅ *, 10, 2, 1; 2000 AO₅ *, 4, 1, 0; 2000 AP₅ *, 9, 2, 1; 2000 AX₅ *, 4, 1, 0; 2000 AY₅ *, 4, 1, 0; 2000 AA₆ *, 25, 3, 2; 2000 AB₆ *, 21, 3, 2; 2000 AC₆ *, 17, 3, 2; 2000 AD₆ *, 16, 3, 2; 2000 AE₆ *, 6, 2, 1; 2000 AF₆ *, 11, 3, 3; 2000 AG₆ *, 21, 3, 2; 2000 AH₆ *, 13, 3, 3; 2000 AM₆ *, 4, 1, 0; 2000 AN₆ *, 3, 1, 0; 2000 AQ₆ *, 3, 1, 0; 2000 AR₆ *, 10, 2, 2; 2000 AS₆ *, 8, 2, 2; 2000 AT₆ *, 9, 2, 2; 2000 AU₆ *, 7, 2, 2; 2000 AV₆ *, 8, 2, 2; 2000 AW₆ *, 7, 2, 2; 2000 AX₆ *, 9, 2, 2; 2000 AY₆ *, 10, 2, 2; 2000 AZ₆ *, 8, 2, 2; 2000 AA₇ *, 9, 2, 2; 2000 AB₇ *, 9, 2, 2; 2000 AC₇ *, 20, 4, 23; 2000 AD₇ *, 7, 2, 2; 2000 AE₇ *, 8, 2, 2; 2000 AF₇ *, 10, 2, 2; 2000 AG₇ *, 7, 2, 2; 2000 AH₇ *, 8, 2, 2; 2000 AJ₇ *, 9, 2, 2; 2000 AK₇ *, 8, 2, 2; 2000 AL₇ *, 8, 2, 2; 2000 AM₇ *, 9, 2, 2; 2000 AN₇ *, 6, 2, 2; 2000 AO₇ *, 7, 2, 2; 2000 AP₇ *, 7, 2, 2; 2000 AQ₇ *, 6, 2, 2; 2000 AR₇ *, 10, 2, 2; 20

28; 2000 AA₁₂ *, 10, 2, 1; 2000 AB₁₂ *, 8, 2, 1; 2000 AC₁₂ *, 10, 2, 1; 2000 AD₁₂ *, 9, 2, 1; 2000 AE₁₂ *, 10, 2, 1; 2000 AF₁₂ *, 9, 2, 1; 2000 AG₁₂ *, 8, 2, 1; 2000 AH₁₂ *, 8, 2, 1; 2000 AJ₁₂ *, 8, 2, 1; 2000 AK₁₂ *, 7, 2, 1; 2000 AL₁₂ *, 7, 2, 1; 2000 AM₁₂ *, 10, 2, 1; 2000 AN₁₂ *, 10, 2, 1; 2000 AO₁₂ *, 8, 2, 1; 2000 AP₁₂ *, 9, 2, 1; 2000 AQ₁₂ *, 8, 2, 1; 2000 AR₁₂ *, 10, 2, 1; 2000 AS₁₂ *, 10, 2, 1; 2000 AT₁₂ *, 7, 2, 1; 2000 AU₁₂ *, 7, 2, 1; 2000 AV₁₂ *, 7, 2, 1; 2000 AW₁₂ *, 13, 3, 20; 2000 AX₁₂ *, 10, 2, 1; 2000 AY₁₂ *, 7, 2, 1; 2000 AZ₁₂ *, 9, 2, 1; 2000 AA₁₃ *, 8, 2, 1; 2000 AB₁₃ *, 10, 2, 1; 2000 AC₁₃ *, 7, 2, 1; 2000 AD₁₃ *, 9, 2, 1; 2000 AE₁₃ *, 10, 2, 1; 2000 AF₁₃ *, 10, 2, 1; 2000 AG₁₃ *, 9, 2, 1; 2000 AH₁₃ *, 10, 2, 1; 2000 AJ₁₃ *, 8, 2, 1; 2000 AK₁₃ *, 9, 2, 1; 2000 AL₁₃ *, 9, 2, 1; 2000 AM₁₃ *, 9, 2, 1; 2000 AN₁₃ *, 11, 2, 1; 2000 AO₁₃ *, 9, 2, 1; 2000 AP₁₃ *, 8, 2, 1; 2000 AQ₁₃ *, 9, 2, 1; 2000 AR₁₃ *, 7, 2, 1; 2000 AS₁₃ *, 10, 2, 1; 2000 AT₁₃ *, 10, 2, 1; 2000 AU₁₃ *, 8, 2, 1; 2000 AV₁₃ *, 10, 2, 1; 2000 AW₁₃ *, 9, 2, 1; 2000 AX₁₃ *, 10, 2, 1; 2000 AY₁₃ *, 9, 2, 1; 2000 AZ₁₃ *, 9, 2, 1; 2000 AA₁₄ *, 8, 2, 1; 2000 AB₁₄ *, 9, 2, 1; 2000 AC₁₄ *, 9, 2, 1; 2000 AD₁₄ *, 10, 2, 1; 2000 AE₁₄ *, 9, 2, 1; 2000 AF₁₄ *, 7, 2, 1; 2000 AG₁₄ *, 8, 2, 1; 2000 AH₁₄ *, 18, 4, 51; 2000 AJ₁₄ *, 10, 2, 1; 2000 AK₁₄ *, 9, 2, 1; 2000 AL₁₄ *, 10, 2, 1; 2000 AM₁₄ *, 10, 2, 1; 2000 AN₁₄ *, 9, 2, 1; 2000 AO₁₄ *, 10, 2, 1; 2000 AP₁₄ *, 10, 2, 1; 2000 AQ₁₄ *, 10, 2, 1; 2000 AR₁₄ *, 8, 2, 1; 2000 AS₁₄ *, 10, 2, 1; 2000 AT₁₄ *, 13, 3, 7; 2000 AU₁₄ *, 10, 2, 1; 2000 AV₁₄ *, 9, 2, 1; 2000 AW₁₄ *, 8, 2, 1; 2000 AX₁₄ *, 10, 2, 1; 2000 AY₁₄ *, 10, 2, 1; 2000 AZ₁₄ *, 8, 2, 1; 2000 AA₁₅ *, 10, 2, 1; 2000 AB₁₅ *, 10, 2, 1; 2000 AC₁₅ *, 8, 2, 1; 2000 AD₁₅ *, 8, 2, 1; 2000 AE₁₅ *, 9, 2, 1; 2000 AF₁₅ *, 9, 2, 1; 2000 AG₁₅ *, 8, 2, 1; 2000 AH₁₅ *, 7, 2, 1; 2000 AJ₁₅ *, 9, 2, 1; 2000 AK₁₅ *, 15, 4, 34; 2000 AL₁₅ *, 7, 2, 1; 2000 AM₁₅ *, 6, 2, 1; 2000 AN₁₅ *, 7, 2, 1; 2000 AO₁₅ *, 7, 2, 1; 2000 AP₁₅ *, 8, 2, 1; 2000 AQ₁₅ *, 10, 2, 1; 2000 AR₁₅ *, 9, 2, 1; 2000 AS₁₅ *, 10, 2, 1; 2000 AT₁₅ *, 9, 2, 1; 2000 AU₁₅ *, 9, 2, 1; 2000 AV₁₅ *, 10, 2, 1; 2000 AW₁₅ *, 9, 2, 1; 2000 AX₁₅ *, 12, 2, 1; 2000 AY₁₅ *, 7, 2, 1; 2000 AZ₁₅ *, 10, 2, 1; 2000 AA₁₆ *, 9, 2, 1; 2000 AB₁₆ *, 9, 2, 1; 2000 AC₁₆ *, 6, 2, 1; 2000 AD₁₆ *, 14, 3, 28; 2000 AE₁₆ *, 9, 2, 1; 2000 AF₁₆ *, 10, 2, 1; 2000 AG₁₆ *, 9, 2, 1; 2000 AH₁₆ *, 6, 2, 1; 2000 AJ₁₆ *, 9, 2, 1; 2000 AK₁₆ *, 9, 2, 1; 2000 AL₁₆ *, 9, 2, 1; 2000 AM₁₆ *, 9, 2, 1; 2000 AN₁₆ *, 7, 2, 1; 2000 AO₁₆ *, 9, 2, 1; 2000 AP₁₆ *, 7, 2, 1; 2000 AQ₁₆ *, 9, 2, 1; 2000 AR₁₆ *, 8, 2, 1; 2000 AS₁₆ *, 10, 2, 1; 2000 AT₁₆ *, 9, 2, 1; 2000 AU₁₆ *, 10, 2, 1; 2000 AV₁₆ *, 13, 3, 5; 2000 AW₁₆ *, 8, 2, 1; 2000 AX₁₆ *, 7, 2, 1; 2000 AY₁₆ *, 9, 2, 1; 2000 AZ₁₆ *, 9, 2, 1; 2000 AA₁₇ *, 13, 3, 20; 2000 AB₁₇ *, 10, 2, 1; 2000 AC₁₇ *, 9, 2, 1; 2000 AD₁₇ *, 9, 2, 1; 2000 AE₁₇ *, 8, 2, 1; 2000 AF₁₇ *, 8, 2, 1; 2000 AG₁₇ *, 10, 2, 1; 2000 AH₁₇ *, 9, 2, 1; 2000 AJ₁₇ *, 10, 2, 1; 2000 AK₁₇ *, 7, 2, 1; 2000 AL₁₇ *, 7, 2, 1; 2000 AM₁₇ *, 8, 2, 1; 2000 AN₁₇ *, 10, 2, 1; 2000 AO₁₇ *, 20, 4, 5; 2000 AP₁₇ *, 8, 2, 1; 2000 AQ₁₇ *, 10, 2, 1; 2000 AR₁₇ *, 8, 2, 1; 2000 AS₁₇ *, 10, 2, 1; 2000 AT₁₇ *, 10, 2, 1; 2000 AU₁₇ *, 9, 2, 1; 2000 AV₁₇ *, 13, 3, 3; 2000 AW₁₇ *, 12, 3, 3; 2000 AX₁₇ *, 9, 2, 1; 2000 AY₁₇ *, 9, 2, 1; 2000 AZ₁₇ *, 9, 2, 1; 2000 AA₁₈ *, 6, 2, 1; 2000 AB₁₈ *, 9, 2, 1; 2000 AC₁₈ *, 9, 2, 1; 2000 AD₁₈ *, 6, 2, 1; 2000 AE₁₈ *, 6, 2, 1; 2000 AF₁₈ *, 10, 2, 1; 2000 AG₁₈ *, 8, 2, 1; 2000 AH₁₈ *, 9, 2, 1; 2000 AJ₁₈ *, 6, 2, 1; 2000 AK₁₈ *, 6, 2, 1; 2000 AL₁₈ *, 15, 3, 20; 2000 AM₁₈ *, 8, 2, 1; 2000 AN₁₈ *, 10, 2, 1; 2000 AO₁₈ *, 10, 2, 1; 2000 AP₁₈ *, 9, 2, 1; 2000 AQ₁₈ *, 10, 2, 1; 2000 AR₁₈ *, 10, 2, 1; 2000 AS₁₈ *, 8, 2, 1; 2000 AT₁₈ *, 23, 5, 62; 2000 AU₁₈ *, 8, 2, 1; 2000 AV₁₈ *, 8, 2, 1; 2000 AW₁₈ *, 8, 2, 1; 2000 AX₁₈ *, 9, 2, 1; 2000 AY₁₈ *, 9, 2, 1; 2000 AZ₁₈ *, 6, 2, 1; 2000 AA₁₉ *, 7, 2, 1; 2000 AB₁₉ *, 13, 3, 3; 2000 AC₁₉ *, 8, 2, 1; 2000 AD₁₉ *, 8, 2, 1; 2000 AE₁₉ *, 7, 2, 1; 2000 AF₁₉ *, 8, 2, 1; 2000 AG₁₉ *, 6, 2, 1; 2000 AH₁₉ *, 9, 2, 1; 2000 AJ₁₉ *, 9, 2, 1; 2000 AK₁₉ *, 7, 2, 1; 2000 AL₁₉ *, 8, 2, 1; 2000 AM₁₉ *, 7, 2, 1; 2000 AN₁₉ *, 7, 2, 1; 2000 AO₁₉ *, 7, 2, 1; 2000 AP₁₉ *, 9, 2, 1; 2000 AQ₁₉ *, 7, 2, 1; 2000 AR₁₉ *, 6, 2, 1; 2000 AS₁₉ *, 8, 2, 1; 2000 AT₁₉ *, 7, 2, 1; 2000 AU₁₉ *, 8, 2, 1; 2000 AV₁₉ *, 7, 2, 1; 2000 AW₁₉ *, 8, 2, 1; 2000 AX₁₉ *, 6, 2, 1; 2000 AY₁₉ *, 8, 2, 1; 2000 AZ₁₉ *, 8, 2, 1; 2000 AA₂₀ *, 7, 2, 1; 2000 AB₂₀ *, 13, 3, 28; 2000 AC₂₀ *, 8, 2, 1; 2000 AD₂₀ *, 7, 2, 1; 2000 AE₂₀ *, 6, 2, 1; 2000 AF₂₀ *, 11, 3, 7; 2000 AG₂₀ *, 9, 2, 1; 2000 AH₂₀ *, 13, 4, 7; 2000 AJ₂₀ *, 6, 2, 1; 2000 AK₂₀ *, 7, 2, 1; 2000 AL₂₀ *, 8, 2, 1; 2000 AM₂₀ *, 8, 2, 1; 2000 AN₂₀ *, 7, 2, 1; 2000 AO₂₀ *, 7, 2, 1; 2000 AP₂₀ *, 7, 2, 1; 2000 AQ₂₀ *, 7, 2, 1; 2000 AR₂₀ *, 6, 2, 1; 2000 AS₂₀ *, 7, 2, 1; 2000 AT₂₀ *, 7, 2, 1; 2000 AU₂₀ *, 9, 2, 1; 2000 AV₂₀ *, 9, 2, 1; 2000 AW₂₀ *, 6, 2, 1; 2000 AX₂₀ *, 7, 2, 1; 2000 AY₂₀ *, 7, 2, 1; 2000 AZ₂₀ *, 7, 2, 1; 2000 AA₂₁ *, 8, 2, 1; 2000 AB₂₁ *, 7, 2, 1; 2000 AC₂₁ *, 7, 2, 1; 2000 AD₂₁ *, 10, 3, 5; 2000 AE₂₁ *, 7, 2, 1; 2000 AF₂₁ *, 7, 2, 1; 2000 AG₂₁ *, 11, 3, 20; 2000 AH₂₁ *, 9, 2, 1; 2000 AJ₂₁ *, 7, 2, 1; 2000 AK₂₁ *, 8, 2, 1; 2000 AL₂₁ *, 8, 2, 1; 2000 AM₂₁ *, 6, 2, 1; 2000 AN₂₁ *, 9, 2, 1; 2000 AO₂₁ *, 8, 2, 1; 2000 AP₂₁ *, 8, 2, 1; 2000 AQ₂₁ *, 9, 2, 1; 2000 AR₂₁ *, 7, 2, 1; 2000 AS₂₁ *, 8, 2, 1; 2000 AT₂₁ *, 7, 2, 1; 2000 AU₂₁ *, 8, 2, 1; 2000 AV₂₁ *, 8, 2, 1; 2000 AW₂₁ *, 8, 2, 1; 2000 AX₂₁ *, 7, 2, 1; 2000 AY₂₁ *, 7, 2, 1; 2000 AZ₂₁ *, 7, 2, 1; 2000 AA₂₂ *, 7, 2, 1; 2000 AB₂₂ *, 6, 2, 1; 2000 AC₂₂ *, 6, 2, 1; 2000 AD₂₂ *, 7, 2, 1; 2000 AE₂₂ *, 8, 2, 1; 2000 AF₂₂ *, 7, 2, 1; 2000 AG₂₂ *, 7, 2, 1; 2000 AH₂₂ *, 7, 2, 1; 2000 AJ₂₂ *, 8, 2, 1; 2000 AK₂₂ *, 8, 2, 1; 2000 AL₂₂ *, 7, 2, 1; 2000 AM₂₂ *, 8, 2, 1; 2000 AN₂₂ *, 7, 2, 1; 2000 AO₂₂ *, 13, 3, 5; 2000 AP₂₂ *, 10, 2, 1; 2000 AQ₂₂ *, 9, 2, 1; 2000 AR₂₂ *, 15, 3, 5; 2000 AS₂₂ *, 15, 3, 5; 2000 AT₂₂ *, 8, 2, 1; 2000 AU₂₂ *, 10, 2, 1; 2000 AV₂₂ *, 15, 3, 28; 2000 AW₂₂ *, 10, 2, 1; 2000 AX₂₂ *, 7, 2, 1; 2000 AY₂₂ *, 14, 3, 28; 2000 AZ₂₂ *, 9, 2, 1; 2000 AA₂₃ *, 14, 3, 5; 2000 AB₂₃ *, 10, 2, 1; 2000 AC₂₃ *, 13, 3, 5; 2000 AD₂₃ *, 14, 3, 5; 2000 AE₂₃ *, 9, 2, 1; 2000 AF₂₃ *, 9, 2, 1; 2000 AG₂₃ *, 8, 2, 1; 2000 AH₂₃ *, 8, 2, 1; 2000 AJ₂₃ *, 15, 3, 5; 2000 AK₂₃ *, 7, 2, 1; 2000 AL₂₃ *, 10, 2, 1; 2000 AM₂₃ *, 10, 2, 1; 2000 AN₂₃ *, 10, 2, 1; 2000 AO₂₃ *, 10, 2, 1; 2000 AP₂₃ *, 10, 2, 1; 2000 AQ₂₃ *, 9, 2, 1; 2000 AR₂₃ *, 10, 2, 1; 2000 AS₂₃ *, 10, 2, 1;

2000 AT₂₃ *, 8, 2, 1; 2000 AU₂₃ *, 12, 3, 5; 2000 AV₂₃ *, 8, 2, 1; 2000 AW₂₃ *, 8, 2, 1; 2000 AX₂₃ *, 9, 2, 1; 2000 AY₂₃ *, 12, 3, 5; 2000 AZ₂₃ *, 10, 2, 1; 2000 AA₂₄ *, 9, 2, 1; 2000 AB₂₄ *, 8, 2, 1; 2000 AC₂₄ *, 9, 2, 1; 2000 AD₂₄ *, 7, 2, 1; 2000 AE₂₄ *, 8, 2, 1; 2000 AF₂₄ *, 7, 2, 1; 2000 AG₂₄ *, 9, 2, 1; 2000 AH₂₄ *, 9, 2, 1; 2000 AJ₂₄ *, 9, 2, 1; 2000 AK₂₄ *, 10, 2, 1; 2000 AL₂₄ *, 10, 2, 1; 2000 AM₂₄ *, 12, 3, 5; 2000 AN₂₄ *, 11, 3, 5; 2000 AO₂₄ *, 19, 3, 5; 2000 AP₂₄ *, 15, 3, 5; 2000 AQ₂₄ *, 12, 3, 5; 2000 AR₂₄ *, 8, 2, 1; 2000 AS₂₄ *, 8, 2, 1; 2000 AT₂₄ *, 9, 2, 1; 2000 AU₂₄ *, 9, 2, 1; 2000 AV₂₄ *, 12, 3, 5; 2000 AW₂₄ *, 7, 2, 1; 2000 AX₂₄ *, 23, 4, 29; 2000 AY₂₄ *, 7, 2, 1; 2000 AZ₂₄ *, 9, 2, 1; 2000 AA₂₅ *, 8, 2, 1; 2000 AB₂₅ *, 9, 2, 1; 2000 AC₂₅ *, 9, 2, 1; 2000 AD₂₅ *, 14, 3, 5; 2000 AE₂₅ *, 15, 3, 5; 2000 AF₂₅ *, 10, 2, 1; 2000 AG₂₅ *, 10, 2, 1; 2000 AH₂₅ *, 13, 3, 5; 2000 AJ₂₅ *, 8, 2, 1; 2000 AK₂₅ *, 10, 2, 1; 2000 AL₂₅ *, 9, 2, 1; 2000 AM₂₅ *, 14, 3, 7; 2000 AN₂₅ *, 10, 2, 1; 2000 AO₂₅ *, 8, 2, 1; 2000 AP₂₅ *, 7, 2, 1; 2000 AQ₂₅ *, 9, 2, 1; 2000 AR₂₅ *, 10, 2, 1; 2000 AS₂₅ *, 10, 2, 1; 2000 AT₂₅ *, 10, 2, 1; 2000 AU₂₅ *, 9, 2, 1; 2000 AV₂₅ *, 14, 3, 5; 2000 AW₂₅ *, 15, 3, 5; 2000 AX₂₅ *, 9, 2, 1; 2000 AY₂₅ *, 10, 2, 1; 2000 AZ₂₅ *, 8, 2, 1; 2000 AA₂₆ *, 8, 2, 1; 2000 AB₂₆ *, 10, 2, 1; 2000 AC₂₆ *, 8, 2, 1; 2000 AD₂₆ *, 8, 2, 1; 2000 AE₂₆ *, 9, 2, 1; 2000 AF₂₆ *, 8, 2, 1; 2000 AG₂₆ *, 14, 3, 5; 2000 AH₂₆ *, 9, 2, 1; 2000 AJ₂₆ *, 8, 2, 1; 2000 AL₂₆ *, 14, 3, 5; 2000 AM₂₆ *, 12, 3, 5; 2000 AN₂₆ *, 19, 4, 29; 2000 AO₂₆ *, 13, 3, 5; 2000 AP₂₆ *, 10, 3, 5; 2000 AQ₂₆ *, 8, 2, 1; 2000 AR₂₆ *, 8, 2, 1; 2000 AS₂₆ *, 18, 4, 5; 2000 AT₂₆ *, 14, 3, 3; 2000 AU₂₆ *, 9, 2, 1; 2000 AV₂₆ *, 14, 3, 4; 2000 AW₂₆ *, 15, 3, 4; 2000 AX₂₆ *, 14, 3, 4; 2000 AY₂₆ *, 20, 4, 5; 2000 AZ₂₆ *, 10, 2, 1; 2000 AA₂₇ *, 10, 2, 1; 2000 AB₂₇ *, 9, 2, 1; 2000 AC₂₇ *, 7, 2, 1; 2000 AD₂₇ *, 18, 3, 5; 2000 AE₂₇ *, 8, 2, 1; 2000 AF₂₇ *, 17, 4, 29; 2000 AG₂₇ *, 15, 3, 4; 2000 AH₂₇ *, 13, 3, 25; 2000 AJ₂₇ *, 10, 2, 1; 2000 AK₂₇ *, 10, 2, 1; 2000 AL₂₇ *, 10, 2, 1; 2000 AM₂₇ *, 10, 2, 1; 2000 AN₂₇ *, 9, 2, 1; 2000 AO₂₇ *, 10, 2, 1; 2000 AP₂₇ *, 9, 2, 1; 2000 AQ₂₇ *, 8, 2, 1; 2000 AR₂₇ *, 10, 2, 1; 2000 AS₂₇ *, 22, 4, 5; 2000 AT₂₇ *, 28, 5, 24; 2000 AU₂₇ *, 33, 3, 4; 2000 AV₂₇ *, 35, 4, 5; 2000 AW₂₇ *, 23, 4, 5; 2000 AX₂₇ *, 22, 4, 5; 2000 AZ₂₇ *, 32, 4, 5; 2000 AA₂₈ *, 23, 4, 5; 2000 AB₂₈ *, 15, 3, 4; 2000 AC₂₈ *, 6, 2, 1; 2000 AD₂₈ *, 9, 2, 1; 2000 AE₂₈ *, 10, 2, 1; 2000 AF₂₈ *, 8, 2, 1; 2000 AG₂₈ *, 10, 2, 1; 2000 AH₂₈ *, 8, 2, 1; 2000 AJ₂₈ *, 15, 3, 4; 2000 AK₂₈ *, 10, 2, 1; 2000 AL₂₈ *, 7, 2, 1; 2000 AM₂₈ *, 8, 2, 1; 2000 AO₂₈ *, 15, 3, 5; 2000 AP₂₈ *, 15, 3, 5; 2000 AQ₂₈ *, 10, 2, 1; 2000 AR₂₈ *, 12, 2, 1; 2000 AS₂₈ *, 10, 2, 1; 2000 AT₂₈ *, 10, 2, 1; 2000 AU₂₈ *, 13, 3, 4; 2000 AV₂₈ *, 10, 2, 1; 2000 AW₂₈ *, 8, 2, 1; 2000 AX₂₈ *, 15, 3, 5; 2000 AY₂₈ *, 9, 2, 1; 2000 AZ₂₈ *, 8, 2, 1; 2000 AA₂₉ *, 10, 2, 1; 2000 AB₂₉ *, 15, 3, 5; 2000 AC₂₉ *, 18, 4, 24; 2000 AD₂₉ *, 10, 2, 1; 2000 AE₂₉ *, 18, 4, 32; 2000 AF₂₉ *, 9, 2, 1; 2000 AG₂₉ *, 8, 2, 1; 2000 AH₂₉ *, 15, 2, 1; 2000 AJ₂₉ *, 13, 3, 5; 2000 AK₂₉ *, 15, 3, 5; 2000 AL₂₉ *, 10, 2, 1; 2000 AM₂₉ *, 10, 2, 1; 2000 AN₂₉ *, 14, 3, 5; 2000 AO₂₉ *, 12, 3, 20; 2000 AP₂₉ *, 20, 4, 29; 2000 AQ₂₉ *, 9, 2, 1; 2000 AR₂₉ *, 9, 2, 1; 2000 AS₂₉ *, 9, 2, 1; 2000 AT₂₉ *, 8, 2, 1; 2000 AU₂₉ *, 10, 2, 1; 2000 AV₂₉ *, 10, 2, 1; 2000 AW₂₉ *, 9, 2, 1; 2000 AX₂₉ *, 9, 2, 1; 2000 AY₂₉ *, 12, 3, 5; 2000 AZ₂₉ *, 7, 2, 1; 2000 AA₃₀ *, 9, 2, 1; 2000 AB₃₀ *, 13, 3, 5; 2000 AC₃₀ *, 10, 2, 1; 2000 AD₃₀ *, 10, 2, 1; 2000 AE₃₀ *, 10, 2, 1; 2000 AF₃₀ *, 10, 2, 1; 2000 AG₃₀ *, 8, 2, 1; 2000 AH₃₀ *, 9, 2, 1; 2000 AJ₃₀ *, 9, 2, 1; 2000 AK₃₀ *, 10, 2, 1; 2000 AL₃₀ *, 10, 2, 1; 2000 AM₃₀ *, 10, 2, 1; 2000 AN₃₀ *, 9, 2, 1; 2000 AO₃₀ *, 10, 2, 1; 2000 AP₃₀ *, 10, 2, 1; 2000 AQ₃₀ *, 8, 2, 1; 2000 AR₃₀ *, 8, 2, 1; 2000 AS₃₀ *, 10, 2, 1; 2000 AT₃₀ *, 8, 2, 1; 2000 AU₃₀ *, 8, 2, 1; 2000 AV₃₀ *, 8, 2, 1; 2000 AW₃₀ *, 7, 2, 1; 2000 AX₃₀ *, 14, 2, 1; 2000 AY₃₀ *, 9, 2, 1; 2000 AZ₃₀ *, 10, 2, 1; 2000 AA₃₁ *, 10, 2, 1; 2000 AB₃₁ *, 8, 2, 1; 2000 AC₃₁ *, 10, 2, 1; 2000 AD₃₁ *, 10, 2, 1; 2000 AE₃₁ *, 10, 2, 1; 2000 AF₃₁ *, 8, 2, 1; 2000 AG₃₁ *, 10, 2, 1; 2000 AH₃₁ *, 10, 2, 1; 2000 AJ₃₁ *, 10, 2, 1; 2000 AK₃₁ *, 15, 3, 5; 2000 AL₃₁ *, 15, 3, 5; 2000 AM₃₁ *, 15, 3, 5; 2000 AN₃₁ *, 18, 3, 20; 2000 AO₃₁ *, 10, 2, 1; 2000 AP₃₁ *, 7, 2, 1; 2000 AQ₃₁ *, 8, 2, 1; 2000 AR₃₁ *, 10, 2, 1; 2000 AS₃₁ *, 10, 2, 1; 2000 AT₃₁ *, 10, 2, 1; 2000 AU₃₁ *, 10, 2, 1; 2000 AV₃₁ *, 10, 2, 1; 2000 AW₃₁ *, 9, 2, 1; 2000 AX₃₁ *, 10, 2, 1; 2000 AY₃₁ *, 15, 3, 5; 2000 AZ₃₁ *, 10, 2, 1; 2000 AA₃₂ *, 10, 2, 1; 2000 AB₃₂ *, 10, 2, 1; 2000 AC₃₂ *, 9, 2, 1; 2000 AD<

2, 1; 2000 AD₃₅ *, 7, 2, 1; 2000 AE₃₅ *, 10, 2, 1; 2000 AF₃₅ *, 12, 3, 5; 2000 AG₃₅ *, 14, 3, 5; 2000 AH₃₅ *, 13, 3, 5; 2000 AJ₃₅ *, 8, 2, 1; 2000 AK₃₅ *, 6, 2, 1; 2000 AL₃₅ *, 8, 2, 1; 2000 AM₃₅ *, 7, 2, 1; 2000 AN₃₅ *, 9, 2, 1; 2000 AO₃₅ *, 9, 2, 1; 2000 AP₃₅ *, 13, 3, 5; 2000 AQ₃₅ *, 7, 2, 1; 2000 AR₃₅ *, 6, 2, 1; 2000 AS₃₅ *, 15, 4, 32; 2000 AT₃₅ *, 15, 4, 24; 2000 AU₃₅ *, 8, 2, 1; 2000 AV₃₅ *, 8, 2, 1; 2000 AW₃₅ *, 7, 2, 1; 2000 AX₃₅ *, 6, 2, 1; 2000 AY₃₅ *, 14, 3, 5; 2000 AZ₃₅ *, 9, 2, 1; 2000 AA₃₆ *, 11, 3, 5; 2000 AB₃₆ *, 12, 3, 5; 2000 AC₃₆ *, 18, 3, 5; 2000 AD₃₆ *, 19, 4, 29; 2000 AE₃₆ *, 15, 3, 5; 2000 AF₃₆ *, 12, 3, 5; 2000 AG₃₆ *, 8, 2, 1; 2000 AH₃₆ *, 7, 2, 1; 2000 AJ₃₆ *, 6, 2, 1; 2000 AK₃₆ *, 8, 2, 1; 2000 AL₃₆ *, 7, 2, 1; 2000 AM₃₆ *, 9, 2, 1; 2000 AN₃₆ *, 21, 5, 26; 2000 AO₃₆ *, 7, 2, 1; 2000 AP₃₆ *, 8, 2, 1; 2000 AQ₃₆ *, 8, 2, 1; 2000 AR₃₆ *, 8, 2, 1; 2000 AS₃₆ *, 8, 2, 1; 2000 AT₃₆ *, 8, 2, 1; 2000 AU₃₆ *, 7, 2, 1; 2000 AV₃₆ *, 13, 3, 5; 2000 AW₃₆ *, 9, 2, 1; 2000 AX₃₆ *, 13, 3, 5; 2000 AY₃₆ *, 13, 3, 5; 2000 AZ₃₆ *, 11, 3, 5; 2000 AB₃₇ *, 34, 4, 5; 2000 AC₃₇ *, 33, 4, 5; 2000 AD₃₇ *, 24, 3, 4; 2000 AE₃₇ *, 22, 4, 5; 2000 AF₃₇ *, 13, 4, 5; 2000 AG₃₇ *, 7, 2, 1; 2000 AH₃₇ *, 6, 2, 1; 2000 AJ₃₇ *, 7, 2, 1; 2000 AK₃₇ *, 8, 2, 1; 2000 AL₃₇ *, 14, 3, 5; 2000 AM₃₇ *, 14, 3, 5; 2000 AN₃₇ *, 9, 2, 1; 2000 AO₃₇ *, 12, 3, 5; 2000 AP₃₇ *, 18, 4, 5; 2000 AQ₃₇ *, 6, 2, 1; 2000 AR₃₇ *, 6, 2, 1; 2000 AS₃₇ *, 11, 3, 25; 2000 AT₃₇ *, 8, 2, 1; 2000 AU₃₇ *, 8, 2, 1; 2000 AV₃₇ *, 6, 2, 1; 2000 AW₃₇ *, 9, 2, 1; 2000 AX₃₇ *, 7, 2, 1; 2000 AY₃₇ *, 6, 2, 1; 2000 AZ₃₇ *, 6, 2, 1; 2000 AA₃₈ *, 6, 2, 1; 2000 AB₃₈ *, 8, 2, 1; 2000 AC₃₈ *, 7, 2, 1; 2000 AD₃₈ *, 8, 2, 1; 2000 AE₃₈ *, 8, 2, 1; 2000 AF₃₈ *, 9, 2, 1; 2000 AG₃₈ *, 8, 2, 1; 2000 AH₃₈ *, 9, 2, 1; 2000 AJ₃₈ *, 8, 2, 1; 2000 AK₃₈ *, 7, 2, 1; 2000 AL₃₈ *, 6, 2, 1; 2000 AM₃₈ *, 8, 2, 1; 2000 AN₃₈ *, 13, 3, 8; 2000 AO₃₈ *, 6, 2, 1; 2000 AP₃₈ *, 9, 2, 1; 2000 AQ₃₈ *, 10, 3, 5; 2000 AR₃₈ *, 7, 2, 1; 2000 AS₃₈ *, 7, 2, 1; 2000 AT₃₈ *, 14, 3, 5; 2000 AU₃₈ *, 9, 2, 1; 2000 AV₃₈ *, 8, 2, 1; 2000 AW₃₈ *, 8, 2, 1; 2000 AX₃₈ *, 8, 2, 1; 2000 AY₃₈ *, 8, 2, 1; 2000 AZ₃₈ *, 7, 2, 1; 2000 AA₃₉ *, 9, 2, 1; 2000 AB₃₉ *, 8, 2, 1; 2000 AC₃₉ *, 7, 2, 1; 2000 AD₃₉ *, 9, 2, 1; 2000 AE₃₉ *, 7, 2, 1; 2000 AF₃₉ *, 7, 2, 1; 2000 AG₃₉ *, 8, 2, 1; 2000 AH₃₉ *, 9, 2, 1; 2000 AJ₃₉ *, 9, 2, 1; 2000 AK₃₉ *, 9, 2, 1; 2000 AL₃₉ *, 8, 2, 1; 2000 AM₃₉ *, 8, 2, 1; 2000 AN₃₉ *, 8, 2, 1; 2000 AO₃₉ *, 9, 2, 1; 2000 AP₃₉ *, 8, 2, 1; 2000 AQ₃₉ *, 11, 3, 5; 2000 AR₃₉ *, 7, 2, 1; 2000 AS₃₉ *, 7, 2, 1; 2000 AT₃₉ *, 6, 2, 1; 2000 AU₃₉ *, 7, 2, 1; 2000 AV₃₉ *, 11, 3, 4; 2000 AW₃₉ *, 16, 4, 4; 2000 AX₃₉ *, 16, 3, 4; 2000 AY₃₉ *, 8, 2, 1; 2000 AZ₃₉ *, 6, 2, 1; 2000 AA₄₀ *, 8, 2, 1; 2000 AB₄₀ *, 7, 2, 1; 2000 AC₄₀ *, 15, 4, 5; 2000 AD₄₀ *, 6, 2, 1; 2000 AE₄₀ *, 12, 3, 3; 2000 AF₄₀ *, 8, 2, 1; 2000 AG₄₀ *, 7, 2, 1; 2000 AH₄₀ *, 6, 2, 1; 2000 AJ₄₀ *, 12, 3, 5; 2000 AK₄₀ *, 8, 2, 1; 2000 AL₄₀ *, 18, 4, 24; 2000 AM₄₀ *, 8, 2, 1; 2000 AN₄₀ *, 8, 2, 1; 2000 AO₄₀ *, 8, 2, 1; 2000 AP₄₀ *, 10, 2, 1; 2000 AQ₄₀ *, 9, 2, 1; 2000 AR₄₀ *, 7, 2, 1; 2000 AS₄₀ *, 10, 2, 1; 2000 AT₄₀ *, 8, 2, 1; 2000 AU₄₀ *, 10, 2, 1; 2000 AV₄₀ *, 10, 2, 1; 2000 AW₄₀ *, 7, 2, 1; 2000 AX₄₀ *, 9, 2, 1; 2000 AY₄₀ *, 10, 2, 1; 2000 AZ₄₀ *, 10, 2, 1; 2000 AA₄₁ *, 10, 2, 1; 2000 AB₄₁ *, 12, 2, 1; 2000 AC₄₁ *, 9, 2, 1; 2000 AD₄₁ *, 9, 2, 1; 2000 AE₄₁ *, 10, 2, 1; 2000 AF₄₁ *, 10, 2, 1; 2000 AG₄₁ *, 10, 2, 1; 2000 AH₄₁ *, 9, 2, 1; 2000 AJ₄₁ *, 10, 2, 1; 2000 AK₄₁ *, 9, 2, 1; 2000 AL₄₁ *, 7, 2, 1; 2000 AM₄₁ *, 10, 2, 1; 2000 AN₄₁ *, 10, 2, 1; 2000 AO₄₁ *, 9, 2, 1; 2000 AP₄₁ *, 7, 2, 1; 2000 AQ₄₁ *, 8, 2, 1; 2000 AR₄₁ *, 10, 2, 1; 2000 AS₄₁ *, 10, 2, 1; 2000 AT₄₁ *, 10, 2, 1; 2000 AU₄₁ *, 10, 2, 1; 2000 AV₄₁ *, 8, 2, 1; 2000 AW₄₁ *, 7, 2, 1; 2000 AX₄₁ *, 6, 2, 1; 2000 AY₄₁ *, 8, 2, 1; 2000 AZ₄₁ *, 9, 2, 1; 2000 AA₄₂ *, 8, 2, 1; 2000 AB₄₂ *, 7, 2, 1; 2000 AC₄₂ *, 7, 2, 1; 2000 AD₄₂ *, 8, 2, 1; 2000 AE₄₂ *, 8, 2, 1; 2000 AF₄₂ *, 10, 2, 3; 2000 AG₄₂ *, 6, 2, 3; 2000 AH₄₂ *, 8, 2, 3; 2000 AI₄₂ *, 8, 2, 3; 2000 AJ₄₂ *, 3, 3; 2000 AK₄₂ *, 9, 2, 2; 2000 AL₄₂ *, 10, 2, 2; 2000 AM₄₂ *, 9, 2, 2; 2000 AN₄₂ *, 22, 5, 36; 2000 AO₄₂ *, 8, 2, 2; 2000 AP₄₂ *, 19, 4, 5; 2000 AQ₄₂ *, 9, 2, 2; 2000 AR₄₂ *, 9, 2, 2; 2000 AS₄₂ *, 8, 2, 2; 2000 AT₄₂ *, 19, 4, 5; 2000 AU₄₂ *, 9, 2, 2; 2000 AV₄₂ *, 9, 2, 2; 2000 AW₄₂ *, 8, 2, 2; 2000 AX₄₂ *, 6, 2, 2; 2000 AY₄₂ *, 10, 2, 1; 2000 AZ₄₂ *, 8, 2, 1; 2000 AA₄₃ *, 16, 4, 30; 2000 AB₄₃ *, 20, 3, 2; 2000 AC₄₃ *, 8, 2, 1; 2000 AD₄₃ *, 13, 3, 2; 2000 AE₄₃ *, 13, 3, 2; 2000 AF₄₃ *, 12, 3, 2; 2000 AG₄₃ *, 13, 3, 2; 2000 AH₄₃ *, 12, 2, 1; 2000 AJ₄₃ *, 11, 3, 2; 2000 AK₄₃ *, 23, 5, 24; 2000 AL₄₃ *, 10, 2, 2; 2000 AM₄₃ *, 9, 2, 1; 2000 AN₄₃ *, 7, 2, 2; 2000 AO₄₃ *, 7, 2, 1; 2000 AP₄₃ *, 12, 3, 7; 2000 AQ₄₃ *, 3, 1, 0; 2000 AR₄₃ *, 15, 4, 0; 2000 AS₄₃ *, 9, 2, 2; 2000 AT₄₃ *, 10, 3, 29; 2000 AU₄₃ *, 10, 2, 2; 2000 AV₄₃ *, 10, 2, 2; 2000 AW₄₃ *, 10, 2, 2; 2000 AX₄₃ *, 6, 2, 2; 2000 AY₄₃ *, 8, 2, 2; 2000 AZ₄₃ *, 6, 2, 2; 2000 AA₄₄ *, 14, 3, 4; 2000 AB₄₄ *, 16, 4, 4; 2000 AC₄₄ *, 27, 4, 7; 2000 AD₄₄ *, 6, 2, 2; 2000 AE₄₄ *, 7, 2, 2; 2000 AF₄₄ *, 8, 2, 2; 2000 AG₄₄ *, 10, 2, 2; 2000 AH₄₄ *, 7, 2, 2; 2000 AI₄₄ *, 8, 2, 2; 2000 AJ₄₄ *, 10, 2, 2; 2000 AK₄₄ *, 10, 2, 2; 2000 AL₄₄ *, 10, 2, 2; 2000 AM₄₄ *, 10, 2, 2; 2000 AN₄₄ *, 10, 2, 2; 2000 AO₄₄ *, 10, 2, 2; 2000 AP₄₄ *, 10, 2, 2; 2000 AQ₄₄ *, 10, 2, 2; 2000 AR₄₄ *, 10, 2, 2; 2000 AS₄₄ *, 10, 2, 2; 2000 AT₄₄ *, 10, 2, 2; 2000 AU₄₄ *, 10, 2, 2; 2000 AV₄₄ *, 10, 2, 2; 2000 AW₄₄ *, 10, 2, 2; 2000 AX₄₄ *, 10, 2, 2; 2000 AY₄₄ *, 10, 2, 2; 2000 AZ₄₄ *, 10, 2, 2; 2000 AA₄₅ *, 10, 2, 2; 2000 AB₄₅ *, 10, 2, 2; 2000 AC₄₅ *, 10, 2, 2; 2000 AD₄₅ *, 10, 2, 2; 2000 AE₄₅ *, 10, 2, 2; 2000 AF₄₅ *, 10, 2, 2; 2000 AG₄₅ *, 10, 2, 2; 2000 AH₄₅ *, 10, 2, 2; 2000 AI₄₅ *, 10, 2, 2; 2000 AJ₄₅ *, 10, 2, 2; 2000 AK₄₅ *, 10, 2, 2; 2000 AL₄₅ *, 10, 2, 2; 2000 AM₄₅ *, 10, 2, 2; 2000 AN₄₅ *, 10, 2, 2; 2000 AO₄₅ *, 10, 2, 2; 2000 AP₄₅ *, 10, 2, 2; 2000 AQ₄₅ *, 10, 2, 2; 2000 AR₄₅ *, 10, 2, 2; 2000 AS₄₅ *, 10, 2, 2; 2000 AT₄₅ *, 10, 2, 2; 2000 AU₄₅ *, 10, 2, 2; 2000 AV₄₅ *, 10, 2, 2; 2000 AW₄₅ *, 10, 2, 2; 2000 AX₄₅ *, 10, 2, 2; 2000 AY₄₅ *, 10, 2, 2; 2000 AZ₄₅ *, 10, 2, 2; 2000 AA₄₆ *, 10, 2, 2; 2000 AB₄₆ *, 10, 2, 2; 2000 AC₄₆ *, 10, 2, 2; 2000 AD₄₆ *, 10, 2, 2; 2000 AE₄₆ *, 10, 2, 2; 2000 AF₄₆ *, 10, 2, 2; 2000 AG₄₆ *, 10, 2, 2; 2000 AH₄₆ *, 10, 2, 2; 2000 AI₄₆ *, 10, 2, 2; 2000 AJ₄₆ *, 10, 2, 2; 2000 AK₄₆ *, 19, 5, 32; 2000 AL₄₆ *, 12, 3, 5; 2000 AM₄₆ *, 17, 3, 5; 2000 AN₄₆ *, 6, 2, 2; 2000 AO₄₆ *, 8, 2, 2; 2000 AP₄₆ *, 9, 2, 2; 2000 AQ₄₆ *, 8, 2, 2; 2000 AR₄₆ *, 7, 2, 2; 2000 AS₄₆ *, 9, 2, 1; 2000 AT₄₆ *, 15, 2, 1; 2000 AU₄₆ *, 9, 2, 1; 2000 AV₄₆ *, 8, 2, 1; 2000 AW₄₆ *, 12, 2, 1; 2000 AX₄₆ *, 8, 2, 1; 2000 AY₄₆ *, 8, 2, 1; 2000 AZ₄₆ *, 20, 4, 4; 2000 AA₄₇ *, 12, 3, 4; 2000 AB₄₇ *, 20, 4, 4; 2000 AC₄₇ *, 10, 2, 1; 2000 AD₄₇ *, 9, 2, 1; 2000 AE₄₇ *, 10, 2, 1; 2000 AF₄₇ *, 10, 2, 1; 2000 AG₄₇ *, 8, 2, 1; 2000 AH₄₇ *, 9, 2, 1; 2000 AJ₄₇ *, 9, 2, 1; 2000 AK₄₇ *, 10, 2, 1; 2000 AL₄₇ *, 10, 2, 1; 2000 AM₄₇ *, 6, 2, 1; 2000 AN₄₇ *, 14, 3, 3; 2000 AO₄₇ *, 10, 2, 1; 2000 AP₄₇ *, 8, 2, 1; 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10, 2, 2; 2000 AC₆₁ *, 9, 2, 2; 2000 AD₆₁ *, 9, 2, 2; 2000 AE₆₁ *, 15, 3, 4; 2000 AF₆₁ *, 7, 2, 2; 2000 AG₆₁ *, 9, 2, 2; 2000 AH₆₁ *, 7, 2, 2; 2000 AJ₆₁ *, 9, 2, 2; 2000 AK₆₁ *, 10, 2, 2; 2000 AL₆₁ *, 10, 2, 2; 2000 AM₆₁ *, 7, 2, 2; 2000 AN₆₁ *, 9, 2, 2; 2000 AO₆₁ *, 9, 2, 2; 2000 AP₆₁ *, 10, 2, 2; 2000 AQ₆₁ *, 10, 2, 2; 2000 AR₆₁ *, 9, 2, 2; 2000 AS₆₁ *, 10, 2, 2; 2000 AT₆₁ *, 10, 2, 2; 2000 AU₆₁ *, 10, 2, 2; 2000 AV₆₁ *, 10, 2, 2; 2000 AW₆₁ *, 10, 2, 2; 2000 AX₆₁ *, 9, 2, 2; 2000 AY₆₁ *, 8, 2, 2; 2000 AZ₆₁ *, 8, 2, 2; 2000 AA₆₂ *, 13, 3, 5; 2000 AB₆₂ *, 8, 2, 2; 2000 AC₆₂ *, 9, 2, 2; 2000 AD₆₂ *, 9, 2, 2; 2000 AE₆₂ *, 9, 2, 2; 2000 AF₆₂ *, 10, 2, 2; 2000 AG₆₂ *, 9, 2, 2; 2000 AH₆₂ *, 8, 2, 2; 2000 AJ₆₂ *, 9, 2, 2; 2000 AK₆₂ *, 10, 2, 2; 2000 AL₆₂ *, 8, 2, 2; 2000 AM₆₂ *, 9, 2, 2; 2000 AN₆₂ *, 9, 2, 2; 2000 AO₆₂ *, 9, 2, 2; 2000 AP₆₂ *, 9, 2, 2; 2000 AQ₆₂ *, 10, 2, 2; 2000 AR₆₂ *, 8, 2, 2; 2000 AS₆₂ *, 9, 2, 2; 2000 AT₆₂ *, 9, 2, 2; 2000 AU₆₂ *, 9, 2, 2; 2000 AV₆₂ *, 8, 2, 2; 2000 AW₆₂ *, 8, 2, 2; 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8, 2, 1; 2000 AS₇₂ *, 7, 2, 1; 2000 AT₇₂ *, 8, 2, 1; 2000 AU₇₂ *, 7, 2, 1; 2000 AV₇₂ *, 8, 2, 1; 2000 AW₇₂ *, 6, 2, 1; 2000 AX₇₂ *, 6, 2, 1; 2000 AY₇₂ *, 8, 2, 1; 2000 AZ₇₂ *, 7, 2, 1; 2000 AA₇₃ *, 8, 2, 1; 2000 AB₇₃ *, 8, 2, 1; 2000 AC₇₃ *, 7, 2, 1; 2000 AD₇₃ *, 8, 2, 1; 2000 AE₇₃ *, 10, 2, 1; 2000 AF₇₃ *, 10, 2, 1; 2000 AG₇₃ *, 7, 2, 1; 2000 AH₇₃ *, 9, 2, 1; 2000 AJ₇₃ *, 10, 2, 1; 2000 AK₇₃ *, 7, 2, 1; 2000 AL₇₃ *, 8, 2, 1; 2000 AM₇₃ *, 9, 2, 1; 2000 AN₇₃ *, 20, 4, 31; 2000 AO₇₃ *, 7, 2, 1; 2000 AQ₇₃ *, 7, 2, 1; 2000 AR₇₃ *, 10, 2, 1; 2000 AS₇₃ *, 9, 2, 1; 2000 AT₇₃ *, 13, 3, 30; 2000 AU₇₃ *, 8, 2, 1; 2000 AV₇₃ *, 10, 2, 1; 2000 AW₇₃ *, 9, 2, 1; 2000 AX₇₃ *, 7, 2, 1; 2000 AY₇₃ *, 10, 2, 1; 2000 AZ₇₃ *, 7, 2, 1; 2000 AA₇₄ *, 8, 2, 1; 2000 AB₇₄ *, 10, 2, 1; 2000 AC₇₄ *, 8, 2, 1; 2000 AD₇₄ *, 8, 2, 1; 2000 AE₇₄ *, 10, 2, 1; 2000 AF₇₄ *, 10, 2, 1; 2000 AG₇₄ *, 10, 2, 1; 2000 AH₇₄ *, 10, 2, 1; 2000 AJ₇₄ *, 10, 2, 1; 2000 AK₇₄ *, 8, 2, 1; 2000 AL₇₄ *, 9, 2, 1; 2000 AM₇₄ *, 10, 2, 1; 2000 AN₇₄ *, 9, 2, 1; 2000 AO₇₄ *, 8, 2, 1; 2000 AP₇₄ *, 9, 2, 1; 2000 AQ₇₄ *, 10, 2, 1; 2000 AR₇₄ *, 9, 2, 1; 2000 AS₇₄ *, 10, 2, 1; 2000 AT₇₄ *, 9, 2, 1; 2000 AU₇₄ *, 10, 2, 1; 2000 AV₇₄ *, 9, 2, 1; 2000 AW₇₄ *, 9, 2, 1; 2000 AX₇₄ *, 10, 2, 1; 2000 AY₇₄ *, 10, 2, 1; 2000 AZ₇₄ *, 7, 2, 1; 2000 AA₇₅ *, 10, 2, 1; 2000 AB₇₅ *, 7, 2, 1; 2000 AC₇₅ *, 8, 2, 1; 2000 AD₇₅ *, 9, 2, 1; 2000 AE₇₅ *, 8, 2, 1; 2000 AF₇₅ *, 9, 2, 1; 2000 AG₇₅ *, 10, 2, 1; 2000 AH₇₅ *, 10, 2, 1; 2000 AJ₇₅ *, 8, 2, 1; 2000 AK₇₅ *, 10, 2, 1; 2000 AL₇₅ *, 7, 2, 1; 2000 AM₇₅ *, 8, 2, 1; 2000 AN₇₅ *, 9, 2, 1; 2000 AO₇₅ *, 10, 2, 1; 2000 AP₇₅ *, 10, 2, 1; 2000 AQ₇₅ *, 10, 2, 1; 2000 AR₇₅ *, 10, 2, 1; 2000 AS₇₅ *, 10, 2, 1; 2000 AT₇₅ *, 9, 2, 1; 2000 AU₇₅ *, 9, 2, 1; 2000 AV₇₅ *, 9, 2, 1; 2000 AW₇₅ *, 9, 2, 1; 2000 AX₇₅ *, 8, 2, 1; 2000 AY₇₅ *, 6, 2, 1; 2000 AZ₇₅ *, 8, 2, 1; 2000 AA₇₆ *, 10, 2, 1; 2000 AB₇₆ *, 10, 2, 1; 2000 AC₇₆ *, 8, 2, 1; 2000 AD₇₆ *, 10, 2, 1; 2000 AE₇₆ *, 8, 2, 1; 2000 AF₇₆ *, 8, 2, 1; 2000 AG₇₆ *, 8, 2, 1; 2000 AH₇₆ *, 20, 4, 63; 2000 AJ₇₆ *, 8, 2, 1; 2000 AK₇₆ *, 8, 2, 1; 2000 AL₇₆ *, 8, 2, 1; 2000 AM₇₆ *, 12, 3, 23; 2000 AN₇₆ *, 8, 2, 1; 2000 AO₇₆ *, 8, 2, 1; 2000 AP₇₆ *, 7, 2, 1; 2000 AQ₇₆ *, 10, 2, 1; 2000 AR₇₆ *, 8, 2, 1; 2000 AS₇₆ *, 7, 2, 1; 2000 AU₇₆ *, 8, 2, 1; 2000 AV₇₆ *, 7, 2, 1; 2000 AW₇₆ *, 11, 2, 1; 2000 AX₇₆ *, 8, 2, 1; 2000 AY₇₆ *, 10, 2, 1; 2000 AZ₇₆ *, 13, 2, 1; 2000 AA₇₇ *, 8, 2, 1; 2000 AB₇₇ *, 8, 2, 1; 2000 AC₇₇ *, 8, 2, 1; 2000 AD₇₇ *, 8, 2, 1; 2000 AE₇₇ *, 7, 2, 1; 2000 AF₇₇ *, 8, 2, 1; 2000 AG₇₇ *, 8, 2, 1; 2000 AH₇₇ *, 8, 2, 1; 2000 AJ₇₇ *, 8, 2, 1; 2000 AK₇₇ *, 8, 2, 1; 2000 AL₇₇ *, 8, 2, 1; 2000 AM₇₇ *, 7, 2, 1; 2000 AN₇₇ *, 8, 2, 1; 2000 AO₇₇ *, 8, 2, 1; 2000 AP₇₇ *, 8, 2, 1; 2000 AQ₇₇ *, 8, 2, 1; 2000 AR₇₇ *, 8, 2, 1; 2000 AS₇₇ *, 8, 2, 1; 2000 AT₇₇ *, 7, 2, 1; 2000 AU₇₇ *, 8, 2, 1; 2000 AV₇₇ *, 7, 2, 1; 2000 AW₇₇ *, 7, 2, 1; 2000 AX₇₇ *, 8, 2, 1; 2000 AY₇₇ *, 7, 2, 1; 2000 AZ₇₇ *, 7, 2, 1; 2000 AA₇₈ *, 8, 2, 1; 2000 AB₇₈ *, 8, 2, 1; 2000 AC₇₈ *, 8, 2, 1; 2000 AD₇₈ *, 8, 2, 1; 2000 AE₇₈ *, 8, 2, 1; 2000 AF₇₈ *, 8, 2, 1; 2000 AG₇₈ *, 8, 2, 1; 2000 AH₇₈ *, 7, 2, 1; 2000 AJ₇₈ *, 8, 2, 1; 2000 AK₇₈ *, 8, 2, 1; 2000 AL₇₈ *, 8, 2, 1; 2000 AM₇₈ *, 9, 3, 4; 2000 AN₇₈ *, 25, 5, 26; 2000 AO₇₈ *, 8, 2, 1; 2000 AP₇₈ *, 7, 2, 1; 2000 AQ₇₈ *, 8, 2, 1; 2000 AR₇₈ *, 8, 2, 1; 2000 AS₇₈ *, 8, 2, 1; 2000 AT₇₈ *, 6, 2, 1; 2000 AU₇₈ *, 8, 2, 1; 2000 AV₇₈ *, 8, 2, 1; 2000 AW₇₈ *, 8, 2, 1; 2000 AX₇₈ *, 8, 2, 1; 2000 AY₇₈ *, 8, 2, 1; 2000 AZ₇₈ *, 8, 2, 1; 2000 AA₇₉ *, 7, 2, 1; 2000 AB₇₉ *, 12, 3, 4; 2000 AC₇₉ *, 13, 3, 4; 2000 AD₇₉ *, 8, 2, 1; 2000 AE₇₉ *, 12, 3, 4; 2000 AF₇₉ *, 12, 3, 29; 2000 AG₇₉ *, 6, 2, 1; 2000 AH₇₉ *, 8, 2, 1; 2000 AJ₇₉ *, 8, 2, 1; 2000 AK₇₉ *, 8, 2, 1; 2000 AL₇₉ *, 8, 2, 1; 2000 AM₇₉ *, 8, 2, 1; 2000 AN₇₉ *, 8, 2, 1; 2000 AO₇₉ *, 8, 2, 1; 2000 AP₇₉ *, 18, 4, 31; 2000 AQ₇₉ *, 13, 3, 23; 2000 AR₇₉ *, 8, 2, 1; 2000 AS₇₉ *, 6, 2, 1; 2000 AT₇₉ *, 8, 2, 1; 2000 AU₇₉ *, 8, 2, 1; 2000 AV₇₉ *, 8, 2, 1; 2000 AW₇₉ *, 8, 2, 1; 2000 AX₇₉ *, 15, 4, 29; 2000 AY₇₉ *, 6, 2, 1; 2000 AZ₇₉ *, 6, 2, 1; 2000 AA₈₀ *, 13, 2, 1; 2000 AB₈₀ *, 8, 2, 1; 2000 AC₈₀ *, 7, 2, 1; 2000 AD₈₀ *, 8, 2, 1; 2000 AE₈₀ *, 8, 2, 1; 2000 AF₈₀ *, 8, 2, 1; 2000 AG₈₀ *, 8, 2, 1; 2000 AH₈₀ *, 8, 2, 1; 2000 AJ₈₀ *, 11, 3, 23; 2000 AK₈₀ *, 8, 2, 1; 2000 AL₈₀ *, 12, 3, 30; 2000 AM₈₀ *, 7, 2, 1; 2000 AN₈₀ *, 6, 2, 1; 2000 AO₈₀ *, 8, 2, 1; 2000 AP₈₀ *, 6, 2, 1; 2000 AQ₈₀ *, 6, 2, 1; 2000 AR₈₀ *, 8, 2, 1; 2000 AS₈₀ *, 7, 2, 1; 2000 AT₈₀ *, 8, 2, 1; 2000 AU₈₀ *, 6, 2, 1; 2000 AV₈₀ *, 9, 2, 1; 2000 AW₈₀ *, 6, 2, 1; 2000 AX₈₀ *, 8, 2, 1; 2000 AY₈₀ *, 7, 2, 1; 2000 AZ₈₀ *, 8, 2, 1; 2000 AA₈₁ *, 8, 2, 1; 2000 AB₈₁ *, 9, 2, 1; 2000 AC₈₁ *, 9, 2, 1; 2000 AD₈₁ *, 7, 2, 1; 2000 AE₈₁ *, 8, 2, 1; 2000 AF₈₁ *, 8, 2, 1; 2000 AG<

1; 2000 AO₈₄ *, 8, 2, 1; 2000 AP₈₄ *, 8, 2, 1; 2000 AQ₈₄ *, 8, 2, 1; 2000 AR₈₄ *, 12, 3, 29; 2000 AS₈₄ *, 7, 2, 1; 2000 AT₈₄ *, 8, 2, 1; 2000 AU₈₄ *, 8, 2, 1; 2000 AV₈₄ *, 8, 2, 1; 2000 AW₈₄ *, 8, 2, 1; 2000 AX₈₄ *, 8, 2, 1; 2000 AY₈₄ *, 8, 2, 1; 2000 AZ₈₄ *, 8, 2, 1; 2000 AA₈₅ *, 8, 2, 1; 2000 AB₈₅ *, 8, 2, 1; 2000 AC₈₅ *, 8, 2, 1; 2000 AD₈₅ *, 8, 2, 1; 2000 AE₈₅ *, 8, 2, 1; 2000 AF₈₅ *, 8, 2, 1; 2000 AG₈₅ *, 12, 3, 4; 2000 AH₈₅ *, 12, 3, 4; 2000 AJ₈₅ *, 8, 2, 1; 2000 AK₈₅ *, 8, 2, 1; 2000 AL₈₅ *, 13, 2, 1; 2000 AM₈₅ *, 11, 3, 4; 2000 AN₈₅ *, 14, 3, 3; 2000 AO₈₅ *, 13, 3, 3; 2000 AP₈₅ *, 7, 2, 1; 2000 AQ₈₅ *, 13, 3, 3; 2000 AR₈₅ *, 10, 2, 1; 2000 AS₈₅ *, 8, 2, 1; 2000 AT₈₅ *, 13, 2, 1; 2000 AU₈₅ *, 13, 2, 1; 2000 AV₈₅ *, 19, 4, 3; 2000 AW₈₅ *, 9, 2, 1; 2000 AX₈₅ *, 15, 3, 3; 2000 AY₈₅ *, 17, 4, 3; 2000 AZ₈₅ *, 9, 2, 1; 2000 AA₈₆ *, 12, 3, 3; 2000 AB₈₆ *, 10, 2, 1; 2000 AC₈₆ *, 10, 2, 1; 2000 AD₈₆ *, 9, 2, 1; 2000 AE₈₆ *, 9, 2, 1; 2000 AF₈₆ *, 9, 2, 1; 2000 AG₈₆ *, 7, 2, 1; 2000 AH₈₆ *, 10, 2, 1; 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2000 AA₉₀ *, 6, 2, 1; 2000 AB₉₀ *, 6, 2, 1; 2000 AC₉₀ *, 7, 2, 1; 2000 AD₉₀ *, 6, 2, 1; 2000 AE₉₀ *, 8, 2, 1; 2000 AF₉₀ *, 6, 2, 1; 2000 AG₉₀ *, 6, 2, 1; 2000 AH₉₀ *, 6, 2, 1; 2000 AJ₉₀ *, 7, 2, 1; 2000 AK₉₀ *, 7, 2, 1; 2000 AL₉₀ *, 9, 2, 1; 2000 AM₉₀ *, 8, 2, 1; 2000 AN₉₀ *, 7, 2, 1; 2000 AO₉₀ *, 7, 2, 1; 2000 AP₉₀ *, 6, 2, 1; 2000 AQ₉₀ *, 6, 2, 1; 2000 AR₉₀ *, 9, 2, 1; 2000 AS₉₀ *, 8, 2, 1; 2000 AT₉₀ *, 8, 2, 1; 2000 AU₉₀ *, 7, 2, 1; 2000 AV₉₀ *, 8, 2, 1; 2000 AW₉₀ *, 6, 2, 1; 2000 AX₉₀ *, 6, 2, 1; 2000 AY₉₀ *, 8, 2, 1; 2000 AZ₉₀ *, 9, 2, 1; 2000 AA₉₁ *, 7, 2, 1; 2000 AB₉₁ *, 7, 2, 1; 2000 AC₉₁ *, 6, 2, 1; 2000 AD₉₁ *, 7, 2, 1; 2000 AE₉₁ *, 17, 5, 5; 2000 AF₉₁ *, 6, 2, 1; 2000 AG₉₁ *, 6, 2, 1; 2000 AH₉₁ *, 6, 2, 1; 2000 AJ₉₁ *, 7, 2, 1; 2000 AK₉₁ *, 12, 2, 1; 2000 AL₉₁ *, 8, 2, 1; 2000 AM₉₁ *, 20, 5, 5; 2000 AN₉₁ *, 23, 4, 32; 2000 AO₉₁ *, 11, 2, 1; 2000 AP₉₁ *, 8, 2, 1; 2000 AQ₉₁ *, 14, 2, 1; 2000 AR₉₁ *, 7, 2, 1; 2000 AS₉₁ *, 8, 2, 1; 2000 AT₉₁ *, 8, 2, 1; 2000 AU₉₁ *, 8, 2, 1; 2000 AV₉₁ *, 8, 2, 1; 2000 AW₉₁ *, 9, 2, 1; 2000 AX₉₁ *, 9, 2, 1; 2000 AY₉₁ *, 10, 2, 1; 2000 AZ₉₁ *, 9, 2, 1; 2000 AA₉₂ *, 14, 3, 3; 2000 AB₉₂ *, 15, 3, 3; 2000 AC₉₂ *, 14, 3, 3; 2000 AD₉₂ *, 39, 7, 36; 2000 AE₉₂ *, 25, 4, 5; 2000 AF₉₂ *, 26, 5, 25; 2000 AG₉₂ *, 9, 2, 1; 2000 AH₉₂ *, 7, 2, 1; 2000 AJ₉₂ *, 7, 2, 1; 2000 AK₉₂ *, 13, 3, 3; 2000 AL₉₂ *, 9, 2, 6; 2000 AM₉₂ *, 10, 2, 6; 2000 AN₉₂ *, 7, 2, 6; 2000 AO₉₂ *, 10, 2, 6; 2000 AP₉₂ *, 8, 2, 6; 2000 AQ₉₂ *, 9, 2, 6; 2000 AR₉₂ *, 7, 2, 6; 2000 AS₉₂ *, 9, 2, 6; 2000 AT₉₂ *, 9, 2, 6; 2000 AU₉₂ *, 7, 2, 6; 2000 AV₉₂ *, 9, 2, 5; 2000 AW₉₂ *, 9, 2, 5; 2000 AX₉₂ *, 8, 2, 5; 2000 AY₉₂ *, 9, 2, 5; 2000 AZ₉₂ *, 10, 2, 5; 2000 AA₉₃ *, 8, 2, 5; 2000 AB₉₃ *, 13, 2, 5; 2000 AC₉₃ *, 7, 2, 5; 2000 AD₉₃ *, 9, 2, 4; 2000 AE₉₃ *, 17, 4, 7; 2000 AF₉₃ *, 9, 2, 4; 2000 AG₉₃ *, 9, 2, 4; 2000 AH₉₃ *, 15, 3, 5; 2000 AJ₉₃ *, 8, 2, 4; 2000 AK₉₃ *, 8, 2, 4; 2000 AL₉₃ *, 9, 2, 4; 2000 AM₉₃ *, 6, 2, 4; 2000 AN₉₃ *, 9, 2, 4; 2000 AO₉₃ *, 8, 2, 3; 2000 AP₉₃ *, 9, 2, 3; 2000 AQ₉₃ *, 9, 2, 3; 2000 AR₉₃ *, 14, 3, 5; 2000 AS₉₃ *, 8, 2, 2; 2000 AT₉₃ *, 9, 2, 2; 2000 AU₉₃ *, 10, 2, 1; 2000 AV₉₃ *, 21, 4, 3; 2000 AW₉₃ *, 44, 8, 32; 2000 AX₉₃ *, 21, 5, 5; 2000 AY₉₃ *, 14, 3, 2; 2000 AZ₉₃ *, 7, 2, 4; 2000 AA₉₄ *, 7, 2, 4; 2000 AB₉₄ *, 7, 2, 4; 2000 AC₉₄ *, 8, 2, 4; 2000 AD₉₄ *, 24, 2, 4; 2000 AE₉₄ *, 7, 2, 4; 2000 AF₉₄ *, 8, 2, 4; 2000 AG₉₄ *, 23, 2, 4; 2000 AH₉₄ *, 9, 2, 3; 2000 AJ₉₄ *, 10, 2, 3; 2000 AK₉₄ *, 10, 2, 3; 2000 AL₉₄ *, 10, 2, 3; 2000 AM₉₄ *, 10, 2, 3; 2000 AN₉₄ *, 8, 2, 3; 2000 AO₉₄ *, 12, 3, 5; 2000 AP₉₄ *, 20, 4, 5; 2000 AQ₉₄ *, 7, 2, 3; 2000 AR₉₄ *, 7, 2, 3; 2000 AS₉₄ *, 15, 2, 3; 2000 AT₉₄ *, 11, 3, 5; 2000 AU₉₄ *, 6, 2, 3; 2000 AV₉₄ *, 7, 2, 3; 2000 AW₉₄ *, 22, 4, 5; 2000 AX₉₄ *, 10, 2, 3; 2000 AY₉₄ *, 10, 2, 3; 2000 AZ₉₄ *, 14, 3, 31; 2000 AA₉₅ *, 8, 2, 3; 2000 AB₉₅ *, 10, 2, 3; 2000 AC₉₅ *, 10, 2, 3; 2000 AD₉₅ *, 10, 2, 3; 2000 AE₉₅ *, 8, 2, 3; 2000 AF₉₅ *, 9, 2, 3; 2000 AG₉₅ *, 10, 2, 3; 2000 AH₉₅ *, 15, 3, 32; 2000 AJ₉₅ *, 10, 2, 3; 2000 AK₉₅ *, 9, 2, 3; 2000 AL₉₅ *, 9, 2, 3; 2000 AM₉₅ *, 9, 2, 3; 2000 AN₉₅ *, 8, 2, 3; 2000 AO₉₅ *, 10, 2, 3; 2000 AP₉₅ *, 10, 2, 3; 2000 AQ₉₅ *, 10, 2, 3; 2000 AR₉₅ *, 9, 2, 3; 2000 AS₉₅ *, 10, 2, 3; 2000 AT₉₅ *, 9, 2, 3; 2000 AU₉₅ *, 10, 2, 3; 2000 AV₉₅ *, 9, 2, 3; 2000 AW₉₅ *, 10, 2, 3; 2000 AX₉₅ *, 10, 2, 3; 2000 AY₉₅ *, 9, 2, 3; 2000 AZ₉₅ *, 9, 2, 3; 2000 AA₉₆ *, 10, 2, 3; 2000 AB₉₆ *, 10, 2, 3; 2000 AC₉₆ *, 9, 2, 3; 2000 AD₉₆ *, 6, 2, 3; 2000 AE₉₆ *, 15, 3, 32; 2000 AF₉₆ *, 9, 2, 3; 2000 AG₉₆ *, 8, 2, 3; 2000 AH₉₆ *, 9, 2, 3; 2000 AJ₉₆ *, 7, 2, 3; 2000 AK₉₆ *,

8, 2, 3; 2000 AL₉₆ *, 9, 2, 3; 2000 AM₉₆ *, 9, 2, 3; 2000 AN₉₆ *, 10, 2, 3; 2000 AO₉₆ *, 9, 2, 3; 2000 AP₉₆ *, 9, 2, 3; 2000 AQ₉₆ *, 9, 2, 3; 2000 AR₉₆ *, 10, 2, 3; 2000 AS₉₆ *, 8, 2, 3; 2000 AT₉₆ *, 9, 2, 3; 2000 AU₉₆ *, 8, 2, 3; 2000 AV₉₆ *, 9, 2, 3; 2000 AW₉₆ *, 8, 2, 3; 2000 AX₉₆ *, 10, 2, 3; 2000 AY₉₆ *, 10, 2, 3; 2000 AZ₉₆ *, 9, 2, 3; 2000 AA₉₇ *, 7, 2, 3; 2000 AB₉₇ *, 9, 2, 3; 2000 AC₉₇ *, 7, 2, 3; 2000 AD₉₇ *, 10, 2, 3; 2000 AE₉₇ *, 9, 2, 3; 2000 AF₉₇ *, 8, 2, 3; 2000 AG₉₇ *, 9, 2, 3; 2000 AH₉₇ *, 10, 2, 3; 2000 AJ₉₇ *, 9, 2, 3; 2000 AK₉₇ *, 9, 2, 3; 2000 AL₉₇ *, 9, 2, 3; 2000 AM₉₇ *, 9, 2, 3; 2000 AN₉₇ *, 10, 2, 3; 2000 AO₉₇ *, 9, 2, 3; 2000 AP₉₇ *, 9, 2, 3; 2000 AQ₉₇ *, 7, 2, 3; 2000 AR₉₇ *, 10, 2, 3; 2000 AS₉₇ *, 7, 2, 3; 2000 AT₉₇ *, 9, 2, 3; 2000 AU₉₇ *, 9, 2, 3; 2000 AV₉₇ *, 20, 4, 36; 2000 AW₉₇ *, 10, 2, 3; 2000 AX₉₇ *, 9, 2, 3; 2000 AY₉₇ *, 9, 2, 3; 2000 AZ₉₇ *, 9, 2, 3; 2000 AA₉₈ *, 9, 2, 3; 2000 AB₉₈ *, 10, 2, 3; 2000 AC₉₈ *, 9, 2, 3; 2000 AD₉₈ *, 8, 2, 3; 2000 AE₉₈ *, 8, 2, 3; 2000 AF₉₈ *, 8, 2, 3; 2000 AG₉₈ *, 7, 2, 3; 2000 AH₉₈ *, 8, 2, 3; 2000 AJ₉₈ *, 9, 2, 3; 2000 AK₉₈ *, 8, 2, 3; 2000 AL₉₈ *, 8, 2, 3; 2000 AM₉₈ *, 9, 2, 3; 2000 AN₉₈ *, 7, 2, 3; 2000 AO₉₈ *, 9, 2, 2; 2000 AP₉₈ *, 14, 2, 2; 2000 AQ₉₈ *, 10, 2, 2; 2000 AR₉₈ *, 9, 2, 2; 2000 AS₉₈ *, 9, 2, 2; 2000 AT₉₈ *, 10, 2, 2; 2000 AU₉₈ *, 9, 2, 2; 2000 AV₉₈ *, 10, 2, 2; 2000 AW₉₈ *, 10, 2, 2; 2000 AX₉₈ *, 10, 2, 2; 2000 AY₉₈ *, 20, 4, 63; 2000 AZ₉₈ *, 9, 2, 2; 2000 AA₉₉ *, 9, 2, 2; 2000 AB₉₉ *, 9, 2, 2; 2000 AC₉₉ *, 8, 2, 2; 2000 AD₉₉ *, 10, 2, 2; 2000 AE₉₉ *, 10, 2, 2; 2000 AF₉₉ *, 10, 2, 2; 2000 AG₉₉ *, 10, 2, 2; 2000 AH₉₉ *, 8, 2, 2; 2000 AJ₉₉ *, 10, 2, 2; 2000 AK₉₉ *, 10, 2, 2; 2000 AL₉₉ *, 10, 2, 2; 2000 AM₉₉ *, 8, 2, 2; 2000 AN₉₉ *, 10, 2, 2; 2000 AO₉₉ *, 10, 2, 2; 2000 AP₉₉ *, 10, 2, 2; 2000 AQ₉₉ *, 10, 2, 2; 2000 AR₉₉ *, 9, 2, 2; 2000 AS₉₉ *, 10, 2, 2; 2000 AT₉₉ *, 9, 2, 2; 2000 AU₉₉ *, 10, 2, 2; 2000 AV₉₉ *, 10, 2, 2; 2000 AW₉₉ *, 10, 2, 2; 2000 AX₉₉ *, 10, 2, 2; 2000 AY₉₉ *, 9, 2, 2; 2000 AZ₉₉ *, 10, 2, 2; 2000 AA₁₀₀ *, 9, 2, 2; 2000 AB₁₀₀ *, 10, 2, 2; 2000 AC₁₀₀ *, 10, 2, 2; 2000 AD₁₀₀ *, 10, 2, 2; 2000 AE₁₀₀ *, 9, 2, 2; 2000 AF₁₀₀ *, 10, 2, 2; 2000 AG₁₀₀ *, 10, 2, 2; 2000 AH₁₀₀ *, 10, 2, 2; 2000 AI₁₀₀ *, 8, 2, 2; 2000 AJ₁₀₀ *, 10, 2, 2; 2000 AK₁₀₀ *, 10, 2, 2; 2000 AL₁₀₀ *, 8, 2, 2; 2000 AM₁₀₀ *, 10, 2, 2; 2000 AN₁₀₀ *, 10, 2, 2; 2000 AO₁₀₀ *, 10, 2, 2; 2000 AP₁₀₀ *, 9, 2, 2; 2000 AQ₁₀₀ *, 9, 2, 2; 2000 AR₁₀₀ *, 10, 2, 2; 2000 AS₁₀₀ *, 10, 2, 2; 2000 AT₁₀₀ *, 9, 2, 2; 2000 AU₁₀₀ *, 25, 5, 61; 2000 AV₁₀₀ *, 10, 2, 2; 2000 AW₁₀₀ *, 10, 2, 2; 2000 AX₁₀₀ *, 14, 3, 4; 2000 AY₁₀₀ *, 10, 2, 2; 2000 AZ₁₀₀ *, 10, 2, 2; 2000 AA₁₀₁ *, 10, 2, 2; 2000 AB₁₀₁ *, 10, 2, 2; 2000 AC₁₀₁ *, 9, 2, 2; 2000 AD₁₀₁ *, 10, 2, 2; 2000 AE₁₀₁ *, 10, 2, 2; 2000 AF₁₀₁ *, 10, 2, 2; 2000 AG₁₀₁ *, 9, 2, 2; 2000 AH₁₀₁ *, 18, 4, 63; 2000 AJ₁₀₁ *, 10, 2, 2; 2000 AK₁₀₁ *, 9, 2, 2; 2000 AL₁₀₁ *, 10, 2, 2; 2000 AM₁₀₁ *, 10, 2, 2; 2000 AN₁₀₁ *, 10, 2, 2; 2000 AO₁₀₁ *, 8, 2, 2; 2000 AP₁₀₁ *, 7, 2, 2; 2000 AQ₁₀₁ *, 7, 2, 2; 2000 AR₁₀₁ *, 8, 2, 2; 2000 AS₁₀₁ *, 7, 2, 2; 2000 AT₁₀₁ *, 8, 2, 2; 2000 AU₁₀₁ *, 9, 2, 2; 2000 AV₁₀₁ *, 8, 2, 2; 2000 AW₁₀₁ *, 7, 2, 2; 2000 AX₁₀₁ *, 8, 2, 2; 2000 AY₁₀₁ *, 7, 2, 2; 2000 AZ₁₀₁ *, 9, 2, 2; 2000 AA₁₀₂ *, 8, 2, 2; 2000 AB₁₀₂ *, 8, 2, 2; 2000 AC₁₀₂ *, 9, 2, 2; 2000 AD₁₀₂ *, 9, 2, 2; 2000 AE₁₀₂ *, 10, 2, 2; 2000 AF₁₀₂ *, 9, 2, 2; 2000 AG₁₀₂ *, 10, 2, 2; 2000 AH₁₀₂ *, 10, 2, 2; 2000 AI₁₀₂ *, 9, 2, 2; 2000 AJ₁₀₂ *, 9, 2, 2; 2000 AK₁₀₂ *, 24, 5, 63; 2000 AL₁₀₂ *, 9, 2, 2; 2000 AM₁₀₂ *, 9, 2, 2; 2000 AN₁₀₂ *, 10, 2, 2; 2000 AO₁₀₂ *, 10, 2, 2; 2000 AP₁₀₂ *, 9, 2, 2; 2000 AQ₁₀₂ *, 10, 2, 2; 2000 AR₁₀₂ *, 10, 2, 2; 2000 AS₁₀₂ *, 10, 2, 2; 2000 AT₁₀₂ *, 10, 2, 2; 2000 AU₁₀₂ *, 9, 2, 2; 2000 AV₁₀₂ *, 8, 2, 2; 2000 AW₁₀₂ *, 20, 5, 64; 2000 AX₁₀₂ *, 9, 2, 2; 2000 AY₁₀₂ *, 10, 2, 2; 2000 AZ₁₀₂ *, 10, 2, 2; 2000 AA₁₀₃ *, 8, 2, 2; 2000 AB₁₀₃ *, 9, 2, 2; 2000 AC₁₀₃ *, 8, 2, 2; 2000 AD₁₀₃ *, 10, 2, 2; 2000 AE₁₀₃ *, 9, 2, 2; 2000 AF₁₀₃ *, 8, 2, 2; 2000 AG₁₀₃ *, 10, 2, 2; 2000 AH₁₀₃ *, 10, 2, 2; 2000 AJ₁₀₃ *, 8, 2, 2; 2000 AK₁₀₃ *, 9, 2, 2; 2000 AL₁₀₃ *, 9, 2, 2; 2000 AM₁₀₃ *, 25, 5, 63; 2000 AN₁₀₃ *, 9, 2, 2; 2000 AO₁₀₃ *, 8, 2, 2; 2000 AP₁₀₃ *, 8, 2, 2; 2000 AQ₁₀₃ *, 10, 2, 2; 2000 AR₁₀₃ *, 8, 2, 2; 2000 AS₁₀₃ *, 9, 2, 2; 2000 AT₁₀₃ *, 10, 2, 2; 2000 AU₁₀₃ *, 9, 2, 2; 2000 AV₁₀₃ *, 10, 2, 2; 2000 AW₁₀₃ *, 10, 2, 2; 2000 AX₁₀₃ *, 9, 2, 2; 2000 AY₁₀₃ *, 9, 2, 2; 2000 AZ₁₀₃ *, 10, 2, 2; 2000 AA₁₀₄ *, 10, 2, 2; 2000 AB₁₀₄ *, 9, 2, 2; 2000 AC₁₀₄ *, 10, 2, 2; 2000 AD₁₀₄ *, 10, 2, 2; 2000 AE₁₀₄ *, 8, 2, 2; 2000 AF₁₀₄ *, 10, 2, 2; 2000 AG₁₀₄ *, 15, 3, 4; 2000 AH₁₀₄ *, 23, 5, 34; 2000 AJ

2; 2000 AN₁₀₇ *, 14, 2, 2; 2000 AO₁₀₇ *, 9, 2, 2; 2000 AP₁₀₇ *, 9, 2, 2; 2000 AQ₁₀₇ *, 25, 4, 32; 2000 AR₁₀₇ *, 10, 2, 2; 2000 AS₁₀₇ *, 14, 2, 2; 2000 AT₁₀₇ *, 10, 3, 4; 2000 AU₁₀₇ *, 20, 2, 2; 2000 AV₁₀₇ *, 17, 2, 2; 2000 AW₁₀₇ *, 10, 2, 2; 2000 AX₁₀₇ *, 10, 2, 2; 2000 AY₁₀₇ *, 9, 2, 2; 2000 AZ₁₀₇ *, 16, 2, 2; 2000 AA₁₀₈ *, 11, 3, 4; 2000 AB₁₀₈ *, 8, 2, 2; 2000 AC₁₀₈ *, 7, 2, 2; 2000 AD₁₀₈ *, 12, 3, 4; 2000 AE₁₀₈ *, 11, 3, 4; 2000 AF₁₀₈ *, 13, 3, 4; 2000 AG₁₀₈ *, 9, 2, 2; 2000 AH₁₀₈ *, 10, 2, 2; 2000 AJ₁₀₈ *, 9, 2, 2; 2000 AK₁₀₈ *, 9, 2, 2; 2000 AL₁₀₈ *, 8, 2, 2; 2000 AM₁₀₈ *, 8, 2, 2; 2000 AN₁₀₈ *, 10, 2, 2; 2000 AO₁₀₈ *, 12, 3, 32; 2000 AP₁₀₈ *, 8, 2, 2; 2000 AQ₁₀₈ *, 7, 2, 2; 2000 AR₁₀₈ *, 10, 2, 2; 2000 AS₁₀₈ *, 9, 2, 2; 2000 AT₁₀₈ *, 12, 2, 2; 2000 AU₁₀₈ *, 8, 2, 2; 2000 AV₁₀₈ *, 9, 2, 2; 2000 AW₁₀₈ *, 12, 2, 2; 2000 AX₁₀₈ *, 8, 2, 2; 2000 AY₁₀₈ *, 7, 2, 2; 2000 AZ₁₀₈ *, 7, 2, 2; 2000 AA₁₀₉ *, 8, 2, 2; 2000 AB₁₀₉ *, 8, 2, 2; 2000 AC₁₀₉ *, 8, 2, 2; 2000 AD₁₀₉ *, 7, 2, 2; 2000 AE₁₀₉ *, 8, 2, 2; 2000 AF₁₀₉ *, 8, 2, 2; 2000 AG₁₀₉ *, 9, 2, 2; 2000 AH₁₀₉ *, 9, 2, 2; 2000 AJ₁₀₉ *, 13, 4, 26; 2000 AK₁₀₉ *, 9, 2, 2; 2000 AL₁₀₉ *, 7, 2, 2; 2000 AM₁₀₉ *, 7, 2, 2; 2000 AN₁₀₉ *, 14, 3, 4; 2000 AO₁₀₉ *, 7, 2, 2; 2000 AP₁₀₉ *, 7, 2, 2; 2000 AQ₁₀₉ *, 8, 2, 2; 2000 AR₁₀₉ *, 18, 2, 2; 2000 AS₁₀₉ *, 19, 2, 2; 2000 AT₁₀₉ *, 11, 2, 2; 2000 AU₁₀₉ *, 7, 2, 2; 2000 AV₁₀₉ *, 10, 3, 4; 2000 AW₁₀₉ *, 7, 2, 2; 2000 AX₁₀₉ *, 12, 3, 4; 2000 AY₁₀₉ *, 11, 3, 4; 2000 AZ₁₀₉ *, 8, 2, 2; 2000 AA₁₁₀ *, 7, 2, 2; 2000 AB₁₁₀ *, 8, 2, 2; 2000 AC₁₁₀ *, 8, 2, 2; 2000 AD₁₁₀ *, 6, 2, 2; 2000 AE₁₁₀ *, 6, 2, 2; 2000 AF₁₁₀ *, 8, 2, 2; 2000 AG₁₁₀ *, 10, 2, 2; 2000 AH₁₁₀ *, 24, 2, 2; 2000 AJ₁₁₀ *, 9, 2, 2; 2000 AK₁₁₀ *, 10, 2, 2; 2000 AL₁₁₀ *, 10, 2, 2; 2000 AM₁₁₀ *, 21, 4, 5; 2000 AN₁₁₀ *, 15, 3, 5; 2000 AO₁₁₀ *, 9, 2, 2; 2000 AP₁₁₀ *, 10, 2, 2; 2000 AQ₁₁₀ *, 8, 2, 2; 2000 AR₁₁₀ *, 11, 3, 4; 2000 AS₁₁₀ *, 10, 2, 2; 2000 AT₁₁₀ *, 7, 2, 2; 2000 AU₁₁₀ *, 10, 2, 2; 2000 AV₁₁₀ *, 10, 2, 2; 2000 AW₁₁₀ *, 9, 2, 2; 2000 AX₁₁₀ *, 9, 2, 2; 2000 AY₁₁₀ *, 10, 2, 2; 2000 AZ₁₁₀ *, 15, 3, 30; 2000 AA₁₁₁ *, 9, 2, 2; 2000 AB₁₁₁ *, 7, 2, 2; 2000 AC₁₁₁ *, 7, 2, 2; 2000 AD₁₁₁ *, 8, 2, 2; 2000 AE₁₁₁ *, 9, 2, 2; 2000 AF₁₁₁ *, 9, 2, 2; 2000 AG₁₁₁ *, 10, 2, 2; 2000 AH₁₁₁ *, 9, 2, 2; 2000 AJ₁₁₁ *, 10, 2, 2; 2000 AK₁₁₁ *, 9, 2, 2; 2000 AL₁₁₁ *, 10, 2, 2; 2000 AM₁₁₁ *, 10, 2, 2; 2000 AN₁₁₁ *, 10, 2, 2; 2000 AO₁₁₁ *, 10, 2, 2; 2000 AP₁₁₁ *, 10, 2, 2; 2000 AQ₁₁₁ *, 8, 2, 2; 2000 AR₁₁₁ *, 14, 3, 4; 2000 AS₁₁₁ *, 10, 2, 2; 2000 AT₁₁₁ *, 8, 2, 2; 2000 AU₁₁₁ *, 10, 2, 2; 2000 AV₁₁₁ *, 9, 2, 2; 2000 AW₁₁₁ *, 9, 2, 2; 2000 AX₁₁₁ *, 14, 3, 4; 2000 AY₁₁₁ *, 8, 2, 2; 2000 AZ₁₁₁ *, 9, 2, 2; 2000 AA₁₁₂ *, 10, 2, 2; 2000 AB₁₁₂ *, 12, 3, 4; 2000 AC₁₁₂ *, 8, 2, 2; 2000 AD₁₁₂ *, 9, 2, 2; 2000 AE₁₁₂ *, 10, 2, 2; 2000 AF₁₁₂ *, 8, 2, 2; 2000 AG₁₁₂ *, 15, 2, 2; 2000 AH₁₁₂ *, 9, 2, 2; 2000 AJ₁₁₂ *, 10, 2, 2; 2000 AK₁₁₂ *, 12, 2, 2; 2000 AL₁₁₂ *, 10, 2, 2; 2000 AM₁₁₂ *, 10, 2, 2; 2000 AN₁₁₂ *, 10, 2, 2; 2000 AO₁₁₂ *, 7, 2, 2; 2000 AP₁₁₂ *, 10, 2, 2; 2000 AQ₁₁₂ *, 14, 2, 2; 2000 AR₁₁₂ *, 9, 2, 2; 2000 AS₁₁₂ *, 8, 2, 2; 2000 AT₁₁₂ *, 10, 2, 2; 2000 AU₁₁₂ *, 21, 5, 34; 2000 AV₁₁₂ *, 10, 2, 2; 2000 AW₁₁₂ *, 7, 2, 2; 2000 AX₁₁₂ *, 13, 3, 4; 2000 AY₁₁₂ *, 8, 2, 2; 2000 AZ₁₁₂ *, 7, 2, 2; 2000 AA₁₁₃ *, 10, 2, 2; 2000 AB₁₁₃ *, 10, 2, 2; 2000 AC₁₁₃ *, 10, 2, 2; 2000 AD₁₁₃ *, 9, 2, 2; 2000 AE₁₁₃ *, 9, 2, 2; 2000 AF₁₁₃ *, 10, 2, 2; 2000 AG₁₁₃ *, 7, 2, 2; 2000 AH₁₁₃ *, 9, 2, 2; 2000 AJ₁₁₃ *, 9, 2, 2; 2000 AK₁₁₃ *, 10, 2, 2; 2000 AL₁₁₃ *, 8, 2, 2; 2000 AM₁₁₃ *, 10, 2, 2; 2000 AN₁₁₃ *, 9, 2, 2; 2000 AO₁₁₃ *, 10, 2, 2; 2000 AP₁₁₃ *, 18, 4, 26; 2000 AQ₁₁₃ *, 11, 3, 4; 2000 AR₁₁₃ *, 10, 2, 2; 2000 AS₁₁₃ *, 10, 2, 2; 2000 AT₁₁₃ *, 10, 2, 2; 2000 AU₁₁₃ *, 10, 2, 2; 2000 AV₁₁₃ *, 8, 2, 2; 2000 AW₁₁₃ *, 10, 2, 2; 2000 AX₁₁₃ *, 9, 2, 2; 2000 AY₁₁₃ *, 10, 2, 2; 2000 AZ₁₁₃ *, 10, 2, 2; 2000 AA₁₁₄ *, 18, 4, 28; 2000 AB₁₁₄ *, 15, 3, 6; 2000 AC₁₁₄ *, 10, 2, 2; 2000 AD₁₁₄ *, 9, 2, 2; 2000 AE₁₁₄ *, 8, 2, 2; 2000 AF₁₁₄ *, 14, 2, 2; 2000 AG₁₁₄ *, 9, 2, 2; 2000 AH₁₁₄ *, 9, 2, 2; 2000 AJ₁₁₄ *, 10, 2, 2; 2000 AK₁₁₄ *, 9, 2, 2; 2000 AL₁₁₄ *, 10, 2, 2; 2000 AM₁₁₄ *, 10, 2, 2; 2000 AN₁₁₄ *, 10, 2, 2; 2000 AO₁₁₄ *, 10, 2, 2; 2000 AP₁₁₄ *, 9, 2, 2; 2000 AQ₁₁₄ *, 9, 2, 2; 2000 AR₁₁₄ *, 9, 2, 2; 2000 AS₁₁₄ *, 12, 2, 2; 2000 AT₁₁₄ *, 6, 2, 2; 2000 AU₁₁₄ *, 9, 2, 2; 2000 AV₁₁₄ *, 8, 2, 2; 2000 AW₁₁₄ *, 10, 2, 2; 2000 AX₁₁₄ *, 9, 2, 2; 2000 AY₁₁₄ *, 8, 2, 2; 2000 AZ₁₁₄ *, 8, 2, 2; 2000 AA₁₁₅ *, 10, 2, 2; 2000 AB₁₁₅ *, 8, 2, 2; 2000 AC₁₁₅ *, 8, 2, 2; 2000 AD₁₁₅ *, 10, 2, 2; 2000 AE₁₁₅ *, 10, 2, 2; 2000 AF₁₁₅ *, 10, 2, 2; 2000 AG₁₁₅ *, 9, 2, 2; 2000 AH₁₁₅ *, 9, 2, 2; 2000 AJ₁₁₅ *, 8, 2, 2; 2000 AK₁₁₅ *, 10, 2, 2; 2000 AL₁₁₅ *, 10, 2, 2; 2000 AM₁₁₅ *, 9, 2, 2; 2000 AN₁₁₅ *, 9, 2, 2; 2000 AO₁₁₅ *, 8, 2, 2; 2000 AP₁₁₅ *, 10, 2, 2; 2000 AQ₁₁₅ *, 10, 2, 2; 2000 AR₁₁₅ *, 10, 2, 2; 2000 AS₁₁₅ *, 9, 2, 2; 2000 AT₁₁₅ *, 10, 2, 2; 2000 AU₁₁₅ *, 10, 2, 2; 2000 AV₁₁₅ *, 10, 2, 2; 2000 AW₁₁₅ *, 10, 2, 2; 2000 AX₁₁₅ *, 10, 2, 2; 2000 AY₁₁₅ *, 9, 2, 2; 2000 AZ₁₁₅ *, 10, 2, 2; 2000 AA₁₁₆ *, 9, 2, 2; 2000 AB₁₁₆ *, 10, 2, 2; 2000 AC₁₁₆ *, 10, 2, 2; 2000 AD₁₁₆ *, 14, 3, 3; 2000 AE₁₁₆ *, 10, 2, 2; 2000 AF₁₁₆ *, 8, 2, 2; 2000 AG₁₁₆ *, 9, 2, 2; 2000 AH₁₁₆ *, 10, 2, 2; 2000 AJ₁₁₆ *, 9, 2, 2; 2000 AK₁₁₆ *, 10, 2, 2; 2000 AL₁₁₆ *, 10, 2, 2; 2000 AM₁₁₆ *, 10, 2, 2; 2000 AN₁₁₆ *, 15, 3, 24; 2000 AO₁₁₆ *, 10, 2, 2; 2000 AP₁₁₆ *, 9, 2, 2; 2000 AQ₁₁₆ *, 9, 2, 2; 2000 AR₁₁₆ *, 10, 2, 2; 2000 AS₁₁₆ *, 10, 2, 2; 2000 AT₁₁₆ *, 10, 2, 2; 2000 AU₁₁₆ *, 16, 4, 26; 2000 AV₁₁₆ *, 15, 3, 6; 2000 AW₁₁₆ *, 10, 2, 2; 2000 AX₁₁₆ *, 14, 3, 4; 2000 AY₁₁₆ *, 15, 3, 6; 2000 AZ₁₁₆ *, 10, 2, 2; 2000 AA₁₁₇ *, 19, 4, 28; 2000 AB₁₁₇ *, 9, 2, 2; 2000 AC₁₁₇ *, 24, 5, 36; 2000 AD₁₁₇ *, 10, 2, 2; 2000 AE₁₁₇ *, 10, 2, 2; 2000 AF₁₁₇ *, 13, 3, 4; 2000 AG₁₁₇ *, 10, 2, 2; 2000 AH₁₁₇ *, 7, 2, 2; 2000 AJ₁₁₇ *, 9, 2, 2; 2000 AK₁₁₇ *, 8, 2, 2; 2000 AL₁₁₇ *, 7, 2, 2; 2000 AM₁₁₇ *, 8, 2, 2; 2000 AN₁₁₇ *, 9, 2, 2; 2000 AO₁₁₇ *, 10, 2, 2; 2000 AP₁₁₇ *, 8, 2, 2; 2000 AQ₁₁₇ *, 10, 2, 2; 2000 AR₁₁₇ *, 10, 2, 2; 2000 AS₁₁₇ *, 10, 2, 2; 2000 AT₁₁₇ *, 10, 2, 2; 2000 AU₁₁₇ *, 9, 2, 2; 2000 AV₁₁₇ *, 10, 2, 2; 2000 AW₁₁₇ *, 10, 2, 2; 2000 AX₁₁₇ *, 9, 2, 2; 2000 AY₁₁₇ *, 10, 2, 2; 2000 AZ₁₁₇ *, 9, 2, 2; 2000 AA₁₁₈ *, 7, 2, 2; 2000 AB₁₁₈ *, 10, 2, 2; 2000 AC₁₁₈ *, 9, 2, 2; 2000 AD₁₁₈ *, 10, 2, 2; 2000 AE₁₁₈ *, 9, 2, 2; 2000 AF₁₁₈ *, 9, 2, 2; 2000 AG₁₁₈ *, 8, 2, 2; 2000 AH₁₁₈ *, 10, 2, 2; 2000 AJ₁₁₈ *, 10,

2, 2; 2000 AK₁₁₈ *, 10, 2, 2; 2000 AL₁₁₈ *, 10, 2, 2; 2000 AM₁₁₈ *, 10, 2, 2; 2000 AN₁₁₈ *, 8, 2, 2; 2000 AO₁₁₈ *, 7, 2, 2; 2000 AP₁₁₈ *, 10, 2, 2; 2000 AQ₁₁₈ *, 8, 2, 2; 2000 AR₁₁₈ *, 10, 2, 2; 2000 AS₁₁₈ *, 9, 2, 2; 2000 AT₁₁₈ *, 10, 2, 2; 2000 AU₁₁₈ *, 8, 2, 2; 2000 AV₁₁₈ *, 9, 2, 2; 2000 AW₁₁₈ *, 10, 2, 2; 2000 AX₁₁₈ *, 8, 2, 2; 2000 AY₁₁₈ *, 8, 2, 2; 2000 AZ₁₁₈ *, 8, 2, 2; 2000 AA₁₁₉ *, 8, 2, 2; 2000 AB₁₁₉ *, 10, 2, 2; 2000 AC₁₁₉ *, 9, 2, 2; 2000 AD₁₁₉ *, 10, 2, 2; 2000 AE₁₁₉ *, 7, 2, 2; 2000 AF₁₁₉ *, 10, 2, 2; 2000 AG₁₁₉ *, 8, 2, 2; 2000 AH₁₁₉ *, 9, 2, 2; 2000 AJ₁₁₉ *, 9, 2, 2; 2000 AK₁₁₉ *, 10, 2, 2; 2000 AL₁₁₉ *, 10, 2, 2; 2000 AM₁₁₉ *, 10, 2, 2; 2000 AN₁₁₉ *, 7, 2, 2; 2000 AO₁₁₉ *, 10, 2, 2; 2000 AP₁₁₉ *, 9, 2, 2; 2000 AQ₁₁₉ *, 8, 2, 2; 2000 AR₁₁₉ *, 10, 2, 2; 2000 AS₁₁₉ *, 10, 2, 2; 2000 AT₁₁₉ *, 10, 2, 2; 2000 AU₁₁₉ *, 9, 2, 2; 2000 AV₁₁₉ *, 8, 2, 2; 2000 AW₁₁₉ *, 10, 2, 2; 2000 AX₁₁₉ *, 10, 2, 2; 2000 AY₁₁₉ *, 10, 2, 2; 2000 AZ₁₁₉ *, 8, 2, 2; 2000 AA₁₂₀ *, 10, 2, 2; 2000 AB₁₂₀ *, 9, 2, 2; 2000 AC₁₂₀ *, 9, 2, 2; 2000 AD₁₂₀ *, 8, 2, 2; 2000 AE₁₂₀ *, 8, 2, 2; 2000 AF₁₂₀ *, 10, 2, 2; 2000 AG₁₂₀ *, 12, 3, 4; 2000 AH₁₂₀ *, 6, 2, 2; 2000 AJ₁₂₀ *, 10, 2, 2; 2000 AK₁₂₀ *, 10, 2, 2; 2000 AL₁₂₀ *, 8, 2, 2; 2000 AM₁₂₀ *, 10, 2, 2; 2000 AN₁₂₀ *, 9, 2, 2; 2000 AO₁₂₀ *, 9, 2, 2; 2000 AP₁₂₀ *, 9, 2, 2; 2000 AQ₁₂₀ *, 9, 2, 2; 2000 AR₁₂₀ *, 10, 2, 2; 2000 AS₁₂₀ *, 10, 2, 2; 2000 AT₁₂₀ *, 10, 2, 2; 2000 AU₁₂₀ *, 9, 2, 2; 2000 AV₁₂₀ *, 9, 2, 2; 2000 AW₁₂₀ *, 8, 2, 2; 2000 AX₁₂₀ *, 10, 2, 2; 2000 AY₁₂₀ *, 10, 2, 2; 2000 AZ₁₂₀ *, 10, 2, 2; 2000 AA₁₂₁ *, 9, 2, 2; 2000 AB₁₂₁ *, 8, 2, 2; 2000 AC₁₂₁ *, 10, 2, 2; 2000 AD₁₂₁ *, 10, 2, 2; 2000 AE₁₂₁ *, 9, 2, 2; 2000 AF₁₂₁ *, 9, 2, 2; 2000 AG₁₂₁ *, 10, 2, 2; 2000 AH₁₂₁ *, 10, 2, 2; 2000 AI₁₂₁ *, 10, 2, 2; 2000 AJ₁₂₁ *, 10, 2, 2; 2000 AK₁₂₁ *, 10, 2, 2; 2000 AL₁₂₁ *, 10, 2, 2; 2000 AM₁₂₁ *, 10, 2, 2; 2000 AN₁₂₁ *, 8, 2, 2; 2000 AO₁₂₁ *, 7, 2, 2; 2000 AP₁₂₁ *, 9, 2, 2; 2000 AQ₁₂₁ *, 7, 2, 2; 2000 AR₁₂₁ *, 8, 2, 2; 2000 AS₁₂₁ *, 8, 2, 2; 2000 AT₁₂₁ *, 7, 2, 2; 2000 AU₁₂₁ *, 9, 2, 2; 2000 AV₁₂₁ *, 9, 2, 2; 2000 AW₁₂₁ *, 9, 2, 2; 2000 AX₁₂₁ *, 6, 2, 2; 2000 AY₁₂₁ *, 8, 2, 2; 2000 AZ₁₂₁ *, 8, 2, 2; 2000 AA₁₂₂ *, 22, 5, 36; 2000 AB₁₂₂ *, 7, 2, 2; 2000 AC₁₂₂ *, 6, 2, 2; 2000 AD₁₂₂ *, 8, 2, 2; 2000 AE₁₂₂ *, 6, 2, 2; 2000 AF₁₂₂ *, 6, 2, 2; 2000 AG₁₂₂ *, 7, 2, 2; 2000 AH₁₂₂ *, 6, 2, 2; 2000 AJ₁₂₂ *, 8, 2, 2; 2000 AK₁₂₂ *, 12, 3, 24; 2000 AL₁₂₂ *, 6, 2, 2; 2000 AM₁₂₂ *, 6, 2, 2; 2000 AN₁₂₂ *, 9, 2, 2; 2000 AO₁₂₂ *, 8, 2, 2; 2000 AP₁₂₂ *, 8, 2, 2; 2000 AQ₁₂₂ *, 8, 2, 2; 2000 AR₁₂₂ *, 8, 2, 2; 2000 AS₁₂₂ *, 9, 2, 2; 2000 AT₁₂₂ *, 9, 2, 2; 2000 AU₁₂₂ *, 9, 2, 2; 2000 AV₁₂₂ *, 8, 2, 2; 2000 AW₁₂₂ *, 7, 2, 2; 2000 AX₁₂₂ *, 8, 2, 2; 2000 AY₁₂₂ *, 9, 2, 2; 2000 AZ₁₂₂ *, 7, 2, 2; 2000 AA₁₂₃ *, 9, 2, 2; 2000 AB₁₂₃ *, 8, 2, 2; 2000 AC₁₂₃ *, 7, 2, 2; 2000 AD₁₂₃ *, 11, 3, 24; 2000 AE₁₂₃ *, 6, 2, 2; 2000 AF₁₂₃ *, 8, 2, 2; 2000 AG₁₂₃ *, 8, 2, 2; 2000 AH₁₂₃ *, 9, 2, 2; 2000 AJ₁₂₃ *, 7, 2, 2; 2000 AK₁₂₃ *, 6, 2, 2; 2000 AL₁₂₃ *, 7, 2, 2; 2000 AM₁₂₃ *, 6, 2, 2; 2000 AN₁₂₃ *, 7, 2, 2; 2000 AO₁₂₃ *, 8, 2, 2; 2000 AP₁₂₃ *, 7, 2, 2; 2000 AQ₁₂₃ *, 9, 2, 2; 2000 AR₁₂₃ *, 9, 2, 2; 2000 AS₁₂₃ *, 10, 2, 2; 2000 AT₁₂₃ *, 10, 2, 2; 2000 AU₁₂₃ *, 7, 2, 2; 2000 AV₁₂₃ *, 9, 2, 2; 2000 AW₁₂₃ *, 10, 2, 2; 2000 AX₁₂₃ *, 10, 2, 2; 2000 AY₁₂₃ *, 9, 2, 2; 2000 AZ₁₂₃ *, 9, 2, 2; 2000 AA₁₂₄ *, 9, 2, 2; 2000 AB₁₂₄ *, 10, 2, 2; 2000 AC₁₂₄ *, 9, 2, 2; 2000 AD₁₂₄ *, 10, 2, 2; 2000 AE₁₂₄ *, 10, 2, 2; 2000 AF₁₂₄ *, 10, 2, 2; 2000 AG₁₂₄ *, 10, 2, 2; 2000 AH₁₂₄ *, 6, 2, 2; 2000 AJ₁₂₄ *, 12, 3, 4; 2000 AK₁₂₄ *, 9, 2, 2; 2000 AL₁₂₄ *, 8, 2, 2; 2000 AM₁₂₄ *, 8, 2, 2; 2000 AN₁₂₄ *, 7, 2, 2; 2000 AO₁₂₄ *, 10, 2, 2; 2000 AP₁₂₄ *, 9, 2, 2; 2000 AQ₁₂₄ *, 10, 2, 2; 2000 AR₁₂₄ *, 13, 3, 31; 2000 AS₁₂₄ *, 10, 2, 2; 2000 AT₁₂₄ *, 6, 2, 2; 2000 AU₁₂₄ *, 10, 2, 2; 2000 AV₁₂₄ *, 10, 2, 2; 2000 AW₁₂₄ *, 13, 3, 4; 2000 AX₁₂₄ *, 10, 2, 2; 2000 AY₁₂₄ *, 9, 2, 2; 2000 AZ₁₂₄ *, 10, 2, 2; 2000 AA₁₂₅ *, 10, 2, 2; 2000 AB₁₂₅ *, 8, 2, 2; 2000 AC₁₂₅ *, 10, 2, 2; 2000 AD₁₂₅ *, 9, 2, 2; 2000 AE₁₂₅ *, 10, 2, 2; 2000 AF₁₂₅ *, 9, 2, 2; 2000 AG₁₂₅ *, 10, 2, 2; 2000 AH₁₂₅ *, 15, 2, 2; 2000 AJ₁₂₅ *, 14, 3, 4; 2000 AK₁₂₅ *, 10, 2, 2; 2000 AL₁₂₅ *, 10, 2, 2; 2000 AM₁₂₅ *, 10, 2, 2; 2000 AN₁₂₅ *, 10, 2, 2; 2000 AO₁₂₅ *, 10, 2, 2; 2000 AP₁₂₅ *, 7, 2, 2; 2000 AQ₁₂₅ *, 9, 2, 2; 2000 AR₁₂₅ *, 8, 2, 2; 2000 AS₁₂₅ *, 10, 2, 2; 2000 AT₁₂₅ *, 10, 2, 2; 2000 AU₁₂₅ *, 10, 2, 2; 2000 AV₁₂₅ *, 15, 2, 2; 2000 AW₁₂₅ *, 10, 2, 2; 2000 AX₁₂₅ *, 9, 2, 2; 2000 AY₁₂₅ *, 10, 2, 2; 2000 AZ₁₂₅ *, 9, 2, 2; 2000 AA₁₂₆ *, 8, 2, 2; 2000 AB₁₂₆ *, 10, 2, 2; 2000 AC₁₂₆ *, 9, 2, 2; 2000 AD₁₂₆ *, 10, 2, 2; 2000 AE₁₂₆ *, 9, 2, 2; 2000 AF₁₂₆ *, 10, 2, 2; 2000 AG₁₂₆ *, 9, 2, 2; 2000 AH₁₂₆ *, 6, 2, 2; 2000 AJ₁₂₆ *, 8, 2, 2; 2000 AK₁₂₆ *, 8, 2, 2; 2000 AL₁₂₆ *, 8, 2, 2; 2000 AM₁₂₆ *, 10, 2, 2; 2000 AN₁₂₆ *, 8, 2, 2; 2000 AO₁₂₆ *, 10, 2, 2; 2000 AP₁₂₆ *, 10, 2, 2; 2000 AQ₁₂₆ *, 10

2, 2; 2000 AG₁₂₉ *, 7, 2, 2; 2000 AH₁₂₉ *, 9, 2, 2; 2000 AJ₁₂₉ *, 8, 2, 2; 2000 AK₁₂₉ *, 8, 2, 2; 2000 AL₁₂₉ *, 8, 2, 2; 2000 AM₁₂₉ *, 9, 2, 2; 2000 AN₁₂₉ *, 8, 2, 2; 2000 AO₁₂₉ *, 6, 2, 2; 2000 AP₁₂₉ *, 8, 2, 2; 2000 AQ₁₂₉ *, 9, 2, 2; 2000 AR₁₂₉ *, 9, 2, 2; 2000 AS₁₂₉ *, 9, 2, 2; 2000 AT₁₂₉ *, 7, 2, 2; 2000 AU₁₂₉ *, 9, 2, 2; 2000 AV₁₂₉ *, 7, 2, 2; 2000 AW₁₂₉ *, 6, 2, 2; 2000 AX₁₂₉ *, 7, 2, 2; 2000 AY₁₂₉ *, 7, 2, 2; 2000 AZ₁₂₉ *, 9, 2, 2; 2000 AA₁₃₀ *, 8, 2, 2; 2000 AB₁₃₀ *, 9, 2, 2; 2000 AC₁₃₀ *, 8, 2, 2; 2000 AD₁₃₀ *, 8, 2, 2; 2000 AE₁₃₀ *, 9, 2, 2; 2000 AF₁₃₀ *, 13, 3, 31; 2000 AG₁₃₀ *, 9, 2, 2; 2000 AH₁₃₀ *, 8, 2, 2; 2000 AJ₁₃₀ *, 9, 2, 2; 2000 AK₁₃₀ *, 8, 2, 2; 2000 AL₁₃₀ *, 11, 3, 32; 2000 AM₁₃₀ *, 9, 2, 2; 2000 AN₁₃₀ *, 7, 2, 2; 2000 AO₁₃₀ *, 6, 2, 2; 2000 AP₁₃₀ *, 7, 2, 2; 2000 AQ₁₃₀ *, 7, 2, 2; 2000 AR₁₃₀ *, 8, 2, 2; 2000 AS₁₃₀ *, 17, 4, 6; 2000 AT₁₃₀ *, 7, 2, 1; 2000 AU₁₃₀ *, 8, 2, 1; 2000 AV₁₃₀ *, 7, 2, 1; 2000 AW₁₃₀ *, 8, 2, 1; 2000 AX₁₃₀ *, 21, 2, 1; 2000 AY₁₃₀ *, 7, 2, 1; 2000 AZ₁₃₀ *, 7, 2, 1; 2000 AA₁₃₁ *, 24, 5, 27; 2000 AB₁₃₁ *, 8, 2, 1; 2000 AC₁₃₁ *, 8, 2, 1; 2000 AD₁₃₁ *, 8, 2, 1; 2000 AE₁₃₁ *, 6, 2, 1; 2000 AF₁₃₁ *, 8, 2, 1; 2000 AG₁₃₁ *, 7, 2, 1; 2000 AH₁₃₁ *, 6, 2, 6; 2000 AI₁₃₁ *, 9, 2, 6; 2000 AJ₁₃₁ *, 8, 2, 6; 2000 AK₁₃₁ *, 9, 2, 6; 2000 AL₁₃₁ *, 6, 2, 6; 2000 AM₁₃₁ *, 8, 2, 6; 2000 AN₁₃₁ *, 8, 2, 6; 2000 AO₁₃₁ *, 9, 2, 6; 2000 AP₁₃₁ *, 9, 2, 6; 2000 AQ₁₃₁ *, 8, 2, 6; 2000 AR₁₃₁ *, 9, 2, 6; 2000 AS₁₃₁ *, 9, 2, 6; 2000 AT₁₃₁ *, 9, 2, 5; 2000 AU₁₃₁ *, 9, 2, 5; 2000 AV₁₃₁ *, 6, 2, 5; 2000 AW₁₃₁ *, 8, 2, 5; 2000 AX₁₃₁ *, 7, 2, 5; 2000 AY₁₃₁ *, 10, 2, 5; 2000 AZ₁₃₁ *, 9, 2, 5; 2000 AA₁₃₂ *, 9, 2, 5; 2000 AB₁₃₂ *, 17, 4, 31; 2000 AC₁₃₂ *, 10, 2, 5; 2000 AD₁₃₂ *, 9, 2, 5; 2000 AE₁₃₂ *, 10, 2, 5; 2000 AF₁₃₂ *, 10, 2, 5; 2000 AG₁₃₂ *, 7, 2, 5; 2000 AH₁₃₂ *, 10, 2, 5; 2000 AI₁₃₂ *, 10, 2, 5; 2000 AJ₁₃₂ *, 7, 2, 5; 2000 AK₁₃₂ *, 7, 2, 5; 2000 AL₁₃₂ *, 7, 2, 5; 2000 AM₁₃₂ *, 8, 2, 5; 2000 AN₁₃₂ *, 10, 2, 5; 2000 AO₁₃₂ *, 8, 2, 5; 2000 AP₁₃₂ *, 7, 2, 5; 2000 AQ₁₃₂ *, 7, 2, 5; 2000 AR₁₃₂ *, 9, 2, 5; 2000 AS₁₃₂ *, 7, 2, 5; 2000 AT₁₃₂ *, 6, 2, 5; 2000 AU₁₃₂ *, 7, 2, 5; 2000 AV₁₃₂ *, 6, 2, 5; 2000 AW₁₃₂ *, 9, 2, 5; 2000 AX₁₃₂ *, 6, 2, 5; 2000 AY₁₃₂ *, 6, 2, 5; 2000 AZ₁₃₂ *, 7, 2, 5; 2000 AA₁₃₃ *, 6, 2, 5; 2000 AB₁₃₃ *, 10, 2, 5; 2000 AC₁₃₃ *, 10, 2, 5; 2000 AD₁₃₃ *, 10, 2, 5; 2000 AE₁₃₃ *, 8, 2, 5; 2000 AF₁₃₃ *, 9, 2, 5; 2000 AG₁₃₃ *, 10, 2, 5; 2000 AH₁₃₃ *, 10, 2, 5; 2000 AI₁₃₃ *, 10, 2, 5; 2000 AJ₁₃₃ *, 9, 2, 5; 2000 AK₁₃₃ *, 9, 2, 5; 2000 AL₁₃₃ *, 8, 2, 4; 2000 AO₁₃₃ *, 6, 2, 4; 2000 AP₁₃₃ *, 15, 4, 7; 2000 AQ₁₃₃ *, 9, 2, 4; 2000 AR₁₃₃ *, 6, 2, 4; 2000 AS₁₃₃ *, 8, 2, 4; 2000 AT₁₃₃ *, 8, 2, 4; 2000 AU₁₃₃ *, 8, 2, 4; 2000 AV₁₃₃ *, 9, 2, 4; 2000 AW₁₃₃ *, 10, 2, 4; 2000 AX₁₃₃ *, 10, 2, 4; 2000 AY₁₃₃ *, 9, 2, 4; 2000 AZ₁₃₃ *, 8, 2, 4; 2000 AA₁₃₄ *, 6, 2, 4; 2000 AB₁₃₄ *, 6, 2, 4; 2000 AC₁₃₄ *, 7, 2, 4; 2000 AD₁₃₄ *, 6, 2, 4; 2000 AE₁₃₄ *, 7, 2, 4; 2000 AF₁₃₄ *, 10, 2, 4; 2000 AG₁₃₄ *, 12, 2, 4; 2000 AH₁₃₄ *, 14, 2, 4; 2000 AI₁₃₄ *, 9, 2, 4; 2000 AJ₁₃₄ *, 14, 4, 7; 2000 AK₁₃₄ *, 10, 2, 4; 2000 AL₁₃₄ *, 10, 2, 4; 2000 AM₁₃₄ *, 7, 2, 4; 2000 AN₁₃₄ *, 6, 2, 4; 2000 AO₁₃₄ *, 9, 2, 4; 2000 AP₁₃₄ *, 7, 2, 4; 2000 AQ₁₃₄ *, 19, 4, 7; 2000 AR₁₃₄ *, 9, 2, 4; 2000 AS₁₃₄ *, 9, 2, 4; 2000 AT₁₃₄ *, 9, 2, 4; 2000 AU₁₃₄ *, 8, 2, 4; 2000 AV₁₃₄ *, 15, 2, 4; 2000 AW₁₃₄ *, 15, 2, 4; 2000 AX₁₃₄ *, 10, 2, 4; 2000 AY₁₃₄ *, 10, 2, 4; 2000 AZ₁₃₄ *, 10, 2, 4; 2000 AA₁₃₅ *, 6, 2, 4; 2000 AB₁₃₅ *, 9, 2, 4; 2000 AC₁₃₅ *, 8, 2, 4; 2000 AD₁₃₅ *, 9, 2, 4; 2000 AE₁₃₅ *, 10, 2, 4; 2000 AF₁₃₅ *, 10, 2, 4; 2000 AG₁₃₅ *, 10, 2, 4; 2000 AH₁₃₅ *, 10, 2, 4; 2000 AI₁₃₅ *, 10, 2, 4; 2000 AJ₁₃₅ *, 10, 2, 4; 2000 AK₁₃₅ *, 10, 2, 4; 2000 AL₁₃₅ *, 10, 2, 4; 2000 AM₁₃₅ *, 7, 2, 4; 2000 AN₁₃₅ *, 10, 2, 4; 2000 AO₁₃₅ *, 10, 2, 4; 2000 AP₁₃₅ *, 8, 2, 4; 2000 AQ₁₃₅ *, 8, 2, 4; 2000 AR₁₃₅ *, 8, 2, 4; 2000 AS₁₃₅ *, 9, 2, 4; 2000 AT₁₃₅ *, 8, 2, 4; 2000 AU₁₃₅ *, 9, 2, 4; 2000 AV₁₃₅ *, 9, 2, 4; 2000 AW₁₃₅ *, 10, 2, 4; 2000 AX₁₃₅ *, 9, 2, 4; 2000 AY₁₃₅ *, 10, 2, 4; 2000 AZ₁₃₅ *, 8, 2, 4; 2000 AA₁₃₆ *, 8, 2, 4; 2000 AB₁₃₆ *, 9, 2, 4; 2000 AC₁₃₆ *, 10, 2, 4; 2000 AD₁₃₆ *, 7, 2, 4; 2000 AE₁₃₆ *, 9, 2, 4; 2000 AF₁₃₆ *, 9, 2, 4; 2000 AG₁₃₆ *, 8, 2, 4; 2000 AH₁₃₆ *, 8, 2, 4; 2000 AI₁₃₆ *, 6, 2, 4; 2000 AJ₁₃₆ *, 7, 2, 4; 2000 AK₁₃₆ *, 7, 2, 4; 2000 AL₁₃₆ *, 8, 2, 4; 2000 AM₁₃₆ *, 10, 2, 4; 2000 AN₁₃₆ *, 9, 2, 4; 2000 AO₁₃₆ *, 7, 2, 4; 2000 AP₁₃₆ *, 6, 2, 4; 2000 AQ₁₃₆ *, 8, 2, 4; 2000 AR₁₃₆ *, 9, 2, 4; 2000 AS₁₃₆ *, 7, 2, 4; 2000 AT₁₃₆ *, 8, 2, 4; 2000 AU₁₃₆ *, 8, 2, 4; 2000 AV₁₃₆ *, 10, 2, 4; 2000 AW₁₃₆ *, 8, 2, 4; 2000 AX₁₃₆ *, 10, 2, 4; 2000 AY₁₃₆ *, 10, 2, 4; 2000 AZ₁₃₆ *, 16, 4, 35; 2000 AA₁₃₇ *, 9, 2, 4; 2000 AB₁₃₇ *, 8, 2, 4; 2000 AC₁₃₇ *, 9, 2, 4; 2000 AD₁₃₇ *, 7, 2, 4; 2000 AE₁₃₇ *, 6, 2, 4; 2000 AF₁₃₇ *, 10, 2, 4; 2000 AG₁₃₇ *, 6, 2, 4; 2000 AH₁₃₇ *, 8, 2, 4; 2000 AI₁₃₇ *, 8, 2, 4; 2000 AJ₁₃₇ *, 9, 2, 4; 2000 AK₁₃₇ *, 8, 2, 4; 2000 AL₁₃₇ *, 8, 2, 4; 2000 AM₁₃₇ *, 10, 2, 4; 2000 AN₁₃₇ *, 8, 2, 4; 2000 AO₁₃₇ *, 9, 2, 4; 2000 AP₁₃₇ *, 7, 2, 4; 2000 AQ₁₃₇ *, 9, 2, 4; 2000 AR₁₃₇ *, 9, 2, 4; 2000 AS₁₃₇ *, 9, 2, 4; 2000 AT₁₃₇ *, 9, 2, 4; 2000 AU₁₃₇ *, 9, 2, 4; 2000 AV₁₃₇ *, 9, 2, 4; 2000 AW₁₃₇ *, 8, 2, 4; 2000 AX₁₃₇ *, 8, 2, 4; 2000 AY₁₃₇ *, 8, 2, 4; 2000 AZ₁₃₇ *, 7, 2, 4; 2000 AA₁₃₈ *, 8, 2, 4; 2000 AB₁₃₈ *, 8, 2, 4; 2000 AC₁₃₈ *, 8, 2, 4; 2000 AD₁₃₈ *, 9, 2, 4; 2000 AE₁₃₈ *, 7, 2, 4; 2000 AF₁₃₈ *, 19, 4, 38; 2000 AG₁₃₈ *, 10, 2, 3; 2000 AH₁₃₈ *, 13, 3, 5; 2000 AJ₁₃₈ *, 10, 2, 3; 2000 AK₁₃₈ *, 10, 2, 3; 2000 AL₁₃₈ *, 10, 2, 3; 2000 AM₁₃₈ *, 10, 2, 3; 2000 AN₁₃₈ *, 10, 2, 3; 2000 AO₁₃₈ *, 13, 3, 5; 2000 AP₁₃₈ *, 10, 2, 3; 2000 AQ₁₃₈ *, 15, 3, 5; 2000 AR₁₃₈ *, 10, 2, 3; 2000 AS₁₃₈ *, 9, 2, 3; 2000 AT₁₃₈ *, 9, 2, 3; 2000 AU₁₃₈ *, 9, 2, 3; 2000 AV₁₃₈ *, 9, 2, 3; 2000 AW₁₃₈ *, 9, 2, 3; 2000 AX₁₃₈ *, 10, 2, 3; 2000 AY₁₃₈ *, 10, 2, 3; 2000 AZ₁₃₈ *, 8, 2, 3; 2000 AA₁₃₉ *, 10, 2, 3; 2000 AB₁₃₉ *, 10, 2, 3; 2000 AC₁₃₉ *, 10, 2, 3; 2000 AD₁₃₉ *, 10, 2, 3; 2000 AE₁₃₉ *, 10, 2, 3; 2000 AF₁₃₉ *, 10, 2, 3; 2000 AG₁₃₉ *, 10, 2, 3; 2000 AH₁₃₉ *, 9, 2, 3; 2000 AI₁₃₉ *, 10, 2, 3; 2000 AJ₁₃₉ *, 10, 2, 3; 2000 AK₁₃₉ *, 9, 2, 3; 2000 AL₁₃₉ *, 10, 2, 3; 2000 AM₁₃₉ *, 10, 2, 3; 2000 AN₁₃₉ *, 10, 2, 3; 2000 AO₁₃₉ *, 8, 2, 3; 2000 AP₁₃₉ *, 8, 2, 3; 2000 AQ₁₃₉ *, 7, 2, 3; 2000 AR₁₃₉ *, 10, 2, 3; 2000 AS₁₃₉ *, 10, 2, 3; 2000 AT₁₃₉ *, 9, 2, 3; 2000 AU₁₃₉ *, 8, 2, 3; 2000 AV₁₃₉ *, 10, 2, 3; 2000 AW₁₃₉ *, 10, 2, 3; 2000 AX₁₃₉ *, 10, 2, 3; 2000 AY₁₃₉ *, 10, 2, 3; 2000 AZ₁₃₉ *, 10, 2, 3; 2000 AA₁₄₀ *, 10, 2, 3; 2000 AB₁₄₀ *, 10, 2, 3; 2000 AC₁₄₀ *, 10, 2, 3; 2000 AD₁₄₀ *, 10, 2, 3; 2000 AE₁₄₀ *, 19, 4, 28; 2000 AF₁₄₀ *, 17,

3, 5; 2000 AG₁₄₀ *, 8, 2, 3; 2000 AH₁₄₀ *, 7, 2, 3; 2000 AJ₁₄₀ *, 8, 2, 3; 2000 AK₁₄₀ *, 7, 2, 3; 2000 AL₁₄₀ *, 8, 2, 3; 2000 AM₁₄₀ *, 9, 2, 3; 2000 AN₁₄₀ *, 7, 2, 3; 2000 AO₁₄₀ *, 6, 2, 3; 2000 AP₁₄₀ *, 20, 3, 5; 2000 AQ₁₄₀ *, 10, 2, 3; 2000 AR₁₄₀ *, 9, 2, 2; 4; 2000 AS₁₄₀ *, 8, 2, 4; 2000 AT₁₄₀ *, 7, 2, 4; 2000 AU₁₄₀ *, 15, 2, 3; 2000 AV₁₄₀ *, 19, 4, 6; 2000 AW₁₄₀ *, 18, 4, 6; 2000 AX₁₄₀ *, 29, 6, 37; 2000 AY₁₄₀ *, 13, 3, 5; 2000 AZ₁₄₀ *, 10, 2, 3; 2000 AA₁₄₁ *, 10, 2, 3; 2000 AB₁₄₁ *, 23, 5, 37; 2000 AC₁₄₁ *, 10, 2, 3; 2000 AD₁₄₁ *, 10, 2, 3; 2000 AE₁₄₁ *, 9, 2, 3; 2000 AF₁₄₁ *, 9, 2, 3; 2000 AG₁₄₁ *, 10, 2, 3; 2000 AH₁₄₁ *, 7, 2, 3; 2000 AJ₁₄₁ *, 10, 2, 3; 2000 AK₁₄₁ *, 10, 2, 3; 2000 AL₁₄₁ *, 10, 2, 3; 2000 AM₁₄₁ *, 10, 2, 3; 2000 AN₁₄₁ *, 10, 2, 3; 2000 AO₁₄₁ *, 10, 2, 3; 2000 AP₁₄₁ *, 7, 2, 3; 2000 AQ₁₄₁ *, 8, 2, 3; 2000 AR₁₄₁ *, 10, 2, 3; 2000 AS₁₄₁ *, 10, 2, 3; 2000 AT₁₄₁ *, 10, 2, 3; 2000 AU₁₄₁ *, 10, 2, 3; 2000 AV₁₄₁ *, 10, 2, 3; 2000 AW₁₄₁ *, 10, 2, 3; 2000 AX₁₄₁ *, 7, 2, 3; 2000 AY₁₄₁ *, 10, 2, 3; 2000 AZ₁₄₁ *, 10, 2, 3; 2000 AA₁₄₂ *, 10, 2, 3; 2000 AB₁₄₂ *, 10, 2, 3; 2000 AC₁₄₂ *, 10, 2, 3; 2000 AD₁₄₂ *, 10, 2, 3; 2000 AE₁₄₂ *, 10, 2, 3; 2000 AF₁₄₂ *, 9, 2, 3; 2000 AG₁₄₂ *, 10, 2, 3; 2000 AH₁₄₂ *, 19, 3, 5; 2000 AI₁₄₂ *, 10, 2, 3; 2000 AJ₁₄₂ *, 10, 2, 3; 2000 AK₁₄₂ *, 15, 3, 6; 2000 AL₁₄₂ *, 10, 2, 3; 2000 AN₁₄₂ *, 10, 2, 3; 2000 AO₁₄₂ *, 10, 2, 3; 2000 AP₁₄₂ *, 15, 3, 6; 2000 AQ₁₄₂ *, 10, 2, 3; 2000 AR₁₄₂ *, 10, 2, 3; 2000 AS₁₄₂ *, 10, 2, 3; 2000 AT₁₄₂ *, 22, 5, 37; 2000 AU₁₄₂ *, 10, 2, 3; 2000 AV₁₄₂ *, 7, 2, 3; 2000 AW₁₄₂ *, 9, 2, 3; 2000 AX₁₄₂ *, 9, 2, 3; 2000 AY₁₄₂ *, 9, 2, 3; 2000 AZ₁₄₂ *, 9, 2, 3; 2000 AA₁₄₃ *, 9, 2, 3; 2000 AB₁₄₃ *, 10, 2, 3; 2000 AC₁₄₃ *, 7, 2, 3; 2000 AD₁₄₃ *, 9, 2, 3; 2000 AE₁₄₃ *, 10, 2, 3; 2000 AF₁₄₃ *, 10, 2, 3; 2000 AG₁₄₃ *, 10, 2, 3; 2000 AH₁₄₃ *, 7, 2, 3; 2000 AJ₁₄₃ *, 6, 2, 3; 2000 AK₁₄₃ *, 13, 3, 5; 2000 AL₁₄₃ *, 9, 2, 3; 2000 AM₁₄₃ *, 9, 2, 3; 2000 AN₁₄₃ *, 8, 2, 3; 2000 AO₁₄₃ *, 9, 2, 3; 2000 AP₁₄₃ *, 7, 2, 3; 2000 AQ₁₄₃ *, 6, 2, 3; 2000 AR₁₄₃ *, 9, 2, 3; 2000 AS₁₄₃ *, 9, 2, 3; 2000 AT₁₄₃ *, 9, 2, 3; 2000 AU₁₄₃ *, 23, 5, 28; 2000 AV₁₄₃ *, 9, 2, 3; 2000 AW₁₄₃ *, 7, 2, 3; 2000 AX₁₄₃ *, 9, 2, 3; 2000 AY₁₄₃ *, 9, 2, 3; 2000 AZ₁₄₃ *, 7, 2, 3; 2000 AA₁₄₄ *, 8, 2, 3; 2000 AB₁₄₄ *, 9, 2, 3; 2000 AC₁₄₄ *, 7, 2, 3; 2000 AD₁₄₄ *, 6, 2, 3; 2000 AE₁₄₄ *, 7, 2, 3; 2000 AF₁₄₄ *, 9, 2, 3; 2000 AG₁₄₄ *, 9, 2, 3; 2000 AH₁₄₄ *, 9, 2, 3; 2000 AI₁₄₄ *, 17, 3, 34; 2000 AJ₁₄₄ *, 8, 2, 3; 2000 AK₁₄₄ *, 9, 2, 3; 2000 AL₁₄₄ *, 9, 2, 3; 2000 AM₁₄₄ *, 9, 2, 3; 2000 AN₁₄₄ *, 9, 2, 3; 2000 AO₁₄₄ *, 9, 2, 3; 2000 AP₁₄₄ *, 9, 2, 3; 2000 AQ₁₄₄ *, 8, 2, 3; 2000 AR₁₄₄ *, 9, 2, 3; 2000 AS₁₄₄ *, 8, 2, 3; 2000 AT₁₄₄ *, 9, 2, 3; 2000 AU₁₄₄ *, 9, 2, 3; 2000 AV₁₄₄ *, 9, 2, 3; 2000 AW₁₄₄ *, 7, 2, 3; 2000 AX₁₄₄ *, 9, 2, 3; 2000 AY₁₄₄ *, 7, 2, 3; 2000 AZ₁₄₄ *, 6, 2, 3; 2000 AA₁₄₅ *, 8, 2, 3; 2000 AB₁₄₅ *, 8, 2, 3; 2000 AC₁₄₅ *, 10, 2, 3; 2000 AD₁₄₅ *, 10, 2, 3; 2000 AE₁₄₅ *, 9, 2, 2; 2000 AF₁₄₅ *, 7, 2, 3; 2000 AG₁₄₅ *, 8, 2, 2; 2000 AH₁₄₅ *, 8, 2, 3; 2000 AJ₁₄₅ *, 7, 2, 2; 2000 AK₁₄₅ *, 18, 4, 28; 2000 AL₁₄₅ *, 13, 3, 5; 2000 AM₁₄₅ *, 13, 2, 2; 2000 AN₁₄₅ *, 6, 2, 2; 2000 AO₁₄₅ *, 8, 2, 2; 2000 AP₁₄₅ *, 8, 2, 2; 2000 AQ₁₄₅ *, 9, 2, 2; 2000 AR₁₄₅ *, 9, 2, 2; 2000 AS₁₄₅ *, 10, 2, 1; 2000 AT₁₄₅ *, 9, 2, 1; 2000 AU₁₄₅ *, 10, 2, 2; 2000 AV₁₄₅ *, 10, 2, 2; 2000 AW₁₄₅ *, 10, 2, 2; 2000 AX₁₄₅ *, 10, 2, 2; 2000 AY₁₄₅ *, 10, 2, 2; 2000 AZ₁₄₅ *, 8, 2, 2; 2000 AA₁₄₆ *, 9, 2, 2; 2000 AB₁₄₆ *, 7, 2, 2; 2000 AC₁₄₆ *, 8, 2, 2; 2000 AD₁₄₆ *, 15, 3, 4; 2000 AE₁₄₆ *, 17, 4, 39; 2000 AF₁₄₆ *, 10, 2, 2; 2000 AG₁₄₆ *, 6, 2, 2; 2000 AH₁₄₆ *, 13, 3, 4; 2000 AI₁₄₆ *, 13, 2, 1; 2000 AJ₁₄₆ *, 10, 2, 1; 2000 AK₁₄₆ *, 8, 2, 2; 2000 AL₁₄₆ *, 8, 2, 2; 2000 AM₁₄₆ *, 8, 2, 2; 2000 AN₁₄₆ *, 25, 5, 37; 2000 AO₁₄₆ *, 17, 4, 34; 2000 AP₁₄₆ *, 17, 4, 4; 2000 AQ₁₄₆ *, 9, 2, 2; 2000 AR₁₄₆ *, 7, 2, 2; 2000 AS₁₄₆ *, 11, 3, 4; 2000 AT₁₄₆ *, 7, 2, 2; 2000 AU₁₄₆ *, 12, 3, 4; 2000 AV₁₄₆ *, 13, 2, 1; 2000 AW₁₄₆ *, 9, 2, 1; 2000 AX₁₄₆ *, 8, 2, 2; 2000 AY₁₄₆ *, 23, 5, 36; 2000 AZ₁₄₆ *, 9, 2, 1; 2000 AA₁₄₇ *, 10, 2, 2; 2000 AB₁₄₇ *, 12, 3, 20; 2000 AC₁₄₇ *, 16, 4, 4; 2000 AD₁₄₇ *, 8, 2, 4; 2000 AE₁₄₇ *, 7, 2, 4; 2000 AF₁₄₇ *, 7, 2, 4; 2000 AG₁₄₇ *, 7, 2, 4; 2000 AH₁₄₇ *, 7, 2, 4; 2000 AI₁₄₇ *, 8, 2, 4; 2000 AJ₁₄₇ *, 8, 2, 4; 2000 AK₁₄₇ *, 8, 2, 4; 2000 AL₁₄₇ *, 10, 2, 4; 2000 AM₁₄₇ *, 8, 2, 4; 2000 AN₁₄₇ *, 10, 2, 4; 2000 AO₁₄₇ *, 10, 2, 4; 2000 AP₁₄₇ *, 6, 2, 4; 2000 AQ₁₄₇ *, 10, 2, 4; 2000 AR₁₄₇ *, 10, 2, 4; 2000 AS₁₄₇ *, 9, 2, 4; 2000 AT₁₄₇ *, 9, 2, 4; 2000 AU₁₄₇ *, 7, 2, 4; 2000 AV₁₄₇ *, 6, 2, 4; 2000 AW₁₄₇ *, 10, 2, 4; 2000 AX₁₄₇ *, 9, 2, 4; 2000 AY₁₄₇ *, 8, 2, 4; 2000 AZ₁₄₇ *, 11, 3, 34; 2000 AA₁₄₈ *, 6, 2, 4; 2000 AB₁₄₈ *, 9, 2, 4; 2000 AC₁₄₈ *, 7, 2, 4; 2

2, 2; 2000 AP₁₅₁ *, 10, 2, 2; 2000 AQ₁₅₁ *, 8, 2, 2; 2000 AR₁₅₁ *, 9, 2, 2; 2000 AS₁₅₁ *, 7, 2, 2; 2000 AT₁₅₁ *, 9, 2, 2; 2000 AU₁₅₁ *, 10, 2, 2; 2000 AV₁₅₁ *, 14, 2, 2; 2000 AW₁₅₁ *, 10, 2, 2; 2000 AX₁₅₁ *, 7, 2, 2; 2000 AY₁₅₁ *, 12, 2, 2; 2000 AZ₁₅₁ *, 9, 2, 2; 2000 AA₁₅₂ *, 7, 2, 2; 2000 AB₁₅₂ *, 8, 2, 2; 2000 AC₁₅₂ *, 9, 2, 2; 2000 AD₁₅₂ *, 8, 2, 2; 2000 AE₁₅₂ *, 6, 2, 2; 2000 AF₁₅₂ *, 10, 2, 2; 2000 AG₁₅₂ *, 11, 3, 25; 2000 AH₁₅₂ *, 7, 2, 2; 2000 AJ₁₅₂ *, 14, 2, 2; 2000 AK₁₅₂ *, 10, 2, 2; 2000 AL₁₅₂ *, 8, 2, 2; 2000 AM₁₅₂ *, 8, 2, 2; 2000 AN₁₅₂ *, 9, 2, 2; 2000 AO₁₅₂ *, 9, 2, 2; 2000 AP₁₅₂ *, 7, 2, 2; 2000 AQ₁₅₂ *, 10, 2, 2; 2000 AR₁₅₂ *, 10, 2, 2; 2000 AS₁₅₂ *, 30, 6, 38; 2000 AT₁₅₂ *, 8, 2, 2; 2000 AU₁₅₂ *, 10, 2, 2; 2000 AV₁₅₂ *, 7, 2, 2; 2000 AW₁₅₂ *, 10, 2, 2; 2000 AX₁₅₂ *, 8, 2, 2; 2000 AY₁₅₂ *, 8, 2, 2; 2000 AZ₁₅₂ *, 10, 2, 2; 2000 AA₁₅₃ *, 10, 2, 2; 2000 AB₁₅₃ *, 10, 2, 2; 2000 AC₁₅₃ *, 9, 2, 2; 2000 AD₁₅₃ *, 13, 2, 1; 2000 AG₁₅₃ *, 9, 2, 3; 2000 AJ₁₅₃ *, 5, 1, 0; 2000 AK₁₅₃ *, 12, 2, 3; 2000 AO₁₅₃ *, 7, 2, 1; 2000 AP₁₅₃ *, 7, 2, 6; 2000 AQ₁₅₃ *, 9, 2, 2; 2000 AR₁₅₃ *, 9, 2, 2; 2000 AS₁₅₃ *, 10, 2, 2; 2000 AT₁₅₃ *, 7, 2, 2; 2000 AU₁₅₃ *, 8, 2, 2; 2000 AV₁₅₃ *, 10, 2, 2; 2000 AW₁₅₃ *, 8, 2, 2; 2000 AX₁₅₃ *, 9, 2, 2; 2000 AY₁₅₃ *, 8, 2, 2; 2000 AZ₁₅₃ *, 10, 2, 2; 2000 AA₁₅₄ *, 22, 5, 62; 2000 AB₁₅₄ *, 10, 2, 2; 2000 AC₁₅₄ *, 10, 2, 2; 2000 AD₁₅₄ *, 9, 2, 2; 2000 AE₁₅₄ *, 10, 2, 2; 2000 AF₁₅₄ *, 7, 2, 2; 2000 AG₁₅₄ *, 10, 2, 2; 2000 AH₁₅₄ *, 7, 2, 2; 2000 AI₁₅₄ *, 10, 2, 2; 2000 AJ₁₅₄ *, 10, 2, 2; 2000 AK₁₅₄ *, 10, 2, 2; 2000 AL₁₅₄ *, 7, 2, 2; 2000 AM₁₅₄ *, 8, 2, 2; 2000 AN₁₅₄ *, 7, 2, 2; 2000 AO₁₅₄ *, 8, 2, 2; 2000 AP₁₅₄ *, 9, 2, 2; 2000 AQ₁₅₄ *, 10, 2, 1; 2000 AR₁₅₄ *, 13, 3, 25; 2000 AS₁₅₄ *, 9, 2, 1; 2000 AT₁₅₄ *, 8, 2, 1; 2000 AU₁₅₄ *, 10, 2, 1; 2000 AV₁₅₄ *, 6, 2, 1; 2000 AW₁₅₄ *, 9, 2, 1; 2000 AX₁₅₄ *, 10, 2, 1; 2000 AY₁₅₄ *, 8, 2, 1; 2000 AZ₁₅₄ *, 10, 2, 1; 2000 AA₁₅₅ *, 10, 2, 1; 2000 AB₁₅₅ *, 15, 2, 1; 2000 AC₁₅₅ *, 10, 2, 1; 2000 AD₁₅₅ *, 7, 2, 1; 2000 AE₁₅₅ *, 8, 2, 1; 2000 AF₁₅₅ *, 10, 2, 1; 2000 AG₁₅₅ *, 9, 2, 1; 2000 AH₁₅₅ *, 7, 2, 1; 2000 AJ₁₅₅ *, 7, 2, 1; 2000 AK₁₅₅ *, 6, 2, 1; 2000 AL₁₅₅ *, 9, 2, 1; 2000 AM₁₅₅ *, 8, 2, 1; 2000 AN₁₅₅ *, 15, 4, 51; 2000 AO₁₅₅ *, 7, 2, 1; 2000 AP₁₅₅ *, 7, 2, 2; 2000 AQ₁₅₅ *, 9, 2, 2; 2000 AR₁₅₅ *, 9, 2, 1; 2000 AS₁₅₅ *, 14, 3, 28; 2000 AT₁₅₅ *, 10, 2, 1; 2000 AU₁₅₅ *, 9, 2, 1; 2000 AV₁₅₅ *, 9, 2, 1; 2000 AW₁₅₅ *, 8, 2, 2; 2000 AX₁₅₅ *, 9, 2, 1; 2000 AY₁₅₅ *, 10, 2, 1; 2000 AZ₁₅₅ *, 9, 2, 1; 2000 AA₁₅₆ *, 8, 2, 1; 2000 AB₁₅₆ *, 8, 2, 1; 2000 AC₁₅₆ *, 12, 3, 28; 2000 AD₁₅₆ *, 9, 2, 1; 2000 AE₁₅₆ *, 6, 2, 1; 2000 AF₁₅₆ *, 8, 2, 1; 2000 AG₁₅₆ *, 8, 2, 1; 2000 AH₁₅₆ *, 8, 2, 2; 2000 AI₁₅₆ *, 14, 2, 1; 2000 AJ₁₅₆ *, 13, 2, 1; 2000 AK₁₅₆ *, 13, 2, 1; 2000 AL₁₅₆ *, 10, 2, 1; 2000 AM₁₅₆ *, 9, 2, 1; 2000 AN₁₅₆ *, 8, 2, 1; 2000 AO₁₅₆ *, 9, 2, 1; 2000 AP₁₅₆ *, 9, 2, 1; 2000 AQ₁₅₆ *, 9, 2, 1; 2000 AR₁₅₆ *, 8, 2, 1; 2000 AS₁₅₆ *, 7, 2, 1; 2000 AT₁₅₆ *, 9, 2, 1; 2000 AU₁₅₆ *, 9, 2, 1; 2000 AV₁₅₆ *, 9, 2, 2; 2000 AW₁₅₆ *, 9, 2, 2; 2000 AX₁₅₆ *, 8, 2, 2; 2000 AY₁₅₆ *, 9, 2, 1; 2000 AZ₁₅₆ *, 7, 2, 1; 2000 AA₁₅₇ *, 9, 2, 2; 2000 AB₁₅₇ *, 7, 2, 1; 2000 AC₁₅₇ *, 8, 2, 1; 2000 AD₁₅₇ *, 7, 2, 1; 2000 AE₁₅₇ *, 9, 2, 1; 2000 AF₁₅₇ *, 6, 2, 1; 2000 AG₁₅₇ *, 8, 2, 1; 2000 AH₁₅₇ *, 7, 2, 1; 2000 AI₁₅₇ *, 12, 2, 1; 2000 AJ₁₅₇ *, 9, 2, 1; 2000 AK₁₅₇ *, 7, 2, 1; 2000 AL₁₅₇ *, 10, 2, 1; 2000 AM₁₅₇ *, 10, 2, 1; 2000 AN₁₅₇ *, 10, 2, 1; 2000 AO₁₅₇ *, 10, 2, 2; 2000 AP₁₅₇ *, 7, 2, 1; 2000 AQ₁₅₇ *, 9, 2, 1; 2000 AR₁₅₇ *, 9, 2, 1; 2000 AS₁₅₇ *, 9, 2, 1; 2000 AT₁₅₇ *, 8, 2, 1; 2000 AU₁₅₇ *, 10, 2, 1; 2000 AV₁₅₇ *, 15, 2, 1; 2000 AW₁₅₇ *, 8, 2, 1; 2000 AX₁₅₇ *, 10, 2, 1; 2000 AY₁₅₇ *, 7, 2, 1; 2000 AZ₁₅₇ *, 10, 2, 1; 2000 AA₁₅₈ *, 9, 2, 1; 2000 AB₁₅₈ *, 9, 2, 1; 2000 AC₁₅₈ *, 10, 2, 1; 2000 AD₁₅₈ *, 8, 2, 1; 2000 AE₁₅₈ *, 10, 2, 1; 2000 AF₁₅₈ *, 13, 3, 27; 2000 AG₁₅₈ *, 9, 2, 1; 2000 AH₁₅₈ *, 14, 3, 25; 2000 AJ₁₅₈ *, 10, 2, 1; 2000 AK₁₅₈ *, 9, 2, 1; 2000 AL₁₅₈ *, 7, 2, 1; 2000 AM₁₅₈ *, 9, 2, 1; 2000 AN₁₅₈ *, 10, 2, 1; 2000 AO₁₅₈ *, 9, 2, 1; 2000 AP₁₅₈ *, 14, 2, 1; 2000 AQ₁₅₈ *, 9, 2, 1; 2000 AR₁₅₈ *, 10, 2, 1; 2000 AS₁₅₈ *, 7, 2, 1; 2000 AT₁₅₈ *, 7, 2, 1; 2000 AU₁₅₈ *, 8, 2, 1; 2000 AV₁₅₈ *, 15, 3, 25; 2000 AW₁₅₈ *, 9, 2, 1; 2000 AX₁₅₈ *, 8, 2, 1; 2000 AY₁₅₈ *, 8, 2, 1; 2000 AZ₁₅₈ *, 10, 2, 1; 2000 AA₁₅₉ *, 10, 2, 1; 2000 AB₁₅₉ *, 9, 2, 1; 2000 AC₁₅₉ *, 9, 2, 1; 2000 AD₁₅₉ *, 10, 2, 1; 2000 AE₁₅₉ *, 8, 2, 1; 2000 AF₁₅₉ *, 10, 2, 1; 2000 AG₁₅₉ *, 10, 2, 1; 2000 AH₁₅₉ *, 9, 2, 1; 2000 AI₁₅₉ *, 8, 2, 1; 2000 AJ₁₅₉ *, 9, 2, 1; 2000 AK₁₅₉ *, 9, 2, 1; 2000 AL₁₅₉ *, 10, 2, 1; 2000 AM₁₅₉ *, 9, 2, 1; 2000 AN₁₅₉ *, 10, 2, 1; 2000 AO₁₅₉ *, 10, 2, 1; 2000 AP₁₅₉ *, 9, 2, 1; 2000 AQ₁₅₉ *, 9, 2, 1; 2000 AR₁₅₉ *, 10, 2, 1; 2000 AS₁₅₉ *, 7, 2, 1; 2000 AT₁₅₉ *, 10, 2, 1; 2000 AU₁₅₉ *, 9, 2, 1; 2000 AV₁₅₉ *, 10, 2, 1; 2000 AW₁₅₉ *, 12, 3, 25; 2000 AX₁₅₉ *, 9, 2, 1; 2000 AY₁₅₉ *, 10, 2, 1; 2000 AZ₁₅₉ *, 10, 2, 1; 2000 AA₁₆₀ *, 10, 2, 1; 2000 AB₁₆₀ *, 9, 2, 1; 2000 AC₁₆₀ *, 9, 2, 1; 2000 AD₁₆₀ *, 8, 2, 1; 2000 AE₁₆₀ *, 8, 2, 1; 2000 AF₁₆₀ *, 7, 2, 1; 2000 AG₁₆₀ *, 9, 2, 1; 2000 AH₁₆₀ *, 8, 2, 3; 2000 AI₁₆₀ *, 8, 2, 1; 2000 AJ₁₆₀ *, 8, 2, 1; 2000 AK₁₆₀ *, 8, 2, 1; 2000 AL₁₆₀ *, 7, 2, 3; 2000 AM₁₆₀ *, 6, 2, 1; 2000 AN₁₆₀ *, 8, 2, 1; 2000 AP₁₆₀ *, 8, 2, 1; 2000 AQ₁₆₀ *, 9, 2, 1; 2000 AR₁₆₀ *, 7, 2, 1; 2000 AS₁₆₀ *, 7, 2, 1; 2000 AT₁₆₀ *, 7, 2, 1; 2000 AU₁₆₀ *, 6, 2, 1; 2000 AV₁₆₀ *, 7, 2, 1; 2000 AW₁₆₀ *, 8, 2, 1; 2000 AX₁₆₀ *, 8, 2, 1; 2000 AY₁₆₀ *, 9, 2, 1; 2000 AZ₁₆₀ *, 9, 2, 1; 2000 AA₁₆₁ *, 8, 2, 1; 2000 AB₁₆₁ *, 9, 2, 1; 2000 AC₁₆₁ *, 9, 2, 1; 2000 AD₁₆₁ *, 8, 2, 1; 2000 AE₁₆₁ *, 8, 2, 1; 2000 AF₁₆₁ *, 10, 2, 5; 2000 AG₁₆₁ *, 10, 2, 1; 2000 AH₁₆₁ *, 8, 2, 1; 2000 AI₁₆₁ *, 10, 2, 1; 2000 AJ₁₆₁ *, 10, 2, 1; 2000 AK₁₆₁ *, 10, 2, 1; 2000 AL₁₆₁ *, 8, 2, 1; 2000 AM₁₆₁ *, 8, 2, 1; 2000 AN₁₆₁ *, 9, 2, 1; 2000 AO₁₆₁ *, 8, 2, 1; 2000 AP₁₆₁ *, 10, 2, 1; 2000 AQ₁₆₁ *, 10, 2, 1; 2000 AR₁₆₁ *, 8, 2, 1; 2000 AS₁₆₁ *, 9, 2, 1; 2000 AT₁₆₁ *, 9, 2, 2; 2000 AU₁₆₁ *, 6, 2, 4; 2000 AV₁₆₁ *, 7, 2, 4; 2000 AW₁₆₁ *, 10, 2, 1; 2000 AX₁₆₁ *, 10, 2, 6; 2000 AZ₁₆₁ *, 10, 2, 4; 2000 AA₁₆₂ *, 8, 2, 4; 2000 AB₁₆₂ *, 7, 2, 2; 2000 AC₁₆₂ *, 10, 2, 2; 2000 AD₁₆₂ *, 9, 2, 2; 2000 AE₁₆₂ *, 8, 2, 2; 2000 AF₁₆₂ *, 9, 2, 2; 2000 AG₁₆₂ *, 8, 2, 2; 2000 AH₁₆₂ *, 6, 2, 2; 2000 AI₁₆₂ *, 7, 2, 2; 2000 AJ₁₆₂ *, 7, 2, 2; 2000 AK₁₆₂ *, 8, 2, 2; 2000 AL₁₆₂ *, 10, 2, 3; 2000 AM₁₆₂ *, 10, 2, 3; 2000 AN₁₆₂ *, 7, 2, 2; 2000 AO₁₆₂ *, 8, 2, 2; 2000 AP₁₆₂ *, 8, 2, 2; 2000 AQ₁₆₂ *, 8, 2, 2; 2000 AR₁₆₂ *, 9,

2, 4; 2000 AS₁₆₂ *, 9, 2, 4; 2000 AT₁₆₂ *, 9, 2, 4; 2000 AU₁₆₂ *, 7, 2, 3; 2000 AV₁₆₂ *, 6, 2, 2; 2000 AW₁₆₂ *, 10, 2, 3; 2000 AX₁₆₂ *, 10, 2, 1; 2000 AY₁₆₂ *, 9, 2, 1; 2000 AZ₁₆₂ *, 11, 2, 1; 2000 AA₁₆₃ *, 10, 2, 2; 2000 AB₁₆₃ *, 10, 2, 1; 2000 AC₁₆₃ *, 9, 2, 1; 2000 AD₁₆₃ *, 7, 2, 1; 2000 AE₁₆₃ *, 10, 2, 2; 2000 AF₁₆₃ *, 10, 2, 1; 2000 AG₁₆₃ *, 20, 4, 63; 2000 AH₁₆₃ *, 10, 2, 1; 2000 AJ₁₆₃ *, 10, 2, 2; 2000 AK₁₆₃ *, 8, 2, 1; 2000 AL₁₆₃ *, 8, 2, 2; 2000 AM₁₆₃ *, 6, 2, 1; 2000 AN₁₆₃ *, 7, 2, 1; 2000 AO₁₆₃ *, 7, 2, 2; 2000 AP₁₆₃ *, 7, 2, 2; 2000 AQ₁₆₃ *, 19, 4, 5; 2000 AR₁₆₃ *, 10, 2, 2; 2000 AS₁₆₃ *, 9, 2, 2; 2000 AT₁₆₃ *, 9, 2, 2; 2000 AV₁₆₃ *, 8, 2, 2; 2000 AW₁₆₃ *, 9, 2, 2; 2000 AX₁₆₃ *, 8, 2, 1; 2000 AY₁₆₃ *, 9, 2, 1; 2000 AZ₁₆₃ *, 8, 2, 2; 2000 AA₁₆₄ *, 8, 2, 2; 2000 AB₁₆₄ *, 9, 2, 2; 2000 AC₁₆₄ *, 7, 2, 1; 2000 AD₁₆₄ *, 8, 2, 2; 2000 AE₁₆₄ *, 9, 2, 2; 2000 AF₁₆₄ *, 10, 2, 2; 2000 AG₁₆₄ *, 8, 2, 3; 2000 AH₁₆₄ *, 8, 2, 5; 2000 AI₁₆₄ *, 9, 2, 5; 2000 AJ₁₆₄ *, 8, 2, 5; 2000 AK₁₆₄ *, 9, 2, 5; 2000 AL₁₆₄ *, 9, 2, 5; 2000 AM₁₆₄ *, 9, 2, 5; 2000 AN₁₆₄ *, 9, 2, 5; 2000 AO₁₆₄ *, 8, 2, 5; 2000 AP₁₆₄ *, 8, 2, 5; 2000 AQ₁₆₄ *, 8, 2, 5; 2000 AR₁₆₄ *, 7, 2, 5; 2000 AS₁₆₄ *, 8, 2, 2; 2000 AT₁₆₄ *, 8, 2, 3; 2000 AU₁₆₄ *, 8, 2, 3; 2000 AV₁₆₄ *, 10, 2, 3; 2000 AX₁₆₄ *, 9, 2, 3; 2000 AY₁₆₄ *, 10, 2, 3; 2000 AZ₁₆₄ *, 10, 2, 2; 2000 AA₁₆₅ *, 13, 2, 2; 2000 AB₁₆₅ *, 7, 2, 2; 2000 AC₁₆₅ *, 10, 2, 2; 2000 AD₁₆₅ *, 12, 2, 2; 2000 AE₁₆₅ *, 8, 2, 2; 2000 AF₁₆₅ *, 10, 2, 2; 2000 AG₁₆₅ *, 10, 2, 2; 2000 AH₁₆₅ *, 13, 2, 2; 2000 AI₁₆₅ *, 9, 2, 2; 2000 AJ₁₆₅ *, 10, 2, 2; 2000 AK₁₆₅ *, 10, 2, 2; 2000 AL₁₆₅ *, 10, 2, 2; 2000 AM₁₆₅ *, 10, 2, 2; 2000 AN₁₆₅ *, 10, 2, 2; 2000 AO₁₆₅ *, 10, 2, 2; 2000 AP₁₆₅ *, 9, 2, 2; 2000 AQ₁₆₅ *, 9, 2, 2; 2000 AR₁₆₅ *, 10, 2, 2; 2000 AS₁₆₅ *, 10, 2, 2; 2000 AT₁₆₅ *, 9, 2, 2; 2000 AU₁₆₅ *, 10, 2, 2; 2000 AV₁₆₅ *, 10, 2, 2; 2000 AW₁₆₅ *, 10, 2, 2; 2000 AX₁₆₅ *, 8, 2, 2; 2000 AY₁₆₅ *, 7, 2, 2; 2000 AZ₁₆₅ *, 8, 2, 2; 2000 AA₁₆₆ *, 10, 2, 2; 2000 AB₁₆₆ *, 10, 2, 2; 2000 AC₁₆₆ *, 7, 2, 2; 2000 AD₁₆₆ *, 8, 2, 2; 2000 AE₁₆₆ *, 10, 2, 2; 2000 AF₁₆₆ *, 10, 2, 2; 2000 AG₁₆₆ *, 10, 2, 2; 2000 AH₁₆₆ *, 14, 3, 27; 2000 AI₁₆₆ *, 7, 2, 2; 2000 AJ₁₆₆ *, 9, 2, 2; 2000 AK₁₆₆ *, 10, 2, 2; 2000 AL₁₆₆ *, 10, 2, 2; 2000 AM₁₆₆ *, 10, 2, 2; 2000 AN₁₆₆ *, 9, 2, 2; 2000 AO₁₆₆ *, 9, 2, 2; 2000 AP₁₆₆ *, 9, 2, 2; 2000 AQ₁₆₆ *, 15, 2, 2; 2000 AR₁₆₆ *, 10, 2, 2; 2000 AS₁₆₆ *, 8, 2, 2; 2000 AT₁₆₆ *, 9, 2, 2; 2000 AU₁₆₆ *, 8, 2, 2; 2000 AV₁₆₆ *, 10, 2, 2; 2000 AW₁₆₆ *, 10, 2, 2; 2000 AX₁₆₆ *, 9, 2, 2; 2000 AY₁₆₆ *, 10, 2, 2; 2000 AZ₁₆₆ *, 8, 2, 2; 2000 AA₁₆₇ *, 10, 2, 2; 2000 AB₁₆₇ *, 10, 2, 2; 2000 AC₁₆₇ *, 9, 2, 2; 2000 AD₁₆₇ *, 10, 2, 2; 2000 AE₁₆₇ *, 10, 2, 2; 2000 AF₁₆₇ *, 10, 2, 2; 2000 AG₁₆₇ *, 10, 2, 2; 2000 AH₁₆₇ *, 10, 2, 2; 2000 AI₁₆₇ *, 10, 2, 2; 2000 AJ₁₆₇ *, 9, 2, 2; 2000 AK₁₆₇ *, 7, 2, 2; 2000 AL₁₆₇ *, 10, 2, 2; 2000 AM₁₆₇ *, 10, 2, 2; 2000 AN₁₆₇ *, 9, 2, 2; 2000 AO₁₆₇ *, 9, 2, 2; 2000 AP₁₆₇ *, 7, 2, 2; 2000 AQ₁₆₇ *, 6, 2, 2; 2000 AR₁₆₇ *, 8, 2, 2; 2000 AS₁₆₇ *, 9, 2, 2; 2000 AT₁₆₇ *, 8, 2, 2; 2000 AU₁₆₇ *, 9, 2, 2; 2000 AV₁₆₇ *, 8, 2, 2; 2000 AW₁₆₇ *, 8, 2, 2; 2000 AX₁₆₇ *, 10, 2, 2; 2000 AY₁₆₇ *, 10, 2, 2; 2000 AZ₁₆₇ *, 8, 2, 2; 2000 AA₁₆₈ *, 10, 2, 2; 2000 AB₁₆₈ *, 9, 2, 2; 2000 AC₁₆₈ *, 10, 2, 2; 2000 AD₁₆₈ *, 19, 3, 2; 2000 AE₁₆₈ *, 23, 4, 3; 2000 AF₁₆₈ *, 9, 2, 5; 2000 AG₁₆₈ *, 10, 2, 4; 2000 AH₁₆₈ *, 10, 2, 4; 2000 AI₁₆₈ *, 10, 2, 4; 2000 AJ₁₆₈ *, 10, 2, 4; 2000 AK₁₆₈ *, 10, 2, 4; 2000 AL₁₆₈ *, 9, 2, 4; 2000 AM₁₆₈ *, 10, 2, 4; 2000 AN₁₆₈ *, 10, 2, 4; 2000 AO₁₆₈ *, 10, 2, 4; 2000 AP₁₆₈ *, 10, 2, 4; 2000 AQ₁₆₈ *, 10, 2, 4; 2000 AR₁₆₈ *, 10, 2, 4; 2000 AS₁₆₈ *, 10, 2, 4; 2000 AT₁₆₈ *, 10, 2, 4; 2000 AU₁₆₈ *, 10, 2, 4; 2000 AV₁₆₈ *, 10, 2, 4; 2000 AW₁₆₈ *, 10, 2, 4; 2000 AX₁₆₈ *, 10, 2, 4; 2000 AY₁₆₈ *, 10, 2, 4; 2000 AZ₁₆₈ *, 10, 2, 4; 2000 AA₁₆₉ *, 10, 2, 4; 2000 AB₁₆₉ *, 10, 2, 4; 2000 AC₁₆₉ *, 9, 2, 4; 2000 AD₁₆₉ *, 10, 2, 4; 2000 AE₁₆₉ *, 9, 2, 4; 2000 AF₁₆₉ *, 10, 2, 4; 2000 AG₁₆₉ *, 9, 2, 4; 2000 AH₁₆₉ *, 10, 2, 4; 2000 AI₁₆₉ *, 8, 2, 4; 2000 AJ₁₆₉ *, 9, 2, 4; 2000 AK₁₆₉ *, 7, 2, 4; 2000 AL₁₆₉ *, 7, 2, 4; 2000 AM₁₆₉ *, 8, 2, 4; 2000 AN₁₆₉ *, 9, 2, 4; 2000 AO₁₆₉ *, 22, 5, 67; 2000 AP₁₆₉ *, 10, 2, 4; 2000 AQ₁₆₉ *, 10, 2, 4; 2000 AR₁₆₉ *, 8, 2, 4; 2000 AS₁₆₉ *, 8, 2, 4; 2000 AT₁₆₉ *, 8, 2, 4; 2000 AU₁₆₉ *, 8, 2, 4; 2000 AV₁₆₉ *, 9, 2, 4; 2000 AW₁₆₉ *, 7, 2, 4; 2000 AX₁₆₉ *, 9, 2, 4; 2000 AY₁₆₉ *, 7, 2, 4; 2000 AZ₁₆₉ *, 8, 2, 4; 2000 AA₁₇₀ *, 8, 2, 4; 2000 AB₁₇₀ *, 8, 2, 4; 2000 AC₁₇₀ *, 10, 2, 4; 2000 AD₁₇₀ *, 10, 2, 4; 2000 AE₁₇₀ *, 9, 2, 4; 2000 AF₁₇₀ *, 10, 2, 4; 2000 AG₁₇₀ *, 10, 2, 4; 2000 AH₁₇₀ *, 10, 2, 4; 2000 AI₁₇₀ *, 9, 2, 4; 2000 AJ₁₇₀ *, 9, 2, 4; 2000 AK₁₇₀ *, 10, 2, 4; 2000 AL₁₇₀ *, 10, 2, 4; 2000 AM₁₇₀ *, 9, 2, 4; 2000 AN₁₇₀ *, 9, 2, 4; 2000 AO₁₇₀ *, 10, 2, 4; 2000 AP₁₇₀ *, 10, 2, 4; 2000 AQ₁₇₀ *, 9, 2, 4; 2000 AR

2, 4; 2000 AD₁₇₄ *, 8, 2, 4; 2000 AE₁₇₄ *, 9, 2, 4; 2000 AF₁₇₄ *, 9, 2, 4; 2000 AG₁₇₄ *, 9, 2, 4; 2000 AH₁₇₄ *, 9, 2, 4; 2000 AJ₁₇₄ *, 8, 2, 4; 2000 AK₁₇₄ *, 9, 2, 4; 2000 AL₁₇₄ *, 7, 2, 4; 2000 AM₁₇₄ *, 8, 2, 4; 2000 AN₁₇₄ *, 7, 2, 4; 2000 AO₁₇₄ *, 10, 3, 37; 2000 AP₁₇₄ *, 7, 2, 4; 2000 AQ₁₇₄ *, 6, 2, 4; 2000 AR₁₇₄ *, 9, 2, 4; 2000 AS₁₇₄ *, 9, 2, 4; 2000 AT₁₇₄ *, 8, 2, 4; 2000 AU₁₇₄ *, 9, 2, 4; 2000 AV₁₇₄ *, 10, 2, 4; 2000 AW₁₇₄ *, 10, 2, 4; 2000 AX₁₇₄ *, 8, 2, 4; 2000 AY₁₇₄ *, 9, 2, 4; 2000 AZ₁₇₄ *, 9, 2, 4; 2000 AA₁₇₅ *, 10, 2, 4; 2000 AB₁₇₅ *, 10, 2, 4; 2000 AC₁₇₅ *, 9, 2, 4; 2000 AD₁₇₅ *, 9, 2, 4; 2000 AE₁₇₅ *, 9, 2, 4; 2000 AF₁₇₅ *, 9, 2, 4; 2000 AG₁₇₅ *, 10, 2, 4; 2000 AH₁₇₅ *, 10, 2, 4; 2000 AJ₁₇₅ *, 10, 2, 4; 2000 AK₁₇₅ *, 9, 2, 4; 2000 AL₁₇₅ *, 8, 2, 4; 2000 AM₁₇₅ *, 10, 2, 4; 2000 AN₁₇₅ *, 8, 2, 4; 2000 AO₁₇₅ *, 9, 2, 4; 2000 AP₁₇₅ *, 8, 2, 4; 2000 AQ₁₇₅ *, 10, 2, 4; 2000 AR₁₇₅ *, 9, 2, 4; 2000 AS₁₇₅ *, 9, 2, 4; 2000 AT₁₇₅ *, 8, 2, 4; 2000 AU₁₇₅ *, 6, 2, 4; 2000 AV₁₇₅ *, 6, 2, 4; 2000 AW₁₇₅ *, 9, 2, 4; 2000 AX₁₇₅ *, 10, 2, 4; 2000 AY₁₇₅ *, 9, 2, 4; 2000 AZ₁₇₅ *, 10, 2, 4; 2000 AA₁₇₆ *, 9, 2, 4; 2000 AB₁₇₆ *, 10, 2, 4; 2000 AC₁₇₆ *, 9, 2, 4; 2000 AD₁₇₆ *, 9, 2, 4; 2000 AE₁₇₆ *, 8, 2, 4; 2000 AF₁₇₆ *, 8, 2, 4; 2000 AG₁₇₆ *, 8, 2, 4; 2000 AH₁₇₆ *, 8, 2, 4; 2000 AJ₁₇₆ *, 7, 2, 4; 2000 AK₁₇₆ *, 8, 2, 4; 2000 AL₁₇₆ *, 8, 2, 4; 2000 AM₁₇₆ *, 8, 2, 4; 2000 AN₁₇₆ *, 8, 2, 4; 2000 AO₁₇₆ *, 7, 2, 4; 2000 AP₁₇₆ *, 7, 2, 4; 2000 AQ₁₇₆ *, 6, 2, 4; 2000 AR₁₇₆ *, 7, 2, 4; 2000 AS₁₇₆ *, 8, 2, 4; 2000 AT₁₇₆ *, 7, 2, 4; 2000 AU₁₇₆ *, 7, 2, 4; 2000 AV₁₇₆ *, 7, 2, 4; 2000 AW₁₇₆ *, 7, 2, 4; 2000 AX₁₇₆ *, 7, 2, 4; 2000 AY₁₇₆ *, 7, 2, 4; 2000 AZ₁₇₆ *, 7, 2, 4; 2000 AA₁₇₇ *, 9, 2, 4; 2000 AB₁₇₇ *, 6, 2, 4; 2000 AC₁₇₇ *, 7, 2, 4; 2000 AD₁₇₇ *, 7, 2, 4; 2000 AE₁₇₇ *, 9, 2, 4; 2000 AF₁₇₇ *, 8, 2, 4; 2000 AG₁₇₇ *, 7, 2, 4; 2000 AH₁₇₇ *, 7, 2, 4; 2000 AI₁₇₇ *, 6, 2, 4; 2000 AJ₁₇₇ *, 7, 2, 4; 2000 AK₁₇₇ *, 10, 3, 36; 2000 AL₁₇₇ *, 10, 2, 4; 2000 AM₁₇₇ *, 10, 2, 4; 2000 AN₁₇₇ *, 10, 2, 4; 2000 AO₁₇₇ *, 10, 2, 4; 2000 AP₁₇₇ *, 10, 2, 4; 2000 AQ₁₇₇ *, 9, 2, 4; 2000 AR₁₇₇ *, 10, 2, 4; 2000 AS₁₇₇ *, 10, 2, 4; 2000 AT₁₇₇ *, 10, 2, 4; 2000 AU₁₇₇ *, 8, 2, 4; 2000 AV₁₇₇ *, 9, 2, 4; 2000 AW₁₇₇ *, 9, 2, 4; 2000 AX₁₇₇ *, 10, 2, 4; 2000 AY₁₇₇ *, 8, 2, 4; 2000 AZ₁₇₇ *, 10, 2, 4; 2000 AA₁₇₈ *, 8, 2, 4; 2000 AB₁₇₈ *, 8, 2, 4; 2000 AC₁₇₈ *, 10, 2, 4; 2000 AD₁₇₈ *, 10, 2, 4; 2000 AE₁₇₈ *, 8, 2, 4; 2000 AF₁₇₈ *, 9, 2, 4; 2000 AG₁₇₈ *, 9, 2, 4; 2000 AH₁₇₈ *, 9, 2, 4; 2000 AJ₁₇₈ *, 10, 2, 4; 2000 AK₁₇₈ *, 9, 2, 4; 2000 AL₁₇₈ *, 9, 2, 4; 2000 AM₁₇₈ *, 9, 2, 4; 2000 AN₁₇₈ *, 8, 2, 4; 2000 AO₁₇₈ *, 9, 2, 4; 2000 AP₁₇₈ *, 9, 2, 4; 2000 AQ₁₇₈ *, 8, 2, 4; 2000 AR₁₇₈ *, 8, 2, 4; 2000 AS₁₇₈ *, 8, 2, 4; 2000 AT₁₇₈ *, 9, 2, 4; 2000 AU₁₇₈ *, 10, 2, 4; 2000 AV₁₇₈ *, 8, 2, 4; 2000 AW₁₇₈ *, 9, 2, 4; 2000 AX₁₇₈ *, 14, 3, 28; 2000 AY₁₇₈ *, 8, 2, 4; 2000 AZ₁₇₈ *, 10, 2, 4; 2000 AA₁₇₉ *, 9, 2, 4; 2000 AB₁₇₉ *, 7, 2, 4; 2000 AC₁₇₉ *, 9, 2, 4; 2000 AD₁₇₉ *, 9, 2, 4; 2000 AE₁₇₉ *, 9, 2, 4; 2000 AF₁₇₉ *, 9, 2, 4; 2000 AG₁₇₉ *, 8, 2, 4; 2000 AH₁₇₉ *, 8, 2, 4; 2000 AJ₁₇₉ *, 9, 2, 4; 2000 AK₁₇₉ *, 7, 2, 4; 2000 AL₁₇₉ *, 9, 2, 4; 2000 AM₁₇₉ *, 8, 2, 4; 2000 AN₁₇₉ *, 9, 2, 4; 2000 AO₁₇₉ *, 10, 2, 4; 2000 AP₁₇₉ *, 10, 2, 4; 2000 AQ₁₇₉ *, 8, 2, 4; 2000 AR₁₇₉ *, 10, 2, 4; 2000 AS₁₇₉ *, 9, 2, 4; 2000 AT₁₇₉ *, 8, 2, 4; 2000 AU₁₇₉ *, 10, 2, 4; 2000 AV₁₇₉ *, 8, 2, 4; 2000 AW₁₇₉ *, 9, 2, 4; 2000 AX₁₇₉ *, 9, 2, 4; 2000 AY₁₇₉ *, 9, 2, 4; 2000 AZ₁₇₉ *, 8, 2, 4; 2000 AA₁₈₀ *, 10, 2, 4; 2000 AB₁₈₀ *, 9, 2, 4; 2000 AC₁₈₀ *, 9, 2, 4; 2000 AD₁₈₀ *, 10, 2, 4; 2000 AE₁₈₀ *, 12, 3, 28; 2000 AF₁₈₀ *, 8, 2, 4; 2000 AG₁₈₀ *, 9, 2, 4; 2000 AH₁₈₀ *, 7, 2, 4; 2000 AI₁₈₀ *, 10, 2, 4; 2000 AJ₁₈₀ *, 10, 2, 4; 2000 AK₁₈₀ *, 10, 2, 4; 2000 AL₁₈₀ *, 10, 2, 4; 2000 AM₁₈₀ *, 9, 2, 4; 2000 AN₁₈₀ *, 8, 2, 4; 2000 AO₁₈₀ *, 9, 2, 4; 2000 AP₁₈₀ *, 16, 4, 36; 2000 AQ₁₈₀ *, 9, 2, 4; 2000 AR₁₈₀ *, 9, 2, 4; 2000 AS₁₈₀ *, 8, 2, 4; 2000 AT₁₈₀ *, 10, 2, 4; 2000 AU₁₈₀ *, 8, 2, 4; 2000 AV₁₈₀ *, 8, 2, 4; 2000 AW₁₈₀ *, 9, 2, 4; 2000 AX₁₈₀ *, 7, 2, 4; 2000 AY₁₈₀ *, 8, 2, 4; 2000 AZ₁₈₀ *, 8, 2, 4; 2000 AA₁₈₁ *, 10, 2, 4; 2000 AB₁₈₁ *, 9, 2, 4; 2000 AC₁₈₁ *, 10, 2, 4; 2000 AD₁₈₁ *, 10, 2, 4; 2000 AE₁₈₁ *, 8, 2, 4; 2000 AF₁₈₁ *, 10, 2, 4; 2000 AG₁₈₁ *, 10, 2, 4; 2000 AH₁₈₁ *, 10, 2, 4; 2000 AJ₁₈₁ *, 8, 2, 4; 2000 AK₁₈₁ *, 9, 2, 4; 2000 AL₁₈₁ *, 10, 2, 4; 2000 AM₁₈₁ *, 8, 2, 4; 2000 AN₁₈₁ *, 8, 2, 4; 2000 AO₁₈₁ *, 7, 2, 4; 2000 AP₁₈₁ *, 7, 2, 4; 2000 AQ₁₈₁ *, 10, 2, 4; 2000 AR₁₈₁ *, 9, 2, 4; 2000 AS₁₈₁ *, 12, 3, 28; 2000 AT₁₈₁ *, 7, 2, 4; 2000 AU₁₈₁ *, 14, 3, 28; 2000 AV₁₈₁ *, 8, 2, 4; 2000 AW₁₈₁ *, 9, 2, 4; 2000 AX₁₈₁ *, 13, 3, 28; 2000 AY₁₈₁ *, 10, 2, 4; 2000 AZ₁₈₁ *, 8, 2, 4; 2000 AA₁₈₂ *, 8, 2, 4; 2000 AB₁₈₂ *, 9, 2, 4; 2000 AC₁₈₂ *, 8, 2, 4; 2000 AD₁₈₂ *, 10, 2, 4; 2000 AE₁₈₂ *, 8, 2, 4; 2000 AF₁₈₂ *, 8, 2, 4; 2000 AG₁₈₂ *, 9, 2, 4; 2000 AH₁₈₂ *, 8, 2, 4; 2000 AI₁₈₂ *, 9, 2, 4; 2000 AJ₁₈₂ *, 8, 2, 4; 2000 AK₁₈₂ *, 8, 2, 4; 2000 AL₁₈₂ *, 9, 2, 4; 2000 AM₁₈₂ *, 6, 2, 4; 2000 AN₁₈₂ *, 9, 2, 4; 2000 AO₁₈₂ *, 10, 2, 4; 2000 AP₁₈₂ *, 7, 2, 4; 2000 AQ₁₈₂ *, 9, 2, 4; 2000 AR₁₈₂ *, 9, 2, 4; 2000 AS₁₈₂ *, 14, 3, 6; 2000 AT₁₈₂ *, 10, 2, 4; 2000 AU₁₈₂ *, 8, 2, 4; 2000 AV₁₈₂ *, 8, 2, 4; 2000 AW₁₈₂ *, 9, 2, 4; 2000 AX₁₈₂ *, 9, 2, 4; 2000 AY₁₈₂ *, 8, 2, 4; 2000 AZ₁₈₂ *, 8, 2, 4; 2000 AA₁₈₃ *, 7, 2, 4; 2000 AB₁₈₃ *, 6, 2, 4; 2000 AC₁₈₃ *, 9, 2, 4; 2000 AD₁₈₃ *, 6, 2, 4; 2000 AE₁₈₃ *, 8, 2, 4; 2000 AF₁₈₃ *, 8, 2, 4; 2000 AG₁₈₃ *, 7, 2, 4; 2000 AH₁₈₃ *, 8, 2, 4; 2000 AI₁₈₃ *, 9, 2, 4; 2000 AJ₁₈₃ *, 9, 2, 4; 2000 AK₁₈₃ *, 9, 2, 4; 2000 AL₁₈₃ *, 6, 2, 4; 2000 AM₁₈₃ *, 8, 2, 4; 2000 AN₁₈₃ *, 8, 2, 4; 2000 AO₁₈₃ *, 8, 2, 4; 2000 AP₁₈₃ *, 7, 2, 4; 2000 AQ₁₈₃ *, 7, 2, 4; 2000 AR₁₈₃ *, 7, 2, 4; 2000 AS₁₈₃ *, 7, 2, 4; 2000 AT₁₈₃ *, 8, 2, 4; 2000 AU₁₈₃ *, 8, 2, 4; 2000 AV₁₈₃ *, 8, 2, 4; 2000 AW₁₈₃ *, 7, 2, 4; 2000 AX₁₈₃ *, 8, 2, 4; 2000 AY₁₈₃ *, 6, 2, 4; 2000 AZ₁₈₃ *, 6, 2, 4; 2000 AA₁₈₄ *, 9, 2, 4; 2000 AB₁₈₄ *, 8, 2, 4; 2000 AC₁₈₄ *, 8, 2, 4; 2000 AD₁₈₄ *, 7, 2, 4; 2000 AE₁₈₄ *, 8, 2, 4; 2000 AF₁₈₄ *, 8, 2, 4; 2000 AG₁₈₄ *, 6, 2, 4; 2000 AH₁₈₄ *, 18, 4, 36; 2000 AJ₁₈₄ *, 7, 2, 4; 2000 AK₁₈₄ *, 9, 2, 4; 2000 AL₁₈₄ *, 8, 2, 4; 2000 AM₁₈₄ *, 8, 2, 4; 2000 AN₁₈₄ *, 6, 2, 4; 2000 AO₁₈₄ *, 8, 2, 4; 2000 AP₁₈₄ *, 7, 2, 4; 2000 AQ₁₈₄ *, 7, 2, 4; 2000 AR₁₈₄ *, 8, 2, 4; 2000 AS₁₈₄ *, 7, 2, 4; 2000 AT₁₈₄ *, 8, 2, 4; 2000 AU₁₈₄ *, 7, 2, 4; 2000 AV₁₈₄ *, 8, 2, 4; 2000 AW₁₈₄ *, 8, 2, 4; 2000 AX₁₈₄ *, 7, 2, 4; 2000 AY₁₈₄ *, 8, 2, 4; 2000 AZ₁₈₄ *, 7, 2, 4;

2000 AA₁₈₅ *, 7, 2, 4; 2000 AB₁₈₅ *, 9, 2, 4; 2000 AC₁₈₅ *, 9, 2, 4; 2000 AD₁₈₅ *, 10, 2, 4; 2000 AE₁₈₅ *, 10, 2, 4; 2000 AF₁₈₅ *, 9, 2, 4; 2000 AG₁₈₅ *, 10, 2, 4; 2000 AH₁₈₅ *, 15, 3, 28; 2000 AJ₁₈₅ *, 8, 2, 4; 2000 AK₁₈₅ *, 10, 2, 4; 2000 AL₁₈₅ *, 9, 2, 4; 2000 AM₁₈₅ *, 8, 2, 4; 2000 AN₁₈₅ *, 7, 2, 3; 2000 AO₁₈₅ *, 9, 2, 3; 2000 AP₁₈₅ *, 10, 2, 3; 2000 AQ₁₈₅ *, 14, 2, 3; 2000 AR₁₈₅ *, 9, 2, 3; 2000 AS₁₈₅ *, 10, 2, 3; 2000 AT₁₈₅ *, 10, 2, 3; 2000 AU₁₈₅ *, 10, 2, 3; 2000 AV₁₈₅ *, 10, 2, 3; 2000 AW₁₈₅ *, 9, 2, 3; 2000 AX₁₈₅ *, 32, 7, 119; 2000 AY₁₈₅ *, 9, 2, 3; 2000 AZ₁₈₅ *, 10, 2, 3; 2000 AA₁₈₆ *, 10, 2, 3; 2000 AB₁₈₆ *, 9, 2, 3; 2000 AC₁₈₆ *, 9, 2, 3; 2000 AD₁₈₆ *, 10, 2, 3; 2000 AE₁₈₆ *, 10, 2, 3; 2000 AF₁₈₆ *, 10, 2, 3; 2000 AG₁₈₆ *, 10, 2, 3; 2000 AH₁₈₆ *, 8, 2, 3; 2000 AI₁₈₆ *, 9, 2, 3; 2000 AJ₁₈₆ *, 9, 2, 3; 2000 AK₁₈₆ *, 8, 2, 3; 2000 AL₁₈₆ *, 9, 2, 3; 2000 AM₁₈₆ *, 10, 2, 3; 2000 AN₁₈₆ *, 8, 2, 3; 2000 AO₁₈₆ *, 7, 2, 3; 2000 AP₁₈₆ *, 8, 2, 3; 2000 AQ₁₈₆ *, 9, 2, 3; 2000 AR₁₈₆ *, 7, 2, 3; 2000 AS₁₈₆ *, 9, 2, 3; 2000 AT₁₈₆ *, 9, 2, 3; 2000 AU₁₈₆ *, 7, 2, 3; 2000 AV₁₈₆ *, 7, 2, 3; 2000 AW₁₈₆ *, 7, 2, 3; 2000 AX₁₈₆ *, 7, 2, 3; 2000 AY₁₈₆ *, 8, 2, 3; 2000 AZ₁₈₆ *, 7, 2, 3; 2000 AA₁₈₇ *, 10, 2, 3; 2000 AB₁₈₇ *, 9, 2, 3; 2000 AC₁₈₇ *, 9, 2, 3; 2000 AD₁₈₇ *, 9, 2, 3; 2000 AE₁₈₇ *, 8, 2, 3; 2000 AF₁₈₇ *, 8, 2, 3; 2000 AG₁₈₇ *, 9, 2, 3; 2000 AH₁₈₇ *, 7, 2, 3; 2000 AJ₁₈₇ *, 8, 2, 3; 2000 AK₁₈₇ *, 10, 2, 3; 2000 AL₁₈₇ *, 9, 2, 3; 2000 AM₁₈₇ *, 9, 2, 3; 2000 AN₁₈₇ *, 7, 2, 3; 2000 AO₁₈₇ *, 8, 2, 3; 2000 AP₁₈₇ *, 10, 2, 3; 2000 AQ₁₈₇ *, 9, 2, 3; 2000 AR₁₈₇ *, 10, 2, 3; 2000 AS₁₈₇ *, 10, 2, 3; 2000 AT₁₈₇ *, 9, 2, 3; 2000 AU₁₈₇ *, 9, 2, 3; 2000 AV₁₈₇ *, 9, 2, 3; 2000 AW₁₈₇ *, 8, 2, 3; 2000 AX₁₈₇ *, 10, 2, 3; 2000 AY₁₈₇ *, 10, 2, 3; 2000 AZ₁₈₇ *, 10, 2, 3; 2000 AA₁₈₈ *, 9, 2, 3; 2000 AB₁₈₈ *, 8, 2, 3; 2000 AC₁₈₈ *, 10, 2, 3; 2000 AD₁₈₈ *, 10, 2, 3; 2000 AE₁₈₈ *, 10, 2, 3; 2000 AF₁₈₈ *, 10, 2, 3; 2000 AG₁₈₈ *, 9, 2, 3; 2000 AH₁₈₈ *, 9, 2, 3; 2000 AI₁₈₈ *, 9, 2, 3; 2000 AJ₁₈₈ *, 9, 2, 3; 2000 AK₁₈₈ *, 10, 2, 3; 2000 AL₁₈₈ *, 10, 2, 3; 2000 AM₁₈₈ *, 8, 2, 3; 2000 AN₁₈₈ *, 8, 2, 3; 2000 AO₁₈₈ *, 20, 4, 67; 2000 AP₁₈₈ *, 10, 2, 3; 2000 AQ₁₈₈ *, 10, 2, 3; 2000 AR₁₈₈ *, 9, 2, 3; 2000 AS₁₈₈ *, 7, 2, 3; 2000 AT₁₈₈ *, 10, 2, 3; 2000 AU₁₈₈ *, 10, 2, 3; 2000 AV₁₈₈ *, 19, 4, 67; 2000 AW₁₈₈ *, 10, 2, 3; 2000 AX₁₈₈ *, 10, 2, 3; 2000 AY₁₈₈ *, 10, 2, 3; 2000 AZ₁₈₈ *, 8, 2, 3; 2000 AA₁₈₉ *, 8, 2, 3; 2000 AB₁₈₉ *, 8, 2, 3; 2000 AC₁₈₉ *, 15, 3, 37; 2000 AD₁₈₉ *, 8, 2, 3; 2000 AE₁₈₉ *, 8, 2, 3; 2000 AF₁₈₉ *, 8, 2, 3; 2000 AG₁₈₉ *, 16, 4, 67; 2000 AH₁₈₉ *, 9, 2, 3; 2000 AJ₁₈₉ *, 10, 2, 3; 2000 AK₁₈₉ *, 8, 2, 3; 2000 AL₁₈₉ *, 9, 2, 3; 2000 AM₁₈₉ *, 8, 2, 3; 2000 AN₁₈₉ *, 12, 2, 3; 2000 AO₁₈₉ *, 8, 2, 3; 2000 AP₁₈₉ *, 9, 2, 3; 2000 AQ₁₈₉ *, 9, 2, 3; 2000 AR₁₈₉ *, 9, 2, 3; 2000 AS₁₈₉ *, 9, 2, 3; 2000 AT₁₈₉ *, 10, 2, 3; 2000 AU₁₈₉ *, 9, 2, 3; 2000 AV₁₈₉ *, 8, 2, 3; 2000 AW₁₈₉ *, 9, 2, 3; 2000 AX₁₈₉ *, 8, 2, 3; 2000 AY₁₈₉ *, 9, 2, 3; 2000 AZ₁₈₉ *, 13, 3, 37; 2000 AA₁₉₀ *, 10, 2, 3; 2000 AB₁₉₀ *, 10, 2, 3; 2000 AC₁₉₀ *, 9, 2, 3; 2000 AD₁₉₀ *, 9, 2, 3; 2000 AE₁₉₀ *, 9, 2, 3; 2000 AF₁₉₀ *, 9, 2, 3; 2000 AG₁₉₀ *, 9, 2, 3; 2000 AH₁₉₀ *, 9, 2, 3; 2000 AJ₁₉₀ *, 9, 2, 3; 2000 AK₁₉₀ *, 9, 2, 3; 2000 AL₁₉₀ *, 9, 2, 3; 2000 AM₁₉₀ *, 9, 2, 3; 2000 AN₁₉₀ *, 9, 2, 3; 2000 AO₁₉₀ *, 10, 2, 3; 2000 AP₁₉₀ *, 13, 3, 37; 2000 AQ₁₉₀ *, 9, 2, 3; 2000 AR₁₉₀ *, 8, 2, 3; 2000 AS₁₉₀ *, 10, 2, 3; 2000 AT₁₉₀ *, 8, 2, 3; 2000 AU₁₉₀ *, 10, 2, 3; 2000 AV₁₉₀ *, 8, 2, 3; 2000 AW₁₉₀ *, 9, 2, 3; 2000 AX₁₉₀ *, 8, 2, 3; 2000 AY₁₉₀ *, 8, 2, 3; 2000 AZ₁₉₀ *, 10, 2, 3; 2000 AA₁₉₁ *, 7, 2, 3; 2000 AB₁₉₁ *, 10, 2, 3; 2000 AC₁₉₁ *, 10, 2, 3; 2000 AD₁₉₁ *, 9, 2, 3; 2000 AE₁₉₁ *, 9, 2, 3; 2000 AF₁₉₁ *, 7, 2, 3; 2000 AG₁₉₁ *, 9, 2, 3; 2000 AH₁₉₁ *, 9, 2, 3; 2000 AJ₁₉₁ *, 7, 2, 3; 2000 AK₁₉₁ *, 9, 2, 3; 2000 AL₁₉₁ *, 9, 2, 3; 2000 AM₁₉₁ *, 7, 2, 3; 2000 AN₁₉₁ *, 7, 2, 3; 2000 AO₁₉₁ *, 6, 2, 3; 2000 AP₁₉₁ *, 9, 2, 3; 2000 AQ₁₉₁ *, 11, 2, 3; 2000 AR₁₉₁ *, 7, 2, 3; 2000 AS₁₉₁ *, 8, 2, 3; 2000 AT₁₉₁ *, 9, 2, 3; 2000 AU₁₉₁ *, 8, 2, 3; 2000 AV₁₉₁ *, 10, 2, 3; 2000 AW₁₉₁ *, 7, 2, 3; 2000 AX₁₉₁ *, 9, 2, 3; 2000 AY₁₉₁ *, 9, 2, 3; 2000 AZ₁₉₁ *, 9, 2, 3; 2000 AA₁₉₂ *, 10, 2, 3; 2000 AB₁₉₂ *, 9, 2, 3; 2000 AC₁₉₂ *, 9, 2, 3; 2000 AD₁₉₂ *, 8, 2, 3; 2000 AE₁₉₂ *, 9, 2, 3; 2000 AF₁₉₂ *, 8, 2, 3; 2000 AG₁₉₂ *, 9, 2, 3; 2000 AH₁₉₂ *, 8, 2, 3; 2000 AJ₁₉₂ *, 8, 2, 3; 2000 AK₁₉₂ *, 7, 2, 3; 2000 AL₁₉₂ *, 9, 2, 3; 2000 AM₁₉₂ *, 9, 2, 3; 2000 AN₁₉₂ *, 13, 3, 37; 2000 AO₁₉₂ *, 14, 3, 4; 2000 AP₁₉₂ *, 9, 2, 3; 2000 AQ₁₉₂ *, 10, 2, 3; 2000 AR₁₉₂ *, 15, 3, 4; 2000 AS₁₉₂ *, 10, 2, 3; 2000 AT₁₉₂ *, 15, 3, 4; 2000 AU₁₉₂ *, 10, 2, 3; 2000 AV₁₉₂ *, 9, 2, 3; 2000 AW₁₉₂ *, 7, 2, 3; 2000 AX₁₉₂ *, 10, 2, 3; 2000 AY₁₉₂ *, 10, 2, 3; 2000 AZ₁₉₂ *, 6, 2, 3; 2000 AA₁₉₃ *, 9, 2, 3; 2000 AB₁₉₃ *, 12, 3, 4; 2000 AC₁₉₃ *, 14, 3, 4; 2000 AD₁₉₃ *, 9, 2, 3; 2000 AE₁₉₃ *, 10, 2, 3; 2000 AF₁₉₃

2, 3; 2000 AV₁₉₅ *, 7, 2, 3; 2000 AW₁₉₅ *, 9, 2, 3; 2000 AX₁₉₅ *, 9, 2, 3; 2000 AY₁₉₅ *, 10, 2, 3; 2000 AZ₁₉₅ *, 9, 2, 3; 2000 AA₁₉₆ *, 7, 2, 3; 2000 AB₁₉₆ *, 9, 2, 3; 2000 AC₁₉₆ *, 7, 2, 3; 2000 AD₁₉₆ *, 7, 2, 3; 2000 AE₁₉₆ *, 8, 2, 3; 2000 AF₁₉₆ *, 10, 2, 3; 2000 AG₁₉₆ *, 6, 2, 3; 2000 AH₁₉₆ *, 9, 2, 3; 2000 AJ₁₉₆ *, 9, 2, 3; 2000 AK₁₉₆ *, 10, 2, 3; 2000 AL₁₉₆ *, 10, 2, 3; 2000 AM₁₉₆ *, 9, 2, 3; 2000 AN₁₉₆ *, 8, 2, 3; 2000 AO₁₉₆ *, 9, 2, 3; 2000 AP₁₉₆ *, 10, 2, 3; 2000 AQ₁₉₆ *, 6, 2, 3; 2000 AR₁₉₆ *, 10, 2, 3; 2000 AS₁₉₆ *, 10, 2, 3; 2000 AT₁₉₆ *, 7, 2, 3; 2000 AU₁₉₆ *, 7, 2, 3; 2000 AV₁₉₆ *, 7, 2, 3; 2000 AW₁₉₆ *, 8, 2, 3; 2000 AX₁₉₆ *, 8, 2, 3; 2000 AY₁₉₆ *, 7, 2, 3; 2000 AZ₁₉₆ *, 9, 2, 3; 2000 AA₁₉₇ *, 6, 2, 3; 2000 AB₁₉₇ *, 7, 2, 3; 2000 AC₁₉₇ *, 7, 2, 3; 2000 AD₁₉₇ *, 7, 2, 3; 2000 AE₁₉₇ *, 9, 2, 3; 2000 AF₁₉₇ *, 15, 2, 3; 2000 AG₁₉₇ *, 10, 2, 3; 2000 AH₁₉₇ *, 10, 2, 3; 2000 AI₁₉₇ *, 10, 2, 3; 2000 AJ₁₉₇ *, 10, 2, 3; 2000 AK₁₉₇ *, 10, 2, 3; 2000 AL₁₉₇ *, 9, 2, 3; 2000 AM₁₉₇ *, 10, 2, 3; 2000 AN₁₉₇ *, 9, 2, 3; 2000 AO₁₉₇ *, 9, 2, 3; 2000 AP₁₉₇ *, 8, 2, 3; 2000 AQ₁₉₇ *, 9, 2, 3; 2000 AR₁₉₇ *, 10, 2, 3; 2000 AS₁₉₇ *, 10, 2, 3; 2000 AT₁₉₇ *, 10, 2, 3; 2000 AU₁₉₇ *, 10, 2, 3; 2000 AV₁₉₇ *, 8, 2, 3; 2000 AW₁₉₇ *, 8, 2, 3; 2000 AX₁₉₇ *, 10, 2, 3; 2000 AY₁₉₇ *, 10, 2, 3; 2000 AZ₁₉₇ *, 10, 2, 3; 2000 AA₁₉₈ *, 8, 2, 3; 2000 AB₁₉₈ *, 9, 2, 3; 2000 AC₁₉₈ *, 9, 2, 3; 2000 AD₁₉₈ *, 8, 2, 3; 2000 AE₁₉₈ *, 10, 2, 3; 2000 AF₁₉₈ *, 10, 2, 3; 2000 AG₁₉₈ *, 10, 2, 3; 2000 AH₁₉₈ *, 9, 2, 3; 2000 AJ₁₉₈ *, 8, 2, 3; 2000 AK₁₉₈ *, 10, 2, 3; 2000 AL₁₉₈ *, 9, 2, 3; 2000 AM₁₉₈ *, 10, 2, 3; 2000 AN₁₉₈ *, 9, 2, 3; 2000 AO₁₉₈ *, 9, 2, 3; 2000 AP₁₉₈ *, 10, 2, 3; 2000 AQ₁₉₈ *, 7, 2, 3; 2000 AR₁₉₈ *, 10, 2, 3; 2000 AS₁₉₈ *, 8, 2, 3; 2000 AT₁₉₈ *, 10, 2, 3; 2000 AU₁₉₈ *, 7, 2, 3; 2000 AV₁₉₈ *, 7, 2, 3; 2000 AW₁₉₈ *, 11, 2, 3; 2000 AX₁₉₈ *, 9, 2, 3; 2000 AY₁₉₈ *, 8, 2, 3; 2000 AZ₁₉₈ *, 6, 2, 3; 2000 AA₁₉₉ *, 7, 2, 3; 2000 AB₁₉₉ *, 8, 2, 3; 2000 AC₁₉₉ *, 10, 2, 2; 2000 AD₁₉₉ *, 10, 2, 2; 2000 AE₁₉₉ *, 10, 2, 2; 2000 AF₁₉₉ *, 10, 2, 2; 2000 AG₁₉₉ *, 10, 2, 2; 2000 AH₁₉₉ *, 7, 2, 2; 2000 AI₁₉₉ *, 9, 2, 2; 2000 AJ₁₉₉ *, 8, 2, 2; 2000 AK₁₉₉ *, 8, 2, 2; 2000 AL₁₉₉ *, 10, 2, 2; 2000 AM₁₉₉ *, 10, 2, 2; 2000 AN₁₉₉ *, 23, 5, 101; 2000 AO₁₉₉ *, 13, 2, 2; 2000 AP₁₉₉ *, 10, 2, 2; 2000 AQ₁₉₉ *, 10, 2, 2; 2000 AR₁₉₉ *, 10, 2, 2; 2000 AS₁₉₉ *, 14, 2, 2; 2000 AT₁₉₉ *, 10, 2, 2; 2000 AU₁₉₉ *, 9, 2, 2; 2000 AV₁₉₉ *, 8, 2, 2; 2000 AW₁₉₉ *, 8, 2, 2; 2000 AX₁₉₉ *, 9, 2, 2; 2000 AY₁₉₉ *, 10, 2, 2; 2000 AZ₁₉₉ *, 9, 2, 2; 2000 AA₂₀₀ *, 10, 2, 2; 2000 AB₂₀₀ *, 6, 2, 2; 2000 AC₂₀₀ *, 9, 2, 2; 2000 AD₂₀₀ *, 9, 2, 2; 2000 AE₂₀₀ *, 9, 2, 2; 2000 AF₂₀₀ *, 7, 2, 2; 2000 AG₂₀₀ *, 9, 2, 2; 2000 AH₂₀₀ *, 8, 2, 2; 2000 AJ₂₀₀ *, 9, 2, 2; 2000 AK₂₀₀ *, 9, 2, 2; 2000 AL₂₀₀ *, 9, 2, 2; 2000 AM₂₀₀ *, 8, 2, 2; 2000 AN₂₀₀ *, 10, 2, 2; 2000 AO₂₀₀ *, 9, 2, 2; 2000 AP₂₀₀ *, 6, 2, 2; 2000 AQ₂₀₀ *, 8, 2, 2; 2000 AR₂₀₀ *, 10, 2, 2; 2000 AS₂₀₀ *, 10, 2, 2; 2000 AT₂₀₀ *, 9, 2, 2; 2000 AU₂₀₀ *, 17, 4, 62; 2000 AV₂₀₀ *, 9, 2, 2; 2000 AW₂₀₀ *, 6, 2, 2; 2000 AX₂₀₀ *, 9, 2, 2; 2000 AY₂₀₀ *, 10, 2, 2; 2000 AZ₂₀₀ *, 8, 2, 2; 2000 AA₂₀₁ *, 9, 2, 2; 2000 AB₂₀₁ *, 8, 2, 2; 2000 AC₂₀₁ *, 8, 2, 2; 2000 AD₂₀₁ *, 9, 2, 2; 2000 AE₂₀₁ *, 9, 2, 2; 2000 AF₂₀₁ *, 6, 2, 2; 2000 AG₂₀₁ *, 8, 2, 2; 2000 AH₂₀₁ *, 7, 2, 2; 2000 AI₂₀₁ *, 7, 2, 2; 2000 AJ₂₀₁ *, 7, 2, 2; 2000 AK₂₀₁ *, 6, 2, 2; 2000 AL₂₀₁ *, 6, 2, 2; 2000 AM₂₀₁ *, 13, 3, 3; 2000 AN₂₀₁ *, 14, 3, 3; 2000 AO₂₀₁ *, 8, 2, 2; 2000 AP₂₀₁ *, 7, 2, 2; 2000 AQ₂₀₁ *, 8, 2, 2; 2000 AR₂₀₁ *, 12, 2, 2; 2000 AS₂₀₁ *, 6, 2, 2; 2000 AT₂₀₁ *, 13, 2, 2; 2000 AU₂₀₁ *, 8, 2, 2; 2000 AV₂₀₁ *, 8, 2, 2; 2000 AW₂₀₁ *, 8, 2, 2; 2000 AX₂₀₁ *, 13, 3, 26; 2000 AY₂₀₁ *, 7, 2, 2; 2000 AZ₂₀₁ *, 8, 2, 2; 2000 AA₂₀₂ *, 8, 2, 2; 2000 AB₂₀₂ *, 8, 2, 1; 2000 AC₂₀₂ *, 7, 2, 1; 200

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(12821), 5, 1, 0; (12822), 10, 2, 2; (12823), 8, 2, 1; (12824), 15, 3, 24; (12826), 12, 3, 22; (12827), 13, 3, 2; (12828), 9, 2, 22; (12829), 10, 2, 1; (12831), 15, 3, 24; (12832), 10, 2, 18; (12833), 9, 2, 2; (12834), 8, 2, 1; (12835), 10, 2, 24; (12836), 9, 2, 1; (12837), 15, 3, 24; (12839), 8, 2, 1; (12840), 19, 4, 23; (12841), 10, 1, 0; (12842), 30, 2, 1; (12843), 7, 2, 2; (12844), 15, 3, 25; (12845), 4, 1, 0; (12846), 4, 1, 0; (12847), 8, 2, 1; (12849), 10, 2, 2; (12854), 10, 2, 1; (12858), 3, 1, 0; (12859), 9, 2, 1; (12861), 9, 2, 96; (12862), 3, 1, 0; (12867), 15, 3, 24; (12868), 12, 3, 24; (12869), 19, 4, 59; (12870), 4, 1, 0; (12872), 19, 4, 23; (12873), 10, 2, 1; (12874), 8, 2, 1; (12875), 10, 2, 2; (12876), 5, 1, 0; (12877), 13, 3, 23; (12878), 10, 2, 2; (12880), 7, 2, 1; (12881), 23, 3, 2; (12882), 5, 1, 0; (12883), 18, 3, 2; (12884), 10, 2, 1; (12885), 3, 1, 0; (12886), 10, 2, 18; (12887), 10, 2, 1; (12888), 7, 2, 24; (12890), 9, 2, 3; (12891), 13, 3, 23; (12892), 15, 3, 24; (12893), 10, 2, 2; (12894), 8, 2, 1; (12895), 8, 2, 2; (12896), 12, 3, 20; (12897), 4, 1, 0; (12898), 15, 3, 24; (12899), 10, 2, 1; (12901), 13, 3, 23; (12902), 15, 3, 18; (12903), 17, 3, 2; (12904), 5, 1, 0; (12905), 9, 2, 1; (12906), 18, 4, 24; (12907), 10, 2, 2; (12908), 5, 1, 0; (12909), 17, 3, 2; (12910), 10, 2, 2; (12911), 9, 2, 2; (12912), 10, 2, 1; (12913), 15, 3, 24; (12914), 5, 1, 0; (12915), 18, 4, 4; (12916), 9, 2, 3; (12917), 18, 4, 28; (12918), 10, 2, 18; (12919), 15, 3, 24; (12920), 15, 3, 23; (12921), 14, 3, 28; (12922), 10, 2, 2; (12923), 5, 1, 0; (12925), 15, 3, 63; (12927), 12, 3, 11; (12928), 11, 2, 2; (12930), 9, 2, 3; (12931), 28, 6, 63; (12932), 23, 5, 63; (12933), 24, 5, 63; (12934), 13, 3, 51; (12935), 14, 3, 11; (12936), 8, 2, 1; (12937), 13, 3, 20; (12938), 3, 1, 0; (12939), 5, 1, 0; (12940), 14, 3, 24; (12942), 10, 2, 2; (12943), 15, 3, 20; (12944), 9, 2, 1; (12945), 22, 4, 5; (12946), 13, 3, 28; (12947), 13, 3, 20; (12948), 6, 2, 24; (12949), 9, 2, 19; (12950), 10, 2, 1; (12951), 9, 2, 1; (12953), 14, 3, 20; (12954), 19, 4, 28; (12956), 5, 1, 0; (12958), 9, 2, 2; (12960), 14, 3, 23; (12962), 9, 2, 1; (12963), 14, 3, 22; (12964), 5, 1, 0; (12965), 10, 2, 18; (12966), 10, 2, 2; (12968), 3, 1, 0; (12970), 19, 4, 20; [224055, 20720, 7661*, 1996/01/24-2000/01/21]

709 W & B Observatory, Cloudcroft

W. Offutt, P.O. Drawer 1130, Cloudcroft, NM 88317, U.S.A.

[offutt@galileo.apo.nmsu.edu]

0.60-m $f/7$ Ritchey-Chrétien + CCD
USNO-SA1.0

1998 XY₉₅, 2, 1, 0; [2, 1, 0*, 1999/12/07]

711 McDonald Observatory

J. G. Ries, McDonald Observatory, University of Texas, Austin, TX 78712, U.S.A.
[moon@astro.as.utexas.edu]

0.76-m $f/3.0$ reflector + CCD

GSC

1993 FM₆, 4, 1, 0; 1995 SM₅₅, 11, 2, 1; 1998 SN₁₆₅, 5, 2, 1; 1998 WH₂₄, 11, 2, 1; 1999 TD₁₀, 12, 2, 1; 1999 UG₅, 5, 2, 1; 1999 YT, 6, 2, 2; 2000 AR₄₄, 3, 1, 0; 2000 AW₉₃, 6, 2, 1; 2000 AX₉₃, 9, 3, 2; 2000 AY₉₃, 6, 2, 2; 2000 AZ₉₃, 3, 1, 0; 2000 AJ₁₅₃, 12, 4, 3; 2000 AK₁₅₃, 11, 4, 3; 2000 AD₂₀₅, 1, 1, 0; 2000 AE₂₀₅, 9, 3, 2; 2000 AF₂₀₅, 6, 2, 1; 2000 AH₂₀₅, 3, 1, 0; 2000 AB₂₂₉, 12, 4, 4; 2000 AC₂₂₉, 9, 3, 2; 2000 AD₂₂₉, 3, 1, 0; [147, 21, 0*, 1999/11/30–2000/01/11]

713 Thornton

R. A. Koff, 1915 W. 101st Ave., Thornton, CO 80221, U.S.A.

[Bob.Koff@worldnet.att.net]

0.20-m $f/10$ Schmidt-Cassegrain + CCD

USNO-A2.0

1999 YK₅, 6, 1, 0; 2000 AB₆, 3, 1, 0; [9, 2, 0*, 1999/12/30–2000/01/06]

715 Las Cruces

D. Dixon, 5975 Moonrise Vista, Las Cruces, NM 88012, U.S.A.

[ddixon@lascruces.com]

0.3-m $f/3.5$ Schmidt-Cassegrain + CCD

GSC, USNO-A2.0

1985 RA, 3, 1, 0; 1999 VG₂, 2, 1, 0; 1999 VW₆, 6, 2, 2; 1999 VB₇, 5, 2, 2; 1999 WY₉, 2, 1, 0; 1999 XM₈₃, 8, 2, 1; 2000 AT₄, 3, 1, 0; 2000 AY₂₂, 2, 1, 0; [31, 8, 0*, 1999/12/31–2000/01/12]

718 University of Utah Hansen Planetarium, Tooele

P. Wiggins, University of Utah Hansen Planetarium, 15 South State Street, Salt

Lake City, UT 84111-1590, U.S.A. [p.wiggins@m.cc.utah.edu]

Observers P. Wiggins, H. Phaneuf

0.35-m $f/4.1$ Schmidt-Cassegrain + CCD

GSC

1997 ER₂, 6, 2, 1; [6, 1, 0*, 1999/12/29–1999/12/30]

719 Etschorn Observatory

D. A. Klinglesmith III, 1215 Vista Drive, Socorro, NM 87801, U.S.A.

[TheKs@aol.com]

Observers D. A. Klinglesmith III, S. Hathaway

0.355-m Schmidt-Cassegrain + CCD

GSC

2000 AB₂₂₉, 2, 1, 0; [2, 1, 0*, 2000/01/13]

721 Lime Creek

R. Linderholm, R2 Box 79, Cambridge, NE 69022, U.S.A. [lindh@swnebr.net]

0.25-m $f/3.3$ Schmidt-Cassegrain + CCD

GSC

1997 EO₁₇, 2, 1, 0; [2, 1, 0*, 2000/01/13]

723 Cottonwood Observatory, Ada

J. Waller, Rt#3 Box 175c, Ada, OK 74820, U.S.A. [jwaller@chickasaw.com]

0.30-m $f/6$ Schmidt-Cassegrain + CCD

GSC-ACT

1999 XX₁₄₁, 3, 1, 0; 1999 XY₁₆₆, 3, 1, 0; 1999 XZ₁₆₆, 3, 1, 0; 2000 AC₇, 3, 1, 0; (1641), 3, 1, 0; (3034), 3, 1, 0; [18, 6, 0*, 1999/12/16–1999/12/29]

725 Fair Oaks Ranch

J. V. McClusky, McClusky Observatory, 31789 Sunland, Fair Oaks Ranch,
TX 78015, U.S.A. [mcclusky@lonestar.utsa.edu]

0.46-m $f/4.5$ Newtonian reflector + CCD

USNO-SA2.0

1995 YK₂₀, 2, 1, 0; 1998 VS₅, 5, 2, 3; 1999 AG₂₄, 5, 2, 3; 1999 VP₃₆, 2, 1, 0; 1999 YH₇ *, 9, 4, 14; 2000 AN₁₃, 4, 2, 4; 2000 AO₁₉, 2, 1, 0; [29, 7, 1*, 1998/10/08–2000/01/11]

726 Brainerd

J. E. Wentworth, 6469 Madson Ave. N.W., Brainerd, MN 56401, U.S.A.

[jimw@brainerd.net]

0.280-m Schmidt-Cassgrain + CCD

GSC-1.1

1999 RH₂₇, 12, 2, 1; 1999 VM₄₀, 5, 1, 0; 1999 WK₁₃, 6, 1, 0; 1999 XL₁₃₆, 4, 1, 0; 1999 YF₃, 8, 2, 6; 1999 YG₃, 11, 2, 6; 1999 YK₅, 26, 5, 8; [72, 7, 0*, 1999/12/21–2000/01/09]

727 Zeno Observatory, Edmond

T. Stafford, 2947 Village Circle, Edmond, OK 73013, U.S.A.

[tstaffor@agnetplex.com]

0.15-m $f/6$ refractor + CCD

GSC

1999 VS₁₉, 3, 1, 0; 1999 WB₉, 3, 1, 0; 2000 AF₁₅₃ *, 5, 2, 1; [11, 3, 1*, 1999/12/16–2000/01/11]

732 Oaxaca

J. Roe, Apdo. No. 221, MX-68000 Oaxaca, Mexico [jamesroe@antequera.com]

0.25-m $f/3.4$ reflector + CCD

GSC-ACT

1988 RY₅, 3, 1, 0; 1989 CB₆, 6, 2, 1; 1992 SF₁₁, 5, 2, 2; 1993 BD, 8, 2, 1; 1995 WX₂, 6, 2, 1; 1997 GD₁₇, 14, 4, 3; 1997 RG₉, 6, 2, 1; 1998 MZ₂₃, 9, 3, 2; 1998 OU₁₄, 5, 2, 1; 1998 QW₄₅, 2, 1, 0; 1998 RD₄₀, 5, 2, 1; 1998 RA₅₉, 6, 2, 1; 1998 RL₇₃, 13, 4, 3; 1998 SC₁₃₈, 3, 1, 0; 1999 VL, 5, 2, 1; 1999 VA₂, 5, 1, 0; 1999 VV₁₉, 3, 2, 3; 1999 VB₂₁, 9, 2, 1; 1999 XS₁, 6, 2, 1; 1999 XQ₅, 7, 3, 15; 1999 XZ₃₆, 3, 1, 0; 1999 XA₃₇, 3, 1, 0; 1999 XN₃₇, 5, 2, 1; 1999 XM₈₃, 8, 2, 1; 1999 XL₈₄, 6, 2, 1; 1999 XS₈₄, 9, 3, 2; 1999 XY₈₆, 6, 2, 1; 1999 XN₁₀₁, 12, 4, 4; 1999 XQ₁₀₅, 13, 6, 28; 1999 XR₁₀₅, 12, 5, 27; 1999 XH₁₇₅, 6, 2, 1; 1999 XU₁₈₈, 9, 3, 2; 1999 XD₂₂₈, 5, 2, 1; 2000 AA *, 15, 6, 6; 2000 AT₄, 3, 2, 1; 2000 AV₄ *, 28, 4, 3; 2000 AS₃₇, 8, 2, 1; 2000 AJ₅₅, 5, 2, 1; 2000 AM₈₅, 6, 2, 2; 2000 AV₉₃ *, 13, 4, 3; 2000 AX₁₁₉, 10, 3, 2; 2000 AA₁₂₀, 6, 2, 1; 2000 AQ₁₅₈, 8, 2, 1; 2000 AE₂₀₄, 4, 1, 0; 2000 AO₂₀₅ *, 11, 4, 3; (2505), 6, 1, 0; (2953), 15, 4, 3; (3150), 6, 2, 1; (3745), 4, 2, 1; (3800), 6, 2, 1; (4637), 1, 1, 0; (4639), 3, 1, 0; (6102), 3, 1, 0; (6647), 3, 1, 0; (7637), 3, 1, 0; (9017), 3, 1, 0; (9276), 3, 1, 0; (9404), 3, 1, 0; (9468), 5, 2, 1; (9631), 2, 1, 0; (9651), 3, 1, 0; (11376), 3, 1, 0; (11738), 5, 2, 1; [417, 63, 4*, 1999/11/05–2000/01/13]

734 Farpoint Observatory, Eskridge

G. Hug, RTE 1 Box 35c, Eskridge, KS 66423, U.S.A. [frogstar@inlandnet.net]

Observers G. Bell, G. Hug, C. Lambrecht, D. Brunken

Measurers G. Hug, G. Bell

0.30-m Schmidt-Cassegrain + CCD

GSC-1.1, USNO-A2.0, USNO-SA1.0, USNO-SA2.0

1993 TV₁₉, 3, 1, 0; 1993 UW₆, 2, 1, 0; 1994 RW₁₇, 3, 1, 0; 1998 VZ₅, 4, 2, 4; 1999 TE₈, 2, 1, 0; 1999 VW, 4, 1, 0; 1999 VS₁₁, 2, 1, 0; 1999 VC₁₉, 7, 2, 2; 1999 VE₂₂, 2, 1, 0; 1999 VU₂₂, 3, 1, 0; 1999 VN₂₃, 3, 1, 0; 1999 VY₂₅, 4, 2, 10; 1999 VV₇₁, 3, 1, 0; 1999 VW₇₁, 3, 1, 0; 1999 XU₃₈, 4, 1, 0; 1999 XV₆₆, 6, 2, 2; 1999 XU₆₈, 6, 2, 2; 1999 XZ₆₉, 8, 2, 2; 1999 XY₉₄, 7, 2, 2; 1999 XM₁₂₇, 9, 2, 12; 1999 XW₁₂₇, 4, 1, 0; 1999 XU₁₄₃ *, 8, 2, 4; 1999 XV₁₄₃ *, 7, 2, 4; 1999 XW₁₄₃ *, 16, 4, 18; 1999 YG₄ *, 21, 6, 12; 1999 YH₄ *, 11, 3, 13; 1999 YJ₄ *, 13, 4, 11; 1999 YK₄ *, 5, 2, 1; 1999 YL₄ *, 14, 4, 12; 1999 YR₄ *, 11, 3, 3; 1999 YS₄ *, 14, 4, 11; 1999 YT₄ *, 15, 4, 11; 1999 YU₄ *, 11, 3, 3; 1999 YV₄ *, 12, 3, 3; 1999 YS₈, 6, 2, 13; 1999 YA₉ *, 8, 2, 2; 1999 YB₉ *, 11, 3, 15; 1999 YC₉ *, 8, 2, 2; 1999 YD₉ *, 10, 4, 16; 1999 YH₁₃ *, 9, 3, 14; 1999 YK₁₃ *, 10, 4, 14; 1999 YU₁₄ *, 13, 3, 16; 2000 AY₂₇, 6, 2, 1; 2000 AF₃₁, 3, 1, 0; 2000 AN₃₅, 2, 1, 0; 2000 AO₃₅, 2, 1, 0; 2000 AY₄₃, 3, 1, 0; 2000 AQ₄₄, 3, 1, 0; 2000 AY₉₂, 3, 1, 0; 2000 AB₁₄₇ *, 9, 3, 7; 2000 AB₁₅₉, 2, 1, 0; 2000 AG₁₆₈ *, 12, 4, 9; 2000 AW₂₀₅ *, 10, 3, 8; 2000 AX₂₀₅ *, 7, 3, 7; 2000 AY₂₀₅ *, 5, 2, 2; 2000 AO₂₁₉, 3, 1, 0; 2000 BG *, 5, 2, 5; (49), 3, 1, 0; (7534), 4, 1, 0; (7942), 4, 1, 0; [408, 60, 26*, 1999/12/13–2000/01/21]

735 George Observatory, Needville

W. G. Dillon, 4703 Birkenhead Circle, Missouri City, TX 77459, U.S.A.

[bdillon@houston.geoquest.slb.com]

Observers W. G. Dillon, C. Gustava

Measurer W. G. Dillon

0.46-m reflector + CCD

USNO-A2.0

1999 XV₃₅, 3, 1, 0; [3, 1, 0*, 1999/12/28]

739 Sunflower Observatory, Olathe

L. Robinson, Sunflower Observatory, 14680 W. 144 St., Olathe, KS 66062, U.S.A.

[lrobinson@ix.netcom.com]

0.30-m Schmidt-Cassegrain + CCD

GSC-1.1

1989 SN₄, 3, 1, 0; 1995 SU₅₂, 2, 1, 0; 1996 BV₂, 3, 1, 0; 1997 SG₇, 4, 1, 0; 1998 MP₂₄, 10, 1, 0; 1998 QB₂₆, 4, 1, 0; 1999 RB₃₅, 6, 2, 5; 1999 TT₅, 3, 1, 0; 1999 TP₇, 3, 1, 0; 1999 TS₁₁, 3, 1, 0; 1999 UA₂, 3, 1, 0; 1999 VE₁, 6, 2, 4; 1999 VH₅, 3, 1, 0; 1999 VH₁₂, 3, 1, 0; 1999 VT₁₉, 6, 2, 9; 1999 WO₃, 2, 1, 0; 1999 WS₃, 2, 1, 0; 1999 WX₃, 3, 1, 0; 1999 WM₄, 3, 1, 0; 1999 WO₄, 3, 1, 0; 1999 WU₄, 5, 2, 1; 1999 WA₈, 13, 4, 14; 1999 WR₉, 2, 1, 0; 1999 WX₉, 3, 1, 0; 1999 WD₁₀, 2, 1, 0; 1999 WE₁₀, 2, 1, 0; 1999 XF₁, 3, 1, 0; 1999 XU₇, 3, 1, 0; 1999 XS₁₅, 4, 2, 6; 1999 XY₃₅, 3, 1, 0; 1999 XZ₃₅, 4, 2, 3; 1999 XB₃₆, 2, 1, 0; 1999 XF₃₆, 2, 1, 0; 1999 XG₃₆, 2, 1, 0; 1999 XX₃₆, 3, 1, 0; 1999 XJ₈₃, 15, 4, 3; 1999 XG₈₅, 2, 1, 0; 1999 XX₈₆, 2, 1, 0; 1999 XT₉₀, 2, 1, 0; 1999 XR₉₁, 3, 1, 0; 1999 XD₉₅, 3, 1, 0; 1999 XW₉₅, 4, 1, 0; 1999 XA₉₆, 3, 1, 0; 1999 XV₁₀₀, 2, 1, 0; 1999 XJ₁₀₁, 2, 1, 0; 1999 XD₁₀₄, 3, 1, 0; 1999 XJ₁₀₅, 3, 1, 0; 1999 XX₁₃₅, 2, 1, 0; 1999 XK₁₃₆, 3, 1, 0; 1999 XL₁₃₆, 3, 1, 0; 1999 XS₁₄₀, 5, 2, 1; 1999 XW₁₄₃, 3, 1, 0; 1999 XG₁₈₁, 4, 1, 0; 1999 YE₃, 3, 1, 0; 1999 YM₄ *, 13, 4, 4; 1999 YQ₄, 3, 1, 0; 1999 YU₄, 3, 1, 0; 1999 YV₄, 4, 1, 0; 1999 YW₄ *, 13, 4, 5; 1999 YL₅, 7, 3, 8; 1999 YT₈, 3, 1, 0; 1999 YU₈ *, 18, 6, 16; 1999 YT₁₃, 4, 1, 0; 1999 YR₁₄, 3, 1, 0; 1999 YS₁₄, 3, 1, 0; 1999 YT₁₄, 3, 1, 0; 2000 AT₄, 9, 3, 18; 2000 AU₄, 2, 1, 0; 2000 AH₅ *, 17, 4, 20; 2000 AC₉, 7, 2, 1; 2000 AE₄₂, 3, 1, 0; 2000 AW₅₀ *, 6, 2, 1; 2000 AK₆₂, 4, 1, 0; 2000 AL₁₄₄, 3, 1, 0; 2000 BH *, 5, 2, 1; (425), 2, 1, 0; (710), 3, 1, 0; (5605), 3, 1, 0; (6286), 3, 1, 0; (9234), 3, 1, 0; (9439), 3, 1, 0; [345, 81, 6*, 1999/12/17–2000/01/24]

744 Doyan Rose Observatory, Indianapolis

J. Ruthroff, 5221 Graceland Ave., Indianapolis, IN 46254, U.S.A.

[jruthroff@sprintmail.com]

0.25-m $f/5.5$ Schmidt-Cassegrain + CCD

GSC-1.1, USNO-A2.0

1999 XN₃₇, 5, 2, 5; (9191), 2, 1, 0; [7, 2, 0*, 1999/12/17–1999/12/22]

747 Baton Rouge Observatory

W. R. Cooney, Jr., 10330 Dunn Dr., Baton Rouge, LA 70810, U.S.A.

[walt@sprintmail.com]

Observers W. R. Cooney, Jr., R. Pitre

Measurers W. R. Cooney, Jr.

0.51-m $f/8.4$ reflector + CCD

USNO-A2.0

1988 RY₅, 4, 1, 0; 1992 PM₂, 3, 1, 0; 1998 SK₃₅, 5, 2, 6; 1999 VG₁, 6, 2, 18; 1999 WQ₂, 7, 2, 27; 1999 XT₁, 9, 2, 27; 1999 XU₁, 14, 4, 27; 1999 YA, 4, 1, 0; 1999 YC₅ *, 11, 4, 16; 1999 YD₅ *, 9, 3, 4; 2000 AC₆, 5, 1, 0; (9631), 4, 1, 0; [81, 12, 2*, 1999/10/03–2000/01/14]

749 Oakwood

J. A. Howell, 4046 Lyman Way, Gainesville, GA 30507, U.S.A.

[andyho@mindspring.com]

0.46-m $f/4.4$ Newtonian reflector + CCD

GSC

1997 CW, 7, 3, 10; [7, 1, 0*, 1999/12/27–2000/01/06]

750 Hobbs Observatory, Fall Creek

R. Elliott, S475 County Road K, Fall Creek, WI 54742, U.S.A.

[elliottb@uwec.edu]

0.30-m $f/3.3$ reflector + CCD

GSC-ACT

(150), 3, 1, 0; (699), 2, 1, 0; [5, 2, 0*, 1999/12/16–2000/01/19]

757 High Point

D. K. Chesney, 4210 Lauren Place, High Point, NC 27265, U.S.A.

[dkchesney@aol.com]

0.25-m Schmidt-Cassegrain + CCD

GSC, USNO-SA2.0

2000 AF₂₀₄ *, 6, 3, 2; [6, 1, 1*, 2000/01/12–2000/01/14]

807 Cerro Tololo

J. W. Parker, Southwest Research Institute, 1050 Walnut Street, Suite 426,

Boulder, CO 80302, U.S.A. [joel@boulder.swri.edu]

4-m Blanco reflector + CCD

USNO-A2.0

1999 PQ₇ *, 3, 1, 0; 1999 PR₇ *, 3, 1, 0; 1999 PS₇ *, 3, 1, 0; 1999 PT₇ *, 3, 1, 0; 1999 PU₇ *, 3, 1, 0; 1999 PV₇ *, 3, 1, 0; 1999 PW₇ *, 2, 1, 0; 1999 PX₇ *, 2, 1, 0; [22, 8, 8*, 1999/08/06–1999/08/07]

808 Carlos U. Cesco Observatory, El Leoncito

C. E. Lopez, Felix Aguilar Observatory, Benavidez 8175 (Oeste), AR-5407

Marquesado-San Juan, Argentina [clopez@info.unsj.edu.ar]

Observers M. R. Cesco, H. S. Lepez, C. E. Lopez, J. E. Torres, J. A. Vicentela

Measurers C. E. Lopez, R. A. Gil-Hutton

0.5-m $f/7.5$ double astrograph + CCD

PPM

1983 AC₁, 4, 2, 4; 1990 RF₁₇, 2, 1, 0; 1991 AG₂, 2, 1, 0; 1991 FG, 2, 1, 0; 1992 AV₁, 2, 1, 0; 1992 EW₉, 2, 1, 0; 1995 DG, 2, 1, 0; 1995 UC₁₇, 2, 1, 0; 1998 QB₄₃, 2, 1, 0; 1998 QN₇₅, 2, 1, 0; 1998 TA₃₄, 2, 1, 0; 1998 VF₃₅, 4, 2, 3; 1999 AE₆, 4, 2, 3; 1999 SX₅, 2, 1, 0; 1999 SZ₅, 4, 2, 3; 1999 US₃, 12, 6, 6; (84), 2, 1, 0; (616), 4, 2, 3; (945), 2, 1, 0; (965), 2, 1, 0; (1036), 4, 2, 2; (1166), 4, 2, 3; (1276), 2, 1, 0; (1312), 1, 1, 0; (1360), 2, 1, 0; (1362), 2, 1, 0; (1366), 2, 1, 0; (1373), 2, 1, 0; (1583), 4, 2, 4; (1631), 2, 1, 0; (2056), 2, 1, 0; (2104), 2, 1, 0; (2265), 1, 1, 0; (2759), 3, 2, 4; (2967), 2, 1, 0; (3022), 2, 1, 0; (3167), 4, 2, 3; (3419), 2, 1, 0; (3793), 4, 2, 4; (4060), 4, 2, 4; (4068), 2, 1, 0; (4761), 7, 4, 4; (4770), 8, 4, 34; (5222), 2, 1, 0; (5234), 2, 1, 0; (5264), 4, 2, 5; (5285), 4, 2, 5; (6000), 2, 1, 0; (6493), 2, 1, 0; (6530), 2, 1, 0; (9069), 2, 1, 0; (9149), 2, 1, 0; (12336), 2, 1, 0; [152, 53, 0*, 1992/11/30–2000/01/11]

809 European Southern Observatory

H. Debehogne, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180

Brussels, Belgium [henri@astro.oma.be] (3)

E. W. Elst, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels, Belgium [elst@atmos.oma.be] (4)

7 = 3 + 4

C.-I. Lagerkvist, Uppsala Observatory, Box 515, S-75120 Uppsala, Sweden

[classe@astro.uu.se] (8)

Observers G. Pizarro, O. Pizarro, A. Nathues, H. Debehogne

Measurers E. W. Elst, O. Hernius, C.-I. Lagerkvist, A. Niemi, O. Karlsson, H. Debehogne

1.0-m Schmidt, Bochum telescope + CCD

{3} 1999 XO₃₂, 3, 1, 0; [3, 1, 0*, 1993/04/25]

{4} 1985 RT, 3, 1, 0; 1988 FE₃, 3, 1, 0; 1990 VE₄, 3, 1, 0; 1991 SE₁, 3, 1, 0; 1993 FC₁₃, 3, 1, 0; 1993 OM₈, 3, 1, 0; 1993 TL₂₃, 6, 2, 2; 1994 EJ₆, 3, 1, 0; 1994 EZ₆, 3, 1, 0; 1994 EC₇, 3, 1, 0; 1994 PX₂, 3, 1, 0; 1994 PE₁₁, 3, 1, 0; 1994 RO₁₄, 3, 1, 0; 1994 RN₂₆, 3, 1, 0; 1994 WE₄, 3, 1, 0;

2000 JAN. 24

M.P.C. 37475

1995 YR₆, 3, 1, 0; 1996 HX₁₃, 3, 1, 0; 1996 HX₂₂, 6, 2, 3; 1997 GK₈, 3, 1, 0; 1997 GA₁₈, 3, 1, 0; 1997 GJ₁₉, 3, 1, 0; 1997 HP₁₁, 3, 1, 0; 1997 JC₁₀, 3, 1, 0; 1997 JY₁₈ *, 3, 1, 0; 1997 KQ₃, 3, 1, 0; 1997 LU₁₅, 3, 1, 0; 1998 KT₆, 3, 1, 0; 1998 KD₈, 6, 1, 0; 1998 KD₃₂, 3, 1, 0; 1998 MJ₃₃, 3, 1, 0; 1998 MA₄₆, 3, 1, 0; 1998 PQ, 3, 1, 0; 1998 QC₈, 3, 1, 0; 1998 QG₁₄, 3, 1, 0; 1998 QZ₁₇, 3, 1, 0; 1998 QC₃₈, 6, 2, 1; 1998 QS₃₈, 3, 1, 0; 1998 QL₄₄, 3, 1, 0; 1998 QU₄₇, 3, 1, 0; 1998 QO₅₃, 3, 1, 0; 1998 QY₅₅, 3, 1, 0; 1998 RL₆, 3, 1, 0; 1998 RA₇₂, 3, 1, 0; 1998 SY₁₅, 3, 1, 0; 1998 SH₁₁₆, 3, 1, 0; 1998 SR₁₁₆, 6, 2, 11; 1998 SQ₁₁₈, 3, 1, 0; 1998 SS₁₃₀, 3, 1, 0; 1998 SX₁₃₇, 3, 1, 0; 1998 SL₁₄₂, 3, 1, 0; 1998 UF₄₁, 6, 2, 1; 1998 VZ₃₀, 3, 1, 0; 1998 VR₃₆, 3, 1, 0; 1998 WN₁₁, 3, 1, 0; 1999 RO₉₄, 3, 1, 0; 1999 RL₁₀₉, 3, 1, 0; 1999 TQ₁₁, 3, 1, 0; 1999 TX₃₂, 3, 1, 0; 1999 UX₈, 3, 1, 0; 1999 UJ₉, 3, 1, 0; 1999 UN₂₅, 3, 1, 0; 1999 UX₂₅, 3, 1, 0; 1999 VH₆, 3, 1, 0; 1999 VO₉, 3, 1, 0; 1999 VJ₁₀, 3, 1, 0; 1999 VS₂₄, 3, 1, 0; 1999 VF₃₁, 3, 1, 0; 1999 VM₃₅, 3, 1, 0; 1999 VN₃₅, 3, 1, 0; 1999 VP₅₆, 3, 1, 0; 1999 VJ₆₂, 3, 1, 0; 1999 VM₆₇, 3, 1, 0; 1999 WQ₂, 3, 1, 0; 1999 WJ₄, 3, 1, 0; 1999 WC₁₀, 4, 2, 20; 1999 XR₃₃, 4, 2, 11; 1999 XH₆₅, 3, 1, 0; 1999 XY₇₃, 2, 1, 0; 1999 XK₁₀₀, 3, 1, 0; 1999 XG₁₀₁, 3, 1, 0; 1999 XJ₁₅₁, 3, 1, 0; 1999 XE₁₅₇, 3, 1, 0; 1999 XA₁₅₉, 9, 3, 7; [274, 83, 1*, 1992/05/02–1998/09/21]

{7} 1993 TJ₂₁, 3, 1, 0; 1996 HF₁₈, 3, 1, 0; 1998 PQ, 3, 1, 0; 1998 QG₂₁, 3, 1, 0; 1998 RH₁₆, 3, 1, 0; 1998 UC₃, 6, 2, 10; 1999 SY₃, 3, 1, 0; 1999 TU₁₁, 3, 1, 0; 1999 VP₈₉, 3, 1, 0; 1999 XM₂₅, 3, 1, 0; 6640 P-L, 3, 1, 0; [36, 11, 0*, 1993/09/14–1993/10/22]

{8} 1973 SX, 4, 2, 21; 1973 SF₁, 9, 5, 27; 1973 SS₁, 3, 2, 2; 1973 SY₁, 3, 2, 2; 1981 SD₂, 2, 1, 0; 1989 YO₃, 6, 6, 11; 1990 UE₄, 4, 2, 2; 1991 ED₂, 4, 2, 2; 1991 HN, 2, 1, 0; 1991 PK₃, 3, 2, 2; 1992 ED₄, 4, 2, 2; 1993 FG₅, 2, 1, 0; 1993 FP₁₁, 2, 1, 0; 1993 VF₁₂, 4, 2, 2; 1994 CG₁₄, 4, 2, 2; 1994 JJ₅, 4, 2, 2; 1995 SO₁₆, 5, 4, 26; 1995 SB₃₈, 4, 3, 19; 1995 SV₅₂, 4, 2, 2; 1995 SE₅₃, 5, 4, 19; 1996 RM₂₇, 1, 1, 0; 1996 RS₂₈, 4, 2, 1; 1996 RA₃₃, 10, 3, 21; 1996 RD₃₃, 1, 1, 0; 1996 TN₄₉, 6, 3, 58; 1996 TF₆₈, 1, 1, 0; 1996 VU₁₇, 4, 2, 2; 1996 XJ₁, 4, 2, 2; 1996 XT₁, 4, 2, 2; 1997 AD₂, 1, 1, 0; 1997 CE₂₂, 11, 10, 34; 1997 CY₂₈, 3, 3, 3; 1997 ET₁, 4, 2, 2; 1997 RQ₈, 2, 1, 0; 1997 SA₂₀, 4, 2, 2; 1997 SM₃₅ *, 6, 3, 6; 1997 SN₃₅ *, 3, 2, 2; 1997 TY₅, 4, 2, 2; 1997 TZ₂₇ *, 10, 5, 27; 1997 TA₂₈ *, 10, 5, 27; 1997 TB₂₈ *, 10, 5, 27; 1997 TC₂₈ *, 10, 5, 27; 1997 TD₂₈ *, 7, 4, 27; 1997 TE₂₈ *, 4, 2, 1; 1997 TF₂₈ *, 4, 2, 1; 1997 TG₂₈ *, 6, 2, 1; 1997 TH₂₈ *, 4, 2, 1; 1997 TJ₂₈ *, 4, 2, 1; 1997 TK₂₈ *, 4, 2, 1; 1997 TL₂₈ *, 4, 2, 1; 1997 TM₂₈ *, 9, 4, 22; 1997 TN₂₈ *, 4, 2, 1; 1997 TO₂₈ *, 4, 2, 1; 1997 TP₂₈ *, 6, 2, 1; 1997 TQ₂₈ *, 8, 2, 1; 1997 TR₂₈ *, 8, 2, 1; 1997 TS₂₈ *, 4, 2, 1; 1997 TT₂₈ *, 4, 2, 1; 1997 TU₂₈ *, 4, 2, 1; 1997 TV₂₈ *, 10, 4, 22; 1997 TW₂₈ *, 4, 2, 1; 1997 TX₂₈ *, 4, 2, 1; 1997 TY₂₈ *, 4, 2, 1; 1997 TZ₂₈ *, 3, 2, 1; 1997 TA₂₉ *, 4, 2, 1; 1997 TB₂₉ *, 4, 2, 1; 1997 TC₂₉ *, 4, 2, 1; 1997 TD₂₉ *, 3, 2, 1; 1997 TE₂₉ *, 4, 2, 1; 1997 TF₂₉ *, 4, 2, 1; 1997 TG₂₉ *, 4, 2, 1; 1997 TH₂₉ *, 4, 2, 1; 1997 TJ₂₉ *, 6, 2, 1; 1997 TK₂₉ *, 7, 2, 1; 1997 TL₂₉ *, 8, 2, 1; 1997 TM₂₉ *, 2, 2, 1; 1997 TN₂₉ *, 3, 2, 1; 1997 TO₂₉ *, 4, 2, 1; 1997 TP₂₉ *, 4, 2, 1; 1997 TQ₂₉ *, 4, 2, 1; 1997 TR₂₉ *, 3, 2, 1; 1997 TS₂₉ *, 3, 2, 1; 1997 TT₂₉ *, 4, 2, 1; 1997 TV₂₉ *, 4, 2, 1; 1997 TW₂₉ *, 4, 2, 1; 1997 TX₂₉ *, 4, 2, 1; 1997 TY₂₉ *, 4, 2, 1; 1997 TZ₂₉ *, 4, 2, 1; 1997 UA₂₆ *, 4, 2, 2; 1997 UB₂₆ *, 4, 2, 2; 1997 UC₂₆ *, 3, 2, 2; 1997 UD₂₆ *, 4, 2, 2; 1997 UE₂₆ *, 4, 2, 2; 1997 UF₂₆ *, 4, 2, 2; 1997 UG₂₆ *, 3, 2, 2; 1997 UH₂₆ *, 4, 2, 2; 1997 UJ₂₆ *, 6, 2, 2; 1997 UK₂₆ *, 4, 2, 2; 1997 UL₂₆ *, 3, 2, 2; 1997 UM₂₆ *, 4, 2, 2; 1997 UN₂₆ *, 3, 2, 2; 1997 UO₂₆ *, 4, 2, 2; 1997 UP₂₆ *, 4, 2, 2; 1997 UQ₂₆ *, 3, 2, 2; 1997 UR₂₆ *, 4, 2, 2; 1997 US₂₆ *, 4, 2, 11; 1997 UT₂₆ *, 4, 2, 11; 1997 UU₂₆ *, 4, 2, 11; 1997 UV₂₆ *, 4, 2, 11; 1997 UW₂₆ *, 3, 2, 11; 1997 UX₂₆ *, 3, 2, 11; 1997 VG₁, 9, 4, 6; 1997 VW₁, 3, 2, 2; 1997 WK₅₇ *, 5, 3, 2; 1997 WL₅₇ *, 5, 3, 2; 1997 WM₅₇ *, 2, 2, 2; 1997 WN₅₇ *, 4, 2, 2; 1997 WO₅₇ *, 4, 2, 2; 1997 WP₅₇ *, 4, 2, 2; 1997 WQ₅₇ *, 4, 2, 2; 1997 WR₅₇ *, 4, 2, 2; 1997 WS₅₇ *, 4, 2, 2; 1997 WT₅₇ *, 4, 2, 2; 1997 WU₅₇ *, 4, 2, 2; 1997 WV₅₇ *, 4, 2, 2; 1997 WW₅₇ *, 4, 2, 2; 1997 WX₅₇ *, 4, 2, 2; 1997 WY₅₇ *, 4, 2, 2; 1997 WZ₅₇ *, 4, 2, 2; 1997 WA₅₈ *, 4, 2, 2; 1997 WB₅₈ *, 4, 2, 2; 1997 WC₅₈ *, 4, 2, 2; 1997 WD₅₈ *, 4, 2, 2; 1997 WE₅₈ *, 4, 2, 2; 1997 WF₅₈ *, 3, 2, 2; 1997 WG₅₈ *, 3, 2, 2; 1997 WH₅₈ *, 3, 2, 2; 1997 XA₉, 4, 2, 2; 1997 XR₁₃ *, 4, 2, 2; 1997 XS₁₃ *, 4, 2, 1; 1997 XT₁₃ *, 4, 2, 1; 1997 XU₁₃ *, 4, 2, 1; 1997 XV₁₃ *, 4, 2, 1; 1997 XW₁₃ *, 4, 2, 1; 1998 BV₁₈, 4, 2, 2; 1998 BE₃₃, 4, 2, 2; 1998 DQ₁₀, 2, 1, 0; 1998 DV₃₆ *, 4, 2, 2; 1998 DW₃₆ *, 4, 2, 2; 1998 DX₃₆ *, 4, 2, 2; 1998 DY₃₆ *, 4, 2, 2; 1998 DZ₃₆ *, 4, 2, 2; 1998 DA₃₇ *, 4, 2, 2; 1998 DC₃₇ *, 4, 2, 2; 1998 DD₃₇ *, 4, 2, 2; 1998 DE₃₇ *, 4, 2, 2; 1998 DF₃₇ *, 4, 2, 2; 1998 DG₃₇ *, 4, 2, 2; 1998 DH₃₇ *, 4, 2, 2; 1998 DJ₃₇ *, 4, 2, 2; 1998 DK₃₇ *, 4, 2, 2; 1998 DL₃₇ *, 4, 2, 2; 1998 DM₃₇ *, 4, 2, 2; 1998 DN₃₇ *, 4, 2, 2; 1998 DO₃₇ *, 4, 2, 2; 1998 DP₃₇ *, 4, 2, 2; 1998 EZ₉, 4, 2, 2; 1998 EE₁₀, 2, 1, 0; 1998 FO, 2, 1, 0; 1998 FM₂, 2, 1, 0; 1998 FA₅, 4, 2, 2; 1998 FZ₁₁, 4, 2, 2; 1998 FP₄₅, 4, 2, 2; 1998 FS₄₅, 4, 2, 2; 1998 FT₄₅, 2, 1, 0; 1998 FR₄₆, 4, 2, 2; 1998 FK₅₀, 4, 2, 2; 1998 FL₅₀, 4, 2, 2; 1998 FU₅₀, 4, 2, 2; 1998 FW₅₀, 4, 2, 2; 1998 FA₅₁, 4, 2, 2; 1998 FB₅₁, 4, 2, 2; 1998 FC₅₁, 2, 1, 0; 1998 FE₅₁, 4, 2, 2; 1998 FJ₅₁, 4, 2, 2; 1998 FK₅₁, 4, 2, 2; 1998 FL₅₁, 4, 2, 2; 1998 FM₅₁, 4, 2, 2; 1998 FN₅₁, 4, 2, 2; 1998 FP₅₁, 4, 2, 2; 1998 FS₅₁, 2, 1, 0; 1998 FT₅₁, 4, 2, 2; 1998 FW₅₁, 4, 2, 2; 1998 FA₅₂, 4, 2, 2; 1998 FC₅₂, 4, 2, 2; 1998 FD₅₂, 4, 2, 2; 1998 FE₅₂, 2, 1, 0; 1998 FN₅₂, 4, 2, 2; 1998 FO₅₂, 4, 2, 2; 1998 FD₅₅, 4, 2, 2; 1998 FE₅₅, 4, 2, 2; 1998 FG₅₅, 4, 2, 2; 1998 FN₅₅, 4, 2, 2; 1998 FP₅₅, 4, 2, 2; 1998 FU₅₅, 4, 2, 2; 1998 FV₅₅, 4, 2, 2; 1998 FX₅₅, 2,

1, 0; 1998 FZ₅₅, 2, 1, 0; 1998 FL₆₀, 4, 4, 5; 1998 FB₇₂, 4, 2, 2; 1998 FV₇₂, 2, 1, 0; 1998 FE₇₄, 4, 2, 2; 1998 FF₇₄, 4, 2, 2; 1998 FB₈₀, 4, 2, 2; 1998 FE₈₀, 4, 2, 2; 1998 FF₈₀, 4, 2, 2; 1998 FG₈₀, 4, 2, 2; 1998 FJ₈₀, 2, 1, 0; 1998 FK₁₂₁, 2, 1, 0; 1998 FP₁₂₆, 4, 2, 2; 1998 FP₁₃₀, 4, 2, 2; 1998 GN₁, 4, 2, 2; 1998 HB₁₁₄, 13, 10, 36; 1998 HJ₁₂₈, 4, 2, 2; 1998 HN₁₂₈, 4, 2, 2; 1998 HQ₁₃₂, 4, 2, 2; 1998 HJ₁₃₃, 4, 2, 2; 1998 HK₁₃₃, 4, 2, 2; 1998 HA₁₃₄, 4, 2, 2; 1998 HS₁₃₅, 4, 2, 2; 1998 JB₂, 1, 1, 0; 1998 KG₆₄, 3, 3, 4; 1998 OQ₁₀, 9, 9, 34; 1998 SQ₁₄, 4, 6; 1998 SU₅₂, 8, 4, 7; 1998 UZ₈, 10, 5, 10; 1998 UQ₁₆, 10, 5, 27; 1998 US₂₄, 6, 3, 5; 1998 VU₆, 2, 1, 0; 1998 WX₉, 10, 5, 27; 1998 XA₇, 2, 1, 0; 1998 XO₇₉, 4, 2, 2; 1999 EA₂, 4, 2, 2; 1999 KK₁₅, 4, 2, 2; 1999 PW₄, 4, 4, 7; 1999 RL₂₅, 3, 3, 24; 1999 RN₂₅, 2, 1, 0; 1999 RJ₃₁, 2, 2, 2; 1999 RR₃₁, 2, 1, 0; 1999 RU₁₃₆, 6, 6, 34; 1999 RY₁₇₆, 2, 2, 1; 1999 SH₂, 15, 12, 34; 1999 UC₂₅, 1, 1, 0; 1999 VY₃₃, 2, 2, 1; 1999 VX₅₄, 1, 1, 0; 1999 VG₆₆, 4, 4, 26; 1999 VX₆₇, 4, 4, 4; 1999 XE₄, 3, 3, 26; 1999 XD₁₉, 2, 2, 2; 1999 XT₇₃, 9, 1, 0; 1999 XS₁₀₉, 4, 3, 2; 1999 XJ₁₅₆, 4, 2, 1; 1999 XT₁₆₀, 4, 2, 11; 1999 XU₁₆₆, 6, 6, 29; 2000 AU₂₇, 8, 4, 7; 2727 P-L, 2, 1, 0; 2728 P-L, 4, 2, 2; 9602 P-L, 6, 3, 21; 2258 T-1, 2, 1, 0; 4111 T-1, 4, 2, 2; 4536 T-2, 5, 3, 27; 4742 T-2, 6, 2, 2; 4235 T-3, 2, 2, 1; (210), 2, 1, 0; (384), 4, 2, 2; (1104), 4, 2, 2; (1143), 2, 1, 0; (1202), 4, 2, 2; (1219), 2, 1, 0; (1366), 2, 1, 0; (1521), 4, 2, 2; (1749), 6, 3, 32; (1869), 4, 2, 1; (2148), 4, 2, 1; (2385), 2, 1, 0; (2778), 4, 2, 2; (3105), 4, 2, 2; (3379), 4, 2, 2; (3408), 4, 2, 2; (3467), 4, 2, 2; (3564), 2, 1, 0; (3709), 6, 3, 27; (3793), 2, 1, 0; (3973), 4, 2, 2; (4057), 8, 4, 22; (4068), 3, 2, 2; (4332), 4, 2, 2; (4527), 2, 1, 0; (4822), 2, 1, 0; (4902), 6, 3, 27; (4946), 4, 2, 1; (5028), 4, 2, 1; (5258), 2, 1, 0; (5534), 4, 2, 2; (5544), 2, 1, 0; (5623), 4, 2, 2; (6144), 10, 5, 10; (6237), 2, 1, 0; (6557), 2, 1, 0; (6576), 2, 1, 0; (7152), 6, 3, 29; (7543), 4, 2, 2; (8388), 4, 2, 2; (8447), 4, 2, 2; (8495), 4, 2, 2; (8512), 2, 1, 0; (8520), 2, 1, 0; (8576), 4, 2, 2; (8594), 4, 2, 2; (8664), 4, 2, 2; (8770), 4, 2, 2; (8771), 4, 2, 2; (9431), 2, 1, 0; (9455), 2, 1, 0; (9590), 6, 3, 28; (9694), 2, 1, 0; (9712), 8, 3, 22; (9713), 6, 3, 28; (9807), 2, 1, 0; (9817), 2, 1, 0; (9818), 4, 2, 1; (9828), 12, 4, 22; (9907), 8, 4, 32; (10908), 4, 2, 2; (10989), 6, 3, 21; (11003), 3, 2, 2; (11251), 6, 2, 1; (11388), 6, 3, 23; (11396), 4, 2, 2; (11632), 4, 2, 2; (11668), 19, 7, 28; (11684), 4, 2, 2; (11689), 4, 2, 2; (11872), 2, 1, 0; (12054), 4, 2, 1; (12188), 4, 2, 2; (12398), 2, 1, 0; (12917), 4, 2, 1; (12921), 2, 1, 0; [1529, 362, 134*, 1995/04/06–1998/03/02]

819 Val-des-Bois

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[bergeron@achilles.net]

Observer D. Bergeron

Measurer T. Alderweireldt

0.25-m *f*/10 Schmidt-Cassegrain + CCD

GSC-1.2

1999 XX, 5, 1, 0; 1999 XH₅₉, 3, 1, 0; 1999 XH₁₄₂, 13, 2, 6; [21, 3, 0*, 1999/12/02–2000/01/06]

824 Lake Clear

K. A. Williams, RD #1 Box 277, Forest Home Road, Lake Clear, NY 12945,

U.S.A. [kenwill@NorthNet.org]

0.41-m *f*/5.0 reflector + CCD

GSC

1999 XX₂₀₆, 3, 1, 0; [3, 1, 0*, 1998/09/19]

838 Dayton

J. Chumack, 3118 Mesmer Avenue, Dayton, OH 45410, U.S.A.

[galactic@infinet.com]

0.25-m Schmidt-Cassegrain + CCD

GSC

(65), 5, 2, 6; (1292), 5, 2, 6; (1829), 4, 2, 6; [14, 3, 0*, 2000/01/08–2000/01/14]

843 Decatur

L. C. Ball, 4311 Emerald Lane, Decatur, AL 35603, U.S.A. [dustoff72@aol.com]

0.30-m *f*/6.5 Schmidt-Cassegrain + CCD

GSC, USNO-SA2.0

(3200), 8, 2, 1; [8, 1, 0*, 2000/01/05–2000/01/07]

846 Principia Astronomical Observatory, Elsau

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[dcorn@prin.edu]

Observers D. A. Cornell, C. A. Hooper, T. H. Fuller, A. Fuller, D. McCall

0.41-m $f/10$ reflector + CCD

USNO-A2.0

1993 OW₁, 4, 2, 3; [4, 1, 0*, 2000/01/05–2000/01/08]

848 Tenagra Observatory, Cottage Grove

P. R. Holvorcem, Departamento de Matematica/IMECC, Universidade Estadual de Campiñas, Campiñas, SP 13081-970, Brazil [canis@mpc.com.br]

Observer M. Schwartz

Measurer P. R. Holvorcem

0.36-m $f/11$ Schmidt-Cassegrain + CCD

GSC-ACT, USNO-SA2.0, USNO-A2.0

1981 EM₆, 7, 3, 3; 1982 UH₉, 9, 3, 10; 1992 EO, 3, 1, 0; 1992 JG, 9, 3, 3; 1994 PJ₇, 3, 1, 0; 1995 YV₃, 6, 2, 3; 1997 AN₁, 5, 2, 3; 1997 US₉, 3, 2, 2; 1998 CB₄, 3, 1, 0; 1998 DU, 8, 3, 3; 1998 EP₈, 2, 1, 0; 1998 ET₁₁, 3, 1, 0; 1998 FM₁₂, 3, 1, 0; 1998 FN₁₁₈, 6, 2, 3; 1998 HW₁₃, 2, 1, 0; 1998 JE₄, 3, 1, 0; 1998 KK₈, 9, 2, 3; 1998 QR₅₂, 11, 4, 54; 1998 RO₁, 9, 3, 3; 1999 CF₉, 3, 1, 0; 1999 ED₅, 2, 1, 0; 1999 HW₂, 3, 1, 0; 1999 HX₂, 3, 1, 0; 1999 JM₈, 3, 1, 0; 1999 LF₆, 12, 4, 56; 1999 LN₂₈, 3, 1, 0; 1999 LO₂₈, 4, 2, 2; 1999 ML, 14, 5, 58; 1999 NW₂, 6, 2, 2; 1999 NT₄, 2, 1, 0; 1999 NZ₄, 15, 5, 56; 1999 NA₅, 3, 1, 0; 1999 NB₅, 9, 2, 3; 1999 NC₅, 4, 1, 0; 1999 ND₄₃, 9, 3, 54; 1999 OP₃, 14, 4, 53; 1999 OQ₃, 6, 2, 49; 1999 OT₃, 3, 1, 0; 1999 PJ₁, 9, 3, 4; 1999 PS₃, 2, 1, 0; 1999 PG₄, 6, 2, 1; 1999 QJ, 9, 3, 4; 1999 RJ, 3, 1, 0; 1999 RC₂, 11, 4, 10; 1999 RD₂, 6, 2, 10; 1999 RE₂, 8, 3, 10; 1999 RU₂, 15, 5, 6; 1999 RV₂, 12, 4, 6; 1999 RB₃, 6, 2, 3; 1999 RC₃, 6, 2, 3; 1999 RS₁₂, 3, 1, 0; 1999 RN₁₅, 3, 2, 4; 1999 RQ₁₅, 7, 3, 2; 1999 RR₁₅, 2, 1, 0; 1999 RT₁₆, 6, 2, 2; 1999 RH₂₇, 9, 3, 4; 1999 RJ₂₇, 3, 1, 0; 1999 RE₂₈, 6, 2, 2; 1999 RN₂₈, 4, 2, 1; 1999 RP₂₈, 5, 2, 1; 1999 RQ₂₈, 11, 4, 4; 1999 RR₂₈, 11, 4, 4; 1999 RK₃₁, 2, 1, 0; 1999 RL₃₁, 3, 1, 0; 1999 RS₃₁, 6, 2, 2; 1999 RT₃₁, 5, 2, 2; 1999 RX₃₁, 3, 1, 0; 1999 RY₃₁, 3, 1, 0; 1999 RB₃₂, 3, 1, 0; 1999 RC₃₂, 3, 1, 0; 1999 RD₃₂, 6, 2, 1; 1999 RF₃₂, 4, 2, 2; 1999 RH₃₂, 6, 2, 2; 1999 RJ₃₂, 10, 4, 14; 1999 RK₃₂, 3, 1, 0; 1999 RM₃₂, 2, 1, 0; 1999 RN₃₂, 3, 1, 0; 1999 RO₃₂, 6, 2, 2; 1999 RP₃₂, 6, 2, 2; 1999 RG₃₃, 12, 3, 2; 1999 RJ₃₃, 4, 2, 1; 1999 RK₃₃, 8, 3, 3; 1999 RL₃₃, 6, 2, 1; 1999 RD₃₅, 3, 1, 0; 1999 RO₃₅, 3, 1, 0; 1999 RR₃₅, 6, 2, 3; 1999 RT₃₅, 3, 1, 0; 1999 RC₃₆, 6, 2, 3; 1999 RD₃₆, 3, 1, 0; 1999 RO₃₆, 8, 3, 2; 1999 RP₃₆, 5, 2, 1; 1999 RQ₃₆, 3, 1, 0; 1999 RT₄₁, 3, 1, 0; 1999 RJ₄₂, 2, 1, 0; 1999 RG₄₅, 3, 1, 0; 1999 RK₄₅, 3, 1, 0; 1999 RQ₄₅, 3, 1, 0; 1999 RG₈₉, 3, 1, 0; 1999 RA₁₄₉, 3, 1, 0; 1999 RX₁₅₁, 3, 1, 0; 1999 RM₁₇₆, 3, 1, 0; 1999 RN₁₇₆, 2, 1, 0; 1999 RT₁₈₁, 3, 1, 0; 1999 RS₁₉₃, 2, 1, 0; 1999 RV₁₉₃, 2, 1, 0; 1999 XY₁₆₈, 2, 1, 0; (586), 3, 1, 0; (1296), 2, 1, 0; (1681), 2, 1, 0; (2021), 3, 1, 0; (2492), 2, 1, 0; (3070), 3, 1, 0; (4587), 4, 2, 3; (6489), 3, 1, 0; (7304), 3, 1, 0; (11101), 6, 2, 3; (11263), 3, 1, 0; (11398), 9, 3, 3; (11405), 6, 2, 3; (11444), 3, 1, 0; (11500), 8, 3, 3; (11548), 5, 2, 3; (12066), 5, 2, 3; (12102), 2, 1, 0; (12200), 2, 1, 0; (12401), 3, 1, 0; [643, 126, 0*, 1999/07/23–1999/09/29]

849 Everstar Observatory, Olathe

G. Fedon, 21251 W. 123rd St., Olathe, KS 66061, U.S.A. [antares@everstar.com]

Observers M. Abraham, G. Fedon

0.25-m Schmidt-Cassegrain + CCD

GSC-1.1

1999 VE₈, 3, 1, 0; 1999 VA₉, 4, 1, 0; 1999 VB₃₆, 3, 1, 0; 1999 WL₃, 3, 1, 0; 1999 WO₃, 3, 1, 0; 1999 WS₃, 3, 1, 0; 1999 WX₃, 4, 1, 0; 1999 WO₄, 3, 1, 0; 1999 WA₅, 3, 1, 0; 1999 WV₉, 3, 1, 0; 1999 XA₁, 3, 1, 0; 1999 XC₁, 3, 1, 0; 1999 XD₁, 3, 1, 0; 1999 XH₁, 3, 1, 0; 1999 XY₁, 4, 1, 0; 1999 XJ₇, 3, 1, 0; 1999 XL₇, 3, 1, 0; 1999 XP₇, 3, 1, 0; 1999 XR₁₃, 6, 2, 4; 1999 XU₂₈, 3, 1, 0; 1999 XF₃₆, 3, 1, 0; 1999 XG₃₆, 3, 1, 0; 1999 XD₃₇, 3, 1, 0; 1999 XE₃₇, 3, 1, 0; 1999 XJ₈₄, 3, 1, 0; 1999 XN₈₆, 3, 1, 0; 1999 XX₈₆, 10, 2, 7; 1999 XX₉₅, 3, 1, 0; 1999 XG₁₀₀, 3, 1, 0; 1999 XJ₁₀₅, 2, 1, 0; 1999 XQ₁₃₄, 3, 1, 0; 1999 XS₁₄₀, 2, 1, 0; 1999 XR₁₇₅, 4, 1, 0; 1999 XY₁₉₁, 3, 1, 0; 1999 YL₅ *, 6, 2, 2; 1999 YT₈ *, 13, 3, 3; 1999 YV₈, 4, 1, 0; 2000 AU₄ *, 12, 3, 4; 2000 AC₈₄, 3, 1, 0; 2000 AK₁₅₆, 4, 1, 0; (59), 3, 1, 0; (1298), 3, 1, 0; (1429), 3, 1, 0; (2565), 2, 1, 0; (3076), 3, 1, 0; (5538), 2, 1, 0; (6631), 3, 1, 0; (9404), 2, 1, 0; [177, 48, 3*, 1999/12/27–2000/01/24]

856 Riverside

G. Malcolm, 7430 Lippizan Drive, Riverside, CA 92509, U.S.A. [gmalcolm@pe.net]

Observer G. Malcolm

Measurer R. Stephens

0.30-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC, USNO-A2.0

(657), 2, 1, 0; (847), 3, 1, 0; (981), 3, 1, 0; [8, 3, 0*, 1999/11/28]

857 Iowa Robotic Observatory

R. Mutel, Department of Physics & Astronomy, University of Iowa, Iowa City, IA 52242, U.S.A. [rlm@astro.physics.uiowa.edu]

Observers R. Mutel, C. Othon

0.5-m $f/8$ reflector + CCD

USNO-SA2.0

(7636), 6, 1, 0; (8671), 6, 1, 0; (9377), 5, 1, 0; [17, 3, 0*, 1999/11/08]

858 Tebbutt Observatory, Edgewood

F. B. Zoltowski, Tebbutt Observatory, 70 Abajo Dr., Edgewood, NM 87015, U.S.A. [fbzolt@compserve.com]

0.3-m $f/3.3$ Schmidt-Cassegrain + CCD

USNO-SA2.0

1998 JJ₄, 7, 2, 1; 1998 MO₇, 6, 2, 1; 1998 MV₁₃, 6, 2, 1; 1999 WK₄, 6, 2, 1; 1999 WP₄, 9, 3, 2; 1999 XB₉₈, 6, 2, 1; (1004), 5, 2, 1; (1817), 8, 2, 1; (2975), 6, 2, 1; (5943), 6, 2, 1; (7524), 6, 2, 1; [71, 11, 0*, 2000/01/11–2000/01/13]

859 Serra da Piedade

C. Jacques, P.O. Box 1084, Belo Horizonte, Minas Gerais, BR-30000 Brazil

[cjjacques@unix.horizontes.com.br]

Observers C. Jacques, J. Amancio

Measurer C. Jacques

0.30-m $f/3.3$ reflector + CCD

GSC

1994 AV₁₀, 2, 1, 0; [2, 1, 0*, 1999/09/05]

860 Valinhos

P. R. Holvorcem, Departamento de Matematica/IMECC, Universidade Estadual de Campiñas SP, BR-13081-970, Brazil [canis@mpc.com.br]

0.20-m $f/3.3$ reflector + CCD

GSC

1999 JM₈, 2, 1, 0; 1999 LF₆, 3, 1, 0; 1999 RH₂₇, 3, 1, 0; (2038), 2, 1, 0; [10, 4, 0*, 1999/11/03]

886 Susono

M. Akiyama, 1655-23, Chabatake, Susono, Shizuoka-Ken, 410-11 Japan

0.25-m $f/6.3$ reflector + CCD

GSC

1985 RA, 2, 1, 0; 1989 WU, 2, 1, 0; 1993 FE₁₂, 2, 1, 0; 1995 VJ₂, 2, 1, 0; 1995 XT₁, 2, 1, 0; 1998 TA, 2, 1, 0; 1999 VB₂₁, 4, 2, 5; 1999 XL₈, 4, 2, 5; 1999 XD₃₆, 2, 1, 0; 1999 XD₁₀₄, 4, 2, 4; 1999 XK₁₀₅, 2, 1, 0; 1999 XN₁₀₅, 2, 1, 0; 1999 XO₁₀₅, 2, 1, 0; [32, 13, 0*, 1999/12/10–2000/01/08]

888 Gekko Observatory

T. Kagawa, 1308-222, Kuwahara, Kannami-cho, Tagata-gun, Shizuoka-Ken, 419-010, Japan

0.50-m $f/4.0$ reflector + CCD

GSC-1.1

1990 VE, 2, 1, 0; 1990 VE₄, 2, 1, 0; 1991 YC, 4, 2, 10; 1995 VH₂, 2, 1, 0; 1995 VJ₂, 3, 1, 0; 1995 VB₉, 3, 1, 0; 1995 YR, 2, 1, 0; 1995 YM₄, 2, 1, 0; 1997 AQ₆, 3, 1, 0; 1998 SS₂, 2, 1, 0; 1998 VC, 3, 1, 0; 1998 VM₆, 6, 2, 5; 1999 TB₁, 2, 1, 0; 1999 TD₁₅, 3, 1, 0; 1999 UQ₁, 3, 1, 0; 1999 UC₃, 2, 1, 0; 1999 VV₁, 3, 1, 0; 1999 VW₁, 2, 1, 0; 1999 VU₂₀, 2, 1, 0; 1999 VB₂₁, 5, 2, 12; 1999 WV, 3, 1, 0; 1999 WE₁, 2, 1, 0; 1999 WM₁₁, 2, 1, 0; 1999 WO₁₁, 3, 1, 0; 1999 XF₂, 5, 2, 9; 1999 XL₈, 2, 1, 0; 1999 XA₃₆, 2, 1, 0; 1999 XE₃₈, 2, 1, 0; 1999 XF₃₈, 3, 1, 0; 1999 XO₈₆, 6, 3, 4; 1999 XR₉₆, 2, 1, 0; 1999 XZ₁₀₃, 2, 1, 0; 1999 XB₁₀₄, 2, 1, 0; 1999 XC₁₀₄, 5, 2, 24; 1999 XD₁₀₄, 3, 1, 0; 1999 XK₁₀₅, 5, 2, 8; 1999 XN₁₀₅, 3, 1, 0; 1999 XO₁₀₅, 2, 1, 0; 1999 XP₁₀₅, 2, 1, 0; 1999 XQ₁₄₄, 3, 1, 0; 1999 YD, 3, 1, 0; 2000 AG₂ *, 11, 4, 11; 2000 AR₂ *, 5, 2, 1; 2000 AE₅ *, 11, 4, 16; 2000 AA₂₀₅, 3, 1, 0; (4021), 2, 1, 0; [150, 46, 3*, 1999/12/21–2000/01/20]

2000 JAN. 24

M.P.C. 37477

897 YGCO Chiyoda Station

T. Kojima, 45 Shimonakamori, Chiyoda, Ohra-Gun, Gunma-Ken, 370-0724 Japan
[kojitaku@sannet.ne.jp]

0.25-m $f/6.0$ reflector + CCD

GSC

1994 YL₂, 2, 1, 0; 1998 MT₃₇, 2, 1, 0; 1999 WO₉, 2, 1, 0; 1999 WP₉, 2, 1, 0; 2000 AC₅ *, 9, 3, 7; 2000 AD₅ *, 8, 3, 5; (5304), 2, 1, 0; (6359), 2, 1, 0; [29, 8, 2*, 1999/11/30–2000/01/10]

900 Moriyama

Y. Ikari, Katube-Cho 626, Moriyama, Shiga-Ken 524, Japan

[ikari@gold.ocn.ne.jp]

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1999 RH₂₇, 4, 2, 5; 1999 US₃, 4, 2, 11; 1999 VZ₂, 2, 1, 0; 1999 VM₄₀, 4, 2, 11; 1999 WY₂, 1, 0; 1999 XO₃₅, 2, 1, 0; 1999 XL₁₃₆, 2, 1, 0; 1999 XL₁₃₇, 6, 3, 3; 1999 YC₂, 2, 1, 0; 1999 YD₂, 1, 0; 1999 YT₂, 2, 1, 0; 1999 YO₁ *, 15, 7, 12; 1999 YE₃, 4, 2, 6; 1999 YE₅ *, 6, 3, 3; 1999 YK₅, 4, 2, 4; 1999 YS₁₄, 2, 1, 0; 2000 AB₆, 2, 1, 0; 2000 AX₉₃, 2, 1, 0; 2000 AB₂₂₉, 2, 1, 0; (4748), 4, 2, 4; (5066), 2, 1, 0; [75, 21, 2*, 1999/12/19–2000/01/18]

903 Fukuchiyama

M. Yoshimi, Osas 185-4-101, Fukuchiyama, Kyoto 620-0845, Japan

[myoshimi@silver.ocn.ne.jp]

Observer M. Yoshimi

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1999 XL₁₃₇, 12, 4, 24; [12, 1, 0*, 1999/12/15–2000/01/08]

905 Nachi-Katsuura Observatory

T. Urata, 1-8, Dobayashi 1 Chome, Shimizu, Shizuoka-Ken 424, Japan

[urata@sannet.ne.jp]

Observer Y. Shimizu

Measurer T. Urata

0.40-m $f/3.3$ Baker-Schmidt

GSC

1999 XF₃₈, 1, 1, 0; 1999 XK₁₀₅, 4, 2, 2; 1999 XL₁₀₅, 3, 2, 2; 1999 XN₁₀₅, 4, 2, 2; 1999 XO₁₀₅, 4, 2, 2; 1999 XR₁₄₄, 4, 2, 2; 2000 AA₂₀₅ *, 4, 2, 2; 2000 AB₂₀₅ *, 4, 2, 2; [28, 8, 2*, 1999/12/06–2000/01/10]

910 Caussols-ODAS

A. Maury, Observatoire de la Côte d'Azur, B.P. 229, F-06304 Nice, France

[maury@obs-azur.fr]

G. Hahn, DLR Institute of Planetary Exploration, Rudower Chaussee 5, D-12489

Berlin, Germany [Gerhard.Hahn@DLR.de]

Observers A. Maury, D. Albanese, G. Hahn, M. Hoffmann

Measurers A. Maury, G. Hahn

0.90-m Schmidt + CCD

GSC

1997 GV₂₀, 3, 1, 0; 1997 GZ₂₂, 3, 1, 0; 1998 BL₁₄, 6, 2, 507; 1998 FM₄₅, 3, 1, 0; 1998 HP₆₄, 3, 1, 0; 1998 KW₅₅, 3, 1, 0; 1998 QG₂₉, 3, 1, 0; 1998 RV₁₇, 3, 1, 0; 1999 RS₃, 1, 0; 1999 RJ₁₀, 3, 1, 0; 1999 RH₁₄₄, 3, 1, 0; 1999 RV₁₆₅, 3, 1, 0; 1999 RQ₂₀₁, 3, 1, 0; 1999 UW₃, 1, 0; 1999 UG₂, 3, 1, 0; 1999 UJ₄, 3, 1, 0; 1999 UO₇, 3, 1, 0; 1999 UH₁₃, 3, 1, 0; 1999 VF₁₉, 3, 1, 0; 1999 VP₂₃, 3, 1, 0; 1999 VV₂₃, 3, 1, 0; 1999 VW₃₁, 3, 1, 0; 1999 VM₃₂, 3, 1, 0; 1999 VB₅₃, 3, 1, 0; 1999 VX₅₅, 3, 1, 0; 1999 VN₆₅, 3, 1, 0; 1999 WJ₄, 3, 1, 0; 1999 WM₆, 3, 1, 0; 1999 XU₂₀, 3, 1, 0; 1999 XZ₁₀₉, 3, 1, 0; [93, 30, 0*, 1997/01/15–1999/01/20]

931 Punaauia

J. C. Pelle, BP 130085, 98717 Punaauia, French Polynesia [jcpelle@mail.pf]

0.20-m $f/10$ reflector + CCD

GSC

2000 AQ₁₅₈, 2, 1, 0; (1037), 4, 2, 12; (5453), 4, 2, 12; (9468), 2, 1, 0; [12, 4, 0*, 1999/12/17–2000/01/13]

944 Observatorio Geminis, Dos Hermanas

J. M. Garcia J., c/Montserrat Caballe 8, E-41700 Dos Hermanas (Sevilla), Spain

[jmgarcia@wanadoo.es]

0.304-m $f/5.5$ reflector + CCD

USNO-SA2.0

1997 WU₂₂, 5, 1, 0; 1999 RH₂₇, 15, 3, 5; 1999 WY₁₁, 2, 1; (5066), 12, 2, 1; (7485), 11, 2, 2; (7637), 14, 2, 2; [68, 6, 0*, 1999/12/16–2000/01/24]

945 Monte Deva

R. Cuesta, Avda de Portugal 52 1 D, E-33207 Gijon, Asturias, Spain

[ruli12@bigfoot.com]

Observers J. R. Vidal, R. Cuesta, E. Riego, J. Vidal, J. Rodriguez

Measurer R. Cuesta

0.36-m $f/6.3$ Schmidt-Cassegrain + CCD

USNO-A2.0

(6), 3, 1, 0; (25), 3, 1, 0; (49), 4, 1, 0; (268), 4, 1, 0; (645), 4, 1, 0; (699), 4, 1, 0; [22, 6, 0*, 1999/12/30–2000/01/03]

946 Ametlla de Mar

J. Nomen, Rio de Oro 25, bjos2, E-08034 Barcelona, Spain

[jnomen@astro.gea.cesca.es]

0.30-m $f/5.0$ reflector + CCD

USNO-SA1.0

1999 XW₃₅, 7, 2, 14; 1999 YD₂, 2, 1, 0; 2000 AD *, 6, 2, 1; [15, 3, 1*, 1999/12/17–2000/01/02]

951 Highworth

J. W. Rock, 2 Spa Close, Highworth, Swindon, Wiltshire SN6 7PJ, England

[0C34@dial.pipex.com]

0.30-m Newtonian reflector + CCD

GSC

(4613), 6, 2, 2; [6, 1, 0*, 1999/12/13–1999/12/15]

952 Marxuquera

J. J. Gómez D., Cardenal Cisneros 55-4-8, E-46700 Gandia, Spain

[astsafor@arrakis.es]

0.25-m $f/6.3$ Schmidt-Cassegrain + CCD

GSC

1999 WK₁₃, 6, 1, 0; 2000 AD₃, 1, 0; (1304), 6, 2, 1; [15, 3, 0*, 1999/12/05–2000/01/06]

954 Teide Observatory

A. A. Sabadell P.O. Box 50, E-08200 Sabadell (BCN), Spain

[minorplanets@astrosabadell.org]

Observer R. Casas

Measurer F. Casarramona

0.8-m $f/11.3$ Cassegrain + CCD

GSC-1.2, APM

1999 YR₁₄, 6, 2, 1; 1999 YS₁₄, 5, 2, 1; 1999 YT₁₄, 5, 2, 1; [16, 3, 0*, 2000/01/02–2000/01/03]

958 Observatoire de Dax

P. Dupouy, Observatoire de Dax, F-40100 Dax, France

[Dupouy_Philippe@compuserve.com]

1998 QR₅₃, 6, 2, 1; 2000 AN₄₈, 3, 1, 0; [9, 2, 0*, 1999/12/16–2000/01/06]

Orbital elements have been computed by the following contributors:

G. V. Williams, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street,
Cambridge, MA 02138, U.S.A. [gwilliams@cfa.harvard.edu]

From 58 observations 1998 Apr. 10–13.

From 1126 observations 1998 June 30–2000 Jan. 20, mean residual $0''.7$.

From 239 observations 1998 Sept. 17–2000 Jan. 10, mean residual $0''.6$.

From 326 observations 1998 Oct. 2–2000 Jan. 4, mean residual $0''.8$.

From 360 observations 1999 Apr. 22–2000 Jan. 20, mean residual $0''.6$.

From 382 observations 1999 May 12–2000 Jan. 1, mean residual $0''.5$.

From 138 observations 1999 June 9–2000 Jan. 20, mean residual $0''.6$.

P 82.6

From 605 observations 1999 Sept. 27–2000 Jan. 22, mean residual $0''.6$.

2000 JAN. 24

M.P.C. 37479

C/1999 T1 (McNaught-Hartley)

Epoch 2000 Dec. 2.0 TT = JDT 2451880.5

<i>T</i> 2000 Dec. 13.4628 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
<i>z</i>	−0.000024	ω 344.7594	−0.9659066 −0.2553490
	±0.000072	Ω 182.4839	+0.1065422 −0.5423043
<i>e</i>	1.000028	<i>i</i> 79.9769	−0.2359516 +0.8004392

From 163 observations 1999 Oct. 7–2000 Jan. 11, mean residual 0^{''}.7.**C/1999 T3 (LINEAR)**

Epoch 2000 Sept. 13.0 TT = JDT 2451800.5

<i>T</i> 2000 Sept. 1.6922 TT		Nakano	
<i>q</i>	(2000.0)	P	Q
<i>z</i>	+0.000566	ω 211.3389	+0.7106118 −0.2274449
	±0.000039	Ω 223.5119	+0.6514689 −0.1447175
<i>e</i>	0.996962	<i>i</i> 104.7527	−0.2657425 −0.9629775

From 156 observations 1999 Oct. 3–2000 Jan. 12, mean residual 0^{''}.6.**C/1999 U1 (Ferris)**

Epoch 1998 Aug. 15.0 TT = JDT 2451040.5

<i>T</i> 1998 Sept. 2.9334 TT		Nakano	
<i>q</i>	(2000.0)	P	Q
<i>z</i>	−0.000795	ω 291.0443	−0.0262261 +0.5737745
	±0.000053	Ω 58.2585	+0.7596358 +0.5437430
<i>e</i>	1.003288	<i>i</i> 105.7271	−0.6498197 +0.6124756

From 169 observations 1999 Oct. 18–2000 Jan. 22, mean residual 0^{''}.6.**P/1999 U3 (LINEAR)***T* 1999 Nov. 18.5055 TT

<i>q</i> 1.846494		Nakano	
<i>n</i>	(2000.0)	P	Q
<i>a</i>	0.0922794	ω 111.3417	+0.4786163 −0.8327010
<i>e</i>	4.849900	Ω 306.9715	+0.6193588 +0.5449765
<i>P</i>	0.619272	<i>i</i> 20.3974	+0.6223512 +0.0980287

10.7

From 179 observations 1999 Oct. 30–2000 Jan. 21.

P/1999 V1 (Catalina)*T* 1999 Oct. 25.1222 TT

<i>q</i> 2.944438		Nakano	
<i>n</i>	(2000.0)	P	Q
<i>a</i>	0.0587694	ω 186.7097	−0.5114528 −0.8236814
<i>e</i>	6.551918	Ω 294.3124	+0.8003648 −0.3528903
<i>P</i>	0.550599	<i>i</i> 15.5874	+0.3127814 −0.4438665

16.8

From 68 observations 1999 Nov. 5–2000 Jan. 18.

P/1999 X1 (Hug-Bell)

Epoch 1999 July 1.0 TT = JDT 2451360.5

<i>T</i> 1999 June 20.8337 TT		Marsden	
<i>q</i>	(2000.0)	P	Q
<i>n</i>	1.936769	ω 296.9161	+0.7438140 −0.6423033
<i>a</i>	3.673239	Ω 103.6511	+0.6606348 +0.6644880
<i>e</i>	0.472735	<i>i</i> 10.9687	+0.1015005 +0.3819714

P 7.04From 77 observations 1999 Oct. 10–2000 Jan. 16, mean residual 0^{''}.8.**C/1999 XS₈₇ (LINEAR)***T* 1999 Aug. 6.5652 TT

<i>q</i> 2.771150		(2000.0)		Nakano	
<i>n</i>		ω		P	Q
<i>a</i>	0.0135593	Ω 151.3325		+0.5130563	−0.8193681
<i>e</i>	17.417216	<i>i</i> 266.7271		+0.7305288	+0.5732567
<i>P</i>	0.840896		14.8429	+0.4506672	+0.0035537

72.7

From 56 observations 1999 Nov. 4–2000 Jan. 22.

C/1999 Y1 (LINEAR)*T* 2001 Mar. 24.2030 TT

<i>q</i> 3.092201		(2000.0)		Nakano	
<i>n</i>		ω		P	Q
<i>a</i>		Ω 184.2465		+0.9934103	+0.0349612
<i>e</i>	1.0	<i>i</i> 188.8501		+0.1143547	−0.3661623
<i>P</i>			134.8092	−0.0076799	−0.9298940

From 182 observations 1999 Dec. 20–2000 Jan. 22.

C/1999 Y2 (SOHO)*T* 1999 Dec. 28.71 TT

<i>q</i> 0.0483		(2000.0)		Marsden	
<i>n</i>		ω		P	Q
<i>a</i>		Ω 342.21		−0.44734	−0.45962
<i>e</i>	1.0	<i>i</i> 235.50		−0.66486	−0.40288
<i>P</i>			111.42	−0.59820	+0.79148

From 23 observations 1999 Dec. 28.

C/2000 A1 (Montani)*T* 2000 June 15.9310 TT

<i>q</i> 9.762925		(2000.0)		Nakano	
<i>n</i>		ω		P	Q
<i>a</i>		Ω 12.9978		−0.5523718	−0.7389527
<i>e</i>	1.0	<i>i</i> 111.8401		+0.7228032	−0.6551221
<i>P</i>			24.5585	+0.4152602	+0.1573657

From 42 observations 2000 Jan. 4–18.

C/2000 B1 (SOHO)*T* 2000 Jan. 25.83 TT

<i>q</i> 0.0052		(2000.0)		Marsden	
<i>n</i>		ω		P	Q
<i>a</i>		Ω 87.11		+0.16751	−0.98228
<i>e</i>	1.0	<i>i</i> 8.32		−0.96203	−0.18151
<i>P</i>			144.47	+0.21551	−0.04676

From 20 observations 2000 Jan. 24.

(12972)* 1973 SF₁ = 1997 VP₄

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 30866)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 72.52940		(2000.0)		Williams	
<i>n</i>		ω		P	Q
<i>a</i>	0.08404645	Ω 338.31630		+0.94347805	−0.31737073
<i>e</i>	5.1616648	<i>i</i> 40.58405		+0.32156459	+0.80672237
<i>P</i>	0.1507135		8.44351	+0.08028321	+0.49847249

P 11.73 *H* 11.4 *G* 0.15 *U* 1

Residuals in seconds of arc											
1973 09 19	675	0.1+	0.9+	1997 10 30	704	1.1+	0.1−	1998 12 17	704	0.0	0.0
1973 09 19	675	0.1+	0.4−	1997 10 30	704	0.8+	0.9+	1998 12 17	704	0.7+	1.7−
1973 09 20	675	0.6−	0.7+	1997 10 30	704	1.4+	0.2−	1998 12 17	704	0.1−	0.9−
1973 09 24	675	1.5−	0.7−	1997 10 30	704	0.3+	0.3+	1998 12 17	704	1.2−	0.5+

1973 09 24	675	0.6−	1.4+	1997 11 02	552	0.5−	0.8+	1998 12 17	704	0.1−	0.9−
1973 09 25	675	0.2−	0.3+	1997 11 02	552	0.7−	0.4+	1999 12 12	704	1.7+	0.5−
1973 09 25	675	0.8+	0.6−	1997 11 03	552	0.2−	0.7−	1999 12 12	704	0.6+	0.1−
1973 09 29	675	1.7+	2.1−	1997 11 03	552	0.4−	0.7−	1999 12 12	704	0.1+	0.8−
1973 09 29	675	0.3+	1.2+	1998 11 21	704	0.7+	0.1+	1999 12 12	704	0.8−	1.0+
1973 09 30	675	0.3+	0.3+	1998 11 21	704	0.0	1.2−	1999 12 12	704	0.2−	1.0−
1973 09 30	675	0.4+	1.6+	1998 11 21	704	1.5+	0.0	1999 12 15	704	0.0	0.7+
1973 10 04	675	0.4+	1.0−	1998 11 21	704	0.4+	0.3−	1999 12 15	704	0.3+	0.0
1973 10 04	675	0.6−	0.9+	1998 11 21	704	(2.2−	2.0−)	1999 12 15	704	0.6+	0.5−
1973 10 05	675	0.2−	0.9−	1998 11 24	704	0.1−	0.2−	1999 12 15	704	0.5+	0.2−
1973 10 05	675	1.2−	0.1−	1998 11 24	704	0.1−	0.6+	1999 12 15	704	0.3+	0.1−
1997 10 01	809	0.1−	0.1+	1998 11 24	704	0.7+	0.5+	2000 01 02	704	0.4−	0.3+
1997 10 01	809	0.3+	0.3−	1998 11 24	704	0.1+	1.4+	2000 01 02	704	0.5−	0.2+
1997 10 05	809	0.5−	0.2−	1998 11 24	561	0.2−	0.5+	2000 01 02	704	0.9−	0.0
1997 10 05	809	0.5−	0.3−	1998 11 24	561	0.4−	0.6+	2000 01 02	704	0.2−	0.5−
1997 10 06	809	0.3−	0.4−	1998 11 24	561	0.3−	0.4+	2000 01 08	704	0.3+	0.3+
1997 10 26	809	0.5−	0.2−	1998 12 14	704	0.7+	0.4−	2000 01 08	704	0.7−	1.2+
1997 10 26	809	1.0−	0.0	1998 12 14	704	0.6+	1.5−	2000 01 08	704	0.4−	0.1+
1997 10 28	809	0.8+	0.0	1998 12 14	704	1.5−	0.0	2000 01 08	704	0.1−	0.3+
1997 10 28	809	0.3+	0.7+	1998 12 14	704	0.6−	0.5+	2000 01 08	704	0.1−	1.4+
1997 10 30	704	0.2−	0.4−	1998 12 14	704	(0.0	2.5+)				

(12973)* 1973 SY₁ = 1996 SY₇ = 1998 VO₂₁

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPC* 33472)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams	
<i>P</i>	46.66866	<i>ω</i>	38.65832	<i>P</i>	<i>Q</i>
<i>n</i>	0.08372851	<i>Ω</i>	358.39678	+0.79796905	−0.60269195
<i>a</i>	5.1747234	<i>i</i>	5.73220	+0.52517600	+0.69759709
<i>e</i>	0.0571387	<i>H</i>	11.4	+0.29569506	+0.38745414
<i>P</i>	11.77	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 09 19	675	0.7−	1.5−	1996 08 12	566	0.0	0.1+	1998 11 11	704	0.4+	1.1+
1973 09 19	675	0.6+	0.2+	1996 09 20	327	0.3−	0.5+	1999 12 15	704	0.3−	0.4−
1973 09 20	675	0.4+	0.3+	1996 09 20	327	0.2+	0.5+	1999 12 15	704	0.1+	0.6−
1973 09 24	675	0.3−	0.3+	1996 09 20	327	0.4−	0.7+	1999 12 15	704	0.3+	0.9−
1973 09 24	675	0.3+	0.4−	1996 10 07	327	0.3+	0.2+	1999 12 15	704	0.8+	1.2−
1973 09 25	675	0.1+	1.1−	1996 10 07	327	0.0	0.1−	2000 01 02	704	0.3−	0.5−
1973 09 25	675	0.1−	0.1+	1996 10 07	327	0.4+	0.4+	2000 01 02	704	0.7−	0.0
1973 09 29	675	0.5+	0.0	1997 09 29	809	0.2−	0.2−	2000 01 02	704	0.2+	0.1+
1973 09 29	675	0.4−	0.0	1997 10 01	809	1.7−	0.6−	2000 01 02	704	0.3−	0.2+
1973 09 30	675	0.1−	0.6+	1997 10 01	809	0.2+	0.2+	2000 01 02	704	0.2+	1.2+
1973 09 30	675	0.9−	1.3+	1998 11 10	704	0.8+	0.2−	2000 01 04	704	0.2+	0.1−
1973 10 04	675	0.4+	1.6−	1998 11 10	704	0.5+	1.8+	2000 01 04	704	0.2−	0.8+
1973 10 04	675	0.1+	0.2−	1998 11 10	704	0.3−	1.8−	2000 01 04	704	0.3−	0.1−
1973 10 05	675	(2.7+	2.2−)	1998 11 11	704	0.1+	0.4−	2000 01 04	704	0.1−	0.7+
1973 10 05	675	1.1+	0.0	1998 11 11	704	0.5+	0.8+	2000 01 04	704	0.5−	0.4+
1996 08 12	566	0.4+	0.4−	1998 11 11	704	0.8−	0.4−				
1996 08 12	566	0.3−	0.3−	1998 11 11	704	0.1−	1.0+				

(12974)* 1973 SB₂ = 1996 RF₃₂ = 1998 WE₁₈

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPC* 33671)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams	
<i>P</i>	78.37400	<i>ω</i>	4.13735	<i>P</i>	<i>Q</i>
<i>n</i>	0.08363700	<i>Ω</i>	15.19448	+0.94378385	−0.32873529
<i>a</i>	5.1784972	<i>i</i>	7.61135	+0.29935786	+0.80542184
<i>e</i>	0.0513641	<i>H</i>	11.2	+0.14020313	+0.49318229
<i>P</i>	11.78	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 09 19	675	0.4−	0.2−	1998 11 21	704	0.2+	1.2−	1999 12 12	704	0.3+	1.0−
1973 09 19	675	0.1+	0.4+	1998 11 21	704	0.2−	1.7−	1999 12 12	704	0.3−	0.4−
1973 09 20	675	0.3+	0.8+	1998 11 21	704	0.4+	0.6+	1999 12 15	704	0.2−	0.0
1973 09 25	675	0.1−	0.2+	1998 11 21	704	0.9+	1.5−	1999 12 15	704	0.6+	0.4−
1973 09 29	675	0.3+	0.8+	1998 11 21	704	(2.9−	1.0+)	1999 12 15	704	0.6−	0.3−
1973 09 29	675	0.1−	0.0	1998 11 24	704	0.1−	1.8+	1999 12 15	704	0.6−	0.5−
1973 09 30	675	1.8+	2.3−	1998 11 24	704	0.6−	1.5+	1999 12 16	704	0.3−	0.1+
1973 09 30	675	0.5−	0.7+	1998 11 24	704	1.0+	0.9+	1999 12 16	704	0.7+	0.2−
1973 10 04	675	0.8+	1.4−	1998 11 24	704	0.3−	1.2+	1999 12 16	704	0.1−	1.5−
1973 10 04	675	1.2−	0.2−	1998 11 24	704	(0.0	2.2+)	1999 12 16	704	0.1+	0.6−
1973 10 05	675	(1.1+	2.7−)	1998 12 14	704	0.8+	0.2−	2000 01 02	704	0.5−	0.5+
1973 10 05	675	0.7−	0.6+	1998 12 14	704	1.2−	0.2−	2000 01 02	704	0.1−	0.6+
1989 12 08	675	0.6+	0.4+	1998 12 14	704	(1.4+	2.5−)	2000 01 02	704	0.4+	0.2+
1989 12 08	675	0.0	0.1+	1998 12 14	704	(2.2−	2.6+)	2000 01 02	704	1.2−	0.4−
1996 09 14	809	0.5+	0.2−	1998 12 17	704	1.4−	0.3+	2000 01 02	704	0.5+	0.7+
1996 09 15	809	0.3−	0.7+	1998 12 17	704	0.6−	1.1−	2000 01 04	704	0.0	0.7+
1996 09 16	809	1.0−	0.6−	1998 12 17	704	0.3−	0.2−	2000 01 04	704	0.4−	0.9+
1997 10 30	704	1.1−	0.2−	1998 12 17	704	0.2+	0.9−	2000 01 04	704	0.3−	0.5+
1997 10 30	704	0.5+	1.3+	1998 12 17	704	(0.7−	3.1−)	2000 01 04	704	0.1−	0.5+
1997 10 30	704	1.3+	0.2+	1999 12 12	704	0.3+	0.2−	2000 01 04	704	0.3+	0.7+
1997 10 30	704	0.6+	0.7+	1999 12 12	704	0.6+	0.3−				
1997 10 30	704	0.1−	0.2−	1999 12 12	704	0.7+	0.2−				

(12975)* 1973 SY₅ = 1977 RH₄ = 1998 RM₅₉

Discovered 1973 Sept. 28 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. G. V. Williams (*MPC* 32916)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams	
<i>P</i>	93.29501	<i>ω</i>	216.34420	<i>P</i>	<i>Q</i>
<i>n</i>	0.23683317	<i>Ω</i>	186.43826	+0.73624444	−0.67608165
<i>a</i>	2.5872657	<i>i</i>	15.14018	+0.66598507	+0.73156751
<i>e</i>	0.1399066	<i>H</i>	13.4	+0.12003334	+0.08787820
<i>P</i>	4.16	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.6−	0.9−	1998 09 16	699	0.1−	1.1+	1998 10 15	704	0.3+	0.4−
1973 09 19	675	0.8−	1.2+	1998 09 16	699	0.1−	1.0+	1998 10 15	704	0.4+	0.5+
1973 09 20	675	1.0−	1.3−	1998 09 18	704	0.2+	0.1−	1998 10 15	704	1.0+	0.1−
1973 09 24	675	0.8+	0.3−	1998 09 18	704	0.4−	0.5+	1998 10 15	704	0.9+	1.0−
1973 09 24	675	0.2+	1.5−	1998 09 18	704	1.0+	1.2+	1998 12 16	699	0.7−	0.2+
1973 09 25	675	(2.8−	2.4−)	1998 09 18	704	0.7+	0.1+	1998 12 16	699	1.1−	0.2+
1973 09 25	675	1.0−	0.1−	1998 09 18	704	0.9+	0.7+	1998 12 16	699	0.8−	0.0
1973 09 28	095	(1.3+	3.4+)	1998 09 26	704	1.1−	1.0+	1999 12 14	704	0.6−	0.2−
1973 10 04	675	1.9+	1.3−	1998 09 26	704	1.7−	0.6−	1999 12 14	704	0.3+	1.1+
1973 10 04	675	2.2+	2.0−	1998 09 26	704	0.9−	0.4−	1999 12 14	704	0.4−	0.8−
1977 09 09	095	1.0−	0.3+	1998 09 26	704	0.8−	0.7−	1999 12 14	704	0.1+	0.6−
1998 06 30	704	(2.2+	1.4+)	1998 09 26	704	1.0−	0.1−	1999 12 14	704	1.1−	0.1+
1998 06 30	704	1.1+	0.2+	1998 09 27	704	0.1+	0.2+	1999 12 16	704	0.8−	0.4−
1998 06 30	704	1.8+	0.4+	1998 09 27	704	0.3+	0.8+	1999 12 16	704	1.8−	0.4−
1998 06 30	704	0.2+	0.1−	1998 09 27	704	0.2+	0.9+	1999 12 16	704	0.1−	1.2−
1998 06 30	704	0.6−	1.8−	1998 09 27	704	0.2−	0.5+	1999 12 16	704	0.2+	0.9−
1998 08 27	699	0.5−	0.1+	1998 09 27	704	0.1−	0.3+	2000 01 07	699	0.6+	1.1+
1998 08 27	699	0.5−	0.2+	1998 10 14	704	0.2−	0.3+	2000 01 07	699	0.8+	1.2+
1998 08 27	699	0.9−	0.0	1998 10 14	704	0.9+	0.4+	2000 01 07	699	0.8+	1.0+
1998 09 14	704	0.2−	0.9+	1998 10 14	704	0.1+	0.7−	2000 01 11	704	1.6+	0.1+
1998 09 14	704	0.4+	0.0	1998 10 14	704	0.1+	0.0	2000 01 11	704	0.3+	0.2−
1998 09 14	704	0.5−	0.4+	1998 10 14	704	1.1+	0.8−	2000 01 11	704	0.5+	0.7+
1998 09 16	699	0.0	1.1+	1998 10 15	704	0.2−	0.2−	2000 01 11	704	1.1−	0.7−

2000 JAN. 24

M.P.C. 37481

Epoch	2000 Feb. 26.0 TT = JDT 2451600.5				Williams			
<i>M</i>	70.38580		(2000.0)		P		Q	
<i>n</i>	0.25800250		ω	123.60030	+0.80655331		+0.59097800	
<i>a</i>	2.4437312		Ω	200.18561	-0.55553546		+0.74919672	
<i>e</i>	0.2022142		<i>i</i>	2.44542	-0.20211906		+0.29908073	
<i>P</i>	3.82		<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc								
1976 08 26	095	(4.5- 1.7+)	1998 04 22	704	(2.7+ 2.0+)	1999 10 09	704	0.3+ 0.2+
1976 09 24	095	0.9- 1.3+	1998 04 22	704	1.4- 0.5-	1999 10 09	704	0.1- 0.1+
1976 09 28	095	0.3- 2.1+	1998 04 22	704	0.8- 0.1+	1999 10 09	704	0.2+ 0.0
1994 04 02	691	0.4- 0.2+	1998 04 28	699	0.6- 0.8-	1999 10 09	704	0.0 0.1-
1994 04 02	691	0.6- 0.2+	1998 04 28	699	1.0- 0.2+	1999 10 15	704	0.5- 0.3+
1994 04 02	691	0.4- 0.1-	1998 04 28	699	1.0- 0.1-	1999 10 15	704	0.8- 0.1+
1998 03 22	704	0.3+ 0.8-	1998 04 30	699	0.7+ 1.6-	1999 10 15	704	0.8- 0.1-
1998 03 22	704	0.7+ 0.0	1998 04 30	699	0.7+ 0.6+	1999 10 15	704	1.0- 0.1+
1998 03 22	704	0.2+ 1.8+	1998 04 30	699	1.4+ 0.8-	1999 10 30	703	0.3- 1.1+
1998 03 22	704	(0.5+ 2.5-)	1998 05 16	704	0.0 0.3-	1999 10 30	703	0.2- 0.7+
1998 03 22	704	0.1+ 1.3-	1998 05 16	704	1.0+ 0.4+	1999 10 30	703	0.4+ 0.6+
1998 03 25	704	1.0- 0.3-	1998 05 16	704	1.6+ 0.7-	1999 10 30	703	0.1- 0.8+
1998 03 25	704	0.7- 0.6+	1998 05 16	704	(2.7+ 0.8+)	1999 11 04	691	0.3+ 0.4-
1998 03 25	704	0.2+ 0.2+	1998 05 16	704	(1.0- 2.0-)	1999 11 04	691	0.3+ 0.3-
1998 03 25	704	1.6- 1.0-	1999 08 13	699	0.1- 0.0	1999 11 04	691	0.2+ 0.4-
1998 03 25	566	0.0 0.2+	1999 08 13	699	0.2+ 0.4-	1999 11 06	704	1.3+ 0.3+
1998 03 25	566	0.3+ 0.2+	1999 08 13	699	0.8+ 0.1+	1999 11 06	704	1.2+ 0.7-
1998 03 25	566	0.5- 0.7-	1999 09 07	704	(2.2+ 0.0)	1999 11 06	704	0.5+ 1.3-
1998 03 28	704	0.2+ 1.1+	1999 09 07	704	0.2+ 1.3-	1999 11 06	704	1.3+ 1.5-
1998 03 28	704	(0.7+ 4.0+)	1999 09 16	106	0.5- 1.1-	1999 11 06	704	0.2- 1.5-
1998 03 28	704	0.1+ 0.5+	1999 09 16	106	1.3- 1.1-	1999 11 27	699	0.5- 0.2-
1998 03 28	704	0.6- 1.6+	1999 09 16	106	0.6- 0.4+	1999 11 27	699	1.4+ 0.3+
1998 03 28	704	0.3- 0.9+	1999 10 01	703	0.2- 0.1+	1999 11 27	699	0.4- 0.6+
1998 04 01	704	0.6- 0.0	1999 10 01	703	0.0 0.3+	1999 12 03	704	0.3- 0.3-
1998 04 01	704	0.3- 0.1+	1999 10 01	703	0.0 0.2+	1999 12 03	704	0.1- 0.2+
1998 04 01	704	0.5- 0.5+	1999 10 01	703	0.0 0.1+	1999 12 03	704	0.3- 0.2-
1998 04 01	704	0.2+ 0.5-	1999 10 04	704	0.2+ 0.1-	1999 12 03	704	0.2- 0.1-
1998 04 01	704	0.9+ 0.5+	1999 10 04	704	0.1+ 0.2-	1999 12 03	704	0.4- 0.4+
1998 04 18	704	0.3+ 0.6+	1999 10 04	704	0.1- 0.1+	1999 12 07	704	0.2- 1.1-
1998 04 18	704	(3.2+ 2.0-)	1999 10 04	704	0.1+ 0.5+	1999 12 07	704	0.1- 1.0-
1998 04 18	704	1.9+ 0.1-	1999 10 04	704	0.0 0.3+	1999 12 07	704	0.2+ 0.1-
1998 04 18	704	(0.1- 2.4-)	1999 10 05	704	0.1- 0.1+	1999 12 07	704	0.1+ 1.0-
1998 04 19	704	0.1- 0.1+	1999 10 05	704	0.3- 0.2-	1999 12 07	704	0.0 0.6-
1998 04 19	704	0.5- 0.3-	1999 10 05	704	0.2- 0.2-	1999 12 13	699	0.3- 1.3+
1998 04 19	704	0.5+ 0.3-	1999 10 05	704	0.4- 0.0	1999 12 13	699	0.6+ 1.4+
1998 04 19	704	0.9+ 0.4+	1999 10 05	704	0.4- 0.0	1999 12 13	699	0.5- 0.2+
1998 04 20	704	0.7- 1.2+	1999 10 07	704	0.8+ 0.1+	2000 01 08	704	0.2- 0.6+
1998 04 20	704	1.3+ 0.9-	1999 10 07	704	0.2+ 0.1-	2000 01 08	704	0.2+ 0.9+
1998 04 20	704	0.6- 0.1+	1999 10 07	704	0.3+ 0.2-	2000 01 08	704	0.4+ 0.9+
1998 04 20	704	(2.6+ 1.1-)	1999 10 07	704	0.4+ 0.1-	2000 01 08	704	0.4+ 1.1+
1998 04 22	704	0.9+ 0.4-	1999 10 07	704	0.3+ 0.3-	2000 01 08	704	0.2+ 0.4+
1998 04 22	704	0.2+ 0.3-	1999 10 09	704	0.1+ 0.2+			

(12977)* 1978 NC = 1994 LM₁

Discovered 1978 July 10 by E. F. Helin and E. M. Shoemaker at Palomar.

Id. G. V. Williams (*MPC* 23778)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams									
M	96.37130			(2000.0)			P			Q					
n	0.24057541			ω	190.92834			+0.56182677			+0.71224446				
a	2.5603651			Ω	114.62075			-0.71980440			+0.67157897				
e	0.1966125			i	27.57210			-0.40771596			-0.20418011				
P	4.10			H	13.6			G	0.15			U	2		
Residuals in seconds of arc															
1978 07 10	675	0.1-	1.3+	1995 11 01	608	1.3+	0.3+	1999 11 30	704	0.3-	0.5+				
1978 07 11	675	0.3-	0.6+	1995 11 01	608	1.2+	0.2+	1999 11 30	704	0.2-	0.7+				
1978 07 13	675	0.9-	1.0-	1995 11 11	608	0.2+	0.0	1999 11 30	704	0.3-	0.3+				
1978 08 12	809	0.3-	0.2+	1995 11 11	608	0.8-	0.5-	1999 11 30	704	0.1-	0.1-				

1978 08 27	413	0.4+ 1.0-	1998 06 26	699	0.3- 0.4+	1999 11 30	704	0.2+ 0.6+
1978 08 27	413	0.8+ 0.6-	1998 06 26	699	0.2+ 0.0	1999 12 31	704	0.7- 1.5-
1994 06 09	675	1.9+ 0.3+	1998 06 26	699	0.6- 0.1-	1999 12 31	704	0.3+ 0.4+
1994 06 09	675	0.3- 0.6+	1999 11 11	699	1.1+ 0.3-	1999 12 31	704	1.5- 0.7-
1994 06 12	675	(5.3+ 1.7-)	1999 11 11	699	0.4- 0.6+	1999 12 31	704	0.5- 0.7+
1994 06 12	675	(1.0+ 3.1+)	1999 11 11	699	0.7- 0.5+			

(12978)* 1978 SD₇ = 1988 TM

Discovered 1978 Sept. 26 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. T. Kobayashi (*MPC* 13854)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5											
<i>M</i> 196.50187 (2000.0)				Williams							
<i>n</i> 0.29640482 ω 97.25989				<i>P</i> +0.69593810 <i>Q</i> +0.71703246							
<i>a</i> 2.2278154 Ω 216.94337				<i>e</i> -0.68188824 +0.64275319							
<i>e</i> 0.2004215 <i>i</i> 3.73711				<i>P</i> -0.22516346 +0.26969017							
<i>P</i> 3.33 <i>H</i> 14.4				<i>G</i> 0.15 <i>U</i> 2							

Residuals in seconds of arc											
1978 09 26	095	(0.2- 3.3-)	1998 09 14	699	0.5- 0.2-	1998 10 29	704	0.6- 0.3-			
1978 10 02	095	(0.7- 4.6-)	1998 09 14	699	0.9- 0.5-	1998 10 29	704	0.3+ 0.1-			
1978 10 08	095	(1.1- 9.1-)	1998 09 26	704	0.3- 0.1-	1998 10 29	704	0.3- 0.3-			
1988 10 03	399	(4.6- 2.1-)	1998 09 26	704	0.4- 0.5-	1998 11 10	704	0.2+ 0.4+			
1988 10 03	399	1.4- 2.1-	1998 09 26	704	0.3- 0.2-	1998 11 10	704	0.1- 1.0+			
1988 10 03	399	0.4+ 1.5-	1998 09 26	704	0.2- 0.0	1998 11 10	704	0.9- 1.0+			
1988 10 03	399	1.6+ 2.0-	1998 09 26	704	0.2+ 0.7-	1998 11 10	704	0.5- 0.6+			
1988 10 05	399	0.8- 0.5+	1998 09 27	704	0.5- 0.4+	1998 11 11	704	0.2+ 0.1+			
1988 10 07	675	0.6+ 1.4-	1998 09 27	704	0.4+ 0.1+	1998 11 11	704	0.1+ 1.0+			
1988 10 07	675	0.4+ 2.1-	1998 09 27	704	0.2+ 0.3-	1998 11 11	704	0.4+ 0.9+			
1988 10 08	399	1.1+ 0.6-	1998 09 27	704	0.1+ 0.0	1998 11 11	704	0.1+ 0.5+			
1988 10 13	675	0.7- 0.1-	1998 09 27	704	0.4- 0.6-	1998 11 11	704	0.4- 0.5+			
1988 10 13	675	0.4- 0.5-	1998 10 10	699	0.7+ 0.4+	1998 11 23	699	0.2- 0.4+			
1988 10 13	399	0.2- 1.7+	1998 10 10	699	0.5+ 0.5+	1998 11 23	699	0.3- 0.6+			
1988 10 13	399	0.9+ 1.6+	1998 10 10	699	0.5+ 0.5+	1998 11 23	699	0.4+ 1.4+			
1988 10 13	399	1.0- 0.2-	1998 10 14	704	0.5+ 0.9+	1999 01 11	704	1.5+ 0.2-			
1988 10 18	399	1.8- 1.8-	1998 10 14	704	0.4+ 0.6+	1999 01 11	704	0.3- 0.5+			
1988 10 18	399	1.6+ 0.6+	1998 10 14	704	1.1+ 0.6+	1999 01 11	704	1.9- 0.7+			
1988 10 19	399	(3.8+ 0.4+)	1998 10 14	704	0.0 0.3-	1999 01 15	691	0.7- 0.4-			
1988 10 19	399	1.8+ 1.4-	1998 10 14	704	1.1+ 1.8-	1999 01 15	691	0.3+ 0.5-			
1988 10 19	399	1.2+ 0.5-	1998 10 15	704	0.1- 0.8+	1999 01 15	691	0.3- 0.0			
1997 03 13	688	0.1- 0.0	1998 10 15	704	0.0 1.2+	1999 12 05	704	1.0+ 1.5-			
1997 03 13	688	0.1+ 0.4-	1998 10 15	704	0.4- 1.1+	1999 12 05	704	1.2+ 0.1+			
1997 03 13	688	0.2+ 0.7-	1998 10 15	704	0.1+ 0.2+	1999 12 05	704	0.1- 0.8-			
1997 03 13	688	0.3+ 0.3-	1998 10 15	704	1.8- 0.7-	2000 01 05	704	0.0 0.7-			
1997 05 08	688	0.4- 0.3+	1998 10 17	699	0.6+ 0.6+	2000 01 05	704	0.1+ 0.3-			
1997 05 08	688	0.2- 0.4+	1998 10 17	699	0.1+ 0.9+	2000 01 05	704	0.2+ 0.4-			
1997 05 08	688	0.2- 0.1-	1998 10 17	699	0.3+ 0.3+	2000 01 05	704	0.0 0.5+			
1997 05 08	688	0.3- 0.1-	1998 10 28	704	0.1- 0.4-	2000 01 08	704	0.0 0.0			
1997 05 14	688	0.2- 0.6+	1998 10 28	704	0.4- 0.3-	2000 01 08	704	0.5- 0.5-			
1997 05 14	688	0.2+ 0.4+	1998 10 28	704	0.3- 0.0	2000 01 08	704	0.5- 0.2-			
1997 05 14	688	0.2- 0.5+	1998 10 28	704	1.3- 1.0-	2000 01 08	704	0.8- 0.4-			
1997 05 14	688	0.2+ 0.2+	1998 10 28	704	0.7- 0.0	2000 01 08	704	0.7- 0.2-			
1998 09 14	699	0.9- 0.5-	1998 10 29	704	1.4+ 1.3+						

Residuals in seconds of arc

1977 04 24	675	0.9−	0.1+	1995 10 16	905	0.2+	1.1+	1999 12 15	704	0.3+	0.2+
1977 04 25	675	0.5−	0.2−	1995 10 16	905	0.2+	0.7+	1999 12 15	704	0.1−	0.2−
1978 09 26	095	(1.3−	2.8+)	1995 10 20	905	1.0+	0.0	1999 12 15	704	0.5+	0.2−
1978 10 02	095	0.1−	0.1−	1995 10 20	905	0.4+	0.0	1999 12 15	704	0.6−	0.4−
1978 10 08	095	(2.8−	0.7+)	1995 10 23	801	0.1+	0.5+	2000 01 03	704	0.3−	0.5−
1978 10 27	675	0.1+	0.3−	1995 10 23	801	0.1−	0.5+	2000 01 03	704	0.2+	0.7+
1978 10 28	675	0.4+	0.3−	1995 10 25	801	1.5+	1.0+	2000 01 03	704	0.2+	0.0
1978 10 29	675	0.4+	0.1−	1995 10 25	801	0.8+	1.4+	2000 01 03	704	0.1+	0.5+
1978 11 01	095	1.7+	0.5−	1997 04 29	704	1.2+	0.1−	2000 01 03	704	1.0−	0.0
1978 11 28	675	0.4−	0.7−	1997 04 29	704	1.1+	0.9−	2000 01 04	704	0.4−	0.1+
1978 11 29	675	0.6−	0.5−	1997 04 29	704	1.8+	0.1+	2000 01 04	704	0.1−	0.1−
1995 09 20	399	1.3−	0.0	1997 04 29	704	0.3−	0.5+	2000 01 04	704	0.1+	0.1−
1995 09 20	399	0.5−	0.1−	1999 10 13	704	0.1−	0.6−	2000 01 04	704	0.1+	0.1−
1995 09 21	399	1.2−	0.7−	1999 10 13	704	0.3+	0.1+	2000 01 04	704	0.2+	0.3−
1995 09 21	399	0.9−	1.0−	1999 10 13	704	0.2+	0.3+	2000 01 08	704	0.3−	0.1−
1995 09 23	809	(5.3+)	1.7−)	1999 10 13	704	0.0	0.6+	2000 01 08	704	0.4−	0.4−
1995 09 26	098	0.4−	0.5+	1999 10 13	704	0.1+	0.9+	2000 01 08	704	0.0	0.1+
1995 09 26	098	0.5−	0.9−	1999 12 15	704	0.2−	0.1+	2000 01 08	704	0.6−	1.0+

(12980)* 1978 VO₃ = 1996 XN₂₃ = 1999 WC₈

Discovered 1978 Nov. 6 by E. F. Helin and S. J. Bus at Palomar.

Id. G. V. Williams (*MPC* 37112)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	93.88682	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.28119412	ω 121.44813	+0.89117283	+0.45314652	
<i>a</i>	2.3074478	Ω 211.62114	−0.42899050	−0.82621150	
<i>e</i>	0.1884454	<i>i</i> 2.36782	−0.14757415	+0.33471299	
<i>P</i>	3.51	<i>H</i> 15.4	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1978 11 05	675	0.5−	0.5−	1998 05 01	704	1.7−	0.1+	1999 11 28	049	1.3+	0.2−
1978 11 06	675	2.2+	1.0+	1998 05 01	704	0.4−	0.9−	1999 11 28	049	0.7+	0.3+
1978 11 08	675	1.7−	0.4+	1998 05 01	704	0.8+	0.4+	1999 11 29	049	1.1+	0.8+
1978 11 29	675	1.9−	0.7−	1998 05 01	704	0.4+	0.9−	1999 11 30	049	1.0+	0.5+
1978 11 30	675	1.9+	0.4+	1999 11 09	704	0.3−	0.4−	1999 11 30	049	1.2+	0.4+
1996 12 12	691	0.1+	0.3+	1999 11 09	704	0.3−	0.3−	1999 12 04	703	1.1−	0.2+
1996 12 12	691	0.1−	0.2+	1999 11 09	704	0.3−	0.3+	1999 12 04	703	0.1−	1.3+
1996 12 12	691	0.1−	0.5−	1999 11 09	704	0.5−	0.0	1999 12 04	703	0.5−	0.2+
1996 12 13	691	0.2+	0.3+	1999 11 09	704	0.0	0.2+	1999 12 04	703	0.0	0.2−
1996 12 13	691	0.2+	0.2+	1999 11 15	704	0.3−	0.3−	1999 12 07	704	0.8−	0.8−
1996 12 13	691	0.1−	0.1+	1999 11 15	704	0.1−	0.3−	1999 12 07	704	0.2−	0.0
1998 04 21	704	1.7+	1.2+	1999 11 15	704	0.1−	0.4−	1999 12 07	704	0.6−	0.7−
1998 04 21	704	0.3+	1.1−	1999 11 15	704	0.1+	0.1−	1999 12 07	704	0.2−	0.3−
1998 04 21	704	0.8+	1.1+	1999 11 15	704	0.1+	0.3−	1999 12 07	704	0.6−	0.8−
1998 04 21	704	0.5+	1.2−	1999 11 17	704	0.5−	0.5+	1999 12 08	704	0.1−	0.3−
1998 04 21	704	0.2−	0.8+	1999 11 17	704	0.0	0.5−	1999 12 08	704	0.5−	1.0−
1998 04 28	566	0.3−	0.2+	1999 11 17	704	0.3+	0.3−	1999 12 08	704	0.4−	0.4−
1998 04 28	566	0.7−	0.2+	1999 11 17	704	0.2+	0.1+	1999 12 08	704	0.0	0.4−
1998 04 28	566	0.4−	0.1+	1999 11 17	704	0.4+	0.2+	1999 12 08	704	0.1−	0.2+
1998 05 01	704	1.0−	0.9−	1999 11 28	049	1.3+	0.6+				

(12981)* 1978 VP₃ = 1978 WV₁₀ = 1996 HY₁₉

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

Id. H. Oishi (d, *MPC* 11722), B. G. Marsden (*MPC* 27302)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Marsden		
<i>M</i>	21.08772	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.19221351	ω 19.04351	−0.23036328	−0.97057175	
<i>a</i>	2.9735833	Ω 84.32254	+0.88340489	−0.23882208	
<i>e</i>	0.0667127	<i>i</i> 4.04337	+0.40807910	−0.03089474	
<i>P</i>	5.13	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1978 11 05	675	0.4−	0.4−	1998 09 27	704	0.7+	0.7−	1999 11 16	704	0.4−	0.3−
1978 11 06	675	0.1+	0.8+	1998 09 27	704	0.3+	0.8−	1999 11 16	704	0.3+	1.0+

1978 11 07	675	2.3+	1.1+	1998 09 27	704	1.0−	0.3+	1999 11 16	704	(2.1−	1.2+)
1978 11 08	675	2.2−	1.1+	1998 09 27	704	0.3+	1.1+	1999 12 18	699	0.1+	0.8−
1978 11 29	675	0.3+	0.5−	1998 10 20	699	0.3+	0.4+	1999 12 18	699	0.1−	0.6+
1978 11 30	675	0.3−	0.8−	1998 10 20	699	0.2+	0.4−	1999 12 18	699	0.1+	0.4−
1996 04 18	809	0.7+	0.1−	1998 10 20	699	0.1+	0.2+	1999 12 30	699	0.4−	0.4+
1996 04 18	809	0.4+	0.3+	1998 10 28	704	0.6−	0.7+	1999 12 30	699	0.6−	0.6+
1996 04 18	809	0.4−	0.4−	1998 10 28	704	0.1−	0.7+	1999 12 30	699	0.1+	0.9+
1996 04 20	809	0.4+	1.5+	1998 10 28	704	(2.7−	1.7−)	2000 01 03	704	0.3+	0.2−
1996 04 20	809	0.3+	1.4+	1998 10 28	704	1.2−	1.2+	2000 01 03	704	0.3+	0.5−
1996 04 20	809	0.1+	1.0+	1998 10 29	704	0.0	1.4+	2000 01 03	704	0.3−	0.7−
1998 09 18	699	0.8+	0.2−	1998 10 29	704	0.0	0.7+	2000 01 03	704	0.3+	1.9−
1998 09 18	699	1.8+	0.5−	1998 10 29	704	0.3−	0.6−	2000 01 03	704	0.2+	0.5−
1998 09 18	699	0.2−	0.4−	1998 10 29	704	0.6−	1.3−	2000 01 04	704	1.3−	1.4+
1998 09 26	704	0.0	0.2+	1999 10 22	704	1.8+	0.7+	2000 01 04	704	0.1−	0.0
1998 09 26	704	1.1+	0.9+	1999 10 22	704	0.9+	1.5+	2000 01 04	704	0.0	0.8−
1998 09 26	704	0.1−	0.8+	1999 10 22	704	0.6−	0.9+	2000 01 04	704	0.3+	1.0−
1998 09 26	704	1.1−	0.8−	1999 10 22	704	0.6+	0.1+	2000 01 04	704	0.3−	0.6−
1998 09 26	704	0.3−	0.8−	1999 11 16	704	0.0	0.7+				
1998 09 27	704	0.8−	0.6−	1999 11 16	704	0.3−	0.8+				

(12982)* 1979 MS₅

Discovered 1979 June 25 by E. F. Helin and S. J. Bus at Siding Spring.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	269.57896	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.26724768	ω 109.67106	−0.65544250	+0.74877270	
<i>a</i>	2.3870422	Ω 118.97579	−0.72828282	−0.59203203	
<i>e</i>	0.0981667	<i>i</i> 6.47568	−0.19999815	−0.29805624	
<i>P</i>	3.69	<i>H</i> 15.1	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1979 06 23	413	0.5+	0.8+	1994 08 12	809	0.6−	0.6−	2000 01 05	704	0.2−	0.3+
1979 06 24	413	1.0+	1.7+	1994 08 12	809	0.0	1.3−	2000 01 05	704	0.3+	0.7+
1979 06 25	413	0.1+	0.7+	1998 09 21	910	0.1−	0.5+	2000 01 06	704	0.3+	0.4+
1979 06 29	413	0.4−	0.9+	1998 09 21	910	0.0	0.7+	2000 01 06	704	0.2−	0.2+
1979 07 24	675	0.7+	1.8+	1998 09 21	910	0.2+	0.5+	2000 01 06	704	0.5−	0.9+
1979 07 24	413	1.7−	0.0	1999 12 18	699	0.6−	0.3+	2000 01 07	691	0.1+	0.5−
1979 07 27	675	0.3−	0.4−	1999 12 18	699	0.3−	1.6+	2000 01 07	691	0.0	0.2−
1979 08 23	675	0.2−	1.3−	1999 12 18	699	1.0+	1.2+	2000 01 07	691	0.1+	0.2−
1991 11 10	675	(3.8−	0.7+)	2000 01 05	704	0.3+	0.0	2000 01 16	691	0.2−	0.0
1991 11 10	675	0.4−	0.3−	2000 01 05	704	0.2+	0.3−	2000 01 16	691	0.0	0.0
1994 08 12	809	0.6+	0.3−	2000 01 05	704	0.4+	0.5−	2000 01 16	691	0.1−	0.4−

(12983)* 1979 OH₁ = 1998 XC₈₂ = 1999 CU₂

Discovered 1979 July 24 by S. J. Bus at Palomar.

Id. B. G. Marsden (*MPC* 33922)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Marsden		
<i>M</i>	264.16344	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17344880	ω 114.68192	−0.29339543	+0.94507214	
<i>a</i>	3.1843577	Ω 137.40991	−0.93590804	−0.25322229	
<i>e</i>	0.0661506	<i>i</i> 12.29199	−0.19492375	−0.20668121	
<i>P</i>	5.68	<i>H</i> 12.5	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1979 07 24	675	0.8+	0.6+	1998 12 22	704	(0.8−	2.6+)	1999 12 05	704	0.1−	0.8−
1979 07 24	413	0.9−	1.0−	1999 01 14	699	1.4−	0.1+	1999 12 05	703	0.1+	0.4+
1979 07 25	675	0.1+	0.1+	1999 01 14	699	0.6−	0.2+	1999 12 05	704	0.7+	0.8−

2000 JAN. 24

M.P.C. 37483

1998 12 15	704	0.8+	1.9+	1999 11 17	704	0.4−	0.9−	2000 01 04	704	0.1+	0.5+
1998 12 15	704	0.8+	0.1+	1999 11 17	704	0.2−	0.2−	2000 01 04	704	0.1+	0.6−
1998 12 22	704	0.4+	0.0	1999 11 17	704	0.3−	0.3−	2000 01 04	704	1.2+	1.0+
1998 12 22	704	0.3−	0.3+	1999 12 05	704	0.1−	0.3+	2000 01 04	704	0.4+	0.1+
1998 12 22	704	(2.1+	0.6+)	1999 12 05	704	0.4−	0.2−				

(12984)* 1979 QF₂ = 1996 AQ₁

Discovered 1979 Aug. 22 by C.-I. Lagerkvist at the European Southern Observatory.

Id. A. Doppler (*MPC* 33922)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	64.15750	<i>ω</i>	211.67339	+0.98297007	−0.18310924		
<i>a</i>	2.8417058	<i>Ω</i>	158.86096	+0.17631033	+0.91591159		
<i>e</i>	0.0803712	<i>i</i>	2.46636	+0.05181218	+0.35717917		
<i>P</i>	4.79	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 08 22	809	0.8+	0.3+	1999 11 14	049	1.3+	0.5+	1999 12 06	704	0.4−	0.1−
1979 08 22	809	0.4+	0.5+	1999 11 14	049	1.4+	0.7+	1999 12 06	704	0.2−	0.2−
1979 08 22	809	0.0	0.3+	1999 11 15	704	0.5+	0.2−	1999 12 06	704	0.5−	0.2−
1979 08 23	809	0.2−	0.1−	1999 11 15	704	0.8+	0.3−	1999 12 06	704	0.5−	0.3−
1979 08 23	809	0.1+	0.5+	1999 11 15	704	0.2−	0.8−	1999 12 06	704	0.3−	0.3−
1979 08 26	809	0.5−	0.1+	1999 11 15	704	0.8+	1.7−	1999 12 07	704	0.7−	0.1+
1979 08 26	809	0.2−	0.2+	1999 11 15	704	0.3+	0.8−	1999 12 07	704	0.9−	0.3+
1979 08 26	809	1.0−	0.2+	1999 11 15	704	0.0	0.2−	1999 12 07	704	1.2−	0.4−
1995 11 30	691	0.5−	0.1−	1999 11 15	704	0.3−	0.3+	1999 12 07	704	0.6−	0.2+
1995 11 30	691	0.0	0.2−	1999 11 15	704	0.4−	0.3+	1999 12 07	704	0.4−	0.1+
1995 11 30	691	0.1−	0.1−	1999 11 15	704	0.1+	0.5+	1999 12 13	699	0.1+	0.2+
1996 01 12	369	0.2+	0.1+	1999 11 15	704	0.3−	0.5+	1999 12 13	699	0.2−	1.3+
1996 01 12	369	0.3+	0.1+	1999 11 17	704	0.6+	0.9−	1999 12 13	699	0.1+	1.3+
1996 01 12	369	0.7+	0.9+	1999 11 17	704	0.6−	0.2+	1999 12 16	691	0.2+	0.1+
1996 01 13	369	0.3−	0.7+	1999 11 17	704	0.3−	0.4−	1999 12 16	691	0.3+	0.1+
1996 01 13	369	0.0	0.4−	1999 11 17	704	0.6−	0.8−	1999 12 16	691	0.2+	0.1+
1996 01 13	369	0.1−	0.1+	1999 11 17	704	0.1−	0.2−	1999 12 27	691	0.1+	0.4−
1998 08 17	704	0.2+	0.3+	1999 11 19	049	1.3+	0.2−	1999 12 27	691	0.2−	0.3−
1998 08 17	704	1.1+	1.5−	1999 11 19	049	1.1+	0.4−	1999 12 27	691	0.1−	0.0
1998 08 17	704	(3.9−	1.1−)	1999 11 19	049	0.4−	0.6−	1999 12 30	699	0.4−	1.0+
1998 08 17	704	1.3−	1.0+	1999 11 28	106	0.3+	0.4−	1999 12 30	699	0.2−	0.9+
1999 10 30	703	0.4+	0.2−	1999 11 28	106	0.9−	0.6−	1999 12 30	699	0.7−	1.1+
1999 10 30	703	0.3−	0.9−	1999 11 28	106	0.9−	0.4+	2000 01 02	691	0.0	0.1−
1999 10 30	703	(2.6−	1.3+)	1999 11 30	106	0.5+	0.8+	2000 01 02	691	0.2−	0.0
1999 10 30	703	0.6−	0.4−	1999 11 30	106	0.4+	0.3+	2000 01 02	691	0.0	0.0
1999 11 14	049	1.3+	0.5+	1999 11 30	106	1.0+	0.2+				

(12985)* 1980 UW₁ = 1991 TX₇

Discovered 1980 Oct. 31 by S. J. Bus at Palomar.

Id. E. Bowell (*MPC* 21784)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	106.13857	<i>ω</i>	39.56903	+0.98297526	+0.18237992		
<i>a</i>	2.3964648	<i>Ω</i>	309.90800	−0.17508367	+0.89294652		
<i>e</i>	0.1951994	<i>i</i>	1.66576	−0.05572560	+0.41156297		
<i>P</i>	3.71	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 10 14	675	0.1−	0.6−	1999 10 22	704	0.5−	1.0−	2000 01 04	704	1.3−	0.2−
1980 10 31	675	0.9+	0.5−	1999 10 22	704	0.6−	1.1−	2000 01 04	704	0.3+	0.5+
1980 11 02	675	0.4−	0.0	1999 12 07	704	0.9+	0.7−	2000 01 04	704	0.0	0.3+
1991 09 17	675	0.5−	0.5−	1999 12 07	704	0.5−	0.3+	2000 01 05	691	0.2+	0.0
1991 09 17	675	0.1+	0.3+	1999 12 07	704	0.0	0.3+	2000 01 05	691	0.8+	0.1+
1991 10 07	033	0.0	0.1+	1999 12 07	704	0.5−	0.8+	2000 01 05	691	0.4+	0.1+
1991 10 07	033	0.2−	0.5+	2000 01 03	704	0.1−	0.6−	2000 01 08	704	0.0	0.1+
1991 10 08	033	0.1+	0.8+	2000 01 03	704	0.2−	0.4+	2000 01 08	704	0.5−	0.0
1993 02 23	691	0.0	0.1−	2000 01 03	704	0.2+	0.2+	2000 01 08	704	0.4−	0.0

1993 02 23	691	0.1−	0.1−	2000 01 03	704	0.5+	0.3−	2000 01 08	704	0.4+	0.4+
1993 02 23	691	0.1−	0.1−	2000 01 03	704	0.0	0.3+	2000 01 08	704	0.1−	0.5+
1999 10 22	704	0.8+	0.3+	2000 01 04	704	0.0	0.2−				

(12986)* 1981 DM₂

Discovered 1981 Feb. 28 by S. J. Bus at Siding Spring in the course of the

U.K. Schmidt-Caltech Asteroid Survey.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	58.80165	<i>ω</i>	78.63201	+0.76236601	−0.63744211		
<i>a</i>	2.9289957	<i>Ω</i>	320.82372	+0.50314125	+0.69233776		
<i>e</i>	0.1040054	<i>i</i>	10.18006	+0.40699748	+0.33813603		
<i>P</i>	5.01	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 02 12	413	0.2−	0.7+	1998 08 23	704	0.1+	0.8−	1998 09 25	704	1.2+	0.4−
1981 02 28	413	(2.7−	0.0)	1998 08 23	704	(4.8−	1.8+)	1998 09 27	704	0.4+	0.7+
1981 02 28	413	1.1−	0.8+	1998 08 26	699	0.8−	0.2−	1998 09 27	704	1.4+	1.2+
1981 03 06	413	0.1+	0.1−	1998 08 26	699	0.5−	0.0	1998 09 27	704	0.3+	0.3+
1981 03 06	413	(4.6+	0.8−)	1998 08 26	699	1.0−	0.9+	1998 09 27	704	1.3+	0.1+
1981 03 08	413	0.5+	1.4+	1998 09 14	704	1.7−	0.2+	1998 09 27	704	0.2+	0.2−
1981 03 08	413	(2.9+	0.0)	1998 09 14	704	1.2−	1.0+	1999 12 12	704	0.2−	0.1+
1981 03 12	413	0.5−	0.3+	1998 09 14	704	1.7−	0.7−	1999 12 12	704	0.4+	0.1+
1981 03 12	413	1.0+	0.2−	1998 09 14	704	0.3+	0.8+	1999 12 12	704	0.3−	0.5+
1981 04 09	413	0.2−	0.5−	1998 09 15	699	1.0+	1.5+	1999 12 12	704	0.1−	0.1+
1981 05 01	413	1.6+	0.1−	1998 09 15	699	(2.3+	1.0+)	1999 12 12	704	0.2+	0.1−
1981 05 01	413	0.4−	0.8−	1998 09 15	699	0.7−	0.1−	1999 12 15	704	0.2+	0.2+
1981 05 02	413	(3.1−	0.8−)	1998 09 18	704	0.8−	0.7−	1999 12 15	704	0.4−	0.3+
1988 09 10	675	0.2+	1.1−	1998 09 18	704	1.1−	0.1−	1999 12 15	704	0.1+	0.6+
1988 09 10	675	0.2+	0.3+	1998 09 18	704	0.7−	0.1+	1999 12 15	704	0.2+	0.4+
1998 08 17	704	1.0−	0.0	1998 09 18	704	0.2−	0.3−	1999 12 15	704	0.2−	0.3+
1998 08 17	704	1.2−	1.0−	1998 09 18	704	0.0	1.3+	2000 01 02	704	0.1+	0.9−
1998 08 17	704	0.8+	0.5−	1998 09 25	704	1.4+	1.3+	2000 01 02	704	0.1−	0.6−
1998 08 17	704	0.1−	0.6−	1998 09 25	704	0.3+	0.5−	2000 01 02	704	0.1+	0.8−
1998 08 23	704	(1.6+	2.1−)	1998 09 25	704	0.4+	0.4−				
1998 08 23	704	1.7+	1.5−	1998 09 25	704	0.9+	0.3+				

(12987)* 1981 EF₂ = 1973 AO₁ = 1986 RM₃

Discovered 1981 Mar. 5 by H. Debehogne and G. DeSanctis at the European Southern Observatory.

Id. S. Nakano (*MPC* 12321)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	269.39842	<i>ω</i>	324.96919	−0.07646974	+0.99229394		
<i>a</i>	2.4280392	<i>Ω</i>	300.46266	−0.88702816	−0.11235801		
<i>e</i>	0.0315141	<i>i</i>	6.49448	−0.45533879	+0.05223419		
<i>P</i>	3.78	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 01 01	095	0.7+	1.5+	1990 09 16	675	(0.6+	2.7−)	1998 11 16	704	0.6+	0.7+
1981 03 05	809	0.3+	0.5−	1990 09 16	675	1.7+	1.5−	1998 11 16	704	0.2−	0.9+
1981 03 05	809	0.1−	0.8−	1990 09 17	675	0.1−	0.2+	1998 11 16	566	0.3+	1.3−
1981 03 05	809	0.1+	1.0−	1990 09 17	675	0.1−	0.1−	1998 11 16	566	0.4+	0.4−
1981 03 06	809	0.9−	0.1−	1990 09 18	675	0.9−	0.8−	1998 11 16	566	0.4+	0.9−
1981 03 06	809	1.7−	0.4−	1990 09 18	675	0.1−	0.8−	1999 01 15	699	0.5−	0.1+
1981 03 06	809	0.9−	0.4+	1990 09 19	675	0.0	2.2−	1999 01 15	699	0.4−	0.0
1981 03 07	809	0.8−	0.3+	1990 09 19	675	1.2+	0.6−	1999 01 15	699	0.5−	0.1+
1981 03 07	809	0.3−	0.4−	1990 09 20	675	0.3−	0.1−	1999 11 05	703	0.8+	0.3−
1981 03 07	809	0.8−	0.1−	1990 09 20	675	0.1+	0.2+	1999 11 05	703	0.6+	0.3−
1981 03 08	809	0.0	0.4−	1990 10 12	413	0.3+	0.6−	1999 11 05	703	0.6+	0.8+
1981 03 08	809	0.7−	0.3−	1990 10 12	413	1.8+	0.2+	1999 11 05	703	0.4+	0.6−
1981 03 08	809	1.1−	0.9−	1992 02 04	675	0.2−	0.4+	1999 12 09	703	0.8+	1.0+
1981 03 09	809	0.1+	0.2−	1992 02 04	675	0.3−	0.9+	1999 12 09	703	0.1+	1.3+
1981 03 09	809	1.1+	0.2−	1994 10 01	675	0.1−	0.5−	1999 12 09	703	1.0−	0.6+
1981 03 09	809	0.0	0.5−	1994 10 01	675	0.5−	0.1−	1999 12 09	703	0.5−	1.6+

1981 03 10	809	0.3–	0.3+	1998 10 18	704	0.1–	0.7–	1999 12 16	704	0.1–	0.4–
1981 03 10	809	0.1+	0.4–	1998 10 18	704	0.2+	1.7–	1999 12 16	704	0.0	0.1+
1981 03 10	809	0.7–	0.6–	1998 10 18	704	1.4+	1.3+	1999 12 16	704	0.2+	0.7–
1981 03 12	809	0.2+	0.1–	1998 10 18	704	1.2–	1.7–	1999 12 16	704	0.0	1.1–
1981 03 12	809	0.1+	0.1–	1998 10 18	704	1.8–	1.4–	1999 12 17	704	0.3–	0.3–
1981 03 12	809	1.3+	0.1–	1998 11 11	704	1.6–	1.6+	1999 12 17	704	0.2+	1.3–
1981 03 14	809	0.9+	0.7–	1998 11 11	704	0.1–	0.0	1999 12 17	704	1.0–	0.5–
1981 03 14	809	1.2+	0.3–	1998 11 11	704	0.7+	0.5–	1999 12 17	704	0.2–	0.2+
1981 03 14	809	0.9–	0.2–	1998 11 11	704	2.0+	1.6+	2000 01 05	704	0.7+	0.9+
1986 09 06	071	(2.8–	3.0–)	1998 11 11	704	1.3–	0.9+	2000 01 05	704	0.4+	0.6+
1986 09 06	071	2.2–	0.6+	1998 11 16	704	0.1+	0.5+	2000 01 05	704	0.3+	0.6+
1986 09 07	071	0.8+	1.9+	1998 11 16	704	0.5+	0.3+	2000 01 05	704	0.0	0.6+
1986 09 07	071	(1.0+	2.9+)	1998 11 16	704	1.5+	0.2+				

(12988)* 1981 EC₅ = 1953 SS = 1998 QJ₁₂

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

Id. E. Bowell (*MPC* 32440), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	149.17383	ω	74.34939	+0.97132614	+0.21245345		
<i>a</i>	2.1816141	Ω	273.29394	–0.23757330	+0.88467569		
<i>e</i>	0.0589290	<i>i</i>	6.13642	+0.00919004	+0.41498489		
<i>P</i>	3.22	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1953 09 16	675	0.2–	0.1+	1998 08 17	704	0.5–	0.7+	1999 12 06	704	1.2–	1.0–
1981 02 09	413	1.2–	0.1–	1998 08 17	704	0.7–	0.8+	2000 01 05	704	0.2+	0.8+
1981 02 14	413	1.7+	0.1+	1998 08 17	704	0.5+	0.4–	2000 01 05	699	1.6+	0.3–
1981 03 02	413	2.0–	0.4+	1998 08 17	704	0.8–	1.3+	2000 01 05	704	0.0	0.3+
1981 03 07	413	0.5–	1.2+	1998 08 23	704	1.1–	0.4–	2000 01 05	704	0.3+	0.1–
1981 03 07	413	1.8+	0.5+	1998 08 23	704	0.9+	0.0	2000 01 05	699	0.6+	0.2–
1981 03 10	413	(4.1–	2.5+)	1998 08 23	704	(2.8+	1.8–)	2000 01 05	704	0.5+	0.4+
1981 03 10	413	(3.2+	0.2+)	1998 08 23	704	0.5+	1.9+	2000 01 05	699	0.7–	0.1+
1981 03 12	413	0.3–	0.7+	1998 08 23	704	(2.1+	0.3–)	2000 01 07	704	0.4+	0.6+
1981 03 12	413	2.3+	0.2+	1998 08 30	699	1.1+	0.6+	2000 01 07	704	0.5–	0.0
1981 04 09	413	2.2–	0.5+	1998 08 30	699	0.3+	0.1–	2000 01 07	704	0.5–	0.3+
1981 04 09	413	0.3+	0.1–	1998 08 30	699	0.1+	0.3–	2000 01 07	704	0.2–	0.1+
1981 04 29	413	1.0+	2.2–	1999 12 06	704	1.4+	0.3–	2000 01 07	704	0.8–	1.6+
1998 08 17	704	1.3–	1.3–	1999 12 06	704	0.5–	0.2–				

(12989)* 1981 EV₉

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

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	332.90163	ω	206.06389	–0.67506979	–0.73421028		
<i>a</i>	2.1977315	Ω	286.48869	+0.68935844	–0.59288432		
<i>e</i>	0.0686839	<i>i</i>	4.31959	+0.26280360	–0.33079216		
<i>P</i>	3.26	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 09 18	675	0.8+	0.4–	1981 04 29	413	0.3–	2.2–	1999 12 15	704	0.8–	0.2–
1979 09 19	675	0.7–	0.1+	1995 07 03	691	0.0	0.2+	1999 12 15	704	0.9–	0.2–
1981 02 02	413	0.1–	1.9+	1995 07 03	691	0.0	0.1+	1999 12 15	704	0.9–	0.4–
1981 02 14	413	0.3+	1.1–	1995 07 03	691	0.3–	0.2+	2000 01 03	704	0.4+	0.0
1981 03 01	413	0.7–	1.8+	1999 11 14	704	(1.0–	2.4+)	2000 01 03	704	0.4–	0.3–
1981 03 01	413	2.1+	1.0+	1999 11 14	704	0.7–	0.0	2000 01 03	704	0.1–	0.5–
1981 03 07	413	1.6+	0.7–	1999 11 14	704	(2.8+	1.2–)	2000 01 03	704	0.0	0.4–
1981 03 07	413	2.1–	0.4+	1999 11 16	704	1.3+	1.0–	2000 01 03	704	0.3+	0.4–
1981 03 11	413	(3.4–	0.7+)	1999 11 16	704	1.0+	0.3+	2000 01 04	704	0.6–	0.9+
1981 03 11	413	0.1+	0.6–	1999 11 16	704	1.6+	1.3+	2000 01 04	704	0.2–	0.5+
1981 03 15	413	(3.8+	1.8–)	1999 11 16	704	0.9+	0.1+	2000 01 04	704	0.0	0.0
1981 03 15	413	0.7+	0.6–	1999 11 16	704	0.3+	0.7+	2000 01 04	704	0.2+	0.8+

1981 04 12	413	1.3–	0.9+	1999 12 15	704	1.0–	0.5–	2000 01 04	704	0.3+	0.0
1981 04 12	413	0.6–	0.7–	1999 12 15	704	0.5–	1.6–				

(12990)* 1981 EB₁₇ = 1977 EZ₅

Discovered 1981 Mar. 6 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. C. M. Bardwell (*MPC* 7768), K. Hurukawa (*JAM* 1373)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	264.81530	ω	237.45809	–0.80296083	+0.59567593		
<i>a</i>	2.4883112	Ω	339.07994	–0.52568657	–0.72405396		
<i>e</i>	0.0536112	<i>i</i>	3.30631	–0.28090484	–0.34772985		
<i>P</i>	3.93	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 03 12	381	0.6–	0.5+	1994 08 12	809	0.7–	1.0+	1998 09 18	704	0.5+	0.3+
1977 03 12	381	0.1–	0.4–	1994 09 05	809	(1.2–	2.3–)	1998 09 18	704	0.4–	0.9+
1977 03 14	381	0.0	0.2–	1994 09 05	809	(1.0–	2.1–)	1998 09 18	704	0.2+	0.1+
1977 03 14	381	(2.9+	2.4–)	1994 09 05	809	(1.2–	2.0–)	1998 09 23	691	0.1+	0.1+
1977 03 15	381	1.1+	1.3–	1994 09 06	809	1.2+	0.2–	1998 09 23	691	0.2–	0.2+
1977 03 15	381	0.6+	1.4–	1994 09 06	809	0.6+	0.0	1998 09 23	691	0.1–	0.2+
1979 11 22	675	2.2–	0.9–	1994 09 06	809	1.0+	0.0	1998 09 27	704	0.7+	0.4+
1979 11 24	675	0.8+	0.6–	1994 09 30	675	1.6+	0.2+	1998 09 27	704	0.5+	1.6–
1979 11 25	675	1.6+	0.8–	1994 09 30	675	0.5–	0.4–	1998 09 27	691	0.4–	0.9+
1981 02 12	413	0.9–	0.1+	1998 08 23	704	0.0	1.0–	1998 09 27	704	0.2–	1.9–
1981 02 13	413	(2.9–	0.2–)	1998 08 23	704	0.2–	0.8+	1998 09 27	691	0.6–	0.9+
1981 03 06	413	1.9–	0.2+	1998 08 23	704	1.0+	1.5–	1998 09 27	704	1.0+	1.4–
1981 03 06	413	(4.8–	1.2+)	1998 08 23	704	1.4–	0.8–	1998 09 27	691	0.8–	0.9+
1981 03 08	413	0.1+	1.5–	1998 08 23	704	1.5–	1.7–	1998 09 27	704	0.5+	1.5–
1981 03 12	413	1.0–	0.0	1998 08 26	691	0.0	0.2–	1999 12 15	704	(0.0	2.9+)
1981 04 06	413	2.5–	0.5+	1998 08 26	691	0.1–	0.5–	1999 12 15	704	0.2+	1.6+
1981 04 06	413	0.2+	0.0	1998 08 26	691	0.0	0.4–	1999 12 15	704	0.3–	0.3+
1981 04 08	413	1.3–	1.1–	1998 09 14	704	0.2+	0.8–	1999 12 15	704	0.8–	0.9+
1981 04 08	413	0.4+	1.4–	1998 09 14	704	0.4+	0.7+	2000 01 03	704	1.2+	0.4–
1981 04 09	413	1.1–	0.1+	1998 09 14	704	0.2+	1.2–	2000 01 03	704	0.4+	0.3+
1981 04 09	413	0.4+	0.0	1998 09 14	704	1.1+	0.1+	2000 01 03	704	0.3+	0.4–
1981 05 01	413	0.5–	0.8–	1998 09 15	691	0.0	0.3+	2000 01 03	704	0.0	0.6–
1981 05 03	413	0.8+	0.8–	1998 09 15	691	0.1+	0.1+	2000 01 04	704	0.0	0.2–
1985 04 25	801	1.7+	0.8–	1998 09 15	691	0.2+	0.1–	2000 01 04	704	0.0	0.5–
1994 08 12	809	0.3+	0.8+	1998 09 18	704	1.1+	1.2–	2000 01 04	704	0.0	0.3–
1994 08 12	809	0.5–	0.3+	1998 09 18	704	1.5–	0.6–	2000 01 04	704	0.1–	0.1–

(12991)* 1981 EN₂₁ = 1993 SE₈

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

Id. G. V. Williams (*MPC* 23121)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	233.04929	ω	53.94135	–0.47632238	+0.87926089		
<i>a</i>	2.9041786	Ω	187.61660	–0.81646513	–0.44404887		
<i>e</i>	0.0147290	<i>i</i>	1.79728	–0.32634596	–0.17239750		
<i>P</i>	4.95	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 02 09	413	0.9–	0.6–	1996 04 20	566	0.4–	1.6–	1998 10 19	327	0.6–	0.1+
1981 02 13	413	0.4+	0.8–	1996 04 20	566	0.3–	1.9–	1998 10 19	327	0.8–	0.2–
1981 03 02	413	1.3–	1.7+	1998 09 18	704	0.3+	0.9+	1998 10 28	704	0.4+	0.8–
1981 03 03	413	0.2+	0.5+	1998 09 18	704	0.3–	0.2+	1998 10 28	704	1.3–	0.4+
1981 03 03	413	0.8+	0.1–	1998 09 18	704	0.4+	0.3+	1998 10 28	704	1.2–	0.1+
1981 03 07	413	1.5–	1.7+	1998 09 18	704	(3.0–	0.8+)	1998 10 28	704	1.7–	0.3–
1981 03 07	413	1.3+	0.2+	1998 09 26	704	0.4+	0.7–	1999 12 07	704	0.9–	0.8+
1981 03 11	413	0.9–	0.4+	1998 09 26	704	0.1–	0.1–	1999 12 07	704	0.5+	0.1+
1981 03 11	413	0.9+	0.3–	1998 09 26	704	0.4–	0.3+	1999 12 07	704	0.6–	0.0
1981 03 16	413	1.3–	0.4+	1998 09 26	704	0.5+	1.1+	1999 12 07	704	0.1+	0.4+
1981 03 29	413	1.2–	1.5+	1998 09 26	704	1.2–	0.2+	1999 12 08	704	0.6+	0.8–

2000 JAN. 24

M.P.C. 37485

1981 04 08	413	0.4−	0.7+	1998 09 27	704	0.5+	0.4+	1999 12 08	704	0.2+	0.2−
1981 04 08	413	0.9+	0.4+	1998 09 27	704	0.0	0.3+	1999 12 08	704	0.3+	0.0
1981 04 11	413	0.0	0.6+	1998 09 27	704	0.1−	0.8+	1999 12 08	704	0.2+	0.4+
1981 04 11	413	1.3+	0.5−	1998 09 27	704	0.1−	0.1−	1999 12 08	704	0.2+	1.1+
1981 04 26	413	1.6+	1.8−	1998 09 27	704	(2.2+	0.5+)	2000 01 05	704	0.7+	0.8+
1981 05 02	413	0.7−	0.0	1998 10 10	699	1.0−	1.0−	2000 01 05	704	1.8−	0.5+
1991 04 15	675	(2.3+	1.7−)	1998 10 10	699	0.5−	0.7−	2000 01 05	704	0.1−	0.2+
1991 04 15	675	0.9+	1.3−	1998 10 10	699	1.1+	0.4−	2000 01 05	704	0.0	0.2+
1991 04 17	675	0.8+	1.9+	1998 10 12	691	0.6−	0.5−	2000 01 06	704	0.3+	0.1−
1993 09 17	809	1.3+	0.1+	1998 10 12	691	0.6−	0.5−	2000 01 06	704	0.4+	0.2−
1993 09 17	809	1.8+	0.9+	1998 10 12	691	0.6−	0.5−	2000 01 06	704	0.2−	0.3−
1993 09 17	809	1.3+	0.5+	1998 10 15	704	0.7+	0.5−	2000 01 07	704	0.2+	0.1−
1993 09 18	809	(2.1+	0.3+)	1998 10 15	704	0.9+	0.1+	2000 01 07	704	0.0	0.4−
1993 09 18	809	(2.1+	0.0)	1998 10 15	704	0.7−	0.6−	2000 01 07	704	0.5+	0.4−
1993 09 18	809	1.0+	0.5+	1998 10 15	704	0.5−	1.2+	2000 01 07	704	1.0+	0.3−
1993 09 22	809	1.8+	1.4−	1998 10 15	327	0.1−	0.0	2000 01 07	704	0.0	0.6−
1993 09 22	809	0.9+	1.0−	1998 10 15	327	0.9−	0.3−	2000 01 09	704	0.3+	0.4−
1993 09 22	809	0.3−	1.2−	1998 10 15	327	0.5−	0.2−	2000 01 09	704	0.8−	1.3−
1996 03 18	566	0.2−	0.1−	1998 10 19	699	0.3−	0.8+	2000 01 09	704	0.1+	0.2−
1996 03 18	566	0.5−	0.1+	1998 10 19	699	0.6+	0.8+	2000 01 09	704	0.1−	0.3−
1996 03 18	566	0.0	0.9−	1998 10 19	699	0.2+	0.8+				
1996 04 20	566	(0.2−	2.5−)	1998 10 19	327	0.2−	0.0				

(12992)* 1981 EZ₂₂ = 1972 RV₂

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

Id. C. M. Bardwell (*MPC* 22398)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	153.37785		(2000.0)		P		Q
<i>n</i>	0.30108025	ω	325.39184	+0.77777586	+0.62853337		
<i>a</i>	2.2046917	Ω	355.66195	−0.56655938	+0.69883415		
<i>e</i>	0.1885003	<i>i</i>	2.45662	−0.27216756	+0.34143320		
<i>P</i>	3.27	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1972 09 04	095	2.1+	1.4−	1981 04 11	413	(5.3+	0.8−)
1979 11 24	675	0.1+	0.4+	1981 04 11	413	(7.1+	2.5−)
1979 11 25	675	(5.2+	0.9+)	1981 04 30	413	0.0	0.4−
1981 02 09	413	(2.8+	1.1−)	1981 05 02	413	0.9+	0.4−
1981 02 13	413	1.3+	1.3−	1995 09 20	399	0.9−	0.1+
1981 03 02	413	1.4−	0.3−	1995 09 20	399	1.2−	0.4−
1981 03 03	413	2.1−	1.3−	1995 09 21	399	0.1+	1.2−
1981 03 07	413	0.1+	0.9−	1995 09 21	399	0.3+	1.5−
1981 03 07	413	0.7−	0.3−	1997 03 06	704	1.4+	0.7−
1981 03 11	413	0.3−	1.4−	1997 03 06	704	1.7+	0.1+
1981 03 29	413	1.9−	1.8+	1998 06 24	704	1.2+	0.9+
1981 03 29	413	2.2−	1.2+	1998 06 24	704	0.3+	0.1+

(12993)* 1981 EP₂₇ = 1991 HQ₁

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

Id. A. Doppler (*MPC* 34482), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	142.56911		(2000.0)		P		Q
<i>n</i>	0.19992518	ω	156.80864	+0.95436293	+0.29779098		
<i>a</i>	2.8966168	Ω	186.00298	−0.29650898	+0.93574632		
<i>e</i>	0.0413799	<i>i</i>	12.49469	−0.03569063	+0.18894274		
<i>P</i>	4.93	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1978 10 03	675	0.2+	0.4+	1993 10 20	809	(0.6+	2.3−)
1978 10 04	675	0.2−	0.6+	1993 10 20	809	(0.1−	2.3−)
1981 02 12	413	0.1+	0.1−	1998 09 18	699	0.6+	0.9+
1981 02 12	413	0.1+	0.4−	1998 09 18	699	0.9+	0.3+
1981 03 02	413	1.3+	1.1+	1998 09 18	699	0.4+	0.3+

1981 03 06	413	1.0−	1.1+	1998 09 20	809	(2.6+	3.9+)	1998 11 11	704	0.8−	0.5−
1981 03 11	413	1.2−	0.1+	1998 09 20	809	(2.1+	3.2+)	1998 12 13	703	0.7+	0.1+
1981 03 15	413	0.2+	0.8−	1998 09 20	809	(2.1+	3.1+)	1998 12 13	703	1.6−	0.5−
1981 03 15	413	0.4+	0.6−	1998 09 21	809	(2.0+	2.8+)	1998 12 13	703	0.9−	0.3+
1981 04 05	413	(3.2+	5.1−)	1998 09 21	809	(1.2+	2.3+)	1998 12 13	703	0.7−	1.0+
1981 05 01	413	0.3+	0.8−	1998 09 21	809	(1.6+	2.1+)	2000 01 08	704	0.4+	0.0
1991 04 19	809	(1.0−	3.3−)	1998 09 26	704	1.1+	1.0+	2000 01 08	704	0.3−	0.1−
1991 04 19	809	(2.5−	3.1−)	1998 09 26	704	0.2+	0.7+	2000 01 08	704	0.2−	0.3−
1991 04 19	809	(3.7−	3.6−)	1998 09 26	704	0.4+	0.6−	2000 01 08	704	0.4+	0.0
1993 10 09	809	1.3−	1.2−	1998 09 26	704	1.5+	1.7+	2000 01 08	704	0.7+	0.2−
1993 10 09	809	1.1−	1.5−	1998 09 26	704	0.1−	0.1+	2000 01 11	704	0.5+	0.3+
1993 10 09	809	1.8−	1.5−	1998 10 11	699	0.7+	0.6+	2000 01 11	704	0.1+	0.5−
1993 10 11	809	1.7+	0.1+	1998 10 11	699	0.0	0.4+	2000 01 11	704	0.1+	0.1−
1993 10 11	809	1.4+	0.6−	1998 10 29	704	0.2+	0.0	2000 01 11	704	0.1+	0.1+
1993 10 11	809	0.6+	0.3−	1998 10 29	704	1.4−	0.1+	2000 01 11	704	0.4+	0.3+
1993 10 20	809	(0.5+	2.8−)	1998 10 29	704	1.7+	0.3+				

(12994)* 1981 ET₂₇ = 1993 RG₂₀

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

Id. G. V. Williams (*MPC* 27908)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	199.52287		(2000.0)		P		Q
<i>n</i>	0.19510835	ω	85.55963	−0.28549537	+0.95834557		
<i>a</i>	2.9440972	Ω	167.84254	−0.89390440	−0.26321833		
<i>e</i>	0.0305971	<i>i</i>	2.21359	−0.34558258	−0.11085976		
<i>P</i>	5.05	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1978 10 03	675	0.2+	1.0−	1991 03 09	675	1.0−	1.2−
1978 10 04	675	0.1+	1.0−	1993 09 15	809	(16.0−	11.4−)
1979 12 20	675	(3.0−	0.2+)	1993 09 15	809	(17.1−	12.6−)
1979 12 20	675	0.1−	1.0+	1993 09 15	809	(17.6−	7.6−)
1981 02 09	413	0.2−	0.1−	1993 09 19	675	0.0	0.1−
1981 02 12	413	0.4−	0.4+	1993 09 19	675	(0.2−	2.3−)
1981 02 13	413	0.8−	0.7+	1993 09 20	691	0.4+	0.3−
1981 03 02	413	1.3+	1.5−	1993 09 20	691	0.5+	0.9−
1981 03 02	413	0.5−	0.7−	1993 09 20	691	0.4+	0.8−
1981 03 06	413	(2.5−	0.9+)	1993 09 22	809	(2.8−	2.7−)
1981 03 06	413	1.4+	0.2−	1993 09 22	809	(0.8−	2.2−)
1981 03 11	413	1.4−	0.7+	1993 09 22	809	(1.2−	2.8−)
1981 03 15	413	0.0	1.4−	1998 09 12	691	0.2−	0.1+
1981 03 15	413	1.0−	0.2−	1998 09 12	691	0.0	0.1+
1981 04 05	413	(3.6+	2.1−)	1998 09 12	691	0.1−	0.0
1981 04 10	413	1.3+	1.6−	1999 11 15	704	0.1−	0.2+
1981 05 01	413	0.2−	0.4+	1999 11 15	704	0.1−	0.3−
1988 11 04	807	0.5+	0.5−	1999 11 15	704	0.3−	0.5−
1988 11 06	807	0.2+	1.3−	1999 11 15	704	0.4−	0.7−
1991 03 09	675	0.8−	1.1−	1999 11 15	704	0.1+	0.8−

(12995)* 1981 EY₂₇ = 1990 SG₁₇

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

Id. E. Bowell (*MPC* 18807)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	149.31813		(2000.0)		P		Q
<i>n</i>	0.24554435	ω	301.56792	+0.60614319	+0.79508077		
<i>a</i>	2.5257057	Ω	5.87575	−0.64284269	+0.50522032		
<i>e</i>	0.1839352	<i>i</i>	11.78296	−0.46834145	+0.33555775		
<i>P</i>	4.01	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1981 02 12	413	0.4+	1.9+	1994 09 07	675	0.2+	0.4+
1981 02 13	413	0.0	0.7+	1994 09 07	675	0.8−	0.7+
1981 03 02	413	0.4−	1.5−	1994 09 09	675	0.5+	0.9+

1981 03 02	413	0.1+	0.8-	1994 09 09	675	0.3+	0.1-	1998 12 08	704	(2.2-	1.4-)
1981 03 06	413	(2.8-	0.7-)	1994 10 01	675	0.4+	0.1-	1998 12 08	704	1.7-	1.0+
1981 03 06	413	0.7+	1.0-	1994 10 01	675	0.6+	0.5-	1998 12 08	704	0.2-	0.2+
1981 03 11	413	1.0-	0.7-	1994 10 04	689	0.9+	0.9-	1998 12 08	704	0.0	1.2+
1981 03 11	413	0.3-	0.3-	1994 10 05	689	0.9+	0.4-	1999 12 13	704	0.0	1.0-
1981 03 15	413	1.4-	1.0-	1994 10 13	689	1.1+	0.4-	1999 12 13	704	0.5-	0.5-
1981 03 15	413	1.2+	0.2+	1998 07 31	596	1.7-	0.2-	1999 12 13	704	0.1+	0.3+
1981 04 05	413	(4.5+	0.4-)	1998 07 31	596	1.8-	0.5-	1999 12 13	704	0.5-	1.2-
1981 04 06	413	0.9+	1.3+	1998 07 31	596	1.4-	0.3-	1999 12 13	704	0.3-	0.7-
1981 04 06	413	2.0+	0.1+	1998 08 20	699	0.7+	0.1+	1999 12 30	704	0.5-	0.4-
1981 04 07	413	1.4+	0.3+	1998 08 20	699	0.3+	0.1-	1999 12 30	704	0.0	0.2+
1981 04 07	413	2.3-	0.0	1998 08 20	699	0.4+	0.0	1999 12 30	704	0.1-	0.4+
1981 04 10	413	0.9+	1.1+	1998 08 23	689	0.2+	0.6-	1999 12 30	704	0.6+	0.1+
1981 04 10	413	0.2+	0.3+	1998 07 31	596	1.4-	0.4+	1999 12 30	704	0.5+	0.7+
1981 05 01	413	1.0-	1.0+	1998 09 21	704	0.4+	0.5+	1999 12 31	704	0.4-	0.6-
1981 05 03	413	0.6+	1.5+	1998 09 21	704	0.1+	1.3+	1999 12 31	704	0.5-	0.7+
1990 09 14	675	(0.5+	2.4-)	1998 09 21	704	0.1+	0.6+	1999 12 31	704	0.5+	0.6+
1990 09 14	675	(0.9+	2.5-)	1998 09 21	704	0.3+	0.3+	1999 12 31	704	0.4-	1.3+
1990 09 17	675	0.5-	0.4+	1998 09 24	699	0.2+	0.3+	1999 12 31	704	0.7+	1.3+
1990 09 17	675	1.0-	0.7+	1998 09 24	699	0.5+	0.6+	2000 01 21	704	0.6+	0.6-
1990 09 20	675	0.6+	0.1-	1998 09 24	699	0.3+	0.2+	2000 01 21	704	0.1-	0.2+
1990 09 20	675	0.6+	0.6-	1998 11 18	910	(3.0-	1.6-)	2000 01 21	704	0.4-	0.1-
1994 09 06	691	0.8-	0.7-	1998 11 18	910	(2.7-	1.1-)	2000 01 21	704	0.2+	1.4+
1994 09 06	691	1.0-	0.3-	1998 11 18	910	(3.0-	1.1-)				
1994 09 06	691	1.2-	0.2-	1998 11 19	910	(2.2-	2.0-)				

(12996)* 1981 EV₂₈

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

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	99.38446	(2000.0)	P	Q	
<i>n</i>	0.19150958	ω	116.11980	+0.83044680	+0.54970158
<i>a</i>	2.9808655	Ω	210.77678	-0.55308462	+0.79405879
<i>e</i>	0.1042252	<i>i</i>	10.18462	-0.06674968	+0.25942014
<i>P</i>	5.15	<i>H</i>	14.2	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1978 10 04	675	0.6+	0.0	1997 05 08	691	0.2+	0.7+	1999 10 21	704	0.5+	0.2+
1978 10 05	675	0.4-	1.0-	1997 05 08	691	0.1+	0.6+	1999 10 21	704	0.9+	0.4+
1981 02 02	413	0.3-	0.5-	1998 08 24	704	0.6-	0.7+	1999 10 30	703	0.6-	0.2+
1981 03 01	413	1.7+	0.8-	1998 08 24	704	0.3-	0.9-	1999 10 30	703	0.8-	0.5-
1981 03 07	413	1.0-	1.5+	1998 08 24	704	0.1+	0.8+	1999 10 30	703	1.8-	0.3+
1981 03 11	413	(4.4-	2.9+)	1998 08 24	704	0.3+	0.7+	1999 10 30	703	0.9-	0.7-
1981 03 11	413	0.0	0.7-	1998 08 24	704	(5.5-	0.7+)	1999 11 04	704	0.2+	0.3-
1981 03 15	413	0.8+	0.2-	1998 08 27	704	(0.3-	2.2+)	1999 11 04	704	0.3+	0.6+
1981 04 12	413	1.6-	0.1+	1998 08 27	704	0.0	0.1-	1999 11 04	704	1.5+	0.8+
1981 04 12	413	(3.3-	1.4+)	1998 08 27	704	0.2+	0.2-	1999 11 04	704	0.9-	0.5+
1981 04 29	413	(0.2+	2.9-)	1998 08 27	704	0.3+	1.6-	1999 11 04	704	0.5-	0.2-
1981 04 30	413	(0.6+	3.5-)	1999 10 21	704	0.7-	0.6+	1999 12 14	704	0.2+	0.9-
1981 05 02	413	0.2-	1.2-	1999 10 21	704	0.7+	0.7+	1999 12 14	704	0.4+	0.3-
1997 05 08	691	0.1+	0.8+	1999 10 21	704	0.4+	0.9+	1999 12 14	704	1.1+	0.4-

(12997)* 1981 EV₂₉

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

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	101.70756	(2000.0)	P	Q	
<i>n</i>	0.23076698	ω	36.18609	-0.40545490	+0.90738374
<i>a</i>	2.6324104	Ω	210.34802	-0.88170909	-0.42016881
<i>e</i>	0.1485425	<i>i</i>	12.65957	-0.24123724	+0.01062635
<i>P</i>	4.27	<i>H</i>	15.3	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1977 04 24	675	0.8-	0.3+	1981 03 12	413	0.2+	1.5-	1999 07 12	704	0.6+	0.5+
1977 04 25	675	1.1+	0.9-	1981 03 12	413	0.8-	0.6+	1999 07 12	704	0.8-	1.0+

1981 02 02	413	0.3+	0.9+	1981 04 12	413	1.7-	1.8+	1999 07 12	704	0.2-	0.0
1981 02 02	413	0.7+	0.8+	1981 04 12	413	0.0	1.1-	1999 09 06	561	0.0	0.6+
1981 03 02	413	1.5-	1.7+	1981 04 29	413	1.2+	1.1-	1999 09 06	561	0.1+	0.5+
1981 03 02	413	0.9+	1.1-	1994 04 19	691	0.1+	0.3-	1999 09 06	561	0.1+	0.5+
1981 03 07	413	0.6-	1.7+	1994 04 19	691	0.1+	0.1-	1999 09 10	561	0.2+	0.1+
1981 03 07	413	0.3-	0.4+	1994 04 19	691	0.0	0.4-	1999 09 10	561	0.1-	0.2+
1981 03 10	413	0.4-	1.6+	1999 07 12	704	0.7-	0.9-	1999 09 10	561	0.2+	0.4+
1981 03 10	413	2.2+	1.1-	1999 07 12	704	0.0	0.5-				

(12998)* 1981 EB₄₃ = 1997 EG₃

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

Id. G. V. Williams (*MPC* 29297)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	197.15561	(2000.0)	P	Q	
<i>n</i>	0.24626180	ω	243.54486	-0.29703419	+0.95485090
<i>a</i>	2.5207978	Ω	9.18071	-0.86329483	-0.26607442
<i>e</i>	0.0527992	<i>i</i>	1.98214	-0.40803520	-0.13215207
<i>P</i>	4.00	<i>H</i>	15.4	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1981 02 13	413	1.3-	1.6+	1997 03 02	691	0.1-	0.5-	1999 11 14	704	0.2-	0.3-
1981 03 02	413	1.0+	1.0+	1997 03 02	691	0.2-	0.0	1999 11 16	704	0.3-	0.0
1981 03 06	413	(3.0-	0.3+)	1997 03 07	691	0.2+	0.2-	1999 11 16	704	0.9-	1.2+
1981 03 11	413	(0.9+	3.6-)	1997 03 07	691	0.4+	0.4-	1999 11 16	704	0.9-	1.3-
1981 03 15	413	1.5+	0.7-	1997 03 07	691	0.2+	0.8-	1999 11 16	704	0.9-	0.4-
1981 03 15	413	0.5+	0.9+	1998 08 17	704	1.2-	0.9+	1999 11 28	120	(2.5+	0.5+)
1981 04 10	413	1.6+	0.3+	1998 08 17	704	0.4-	0.5+	1999 11 28	120	(4.0-	0.1-)
1981 04 10	413	(5.4+	3.7-)	1998 08 17	704	0.7+	0.0	1999 12 07	704	0.4+	1.2+
1981 05 01	413	0.9-	0.4+	1998 08 17	704	0.6+	0.4-	1999 12 07	704	1.4+	0.2+
1981 05 03	413	0.7-	0.0	1998 08 17	704	(5.3-	0.9-)	1999 12 07	704	0.9+	0.2+
1993 03 25	691	0.9-	0.1+	1999 11 14	704	0.1+	0.3+	1999 12 07	704	0.7+	0.1+
1993 03 25	691	0.6-	0.1+	1999 11 14	704	1.1-	0.4-	1999 12 07	704	0.6+	0.4-
1993 03 25	691	0.5-	0.2-	1999 11 14	704	0.1-	0.1+				
1997 03 02	691	0.1-	0.2-	1999 11 14	704	0.1+	0.5+				

(12999)* 1981 QJ₂ = 1957 TF = 1998 QL₈

Discovered 1981 Aug. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. A. Gnädig (*MPC* 32657)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	128.70772	(2000.0)	P	Q	
<i>n</i>	0.28757152	ω	210.69018	+0.99729208	-0.05702641
<i>a</i>	2.2732060	Ω	152.46358	+0.06876901	+0.94691363
<i>e</i>	0.1887561	<i>i</i>	5.76492	-0.02606382	+0.31638989
<i>P</i>	3.43	<i>H</i>	13.9	<i>G</i>	0.15 <i>U</i> 2

Residuals in seconds of arc

1957 10 02	760	0.7-	2.3+	1998 08 23	704	0.7+	0.1+	1999 12 05	703	0.8+	1.2+
1981 08 30	688	1.0-	1.4-	1998 08 23	704	1.0+	0.8+	1999 12 05	703	0.3+	0.1-
1981 08 30	688	1.9-	1.2-	1998 08 23	704	0.6+	1.1+	1999 12 05	704	0.3-	0.9-
1981 09 05	095	0.7-	1.7-	1998 08 23	704	(0.7+	3.3+)	1999 12 05	703	0.3-	0.0
1981 09 26	688	1.7+	0.4+	1998 08 28	691	0.4-	0.2-	1999 12 05	704	0.6+	0.4+
1981 09 26	688	0.0	0.3+	1998 08 28	691	0.6-	0.3+	1999 12 05	703	0.6-	1.0+
1981 10 04	688	1.2+	1.6-	1998 08 28	691	0.7-	0.5+	1999 12 05	704	0.2+	0.0
1981 10 04	688	2.2+	1.4+	1998 12 08	704	0.2-	0.8+	1999 12 05	704	0.5+	1.1-
1998 06 18	699	0.6-	0.6-	1998 12 08	704	0.3-	0.2-	2000 01 05	704	0.1+	0.5-
1998 06 18	699	0.5-	0.5-	1998 12 08	704	0.1+	0.6-	2000 01 05	704	0.6+	0.6+
1998 06 18	699	0.6-	0.7-	1998 12 08	704	0.2-	0.5+	2000 01 05	704	0.3-	1.0-
1998 07 24	910	0.5+	0.6+	1998 12 08	704	0.5-	0.3-	2000 01 05	704	0.1-	0.6-
1998 07 24	910	0.6+	0.8+	1999 11 08	703	0.5+	0.1+	2000 01 05	704	0.3-	0.2+
1998 07 24	910	0.6+	0.7+	1999 11 08	703	0.6+	0.2+	2000 01 07	704	0.0	0.2-
1998 08 17	704	0.0	0.3-	1999 11 08	703	0.5+	0.5+	2000 01 07	704	0.6-	0.3-
1998 08 17	704	0.7-	0.1-	1999 11 08	703	0.2+	0.4-	2000 01 07	704	0.4-	0.5-
1998 08 17	704	0.2-	0.1-	1999 11 17	704	0.3-	0.3-	2000 01 07	704	0.1-	0.8-

2000 JAN. 24

M.P.C. 37487

1998 08 17 704 1.3+ 0.8- 1999 11 17 704 1.0- 0.3-
 1998 08 17 704 0.8- 1.6- 1999 11 17 704 1.3- 1.5+

(13000)* 1981 QK₃ = 1992 EL₁₉

Discovered 1981 Aug. 25 by H. Debehogne at the European Southern Observatory.

Id. G. V. Williams (*MPC* 23857)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	110.89331	(2000.0)	P	Q	
<i>n</i>	0.23121934	ω 9.71428	+0.99438397	+0.08990798	
<i>a</i>	2.6289759	Ω 344.78663	-0.10562251	+0.80986349	
<i>e</i>	0.1161599	<i>i</i> 12.28405	-0.00666434	+0.57968757	
<i>P</i>	4.26	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1981 08 25	809 (0.5- 2.5+)	1981 09 05	809 0.9+ 0.3+	1998 08 23	704 0.1- 0.7+
1981 08 25	809 0.5- 1.8+	1981 09 06	809 0.2+ 0.0	1998 08 23	704 0.2+ 0.1+
1981 08 25	809 0.6- 2.2+	1981 09 06	809 0.9+ 0.3+	1998 08 23	699 0.3- 0.9+
1981 08 26	809 0.2+ 0.9-	1981 09 06	809 1.1+ 0.1+	1998 08 23	704 1.4+ 1.8+
1981 08 26	809 0.1- 1.0-	1981 09 06	809 1.2+ 0.1-	1998 08 23	704 1.0- 1.8+
1981 08 26	809 0.7- 1.3-	1981 09 06	809 1.3+ 0.1+	1998 08 23	699 0.4- 0.1+
1981 08 26	809 1.1- 1.4+	1981 09 06	809 1.1+ 0.0	1998 08 23	704 0.9- 1.3+
1981 08 26	809 0.6- 0.9+	1981 09 07	809 0.0 0.5-	1998 09 14	704 1.0- 0.1+
1981 08 26	809 0.5+ 0.9+	1981 09 07	809 0.3- 0.3-	1998 09 14	704 1.2- 0.4+
1981 08 27	809 1.1- 0.8-	1981 09 07	809 0.1+ 0.7-	1998 09 14	704 1.1- 0.4-
1981 08 27	809 0.3- 0.8-	1992 02 27	675 0.4- 0.3-	1998 09 14	704 0.4- 0.0
1981 08 27	809 0.5+ 0.8-	1992 02 27	675 0.9- 0.6+	1998 09 14	704 0.3- 0.6+
1981 08 28	809 (1.4- 2.7+)	1992 02 28	675 1.2+ 0.5-	1998 09 18	704 0.3+ 0.6-
1981 08 28	809 (0.5- 3.2+)	1992 02 28	675 0.7- 1.7+	1998 09 18	704 0.9+ 0.0
1981 08 28	809 (0.4- 2.7+)	1992 03 01	809 0.2- 0.1+	1998 09 18	704 1.0- 0.3+
1981 08 31	809 0.4+ 0.0	1992 03 04	809 1.9+ 0.7+	1998 09 18	704 0.1- 0.6-
1981 08 31	809 0.9+ 0.1-	1992 04 06	809 1.3- 0.3-	1998 09 18	704 0.3- 0.9+
1981 08 31	809 1.5+ 0.2-	1996 01 13	046 0.2+ 0.1+	1998 09 21	699 0.8- 0.1-
1981 09 01	809 1.5- 0.4+	1996 01 13	046 0.5+ 0.6-	1998 09 21	699 0.1+ 0.0
1981 09 01	809 0.7- 0.2+	1996 01 13	046 0.3+ 1.1-	1998 09 21	699 0.2+ 0.3-
1981 09 01	809 1.2- 0.0	1998 07 31	699 0.3+ 0.6+	1999 12 12	704 0.5+ 0.3+
1981 09 02	809 0.2+ 1.0-	1998 07 31	699 0.2+ 0.0	1999 12 12	704 0.5+ 0.5-
1981 09 02	809 0.3+ 0.7-	1998 07 31	699 (2.5+ 0.5-)	1999 12 12	704 0.4+ 0.1-
1981 09 02	809 1.0+ 0.8-	1998 08 17	704 0.2+ 0.2+	1999 12 12	704 0.2+ 0.2-
1981 09 02	809 0.7- 0.2-	1998 08 17	704 0.7+ 0.4+	1999 12 12	704 0.5+ 0.4+
1981 09 02	809 0.1+ 0.5-	1998 08 17	704 0.1+ 0.3+	1999 12 16	699 0.1- 1.0+
1981 09 02	809 0.6+ 0.3-	1998 08 17	704 0.2- 0.7-	1999 12 16	699 0.5+ 0.2+
1981 09 03	809 0.5- 1.8-	1998 08 17	704 0.6- 0.5-	1999 12 16	699 0.5+ 0.3+
1981 09 03	809 0.7- 1.6-	1998 08 18	566 0.2- 0.3+	1999 12 30	704 0.7- 0.2-
1981 09 03	809 0.5- 1.5-	1998 08 18	566 0.1+ 0.2+	1999 12 30	704 0.3- 0.1-
1981 09 04	809 (1.6- 2.6-)	1998 08 18	566 0.2- 0.2+	1999 12 30	704 0.5- 0.2-
1981 09 04	809 (1.5- 2.5-)	1998 08 22	566 0.2- 0.3-	1999 12 30	704 0.4- 0.6+
1981 09 04	809 (1.1- 2.7-)	1998 08 22	566 0.4+ 0.1-	1999 12 30	704 0.7- 0.7+
1981 09 05	809 1.1+ 0.6+	1998 08 22	566 0.5- 0.4-		
1981 09 05	809 1.0+ 0.5+	1998 08 23	699 0.4+ 0.2+		

(13001)* 1981 VL = 1988 RE₈ = 1995 SZ₂

Discovered 1981 Nov. 2 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (*MPC* 25728)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Asher			
<i>M</i>	66.89262	(2000.0)	P	Q	
<i>n</i>	0.27786062	ω 4.27782	+0.87774080	-0.47837045	
<i>a</i>	2.3258662	Ω 24.35908	+0.43762814	+0.77741912	
<i>e</i>	0.1564590	<i>i</i> 3.76317	+0.19507104	+0.40838857	
<i>P</i>	3.55	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1981 10 23	095 (3.8+ 2.2-)	1995 09 26	098 1.6+ 0.9-	1999 12 15	704 0.2- 0.5-
1981 11 02	688 (3.5+ 1.5-)	1995 10 24	801 0.6- 0.8+	1999 12 15	704 0.3- 0.0

1981 11 02	688 (4.4+ 2.1-)	1995 10 24	801 0.4- 0.8+	1999 12 15	704 0.5- 0.6+
1981 11 05	688 1.8+ 2.2-	1995 10 26	801 0.2- 0.5+	1999 12 15	704 0.3- 0.2-
1981 11 05	688 (1.1+ 3.3-)	1995 10 26	801 0.7- 0.8+	1999 12 15	704 0.6- 0.5+
1981 11 24	688 1.9- 2.0-	1996 12 17	691 0.1- 0.6-	2000 01 02	704 0.2+ 0.3+
1981 11 24	688 1.6+ 1.3-	1996 12 17	691 0.1+ 0.4-	2000 01 02	704 0.2+ 0.5+
1981 11 24	095 1.1+ 1.1-	1996 12 17	691 0.2+ 0.6-	2000 01 02	704 0.0 0.6+
1981 12 02	688 0.4+ 1.8-	1997 02 01	696 0.7- 1.1-	2000 01 02	704 (2.8+ 1.0+)
1981 12 02	688 (5.3+ 1.8-)	1997 02 01	696 0.7- 1.1-	2000 01 02	704 0.1- 0.7+
1988 09 10	071 (3.2- 0.3+)	1997 02 01	696 0.6- 1.1-	2000 01 03	704 0.1- 0.6+
1988 09 10	071 (5.7- 3.5-)	1999 10 13	704 0.6+ 0.1+	2000 01 03	704 0.2+ 0.3+
1988 10 07	675 0.2- 0.3+	1999 10 13	704 0.2+ 0.0	2000 01 03	704 1.2- 1.4+
1988 10 07	675 0.4+ 0.3-	1999 10 13	704 1.0+ 0.1+	2000 01 03	704 0.3- 1.4+
1988 10 13	675 0.7- 0.9+	1999 10 13	704 1.0+ 0.3+	2000 01 03	704 0.1- 0.4-
1988 10 13	675 0.4+ 1.0+	1999 10 13	704 0.5+ 0.5+	2000 01 04	704 0.0 0.3+
1995 09 20	399 2.1- 0.2-	1999 11 16	704 0.0 0.5-	2000 01 04	704 0.2+ 0.2-
1995 09 20	399 (3.2- 0.1-)	1999 11 16	704 0.5+ 0.4-	2000 01 04	704 0.1+ 0.1-
1995 09 21	399 (4.4- 0.2+)	1999 11 16	704 0.1+ 0.6+	2000 01 04	704 0.2+ 0.1+
1995 09 21	399 (3.0- 0.1+)	1999 11 16	704 0.4+ 0.4+	2000 01 04	704 0.0 0.2-
1995 09 26	098 1.4+ 0.9-	1999 11 16	704 0.5- 0.9+		

(13002)* 1982 BJ₁₃ = 1991 RP₁₃ = 1998 OF₁

Discovered 1982 Jan. 30 by S. J. Bus at Palomar.

Id. A. Lowe (*MPC* 32216), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	165.62750	(2000.0)	P	Q	
<i>n</i>	0.26545742	ω 342.57367	+0.22870265	+0.97056089	
<i>a</i>	2.3977623	Ω 300.58850	-0.88238613	+0.17389525	
<i>e</i>	0.0864378	<i>i</i> 5.03440	-0.41120533	+0.16664933	
<i>P</i>	3.71	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1982 01 30	675 0.5+ 0.3+	1998 07 20	120 0.5- 0.0	1999 11 16	704 0.5- 0.3+
1982 01 31	675 0.4- 0.0	1998 07 20	120 1.2- 0.7-	1999 11 16	704 0.2- 0.2+
1991 09 13	675 0.3+ 0.9-	1998 07 21	120 0.1- 0.4-	1999 12 15	704 1.3+ 0.0
1991 09 13	675 0.2- 0.8-	1998 07 21	120 0.3+ 0.0	1999 12 15	704 0.2+ 0.0
1991 09 15	675 0.1+ 0.8+	1998 07 24	566 (0.3- 3.2-)	1999 12 15	704 0.0 0.2-
1991 09 15	675 0.5+ 0.5-	1998 07 24	566 (0.1+ 3.0-)	1999 12 15	704 0.1- 0.1+
1998 06 24	704 0.0 0.3-	1998 07 24	566 (0.0 2.7-)	1999 12 15	704 0.3+ 0.2+
1998 06 24	704 0.7- 1.0+	1998 07 26	704 0.0 0.3+	2000 01 03	704 0.4- 0.1+
1998 06 24	704 0.9- 0.7+	1998 07 26	704 1.0+ 0.7+	2000 01 03	704 0.0 0.3+
1998 06 24	704 0.9+ 0.0	1998 07 26	704 0.1- 0.8-	2000 01 03	704 0.1- 0.2+
1998 06 24	704 0.4+ 1.4+	1998 07 26	704 0.1- 0.0	2000 01 03	704 0.7+ 0.4+
1998 06 28	809 (1.7+ 3.4+)	1998 07 26	704 0.1- 0.9+	2000 01 04	704 0.6+ 0.4+
1998 06 28	809 (1.5+ 3.5+)	1999 11 16	704 1.1+ 0.3+	2000 01 04	704 0.3- 0.5+
1998 06 28	809 (2.1+ 3.5+)	1999 11 16	704 1.9- 0.2-	2000 01 04	704 0.2- 0.3+
1998 07 20	120 0.1+ 0.2+	1999 11 16	704 1.0- 0.5+		

(13003)* 1982 FN = 1982 HJ₂

Discovered 1982 Mar. 21 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. E. Bowell (d, *MPC* 7360)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	125.16751	(2000.0)	P	Q	
<i>n</i>	0.24125310	ω 33.12722	-0.85532444	+0.51781671	
<i>a</i>	2.5555681	Ω 177.83483	-0.51632513	-0.85464598	
<i>e</i>	0.2079062	<i>i</i> 26.58993	+0.04276055	+0.03802761	
<i>P</i>	4.09	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1982 03 21	688 (0.1- 5.1-)	1982 04 27	033 0.3- 0.2+	1994 04 02	689 0.3+ 1.3+
1982 03 21	688 (0.6+ 5.9-)	1982 05 27	801 0.1- 0.8-	1999 07 15	596 0.1- 0.0
1982 03 24	675 (3.4+ 0.9+)	1986 03 06	688 (3.9+ 8.1-)	1999 07 15	596 0.6- 0.2-
1982 03 24	675 1.0+ 0.5+	1986 03 06	688 0.7- 0.0	1999 07 15	596 (2.5- 0.5-)
1982 03 28	688 1.3+ 0.2-	1986 03 14	071 1.0+ 2.3-	1999 07 16	175 0.1+ 0.1+
1982 03 28	688 (4.1+ 2.6-)	1986 03 14	071 (1.2+ 4.6-)	1999 07 16	175 0.1+ 0.0

1982 03 31	688	0.6−	2.0−	1986 04 08	054	0.3−	1.7+	1999 07 16	175	0.2+	0.0
1982 03 31	688	(5.1+	0.9−)	1990 02 27	474	1.5−	0.7+	1999 07 16	175	0.1+	0.0
1982 04 14	688	(4.6+	0.6+)	1990 02 27	474	0.1+	0.2+	1999 10 08	704	1.0−	0.3−
1982 04 14	688	0.8−	0.8+	1994 03 03	689	0.5−	0.2+	1999 10 08	704	0.1+	0.3−
1982 04 23	801	0.9+	0.0	1994 03 15	675	1.1+	1.5−	1999 10 08	704	0.3+	1.0−
1982 04 24	671	0.7−	0.2+	1994 03 15	675	0.0	0.3−	1999 10 08	704	0.0	0.1−
1982 04 25	033	0.5−	1.3+	1994 04 01	689	0.5+	1.5−	1999 10 08	704	0.6+	0.4−

(13004)* 1982 RR = 1993 FS₅

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

Id. T. Kobayashi (*MPC* 23970)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	66.60801	(2000.0)		P	Q		
<i>n</i>	0.23699512	<i>ω</i>	186.60594	+0.99955877	−0.01554472		
<i>a</i>	2.5860869	<i>Ω</i>	174.10446	+0.01941400	+0.98682479		
<i>e</i>	0.3016620	<i>i</i>	14.26561	−0.02248048	+0.16104405		
<i>P</i>	4.16	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 09 15	688	0.1+	1.3−	1997 04 07	566	1.4+	0.2+	1998 06 15	699	0.5+	1.6+
1982 09 15	688	0.8+	1.0−	1998 04 18	688	0.4−	0.1−	1998 06 15	699	0.7+	0.0
1982 09 16	095	0.3+	2.3−	1998 04 18	688	0.3−	0.1+	1998 06 15	699	0.7−	0.5−
1982 09 18	095	(1.7+	2.7−)	1998 05 22	688	0.2−	0.5−	1999 11 06	704	1.1+	1.9+
1982 09 20	095	0.9−	0.4+	1998 05 22	688	0.2−	0.6−	1999 11 06	704	0.2+	0.8−
1982 09 26	095	(2.7−	1.3−)	1998 05 22	688	0.2−	0.5−	1999 11 06	704	0.7+	0.8−
1982 10 11	688	0.8+	0.9−	1998 05 23	704	0.6−	0.9−	1999 11 06	704	0.8+	0.8−
1982 10 11	688	0.6+	0.6−	1998 05 23	704	0.6+	0.0	1999 11 06	704	0.8+	0.8−
1982 10 17	688	0.8−	0.0	1998 05 23	704	0.6−	0.3+	1999 12 03	704	0.5−	0.4−
1982 10 17	688	0.1−	0.6+	1998 05 23	704	0.0	1.1−	1999 12 03	704	0.8−	1.2−
1982 10 21	095	(1.3+	3.3+)	1998 05 23	704	0.2−	1.4−	1999 12 03	704	1.0−	0.4−
1993 03 17	809	(2.3−	0.5−)	1998 05 26	704	0.1+	0.5−	1999 12 03	704	0.9−	0.4−
1993 03 18	809	0.2−	0.8−	1998 05 26	704	1.2−	1.4+	2000 01 07	699	0.2+	0.8−
1993 03 23	809	0.1+	0.9−	1998 05 26	704	1.0+	1.1−	2000 01 07	699	0.3+	0.5−
1993 04 16	413	0.6+	1.4−	1998 05 26	704	(0.6+	2.2−)	2000 01 07	699	0.3+	0.5−
1997 03 12	688	1.6−	1.3−	1998 05 26	704	0.7+	0.7+	2000 01 08	704	(2.6+	2.2+)
1997 03 18	599	1.8−	0.2−	1998 06 03	704	0.7+	1.1−	2000 01 08	704	0.0	0.6+
1997 03 18	599	0.8−	0.2−	1998 06 03	704	0.2−	0.6−	2000 01 08	704	0.3+	0.3−
1997 04 07	566	0.8+	1.1−	1998 06 03	704	(1.2+	2.3−)	2000 01 08	704	0.0	0.3+
1997 04 07	566	0.5−	0.4−	1998 06 03	704	0.5+	0.8−	2000 01 08	704	0.3−	0.2−

(13005)* 1982 SQ₇ = 1991 EN₃ = 1998 SJ₂₂

Discovered 1982 Sept. 18 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. S. Nakano (*MPC* 33220)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Asher			
<i>M</i>	142.57614	(2000.0)		P	Q		
<i>n</i>	0.18544689	<i>ω</i>	303.56507	+0.44972750	+0.89278250		
<i>a</i>	3.0454841	<i>Ω</i>	353.00913	−0.73156217	+0.35139271		
<i>e</i>	0.1747343	<i>i</i>	12.41383	−0.51240801	+0.28189105		
<i>P</i>	5.31	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 09 18	095	1.4−	0.6+	1998 09 18	703	(4.7−	1.2+)	1998 10 02	120	1.5+	0.5−
1982 09 20	095	0.3−	1.6+	1998 09 18	704	0.2+	0.4−	1998 10 02	120	(2.1−	1.8+)
1982 09 26	095	0.8−	1.3+	1998 09 18	704	0.2−	0.0	1998 10 02	120	1.7−	0.1−
1991 03 11	809	0.4−	0.6+	1998 09 18	704	0.2+	0.3+	1998 10 13	120	0.0	0.4−
1991 03 11	809	0.4−	0.8+	1998 09 18	704	0.1+	0.8+	1998 10 13	120	0.1−	0.4−
1991 03 11	809	0.3−	0.8+	1998 09 18	704	0.6−	0.2−	1998 10 13	120	(2.2+	4.0+)
1991 03 12	675	(2.3−	3.0−)	1998 09 23	120	0.9+	0.3+	1998 11 10	699	0.2−	0.1+
1991 03 12	675	0.8−	1.1−	1998 09 23	120	0.6+	0.2+	1998 11 10	699	0.8+	0.4−
1991 03 13	809	0.0	1.0+	1998 09 23	120	0.5+	0.3+	1998 11 10	699	0.2+	0.5−
1991 03 13	809	0.4+	1.3+	1998 09 24	120	0.1+	0.2+	1999 11 01	704	0.3−	0.1−
1991 03 13	809	0.8+	1.3+	1998 09 24	120	0.2−	0.3+	1999 11 01	704	0.3−	0.3−
1991 03 15	809	0.9+	0.0	1998 09 24	120	0.0	0.0	1999 11 01	704	0.2−	0.2−

1991 03 15	809	1.4+	0.0	1998 09 26	704	0.0	0.3+	1999 11 01	704	0.6−	1.1−
1991 03 15	809	1.8+	0.1−	1998 09 26	704	0.7−	0.1+	1999 11 01	704	1.3−	0.0
1998 09 14	704	0.8−	0.1+	1998 09 26	704	1.0−	0.4+	1999 12 13	704	0.3+	0.3+
1998 09 14	704	0.7−	0.7+	1998 09 26	704	0.4−	0.9+	1999 12 13	704	0.0	0.7−
1998 09 14	704	1.2−	0.4+	1998 09 26	704	0.3−	1.2+	1999 12 13	704	0.3+	0.4+
1998 09 14	704	0.6−	0.2−	1998 09 27	704	1.2+	0.0	1999 12 13	704	0.7+	0.3+
1998 09 14	704	0.2+	0.0	1998 09 27	704	0.6+	0.1+	1999 12 13	704	1.7+	0.8+
1998 09 18	703	(3.1−	0.1+)	1998 09 27	704	0.4+	1.7−	1999 12 30	704	0.1+	0.3−
1998 09 18	703	(4.4−	0.6+)	1998 09 27	704	0.5+	1.5−	1999 12 30	704	0.5−	0.1+
1998 09 18	703	(4.5−	0.7+)	1998 09 29	120	0.4+	0.3+	1999 12 30	704	0.1+	0.1+
1998 09 18	703	(5.4−	1.3+)	1998 09 29	120	0.0	0.3+	1999 12 30	704	0.3−	0.8+

(13006)* 1983 AC₁ = 1990 DH

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

Id. S. Nakano (*MPC* 16231)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Asher			
<i>M</i>	351.01388	(2000.0)		P	Q		
<i>n</i>	0.28732603	<i>ω</i>	357.70089	−0.60632527	−0.70443011		
<i>a</i>	2.2745007	<i>Ω</i>	129.35299	+0.73700020	−0.67205115		
<i>e</i>	0.2012228	<i>i</i>	28.50146	+0.29866431	+0.22831004		
<i>P</i>	3.43	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1983 01 12	688	(1.2−	5.4+)	1997 06 26	704	0.3−	0.9+	1999 12 11	423	0.4−	0.9+
1983 01 12	688	(0.9+	3.7−)	1997 06 26	704	1.1+	0.2−	1999 12 11	423	0.5−	1.0+
1983 01 22	688	(2.3+	3.7−)	1997 06 29	704	0.6+	0.4+	1999 12 14	423	0.0	0.5−
1983 01 22	688	0.3+	2.3−	1997 06 29	704	0.5+	0.7+	1999 12 14	423	0.1+	0.1+
1983 02 11	688	0.9+	0.2+	1997 06 29	704	0.5+	0.2+	1999 12 14	423	0.5+	0.5+
1983 02 11	688	1.2+	0.8−	1997 06 29	704	0.2+	0.8+	1999 12 15	423	0.4+	0.2−
1990 01 27	675	0.3−	1.1−	1997 06 29	704	0.1−	0.5+	1999 12 15	423	0.1+	0.5−
1990 01 27	675	0.1+	1.1−	1998 08 17	704	0.3+	0.7+	1999 12 15	423	0.1−	0.4−
1990 02 20	675	0.3+	0.5−	1998 08 17	704	0.2+	0.5−	1999 12 18	704	0.2+	0.1+
1990 02 20	675	0.2+	0.5+	1998 08 17	704	0.2−	0.4−	1999 12 18	704	0.4+	0.1+
1990 02 26	675	(4.5−	8.3+)	1998 08 17	704	0.9−	0.6−	1999 12 18	704	0.2+	0.1+
1990 02 26	675	1.2−	0.4−	1998 08 17	704	0.4+	1.6+	1999 12 18	704	0.2+	0.4+
1990 02 28	675	0.0	0.9−	1998 08 23	704	0.1−	0.8−	1999 12 18	704	0.1−	0.1+
1990 02 28	675	0.1−	0.0	1998 08 23	704	1.1−	0.6+	2000 01 05	808	0.9+	1.6+
1990 03 22	675	0.8−	0.5+	1998 08 23	704	0.3+	1.0+	2000 01 05	808	0.4+	0.7−
1990 03 22	675	0.5−	0.9+	1998 08 23	704	0.9+	0.3−	2000 01 09	808	0.0	1.2+
1990 03 24	675	0.1+	0.3−	1998 08 23	704	0.0	0.2+	2000 01 09	808	0.6−	1.9+
1990 03 24	675	1.7−	0.8+	1998 08 23	704	1.3−	1.1−	2000 01 10	704	0.0	1.0+
1997 06 26	704	0.4+	0.7+	1998 08 23	704	(0.6−	3.8+)	2000 01 10	704	0.1+	0.9+
1997 06 26	704	0.7+	0.9+	1999 11 10	704	1.2−	0.1−	2000 01 10	704	0.1−	1.0+
1997 06 26	704	0.2+	0.3−	1999 11 10	704	1.4−	0.0	2000 01 10	704	0.3+	0.8+
1997 06 26	704	0.3+	0.3+	1999 11 10	704	0.8−	0.4−	2000 01 10	704	0.1+	0.6+
1997 06 26	704	0.6+	1.3+	1999 11 10	704	0.7−	0.2−				
1997 06 26	704	1.4+	0.6+	1999 11 10	704	1.3−	1.9−				

(13007)* 1984 AU = A906 UH = 1972 CE

Discovered 1984 Jan. 8 by J. Wagner at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (*MPC* 37114

1984 01 08	688	(0.7+ 2.2-)	1998 08 17	704	0.0	1.0-	1999 12 15	704	0.4+	0.8+
1984 01 08	688	(1.4+ 3.9-)	1999 11 16	704	1.4+	0.7-	1999 12 15	704	0.2-	0.7+
1984 01 23	372	0.2-	1999 11 16	704	0.2+	0.2+	2000 01 03	704	0.1+	0.4-
1984 01 23	372	(2.4- 1.0+)	1999 11 16	704	0.0	0.9+	2000 01 03	704	0.3-	0.4-
1984 01 25	372	(0.6- 6.9-)	1999 11 16	704	(0.2+ 2.3+)		2000 01 03	704	0.3-	0.4-
1984 01 26	688	0.5-	1999 11 16	704	1.3-	1.2+	2000 01 03	704	0.3-	0.1-
1984 01 26	688	(0.6+ 2.8-)	1999 12 02	411	0.2-	0.3+	2000 01 03	704	0.5-	0.1-
1998 06 29	704	1.3+	1999 12 02	411	0.5-	0.2+	2000 01 04	704	0.1+	0.1-
1998 06 29	704	0.3-	1999 12 03	411	1.0+	0.8-	2000 01 04	704	0.1-	0.1-
1998 06 29	704	0.1+	1999 12 03	411	0.1+	0.1+	2000 01 04	704	0.0	0.2-
1998 06 29	704	0.5+	1999 12 10	704	0.7-	0.7-	2000 01 04	704	0.8-	0.3-
1998 06 29	704	(1.7- 2.1-)	1999 12 10	704	0.5+	0.1-	2000 01 04	704	0.6-	0.3+
1998 07 16	699	0.2-	1999 12 10	704	0.6+	0.3+				
1998 07 16	699	0.3-	1999 12 10	704	0.7+	0.2-				

(13008)* 1984 SE₆ = 1991 NG₈

Discovered 1984 Sept. 22 by H. Debehogne at the European Southern Observatory.

Id. S. Nakano (*MPC* 25954)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	125.95176		(2000.0)	P	Q
<i>n</i>	0.27384343	ω	317.97401	+0.81290018	+0.58236784
<i>a</i>	2.3485573	Ω	6.41834	-0.51793254	+0.72789813
<i>e</i>	0.2042169	<i>i</i>	3.28345	-0.26634409	+0.36195581
<i>P</i>	3.60	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1984 09 22	809	0.2-	0.4-	1984 09 29	809	0.5+	0.6+	1999 10 13	704	0.0	1.0-
1984 09 22	809	0.0	0.7-	1984 09 29	809	0.8+	1.1+	1999 10 13	704	0.4+	1.3-
1984 09 22	809	0.0	1.0-	1984 09 30	809	0.2+	0.8+	1999 10 13	704	1.2+	1.8-
1984 09 23	809	1.2-	1.7+	1984 09 30	809	0.5+	0.9+	1999 10 13	704	(0.8+ 3.1-)	
1984 09 23	809	0.8-	0.6-	1984 09 30	809	0.8+	1.0+	1999 11 16	704	0.2-	0.4-
1984 09 23	809	(0.2- 2.9-)		1984 09 30	809	0.7-	1.0+	1999 11 16	704	0.2-	0.4+
1984 09 24	809	1.2-	1.6-	1984 09 30	809	0.2-	1.0+	1999 11 16	704	0.1-	0.0
1984 09 24	809	1.0-	1.2-	1984 09 30	809	0.2+	0.9+	1999 11 16	704	0.4-	0.1-
1984 09 24	809	1.0-	1.1-	1984 10 01	809	0.6+	0.3+	1999 11 16	704	0.7-	0.2-
1984 09 26	809	0.5+	0.8-	1984 10 01	809	0.7+	0.3+	1999 12 15	704	0.6-	0.5-
1984 09 26	809	0.4+	0.6-	1984 10 01	809	1.2+	0.4+	1999 12 15	704	0.4-	0.3-
1984 09 26	809	0.3+	0.2-	1991 07 14	675	0.1+	1.2-	1999 12 15	704	1.3+	0.3+
1984 09 27	809	(1.0- 3.1-)		1991 07 14	675	0.2-	0.7-	1999 12 15	704	0.2-	0.5-
1984 09 27	809	(0.9- 3.3-)		1994 04 12	691	0.5-	0.1-	1999 12 15	704	0.2-	0.2-
1984 09 27	809	(1.0- 3.4-)		1994 04 12	691	0.9-	0.2+	2000 01 03	704	0.6+	0.0
1984 09 28	809	0.0	0.5+	1994 04 12	691	0.8-	0.5+	2000 01 03	704	0.0	0.7+
1984 09 28	809	0.9+	0.8+	1995 10 20	411	0.3-	0.2-	2000 01 03	704	0.3+	0.1+
1984 09 28	809	1.8+	1.0+	1995 10 20	411	1.3-	0.2-	2000 01 03	704	0.4+	0.6+
1984 09 28	809	0.1-	0.1+	1995 10 25	411	0.6-	0.2-	2000 01 03	704	0.2+	0.1+
1984 09 28	809	0.3+	0.6-	1995 10 25	411	0.8-	0.1+	2000 01 04	704	0.4+	0.5+
1984 09 28	809	0.5+	1.0-	1998 06 26	704	0.1-	0.5+	2000 01 04	704	0.2+	0.4+
1984 09 29	809	(2.3- 0.5-)		1998 06 26	704	1.6+	0.6-	2000 01 04	704	0.3+	0.8+
1984 09 29	809	2.0-	0.5-	1998 06 26	704	0.2+	1.8+	2000 01 04	704	1.3+	1.3+
1984 09 29	809	2.0-	0.6-	1998 06 26	704	0.3+	0.1+	2000 01 04	704	0.5-	0.2-
1984 09 29	809	0.8+	0.3+	1999 10 13	704	0.1-	0.2-				

(13009)* 1985 PB₂ = 1983 CW₄ = 1989 NT₁

Discovered 1985 Aug. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. T. B. Spahr (*MPC* 30650)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	157.33189		(2000.0)	P	Q
<i>n</i>	0.23586362	ω	213.17408	+0.99047036	+0.00682334
<i>a</i>	2.5943510	Ω	145.61911	+0.02121635	+0.97929088
<i>e</i>	0.2001720	<i>i</i>	14.09891	-0.13608209	+0.20234332
<i>P</i>	4.18	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1983 02 14	381	0.3-	1.6-	1998 11 25	426	0.2-	0.0	1999 12 05	704	0.5+	0.3-
1985 08 13	095	(3.9+ 9.1-)		1998 11 25	426	0.4-	0.1+	1999 12 05	704	0.5-	0.3+
1985 08 15	095	(0.9+ 5.8-)		1998 12 19	704	0.2+	0.4-	1999 12 05	704	0.5-	0.4-
1985 08 17	095	1.6+	1.9-	1998 12 19	704	0.1-	0.0	1999 12 18	699	0.0	1.1+
1985 08 19	095	0.1-	0.2-	1998 12 19	704	0.8+	0.1-	1999 12 18	699	0.2-	0.1+
1985 08 24	095	1.0-	1.4+	1998 12 19	704	(2.2+ 0.8-)		1999 12 18	699	0.1-	1.7+
1985 09 11	095	(1.4- 4.6+)		1998 12 19	704	1.3-	1.3-	2000 01 04	704	0.6-	0.7-
1985 09 19	095	(2.8- 5.8+)		1999 01 07	704	0.5-	1.3-	2000 01 04	704	0.9-	1.4+
1985 09 20	095	(3.6- 3.0+)		1999 01 07	704	1.0+	1.4+	2000 01 04	704	0.1-	0.8+
1989 07 07	675	0.2-	0.0	1999 01 07	704	0.0	1.1+	2000 01 04	704	0.2+	0.6+
1989 07 07	675	0.2-	0.1+	1999 01 07	704	0.8+	0.7+	2000 01 07	120	0.1+	0.4-
1998 11 19	699	0.2-	0.6+	1999 02 04	704	0.6+	0.9-	2000 01 07	120	0.3+	0.1+
1998 11 19	699	0.0	0.5+	1999 02 04	704	0.2-	1.6-	2000 01 08	704	0.2-	1.0-
1998 11 19	699	0.2+	0.4+	1999 02 04	704	0.5-	0.7+	2000 01 08	704	1.4+	0.7-
1998 11 24	426	0.2-	0.0	1999 02 04	704	0.7+	0.1-	2000 01 08	704	0.8+	0.2+
1998 11 24	426	0.0	0.1+	1999 02 04	704	(0.2+ 2.1-)		2000 01 08	704	0.0	0.5-
1998 11 24	426	0.3-	0.1+	1999 12 05	704	0.2-	0.4-	2000 01 08	704	0.3+	0.6+
1998 11 25	426	0.2-	0.0	1999 12 05	704	0.2+	1.0-				

(13010)* 1986 QR₅ = 1991 NH₈

Discovered 1986 Aug. 29 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. A. Doppler (*MPC* 34827)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	74.29366		(2000.0)	P	Q
<i>n</i>	0.17813800	ω	113.42982	+0.16277361	-0.97794962
<i>a</i>	3.1282276	Ω	326.36599	+0.79691682	+0.20849697
<i>e</i>	0.0988385	<i>i</i>	13.66374	+0.58174594	-0.01198177
<i>P</i>	5.53	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1986 08 29	095	0.1-	2.2+	1998 11 16	704	0.1-	0.0	2000 01 05	704	0.2-	0.3-
1986 09 06	095	0.3-	1.4-	1998 11 16	704	0.9+	0.6-	2000 01 05	704	0.1+	0.9+
1986 10 02	095	0.5+	0.4-	1998 12 12	704	0.7+	0.4-	2000 01 05	704	0.7+	0.2-
1991 07 14	675	1.5+	0.1-	1998 12 12	704	0.6+	0.9-	2000 01 06	699	0.0	0.1-
1991 07 14	675	0.4-	0.3+	1999 11 05	703	0.2+	0.8-	2000 01 06	699	0.9+	0.2+
1992 09 30	675	1.2-	0.9-	1999 11 05	703	0.2-	0.6+	2000 01 06	699	0.5+	0.0
1992 09 30	675	(2.5- 0.9-)		1999 11 05	703	0.1+	0.6+	2000 01 08	704	0.3-	0.5+
1997 10 31	910	0.7-	0.4+	1999 11 05	703	0.9+	0.1+	2000 01 08	704	1.1+	0.8+
1997 10 31	910	0.8-	0.5+	1999 12 18	699	0.7-	0.3+	2000 01 08	704	1.1-	0.2+
1997 10 31	910	0.8-	0.5+	1999 12 18	699	0.5-	0.3+	2000 01 08	704	0.2+	0.7-
1998 11 16	704	0.3+	0.6+	1999 12 18	699	0.3-	0.5+				
1998 11 16	704	0.9-	0.9+	2000 01 05	704	0.6-	0.4-				

(13011)* 1987 QS₅

Discovered 1987 Aug. 26 by E. W. Elst at the European Southern Observatory.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	95.16275		(2000.0)	P	Q
<i>n</i>	0.18238683	ω	29.04299	+0.99534133	-0.05161759
<i>a</i>	3.0794541	Ω	333.53945	-0.00066812	+0.84090159
<i>e</i>	0.1366225	<i>i</i>	10.53032	+0.09641160	+0.53872084
<i>P</i>	5.40	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1987 08 25	809	0.5+	1.3+	1998 08 31	621	0.0	0.4+	1998 10 15	704	0.1-	0.6+
1987 08 25	809	0.3+	0.2+	1998 09 14	704	0.0	0.2-	1998 10 15	704	0.2-	0.2+
1987 08 25	809	0.7+	0.8+	1998 09 14	704	0.7+	0.2-	1998 10 15	699	0.5+	0.8-
1987 08 26	809	0.7+	0.1+	1998 09 14	704	0.8-	0.6+	1998 10 15	704	0.9-	1.2+
1987 08 26	809	0.6+	0.5-	1998 09 14	704	0.5-	0.1+	1998 10 15	699	0.9-	0.8+
1987 08 26	809	(4.1- 0.6+)		1998 09 14	704	0.2-	0.8+	1998 10 15	704	0.7-	0.3+
1987 08 27	809	1.6-	0.1+	1998 09 18	704	0.2+	0.6+	1998 10 15	704	0.3-	0.1+
1987 08 27	809	1.3-	0.0	1998 09 18	704	0.1+	0.6+	1998 10 18	704	0.2-	0.3+
1987 08 27	809	0.3+	0.6+	1998 09 18	704	0.3-	0.0	1998 10 18	704	1.3+	1.7-

1987 08 28	809	0.4−	0.7−	1998 09 18	704	0.1−	0.3−	1998 10 18	704	1.3+	0.2−
1987 08 28	809	0.7+	1.1−	1998 09 18	699	0.1−	1.0+	1998 10 18	704	0.6+	0.3−
1987 08 28	809	0.7−	0.1−	1998 09 18	704	0.4+	0.5−	1998 10 18	704	0.7+	0.1−
1987 09 02	095	(1.3−	2.6−)	1998 09 18	704	0.6−	0.3−	1998 12 09	704	0.0	1.3−
1995 01 25	411	0.8−	1.2−	1998 09 18	704	1.0−	0.2+	1998 12 09	704	(1.0−	2.3−)
1995 01 25	411	0.0	0.2−	1998 09 18	704	0.6−	0.3+	1998 12 09	704	0.3−	1.5+
1995 01 26	411	0.0	0.5−	1998 09 18	699	0.1+	0.4+	1998 12 09	704	0.8−	0.2−
1995 01 26	411	0.5−	0.6+	1998 09 18	704	0.1+	1.1−	1999 12 12	704	0.5+	0.3−
1998 08 02	699	0.3+	0.0	1998 09 18	704	1.7−	0.7+	1999 12 12	704	0.5+	0.0
1998 08 02	699	1.0+	0.8−	1998 09 18	699	0.6+	0.4+	1999 12 12	704	0.4+	0.8+
1998 08 02	699	0.2+	1.6+	1998 09 26	704	1.0+	0.1−	1999 12 12	704	1.1+	0.0
1998 08 20	621	0.1−	0.2−	1998 09 26	704	0.1−	0.3−	1999 12 12	704	0.5+	0.6+
1998 08 20	621	0.1+	0.4−	1998 09 26	704	0.4+	0.0	1999 12 13	699	0.3−	1.3+
1998 08 20	621	0.1−	0.3−	1998 09 26	704	0.1−	0.6−	1999 12 13	699	0.5+	0.1+
1998 08 23	704	0.7+	0.4+	1998 09 26	704	0.2−	0.6−	1999 12 13	699	0.7−	0.5+
1998 08 23	704	1.0+	1.0−	1998 09 27	704	0.4+	0.4+	1999 12 15	704	0.1+	0.5+
1998 08 23	704	1.5−	0.9+	1998 09 27	704	0.8+	0.6−	1999 12 15	704	0.4+	0.3+
1998 08 23	704	0.9−	0.9−	1998 09 27	704	0.7+	0.9−	1999 12 15	704	0.5+	0.4−
1998 08 23	704	1.0−	1.7+	1998 09 27	704	0.8+	0.1−	1999 12 15	704	0.9+	0.8−
1998 08 27	699	0.5+	0.9−	1998 09 27	704	1.3+	1.2−	1999 12 15	704	0.7+	0.3−
1998 08 27	699	0.3+	0.6−	1998 10 14	704	0.0	0.2−	2000 01 02	704	0.9−	0.0
1998 08 27	699	0.5+	0.5−	1998 10 14	704	0.1+	1.4−	2000 01 02	704	1.1−	0.7−
1998 08 31	621	0.1+	0.1−	1998 10 14	704	0.6−	0.1−	2000 01 02	704	0.7−	0.5−
1998 08 31	621	0.2−	0.0	1998 10 14	704	0.9−	0.7+	2000 01 02	704	1.1−	0.4+
1998 08 31	621	0.1−	0.3+	1998 10 14	704	(2.6−	0.7+)				
1998 08 31	621	0.1+	0.3+	1998 10 15	699	0.1−	0.0				

(13012)* 1987 SO₅ = 1982 UC₉

Discovered 1987 Sept. 30 by P. Jensen at Brorfelde.

Id. A. Lowe (*MPC* 16026), S. Nakano (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

M	113.80664		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.18662795	ω	31.87630	+0.89239474	−0.45106935
a	3.0326218	Ω	354.88437	+0.37744015	+0.76185662
e	0.0155875	i	8.36012	+0.24732685	+0.46487733
P	5.28	H	12.6	G 0.15	U 2

Residuals in seconds of arc

1982 10 21	095	0.1+	1.7−	1998 11 16	704	0.3+	0.8+	2000 01 04	704	0.3−	0.0
1982 10 22	095	0.8+	0.1+	1998 11 16	704	0.2+	0.0	2000 01 04	704	0.2−	0.1−
1987 09 29	054	0.2+	0.1+	1998 12 24	699	0.4−	0.4+	2000 01 04	704	0.0	0.1+
1987 09 30	054	0.2−	0.1+	1998 12 24	699	0.2−	0.9+	2000 01 04	704	0.9−	0.1+
1987 09 30	054	0.3−	0.1−	1998 12 24	699	0.2+	0.8+	2000 01 06	704	0.0	0.6−
1987 10 02	054	(3.6+	1.2−)	1999 02 05	704	0.4−	0.8−	2000 01 06	704	0.2−	0.1+
1998 11 14	704	(2.4−	0.3−)	1999 02 05	704	0.1+	1.0+	2000 01 06	704	0.4−	0.2−
1998 11 14	704	0.1−	0.1+	1999 02 05	704	0.2+	1.7−	2000 01 06	704	0.2−	0.0
1998 11 14	704	0.0	0.4−	1999 02 05	704	1.7−	1.0−	2000 01 06	699	0.1−	0.3+
1998 11 14	704	0.2+	0.5−	1999 12 04	703	0.4+	0.3+	2000 01 06	704	0.4−	0.0
1998 11 14	704	0.2−	0.2−	1999 12 04	703	0.0	0.1+	2000 01 06	699	0.5+	0.4+
1998 11 16	704	0.7+	0.9+	1999 12 04	703	1.1+	0.6−	2000 01 06	699	0.6+	0.3+
1998 11 16	704	0.4−	1.3+	1999 12 04	703	0.2+	0.1+				
1998 11 16	704	0.3+	0.7−	2000 01 04	704	0.1+	0.4−				

(13013)* 1987 SP₁₂ = 1976 SK₆ = 1998 MU₄₆

Discovered 1987 Sept. 16 by H. Debehogne at the European Southern

Observatory.

Id. E. Bowell (*MPC* 32442), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	86.77974		(2000.0)	P	Q
n	0.17999994	ω	187.28437	+0.97147730	−0.23707273
a	3.1066177	Ω	186.43687	+0.21989116	+0.90902502
e	0.2660538	i	2.72349	+0.08876788	+0.34273901
P	5.48	H	13.3	G 0.15	U 2

Residuals in seconds of arc

1976 09 25	095	2.3−	1.4+	1998 09 16	699	0.1−	0.4+	1998 10 15	704	(3.1−	1.9+)
1987 08 28	095	1.8−	1.0−	1998 09 18	704	1.5+	0.1+	1998 10 15	691	0.6−	0.4−
1987 09 16	809	0.5+	0.1−	1998 09 18	704	0.6+	0.3−	1998 10 15	704	1.6−	0.8−
1987 09 16	809	0.4+	0.1−	1998 09 18	704	0.5+	0.3+	1998 10 15	691	0.6−	0.5−
1987 09 16	809	0.4+	0.2−	1998 09 18	704	1.0+	0.8+	1998 10 15	704	1.4−	1.3−
1987 09 16	095	0.4+	1.5−	1998 09 18	704	0.5−	0.4+	1998 11 10	699	0.8−	0.3−
1987 09 18	809	0.3−	0.5+	1998 09 25	699	0.0	0.3+	1998 11 10	699	0.8−	0.5+
1987 09 18	809	0.1−	0.6+	1998 09 25	704	0.2−	0.8+	1998 11 10	699	1.3−	0.3−
1987 09 18	809	0.1+	0.5+	1998 09 25	699	0.4−	0.9+	1998 12 08	704	1.1+	0.3−
1987 09 19	809	0.3+	0.7−	1998 09 25	704	0.3+	0.2+	1998 12 08	704	0.2−	0.2−
1987 09 19	809	0.5+	0.5−	1998 09 25	699	0.0	0.7+	1998 12 08	704	0.6+	0.6−
1987 09 19	809	0.5+	0.6−	1998 09 25	704	0.8+	0.4+	1998 12 08	699	0.4+	0.8−
1987 09 24	809	0.5+	0.2+	1998 09 25	704	1.0+	1.8−	1998 12 08	704	1.2+	1.2−
1987 09 24	809	0.7+	0.0	1998 09 26	704	0.7+	0.5+	1998 12 08	704	0.8+	0.7−
1987 09 24	809	0.4+	0.0	1998 09 26	704	1.7+	0.1−	1998 12 08	699	0.6+	0.2−
1987 09 27	809	0.5+	0.0	1998 09 26	704	0.6+	0.1−	1998 12 08	699	0.3+	0.3−
1987 09 27	809	0.6+	0.1+	1998 09 26	704	0.9+	0.8−	1999 10 10	704	1.2+	1.5+
1987 09 27	809	0.6+	0.2+	1998 09 26	704	0.0	0.7−	1999 10 10	704	0.4−	0.3+
1998 06 29	704	0.8−	0.4+	1998 09 27	704	0.1+	0.1−	1999 10 10	704	0.1−	0.6+
1998 06 29	704	0.6−	0.7+	1998 09 27	704	0.1−	0.7+	1999 10 10	704	0.0	0.1+
1998 06 29	704	0.2−	0.0	1998 09 27	704	0.4−	1.3+	1999 11 17	704	0.9−	0.6−
1998 06 29	704	0.1+	0.4−	1998 09 27	704	0.1+	0.2−	1999 11 17	704	0.7−	0.0
1998 06 29	704	0.9−	0.7+	1998 09 27	704	0.4−	0.7−	1999 11 17	704	0.7−	0.1−
1998 08 02	699	0.4−	0.4+	1998 10 14	704	0.3−	0.5−	1999 11 17	704	0.8−	0.3+
1998 08 02	699	0.8−	0.8+	1998 10 14	704	0.9−	0.8−	2000 01 05	704	0.1+	0.6+
1998 08 02	699	0.4−	0.5+	1998 10 14	704	0.1+	0.0	2000 01 05	704	0.3+	0.4+
1998 09 14	704	0.4+	0.1+	1998 10 14	704	0.5−	0.4+	2000 01 05	704	0.7+	0.8+
1998 09 14	704	0.0	1.6+	1998 10 14	704	1.3−	0.8+	2000 01 05	704	0.7+	0.4+
1998 09 14	704	0.4−	1.0+	1998 10 15	704	0.4−	0.8−	2000 01 05	704	0.6+	0.3+
1998 09 16	699	0.0	0.7+	1998 10 15	704	0.7−	1.0+				
1998 09 16	699	0.1−	0.3+	1998 10 15	691	0.6−	1.0−				

(13014)* 1987 WJ₁

Discovered 1987 Nov. 17 by R. P. Binzel at the Anderson Mesa Station of the

Lowell Observatory.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	83.45182		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.17659367	ω	357.31160	+0.86203308	−0.50231763
a	3.1464388	Ω	33.12048	+0.46730696	+0.73598409
e	0.1389902	i	7.11162	+0.19627322	+0.45387710
P	5.58	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1987 10 27	095	1.9−	0.8+	1998 09 27	704	0.3−	0.3−	1998 11 11	704	1.1−	0.9+
1987 11 17	688	0.5+	0.6−	1998 09 27	704	0.9−	0.4−	1998 11 11	704	0.2−	0.4+
1987 11 17	688	1.0+	0.7−	1998 09 27	704	1.9−	0.3−	1998 11 23	699	0.5+	0.2−
1987 11 20	688	0.1+	0.1−	1998 10 10	699	0.2+	0.3+	1998 11 23	699	0.5+	0.6+
1987 11 20	688	0.4+	0.5−	1998 10 10	699	0.2+	0.4+	1998 11 23	699	0.1−	0.2−
1987 11 21	688	0.5−	0.6−	1998 10 10	699	0.4+	0.3+	1998 12 09	699	0.6+	0.7−
1987 11 21	688	0.8−	0.7−	1998 10 14	704	0.0	0.1+	1998 12 09	699	0.1+	0.4−
1987 11 21	095	1.2+	0.5−	1998 10 14	704	1.0+	1.2+	1998 12 09	699	0.4+	0.2−
1987 11 22	688	0.1+	0.3−	1998 10 14	704	1.3+	0.4+	1999 01 08	704	1.9+	1.7+
1987 11 22	688	0.1+	0.3−	1998 10 14	704	0.8+	0.1−	1999 01 08	704	0.7−	1.2+
1987 12 21	688	0.8+	0.3−	1998 10 14	704	0.7+	1.5−	1999 01 08	704	1.1+	0.4−
1987 12 21	688	0.9+	0.3−	1998 10 15	704	0.1+	0.5−	1999 01 08	704	0.0	0.0
1987 12 22	688	0.1+	0.6−	1998 10 15	704	0.6+	0.1+	1999 01 08	704	0.6+	0.8−
1987 12 22	688	0.1+	0.6−	1998 10 15	704	0.2+	0.2+	1999 01 11	704	0.9−	0.4−
1988 01 12	688	0.3+	2.4+	1998 10 15	704	0.6+	0.2−	1999 01 11	704	0.7+	0.0
1990 03 27	675	1.7−	0.2−	1998 10 28	704	0.1+	0.2+	1999 01 11	704	1.4−	0.1−
1990 03 27	675	0.2+	0.3−	1998 10 28	704	0.5−	0.4+	1999 01 14	691	0.3+	0.1−
1996 05 21	566	1.0+	0.3−	1998 10 28	704	0.6+	0.1−	1999 01 14	691	0.4+	0.6−
1996 05 21	566	0.2−	0.2−	1998 10 28	704	1.0−	0.1+	1999 01 14	691	0.4+	0.7−
1996 05 21	566	0.0	0.3−	1998 10 28	704	0.7−	1.1+	1999 12 15	704	0.4−	0.2−
1998 09 21	809	(2.3+	3.1+)	1998 10 29	704	0.5+	0.7+	1999 12 15	704	0.2+	0.4+
1998 09 21	809	(2.1+	3.0+)	1998 10 29	704	0.5−	0.7+	1999 12 15	704	0.8+	0.5+

2000 JAN. 24

M.P.C. 37491

1998 09 21	809	(2.3+ 2.6+)	1998 10 29	704	0.7- 0.8+	1999 12 15	704	0.3+ 0.0
1998 09 23	809	(3.5+ 1.4+)	1998 10 29	704	0.2- 0.2+	1999 12 15	704	1.2+ 0.6+
1998 09 23	809	(2.8+ 0.7+)	1998 10 29	704	0.3- 0.4-	2000 01 03	704	0.1+ 1.0-
1998 09 23	809	(2.3+ 1.2+)	1998 11 10	704	0.3- 0.6-	2000 01 03	704	0.7- 0.5-
1998 09 26	704	0.5- 0.4-	1998 11 10	704	0.4+ 0.2+	2000 01 03	704	0.5- 0.1+
1998 09 26	704	0.5- 0.6-	1998 11 10	704	0.5- 0.4+	2000 01 03	704	0.0 0.4+
1998 09 26	704	0.2+ 0.8-	1998 11 10	704	0.0 0.2+	2000 01 03	704	0.0 0.2+
1998 09 26	704	0.8- 0.4-	1998 11 10	704	1.0- 0.8+	2000 01 06	699	0.3- 0.1+
1998 09 26	704	0.4- 0.7-	1998 11 11	704	0.4+ 0.7+	2000 01 06	699	0.3+ 0.2+
1998 09 27	704	1.2- 0.6-	1998 11 11	704	1.0+ 0.0	2000 01 06	699	0.4- 0.6+
1998 09 27	704	0.5- 0.4-	1998 11 11	704	0.1- 0.9+			

(13015)* 1987 XC = 1982 JG₁

Discovered 1987 Dec. 14 by T. Seki at Geisei.

Id. T. Kobayashi (*MPC* 12801)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	47.72702		(2000.0)	P	Q
<i>n</i>	0.24086446	ω	285.15567	+0.91075037	+0.33996102
<i>a</i>	2.5583163	Ω	55.51116	-0.17382707	+0.83055549
<i>e</i>	0.2658718	<i>i</i>	16.52467	-0.37459033	+0.44113953
<i>P</i>	4.09	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 05 15	675	(3.7- 2.9-)	1995 09 29	801	0.8+ 0.7-	1999 09 30	704	1.1- 0.0
1982 05 16	675	(4.0- 2.7-)	1995 10 19	372	0.7- 0.8+	1999 09 30	704	0.5- 0.6-
1982 05 16	675	(3.6- 2.0-)	1995 11 18	372	1.0- 1.7-	1999 09 30	704	1.3- 0.1+
1982 05 17	675	(4.4- 2.3-)	1995 11 18	372	0.7- 1.3-	1999 09 30	704	0.6- 0.4-
1987 12 14	372	(4.8- 0.1+)	Y 1995 11 22	801	0.2+ 0.5-	1999 10 08	106	0.3+ 0.7+
1987 12 14	372	1.5+ 0.9-	Y 1995 11 22	801	0.3- 0.3-	1999 10 08	106	0.4- 0.3-
1987 12 16	372	(3.3+ 0.2+)	1995 11 25	801	0.4+ 0.3-	1999 10 16	699	1.0- 0.1+
1987 12 19	372	0.6+ 0.0	1995 11 25	801	0.3+ 0.5-	1999 10 16	699	0.4+ 0.4+
1987 12 19	372	0.3+ 0.7+	1995 12 23	801	0.2+ 0.1-	1999 10 16	699	0.7+ 0.0
1987 12 25	372	1.2+ 0.6+	1995 12 23	801	0.3+ 0.2-	1999 11 08	703	1.0+ 0.5+
1987 12 25	372	1.2- 0.7+	1998 04 24	704	0.3+ 1.2+	1999 11 08	703	0.1+ 0.0
1988 01 13	372	(1.5+ 2.1+)	1998 04 24	704	0.4+ 0.7+	1999 11 08	703	0.7+ 0.0
1988 01 13	372	(2.2- 0.9-)	1998 04 24	704	0.5- 1.3+	1999 11 08	703	0.2+ 0.8+
1991 11 04	894	0.4+ 1.1+	1998 04 24	704	0.8+ 1.1+	1999 11 10	704	0.3+ 0.9+
1991 11 04	894	0.1- 0.2-	1998 04 24	704	0.5+ 0.1+	1999 11 10	704	0.3+ 0.6+
1991 11 05	894	1.1- 0.6+	1998 05 24	699	1.4+ 0.2+	1999 11 10	704	0.6+ 0.9+
1991 11 05	894	0.5- 1.0-	1998 05 24	699	0.0 0.5+	1999 11 10	704	0.1+ 0.7+
1991 11 10	894	0.2- 0.9-	1998 05 24	699	1.1- 0.7+	1999 11 10	704	0.2+ 0.1-
1991 11 10	894	0.6- 0.7-	1998 05 29	704	1.4+ 0.2-	1999 11 15	699	0.0 0.1+
1991 11 28	372	0.1- 1.8+	1998 05 29	704	0.8- 0.9+	1999 11 15	699	0.6+ 0.5-
1991 11 28	372	(0.7- 3.2+)	1998 05 29	704	1.2+ 1.7-	1999 11 15	699	0.1+ 0.2+
1993 01 26	372	(2.7- 0.6+)	1998 05 29	704	1.2- 0.3+	2000 01 08	704	0.3- 1.0+
1993 01 26	372	1.8+ 0.8+	1998 05 29	704	0.2- 0.2+	2000 01 08	704	0.3- 0.2+
1993 02 12	372	(2.4+ 1.0+)	1999 09 11	704	0.2+ 0.7+	2000 01 08	704	0.1- 1.0-
1993 02 12	372	0.3+ 1.4+	1999 09 11	704	0.3+ 0.7+	2000 01 10	704	0.5- 0.7+
1993 02 13	372	(6.3+ 2.4-)	1999 09 11	704	0.2- 0.4+	2000 01 10	704	0.5- 0.5+
1995 09 18	372	0.1- 1.6+	1999 09 11	704	0.1- 0.3+	2000 01 10	704	0.4- 0.3+
1995 09 18	372	(3.1+ 2.4+)	1999 09 11	704	0.2- 0.4+	2000 01 10	704	0.1+ 0.6+
1995 09 29	801	0.2- 1.0-	1999 09 30	704	1.0- 0.0	2000 01 10	704	0.5+ 0.1+

(13016)* 1988 DB₅ = 1990 SZ₁₇ = 1998 SE₁₀₁

Discovered 1988 Feb. 25 by R. H. McNaught at Siding Spring.

Id. G. V. Williams (*MPC* 32920), A. Doppler (*MPC* 34487)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	276.84668		(2000.0)	P	Q
<i>n</i>	0.23861552	ω	12.39232	-0.84130336	+0.53490497
<i>a</i>	2.5743658	Ω	200.52899	-0.51300859	-0.83554747
<i>e</i>	0.1061073	<i>i</i>	12.85289	-0.17038441	-0.12544761
<i>P</i>	4.13	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1988 02 23	413	0.9+ 0.0	1998 09 26	704	0.0 1.1-	1999 12 20	704	0.3- 0.3+
1988 02 25	413	0.1- 0.3-	1998 09 26	704	0.1- 0.5-	1999 12 20	704	0.1+ 0.2-
1988 02 25	413	0.3+ 0.5+	1998 09 26	704	0.7+ 0.4-	1999 12 20	704	0.3- 0.2-
1988 03 10	413	0.0 0.8+	1998 09 26	704	0.7+ 0.2-	1999 12 20	704	0.1- 0.0
1988 03 10	413	0.7- 0.3+	1998 09 27	704	0.0 0.4+	2000 01 08	704	0.6- 0.5+
1990 09 27	413	0.2+ 1.6-	1998 09 27	704	(3.7+ 2.0+)	2000 01 08	704	0.1- 0.0
1994 10 07	691	0.1- 0.0	1998 09 27	704	0.3- 0.9+	2000 01 08	704	0.2+ 0.2-
1994 10 07	691	0.1+ 0.1-	1998 09 27	704	0.3- 0.8+	2000 01 08	704	0.1+ 0.3+
1994 10 07	691	0.1+ 0.1-	1998 09 27	704	0.2+ 1.5+	2000 01 12	704	0.6+ 0.4-
1994 10 26	691	0.5- 0.7+	1998 10 14	699	1.0- 1.1+	2000 01 12	704	0.5+ 0.9-
1994 10 26	691	0.4+ 0.2+	1998 10 14	699	0.1+ 0.0	2000 01 12	704	(0.0 2.5-)
1994 10 26	691	0.3- 0.1+	1998 10 14	699	0.2- 0.0	2000 01 12	704	(0.4- 2.6-)
1998 09 26	704	0.0 0.7-	1999 12 20	704	0.2- 0.2+			

(13017)* 1988 FM = 1951 EL₂ = 1992 DE

Discovered 1988 Mar. 18 by M. Arai and H. Mori at Yorii.

Id. S. Nakano (*MPC* 19863)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	307.05937		(2000.0)	P	Q
<i>n</i>	0.24034264	ω	183.27378	-0.94892621	+0.30930847
<i>a</i>	2.5620180	Ω	15.19457	-0.28380698	-0.75076170
<i>e</i>	0.1147897	<i>i</i>	13.72544	-0.13781383	-0.58368240
<i>P</i>	4.10	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1951 03 13	711	(6.1- 3.7+)	Y 1998 09 20	809	1.1- 0.4-	1998 10 28	704	0.3- 0.5-
1955 03 22	675	0.4+ 0.0	1998 09 20	809	0.6- 1.2-	1998 10 28	704	0.7- 0.2+
1988 03 18	875	2.0- 0.7-	1998 09 20	809	0.6- 1.3-	1998 10 28	704	0.1+ 0.7+
1988 03 18	875	2.3- 1.2-	1998 09 26	704	0.6- 0.0	1998 10 29	704	0.1- 0.4-
1988 03 23	875	(3.2- 1.3+)	1998 09 26	704	0.3+ 1.3-	1998 10 29	704	0.9- 0.1+
1988 03 23	875	(4.7- 0.8+)	1998 09 26	704	0.0 1.1-	1998 10 29	704	1.4- 1.0-
1988 04 09	875	0.2+ 2.3+	1998 09 26	704	0.2- 0.0	1998 10 29	704	1.3- 0.8+
1988 04 09	875	0.2+ 0.7+	1998 09 26	704	0.6- 0.8+	1998 10 29	704	0.1- 0.1+
1988 04 09	875	0.6- 1.8-	1998 09 27	704	0.7- 0.0	1998 11 10	704	0.7+ 0.3+
1988 04 13	875	1.8+ 0.8-	1998 09 27	704	0.2+ 0.6+	1998 11 10	704	0.6+ 1.0+
1988 04 13	875	2.2+ 1.6-	1998 09 27	704	0.9- 1.1+	1998 11 10	704	0.4+ 0.5-
1990 10 22	675	1.0- 0.6+	1998 09 27	704	0.3- 2.0+	1998 11 10	704	0.5+ 0.3-
1990 10 22	675	0.1+ 1.1-	1998 09 27	704	0.3+ 1.1+	1998 11 17	699	0.5+ 0.4-
1992 02 25	376	(0.7+ 2.8-)	1998 10 14	704	0.8+ 0.5-	1998 11 17	699	0.1+ 1.6-
1992 02 25	376	1.7- 0.3+	1998 10 14	704	0.3+ 0.5-	1998 11 17	699	0.2+ 0.8+
1992 02 27	376	0.1- 0.3+	1998 10 14	704	1.2+ 0.0	1999 12 12	703	0.1+ 0.5+
1992 02 27	376	0.3+ 1.5+	1998 10 14	704	1.4+ 0.8+	1999 12 12	703	0.3+ 0.3+
1994 11 29	675	0.4+ 2.3-	1998 10 15	704	0.6+ 0.1-	1999 12 12	703	0.6+ 0.6+
1994 11 29	675	0.4+ 0.1+	1998 10 15	704	1.1+ 0.5+	1999 12 12	703	0.4+ 0.4+
1996 03 21	801	0.0 0.3+	1998 10 15	704	0.5- 0.4+	1999 12 12	704	0.3+ 0.4-
1996 03 21	801	0.1- 0.5+	1998 10 15	704	0.9+ 0.8-	1999 12 12	704	0.6+ 1.0-
1996 03 24	801	0.0 0.0	1998 10 17	699	0.5+ 0.2-	1999 12 12	704	0.5+ 0.7-
1996 03 24	801	0.1+ 0.0	1998 10 17	699	0.5+ 0.0	1999 12 12	704	0.7+ 1.0-
1998 09 14	699	0.1- 0.5-	1998 10 17	699	0.8+ 0.4+	1999 12 12	704	0.2+ 0.1-
1998 09 14	699	0.3- 0.3-	1998 10 23	691	0.0 0.4-	2000 01 02	704	0.2+ 0.1-
1998 09 14	699	0.4+ 0.8+	1998 10 23	691	0.2+ 0.3-	2000 01 02	704	0.1- 0.2+
1998 09 18	809	0.3+ 0.8+	1998 10 23	691	0.2+ 0.3-	2000 01 02	704	0.2- 0.2+
1998 09 18	809	0.0 1.0+	1998 10 28	704	0.5+ 0.5-	2000 01 02	704	0.1- 0.8+
1998 09 18	809	1.2- 1.1+	1998 10 28	704	0.0 0.0	2000 01 02	704	0.2- 0.6+

(13018)* 1988 GF = 1980 KS₁ = 1981 UT₁₄ = 1995 AV

Discovered 1988 Apr. 10 by E. F. Helin at Palomar.

Id. S. Nakano (*MPC* 24737)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	244.14826		(2000.0)	P	Q
<i>n</i>	0.23583346	ω	49.78312	+0.10706507	+0.97971291
<i>a</i>	2.5945722	Ω	227.23566	-0.96785931	+0.06370029
<i>e</i>	0.1766767	<i>i</i>	13.34156	-0.22756411	+0.19001289
<i>P</i>	4.18	<i>H</i>	12.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1980 05 17	095	(0.9+ 3.6+)	1998 10 23	734	0.3- 0.1-	1999 02 15	699	1.6- 0.4-
1981 10 23	095	(0.7+ 2.8+)	1998 10 23	734	0.2- 0.1-	1999 11 19	699	1.2+ 1.0+
1988 04 10	675	0.8+ 1.5-	1998 10 25	734	0.9+ 0.4-	1999 11 19	699	0.9+ 0.9-
1988 04 10	675	0.1+ 1.6-	1998 10 25	734	0.2+ 0.0	1999 11 19	699	0.3+ 0.4+
1988 04 11	675	0.4- 1.5-	1998 10 25	734	0.3- 0.7-	1999 12 16	704	0.0 0.2+
1988 04 11	675	0.6+ 0.2+	1998 11 24	704	0.9+ 0.3+	1999 12 16	704	0.6- 0.6+
1988 04 12	413	0.7- 1.2+	1998 11 24	704	1.7+ 0.0	1999 12 16	704	0.3+ 0.2-
1988 04 12	413	0.4- 0.3+	1998 11 24	704	1.1+ 0.3+	1999 12 16	704	0.6- 0.4-
1988 05 19	675	0.1- 1.0-	1998 11 24	704	0.7+ 0.1-	1999 12 16	704	0.2- 0.6-
1988 05 19	675	0.2+ 0.2+	1998 11 27	426	0.1+ 1.1-	1999 12 16	704	0.9- 0.0
1994 12 30	399	(3.3- 0.1+)	1998 11 27	426	0.1- 0.9-	1999 12 16	704	0.4+ 0.2-
1994 12 30	399	1.5- 1.9+	1998 11 27	426	0.2- 0.5-	1999 12 16	704	0.7- 0.6+
1995 01 06	399	2.1- 1.0-	1998 11 28	426	0.5- 0.8-	1999 12 16	704	0.4- 0.3-
1995 01 06	399	(4.0- 0.3+)	1998 11 28	426	0.1+ 1.1-	1999 12 16	704	0.6- 0.0
1997 06 05	801	0.4- 0.0	1999 01 07	699	0.2+ 0.0	2000 01 11	704	0.1+ 0.0
1997 06 05	801	0.6- 0.0	1999 01 07	699	0.3+ 0.4-	2000 01 11	704	0.2+ 0.2+
1997 07 27	127	0.1+ 0.5-	1999 01 07	699	0.4+ 0.1+	2000 01 11	704	0.0 0.3-
1997 07 27	127	0.5+ 0.6-	1999 01 10	699	0.2+ 0.3-	2000 01 11	704	0.1+ 0.9+
1997 07 29	127	0.2+ 0.3-	1999 01 10	699	0.0 0.0	2000 01 11	704	0.3+ 0.1+
1997 07 29	127	0.1- 0.4-	1999 01 10	699	0.4+ 0.8+			
1998 10 23	734	0.3- 0.1+	1999 02 15	699	0.6- 0.5+			

(13019)* 1988 NW = 1971 QL = 1998 XJ₅₁

Discovered 1988 July 10 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 33475)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	255.70426		(2000.0)	P	Q
<i>n</i>	0.23025718	ω	353.65702	+0.47195426	+0.86153253
<i>a</i>	2.6362945	Ω	304.35003	-0.79858569	+0.32782802
<i>e</i>	0.1793305	<i>i</i>	13.10100	-0.37352386	+0.38767318
<i>P</i>	4.28	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1971 08 18	095	0.8+ 1.3-	1998 12 14	704	0.0 0.1-	1999 01 19	704	0.8- 0.9+
1988 07 10	675	(1.1+ 4.5-)	1998 12 14	704	(2.7- 0.1+)	1999 01 19	704	0.7+ 1.0+
1988 07 12	675	0.0 0.5+	1998 12 17	704	0.3- 0.1+	1999 01 19	704	0.4+ 0.3-
1988 08 08	675	0.2+ 0.7-	1998 12 17	704	0.4- 0.2-	1999 11 09	703	1.4- 1.4+
1988 08 10	675	0.5+ 1.8-	1998 12 17	704	0.7- 0.4-	1999 11 09	703	(2.6+ 3.0+)
1998 11 24	699	0.8+ 0.1+	1998 12 17	704	0.4- 0.8-	1999 11 09	703	(0.7+ 2.0-)
1998 11 24	699	0.0 0.1-	1998 12 17	704	0.3- 0.7-	1999 11 09	703	0.9- 1.6+
1998 11 24	699	0.2+ 0.3+	1999 01 16	704	0.3- 0.7-	2000 01 10	704	0.2+ 0.5-
1998 12 14	699	0.1- 1.1+	1999 01 16	704	0.9- 1.3-	2000 01 10	704	0.7- 0.3-
1998 12 14	699	0.7- 0.6+	1999 01 16	704	0.8+ 0.0	2000 01 10	704	0.1- 1.8-
1998 12 14	699	0.6+ 0.8+	1999 01 16	704	1.0+ 0.7-	2000 01 11	704	0.2- 0.2-
1998 12 14	704	0.7- 0.1+	1999 01 16	704	1.7+ 0.9-	2000 01 11	704	0.1+ 0.1-
1998 12 14	704	0.2+ 0.6-	1999 01 19	704	0.1+ 0.3-	2000 01 11	704	0.1+ 0.0
1998 12 14	704	0.0 0.5-	1999 01 19	704	1.3- 0.4-	2000 01 11	704	0.5+ 1.6-

(13020)* 1988 PW₂ = 1997 GL₃₈

Discovered 1988 Aug. 10 by R. H. McNaught at Siding Spring.

Id. A. Doppler (*MPC* 33475)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	154.47262		(2000.0)	P	Q
<i>n</i>	0.19046877	ω	81.91350	-0.20627130	+0.97841579
<i>a</i>	2.9917148	Ω	176.11580	-0.95443142	-0.19838080
<i>e</i>	0.0313799	<i>i</i>	10.57980	-0.21566831	-0.05785840
<i>P</i>	5.17	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1988 08 10	413	0.9- 0.8-	1999 09 30	703	0.8+ 0.1+	1999 11 03	703	0.1+ 0.2+
1988 08 10	413	0.6- 0.0	1999 09 30	703	0.2- 0.4+	1999 11 03	703	0.1- 0.5+
1988 08 11	413	1.0- 1.8-	1999 10 04	703	0.2+ 0.0	1999 11 03	703	0.6+ 0.1-
1988 08 11	413	0.8+ 0.6+	1999 10 04	703	0.3- 0.5+	1999 11 06	704	1.1+ 0.0
1988 08 19	413	0.5+ 0.4-	1999 10 04	703	0.0 0.1-	1999 11 06	704	0.5- 1.1-
1988 08 20	413	1.6+ 0.2-	1999 10 04	703	0.6+ 0.3+	1999 11 06	704	1.0- 0.1+
1997 04 07	809	(0.9- 2.2+)	1999 10 04	703	0.2- 0.5-	1999 11 06	704	0.2+ 0.2-
1997 04 07	809	(0.5- 2.3+)	1999 10 04	703	0.4+ 0.1-	1999 11 06	704	0.6+ 0.4-
1997 04 07	809	0.1+ 1.4+	1999 10 04	703	0.3+ 0.3-	2000 01 05	704	0.3+ 0.6-
1997 04 08	809	0.9+ 0.1+	1999 10 04	703	0.6+ 0.1-	2000 01 05	704	0.3+ 0.6-
1997 04 08	809	0.6- 0.0	1999 10 13	699	0.3- 1.7+	2000 01 05	704	0.2- 0.4-
1997 04 08	809	0.1- 0.6-	1999 10 13	699	0.8- 0.2+	2000 01 05	704	1.1- 0.8-
1998 06 27	699	0.1- 0.7+	1999 10 13	699	1.0- 1.3+	2000 01 05	704	0.6- 0.7-
1998 06 27	699	0.7- 1.1+	1999 10 30	699	0.5- 0.5+	2000 01 08	704	0.1+ 0.0
1998 06 27	699	0.3+ 0.1+	1999 10 30	699	0.0 0.3+	2000 01 08	704	1.4- 0.1+
1999 09 30	703	0.8+ 0.9+	1999 10 30	699	0.1+ 0.9-	2000 01 08	704	0.0 0.2+
1999 09 30	703	0.4+ 0.3+	1999 11 03	703	0.0 0.1+	2000 01 08	704	0.4- 1.0+

(13021)* 1988 RY₅ = 1979 WB₂ = 1993 SR₂

Discovered 1988 Sept. 3 by H. Debehogne at the European Southern

Observatory.

Id. K. Ichikawa (*MPC* 29912)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	138.37373		(2000.0)	P	Q
<i>n</i>	0.20745166	ω	163.35465	+0.98012855	+0.19833826
<i>a</i>	2.8261255	Ω	185.20862	-0.18572495	+0.91197937
<i>e</i>	0.0913341	<i>i</i>	1.99139	-0.06967253	+0.35910383
<i>P</i>	4.75	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1979 11 16	095	0.3+ 0.7-	1993 09 18	675	0.2- 0.4+	1998 10 29	704	0.3+ 0.3+
1988 09 03	809	1.9- 1.1-	1993 09 18	675	0.5- 0.5+	1998 11 11	704	0.4- 0.9-
1988 09 03	809	1.5- 1.3-	1993 09 19	400	0.7+ 0.8+	1998 11 11	704	0.2- 0.3-
1988 09 03	809	1.0- 1.1-	1993 09 19	400	1.6+ 1.4+	1998 11 11	704	0.1+ 0.8+
1988 09 05	809	0.2+ 0.5+	1993 09 22	675	0.5- 0.5+	1998 11 11	704	0.4+ 0.2-
1988 09 05	809	0.4+ 0.3+	1993 09 22	675	1.0- 1.1+	1998 11 11	704	0.9- 1.2-
1988 09 05	809	0.6+ 0.0	1993 09 23	809	(1.5- 2.6-)	1999 01 07	691	0.4+ 0.5-
1988 09 06	809	(2.8+ 0.4-)	1993 09 23	809	(1.2- 3.1-)	1999 01 07	691	0.5+ 0.6-
1988 09 06	809	(2.9+ 0.3-)	1993 09 23	809	(0.8- 2.9-)	1999 01 07	691	0.3+ 0.4-
1988 09 06	809	(3.2+ 0.3-)	1993 09 23	675	1.0- 0.8-	1999 10 10	704	0.4+ 0.1+
1988 09 08	809	1.1+ 0.4+	1993 09 23	675	0.9- 0.7-	1999 10 10	704	0.6- 0.5+
1988 09 08	809	1.0+ 0.4+	1993 09 23	095	1.4- 0.6+	1999 10 10	704	0.8- 1.1+
1988 09 08	809	1.2+ 0.4+	1998 09 20	809	1.7+ 0.6+	1999 10 10	704	0.7- 1.5+
1988 09 10	675	0.2+ 0.9-	1998 09 20	809	1.2+ 0.1-	1999 12 30	747	0.1+ 0.1+
1988 09 10	675	0.5+ 0.6+	1998 09 20	809	1.5+ 0.3+	1999 12 30	747	0.2- 0.1+
1988 09 10	809	0.1- 1.2+	1998 09 21	809	(2.2+ 1.2+)	1999 12 30	747	0.1- 0.0
1988 09 10	809	0.1- 1.1+	1998 09 21	809	1.3+ 0.3+	1999 12 30	747	0.0 0.6-
1988 09 10	809	0.2- 1.1+	1998 09 21	809	1.5+ 1.0+	1999 12 31	732	0.2- 1.2-
1988 09 12	675	0.3+ 0.4-	1998 10 15	704	0.5- 0.7-	1999 12 31	699	0.7+ 0.7-
1988 09 12	675	0.8+ 0.3-	1998 10 15	704	0.6- 0.0	1999 12 31	732	0.7- 0.5-
1988 09 13	809	1.7- 0.1-	1998 10 15	704	0.3+ 0.5+	1999 12 31	732	0.8- 0.6-
1988 09 13	809	1.6- 0.3-	1998 10 15	704	1.5- 1.0+	1999 12 31	699	0.1+ 0.4-
1988 09 13	809	1.5- 0.3-	1998 10 15	704	1.5- 0.4-	1999 12 31	699	0.1- 0.4-
1988 09 16	809	1.9+ 1.1-	1998 10 28	704	0.3- 0.1+	2000 01 05	704	0.1+ 0.1+
1988 09 16	809	2.0+ 1.2-	1998 10 28	704	0.1- 0.4+	2000 01 05	704	0.3+ 0.3-
1988 09 16	809	1.8+ 1.2-	1998 10 28	704	0.6+ 0.1-	2000 01 05	704	0.4+ 0.3+
1993 09 16	809	0.0 1.6-	1998 10 28	704	0.8- 0.8+	2000 01 05	704	0.0 0.6+

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M.P.C. 37493

1993 09 16 809 (0.3- 2.3-) 1998 10 29 704 1.1- 0.6- 2000 01 05 704 0.9+ 0.8+
 1993 09 16 809 (0.5- 2.1-) 1998 10 29 704 0.0 0.5-
 1993 09 16 400 0.3- 0.4+ 1998 10 29 704 0.8+ 0.2-

(13022)* 1988 RL₉ = 1988 PO₄ = 1990 DC₁ = 1990 EW₅

Discovered 1988 Sept. 1 by H. Debehogne at the European Southern
 Observatory.

Id. S. Nakano (*MPC* 17442)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	121.96039	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.29927463	ω 62.98608	+0.85433823	-0.51757714
<i>a</i>	2.2135506	Ω 328.11976	+0.43960708	+0.76803183
<i>e</i>	0.1060998	<i>i</i> 5.11837	+0.27722157	+0.37714853
<i>P</i>	3.29	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 2

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

1988 08 08	095	1.8-	0.9-	1998 08 17	704	0.4-	0.1-	1998 12 03	097	0.7+	0.2-
1988 08 08	095	0.4-	1.8-	1998 08 17	704	0.1+	0.3+	1998 12 09	704	0.2-	0.6-
1988 09 01	809	(1.7+ 10.8+)		1998 08 17	704	0.7-	1.2+	1998 12 09	704	0.3+	0.8-
1988 09 02	809	(1.8+ 11.0+)		1998 08 17	704	0.2+	0.5+	1998 12 09	704	0.1-	0.0
1988 09 02	809	(2.0+ 10.9+)		1998 08 17	704	1.0-	0.9+	1998 12 09	704	0.7+	0.6-
1988 09 05	809	0.2-	2.1+	1998 08 23	704	1.0+	0.2+	1998 12 09	704	0.1-	0.8-
1988 09 05	809	0.0	2.0+	1998 08 23	704	0.3+	0.4-	1998 12 30	699	0.9-	0.4-
1988 09 05	809	0.1+	1.8+	1998 08 23	704	0.7+	0.6-	1998 12 30	699	0.4-	0.4-
1988 09 07	809	0.1+	1.3-	1998 08 23	704	1.1+	0.2+	1998 12 30	699	0.6+	0.4+
1988 09 08	809	0.0	1.3-	1998 08 23	704	0.9+	0.0	1999 02 04	699	0.4-	0.4+
1988 09 08	809	0.4+	1.4-	1998 08 26	699	0.3+	0.4+	1999 02 04	699	0.5-	0.9-
1988 09 09	809	0.7+	0.7-	1998 08 26	699	0.4+	0.0	1999 02 04	699	0.6+	0.2-
1988 09 10	809	0.8+	0.6-	1998 08 26	699	0.9+	0.0	1999 12 05	704	0.4+	0.1+
1988 09 10	809	0.7+	0.4-	1998 09 14	704	0.6-	0.1+	1999 12 05	704	0.2+	0.1-
1988 09 10	675	0.3+	0.9-	1998 09 14	704	0.6-	0.0	1999 12 05	704	0.4+	0.0
1988 09 10	675	0.3+	0.9-	1998 09 14	704	0.2+	0.4-	1999 12 05	704	0.3+	0.3+
1988 09 14	809(14.8+ 10.1+)			1998 09 14	704	0.1+	1.0-	1999 12 05	704	0.2-	0.5-
1988 09 14	809(14.3+ 10.1+)			1998 09 14	704	0.2-	1.2-	1999 12 05	699	0.4-	0.8+
1988 09 14	809(14.8+ 9.6+)			1998 09 18	704	0.5+	0.2-	1999 12 05	699	0.2+	0.6+
1990 02 21	220 (1.1+ 6.0-)			1998 09 18	704	1.0-	0.8+	1999 12 05	699	0.3-	0.8+
1990 02 21	220 (1.1+ 5.5-)			1998 09 18	704	1.7-	0.4-	1999 12 18	699	0.4+	0.6+
1990 02 22	220(0.3- 0.00+)			1998 09 18	704	0.3-	1.4+	1999 12 18	699	0.1+	1.1+
1990 02 28	399 0.3+	1.5-		1998 09 18	704	1.4-	0.5+	1999 12 18	699	0.3+	0.1-
1990 02 28	399 (4.0- 0.3+)			1998 09 25	704	0.4+	0.0	2000 01 04	704	0.4-	0.0
1990 02 28	399 (2.8- 1.4-)			1998 09 25	704	0.2-	0.4+	2000 01 04	704	0.2+	0.6+
1990 03 01	809 1.2-	1.3-		1998 09 25	704	0.2+	0.1-	2000 01 04	704	0.2-	0.0
1990 03 01	809 0.9-	1.6-		1998 09 25	704	0.3-	0.5+	2000 01 04	704	0.1+	0.8+
1990 03 01	809 0.5-	1.8-		1998 09 25	704	0.7-	0.6+	2000 01 04	704	0.1+	0.1-
1990 03 02	809 0.1-	1.0-		1998 09 27	704	0.6+	0.9-	2000 01 06	699	0.1+	1.0+
1990 03 02	809 0.0	1.0-		1998 09 27	704	0.1+	0.2+	2000 01 06	699	0.2-	1.0+
1990 03 02	809 0.0	1.1-		1998 09 27	704	1.8+	0.8+	2000 01 06	699	0.5+	0.7+
1990 03 03	809 0.3-	0.6-		1998 09 27	704	0.6+	0.1-	2000 01 08	704	0.7-	0.5+
1990 03 03	809 0.4-	0.6-		1998 09 27	704	1.0-	0.3-	2000 01 08	704	0.6+	0.9+
1990 03 03	809 0.1-	0.5-		1998 11 15	699	0.4-	0.3+	2000 01 08	704	0.5+	0.1+
1990 03 04	809 0.0	0.9+		1998 11 15	699	0.3-	0.5+	2000 01 08	704	0.1-	0.1+
1990 03 04	809 0.2+	0.8+		1998 11 15	699	0.0	0.3-	2000 01 08	704	0.6+	0.9-
1990 03 04	809 0.3+	0.8+		1998 12 03	097	0.5+	0.2-				

(13023)* 1988 XT₁ = 1996 FB₂₃ = 1996 GA₂₀

Discovered 1988 Dec. 10 by T. Kojima at the YGCO Chiyoda Station.

Id. B. G. Marsden (*MPC* 27306), M. E. Sansaturio (d, unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	56.26273	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18492469	ω 6.79478	+0.66569869	-0.71717340
<i>a</i>	3.0512148	Ω 41.76575	+0.66925188	+0.45158527
<i>e</i>	0.3017363	<i>i</i> 18.03089	+0.33007148	+0.53078533
<i>P</i>	5.33	<i>H</i> 12.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1988 12 10	897	0.9-	0.3-	1998 08 21	426	0.1-	0.1-	1998 12 08	704	0.3+	0.7+
1988 12 10	897	1.8-	1.2-	1998 08 21	426	0.2-	0.1+	1998 12 08	704	0.0	0.0
1988 12 16	897	0.2-	0.7+	1998 08 21	426	0.0	0.0	1998 12 08	704	0.6+	1.1+
1988 12 16	897	2.1+	1.0+	1998 08 22	426	0.1-	0.0	1998 12 08	704	0.7+	1.9+
1989 01 01	897	0.2+	1.5-	1998 08 22	426	0.1+	0.2+	1999 11 12	699	0.5+	0.0
1989 01 01	897	1.6+	1.4-	1998 08 22	426	0.1+	0.1+	1999 11 12	699	0.5+	0.6-
1996 03 24	809	(3.9- 1.3+)		1998 08 23	426	0.2-	0.2-	1999 11 12	699	0.6+	0.5+
1996 03 24	809	(2.5- 1.8+)		1998 08 23	426	0.0	0.0	1999 12 12	703	0.1+	1.1+
1996 03 24	809	(3.4- 1.6+)		1998 08 23	426	0.0	0.1-	1999 12 12	703	0.1-	0.6+
1996 04 15	809	0.6+	0.9+	1998 09 21	704	0.2-	0.1-	1999 12 12	703	0.6-	0.8+
1996 04 15	809	0.1-	1.0-	1998 09 21	704	0.2-	0.5+	1999 12 12	703	0.2+	1.1+
1996 04 15	809	0.5+	0.3+	1998 09 21	704	0.6-	0.6-	1999 12 30	704	0.5-	0.4+
1996 04 17	809	(3.6+ 1.3+)		1998 09 21	704	0.6-	0.1-	1999 12 30	704	0.0	0.3+
1996 04 17	809	(3.4+ 0.3+)		1998 09 21	704	1.0-	0.2+	1999 12 30	704	0.3+	0.6+
1996 04 17	809	(4.2+ 1.2+)		1998 12 08	704	0.1+	0.9+	1999 12 30	704	1.7+	0.2+

(13024)* 1989 AJ₆ = 1994 PG₃₇

Discovered 1989 Jan. 11 by F. Börngen at Tautenburg.

Id. B. G. Marsden (*MPC* 24561)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	249.60237	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26570920	ω 285.44959	-0.44251147	+0.89429355
<i>a</i>	2.3962474	Ω 318.08165	-0.77987509	-0.42038224
<i>e</i>	0.1010912	<i>i</i> 5.71296	-0.44269453	-0.15335521
<i>P</i>	3.71	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1989 01 04	413	0.8+	0.9+	1998 09 15	699	0.2-	0.1+	1998 10 15	704	1.1+	1.8-
1989 01 04	413	2.2+	0.6+	1998 09 15	699	0.2+	0.5+	1998 10 20	113	0.3+	0.0
1989 01 08	675	1.1-	0.6-	1998 09 18	704	0.2-	0.2+	1998 10 20	113	0.1+	0.0
1989 01 08	675	1.5-	1.3+	1998 09 18	704	0.8-	0.4-	1998 11 21	113	0.5+	0.4-
1989 01 11	033	0.3+	0.4+	1998 09 18	699	0.0	0.4+	1998 11 21	113	(1.8+ 2.6+)	
1989 01 11	033	0.6+	0.8+	1998 09 18	704	0.0	0.2-	1999 12 03	699	0.1+	0.4+
1989 01 14	033	0.8+	1.1+	1998 09 18	704	0.7-	0.1-	1999 12 03	699	1.2+	0.9+
1989 02 02	033	0.0	0.1+	1998 09 18	699	0.0	0.6+	1999 12 03	699	1.1+	0.2-
1994 08 10	809	(2.1+ 2.1-)		1998 09 18	704	0.3+	0.4-	1999 12 08	703	1.0-	0.7+
1994 08 10	809	(1.7+ 2.4-)		1998 09 18	699	0.3-	1.0+	1999 12 08	703	0.3-	0.7+
1994 08 10	809	1.4+	2.0-	1998 09 21	113	0.7-	0.6-	1999 12 08	703	0.4+	0.5+
1994 08 11	809	1.6+	1.6-	1998 09 21	113	(4.8- 1.4+)		1999 12 08	703	0.4+	0.3+
1994 08 11	809	0.6+	1.4-	1998 09 24	113	0.5-	1.5-	1999 12 15	704	0.8-	0.3+
1994 08 11	809	(0.4+ 2.2-)		1998 09 24	113	0.8-	0.9-	1999 12 15	704	0.4-	0.7+
1994 09 03	809	1.1-	1.5+	1998 09 26	704	0.2-	1.5-	1999 12 15	704	0.2-	0.4-
1994 09 03	809	1.6-	1.9+	1998 09 26	704	0.5+	0.1+	1999 12 15	704	0.6-	0.5-
1994 09 03	809	1.3-	1.8+	1998 09 26	704	0.6+	0.1-	1999 12 15	704	0.9-	0.3-
1994 09 04	809	(1.1+ 3.2+)		1998 09 26	704	0.7+	1.1-	1999 12 31	699	0.1+	0.4+
1994 09 04	809	(0.3+ 3.2+)		1998 09 26	704	0.2-	0.5-	1999 12 31	699	0.3+	0.2+
1994 09 04	809	(0.4+ 4.0+)		1998 09 27	704	0.5+	1.2-	1999 12 31	699	0.3+	0.5+
1994 09 09	691	0.1+	0.3+	1998 09 27	704	0.4-	0.8-	2000 01 03	704	0.2+	0.5-
1994 09 09	691	0.0	0.2+	1998 09 27	704	(2.4+ 0.2-)		2000 01 03	704	0.5-	0.3-
1994 09 09	691	0.1+	0.0	1998 09 27	704	(4.5- 1.4-)		2000 01 03	704	0.8+	0.3+
1998 08 20	113	0.4-	0.1-	1998 09 29	704	0.3+	0.9-	2000 01 03	704	0.3+	0.8-
1998 08 20	113	0.9-	0.2-	1998 09 29	704	0.1-	0.5+	2000 01 03	704	0.2+	0.0
1998 08 20	113	1.9-	0.5+	1998 09 29	704	0.2+	0.2+	2000 01 04	704	0.1+	0.7-
1998 08 27	699	0.7+	0.3+	1998 09 29	704	0.1-	0.2-	2000 01 04	704	0.4+	

1998 09 14	704	0.4−	1.0+	1998 10 15	704	0.3+	0.7+	2000 01 13	151	1.7−	0.4+
1998 09 14	704	0.7−	0.6+	1998 10 15	704	1.3+	1.3+	2000 01 13	151	1.2−	0.5+
1998 09 15	699	0.5+	0.4+	1998 10 15	704	(3.2−	0.2+)	2000 01 13	151	1.6−	0.6+

(13025)* 1989 BA

Discovered 1989 Jan. 28 by P. Wild at Zimmerwald.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	4.97196		(2000.0)	P	Q
<i>n</i>	0.26802128	ω	140.26859	−0.56283170	−0.81793049
<i>a</i>	2.3824467	Ω	342.87369	+0.61732650	−0.32005395
<i>e</i>	0.2780718	<i>i</i>	23.87887	+0.54966213	−0.47807445
<i>P</i>	3.68	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1975 06 09	413	1.8−	0.2+	1989 03 27	026	1.2+	0.9−	1998 09 14	704	0.6+	0.6−
1975 06 09	413	0.2+	0.2+	1991 09 04	413	0.5−	0.1+	1998 09 14	699	1.0+	0.6−
1975 07 07	413	0.2−	0.4+	1991 09 04	413	1.1−	0.7+	1998 09 14	699	1.0+	1.1−
1975 07 07	413	0.4−	0.8+	1995 10 19	026	0.7−	0.1+	1999 12 19	704	0.2−	1.1−
1989 01 28	026	0.1−	0.5+	1995 10 22	026	0.4+	0.4−	1999 12 19	704	0.3+	1.0+
1989 01 29	026	0.2+	0.4+	1995 10 23	026	(3.0−	0.5+)	1999 12 19	704	0.1+	0.9+
1989 01 30	026	0.2−	0.2−	1995 10 24	026	0.4+	0.5+	1999 12 19	704	0.9+	1.4+
1989 01 30	026	1.4−	0.6−	1995 10 24	026	0.8−	1.2−	1999 12 19	704	(1.0−	2.3+)
1989 01 31	026	0.9+	0.0	1995 10 26	801	0.5+	0.3−	1999 12 20	704	0.4−	0.8−
1989 02 02	026	1.2−	0.9−	1995 10 26	801	0.4+	0.3−	1999 12 20	704	0.6+	0.5+
1989 02 03	026	0.9+	0.7+	1995 11 18	026	(2.9+	0.9+)	1999 12 20	704	0.0	0.8+
1989 02 04	026	0.9−	1.9−	1995 11 21	026	1.1+	0.6+	1999 12 20	704	0.0	1.3+
1989 02 07	026	0.7+	0.1+	1995 11 24	801	0.2+	0.1−	1999 12 20	704	(0.6−	2.1+)
1989 02 12	026	0.7+	0.9+	1995 11 24	801	0.2+	0.4−	1999 12 28	704	0.5−	0.1+
1989 03 04	026	0.9−	0.2−	1995 12 12	689	(0.6−	2.4+)	1999 12 28	704	0.4−	0.0
1989 03 05	026	0.1+	1.5−	1998 09 14	704	(1.0+	2.3−)	1999 12 28	704	0.2+	0.4−
1989 03 07	675	0.0	0.8−	1998 09 14	704	1.0+	1.9+	1999 12 28	704	0.8+	0.2−
1989 03 07	675	0.0	0.7−	1998 09 14	704	1.0+	0.5+	1999 12 28	704	0.4+	0.1−
1989 03 26	026	0.6−	0.2−	1998 09 14	704	0.1+	1.0−	2000 01 13	611	0.2−	0.7+

(13026)* 1989 CX

Discovered 1989 Feb. 7 by S. Ueda and H. Kaneda at Kushiro.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	43.72450		(2000.0)	P	Q
<i>n</i>	0.27422507	ω	146.00783	−0.43726474	−0.87276652
<i>a</i>	2.3463778	Ω	328.26481	+0.70579375	−0.18350407
<i>e</i>	0.2295920	<i>i</i>	24.36227	+0.55736409	−0.45233268
<i>P</i>	3.59	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1989 02 07	399	(2.8+	0.2+)	1998 08 17	704	0.2+	0.2−	1998 09 19	704	0.4+	0.3+
1989 02 07	399	(3.0−	0.2−)	1998 08 17	704	0.6+	1.3−	1998 09 19	704	1.2−	0.3+
1989 02 07	399	(0.8−	2.4+)	1998 08 17	704	1.1+	0.3+	1998 09 19	704	0.8−	0.1−
1989 02 10	399	2.0−	1.9+	1998 08 17	704	0.7−	0.4+	1998 09 19	704	0.8−	0.8+
1989 02 10	399	(4.8−	2.8+)	1998 08 19	704	0.2−	0.1−	1998 09 21	699	0.2−	0.1−
1989 02 25	809	0.5+	0.5−	1998 08 19	704	0.0	0.6−	1998 09 21	699	0.6−	0.2+
1989 02 25	809	0.9+	0.8−	1998 08 19	704	0.5+	0.5+	1998 09 21	699	0.2+	0.7+
1989 02 25	809	1.1+	0.9−	1998 08 19	704	0.4+	0.2−	1998 09 23	704	0.1−	0.4−
1989 02 27	809	0.7+	0.5+	1998 08 19	596	0.5−	0.9−	1998 09 23	704	1.1−	0.1−
1989 02 27	809	0.5+	0.2+	1998 08 19	596	0.0	0.6−	1998 09 23	704	0.2−	0.2−
1989 02 27	809	0.3+	0.1−	1998 08 19	596	1.0−	1.3−	1998 09 23	704	0.3+	0.4−
1989 02 27	399	1.4−	0.5−	1998 08 24	704	0.1+	0.3+	1998 09 23	704	0.9−	0.5−
1989 02 27	399	0.7−	0.9−	1998 08 24	704	0.8+	0.2−	1998 10 18	699	0.4−	0.5+
1989 02 27	399	(10.6−	1.6−)	1998 08 24	704	0.2+	0.1+	1998 10 18	699	0.3−	0.8−
1989 03 01	809	0.4−	0.1−	1998 08 24	704	1.2−	0.6−	1998 10 18	699	0.0	0.2+
1989 03 01	809	0.4−	0.1−	1998 08 24	704	0.4+	0.1−	1998 12 09	704	(1.8+	2.2−)
1989 03 01	809	0.2−	0.2−	1998 08 27	704	0.3+	0.3+	1998 12 09	704	0.2+	1.1−
1989 03 02	809	0.4+	0.8+	1998 08 27	704	0.1+	1.1+	1998 12 09	704	(2.9+	0.1+)
1989 03 02	809	0.5+	0.8+	1998 08 27	704	0.0	0.8+	1998 12 09	704	1.2−	1.1+
1989 03 02	809	0.4+	0.8+	1998 08 27	704	1.5+	0.7+	1999 11 06	699	0.0	0.0
1989 03 12	399	1.3+	0.7+	1998 08 27	704	0.3−	0.2−	1999 11 06	699	1.4+	1.2+
1989 03 12	399	0.0	0.5+	1998 08 30	699	0.4+	1.2+	2000 01 10	704	0.7−	0.7+

1989 03 12	399	1.0+	0.0	1998 08 30	699	0.6+	0.7+	2000 01 10	704	0.8+	0.0
1995 12 19	399	0.9+	0.4−	1998 08 30	699	0.0	1.2+	2000 01 10	704	0.3+	0.2−
1995 12 19	399	0.9−	0.6−	1998 09 18	699	0.8−	0.1−	2000 01 10	704	0.4+	0.1−
1996 01 21	399	1.4−	1.2−	1998 09 18	699	0.3+	0.3+	2000 01 10	704	0.4+	0.0
1996 01 21	399	0.6+	0.3+	1998 09 18	699	0.4−	0.0				
1998 08 17	704	0.1+	0.1+	1998 09 19	704	0.3+	0.8+				

(13027)* 1989 GJ₄ = 1997 HK₆

Discovered 1989 Apr. 3 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 29912)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	265.16603		(2000.0)	P	Q
<i>n</i>	0.24119575	ω	286.55788	−0.95835932	−0.28021757
<i>a</i>	2.5559731	Ω	237.19957	+0.28055280	−0.88797639
<i>e</i>	0.1135175	<i>i</i>	3.75201	+0.05326857	−0.36465881
<i>P</i>	4.09	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 04 03	809	1.0−	0.3−	1999 09 14	703	0.4+	0.0	1999 10 13	704	0.1−	0.1−
1989 04 03	809	0.4−	0.2+	1999 09 14	703	0.2+	0.3+	1999 10 13	704	0.0	0.4−
1989 04 03	809	0.2−	0.2−	1999 09 14	703	0.2+	0.2+	1999 10 20	704	0.1−	0.2+
1989 04 05	809	0.4−	0.2−	1999 10 01	699	0.0	0.5+	1999 10 20	704	0.1−	0.1+
1989 04 05	809	0.7+	0.0	1999 10 01	699	0.5+	0.3+	1999 10 20	704	0.2−	0.2−
1989 04 09	809	0.5+	1.0+	1999 10 01	699	0.1−	0.9+	1999 10 20	704	0.2−	0.5−
1989 04 09	809	0.6+	0.7+	1999 10 02	703	0.1−	0.4+	1999 10 20	704	0.0	0.3−
1989 04 09	809	0.8+	0.6+	1999 10 02	703	0.7+	0.0	1999 10 29	699	0.1−	0.0
1997 04 28	704	0.7−	0.2+	1999 10 02	703	0.0	0.5+	1999 10 29	699	0.2+	1.4+
1997 04 28	704	0.7−	0.4+	1999 10 02	703	0.2+	0.1−	1999 10 29	699	0.2−	0.5+
1997 04 28	704	0.7−	0.4+	1999 10 03	704	1.4+	0.6+	1999 11 04	704	0.0	0.3−
1997 04 28	704	0.3−	0.5+	1999 10 03	704	1.6+	0.4+	1999 11 04	704	0.4−	0.9+
1997 04 28	704	1.0−	1.0+	1999 10 03	704	1.2+	0.6−	1999 11 04	704	0.1−	0.8+
1997 04 29	704	1.1+	0.1+	1999 10 03	704	0.3+	0.3−	1999 11 04	703	0.9−	0.4−
1997 04 29	704	1.0+	0.4+	1999 10 07	704	0.2−	0.7−	1999 11 04	704	0.4−	0.5+
1997 04 29	704	0.8+	0.1+	1999 10 07	704	0.1+	0.3−	1999 11 04	703	0.1−	0.2−
1997 04 29	704	1.0+	0.0	1999 10 07	704	0.7+	0.3+	1999 11 04	704	0.1−	0.9+
1997 04 29	704	0.9+	0.3+	1999 10 07	704	0.8−	0.0	1999 11 04	703	0.2−	0.1+
1998 06 21	688	0.2−	0.9+	1999 10 07	704	0.3+	0.3−	1999 11 04	703	0.5−	0.0
1998 06 21	688	0.1−	0.8+	1999 10 08	106	0.3+	0.3+	1999 11 14	704	0.3−	0.5+
1998 06 21	688	0.1−	0.8+	1999 10 08	106	0.1+	0.1+	1999 11 14	704	0.0	0.5+
1998 06 24	704	0.5+	0.2−	1999 10 08	106	0.1+	0.1+	1999 11 14	704	0.3+	0.3−
1998 06 24	704	0.8−	0.5+	1999 10 09	703	0.3+	0.5+	1999 11 14	704	0.1+	0.0
1998 06 24	704	0.0	1.1+	1999 10 09	703	0.2−	0.4+	1999 11 14	704	0.0	0.4−
1998 06 24	704	0.4+	1.4+	1999 10 09	703	0.3−	0.0	1999 11 16	704	0.2−	0.1−
1998 06 24	704	0.3−	1.5+	1999 10 09	703	0.2−	0.5+	1999 11 16	704	0.1+	0.2−
1998 06 26	809	0.6+	1.2−	1999 10 10	704	0.4−	0.7−	1999 11 16	704	1.0+	0.4−
1998 06 26	809	0.2+	0.7−	1999 10 10	704	0.7−	0.5−	1999 11 16	704	1.1+	0.2−
1998 06 26	809	0.6+	0.8−	1999 10 10	704	0.7−	0.0	1999 11 16	704	0.0	0.2−
1998 06 26	704	0.6−	1.5+	1999 10 10	704	0.6−	0.1−	1999 12 02	699	1.0−	1.3+
1998 06 26	704	1.2−	1.7+	1999 10 10	704	0.0	0.5−	1999 12 02	699	1.0−	0.7−
1998 06 26	704	0.1−	0.2−	1999 10 11	691	0.0	0.3−	1999 12 02	699	0.5−	0.3+
1998 06 26	704	1.3+	0.1+	1999 10 11	691	0.2−	0.3−	2000 01 07	704	1.1−	0.2+
1998 06 27	809	0.3+	1.5−	1999 10 11	691	0.1−	0.3−	2000 01 07	704	0.2−	0.7+
1998 06 27	809	0.7−	1.4−	1999 10 13	704	0.1+	0.0	2000 01 07	704	0.2+	0.9+
1998 06 27	809	0.8−	1.6−	1999 10 13	704	0.1−	0.0	2000 01 07	704	1.3−	0.1−
1999 09 14	703	0.3+	0.3+	1999 10 13	704	0.5−	0.1−				

2000 JAN. 24

M.P.C. 37495

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	194.84507	(2000.0)	P		Q	
<i>n</i>	0.25178017	ω	207.20248	+0.81783956	+0.53990305	
<i>a</i>	2.4838291	Ω	118.72292	-0.47801806	+0.83004087	
<i>e</i>	0.2161865	<i>i</i>	13.12302	-0.32037040	+0.13977430	
<i>P</i>	3.91	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1989 04 05	809	0.3+	1.3-	1998 12 15	704	0.9+	0.4+	1999 11 16	704	0.7-	0.5-
1989 04 07	809	0.1-	0.6-	1998 12 15	704	0.4+	0.0	1999 11 16	704	0.3+	0.1+
1989 04 11	809	0.4-	0.1-	1998 12 22	704	0.6-	0.2-	1999 11 16	704	0.5-	0.7+
1989 04 13	809	0.4-	0.1-	1998 12 22	704	0.9-	0.5-	2000 01 04	704	0.3+	0.2+
1992 02 08	033	1.2+	1.0+	1998 12 22	704	0.2-	0.4-	2000 01 04	704	0.3-	0.4-
1992 02 08	033	0.3+	0.5+	1998 12 22	704	1.1-	0.1+	2000 01 04	704	0.0	0.6+
1992 02 09	033	1.5-	0.3-	1999 01 14	699	0.7+	0.3-	2000 01 04	704	0.1-	0.1+
1996 01 15	691	0.1+	0.1-	1999 01 14	699	0.9+	0.2+	2000 01 07	704	0.5+	0.1-
1996 01 15	691	0.2+	0.0	1999 01 14	699	0.5+	0.2-	2000 01 07	704	0.2-	0.2+
1996 01 15	691	0.2-	0.2-	1999 01 23	699	0.2-	0.1-	2000 01 07	704	0.2+	0.5+
1998 12 15	704	0.1-	0.5-	1999 01 23	699	0.2-	0.5+	2000 01 07	704	1.0+	0.3+
1998 12 15	704	0.1+	1.2-	1999 01 23	699	0.8+	1.1+				
1998 12 15	704	0.2+	0.4-	1999 11 16	704	1.3-	1.7-				

(13029)* 1989 HA

Discovered 1989 Apr. 27 by P. Jensen at Brorfelde.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	187.33581	(2000.0)	P		Q	
<i>n</i>	0.23781074	ω	124.93594	-0.01986662	+0.98743373	
<i>a</i>	2.5801705	Ω	142.95040	-0.98103244	+0.01099022	
<i>e</i>	0.1645812	<i>i</i>	15.08270	-0.19282291	-0.15765101	
<i>P</i>	4.14	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1989 04 27	054	0.6-	0.9+	1998 08 18	566	0.5+	0.2-	1998 11 11	699	0.1+	0.0
1989 04 28	054	0.2-	0.1+	1998 08 18	566	0.1+	0.1-	1999 10 19	704	0.2-	0.2+
1989 04 30	054	0.3+	0.3-	1998 08 18	566	0.0	0.1-	1999 10 19	704	0.6+	0.3+
1989 05 03	054	0.7+	1.8+	1998 08 23	704	0.9+	0.1-	1999 10 19	704	0.0	0.3-
1989 05 29	675	0.5-	0.7+	1998 08 23	704	0.4+	0.3+	1999 10 19	704	0.2-	0.5-
1989 05 29	675	1.3-	0.1+	1998 08 23	704	0.2-	0.1-	1999 11 06	704	0.7+	0.4+
1989 05 30	675	(3.9-	0.4-)	1998 08 23	704	0.4+	0.4-	1999 11 06	704	0.1-	0.6+
1989 06 01	675	2.3+	0.2-	1998 08 23	704	0.6-	1.2-	1999 11 06	704	0.2+	0.9+
1989 06 02	675	(9.6+	5.1+)	1998 09 16	699	0.3+	0.3+	1999 11 06	704	0.6-	1.3+
1989 07 05	675	(0.1-	3.7-)	1998 09 16	699	0.4-	0.7+	1999 11 06	704	0.1-	0.1+
1989 07 05	675	(0.9-	3.0-)	1998 09 16	699	0.2-	0.3+	2000 01 08	704	0.5+	0.1+
1990 11 08	413	0.7+	0.9-	1998 09 21	704	0.2-	0.9+	2000 01 08	704	0.4+	0.7-
1990 11 08	413	0.2-	0.5-	1998 09 21	704	0.2-	0.2+	2000 01 08	704	0.3-	0.0
1998 06 29	704	1.2-	0.6+	1998 09 21	704	0.5-	0.9+	2000 01 08	704	0.2+	0.5-
1998 06 29	704	0.4+	0.5-	1998 09 21	704	0.1+	0.8-	2000 01 08	704	0.2+	0.1-
1998 06 29	704	0.3+	0.2+	1998 09 21	704	0.8-	0.4-	2000 01 11	704	0.1-	0.3+
1998 06 29	704	1.3+	0.0	1998 09 22	699	0.2-	1.0+	2000 01 11	704	0.1+	0.1+
1998 06 29	704	0.5+	0.2+	1998 09 22	699	0.1-	1.3+	2000 01 11	704	0.5-	0.5+
1998 07 26	699	0.1+	0.5-	1998 09 22	699	0.0	1.0+	2000 01 11	704	0.3-	0.5+
1998 07 26	699	0.0	0.4-	1998 11 11	699	0.9-	0.1-	2000 01 11	704	0.6-	0.3+
1998 07 26	699	0.2-	0.7-	1998 11 11	699	0.6-	0.3+				

(13030)* 1989 PF = 1984 KF₁ = 1998 QX₂

Discovered 1989 Aug. 9 by J. Alu and E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 32444), E. Bowell (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	113.55515	(2000.0)	P		Q	
<i>n</i>	0.21696059	ω	190.69941	+0.92331832	+0.34323761	
<i>a</i>	2.7429348	Ω	147.51605	-0.32439845	+0.93714666	
<i>e</i>	0.2409787	<i>i</i>	18.70719	-0.20554543	+0.06280196	
<i>P</i>	4.54	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1984 05 25	095	0.3-	0.5-	1998 08 27	699	0.1+	0.8+	1999 11 06	704	0.4+	0.7+
1989 08 09	675	1.5+	0.7-	1998 08 27	699	0.1+	0.8+	1999 11 06	704	0.6+	0.5+
1989 08 09	675	1.9+	0.8-	1998 08 27	699	0.0	1.0+	1999 11 06	704	(1.9+	2.3-)
1989 08 10	675	0.5-	1.0-	1998 09 14	704	0.3+	0.1+	2000 01 08	704	0.0	0.2+
1989 09 05	675	0.2-	0.1-	1998 09 14	704	0.5-	1.6-	2000 01 08	704	0.1+	0.1+
1989 09 05	675	1.0-	1.3-	1998 09 14	704	0.1+	0.5+	2000 01 08	704	0.3+	0.1+
1989 09 08	675	0.6-	1.0-	1998 09 14	704	0.3-	0.8-	2000 01 08	704	0.1+	0.2-
1989 09 08	675	(1.8-	2.7-)	1998 09 14	704	1.1-	0.4+	2000 01 08	704	0.2-	0.0
1998 06 25	699	0.0	0.5+	1998 09 14	699	0.5+	0.4-	2000 01 10	704	0.3-	0.2+
1998 06 25	699	0.0	0.6+	1998 09 14	699	0.4+	0.1-	2000 01 10	704	0.1+	0.2-
1998 06 25	699	0.2-	0.4+	1998 09 14	699	0.8+	0.3+	2000 01 10	704	0.2-	0.2+
1998 08 17	704	0.5+	0.4+	1998 09 22	689	0.4+	0.0	2000 01 10	704	0.6-	0.1+
1998 08 17	704	0.7-	0.6+	1998 09 24	699	0.2-	1.1+	2000 01 10	704	0.4-	0.4+
1998 08 17	704	0.4+	1.2+	1998 09 24	699	0.1-	0.8+	2000 01 11	704	0.1-	0.5+
1998 08 17	704	1.2+	0.5-	1998 09 24	699	0.1-	1.0+	2000 01 11	704	0.1+	0.5+
1998 08 17	704	0.1+	0.1+	1998 12 08	704	0.1-	0.9-	2000 01 11	704	0.3-	0.8-
1998 08 23	704	0.6-	1.1+	1998 12 08	704	0.5-	0.8-	2000 01 11	704	0.0	0.5+
1998 08 23	704	(3.3-	0.3+)	1998 12 08	704	0.5-	0.5-	2000 01 11	704	0.1+	0.9+
1998 08 23	704	0.2-	0.3+	1998 12 08	704	0.6-	0.6-				
1998 08 23	704	0.1-	0.3-	1998 12 08	704	(2.5-	0.3+)				

(13031)* 1989 SN₄ = 1979 HH₂ = 1996 KN₄

Discovered 1989 Sept. 26 by E. W. Elst at the European Southern

Observatory.

Id. T. Kobayashi (*MPC* 27555)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	340.62703	(2000.0)	P		Q	
<i>n</i>	0.23500589	ω	52.43903	-0.86753225	+0.49655578	
<i>a</i>	2.6006598	Ω	157.29057	-0.47652849	-0.81328540	
<i>e</i>	0.1294903	<i>i</i>	4.25420	-0.14250751	-0.30331373	
<i>P</i>	4.19	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1979 04 24	095	1.6-	1.3-	1993 09 22	675	1.6-	0.4-	1997 09 26	610	1.6+	0.9-
1989 09 26	809	2.0+	1.4+	1993 10 13	675	0.6+	0.2+	1997 09 26	610	1.2+	1.0-
1989 09 26	809	1.5+	0.1-	1993 10 15	010	(2.3-	1.4+)	1997 09 26	610	0.8+	0.9-
1989 09 26	809	1.8+	0.0	1993 10 15	010	(1.6-	2.2+)	1997 09 27	610	0.7+	0.6-
1989 09 28	809	(0.3-	3.0+)	1993 10 15	010	(2.4-	1.3+)	1997 09 27	610	0.7+	0.2-
1989 09 28	809	0.2-	1.9+	1996 05 22	809	0.1-	0.4+	1997 09 27	610	0.8+	0.1+
1989 09 28	809	0.0	1.4+	1996 05 22	809	0.1-	0.4+	1998 10 30	704	(2.3+	2.6+)
1989 09 29	675	0.3-	0.5-	1996 05 22	809	0.4+	0.8+	1998 10 30	704	1.2+	0.6-
1989 09 29	675	0.8+	0.5-	1996 05 24	809	1.2+	0.4+	1998 10 30	704	0.3+	0.9-
1989 10 03	809	(1.5-	2.9+)	1996 05 24	809	1.5+	0.1+	1998 12 15	704	(1.4+	3.9+)
1989 10 03	809	1.2-	2.4+	1996 05 24	809	1.3+	0.2+	1998 12 15	704	(0.8+	3.7+)
1989 10 03	809	0.2-	1.6+	1997 08 12	691	1.5-	0.2-	1998 12 15	704	(1.1+	3.6+)
1989 10 07	809	0.7-	1.3+	1997 08 12	691	1.3-	0.5-	1998 12 15	704	(0.6+	3.8+)
1989 10 07	809	0.3-	0.2+	1997 08 12	691	1.4-	0.5-	1999 11 08	703	0.4+	0.0
1989 10 07	809	0.7-	0.0	1997 09 23	691	1.1-	0.1-	1999 11 08	703	0.5-	0.2-
1989 10 08	809	1.8-	0.8-	1997 09 23	691	0.9-	0.6-	1999 11 08	703	(4.7+	3.3+)
1989 10 08	809	(3.5-	0.3-)	1997 09 23	691	1.1-	0.1-	1999 11 08	703	0.2-	1.6+
1989 10 08	809	(4.9-	1.6-)	1997 09 25	610	0.3-	0.2+	2000 01 22	739	0.6-	1.1+
1993 09 18	675	0.4-	0.8-	1997 09 25	610	0.2-	0.1+	2000 01 22	739	0.8-	0.8+
1993 09 22	675	0.1+	0.5+	1997 09 25	610	0.0	0.2+	2000 01 22	739	0.7-	0.8+

(13032)* 1989 TU₃ = 1998 SK₁₂₉

Discovered 1989 Oct. 7 by E. W. Elst at the European Southern Observatory.

Id. E. Bowell (*MPC* 33223), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	43.80110		(2000.0)	$\mathbf{P}$		$\mathbf{Q}$	
n	0.21912877	ω	279.64086	-0.03361872	-0.99936922		
a	2.7248114	Ω	172.25820	+0.94705028	-0.03551257		
e	0.0409210	i	4.87280	+0.31932046	+0.00010857		
P	4.50	H	13.9	G	0.15	U	1

Residuals in seconds of arc

1989 09 28	809	0.1−	0.4+	1998 09 26	704	0.7+	0.0	1998 11 11	704	1.0+	0.3+
1989 09 28	809	0.3−	1.2+	1998 09 27	704	0.7−	0.3+	1999 12 05	704	0.4−	0.2+
1989 09 28	809	0.3+	0.9+	1998 09 27	704	0.0	0.5−	1999 12 05	704	0.1−	0.7−
1989 09 29	675	0.9+	0.8−	1998 09 27	704	0.3−	0.2+	1999 12 05	704	0.6+	0.3+
1989 10 07	809	0.0	0.5−	1998 09 27	704	0.4−	0.5+	1999 12 05	704	0.9−	0.9+
1989 10 07	809	0.1+	0.1+	1998 09 27	704	0.8−	1.7−	1999 12 05	704	0.6+	0.2+
1989 10 07	809	1.1−	0.3−	1998 10 11	699	0.8−	0.6+	2000 01 05	704	0.5+	0.1+
1989 10 08	809	0.5+	0.9−	1998 10 11	699	0.4+	0.3−	2000 01 05	704	0.1+	0.5−
1989 10 08	809	0.7+	0.8−	1998 10 11	699	0.4−	0.6+	2000 01 05	699	0.4+	0.1+
1989 10 08	809	0.5−	0.5−	1998 10 20	699	0.7−	1.0+	2000 01 05	704	0.3−	0.0
1996 03 17	566	0.9−	0.9−	1998 10 20	699	0.1−	0.1+	2000 01 05	699	0.1−	0.1+
1996 03 17	566	0.2−	0.5−	1998 10 20	699	0.2−	0.4+	2000 01 05	704	0.6−	0.6−
1996 03 17	566	0.3−	0.5−	1998 11 10	704	1.0+	1.2−	2000 01 05	704	0.3−	0.5−
1996 04 20	566	0.5+	0.7+	1998 11 10	704	0.9−	1.1+	2000 01 05	699	0.1+	0.3+
1996 04 20	566	0.3+	1.0+	1998 11 10	704	0.4−	0.8+	2000 01 07	704	0.3+	0.4−
1996 04 20	566	0.8+	1.0+	1998 11 10	704	0.3−	0.6+	2000 01 07	704	0.3+	0.3+
1998 09 26	704	0.2−	1.4+	1998 11 11	704	0.2−	0.8−	2000 01 07	704	0.1−	0.1+
1998 09 26	704	0.5−	0.4−	1998 11 11	704	0.7+	0.5−	2000 01 07	704	0.2+	0.0
1998 09 26	704	0.2+	0.1−	1998 11 11	704	1.4+	0.1−	2000 01 07	704	0.0	0.4+
1998 09 26	704	0.8+	0.4−	1998 11 11	704	0.1−	0.1+				

(13033)* 1989 TB₅ = 1989 SK₈ = 1993 QG₁

Discovered 1989 Oct. 7 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (d, *MPC* 16003), B. G. Marsden (*MPC* 22591)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22525277	<i>ω</i>	112.00183	+0.12231164	+0.99205400		
<i>a</i>	2.6751981	<i>Ω</i>	164.93398	−0.94728973	+0.12554973		
<i>e</i>	0.0408061	<i>i</i>	6.51085	−0.29611152	+0.00813132		
<i>P</i>	4.38	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 09 28	809	0.3−	1.5−	1993 08 13	675	0.6+	0.7+	1998 11 16	566	1.5−	0.6−
1989 09 28	809	0.8−	1.2−	1993 08 16	010	0.3−	0.0	1998 11 16	566	1.8−	0.7−
1989 09 28	809	(1.9−	3.0−)	1993 08 16	010	1.0−	0.9+	1999 12 05	703	0.1+	1.7−
1989 09 29	675	0.8−	1.3−	1993 08 16	010	1.8−	1.3+	1999 12 05	703	1.0+	0.2−
1989 09 29	675	0.1−	0.8−	1993 08 17	010	(3.8−	1.1−)	1999 12 05	704	0.1−	0.6+
1989 10 03	809	(3.5−	1.3−)	1993 08 17	010	0.6+	0.5+	1999 12 05	703	0.1+	1.3+
1989 10 03	809	(3.7−	1.5−)	1993 08 17	010	0.3−	1.6−	1999 12 05	704	0.5+	0.8−
1989 10 03	809	2.5−	1.9−	1993 08 17	010	1.4+	0.2−	1999 12 05	703	0.7−	0.0
1989 10 07	809	1.1+	0.0	1993 08 19	010	1.2+	1.4−	1999 12 05	704	0.0	0.4−
1989 10 07	809	0.5+	0.6+	1993 08 19	010	1.6+	1.1−	1999 12 05	704	0.0	1.2−
1989 10 07	809	0.2−	0.1+	1993 08 19	010	0.6−	1.9−	1999 12 05	704	0.4+	1.0−
1989 10 08	809	2.0+	0.3+	1998 10 18	809	1.0+	1.7+	2000 01 05	704	0.7−	1.7−
1989 10 08	809	1.2+	0.4−	1998 10 18	809	0.2+	0.9+	2000 01 05	704	0.3−	0.4+
1989 10 08	809	1.6+	0.0	1998 10 18	809	0.2+	2.0+	2000 01 05	704	0.4+	0.5+
1992 04 08	691	0.0	0.5−	1998 10 19	809	(2.7+	1.8+)	2000 01 05	704	0.3−	0.2+
1992 04 08	691	0.2+	1.0+	1998 10 19	809	1.8+	1.9+	2000 01 08	704	0.1−	0.9−
1992 04 08	691	0.2+	0.0	1998 10 19	809	2.0+	1.9+	2000 01 08	704	0.1−	0.6−
1992 04 26	691	0.1+	0.3−	1998 11 11	704	1.2−	0.9+	2000 01 08	704	0.2−	0.5+
1992 04 26	691	0.4−	0.2+	1998 11 11	704	0.6−	0.1−	2000 01 08	704	0.0	0.5−
1992 04 26	691	0.4−	0.2+	1998 11 11	704	0.7−	0.1−	2000 01 08	704	0.2−	0.1+
1993 08 13	675	0.6−	1.0+	1998 11 16	566	1.2−	0.6−				

(13034)* 1989 UN = 1991 GM₂ = 1991 GE₁₃

Discovered 1989 Oct. 23 by Y. Mizuno and T. Furuta at Kani.

Id. A. Gnädig (*MPC* 30756)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.30976921	<i>ω</i>	6.29363	+0.94316784	−0.33203085		
<i>a</i>	2.1632691	<i>Ω</i>	13.12374	+0.30218668	+0.83966036		
<i>e</i>	0.1240037	<i>i</i>	3.47998	+0.13826656	+0.42979762		
<i>P</i>	3.18	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 10 02	809	0.4−	0.6−	1991 04 08	809	1.2−	0.5−	1999 11 04	699	0.5+	1.4+
1989 10 02	809	0.1−	0.5−	1991 04 08	809	(2.0−	2.2−)	1999 11 16	704	0.2−	0.3+
1989 10 02	809	0.1+	0.5−	1991 04 10	809	0.7+	0.1+	1999 11 16	704	0.3−	0.2+
1989 10 03	809	0.9−	0.4+	1991 04 10	809	0.6−	0.1−	1999 11 16	704	0.3−	0.4+
1989 10 03	809	0.3−	0.5+	1991 04 10	809	(2.6−	0.2+)	1999 11 16	704	0.5−	0.2+
1989 10 03	809	0.5+	0.5+	1997 03 29	327	0.4+	0.1+	1999 11 16	704	0.0	0.5+
1989 10 04	809	0.3−	0.0	1997 03 29	327	0.4+	0.3−	1999 12 15	703	0.5−	0.3+
1989 10 04	809	0.1+	0.1+	1997 03 29	327	(0.4−	2.8+)	1999 12 15	703	0.4+	0.6+
1989 10 04	809	0.4+	0.1+	1998 06 24	704	0.9+	0.5+	1999 12 15	703	0.1−	0.5+
1989 10 23	403	0.4+	1.0−	1998 06 24	704	(0.4+	3.1+)	1999 12 15	703	0.1+	0.7+
1989 10 23	403	2.1−	0.9+	1998 06 24	704	0.6−	1.9+	2000 01 03	704	0.0	0.2+
1989 10 23	095	(4.5+	0.2+)	1998 06 24	704	0.5−	1.9+	2000 01 03	704	0.2+	0.4−
1989 10 23	095	2.4+	1.7−	1999 10 12	704	0.4+	0.0	2000 01 03	704	0.3+	0.1−
1989 10 26	403	1.7−	1.9+	1999 10 12	704	0.5−	0.7−	2000 01 03	704	0.3+	0.1−
1989 10 26	403	0.4+	0.0	1999 10 12	704	0.2+	1.0+	2000 01 03	704	0.2+	0.9−
1989 11 02	364	(0.9−	3.0+)	1999 10 12	704	0.4+	0.4+	2000 01 04	704	0.1+	0.1+
1989 11 02	364	1.0+	0.7−	1999 10 12	704	0.4−	0.7+	2000 01 04	704	0.1+	0.1+
1989 11 04	403	2.0−	1.5+	1999 10 22	704	0.7−	0.6−	2000 01 04	704	0.1+	0.3−
1989 11 04	403	(4.3−	0.1−)	1999 10 22	704	0.2+	0.3−	2000 01 04	704	0.2+	0.3−
1989 11 04	364	0.9+	1.2+	1999 10 22	704	0.5−	0.1+	2000 01 04	704	0.4+	0.1−
1989 11 04	364	0.2+	0.4+	1999 10 22	704	0.5−	0.1−	2000 01 06	699	0.4+	0.1+
1989 11 04	095	1.4+	0.9−	1999 10 22	704	0.1−	0.4+	2000 01 06	699	0.6+	0.5+
1989 11 04	095	0.6+	1.8−	1999 11 04	699	1.1−	1.4+	2000 01 06	699	0.5+	0.3−
1991 04 08	809	0.2−	0.1−	1999 11 04	699	0.2−	1.0+				

(13035)* 1989 UA₆ = 1977 CE₂

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

Id. S. J. Bus (*MPC* 18294)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.12458896	<i>ω</i>	214.37020	+0.04574296	+0.99748971		
<i>a</i>	3.9702361	<i>Ω</i>	58.30724	−0.90166508	+0.06452007		
<i>e</i>	0.1647715	<i>i</i>	3.64231	−0.43000892	−0.02917930		
<i>P</i>	7.91	<i>H</i>	11.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 02 11	675	0.2+	0.5+	1997 10 29	566	0.3−	0.3+	1999 12 15	704	0.2+	0.7−
1977 02 12	675	0.5+	0.0	1997 10 29	566	0.1−	0.0	1999 12 15	704	0.3+	0.3−
1988 08 16	675	0.0	0.3−	1997 10 29	566	0.2−	0.1−	1999 12 31	699	0.2−	0.4+
1988 08 16	675	0.1−	1.1−	1997 11 03	704	1.5+	0.5+	1999 12 31	699	0.5+	0.5+
1988 09 11	675	0.7−	1.3+	1997 11 03	704	1.9+	0.1+	1999 12 31	699	1.0+	0.3+
1988 09 11	675	0.5−	1.5+	1997 11 03	704	(2.2+	0.7+)	2000 01 03	704	0.4−	0.4−
1989 09 30	675	0.2+	0.3−	1997 11 03	704	0.5+	0.5−	2000 01 03	704	0.4−	0.1+
1989 09 30	675	0.4+	0.7−	1997 11 03	704	0.2−	0.0	2000 01 03	704	0.1+	0.3+
1989 10 04	807	1.0+	0.5+	1998 12 14	704	0.0	1.3+	2000 01 03	704	0.7−	0.2+
1989 10 30	807	1.2+	0.1−	1998 12 14	704	0.4−	0.7−	2000 01 03	704	0.0	0.5−
1989 11 01	807	0.8+	0.3−	1998 12 14	704	1.2−	0.7+	2000 01 04	704	0.4−	0.4+
1989 11 03	675	0.2+	0.5−	1998 12 14	704	(2.3−	2.4−)	2000 01 04	704	0.1−	0.1−
1989 11 03	675	0.8−	0.2−	1998 12 17	704	0.4−	0.5−	2000 01 04	704	0.5+	0.0
1989 11 04	675	0.5−	1.5−	1998 12 17	704	0.7−	1.3−	2000 01 04	704	0.1−	1.2+

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	206.87169		(2000.0)	P		Q	
<i>n</i>	0.27593519	ω	151.16445	−0.72347910		+0.68997791	
<i>a</i>	2.3366733	Ω	72.48240	−0.63783028		−0.65558992	
<i>e</i>	0.0662439	<i>i</i>	1.35493	−0.26410325		−0.30680994	
<i>P</i>	3.57	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 12 30	413	1.1+	0.8−	1999 10 03	704	0.1+	0.7+	1999 11 12	704	0.2+	0.2−
1989 12 30	413	1.3−	0.4+	1999 10 03	704	0.3−	0.2+	1999 11 16	704	0.7+	0.4−
1989 12 31	413	(3.7−	0.9−)	1999 10 03	704	0.7−	1.4+	1999 11 16	704	0.6+	0.0
1989 12 31	413	0.9+	0.1+	1999 10 03	704	1.1−	0.7+	1999 11 16	704	0.6+	0.2−
1990 01 29	033	0.4−	0.6+	1999 11 04	704	0.3−	0.1+	1999 11 16	704	0.8+	0.8−
1990 01 29	033	(0.4−	2.1+)	1999 11 04	704	0.1−	0.0	1999 11 16	704	0.2−	0.3+
1994 04 03	675	0.2−	0.6+	1999 11 04	704	0.0	0.2+	1999 12 04	703	0.1+	1.0+
1994 04 03	675	0.4+	0.5+	1999 11 04	704	0.6+	0.4−	1999 12 04	703	0.2−	0.4+
1995 08 19	809	0.5+	0.5+	1999 11 04	704	0.2+	0.1−	1999 12 04	703	0.9−	0.2−
1995 08 20	809	0.3+	0.4+	1999 11 05	704	0.1+	0.4−	1999 12 04	703	0.1+	0.1−
1995 08 26	809	0.0	0.3+	1999 11 05	704	0.5−	0.1−	1999 12 04	699	0.5−	0.9+
1995 08 27	809	0.7−	0.6−	1999 11 05	704	0.2−	0.0	1999 12 04	699	0.4+	0.6+
1995 08 29	809	0.1+	1.6−	1999 11 05	704	0.0	0.6−	1999 12 04	699	0.5−	1.1+
1995 08 30	809	0.4+	0.5−	1999 11 05	704	0.4−	0.1+	1999 12 07	704	0.3+	0.3−
1998 06 24	704	1.0−	0.0	1999 11 09	704	0.1−	0.1+	1999 12 07	704	0.4−	0.0
1998 06 24	704	1.1+	0.2+	1999 11 09	704	0.1+	0.1−	1999 12 07	704	0.2−	0.2+
1998 06 24	704	0.2+	1.8+	1999 11 09	704	0.1−	0.3−	1999 12 07	704	0.0	0.9−
1998 06 24	704	(4.2−	1.5+)	1999 11 09	704	0.3+	0.2+	1999 12 07	704	0.3−	0.6−
1999 10 01	703	0.8−	0.1+	1999 11 12	704	0.2+	0.2−	2000 01 07	704	0.6+	0.9+
1999 10 01	703	0.1+	1.0+	1999 11 12	704	0.3+	0.2−	2000 01 07	704	0.7+	0.2−
1999 10 01	703	0.5−	0.3+	1999 11 12	704	0.2+	0.0	2000 01 07	704	0.3−	1.0−
1999 10 01	703	0.3−	0.3+	1999 11 12	704	0.6+	0.2+				

(13037)* 1990 EN₃ = 1998 SG₁₁₈

Discovered 1990 Mar. 2 by E. W. Elst at the European Southern Observatory.

Id. E. Bowell (*MPC* 32921), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	268.98595		(2000.0)	P		Q	
<i>n</i>	0.29047312	ω	38.69685	−0.36186074		+0.93113554	
<i>a</i>	2.2580423	Ω	210.16690	−0.87611929		−0.35624880	
<i>e</i>	0.0882657	<i>i</i>	5.16100	−0.31854638		−0.07793196	
<i>P</i>	3.39	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 03 02	809	0.6−	1.0−	1997 02 09	910	0.2−	1.3+	1998 10 29	704	1.5−	1.1+
1990 03 02	809	0.2−	0.0	1997 02 09	910	0.5−	1.1+	1998 10 29	704	0.9−	1.2+
1990 03 02	809	1.2−	1.2−	1998 09 14	699	0.1+	0.0	1998 10 29	704	0.3−	1.3+
1990 03 04	809	0.4+	1.4−	1998 09 14	699	0.4−	0.8−	1998 10 29	704	0.1−	1.4+
1990 03 04	809	1.2+	1.7−	1998 09 14	699	0.5+	0.7−	1998 11 23	699	0.4−	0.3−
1990 03 04	809	0.1+	1.2−	1998 09 26	704	0.2+	0.6−	1998 11 23	699	0.2+	0.0
1990 04 04	809	(2.7+	0.2+)	1998 09 26	704	1.4+	0.6−	1998 11 23	699	0.6+	0.2+
1990 04 04	809	(3.2+	0.8−)	1998 09 26	704	1.0+	1.7−	1999 12 05	704	0.0	0.1−
1990 04 04	809	0.3+	0.5+	1998 09 26	704	0.5+	0.5−	1999 12 05	704	1.4−	1.1+
1990 04 15	809	0.3+	0.8−	1998 09 26	704	1.9+	1.3−	1999 12 05	704	0.5+	0.4+
1990 04 16	809	0.4−	1.1−	1998 09 27	704	0.8−	0.2+	2000 01 05	704	(2.9+	0.4+)
1990 04 16	809	(1.7−	2.1−)	1998 09 27	704	0.8+	0.1−	2000 01 05	704	1.4+	0.6−
1990 04 16	809	0.1−	0.9+	1998 09 27	704	(0.4+	2.0−)	2000 01 05	704	0.2−	0.3−
1990 04 17	809	1.3−	0.3−	1998 09 27	704	0.7+	0.3−	2000 01 08	704	0.2+	0.2−
1990 04 17	809	(2.3−	1.4−)	1998 10 28	704	0.6+	0.6+	2000 01 08	704	1.2+	0.0
1995 12 27	691	0.6−	0.3−	1998 10 28	704	0.2−	1.1−	2000 01 08	704	0.2+	1.0+
1995 12 27	691	0.6−	0.4−	1998 10 28	704	0.9−	0.6−	2000 01 08	704	0.1−	0.7+
1995 12 27	691	0.7−	0.3−	1998 10 28	704	1.0−	0.1−	2000 01 08	704	0.5+	0.8+
1997 02 09	910	0.7−	1.1+	1998 10 29	704	(2.4+	0.9+)				

(13038)* 1990 EN₄ = 1995 DT₁₃

Discovered 1990 Mar. 2 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 25329)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.07883		(2000.0)	P		Q	
<i>n</i>	0.19135264	ω	147.79769	−0.57794564		−0.81432470	
<i>a</i>	2.9824952	Ω	337.36917	+0.71621981		−0.47476122	
<i>e</i>	0.0340094	<i>i</i>	7.98065	+0.39116239		−0.33388181	
<i>P</i>	5.15	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 03 02	809	0.0	0.5+	1995 02 23	033	0.5+	1.1−	1998 11 16	704	(0.1−	2.8−)
1990 03 02	809	0.0	0.2−	1995 02 24	033	0.3−	0.3+	1998 11 16	704	(2.7−	0.6−)
1990 03 02	809	0.7−	0.5+	1998 10 18	704	1.1+	0.0	1999 11 16	704	0.1+	0.5+
1990 03 04	809	0.6+	0.4+	1998 10 18	704	1.3−	0.9−	1999 11 16	704	0.0	0.4−
1990 03 04	809	0.4+	1.1+	1998 10 18	704	0.2+	0.4−	1999 11 16	704	0.4+	0.4−
1990 03 04	809	0.3+	0.7+	1998 10 18	704	1.0−	0.9+	1999 11 16	704	0.2+	0.2−
1990 04 15	809	0.5+	0.9−	1998 11 01	699	0.6+	0.1−	1999 12 04	703	0.3+	0.3+
1990 04 16	809	0.5−	1.8−	1998 11 01	699	0.7−	0.4−	1999 12 04	703	0.4+	0.1−
1990 04 16	809	1.7−	1.2−	1998 11 01	699	0.2+	0.1+	1999 12 04	703	0.4+	0.1+
1990 04 16	809	0.9+	1.0−	1998 11 16	704	1.0+	2.0−	1999 12 04	703	0.3+	0.4−
1990 04 17	809	1.0−	0.7−	1998 11 16	704	(0.0	2.3−)	2000 01 06	704	0.0	0.5+
1990 04 17	809	0.6−	0.6−	1998 11 16	704	(0.2−	3.8−)	2000 01 06	704	0.7+	0.1+
1992 09 22	809	1.1+	0.5−	1998 11 16	704	(0.5−	2.5−)	2000 01 06	704	0.1+	1.9+
1992 09 22	809	0.1+	0.0	1998 11 16	704	0.1+	0.1+	2000 01 06	704	1.2−	0.3+
1992 09 22	809	0.9−	0.4−	1998 11 16	704	(2.0+	0.4−)				
1995 02 22	033	0.6−	0.3−	1998 11 16	704	0.6+	0.3+				

(13039)* 1990 FK₁ = 1984 FE₂ = 1997 UT₁₀

Discovered 1990 Mar. 27 by K. Endate and K. Watanabe at Kitami.

Id. T. B. Spahr (*MPC* 30870), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	231.79119		(2000.0)	P		Q	
<i>n</i>	0.17404615	ω	68.33900	−0.44340319		+0.89617082	
<i>a</i>	3.1770674	Ω	175.24155	−0.87815853		−0.43066238	
<i>e</i>	0.1703395	<i>i</i>	11.45634	−0.17953050		−0.10680724	
<i>P</i>	5.66	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 03 30	095	0.6+	0.2+	1998 10 12	699	0.1+	1.1-	1999 10 10	704	0.1+	0.6+
1990 03 27	400	1.9+	0.6-	1998 10 12	699	0.4-	0.7+	1999 10 10	704	0.4+	0.1-
1990 03 27	400	1.1+	0.8+	1998 10 16	704	0.5+	0.4-	1999 10 10	704	0.1-	0.6-
1990 03 29	400	0.1+	0.4-	1998 10 16	704	0.6+	0.7-	1999 10 10	704	0.1-	0.1+
1990 03 29	400	0.9-	0.2-	1998 10 16	704	1.0+	1.3+	1999 11 05	704	0.2-	0.8+
1990 04 01	675	0.9-	1.8+	1998 10 16	704	0.9-	0.6-	1999 11 05	704	0.3-	0.7+
1990 04 01	675	0.9-	1.1+	1998 11 06	118	0.2+	0.6-	1999 11 05	704	1.0-	0.2+
1990 04 19	400	1.4-	1.6-	1998 11 06	118	0.2-	0.4-	1999 11 05	704	0.2-	0.6+
1990 04 19	400	0.0	1.4-	1998 11 07	118	0.0	0.6-	1999 11 05	704	0.7-	0.5+
1990 04 20	400	0.1-	0.7-	1998 11 07	118	0.2-	0.3-	2000 01 07	704	0.9-	0.7+
1990 04 20	400	0.4+	1.1+	1998 11 13	704	0.4+	0.1-	2000 01 07	704	0.4+	0.2-
1997 10 30	557	0.2+	0.1+	1998 11 13	704	(1.9+	2.3-)	2000 01 07	704	0.2+	0.1-
1997 10 30	557	0.2-	0.4+	1998 11 13	704	0.8-	0.1+	2000 01 07	704	0.1+	0.6-
1997 10 30	557	0.1-	0.5-	1998 11 13	704	0.8-	0.4-	2000 01 07	704	0.3+	0.7-
1997 10 31	557	0.3+	0.0	1998 11 13	704	(1.0-	2.8-)	2000 01 11	704	0.6+	0.4-
1997 10 31	557	0.1-	0.5+	1998 11 19	699	0.2-	0.3-	2000 01 11	704	0.6+	0.2-
1997 11 03	557	0.1+	0.2-	1998 11 19	699	0.7-	0.7+	2000 01 11	704	0.2+	0.4-
1997 11 03	557	0.4+	0.1-	1998 11 19	699	0.6-	0.3+	2000 01 11	704	0.5+	0.0
1997 11 05	557	0.1+	0.2+	1998 12 11	699	0.0	0.1-	2000 01 11	704	0.7+	0.2-
1997 11 05	557	0.2+	0.4+	1998 12 11	699	0.3-	0.8+				
1998 10 12	699	0.1-	0.7+	1998 12 11	699	1.5+	0.2+				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	57.75725	(2000.0)	P	Q
<i>n</i>	0.22887480	ω 84.87637	+0.97822814	+0.05897858
<i>a</i>	2.6468992	Ω 271.63991	-0.13513811	+0.90866851
<i>e</i>	0.2474338	<i>i</i> 11.48182	+0.15750365	+0.41333166
<i>P</i>	4.31	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1990 07 26	675	0.2-	0.3-	1999 06 22	703	0.3+	1.3+	1999 11 03	704	1.1+	0.6+
1990 07 26	675	0.4+	0.0	1999 09 03	704	0.3-	0.3-	1999 12 07	703	0.1+	0.0
1990 07 28	675	0.1-	0.4+	1999 09 03	704	0.3-	0.1+	1999 12 07	703	0.3+	0.1+
1990 07 28	675	0.6+	0.1-	1999 09 03	704	0.6-	0.0	1999 12 07	703	0.0	0.2+
1990 07 29	675	0.1-	1.3+	1999 10 07	850	0.7-	0.1+	1999 12 07	703	0.1-	0.1+
1990 07 29	675	0.8+	1.9-	1999 10 07	850	0.6+	0.1-	1999 12 13	703	0.4+	0.1+
1990 10 23	675	0.4+	1.9-	1999 10 08	850	0.9-	0.2+	1999 12 13	703	0.1+	0.4+
1990 10 23	675	0.1-	1.7-	1999 10 12	850	0.1-	0.1+	1999 12 13	703	0.2-	0.3+
1992 01 26	691	0.0	0.8-	1999 10 12	850	0.9-	0.8+	1999 12 13	703	0.0	0.3+
1992 01 26	691	0.2-	0.7-	1999 10 14	704	0.4+	0.2-	1999 12 15	704	0.1-	0.9-
1992 01 26	691	0.2-	0.8-	1999 10 14	704	0.4-	1.5-	1999 12 15	704	0.2-	0.1+
1992 01 28	691	0.2+	1.5-	1999 10 14	704	0.4-	1.4-	1999 12 15	704	0.5-	0.1+
1992 01 28	691	0.2+	1.1-	1999 10 14	850	0.1-	0.0	1999 12 15	704	0.2-	0.4-
1992 01 28	691	0.1+	1.1-	1999 10 14	704	0.7-	1.9-	2000 01 03	704	0.4+	1.6+
1992 01 30	809	0.7-	0.3-	1999 10 14	704	(1.8-	2.9-)	2000 01 03	704	0.9+	1.1+
1992 01 30	809	1.1-	0.6+	1999 10 14	850	0.1+	0.8-	2000 01 03	704	0.0	1.1+
1992 01 30	809	(2.1-	2.6+)	1999 10 15	850	0.1-	0.2-	2000 01 03	704	0.7+	1.0+
1998 05 24	704	0.3-	0.7-	1999 10 15	850	0.4-	0.2-	2000 01 03	704	1.6+	0.2-
1998 05 24	704	0.3-	0.5+	1999 11 03	704	0.2+	0.1+	2000 01 04	704	0.2-	0.7+
1998 05 24	704	(0.6+	2.8+)	1999 11 03	704	0.2+	0.3+	2000 01 04	704	0.1-	0.6+
1998 05 24	704	0.2-	0.1+	1999 11 03	704	0.1+	0.0	2000 01 04	704	0.4-	0.6+
1998 05 24	704	(2.9-	1.8+)	1999 11 03	704	0.9+	0.2+	2000 01 04	704	0.2+	0.7+
1999 06 22	703	0.1+	0.5+	1999 11 03	704	1.0-	0.1-	2000 01 04	704	0.1-	0.3+
1999 06 22	703	0.5+	0.3+	1999 11 03	704	0.1-	0.2+				
1999 06 22	703	0.1-	1.1+	1999 11 03	704	0.5-	0.4-				

(13041)* 1990 OS₄ = 1979 YM₃ = 1989 EN₁₁ = 1998 MT₂₈

Discovered 1990 July 25 by H. E. Holt at Palomar.

Id. A. Doppler (*MPC* 33224)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	283.95231	(2000.0)	P	Q
<i>n</i>	0.24065072	ω 235.50316	-0.79351658	-0.55805315
<i>a</i>	2.5598309	Ω 269.39798	+0.60687667	-0.69612948
<i>e</i>	0.0535751	<i>i</i> 14.04733	+0.04507928	-0.45164193
<i>P</i>	4.10	<i>H</i> 13.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1979 12 24	095	(1.2-	3.0-)	1999 07 22	704	0.8+	0.3+	1999 11 03	704	0.3+	0.1-
1989 03 12	808	0.4+	0.2-	1999 07 22	704	0.3+	0.5-	1999 11 03	704	0.9+	0.3+
1989 03 12	808	0.5-	0.1-	1999 07 22	704	0.2+	0.6+	1999 11 03	704	0.6+	0.4-
1990 07 25	675	0.6-	0.4+	1999 09 21	699	0.2-	0.5-	1999 11 03	704	0.3+	0.2+
1990 07 25	675	0.2+	0.1+	1999 09 21	699	0.3-	0.0	1999 11 03	704	0.4+	0.1+
1990 07 28	675	0.0	1.3+	1999 09 21	699	(1.1-	2.1+)	1999 11 03	704	0.6+	0.2+
1990 07 28	675	0.9+	0.0	1999 10 05	704	0.6-	0.6+	1999 11 10	703	0.7-	0.4+
1990 07 30	675	0.6+	1.6-	1999 10 05	704	0.3+	0.2+	1999 11 10	699	0.0	0.5+
1990 07 30	675	0.7-	0.9-	1999 10 05	704	0.2+	0.4-	1999 11 10	703	0.1-	0.5+
1998 06 24	704	(2.9+	0.2+)	1999 10 05	704	0.6+	0.3-	1999 11 10	703	0.7-	0.0
1998 06 24	704	0.4+	1.7+	1999 10 05	704	0.2-	0.4+	1999 11 10	699	0.6-	0.6-
1998 06 24	704	1.9+	1.1-	1999 10 14	704	0.2-	0.1-	1999 11 10	703	0.6-	0.0
1998 06 24	704	0.2+	0.3+	1999 10 14	704	0.3-	0.3+	1999 11 10	699	0.4-	0.2+
1998 06 26	704	0.3-	0.3-	1999 10 14	704	0.1-	0.3+	1999 12 08	703	0.2-	0.4-
1998 06 26	704	(2.3-	2.1+)	1999 10 14	704	0.2-	0.1+	1999 12 08	703	0.2-	0.1+
1998 06 26	704	1.1-	0.6+	1999 10 14	704	0.1-	0.8-	1999 12 08	703	0.1+	0.1+
1998 06 26	704	0.5+	0.8-	1999 10 16	744	(4.3-	1.0-)	1999 12 08	703	0.4-	0.3+
1998 07 21	704	0.2-	0.3-	1999 10 16	744	(4.0-	1.5+)	2000 01 06	704	0.4+	0.9-
1998 07 21	704	0.7-	1.6+	1999 11 03	704	0.6-	0.3+	2000 01 06	704	0.5+	0.4-
1998 07 21	704	0.9-	1.4-	1999 11 03	704	0.3+	0.1-	2000 01 06	704	0.4-	0.8-

1998 07 21	704	0.1+	0.1-	1999 11 03	704	0.7+	0.0
1999 07 22	704	0.5-	0.7+	1999 11 03	704	0.4+	0.3-

(13042)* 1990 QE = 1994 QM

Discovered 1990 Aug. 18 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 23973)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	98.79258	(2000.0)	P	Q
<i>n</i>	0.23983968	ω 48.95346	+0.97351547	+0.02933208
<i>a</i>	2.5655985	Ω 308.10894	-0.15157773	+0.82523610
<i>e</i>	0.2421777	<i>i</i> 16.74754	+0.17114854	+0.56402572
<i>P</i>	4.11	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1990 08 18	675	(2.6-	0.3-)	1994 08 28	413	1.0+	0.4-	1999 12 15	704	0.2-	0.3-
1990 08 18	675	(2.8-	0.6+)	1994 08 28	413	1.0+	0.3-	1999 12 15	704	0.1+	0.0
1990 08 20	675	0.2+	0.3-	1996 01 12	691	0.3+	0.2-	1999 12 15	704	0.1+	0.2-
1990 08 20	675	0.5+	0.6-	1996 01 12	691	0.1+	0.1-	1999 12 15	704	0.5-	0.6-
1990 09 22	675	1.0-	0.2-	1996 01 12	691	0.2+	0.0	2000 01 03	704	0.2-	0.5-
1990 09 22	675	0.3-	0.7+	1996 02 16	424	1.5-	0.9-	2000 01 03	704	0.3+	0.1-
1990 09 24	675	0.8-	0.6-	1996 02 16	424	(2.5-	1.3-)	2000 01 03	704	0.2+	0.0
1990 09 24	675	1.3-	0.5+	1998 08 15	704	0.0	0.7+	2000 01 03	704	0.4+	0.1-
1994 07 12	675	1.4+	1.4+	1998 08 15	704	0.1+	0.4-	2000 01 03	704	0.7+	0.8-
1994 07 12	675	0.4-	0.1+	1998 08 15	704	1.2-	1.9-	2000 01 04	704	0.4-	0.5+
1994 08 25	413	0.6-	0.7-	1998 08 15	704	1.7-	1.1-	2000 01 04	704	0.2-	0.1-
1994 08 25	413	0.3-	1.5+	1999 12 08	703	0.2+	0.5-	2000 01 04	704	0.0	0.6-
1994 08 26	413	0.9+	0.1-	1999 12 08	703	0.0	0.8+	2000 01 04	704	0.2-	0.4-
1994 08 26	413	0.9+	0.2-	1999 12 08	703	0.1-	0.8+	2000 01 04	704	0.1-	0.3-
1994 08 27	413	1.0+	0.3-	1999 12 08	703	0.6-	0.7+				
1994 08 27	413	1.0+	0.0	1999 12 15	704	0.2-	0.1-				

(13043)* 1990 QT₄ = 1986 TF₉ = 1993 LA₁

Discovered 1990 Aug. 24 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 22403)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	49.42726	(2000.0)	P	Q
<i>n</i>	0.23882857	ω 47.14599	+0.65841324	-0.75261470
<i>a</i>	2.5728346	Ω 1.73424	+0.59104178	+0.51047058
<i>e</i>	0.0959707	<i>i</i> 15.21954	+0.46600603	+0.41592175
<i>P</i>	4.13	<i>H</i> 13.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1986 10 02	095	0.6+	0.8+	1994 07 13	689	0.7+	0.5+	1999 11 10	367	0.1-	0.1+
1990 08 24	675	0.2-	0.2-	1994 07 14	689	0.1+	0.9-	1999 11 10	367	0.2-	0.2+
1990 08 24	675	0.1+	0.4-	1996 02 08	689	0.5+	1.5+	1999 12 17	704	1.0+	1.5-
1990 08 26	675	0.2+	0.7-	1996 02 09	689	0.5-	0.0	1999 12 17	704	0.9-	0.5-
1990 08 26	675	0.3-	0.6-	1997 04 27	689	0.2-	0.4-	1999 12 17	704	0.4-	0.6-
1990 08 29	675	0.1+	0.9-	1997 05 12	689	0.2-	0.0	1999 12 17	704	1.0-	0.8-
1993 06 13	413	0.6-	0.3-	1997 05 13	689	0.4-	0.5-	1999 12 17	704	0.5-	1.7-
1993 06 13	413	0.2+	1.0-	1999 10 31	704	0.0	0.0	2000 01 21	704	0.3+	0.3-
1993 06 14	413	0.1+	1.2-	1999 10 31	704	0.2+	0.4-	2000 01 21	704	0.4+	0.0
1993 06 15	413	0.1+	0.4-	1999 10 31	704	0.7+	0.4-	2000 01 21	704	0.1+	0.0
1993 06 15	413	0.1-	0.6-	1999 10 31	704	0.8+	0.6-	2000 01 21	704	0.0	0.0
1993 06 15	413	0.6-	0.2-	1999 10 31	704	1.0+	0.0	2000 01 21	704	0.4-	0.2-
1993 06 18	413	0.8-	0.1-	1999 11 10	367	0.1-	0.5+				

(13044)* 1990 QO₈ = 1980 DA₄ = 1988 CA₇ = 1988 EJ₂ = 1994 PG₂₈

Discovered 1990 Aug. 16 by E. W. Elst at the European Southern

Observatory.

Id. B. G. Marsden (*MPC* 24563), A. Milani (*MPC* 34178), G. V. Williams (*MPC* 34490)

2000 JAN. 24

M.P.C. 37499

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	40.49561		(2000.0)	P	Q
<i>n</i>	0.24367929	ω	96.95674	+0.18945726	-0.97965661
<i>a</i>	2.5385768	Ω	341.71310	+0.79688225	+0.19278432
<i>e</i>	0.1432954	<i>i</i>	12.17468	+0.57365898	+0.05574156
<i>P</i>	4.04	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 02 20	095	1.5+	1.7-	1998 08 17	704	0.9-	0.2+	1998 10 20	910	0.0	0.6-
1988 02 13	054	2.2-	0.4-	1998 08 17	704	1.7-	0.8+	1998 10 21	910	0.1+	0.6-
1988 02 13	054	2.0-	0.1+	1998 08 17	704	1.5-	0.4-	1998 10 21	910	0.1+	0.5-
1988 03 12	054	0.2+	0.3-	1998 08 17	704	0.6-	0.1-	1998 10 21	910	0.0	0.5-
1988 03 12	054	0.3-	0.5-	1998 08 17	704	0.6-	0.7-	1999 11 05	699	0.8+	0.1+
1990 08 16	809	(0.8+	2.7-)	1998 08 23	704	0.4-	0.0	1999 11 05	699	1.5+	0.8-
1990 08 16	809	(0.2-	2.4-)	1998 08 23	704	0.0	0.9+	1999 11 05	699	1.1+	1.1-
1990 08 16	809	(0.7-	2.2-)	1998 08 23	704	0.2-	1.6+	1999 11 17	703	0.3+	0.2-
1990 08 18	809	1.3+	1.0-	1998 08 23	704	0.0	1.8+	1999 11 17	703	0.1-	0.3-
1990 08 18	809	1.6+	1.2-	1998 08 23	704	1.4+	1.6+	1999 11 17	703	0.0	0.0
1990 08 18	809	0.6+	1.5-	1998 08 27	699	0.6+	0.1-	1999 11 17	703	0.1-	0.1+
1990 08 24	809	0.0	1.1-	1998 08 27	699	0.4+	0.1+	1999 12 12	704	0.5+	1.4-
1990 08 24	809	0.4+	0.8-	1998 08 27	699	0.9+	0.2-	1999 12 12	704	0.0	1.3-
1990 08 24	809	0.6-	1.0-	1998 09 18	704	0.8+	0.3+	1999 12 12	704	(0.2+	3.4+)
1990 08 26	809	1.1-	0.6+	1998 09 18	704	0.9+	0.3-	1999 12 15	704	1.4+	1.2-
1990 08 26	809	0.3-	0.5+	1998 09 18	704	0.4+	1.2-	1999 12 15	704	0.1+	0.1+
1990 08 26	809	0.4+	0.9+	1998 09 18	704	0.1-	1.7+	1999 12 15	704	0.5+	0.5+
1990 08 12	809	(3.6+	0.6-)	1998 09 18	704	0.6-	0.1+	1999 12 15	704	1.7-	1.3+
1994 08 12	809	(3.5+	0.2-)	1998 09 21	699	0.5+	0.2+	2000 01 02	704	0.1-	0.2+
1994 08 12	809	(2.7+	0.0)	1998 09 21	699	1.0+	0.6+	2000 01 02	704	0.1+	0.2+
1994 08 13	809	(3.2+	0.9-)	1998 09 21	699	0.5+	0.4+	2000 01 02	704	0.2-	0.1+
1994 08 13	809	(3.2+	0.1+)	1998 10 14	910	0.3-	0.6-	2000 01 02	704	0.1+	0.1+
1994 08 13	809	(3.2+	0.5-)	1998 10 14	910	0.4+	0.2-	2000 01 02	704	0.3-	0.2+
1994 09 05	809	(2.4+	4.7+)	1998 10 14	910	0.2-	0.5-	2000 01 03	704	0.9+	0.3+
1994 09 05	809	(2.3+	5.2+)	1998 10 17	699	1.6-	0.9-	2000 01 03	704	0.6+	0.1+
1994 09 05	809	(2.2+	5.0+)	1998 10 17	699	0.1-	0.2+	2000 01 03	704	0.0	1.5+
1994 09 06	809	(2.6+	5.3+)	1998 10 17	699	1.3-	0.5+	2000 01 03	704	0.1-	0.1+
1994 09 06	809	(2.4+	5.1+)	1998 10 20	699	1.6+	0.3+	2000 01 03	704	0.6-	0.6+
1994 09 06	809	(1.9+	4.8+)	1998 10 20	699	0.3+	0.4+	2000 01 10	699	0.4-	0.6+
1998 07 31	699	0.3+	0.5-	1998 10 20	699	1.1-	0.2+	2000 01 10	699	0.4-	0.3+
1998 07 31	699	0.0	0.1-	1998 10 20	910	0.2+	0.6-	2000 01 10	699	0.3-	0.8+
1998 07 31	699	1.0-	0.3-	1998 10 20	910	0.1+	0.6-				

(13045)* 1990 QP₈ = 1978 UH₇

Discovered 1990 Aug. 16 by E. W. Elst at the European Southern

Observatory.

Id. T. Kobayashi (*MPC* 23974)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	51.66627		(2000.0)	P	Q
<i>n</i>	0.24043465	ω	75.17779	+0.64024304	-0.76815712
<i>a</i>	2.5613643	Ω	335.01026	+0.70029870	+0.58625457
<i>e</i>	0.0945151	<i>i</i>	0.65743	+0.31570648	+0.25737175
<i>P</i>	4.10	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1978 10 27	675	0.4+	0.1-	1998 08 17	704	0.1-	0.1-	1999 11 03	704	0.4-	0.1-
1978 10 28	675	0.7+	0.6-	1998 08 17	704	0.0	0.3-	1999 11 03	704	0.4+	0.1+
1978 10 29	675	0.6-	0.3-	1998 08 17	704	0.8+	0.3-	1999 11 03	704	1.0+	0.6+
1990 08 16	809	0.5-	0.1-	1998 08 17	704	0.4-	0.1-	1999 12 07	704	0.7-	0.4+
1990 08 16	809	(2.6-	0.5-)	1998 08 20	691	0.4+	0.0	1999 12 07	704	0.5-	0.1-
1990 08 16	809	(2.5-	0.8-)	1998 08 20	691	0.7+	0.0	1999 12 07	704	0.0	0.1-
1990 08 18	809	0.3+	0.4+	1998 08 20	691	0.5+	0.2+	1999 12 07	704	0.6+	0.3+
1990 08 18	809	0.3-	0.2+	1998 08 23	691	0.3-	0.2+	1999 12 07	704	0.2+	0.5+
1990 08 18	809	0.4+	0.3-	1998 08 23	691	0.4-	0.2+	2000 01 03	704	0.6+	0.5+
1990 08 24	809	0.9-	0.0	1998 08 23	691	0.4-	0.2+	2000 01 03	704	0.1-	0.3-
1990 08 24	809	0.5+	0.4-	1998 08 26	691	0.3-	0.2+	2000 01 03	704	0.1+	0.2-
1990 08 24	809	0.2+	0.6+	1998 08 26	691	0.5-	0.2-	2000 01 03	704	0.2-	0.8-

1990 08 26	809	1.4-	0.1+	1998 08 26	691	0.2-	0.1+	2000 01 04	704	0.6-	1.4-
1990 08 26	809	0.7+	0.5+	1998 08 31	691	0.1-	0.2-	2000 01 04	704	0.3-	0.7+
1990 08 26	809	0.0	0.6+	1998 08 31	691	0.1-	0.2-	2000 01 04	704	0.3+	0.4+
1998 08 17	704	1.1+	0.5-	1998 08 31	691	0.2-	0.2-				

(13046)* 1990 QB₁₉ = 1990 SE₂₀ = 1990 SM₂₇ = 1993 FO₄₄ = 1997 LG₁₈

Discovered 1990 Aug. 31 by L. V. Zhuravleva at the Crimean Astrophysical

Observatory.

Id. T. B. Spahr (*MPC* 30653), S. Nakano (d, *MPC* 20912), G. V. Williams (unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	135.41076		(2000.0)	P	Q
<i>n</i>	0.24226020	ω	10.80003	+0.81779699	+0.57430627
<i>a</i>	2.5484806	Ω	314.08278	-0.53179744	+0.72943086
<i>e</i>	0.2653691	<i>i</i>	2.96476	-0.21999902	+0.37162202
<i>P</i>	4.07	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1990 08 31	095	1.3-	1.6+	1998 07 28	684	0.7-	0.3+	1998 09 13	699	0.7+	0.9+
1990 09 19	675	0.5-	0.8-	1998 07 28	684	0.6-	0.3+	1998 09 14	704	1.1+	0.2-
1990 09 19	675	0.2+	0.9-	1998 07 31	684	0.3-	0.3+	1998 09 14	704	0.8+	0.3-
1990 09 23	095	1.3+	0.8+	1998 07 31	684	0.4-	0.3+	1998 09 14	704	0.6+	0.6-
1993 03 21	809	(2.5-	0.5+)	1998 08 17	704	0.3+	0.5-	1998 09 14	704	1.3+	0.4+
1993 03 22	809	0.6+	0.5-	1998 08 17	704	0.6+	0.3+	1998 09 14	704	0.8-	0.7-
1993 03 24	809	(2.9+	2.8+)	1998 08 17	704	0.1-	1.2+	1999 12 07	691	0.0	0.2-
1993 04 17	413	2.0-	0.5-	1998 08 17	704	0.7+	0.6+	1999 12 07	691	0.2-	0.2-
1997 06 08	568	1.4+	0.8-	1998 08 17	704	0.3-	1.0+	1999 12 07	691	0.1-	0.1-
1998 07 04	699	1.8-	0.5+	1998 08 21	566	1.3-	1.0-	1999 12 14	691	0.2+	0.3-
1998 07 04	699	0.6-	0.4+	1998 08 21	566	1.3-	1.2-	1999 12 14	691	0.1+	0.3-
1998 07 04	699	1.4-	0.0	1998 08 21	566	0.9-	1.1-	1999 12 14	691	0.4+	0.3-
1998 07 26	809	(2.7+	0.1-)	1998 08 23	704	0.7+	0.4-	1999 12 18	691	0.2+	0.0
1998 07 26	809	1.7+	0.6-	1998 08 23	704	1.4-	0.7+	1999 12 18	691	0.3+	0.1+
1998 07 26	809	1.3+	0.3-	1998 08 23	704	0.6-	0.9+	1999 12 18	691	0.2+	0.0
1998 07 27	809	(2.1+	1.2-)	1998 08 23	704	0.1+	0.0	2000 01 03	704	0.1+	1.2+
1998 07 27	809	1.4+	1.2-	1998 09 13	699	0.3+	0.1-	2000 01 03	704	0.9-	0.4-
1998 07 27	809	1.2+	0.9-	1998 09 13	699	0.0	0.4-	2000 01 03	704	0.9-	0.1-

(13047)* 1990 RJ₅ = 1994 SM

Discovered 1990 Sept. 15 by H. E. Holt at Palomar.

Id. K. Ichikawa (*MPC* 28297)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	48.96721		(2000.0)	P	Q
<i>n</i>	0.24519260	ω	184.19942	-0.02809667	-0.99840861
<i>a</i>	2.5281207	Ω	267.41563	+0.91853967	-0.00649081
<i>e</i>	0.1477993	<i>i</i>	2.80551	+0.39432911	-0.05601893
<i>P</i>	4.02	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1990 09 15	675	1.0+	0.1-	1998 08 17	704	0.6-	0.3-	1998 09 25	704	0.5+	0.1-
1990 09 15	675	0.2-	1.4-	1998 08 17	704	(2.3-	1.6+)	1998 09 25	699	0.3-	1.3+
1990 09 16	675	0.7+	1.6-	1998 08 23	704	1.2+	1.8-	1998 09 25	704	0.2-	0.5-
1990 09 16	675	0.2+	0.4+	1998 08 23	704	1.1+	0.3+	1998 09 25	699	(1.5+	2.1+)
1990 09 20	675	0.7+	0.9-	1998 08 23	704	0.2-	0.4-	1998 09 25	704	0.1+	0.3+
1990 09 20	675	0.7+	0.2-	1998 08 23	704	(1.0+	3.0-)	1998 09 27	704	0.1-	0.7+
1992 03 02	809	0.0	0.5+	1998 09 14	704	0.4+	0.1+	1998 09 27	704	(0.4+	2.2+)
1992 03 05	809	1.4-	0.3+	1998 09 14	704	0.4+	1.1-	1998 09 27	704	0.1-	1.4+
1992 03 08	809	0.3+	0.0	1998 09 14	704	0.3-	1.3-	1998 09 27	704	0.5-	1.3+
1994 09 27	691	0.6-	0.6+	1998 09 14	704	0.2+	0.6-	1998 09 27	704	0.0	0.7+
1994 09 27	691	0.4-	0.1+	1998 09 16	699	0.2+	0.7+	1999 11 08	703	0.5-	0.9+
1994 10 10	691	0.7-	0.0	1998 09 16	699	0.1+	0.5+	1999 11 08	703	0.5-	0.1-
1994 10 10	691	0.2-	0.3+	1998 09 16	699	0.0	0.5+	1999 11 08	703	(0.0	3.2+)
1994 10 10	691	0.5-	0.1+	1998 09 18	704	0.1+	0.4-	1999 11 08	703	0.3-	0.7-
1995 12 20	327	0.7+	0.0	1998 09 18	704	0.8-	0.4-	1999 11 17	704	0.2-	0.1+
1995 12 20	327	0.8+	0.2-	1998 09 18	704	0.3-	0.1-	1999 11 17	704	0.2+	0.3+
1995 12 20	327	0.1+	0.0	1998 09 18	704	0.6-	0.3-	1999 11 17	704	0.5-	0.6+

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1995 12 20	327	0.6+	0.5-	1998 09 18	704	0.2+	0.2-	2000 01 05	704	0.1-	0.2+
1998 08 17	704	0.3+	0.2+	1998 09 25	704	0.5+	0.1+	2000 01 05	704	0.0	0.1-
1998 08 17	704	0.6-	0.6+	1998 09 25	704	0.3+	0.6-	2000 01 05	704	0.0	0.0
1998 08 17	704	1.7-	0.3+	1998 09 25	699	0.1-	1.4+	2000 01 05	704	0.6+	1.4-

(13048)* 1990 RR₇ = 1993 FG₃₉

Discovered 1990 Sept. 13 by H. Debehogne at the European Southern Observatory.

Id. K. Ichikawa (*MPC* 28297)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.24300535	<i>ω</i>	114.96253	+0.16067404		+0.98653840	
<i>a</i>	2.5432682	<i>Ω</i>	164.19378	-0.94106616		+0.16241833	
<i>e</i>	0.1307651	<i>i</i>	6.41378	-0.29762113		+0.01903331	
<i>P</i>	4.06	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 09 13	809	0.3-	0.8-	1998 08 23	704	0.2+	0.3+	1998 09 25	704	0.1+	1.9-
1990 09 13	809	0.1+	0.8-	1998 08 23	704	0.7-	1.3+	1998 09 27	704	0.3-	0.1+
1990 09 13	809	0.5+	0.8-	1998 08 26	699	0.2+	0.3-	1998 09 27	704	0.8+	1.3+
1990 09 15	809	0.3-	0.0	1998 08 26	699	0.1-	0.3-	1998 09 27	704	0.9-	0.0
1990 09 15	809	0.2-	0.1+	1998 08 26	699	0.3-	0.2-	1998 09 27	704	1.3-	0.7-
1990 09 15	809	0.3+	0.1-	1998 09 14	704	0.1+	0.4-	1998 09 27	704	(2.3- 0.5+)	
1990 09 21	809	0.0	0.1-	1998 09 14	704	1.5+	0.8-	1998 10 26	910	1.2-	1.0-
1990 09 21	809	0.4+	0.2+	1998 09 14	704	0.2+	0.9-	1998 10 26	910	1.2-	0.6-
1990 09 21	809	0.5+	0.0	1998 09 14	704	0.7-	0.4-	1998 10 26	910	1.6-	0.4-
1990 09 22	809	0.1-	0.4+	1998 09 14	704	0.7+	0.2+	1999 12 14	704	0.8+	0.3+
1990 09 22	809	0.1-	0.3+	1998 09 14	699	0.3+	0.8+	1999 12 14	704	0.8+	0.3-
1990 09 22	809	0.3+	0.1+	1998 09 14	699	0.3+	0.2-	1999 12 14	704	0.7-	0.4-
1993 03 19	809	(3.0- 2.8-)		1998 09 14	699	0.4+	1.5+	1999 12 14	704	0.2+	0.5-
1993 03 20	809	0.2-	0.5-	1998 09 15	610	1.3+	0.6+	1999 12 14	704	0.0	0.5-
1993 03 24	809	0.2-	0.5-	1998 09 15	610	1.0+	0.8+	2000 01 05	704	0.2-	0.7+
1993 04 16	413	(3.0+ 2.7-)		1998 09 15	610	0.7+	1.0+	2000 01 05	704	0.5-	0.9+
1994 09 30	675	0.2+	0.5+	1998 09 18	704	0.2+	0.6-	2000 01 05	704	0.3-	0.2+
1994 09 30	675	1.3-	1.2-	1998 09 18	704	1.7-	0.3+	2000 01 05	704	0.1+	0.7+
1998 08 17	704	0.4-	0.2-	1998 09 18	704	0.9+	0.8+	2000 01 05	704	0.1-	0.1+
1998 08 17	704	0.4-	1.5+	1998 09 18	704	1.2+	1.1+	2000 01 07	704	0.2-	0.1-
1998 08 17	704	0.0	0.6+	1998 09 18	704	1.3+	0.0	2000 01 07	704	0.1-	0.0
1998 08 17	704	0.1+	0.0	1998 09 25	704	0.2-	0.3+	2000 01 07	704	0.1+	0.2+
1998 08 17	704	0.1+	0.3+	1998 09 25	704	0.2-	0.1-	2000 01 07	704	0.5+	1.2-
1998 08 23	704	0.8-	0.2-	1998 09 25	704	0.6+	0.9-	2000 01 07	704	0.4-	0.3+
1998 08 23	704	0.8-	1.2-	1998 09 25	704	0.4-	0.8-				

(13049)* 1990 RF₁₇ = 1990 SS₁ = 1986 VE₉ = 1998 QK₉₇

Discovered 1990 Sept. 15 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Id. S. Nakano (d, *MPC* 20913), G. V. Williams (*MPC* 32445)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.23860622	<i>ω</i>	225.90322	+0.51780000		-0.85384886	
<i>a</i>	2.5744327	<i>Ω</i>	193.21290	+0.83623787		+0.51827327	
<i>e</i>	0.1606091	<i>i</i>	13.44710	+0.18052530		+0.04832123	
<i>P</i>	4.13	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 11 04	095	1.2-	1.0+	1998 11 17	699	0.5-	0.5+	1999 11 07	704	0.3+	1.0-
1990 09 15	095	0.4+	1.0+	1998 12 09	704	0.5+	0.9+	1999 11 15	699	0.6+	0.8+
1990 09 15	095	(2.2+ 5.7-)		1998 12 09	699	0.9+	0.3+	1999 11 15	699	0.4+	0.6+
1990 09 18	675	0.9+	0.0	1998 12 09	704	0.4+	0.9-	1999 11 15	699	1.6+	0.0
1990 09 18	675	0.5+	0.6-	1998 12 09	704	1.7+	0.5+	1999 12 13	703	0.3+	0.1-
1990 09 20	675	0.0	0.8-	1998 12 09	699	0.4+	0.7-	1999 12 13	703	0.1+	0.1-
1990 09 20	675	0.6-	1.2-	1998 12 09	704	0.3-	0.9-	1999 12 13	703	0.1+	0.3+
1990 09 23	095	0.9+	0.3-	1998 12 09	704	0.2-	1.2+	1999 12 13	703	0.7+	0.2+
1990 10 11	095	(0.8+ 2.2-)		1998 12 09	699	0.0	0.5+	1999 12 16	704	0.9-	0.7+
1990 10 15	095	(2.2- 6.2+)		1999 01 10	699	0.4-	1.1-	1999 12 16	704	0.7-	0.5+

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1990 10 15	095	(2.4- 13.1+)		1999 01 10	699	1.6-	0.6-	1999 12 16	704	0.7-	0.1-
1998 08 24	704	0.4+	0.2+	1999 01 10	699	0.5-	0.4+	1999 12 16	704	0.2-	0.3+
1998 08 24	704	0.0	0.6-	1999 10 19	704	0.0	0.3-	1999 12 16	704	1.0-	0.9-
1998 08 24	704	0.3-	1.0+	1999 10 19	704	1.4-	0.6+	1999 12 17	699	(0.7+ 2.2+)	
1998 08 24	704	0.2-	0.1-	1999 10 19	704	0.5-	0.7+	1999 12 17	699	0.2+	1.4+
1998 08 24	704	0.5+	0.1+	1999 10 19	704	1.3-	0.2-	1999 12 17	699	(0.1- 2.1+)	
1998 08 27	704	(3.5+ 1.7+)		1999 10 19	704	0.3-	0.1+	2000 01 07	699	0.9+	0.1-
1998 08 27	704	(3.3- 1.2+)		1999 11 06	704	0.7+	0.1-	2000 01 07	699	0.6+	0.4-
1998 08 27	704	0.4-	0.6+	1999 11 06	704	0.4+	0.8-	2000 01 07	699	0.9+	0.1-
1998 08 27	704	0.6-	0.7+	1999 11 06	704	0.0	0.1-	2000 01 08	808	1.5-	0.2+
1998 10 12	704	1.2-	0.7-	1999 11 06	704	1.1+	0.5-	2000 01 08	808	1.1+	0.5-
1998 10 12	704	0.5+	0.4+	1999 11 06	704	0.8+	1.2-	2000 01 09	704	0.2-	0.5+
1998 10 12	704	0.1+	1.0-	1999 11 07	704	0.1-	0.1+	2000 01 09	704	0.6-	0.3+
1998 11 17	699	0.9-	0.8+	1999 11 07	704	0.4-	0.3-	2000 01 09	704	0.6-	0.5-

(13050)* 1990 SY = 1986 VW₃ = 1993 FO₂₉ = 1994 RB₁₁

Discovered 1990 Sept. 16 by H. E. Holt at Palomar.

Id. S. Nakano (*MPC* 24102)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Asher			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.23613690	<i>ω</i>	337.51135	+0.62420795		+0.77802304	
<i>a</i>	2.5923490	<i>Ω</i>	330.96630	-0.69268159		+0.50909957	
<i>e</i>	0.1863738	<i>i</i>	8.41523	-0.36132623		+0.36810024	
<i>P</i>	4.17	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1986 11 05	010	(13.0- 2.1-)		1994 09 03	809	(2.8+ 2.7+)		1998 10 19	699	0.9-	0.4+
1986 11 05	010	(7.9- 3.1-)		1994 09 03	809	(2.5+ 2.5+)		1998 10 19	699	0.4-	1.1+
1990 09 16	675	0.7+	2.1-	1994 09 04	809	(3.4+ 4.4+)		1998 11 06	699	0.7-	0.4+
1990 09 16	675	2.2+	1.3-	1994 09 04	809	(3.2+ 4.3+)		1998 11 06	699	0.4-	0.7+
1990 09 17	675	1.2+	1.9-	1994 09 04	809	(3.1+ 4.3+)		1998 11 06	699	0.0	0.9+
1990 09 17	675	(1.0+ 2.8-)		1994 09 05	809	0.8-	0.1-	1999 10 14	704	0.8+	0.3+
1990 09 18	675	0.8+	2.4-	1994 09 05	809	1.2-	0.3-	1999 10 14	704	1.2+	0.6-
1990 09 18	675	1.5+	1.9-	1994 09 05	809	1.5-	0.5-	1999 10 14	704	1.2+	0.6+
1990 09 20	675	(1.0+ 2.7-)		1994 09 06	809	0.4-	0.0	1999 10 14	704	(2.5+ 2.1+)	
1990 09 20	675	0.7+	0.0	1994 09 06	809	0.6-	0.3-	1999 12 12	704	0.4-	0.2+
1990 09 21	657	0.2-	0.6-	1994 09 06	809	1.3-	1.0-	1999 12 12	704	0.2-	0.1+
1990 09 21	657	0.2+	0.7+	1994 09 09	399	1.8-	0.7+	1999 12 12	704	1.3-	0.5+
1993 03 21	809	1.6-	0.3-	1994 09 09	399	1.4-	0.2-	1999 12 12	704	0.1+	0.5+
1993 03 22	809	1.7+	0.3-	1994 10 01	399	0.1-	1.9+	1999 12 12	704	0.4+	0.8+
1993 03 26	809	(3.1+ 0.8+)		1994 10 01	399	0.5+	0.2+	1999 12 15	704	0.5-	0.5+
1993 04 17	413	0.9-	0.7-	1994 10 02	399	1.4-	1.8+	1999 12 15	704	0.2-	0.3+
1994 08 10	809	1.8+	1.8-	1994 10 02	399	1.9-	1.3+	1999 12 15	704	0.6-	0.1+
1994 08 10	809	1.2+	1.7-	1994 10 31	801	1.5+	1.2+	1999 12 15	704	0.2+	0.0
1994 08 10	809	0.4+	0.8-	1997 04 08	689	(12.6+ 7.7-)		1999 12 15	704	0.1-	0.1-
1994 08 11	809	2.3+	0.9+	1998 08 17	704	0.5+	1.1+	2000 01 02	704	0.2+	0.2-
1994 08 11	809	1.5+	0.7+	1998 08 17	704	0.4+	0.7+	2000 01 02	704	0.3-	0.4+
1994 08 11	809	1.6+	0.9+	1998 08 17	704	0.1-	0.5+	2000 01 02	704	0.3-	0.6+
1994 09 01	399	1.0-	0.1+	1998 08 17	704	0.1-	0.7+	2000 01 02	704	0.0	0.7+
1994 09 01	399	0.6-	0.2-	1998 08 17	704	0.4-	0.7+	2000 01 02	704	0.2+	0.3+
1994 09 03	809	(2.6+ 2.8+)		1998 10 19	699	0.1+	0.9+				

(13051)* 1990 SF₅ = 1994 PH₁₅

Discovered 1990

2000 JAN. 24

M.P.C. 37501

Residuals in seconds of arc

1990 09 15	809	0.0	0.7+	1994 08 11	809	1.5+	0.3-	1999 12 14	704	0.0	0.9-
1990 09 15	809	1.2-	1.1+	1994 09 03	809	0.1+	1.6-	1999 12 14	704	0.1+	0.4-
1990 09 15	809	0.5-	0.2+	1994 09 03	809	0.5+	0.2-	1999 12 14	704	0.6+	0.9-
1990 09 22	809	0.5-	1.4+	1994 09 03	809	0.0	0.1-	1999 12 14	704	0.3+	0.2-
1990 09 22	809	1.1-	0.8+	1994 09 04	809	0.9-	1.7-	2000 01 05	704	0.8+	0.5+
1990 09 22	809	1.0-	0.2+	1994 09 04	809	0.2-	1.8-	2000 01 05	704	0.2+	0.3-
1990 09 25	809	1.0+	0.7+	1994 09 04	809	(2.0-	1.9-)	2000 01 05	704	0.6+	0.5+
1990 09 25	809	0.1+	0.5+	1997 04 11	704	0.5+	0.1+	2000 01 07	704	1.3-	1.2-
1990 09 25	809	0.3+	1.4+	1997 04 11	704	0.2-	1.1+	2000 01 07	704	0.1-	1.0-
1994 08 10	809	(2.9+	1.2-)	1998 08 17	704	0.0	0.6-	2000 01 07	704	0.2-	0.1+
1994 08 10	809	(2.4+	1.0-)	1998 08 17	704	(2.1-	0.0)	2000 01 07	704	0.0	1.1+
1994 08 10	809	1.9+	0.5-	1998 08 17	704	0.0	0.1+	2000 01 07	704	1.1-	0.0
1994 08 11	809	(2.3+	0.0)	1998 08 17	704	0.5-	0.0				
1994 08 11	809	(2.7+	0.9-)	1999 12 14	704	0.2+	0.4-				

(13052)* 1990 SN₈

Discovered 1990 Sept. 22 by E. W. Elst at the European Southern Observatory.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
<i>n</i>	0.22840953	ω	144.42075	-0.90967683	+0.41059665
<i>a</i>	2.6504924	Ω	59.93687	-0.39579121	-0.81150262
<i>e</i>	0.0384132	<i>i</i>	4.13706	-0.12584667	-0.41578105
<i>P</i>	4.32	<i>H</i>	13.5	<i>G</i>	0.15

Residuals in seconds of arc

1990 09 14	809	0.3-	1.2-	1999 10 10	704	0.3-	0.3+	1999 11 12	704	0.2-	0.2-
1990 09 14	809	1.2+	1.0-	1999 10 10	704	0.0	0.2+	1999 11 12	704	0.2-	0.1+
1990 09 14	809	0.5+	0.9-	1999 10 10	704	0.3-	0.7+	1999 11 12	704	0.1-	0.2+
1990 09 22	809	0.1-	0.3+	1999 10 20	704	0.3+	0.4+	1999 11 17	704	0.9-	0.4-
1990 09 22	809	0.7+	0.6+	1999 10 20	704	0.3+	0.0	1999 11 17	704	0.1+	0.1+
1990 09 22	809	0.2-	0.2+	1999 10 20	704	0.4+	0.2+	1999 11 17	704	0.3+	0.0
1990 09 25	809	0.0	0.5-	1999 10 20	704	0.2+	0.1+	1999 11 17	704	0.4-	0.5-
1990 09 25	809	0.7-	0.3+	1999 10 20	704	0.3+	0.3+	1999 11 17	704	0.4-	0.3-
1990 09 25	809	0.1-	0.2-	1999 10 29	703	1.1-	0.5-	1999 12 07	704	0.9+	0.4+
1997 03 04	411	0.6+	0.6+	1999 10 29	703	0.5-	0.3+	1999 12 07	704	0.5+	0.4+
1997 03 04	411	1.2-	0.4+	1999 10 29	703	0.3-	0.4+	1999 12 07	704	0.2+	0.2-
1997 03 05	411	1.0+	0.8-	1999 10 29	703	0.5-	0.1-	1999 12 07	704	1.0+	0.3+
1997 03 05	411	0.6-	0.7-	1999 11 03	699	0.1+	0.3+	1999 12 07	704	0.5+	0.2-
1998 06 24	704	0.5-	0.1+	1999 11 03	699	0.2+	0.2+	1999 12 30	699	0.5+	0.2-
1998 06 24	704	0.2-	0.3-	1999 11 03	699	0.5+	0.1+	1999 12 30	699	0.9+	0.1+
1998 06 24	704	0.2+	1.5+	1999 11 05	704	0.1-	0.1+	1999 12 30	699	1.4-	0.2+
1998 06 24	704	1.0-	0.5+	1999 11 05	704	0.4-	0.1+	2000 01 07	704	0.4-	0.2+
1998 06 24	704	(2.9-	1.6-)	1999 11 05	704	0.0	0.3+	2000 01 07	704	0.5+	0.3-
1998 07 03	699	0.3-	1.0-	1999 11 05	704	0.2+	0.4-	2000 01 07	704	0.1-	0.1+
1998 07 03	699	1.2+	1.1-	1999 11 05	704	0.2-	0.2-	2000 01 07	704	0.6-	0.7-
1998 07 03	699	0.3+	1.1+	1999 11 05	704	0.3+	0.0	2000 01 07	704	0.5+	0.9-
1999 10 10	704	0.3+	0.1+	1999 11 12	704	0.1-	0.1-				
1999 10 10	704	0.6-	0.5+	1999 11 12	704	0.2-	0.2-				

(13053)* 1990 SQ₈ = 1998 MJ₂₃

Discovered 1990 Sept. 22 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (*MPC* 32923)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
<i>n</i>	0.23509230	ω	305.98282	+0.45187381	-0.88808267
<i>a</i>	2.6000225	Ω	116.94502	+0.84591297	+0.39653307
<i>e</i>	0.2912722	<i>i</i>	5.43121	+0.28326898	+0.23253106
<i>P</i>	4.19	<i>H</i>	14.9	<i>G</i>	0.15

Residuals in seconds of arc

1990 09 14	809	1.2+	1.8+	1997 06 27	691	0.0	0.1+	1999 12 04	703	0.1-	0.8+
1990 09 14	809	0.3+	1.5+	1998 06 24	691	0.1+	1.1+	1999 12 06	704	1.3-	0.4+

1990 09 14	809	0.6-	0.0	1998 06 24	691	0.1-	0.5+	1999 12 06	704	0.6-	0.1-
1990 09 22	809	0.2-	0.2+	1998 06 24	691	0.1+	0.4+	1999 12 06	704	1.1-	0.7+
1990 09 22	809	0.6-	0.3-	1998 06 30	691	0.2-	0.1+	2000 01 04	704	1.0+	0.2+
1990 09 22	809	0.6-	0.1+	1998 06 30	691	0.2-	0.2+	2000 01 04	704	0.6+	0.1+
1990 09 25	809	0.3+	0.4-	1998 06 30	691	0.3-	0.3+	2000 01 04	704	1.3+	0.3-
1990 09 25	809	0.6+	1.2-	1999 11 16	704	1.0-	0.1+	2000 01 04	704	0.5+	0.2+
1990 09 25	809	0.3-	0.9-	1999 11 16	704	0.5+	0.1-	2000 01 04	704	1.0+	0.6+
1996 03 21	691	0.3-	0.4-	1999 11 16	704	0.1-	0.8-	2000 01 07	704	1.0+	0.2+
1996 03 21	691	0.3-	0.1-	1999 11 16	704	1.0-	0.1-	2000 01 07	704	0.5+	0.1+
1996 03 21	691	0.1-	0.2-	1999 12 04	703	1.3-	0.1+	2000 01 07	704	0.1+	0.3+
1997 06 27	691	0.2-	0.6+	1999 12 04	703	0.4+	1.0+	2000 01 07	704	0.2+	0.4-
1997 06 27	691	0.2+	0.3+	1999 12 04	703	0.4-	0.8+	2000 01 07	704	0.1-	0.8+

(13054)* 1990 ST₁₅ = 1996 AM₂

Discovered 1990 Sept. 16 by H. E. Holt at Palomar.

Id. K. Ichikawa (*MPC* 26740), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
<i>n</i>	0.26933131	ω	308.93311	-0.15426496	+0.98474361
<i>a</i>	2.3747150	Ω	311.99536	-0.86967539	-0.17400715
<i>e</i>	0.0878439	<i>i</i>	6.21923	-0.46889981	-0.00124056
<i>P</i>	3.66	<i>H</i>	13.5	<i>G</i>	0.15

Residuals in seconds of arc

1989 03 07	675	0.6+	0.4-	1998 08 31	704	0.2+	0.7+	1998 12 14	704	1.4+	0.1-
1989 03 07	675	0.2+	0.6-	1998 11 10	704	0.2+	0.5+	1999 11 05	703	0.0	1.5+
1990 09 16	675	0.1-	0.1-	1998 11 10	704	1.3+	0.7-	1999 11 05	703	0.6+	0.7+
1990 09 16	675	0.4+	1.0-	1998 11 10	704	0.5-	0.3+	1999 11 05	703	0.7+	0.9-
1990 09 17	675	0.2-	0.5+	1998 11 10	704	0.2+	0.7+	1999 11 05	703	0.1+	1.2+
1990 09 19	675	0.2+	1.3-	1998 11 10	704	0.3-	0.2+	1999 12 09	703	0.5+	0.3-
1990 09 19	675	0.6+	0.8-	1998 11 14	704	0.4-	0.2+	1999 12 09	703	0.7+	0.7+
1990 09 20	675	0.7+	1.3-	1998 11 14	704	0.5+	0.2+	1999 12 09	703	0.3+	0.5+
1990 09 20	675	0.0	0.5-	1998 11 14	704	1.6+	0.2+	1999 12 09	703	1.2-	0.6-
1996 01 13	411	0.1-	0.9-	1998 11 14	704	(0.1-	2.4-)	1999 12 16	704	0.7-	0.5-
1996 01 13	411	0.5-	0.2-	1998 11 16	704	0.2-	0.3+	1999 12 16	704	0.6-	0.0
1996 01 16	411	0.9-	0.2-	1998 11 16	704	0.2-	0.5-	1999 12 16	704	0.5-	0.1-
1996 01 16	411	0.5-	0.2+	1998 11 16	704	(0.5-	3.8-)	1999 12 16	704	0.2+	1.8-
1996 01 25	411	1.3-	1.8-	1998 11 16	704	0.5-	0.0	1999 12 16	704	0.0	0.1-
1996 01 25	411	0.7-	0.4-	1998 11 16	704	0.2+	0.1+	2000 01 05	704	0.1-	0.0
1998 08 31	704	0.6-	1.7-	1998 12 14	704	0.4-	0.6+	2000 01 05	704	0.2-	0.7-
1998 08 31	704	0.6-	0.2+	1998 12 14	704	0.4-	0.8+	2000 01 05	704	0.8+	0.8+
1998 08 31	704	0.1+	1.9+	1998 12 14	704	1.0-	0.1-				
1998 08 31	704	0.0	1.1-	1998 12 14	704	0.2+	0.2-				

(13055)* 1990 TW₁₂

Discovered 1990 Oct. 14 by F. Börngen and L. D. Schmadel at Tautenburg.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
<i>n</i>	0.22382631	ω	15.84994	+0.57945729	-0.80113668
<i>a</i>	2.6865522	Ω	39.08314	+0.71958303	+0.41667053
<i>e</i>	0.1718170	<i>i</i>	13.73586	+0.38266108	+0.42961110
<i>P</i>	4.40	<i>H</i>	13.9	<i>G</i>	0.15

Residuals in seconds of arc

1990 10 14	033	0.9-	0.9-	1994 09 10	675	0.2-	0.0	1999 12 30	704	0.2-	0.4-
1990 10 15	033	0.3-	0.7+	1999 11 10	367	0.2-	0.1+	1999 12 30	704	0.1+	0.2-
1990 10 15	033	0.3-	0.1+	1999 11 10	367	0.2+	0.6+	1999 12 31	704	0.1+	0.3+
1990 11 11	400	1.4-	1.1+	1999 11 10	367	0.1+	0.0	1999 12 31	704	0.0	0.1-
1990 11 11	400	1.9+	1.7+	1999 12 13	704	0.2+	0.2+	1999 12 31	704	0.1-	0.5-

1992 03 31	033	0.2+	0.2+	1999 12 14	704	0.0	0.1-	2000 01 21	704	0.4+	0.4+
1992 04 03	033	0.4+	0.2-	1999 12 14	704	0.1+	0.3-	2000 01 21	704	0.0	0.2+
1992 04 30	033	0.3+	0.2+	1999 12 14	704	0.2-	0.7-	2000 01 21	704	0.9+	0.8+
1992 04 30	033	0.3-	0.5+	1999 12 30	704	0.3+	0.3-	2000 01 21	704	(1.7+	2.1+)
1992 05 04	033	0.1+	0.7+	1999 12 30	704	0.3-	0.1+				
1994 09 10	675	0.0	0.1+	1999 12 30	704	0.1-	0.1+				

(13056)* 1990 VN₁ = 1977 SP₂ = 1994 TB₁

Discovered 1990 Nov. 12 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 24103)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

M	83.71476		(2000.0)		P		Q
n	0.23198802	ω	346.29845		+0.84309357		-0.52654215
a	2.6231654	Ω	46.02198		+0.50659698		+0.70945753
e	0.1157770	i	8.73643		+0.18042374		+0.46842650
P	4.25	H	13.4	G	0.15	U	1

Residuals in seconds of arc

1977 09 19	095	0.4-	2.2+	1994 10 10	397	1.8+	0.6+	1999 11 05	699	0.2-	0.9+
1990 11 11	374	(3.2-	1.7-)	1994 10 10	397	0.1-	0.1+	1999 11 17	703	0.2+	0.6+
1990 11 12	399	1.3-	1.7-	1994 10 11	397	2.2+	0.0	1999 11 17	703	0.3-	0.6+
1990 11 12	399	0.3-	1.9-	1994 10 11	397	1.8+	1.1-	1999 11 17	703	0.3-	1.2+
1990 11 12	399	1.7+	0.8-	1994 11 07	675	0.1-	0.8+	1999 11 17	703	0.6+	0.2+
1990 11 13	399	(2.1-	3.4-)	1994 11 07	675	0.6+	0.6+	1999 12 07	703	0.2+	0.0
1990 11 13	399	1.3-	2.1-	1998 09 17	699	0.4-	0.0	1999 12 07	703	0.3+	0.5+
1990 11 15	403	0.5-	0.4-	1998 09 17	699	0.1-	0.6+	1999 12 07	703	0.3+	0.4+
1990 11 15	403	1.4-	0.8-	Y 1998 09 17	699	0.2-	0.2+	1999 12 07	703	0.1-	0.8+
1990 11 16	403	(3.6-	1.0+)	Y 1998 09 21	704	0.1+	0.7-	1999 12 15	704	0.0	0.3-
1990 11 16	403	0.5-	0.3+	Y 1998 09 21	704	0.1-	0.4-	1999 12 15	704	0.5+	0.3-
1990 11 21	399	(5.4+	1.2+)	1998 09 21	704	0.2-	0.4-	1999 12 15	704	0.0	0.1-
1990 11 21	399	(4.8+	0.5+)	1998 09 21	704	0.6-	0.3+	1999 12 15	704	0.3-	0.7-
1990 11 24	399	1.6+	0.2-	1998 09 21	704	0.3-	0.9-	2000 01 02	704	0.1+	0.1-
1990 11 24	399	1.0-	2.3+	1998 11 11	699	1.5-	0.2+	2000 01 02	704	0.0	0.1-
1994 10 02	400	0.0	0.4+	1998 11 11	699	1.1-	1.3+	2000 01 02	704	0.5+	0.1+
1994 10 02	400	2.0-	0.7-	1998 11 11	699	0.7-	0.8+	2000 01 02	704	0.1+	0.3-
1994 10 03	400	1.1+	0.7+	1999 11 05	699	0.7+	1.5+	2000 01 02	704	0.7+	0.4-
1994 10 03	400	0.8+	0.4+	1999 11 05	699	0.6-	0.7-				

(13057)* 1990 VF₈ = 1990 UK₁₁ = 1981 UZ₁₇

Discovered 1990 Nov. 13 by C. S. Shoemaker at Palomar.

Id. S. Nakano (d, *MPC* 20913), G. V. Williams (*MPC* 31530)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	55.22636		(2000.0)		P		Q	
n	0.21765553	ω	328.04739		+0.99044160		+0.12350983	
a	2.7370931	Ω	25.07693		-0.07469711		+0.85454492	
e	0.1814773	i	8.33051		-0.11595593		+0.50447825	
P	4.53	H	13.6		G	0.15	U	1

Residuals in seconds of arc

1981 10 24	095	(5.2+	2.5-)	1999 10 08	120	1.5+	1.5-	1999 11 04	704	0.2+	0.7-
1990 10 16	095	(1.0-	2.6+)	1999 10 09	120	0.7+	0.8-	1999 11 04	703	0.1-	0.3+
1990 10 16	095	(2.5+	0.8+)	1999 10 09	619	0.2+	1.4-	1999 11 04	703	0.0	0.3+
1990 10 22	675	0.1+	0.4+	1999 10 09	619	0.1+	0.3-	1999 11 11	703	0.1+	0.6+
1990 10 22	675	0.5+	1.3-	1999 10 10	619	0.2-	1.0-	1999 11 11	703	0.1-	0.4+
1990 11 11	675	0.1+	0.3-	1999 10 10	106	0.2-	0.1+	1999 11 11	703	0.4-	0.4+
1990 11 11	675	0.3-	0.8-	1999 10 10	106	0.0	0.0	1999 11 11	703	0.3-	0.7+
1990 11 13	675	0.6+	0.3-	1999 10 10	106	0.5+	0.1+	1999 11 14	704	0.3-	0.1+
1990 11 13	675	0.2+	1.2-	1999 10 10	704	0.1+	0.6-	1999 11 14	704	0.4-	0.1-
1994 08 03	675	0.9+	0.5+	1999 10 10	704	0.6+	0.7-	1999 11 14	704	0.2-	0.0
1994 08 03	675	0.1-	1.0+	1999 10 10	704	0.5+	0.6-	1999 11 14	704	0.9-	0.0
1994 08 05	675	0.5-	0.7+	1999 10 10	704	0.0	0.7-	1999 11 14	704	0.6-	0.2+
1994 08 05	675	0.7-	1.1+	1999 10 10	704	0.2+	0.7-	1999 11 16	704	0.4-	0.3+
1998 05 24	704	0.0	0.0	1999 10 15	704	0.5-	0.6-	1999 11 16	704	0.5-	0.1-
1998 05 24	704	0.5-	1.0+	1999 10 15	704	0.3-	0.7-	1999 11 16	704	0.2-	0.1-
1998 05 24	704	(1.4+	2.4-)	1999 10 15	704	0.4-	0.2-	1999 11 16	704	0.6-	0.2+

1998 05 24	704	0.1-	1.3-	1999 10 15	704	0.8-	1.0-	1999 11 16	704	0.4-	0.1+
1999 09 14	703	0.3-	0.5+	1999 10 15	704	0.9-	0.8-	1999 11 19	143	0.1+	0.7+
1999 09 14	703	0.4+	1.2+	1999 10 21	704	0.3-	0.1-	1999 11 19	143	0.1+	0.5+
1999 09 14	703	0.6-	0.2+	1999 10 21	704	0.5-	0.4-	1999 11 19	143	0.1-	0.4+
1999 09 14	703	0.2-	0.1-	1999 10 21	704	0.4-	0.1-	1999 12 03	699	0.2+	0.4+
1999 10 03	704	0.7+	0.4+	1999 10 21	704	0.1-	0.1+	1999 12 03	699	0.2+	0.3+
1999 10 03	704	0.4+	0.1-	1999 10 21	704	0.4-	0.4+	1999 12 03	699	0.2+	0.5+
1999 10 03	704	0.2+	0.2-	1999 10 29	699	0.0	1.0+	1999 12 30	699	0.3-	0.7+
1999 10 03	704	0.3+	0.1-	1999 10 29	699	0.1-	0.6+	1999 12 30	699	0.2-	1.2+
1999 10 03	704	0.4-	0.1+	1999 10 29	699	0.2+	0.7+	1999 12 30	699	0.0	0.8+
1999 10 05	704	0.4+	0.5-	1999 11 03	703	0.1-	0.4+	2000 01 04	704	0.4+	0.1+
1999 10 05	704	0.5+	0.4-	1999 11 03	703	0.4-	0.4+	2000 01 04	704	0.4-	0.2-
1999 10 05	704	0.4+	0.1+	1999 11 03	703	0.6+	1.0+	2000 01 04	704	1.2+	0.6+
1999 10 05	704	0.2+	0.3-	1999 11 03	703	0.1-	0.7+	2000 01 04	704	0.7-	0.1+
1999 10 05	704	0.1+	0.2-	1999 11 04	704	0.1+	0.3+	2000 01 04	704	0.3+	1.6+
1999 10 07	704	0.2+	0.1-	1999 11 04	704	0.1+	0.3+	2000 01 06	704	0.2-	0.6+
1999 10 07	704	0.4+	0.2+	1999 11 04	704	0.2+	0.1+	2000 01 06	704	0.2+	0.3+
1999 10 07	704	0.6+	1.3-	1999 11 04	703	0.2+	0.5+	2000 01 06	704	0.3-	0.9+
1999 10 07	704	0.2+	1.3-	1999 11 04	704	0.4+	0.3-	2000 01 06	704	0.0	0.1-
1999 10 07	704	0.1-	0.8-	1999 11 04	703	0.5-	0.6+	2000 01 06	704	0.3-	0.1+

(13058)* 1990 WN₃ = 1992 GB₇ = 1992 HB₆

Discovered 1990 Nov. 19 by E. W. Elst at the European Southern

Observatory.

Id. M. E. Sansaturio (*MPC* 37117)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	213.11784		(2000.0)		P		Q
n	0.27209813	ω	214.15053		+0.62439659		-0.78046735
a	2.3585894	Ω	197.28101		+0.73831891		+0.60292180
e	0.1153478	i	6.10972		+0.25497862		+0.16539657
P	3.62	H	14.7	G	0.15	U	2

Residuals in seconds of arc

1990 11 14	675	0.6-	0.5+	1992 04 04	809	0.0	1.6-	1999 02 23	704	0.7-	1.2+
1990 11 14	675	0.3-	0.1+	1992 04 25	809	1.8-	0.0	1999 02 23	704	(2.2+	0.3+)
1990 11 15	809	(0.8-	2.3-)	1992 04 25	809	0.5+	0.6-	1999 02 23	704	0.2+	0.6+
1990 11 15	809	0.2+	1.4-	1992 04 25	809	0.6+	0.3+	1999 02 23	704	(3.8-	2.0+)
1990 11 15	809	0.2+	1.7-	1997 10 29	566	0.3-	0.9+	1999 03 22	699	0.5+	0.6+
1990 11 16	809	0.1+	1.7-	1997 10 29	566	0.6-	1.0+	1999 03 22	699	0.8+	0.3-
1990 11 16	809	0.9-	1.1-	1997 10 29	566	0.3-	0.6+	1999 03 22	699	0.4+	0.3+
1990 11 16	809	0.1-	1.1-	1997 10 30	704	0.2+	1.0+	1999 04 06	704	0.9+	1.7+
1990 11 18	809	0.6-	0.2+	1997 10 30	704	0.2+	1.0+	1999 04 06	704	0.1-	1.0+
1990 11 18	809	0.1+	0.0	1997 10 30	704	0.4+	1.5+	1999 04 06	704	0.4+	0.1-
1990 11 18	809	1.1+	0.9+	1997 10 30	704	0.5+	1.0+	1999 04 06	704	0.9-	0.1+
1990 11 19	809	0.2+	0.0	1997 10 30	704	0.3+	1.2+	1999 04 09	699	0.6+	1.9+
1990 11 19	809	0.1-	0.4-	1997 11 03	704	0.8-	0.5+	1999 04 09	699	0.2+	0.6+
1990 11 19	809	0.9-	0.4-	1997 11 03	704	0.3-	1.0+	1999 04 09	699	0.8+	1.7+
1990 11 22	809	0.3+	0.0	1997 11 03	704	0.7-	1.0+	1999 04 15	704	0.2+	1.7+
1990 11 22	809	1.0+	0.3-	1997 11 03	704	1.0-	0.4-	1999 04 15	704	1.0+	0.9-
1990 11 22	809	0.7+	0.2+	1997 12 30	557	0.3-	0.0	1999 04 15	704	1.5+	0.0
1992 04 04	809	0.1+	0.5+	1997 12 30	557	0.7-	0.5+	1999 04 15	704	1.1-	1.1-
1992 04 04	809	0.2-	0.4-	1999 02 23	704	1.1-	0.6-	1999 04 15	704	0.8-	1.1+

(13059)* 1991 BD₁

2000 JAN. 24

M.P.C. 37503

1983 02 15	675	0.2-	0.8+	1991 02 14	675	0.2-	0.8+	1998 12 22	704	0.1-	0.8+
1983 02 15	675	2.0-	1.3-	1991 02 14	675	1.2+	0.0	1998 12 22	704	0.1-	0.6+
1989 09 30	675	0.1+	1.3+	1991 02 19	675	1.0+	0.4-	1998 12 22	704	0.2+	1.9+
1989 09 30	675	0.1-	0.2+	1991 02 19	675	0.5+	1.2-	1999 11 08	703	0.1-	0.5+
1991 01 16	675	0.5-	0.5+	1993 07 26	675	0.2-	0.1+	1999 11 08	703	1.1+	0.7+
1991 01 16	675	0.3-	0.3+	1993 07 26	675	0.0	0.5-	1999 11 08	703	0.5+	0.2+
1991 01 18	511	(2.2-	0.2+)	1993 09 18	675	0.3-	0.3+	1999 11 08	703	1.6+	0.6+
1991 01 18	511	1.9-	1.1-	1998 12 15	704	0.5+	0.3-	2000 01 08	699	1.1-	1.5+
1991 01 18	511	0.7-	0.4-	1998 12 15	704	1.1-	0.8-	2000 01 08	699	1.1+	1.7+
1991 01 19	511	(4.5-	0.1-)	1998 12 15	704	0.1+	0.0	2000 01 08	699	0.3+	1.4+
1991 01 19	511	(2.9-	0.2-)	1998 12 15	704	0.1+	0.4+				

(13060)* 1991 EJ = 1997 WT₂₉

Discovered 1991 Mar. 10 by R. H. McNaught at Siding Spring.

Id. G. V. Williams (*MPC* 30976)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	68.76859		(2000.0)	P		Q	
<i>n</i>	0.08278847	ω	95.35053	+0.88461466		-0.26789584	
<i>a</i>	5.2138214	Ω	280.61679	+0.08538086		+0.89772592	
<i>e</i>	0.1229519	<i>i</i>	22.85123	+0.45843975		+0.34974275	
<i>P</i>	11.91	<i>H</i>	10.3	<i>G</i>	0.15	<i>U</i>	0

Residuals in seconds of arc

1953 01 09	675	1.0-	0.6-	1998 11 16	704	1.1+	1.5-	1999 11 16	704	0.9+	0.3-
1953 01 09	675	0.7+	0.4+	1998 11 16	704	0.6+	0.9-	1999 11 16	704	1.0+	1.3-
1991 01 26	413	1.0+	0.1+	1998 11 16	566	0.5-	0.1+	1999 11 16	704	0.4+	1.0-
1991 02 12	413	0.3+	0.6-	1998 11 16	566	0.3-	0.1+	1999 11 16	704	0.6-	0.4-
1991 03 06	413	(2.0-	3.1-)	1998 11 16	566	0.3-	0.0	1999 11 16	704	0.4-	0.6-
1991 03 10	413	0.7-	0.1-	1998 12 12	704	0.2+	0.6+	1999 12 15	704	(0.4-	2.3+)
1991 03 12	413	0.6-	0.2-	1998 12 12	704	0.5-	0.1+	1999 12 15	704	0.4-	0.9+
1997 11 17	327	0.3-	0.0	1998 12 12	704	0.2+	0.1-	1999 12 15	704	1.0-	1.0+
1997 11 17	327	0.1+	0.2-	1998 12 12	704	1.4+	0.4-	2000 01 03	704	0.0	0.1-
1997 11 17	327	0.1+	0.1-	1999 01 14	699	0.3+	0.2+	2000 01 03	704	0.0	0.1+
1997 11 17	327	0.2-	0.3-	1999 01 14	699	0.3-	0.1+	2000 01 03	704	1.0+	1.4+
1997 11 19	327	0.6-	0.1-	1999 01 14	699	0.2+	0.1+	2000 01 03	704	0.3-	0.6+
1997 11 19	327	0.2-	0.4+	1999 01 18	704	0.5-	1.6+	2000 01 03	704	0.4+	0.3+
1997 11 19	327	0.4-	0.7+	1999 01 18	704	0.7+	0.9-	2000 01 04	704	0.2-	0.2+
1998 11 14	704	0.3+	0.3+	1999 01 18	704	0.2+	1.7-	2000 01 04	704	0.5+	0.6+
1998 11 14	704	0.8-	0.1+	1999 01 18	704	(2.7-	0.3+)	2000 01 04	704	0.4-	0.2-
1998 11 14	704	0.5-	0.1-	1999 11 15	163	0.1-	0.1+	2000 01 04	704	0.4-	0.0
1998 11 14	704	0.6+	0.4-	1999 11 15	163	0.2+	0.4+	2000 01 04	704	0.0	1.0+
1998 11 16	704	(2.2+	0.6+)	1999 11 15	163	0.1-	0.1-				
1998 11 16	704	(3.2+	0.4-)	1999 11 16	163	0.8-	0.1-				

(13061)* 1991 FL₂ = 1984 WY₄ = 1998 RZ

Discovered 1991 Mar. 20 by H. Debehogne at the European Southern

Observatory.

Id. S. Nakano (*MPC* 32660)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Asher			
<i>M</i>	90.10515		(2000.0)	P		Q	
<i>n</i>	0.20894099	ω	46.90228	+0.82017269		-0.57065191	
<i>a</i>	2.8126797	Ω	347.70460	+0.45309770		+0.69154135	
<i>e</i>	0.0919611	<i>i</i>	11.07429	+0.34931251		+0.44286223	
<i>P</i>	4.72	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 11 21	010	0.6-	0.7+	1998 09 25	699	0.3+	0.7+	1998 10 28	294	0.1+	0.1+
1991 03 09	675	0.4-	1.3-	1998 09 26	704	0.9+	0.0	1998 10 28	704	0.5-	0.2-
1991 03 09	675	0.3-	0.8-	1998 09 26	704	0.5+	0.1-	1998 10 28	294	0.6+	0.3+
1991 03 12	675	0.4-	0.2+	1998 09 26	704	0.9+	0.2-	1998 10 28	704	0.2+	0.1+
1991 03 12	675	0.2-	0.3-	1998 09 26	704	1.1+	0.1+	1998 10 28	704	0.2+	0.4+
1991 03 20	809	1.1-	0.5+	1998 09 26	704	0.0	0.2+	1998 10 28	704	0.1-	0.2-
1991 03 20	809	0.6-	0.4+	1998 09 27	704	0.5+	0.2+	1998 11 20	699	0.3-	0.0
1991 03 20	809	0.2-	0.4+	1998 09 27	704	0.4-	0.8+	1998 11 20	699	0.4-	0.2+
1991 03 21	809	0.8+	0.1-	1998 09 27	704	0.4+	1.0+	1998 11 20	699	0.4-	0.1+

1991 03 21	809	0.6+	0.3+	1998 09 27	704	0.8+	0.8+	1999 01 08	704	1.3-	0.4+
1991 03 21	809	0.8+	0.4+	1998 09 27	704	0.0	0.2-	1999 01 08	704	1.4-	1.5+
1991 03 22	809	0.8-	0.4-	1998 10 02	689	0.1-	0.1-	1999 01 08	704	(2.2-	1.7+)
1991 03 22	809	0.6-	0.5-	1998 10 08	689	0.1+	0.2-	1999 01 08	704	1.5+	1.3-
1991 03 22	809	0.3-	0.3-	1998 10 11	699	0.4-	0.0	1999 11 09	703	1.1-	0.5+
1991 03 23	809	1.4+	0.1+	1998 10 11	699	0.0	0.1+	1999 11 09	703	0.3-	0.9-
1991 03 23	809	1.0+	0.3+	1998 10 11	699	0.2-	0.3+	1999 11 09	703	0.2-	1.1-
1991 03 23	809	1.3+	0.4+	1998 10 18	699	0.3+	0.6-	1999 11 09	703	0.1+	0.5-
1993 09 18	010	0.5+	0.4-	1998 10 18	704	0.7-	0.6-	1999 11 11	703	0.6+	0.3-
1993 09 18	010	0.6-	0.8-	1998 10 18	699	0.0	0.2-	1999 11 11	703	0.9-	0.6+
1993 09 18	010	0.1-	1.1-	1998 10 18	704	0.4+	1.1-	1999 11 11	703	0.0	0.1+
1998 08 20	699	0.1-	0.4-	1998 10 18	699	0.0	0.3-	1999 11 11	703	0.3+	0.5-
1998 08 20	699	0.2-	0.1+	1998 10 18	704	0.0	0.0	2000 01 03	704	0.2-	0.2-
1998 08 20	699	0.5-	0.2-	1998 10 18	704	0.4-	0.8-	2000 01 03	704	0.3-	0.6-
1998 09 12	411	0.5-	0.6+	1998 10 18	704	1.1-	0.4-	2000 01 03	704	0.3-	0.3+
1998 09 12	411	0.7-	0.2-	1998 10 26	294	0.8-	0.7-	2000 01 03	704	0.5+	0.5+
1998 09 13	411	0.9-	0.6-	1998 10 26	294	0.4+	0.8-	2000 01 03	704	0.0	0.8+
1998 09 13	411	0.6-	0.3+	1998 10 28	294	1.3+	0.1-	2000 01 06	699	0.2-	0.7+
1998 09 25	699	0.4+	1.1+	1998 10 28	294	1.0+	1.0+	2000 01 06	699	0.0	0.1+
1998 09 25	699	0.4+	0.9+	1998 10 28	704	0.0	0.2-	2000 01 06	699	0.3-	0.3-

(13062)* 1991 HN = 1998 XC₅₆

Discovered 1991 Apr. 19 by C. S. Shoemaker at Palomar.

Id. G. V. Williams (*MPC* 33479)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	100.24678		(2000.0)	P		Q	
<i>n</i>	0.08539020	ω	287.81131	+0.93660725		-0.31968242	
<i>a</i>	5.1073706	Ω	91.02377	+0.35036774		+0.85095088	
<i>e</i>	0.0119490	<i>i</i>	8.24727	+0.00305006		+0.41675622	
<i>P</i>	11.54	<i>H</i>	11.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 04 19	675	0.3-	1.4-	1997 12 04	809	(3.1+	0.8+)	1999 10 22	704	0.6-	0.1+
1991 04 19	675	0.6+	0.7+	1997 12 04	809	(3.8+	0.4+)	1999 10 22	704	0.6+	0.3-
1991 04 20	675	1.1+	0.2-	1998 12 15	704	1.4-	0.5-	1999 12 15	704	0.3+	0.6-
1991 04 20	675	1.7+	1.0-	1998 12 15	704	(0.9-	2.8-)	1999 12 15	704	0.4+	0.5+
1991 05 14	675	0.7-	0.4-	1998 12 15	704	1.0-	0.9+	1999 12 15	704	0.3+	0.1-
1991 05 16	675	1.7-	0.9+	1998 12 16	704	0.1-	0.6+	1999 12 15	704	0.4-	0.0
1991 05 18	675	(2.6-	1.0+)	1998 12 16	704	(2.2+	0.0)	1999 12 15	704	0.1-	1.7+
1991 06 06	675	0.4-	0.1+	1998 12 16	704	1.3+	1.1+	2000 01 03	704	0.7-	0.8-
1991 06 06	675	0.9-	0.9-	1998 12 16	704	0.9+	1.2+	2000 01 03	704	0.1+	0.4+
1991 06 07	675	0.6+	1.5+	1998 12 22	704	1.4-	1.3-	2000 01 03	704	0.4+	0.3-
1991 06 07	675	0.4-	0.7+	1998 12 22	704	1.1+	1.8-	2000 01 03	704	1.1-	0.0
1997 11 06	704	0.4-	0.4-	1998 12 22	704	1.3+	0.0	2000 01 03	704	0.2-	0.5+
1997 11 06	704	0.8+	0.6+	1998 12 22	704	0.7-	0.3-	2000 01 04	704	0.3-	0.3-
1997 11 06	704	0.1+	0.1-	1999 10 22	704	0.4+	0.7-	2000 01 04	704	0.0	0.4+
1997 11 06	704	0.1-	0.3-	1999 10 22	704	0.2+	0.6-	2000 01 04	704	0.2+	0.3-
1997 11 06	704	0.3-	0.1-	1999 10 22	704	0.1+	0.0	2000 01 04	704	0.6+	0.4+

(13063)* 1991 LB

Discovered 1991 June 5 by Spacewatch at Kitt Peak.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	149.88945		(2000.0)	P	Q
n	0.29686310	ω	121.52885	+0.94007245	+0.33685926
a	2.2255221	Ω	218.85637	-0.33437614	+0.88042681
e	0.1948218	i	4.82932	-0.06675611	+0.33372814
P	3.32	H	14.7	G 0.15	U 1

1991 06 07	691	0.2+	0.5-	1998 08 19	566	0.8-	0.0	1998 12 15	910	(3.7-	1.1-)
1991 06 07	691	0.2+	0.3-	1998 08 23	704	0.2+	0.1+	1998 12 15	910	(3.5-	1.0-)
1991 06 07	691	0.1-	0.5-	1998 08 23	704	0.3-	0.7+	1998 12 17	910	(3.5-	1.1-)
1991 06 10	691	0.1+	0.8+	1998 08 23	704	0.5+	0.9+	1998 12 17	910	(4.0-	1.4-)
1991 06 10	691	0.4+	0.8+	1998 08 23	704	0.9+	0.1+	1998 12 17	910	(3.4-	1.0-)
1991 06 10	691	0.1+	0.8+	1998 08 23	704	0.3-	0.1+	1998 12 05	704	0.0	0.3+
1995 10 20	411	0.5+	0.7+	1998 09 22	699	0.0	0.3-	1999 12 05	704	1.1+	0.1-
1995 10 20	411	0.1+	0.4+	1998 09 22	699	0.6+	0.8-	1999 12 05	704	1.6+	0.6-
1995 10 25	411	0.6-	0.6+	1998 09 22	699	0.3+	0.2-	2000 01 05	699	0.1-	0.8+
1995 10 25	411	0.7-	0.5+	1998 10 14	699	0.1-	0.5-	2000 01 05	699	0.6+	1.0+
1998 06 04	699	0.0	0.8-	1998 10 14	699	0.5-	0.2-	2000 01 05	699	0.2+	0.4+
1998 06 04	699	0.5-	0.7-	1998 10 14	699	0.2-	0.2+	2000 01 07	704	(0.3+	3.1-)
1998 06 04	699	0.3+	0.7-	1998 10 20	699	0.6-	0.7-	2000 01 07	704	0.1-	0.9-
1998 07 16	699	0.5+	0.1-	1998 10 20	699	1.0-	0.1-	2000 01 07	704	1.3-	0.2+
1998 07 16	699	0.7+	0.1+	1998 10 20	699	1.1-	0.0	2000 01 07	704	1.0-	0.6+

(13064)* 1991 PC₆ = 1982 BA₁₄

Discovered 1991 Aug. 6 by E. W. Elst at the European Southern Observatory.
Id. S. J. Bus (*MPC* 20024)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5				Williams			
<i>M</i>	51.83083		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.26942872	ω	278.35960	+0.7103138		-0.69601346	
<i>a</i>	2.3741426	Ω	125.82760	+0.68595620		+0.65106739	
<i>e</i>	0.1270795	<i>i</i>	7.43643	+0.15783053		+0.30278130	
<i>P</i>	3.66	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 01 30	675	1.1+	1.8-	1993 01 28	010	1.0-	1.0+	1999 12 14	704	0.1-	0.8-
1982 01 31	675	0.9-	0.0	1993 01 28	010	0.6-	0.4-	1999 12 14	704	0.6-	1.3-
1991 08 06	809	0.3+	0.1-	1993 01 29	691	1.1+	0.0	1999 12 14	704	0.5-	1.2-
1991 08 06	809	1.1-	0.9-	1993 01 29	691	1.0+	0.1+	1999 12 14	704	(0.2-	2.2-)
1991 08 06	809	0.3-	0.2+	1993 01 29	691	1.1+	0.3+	2000 01 05	704	0.3+	0.1+
1991 08 14	809	0.3+	0.5-	1995 10 04	966	1.0-	0.6+	2000 01 05	704	0.3+	0.1+
1991 08 14	809	1.2-	1.3-	1995 10 05	966	1.1-	0.7+	2000 01 05	704	0.1+	0.1-
1991 08 14	809	0.8-	0.8-	1997 04 06	327	0.3+	0.6+	2000 01 05	704	0.1+	0.1-
1991 09 04	809	(1.5+	2.4+)	1997 04 06	327	0.1+	0.7+	2000 01 05	704	0.1+	0.2-
1991 09 04	809	(2.4+	1.6+)	1997 04 06	327	0.3-	0.3+	2000 01 06	704	0.1+	0.1+
1991 09 04	809	2.0+	0.9+	1999 10 10	704	0.0	0.8+	2000 01 06	704	0.4-	0.7-
1991 09 06	809	0.6+	0.0	1999 10 10	704	0.0	0.2-	2000 01 06	704	0.1+	0.1+
1991 09 06	809	0.0	1.0+	1999 10 10	704	0.6-	0.6+	2000 01 06	704	0.0	0.1+
1991 09 06	809	1.6+	1.3+	1999 10 10	704	0.5+	0.9+	2000 01 06	704	0.2+	0.1-
1993 01 27	010	(2.9-	1.4+)	1999 10 20	704	0.1-	0.4+	2000 01 07	169	0.9+	1.4+
1993 01 27	010	(3.0-	1.2+)	1999 10 20	704	0.5-	0.7-	2000 01 07	169	0.7+	1.2+
1993 01 27	010	1.5-	0.3+	1999 10 20	704	0.7+	0.4-	2000 01 07	169	0.4+	1.4+
1993 01 28	010	0.9-	1.0+	1999 12 14	704	0.5-	1.3-	2000 01 07	169	0.6+	0.5-

(13065)* 1991 PG₁₁ = 1977 RU₁₈

Discovered 1991 Aug. 9 by H. E. Holt at Palomar.
Id. G. V. Williams (*MPC* 19507)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5				Williams			
<i>M</i>	172.42176		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.28176137	ω	137.43443	+0.72897166		+0.68454267	
<i>a</i>	2.3043498	Ω	179.36163	-0.65496703		+0.69801910	
<i>e</i>	0.2372520	<i>i</i>	6.61401	-0.19904399		+0.21016819	
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 09 09	675	0.4+	0.5-	1998 09 14	704	0.1-	0.5+	1998 10 17	699	0.2-	0.0
1977 09 10	675	0.2-	0.9-	1998 09 14	704	0.0	0.8-	1998 10 17	699	0.2-	0.3+
1991 08 09	675	1.0+	0.3+	1998 09 14	704	0.1+	0.1-	1998 10 17	699	0.0	0.6+
1991 08 10	675	0.7-	0.3+	1998 09 14	704	0.3+	0.5+	1998 10 20	689	0.7+	0.1-
1991 09 11	675	1.5+	0.3-	1998 09 16	699	0.1+	0.1+	1998 11 15	699	0.5-	0.6+
1991 09 11	675	0.0	1.7-	1998 09 16	699	0.4+	0.2+	1998 11 15	699	0.4-	0.0
1991 09 15	675	0.4-	0.9-	1998 09 16	699	0.1-	0.1-	1998 11 15	699	0.4+	0.3+
1991 09 15	675	(1.3+	2.1-)	1998 09 18	704	0.0	0.3+	1998 11 16	566	0.0	0.1-

1997 04 02	704	1.6+	1.2+	1998 09 18	704	0.1+	0.6+	1998 11 16	566	0.1+	0.2-
1997 04 02	704	0.8+	0.7+	1998 09 18	704	1.5+	0.4+	1998 11 16	566	0.2+	0.3-
1997 04 02	704	1.1+	0.6+	1998 09 18	704	0.0	0.2+	1998 12 08	704	0.3-	0.4-
1997 04 02	704	0.4+	0.9+	1998 09 18	704	0.4-	1.3+	1998 12 08	704	0.3+	0.6-
1997 04 07	566	0.1-	1.0-	1998 09 21	689	0.4+	0.3-	1998 12 08	704	0.2-	0.3-
1997 04 07	566	0.2+	0.2-	1998 09 22	689	0.6+	0.1-	1998 12 08	704	1.2+	0.4+
1997 04 07	566	0.2+	0.1-	1998 09 26	704	0.4-	0.2+	1998 12 08	704	1.9-	1.0-
1997 04 28	704	1.5-	0.2-	1998 09 26	704	1.4-	0.4+	1998 12 16	699	0.1+	1.9-
1997 04 28	704	1.6-	0.1-	1998 09 26	704	1.1-	0.8-	1998 12 16	699	0.2-	1.1-
1997 04 28	704	0.8-	0.9-	1998 09 26	704	1.3-	0.2+	1998 12 16	699	0.2-	1.8-
1997 04 28	704	0.8-	0.1+	1998 09 26	704	1.8-	0.3-	1999 11 08	703	0.3+	0.1-
1998 06 30	704	0.7-	0.5-	1998 09 27	704	0.8+	0.4+	1999 11 08	703	0.0	1.0+
1998 06 30	704	0.7-	1.3-	1998 09 27	704	0.5+	0.6+	1999 11 08	703	1.6-	0.2-
1998 06 30	704	0.9-	0.5+	1998 09 27	691	0.2+	0.2+	1999 11 08	703	(2.1-	1.7+)
1998 06 30	704	0.0	0.4+	1998 09 27	704	0.3+	0.5+	1999 12 14	704	0.7+	0.1+
1998 06 30	704	(3.6-	0.3+)	1998 09 27	704	0.1+	0.4+	1999 12 14	704	0.4-	0.2-
1998 07 24	566	1.5-	1.3-	1998 09 27	691	0.0	0.3+	1999 12 14	704	0.4-	1.6-
1998 07 24	566	0.2+	1.2-	1998 09 27	704	0.6-	0.0	2000 01 04	699	0.4-	0.6+
1998 07 24	566	0.1+	1.0-	1998 09 27	691	0.1+	0.3+	2000 01 04	699	0.6+	0.3-
1998 08 23	704	0.3+	0.4+	1998 10 02	689	0.6+	0.5-	2000 01 04	699	0.3-	1.1+
1998 08 23	704	0.8+	0.9+	1998 10 14	704	0.0	0.3+	2000 01 05	704	0.2+	0.1+
1998 08 23	704	0.9+	1.1+	1998 10 14	704	0.3-	0.9+	2000 01 05	704	0.1+	0.3-
1998 08 23	704	0.5-	0.6+	1998 10 14	704	(2.7-	2.0-)	2000 01 05	704	1.8-	0.0
1998 08 23	704	1.2+	0.7+	1998 10 14	704	(2.8-	0.9+)	2000 01 05	704	0.2-	0.7-
1998 08 23	704	0.8+	0.4-	1998 10 14	704	1.4-	0.2+	2000 01 07	704	0.6+	0.0
1998 08 23	704	0.8+	0.9+	1998 10 15	704	0.4+	0.0	2000 01 07	704	0.8+	0.4+
1998 08 23	704	0.2+	0.5+	1998 10 15	704	0.6+	0.8+	2000 01 07	704	0.3+	0.5+
1998 08 23	704	0.7-	0.9-	1998 10 15	704	0.5+	0.3+	2000 01 07	704	0.3+	0.2+
1998 08 23	704	1.0-	1.2-	1998 10 15	704	0.3+	0.7+	2000 01 07	704	0.8+	0.7-
1998 09 14	704	0.0	0.3-	1998 10 15	704	0.5-	0.3+				

(13066)* 1991 PM₁₃ = 1977 QO = 1984 QU₁ = 1997 EC₃₄

Discovered 1991 Aug. 5 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 29614)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5				Williams			
<i>M</i>	194.59225		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.28209606	ω	278.73065	+0.11103583		+0.99381211	
<i>a</i>	2.3025268	Ω	357.63847	-0.88165797		+0.09714748	
<i>e</i>	0.2066875	<i>i</i>	4.06636	-0.45863958		+0.05385035	
<i>P</i>	3.49	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 08 18	095	1.0+	1.4-	1998 09 14	704	0.4-	0.1-	1998 10 17	327	0.1+	0.2+
1984 08 26	808	(1.3-	15.9+)	1998 09 14	704	0.6+	0.4-	1998 10 20	910	0.6-	0.3-
1984 08 26	808	(2.0-	4.8+)	1998 09 14	704	0.1+	1.5+	1998 10 20	910	0.6-	0.3-
1984 09 01	808	(0.3+	14.0+)	1998 09 14	704	0.0	0.5+	1998 10 20	910	0.5-	0.4-
1984 09 01	808	(0.0	11.5+)	1998 09 15	610	1.2+	0.8-	1998 10 21	910	0.4-	0.5-
1991 08 05	675	(1.1-	2.2+)	1998 09 15	610	1.5+	0.5-	1998 10 21	910	0.4-	0.6-
1991 08 08	675	0.4-	1.2+	1998 09 15	610	1.9+	0.2-	1998 10 21	910	0.6-	0.7-
1991 08 08	675	0.8-	1.7+	1998 09 18	704	0.0	0.1+	1999 01 05	910	1.7-	0.5-
1991 09 07	399	(0.3-	2.1-)	1998 09 18	704	1.0-	1.1-	1999 01 05	910	1.8-	0.6-
1991 09 07	399	0.9-	1.5+	1998 09 18	704	0.3+	0.9-	1999 01 05	910	1.5-	1.0-
1991 09 12	675	0.6-	0.2-	1998 09 18	704	0.5-	0.2-	1999 11 16	704	0.4+	0.8+
1991 09 12	675	0.1+	0.3-	1998 09 18	704	1.1-	0.8-	1999 11 16	704	0.4-	0.5-
1997 03 04	704	0.9+	1.2+	1998 09 21	699	0.3+	1.4+	1999 11 16	704	0.2-	1.3-
1997 03 04	704	0.4-	0.7+	1998 09 21	699	0.3+	1.3+	1999 11 16	704	0.5+	0.3-
1997 03 05	704	0.9-	1.2+	1998 09 21	699	0.8+	1.7+	1999 12 15	704	0.3+	0.2-
1997 03 05	704	1.0+	1.2+	1998 09 25	704	0.4+	0.6-	1999 12 15	704	0.0	0.1-
1997 03 06	704	0.1-	0.4+	1998 09 25	704	0.2-	0.6-	1999 12 15	704	0.5+	0.1+
1997 03 06	704	1.0-	0.2+	1998 09 25	704	0.1+	0.2+	1999 12 15	704	0.4-	0.6-
1998 08 17	704	0.1-	0.3-	1998 09 25	704	0.4-	0.1+	1999 12 15	704	0.4+	0.7-
1998 08 17	704	0.4-	1.1+	1998 09 25	704	0.1-	0.6+	2000 01 02	704	0.2+	0.9+
1998 08 17	704	0.5-	1.0+	1998 09 27	704	1.1+	0.6-	2000 01 02	704	0.4+	0.2-
1998 08 17	704	0.1+	0.0	1998 09 27	704	0.6+	0.4-	2000 01 02	704	0.3+	0.1-
1998 08 17	704	0.5+	0.7+	1998 09 27	704	0.5-	0.1-	2000 01 02	704	0.0	0.0
1998 08 18	566	0.8-	0.1-	1998 09 27	704	0.3-	0.6-	2000 01 04	704	0.2+	0.3+
1998 08 18	566	0.7-	0.3-	1998 09 27	704	1.4-	1.4+	2000 01 04	704	0.1-	1.0-

2000 JAN. 24

M.P.C. 37505

1998 08 18	566	0.9−	0.2−	1998 10 12	699	0.4+	0.3+	2000 01 04	704	0.6+	0.3+
1998 08 23	704	0.7+	0.1+	1998 10 12	699	0.0	0.4−	2000 01 04	704	0.0	1.8+
1998 08 23	704	0.2+	0.3−	1998 10 12	699	0.4−	0.1+	2000 01 04	704	0.4+	0.5+
1998 08 23	704	0.9+	0.6+	1998 10 17	327	0.2+	0.1−				
1998 09 14	704	1.0+	0.3−	1998 10 17	327	0.1+	0.4+				

(13067)* 1991 PA₁₅ = 1991 RW₆ = 1998 MB₃₆

Discovered 1991 Aug. 6 by H. E. Holt at Palomar.

Id. S. Nakano (d, *MPC* 19822), G. V. Williams (*MPC* 32224)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	128.44141		(2000.0)	P	Q
<i>n</i>	0.27560316	ω	151.73494	+0.95982334	+0.27997870
<i>a</i>	2.3385496	Ω	192.05041	−0.27138579	+0.90924113
<i>e</i>	0.1679345	<i>i</i>	5.14920	−0.07133658	+0.30804627
<i>P</i>	3.58	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1991 08 06	675	0.7+	1.6+	1997 04 02	704	1.1+	0.3−	1999 12 14	704	0.1+	0.2−
1991 08 06	675	0.1−	1.1−	1998 06 24	704	(3.1−	0.1−)	1999 12 14	704	0.5−	0.5+
1991 08 08	675	0.7+	0.4−	1998 06 24	704	0.2+	0.2+	2000 01 05	704	0.3+	0.3−
1991 08 08	675	0.1−	0.6−	1998 06 24	704	1.0−	1.6+	2000 01 05	704	0.2+	0.3−
1991 09 03	413	0.3+	0.1−	1998 06 24	704	(2.4−	0.6+)	2000 01 05	704	0.1−	0.3+
1991 09 03	413	0.4+	1.2+	1998 06 26	704	0.7+	0.1−	2000 01 05	704	0.3−	0.3+
1991 09 04	413	1.2−	0.7+	1998 06 26	704	0.5+	0.7+	2000 01 07	704	0.4+	0.5−
1991 09 14	675	1.0−	0.5+	1998 06 26	704	0.1−	0.8−	2000 01 07	704	0.4+	0.2+
1991 09 14	675	0.3+	1.3−	1998 06 26	704	0.3−	0.7−	2000 01 07	704	0.5+	1.5+
1994 05 15	691	0.3−	0.2−	1999 10 10	704	0.8+	0.2+	2000 01 07	704	0.2−	0.3−
1994 05 15	691	0.3−	0.1−	1999 10 10	704	0.4+	0.8+	2000 01 07	704	1.0−	0.2−
1994 05 15	691	0.1−	0.6+	1999 10 10	704	1.2−	0.1−				
1997 04 02	704	0.2+	0.5+	1999 12 14	704	0.2−	0.1−				

(13068)* 1991 RL₁ = 1998 QG₅₃

Discovered 1991 Sept. 4 by E. F. Helin at Palomar.

Id. G. V. Williams (*MPC* 32448)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	201.67134		(2000.0)	P	Q
<i>n</i>	0.28700070	ω	101.51019	+0.41301168	+0.90956007
<i>a</i>	2.2762192	Ω	193.17427	−0.89435658	+0.39552272
<i>e</i>	0.1698458	<i>i</i>	11.66033	−0.17189431	+0.12752357
<i>P</i>	3.43	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1991 09 04	675	0.7+	0.4−	1998 08 31	704	0.6+	0.8−	1998 10 15	704	0.0	1.2+
1991 09 04	675	0.4+	1.3−	1998 08 31	704	0.8−	0.5−	1998 10 15	704	0.2−	0.6+
1991 09 08	675	0.8−	0.0	1998 09 14	704	0.1+	0.3+	1998 10 15	704	0.1−	0.8+
1991 09 08	675	0.5+	0.4−	1998 09 14	704	0.5+	0.0	1998 10 15	704	0.7+	0.1+
1991 09 12	675	0.1−	0.3−	1998 09 14	704	0.4+	0.7+	1998 10 24	691	0.5−	0.9−
1991 09 12	675	(0.5−	2.2−)	1998 09 15	699	0.0	0.2+	1998 10 24	691	0.4−	0.8−
1997 04 28	704	0.3+	0.4+	1998 09 15	699	0.1−	0.4+	1998 10 24	691	0.4−	0.7−
1997 04 28	704	0.0	0.7+	1998 09 15	699	0.4+	0.3−	1998 11 15	699	0.7−	0.8+
1997 04 28	704	0.6−	0.3−	1998 09 18	704	0.1−	0.5−	1998 11 15	699	0.1+	1.2+
1997 04 28	704	0.5+	0.1+	1998 09 18	704	0.4−	0.8−	1998 11 15	699	0.0	0.6+
1997 04 28	704	1.4−	0.3+	1998 09 18	704	0.3+	0.7−	1998 12 08	704	0.2−	0.1−
1998 06 30	704	0.1+	1.2+	1998 09 18	704	0.6−	0.4−	1998 12 08	704	1.4+	0.5+
1998 06 30	704	0.6+	0.6+	1998 09 18	704	0.4+	0.1−	1998 12 08	704	(1.0−	2.2+)
1998 06 30	704	0.5+	0.0	1998 09 26	704	0.0	0.9+	1998 12 08	704	(2.6−	0.6+)
1998 06 30	704	1.2+	0.6+	1998 09 26	704	0.8−	0.1−	1999 12 13	703	0.4+	0.9+
1998 08 20	699	0.0	0.0	1998 09 26	704	0.6+	0.1+	1999 12 13	703	0.3+	0.4+
1998 08 20	699	0.1+	0.0	1998 09 26	704	0.8+	0.9−	1999 12 13	703	0.3+	1.1+
1998 08 20	699	0.2−	0.1−	1998 09 26	704	0.0	0.0	1999 12 13	703	1.3+	0.0
1998 08 27	699	0.1+	0.4+	1998 09 27	704	0.1−	0.5−	2000 01 04	699	0.1−	0.6+
1998 08 27	699	0.4+	0.5−	1998 09 27	704	0.8−	0.0	2000 01 04	699	0.8+	0.4+
1998 08 27	699	0.2+	0.2+	1998 09 27	704	0.3−	0.0	2000 01 04	699	1.3+	0.8+
1998 08 28	704	0.7+	0.9+	1998 09 27	704	0.2−	0.0	2000 01 08	704	0.0	0.8−
1998 08 28	704	1.6−	0.5+	1998 09 27	704	0.3−	0.1+	2000 01 08	704	0.0	0.2+

1998 08 28	704	1.5−	0.1+	1998 10 14	704	0.1−	0.2+	2000 01 08	704	0.8−	1.2−
1998 08 28	704	0.7−	0.3−	1998 10 14	704	0.3+	1.0+	2000 01 08	704	0.7−	0.4−
1998 08 28	704	0.3−	0.8−	1998 10 14	704	0.6+	0.2−	2000 01 08	704	1.6−	0.0
1998 08 28	699	0.3+	0.1−	1998 10 14	699	0.5+	0.1+	2000 01 11	704	0.2−	0.4−
1998 08 28	699	0.3+	0.0	1998 10 14	704	0.0	0.4−	2000 01 11	704	0.4+	1.0−
1998 08 28	699	(2.6−	0.3−)	1998 10 14	704	1.0−	0.3−	2000 01 11	704	0.3+	1.8−
1998 08 31	704	0.0	0.1−	1998 10 14	699	0.2−	0.4+	2000 01 11	704	0.4−	0.6−
1998 08 31	704	0.9+	0.7−	1998 10 14	699	0.0	0.6+	2000 01 11	704	0.2+	0.5−
1998 08 31	704	0.3−	0.9−	1998 10 15	704	0.0	0.7+				

(13069)* 1991 RX₁ = 1984 WV₁ = 1989 EU₁₁ = 1995 WY₃

Discovered 1991 Sept. 6 by E. W. Elst at Haute Provence.

Id. S. Nakano (*MPC* 26398)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	54.13303		(2000.0)	P	Q
<i>n</i>	0.26987493	ω	80.33566	+0.19967311	−0.97985373
<i>a</i>	2.3715249	Ω	358.13114	+0.84153704	+0.17365934
<i>e</i>	0.2496279	<i>i</i>	7.33033	+0.50194229	+0.09863619
<i>P</i>	3.65	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1971 04 16	675	1.3−	1.3−	1995 11 21	905	0.8−	0.7−	1998 08 29	699	0.1−	0.5−
1971 04 16	675	0.3−	0.6+	1995 11 21	905	(0.9−	2.5−)	1998 12 17	699	0.9+	0.3+
1984 11 21	675	1.0+	0.8−	1995 11 25	905	0.3−	0.2−	1999 12 17	699	0.5+	0.8+
1984 11 21	675	1.1+	0.2+	1995 11 25	905	0.8−	0.5−	1999 12 17	699	0.1−	0.9+
1984 11 21	010	0.0	1.9+	1996 02 24	801	1.3+	1.1+	2000 01 04	704	0.2+	1.0−
1989 03 03	808	0.8−	0.4−	1996 02 24	801	1.2−	0.3−	2000 01 04	704	0.5+	0.6+
1989 03 03	808	0.3−	0.4−	1998 08 17	704	0.1+	0.5−	2000 01 04	704	0.6−	1.4−
1991 09 06	511	0.4+	0.3+	1998 08 17	704	0.1+	1.0+	2000 01 04	704	0.0	0.2+
1991 09 06	511	0.8−	0.9−	1998 08 17	704	0.3−	0.3−	2000 01 04	704	0.2+	0.3−
1991 09 07	511	0.2+	1.2−	1998 08 17	704	(2.1+	2.1+)	2000 01 07	704	0.8−	0.3−
1991 09 07	511	0.2+	0.1+	1998 08 17	704	0.3+	0.1−	2000 01 07	704	0.3−	0.6−
1991 09 13	675	1.1−	0.3+	1998 08 23	704	0.3−	0.5+	2000 01 07	704	0.4−	0.4−
1991 09 13	675	1.4−	0.0	1998 08 23	704	1.7+	0.5−	2000 01 07	704	0.2+	0.1−
1991 09 16	675	0.2−	0.2−	1998 08 23	704	1.5+	1.5+	2000 01 07	704	0.1−	0.9−
1991 09 16	675	0.1−	0.2−	1998 08 23	704	1.6−	1.3−	2000 01 10	699	0.1−	0.5+
1995 11 18	905	0.0	0.4−	1998 08 29	699	1.6+	1.2−	2000 01 10	699	0.5+	0.1+
1995 11 18	905	0.5+	0.9−	1998 08 29	699	1.1+	0.4−	2000 01 10	699	0.2+	0.2+

(13070)* 1991 RO₂ = 1127 T-1

Discovered 1991 Sept. 8 by E. W. Elst at Haute Provence.

Id. B. G. Marsden (*MPC* 19508)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	97.96424		(2000.0)	P	Q
<i>n</i>	0.26080161	ω	130.93380	+0.91847119	+0.39316848
<i>a</i>	2.4262146	Ω	205.99976	−0.38581470	+0.86698001
<i>e</i>	0.2822061	<i>i</i>	5.59896	−0.08693492	+0.30620942
<i>P</i>	3.78	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1971 03 24	675	0.7+	0.6−	1998 04 30	566	0.2−	1.1−	1998 06 16	704	1.2+	1.7+
1971 03 25	675	0.0	0.2+	1998 04 30	566	0.2−	1.6−	1999 10 10	704	0.7+	0.2−
1971 03 25	675	1.0−	1.5+	1998 04 30	566	0.4−	0.6−	1999 10 10	704	0.7−	0.5−
1971 03 26	675	0.7+	0.7−	1998 05 22	704	0.3+	0.2+	1999 10 10	704	0.3+	0.1−
1991 09 05	033	0.5−	0.4+	1998 05 22	704	0.3+	0.4+	1999 12 14	704	0.3−	0.2+
1991 09 05	033	0.8−	0.2+	1998 05 22	704	0.3−	0.1+	1999 12 14	704	0.1−	0.7+
1991 09 08	511	0.1+	1.0−	1998 05 22	704	0.3−	1.1+	1999 12 14	704	0.1−	0.5+
1991 09 08	511	(1.3+	2.8−)	1998 05 22	704	0.4+	0.4−	1999 12 14	704	0.2−	0.1−
1991 09 09	095	0.4−	0.0	1998 05 23	699	1.3+	0.0	1999 12 14	704	0.3−	0.2+
1991 09 10	095	1.2+	0.3+	1998 05 23	699	0.7−	0.4+	1999 12 15	704	0.4+	0.5+
1991 09 10	511	0.6−	1.3−	1998 05 23	699	0.0	0.3+	1999 12 15	704	0.1+	0.8+
1991 09 12	033	0.3+	0.0	1998 05 24	704	0.8−	0.0	1999 12 15	704	0.5+	0.1+
1991 09 12	033	0.4+	0.2−	1998 05 24	704	1.3−	0.4−	1999 12 15	704	0.1+	0.5+
1991 09 13	675	1.3+	0.1+	1998 05 24	704	0.4+	0.7+	1999 12 15	704	0.1+	0.8+
1991 09 13	675	1.3+	0.5+	1998 05 24	704	0.7−	0.0	2000 01 05	704	0.2+	0.5−

1991 09 14	033	0.4−	0.1+	1998 05 24	704	0.8+	0.1−	2000 01 05	704	0.2+	0.1+
1991 09 15	033	0.4−	0.3+	1998 05 24	699	0.0	0.4−	2000 01 05	704	0.8+	0.4+
1991 09 15	033	0.4+	0.6+	1998 05 24	699	0.1−	0.4−	2000 01 05	704	0.7−	1.4−
1991 09 15	675	0.1−	1.2+	1998 05 24	699	0.6−	0.5+	2000 01 05	704	0.4−	0.1+
1991 09 15	675	1.5+	1.2+	1998 05 28	699	0.4+	0.6−	2000 01 06	704	0.3−	0.2+
1991 10 02	033	0.9−	0.3+	1998 05 28	699	0.8−	0.2−	2000 01 06	704	0.2+	0.3−
1991 10 02	033	0.1−	0.3−	1998 05 28	699	0.4+	0.4−	2000 01 06	704	0.1−	0.4−
1991 10 03	033	0.4−	1.0−	1998 06 16	704	1.3+	0.3+	2000 01 06	704	0.3−	0.1+
1991 10 04	033	1.2−	1.0−	1998 06 16	704	0.3+	1.8+	2000 01 06	704	0.3+	0.1+
1991 10 09	033	0.4−	0.1−	1998 06 16	704	(0.9−	3.3+)				
1991 10 09	033	0.5−	0.4+	1998 06 16	704	0.1−	1.2+				

(13071)* 1991 RT₅ = 1982 BO₅

Discovered 1991 Sept. 13 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 20509)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	132.54911	(2000.0)		P	Q		
<i>n</i>	0.27285199	ω	313.02961	+0.96790497	+0.24125089		
<i>a</i>	2.3542431	Ω	33.19313	−0.17643652	+0.85182272		
<i>e</i>	0.1392523	<i>i</i>	7.38967	−0.17896961	+0.46496889		
<i>P</i>	3.61	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 01 26	381	0.4−	0.1+	1998 09 21	704	0.0	0.1−	1999 11 17	703	(2.8+	0.1−)
1982 01 26	381	0.6−	0.0	1998 09 21	704	0.4−	0.2+	1999 11 17	703	0.3+	0.3+
1982 01 28	381	0.4+	1.2+	1998 09 21	704	0.9+	0.8+	1999 11 17	703	1.8−	0.8−
1991 09 08	808	0.2+	1.2−	1998 09 21	704	0.0	1.7+	1999 12 07	703	0.2+	0.2+
1991 09 08	808	0.3−	0.4+	1998 09 21	704	0.7−	1.0+	1999 12 07	703	0.1−	0.6+
1991 09 12	095	0.3+	1.7−	1998 09 25	701	0.6−	0.6+	1999 12 07	703	0.4−	0.2+
1991 09 12	095	(2.6+	3.3−)	1998 09 25	701	0.5−	0.4+	1999 12 07	703	0.3−	0.4+
1991 09 13	675	0.4−	0.2+	1998 09 28	701	0.1−	0.9+	1999 12 15	704	0.6+	0.8−
1991 09 13	675	0.0	1.1+	1998 09 28	701	0.1+	0.5+	1999 12 15	704	1.2+	0.8+
1991 09 16	675	0.1+	1.0−	1998 12 08	704	(2.3+	0.7+)	1999 12 15	704	1.1+	0.9+
1991 09 16	675	0.6+	0.8−	1998 12 08	704	1.1+	1.7−	1999 12 15	704	0.3−	1.0+
1991 10 01	691	0.8−	0.5+	1998 12 08	704	0.2−	2.0−	1999 12 15	704	0.5−	1.4+
1991 10 01	691	0.5−	0.5+	1998 12 08	704	(1.1−	2.4−)	2000 01 02	704	1.1−	0.9−
1991 10 01	691	0.2−	0.6+	1998 12 08	704	(2.7−	0.3+)	2000 01 02	704	0.1−	0.1+
1991 10 02	675	0.7+	0.4+	1998 12 09	704	0.9+	0.3−	2000 01 02	704	0.3+	0.7−
1991 10 02	675	0.2−	0.8+	1998 12 09	704	0.2+	0.4−	2000 01 02	704	0.3+	0.8−
1991 10 07	675	1.2+	0.2+	1998 12 09	704	1.2−	1.1−	2000 01 10	699	0.7+	0.1−
1991 10 07	675	0.4+	0.5−	1998 12 09	704	1.4−	0.7−	2000 01 10	699	0.3+	0.1+
1991 10 08	675	0.2+	0.3+	1999 11 17	703	0.6+	0.1−	2000 01 10	699	0.4+	0.2+

(13072)* 1991 RS₈ = 1982 BR₇ = 1984 WZ₄

Discovered 1991 Sept. 11 by H. E. Holt at Palomar.

Id. A. Gnädig (*MPC* 31101), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	94.06132	(2000.0)		P	Q		
<i>n</i>	0.27583587	ω	55.12707	+0.67258266	−0.73978428		
<i>a</i>	2.3372341	Ω	352.51989	+0.62322281	+0.57991186		
<i>e</i>	0.1062860	<i>i</i>	8.28357	+0.39903118	+0.34120587		
<i>P</i>	3.57	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 01 26	381	0.2+	0.0	1998 08 23	704	0.7+	0.5−	1998 09 27	704	0.1+	0.3+
1982 01 26	381	1.1+	0.9+	1998 08 23	704	0.6−	1.0−	1998 09 27	704	0.4−	1.0+
1984 11 21	010	1.5+	0.9−	1998 08 23	704	0.2−	0.3−	1998 09 27	704	0.1+	1.2+
1991 09 11	675	0.4+	1.5−	1998 08 23	704	0.7−	0.5−	1998 09 27	704	0.4−	1.0+
1991 09 11	675	0.0	0.6−	1998 08 30	699	0.4+	0.1−	1998 09 27	704	0.8−	0.3+
1991 09 12	675	0.4+	1.3−	1998 08 30	699	0.2+	0.4+	1998 10 20	699	1.6+	0.7+
1991 09 12	675	1.9−	0.7−	1998 08 30	699	0.1+	0.2+	1998 10 20	699	0.5+	1.2+
1991 09 14	675	0.1−	0.6−	1998 09 14	704	0.1+	0.3−	1998 10 20	699	0.5+	0.7+
1991 09 14	675	0.2−	0.1−	1998 09 14	704	0.3−	0.3+	1998 12 09	704	0.9+	0.5+
1991 09 14	675	0.8−	0.3−	1998 09 14	704	1.2−	1.1+	1998 12 09	704	0.5+	0.6+
1991 09 14	675	0.2−	0.1−	1998 09 14	704	1.2−	0.4−	1998 12 09	704	0.2+	1.1−

1991 10 04	033	0.0	0.9+	1998 09 14	704	0.9−	0.7+	1998 12 09	704	1.7+	1.1−
1991 10 04	033	0.4+	0.6+	1998 09 14	699	0.7+	0.1+	1999 11 16	704	0.4+	0.9+
1991 10 05	033	1.0−	1.0+	1998 09 14	699	0.1−	0.1+	1999 11 16	704	0.0	0.0
1991 10 31	033	0.3+	0.5+	1998 09 14	699	0.2−	0.0	1999 11 16	704	1.0+	0.6+
1991 10 31	033	0.4+	0.4−	1998 09 18	704	0.6+	0.0	1999 11 16	704	0.8+	0.4−
1991 11 04	033	0.3+	0.3−	1998 09 18	691	0.4+	0.2+	1999 11 17	703	0.4−	0.2+
1998 08 17	704	0.3+	0.3+	1998 09 18	704	0.1−	0.6−	1999 11 17	703	1.0+	0.2−
1998 08 17	704	0.3+	0.3+	1998 09 18	704	0.3+	0.7−	1999 11 17	703	0.5−	0.2+
1998 08 17	704	0.2+	0.3+	1998 09 18	699	0.3−	0.3+	1999 11 17	703	0.5+	0.5+
1998 08 17	704	0.8+	0.4+	1998 09 18	691	0.3+	0.1−	1999 12 15	704	0.3−	0.0
1998 08 17	704	0.4+	0.2−	1998 09 18	704	0.4+	0.1+	1999 12 15	704	0.2−	0.3+
1998 08 21	566	0.9−	0.8−	1998 09 18	699	0.3−	0.3+	1999 12 15	704	1.0−	0.7+
1998 08 21	566	1.2−	0.1−	1998 09 18	691	0.1+	0.0	1999 12 15	704	0.5−	0.0
1998 08 21	566	0.9−	0.5−	1998 09 18	704	0.2+	0.2+				
1998 08 23	704	0.0	0.0	1998 09 18	699	0.1+	0.6+				

(13073)* 1991 RE₁₅ = 1950 OK = 1974 SY = 1981 TL₁

Discovered 1991 Sept. 15 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 19680, *MPC* 30449)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	201.36403	(2000.0)		P	Q		
<i>n</i>	0.28987557	ω	330.30281	+0.69005189	+0.72266119		
<i>a</i>	2.2611444	Ω	343.22302	−0.63384641	+0.57681981		
<i>e</i>	0.2212103	<i>i</i>	7.93841	−0.34938106	+0.38084078		
<i>P</i>	3.40	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1950 07 17	078	(1.5−	5.9−)	Y	1998 08 31	704	(1.0+	2.2+)	1998 11 16	704	0.1+	0.1−
1974 09 19	095	(3.4−	3.3+)		1998 08 31	704	0.3+	1.4+	1998 11 16	704	0.6−	0.9−
1974 09 21	095	(3.2−	11.7+)		1998 08 31	704	0.3−	0.7+	1998 12 17	699	0.2−	0.3−
1974 09 23	095	(3.6−	4.1+)		1998 08 31	704	0.1−	0.2+	1998 12 17	699	0.4−	0.2+
1981 10 02	095	0.0	0.3+		1998 10 02	704	0.1−	0.2−	1998 12 17	699	0.7+	0.3−
1991 09 11	675	1.7+	0.7−		1998 10 02	704	0.3+	0.0	1999 01 08	704	(2.5−	1.2−)
1991 09 11	675	0.2+	0.7−		1998 10 02	704	0.1−	0.3+	1999 01 08	704	0.3−	0.6−
1991 09 14	675	1.3−	0.2+		1998 10 02	689	0.0	0.6−	1999 01 08	704	0.9+	1.3+
1991 09 14	675	0.8−	0.0		1998 10 02	704	0.9−	0.8−	1999 01 08	704	1.6−	0.3+
1991 09 15	675	0.4+	0.2−		1998 10 02	704	1.9−	0.5−	1999 01 08	704	0.1−	0.3−
1991 09 15	675	1.6+	0.7−		1998 10 03	699	0.5+	0.1−	1999 11 16	704	0.6−	0.3−
1991 09 17	675	0.2−	0.4+		1998 10 03	699	1.4−	0.1+	1999 11 16	704	1.4−	0.1+
1991 09 17	675	0.5−	0.3−		1998 10 03	699	0.3+	0.4−	1999 11 16	704	0.1−	0.1−
1997 03 05	809	0.4+	0.8+		1998 10 18	704	0.4+	0.2−	1999 11 16	704	0.3−	0.1−
1997 03 05	809	1.1+	1.5+		1998 10 18	704	0.0	1.3−	2000 01 04	704	1.1−	0.8−
1997 03 05	809	0.7+	1.5+		1998 10 18	704	0.6+	1.7−	2000 01 04	704	0.0	0.8−
1997 03 06	809	(1.7+	3.7+)		1998 10 18	704	(0.2+	2.0−)	2000 01 04	704	0.3−	0.2−
1997 03 06	809	(1.3+	4.0+)		1998 11 14	704	0.1+	1.3+	2000 01 04	704	0.1−	0.5−
1997 03 06	809	(1.4+	3.3+)		1998 11 14	704	0.4+	1.4+	2000 01 04	704	0.9+	0.6−
1998 08 28	704	0.6−	0.4+		1998 11 14	704	(0.1+	2.2+)	2000 01 07	704	0.0	1.2−
1998 08 28	704	0.4+	0.3−		1998 11 14	704	0.9−	1.7+	2000 01 07	704	0.4+	0.0
1998 08 28	704	0.3+	0.5+		1998 11 14	704	(0.3−	2.4+)	2000 01 07	704	0.2−	0.1+
1998 08 28	704	1.0+	0.2+		1998 11 16	704	0.5+	1.2+	2000 01 07	704	0.8−	0.2−
1998 08 28	704	0.0	0.5+		1998 11 16	704	0.0	0.9+	2000 01 07	704	0.0	0.7−
1998 08 31	704	0.2−	0.5+		1998 11 16	704	0.7+	0.5+				

Residuals in seconds of arc

1963 10 13	760	0.7−	0.5+	1998 09 14	704	(0.3−	2.1+)	1998 11 06	118	0.1−	0.1−
1963 10 13	760	0.0	0.2+	1998 09 18	704	0.4+	1.4+	1998 11 06	118	0.2−	0.0
1977 09 09	095	0.5+	1.2−	1998 09 18	704	0.3−	0.6+	1998 11 07	118	0.4−	0.3−
1984 09 21	010	0.5−	0.8+	1998 09 18	704	1.3−	1.3+	1998 11 07	118	0.1−	0.3−
1991 09 11	675	1.7+	0.9−	1998 09 18	704	(0.0	2.2+)	1998 11 10	699	0.8−	0.1+
1991 09 11	675	0.1+	1.7−	1998 09 18	704	(0.5−	2.5+)	1998 11 10	699	0.3+	0.4+
1991 09 14	675	(0.7+	2.7−)	1998 09 25	704	0.3+	0.4+	1998 11 10	699	0.2−	0.2−
1991 09 14	675	(0.4+	2.4−)	1998 09 25	704	0.8−	0.8+	1998 12 09	704	0.1−	0.5−
1991 09 15	675	0.3+	1.1−	1998 09 25	704	0.3+	0.7+	1998 12 09	704	0.7+	1.0+
1991 09 15	675	1.0+	1.8−	1998 09 25	704	0.1−	0.1+	1998 12 09	704	1.1+	0.4−
1991 09 16	675	(0.6−	2.9−)	1998 09 25	704	0.2−	1.7+	1998 12 09	704	1.2−	1.8−
1991 09 16	675	0.1−	1.9−	1998 09 27	704	0.6+	0.5+	1999 11 16	704	0.5−	0.6+
1991 10 09	033	1.3+	0.1+	1998 09 27	704	0.9+	0.5+	1999 11 16	704	0.1−	0.4−
1991 10 09	033	1.5+	1.5+	1998 09 27	704	0.7−	0.4+	1999 11 16	704	0.2+	0.3−
1997 03 08	809	0.8+	0.7+	1998 09 27	704	1.3−	0.1+	1999 11 16	704	0.4−	0.4+
1997 03 08	809	0.1+	1.0+	1998 09 27	704	0.5−	0.1+	1999 11 16	704	0.7−	0.4+
1997 03 08	809	0.5+	1.1+	1998 09 27	120	0.1−	0.1+	1999 12 04	703	1.6+	0.7+
1997 03 09	809	(0.7−	3.5+)	1998 09 27	120	0.6−	1.0−	1999 12 04	703	0.2+	0.7+
1997 03 09	809	(0.2+	3.8+)	1998 09 27	120	0.2+	0.3+	1999 12 04	703	0.3+	0.1−
1997 03 09	809	(0.1−	3.4+)	1998 09 27	120	0.3−	0.1+	1999 12 04	703	0.1+	0.1+
1998 06 29	704	0.8+	1.0−	1998 10 02	689	0.0	0.7−	2000 01 04	704	0.2−	0.0
1998 06 29	704	0.2−	1.1−	1998 10 08	120	0.3−	0.3−	2000 01 04	704	0.1−	0.7−
1998 06 29	704	0.4+	1.0−	1998 10 08	120	0.8−	0.5−	2000 01 04	704	0.0	0.0
1998 06 29	704	0.4−	0.8−	1998 10 10	120	0.3−	0.8−	2000 01 04	704	0.1+	0.6−
1998 06 29	704	0.4−	0.1+	1998 10 10	120	0.5−	0.7−	2000 01 04	704	0.0	0.4−
1998 08 23	704	0.0	0.8+	1998 10 10	120	0.4+	1.2−	2000 01 06	704	0.1+	0.3+
1998 08 23	704	0.0	0.9+	1998 10 13	704	1.1+	1.3−	2000 01 06	704	0.3+	0.2+
1998 08 23	704	0.3−	0.5+	1998 10 13	704	0.3+	1.5+	2000 01 06	704	0.1+	0.3+
1998 08 23	704	0.8−	1.2+	1998 10 13	704	0.4−	0.2+	2000 01 06	704	0.2−	0.0
1998 08 23	704	1.4−	0.7+	1998 10 13	704	1.2−	0.0	2000 01 06	699	0.1+	0.1−
1998 09 14	704	0.4+	1.3+	1998 10 20	699	0.3+	0.1−	2000 01 06	704	0.1+	0.5−
1998 09 14	704	0.1−	1.0+	1998 10 20	699	1.1+	0.3−	2000 01 06	699	0.8−	0.4+
1998 09 14	704	0.0	1.4+	1998 10 20	699	0.7+	0.3−	2000 01 06	699	0.7+	0.6+

(13075)* 1991 UN₁ = 1989 AV₇ = 1998 QR₂₀

Discovered 1991 Oct. 28 by S. Ueda and H. Kaneda at Kushiro.

Id. G. V. Williams (*MPC* 32451)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	96.70440		(2000.0)	P	Q		
n	0.26990121	ω	83.93164	+0.79576054	−0.60114925		
a	2.3713710	Ω	312.99264	+0.50836415	+0.72891038		
e	0.1211212	i	5.75781	+0.32913684	+0.32758091		
P	3.65	H	14.1	G	0.15	U	2

Residuals in seconds of arc

1989 01 10	033	0.7−	0.5+	1998 08 25	910	1.3+	0.0	1999 11 16	704	0.5+	1.1+
1991 10 28	399	0.3−	0.3+	1998 08 26	910	1.4+	0.1−	1999 11 16	704	1.1−	0.6−
1991 10 28	399	(3.2+	0.7+)	1998 08 26	699	0.1+	0.6−	1999 11 16	704	0.3−	0.1−
1991 10 29	399	0.2+	0.1+	1998 08 26	699	0.1−	0.9−	1999 12 04	703	0.3−	0.0
1991 10 29	399	(3.4−	4.2−)	1998 08 26	699	0.4+	0.7−	1999 12 04	703	0.3+	0.6+
1991 11 11	399	1.0+	0.6+	1998 09 14	704	0.8−	0.5−	1999 12 04	703	0.1+	0.3+
1991 11 11	399	0.7−	0.3+	1998 09 14	704	0.9−	0.3−	1999 12 04	703	0.0	0.4+
1998 07 26	699	0.4−	0.1+	1998 09 14	704	1.5−	0.0	1999 12 06	704	0.4+	0.4−
1998 07 26	699	1.2−	0.5−	1998 09 14	704	1.8−	0.2+	1999 12 06	704	0.6+	0.8−
1998 07 26	699	0.7−	0.0	1998 09 14	704	0.4−	0.1+	1999 12 06	704	0.3+	0.2+
1998 08 17	704	0.7+	0.1−	1998 09 18	704	0.4+	0.3+	1999 12 06	704	0.7−	0.4−
1998 08 17	704	1.0+	0.2+	1998 09 18	704	0.2−	1.0−	1999 12 06	704	0.2−	0.5+
1998 08 17	704	0.7+	0.1−	1998 09 18	704	0.4−	0.1−	2000 01 03	120	1.0−	0.2−
1998 08 17	704	0.8+	0.5+	1998 09 18	704	0.0	0.5+	2000 01 03	120	0.9−	0.2+
1998 08 17	704	0.4−	0.1+	1998 09 18	704	0.1−	0.3+	2000 01 07	704	0.3+	0.5−
1998 08 23	704	0.5+	0.6−	1998 12 09	704	1.2−	0.5−	2000 01 07	704	0.6+	1.3−
1998 08 23	704	0.4+	0.0	1998 12 09	704	0.5−	1.1−	2000 01 07	704	0.2+	0.4−
1998 08 23	704	0.3−	1.1+	1998 12 09	704	0.3−	1.8−	2000 01 07	704	0.1+	0.6−
1998 08 23	704	0.9+	0.8+	1998 12 09	704	(2.0−	2.1+)	2000 01 07	704	0.4−	0.5−

1998 08 23	704	0.5+	0.9+	1999 11 16	704	0.3+	0.2−
1998 08 25	910	1.3+	0.0	1999 11 16	704	0.8+	0.7+

(13076)* 1991 VT₃ = 1983 XA₂ = 1998 KA₁₅

Discovered 1991 Nov. 11 by S. Ueda and H. Kaneda at Kushiro.

Id. A. Gnädig (*MPC* 32451)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	48.27238		(2000.0)	P	Q
n	0.23822618	ω	114.57174	+0.97294288	+0.13639042
a	2.5771699	Ω	238.08773	−0.18592390	+0.94137530
e	0.1854286	i	12.69136	+0.13716577	+0.30856150
P	4.14	H	13.1	G 0.15	U 2

Residuals in seconds of arc

1983 12 05	561	0.6+	0.6+	1998 06 16	704	0.6+	1.0−	1999 10 12	704	0.0	0.2+
1983 12 05	561	(3.0+	0.7+)	1998 06 16	704	1.1+	1.4+	1999 10 12	704	0.1+	0.3+
1991 11 11	399	0.2−	0.1−	1998 06 16	704	1.2−	0.7+	1999 10 12	127	0.5−	1.2+
1991 11 11	399	0.8+	0.4−	1999 07 22	704	0.5−	0.3−	1999 10 12	127	0.6−	1.2+
1991 11 13	399	0.7+	0.4+	1999 07 22	704	0.7−	0.9−	1999 10 13	611	0.2−	0.4−
1991 11 13	399	(2.2−	2.5−)	1999 07 22	704	0.7−	0.1+	1999 10 13	611	0.3−	0.1−
1991 12 01	675	0.4−	0.4−	1999 07 22	704	0.4−	0.2−	1999 10 13	127	0.1−	0.1−
1991 12 01	675	0.8+	0.9−	1999 07 22	704	0.1−	0.5−	1999 10 13	127	0.1+	0.2+
1991 12 03	675	0.5+	0.8−	1999 08 11	704	0.2+	0.1−	1999 10 15	127	0.3−	0.3−
1991 12 03	675	0.1+	1.0−	1999 08 11	704	0.7+	1.5−	1999 10 15	127	0.2−	0.1−
1991 12 05	399	1.6−	0.4−	1999 08 11	704	0.4+	1.5−	1999 10 15	127	0.0	0.0
1991 12 05	399	1.3−	1.7+	1999 08 11	704	1.0+	0.3−	1999 10 18	636	1.0+	0.3+
1991 12 07	399	(3.2−	1.4−)	1999 08 11	704	0.8+	0.5−	1999 10 18	636	1.2+	0.3+
1991 12 07	399	(2.7−	1.8−)	1999 09 08	704	1.8+	0.6+	1999 10 18	636	1.5+	0.2+
1995 11 30	691	0.1−	0.4+	1999 09 08	704	0.3−	1.0+	1999 10 29	703	0.3−	0.5+
1995 11 30	691	0.1−	0.4+	1999 09 08	704	0.3−	0.1+	1999 10 29	703	0.3−	0.4+
1995 11 30	691	0.0	0.5+	1999 09 08	704	0.0	0.3−	1999 10 29	703	0.1−	0.7+
1998 04 22	704	0.4−	0.1+	1999 09 08	704	1.2−	0.7+	1999 10 29	703	0.3−	1.0+
1998 04 22	704	1.1+	0.5−	1999 09 11	106	0.1−	1.2+	1999 11 04	704	0.0	0.1+
1998 04 22	704	0.3+	0.4+	1999 09 11	106	0.3−	0.1−	1999 11 04	704	0.3−	0.1−
1998 04 22	704	0.2−	0.4+	1999 09 12	106	0.3−	0.4+	1999 11 04	704	0.3−	0.1−
1998 04 22	704	0.7−	0.3+	1999 09 13	703	0.0	0.5−	1999 11 04	704	0.2−	0.2−
1998 05 01	704	0.9−	0.4+	1999 09 13	703	0.4+	0.0	1999 11 04	704	0.6−	0.7−
1998 05 01	704	0.7−	1.7+	1999 09 13	703	0.9+	0.5−	1999 11 12	703	0.1−	0.5+
1998 05 01	704	0.1−	0.0	1999 09 13	703	0.2−	0.8−	1999 11 12	703	0.3+	0.3+
1998 05 01	704	0.4+	0.2+	1999 09 18	704	0.3+	0.3+	1999 11 12	703	0.3+	0.4+
1998 05 01	704	0.8−	0.8+	1999 09 18	704	0.1+	0.2+	1999 11 12	703	0.0	0.7+
1998 05 06	566	0.5−	0.3+	1999 09 18	704	0.1+	0.3+	1999 11 27	699	0.3−	1.1+
1998 05 06	566	0.8−	0.5+	1999 09 18	704	0.2+	0.2+	1999 11 27	699	0.5−	0.9+
1998 05 06	566	0.7−	0.3+	1999 09 18	704	0.1+	0.1+	1999 11 27	699	0.3−	1.0+
1998 05 22	704	1.7+	0.6+	1999 10 03	704	0.3−	0.3−	1999 12 06	704	0.2+	0.5+
1998 05 22	704	0.9+	0.3+	1999 10 03	704	0.4−	0.9−	1999 12 06	704	0.2−	0.6+
1998 05 22	704	0.9+	0.2+	1999 10 03	704	0.4−	0.7−	1999 12 06	704	0.1−	0.7+
1998 05 22	704	0.9+	0.3−	1999 10 03	704	0.4−	1.2−	1999 12 06	704	0.2−	0.7+
1998 05 22	704	1.0+	0.7−	1999 10 03	704	0.3−	1.6−	1999 12 06	704	0.1+	0.5+
1998 05 24	704	0.3+	0.1+	1999 10 11	699	0.1−	0.2+	2000 01 07	704	0.2+	0.5+
1998 05 24	704	0.0	0.4+	1999 10 11	699	0.1+	0.0	2000 01 07	704	0.2+	0.5+
1998 05 24	704	0.2+	0.5−	1999 10 11	699	0.1−	0.2+	2000 01 07	704	0.2+	0.3+
1998 05 24	704	0.8+	0.9+	1999 10 12	704	0.2−	0.0	2000 01 07	704	0.1+	0.0
1998 05 24	704	1.4−	1.1+	1999 10 12	704	0.2−	0.1−	2000 01 07	704	0.2−	0.1+
1998 06 16	704	1.2−	0.3+	1999 10 12	704	0.3−	0.1+				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	250.36768	(2000.0)	P		Q	
<i>n</i>	0.26317935	ω	40.09508	−0.61586153	+0.78771525	
<i>a</i>	2.4115791	Ω	191.91527	−0.73997287	−0.58478291	
<i>e</i>	0.1006891	<i>i</i>	4.11277	−0.27047131	−0.19373598	
<i>P</i>	3.75	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1991 10 06	675	0.9−	0.0	1997 04 01	809	1.6−	0.7−	2000 01 05	704	0.0	0.2−
1991 10 06	675	0.2+	0.8+	1997 04 01	809	1.3−	0.4+	2000 01 05	704	0.1+	0.4−
1991 11 04	691	0.3+	0.5+	1997 04 01	809	0.7−	0.2−	2000 01 05	704	0.1−	0.6−
1991 11 04	691	0.4+	0.2−	1998 08 23	704	0.7−	0.3−	2000 01 05	704	0.1−	0.3+
1991 11 04	691	0.2+	0.3+	1998 08 23	704	1.0+	0.4−	2000 01 05	704	0.4+	0.1−
1991 11 06	691	0.8+	1.2+	1998 08 23	704	0.2+	1.0−	2000 01 06	704	0.2+	0.9−
1991 11 06	691	0.4+	0.3−	1998 08 23	704	1.3−	0.7+	2000 01 06	704	0.0	0.2−
1991 11 06	691	0.3−	0.5+	1998 09 14	704	0.2+	0.9+	2000 01 06	704	1.5+	1.3+
1991 11 07	691	0.5−	0.3+	1998 09 14	704	(2.4−	1.0+)	2000 01 07	704	0.3−	0.2+
1991 11 07	691	0.9−	0.2+	1998 09 14	704	1.5+	1.6−	2000 01 07	704	0.4−	0.7−
1991 11 07	691	0.4−	0.8+	1998 09 14	704	1.2+	0.8−	2000 01 07	704	0.3−	0.5+
1991 11 07	691	0.3−	0.3+	1998 09 18	704	0.7−	0.6+	2000 01 07	704	0.0	0.3+
1991 11 07	691	0.0	0.2+	1998 09 18	704	0.9−	1.1−	2000 01 07	704	0.2+	0.7+
1997 03 12	809	1.2+	0.3−	1998 09 18	704	(2.4−	0.4+)	2000 01 09	704	0.3+	0.1+
1997 03 12	809	1.1+	0.4+	1998 09 18	704	0.7−	1.4+	2000 01 09	704	0.3−	0.6−
1997 03 12	809	0.6+	0.5+	1998 09 18	704	0.6+	0.5+	2000 01 09	704	0.2−	0.6−
1997 03 13	809	0.2+	0.9+	1999 12 14	704	0.1−	0.1+	2000 01 09	704	0.1+	0.8−
1997 03 13	809	1.4+	0.7+	1999 12 14	704	(2.1−	0.3−)	2000 01 09	704	1.2−	1.3−
1997 03 13	809	0.2+	0.8+	1999 12 14	704	0.3−	0.2−				

(13078)* 1991 WD = 1997 KD

Discovered 1991 Nov. 17 by S. Otomo at Kiyosato.

Id. G. V. Williams (*MPC* 30274)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	304.83644	(2000.0)	P		Q	
<i>n</i>	0.23252870	ω	35.36533	−0.55457157	−0.79694599	
<i>a</i>	2.6190975	Ω	89.48309	+0.69768130	−0.60212195	
<i>e</i>	0.2170918	<i>i</i>	13.85357	+0.45353190	−0.04823113	
<i>P</i>	4.24	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1991 11 17	894	0.5−	0.0	1997 05 28	587	0.6+	0.1−	1999 09 13	704	0.1+	0.3−
1991 11 17	894	0.2−	0.5−	1997 05 28	587	1.3+	0.5+	1999 11 10	704	0.5+	0.0
1991 12 12	894	0.0	1.2+	1997 05 30	587	0.4+	1.0+	1999 11 10	704	0.1−	0.3+
1991 12 13	894	0.4+	0.0	1997 05 30	587	0.3+	0.8+	1999 11 10	704	0.3−	0.3+
1991 12 13	894	0.2+	0.1−	1997 06 06	587	0.4+	0.4+	1999 11 10	704	0.2−	0.0
1991 12 16	894	(1.4−	2.5−)	1997 06 06	587	0.1−	0.2−	1999 11 10	704	0.0	0.3+
1991 12 16	894	(2.1+	5.3−)	1997 06 23	587	0.0	0.2+	2000 01 09	704	0.4−	0.2−
1993 05 18	691	0.4−	0.3−	1997 06 23	587	0.6−	0.4−	2000 01 09	704	0.7−	0.0
1993 05 18	691	0.1−	1.0+	1997 07 06	587	0.1+	1.3−	2000 01 09	704	0.9−	0.1+
1993 05 18	691	0.0	0.5−	1997 07 06	587	1.5−	0.3+	2000 01 09	704	0.7−	0.4−
1997 05 27	587	0.1+	1.8+	1997 07 08	587	0.1+	0.1−	2000 01 09	704	1.0−	0.5+
1997 05 27	587	0.1+	1.0−	1999 09 13	704	1.2+	0.9+				
1997 05 28	587	0.1−	0.1+	1999 09 13	704	0.4+	0.5+				

(13079)* 1992 CD₃ = 1994 PW

Discovered 1992 Feb. 2 by E. W. Elst at the European Southern Observatory.

Id. T. Kobayashi (*MPC* 23978)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	127.55293	(2000.0)	P		Q	
<i>n</i>	0.24048316	ω	183.55661	+0.92485343	+0.37232564	
<i>a</i>	2.5610198	Ω	154.15479	−0.34440140	+0.90643373	
<i>e</i>	0.1034074	<i>i</i>	10.25188	−0.16134995	+0.19937781	
<i>P</i>	4.10	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1992 01 30	809	(0.2+	3.7−)	1994 10 01	675	0.0	0.8−	1998 09 21	699	0.0	0.2+
1992 01 30	809	(0.1−	2.5−)	1998 08 16	120	1.7+	0.4−	1998 09 21	699	0.2−	0.4+
1992 01 30	809	0.6−	1.2−	1998 08 16	120	0.6+	0.3−	1998 09 21	699	0.3−	0.2+
1992 01 30	691	0.3−	0.1−	1998 08 16	120	1.0+	0.1−	1998 10 17	699	0.6+	0.3+
1992 01 30	691	0.2−	0.2−	1998 08 17	704	1.0+	0.5−	1998 10 17	699	0.1+	0.4−
1992 01 30	691	0.1+	0.2−	1998 08 17	704	1.4+	1.1−	1998 10 17	699	0.1−	1.1−
1992 02 02	809	0.0	1.5−	1998 08 17	704	0.7+	0.6−	1999 10 20	704	0.0	0.0
1992 02 02	809	0.4+	1.2−	1998 08 17	704	0.4+	0.5−	1999 10 20	704	0.1−	0.5−
1992 02 02	809	0.0	1.0−	1998 08 17	704	1.3+	0.1+	1999 10 20	704	0.5+	0.7+
1992 02 06	809	(0.5+	2.8−)	1998 08 23	704	0.1−	0.3−	1999 12 14	704	0.4+	0.3+
1992 02 06	809	0.2+	2.0−	1998 08 23	704	0.5−	0.9−	1999 12 14	704	1.1+	0.2+
1992 02 06	809	(1.4−	2.2−)	1998 08 23	704	0.9−	0.2−	1999 12 14	704	0.7+	0.2+
1994 08 14	411	0.7+	0.8+	1998 08 23	704	0.5−	0.2+	1999 12 14	704	1.2+	1.0+
1994 08 14	411	0.1+	0.3+	1998 08 23	704	0.7+	0.4+	1999 12 14	704	0.5+	0.5+
1994 08 15	411	0.2−	0.5+	1998 09 14	704	0.5−	0.3+	2000 01 07	704	0.6−	0.4+
1994 08 15	411	0.2−	0.8+	1998 09 14	704	0.4−	0.6+	2000 01 07	704	0.2−	0.5+
1994 08 15	411	0.3−	0.6+	1998 09 14	704	1.0−	0.2+	2000 01 07	704	0.6−	0.0
1994 08 17	411	0.0	0.2+	1998 09 14	704	1.0−	0.2+	2000 01 07	704	0.3−	0.8+
1994 08 17	411	0.6−	1.0+	1998 09 14	704	0.9−	0.4+	2000 01 07	704	0.1−	0.1+
1994 09 11	675	0.0	0.9−	1998 09 18	704	0.2+	1.1−	2000 01 11	704	0.5−	0.6+
1994 09 11	675	(0.5−	2.2−)	1998 09 18	704	0.6−	0.7+	2000 01 11	704	0.8−	0.1+
1994 09 12	675	0.1+	0.1−	1998 09 18	704	0.3+	0.5−	2000 01 11	704	0.6−	0.1+
1994 09 12	675	0.3+	0.5+	1998 09 18	704	1.9−	0.5−	2000 01 11	704	0.6−	0.6−
1994 10 01	675	0.4−	1.2−	1998 09 18	704	0.2−	0.6−	2000 01 11	704	0.3+	0.1+

(13080)* 1992 EZ₇ = 1990 SZ₁₃

Discovered 1992 Mar. 2 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 23783)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	16.78141	(2000.0)	P		Q	
<i>n</i>	0.23240528	ω	274.26412	+0.21193112	−0.97531043	
<i>a</i>	2.6200247	Ω	163.10770	+0.95982726	+0.19577062	
<i>e</i>	0.1986804	<i>i</i>	12.33750	+0.18389353	+0.10219312	
<i>P</i>	4.24	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1988 03 18	675	0.1+	0.3+	1999 11 06	704	0.1+	0.0	1999 12 14	703	0.2+	0.1+
1988 03 18	675	0.2+	1.6−	1999 11 06	704	0.3+	0.2+	1999 12 14	703	0.0	0.7+
1990 09 23	809	0.0	0.2−	1999 11 06	704	0.0	0.1−	1999 12 14	703	0.4+	0.5+
1990 09 23	809	0.3+	0.1−	1999 11 06	704	0.1−	0.1−	1999 12 16	704	1.0−	0.1−
1990 09 23	809	1.0+	0.1−	1999 11 06	704	0.1+	0.3−	1999 12 16	704	1.0−	0.1−
1990 09 24	809	0.6−	0.1−	1999 11 07	704	0.3+	0.1−	1999 12 16	704	1.3−	0.4+
1990 09 24	809	0.4−	0.3−	1999 11 07	704	0.1+	0.2−	1999 12 16	704	1.1−	0.1+
1990 09 24	809	0.1−	0.8−	1999 11 07	704	0.3−	0.3−	2000 01 07	699	0.4+	0.3+
1992 02 25	675	0.9+	0.3−	1999 11 07	704	0.3+	0.4−	2000 01 07	699	0.2+	0.3+
1992 02 25	675	0.2+	1.0−	1999 11 07	704	0.5+	0.2−	2000 01 07	699	0.3+	0.2+
1992 03 02	809	1.1−	0.7+	1999 12 03	704	0.1+	0.5−	2000 01 08	704	0.2−	0.3+
1992 03 04	809	0.6−	0.3+	1999 12 03	704	0.1+	0.6−	2000 01 08	704	0.1+	0.2+
1992 03 07	809	0.2−	0.5−	1999 12 03	704	0.5−	0.5−	2000 01 08	704	0.2−	0.2−
1992 04 06	809	0.1+	0.1−	1999 12 03	704	(3.7−	1.2−)	2000 01 08	699	0.1+	0.1−
1999 10 19	704	0.6+	0.2+	1999 12 03	704	0.4−	1.0−	2000 01 08	704	0.4+	0.9−
1999 10 19	704	0.5−	0.1−	1999 12 08	699	0.3+	0.2+	2000 01 08	704	0.1+	1.0−
1999 10 19	704	0.1−	0.1−	1999 12 08	699	0.4+	0.8+	2000 01 08	699	0.5+	1.5+
1999 10 19	704	0.2−	0.0	1999 12 08	699	0.7+	0.2+	2000 01 08	699	0.7+	0.1+
1999 10 19	704	0.0	0.0	1999 12 14	703	0.2+	0.5+				

(13081)* 1992 EW₉ = 1971 BZ₂

Discovered 1992 Mar. 2 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 23862)

2000 JAN. 24

M.P.C. 37509

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	116.06320	(2000.0)	P		Q	
<i>n</i>	0.23681285	ω	209.40177	+0.98996486	-0.08704010	
<i>a</i>	2.5874137	Ω	154.84844	+0.10491245	+0.98046930	
<i>e</i>	0.1244362	<i>i</i>	15.18496	-0.09467283	+0.17636320	
<i>P</i>	4.16	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1971 01 27	805	0.1+	0.8-	1998 08 26	809	(0.9+	2.3-)	1998 12 08	704	0.1+	1.0-
1971 01 29	805	0.2+	1.5-	1998 08 27	809	0.7+	1.5+	1998 12 08	704	1.2-	1.5+
1992 02 04	675	0.6-	1.1+	1998 08 27	809	1.9+	1.4+	1998 12 08	704	1.2-	1.2-
1992 02 25	675	0.1-	0.0	1998 08 27	809	(2.1+	2.2+)	1998 12 08	704	0.9+	0.8-
1992 02 25	675	0.5+	0.0	1998 09 14	704	0.3+	0.2-	1999 10 19	704	0.3+	0.7-
1992 02 27	675	0.1-	0.8+	1998 09 14	704	0.8+	0.6-	1999 10 19	704	0.6-	0.3+
1992 02 27	675	0.7-	0.3+	1998 09 14	704	0.4-	0.5+	1999 10 19	704	0.4-	0.5+
1992 02 28	675	0.5+	0.9+	1998 09 14	704	0.2+	0.6+	1999 10 19	704	1.1-	0.6+
1992 02 28	675	0.7-	0.3+	1998 09 18	704	0.4-	0.5-	1999 10 19	704	0.8-	0.9+
1992 03 02	809	0.1-	1.1+	1998 09 18	704	0.6+	0.2+	1999 12 16	699	0.3+	0.0
1992 03 04	809	0.6+	0.6+	1998 09 18	704	0.3-	1.1+	1999 12 16	699	0.7+	0.1+
1992 03 07	809	0.0	1.4+	1998 09 18	704	0.3-	0.6+	1999 12 16	699	0.6+	0.0
1992 04 04	809	(0.5+	2.0+)	1998 09 18	704	0.4-	0.6+	2000 01 04	699	0.5+	0.1-
1996 03 21	801	0.2+	0.0	1998 09 27	699	0.4-	0.3+	2000 01 04	699	0.5+	0.2-
1996 03 21	801	0.3+	0.1-	1998 09 27	699	0.3-	0.4+	2000 01 04	699	0.6+	0.1-
1996 04 08	327	0.7-	0.0	1998 09 27	699	0.3-	0.2+	2000 01 08	704	0.1-	0.3-
1996 04 08	327	0.0	0.3+	1998 10 16	704	0.0	0.2-	2000 01 08	704	0.1-	0.4-
1996 04 08	327	0.2+	0.3+	1998 10 16	704	0.1+	0.8+	2000 01 08	704	0.1-	0.3-
1998 06 29	704	0.9-	0.4-	1998 10 16	704	0.6-	0.9+	2000 01 08	704	0.1-	0.3-
1998 06 29	704	0.0	0.5-	1998 10 16	704	0.2-	0.4-	2000 01 10	808	0.1-	0.1+
1998 06 29	704	0.9-	0.7-	1998 10 16	423	0.0	0.5+	2000 01 10	808	0.3-	0.1+
1998 06 29	704	0.7-	0.6-	1998 10 16	423	0.4-	0.5+	2000 01 11	704	0.1-	0.4-
1998 06 29	704	0.1+	0.2-	1998 10 16	423	0.1-	0.2+	2000 01 11	704	0.1-	0.3-
1998 08 23	761	0.8-	0.2-	1998 10 17	423	0.2+	0.3+	2000 01 11	704	0.0	0.2-
1998 08 23	761	0.9-	0.3-	1998 10 17	423	0.1-	0.0	2000 01 11	704	0.1+	0.3-
1998 08 26	809	(1.5+	3.3-)	1998 10 17	423	0.3+	0.2+	2000 01 11	704	0.3+	0.0
1998 08 26	809	1.5+	1.8-	1998 11 07	689	1.2+	1.3-				

(13082)* 1992 EY₁₀ = 1985 TH₃

Discovered 1992 Mar. 6 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.
Id. A. Doppler (*MPC* 34841), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.80330	(2000.0)	P		Q	
<i>n</i>	0.22179432	ω	351.14033	+0.91231629	+0.40418670	
<i>a</i>	2.7029361	Ω	344.51102	-0.35902177	+0.71240889	
<i>e</i>	0.1569334	<i>i</i>	14.23463	-0.19693238	+0.57367821	
<i>P</i>	4.44	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1985 09 21	095	0.7-	1.5-	1992 03 09	809	1.1+	1.3+	1999 12 14	704	0.3-	0.7-
1985 10 11	675	(3.4-	0.7+)	1998 09 14	699	0.1-	0.3+	1999 12 14	704	1.1-	0.2+
1985 10 13	675	0.4+	0.3-	1998 09 14	699	0.8-	0.2-	1999 12 14	704	0.9-	0.0
1985 10 13	675	1.7+	0.2-	1998 09 14	699	0.6-	0.0	1999 12 14	704	0.1+	0.1-
1992 02 24	691	0.1-	0.4-	1998 09 24	699	0.2-	1.4+	1999 12 30	704	0.7+	0.7-
1992 02 24	691	(3.4-	1.9+)	1998 09 24	699	0.0	1.5+	1999 12 30	704	0.3+	0.3-
1992 02 24	691	0.3+	0.2-	1998 09 24	699	0.7-	1.8+	1999 12 30	704	0.6-	0.0
1992 03 06	809	0.1-	0.9+	1999 12 13	704	0.7+	0.5+	2000 01 21	704	0.4+	0.0
1992 03 06	691	0.2+	0.5-	1999 12 13	704	0.7+	0.4+	2000 01 21	704	0.2-	0.4+
1992 03 06	691	0.1+	0.5-	1999 12 13	704	0.8+	1.8+	2000 01 21	704	0.4-	0.4+
1992 03 08	809	0.3-	1.3+	1999 12 13	704	0.0	1.0+				

(13083)* 1992 EE₃₂ = 1982 XG₃ = 1994 RD₁₀

Discovered 1992 Mar. 2 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.
Id. G. V. Williams (*MPC* 25640)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	335.68847	(2000.0)	P		Q	
<i>n</i>	0.23499704	ω	311.12266	-0.81598831	-0.57779345	
<i>a</i>	2.6007251	Ω	193.61306	+0.55047383	-0.76725233	
<i>e</i>	0.1886936	<i>i</i>	4.34395	+0.17646995	-0.27834978	
<i>P</i>	4.19	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1982 12 13	381	1.0-	0.3+	1996 01 03	327	0.1+	0.2+	1999 12 14	704	0.1+	0.8-
1982 12 14	381	1.2+	1.1-	1996 01 03	327	0.9+	0.7+	1999 12 14	704	0.7-	0.5+
1982 12 14	381	(5.0+	1.0+)	1996 01 03	327	0.3+	0.1-	1999 12 14	704	0.8-	0.4-
1992 02 28	675	0.2+	1.4-	1999 10 10	704	0.4-	0.8+	2000 01 05	704	0.5+	0.7+
1992 02 28	675	0.8-	1.4-	1999 10 10	704	0.4-	0.2-	2000 01 05	704	0.1-	0.3-
1992 03 02	809	0.0	0.7+	1999 10 10	704	1.2-	1.1+	2000 01 05	704	0.2-	0.1-
1992 03 05	809	0.1+	0.8-	1999 10 10	704	0.1-	0.3+	2000 01 05	704	0.4-	0.3-
1992 03 08	809	0.7-	0.9+	1999 11 17	704	0.0	0.0	2000 01 05	704	0.6+	0.3+
1994 09 12	691	0.3+	0.1-	1999 11 17	704	0.9+	0.4-	2000 01 06	704	0.7+	0.1-
1994 09 12	691	0.0	0.2-	1999 11 17	704	1.5-	1.3-	2000 01 06	704	0.3+	0.0
1994 09 12	691	0.4+	0.3-	1999 12 06	704	0.9+	1.2+	2000 01 06	704	0.4+	0.5+
1994 09 14	691	0.3-	0.1-	1999 12 06	704	0.3-	0.1+	2000 01 06	704	0.4+	0.5-
1994 09 14	691	0.4+	0.2-	1999 12 06	704	0.1+	0.3-	2000 01 06	704	0.1+	0.3+
1994 09 14	691	0.0	0.8-	1999 12 14	704	0.2-	0.1+				

(13084)* 1992 GC_s = 1998 VH₃₀

Discovered 1992 Apr. 2 by F. Börngen at Tautenburg.

Id. E. Bowell (*MPC* 33231), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	216.21198	(2000.0)	P		Q	
<i>n</i>	0.23201044	ω	204.94162	+0.51591253	+0.85067041	
<i>a</i>	2.6229964	Ω	96.26196	-0.76793220	+0.51149516	
<i>e</i>	0.0498626	<i>i</i>	5.82970	-0.37962403	+0.12137777	
<i>P</i>	4.25	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1989 09 02	675	0.5-	0.3+	1998 11 10	704	0.2-	1.0+	1998 11 21	704	1.2-	1.6+
1989 09 02	675	0.3-	0.5+	1998 11 10	704	0.5+	0.1-	1998 11 24	704	0.1-	0.0
1992 04 02	033	0.8+	0.7+	1998 11 10	704	0.7-	1.6+	1998 11 24	704	0.4+	0.8+
1992 04 04	033	0.5+	0.1+	1998 11 10	704	0.7+	1.0+	1998 11 24	704	0.2-	0.6+
1992 04 04	033	0.7-	0.9-	1998 11 11	704	0.4+	0.4-	1998 11 24	704	0.3+	0.9+
1992 04 29	033	0.2-	0.0	1998 11 11	704	0.8+	0.4-	1998 12 17	120	0.5-	0.2-
1992 04 29	033	0.2+	0.0	1998 11 11	704	0.7+	0.6-	1998 12 17	120	0.3-	0.6-
1992 04 30	033	0.4+	0.9+	1998 11 11	704	(1.3+	3.5-)	1999 11 17	703	0.8-	0.8-
1992 05 03	033	0.1+	0.3+	1998 11 18	704	0.4-	0.1-	1999 11 17	703	0.4+	0.4+
1992 05 04	033	0.5-	0.1+	1998 11 18	704	0.1+	0.3-	1999 11 17	703	1.3+	0.1-
1992 05 05	033	0.3+	0.3-	1998 11 18	704	0.2+	0.8-	1999 11 17	703	(2.4+	0.1+)
1997 08 01	566	0.0	1.1+	1998 11 18	704	(1.0+	3.2-)	2000 01 10	699	0.2+	0.2+
1997 08 01	566	0.4-	1.5+	1998 11 18	704	(2.1+	3.4-)	2000 01 10	699	0.7+	1.1+
1997 08 01	566	0.2+	1.0+	1998 11 21	704	0.5-	0.1-	2000 01 10	699	0.5+	0.9+
1998 10 19	699	0.2+	0.6-	1998 11 21	704	0.5-	0.2-	2000 01 12	113	0.4-	1.3+
1998 10 19	699	0.2+	0.3+	1998 11 21	704	0.8+	0.9-	2000 01 12	113	0.8-	1.0+
1998 10 19	699	0.5+	1.0-	1998 11 21	704	1.4-	0.7+				

(13085)* 1992 HA₄ = 1993 PW₁

Discovered 1992 Apr. 23 by E. W. Elst at the European Southern

Observatory.

Id. G. V. Williams (*MPC* 22594)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	212.28198	(2000.0)	P		Q	
<i>n</i>	0.21598094	ω	345.94056	-0.15289754	+0.98823644	
<i>a</i>	2.7512228	Ω	275.26448	-0.90637088	-0.14157289	
<i>e</i>	0.0831103	<i>i</i>	0.19162	-0.39384537	-0.05784345	
<i>P</i>	4.56	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1992 04 04	809	0.5+	0.3+	1998 09 18	704	(1.2+	2.2-)	1998 10 15	704	0.4+	1.5+
1992 04 04	809	0.2+	0.2+	1998 09 23	691	0.2+	0.7-	1998 10 19	699	0.0	0.1-
1992 04 04	809	0.0	1.0-	1998 09 23	691	0.2+	0.6-	1998 10 19	699	0.3+	0.4-
1992 04 06	809	0.3-	1.1-	1998 09 23	691	0.4+	0.7-	1998 10 19	699	0.8+	0.0
1992 04 06	809	1.7-	1.1-	1998 09 26	704	1.8-	0.3-	1998 10 28	704	0.2-	2.0-
1992 04 06	809	(3.7-	0.0)	1998 09 26	704	0.0	0.0	1998 10 28	704	(0.4+	2.4-)
1992 04 23	809	(4.4-	1.2+)	1998 09 26	704	1.8+	1.9-	1998 10 28	704	(2.5+	0.8+)
1992 04 23	809	(3.9-	0.8+)	1998 09 26	704	0.6+	0.1-	1998 10 28	704	(1.4+	3.7-)
1992 04 23	809	(3.2-	0.3-)	1998 09 26	704	1.1-	0.3-	1998 10 29	704	1.1+	1.9-
1992 04 25	809	0.4-	0.8+	1998 09 27	704	0.4-	0.6-	1998 10 29	704	1.3+	0.8+
1992 04 25	809	0.4+	0.1+	1998 09 27	704	0.1+	0.1+	1998 10 29	704	1.9+	1.8-
1992 04 25	809	0.3+	0.9-	1998 09 27	704	1.1-	0.1-	1998 10 29	704	0.1+	1.3-
1993 08 14	691	0.1-	0.2+	1998 09 27	704	0.4-	0.9+	1999 12 08	704	0.3+	0.5-
1993 08 14	691	0.0	0.0	1998 09 27	704	0.7-	0.7+	1999 12 08	704	0.0	0.2+
1993 08 14	691	0.3+	0.1-	1998 10 14	704	0.6-	0.2+	1999 12 08	704	0.3-	0.3+
1993 08 15	691	0.1-	0.1-	1998 10 14	704	(1.4-	2.4+)	1999 12 08	704	0.2+	0.5+
1993 08 15	691	0.0	0.3-	1998 10 14	704	0.5-	1.3+	1999 12 08	704	0.4+	0.1-
1993 08 15	691	0.1+	0.1-	1998 10 14	704	(2.6-	0.0)	2000 01 03	704	0.5+	0.6-
1998 09 14	704	1.3+	0.6+	1998 10 14	699	0.2+	0.6+	2000 01 03	704	1.3+	0.7-
1998 09 14	704	1.1+	1.5+	1998 10 14	699	0.5-	0.1-	2000 01 03	704	1.5-	0.2+
1998 09 14	704	0.7-	1.5-	1998 10 14	699	0.2-	1.4+	2000 01 04	704	(2.4-	0.9-)
1998 09 18	704	1.2-	0.3-	1998 10 15	704	0.7-	0.3+	2000 01 04	704	0.8-	0.1-
1998 09 18	704	0.2-	0.5+	1998 10 15	704	0.7-	1.2+	2000 01 04	704	(0.6+	3.1+)
1998 09 18	704	(2.1+	0.4-)	1998 10 15	704	0.4-	0.4+				
1998 09 18	704	0.7+	1.2-	1998 10 15	704	0.0	1.4+				

(13086)* 1992 HS₄ = 1997 MC₁₁

Discovered 1992 Apr. 30 by F. Börngen at Tautenburg.

Id. G. V. Williams (*MPC* 30657)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
203.60341					
<i>n</i>	0.21040861	ω	179.38540	+0.16731794	+0.97257672
<i>a</i>	2.7995853	Ω	100.23819	-0.90524733	+0.21646540
<i>e</i>	0.1913025	<i>i</i>	9.44882	-0.39055343	-0.08507207
<i>P</i>	4.68	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 11 04	675	1.2+	0.2-	1998 11 13	704	(1.9+	2.0-)	1999 12 08	704	0.6-	1.0-
1989 11 04	675	1.0+	0.3-	1998 11 13	704	0.9+	1.0-	1999 12 08	704	1.1-	1.9+
1992 04 30	033	0.1-	0.5+	1998 11 13	704	0.4-	0.0	1999 12 30	120	1.5+	0.3-
1992 05 01	033	0.3+	0.6+	1998 11 13	704	1.4-	0.9+	1999 12 30	120	0.9+	0.1+
1992 05 04	033	0.8+	0.2+	1998 11 13	704	0.0	1.8+	2000 01 03	704	0.3-	0.0
1992 05 05	033	1.4+	0.5+	1998 11 19	699	0.6+	0.5+	2000 01 03	704	0.5-	0.5-
1992 05 06	033	0.3-	0.3+	1998 11 19	699	0.1+	0.5-	2000 01 03	704	0.6-	0.2-
1992 05 23	033	0.9-	0.1-	1998 11 19	699	0.6+	1.0+	2000 01 03	704	0.0	0.1-
1992 05 24	033	0.3-	1.4+	1998 11 21	113	(2.9-	4.4+)	2000 01 03	704	0.4-	0.0
1992 05 24	033	0.3+	0.4+	1998 11 21	113	1.9-	1.6+	2000 01 04	704	0.4-	0.2+
1992 05 25	033	0.2-	0.1+	1998 12 08	113	0.4-	0.6-	2000 01 04	704	0.3-	0.3+
1992 05 26	033	0.5-	0.1-	1998 12 08	113	0.6-	0.6-	2000 01 04	704	0.6+	0.5+
1992 05 27	033	0.1+	0.9+	1998 12 10	113	0.8-	0.7-	2000 01 04	704	0.7-	1.6+
1992 05 28	033	0.4-	0.1+	1998 12 10	113	0.3+	0.6-	2000 01 04	120	0.0	0.0
1997 06 28	704	0.4+	0.7+	1998 12 11	699	1.3+	0.5-	2000 01 04	120	0.1+	0.8+
1997 06 28	704	(2.4-	0.0)	1998 12 11	699	1.1-	0.6+	2000 01 05	113	0.7+	0.2+
1997 06 28	704	0.3+	0.9+	1998 12 11	699	1.0+	0.2+	2000 01 05	113	0.7-	0.8-
1997 06 29	704	0.1-	0.1+	1998 12 17	113	1.5-	0.2+	2000 01 05	113	0.2+	0.2+
1997 06 29	704	0.7-	1.0+	1998 12 17	113	0.7-	0.6+	2000 01 08	704	0.2+	0.6+
1997 06 29	704	0.5+	0.5+	1998 12 17	113	0.8-	0.1-	2000 01 08	704	0.1-	0.1-
1997 06 29	704	0.2+	0.3-	1998 12 17	113	1.2-	0.8+	2000 01 08	704	0.1-	0.5+
1997 06 29	704	0.8+	0.3-	1999 12 05	691	0.5+	0.3+	2000 01 08	704	0.1+	0.1+
1998 10 12	699	0.1-	0.2+	1999 12 05	691	0.3+	0.2+	2000 01 08	704	0.1+	0.6+
1998 10 12	699	0.5+	0.2+	1999 12 05	691	0.4+	0.1+				
1998 10 12	699	0.1-	0.9+	1999 12 08	704	1.1+	1.3-				

(13087)* 1992 OV₆ = 1990 DS₄ = 1993 VT₃

Discovered 1992 July 30 by E. W. Elst at the European Southern

Observatory.

Id. A. Lowe (*MPC* 22956), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
78.44499					
<i>n</i>	0.20201267	ω	246.26344	+0.08076271	-0.99669635
<i>a</i>	2.8766276	Ω	199.11008	+0.92377298	+0.07808454
<i>e</i>	0.0327303	<i>i</i>	1.50343	+0.37432722	+0.02234279
<i>P</i>	4.88	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1990 02 28	809	1.5+	0.2+	1993 12 06	372	(2.9-	0.1+)	1998 12 15	704	1.4-	0.0
1990 02 28	809	1.8+	0.3+	1993 12 06	372	(2.1-	1.0+)	1998 12 15	704	0.7-	0.9+
1990 02 28	809	(2.1+	0.2+)	1994 01 18	691	0.3-	0.4+	1998 12 15	704	0.3+	1.0+
1990 03 01	809	0.6-	1.2-	1994 01 18	691	0.8-	0.5+	1998 12 15	704	0.5-	0.8+
1990 03 01	809	0.2-	1.2-	1994 01 18	691	0.9-	0.3+	1998 12 22	704	0.5+	0.1-
1990 03 01	809	0.1-	1.1-	1996 06 12	104	1.0-	0.8+	1998 12 22	704	1.1-	0.7-
1990 03 01	809	0.7-	0.6-	1996 06 12	104	0.2+	0.3+	1998 12 22	704	0.5-	0.7-
1990 03 01	809	0.9-	0.6-	1996 06 12	104	0.2+	0.3+	1999 12 09	703	0.4+	0.4+
1990 03 01	809	1.2-	0.5-	1996 06 12	104	0.2-	0.5+	1999 12 09	703	1.4+	0.1-
1992 07 26	809	0.9+	0.4-	1996 06 13	566	1.4-	0.3-	1999 12 09	703	0.5-	0.2-
1992 07 26	809	0.8-	0.6-	1996 06 13	566	1.0-	0.1+	1999 12 09	703	0.2+	0.3+
1992 07 30	809	1.6+	0.5-	1996 06 13	566	0.4-	0.5+	2000 01 05	704	0.4-	0.7-
1992 07 30	809	1.2+	0.2-	1996 06 13	104	1.3+	1.8+	2000 01 05	704	0.6-	1.8-
1992 07 30	809	0.5-	0.5-	1996 06 13	104	0.8-	1.6+	2000 01 05	704	0.1+	0.1-
1992 07 31	809	(2.3+	0.5+)	1996 06 13	104	2.0-	1.6+	2000 01 05	704	1.1+	1.0-
1992 07 31	809	1.9+	0.7-	1996 06 16	816	0.5-	0.4-	2000 01 06	699	1.2+	0.2+
1992 07 31	809	1.3+	0.4-	1996 06 16	816	0.6-	0.2-	2000 01 06	699	0.8+	0.2-
1993 10 18	033	(2.1+	0.1+)	1996 06 16	816	0.6-	0.2-	2000 01 06	699	0.7+	0.4+
1993 10 18	033	0.7-	0.2-	1997 08 27	557	0.2+	0.1+	2000 01 08	704	0.4-	0.0
1993 11 13	372	(1.0-	2.5-)	1997 08 27	557	0.4+	0.1+	2000 01 08	704	1.1+	0.7+
1993 11 13	372	(0.2+	2.6-)	1997 08 27	557	0.4+	0.1+	2000 01 08	704	1.2+	0.3+
1993 11 18	372	0.6-	0.2-	1997 08 30	557	0.8+	0.2+	2000 01 08	704	0.2-	0.9-
1993 11 18	372	(3.5-	0.1-)	1997 08 31	557	0.6+	0.1+	2000 01 08	704	0.8+	0.3-
1993 11 24	372	0.0	1.4+	1998 12 15	704	(0.1+	2.5+)				

(13088)* 1992 PB₁ = 1998 SM₂₃

Discovered 1992 Aug. 8 by E. W. Elst at Caussols.

Id. G. V. Williams (*MPC* 32662)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>
85.79202					
<i>n</i>	0.17668308	ω	220.74831	+0.98082867	-0.18153610
<i>a</i>	3.1453772	Ω	149.49171	+0.19428960	+0.93906434
<i>e</i>	0.1160003	<i>i</i>	8.02248	-0.01505550	+0.29189522
<i>P</i>	5.58	<i>H</i>	12.9	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1992 07 24	809	0.3+	0.8-	1998 09 18	704	0.4-	0.8+	1999 10 10	704	0.4-	0.3+
1992 07 24	809	0.4-	1.0-	1998 09 18	704	0.1+	1.3+	1999 10 20	704	0.1+	0.1-
1992 07 24	809	(2.1-	1.1-)	1998 09 18	704	1.0-	1.1+	1999 10 20	704	0.3-	1.5-
1992 07 26	809	1.9+	0.9+	1998 09 24	699	0.2-	0.0	1999 10 20	704	0.7-	0.1-
1992 07 26	809	0.7+	0.7+	1998 09 24	699	0.2+	0.8+	1999 10 20	704	0.1-	0.7-
1992 07 26	809	0.5-	1.6-	1998 09 24	699	0.1+	0.6+	1999 10 20	704	0.2-	0.5-
1992 07 30	809	0.9-	0.8-	1998 09 26	704	0.2+	0.1+	1999 12 06	704	0.4-	1.4-
1992 07 30	809	1.3-	0.1-	1998 09 26	704	1.0+	0.5-	1999 12 06	704	0.5-	0.3+
1992 07 30	809	0.3-	0.1+	1998 09 26	704	0.1+	0.9-	1999 12 06	704	1.1-	0.2+
1992 08 08	010	1.8+	2.0-	1998 09 26	704	0.9+	0.6-	1999 12 14	704	0.1+	0.4-
1992 08 08	010	(2.7+	1.8-)	1998 09 26	704	0.1-	1.5-	1999 12 14	704	1.0+	0.6-
1992 08 08	010	(2.2+	1.9-)	1998 09 27	704	0.0	0.2-	1999 12 14	704	0.2+	0.3-
1992 08 09	010	(1.0+	3.0-)	1998 09 27	704	0.2-	0.2-	1999 12 14	704	0.4+	0.0
1992 08 09	010	(1.0+	2.6-)	1998 09 27	704	0.8+	0.3+	1999 12 14	704	0.2+	0.0
1992 08 09	010	(0.8+	2.2-)	1998 09 27	704	0.3+	0.3+	2000 01 05	704	0.9-	0.2-
1995 02 21	691	(2.0+	2.7+)	1998 09 27	704	0.4+	0.8+	2000 01 05	704	0.2-	0.2+
1995 02 21	691	0.1-	0.1-	1998 10 15	704	0.1+	0.7+	2000 01 05	704	0.4+	0.4+

2000 JAN. 24

M.P.C. 37511

1995 02 21	691	0.0	0.1−	1998 10 15	704	0.4+	1.2−	2000 01 05	704	0.2+	0.1−
1995 03 01	691	0.4−	0.5−	1998 10 15	704	0.3−	0.1−	2000 01 05	704	0.5+	0.3+
1995 03 01	691	0.4+	1.0+	1998 10 15	704	0.0	0.8+	2000 01 07	704	0.2−	0.2+
1995 03 01	691	0.6−	0.1−	1998 11 22	725	0.2+	0.3−	2000 01 07	704	0.4+	0.1+
1998 09 14	704	1.1−	0.2−	1998 11 22	725	0.1+	0.3−	2000 01 07	704	0.2−	0.2+
1998 09 14	704	0.7−	0.5−	1998 11 22	725	0.1−	0.3−	2000 01 07	704	0.2+	0.5−
1998 09 14	704	1.1−	0.3−	1998 11 26	725	0.0	0.2−	2000 01 07	704	0.3+	0.6−
1998 09 17	699	0.1+	0.1−	1998 11 26	725	0.2−	0.1−	2000 01 07	704	0.4+	0.0
1998 09 17	699	0.0	0.2+	1999 10 10	704	0.9+	0.3+	2000 01 07	704	1.1+	0.2−
1998 09 17	699	0.0	0.4+	1999 10 10	704	0.2−	0.0	2000 01 07	704	0.6−	0.0
1998 09 18	704	0.0	0.6+	1999 10 10	704	0.0	0.3+	2000 01 07	704	0.3+	0.3−
1998 09 18	704	1.3−	1.1+	1999 10 10	704	0.6+	1.1+				

(13089)* 1992 PH₂ = 1987 SE₂₁ = 1997 ND₁₁

Discovered 1992 Aug. 2 by H. E. Holt at Palomar.

Id. T. B. Spahr (*MPC* 30657), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	138.63966		(2000.0)	P	Q
n	0.18601173	ω	69.32326	+0.93154587	+0.32454448
a	3.0393158	Ω	271.44885	−0.36349478	+0.84314997
e	0.1397124	i	9.44169	+0.00968674	+0.42868287
P	5.30	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1987 09 18	095	0.8+	0.3+	1998 10 18	704	1.2−	0.5+	1999 01 08	699	1.2−	0.5+
1992 07 31	675	0.2−	0.9−	1998 10 18	704	1.4−	1.9−	1999 10 10	704	0.4−	0.9−
1992 07 31	675	0.2−	0.9−	1998 11 01	699	0.0	0.4−	1999 10 10	704	0.2−	0.6−
1992 08 02	675	0.6+	0.9−	1998 11 01	699	0.1+	0.8+	1999 10 10	704	0.1+	0.5−
1992 08 02	675	0.0	1.0−	1998 11 01	699	0.3+	0.6−	1999 10 10	704	1.2+	0.4−
1992 08 06	675	0.4+	0.5−	1998 11 14	704	0.8+	0.0	1999 10 10	704	1.6+	1.3−
1992 08 06	675	0.1+	0.5−	1998 11 14	704	0.5+	0.1−	1999 12 14	704	0.6+	0.4+
1992 08 23	675	0.1+	0.1+	1998 11 14	704	0.3−	0.1+	1999 12 14	704	0.1+	0.6+
1992 08 23	675	0.6−	0.1−	1998 11 14	704	0.3+	0.2−	1999 12 14	704	0.1−	1.3+
1997 07 13	327	0.1−	0.4+	1998 11 16	704	0.1−	0.1−	1999 12 31	699	0.3+	0.4−
1997 07 13	327	0.1+	0.8+	1998 11 16	704	0.3−	0.7+	1999 12 31	699	0.4+	0.0
1997 07 13	327	0.2−	0.5+	1998 11 16	704	0.1−	0.2+	1999 12 31	699	0.4+	0.2−
1997 07 24	327	0.3+	0.2+	1998 11 16	704	0.3−	0.2+	2000 01 05	704	1.1−	0.9−
1997 07 24	327	0.3+	0.4+	1998 11 16	704	0.5−	0.2+	2000 01 05	704	0.6−	0.5−
1997 07 24	327	0.0	0.1+	1998 11 16	704	0.2−	0.2+	2000 01 05	704	0.6−	0.2−
1997 07 25	327	0.2−	0.3+	1998 11 16	704	0.5+	0.4+	2000 01 05	704	1.7−	1.2+
1997 07 25	327	0.1+	0.2+	1998 11 16	704	0.5+	0.1+	2000 01 05	704	0.9−	0.1+
1998 10 02	704	1.1+	0.6+	1998 11 16	704	0.3+	0.1+	2000 01 07	704	0.4+	0.8−
1998 10 02	704	0.6−	1.9+	1998 11 16	704	0.6+	0.6+	2000 01 07	704	0.1−	0.2+
1998 10 02	704	0.1−	0.1+	1998 12 16	699	0.6+	0.4−	2000 01 07	704	0.7+	0.1−
1998 10 02	704	0.4+	1.5+	1998 12 16	699	1.1+	1.4−	2000 01 07	704	0.7−	0.3+
1998 10 02	704	0.7−	0.9+	1998 12 16	699	0.7+	0.9−	2000 01 07	704	0.8+	0.2+
1998 10 18	704	0.1+	0.7−	1999 01 08	699	0.4−	0.7+				
1998 10 18	704	0.1−	0.5−	1999 01 08	699	1.1−	0.3−				

(13090)* 1992 PV₂ = 1987 SP₂₃ = 1998 VD₂₈

Discovered 1992 Aug. 6 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 33231)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	156.84852		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.18921882	ω	57.54722	+0.85667330	+0.49173509		
a	3.0048756	Ω	272.56495	−0.50999358	+0.76187747		
e	0.1235071	i	8.97856	−0.07757202	+0.42159141		
P	5.21	H	13.0	G	0.15	U	1

Residuals in seconds of arc

1987 09 23	095	0.4−	0.7+	1998 11 10	704	0.1+	0.6+	1999 12 14	704	0.9+	1.1+
1992 08 02	675	(2.7−	0.8−)	1998 11 10	704	0.4+	0.6+	1999 12 14	704	0.2+	0.1−
1992 08 02	675	1.2−	1.5−	1998 11 11	704	1.4+	0.4+	1999 12 14	704	0.1−	0.3−
1992 08 06	675	0.3+	0.4−	1998 11 11	704	0.1−	0.1+	1999 12 14	704	0.3−	1.0−
1992 08 06	675	0.6+	0.0	1998 11 11	704	0.8+	0.5+	1999 12 14	704	1.1−	0.7−

1992 08 06	675	0.2+	0.3+	1998 11 11	704	0.3−	0.4+	1999 12 15	703	1.3+	0.4+
1992 08 06	675	0.8+	0.9−	1998 11 11	704	0.5+	0.8−	1999 12 15	703	0.3+	0.5+
1992 08 06	675	0.0	1.7+	1998 11 11	704	0.3−	0.6+	1999 12 15	703	0.3+	0.3+
1992 08 06	675	0.7−	0.6+	1998 11 11	704	1.3+	1.0−	1999 12 15	703	0.8+	0.9−
1992 08 07	675	0.1+	0.2+	1998 11 14	704	0.1+	1.0+	1999 12 31	699	0.5+	0.1−
1992 08 07	675	1.4−	0.9+	1998 11 14	704	0.3−	0.2−	1999 12 31	699	0.0	0.1−
1992 08 07	675	0.5+	1.8−	1998 11 14	704	0.0	0.2−	1999 12 31	699	0.3+	0.1−
1992 08 07	675	1.2−	0.1−	1998 11 14	704	0.4+	0.3−	2000 01 05	704	0.3−	0.5−
1992 08 23	675	0.4+	0.8+	1998 11 14	704	0.1−	0.6+	2000 01 05	704	0.8−	0.0
1992 08 23	675	1.1+	0.1+	1998 11 16	704	0.4−	0.0	2000 01 05	704	0.7−	0.2+
1992 08 28	675	0.2+	0.0	1998 11 16	704	0.7−	0.3−	2000 01 05	704	0.7−	0.3+
1992 08 28	675	0.9+	1.1−	1998 11 16	704	0.2−	0.7−	2000 01 05	704	0.5−	0.2−
1998 10 03	699	0.5+	1.2−	1998 11 16	704	0.7−	0.2+	2000 01 07	704	(0.4−	2.3−)
1998 10 03	699	0.3−	0.9−	1998 11 16	704	1.0−	1.1−	2000 01 07	704	0.4−	0.9+
1998 10 03	699	0.6−	0.1+	1999 11 17	704	0.3+	0.5−	2000 01 07	704	0.0	0.1+
1998 11 10	704	0.0	0.6−	1999 11 17	704	0.2−	1.2−	2000 01 07	704	(0.3−	2.1+)
1998 11 10	704	0.6−	0.6+	1999 11 17	704	0.2−	0.3+	2000 01 07	704	(1.0−	2.8+)
1998 11 10	704	0.1−	1.6+	1999 11 17	704	0.1+	0.2+				

(13091)* 1992 PT₃ = 1982 SJ₅ = 1999 XF₁₀₇

Discovered 1992 Aug. 5 by H. E. Holt at Palomar.

Id. G. V. Williams (*MPC* 37119)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	98.84437		(2000.0)	P	Q
n	0.29405672	ω	223.42980	+0.59049431	+0.80599872
a	2.2396594	Ω	82.80370	−0.72868111	+0.55431759
e	0.2752577	i	2.36953	−0.34690101	+0.20760074
P	3.35	H	15.1	G 0.15	U 1

Residuals in seconds of arc

1982 09 16	095	0.1+	0.4−	1999 10 03	704	0.4−	1.7−	1999 11 15	704	0.1−	0.2+
1992 06 28	675	1.0−	0.6−	1999 10 03	704	0.2−	0.5−	1999 11 15	704	0.3+	0.1+
1992 06 28	675	0.2−	0.8+	1999 10 07	704	1.0+	0.0	1999 11 15	704	0.1+	0.2−
1992 08 01	809	(3.7−	1.0+)	1999 10 07	704	0.7+	0.1−	1999 11 15	704	0.3+	0.1−
1992 08 01	809	(3.4−	0.8+)	1999 10 07	704	0.1+	0.3+	1999 11 17	704	0.1+	0.6−
1992 08 01	809	(2.8−	0.6+)	1999 10 10	704	0.2+	0.5−	1999 11 17	704	0.5+	0.2−
1992 08 02	809	1.1−	1.0+	1999 10 10	704	0.4+	0.4−	1999 11 17	704	0.7+	0.3+
1992 08 02	809	0.3−	0.8+	1999 10 10	704	0.6+	0.2−	1999 11 17	704	0.2−	0.6−
1992 08 02	809	0.2+	0.7+	1999 10 10	704	0.2+	0.3−	1999 12 04	703	0.7−	0.6+
1992 08 05	675	0.3+	0.9−	1999 10 10	704	0.1+	0.2+	1999 12 04	703	1.2−	1.4+
1992 08 05	675	0.2+	1.1−	1999 10 15	704	0.7+	0.1−	1999 12 04	703	0.5−	0.0
1992 08 06	675	0.3+	0.6−	1999 10 15	704	0.9+	0.4−	1999 12 04	703	0.8−	0.2+
1992 08 06	675	0.4+	0.5−	1999 10 15	704	0.9+	0.6+	1999 12 07	704	(0.3+	2.2+)
1992 08 24	675	0.0	0.7+	1999 10 15	704	0.2−	0.2−	1999 12 07	704	0.5−	0.2+
1992 08 24	675	0.8+	0.0	1999 11 01	703	1.0−	0.9+	1999 12 07	704	1.4+	0.2−
1998 03 22	704	(0.4−	2.9−)	1999 11 01	703	0.5−	0.8+	1999 12 07	704	(0.2−	2.2−)
1998 03 22	704	0.1+	0.7−	1999 11 01	703	0.9−	0.0	1999 12 12	703	(0.4+	2.5+)
1998 03 22	704	1.0+	0.9+	1999 11 01	703	0.7−	0.7+	1999 12 12	703	0.9−	0.0
1998 03 22	704	0.7+	1.1−	1999 11 04	704	0.4−	0.4−	1999 12 12	703	0.4−	0.6−
1998 03 29	704	1.2−	0.0	1999 11 04	704	0.2−	0.1+	1999 12 12	703	0.1−	0.4+
1998 03 29	704	(3.0−	0.3−)	1999 11 04	704	0.5−	0.3+	2000 01 05	704	0.4+	0.2−
1998 03 29	704	0.5−	0.6+	1999 11 04	704	0.1−	0.2−	2000 01 05	704	0.0	0.3+
1998 03 29	704	0.5−	1.3−	1999 11 04	704	0.5−	0.1+	2000 01 05	704	0.1−	0.8−
1999 10 03	704	1.5+	0.7−	1999 11 15	704	0.3+	0.2+	2000 01 05	704	0.3−	0.4+

Residuals in seconds of arc

1992 09 21	033	0.4+	0.5-	1997 03 06	704	1.6+	0.3+	1999 10 22	704	0.6+	0.7-
1992 09 21	033	0.4+	0.1-	1998 06 24	704	0.7-	0.9-	1999 11 17	704	0.3-	0.9+
1992 09 22	033	0.1+	0.2+	1998 06 24	704	0.3-	0.9+	1999 11 17	704	0.5+	0.5+
1992 09 24	033	0.1-	0.2+	1998 06 24	704	0.1-	1.7-	1999 11 17	704	0.4+	2.0+
1992 09 24	033	0.9-	0.1-	1998 06 24	704	0.8-	0.1-	1999 11 17	704	1.1+	0.1+
1992 09 26	033	0.1+	0.2+	1998 06 24	704	0.5-	0.8+	1999 12 30	699	0.2+	0.1+
1992 09 27	033	0.6-	0.0	1998 06 26	704	0.5-	0.1-	1999 12 30	699	0.0	0.4+
1992 09 28	033	0.8+	0.5+	1998 06 26	704	0.7+	1.2+	1999 12 30	699	0.5-	0.4+
1995 07 22	691	0.0	0.2-	1998 06 26	704	1.9-	0.6-	2000 01 05	704	0.0	0.1-
1995 07 22	691	0.1-	0.1+	1998 06 26	704	0.1-	1.3+	2000 01 05	704	0.2+	0.6-
1995 07 22	691	1.0+	0.2+	1998 06 28	809	(2.7-	1.5-)	2000 01 05	704	0.7+	0.5-
1995 07 27	691	0.6-	0.3-	1998 06 28	809	(3.2-	0.5-)	2000 01 05	704	0.6+	0.1-
1995 07 27	691	0.7-	0.3-	1998 06 28	809	(4.1-	1.1-)	2000 01 05	704	0.8+	0.6+
1995 07 27	691	0.2-	0.0	1998 07 01	809	0.1+	0.4-	2000 01 05	113	0.4-	0.3-
1997 02 06	327	1.0-	1.3-	1998 07 01	809	1.2+	0.3-	2000 01 05	113	0.8-	0.5+
1997 02 06	327	0.5-	1.3-	1998 07 01	809	0.3+	0.3-	2000 01 05	113	0.4-	0.1+
1997 02 06	327	0.9-	1.0-	1998 08 15	704	1.3+	0.8-	2000 01 06	704	0.1-	0.0
1997 02 15	327	1.4-	0.5+	1998 08 15	704	0.7-	0.6+	2000 01 06	704	0.2+	0.2+
1997 02 15	327	0.7+	0.9+	1998 08 15	704	1.9+	1.2+	2000 01 06	704	0.2+	0.2+
1997 02 15	327	(2.6-	0.8+)	1998 08 15	704	0.2+	0.0	2000 01 07	691	0.5-	0.1-
1997 03 05	704	1.1+	0.8+	1999 10 22	704	0.7-	0.8-	2000 01 07	691	0.4-	0.1-
1997 03 05	704	0.1-	0.2+	1999 10 22	704	0.6-	0.5-	2000 01 07	691	0.4-	0.1-
1997 03 06	704	0.8+	0.8+	1999 10 22	704	0.2-	1.0-				

(13093)* 1992 SQ₂₄ = 1987 SN₂₄ = 1994 AN

Discovered 1992 Sept. 21 by F. Börngen at Tautenburg.

Id. G. V. Williams (*MPC* 25428)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	1.82061	(2000.0)		P	Q		
<i>n</i>	0.19071545	ω	309.30037	-0.88875158	-0.45276855		
<i>a</i>	2.9891346	Ω	204.03577	+0.45572068	-0.85592258		
<i>e</i>	0.0519889	<i>i</i>	10.11928	+0.04938924	-0.24979428		
<i>P</i>	5.17	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 09 23	095	0.2+	0.4+	1997 10 31	910	0.1+	0.4+	1999 01 17	113	1.2+	1.0+
1992 09 07	033	0.8-	0.2+	1997 10 31	910	0.1+	0.3+	1999 02 10	113	0.3+	0.0
1992 09 07	033	0.7-	0.3-	1998 08 31	704	0.5-	0.4+	1999 02 10	113	0.4+	0.3+
1992 09 21	033	0.1-	1.0+	1998 08 31	704	1.7-	0.6+	1999 11 09	703	0.6+	0.3-
1992 09 21	033	0.7+	0.5-	1998 08 31	704	1.1-	0.9-	1999 11 09	703	0.3+	0.2-
1992 09 22	033	0.3-	0.5+	1998 08 31	704	0.5-	0.2-	1999 11 09	703	0.5+	0.5+
1992 09 25	033	0.6+	0.6-	1998 08 31	704	1.6-	0.4+	1999 11 09	703	0.0	0.1-
1992 09 26	033	0.4+	0.6-	1998 11 10	704	1.1+	0.6+	1999 11 19	699	0.6+	0.4-
1992 09 27	033	0.4+	0.2-	1998 11 10	704	0.4+	1.3-	1999 11 19	699	0.3+	0.3-
1992 09 28	033	0.5-	1.7+	1998 11 10	704	0.2-	0.6+	1999 11 19	699	0.0	0.4-
1994 01 03	596	0.4-	0.7-	1998 11 10	704	1.0-	1.9-	1999 12 14	704	1.1-	0.1+
1994 01 03	596	0.2-	0.5-	1998 11 10	704	(3.8-	0.6-)	1999 12 14	704	0.4+	0.5+
1994 01 05	589	(0.3-	2.2+)	1998 11 11	699	0.8+	0.5+	1999 12 14	704	0.2-	0.9+
1994 01 05	589	(0.2+	2.3+)	1998 11 11	699	0.7+	0.2+	1999 12 14	704	0.3+	0.0
1994 01 05	589	(0.1+	2.2+)	1998 11 11	699	0.7+	0.2+	1999 12 14	704	0.8+	0.4+
1994 01 05	589	(0.4+	2.3+)	1998 12 09	113	0.1-	0.3-	1999 12 16	704	0.9-	0.4-
1994 01 11	589	0.0	0.1+	1998 12 09	113	0.4+	0.4-	1999 12 16	704	0.6-	0.1-
1994 01 11	589	0.2-	0.4+	1998 12 10	113	0.9-	0.5-	1999 12 16	704	0.4-	0.6+
1994 01 11	589	1.1-	1.8+	1998 12 10	113	0.8-	0.1-	1999 12 16	704	0.3+	0.7+
1994 01 13	596	0.1-	0.3-	1998 12 17	113	0.1+	0.4-	2000 01 12	113	0.2+	0.3+
1994 01 13	596	0.5+	1.0-	1998 12 17	113	0.3+	0.1-	2000 01 12	113	0.1-	0.4+
1994 01 13	596	0.8+	0.2+	1998 12 17	113	0.1-	0.1-				
1997 10 31	910	0.2-	0.4+	1999 01 17	113	1.0+	0.4+				

(13094)* 1992 UK₈ = 1992 UM₈ = 1964 TD₂ = 1980 FH₆ = 1985 VS₁

Discovered 1992 Oct. 19 by K. Endate and K. Watanabe at Kitami.

Id. G. V. Williams (d, *MPC* 21540), A. Gnädig (*MPC* 32453)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

				Williams			
<i>M</i>	52.11938	(2000.0)		P	Q		
<i>n</i>	0.28237802	ω	132.95462	+0.97331039	-0.22200670		
<i>a</i>	2.3009939	Ω	239.95058	+0.18611483	+0.91180550		
<i>e</i>	0.1637587	<i>i</i>	3.85113	+0.13426900	+0.34543272		
<i>P</i>	3.49	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1964 10 09	330	0.5+	0.4+	1999 10 13	704	0.5+	0.0	1999 11 14	704	0.4-	0.1-
1980 03 23	809	0.3+	0.8-	1999 10 13	704	0.3+	0.3-	1999 11 14	704	0.2-	0.3-
1985 11 07	688	0.1-	1.6+	1999 10 13	704	0.4+	0.2-	1999 11 14	704	0.7-	0.3-
1985 11 07	688	(2.2-	4.1-)	1999 10 13	704	0.3+	0.2-	1999 11 14	704	0.7-	0.6-
1992 10 19	400	0.3+	0.9-	1999 10 13	704	0.0	0.2-	1999 11 16	704	0.5-	0.6+
1992 10 19	400	0.2-	0.9+	1999 10 15	704	0.2+	0.2+	1999 11 16	704	0.3-	0.3+
1992 10 26	400	0.5-	0.3-	1999 10 15	704	0.0	0.2+	1999 11 16	704	0.6-	0.0
1992 10 26	400	0.9-	1.1-	1999 10 15	704	0.1-	0.1-	1999 11 16	704	1.0-	0.0
1992 11 15	400	1.2-	1.0-	1999 10 15	704	0.0	0.0	1999 11 16	704	0.8-	0.1+
1992 11 15	400	0.4+	0.9-	1999 10 15	704	0.1-	0.1-	1999 11 27	120	0.1+	0.5+
1992 11 20	691	0.4-	0.4-	1999 10 21	704	0.4+	0.3-	1999 11 27	120	0.4-	0.2-
1992 11 20	691	1.2-	0.3-	1999 10 21	704	0.3+	0.1+	1999 12 04	703	0.2-	0.1+
1992 11 20	691	0.4-	0.0	1999 10 21	704	0.7+	0.1-	1999 12 04	699	0.3-	0.5+
1998 05 01	704	0.7-	0.1-	1999 10 21	704	0.8+	0.2-	1999 12 04	703	0.3-	0.3+
1998 05 01	704	0.1-	0.7+	1999 10 21	704	0.4+	0.8-	1999 12 04	703	0.2+	0.3+
1998 05 01	704	0.4+	0.2+	1999 10 29	703	1.1-	0.1+	1999 12 04	703	0.1+	0.3+
1998 05 01	704	0.1-	1.2-	1999 10 29	703	0.3-	0.3+	1999 12 04	699	0.4-	0.6+
1998 05 01	704	0.2-	0.7-	1999 10 29	703	0.0	0.4+	1999 12 04	699	0.3-	0.3+
1998 05 24	704	0.5-	0.1-	1999 10 29	703	0.1-	0.2+	1999 12 06	704	1.0+	1.5+
1998 05 24	704	1.4+	0.5+	1999 11 04	704	0.6+	0.1+	1999 12 06	704	0.5+	0.3-
1998 05 24	704	1.2-	1.3-	1999 11 04	704	0.0	0.3+	1999 12 06	704	1.0-	1.8-
1998 05 24	704	(0.7-	2.6+)	1999 11 04	704	0.5+	0.0	1999 12 07	704	0.5+	0.5+
1999 10 03	704	1.5+	0.5+	1999 11 04	704	0.6+	0.4+	1999 12 07	704	0.6-	0.2-
1999 10 03	704	0.1-	0.4+	1999 11 04	704	0.5+	0.5+	1999 12 07	704	0.8+	0.4-
1999 10 03	704	0.1-	0.6-	1999 11 06	704	0.4+	0.3+	1999 12 07	704	0.7+	0.3-
1999 10 03	704	1.2+	1.2-	1999 11 06	704	0.4+	0.2+	1999 12 07	704	0.8-	1.4-
1999 10 03	704	0.8-	0.1-	1999 11 06	704	0.3+	0.4+	2000 01 04	704	0.1+	0.1+
1999 10 07	704	0.5+	0.1+	1999 11 06	704	0.3+	0.3+	2000 01 04	704	0.4+	0.1+
1999 10 07	704	0.5-	0.3-	1999 11 06	704	0.4+	0.2+	2000 01 04	704	0.0	0.1-
1999 10 07	704	0.1+	0.1+	1999 11 10	695	0.6+	0.2-	2000 01 04	704	0.1+	0.8+
1999 10 08	106	0.1+	0.1+	1999 11 10	695	0.1+	0.9-	2000 01 04	704	1.0-	0.5+
1999 10 08	106	0.0	0.2+	1999 11 10	695	0.0	1.2-	2000 01 07	704	0.2+	0.3-
1999 10 08	106	0.0	0.8+	1999 11 11	703	0.1+	0.5+	2000 01 07	704	0.4+	0.5-
1999 10 12	704	0.2+	0.0	1999 11 11	703	0.2+	0.4+	2000 01 07	704	0.2-	0.5-
1999 10 12	704	0.1+	0.0	1999 11 11	703	0.2+	0.3+	2000 01 07	704	0.2+	0.6-
1999 10 12	704	0.2+	0.2-	1999 11 11	703	0.3+	0.6+	2000 01 07	704	0.0	0.6-
1999 10 12	704	0.4+	0.2-	1999 11 14	704	1.4-	0.2-				

(13095)* 1992 WY₁ = 1990 DC₄

Discovered 1992 Nov. 18 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 21277)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

M	350.26854	(2000.0)		P	Q
n	0.28065949	ω	95.64493	-0.10822203	-0.99412659
a	2.3103772	Ω	0.56884	+0.88791914	-0.09691736
e	0.0863165	i	3.28364	+0.44708790	-0.04815970
P	3.51	H	14.3	G 0.15	U 1

2000 JAN. 24

M.P.C. 37513

1990 03 01	809	0.5+	0.1-	1999 10 22	704	0.4+	0.2+	1999 12 05	703	0.5-	0.0
1990 03 01	809	0.9+	0.1-	1999 10 22	704	0.1-	0.2+	1999 12 07	699	0.3+	0.4+
1992 10 28	399	(3.5-	1.5+)	1999 10 22	704	0.6+	0.0	1999 12 07	699	0.2-	0.9+
1992 10 28	399	(4.7-	0.4-)	1999 10 22	704	0.7+	0.4+	1999 12 07	699	0.3+	0.5+
1992 11 02	399	(4.2-	2.5+)	1999 10 22	704	0.5+	0.5+	1999 12 08	704	0.0	0.4-
1992 11 02	399	(3.9-	1.9+)	1999 10 29	703	0.4+	0.7+	1999 12 08	704	0.4-	1.2-
1992 11 18	399	1.2+	0.2+	1999 10 29	703	1.0-	0.4+	1999 12 08	704	0.6-	0.8-
1992 11 18	399	1.6+	0.2+	1999 10 29	703	1.1-	0.1-	1999 12 08	704	0.9-	0.8-
1992 11 21	399	1.3-	0.2+	1999 10 29	703	0.5-	0.5+	1999 12 08	704	0.8-	0.8-
1992 11 21	399	(4.1-	0.9+)	1999 11 03	704	0.0	0.1-	1999 12 15	704	0.4-	0.4-
1997 03 04	704	0.3+	0.9+	1999 11 03	704	0.1-	0.2-	1999 12 15	704	0.5-	0.0
1997 03 04	704	0.1-	0.3+	1999 11 03	699	0.5+	0.4+	1999 12 15	704	0.7-	0.6-
1997 03 05	704	0.1+	0.2+	1999 11 03	704	0.0	0.2-	1999 12 15	704	0.2-	0.5-
1997 03 05	704	0.7+	0.0	1999 11 03	699	0.3-	0.6+	1999 12 15	704	0.6-	0.0
1997 03 06	704	1.1+	0.0	1999 11 03	704	0.4-	0.2-	2000 01 04	704	0.4-	0.6-
1997 03 06	704	0.5+	0.7+	1999 11 03	704	0.1-	0.1-	2000 01 04	704	0.3-	0.1+
1999 09 13	106	0.3-	0.4+	1999 11 03	699	0.1+	0.6+	2000 01 04	704	0.6-	0.6-
1999 09 13	106	0.5+	0.3+	1999 11 09	699	0.5+	1.3+	2000 01 04	704	0.3+	0.8-
1999 10 12	704	1.0+	0.6-	1999 11 09	699	0.3+	1.0+	2000 01 04	704	0.2+	0.7-
1999 10 12	704	0.9+	0.0	1999 11 09	699	0.0	0.6+	2000 01 06	704	0.5-	0.7-
1999 10 12	704	0.1+	0.8-	1999 11 16	704	0.2-	0.6+	2000 01 06	704	0.4-	0.3-
1999 10 12	704	0.3+	0.5-	1999 11 16	704	0.1+	0.8+	2000 01 06	704	0.3-	0.6-
1999 10 12	704	0.4-	0.2+	1999 11 16	704	0.3+	0.5+	2000 01 06	704	0.2+	0.4+
1999 10 13	704	0.8+	0.4-	1999 11 16	704	0.1+	0.4+	2000 01 06	704	0.2+	0.5-

(13096)* 1993 BE₅ = 1984 YC₂ = 1990 TB₁₂ = 1994 GX₈

Discovered 1993 Jan. 27 by E. W. Elst at Caussols.

Id. S. Nakano (*MPC* 23520)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	97.15295		(2000.0)	P	Q
<i>n</i>	0.14141106	ω	88.51561	+0.76294004	-0.64579524
<i>a</i>	3.6487754	Ω	311.70858	+0.57629464	+0.70009933
<i>e</i>	0.0268555	<i>i</i>	2.26566	+0.29292829	+0.30464640
<i>P</i>	6.97	<i>H</i>	12.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1984 12 23	095	(1.1-	3.2-)	1994 04 11	399	1.8-	1.3+	1999 11 16	704	0.3-	0.9+
1989 07 05	675	1.3+	0.2+	1994 04 13	399	0.4+	1.3-	1999 11 16	704	0.1+	0.5-
1989 07 05	675	0.7-	0.7+	1994 04 13	399	1.0-	0.9-	1999 11 16	704	0.7+	1.2+
1989 07 29	675	0.9+	1.2-	1996 08 10	566	0.2-	0.2-	1999 11 16	704	0.8+	0.8+
1989 07 29	675	1.6+	0.3-	1996 08 10	566	0.3-	0.0	1999 11 16	704	1.0+	1.1+
1990 10 11	033	0.6+	0.1+	1996 08 10	566	0.1-	0.4-	2000 01 04	704	0.7+	0.5+
1990 10 12	033	0.6-	0.7-	1998 12 07	596	1.2-	1.4-	2000 01 04	704	0.1+	0.5+
1990 10 12	033	0.3-	0.9-	1998 12 07	596	0.8-	0.6-	2000 01 04	704	0.1+	0.5+
1990 10 13	033	0.3+	0.1-	1998 12 07	596	0.0	0.1-	2000 01 04	704	0.0	0.9+
1990 10 14	033	1.0-	0.6+	1998 12 08	587	0.4-	0.2+	2000 01 04	704	0.4-	1.0+
1993 01 27	010	(0.8-	2.2-)	1998 12 08	587	0.7-	0.2-	2000 01 05	704	0.4+	0.5+
1993 01 27	010	0.3-	2.0-	1998 12 08	587	0.4-	0.1+	2000 01 05	704	1.1+	0.8+
1993 01 27	010	(0.7+	2.6-)	1998 12 14	704	0.8+	0.7+	2000 01 05	704	1.1+	0.7+
1993 01 28	010	0.1+	0.8-	1998 12 14	704	1.8+	1.5-	2000 01 05	704	0.3+	0.5+
1993 01 28	010	0.1+	1.1-	1998 12 14	704	0.6+	0.9-	2000 01 05	704	0.4+	0.4+
1993 01 28	010	0.1-	1.5-	1998 12 14	704	(2.3+	1.0-)	2000 01 06	120	1.0+	0.3+
1993 02 18	511	0.2-	1.0+	1998 12 14	704	0.7+	0.6+	2000 01 06	120	0.1+	0.1+
1993 02 19	511	2.1-	0.5+	1998 12 17	704	0.2+	0.1-	2000 01 06	704	0.4+	0.1-
1993 02 19	511	1.1-	1.6-	1998 12 17	704	0.4-	1.2-	2000 01 06	704	0.6+	0.2+
1993 02 19	511	(10.6-	0.6-)	1998 12 17	704	0.5-	1.0-	2000 01 06	704	0.2+	0.2+
1993 02 20	010	0.5-	1.7-	1998 12 17	704	0.7-	0.4-	2000 01 06	704	0.4-	0.2+
1993 02 20	010	1.2-	1.5-	1998 12 17	704	0.2-	0.4+	2000 01 07	704	0.4+	0.7+
1993 02 20	010	0.4+	1.8-	1999 11 05	703	(0.3+	3.1+)	2000 01 07	704	0.1+	0.0
1993 02 22	010	0.6+	1.7-	1999 11 05	703	0.8+	0.1+	2000 01 07	704	0.0	0.4+
1993 02 23	010	(1.6+	2.6-)	1999 11 05	703	0.4-	1.2+	2000 01 07	704	0.3+	0.9+
1994 04 11	399	0.9-	1.2-	1999 11 05	703	(1.1+	2.3+)	2000 01 07	704	0.1+	0.6+

(13097)* 1993 BU₇ = 1997 EJ₄₉

Discovered 1993 Jan. 23 by E. W. Elst at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 30274)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	90.43239		(2000.0)	P	Q
<i>n</i>	0.27576243	ω	179.64774	+0.82976829	-0.55753064
<i>a</i>	2.3376491	Ω	214.27695	+0.51194385	+0.77845628
<i>e</i>	0.0152379	<i>i</i>	2.58295	+0.22225680	+0.28838414
<i>P</i>	3.57	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1993 01 23	809	1.9-	0.0	1997 05 08	691	0.4-	0.1+	1998 09 18	704	0.2-	0.1+
1993 01 23	809	0.5+	0.4-	1997 05 08	691	0.4-	0.1-	1998 09 18	704	0.0	0.9+
1993 01 23	809	0.6+	1.3-	1998 07 26	699	0.6-	1.0+	1998 09 18	704	0.4-	0.1+
1993 01 28	809	0.1+	1.0-	1998 07 26	699	0.5+	0.2-	1998 09 18	704	1.5+	0.8-
1993 01 28	809	0.6-	0.1-	1998 07 26	699	0.2+	0.3+	1998 09 18	704	(1.5-	2.3+)
1993 01 28	809	0.8+	0.5-	1998 08 17	704	0.5-	0.4-	1999 12 06	704	1.2+	0.5+
1993 02 17	809	0.3+	1.4+	1998 08 17	704	(2.5-	1.4+)	1999 12 06	704	0.1+	0.2-
1993 02 17	809	0.2-	1.5+	1998 08 17	704	0.9-	0.6-	1999 12 06	704	0.8-	0.0
1993 02 17	809	0.4+	0.4+	1998 08 17	704	1.0-	0.5-	2000 01 05	704	0.7+	0.8+
1997 03 11	809	0.3+	0.1+	1998 08 17	704	0.2-	1.0-	2000 01 05	704	0.4-	0.5+
1997 03 11	809	1.1+	1.1+	1998 09 11	910	0.5+	1.1+	2000 01 05	704	0.2+	0.3+
1997 03 11	809	1.2-	0.7+	1998 09 11	910	0.6+	1.1+	2000 01 05	704	0.5-	0.1+
1997 03 12	809	(1.0+	3.9+)	1998 09 11	910	0.5+	1.0+	2000 01 05	704	0.3+	0.1-
1997 03 12	809	(2.2+	3.4+)	1998 09 14	704	0.1+	0.3-	2000 01 06	704	0.0	0.2-
1997 03 12	809	(2.4+	2.9+)	1998 09 14	704	0.3-	1.9+	2000 01 06	704	0.6-	0.5-
1997 03 31	704	0.9+	0.3-	1998 09 14	704	1.2-	0.2-	2000 01 06	704	0.1+	0.4+
1997 03 31	704	0.6+	0.4+	1998 09 14	704	0.6+	0.4-				
1997 05 08	691	0.3-	0.1-	1998 09 14	704	0.1+	0.1-				

(13098)* 1993 FM₆ = 1998 RD₇₆

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 32930)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	166.59376		(2000.0)	P			Q				
<i>n</i>	0.26349671	ω	235.72966	+0.85542852		+0.51612726					
<i>a</i>	2.4096423	Ω	93.16250	-0.45987823		+0.79517931					
<i>e</i>	0.0883820	<i>i</i>	2.47204	-0.23823110		+0.31828056					
<i>P</i>	3.74	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1991 12 08	691	0.2+	0.7-	1998 09 27	704	0.2+	0.6+	1998 10 14	704	1.0+	1.6-
1991 12 08	691	0.2+	0.7-	1998 09 27	704	0.3+	0.2-	1998 10 14	704	0.4-	1.4-
1993 03 17	809	0.0	0.8+	1998 09 29	704	1.5+	1.3+	1998 10 14	704	(2.4+	0.4+)
1993 03 18	809	0.3+	0.4+	1998 09 29	704	0.0	0.8+	1998 10 14	704	0.7-	1.0-
1993 03 23	809	0.3+	0.6+	1998 09 29	704	0.3+	0.1+	1999 11 16	704	0.2-	0.0
1993 04 16	413	0.1+	0.2+	1998 09 29	704	0.2-	0.3+	1999 11 16	704	0.9-	0.6+
1998 09 14	704	0.3+	0.1-	1998 09 29	704	0.5-	0.7+	1999 11 16	704	0.2+	1.0-
1998 09 14	704	0.7-	0.1-	1998 09 29	704	1.4-	0.2+	1999 11 16	704	0.5+	0.9+
1998 09 14	704	0.4+	0.5-	1998 09 29	704	1.1-	1.9+	1999 11 16	704	0.1+	0.3+
1998 09 18	704	0.5+	0.3-	1998 09 29	704	0.8-	0.7+	1999 12 01	711	0.3-	0.3+
1998 09 18	704	1.6+	0.1+	1998 09 29	704	0.1+	0.9-	1999 12 01	711	0.3+	1.9+
1998 09 18	704	0.6-	0.2+	1998 09 29	704	0.7-	0.4-	1999 12 01	711	0.1+	0.3+
1998 09 18	704	0.9+	0.4+	1998 09 29	704	1.1+	0.9+	1999 12 01	711	0.3-	1.2+
1998 09 18	704	0.1+	0.0	1998 09 29	704	0.7+	1.1+	2000 01 04	704	0.2+	0.5-
1998 09 26	704	0.5-	0.4+	1998 09 29	704	1.5+	0.3+	2000 01 04	704	0.6+	0.0
1998 09 26	704	0.1-	0.9-	1998 09 29	704	0.3-	0.5+	2000 01 04	704	0.3+	0.1-
1998 09 26	704	0.2-	0.5+	1998 09 29	704	0.6+	0.2+	2000 01 06	704	0.0	0.8-
1998 09 26	704	0.1+	0.3-	1998 09 29	704	0.2+	0.6-	2000 01 06	704	0.1-	0.9-
1998 09 26	704	0.0	0.4-	1998 09 29	704	0.2-	0.4+	2000 01 06	704	0.3-	0.1+
1998 09 27	704	0.2-	0.9-	1998 09 29	704	(3.0-	0.4+)	2000 01 06	704	0.1+	0.0
1998 09 27	704	0.8-	0.1-	1998 09 29	704	1.2-	0.8+				
1998 09 27	704	0.4-	0.2-	1998 09 29	704	1.7-	0.1-				

(13099)* 1993 FO₇ = 1982 HJ₃

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Gnädig (*MPC* 34844)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 26.35713 (2000.0)			Williams		<i>P</i> <i>Q</i>	
<i>n</i>	0.26572201	ω	11.55160	+0.01538190	−0.99816301	
<i>a</i>	2.3961704	Ω	77.58724	+0.91252774	−0.00994318	
<i>e</i>	0.1709979	<i>i</i>	3.43998	+0.40872548	+0.05976402	
<i>P</i>	3.71	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1956 04 09	675	1.1−	1.0+	1999 10 12	704	0.4−	0.7−	1999 12 03	699	0.0	0.1+
1956 04 09	675	0.8+	0.9−	1999 10 12	704	0.1+	0.6−	1999 12 03	699	0.2−	0.3+
1982 04 27	033	0.0	1.5−	1999 10 12	704	0.1+	0.3−	1999 12 03	699	0.3−	0.7+
1982 04 27	033	0.5−	1.8−	1999 10 12	704	0.1−	0.2−	1999 12 07	704	1.9+	0.9+
1993 03 17	809	1.9+	0.3−	1999 10 12	704	0.1+	0.1−	1999 12 07	704	(2.3+ 2.0+)	
1993 03 18	809	0.3−	0.9+	1999 10 22	704	0.5+	0.3−	1999 12 07	704	1.2+	0.7+
1993 03 20	691	0.2+	0.3+	1999 10 22	704	0.2+	0.7−	1999 12 07	704	0.7−	0.8+
1993 03 20	691	0.2+	0.3+	1999 10 22	704	0.3+	0.9−	2000 01 03	704	0.1−	0.1+
1993 03 20	691	0.1+	0.3+	1999 10 22	704	0.2+	0.2+	2000 01 03	704	0.4−	0.6+
1993 03 23	809	0.1−	0.5+	1999 10 22	704	0.4+	0.7−	2000 01 03	704	0.3−	0.6+
1993 04 14	691	0.2−	0.2+	1999 11 12	703	0.4−	0.0	2000 01 03	704	0.0	1.0+
1993 04 14	691	0.3−	0.2+	1999 11 12	703	0.1+	0.3+	2000 01 03	704	0.2−	0.9+
1993 04 14	691	0.3−	0.5+	1999 11 12	703	0.1−	0.3+	2000 01 04	704	0.5+	0.3+
1993 04 16	413	0.2−	0.9+	1999 11 12	703	0.2+	0.3+	2000 01 04	704	0.4−	0.3−
1998 08 17	704	0.4+	0.8+	1999 11 16	704	0.3−	0.5−	2000 01 04	704	0.3−	0.2−
1998 08 17	704	1.2−	0.9+	1999 11 16	704	0.3−	0.4−	2000 01 04	704	0.0	0.2−
1998 08 17	704	0.2−	1.0+	1999 11 16	704	0.2−	0.1−	2000 01 04	704	0.3−	0.4−
1998 08 17	704	0.5−	0.6+	1999 11 16	704	0.0	0.9−				
1998 08 17	704	0.4+	1.1+	1999 11 16	704	0.3+	0.3−				

(13100)* 1993 FB₁₀

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 106.14636 (2000.0)			Williams		<i>P</i> <i>Q</i>	
<i>n</i>	0.25784276	ω	250.50383	+0.98461415	−0.16643690	
<i>a</i>	2.4447404	Ω	119.04543	+0.17425921	+0.91257657	
<i>e</i>	0.1916021	<i>i</i>	3.49094	+0.01298859	+0.37350070	
<i>P</i>	3.82	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1993 03 17	809	0.6−	0.3+	1998 08 17	704	0.4+	0.1−	2000 01 03	120	0.3−	0.1+
1993 03 18	809	0.5−	0.6−	1998 08 17	704	0.6−	0.5+	2000 01 04	704	0.5−	0.2+
1993 03 23	809	1.0+	0.8−	1998 08 19	566	0.2+	0.3+	2000 01 04	704	0.1−	0.0
1993 04 16	413	1.8+	1.1+	1998 08 19	566	0.2+	0.2+	2000 01 04	704	1.2−	0.3−
1994 07 08	809	0.9−	0.3−	1998 08 19	566	0.3+	0.0	2000 01 04	704	0.5−	0.0
1994 07 08	809	0.3+	0.1−	1998 08 23	704	1.3+	0.4−	2000 01 04	704	0.3+	0.5−
1994 07 08	809	1.0+	0.0	1998 08 23	704	0.1−	1.7+	2000 01 05	691	0.3+	0.2−
1994 07 09	809	0.5−	0.7−	1998 08 23	704	0.1+	0.3+	2000 01 05	691	0.3+	0.2−
1994 07 09	809	0.2−	0.2−	1998 08 23	704	1.2−	0.3+	2000 01 05	691	0.3+	0.1−
1994 07 09	809	0.1+	0.1−	1998 08 23	704	1.1−	1.0−	2000 01 06	704	0.1−	0.5+
1995 12 21	411	0.1−	0.2−	1999 11 16	704	0.3−	0.8+	2000 01 06	704	0.5+	0.1+
1995 12 21	411	0.2−	0.4−	1999 11 16	704	0.3+	0.3+	2000 01 06	704	0.1−	0.0
1995 12 22	411	0.3+	0.3−	1999 11 16	704	0.0	0.2−	2000 01 06	704	0.2+	0.3+
1995 12 22	411	0.8−	0.2+	1999 11 16	704	0.4−	0.2+	2000 01 06	704	0.4+	0.0
1997 04 05	566	0.1+	0.6+	1999 11 16	704	0.6+	0.0	2000 01 07	704	0.4−	0.7−
1997 04 05	566	0.9−	0.4+	1999 11 17	704	0.1+	0.7+	2000 01 07	704	0.2+	0.1−
1997 04 05	566	0.3−	0.2+	1999 11 17	704	1.0+	0.2−	2000 01 07	704	0.1+	0.2+
1998 08 17	704	0.0	0.1+	1999 11 17	704	0.8+	0.0	2000 01 07	704	0.6+	0.2+
1998 08 17	704	0.1+	0.4+	1999 11 17	704	0.1+	0.1+	2000 01 07	704	0.3+	0.7+
1998 08 17	704	0.2+	0.2+	2000 01 03	120	0.9−	0.1+				

(13101)* 1993 FS₁₀ = 1994 RO₂

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Gnädig (*MPC* 29918)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 157.82996 (2000.0)			Williams		<i>P</i> <i>Q</i>	
<i>n</i>	0.25552616	ω	147.31831	+0.77288961	+0.63438439	
<i>a</i>	2.4594942	Ω	173.25454	−0.60488243	+0.74328588	
<i>e</i>	0.0951333	<i>i</i>	6.88212	−0.19172610	+0.21232651	
<i>P</i>	3.86	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1993 03 19	809	0.4−	0.1−	1998 08 23	704	0.5+	0.9−	1998 09 27	704	0.2+	0.2−
1993 03 20	809	0.4−	0.1−	1998 08 23	704	1.3−	0.1+	1998 09 27	704	0.5+	0.0
1993 03 23	809	0.5+	0.8+	1998 08 23	704	0.9−	1.0−	1998 10 12	699	0.6−	0.3−
1993 03 24	691	0.2−	0.5−	1998 08 23	704	(0.9+ 2.4−)		1998 10 12	699	0.4−	0.8−
1993 03 24	691	0.3−	1.1−	1998 08 23	704	0.6−	0.5−	1998 10 12	699	0.7+	0.5−
1993 03 24	691	0.2−	0.6−	1998 09 18	704	0.4+	0.3−	1999 12 14	704	1.2−	1.6+
1993 04 16	413	0.5+	0.8−	1998 09 18	704	0.6+	0.4−	1999 12 14	704	0.3−	0.4+
1994 09 02	691	0.2−	0.3+	1998 09 18	704	1.2+	0.9−	1999 12 14	704	1.0−	0.5+
1994 09 02	691	0.2−	0.2+	1998 09 18	704	0.8+	0.1+	1999 12 14	704	0.2−	0.3+
1994 09 02	691	0.2−	0.1+	1998 09 18	704	1.3−	0.2+	2000 01 07	704	0.2−	0.3−
1994 09 08	691	0.1−	0.5+	1998 09 25	704	0.6+	0.1+	2000 01 07	704	0.3−	0.5−
1994 09 08	691	0.1+	0.0	1998 09 25	704	0.2−	0.5−	2000 01 07	704	0.2−	0.1−
1994 09 08	691	0.1+	0.3+	1998 09 25	704	0.4+	0.5−	2000 01 07	704	0.2+	0.2−
1998 08 17	704	0.1+	0.5−	1998 09 25	704	0.3+	0.6+	2000 01 07	704	2.0+	1.0−
1998 08 17	704	0.7−	0.5−	1998 09 25	704	0.5−	0.2−	2000 01 11	704	0.4−	0.4−
1998 08 17	704	0.5+	0.1+	1998 09 27	704	0.0	0.1−	2000 01 11	704	1.1+	0.0
1998 08 17	704	0.7+	1.0+	1998 09 27	704	0.7+	0.2+	2000 01 11	704	0.0	0.1−
1998 08 17	704	0.4−	1.2+	1998 09 27	704	0.1−	0.8+	2000 01 11	704	0.3+	0.0

(13102)* 1993 FU₁₁ = 1990 QC₁₁

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 23523)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 146.11419 (2000.0)			Williams		<i>P</i> <i>Q</i>	
<i>n</i>	0.23308445	ω	154.94598	+0.15357208	+0.98644419	
<i>a</i>	2.6149327	Ω	123.83854	−0.91792130	+0.16407955	
<i>e</i>	0.0788315	<i>i</i>	3.99187	−0.36583617	+0.00240044	
<i>P</i>	4.23	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1990 08 16	809	1.8−	1.2+	1999 10 20	704	0.6+	0.5+	1999 11 17	704	0.3+	0.3+
1990 08 16	809	1.6−	1.3+	1999 10 20	704	0.5+	1.2+	1999 11 28	120	0.6+	1.1−
1990 08 16	809	(2.7− 0.1−)		1999 10 20	704	1.1+	0.7+	1999 11 28	120	1.2+	0.0
1990 08 20	809	1.4+	1.1+	1999 11 05	704	0.4+	0.0	1999 11 28	120	1.2−	0.2+
1990 08 20	809	0.7+	0.0	1999 11 05	704	0.1−	0.0	1999 11 30	120	1.0−	0.3+
1990 08 20	809	0.0	0.5−	1999 11 05	704	0.3+	0.2+	1999 11 30	120	0.6−	0.6−
1993 03 17	809	0.7+	0.4+	1999 11 05	704	0.5−	0.1+	1999 11 30	120	(3.0− 0.4+)	
1993 03 18	809	0.5+	0.4+	1999 11 05	704	1.0+	0.4+	1999 12 14	704	0.0	0.4−
1993 03 23	809	0.1+	1.3+	1999 11 13	120	0.1+	0.2−	1999 12 14	704	0.1+	1.6−
1993 04 16	413	0.2−	0.6+	1999 11 13	120	0.1−	0.2+	1999 12 14	704	0.1+	0.5−
1998 06 24	704	0.8+	0.1+	1999 11 17	704	0.5−	0.0	1999 12 14	704	1.8−	0.6−
1998 06 24	704	0.4−	0.5−	1999 11 17	704	0.1−	0.4+	2000 01 05	704	0.9−	0.9−
1998 06 24	704	0.6−	0.6−	1999 11 17	704	0.2−	0.0	2000 01 05	704	0.5+	0.2+
1998 06 24	704	0.3+	0.6−	1999 11 17	704	0.5+	0.0	2000 01 05	704	0.6−	1.0+

(13103)* 1993 FR₁₂ = 1995 UO₁₆

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 26173)

2000 JAN. 24

M.P.C. 37515

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	314.05316		(2000.0)		P		Q				
<i>n</i>	0.25503314	ω	49.96788		-0.85921161		-0.50788004				
<i>a</i>	2.4626629	Ω	99.42659		+0.44827290		-0.80549666				
<i>e</i>	0.1302708	<i>i</i>	3.58889		+0.24659038		-0.30534080				
<i>P</i>	3.86	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1993 03 17	809	0.9-	0.4+	1999 11 04	704	0.6+	0.7-	1999 12 07	704	0.1-	0.8-
1993 03 18	809	0.1+	0.1-	1999 11 04	704	0.2-	0.9-	1999 12 07	704	0.1-	0.4-
1993 03 23	809	0.7+	0.3-	1999 11 15	704	0.7-	1.0-	1999 12 07	704	0.1-	0.5-
1993 04 16	413	0.2-	0.8-	1999 11 15	704	0.0	0.3-	1999 12 07	704	0.2-	0.5-
1995 10 17	691	0.1-	0.1-	1999 11 15	704	0.3-	0.1-	1999 12 08	704	0.2-	0.3-
1995 10 17	691	0.0	0.6+	1999 11 15	704	0.1+	0.1-	1999 12 08	704	0.2-	0.2-
1995 10 17	691	0.1-	0.2+	1999 11 15	704	0.3+	0.3-	1999 12 08	704	0.1+	0.5-
1995 10 23	691	0.2+	0.3+	1999 11 17	704	0.6+	0.1-	1999 12 08	704	0.1+	0.2-
1995 10 23	691	0.2-	0.2-	1999 11 17	704	1.1-	0.9-	1999 12 08	704	0.2+	0.1-
1995 10 28	691	0.1-	0.5+	1999 11 17	704	0.1+	0.5+	1999 12 17	691	0.1-	0.3+
1995 10 28	691	0.3-	0.2+	1999 11 17	704	0.2-	0.1+	1999 12 17	691	0.0	0.2+
1995 10 28	691	0.1+	0.2+	1999 11 17	704	0.1-	0.5+	1999 12 17	691	0.0	0.2+
1998 08 17	704	0.6-	0.8-	1999 12 03	699	1.4+	0.5+	2000 01 05	704	0.5+	0.3+
1998 08 17	704	0.3-	0.5+	1999 12 03	699	0.7+	0.8+	2000 01 05	704	0.4-	0.0
1998 08 17	704	1.1+	0.5-	1999 12 03	699	0.9+	0.0	2000 01 05	704	0.9+	0.3+
1998 08 17	704	0.7+	0.2+	1999 12 04	703	0.9-	0.6+	2000 01 05	704	0.1-	0.2+
1998 08 17	704	0.6-	0.2-	1999 12 04	703	0.4+	0.4+	2000 01 05	704	0.3-	0.6+
1999 11 04	704	0.3+	0.1-	1999 12 04	703	0.2-	0.4+	2000 01 11	691	0.2-	0.0
1999 11 04	704	0.0	0.3-	1999 12 04	703	0.9-	0.1+	2000 01 11	691	0.1-	0.0
1999 11 04	704	0.1-	0.2-	1999 12 07	704	0.0	0.0	2000 01 11	691	0.1-	0.0

(13104)* 1993 FV₂₄ = 1997 GV₆

Discovered 1993 Mar. 21 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 29617)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	238.28608		(2000.0)		P		Q				
<i>n</i>	0.25750689	ω	350.00160		-0.18577161		+0.98227617				
<i>a</i>	2.4468657	Ω	269.28912		-0.89977951		-0.18026222				
<i>e</i>	0.1741856	<i>i</i>	1.42971		-0.39482369		-0.05137173				
<i>P</i>	3.83	<i>H</i>	15.4		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1993 03 21	809	0.4+	0.2+	1997 05 01	704	0.1-	0.3-	1999 12 02	691	0.6+	0.1+
1993 03 22	809	1.0+	0.3+	1997 05 05	704	0.1-	0.4-	1999 12 16	691	0.0	0.1-
1993 03 26	809	0.7-	0.8+	1997 05 05	704	1.6+	0.0	1999 12 16	691	0.0	0.1-
1993 04 18	413	(1.0+ 2.9+)		1997 05 05	704	0.3-	0.2+	1999 12 16	691	0.2+	0.1-
1994 10 13	691	0.6-	1.3+	1997 05 05	704	0.2+	0.2+	1999 12 17	691	0.0	0.2-
1994 10 13	691	0.2-	0.0	1998 09 26	704	0.2+	0.1-	1999 12 17	691	0.1-	0.3-
1994 10 13	691	0.2-	0.6+	1998 09 26	704	1.8+	1.1-	1999 12 17	691	0.0	0.2-
1997 04 02	704	0.5+	0.3+	1998 09 26	704	0.4+	1.6+	1999 12 18	691	0.2+	0.3+
1997 04 02	704	0.9-	0.2+	1998 09 26	704	(4.8- 0.8+)		1999 12 18	691	0.1+	0.3+
1997 04 06	704	0.0	0.0	1998 09 26	691	0.1-	0.2-	1999 12 18	691	0.1-	0.1+
1997 04 06	704	0.1-	0.0	1998 09 26	691	0.1-	0.1-	1999 12 18	691	0.0	0.0
1997 04 08	704	0.9-	0.5+	1998 09 26	691	0.2-	0.0	1999 12 18	691	0.1-	0.2+
1997 04 08	704	0.4-	1.3-	1998 10 15	704	0.3-	0.8-	1999 12 18	691	0.1+	0.1+
1997 04 30	704	0.1+	0.2-	1998 10 15	704	(1.4+ 2.6+)		2000 01 05	704	0.1-	1.4+
1997 04 30	704	0.0	0.3+	1998 10 15	704	(1.5+ 3.1+)		2000 01 05	704	0.0	1.2-
1997 04 30	704	0.2+	0.4+	1998 10 15	704	0.6-	0.6+	2000 01 05	704	0.4+	1.2-
1997 04 30	704	0.1-	0.6+	1998 10 28	704	(1.1- 2.3+)		2000 01 07	691	0.7-	0.1-
1997 04 30	704	0.0	0.5+	1998 10 28	704	1.8-	1.2-	2000 01 07	691	0.2-	0.1+
1997 05 01	704	0.0	0.3-	1998 10 28	704	0.2-	0.2-	2000 01 07	691	0.4-	0.2+
1997 05 01	704	0.3+	0.1-	1998 10 28	704	1.5+	0.8+	2000 01 09	691	0.4-	0.0
1997 05 01	704	0.0	0.5-	1999 12 02	691	0.4+	1.1+	2000 01 09	691	0.0	0.1-
1997 05 01	704	0.3-	0.2-	1999 12 02	691	0.4+	0.1+	2000 01 09	691	0.0	0.3-

(13105)* 1993 FO₂₇ = 1995 WA₃₄

Discovered 1993 Mar. 21 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 26401)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	9.19787		(2000.0)		P		Q				
n	0.26603781	ω	232.89538		-0.41990914		-0.90652305				
a	2.3942737	Ω	241.98747		+0.84752612		-0.37453562				
e	0.1386822	i	2.82427		+0.32461639		-0.19477944				
P	3.70	H	15.5		G	0.15	U	1			
Residuals in seconds of arc											
1993 03 21	809	1.8-	1.3+	1995 12 24	566	1.2+	0.7-	1999 12 06	703	1.1+	1.3-
1993 03 22	809	0.8+	0.5-	1996 01 12	691	0.2-	0.0	1999 12 06	703	0.6+	1.3+
1993 03 26	809	0.6+	0.0	1996 01 12	691	0.2-	0.1-	1999 12 18	699	0.6+	0.3+
1993 04 17	413	0.5+	0.9-	1996 01 12	691	0.3-	0.0	1999 12 18	699	0.1+	0.7+
1995 11 20	691	0.3-	0.1-	1996 01 24	691	0.2-	0.0	1999 12 18	699	1.0+	0.1+
1995 11 20	691	0.0	0.2-	1996 01 24	691	0.4-	0.4+	2000 01 05	704	(0.2-	2.4-)
1995 11 20	691	0.0	0.0	1996 01 24	691	0.4-	0.1-	2000 01 05	704	0.9-	0.6-
1995 11 27	691	0.1-	0.4-	1998 08 17	704	0.8+	0.8+	2000 01 05	704	0.4-	0.5-
1995 11 27	691	0.6-	0.2-	1998 08 17	704	0.9-	0.8+	2000 01 05	704	0.2-	0.3-
1995 11 27	691	0.1+	0.5+	1998 08 17	704	0.4+	0.1+	2000 01 07	704	0.3-	0.4-
1995 12 23	691	0.1-	0.5+	1998 08 17	704	0.5-	1.2-	2000 01 07	704	0.8-	0.7+
1995 12 23	691	0.3-	0.1+	1999 12 06	120	0.6-	0.8+	2000 01 07	704	0.3-	0.1-
1995 12 23	691	0.4-	0.2+	1999 12 06	120	0.4+	0.6+	2000 01 07	704	0.1-	0.4-
1995 12 24	566	0.9+	0.7-	1999 12 06	703	0.9+	0.5-				
1995 12 24	566	1.4+	0.3-	1999 12 06	703	0.4-	0.8+				

(13106)* 1993 FV₄₈ = 1989 CZ₆ = 1998 SC₁₄₇

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. S. Nakano (*MPC* 33234)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

M	262.43416		(2000.0)		P		Q				
n	0.27006306	ω	71.47434		-0.27899561		+0.96028030				
a	2.3704234	Ω	182.34151		-0.91952541		-0.26859402				
e	0.0858511	i	6.77029		-0.27682932		-0.07562408				
P	3.65	H	13.8	G	0.15	U	2				
Residuals in seconds of arc											
1989 02 04	809	0.6-	0.6-	1998 10 28	704	0.2-	0.8+	1999 11 06	703	0.1-	0.1+
1989 02 04	809	0.2-	0.0	1998 10 28	704	0.1+	0.2-	1999 11 06	703	0.8-	0.5-
1989 02 04	809	0.8+	0.1+	1998 10 29	704	0.4-	0.0	1999 11 06	703	0.6-	1.2-
1993 03 19	809	0.2-	0.2-	1998 10 29	704	0.8-	0.2-	1999 11 06	703	1.1+	0.8+
1993 03 20	809	0.2-	0.0	1998 10 29	704	1.8-	0.3-	2000 01 05	704	0.6+	0.1-
1993 03 24	809	0.2-	0.7+	1998 10 29	704	0.5-	0.3+	2000 01 05	704	0.2+	1.2+
1993 04 16	413	0.1+	1.7-	1998 10 29	704	1.6-	0.3-	2000 01 05	704	1.2+	0.8-
1998 09 20	809	1.0+	1.1-	1998 11 10	704	(0.3-	2.6+)	2000 01 05	704	0.7+	0.7+
1998 09 20	809	1.1+	1.4-	1998 11 10	704	0.4-	0.2+	2000 01 05	704	0.3-	0.3-
1998 09 20	809	0.3+	1.6-	1998 11 10	704	0.5-	1.5+	2000 01 08	704	0.3+	0.0
1998 09 21	809	0.4+	1.6-	1998 11 11	704	0.9+	1.8+	2000 01 08	704	0.2-	0.0
1998 09 21	809	(0.5+	2.3-)	1998 11 11	704	(0.7+	3.5+)	2000 01 08	704	0.2-	0.6-
1998 09 21	809	0.0	1.1-	1998 11 11	704	1.4+	1.9+	2000 01 08	704	0.8-	0.4+
1998 10 28	704	0.2+	0.3+	1998 11 11	704	0.5+	0.3+	2000 01 08	704	1.2-	0.6-
1998 10 28	704	0.9+	0.8-	1998 11 11	704	(2.0+	2.1+)				

(13107)* 1993 FE₅₉ = 1938 UA₁ = 1946 UA = 1950 TV₂ = 1997 EF₄

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPC* 29301)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	97.84534		(2000.0)	P	Q
<i>n</i>	0.24439242	ω	351.13947	+0.99113823	+0.13277580
<i>a</i>	2.5336361	Ω	1.25109	-0.10807660	+0.82334062
<i>e</i>	0.3105029	<i>i</i>	10.42321	-0.07722996	+0.55179780
<i>P</i>	4.03	<i>H</i>	13.7	<i>G</i>	0.15

Residuals in seconds of arc

1938 10 22	062	0.6+	0.0	1997 03 09	691	0.2-	0.4-	1999 12 15	704	0.7-	0.8-
1946 10 19	062	0.1+	0.9-	1997 03 09	691	0.4-	0.2-	1999 12 15	704	0.2+	0.1-
1946 10 19	062	0.5-	0.6-	1997 03 09	691	0.2-	0.3-	2000 01 02	704	0.3-	0.0
1950 10 13	760	1.6+	1.1-	1997 03 14	691	0.2+	0.4-	2000 01 02	704	0.0	0.2+
1993 03 19	809	0.3-	0.3+	1997 03 14	691	0.2+	0.5-	2000 01 02	704	0.3-	0.4-
1993 03 20	809	0.5+	1.2+	1997 03 14	691	0.1+	0.5-	2000 01 02	704	0.4-	0.5-
1993 04 17	413	1.9-	1.2+	1997 04 07	691	0.3-	0.2-	2000 01 02	704	0.5-	0.9-
1993 04 18	691	0.2-	0.1-	1997 04 07	691	0.4-	0.2-	2000 01 05	699	0.5+	1.2+
1993 04 18	691	0.3-	1.0-	1997 04 07	691	0.4+	0.5-	2000 01 05	699	0.4+	0.6+
1993 04 18	691	0.2-	0.1-	1999 11 17	703	0.3+	1.0+	2000 01 05	699	0.4+	1.0+
1997 03 02	691	0.1+	0.4-	1999 11 17	703	0.5+	0.1-	2000 01 05	557	0.1+	0.0
1997 03 02	691	0.5+	0.3-	1999 11 17	703	0.7+	0.4+	2000 01 06	557	0.2+	0.5+
1997 03 02	691	0.3+	0.5-	1999 11 17	703	0.0	0.3+	2000 01 06	557	0.2-	0.3+
1997 03 07	691	0.1-	0.1-	1999 12 15	704	0.1-	0.4-	2000 01 06	557	0.2-	0.3+
1997 03 07	691	0.4-	0.4-	1999 12 15	704	0.4+	0.7-				
1997 03 07	691	0.2-	0.7-	1999 12 15	704	0.2-	0.4-				

(13108)* 1993 FD₈₂ = 1994 PS₁₈ = 1998 QV₂₃

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Doppler (*MPC* 34501)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	199.86094		(2000.0)	P	Q
<i>n</i>	0.24275065	ω	91.60797	-0.31311237	+0.94942971
<i>a</i>	2.5450468	Ω	160.09690	-0.89631829	-0.28730066
<i>e</i>	0.1322401	<i>i</i>	3.92809	-0.31396523	-0.12665525
<i>P</i>	4.06	<i>H</i>	14.3	<i>G</i>	0.15

Residuals in seconds of arc

1993 03 19	809	0.6-	0.4+	1994 08 13	809	0.8+	1.3+	1999 12 06	704	0.6-	0.2-
1993 03 20	809	0.1-	0.3-	1994 09 06	809	0.8-	0.3-	1999 12 06	704	0.9-	0.7+
1993 03 23	809	(1.2+	2.4+)	1994 09 06	809	1.1-	0.5+	1999 12 06	704	1.0-	0.3-
1993 03 24	691	0.2+	0.5+	1994 09 06	809	0.9-	0.7+	1999 12 06	704	1.9-	0.7-
1993 03 24	691	0.4+	0.2+	1998 08 17	704	0.1+	0.0	1999 12 06	704	0.7-	0.9+
1993 03 24	691	0.6+	0.4+	1998 08 17	704	1.4+	1.2-	2000 01 05	704	0.5-	0.3+
1993 04 16	413	0.3+	0.8+	1998 08 17	704	(3.6+	0.9-)	2000 01 05	704	1.7+	0.2+
1994 08 12	809	(2.1+	2.6+)	1998 08 17	704	1.3+	1.3-	2000 01 05	704	1.1+	0.2-
1994 08 12	809	0.4-	1.7+	1998 08 23	704	(0.8+	3.1-)	2000 01 06	704	1.9+	0.1-
1994 08 12	809	(0.7+	2.3+)	1998 08 23	704	0.9-	0.2-	2000 01 06	704	0.1+	1.1+
1994 08 13	809	(1.9+	2.2+)	1998 08 23	704	0.1+	0.5+	2000 01 06	704	0.6+	0.2-
1994 08 13	809	0.9+	0.7+	1998 08 23	704	1.1-	0.5-	2000 01 06	704	0.7+	0.4-

(13109)* 1993 JB₁ = 1970 EE₂ = 1989 GV₂ = 1991 VV₁₃

Discovered 1993 May 14 by E. W. Elst at the European Southern Observatory.

Id. K. Kinoshita (*MPC* 23863)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	5.16880		(2000.0)	P	Q
<i>n</i>	0.26264620	ω	274.56578	-0.84078826	-0.53456912
<i>a</i>	2.4148415	Ω	233.14425	+0.52935363	-0.77873120
<i>e</i>	0.1780899	<i>i</i>	6.13436	+0.11340119	-0.32834976
<i>P</i>	3.75	<i>H</i>	14.5	<i>G</i>	0.15

Residuals in seconds of arc

1970 03 04	805	0.2+	0.4+	1998 09 18	704	1.3+	0.8+	1998 10 15	704	0.1-	1.1+
1970 03 04	805	0.4+	0.8+	1998 09 18	699	0.1-	0.2-	1998 10 15	704	1.3-	0.7-

1970 03 04	805	0.9+	1.5+	1998 09 18	704	1.6-	1.4+	1999 12 05	703	1.4+	0.9+
1989 04 03	809	(2.2-	3.9+)	1998 09 18	704	0.2+	1.9+	1999 12 05	703	0.4+	0.9+
1989 04 03	809	(2.0-	3.4+)	1998 09 18	699	0.8-	0.4+	1999 12 05	703	0.5+	0.5+
1989 04 03	809	(2.8-	3.8+)	1998 09 18	704	(0.5+	2.3+)	1999 12 05	703	0.4+	1.4+
1989 04 05	809	1.4-	1.5+	1998 09 18	699	0.2+	0.2+	1999 12 14	704	0.0	0.2-
1989 04 05	809	1.4-	2.1+	1998 09 26	704	0.4+	1.0+	1999 12 14	704	(0.8+	2.2-)
1989 04 05	809	1.2-	1.2+	1998 09 26	704	0.9-	0.6-	1999 12 14	704	0.2-	1.2-
1991 11 13	399	0.6-	0.3-	1998 09 26	704	0.9+	0.9-	1999 12 14	704	0.3-	0.1+
1991 11 13	399	0.2-	0.2+	1998 09 26	704	0.2+	0.0	1999 12 14	704	0.3-	0.3-
1991 12 08	691	0.8+	0.8+	1998 09 26	704	0.0	1.2+	2000 01 06	699	0.5+	1.0+
1991 12 08	691	1.1+	0.2+	1998 09 27	704	0.8-	0.1+	2000 01 06	699	0.3+	1.0+
1991 12 08	691	0.8+	0.3+	1998 09 27	704	1.2-	0.4+	2000 01 06	699	0.2+	1.0+
1993 05 14	809	0.1-	0.4+	1998 09 27	704	0.3-	0.8-	2000 01 09	704	1.5-	1.7+
1993 05 14	809	0.3+	0.3+	1998 09 27	704	0.0	0.4+	2000 01 09	704	0.1+	1.2-
1993 05 14	809	0.5-	0.6+	1998 09 27	704	0.1+	0.5-	2000 01 09	704	0.9+	1.8-
1993 05 15	809	0.9+	0.9-	1998 10 14	704	0.8-	0.2-	2000 01 11	704	0.9-	0.5+
1993 05 15	809	0.3+	1.6-	1998 10 14	704	1.2-	0.1-	2000 01 11	704	1.0-	1.7-
1993 05 15	809	1.5+	1.1-	1998 10 14	704	0.2+	0.1-	2000 01 11	704	0.8-	1.3-
1993 05 23	809	1.5+	0.1+	1998 10 14	704	(2.3-	0.3-)	2000 01 11	704	1.1+	1.1-
1993 05 23	809	1.0+	0.6+	1998 10 15	704	1.3-	0.3-	2000 01 11	704	0.5-	1.6-
1993 05 23	809	0.7+	0.9+	1998 10 15	704	1.3+	0.8-				
1998 09 18	704	0.2+	0.3+	1998 10 15	704	0.7+	1.0-				

(13110)* 1993 LS₁ = 1982 XL

Discovered 1993 June 15 by R. H. McNaught at Siding Spring.

Id. T. Kobayashi (*MPC* 24109)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	160.27601		(2000.0)	P	Q
<i>n</i>	0.24249109	ω	24.33431	+0.81763419	+0.54368065
<i>a</i>	2.5468626	Ω	301.39692	-0.55789956	+0.66691568
<i>e</i>	0.1776211	<i>i</i>	12.82244	-0.14220551	+0.50954374
<i>P</i>	4.06	<i>H</i>	13.5	<i>G</i>	0.15

Residuals in seconds of arc

1982 12 12	381	0.5-	1.2+	1998 09 26	699	0.1+	0.1+	1999 01 08	704	1.7-	0.8-
1982 12 12	381	0.1-	0.4-	1998 09 26	699	0.5+	0.5+	1999 11 16	704	1.4-	0.1+
1982 12 14	381	0.9+	0.3+	1998 10 16	699	0.2+	0.2-	1999 11 16	704	0.3-	0.4+
1993 06 13	413	0.6-	0.3+	1998 10 16	699	0.1-	0.0	1999 11 16	704	1.0-	0.4-
1993 06 13	413	1.0-	1.7-	1998 10 16	699	0.1+	0.4-	1999 12 09	699	0.3-	0.3-
1993 06 14	413	0.2-	1.2+	1998 11 21	699	0.6-	0.2-	1999 12 09	699	0.2-	0.1+
1993 06 14	413	0.1+	0.4-	1998 11 21	699	0.2-	0.2-	1999 12 09	699	1.5+	1.2+
1993 06 15	413	0.7+	0.5+	1998 11 21	699	0.5-	0.0	1999 12 31	120	0.1+	0.4-
1993 06 15	413	0.3-	0.9-	1998 12 09	704	0.2-	0.4+	1999 12 31	120	0.9+	0.7-
1993 06 15	413	0.1-	0.4-	1998 12 09	704	0.6+	1.6-	1999 12 31	699	(0.4-	2.3-)
1993 06 18	413	0.1-	0.4-	1998 12 09	704	0.1+	0.2-	1999 12 31	699	0.3+	0.4-
1993 06 18	413	0.2-	1.2-	1998 12 09	704	1.3+	0.1-	1999 12 31	699	0.1-	0.5-
1994 12 28	691	0.1-	0.9-	1998 12 09	704	1.5+	0.7+	2000 01 01	120	(2.8-	0.9+)
1994 12 28	691	0.3-	0.8-	1999 01 08	704	1.2+	1.0-	2000 01 01	120	(4.3-	0.4-)
1994 12 28	691	0.2-	0.8-	1999 01 08	704	0.9-	0.8+				
1998 09 26	699	0.1+	0.3+	1999 01 08	704	(1.1+	2.2-)				

(13111)* 1993 OW₁ = 1992 BV

Discovered 1993 July 23 by C. S. Shoemaker at Palomar.

Id. G. V. Williams (*MPC* 22690)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	133.04260		(2000.0)	P	Q
<i>n</i>	0.36437784	ω	212.54332	+0.89593428	+0.25781320
<i>a</i>	1.9413391	Ω	128.06622	-0.24031657	+0.96618937
<i>e</i>	0.0964302	<i>i</i>	27.35044	-0.37356354	-0.00323274
<i>P</i>	2.70	<i>H</i>	14.3	<i>G</i>	0.15

Residuals in seconds of arc

1992 01 30	675	0.6+	1.9-	1995 05 22	658	0.5-	0.0	1999 12 16	704	0.5-	0.2-
1992 01 30	675	0.7-	1.0-	1995 05 22	658	0.4-	0.1-	1999 12 16	704	0.6-	0.2-
1992 02 01	675	1.0+	0.8-	1995 05 23	658	0.4-	0.1+	2000 01 05	846	0.5+	0.4+

1992 02 01	675	0.5+	1.5-	1995 05 23	658	0.3-	0.0	2000 01 05	846	1.8+	0.2-
1993 07 23	675	0.2-	0.6-	1998 04 21	699	0.0	0.3+	2000 01 08	846	2.0+	0.1+
1993 07 24	675	0.1-	0.2+	1998 04 21	699	0.2+	0.5+	2000 01 08	846	0.6+	0.5+
1993 07 24	675	0.0	0.2-	1998 04 21	699	0.4+	0.6+	2000 01 08	704	0.1-	0.2-
1993 07 25	675	(1.7-	3.4-)	1998 05 27	704	0.2+	0.2-	2000 01 08	704	0.2+	0.0
1993 07 25	675	(0.2+	2.6-)	1998 05 27	704	0.3-	0.6-	2000 01 08	704	0.4+	0.1+
1993 10 05	413	0.0	1.3-	1998 05 27	704	0.4+	1.4-	2000 01 08	704	0.0	0.5+
1993 10 05	413	0.1+	0.6+	1998 05 27	704	0.7+	1.2-	2000 01 08	704	0.1+	0.2+
1993 10 06	413	0.2+	1.0-	1998 05 27	704	(0.5+	2.6-)	2000 01 11	704	0.7-	0.3+
1993 10 06	413	0.6-	0.2+	1998 07 14	699	0.7-	1.1+	2000 01 11	704	0.8-	0.5+
1993 10 07	413	0.7+	0.1+	1998 07 14	699	0.2+	0.5+	2000 01 11	704	1.0-	0.5+
1993 10 07	413	0.8-	0.3-	1998 07 14	699	0.5-	0.1+	2000 01 11	704	1.0-	0.4+
1995 02 22	658	0.2+	0.2+	1999 12 16	704	0.4-	0.1+	2000 01 11	704	0.9-	1.0+
1995 02 22	658	0.2+	0.1+	1999 12 16	704	0.4-	0.0				
1995 02 22	658	0.3+	0.1+	1999 12 16	704	1.0-	0.8-				

(13112)* 1993 QV₄

Discovered 1993 Aug. 18 by E. W. Elst at Caussols.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	35.52657		(2000.0)	P	Q
<i>n</i>	0.20421491	ω	63.52181	+0.21056299	-0.97754739
<i>a</i>	2.8559094	Ω	14.32967	+0.88497947	+0.18712571
<i>e</i>	0.0205295	<i>i</i>	1.85702	+0.41530056	+0.09687656
<i>P</i>	4.83	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1988 08 16	675	0.0	0.8-	1998 09 14	704	0.9-	0.6-	1998 10 28	691	0.4-	0.6-
1988 08 16	675	0.6+	0.4-	1998 09 14	704	0.2-	1.1-	1998 10 28	691	0.3-	0.7-
1988 09 10	675	0.4+	0.2+	1998 09 17	699	0.2+	0.5+	1998 10 28	691	0.6-	0.6-
1988 09 10	675	0.0	0.1+	1998 09 17	699	0.1-	0.9+	1999 10 22	704	0.0	0.6-
1988 09 12	675	0.3-	0.6+	1998 09 17	699	0.2+	0.1-	1999 10 22	704	0.2-	0.4+
1988 09 12	675	1.0-	0.8+	1998 09 18	704	0.3+	0.7-	1999 10 22	704	0.0	0.1-
1993 07 26	675	0.3-	0.8+	1998 09 18	704	0.4+	0.4-	1999 10 22	704	0.1+	0.1+
1993 07 26	675	0.3-	0.3-	1998 09 18	704	1.2+	0.0	1999 12 07	704	0.1-	0.1-
1993 08 18	010	0.5-	1.5+	1998 09 18	704	0.2-	0.7+	1999 12 07	704	0.0	0.8+
1993 08 19	010	0.3+	0.4+	1998 09 18	704	0.5+	0.2-	1999 12 07	704	1.6-	0.5-
1993 08 19	010	0.7+	0.4-	1998 09 26	704	0.7-	0.3+	1999 12 07	704	0.1+	0.3+
1993 08 19	010	0.1-	0.5-	1998 09 26	704	0.2-	1.1+	1999 12 07	704	0.1-	0.5+
1993 08 20	809	1.2-	0.8+	1998 09 26	704	0.3-	0.7-	2000 01 03	704	0.1-	0.3-
1993 08 20	809	1.1-	1.3+	1998 09 26	704	0.3-	0.1+	2000 01 03	704	0.4-	0.1+
1993 08 20	809	1.2-	0.9+	1998 09 26	704	0.2+	0.2-	2000 01 03	704	0.3+	0.1-
1993 08 24	809	(2.4-	0.3+)	1998 09 27	704	0.4+	0.1+	2000 01 03	704	0.7+	0.1-
1993 08 24	809	(2.6-	0.4-)	1998 09 27	704	0.8+	0.3+	2000 01 03	704	0.4+	0.2-
1993 08 24	809	(3.3-	0.0)	1998 09 27	704	0.4+	0.2+	2000 01 03	704	0.4+	0.4+
1993 09 19	010	(3.2+	1.5+)	1998 09 27	704	1.7+	0.7+	2000 01 03	704	0.7+	0.6+
1993 09 19	010	1.2+	1.7+	1998 09 27	704	0.3+	0.6-	2000 01 03	704	0.1-	0.1+
1993 09 20	010	(2.6+	0.9-)	1998 10 14	704	0.5+	1.4-	2000 01 03	704	0.8+	0.6+
1993 09 20	010	(2.3+	0.5-)	1998 10 14	704	0.9-	1.0-	2000 01 03	704	0.2-	0.1+
1993 09 20	010	0.4+	1.5-	1998 10 14	704	0.1-	0.5+	2000 01 04	704	0.6-	0.4-
1996 03 16	566	0.0	0.2+	1998 10 14	704	0.1-	0.2-	2000 01 04	704	0.2-	0.2-
1996 03 16	566	0.4+	0.3+	1998 10 16	691	0.1+	0.4+	2000 01 04	704	0.1-	0.9+
1996 03 16	566	0.2-	0.2+	1998 10 16	691	0.1-	0.2+	2000 01 04	704	0.3-	0.4-
1998 09 14	704	0.2+	0.7-	1998 10 16	691	0.4-	0.0	2000 01 04	704	0.8+	0.1+

(13113)* 1993 RQ₅ = 1979 OK₁₀

Discovered 1993 Sept. 15 by E. W. Elst at the European Southern

Observatory.

Id. G. V. Williams (*MPC* 24111)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	44.87911		(2000.0)	P	Q
<i>n</i>	0.22206558	ω	301.98071	-0.57811579	-0.81592283
<i>a</i>	2.7007344	Ω	183.36394	+0.78397161	-0.55298203
<i>e</i>	0.0507109	<i>i</i>	7.06331	+0.22620928	-0.16876259
<i>P</i>	4.44	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1979 07 24	413	0.5+	1.2-	1993 09 23	809	1.0+	0.2-	1997 09 09	824	0.5-	0.1+
1979 07 26	675	1.0+	0.2-	1993 09 23	809	0.7+	0.6+	1997 09 09	824	0.1+	0.0
1979 07 28	413	1.2-	0.5-	1997 08 12	691	0.6-	0.4+	1997 09 19	824	0.1+	0.6+
1988 08 13	675	(0.0	2.7+)	1997 08 12	691	0.6-	0.3+	1997 09 19	824	0.1-	0.5+
1988 08 13	675	0.4+	2.2+	1997 08 12	691	0.4-	0.4+	1997 09 19	824	0.1-	0.6+
1993 09 15	809	0.4+	0.3+	1997 08 25	824	0.5+	1.1-	1997 09 22	824	0.2+	0.5+
1993 09 15	809	0.5-	0.0	1997 08 25	824	0.6+	0.8-	1997 09 22	824	0.0	0.5+
1993 09 15	809	0.3-	0.1+	1997 08 25	824	0.7+	0.9-	1997 09 22	824	0.0	0.2+
1993 09 16	809	(3.2+	2.0-)	1997 08 25	824	1.1+	0.7-	1998 11 11	699	0.3-	0.2-
1993 09 16	809	(3.1+	1.7-)	1997 08 26	824	1.5-	0.1+	1998 11 11	699	0.8+	0.4+
1993 09 16	809	2.0+	1.1-	1997 08 26	824	1.4-	0.0	1998 11 11	699	0.2+	0.3+
1993 09 17	809	0.8-	0.6-	1997 08 26	824	1.4-	0.0	1998 11 23	699	0.4+	0.1+
1993 09 17	809	0.4-	0.8-	1997 08 26	824	0.1+	0.2-	1998 11 23	699	0.8-	1.4+
1993 09 17	809	1.3-	0.4-	1997 08 26	824	0.0	0.1-	1998 11 23	699	0.5+	0.1-
1993 09 18	809	1.5-	0.0	1997 08 26	824	0.0	0.3+	1999 12 09	703	0.0	1.0+
1993 09 18	809	0.4-	1.0-	1997 08 31	910	0.8+	1.0+	1999 12 09	703	0.2+	0.1-
1993 09 18	809	1.2-	1.1-	1997 08 31	910	0.9+	0.9+	1999 12 09	703	0.1+	1.3+
1993 09 18	675	0.5-	0.1+	1997 08 31	910	0.8+	0.9+	1999 12 09	703	0.2+	0.1-
1993 09 18	675	0.9-	0.3+	1997 09 02	824	0.8+	0.0	2000 01 11	699	1.2-	0.2+
1993 09 22	675	1.2+	0.6-	1997 09 02	824	0.3-	0.2+	2000 01 11	699	0.0	0.5-
1993 09 22	675	0.3+	0.3+	1997 09 02	824	0.2-	0.2+	2000 01 11	699	0.5+	0.0
1993 09 23	809	1.5+	0.2-	1997 09 09	824	0.0	0.5+				

(13114)* 1993 SU₄ = 1977 DV₈ = 1998 SU₁₁₆

Discovered 1993 Sept. 19 by E. W. Elst at Caussols.

Id. G. V. Williams (*MPC* 32933), E. Bowell (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	147.53606		(2000.0)	P	Q
<i>n</i>	0.21110771	ω	342.59028	+0.92094211	+0.38915936
<i>a</i>	2.7934012	Ω	354.37860	-0.32797331	+0.74557200
<i>e</i>	0.0378231	<i>i</i>	12.08571	-0.21047362	+0.54099666
<i>P</i>	4.67	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1977 02 19	381	0.6-	0.8-	1998 09 14	699	0.3-	1.8+	1999 11 17	703	0.1-	1.2+
1977 02 19	381	(3.5-	0.9-)	1998 09 14	699	0.2+	0.6-	1999 11 17	703	0.3+	0.5+
1993 07 26	675	(0.7-	2.1-)	1998 09 14	699	1.1+	0.8+	1999 12 12	704	0.5-	0.3-
1993 07 26	675	0.6-	0.3-	1998 09 26	704	0.7-	0.3-	1999 12 12	704	0.1+	0.1+
1993 08 15	809	0.2+	1.1-	1998 09 26	704	0.0	1.2-	1999 12 12	704	0.1-	0.1-
1993 08 15	809	0.9-	0.4-	1998 09 26	704	0.0	0.6-	1999 12 12	704	0.3-	0.2-
1993 08 15	809	0.7-	0.8-	1998 09 26	704	0.4+	1.8-	1999 12 12	704	0.0	0.0
1993 08 20	809	(2.7+	0.2-)	1998 09 26	704	0.5-	0.6-	1999 12 15	704	0.0	0.9-
1993 08 20	809	1.3+	0.8-	1998 09 27	704	0.0	1.0-	1999 12 15	704	1.1+	0.5-
1993 08 20	809	1.0+	0.8-	1998 09 27	704	0.2+	1.2-	1999 12 15	704	0.6+	0.6-
1993 08 24	809	(0.1-	3.8-)	1998 09 27	704	0.7+	0.7+	1999 12 15	704	0.2-	0.6-
1993 08 24	809	(0.2+	3.8-)	1998 09 27	704	0.3-	1.3+	1999 12 15	704	0.2-	0.9-
1993 08 24	809	(0.1+	3.1-)	1998 09 27	704	0.0	0.6+	2000 01 02	704	(1.3-	3.6+)
1993 09 19	010	1.5+	0.5+	1998 10 12	699	0.6-	1.2+	2000 01 02	704	0.7+	0.9+
1993 09 19	010	0.0	0.5+	1998 10 12	699	0.6-	0.9+	2000 01 02	704	(2.2+	5.2-)
1993 09 20	010	0.0	1.1+	1998 10 12	699	0.5-	0.7+	2000 01 10	699	0.2+	0.4-
1993 09 20	010	(0.5-	2.2+)	1999 11 17	703	0.6-	1.0+	2000 01 10	699	0.4-	0.0
1993 09 20	010	(1.6+	3.6+)	1999 11 17	703	1.1-	0.7+	2000 01 10	699	0.2-	0.6-

Residuals in seconds of arc

1976 10 22	381	0.3−	0.2−	1993 09 24	809	(3.4+ 0.6−)	1998 12 17	704	1.2+ 0.6−
1976 10 22	381	0.1−	0.3+	1993 09 24	809	(2.3+ 0.9−)	1998 12 17	704	0.4+ 0.7−
1976 10 24	381	0.5−	0.2+	1993 09 24	809	0.7+ 0.5−	1998 12 17	704	0.5+ 0.7−
1992 05 03	809	(0.4− 4.2+)	1996 03 20	566	1.1+ 1.1−	1999 12 05	704	0.2− 0.3+	
1992 05 03	809	(0.4− 3.0+)	1996 03 20	566	1.0+ 0.9−	1999 12 05	704	0.2− 0.5+	
1992 05 03	809	(0.9− 3.0+)	1996 03 20	566	0.9+ 0.6−	1999 12 05	704	0.3− 0.3−	
1993 09 17	809	0.7− 0.7+	1996 05 16	566	0.6− 0.1−	1999 12 05	704	1.4− 1.1−	
1993 09 17	809	0.4− 1.6+	1996 05 16	566	0.5− 0.2−	2000 01 04	704	0.0 0.5+	
1993 09 17	809	0.7− 0.5+	1996 05 16	566	1.1− 0.1+	2000 01 04	704	0.2− 0.3−	
1993 09 18	809	0.7+ 0.8+	1997 09 02	566	0.5− 0.3+	2000 01 04	704	0.3− 1.6+	
1993 09 18	809	0.9− 0.3+	1997 09 02	566	0.8− 0.1+	2000 01 04	704	0.6− 0.8−	
1993 09 18	809	0.6− 0.5+	1997 09 02	566	0.7− 0.2+	2000 01 06	699	0.3+ 1.6+	
1993 09 22	809	1.9+ 1.2−	1997 09 09	494	0.7+ 0.7−	2000 01 06	699	1.3+ 1.7+	
1993 09 22	809	1.8+ 0.3−	1997 09 09	494	0.5− 0.1−	2000 01 06	699	0.3− 0.7−	
1993 09 22	809	0.8+ 1.0−	1998 12 17	704	0.2− 0.7−				
1993 09 22	675	0.6− 1.5−	1998 12 17	704	0.8− 1.2+				

(13116)* 1993 TG₂₆ = 1996 HL₂₂

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 27312)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	349.77173	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.19074644	ω	85.38556	−0.51557365	−0.85002786
<i>a</i>	2.9888107	Ω	36.31294	+0.69606484	−0.48891460
<i>e</i>	0.0495376	<i>i</i>	10.49541	+0.49967744	−0.19599784
<i>P</i>	5.17	<i>H</i>	12.8	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1993 10 09	809	0.6−	0.2−	1998 09 18	704	0.2−	0.6−	1998 10 28	704	0.2+	0.5+
1993 10 09	809	0.4−	0.1+	1998 09 18	704	0.9+	0.8+	1998 10 28	704	0.2−	0.2−
1993 10 09	809	0.6−	0.2−	1998 09 18	704	0.6−	0.0	1998 10 29	704	1.3+	1.0−
1993 10 11	809	1.3+	0.3−	1998 09 18	704	0.1+	0.8+	1998 10 29	704	0.6−	1.1−
1993 10 11	809	0.9+	0.3+	1998 09 26	704	0.4+	0.5+	1998 10 29	704	0.9+	0.6−
1993 10 11	809	0.0	0.1+	1998 09 26	704	0.4+	0.1+	1998 10 29	704	0.6−	1.3−
1993 10 20	809	0.5−	0.3+	1998 09 26	704	0.1−	0.0	1998 10 29	704	0.7−	0.1−
1993 10 20	809	0.2−	0.6+	1998 09 26	704	0.3+	0.7−	1999 12 07	106	0.1−	0.6+
1993 10 20	809	0.6−	0.5+	1998 09 26	704	0.1−	0.2+	1999 12 07	106	1.1−	1.2+
1996 03 24	809	0.2−	1.2+	1998 09 27	704	0.1−	0.6+	1999 12 07	106	0.1−	1.0+
1996 03 24	809	0.5−	1.1+	1998 09 27	704	0.5−	1.6+	1999 12 12	704	0.2+	0.2+
1996 03 24	809	0.6−	1.0+	1998 09 27	704	0.5−	1.9+	1999 12 12	704	0.1−	0.4−
1996 03 26	809	1.5−	0.2−	1998 09 27	704	1.4−	1.7−	1999 12 12	704	0.7+	0.5−
1996 03 26	809	(2.4−	0.9+)	1998 09 27	704	0.1+	0.6+	1999 12 12	704	0.2+	0.3−
1996 03 26	809	(2.9−	0.0)	1998 10 14	704	0.1−	0.1+	1999 12 12	704	0.2+	0.5−
1996 04 22	566	1.0+	0.5+	1998 10 14	704	1.9−	0.0	1999 12 13	704	0.1+	0.0
1996 04 22	566	1.1+	0.2+	1998 10 14	704	0.4−	0.2−	1999 12 13	704	0.1+	0.0
1996 04 22	566	1.1+	0.3+	1998 10 14	704	0.8+	1.9+	1999 12 13	704	0.3+	0.0
1996 04 23	566	1.2+	0.7+	1998 10 14	704	0.0	0.4−	1999 12 13	704	0.1−	0.4+
1996 04 23	566	0.9+	0.4+	1998 10 15	704	0.8−	0.3+	1999 12 13	704	0.2+	0.1+
1996 04 23	566	0.8+	0.6+	1998 10 15	704	0.5−	1.3−	1999 12 15	704	0.3+	0.1−
1998 08 31	704	(2.1+	0.4−)	1998 10 15	704	0.8−	0.3−	1999 12 15	704	0.0	0.0
1998 08 31	704	1.3+	0.6+	1998 10 15	704	1.0+	1.4+	1999 12 15	704	1.0+	0.5+
1998 08 31	704	(0.6+	2.1+)	1998 10 15	704	0.6−	1.0+	1999 12 15	704	0.4+	0.1+
1998 08 31	704	0.3−	1.2−	1998 10 17	699	0.3+	0.1+	1999 12 15	704	0.4+	0.3−
1998 08 31	704	1.3−	1.6+	1998 10 17	699	0.2−	0.7−	2000 01 02	704	1.4−	0.8−
1998 09 14	704	0.1+	0.3+	1998 10 17	699	0.5−	0.6+	2000 01 02	704	0.3−	0.2+
1998 09 14	704	0.3−	0.3+	1998 10 28	704	0.8+	1.2−	2000 01 02	704	0.4−	0.2+
1998 09 14	704	0.2+	0.5+	1998 10 28	704	0.7−	1.1−	2000 01 02	704	0.2−	0.4+
1998 09 18	704	0.8+	0.6+	1998 10 28	704	0.9+	0.8+	2000 01 02	704	0.0	0.6+

(13117)* 1993 TW₃₈ = 1996 FU₁₀ = 1998 ST₂₅

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32936)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	167.09091	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.19240516	ω	134.40407	+0.54623882	+0.83693961
<i>a</i>	2.9716084	Ω	168.56200	−0.80896145	+0.53763428
<i>e</i>	0.0556289	<i>i</i>	9.86895	−0.21726601	+0.10237906
<i>P</i>	5.12	<i>H</i>	13.2	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1993 10 09	809	0.9+ 1.4−	1998 09 27	704	0.0 0.3−	1998 11 11	704	1.1− 1.0+
1993 10 09	809	(0.7+ 3.1−)	1998 09 27	704	0.4− 0.1+	1998 11 11	704	1.1+ 1.4−
1993 10 09	809	(2.5− 4.0−)	1998 09 29	704	0.4+ 0.3+	1998 11 11	704	1.1− 0.2+
1993 10 11	809	0.5+ 1.4−	1998 09 29	704	0.6+ 1.3+	1998 11 11	704	0.5− 0.1+
1993 10 11	809	0.0 0.3−	1998 09 29	704	0.5+ 1.0+	1998 11 11	704	1.1− 0.1+
1993 10 11	809	0.3+ 0.4−	1998 09 29	704	0.3+ 0.3+	1999 10 10	704	0.1+ 0.1−
1993 10 21	809	0.2− 1.4−	1998 09 29	704	0.6+ 0.2+	1999 10 10	704	0.8− 0.2−
1993 10 21	809	0.0 1.2−	1998 10 17	699	0.0 0.2−	1999 10 10	704	0.4+ 0.1−
1993 10 21	809	0.1+ 0.8−	1998 10 17	699	0.4+ 0.9+	1999 10 10	704	0.7− 0.1−
1996 03 20	691	0.4− 0.5−	1998 10 17	699	0.8+ 0.1−	1999 10 10	704	0.2+ 0.7−
1996 03 20	691	0.2− 0.4−	1998 10 18	428	0.0 0.4−	1999 10 20	704	0.9− 0.2+
1996 03 20	691	0.4− 0.5−	1998 10 18	428	1.2+ 0.0	1999 10 20	704	0.3− 0.2+
1996 03 24	691	0.1+ 1.0−	1998 10 19	428	1.0+ 0.1−	1999 10 20	704	0.9+ 0.8−
1996 03 24	691	0.1+ 0.8−	1998 10 19	428	0.9− 0.0	1999 10 20	704	0.2− 0.8−
1996 03 24	691	0.1− 0.9−	1998 10 19	428	0.6− 0.1−	1999 12 14	704	0.5− 0.5−
1998 09 22	699	0.6− 0.2−	1998 10 28	704	0.4+ 0.2−	1999 12 14	704	0.4+ 0.2+
1998 09 22	699	0.4− 0.5+	1998 10 28	704	0.8+ 1.4−	1999 12 14	704	0.1+ 1.0+
1998 09 22	699	0.5− 1.4+	1998 10 28	704	1.0− 0.6−	2000 01 07	704	0.7+ 0.2−
1998 09 24	699	0.3− 0.5+	1998 10 28	704	0.8− 0.0	2000 01 07	704	0.9+ 0.3+
1998 09 24	699	0.1− 0.6+	1998 10 29	704	0.3+ 0.8−	2000 01 07	704	1.1+ 0.0
1998 09 24	699	0.1− 0.7+	1998 10 29	704	1.7+ 0.6+	2000 01 07	704	0.2− 0.3+
1998 09 26	704	0.4+ 0.1−	1998 10 29	704	0.2+ 0.7−	2000 01 07	704	0.6+ 0.1−
1998 09 26	704	0.0 0.4+	1998 10 29	704	0.2+ 0.6+	2000 01 11	704	0.2− 0.6+
1998 09 26	704	0.0 0.3−	1998 10 29	704	0.2+ 0.0	2000 01 11	704	0.1− 0.4+
1998 09 26	704	0.2+ 0.5−	1998 11 10	704	0.0 0.3−	2000 01 11	704	0.5− 0.3+
1998 09 26	704	0.3+ 0.1−	1998 11 10	704	0.5− 0.8+	2000 01 11	704	0.6− 0.9+
1998 09 27	704	0.1− 0.2+	1998 11 10	704	1.3− 1.0−	2000 01 11	704	0.9− 1.0+
1998 09 27	704	0.2− 0.3+	1998 11 10	704	1.4− 1.0−			
1998 09 27	704	0.6+ 0.5+	1998 11 10	704	0.0 1.2+			

(13118)* 1993 UX₄ = 1978 VH₃ = 1991 DE₂

Discovered 1993 Oct. 20 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPC* 32936)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	193.35707	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.19116698	ω	200.09919	+0.03174661	+0.98116866
<i>a</i>	2.9844259	Ω	72.09968	−0.88747547	+0.11535639
<i>e</i>	0.0803940	<i>i</i>	11.54972	−0.45976020	−0.15492248
<i>P</i>	5.16	<i>H</i>	12.7	<i>G</i>	0.15 <i>U</i> 1

Residuals in seconds of arc

1978 11 05	675	1.1− 0.3−	1993 10 21	809	0.4− 1.1+	1999 11 16	704	0.4+ 0.8+
1978 11 06	675	0.6+ 0.5+	1993 10 21	809	0.3− 0.2+	1999 11 16	704	0.4+ 1.3+
1978 11 07	675	0.2− 1.2+	1999 10 13	704	0.2+ 0.6−	1999 12 15	704	0.6− 0.5+
1978 11 08	675	0.3+ 0.6+	1999 10 13	704	0.0 0.9−	1999 12 15	704	0.3− 0.1−
1978 11 29	675	0.4− 0.4+	1999 10 13	704	0.3+ 0.7−	1999 12 15	704	0.3− 0.4−
1978 11 30	675	0.5+ 0.9−	1999 10 13	704	0.7+ 0.8−	2000 01 02	704	0.1+ 0.6+
1978 11 30	675	(4.3+ 0.6−)	1999 11 03	704	0.4+ 1.6−	2000 01 02	704	0.2− 0.3+
1991 02 23	493	1.0+ 0.7+	1999 11 03	704	0.3+ 0.8−	2000 01 02	704	1.0− 0.6+
1991 02 23	493	0.1+ 1.5+	1999 11 03	704	0.3− 0.8−	2000 01 02	704	0.6− 0.5−
1991 02 23	493	(1.5− 3.5+)	1999 11 03	704	0.1− 0.3−	2000 01 02	704	0.3− 0.4−
1993 10 10	809	0.7+ 0.1+	1999 11 14	704	0.6+ 0.4−	2000 01 04	704	0.1+ 0.4+
1993 10 10	809	0.0 0.2+	1999 11 14	704	0.3+ 0.1−	2000 01 04	704	0.0 0.5+

2000 JAN. 24

M.P.C. 37519

1993 10 20 809 0.8- 0.3+ 1999 11 16 704 0.1+ 0.8-
1993 10 21 809 1.2+ 0.8+ 1999 11 16 704 0.5+ 0.0

(13119)* 1993 VD₄ = 1952 US = 1981 JF₅ = 1998 TY₃₃

Discovered 1993 Nov. 11 by S. Ueda and H. Kaneda at Kushiro.

Id. A. Doppler (*MPC* 32936), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	141.27679	(2000.0)		P	Q		
<i>n</i>	0.19345976	ω	292.49404	+0.93098315	+0.31442947		
<i>a</i>	2.9607991	Ω	49.70751	-0.17461963	+0.82974726		
<i>e</i>	0.0916564	<i>i</i>	14.07416	-0.32059063	+0.46114379		
<i>P</i>	5.09	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1952 10 23	760	(6.7+ 1.2+)	1998 11 10	704	0.4+ 0.2+	1999 12 08	703	0.8+ 0.8+
1952 10 23	760	(4.2+ 3.3+)	1998 11 10	704	0.9+ 0.1+	1999 12 12	703	0.3+ 0.5+
1981 05 08	675	1.3- 0.0	1998 11 10	704	0.4+ 0.7+	1999 12 12	703	0.1- 0.1-
1981 05 09	675	1.1+ 0.2-	1998 11 11	704	0.0 0.1-	1999 12 12	703	0.4- 0.2+
1993 11 11	399	(0.6- 2.3+)	1998 11 11	704	0.6+ 0.3+	1999 12 12	703	0.0 0.4+
1993 11 11	399	(1.6- 2.2+)	1998 11 11	704	0.2+ 0.4+	1999 12 12	704	1.3- 0.4-
1993 11 16	399	0.7- 0.0	1998 11 11	704	0.8+ 0.4+	1999 12 12	704	0.9- 0.4-
1993 11 16	399	1.7- 0.8+	1998 11 11	704	0.0 0.3+	1999 12 12	704	0.5- 0.4-
1993 11 22	399	1.3+ 0.2+	1998 12 17	327	0.6- 0.6-	1999 12 12	704	0.8- 0.2+
1993 11 22	399	0.0 0.9+	1998 12 17	327	0.7- 0.4-	1999 12 12	704	0.9- 0.1+
1998 10 14	699	0.2- 0.6-	1998 12 17	327	0.7- 0.3-	2000 01 02	704	0.4- 0.7-
1998 10 14	699	0.3- 0.2-	1999 12 07	703	0.2- 0.6+	2000 01 02	704	0.3- 0.4-
1998 10 14	699	0.1+ 0.7-	1999 12 07	703	0.3+ 0.2-	2000 01 02	704	0.4- 0.8-
1998 10 20	699	0.4- 0.7-	1999 12 07	703	0.2- 0.5+	2000 01 02	704	0.1+ 0.1+
1998 10 20	699	0.0 1.0-	1999 12 07	703	0.7+ 0.6+	2000 01 02	704	0.2- 0.2-
1998 10 20	699	0.3- 0.5-	1999 12 08	703	0.5+ 0.4+	2000 01 10	699	0.9+ 0.6+
1998 11 10	704	0.7+ 0.0	1999 12 08	703	0.5+ 0.1-	2000 01 10	699	1.1+ 0.5-
1998 11 10	704	0.1+ 0.2+	1999 12 08	703	0.4- 0.8-	2000 01 10	699	1.3+ 0.3-

(13120)* 1993 VU₇

Discovered 1993 Nov. 4 by R. H. McNaught at Siding Spring.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	67.26530	(2000.0)		P	Q		
<i>n</i>	0.18665710	ω	258.65682	+0.84902209	-0.43524283		
<i>a</i>	3.0323061	Ω	126.42222	+0.49568873	+0.85240928		
<i>e</i>	0.2918447	<i>i</i>	21.85488	-0.18290483	+0.28976214		
<i>P</i>	5.28	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 12 30	413	0.3- 1.2+	1998 08 18	566	0.1+ 0.0	1999 12 31	699	0.8+ 0.3+
1988 12 30	413	0.2- 0.6-	1998 08 18	566	0.0 0.0	2000 01 05	704	0.2- 0.2-
1993 10 08	413	0.2- 1.5-	1998 09 21	704	0.5- 0.8+	2000 01 05	704	0.7- 0.1+
1993 10 08	413	0.3+ 0.3-	1998 09 21	704	0.4- 1.6+	2000 01 05	704	0.9- 0.2-
1993 11 04	413	1.0+ 0.2-	1998 09 21	704	1.6+ 0.6+	2000 01 05	704	0.7- 0.2-
1993 11 04	413	0.2- 0.6-	1998 09 21	704	0.5+ 1.3+	2000 01 05	704	0.8- 1.0-
1993 11 05	413	0.5- 0.8-	1998 09 21	704	0.8- 1.6+	2000 01 07	704	0.2+ 0.2+
1993 11 06	413	0.2- 0.5-	1999 12 14	704	0.3+ 0.4+	2000 01 07	704	0.2- 0.4-
1993 11 09	413	1.0+ 0.7-	1999 12 14	704	0.0 0.1+	2000 01 07	704	0.3+ 0.3+
1993 11 09	413	0.4- 0.0	1999 12 14	704	0.2+ 0.6+	2000 01 07	704	0.2- 0.3+
1994 03 19	413	0.6- 0.8+	1999 12 14	704	(0.6+ 2.2-)	2000 01 07	704	0.6+ 0.2+
1994 03 19	413	0.7+ 1.1+	1999 12 31	699	0.5+ 1.6+			
1998 08 18	566	0.4+ 0.1-	1999 12 31	699	0.2+ 0.8+			

(13121)* 1994 CN₉ = 1992 UX₈ = 1998 HP₆₀ = 1999 RX₃₉

Discovered 1994 Feb. 7 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPC* 37124)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	101.97183	P	Q		
<i>n</i>	0.27673522	ω	313.09003	+0.60723313	+0.79447836
<i>a</i>	2.3321676	Ω	354.28061	-0.70198006	+0.53146965
<i>e</i>	0.1147460	<i>i</i>	4.88633	-0.37214503	+0.29384375
<i>P</i>	3.56	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1992 10 31	033	0.6+ 0.1-	1998 04 21	704	0.3+ 0.1+	1999 10 02	703	0.6- 0.9+
1992 10 31	033	0.4- 0.4-	1998 04 21	704	(0.5- 2.2+)	1999 10 02	703	0.6- 0.6+
1992 11 01	033	0.4+ 0.2-	1998 04 21	704	0.1- 0.3-	1999 10 02	703	0.1- 0.8+
1994 02 07	809	0.8+ 0.2+	1998 04 22	704	0.5- 0.1-	1999 10 02	703	0.2- 0.7+
1994 02 07	809	0.0 0.2-	1998 04 22	704	1.2+ 0.5+	1999 10 03	704	0.2+ 0.5+
1994 02 07	809	1.3- 0.3-	1998 04 22	704	0.4- 0.5+	1999 10 03	704	0.4- 0.1+
1994 02 09	809	1.0+ 1.7+	1998 04 22	704	1.4+ 0.8+	1999 10 03	704	0.2- 0.2-
1994 02 09	809	0.4+ 0.7+	1998 04 22	704	0.1+ 1.2+	1999 10 03	704	0.4- 0.3+
1994 02 09	809	0.8+ 0.9+	1998 04 25	699	1.5- 1.5+	1999 10 03	704	0.2+ 0.1+
1994 02 12	809	1.4+ 0.8+	1998 04 25	699	2.0+ 0.1-	1999 11 04	704	0.6+ 0.2-
1994 02 12	809	0.2- 0.9+	1998 04 25	699	0.9- 0.6+	1999 11 04	704	0.7+ 0.1-
1994 02 12	809	0.6- 0.5+	1999 09 12	703	0.1- 0.3-	1999 11 04	704	0.4+ 0.0
1994 02 15	675	(0.4- 4.7-)	1999 09 12	703	0.3- 1.5+	1999 11 04	704	0.6+ 0.0
1994 02 15	675	(0.6- 4.8-)	1999 09 12	703	0.4+ 0.3+	1999 11 04	704	0.7+ 0.3+
1995 10 18	327	0.2- 1.3+	1999 09 12	703	0.5- 1.1+	1999 11 16	704	0.2- 0.3-
1995 10 18	327	1.1- 1.1+	1999 09 14	703	0.6- 0.2+	1999 11 16	704	1.0- 1.2-
1995 10 18	327	0.2- 1.2+	1999 09 14	703	0.5- 0.7+	1999 11 16	704	0.3+ 0.5+
1998 04 21	704	0.0 1.0-	1999 09 14	703	0.4- 0.4+	1999 11 16	704	0.1- 0.1-
1998 04 21	704	0.5+ 0.2-	1999 09 14	703	0.8- 0.2-	1999 11 16	704	0.0 0.5-

(13122)* 1994 CV₉ = 1998 JV₂

Discovered 1994 Feb. 7 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 31963)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	155.31439	P	Q		
<i>n</i>	0.27807468	ω	121.86758	-0.10295466	+0.99217139
<i>a</i>	2.3246724	Ω	142.02378	-0.94701259	-0.07603639
<i>e</i>	0.1156130	<i>i</i>	6.59621	-0.30424908	-0.09906767
<i>P</i>	3.54	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1994 02 07	809	0.8+ 0.9-	1998 04 23	704	0.2+ 0.1+	1998 06 02	699	0.0 0.6+
1994 02 07	809	0.8- 0.3-	1998 04 24	704	0.0 0.4-	1999 10 09	704	0.2- 0.5+
1994 02 07	809	1.5- 1.4-	1998 04 24	704	0.4+ 0.3+	1999 10 09	704	0.2+ 0.6+
1994 02 09	809	0.3- 1.3+	1998 04 24	704	0.1+ 0.7+	1999 10 09	704	0.1+ 0.1+
1994 02 09	809	0.5- 1.8+	1998 05 01	699	1.0+ 0.6-	1999 10 09	704	0.2- 0.1+
1994 02 09	809	0.0 0.7+	1998 05 01	699	0.2+ 0.1+	1999 10 09	704	0.1- 0.2+
1994 02 12	809	0.1- 0.4-	1998 05 01	699	0.0 0.1-	1999 11 06	704	0.8- 1.8+
1994 02 12	809	0.9- 0.4+	1998 05 05	699	0.0 0.6+	1999 11 06	704	0.2+ 0.4+
1994 02 12	809	0.4- 0.5+	1998 05 05	699	0.7+ 0.2+	1999 11 06	704	0.4+ 0.5-
1994 02 15	675	(2.0+ 2.3-)	1998 05 05	699	1.1+ 0.7+	1999 11 06	704	0.5- 0.2+
1994 02 15	675	0.3+ 1.8-	1998 05 23	704	0.3- 0.1-	1999 11 06	704	0.2- 0.2-
1994 02 16	691	1.1+ 0.1+	1998 05 23	704	0.3- 0.1+	1999 11 06	704	0.3- 0.7+
1994 02 16	691	1.2+ 0.1+	1998 05 23	704	0.5- 0.6+	1999 11 06	704	0.8- 0.4+
1994 02 16	691	1.2+ 0.2+	1998 05 23	704	0.2- 0.7-	1999 11 06	704	0.2- 0.1-
1995 08 03	691	0.1- 0.2-	1998 05 23	704	0.1+ 0.4-	1999 11 06	704	0.2- 0.7+
1995 08 03	691	0.1+ 0.4-	1998 05 25	699	0.2- 0.4+	1999 11 06	704	0.4+ 0.5+
1995 08 03	691	0.1+ 0.1-	1998 05 25	699	0.4- 0.6-	2000 01 08	704	0.7+ 0.1-
1998 04 23	704	0.3+ 0.2-	1998 05 25	699	0.3- 0.2+	2000 01 08	704	0.1- 0.8-
1998 04 23	704	0.3- 0.7-	1998 06 02	699	0.0 0.0	2000 01 08	704	0.5+ 0.7-
1998 04 23	704	0.2- 1.3+	1998 06 02	699	0.5- 1.3+	2000 01 08	704	0.4+ 0.3-

(13123)* 1994 KA = 1995 YO₂

Discovered 1994 May 16 by C. S. Shoemaker at Palomar.

Id. S. Nakano (*MPC* 26402)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	138.43414		(2000.0)	P	Q
<i>n</i>	0.27220370	ω	251.42628	+0.69972046	+0.61125763
<i>a</i>	2.3579796	Ω	69.11202	−0.40854550	+0.76700237
<i>e</i>	0.2722780	<i>i</i>	23.31700	−0.58607325	+0.19511913
<i>P</i>	3.62	<i>H</i>	12.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1994 05 16	675	0.4−	0.2+	1998 05 23	423	0.2−	1.0+	1999 12 13	704	0.3+	0.2−
1994 05 16	675	0.2−	0.1−	1998 05 23	423	0.7−	0.9+	1999 12 13	704	0.5+	0.4−
1994 06 02	675	0.4−	0.4+	1998 05 28	704	0.3−	2.1−	1999 12 13	704	0.6+	0.3−
1994 06 02	675	0.5+	0.3+	1998 05 28	704	0.1−	2.0−	1999 12 14	704	0.1−	0.2−
1994 06 04	675	2.1+	1.1+	1998 05 28	704	1.5−	0.8−	1999 12 14	704	0.4−	0.5−
1994 06 04	675	0.1−	0.5+	1998 05 28	704	0.4+	0.6−	1999 12 14	704	0.2−	0.3−
1995 11 22	098	0.4−	0.2−	1998 05 28	704	0.6−	0.2−	1999 12 14	704	0.0	0.0
1995 11 22	098	0.0	0.2+	1998 05 28	423	0.1+	0.7−	1999 12 14	704	0.4+	0.1+
1995 11 22	098	1.6+	1.5−	1998 06 26	423	0.4+	0.5+	1999 12 30	704	0.0	0.6−
1995 11 24	098	0.9−	1.1+	1998 06 27	423	0.5+	0.4+	1999 12 30	704	0.5−	0.3−
1995 11 24	098	0.6−	0.1+	1998 06 27	423	0.5+	0.5+	1999 12 30	704	0.3−	0.3+
1995 11 24	098	1.2+	1.3+	1998 06 27	423	0.5+	0.0	1999 12 30	704	0.8−	0.1+
1995 11 24	098	0.2+	0.1+	1998 06 27	423	0.2+	0.4+	1999 12 30	704	0.8−	0.3+
1995 11 24	098	1.5+	0.7−	1998 06 28	423	0.0	0.3+	2000 01 21	704	0.3+	0.0
1995 12 17	399	1.9−	1.2+	1998 06 28	423	0.5+	0.3+	2000 01 21	704	0.4−	0.4+
1995 12 17	399	(3.4−	1.2+)	1998 06 28	423	0.2+	0.4+	2000 01 21	704	0.4+	0.1+
1995 12 19	399	1.2−	0.3+	1999 12 13	704	0.1−	0.3−	2000 01 21	704	0.6+	0.3+
1995 12 19	399	0.1−	0.3−	1999 12 13	704	0.5+	0.6−				

(13124)* 1994 PS

Discovered 1994 Aug. 14 by T. Kobayashi at Oizumi.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	341.04974		(2000.0)	P	Q
<i>n</i>	0.27382380	ω	32.12361	−0.98899152	+0.12197200
<i>a</i>	2.3486696	Ω	154.48042	−0.13824381	−0.96351785
<i>e</i>	0.1077306	<i>i</i>	11.21317	+0.05276755	−0.23823556
<i>P</i>	3.60	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1994 08 14	411	0.7+	0.5+	1996 02 25	327	0.1−	0.8−	1999 11 09	703	0.4+	1.1+
1994 08 14	411	0.1+	0.2−	1996 02 25	327	0.6−	0.2−	1999 11 09	703	0.1−	0.2+
1994 08 15	411	0.2−	0.4+	1997 06 12	688	0.5−	0.3−	1999 11 19	699	1.4+	1.1+
1994 08 15	411	0.0	0.9+	1997 06 12	688	0.6−	0.2−	1999 11 19	699	1.1+	1.3−
1994 08 15	411	0.2+	1.3+	1998 10 17	699	0.4+	0.1+	1999 11 19	699	1.2+	0.1−
1994 08 16	411	0.1−	1.3+	1998 10 17	699	0.2+	0.4−	1999 12 18	699	0.8−	0.6+
1994 08 16	411	0.2−	1.3+	1998 10 17	699	0.5+	0.1−	1999 12 18	699	0.4−	1.0+
1994 08 27	411	0.7−	0.2+	1998 11 13	704	0.9+	0.3−	1999 12 18	699	0.6−	1.2+
1994 08 27	411	0.6+	0.9+	1998 11 13	704	1.8−	1.0+	2000 01 05	704	0.0	0.1−
1994 09 01	411	0.6+	0.3−	1998 11 13	704	0.1+	1.1+	2000 01 05	704	0.2+	0.0
1994 09 01	411	0.2+	0.2+	1998 11 13	704	1.6−	0.8−	2000 01 05	704	0.1−	0.2+
1994 09 11	675	0.3+	1.8−	1998 11 13	704	(1.0−	2.5−)	2000 01 05	704	0.1+	0.8+
1994 09 11	675	0.6+	1.1−	1998 11 15	566	0.2−	0.2+	2000 01 06	699	1.6+	0.4+
1994 10 01	675	0.4+	0.7−	1998 11 15	566	0.3−	0.2+	2000 01 06	699	0.2−	1.0+
1994 10 01	675	0.5−	0.4−	1998 11 15	566	0.3−	0.3−	2000 01 06	699	0.3−	0.8+
1996 02 25	327	0.2−	0.5−	1999 11 06	699	0.5+	0.4−	2000 01 08	704	0.3−	0.1+
1996 02 25	327	0.2−	0.9−	1999 11 06	699	0.2+	0.8+	2000 01 08	704	0.2−	0.1−
1996 02 25	327	0.2−	0.6−	1999 11 06	699	0.2+	0.8−	2000 01 08	704	0.0	0.2+
1996 02 25	327	0.1+	0.4−	1999 11 09	703	1.2+	0.8−	2000 01 08	704	0.1−	0.1+
1996 02 25	327	0.4−	1.0−	1999 11 09	703	0.2−	0.3−	2000 01 08	704	0.0	0.2+

(13125)* 1994 PK₅ = 1986 XQ₅ = 1998 MZ₃₁

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (*MPC* 32457)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	327.46980		(2000.0)	P	Q
<i>n</i>	0.22389765	ω	128.67348	−0.12361411	−0.98877006
<i>a</i>	2.6859816	Ω	328.12438	+0.85390079	−0.06287204
<i>e</i>	0.0060353	<i>i</i>	9.15104	+0.50554227	−0.13557610
<i>P</i>	4.40	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1986 12 06	482	2.0+	1.0−	1998 06 24	704	1.7−	0.4−	1999 10 12	704	0.3+	0.6−
1986 12 06	482	1.8−	1.0+	1998 06 26	704	0.6−	0.5−	1999 10 12	704	1.4+	0.6+
1994 08 10	809	(3.4+	0.6+)	1998 06 26	704	(3.0+	2.3+)	1999 10 12	704	1.1−	0.2−
1994 08 10	809	(2.4+	1.2+)	1998 06 26	704	1.2+	0.4−	1999 10 12	704	0.1−	0.4−
1994 08 10	809	(2.9+	0.5+)	1998 06 26	704	0.8+	1.3+	1999 10 12	704	0.3+	0.1−
1994 08 11	809	(1.7+	2.1−)	1999 08 21	739	1.0−	0.2+	1999 11 03	704	0.2−	0.3−
1994 08 11	809	(1.2+	2.1−)	1999 08 21	739	0.1+	1.2−	1999 11 03	704	0.0	0.2−
1994 08 11	809	1.3+	1.3−	1999 09 03	704	0.4+	0.9−	1999 11 03	704	0.5+	0.4−
1994 09 03	809	1.3−	1.7+	1999 09 03	704	0.8+	0.0	1999 11 03	704	0.2−	0.2−
1994 09 03	809	1.2−	0.9+	1999 09 03	704	0.2−	0.4−	1999 11 10	703	0.3−	0.4−
1994 09 03	809	1.5−	1.2+	1999 09 04	703	0.4−	0.4−	1999 11 10	703	0.1+	0.6−
1994 09 04	809	0.6+	0.3+	1999 09 04	703	0.2+	0.0	1999 11 10	703	0.1+	0.4−
1994 09 04	809	0.2−	0.4+	1999 09 04	703	0.5+	0.9+	1999 11 10	703	0.3−	0.2−
1994 09 04	809	0.4−	0.6+	1999 09 04	703	0.8+	1.2+	2000 01 03	704	0.6−	0.0
1998 06 24	704	1.0+	0.8−	1999 10 09	681	0.0	1.1−	2000 01 03	704	0.2−	0.4−
1998 06 24	704	0.5−	0.9−	1999 10 09	681	0.1+	0.6−	2000 01 03	704	1.2+	1.2+
1998 06 24	704	1.2+	0.4+	1999 10 10	681	0.4+	0.2+	2000 01 03	704	0.6−	0.7+
1998 06 24	704	0.2+	1.9−	1999 10 10	681	0.6+	0.1−	2000 01 03	704	1.2−	1.1+

(13126)* 1994 PT₁₆ = 1997 GM₃₇

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern

Observatory.

Id. G. V. Williams (*MPC* 29921)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	215.98768		(2000.0)	P	Q
<i>n</i>	0.24625659	ω	344.95856	−0.35903031	+0.93250875
<i>a</i>	2.5208334	Ω	263.98856	−0.85220562	−0.34459772
<i>e</i>	0.0740788	<i>i</i>	2.25018	−0.38058221	−0.10807334
<i>P</i>	4.00	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1994 08 10	809	0.5−	1.3−	1998 08 17	704	1.1−	0.7−	1998 09 27	704	0.3+	0.0
1994 08 10	809	1.4−	1.4−	1998 08 23	704	0.9−	1.7+	1998 09 27	704	0.1−	0.2−
1994 08 10	809	(2.4−	1.4−)	1998 08 23	704	0.7−	0.6+	1999 12 07	704	0.7−	0.9−
1994 08 11	809	0.8−	0.1−	1998 08 23	704	0.1+	0.3−	1999 12 07	704	0.1+	0.7+
1994 08 11	809	1.3−	1.0−	1998 08 23	704	(3.0−	2.7+)	1999 12 07	704	0.8+	0.3+
1994 08 11	809	0.6−	0.7−	1998 09 14	704	0.2+	1.7+	2000 01 03	704	0.6−	0.6−
1994 09 05	809	1.7+	0.4+	1998 09 14	704	1.5−	0.1+	2000 01 03	704	0.6−	0.0
1994 09 05	809	1.5+	0.0	1998 09 14	704	0.9+	0.2+	2000 01 03	704	0.2+	0.1+
1994 09 05	809	1.2+	1.0−	1998 09 14	704	(2.7−	1.8+)	2000 01 03	704	0.6−	0.2−
1994 09 06	809	1.5+	0.5−	1998 09 18	704	0.6−	0.3−	2000 01 05	704	0.2+	0.1−
1994 09 06	809	0.5+	0.9−	1998 09 18	704	0.6+	0.5+	2000 01 05	704	0.1+	0.6−
1994 09 06	809	0.6+	0.4−	1998 09 18	704	1.2−	1.7−	2000 01 05	704	0.3−	0.2−
1997 04 05	566	0.4−	0.9−	1998 09 18	704	(0.8+	2.0+)	2000 01 05	704	0.2+	0.7−
1997 04 05	566	1.0−	0.6−	1998 09 25	704	1.8+	1.7−	2000 01 06	691	0.2−	0.2−
1997 04 05	566	0.9−	1.1−	1998 09 25	704	1.7+	0.3−	2000 01 06	691	0.5+	0.5−
1997 04 11	704	0.4+	0.6−	1998 09 25	704	0.5+	1.1+	2000 01 06	691	0.7−	0.8+
1997 04 11	704	0.5+	0.3−	1998 09 25	704	0.4+	1.4−	2000 01 13	691	0.1+	0.1+
1998 08 17	704	(2.2−	1.7+)	1998 09 25	704	1.2−	0.3−	2000 01 13	691	0.2+	0.1−
1998 08 17	704	(0.6−	2.3+)	1998 09 27	704	0.4+	0.4+	2000 01 13	691	0.2+	0.4−
1998 08 17	704	0.6−	1.9+	1998 09 27	704	0.1−	0.3+				
1998 08 17	704	0.5−	1.2+	1998 09 27	704	0.5+	0.2+				

2000 JAN. 24

M.P.C. 37521

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	270.11463		(2000.0)		P		Q				
<i>n</i>	0.26571404	ω	119.17201		-0.75808919		+0.65103741				
<i>a</i>	2.3962183	Ω	101.47511		-0.61102634		-0.68865730				
<i>e</i>	0.1340601	<i>i</i>	2.22764		-0.22792017		-0.31921999				
<i>P</i>	3.71	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1991 11 06	691	0.0	1.4+	1997 04 11	809	0.0	0.8+	1999 12 08	704	0.1-	0.7+
1991 11 06	691	0.2-	1.0+	1997 04 11	809	0.9+	0.2+	1999 12 08	704	1.1-	1.1-
1991 11 06	691	0.2-	1.0+	1997 04 11	809	0.0	0.3+	2000 01 03	691	0.2+	0.1+
1991 11 07	691	0.0	0.8+	1997 04 12	809	1.7-	1.4+	2000 01 03	704	0.5-	0.9+
1991 11 07	691	0.5-	0.4+	1997 04 12	809	0.0	0.0	2000 01 03	691	0.1+	0.1+
1991 11 07	691	0.4-	0.4+	1997 04 12	809	0.7+	1.1+	2000 01 03	704	0.1-	0.0
1994 08 12	809	1.1-	0.9-	1998 09 14	704	0.0	1.2+	2000 01 03	704	0.4+	0.8-
1994 08 12	809	(2.1-	0.6-)	1998 09 14	704	0.4+	0.4+	2000 01 03	691	0.2+	0.2+
1994 08 12	809	1.1-	0.9-	1998 09 14	704	0.7-	0.6-	2000 01 03	704	0.1+	0.1-
1994 08 13	809	0.9-	0.8+	1998 09 18	704	0.2+	1.2+	2000 01 03	704	0.1+	0.4+
1994 08 13	809	1.1-	1.3+	1998 09 18	704	1.1+	1.4+	2000 01 05	704	0.6+	0.1-
1994 08 13	809	0.9-	1.3+	1998 09 18	704	0.3-	0.3+	2000 01 05	704	0.4+	0.2-
1994 09 05	809	1.4+	0.6+	1998 09 18	704	1.6+	1.1+	2000 01 05	704	0.0	0.5-
1994 09 05	809	1.3+	0.0	1998 09 26	704	1.1-	0.8+	2000 01 05	704	0.2+	0.5-
1994 09 05	809	1.5+	0.7+	1998 09 26	704	0.7-	1.1+	2000 01 05	704	1.1-	0.3-
1994 09 06	809	(2.8+	2.1+)	1998 09 26	704	0.2-	1.1-	2000 01 08	704	0.2+	0.0
1994 09 06	809	(2.7+	1.5+)	1998 09 26	704	0.3+	0.1-	2000 01 08	704	0.3-	0.1+
1994 09 06	809	(2.6+	1.5+)	1998 09 26	704	0.6+	1.7-	2000 01 08	704	0.3+	0.3+
1994 09 09	675	0.1+	1.1-	1998 09 27	704	0.8-	0.2+	2000 01 08	704	0.5-	0.0
1997 04 09	809	0.1+	1.1+	1998 09 27	704	0.4-	1.6+	2000 01 08	704	0.8+	1.6+
1997 04 09	809	0.3+	0.2+	1998 09 27	704	(1.3-	2.6+)	2000 01 08	704	0.5+	1.4+
1997 04 09	809	0.4+	0.3+	1998 09 27	704	1.9-	0.6-	2000 01 08	704	0.0	0.4+
1997 04 10	809	1.1+	1.7+	1998 09 27	704	0.3-	0.3+	2000 01 08	704	0.6-	0.3+
1997 04 10	809	0.7+	1.4+	1999 12 08	704	0.1+	0.5+	2000 01 08	704	0.5+	0.4+
1997 04 10	809	1.0+	0.9+	1999 12 08	704	0.1+	0.2-	2000 01 08	704	0.4-	0.2-

(13128)* 1994 PS₂₈ = 1982 DF₂ = 1998 SU₁₁₂

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (*MPC* 33243)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	267.27325		(2000.0)		P		Q				
<i>n</i>	0.26809544	ω	90.45412		-0.69908306		+0.71116317				
<i>a</i>	2.3820073	Ω	134.87804		-0.69067555		-0.64468335				
<i>e</i>	0.1742592	<i>i</i>	6.02381		-0.18506798		-0.28041099				
<i>P</i>	3.68	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1982 02 20	046	0.2-	1.0+	1994 09 06	809	1.1+	1.6-	1999 12 06	704	0.6+	0.0
1982 02 20	046	(5.6+	3.3-)	1998 09 21	699	0.2+	0.7+	1999 12 06	704	0.2-	0.2-
1982 02 21	046	(3.5-	1.2+)	1998 09 21	699	0.2-	1.9+	1999 12 06	704	0.2-	0.1-
1982 02 21	046	0.3+	0.7-	1998 09 21	699	0.8+	1.5+	1999 12 14	704	0.0	0.1-
1994 08 12	809	(3.8-	2.0-)	1998 09 26	704	0.7-	0.5+	1999 12 14	704	0.1+	0.4+
1994 08 12	809	(3.0-	1.1-)	1998 09 26	704	0.9-	0.9-	1999 12 14	704	0.2+	0.5-
1994 08 12	809	(3.9-	1.6-)	1998 09 26	704	0.1-	0.0	1999 12 14	704	0.1-	0.2-
1994 08 13	809	0.4-	0.9+	1998 09 26	704	0.2-	0.4+	1999 12 14	704	0.0	0.5+
1994 08 13	809	0.6-	0.3+	1998 09 26	704	0.6-	1.2-	2000 01 05	704	0.1-	0.1-
1994 08 13	809	0.5-	0.1+	1998 09 27	704	0.6+	0.3+	2000 01 05	704	0.2-	0.1+
1994 09 05	809	0.8+	1.3-	1998 09 27	704	0.2-	0.6+	2000 01 05	704	0.4-	0.7-
1994 09 05	809	0.8+	0.2-	1998 09 27	704	(0.1+	2.6+)	2000 01 05	704	0.4+	0.4-
1994 09 05	809	0.1-	0.6-	1998 09 27	704	(2.8-	0.4+)	2000 01 06	704	0.3-	0.3-
1994 09 06	809	0.2-	1.5-	1999 12 06	704	0.8+	0.4-	2000 01 06	704	0.0	0.2-
1994 09 06	809	(0.7-	2.2-)	1999 12 06	704	0.5-	0.3+	2000 01 06	704	0.2-	0.5-

(13129)* 1994 PC₂₉ = 1998 MW₂₄

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (*MPC* 32459)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	109.64496		(2000.0)		P		Q				
<i>n</i>	0.21751064	ω	160.71170		+0.43192081		+0.89647069				
<i>a</i>	2.7383085	Ω	134.73269		-0.84470664		+0.44052344				
<i>e</i>	0.0963792	<i>i</i>	8.00403		-0.31609351		+0.04774304				
<i>P</i>	4.53	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1993 01 25	691	0.5+	0.1+	1998 06 26	704	0.6+	0.0	1999 10 09	704	0.5+	0.0
1993 01 25	691	0.1-	0.0	1998 06 26	704	0.5+	0.0	1999 10 09	704	0.9+	0.6-
1993 01 25	691	0.1+	0.5+	1999 08 22	703	1.7+	1.0+	1999 10 09	704	0.3+	0.3-
1994 08 12	809	0.2-	1.2-	1999 08 22	703	0.1-	0.4+	1999 10 09	704	0.7+	1.2-
1994 08 12	809	0.0	0.2-	1999 08 22	703	1.1+	0.6+	1999 10 13	699	0.2+	0.4-
1994 08 12	809	0.9-	1.2-	1999 08 22	703	0.4+	1.0+	1999 10 13	699	0.6+	0.6+
1994 08 13	809	0.9+	0.4-	1999 09 14	120	0.4+	0.3-	1999 10 13	699	0.2-	1.0+
1994 08 13	809	0.9+	1.1-	1999 09 14	120	0.4-	0.1-	1999 11 02	703	(1.3-	3.6+)
1994 08 13	809	1.5+	0.9-	1999 09 30	703	1.1-	0.1-	1999 11 02	703	0.5-	0.1-
1994 09 05	809	0.2-	0.4+	1999 09 30	703	0.2-	0.1+	1999 11 02	703	0.9-	0.1+
1994 09 05	809	0.8-	0.5+	1999 09 30	703	0.6-	0.2+	1999 11 02	703	0.7-	0.9-
1994 09 05	809	0.2-	0.5+	1999 09 30	703	0.7+	0.2-	1999 11 03	699	0.0	0.6+
1994 09 06	809	(0.9-	2.1+)	1999 10 02	704	0.9+	0.0	1999 11 03	699	0.8-	0.5+
1994 09 06	809	0.3-	0.6+	1999 10 02	704	0.7+	0.5-	1999 11 03	699	0.8-	0.7+
1994 09 06	809	0.2-	1.1+	1999 10 02	704	0.8+	0.1-	1999 11 07	704	1.0-	0.2-
1998 06 19	704	1.6-	0.5+	1999 10 02	704	0.7+	0.4-	1999 11 07	704	1.4-	0.4-
1998 06 19	704	0.2-	0.7+	1999 10 02	704	1.5+	0.2+	1999 11 07	704	1.2-	0.2-
1998 06 19	704	1.1+	0.9+	1999 10 04	703	1.2-	0.1+	1999 11 07	704	0.5-	0.0
1998 06 19	704	(4.2-	3.6+)	1999 10 04	703	0.1+	0.0	1999 11 07	704	0.8+	0.1-
1998 06 26	704	0.2+	0.6+	1999 10 04	703	0.1-	0.0	2000 01 08	704	1.2+	0.5+
1998 06 26	704	1.0-	0.7-	1999 10 04	703	0.1-	0.6+	2000 01 08	704	0.6+	1.1+
1998 06 26	704	0.7+	0.7+	1999 10 09	704	1.9-	0.4-	2000 01 08	704	1.1-	0.8+

(13130)* 1994 PW₃₁ = 1990 OW

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 24749)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	222.77451		(2000.0)		P		Q				
<i>n</i>	0.25769690	ω	78.17674		-0.27906096		+0.96021600				
<i>a</i>	2.4456628	Ω	175.57716		-0.92551364		-0.26602864				
<i>e</i>	0.1680510	<i>i</i>	7.82436		-0.25602634		-0.08493524				
<i>P</i>	3.82	<i>H</i>	13.6		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1990 07 19	675	0.9+	2.0-	1997 03 13	691	0.1-	0.6-	1998 10 14	704	0.7-	1.0-
1990 07 19	675	(0.1-	2.4-)	1998 06 29	704	1.6-	0.8+	1998 10 14	704	1.7-	0.5-
1990 07 22	675	0.3+	0.3+	1998 06 29	704	0.4-	1.3-	1998 10 14	704	0.4+	0.2-
1990 07 22	675	0.2-	0.6-	1998 06 29	704	(2.4-	0.8-)	1998 10 15	704	1.0-	0.3+
1994 08 12	809	(2.8+	0.5+)	1998 06 29	704	(5.2-	2.2+)	1998 10 15	704	0.2-	0.2+
1994 08 12	809	(2.6+	1.5+)	1998 08 28	704	0.2+	0.0	1998 10 15	704	0.0	0.3-
1994 08 12	809	(2.5+	0.7+)	1998 08 28	704	0.1-	0.6-	1998 10 15	704	0.0	1.9+
1994 08 13	809	1.8+	0.8+	1998 08 28	704	0.1-	0.7+	1998 10 17	699	1.6-	1.1-
1994 08 13	809	(2.2+	0.9+)	1998 08 28	704	0.2-	0.1-	1998 10 17	699	1.0-	0.0
1994 08 13	809	1.6+	0.5+	1998 08 28	704	0.6-	0.2+	1998 10 18	910	0.2+	0.3+
1994 09 03	809	1.0-	0.7+	1998 09 16	699	0.4+	0.9+	1998 10 18	910	0.0	0.2+
1994 09 03	809	1.8-	0.1+	1998 09 16	699	0.2+	0.7+	1998 10 18	910	0.3+	0.2+
1994 09 03	809	1.6-	0.5+	1998 09 16	699	0.0	0.8+	1998 12 08	704	(1.4-	2.7-)
1994 09 04	809	0.4+	1.4+	1998 09 18	704	0.5+	0.3+	1998 12 08	704	(3.8-	0.7+)
1994 09 04	809	0.3+	1.2+	1998 09 18	704	0.5+	0.0	1998 12 08	704	(2.4-	0.3+)
1994 09 04	809	0.4+	1.3+	1998 09 18	704	0.7+	0.6+	1999 12 06	704	0.1-	0.2-
1994 09 05	809	0.3-	0.6-	1998 09 18	704	0.1+	0.5+	1999 12 06	704	0.6+	0.8+
1994 09 05	809	0.8-	0.8-	1998 09 18	704	0.2+	0.6+	1999 12 06	704	0.8-	0.5+
1994 09 05	809	1.4-	1.4-	1998 09 25	699	0.8+	0.3+	1999 12 06	704	0.1+	0.4-
1994 09 06	809	0.3+	0.0	1998 09 25	699	0.8+	0.3+	1999 12 06	704	0.4+	0.5+
1994 09 06	809	0.3-	0.4+	1998 09 25	699	0.4+	0.3+	1999 12 14	704	1.7-	0.2-

1994 09 06	809	0.3−	0.1+	1998 09 26	704	0.2+	0.4−	1999 12 14	704	0.4+	0.1−
1997 03 05	809	0.3+	0.9+	1998 09 26	704	0.6−	0.8−	1999 12 14	704	0.3+	0.1+
1997 03 05	809	0.4+	1.1+	1998 09 26	704	0.2+	0.1−	2000 01 07	704	0.2−	0.1−
1997 03 05	809	0.9+	0.5+	1998 09 26	704	0.4−	0.0	2000 01 07	704	0.3+	0.0
1997 03 06	809	0.3+	1.6+	1998 09 26	704	1.0+	0.0	2000 01 07	704	0.3+	0.2−
1997 03 06	809	1.1+	1.4+	1998 09 27	704	0.1+	0.8−	2000 01 07	704	0.0	0.0
1997 03 06	809	0.6+	1.2+	1998 09 27	704	0.4+	0.4−	2000 01 11	704	0.3+	0.1+
1997 03 10	691	0.4−	0.6−	1998 09 27	704	0.2+	0.3−	2000 01 11	704	0.0	0.2−
1997 03 10	691	0.6−	0.4−	1998 09 27	704	1.5+	1.2−	2000 01 11	704	0.2−	0.4−
1997 03 10	691	0.7−	0.4−	1998 09 27	704	0.3+	0.8−	2000 01 11	704	0.1+	0.4−
1997 03 13	691	0.4−	0.9−	1998 10 14	704	0.9−	0.3+				
1997 03 13	691	0.5−	0.8−	1998 10 14	704	1.7+	0.5−				

(13131)* 1994 PL₃₂ = 1978 WN₆

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 24902)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	54.41242	(2000.0)	P	Q	
<i>n</i>	0.23889427	<i>ω</i>	207.96091	+0.40070501	−0.91544791
<i>a</i>	2.5723628	<i>Ω</i>	218.44964	+0.85139242	+0.38708610
<i>e</i>	0.1904588	<i>i</i>	3.43811	+0.33847665	+0.11008850
<i>P</i>	4.13	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1978 11 29	675	1.1−	0.6+	1994 09 06	809	0.3−	1.3−	1999 12 07	704	0.1−	0.7−
1978 11 30	675	0.6+	0.4+	1996 02 20	566	0.1−	0.9−	1999 12 07	704	1.2+	0.3−
1994 08 12	809	(2.8+	0.4+)	1996 02 20	566	0.1−	0.7−	1999 12 07	704	0.0	0.3−
1994 08 12	809	1.5+	0.5+	1996 02 20	566	0.2−	0.9−	2000 01 05	704	0.9−	0.2−
1994 08 12	809	(2.3+	0.5+)	1998 08 17	704	(3.6−	0.6−)	2000 01 05	704	0.4+	0.3+
1994 08 13	809	(2.5+	0.4−)	1998 08 17	704	(2.6−	0.3+)	2000 01 05	704	0.0	0.0
1994 08 13	809	1.4+	0.6−	1998 08 17	704	(3.3−	1.7+)	2000 01 05	704	1.0+	0.3+
1994 08 13	809	1.7+	0.7−	1998 08 17	704	1.6−	0.1+	2000 01 07	704	0.2−	0.3+
1994 09 05	809	0.7+	0.3+	1998 08 17	704	(2.8−	0.4+)	2000 01 07	704	0.1−	0.2−
1994 09 05	809	0.4−	0.6−	1998 08 28	699	(2.5−	1.2+)	2000 01 07	704	0.1−	0.0
1994 09 05	809	0.8−	0.3−	1998 08 28	699	1.7−	0.9+	2000 01 07	704	0.5−	0.1−
1994 09 06	809	0.3−	0.0	1998 08 28	699	(0.7−	2.1+)	2000 01 07	704	0.1+	0.3−
1994 09 06	809	1.2+	0.9−	1999 12 07	704	1.3−	0.3+				

(13132)* 1994 PO₃₂ = 1979 OS₅ = 1987 SB₂₇

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 24902, *MPC* 34507), A. Doppler (*MPC* 34507)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	350.38878	(2000.0)	P	Q	
<i>n</i>	0.26917579	<i>ω</i>	223.88293	−0.97615092	−0.19963558
<i>a</i>	2.3756295	<i>Ω</i>	304.41503	+0.21652036	−0.86676757
<i>e</i>	0.0753173	<i>i</i>	5.93445	+0.01575809	−0.45701162
<i>P</i>	3.66	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1979 07 24	675	1.3−	0.4+	1998 10 12	699	0.1+	0.8+	1999 12 05	703	0.1−	1.0+
1979 07 25	675	0.3+	0.8+	1998 10 12	699	0.5+	0.5+	1999 12 05	703	0.3−	0.2+
1987 09 26	095	1.0+	0.1+	1998 10 22	713	0.8+	0.2−	1999 12 05	703	1.5−	0.7+
1994 08 12	809	(3.2+	0.7−)	1998 10 22	713	0.8+	0.5+	1999 12 16	699	0.9+	0.6+
1994 08 12	809	(2.8+	0.0)	1998 10 22	713	0.7+	0.2+	1999 12 16	699	0.6+	1.6+
1994 08 12	809	(3.1+	0.4−)	1998 10 28	704	1.3−	0.1+	1999 12 16	699	0.3−	1.3+
1994 08 13	809	(3.6+	0.6−)	1998 10 28	704	0.1−	0.3+	2000 01 05	704	0.0	0.4+
1994 08 13	809	(2.8+	0.3−)	1998 10 28	704	0.2−	0.0	2000 01 05	704	0.1+	0.1+
1994 08 13	809	(3.0+	0.4−)	1998 10 28	704	0.3+	0.4−	2000 01 05	704	0.1+	1.1+
1994 09 05	809	0.5−	1.3+	1998 10 28	704	1.1−	0.0	2000 01 05	704	0.4+	0.5−
1994 09 05	809	0.0	0.6+	1998 10 29	713	0.7−	0.2−	2000 01 08	704	0.5−	0.4+
1994 09 05	809	0.7−	1.1+	1998 10 29	713	0.0	1.1−	2000 01 08	704	1.0+	0.0
1994 09 06	809	0.3−	0.6+	1998 11 16	566	0.2−	0.9−	2000 01 08	704	0.5+	0.1−
1994 09 06	809	0.3−	0.7+	1998 11 16	566	0.1−	1.0−	2000 01 08	704	1.1+	0.1−

1994 09 06	809	0.1−	0.9+	1998 11 16	566	0.2−	0.4−	2000 01 08	704	0.1+	0.6−
1998 10 12	699	0.5+	0.4−	1999 12 05	703	0.6+	0.2+				

(13133)* 1994 PL₃₄ = 1977 RE₁₆ = 1997 HD₁₅

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern Observatory.

Id. S. Nakano (*MPC* 32237)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Asher			
<i>M</i>	24.32871	(2000.0)	P	Q	
<i>n</i>	0.22883524	<i>ω</i>	202.84593	+0.50887565	−0.86022431
<i>a</i>	2.6472043	<i>Ω</i>	216.58809	+0.79800021	+0.48557422
<i>e</i>	0.1192097	<i>i</i>	3.13072	+0.32286413	+0.15566571
<i>P</i>	4.31	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1977 09 09	675	0.1−	1.3−	1999 11 03	704	0.3+	0.5−	1999 11 28	049	1.1+	1.3+
1977 09 10	675	1.2+	1.5−	1999 11 03	704	0.3+	0.1−	1999 11 28	049	1.2+	1.4+
1994 08 10	809	0.6+	1.7+	1999 11 09	704	0.2+	0.8−	1999 11 29	049	0.2+	0.0
1994 08 10	809	0.9−	0.5+	1999 11 09	704	0.2−	0.9−	1999 11 29	049	0.6+	0.1+
1994 08 10	809	0.0	1.0+	1999 11 09	704	0.2−	1.3−	1999 11 29	049	0.7+	0.1+
1994 08 11	809	0.4−	0.4+	1999 11 09	704	0.5−	1.1−	1999 12 03	699	0.7+	1.4+
1994 08 11	809	0.2−	0.6+	1999 11 09	704	0.6−	1.0−	1999 12 03	699	0.5−	0.7+
1994 08 11	809	0.7−	0.1+	1999 11 10	704	0.5+	0.5−	1999 12 03	699	0.8+	1.4+
1994 09 03	809	(3.5−	4.4−)	1999 11 10	704	0.6+	0.2−	1999 12 07	704	0.9−	0.2+
1994 09 03	809	(3.6−	5.5−)	1999 11 10	704	0.3+	0.3−	1999 12 07	704	0.8−	0.2+
1994 09 03	809	(3.9−	5.7−)	1999 11 10	704	0.4+	0.5−	1999 12 07	704	0.8−	0.0
1994 09 04	809	(1.4−	3.9−)	1999 11 10	704	0.1−	0.6−	1999 12 07	704	0.8−	0.1−
1994 09 04	809	(0.5+	3.2−)	1999 11 15	704	0.1+	0.1−	1999 12 08	704	0.5−	0.1+
1994 09 04	809	(0.3+	2.5−)	1999 11 15	704	0.2+	0.2−	1999 12 08	704	0.5−	0.2−
1997 04 29	691	0.1+	0.4−	1999 11 15	704	0.0	0.2+	1999 12 08	704	0.5−	0.4−
1997 04 29	691	0.6+	0.1−	1999 11 15	704	0.2−	0.2+	1999 12 08	704	0.3−	0.4−
1997 04 29	691	0.3+	0.0	1999 11 15	704	0.1+	0.1−	1999 12 08	704	0.2−	0.1−
1997 05 08	691	0.3−	0.1+	1999 11 17	704	0.1−	0.5−	1999 12 12	691	0.6−	0.1−
1997 05 08	691	0.4−	0.1+	1999 11 17	704	0.2−	0.1−	1999 12 12	691	0.5−	0.1+
1997 05 08	691	0.2−	0.3+	1999 11 17	704	0.4−	0.3+	1999 12 12	691	0.4−	0.2+
1999 11 03	704	0.4+	0.7−	1999 11 17	704	0.4−	1.2+	1999 12 30	699	0.3−	1.8+
1999 11 03	704	0.0	0.3−	1999 11 17	704	0.1+	0.1+	1999 12 30	699	0.3−	1.2+
1999 11 03	704	0.3+	0.9−	1999 11 28	049	1.1+	1.3+	1999 12 30	699	(0.6−	2.4+)

(13134)* 1994 QR = 1953 RZ₁ = 1998 OE₁₀

Discovered 1994 Aug. 16 by T. Kobayashi at Oizumi.

Id. B. G. Marsden (*MPC* 32460)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Marsden			
<i>M</i>	105.76999	(2000.0)	P	Q	
<i>n</i>	0.24064950	<i>ω</i>	206.40621	+0.99621154	−0.08019438
<i>a</i>	2.5598396	<i>Ω</i>	158.11524	+0.08674644	+0.94366631
<i>e</i>	0.1679158	<i>i</i>	5.17750	−0.00613370	+0.32103390
<i>P</i>	4.10	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1953 09 06	675	0.4+	0.3−	1995 11 21	691	0.1+	0.0	1998 08 26	426	0.4+	0.2−
1953 09 06	675	0.2−	0.9−	1998 07 15	699	0.9+	0.4+	1998 08 26	426	0.2+	0.2−
1994 08 12	809	(3.9+	3.4+)	1998 07 15	699	0.7+	1.0−	1998 09 14	704	0.7−	0.2+
1994 08 12	809	(1.9+	4.1+)	1998 07 15	699	0.7+	0.4−	1998 09 14	704	0.4−	0.1−
1994 08 12	809	(1.5+	3.6+)	1998 07 26	809	(3.9+	2.6+)	1998 09 14	704	1.5−	0.7+
1994 08 13	809	(4.5+	3.7+)	1998 07 26	809	(3.8+	2.2+)	1998 09 14	704	1.2+	0.6+
1994 08 13	809	(2.8+	3.5+)	1998 07 26	809	(3.8+	1.6+)	1998 09 14	704	1.9+	0.5+
1994 08 13	809	(2.3+	2.8+)	1998 07 27	809	(2.1+	2.7+)	1998 10 17	699	1.0−	0.4+
1994 08 16	411	0.9−	1.3−	1998 07 27	809	(2.0+	2.7+)	1998 10 17	699	1.3−	0.2−
1994 08 16	411	0.9−	0.7+	1998 07 27	809	(1.6+	2.9+)	1998 10 17	699	1.6−	0.5−
1994 08 17	411	0.5−	0.8−	1998 08 17	704	0.6−	0.3−	1999 12 14	704	0.2+	1.3+
1994 08 17	411	1.0−	0.2+	1998 08 17	704	0.6−	0.4+	1999 12 14	704	0.2+	1.5+
1994 08 27	411	0.6−	0.1+	1998 08 17	704	0.3−	1.3+	1999 12 14	704	0.2−	0.6+
1994 08 27	411	1.5−	0.5+	1998 08 17	704	0.8−	0.1+	1999 12 14	704	0.6+	0.6+
1994 09 01	411	0.4+	1.7−	1998 08 17	704	0.7−	0.4+	1999 12 14	704	1.0−	0.6+

1994 09 01	411	0.3−	1.0−	1998 08 22	566	0.3−	0.4−	1999 12 31	699	0.2+	0.1−
1994 09 01	411	0.3−	0.8−	1998 08 22	566	1.7−	1.3−	1999 12 31	699	0.4+	0.6+
1994 09 05	809	0.8+	0.5+	1998 08 22	566	1.0−	0.2−	1999 12 31	699	0.6+	0.5+
1994 09 05	809	1.1+	0.2+	1998 08 23	704	0.5+	0.5−	2000 01 05	704	0.3−	1.0−
1994 09 05	809	0.4+	0.2+	1998 08 23	704	0.3+	0.9+	2000 01 05	704	0.2−	0.4−
1994 09 06	809	0.6+	1.8+	1998 08 23	704	1.3+	0.1+	2000 01 05	704	0.3−	1.5−
1994 09 06	809	1.2+	1.4+	1998 08 23	704	0.5+	0.7+	2000 01 05	704	0.2−	1.0−
1994 09 06	809	1.8+	1.2+	1998 08 23	704	0.6+	0.8−	2000 01 05	704	0.0	0.9−
1994 09 30	675	0.1+	0.7−	1998 08 25	426	0.3+	0.4−	2000 01 07	704	0.4−	0.2+
1994 09 30	675	0.7+	0.2+	1998 08 25	426	0.4+	0.1−	2000 01 07	704	0.5−	0.3−
1995 11 21	691	0.7+	0.1−	1998 08 25	426	0.5+	0.1−	2000 01 07	704	0.0	0.9−
1995 11 21	691	0.2+	0.0	1998 08 26	426	0.5+	0.5−	2000 01 07	704	0.0	0.5−

(13135)* 1994 QX = 1998 OO₉

Discovered 1994 Aug. 31 by N. Kawasato at Uenohara.

Id. G. V. Williams (*MPC* 32460)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	71.79835		(2000.0)	P	Q
<i>n</i>	0.23070713	ω	78.21964	+0.80950905	−0.56187582
<i>a</i>	2.6328657	Ω	315.66869	+0.39732549	+0.73780030
<i>e</i>	0.1242987	<i>i</i>	14.10226	+0.43223554	+0.37409394
<i>P</i>	4.27	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1994 08 31	376	(3.0−	0.7−)	1998 08 21	566	0.5−	0.0	1999 12 03	699	0.0	1.1+
1994 08 31	376	0.9−	0.3−	1998 08 21	566	0.2+	0.3−	1999 12 12	704	0.4−	0.8−
1994 09 03	376	(2.5+	0.8+)	1998 08 21	566	0.0	0.0	1999 12 12	704	0.1+	1.0−
1994 09 03	376	0.3+	1.3+	1998 08 28	699	0.5−	0.8−	1999 12 12	704	0.2−	1.2−
1994 09 09	376	0.4−	0.4−	1998 08 28	699	0.5−	0.1−	1999 12 12	704	0.5−	0.8−
1994 09 09	376	0.1−	0.4+	1998 08 28	699	0.3−	0.2+	1999 12 13	699	1.4−	1.0+
1996 01 18	327	0.4+	0.0	1998 08 30	699	0.5−	0.0	1999 12 13	699	0.8−	0.7+
1996 01 18	327	0.2+	0.4+	1998 08 30	699	0.5−	0.6+	1999 12 13	699	0.7+	0.0
1996 01 18	327	0.2+	0.2−	1998 08 30	699	0.2+	0.2+	1999 12 13	699	0.6+	0.6+
1998 07 26	809	1.3+	1.7−	1998 09 15	699	0.2+	0.4−	1999 12 13	699	0.9+	0.6−
1998 07 26	809	0.3+	1.6−	1998 09 15	699	0.1−	0.3+	1999 12 13	699	0.5+	0.3−
1998 07 26	809	0.6+	1.9−	1998 09 15	699	0.4+	0.1+	1999 12 15	704	0.3+	0.2−
1998 07 27	809	1.7+	0.4−	1998 09 22	699	0.6−	1.1+	1999 12 15	704	0.3+	1.3−
1998 07 27	809	1.1+	0.6−	1998 09 22	699	0.4+	0.6+	1999 12 15	704	0.8−	0.2+
1998 07 27	809	1.3+	0.9−	1998 09 22	699	0.1+	1.2+	1999 12 15	704	0.1−	0.1+
1998 08 17	704	0.1−	0.3+	1999 12 03	699	0.7−	0.4+	2000 01 02	704	0.2+	1.4−
1998 08 17	704	0.4−	0.4+	1999 12 03	699	0.4−	0.9+	2000 01 02	704	(0.2−	2.1−)
1998 08 17	704	0.3−	0.9+	1999 12 03	699	0.0	0.4−	2000 01 02	704	1.1−	1.8−
1998 08 17	704	0.7−	0.0	1999 12 03	699	0.3−	1.1+	2000 01 02	704	(0.0	2.2−)
1998 08 17	704	0.2−	0.2+	1999 12 03	699	1.1+	0.8+				

(13136)* 1994 UJ₁ = 1992 EW₃₄

Discovered 1994 Oct. 25 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 24399)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	126.56106		(2000.0)	P	Q
<i>n</i>	0.23877286	ω	19.65128	+0.99097543	−0.13356866
<i>a</i>	2.5732348	Ω	348.00791	+0.11457882	+0.88772376
<i>e</i>	0.1818260	<i>i</i>	3.11060	+0.06956578	+0.44057456
<i>P</i>	4.13	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1992 03 03	809	1.1−	0.2−	1998 09 26	704	0.8+	0.1−	1998 10 29	704	0.8+	0.5+
1992 03 06	809	1.2+	0.4+	1998 09 27	704	0.2−	0.7+	1998 10 29	704	0.4−	0.2+
1994 10 25	399	0.4−	0.2−	1998 09 27	704	0.6+	0.2−	1998 11 07	610	0.0	0.2−
1994 10 25	399	(2.8−	0.2−)	1998 09 27	704	0.7+	1.3+	1998 11 07	610	0.1−	0.3−
1994 10 26	399	1.3+	0.6−	1998 09 27	704	0.3+	0.8+	1998 11 07	610	0.2−	0.4−
1994 10 26	399	0.3+	0.3−	1998 09 27	704	0.0	0.1−	1998 11 07	610	0.3−	0.3−
1994 11 07	399	0.6+	0.6+	1998 10 13	422	0.5+	0.6+	1998 11 07	610	0.5−	0.4−
1994 11 07	399	0.1+	0.2+	1998 10 13	422	0.5+	0.6+	1998 11 10	699	0.5+	0.1−
1994 11 10	399	0.2−	0.5−	1998 10 13	422	0.6+	0.6+	1998 11 10	699	0.4−	0.3−

1994 11 10	399	1.8−	0.1+	1998 10 14	704	(1.2+	2.3+)	1998 11 10	699	0.1−	0.3−
1996 03 12	691	0.1+	0.1+	1998 10 14	704	0.2−	0.1−	1998 12 09	704	1.6−	0.0
1996 03 12	691	0.1−	0.2−	1998 10 14	704	0.7−	0.4−	1998 12 09	704	0.9+	0.4−
1996 03 12	691	0.1+	0.1−	1998 10 14	704	1.1−	0.5−	1998 12 09	704	1.1+	0.8−
1996 03 17	691	0.3+	0.1−	1998 10 14	704	0.6−	0.8+	1998 12 09	704	0.3+	1.4+
1996 03 17	691	0.3+	0.2−	1998 10 15	704	0.6+	0.6+	1998 12 09	704	0.6+	0.8+
1998 09 14	704	0.6+	0.5−	1998 10 15	704	0.6−	0.4+	1999 01 08	704	(5.6+	3.7−)
1998 09 14	704	0.2+	0.0	1998 10 15	704	0.9−	1.3−	1999 01 08	704	(6.2+	1.0+)
1998 09 14	704	1.2−	1.6−	1998 10 15	704	1.0−	0.1+	1999 01 08	704	(2.8+	3.4−)
1998 09 15	699	0.3−	0.2−	1998 10 15	704	0.8+	0.1+	1999 01 08	704	(3.9+	1.5−)
1998 09 15	699	0.4−	0.2−	1998 10 15	422	0.7+	0.3+	1999 01 08	704	(5.3+	3.6−)
1998 09 15	699	0.3−	0.1−	1998 10 15	422	0.6+	0.1+	1999 12 06	704	0.4+	0.4−
1998 09 18	120	0.5−	0.0	1998 10 15	422	0.6+	0.2+	1999 12 06	704	0.5+	0.1−
1998 09 18	120	0.7−	0.1−	1998 10 16	151	0.6+	0.9−	1999 12 06	704	1.2−	1.0−
1998 09 18	120	0.6−	0.3+	1998 10 16	151	0.6+	0.3−	1999 12 06	704	0.4+	0.3+
1998 09 18	704	0.8−	0.9+	1998 10 16	151	0.9+	0.0	2000 01 04	704	0.4+	0.4+
1998 09 18	704	1.3−	0.9+	1998 10 28	704	1.2+	0.3−	2000 01 04	704	0.1−	0.7−
1998 09 18	704	0.1−	0.2+	1998 10 28	704	0.6+	0.2+	2000 01 04	704	0.7−	0.3+
1998 09 18	704	0.5−	1.0+	1998 10 28	704	0.3+	0.9−	2000 01 04	704	0.1+	0.4+
1998 09 18	704	0.9−	0.3+	1998 10 28	704	0.3+	0.7−	2000 01 07	704	0.5+	0.1+
1998 09 26	704	0.5−	0.0	1998 10 28	704	0.3+	0.0	2000 01 07	704	0.5−	0.5+
1998 09 26	704	0.1−	0.3−	1998 10 29	704	0.4−	0.3+	2000 01 07	704	0.3−	0.3+
1998 09 26	704	1.1+	0.7−	1998 10 29	704	0.3−	0.4+	2000 01 07	704	0.0	0.6+
1998 09 26	704	0.3−	0.9−	1998 10 29	704	0.2−	0.8+	2000 01 07	704	0.3+	0.8+

(13137)* 1994 UT₁ = 1997 GY₂₃

Discovered 1994 Oct. 26 by S. Ueda and H. Kaneda at Kushiro.

Id. G. V. Williams (*MPC* 29622)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	86.11933		(2000.0)	P	Q
<i>n</i>	0.22082724	ω	330.80926	+0.95086572	−0.25289385
<i>a</i>	2.7108217	Ω	45.02764	+0.30960359	+0.77664961
<i>e</i>	0.1880527	<i>i</i>	14.62320	+0.00002528	+0.57694028
<i>P</i>	4.46	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1994 10 26	399	0.6−	0.7+	1997 04 11	704	0.4+	0.4−	1999 12 02	652	1.2+	1.0+
1994 10 26	399	(2.2−	0.8−)	1997 04 11	704	0.2−	0.1−	1999 12 03	699	0.0	0.3+
1994 10 31	399	0.2+	1.0+	1997 05 07	704	0.2+	0.9+	1999 12 03	699	0.2+	0.5+
1994 10 31	399	0.3−	0.1−	1997 05 07	704	0.2+	1.1+	1999 12 03	699	0.4−	0.8+
1994 11 03	905	0.2−	0.0	1997 05 07	704	0.3+	0.6+	1999 12 13	704	0.4−	0.0
1994 11 03	905	0.2+	1.0+	1997 05 07	704	0.8−	1.1+	1999 12 13	704	0.0	0.4+
1994 11 04	675	0.3+	0.9−	1998 09 21	704	0.4−	0.9−	1999 12 13	704	0.1−	0.2−
1994 11 04	675	0.6−	0.4−	1998 09 21	704	1.3−	1.4+	1999 12 13	704	0.2+	0.1+
1994 11 06	675	0.4+	1.7−	1998 09 21	704	0.2−	0.4+	1999 12 13	704	0.4−	0.6−
1994 11 06	675	0.2−	1.0−	1998 09 21	704	0.3+	1.0+	1999 12 13	704	0.0	0.0
1994 11 07	399	(2.4−	0.1−)	1998 09 21	704	0.6+	1.0+	1999 12 13	704	0.7+	0.2−
1994 11 07	399	0.3−	0.2−	1998 12 08	704	0.3+	1.5+	1999 12 13	704	0.1−	0.1+
1994 11 09	905	0.8+	1.0+	1998 12 08	704	(2.5−	0.9+)	1999 12 13	704	0.1+	0.6−
1994 11 09	905	0.3+	0.2+	1998 12 08	704	1.1−	0.2+	1999 12 13	704	0.2+	0.0
1997 04 06	704	0.1−	0.1−	1998 12 08	704	0.5+	0.6−	1999 12 30	704	0.0	0.0
1997 04 06	704	0.2+	0.4−	1998 12 08	704	(3.1−	3.0+)	1999 12 30	704	0.2+	1.3+
1997 04 07	704	1.4+	0.7−	1999 12 02	652	0.5−	0.5+	1999 12 30	704	0.2−	0.4+
1997 04 07	704	0.1−	0.4+	1999 12 02	652	0.0	0.2−	1999 12 30	704	0.1+	0.4+

Residuals in seconds of arc

1981 05 08	675	0.0	0.0	1998 10 28	704	0.3+	0.4−	1999 01 08	704	1.0−	0.6−
1981 05 09	675	(6.0+	2.5−)	1998 10 28	704	1.1+	0.0	1999 01 11	704	1.4+	1.6+
1994 10 26	399	(1.0−	2.7+)	1998 10 28	704	0.2−	0.1−	1999 01 11	704	2.0−	0.9+
1994 10 26	399	1.0−	1.8+	1998 10 29	704	0.5+	0.3−	1999 01 11	704	0.7−	0.2−
1994 11 01	411	1.0−	0.9−	1998 10 29	704	0.0	0.9−	1999 01 11	704	(1.5+	2.5+)
1994 11 01	411	0.0	0.1+	1998 10 29	704	0.7+	0.5−	1999 01 11	704	0.7+	1.3−
1994 11 02	411	0.4−	0.6−	1998 10 29	704	1.7+	1.3−	1999 12 13	703	1.2+	0.6+
1994 11 02	411	0.2+	0.1−	1998 10 29	704	1.2+	1.4−	1999 12 13	703	0.0	0.4+
1994 11 06	675	0.1−	0.0	1998 11 10	704	0.6−	0.0	1999 12 13	703	0.2+	0.3+
1994 11 06	675	0.5+	0.5+	1998 11 10	704	1.1−	0.2+	1999 12 13	703	0.1+	1.6+
1994 11 08	411	0.2+	0.5+	1998 11 10	704	0.2−	0.4+	1999 12 14	704	0.1+	1.0−
1994 11 08	411	0.1+	0.6−	1998 11 10	704	0.7−	0.1+	1999 12 14	704	0.5+	0.5−
1994 11 23	411	0.5+	0.6+	1998 11 10	704	0.4−	0.2+	1999 12 14	704	0.2+	0.3+
1994 11 23	411	0.3+	0.1+	1998 11 11	704	0.9−	0.1−	2000 01 07	699	1.3+	0.1+
1994 11 28	675	(0.2+	2.6−)	1998 11 11	704	0.2−	0.3+	2000 01 07	699	0.6+	0.2+
1994 11 28	675	(0.5+	2.4−)	1998 11 11	704	0.1−	0.3+	2000 01 07	699	0.2−	1.5+
1994 11 30	675	0.3+	1.5−	1998 11 11	704	0.2+	0.9+	2000 01 08	704	1.1−	0.0
1994 11 30	675	2.0+	1.0−	1998 11 11	704	0.0	0.6−	2000 01 08	704	0.6−	0.9+
1994 12 03	675	0.3+	0.5−	1998 11 20	699	0.2−	0.6+	2000 01 08	704	0.1−	0.9−
1994 12 03	675	1.3−	1.0−	1998 11 20	699	0.1+	0.6+	2000 01 11	704	0.4+	0.4−
1998 08 29	704	0.9−	0.4+	1998 11 20	699	0.1+	0.9+	2000 01 11	704	0.5−	0.7−
1998 08 29	704	0.2−	1.7+	1999 01 08	704	0.2−	0.1+	2000 01 11	704	0.4−	0.5−
1998 08 29	704	(2.6+	2.2−)	1999 01 08	704	1.1+	0.1+	2000 01 11	704	1.0−	1.0−
1998 08 29	704	(2.9+	0.7−)	1999 01 08	704	1.6+	0.3−				
1998 10 28	704	0.1−	0.8+	1999 01 08	704	2.0−	1.4+				

(13139)* 1994 VD₂

Discovered 1994 Nov. 3 by Y. Shimizu and T. Urata at the Nachi-Katsuura

Observatory.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	66.72630	(2000.0)	<i>P</i>	Nakano	<i>Q</i>
<i>n</i>	0.21712071	ω	352.03470	+0.62302443	−0.77096123
<i>a</i>	2.7415860	Ω	59.32425	+0.72585918	+0.50688693
<i>e</i>	0.2197194	<i>i</i>	8.83745	+0.29149446	+0.38559618
<i>P</i>	4.54	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1994 11 03	905	0.4−	0.1+	1996 04 12	385	0.3+	0.1−	1998 09 17	699	0.4+	0.0
1994 11 03	905	0.3−	1.4+	1996 04 12	385	0.8+	1.1−	1998 09 21	704	0.0	0.1−
1994 11 10	905	1.4+	0.8−	1996 04 12	385	0.5−	0.3+	1998 09 21	704	0.1+	0.1+
1994 11 10	905	1.0−	0.6+	1996 04 13	385	0.9−	0.8+	1998 09 21	704	0.4−	1.2+
1994 11 25	411	0.5−	0.0	1996 04 13	385	0.1−	0.1+	1998 09 21	704	0.6−	0.8+
1994 11 25	411	0.2+	0.1−	1996 04 13	385	0.2+	0.5+	1998 09 21	704	0.0	0.7+
1994 11 26	411	0.3+	0.2+	1996 04 20	327	0.1+	0.5−	1998 12 08	704	0.0	0.2+
1994 11 26	411	0.0	0.1−	1996 04 20	327	0.6+	0.3+	1998 12 08	704	(0.1+	2.4+)
1994 12 03	098	0.5+	0.5+	1996 04 20	327	0.2+	0.7+	1998 12 08	704	0.8+	0.0
1994 12 03	098	1.1−	0.8−	1998 08 20	699	0.7−	0.5+	1998 12 08	704	0.6−	1.2+
1994 12 04	887	0.2−	0.3−	1998 08 20	699	0.5−	0.9+	1999 12 09	703	0.1−	0.4−
1994 12 04	887	0.1+	0.3−	1998 08 20	699	0.9−	0.1+	1999 12 09	703	0.3−	0.9+
1994 12 04	887	0.1−	0.3−	1998 09 01	426	0.6+	0.4−	1999 12 09	703	1.7−	0.9+
1994 12 19	887	0.1+	0.2−	1998 09 01	426	0.1−	0.5−	1999 12 09	703	0.2−	0.8+
1994 12 19	887	0.1−	0.2−	1998 09 01	426	0.2+	0.2−	1999 12 15	704	1.5−	1.0−
1994 12 19	887	0.1+	0.1+	1998 09 03	426	0.0	0.6−	1999 12 15	704	1.4+	0.3−
1994 12 23	385	0.1+	0.1+	1998 09 03	426	0.4+	0.5−	1999 12 15	704	0.9+	0.7+
1994 12 23	385	0.0	0.1−	1998 09 03	426	0.4+	0.9−	1999 12 15	704	1.0+	0.3−
1994 12 29	887	0.4+	0.5+	1998 09 16	888	0.1−	1.0−	2000 01 03	704	0.1+	0.1−
1994 12 29	887	0.5+	0.2+	1998 09 16	888	0.1+	0.2−	2000 01 03	704	0.3+	0.6−
1994 12 29	887	0.0	0.2+	1998 09 16	888	0.2+	0.2−	2000 01 03	704	0.4+	0.9−
1995 01 29	385	0.2−	0.2+	1998 09 17	699	0.2+	0.1−	2000 01 03	704	0.1−	0.3−
1995 01 29	385	0.2+	0.2−	1998 09 17	699	0.2+	0.2−	2000 01 03	704	0.5−	0.4+

(13140)* 1994 VW₂ = 1997 LA₉

Discovered 1994 Nov. 4 by K. Endate and K. Watanabe at Kitami.

Id. G. V. Williams (*MPC* 30276)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	86.15930		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.22365786	ω	312.64211	+0.85660870	-0.50843910
a	2.6879010	Ω	78.09593	+0.49575883	+0.76388814
e	0.2960409	i	5.14885	+0.14298506	+0.39744760
P	4.41	H	13.9	G 0.15	U 1

Residuals in seconds of arc

1994 11 04	400	0.6+	0.1+	1997 06 07	809	(0.7−	2.2−)	1998 12 08	704	1.2+	1.3+
1994 11 04	400	0.7+	0.3−	1997 06 08	809	0.5+	1.0+	1998 12 08	704	0.6−	0.7+
1994 11 06	400	(3.2+	2.5−)	1997 06 08	809	(0.9+	2.1+)	1999 11 16	704	1.2−	0.3−
1994 11 06	400	1.4+	2.0−	1997 06 08	809	0.1+	0.6+	1999 11 16	704	0.5−	0.4−
1994 11 24	894	0.9−	0.6−	1998 09 14	704	0.2+	0.2+	1999 11 16	704	0.2−	0.5+
1994 11 24	894	0.4−	0.0	1998 09 14	704	0.2+	0.3−	1999 11 16	704	0.7−	0.3−
1994 11 25	894	0.2+	0.3−	1998 09 14	704	0.6+	0.5+	1999 11 17	703	1.4+	1.0+
1994 11 26	400	0.4−	0.4−	1998 09 14	704	0.8−	0.8−	1999 11 17	703	0.2+	1.9+
1994 11 26	400	0.0	0.5−	1998 09 14	704	0.4−	0.4+	1999 11 17	703	0.6+	0.3+
1994 11 27	675	0.9+	0.4+	1998 11 20	699	1.0−	0.4−	1999 11 17	703	1.2+	1.7+
1994 11 27	675	0.3+	0.4−	1998 11 20	699	1.1−	0.6−	2000 01 10	699	0.2+	0.9−
1994 11 28	675	1.0−	0.3−	1998 11 20	699	0.6−	1.3+	2000 01 10	699	0.2−	0.3−
1994 11 28	675	0.5−	1.2+	1998 12 08	704	1.3+	1.6+	2000 01 10	699	0.2−	0.4+
1997 06 07	809	0.1−	1.7−	1998 12 08	704	(0.9+	2.5+)				
1997 06 07	809	0.7−	1.7−	1998 12 08	704	(0.9−	3.4+)				

(13141)* 1994 WW₂ = 1998 QD₆

Discovered 1994 Nov. 30 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 32461)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	176.94344		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.22263687	ω	305.35612	+0.76479904	+0.64411971
a	2.6961124	Ω	14.56075	−0.57177210	+0.68849991
e	0.0609327	i	3.16136	−0.29691596	+0.33328319
P	4.43	H	13.4	G	0.15
				U	1

Residuals in seconds of arc

1994 11 30	411	0.0	0.4−	1998 09 29	704	1.4+	0.8+	1998 11 15	566	1.5−	0.4+
1994 11 30	411	0.3+	0.4−	1998 09 29	704	0.4−	1.0−	1999 11 16	704	0.4−	0.9+
1994 12 03	411	0.1+	0.0	1998 10 19	699	0.7+	0.3+	1999 11 16	704	0.7+	0.7−
1994 12 03	411	0.3−	0.2+	1998 10 19	699	0.6+	0.0	1999 11 16	704	0.3−	0.6+
1994 12 07	411	1.5−	0.5−	1998 10 19	699	0.3+	0.6+	1999 11 16	704	0.9+	0.2−
1994 12 07	411	0.0	0.1−	1998 10 29	704	0.5−	0.8+	2000 01 04	704	0.4−	0.1+
1994 12 22	411	0.4−	0.9−	1998 10 29	704	0.4−	0.3+	2000 01 04	704	0.0	0.3+
1994 12 22	411	0.4−	0.8+	1998 10 29	704	0.2+	0.0	2000 01 04	704	0.1−	0.1−
1994 12 24	411	1.4+	0.4−	1998 10 29	704	0.2−	0.8−	2000 01 04	704	0.2−	0.3+
1994 12 24	411	1.0+	0.1+	1998 10 29	704	1.0−	0.3−	2000 01 04	704	0.1−	0.0
1996 03 11	691	0.9+	0.5+	1998 11 10	704	0.2+	0.0	2000 01 05	699	0.0	0.4−
1996 03 11	691	0.7+	0.6+	1998 11 10	704	0.7+	0.2−	2000 01 05	699	0.0	0.1+
1996 03 11	691	0.5+	0.4+	1998 11 10	704	0.6+	0.3−	2000 01 05	699	0.8+	1.0+
1996 03 19	566	0.3−	0.1+	1998 11 10	704	0.2−	0.5−	2000 01 06	704	0.4−	0.1−
1996 03 19	566	0.3−	0.2+	1998 11 11	704	0.9+	0.2+	2000 01 06	704	0.9−	0.9−
1996 03 19	566	0.4−	0.1+	1998 11 11	704	0.2+	0.1+	2000 01 06	704	0.4−	0.4−
1998 08 24	910	0.8−	0.2−	1998 11 11	704	0.6+	0.4+	2000 01 06	704	0.3−	0.2−
1998 08 24	910	0.4−	0.2−	1998 11 11	704	0.5−	0.5+	2000 01 06	704	0.2−	0.1−
1998 08 24	910	0.7−	0.2−	1998 11 11	704	(2.0−	2.1−)	2000 01 06	704	0.4+	0.2−
1998 08 25	910	0.9+	0.0	1998 11 14	699	0.4−	0.2−	2000 01 06	704	0.4−	0.4−
1998 08 25	910	0.2−	0.0	1998 11 14	699	0.5+	0.3+	2000 01 06	704	0.5+	0.3+
1998 08 25	910	0.2−	0.2+	1998 11 14	699	0.4+	0.7+	2000 01 06	704	0.2+	0.2−
1998 09 29	704	1.2−	0.6+	1998 11 15	566	0.7−	0.3+	2000 01 06	704	0.7+	0.2−
1998 09 29	704	0.2+	0.4−	1998 11 15	566	0.4−	0.1−				

2000 JAN. 24

M.P.C. 37525

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	51.72913		(2000.0)		P		Q			
<i>n</i>	0.21873494	ω	213.49434		+0.10302820		-0.98026086			
<i>a</i>	2.7280811	Ω	231.17963		+0.95353024		+0.14562379			
<i>e</i>	0.1240927	<i>i</i>	12.50833		+0.28313471		-0.13372496			
<i>P</i>	4.51	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc										
1989 09 28	493	(0.6- 5.4-)	1998 08 23	699	0.5- 0.2+	1999 12 16	704	1.1- 1.0+		
1989 09 28	493	1.3+ 0.1-	1998 09 19	699	0.3+ 0.5+	1999 12 16	704	0.5- 0.2-		
1989 10 03	493	(0.9+ 4.5-)	1998 09 19	699	0.4+ 0.8+	2000 01 07	699	0.8+ 0.4+		
1989 10 03	493	0.4+ 1.3-	1998 09 19	699	0.9+ 0.9+	2000 01 07	699	1.0+ 1.0+		
1991 03 09	372	(2.8- 2.8+)	1998 10 18	699	1.0- 0.2+	2000 01 07	699	0.7+ 1.1+		
1991 03 09	372	0.9- 0.9+	1998 10 18	699	1.0- 0.4+	2000 01 09	704	0.8+ 1.2-		
1991 03 13	372	(3.6- 0.5-)	1998 10 18	699	0.9- 0.7+	2000 01 09	704	1.0+ 0.2-		
1994 12 25	399	0.4- 0.8-	1998 12 09	704	0.1- 0.7-	2000 01 09	704	0.2+ 0.2+		
1994 12 25	399	1.5+ 0.2-	1998 12 09	704	1.0- 1.0+	2000 01 11	704	0.1+ 0.1+		
1994 12 30	399	0.2- 0.4+	1998 12 09	704	1.8- 1.7-	2000 01 11	704	0.6+ 0.4+		
1994 12 30	399	0.8- 0.1-	1998 12 09	704	2.0+ 0.1-	2000 01 11	704	0.1+ 0.1+		
1995 01 06	399	0.8- 0.9-	1998 12 09	704	0.9+ 1.4+	2000 01 11	704	0.2+ 0.1-		
1995 01 06	399	0.0 0.4-	1999 12 16	704	0.3- 0.4+	2000 01 11	704	0.3- 0.1+		
1998 08 23	699	0.3- 0.3-	1999 12 16	704	0.7- 0.1-					
1998 08 23	699	0.0 0.4+	1999 12 16	704	1.3- 1.1-					

(13143)* 1995 AF = 1967 SA = 1989 TD₁₈

Discovered 1995 Jan. 2 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 24754)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	186.08092		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22644347	ω	27.94305		+0.78235040		+0.59560559	
<i>a</i>	2.6658120	Ω	294.33318		-0.60220637		+0.64870686	
<i>e</i>	0.1678898	<i>i</i>	11.53220		-0.15898220		+0.47374402	
<i>P</i>	4.35 <th><i>H</i></th> <td>12.6</td> <th><i>G</i></th> <td>0.15<th><i>U</i></th><td>2</td><td></td></td>	<i>H</i>	12.6	<i>G</i>	0.15 <th><i>U</i></th> <td>2</td> <td></td>	<i>U</i>	2	
Residuals in seconds of arc								
1967 09 09	095	(7.0- 2.7-)	1998 11 14	367	0.1+	0.3+	1998 12 19	704 0.8-
1967 09 30	095	(8.4+ 6.5+)	1998 11 14	367	0.2+	0.5+	1999 01 06	699 0.6+
1989 10 03	493	1.7+ 1.5+	1998 11 16	704	0.8-	0.6+	1999 01 06	699 0.4+
1989 10 03	493	0.5- 1.7+	1998 11 16	704	0.1-	0.6-	1999 01 06	699 0.2+
1989 10 04	493	0.1- 0.2+	1998 11 16	704	1.2+	0.0	1999 11 17	704 0.9+
1989 10 05	493	1.4+ 0.3-	1998 11 16	704	0.7+	0.7+	1999 11 17	704 1.0-
1989 10 05	493	2.2- 1.6-	1998 11 16	704	0.5+	0.7+	1999 11 17	704 1.1+
1989 10 06	493	(1.0+ 2.9-)	1998 12 13	716	0.4-	0.6-	1999 12 05	703 0.0
1991 01 18	675	0.5- 0.7+	1998 12 13	716	0.1-	0.5-	1999 12 05	703 0.2+
1991 01 18	675	0.8- 0.6+	1998 12 14	704	0.1-	0.4+	1999 12 05	704 0.4-
1995 01 02	411	0.0 0.2-	1998 12 14	704	0.3+	0.1-	1999 12 05	703 0.4-
1995 01 02	411	0.4+ 0.4-	1998 12 14	716	0.8-	0.5-	1999 12 05	703 0.7+
1995 01 04	010	1.4+ 0.6-	1998 12 14	704	0.5-	0.3-	1999 12 05	704 0.4+
1995 01 04	010	0.1- 1.5-	1998 12 14	704	1.4+	1.5-	1999 12 05	704 0.5-
1995 01 04	010	0.8+ 1.1-	1998 12 14	704	0.9+	0.2-	1999 12 14	704 1.0-
1995 01 04	010	0.0 0.7+	1998 12 14	716	0.3-	0.4-	1999 12 14	704 0.0
1995 01 05	010	0.3+ 0.6+	1998 12 17	704	0.4+	0.0	1999 12 14	704 0.0
1995 01 05	010	0.2- 0.8+	1998 12 17	704	0.5+	0.1-	1999 12 14	704 0.7+
1995 01 05	411	0.0 0.6+	1998 12 17	704	0.2-	0.4+	2000 01 05	704 0.3-
1995 01 05	411	0.6- 0.0	1998 12 17	704	0.1-	0.6-	2000 01 05	704 0.3+
1995 01 06	411	0.5- 0.1-	1998 12 17	704	0.3-	0.3-	2000 01 05	704 0.5+
1995 01 06	411	0.9- 0.3+	1998 12 19	704	0.3-	0.4+	2000 01 05	704 0.4+
1995 01 19	411	0.2- 0.2-	1998 12 19	704	0.2+	0.0	2000 01 05	704 0.4-
1995 01 19	411	0.4+ 1.3-	1998 12 19	704	0.6-	0.7-	2000 01 08	704 0.4+
1998 09 22	689	0.4- 0.3+	1998 12 19	704	0.4-	0.2+	2000 01 08	704 0.3-
1998 11 14	704	0.2- 0.3-	1998 12 19	704	1.0-	0.9+	2000 01 08	704 0.6-
1998 11 14	704	0.6+ 0.1+	1998 12 19	704	0.2+	0.4-	2000 01 08	704 0.7+
1998 11 14	704	0.8+ 0.9+	1998 12 19	704	1.9-	0.3-	2000 01 08	704 1.1-
1998 11 14	704	0.3+ 0.6+	1998 12 19	704	0.5+	0.8-		
1998 11 14	704	1.5- 1.1+	1998 12 19	704	0.1-	1.6-		

(13144)* 1995 BJ = 1997 MU₁₀

Discovered 1995 Jan. 23 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 30663)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	39.39657		(2000.0)		P		Q				
n	0.18365171	ω	119.90583		+0.42284965		-0.89511630				
a	3.0652982	Ω	304.40961		+0.76113423		+0.43543684				
e	0.0927375	i	9.86143		+0.49180571		+0.09571610				
P	5.37	H	13.3	G	0.15	U	1				
Residuals in seconds of arc											
1995 01 23	411	1.5-	0.5+	1998 08 24	704	0.3-	0.0	1999 10 09	703	0.3+	0.6+
1995 01 23	411	0.4-	0.7+	1998 08 24	704	(0.5+	2.3+)	1999 12 15	704	0.1-	0.1+
1995 01 25	411	0.2-	0.1-	1998 08 24	704	1.0-	0.5-	1999 12 15	704	0.1+	0.9+
1995 01 25	411	0.5-	0.5+	1998 08 24	704	1.1-	0.9+	1999 12 15	704	1.1+	0.2-
1995 01 29	411	1.3+	0.4+	1998 08 24	704	1.0-	0.3+	1999 12 15	704	0.3+	1.1-
1995 01 29	411	1.3+	0.3+	1998 08 27	704	0.2-	0.2-	1999 12 15	704	0.3+	1.2+
1995 02 07	411	1.1+	0.1+	1998 08 27	704	0.3-	0.0	2000 01 02	704	0.3-	0.2+
1995 02 07	411	0.2+	0.2-	1998 08 27	704	0.1+	0.0	2000 01 02	704	0.2+	0.3-
1995 02 17	411	0.4+	0.5+	1998 08 27	704	1.4-	0.1-	2000 01 02	704	0.6+	0.1-
1995 02 17	411	0.0	1.1+	1998 08 27	704	0.0	0.6-	2000 01 02	704	1.7-	0.1-
1997 06 28	704	0.7-	2.0+	1998 09 19	704	1.2+	0.0	2000 01 02	704	0.3-	0.3-
1997 06 28	704	1.2-	1.5+	1998 09 19	704	0.1-	0.6+	2000 01 04	704	0.3+	0.2+
1997 06 28	704	0.1+	0.7+	1998 09 19	704	0.2+	0.5+	2000 01 04	704	0.5-	0.2+
1997 06 29	704	0.6-	0.9+	1998 11 14	699	1.4+	0.8+	2000 01 04	704	0.0	0.2+
1997 06 29	704	0.4+	0.1-	1998 11 14	699	1.6+	0.5+	2000 01 04	704	0.4-	0.3+
1997 06 29	704	0.2+	0.9+	1999 10 09	703	0.8+	0.6+	2000 01 04	704	0.5-	0.0
1997 06 29	704	0.9+	1.3-	1999 10 09	703	0.0	0.2+				
1997 06 29	704	(2.7-	1.0+)	1999 10 09	703	1.5+	0.8-				

(13145)* 1995 DZ₁ = 1996 KG₄

Discovered 1995 Feb. 27 by R. Calanca and R. Bonomi at Cavezzo.

Id. G. V. Williams (*MPC* 27449)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	208.61742		(2000.0)		P		Q		
<i>n</i>	0.18095455	ω	202.06919		+0.19104169		+0.97357518		
<i>a</i>	3.0956823	Ω	79.11997		-0.88047042		+0.22631079		
<i>e</i>	0.1250398	<i>i</i>	7.31983		-0.43390657		-0.03057457		
<i>P</i>	5.45 <th><i>H</i></th> <td>13.1</td> <th><i>G</i></th> <td>0.15</td> <th><i>U</i></th> <td>1</td> <td></td> <td></td>	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1		
Residuals in seconds of arc									
1995 02 27	107 (3.5- 1.1-)		1998 10 29	107 0.0 0.8+		1998 11 21	704 0.0 0.5+		
1995 02 27	107 (3.1- 1.6+)		1998 10 29	107 0.2+ 0.5+		1998 11 23	699 0.4+ 0.0		
1995 02 28	107 (0.5+ 2.7-)		1998 10 29	107 0.1+ 0.4+		1998 11 23	699 0.5+ 0.2+		
1995 02 28	107 (1.7+ 7.9-)		1998 10 29	704 1.0+ 1.3+		1998 11 23	699 0.1- 0.1-		
1995 03 07	107 1.1+ 0.1+		1998 10 29	704 0.5+ 0.4-		1998 11 24	704 0.5+ 0.1+		
1995 03 07	107 0.3- 0.1+		1998 10 29	704 0.2+ 0.4+		1998 11 24	704 0.7- 0.5-		
1995 03 08	107 1.0+ 1.0-		1998 10 29	704 0.6+ 0.5-		1998 11 24	704 0.3- 1.1-		
1995 03 09	107 1.3- 1.6+		1998 10 29	704 0.0 0.5-		1998 11 24	704 0.7+ 0.3-		
1995 03 09	107 0.4+ 0.4-		1998 11 07	107 0.2- 1.0+		1998 12 07	910 0.2- 1.3-		
1995 03 09	107 1.4+ 0.1-		1998 11 07	107 0.1+ 0.4+		1998 12 07	910 0.2- 1.5-		
1995 03 09	107 0.1+ 1.6+		1998 11 10	704 0.0 0.1+		1998 12 08	910 0.1- 1.4-		
1995 03 20	107 (2.2- 4.4-)		1998 11 10	704 0.1+ 0.2+		1998 12 08	910 0.5+ 0.8-		
1995 03 20	107 0.5- 0.2-		1998 11 10	704 0.0 0.8-		1998 12 08	910 0.4+ 0.8-		
1995 03 21	107 (2.6+ 0.4+)		1998 11 10	704 (0.8+ 2.7-)		1998 12 08	910 0.4+ 0.9-		
1995 03 21	107 (3.2+ 4.5+)		1998 11 11	699 0.3+ 0.1+		1999 10 22	704 1.5+ 0.4+		
1995 03 22	107 (0.7+ 2.7+)		1998 11 11	699 0.2+ 0.6+		1999 10 22	704 0.4- 0.2+		
1995 04 04	107 (1.5- 3.5-)		1998 11 11	699 0.5+ 0.5+		1999 10 22	704 0.2- 0.2+		
1995 04 04	107 1.3- 0.8+		1998 11 16	566 0.5- 0.0		1999 10 22	704 0.0 0.1-		
1996 05 22	809 (0.2- 4.6+)		1998 11 16	566 0.7- 0.2-		1999 12 08	107 1.7+ 1.6+		
1996 05 22	809 (0.7- 4.5+)		1998 11 16	566 0.6- 0.1-		1999 12 08	107 0.9- 0.2-		
1996 05 22	809 (0.4- 4.1+)		1998 11 18	704 0.3- 1.2+		1999 12 08	107 0.0 0.1-		
1996 05 24	809 (1.5- 3.7+)		1998 11 18	704 1.1+ 0.2-		1999 12 15	704 0.4+ 0.4+		
1996 05 24	809 (1.9- 2.5+)		1998 11 18	704 0.7+ 0.8-		1999 12 15	704 0.4- 0.2+		
1996 05 24	809 (2.5- 3.4+)		1998 11 18	704 1.5+ 0.8-		1999 12 15	704 0.0 0.4+		

1997 09 02	566	0.6−	1.1+	1998 11 18	704	0.7−	0.2+	1999 12 15	704	1.0−	0.0
1997 09 02	566	0.4−	0.9+	1998 11 18	107	0.4+	0.3+	1999 12 15	704	0.3−	0.7+
1997 09 02	566	0.3−	1.2+	1998 11 18	107	0.2−	0.0	2000 01 03	704	0.1−	1.1−
1998 10 13	107	0.7−	0.2−	1998 11 18	107	1.0+	0.2+	2000 01 03	704	0.1+	0.2−
1998 10 13	107	0.1+	0.1−	1998 11 19	704	1.5−	0.3−	2000 01 03	704	0.0	0.0
1998 10 14	107	0.3+	0.5+	1998 11 19	704	0.5−	0.1+	2000 01 03	704	0.8−	0.2+
1998 10 16	107	0.8−	0.6+	1998 11 19	704	0.2−	0.3−	2000 01 03	704	0.2+	0.7−
1998 10 16	107	1.1−	0.4+	1998 11 19	704	1.1−	1.0+	2000 01 04	704	0.6+	0.3−
1998 10 16	107	0.0	0.0	1998 11 19	704	(2.5−	0.4+)	2000 01 04	704	0.8+	1.0+
1998 10 20	107	1.5−	0.0	1998 11 21	704	0.0	0.2−	2000 01 04	704	0.1−	0.4−
1998 10 20	107	0.4+	0.5+	1998 11 21	704	0.2+	0.3−	2000 01 04	704	0.3−	0.5+
1998 10 21	107	0.3−	0.6+	1998 11 21	704	0.6+	0.3+				

(13146)* 1995 DR₂ = 1998 UH₂₇

Discovered 1995 Feb. 20 by T. Okuni at Nanyo.

Id. S. Nakano (*MPC* 33248)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher							
<i>M</i>		<i>P</i>		<i>Q</i>			
262.45754		(2000.0)					
<i>n</i>	0.17335953	ω	149.49931	−0.71949332	+0.67829620		
<i>a</i>	3.1854509	Ω	73.99844	−0.66440562	−0.60972717		
<i>e</i>	0.0866450	<i>i</i>	8.92576	−0.20222397	−0.41005737		
<i>P</i>	5.69	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1995 02 20	358	1.4−	0.7−	1998 10 19	809	1.5+	0.3+	2000 01 03	704	0.1−	0.7−
1995 02 21	358	(0.5−	2.6+)	1998 10 19	809	1.8+	1.5+	2000 01 03	704	0.3+	0.1+
1995 02 22	358	(5.4−	2.3+)	1998 11 10	704	0.3−	0.9−	2000 01 03	704	0.3+	0.6−
1995 02 27	358	1.3+	0.7+	1998 11 10	704	0.3−	0.8+	2000 01 04	704	0.4−	0.1−
1995 03 07	896	0.1+	0.3−	1998 11 10	704	0.2−	0.8+	2000 01 04	704	0.1+	0.1−
1995 03 07	896	0.1+	0.1+	1998 11 10	704	1.4−	0.7+	2000 01 04	704	0.2−	0.2−
1995 03 08	358	0.2+	1.2+	1998 11 10	704	(4.6−	0.6−)	2000 01 04	704	0.3+	0.5−
1995 03 08	358	(2.1−	3.7−)	1998 11 11	704	0.1−	0.1+	2000 01 04	704	0.7+	0.3+
1997 08 30	566	0.1+	0.3−	1998 11 11	704	0.6−	1.9−	2000 01 06	106	0.7−	0.1+
1997 08 30	566	0.2−	0.2−	1998 11 11	704	0.2−	0.0	2000 01 06	106	0.0	0.1+
1997 08 30	566	0.3+	0.2−	1999 12 03	699	0.4+	1.1+	2000 01 07	106	0.7−	1.0+
1998 10 14	699	1.0+	1.1+	1999 12 03	699	0.3−	0.9+	2000 01 07	704	0.0	0.1−
1998 10 14	699	0.7+	0.6+	1999 12 03	699	0.8+	0.9−	2000 01 07	704	0.3+	0.4−
1998 10 14	699	1.3+	1.0+	1999 12 15	704	0.3−	0.2−	2000 01 07	704	0.2−	0.2−
1998 10 18	809	1.6−	1.7−	1999 12 15	704	0.2−	0.0	2000 01 07	704	0.5−	0.5−
1998 10 18	809	1.8−	1.6−	1999 12 15	704	0.1+	0.5+	2000 01 07	704	0.0	0.9−
1998 10 18	809	2.2−	0.8−	2000 01 03	704	0.1+	0.0				
1998 10 19	809	2.0+	1.4+	2000 01 03	704	0.4+	0.1−				

(13147)* 1995 DZ₁₁ = 1990 EH₇

Discovered 1995 Feb. 24 at Cima Ekar.

Id. A. Doppler (*MPC* 32670)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		<i>P</i>		<i>Q</i>			
51.26624		(2000.0)					
<i>n</i>	0.19526252	ω	312.16047	−0.05351021	−0.99807869		
<i>a</i>	2.9425473	Ω	140.87400	+0.93014373	−0.06119845		
<i>e</i>	0.0363476	<i>i</i>	2.83716	+0.36327580	+0.00967849		
<i>P</i>	5.05	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 03 03	809	0.1−	0.6+	1998 10 18	699	0.6−	0.3−	1999 11 17	704	0.3−	0.2−
1990 03 03	809	0.3+	0.3+	1998 10 18	699	0.6−	0.3−	1999 11 17	704	0.8+	0.2+
1990 03 03	809	0.5+	0.2+	1998 10 18	699	0.8−	0.7−	1999 12 05	703	0.3+	0.2+
1990 03 03	809	0.5−	1.2+	1998 10 26	108	0.8−	1.1+	1999 12 05	704	1.4−	0.4−
1990 03 03	809	0.1−	1.1+	1998 10 26	108	1.5+	0.2−	1999 12 05	703	0.7−	0.9+
1990 03 03	809	0.1−	1.2+	1998 10 26	108	(2.8−	1.5−)	1999 12 05	703	1.0+	0.5−
1990 03 06	809	0.0	1.0−	1998 10 26	108	1.7−	0.2+	1999 12 05	704	1.0−	0.5+
1990 03 06	809	0.0	1.0−	1998 11 11	704	0.4+	0.5+	1999 12 05	703	0.4+	1.0+
1990 03 06	809	0.2+	1.0−	1998 11 11	699	(2.3−	0.5+)	1999 12 05	704	0.0	0.4+
1995 02 04	691	0.3+	0.3−	1998 11 11	704	0.6+	0.1−	1999 12 05	704	0.0	0.8+
1995 02 04	691	0.3+	0.4−	1998 11 11	699	0.4+	0.5+	1999 12 05	704	1.0+	0.5+

1995 02 04	691	0.2+	0.3−	1998 11 11	704	0.8−	0.4−	2000 01 05	704	0.3−	0.8−
1995 02 24	098	(0.3−	2.2−)	1998 11 11	699	0.2+	0.5+	2000 01 05	704	0.4+	0.1+
1995 02 24	098	(3.2−	2.1−)	1998 11 18	704	0.1+	0.8+	2000 01 05	704	0.6+	0.6+
1995 02 25	098	0.0	1.5−	1998 11 18	704	0.7+	0.1+	2000 01 05	704	0.5+	0.8+
1995 02 26	098	0.3+	0.8−	1998 11 18	704	0.4+	1.9−	2000 01 05	704	0.6−	0.3−
1995 02 27	098	1.6−	0.9−	1998 11 18	704	1.1+	1.3−	2000 01 07	704	0.4+	0.6−
1995 02 27	098	(4.3−	1.2−)	1998 11 18	704	(0.9+	2.9−)	2000 01 07	704	0.6−	0.3−
1997 07 16	910	0.0	0.2+	1998 12 14	120	(2.3−	0.1+)	2000 01 07	704	0.4−	0.1+
1997 07 16	910	0.0	0.4+	1998 12 14	120	0.4−	0.5+	2000 01 07	704	0.5+	0.3+
1997 07 16	910	0.1−	0.2+	1998 12 14	120	0.2+	0.4+	2000 01 07	704	0.5−	0.1+
1998 10 15	098	(3.3−	0.2−)	1999 11 17	704	0.2+	0.7+				
1998 10 15	098	(4.0−	2.2−)	1999 11 17	704	0.7+	0.1+				

(13148)* 1995 EF

Discovered 1995 Mar. 1 by T. Nijima and T. Urata at Ojima.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		<i>P</i>		<i>Q</i>			
345.09067		(2000.0)					
<i>n</i>	0.21062731	ω	56.34547	−0.99016582	+0.07700291		
<i>a</i>	2.7976471	Ω	127.79448	−0.11003514	−0.94424855		
<i>e</i>	0.1616874	<i>i</i>	8.49991	+0.08639398	−0.32010190		
<i>P</i>	4.68	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1994 12 02	691	0.2+	0.2−	1995 03 28	887	0.2−	0.8+	1998 11 23	385	0.7−	0.3−
1994 12 02	691	0.3+	0.6−	1995 03 28	887	0.2−	0.1−	1999 12 05	704	0.3+	0.9−
1994 12 02	691	0.5−	0.0	1997 08 28	385	0.5−	1.2+	1999 12 05	704	0.5+	1.0+
1994 12 28	691	0.1+	0.2+	1997 08 28	385	0.7+	1.3+	1999 12 05	704	0.3−	0.4+
1994 12 28	691	0.3−	0.2+	1997 09 04	385	0.3−	0.2−	1999 12 05	704	0.5−	0.3+
1994 12 28	691	0.4−	0.1+	1997 09 04	385	0.9−	0.8+	1999 12 05	704	0.9−	0.7+
1995 03 01	887	0.3−	0.0	1998 10 25	385	0.4+	0.6+	2000 01 07	704	0.1+	0.1+
1995 03 01	887	0.1−	0.2−	1998 10 25	385	0.5−	0.6−	2000 01 07	704	0.3+	0.5+
1995 03 01	887	0.2+	0.1−	1998 10 25	385	0.1−	0.4−	2000 01 07	704	0.4+	0.6+
1995 03 05	887	0.1−	0.4−	1998 10 31	385	0.8+	0.3−	2000 01 07	704	0.3+	0.5+
1995 03 05	887	0.4+	0.4−	1998 10 31	385	1.0−	0.0	2000 01 07	704	0.1+	0.5−
1995 03 05	887	0.1+	0.1−	1998 11 13	704	0.8+	1.2−	2000 01 10	699	0.2−	0.5+
1995 03 08	887	0.7+	0.2−	1998 11 13	704	0.1−	0.0	2000 01 10	699	0.5+	0.8+
1995 03 08	887	0.4−	0.4−	1998 11 13	704	1.4−	1.8+	2000 01 10	699	0.6+	1.0+
1995 03 08	887	0.1+	0.1−	1998 11 13	704	1.7+	0.7−				
1995 03 08	887	0.3+	0.1−	1998 11 13	704	0.3+	0.8+				

(13149)* 1995 EF₈ = 1982 VU₁₀

Discovered 1995 Mar. 4 by F. Börngen at Tautenburg.

Id. G. V. Williams (*MPC* 32670)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		<i>P</i>		<i>Q</i>			
12.86163		(2000.0)					
<i>n</i>	0.17802117	ω	350.82326	−0.20621692	−0.97721215		
<i>a</i>	3.1295961	Ω	111.06481	+0.90114735	−0.20969867		
<i>e</i>	0.1380513	<i>i</i>	3.09041	+0.38132405	−0.03290713		
<i>P</i>	5.54	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

2000 JAN. 24

M.P.C. 37527

1998 09 17	699	0.2+	0.3+	1998 09 27	704	0.8-	0.9-	2000 01 06	704	0.3-	0.7-
1998 09 17	699	0.4-	0.5+	1998 09 27	704	0.8-	0.3-	2000 01 06	704	1.2+	0.3+
1998 09 17	699	0.2+	1.2+	1999 10 12	704	0.1+	0.8+	2000 01 06	704	1.6-	0.6+
1998 09 18	704	0.2+	0.1-	1999 10 12	704	0.8-	0.1-				
1998 09 18	704	0.9+	0.6-	1999 10 12	704	0.8+	1.0+				

(13150)* 1995 FS = 1998 RL₆₆

Discovered 1995 Mar. 23 by L. Tesi and A. Boattini at San Marcello Pistoiese.

Id. G. V. Williams (*MPC* 32945)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
319.95310			(2000.0)		
			P	Q	
<i>n</i>	0.17861484	ω	154.81207	-0.88415372	-0.46697434
<i>a</i>	3.1226575	Ω	357.22160	+0.36239828	-0.66605838
<i>e</i>	0.1452362	<i>i</i>	17.27340	+0.29485536	-0.58163666
<i>P</i>	5.52	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1993 09 21	675	0.3-	0.1-	1998 09 15	699	0.9+	0.6+	1998 10 26	104	0.0	0.1+
1993 09 21	675	0.4+	0.9-	1998 09 18	704	1.4-	0.1+	1998 10 26	104	0.2-	0.2+
1995 03 23	104	0.2+	0.0	1998 09 18	704	0.3+	0.9+	1999 10 31	704	0.7-	1.0+
1995 03 23	104	0.2+	0.3-	1998 09 18	704	0.4+	1.7-	1999 10 31	704	0.8-	0.5+
1995 03 23	104	0.6+	0.4-	1998 09 18	704	0.6-	0.9-	1999 10 31	704	0.8-	0.7+
1995 03 30	104	0.4+	0.3-	1998 09 18	704	0.7-	0.2-	1999 10 31	704	0.6-	0.3+
1995 03 30	104	0.1+	0.2+	1998 09 26	704	0.4-	0.1-	1999 10 31	704	0.9-	1.3+
1995 03 30	104	0.1-	0.1+	1998 09 26	704	0.1+	0.4+	1999 11 30	104	0.7+	0.0
1995 03 31	104	1.2-	0.4+	1998 09 26	704	0.1+	0.1+	1999 11 30	104	1.0+	0.3-
1995 03 31	104	0.7-	0.4+	1998 09 26	704	1.0+	0.4-	1999 11 30	104	1.1+	0.2-
1995 03 31	104	0.2-	0.5+	1998 09 26	704	0.1+	0.1-	1999 11 30	104	1.2+	0.1-
1995 04 05	104	0.5+	0.2-	1998 09 27	704	0.8+	0.4-	1999 12 04	652	(2.6-	0.4+)
1995 04 05	104	0.8+	0.3+	1998 09 27	704	0.4+	0.3+	1999 12 13	104	0.0	0.2+
1995 04 05	104	0.8+	0.2+	1998 09 27	704	0.6-	0.7+	1999 12 13	104	0.3+	0.2+
1995 04 17	104	0.1-	1.1-	1998 09 27	704	1.0+	1.1-	1999 12 13	104	1.4+	0.2+
1995 04 17	104	0.6+	0.6-	1998 10 14	704	0.1-	1.5+	1999 12 17	704	0.5+	0.1+
1995 04 17	104	1.0+	0.2+	1998 10 14	704	0.5-	0.2-	1999 12 17	704	0.5-	0.2-
1995 04 22	658	0.1-	0.4-	1998 10 14	704	1.8-	0.2-	1999 12 17	704	0.0	0.2-
1995 04 22	658	0.0	0.5-	1998 10 14	704	0.5+	0.3-	1999 12 17	704	0.3-	0.7-
1995 04 22	658	0.1-	0.4-	1998 10 14	704	0.5-	1.0+	1999 12 17	704	0.3-	0.6-
1995 05 03	104	0.3-	0.7+	1998 10 14	699	0.3+	1.4+	2000 01 15	104	0.3+	0.3-
1995 05 03	104	0.3-	0.7+	1998 10 14	699	1.0+	0.2-	2000 01 15	104	0.3-	0.4-
1995 05 03	104	0.4-	1.0+	1998 10 14	699	0.2+	0.5-	2000 01 15	104	0.2-	0.9-
1995 05 19	658	1.0-	0.3-	1998 10 15	704	0.7-	0.6-	2000 01 21	704	0.4+	0.4+
1995 05 19	658	1.0-	0.1+	1998 10 15	704	0.5+	0.2-	2000 01 21	704	0.2-	0.3+
1998 09 14	704	0.1-	0.8-	1998 10 15	704	0.2+	1.9+	2000 01 21	704	0.6-	0.6+
1998 09 14	704	0.9-	0.7-	1998 10 15	704	0.6+	0.1-	2000 01 21	704	0.7-	0.4-
1998 09 15	699	0.2+	0.7-	1998 10 15	704	0.7+	0.4+	2000 01 21	704	0.2-	1.0-
1998 09 15	699	0.5-	0.2+	1998 10 26	104	0.4-	0.0				

(13151)* 1995 OH = 1999 UX₁₃

Discovered 1995 July 22 by G. Iatterti at Osservatorio Polino.

Id. G. V. Williams (*MPC* 36793)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
93.68968			(2000.0)		
			P	Q	
<i>n</i>	0.27987121	ω	48.17159	+0.44809728	+0.89105861
<i>a</i>	2.3147134	Ω	248.58434	-0.84150662	+0.39312193
<i>e</i>	0.2105877	<i>i</i>	4.45253	-0.30178706	+0.22686934
<i>P</i>	3.52	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1995 07 22	609	0.2+	0.9+	1999 09 06	703	1.0+	1.0+	1999 10 29	703	0.0	1.0-
1995 07 22	609	1.0-	0.1-	1999 09 06	703	0.0	0.3+	1999 11 03	703	0.4-	0.1-
1995 07 22	609	0.3+	0.4-	1999 09 06	703	0.9-	0.1-	1999 11 03	703	1.1-	0.2-
1995 07 22	609	0.2+	0.4+	1999 09 06	703	(3.6-	3.1+)	1999 11 03	703	0.3-	1.0+
1995 07 24	589	1.1-	0.4-	1999 09 18	704	0.3+	0.6-	1999 11 03	703	0.3-	0.1+
1995 07 24	589	0.4-	0.2+	1999 09 18	704	0.2+	0.6-	1999 11 05	704	0.2+	0.2+
1995 07 24	589	0.8+	0.5+	1999 09 18	704	0.4+	0.0	1999 11 05	704	0.1-	0.2-

1995 07 29	589	0.1-	0.8-	1999 09 18	704	0.3+	0.1-	1999 11 05	704	0.3+	0.1+
1995 07 29	589	0.8+	0.2-	1999 09 18	704	0.4+	0.5-	1999 11 05	704	0.8-	0.2+
1995 07 29	589	0.1+	0.4+	1999 09 18	703	0.2-	0.1+	1999 11 05	704	0.1+	0.0
1995 08 08	589	(2.4+	0.3+)	1999 09 18	703	0.3+	0.3-	1999 11 13	699	0.3-	0.0
1995 08 08	589	(1.7+	2.2-)	1999 09 18	703	0.1-	0.1+	1999 11 13	699	0.0	0.9+
1995 09 11	589	0.9+	0.7+	1999 09 18	703	0.2-	0.2+	1999 11 13	699	1.0-	0.3-
1995 09 11	589	0.6-	0.4+	1999 09 30	703	0.7-	0.2+	1999 11 27	699	0.0	0.4+
1997 01 15	599	0.4-	0.6+	1999 09 30	703	0.6-	0.1-	1999 11 27	699	0.5-	0.3+
1997 01 16	599	0.6+	0.2-	1999 09 30	703	0.2-	0.1-	1999 11 27	699	1.2-	0.3-
1997 01 16	599	0.5-	0.1-	1999 09 30	703	0.8-	0.0	1999 12 05	704	1.9+	0.2+
1998 03 26	704	0.3+	0.2+	1999 10 04	704	0.1+	0.7-	1999 12 05	704	1.8+	0.4-
1998 03 26	704	0.1+	0.9+	1999 10 04	704	0.1-	0.1-	1999 12 05	704	1.9+	1.3-
1998 03 26	704	0.7+	1.0+	1999 10 04	704	0.5+	0.4-	1999 12 07	704	0.3-	0.0
1999 07 23	704	0.2+	0.1-	1999 10 04	704	0.4+	0.3-	1999 12 07	704	0.3-	0.5+
1999 07 23	704	0.2-	0.2-	1999 10 04	704	0.3+	0.3-	1999 12 07	704	0.3-	1.0+
1999 07 23	704	0.4-	0.2+	1999 10 29	703	1.6+	1.3+	1999 12 07	704	0.1+	0.5+
1999 07 23	704	0.5+	1.3+	1999 10 29	703	0.9-	1.0+	1999 12 07	704	0.2-	0.4+
1999 07 23	704	0.0	0.3+	1999 10 29	703	0.3-	0.3-				

(13152)* 1995 QK = 1988 RL₁₄ = 1991 KA₃

Discovered 1995 Aug. 19 by S. P. Laurie at Church Stretton.

Id. E. Bowell (*MPC* 28856), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
78.28046			(2000.0)		
			P	Q	
<i>n</i>	0.27991920	ω	132.59780	+0.99686343	-0.06508707
<i>a</i>	2.3144489	Ω	231.18465	+0.04431266	+0.93039006
<i>e</i>	0.1720336	<i>i</i>	3.31250	+0.06557199	+0.36074645
<i>P</i>	3.52	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1988 09 10	675	0.6+	1.1-	1998 05 24	704	1.1-	1.9-	1999 12 07	704	1.5+	0.4+
1988 09 10	675	0.6-	1.1-	1998 05 24	704	0.9-	0.1-	1999 12 07	704	0.5+	0.9-
1991 05 18	809	0.5+	1.7-	1998 05 24	704	(0.5-	2.6-)	1999 12 07	704	0.3-	0.8-
1991 05 18	809	0.4-	1.3-	1998 05 24	704	0.1-	0.3+	1999 12 07	704	0.2-	1.8-
1991 05 18	809	1.1+	1.9-	1999 10 12	704	0.1+	0.1+	1999 12 08	704	0.4-	0.7-
1995 08 19	966	0.5+	0.1+	1999 10 12	704	0.3+	0.4+	1999 12 08	704	0.3+	0.1-
1995 08 20	966	1.2+	0.3+	1999 10 12	704	0.4-	0.1+	1999 12 08	704	0.2-	0.5-
1995 08 20	966	(2.8-	1.5-)	1999 10 12	704	0.4+	0.0	1999 12 08	704	0.1-	1.2-
1995 08 20	966	0.0	0.0	1999 10 12	704	1.0+	0.0	1999 12 08	704	0.3-	0.8-
1995 09 02	966	0.0	0.2+	1999 11 15	704	0.7-	0.8+	2000 01 05	704	0.3-	0.7-
1995 09 02	966	0.3+	0.2-	1999 11 15	704	0.1-	0.8+	2000 01 05	704	0.3-	0.1+
1995 09 19	966	0.3-	0.6+	1999 11 15	704	0.5-	0.8+	2000 01 05	704	0.3+	0.3+
1995 09 19	966	0.0	0.3+	1999 11 15	704	0.5-	0.3+	2000 01 05	704	0.0	0.1+
1995 09 20	966	1.1-	0.7-	1999 11 15	704	0.5-	0.1-	2000 01 05	704	0.6+	0.5-
1995 09 20	966	0.0	0.3-	1999 11 17	704	0.2-	0.2-	2000 01 06	704	1.4+	1.1-
1995 09 20	966	0.0	0.2+	1999 11 17	704	0.2-	0.1-	2000 01 06	704	0.8-	0.3-
1998 05 24	704	(1.1-	2.7+)	1999 11 17	704	0.0	0.3+	2000 01 06	704	0.3+	0.3-

(13153)* 1995 QC₃ = 1980 TL₆ = 1980 TZ₆

Discovered 1995 Aug. 31 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 25732)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Asher

1995 09 01	411	0.3−	0.5−	1998 03 20	704	1.6−	1.1−	1999 12 15	704	1.1−	1.0−
1995 09 04	411	0.5−	0.2+	1998 03 20	704	1.8+	0.3+	1999 12 15	704	1.0+	0.3+
1995 09 17	411	0.3−	0.1−	1998 03 20	704	0.1−	0.4−	1999 12 15	704	0.6+	0.4−
1995 09 17	411	1.1−	0.3−	1998 03 24	910	0.0	0.3+	1999 12 15	704	1.0+	0.2+
1995 09 20	400	1.7+	0.4−	1998 03 24	910	0.1−	0.3+	1999 12 15	704	0.4+	0.5−
1995 09 20	400	1.1+	0.1+	1998 03 25	910	0.3−	0.1+	1999 12 31	461	0.5−	0.2+
1995 09 21	400	1.8+	0.9+	1999 10 14	704	0.2+	0.8−	1999 12 31	461	0.4−	0.2+
1995 09 21	400	0.2+	0.9+	1999 10 14	704	0.0	0.1+	1999 12 31	461	0.2−	0.1+
1995 10 12	360	0.4+	0.5−	1999 10 14	704	0.2+	0.1−				

(13154)* 1995 RC

Discovered 1995 Sept. 7 by A. Galád at the Astronomical and Geophysical Observatory, Modra.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	110.11115		(2000.0)		P		Q
n	0.30012623	ω	58.53567		+0.86099485		−0.50657722
a	2.2093613	Ω	331.82435		+0.42784654		+0.76970913
e	0.1671500	i	5.52591		+0.27501855		+0.38849372
P	3.28	H	14.2	G	0.15	U	1

Residuals in seconds of arc

1995 09 07	118	0.4−	0.4−	1997 01 08	118	1.2−	1.2−	1998 08 19	118	0.1+	0.4−
1995 09 07	118	0.5−	0.1−	1997 01 12	118	0.7−	0.1−	1998 08 19	118	0.1+	0.0
1995 09 09	118	0.2−	0.4−	1997 01 12	118	0.2+	0.6+	1998 08 23	704	0.5+	0.1+
1995 09 10	118	0.4−	0.2+	1997 02 18	118	0.0	0.5−	1998 08 23	704	1.2+	0.4+
1995 09 10	118	0.3+	0.6+	1997 02 18	118	0.4+	0.7−	1998 08 23	704	1.8+	0.1−
1995 09 10	118	0.4+	0.1−	1997 02 23	118	0.0	0.1−	1998 08 23	704	(2.1− 0.7−)	
1995 09 14	118	0.6−	0.1−	1997 02 23	118	0.4+	0.4−	1998 08 23	704	1.7−	1.1−
1995 09 17	118	0.1−	0.2−	1997 03 02	118	0.4−	0.3+	1998 08 29	699	0.8+	0.3+
1995 09 17	118	0.2−	0.3−	1997 03 02	118	0.5−	0.0	1998 08 29	699	0.8+	0.3+
1995 09 19	118	0.0	0.2−	1997 03 08	118	0.2−	0.2+	1998 08 29	699	0.8+	0.9+
1995 09 24	118	0.1−	0.1−	1997 03 09	118	0.3−	0.5+	1998 08 31	118	0.5+	0.6−
1995 10 11	118	0.3−	0.2−	1997 03 17	118	0.6+	0.1+	1998 08 31	118	0.7+	0.4−
1995 10 14	118	0.5−	0.5−	1997 03 17	118	0.8+	0.3+	1998 09 14	699	0.9+	0.1+
1995 10 18	118	0.2−	0.2−	1998 07 16	118	0.1+	0.2+	1998 09 14	699	1.2+	0.6−
1995 10 19	118	0.9+	0.3−	1998 07 16	118	0.3+	0.3−	1998 09 14	699	0.3+	0.6+
1995 10 22	118	0.0	0.3+	1998 07 16	118	0.3−	0.0	1998 10 19	699	1.1−	0.5+
1995 10 27	118	0.3+	0.3−	1998 07 19	118	0.1+	0.1+	1998 10 19	699	0.1−	0.1+
1995 12 28	118	0.0	0.6+	1998 07 20	118	0.2+	0.5−	1998 10 19	699	0.2+	0.1+
1996 01 13	118	0.2+	0.2−	1998 08 03	118	1.3−	1.1+	1998 10 26	118	0.5+	0.1−
1996 01 14	118	0.3+	0.7+	1998 08 03	118	0.8−	0.5+	1998 10 26	118	0.2+	0.3+
1996 01 16	118	0.3+	0.5+	1998 08 03	118	1.9−	1.0+	1998 10 26	118	1.1−	0.3+
1996 01 16	118	0.4+	0.6+	1998 08 05	118	0.1−	0.5+	1998 11 06	699	0.8+	0.0
1996 01 21	118	0.4+	0.5+	1998 08 05	118	0.3−	0.4+	1998 11 06	699	0.5−	1.2−
1996 01 21	118	0.7+	0.5+	1998 08 09	118	0.4−	0.7+	1998 11 06	699	0.6−	0.0
1996 01 30	118	(0.3− 4.2+)		1998 08 09	118	0.4−	0.1+	1999 11 16	704	0.5+	1.2+
1996 01 30	118	(1.3− 3.7+)		1998 08 14	118	0.7−	0.0	1999 11 16	704	0.1−	0.6+
1996 02 03	327	0.5+	0.4−	1998 08 14	118	0.5+	0.3+	1999 11 16	704	0.4+	0.5+
1996 02 03	327	0.6+	0.1+	1998 08 16	118	0.3+	0.4−	1999 11 16	704	0.1−	1.4+
1996 02 03	327	1.5+	0.4+	1998 08 16	118	0.5−	0.5−	1999 11 16	704	0.3+	1.9+
1996 02 04	327	1.3−	1.0+	1998 08 17	704	0.6−	0.1+	1999 12 05	704	0.0	0.4−
1996 02 04	327	0.3−	0.3+	1998 08 17	704	0.8+	0.0	1999 12 05	704	0.1+	0.4−
1996 02 04	327	0.1+	0.3−	1998 08 17	704	0.2−	0.2−	1999 12 05	704	0.1−	0.8+
1996 02 27	118	0.5−	1.0−	1998 08 17	704	1.5−	0.0	1999 12 05	704	0.6+	0.3−
1996 12 28	118	0.3+	0.7+	1998 08 17	704	0.9+	0.4−	1999 12 05	704	0.1−	0.4+
1996 12 28	118	0.4−	0.1−	1998 08 19	566	0.4−	0.3+	1999 12 22	118	0.9+	0.5+
1996 12 29	118	0.5+	0.7−	1998 08 19	566	0.4−	0.6+				
1996 12 29	118	0.5−	0.3+	1998 08 19	566	0.3−	0.2+				

(13155)* 1995 SB₁

Discovered 1995 Sept. 19 by T. B. Spahr at the University of Arizona's Catalina Station.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	45.48937		(2000.0)		P		Q
n	0.26599978	ω	167.67309		+0.75705466		−0.56745975
a	2.3945020	Ω	231.79664		+0.55898547		+0.81914199
e	0.2540921	i	24.33528		+0.33823585		−0.08364110
P	3.71	H	14.3	G	0.15	U	2

Residuals in seconds of arc

1995 09 19	693	0.1+	0.3−	1998 06 03	704	1.3−	1.8+	1999 11 04	704	0.1−	0.2−
1995 09 19	693	0.9−	0.5−	1998 06 03	704	(2.6− 0.6−)		1999 11 04	704	0.4+	0.2−
1995 09 20	693	0.4−	0.1−	1998 06 03	704	0.1+	0.0	1999 11 04	704	0.1+	0.4−
1995 09 20	693	0.4−	0.3+	1998 06 03	704	0.2−	1.4+	1999 12 03	704	0.4+	0.2−
1995 09 25	693	0.4−	0.9−	1999 09 03	704	0.1+	0.2−	1999 12 03	704	0.1+	0.4+
1995 09 25	693	0.6−	0.5+	1999 09 03	704	0.3+	0.2−	1999 12 03	704	0.1−	0.1−
1995 10 04	608	1.1+	0.3−	1999 09 03	704	0.3+	0.4−	1999 12 15	423	0.4−	0.5+
1995 10 04	608	0.5−	0.7+	1999 10 12	704	0.5−	0.5+	1999 12 16	704	0.8+	0.0
1995 10 05	608	0.5+	0.5+	1999 10 12	704	0.6−	0.0	1999 12 16	704	0.1−	0.3+
1995 10 05	608	1.1+	0.5+	1999 10 12	704	0.9+	0.2+	1999 12 16	704	0.2+	0.0
1995 10 31	658	0.1−	0.3+	1999 10 12	704	0.2+	0.0	1999 12 16	704	0.1−	0.1−
1995 10 31	658	0.1−	0.2+	1999 10 12	704	0.2−	0.2−	1999 12 16	704	0.2−	0.2−
1995 10 31	658	0.0	0.2+	1999 10 21	704	0.7+	0.1−	2000 01 09	704	1.0−	0.3+
1995 11 18	801	(2.2+ 1.1−)		1999 10 21	704	0.1+	0.3−	2000 01 09	704	0.5−	0.7−
1995 11 18	801	0.2−	0.3+	1999 10 21	704	0.7+	0.2+	2000 01 09	704	0.8−	0.5+
1995 11 21	801	0.0	0.0	1999 10 21	704	0.6+	0.4+	2000 01 09	704	1.5−	0.0
1995 11 21	801	0.1−	0.1+	1999 10 21	704	0.3+	0.1+	2000 01 10	699	0.4+	0.9+
1997 05 01	608	1.0+	0.9−	1999 11 04	704	0.0	0.1−	2000 01 10	699	0.2+	1.0+
1997 05 01	608	0.7+	1.7+	1999 11 04	704	0.0	0.0	2000 01 10	699	0.4+	0.9+

(13156)* 1995 SP₃ = 1982 QZ₁

Discovered 1995 Sept. 20 by K. Endate and K. Watanabe at Kitami.

Id. T. Kobayashi (*MPC* 25966), S. Nakano (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	160.18916		(2000.0)		P		Q
n	0.30368612	ω	66.88986		+0.74213084		+0.66432552
a	2.1920616	Ω	251.35350		−0.64417075		+0.67027385
e	0.2014110	i	5.38718		−0.18516441		+0.33076361
P	3.25	H	14.8	G	0.15	U	2

Residuals in seconds of arc

1982 08 23	561	0.1+	0.1−	1998 06 24	704	0.1+	0.1−	1999 12 07	704	0.2−	0.1+
1982 08 23	561	0.9−	0.7+	1998 06 24	704	2.0+	0.0	1999 12 07	704	0.2+	0.4+
1982 08 24	561	0.2−	0.4−	1998 06 24	704	0.4−	0.3+	1999 12 07	704	0.1−	1.3−
1982 08 24	561	0.5+	0.4+	1998 06 26	704	1.2−	0.6−	1999 12 07	704	0.1−	0.3+
1982 08 25	561	0.2+	0.0	1998 06 26	704	1.0−	0.5−	1999 12 14	704	0.5−	0.4+
1982 08 25	561	0.6+	0.4−	1998 06 26	704	0.1−	0.9−	1999 12 14	704	0.1+	1.0+
1982 08 25	561	0.3+	0.1−	1998 06 26	704	0.7+	0.5+	1999 12 14	704	0.6−	0.2+
1982 08 26	561	0.5−	0.0	1998 07 21	704	0.2−	0.1−	1999 12 14	704	0.5−	0.4+
1995 09 20	400	1.3−	0.6+	1998 07 21	704	0.1+	0.4+	1999 12 14	704	1.1+	0.8+
1995 09 20	400	0.7−	2.0−	1998 07 21	704	0.1+	0.2+	2000 01 05	704	0.2+	0.1−
1995 09 21	400	0.5+	0.2−	1998 07 21	704	0.2−	1.1−	2000 01 05	704	0.0	0.3−
1995 09 21	400	1.5+	0.4+	1998 07 21	704	0.5−	0.4−	2000 01 05	704	0.2−	0.1−
1995 09 30	400	0.5+	0.0	1998 07 26	704	0.4−	1.2+	2000 01 05	704	0.5−	0.2−
1995 09 30	400	0.5−	0.5+	1998 07 26	704	0.1+	1.3+	2000 01 06	704	0.3+	0.4−
1998 06 24	704	0.2−	0.4−	1998 07 26	704	1.8+	0.3−	2000 01 06	704	0.5+	0.5−
1998 06 24	704	0.6−	0.2−	1998 07 26	704	0.2−	1.6+	2000 01 06	704	0.6+	0.1+

2000 JAN. 24

M.P.C. 37529

Residuals in seconds of arc

1995 10 15	691	0.4+	0.1-	1997 04 15	620	0.3+	0.6+	1999 11 16	704	0.3+	0.1+
1995 10 15	691	0.2+	0.0	1997 04 15	620	0.3+	0.3+	1999 11 16	704	0.5+	0.7+
1995 10 15	691	0.2+	0.2+	1997 04 15	620	0.4+	0.2+	1999 11 16	704	1.1+	0.2-
1995 10 22	691	0.4+	0.8-	1998 08 26	809	(3.8-	5.0-)	1999 11 16	704	0.8+	0.4+
1995 10 22	691	0.2+	0.2-	1998 08 26	809	(3.9-	4.3-)	1999 11 17	703	0.3-	0.1+
1995 10 22	691	0.0	0.1+	1998 08 26	809	(4.4-	5.1-)	1999 11 17	703	0.8-	0.7+
1995 11 16	691	0.8-	0.1+	1998 08 27	809	0.7-	1.2-	1999 11 17	703	0.9+	0.0
1995 11 16	691	0.5-	0.0	1998 08 27	809	1.1-	0.8-	1999 11 17	703	1.1+	0.6+
1995 11 16	691	0.5-	0.1-	1998 08 27	809	0.3-	0.7-	1999 12 06	704	0.2+	0.1+
1996 01 11	327	0.7-	0.6+	1998 09 14	704	0.4-	0.3+	1999 12 06	704	0.2+	0.1+
1996 01 11	327	0.0	0.5+	1998 09 14	704	0.4-	1.1+	1999 12 06	704	0.5-	0.0
1996 01 11	327	0.1-	0.5+	1998 09 14	704	0.4+	0.0	1999 12 06	704	0.0	0.6+
1996 01 12	327	0.2+	0.5+	1998 09 14	704	1.3+	1.7+	1999 12 06	704	0.4-	0.8+
1996 01 12	327	0.1-	0.4+	1998 09 18	704	0.9+	0.5-	1999 12 15	704	1.8-	1.1-
1996 01 12	327	0.1+	0.4+	1998 09 18	704	0.3-	0.3+	1999 12 15	704	0.0	0.5-
1997 04 12	620	0.3+	0.3-	1998 09 18	704	1.1-	0.3+	1999 12 15	704	0.6-	0.8-
1997 04 12	620	0.2+	0.4+	1998 09 18	704	(0.6-	2.2+)	1999 12 15	704	0.3-	0.4-
1997 04 13	620	0.0	1.1+	1998 09 18	704	0.6+	1.7+				
1997 04 15	620	0.2+	0.9+	1999 11 16	704	0.3-	0.6-				

(13158)* 1995 UE

Discovered 1995 Oct. 17 by P. Sicoli and P. Ghezzi at Sormano.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	295.02715		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29477501	ω	214.22115	-0.94767636	+0.31800679
a	2.2360196	Ω	344.24920	-0.26499791	-0.83247368
e	0.0681696	i	5.90989	-0.17800458	-0.45371715
P	3.34	H	15.1	G 0.15	U 1

Residuals in seconds of arc

1995 10 17	587	1.7+	1.1+	1998 08 17	704	0.0	0.0	1998 09 27	704	0.3+	0.6+
1995 10 17	587	0.8+	0.6-	1998 08 23	704	1.2+	0.9-	1998 09 27	704	1.8+	1.6-
1995 10 18	587	0.5-	0.0	1998 08 23	704	1.1-	1.4+	1998 09 27	704	0.8+	0.1-
1995 10 18	587	0.4+	1.0-	1998 08 23	704	1.6+	0.4-	1998 09 27	704	1.9-	0.4-
1995 10 19	587	0.3+	0.6-	1998 08 23	704	0.3+	1.4+	1999 12 06	587	0.4+	0.8+
1995 10 19	587	0.6+	1.4-	1998 08 23	704	1.5-	0.5+	1999 12 07	587	0.6+	0.8-
1995 10 23	587	0.4-	0.3+	1998 08 24	587	0.3+	0.5-	1999 12 07	587	0.1-	0.1+
1995 10 23	587	0.7-	1.4+	1998 08 24	587	0.2-	0.4-	1999 12 07	587	0.2+	0.4-
1995 10 27	587	0.9+	1.1-	1998 08 24	587	0.0	1.2-	1999 12 15	704	0.2+	0.6-
1995 10 27	587	0.6-	0.5+	1998 08 26	587	0.3+	1.0-	1999 12 15	704	0.2-	0.2+
1995 10 27	587	0.5-	0.2-	1998 08 26	587	0.2+	0.7-	1999 12 15	704	0.5-	0.5-
1995 11 24	587	1.8-	0.9+	1998 08 26	587	1.4+	1.0-	1999 12 15	704	0.8-	0.2+
1995 11 24	587	0.7+	1.1-	1998 09 12	691	0.5+	0.2+	1999 12 15	704	0.7-	0.5-
1997 02 07	587	0.5-	0.5-	1998 09 12	691	0.8-	0.1+	1999 12 31	699	0.6+	0.4+
1997 02 07	587	0.6-	0.4-	1998 09 12	691	0.1+	0.2+	1999 12 31	699	0.7+	0.8+
1997 02 08	587	0.1+	0.2-	1998 09 14	704	0.3+	0.3+	1999 12 31	699	0.6+	0.9+
1997 02 09	587	0.1-	0.4-	1998 09 14	704	1.1+	0.2-	2000 01 02	704	0.4-	0.3-
1997 02 09	587	0.8-	0.5-	1998 09 14	704	0.9-	0.1-	2000 01 02	704	0.0	0.7-
1997 03 06	587	0.3-	0.0	1998 09 14	704	1.4-	0.9+	2000 01 02	704	0.3-	0.4-
1997 03 06	587	0.1-	1.2+	1998 09 15	587	0.4-	0.0	2000 01 02	704	0.2+	0.1-
1997 03 31	587	0.3+	0.4-	1998 09 15	587	0.4+	0.5+	2000 01 02	704	0.6-	0.5+
1997 03 31	587	0.6+	0.4-	1998 09 18	691	0.5-	0.5+	2000 01 04	704	0.6+	0.9-
1997 05 08	587	0.8+	0.6+	1998 09 18	704	0.4+	1.3+	2000 01 04	704	0.3-	0.7+
1998 08 14	587	0.6+	0.1+	1998 09 18	691	0.6-	0.3+	2000 01 04	704	0.1-	1.0+
1998 08 17	704	0.5+	1.6-	1998 09 18	704	0.3-	0.2+	2000 01 04	704	1.4+	0.6+
1998 08 17	704	0.7-	0.3+	1998 09 18	704	2.0-	2.0+	2000 01 04	704	0.9-	0.8+
1998 08 17	704	0.7-	0.8+	1998 09 18	691	0.6-	0.2+				
1998 08 17	704	0.4-	0.3+	1998 09 27	704	1.4+	0.4-				

(13159)* 1995 UW₃ = 1980 TN₆ = 1997 GM

Discovered 1995 Oct. 20 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 29625)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

$\dot{M}$	65.68244		(2000.0)	P		Q	
n	0.26562975	ω	22.21687	+0.87163169	-0.49013229		
a	2.3967252	Ω	7.13940	+0.44300167	+0.78305816		
e	0.1990311	i	2.46368	+0.20978016	+0.38287108		
P	3.71	H	15.1	G	0.15	U	2

Residuals in seconds of arc

1980 10 08	095	0.4+	0.8-	1997 03 04	691	0.3+	0.0	1997 04 12	816	1.4-	0.9+
1995 10 20	411	0.6+	0.2+	1997 03 04	691	0.0	0.2-	1997 04 12	816	0.1+	1.4+
1995 10 20	411	0.4+	0.2-	1997 03 04	691	0.3+	0.4-	1997 04 13	691	0.0	0.7-
1995 10 24	691	0.2+	0.3-	1997 03 05	809	0.0	0.3+	1997 04 13	691	0.2+	0.8-
1995 10 24	691	0.2+	0.2-	1997 03 05	809	1.7+	0.4-	1997 04 13	691	0.0	0.7-
1995 10 24	691	0.3+	0.1-	1997 03 05	809	(2.9+	0.1-)	1997 04 16	691	0.4+	0.9-
1995 10 25	411	0.1-	0.0	1997 04 03	816	0.1-	0.1+	1997 04 16	691	0.4+	1.0-
1995 10 25	411	0.7-	0.1-	1997 04 03	816	0.1-	1.0+	1997 04 16	691	0.3+	0.9-
1995 10 27	411	0.3+	0.6+	1997 04 03	816	0.2+	0.7+	1999 12 15	704	0.3+	0.8-
1995 10 27	411	0.1+	0.1-	1997 04 03	816	0.2+	0.1-	1999 12 15	704	(0.9-	2.6-)
1995 11 01	411	0.2+	0.3+	1997 04 05	816	0.4+	0.5+	1999 12 15	704	0.9+	0.0
1995 11 01	411	0.6+	0.2-	1997 04 05	816	0.2+	0.1+	1999 12 15	704	0.3-	0.3-
1995 11 09	411	0.1+	0.5-	1997 04 05	816	0.3-	0.6+	1999 12 15	704	0.3+	0.9-
1995 11 09	411	0.3+	0.7-	1997 04 05	816	0.4-	0.5+	2000 01 03	704	0.2-	0.2-
1995 11 18	411	1.1-	1.6+	1997 04 07	691	0.0	0.7-	2000 01 03	704	0.3-	0.3-
1995 11 18	411	0.5-	0.6+	1997 04 07	691	0.0	0.4-	2000 01 03	704	0.5-	0.4-
1995 11 23	691	0.4-	0.2+	1997 04 07	691	0.3-	0.6-	2000 01 03	704	0.4-	0.2-
1995 11 23	691	0.2-	0.1+	1997 04 11	816	0.2-	0.8+	2000 01 04	704	0.1-	0.5+
1995 11 23	691	0.4-	0.2+	1997 04 11	816	0.5-	1.0+	2000 01 04	704	0.1-	0.2+
1995 11 30	691	0.4-	0.3+	1997 04 11	816	0.3+	0.3-	2000 01 04	704	0.1+	0.2+
1995 11 30	691	0.4-	0.5+	1997 04 12	816	0.7-	0.2+	2000 01 04	704	0.2+	0.4-
1995 11 30	691	0.5-	0.6+	1997 04 12	816	0.4-	1.2+	2000 01 04	704	0.0	0.1+

(13160)* 1995 US₄ = 1978 WP₁₇

Discovered 1995 Oct. 25 by T. Kobayashi at Oizumi.

Id. T. Kobayashi (*MPC* 26180)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	169.62084		(2000.0)		P		Q				
<i>n</i>	0.29006024	ω	259.02944		+0.71785566		+0.69009726				
<i>a</i>	2.2601846	Ω	57.25680		-0.58843759		+0.67199543				
<i>e</i>	0.2029233	<i>i</i>	6.27400		-0.37205437		+0.26867808				
<i>P</i>	3.40	<i>H</i>	14.4		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1978 11 30	675	0.5-	0.1+	1995 11 27	691	0.2-	0.3-	1999 12 15	704	1.1+	0.1+
1978 12 01	675	0.4+	0.1-	1995 11 27	691	0.3-	0.1-	1999 12 15	703	0.6-	0.3-
1995 10 25	411	0.6+	0.2+	1997 03 07	691	0.0	0.6-	1999 12 15	704	0.1-	0.2+
1995 10 25	411	0.7+	0.2-	1997 03 07	691	0.1-	0.6-	1999 12 15	704	0.1-	0.6-
1995 10 26	411	0.9+	0.0	1997 03 07	691	0.0	0.6-	2000 01 03	704	0.7+	1.1+
1995 10 26	411	0.6+	0.1-	1998 11 11	699	1.9-	0.9-	2000 01 03	704	0.7+	0.1-
1995 11 02	411	0.0	0.1-	1998 11 11	699	0.5-	0.2-	2000 01 03	704	0.1+	0.6+
1995 11 02	411	0.3+	0.1+	1998 11 11	699	0.0	0.2-	2000 01 03	704	0.2+	0.3+
1995 11 15	691	0.2-	0.2-	1998 12 08	704	0.7-	1.5+	2000 01 03	704	0.0	0.6+
1995 11 15	691	0.3-	0.2-	1998 12 08	704	1.0+	1.3-	2000 01 04	704	0.1-	0.2+
1995 11 15	691	0.2-	0.1-	1998 12 08	704	1.2+	1.1+	2000 01 04	704	0.7-	0.2-
1995 11 20	691	0.3-	0.2-	1998 12 08	704	1.2+	1.4+	2000 01 04	704	0.3-	0.0
1995 11 20	691	0.2-	0.1-	1999 12 15	703	0.9-	0.6+	2000 01 04	704	0.1+	0.6-
1995 11 20	691	0.3-	0.2-	1999 12 15	703	0.6-	0.1-	2000 01 04	704	0.3+	0.3+
1995 11 27	691	0.3-	0.2-	1999 12 15	703	0.0	0.4+				

(13161)* 1995 UK<

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Asher						
<i>M</i>	79.25001			(2000.0)	P			Q			
<i>n</i>	0.26492711			ω	29.90946			+0.97964151 −0.20048398			
<i>a</i>	2.4009610			Ω	341.64705			+0.17699770 +0.88705197			
<i>e</i>	0.2038533			<i>i</i>	1.89747			+0.09473296 +0.41586654			
<i>P</i>	3.72			<i>H</i>	13.9			<i>G</i>	0.15 <i>U</i> 1		
Residuals in seconds of arc											
1980 10 13	095	0.5−	1.8+	1995 11 11	411	0.7−	0.4+	1999 12 07	704	0.2+	0.2+
1991 09 10	675	0.4+	0.1+	1995 12 09	411	0.2+	0.7+	1999 12 07	704	0.1+	0.2+
1991 09 10	675	0.6+	0.2−	1995 12 09	411	0.4−	0.1+	1999 12 07	704	0.2+	0.1−
1991 09 16	675	0.5+	0.6−	1997 04 01	684	0.4−	1.3+	1999 12 07	704	0.6−	0.0
1991 09 16	675	0.5+	0.2+	1997 04 01	684	0.6−	1.8+	2000 01 03	704	0.3+	0.1−
1995 10 18	114	(1.0−	2.6−)	1997 04 01	684	0.3−	1.4+	2000 01 03	704	0.3+	0.4−
1995 10 19	114	(2.3−	2.5−)	1997 06 11	696	0.3+	0.5−	2000 01 03	704	0.4+	0.5−
1995 10 19	114	(2.8−	1.7−)	1997 06 11	696	0.4+	0.8−	2000 01 03	704	0.1+	0.2−
1995 10 27	411	0.1−	0.3−	1997 06 11	696	0.0	0.8−	2000 01 03	704	0.0	0.1−
1995 10 27	411	0.3−	0.6−	1999 10 13	704	1.2+	0.2−	2000 01 04	704	0.2−	0.6−
1995 10 29	411	0.3−	0.1−	1999 10 13	704	1.1+	0.4−	2000 01 04	704	0.4+	0.4−
1995 10 29	411	0.2−	0.0	1999 10 13	704	0.7+	0.3−	2000 01 04	704	0.1+	0.3−
1995 11 02	411	0.9−	0.1−	1999 10 13	704	0.7+	0.1−	2000 01 04	704	0.4−	0.2−
1995 11 02	411	0.9−	0.3+	1999 10 13	704	0.9+	0.9−	2000 01 04	704	0.1−	0.0
1995 11 11	411	1.1−	0.1+	1999 12 07	704	0.6+	0.1+				

(13162)* 1995 UK₄₄ = 1976 JC₁₀ = 1980 NR

Discovered 1995 Oct. 22 by M. Hirasawa and S. Suzuki at Nyukasa.

Id. K. Kinoshita (*MPC* 26406)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5				Williams							
M	104.25515	(2000.0)		P		Q					
n	0.27290067	ω	92.79356	+0.97280693		+0.21026739					
a	2.3539631	Ω	255.08240	−0.23143920		+0.89890820					
e	0.1466370	i	5.76901	+0.00908732		+0.38438479					
P	3.61 <th>H</th> <td>14.0</td> <th>G</th> <td>0.15<th>U</th><td>2</td></td>	H	14.0	G	0.15 <th>U</th> <td>2</td>	U	2				
Residuals in seconds of arc											
1976 05 02	809	0.0	0.7+	1999 10 12	704	0.5−	0.6−	1999 12 08	704	1.0−	0.1−
1980 07 11	805	1.6−	0.5−	1999 10 12	704	0.9−	0.2+	1999 12 08	704	0.3−	0.2+
1980 07 12	805	0.2+	1.1+	1999 10 12	704	0.6+	0.2−	1999 12 17	704	0.2+	0.2+
1980 07 12	805	0.9+	0.2−	1999 10 12	704	0.5+	0.3+	1999 12 17	704	0.1+	0.1+
1980 07 13	805	0.7+	0.3−	1999 10 22	704	0.9+	0.1−	1999 12 17	704	0.1+	0.3−
1980 07 13	805	0.2+	0.5−	1999 10 22	704	0.6+	0.3+	1999 12 17	704	0.0	0.0
1995 10 22	408	(1.1−	2.8−)	1999 10 22	704	1.0+	0.7−	1999 12 17	704	0.2−	0.1−
1995 10 22	408	(1.8−	2.3−)	1999 10 22	704	0.2+	0.6−	1999 12 18	704	0.7+	0.4−
1995 10 26	408	0.4+	0.5+	1999 10 22	704	1.1+	1.1−	1999 12 18	704	1.4−	0.5+
1995 10 26	408	0.4−	0.1−	1999 11 17	704	0.9+	0.6−	1999 12 18	704	0.1−	0.4+
1995 10 27	408	0.6−	1.4−	1999 11 17	704	0.3+	0.6−	1999 12 18	704	0.3+	1.1+
1995 10 27	408	0.7+	0.3−	1999 11 17	704	0.2+	0.1−	1999 12 18	704	0.1−	0.7+
1997 03 08	691	0.2−	0.4−	1999 11 17	704	0.3+	0.3−	2000 01 05	704	0.1−	0.1+
1997 03 08	691	0.2−	0.2−	1999 11 17	704	0.1−	0.5−	2000 01 05	704	0.1−	0.4−
1997 03 08	691	0.3−	0.3−	1999 12 07	704	0.8+	1.7+	2000 01 05	704	0.6−	0.2−
1997 03 09	691	0.4−	0.3−	1999 12 07	704	0.1+	0.6+	2000 01 05	704	0.6−	0.1−
1997 03 09	691	0.0	0.4−	1999 12 07	704	0.3−	0.1+	2000 01 05	704	0.4−	0.4−
1997 03 09	691	0.1−	0.4−	1999 12 07	704	0.2−	0.1−	2000 01 06	704	0.2−	0.2+
1997 03 16	691	0.1+	0.3−	1999 12 08	704	0.3−	0.3+	2000 01 06	704	0.7−	0.1+
1997 03 16	691	0.0	0.1+	1999 12 08	704	0.8+	0.3−	2000 01 06	704	0.3+	0.5+
1997 03 16	691	0.1+	0.3−	1999 12 08	704	0.4−	0.5+				

(13163)* 1995 UC₄₅ = 1980 KY

Discovered 1995 Oct. 28 by K. Endate and K. Watanabe at Kitami.

Id. S. Nakano (*MPC* 36794)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Williams						
<i>M</i>	144.91288	(2000.0)			P			Q			
<i>n</i>	0.28587317	ω	303.79808		+0.95938861		+0.25408385				
<i>a</i>	2.2822005	Ω	41.85624		−0.15696616		+0.84177522				
<i>e</i>	0.0699985	<i>i</i>	10.58176		−0.23438243		+0.47629389				
<i>P</i>	3.45	<i>H</i>	13.3		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1980 05 17	095	0.5+	0.8+	1995 12 19	399	0.3−	0.2−	1999 12 08	703	0.1−	0.9+
1995 10 28	400	(3.5+	1.0−)	1998 11 20	699	0.7−	0.0	1999 12 15	704	0.0	1.1−
1995 10 28	400	0.4+	0.6+	1998 11 20	699	1.9−	0.4+	1999 12 15	704	0.1+	0.2+
1995 10 30	400	1.8+	0.6−	1998 11 20	699	0.5−	0.3+	1999 12 15	704	0.4+	0.0
1995 10 30	400	1.1−	1.2−	1998 12 08	704	0.3+	0.0	1999 12 15	704	0.6+	0.6+
1995 11 02	400	1.0+	0.5+	1998 12 08	704	1.2−	1.2+	2000 01 02	704	0.2−	0.6−
1995 11 02	400	0.2+	0.2+	1998 12 08	704	1.1+	1.2+	2000 01 02	704	0.2−	0.7−
1995 11 12	400	0.5−	0.1−	1998 12 08	704	1.2+	1.2+	2000 01 02	704	0.1+	0.2−
1995 11 12	400	0.6−	0.1−	1999 11 12	699	0.2−	0.5+	2000 01 02	704	0.0	0.1+
1995 11 15	400	0.1+	0.3−	1999 11 12	699	0.2+	1.4−	2000 01 02	704	0.1−	0.2−
1995 11 15	400	0.8+	0.1−	1999 11 12	699	0.5+	0.2+	2000 01 10	699	0.4+	0.3+
1995 12 17	399	1.3−	0.2+	1999 12 08	703	1.1−	2.0+	2000 01 10	699	0.4+	0.1+
1995 12 17	399	0.0	0.4−	1999 12 08	703	0.5−	0.5+	2000 01 10	699	0.5+	0.6+
1995 12 19	399	0.1+	0.4−	1999 12 08	703	0.1−	0.6+				

(13164)* 1995 VF = 1991 PG₂₁

Discovered 1995 Nov. 1 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 32241)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i>	124.62328		(2000.0)		P		Q				
<i>n</i>	0.28265613		ω	114.19173		+0.98647162		−0.12796377			
<i>a</i>	2.2994843		Ω	253.29036		+0.08203426		+0.92648855			
<i>e</i>	0.1335700		<i>i</i>	6.14138		+0.14192999		+0.35389862			
<i>P</i>	3.49		<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	1	
Residuals in seconds of arc											
1991 08 09	675	0.3+	0.7−	1998 07 26	699	0.3+	0.4+	2000 01 05	704	0.4+	0.6+
1991 08 09	675	0.3+	1.2−	1998 07 26	699	0.2+	0.7+	2000 01 05	704	0.2−	0.6−
1995 11 01	411	0.0	0.2−	1998 08 27	704	0.3+	0.1+	2000 01 05	704	0.3−	0.4−
1995 11 01	411	0.1+	0.1+	1998 08 27	704	1.7−	0.4−	2000 01 05	704	0.3+	0.3−
1995 11 02	411	0.0	0.2−	1998 08 27	704	0.5−	0.1+	2000 01 05	704	0.4−	0.2−
1995 11 02	411	0.5+	0.4−	1998 08 27	704	0.4+	0.5−	2000 01 06	704	0.4+	0.1−
1995 11 03	411	0.8−	0.0	1998 08 27	704	(0.4− 2.4−)		2000 01 06	704	0.2−	0.8+
1995 11 03	411	0.3−	0.2+	1998 10 11	699	0.4−	0.2+	2000 01 06	704	0.3+	0.1−
1995 11 11	411	0.4+	0.2−	1998 10 11	699	0.2+	0.2−	2000 01 06	704	1.2+	0.2+
1995 11 11	411	1.1−	0.1−	1998 10 11	699	0.4−	0.6+	2000 01 08	704	0.0	0.3−
1995 11 26	411	0.3+	0.1+	1999 11 17	704	0.8+	0.8+	2000 01 08	704	0.2−	0.4+
1995 11 26	411	1.1+	0.4+	1999 11 17	704	0.0	1.1+	2000 01 08	704	0.9−	0.4−
1998 06 25	699	0.1−	0.5+	1999 11 17	704	0.4+	0.3+	2000 01 08	704	0.2−	0.5−
1998 06 25	699	0.5+	0.6+	1999 12 14	704	0.7+	0.1+	2000 01 08	704	0.0	0.1−
1998 06 25	699	0.7+	0.6−	1999 12 14	704	1.1−	0.1+				
1998 07 26	699	0.1+	0.8+	1999 12 14	704	0.9−	0.5−				

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M.P.C. 37531

1995 11 16	399	1.1+	1.7+	1998 08 23	704	0.9-	0.5+	1998 11 18	910	1.5-	1.5-
1995 11 17	399	1.2+	1.5+	1998 08 23	704	0.8-	0.1+	1998 11 18	910	1.5-	1.2-
1995 11 17	399	0.4+	1.2+	1998 08 23	704	0.2+	1.0-	1998 11 18	910	1.5-	1.4-
1995 11 25	399	1.1-	0.1+	1998 08 27	699	1.5+	0.2+	1998 11 19	910	1.2-	1.4-
1995 11 25	399	1.7-	0.5-	1998 08 27	699	2.0+	0.1-	1998 11 19	910	1.3-	1.5-
1995 11 27	046	(2.6-	0.8-)	1998 08 27	699	0.6+	0.1-	1998 11 19	910	1.4-	1.6-
1995 11 27	046	0.1+	1.2-	1998 09 14	704	0.4+	0.4-	1998 11 24	699	0.6-	1.1+
1995 11 27	046	0.6+	0.6-	1998 09 14	704	0.8+	0.7-	1998 11 24	699	0.3+	1.5-
1995 11 27	046	0.5+	0.5-	1998 09 14	704	0.9+	1.4+	1998 11 24	699	0.4-	0.9+
1995 11 27	046	0.5+	0.6-	1998 09 14	704	(1.2-	2.5+)	1998 12 08	704	0.3+	0.2+
1995 12 14	399	0.4+	0.8+	1998 09 14	704	0.6-	0.8+	1998 12 08	704	0.2+	0.6-
1995 12 14	399	0.0	1.7+	1998 09 14	699	0.3-	0.3+	1998 12 08	704	0.4+	0.6-
1995 12 17	399	0.1-	0.0	1998 09 14	699	0.1+	0.6+	1998 12 08	704	0.8+	0.1-
1995 12 17	399	0.8+	0.3+	1998 09 14	699	0.1-	0.4+	1998 12 08	704	0.2+	0.9-
1998 06 29	704	0.1+	0.8-	1998 09 18	704	0.6+	0.8-	1999 11 16	704	0.5-	0.1-
1998 06 29	704	0.9-	0.2-	1998 09 18	704	0.3-	0.4-	1999 11 16	704	0.2+	0.3-
1998 06 29	704	(1.5+	2.5+)	1998 09 18	704	1.1+	1.2+	1999 11 16	704	1.4+	0.7+
1998 06 29	704	0.4+	1.8+	1998 09 18	704	(1.7+	3.8+)	1999 11 16	704	0.0	0.4+
1998 07 31	699	0.4+	0.4+	1998 09 18	704	(2.5-	2.1+)	1999 11 16	704	0.4+	0.6+
1998 07 31	699	0.5+	0.5+	1998 09 24	699	0.5-	0.9+	1999 11 17	703	0.8-	0.4-
1998 07 31	699	0.0	0.0	1998 09 24	699	0.4-	0.8+	1999 11 17	703	1.1-	1.3+
1998 08 17	704	0.6-	0.3+	1998 09 24	699	0.6-	0.7+	1999 11 17	703	0.3+	0.4+
1998 08 17	704	0.6-	0.7+	1998 09 24	699	0.7-	0.1+	1999 11 17	703	1.3-	0.3+
1998 08 17	704	0.1-	0.0	1998 09 24	699	0.5-	0.8+	2000 01 10	699	0.9+	0.2+
1998 08 17	704	0.4-	0.4+	1998 09 24	699	0.4-	0.5+	2000 01 10	699	0.1-	0.8+
1998 08 17	704	0.2+	0.2+	1998 10 17	699	0.4+	0.8-	2000 01 10	699	0.2-	1.0+

(13166)* 1995 WU₁ = 1976 UT₄ = 1997 HD₁₇

Discovered 1995 Nov. 16 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (*MPC* 29924)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	0.13574		(2000.0)	P	Q
<i>n</i>	0.26114155	ω	68.66014	-0.37298653	-0.91706081
<i>a</i>	2.4241086	Ω	44.07284	+0.75835706	-0.38887126
<i>e</i>	0.0612111	<i>i</i>	11.69538	+0.53457984	-0.08819649
<i>P</i>	3.77	<i>H</i>	12.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1976 10 30	095	1.6+	2.1-	1998 09 21	704	0.1-	0.8-	1999 12 13	704	0.3-	0.6-
1995 11 16	399	1.1-	1.1+	1998 09 21	704	0.3-	2.0-	1999 12 13	704	0.4-	0.1-
1995 11 16	399	0.6+	1.4+	1998 09 21	704	0.1+	0.8-	1999 12 13	704	0.4-	0.9-
1995 11 17	399	2.0-	1.4+	1998 09 21	704	0.2+	1.9-	1999 12 15	704	0.3+	0.8-
1995 11 17	399	0.3-	0.0	1998 09 21	704	0.1+	0.6-	1999 12 15	704	0.2+	0.5-
1995 11 25	399	1.8-	1.0-	1998 09 28	423	0.2-	0.0	1999 12 15	704	0.0	0.4-
1995 11 25	399	(3.0-	1.2-)	1998 09 28	423	0.3-	0.7+	1999 12 15	704	0.1+	0.5-
1995 12 14	399	0.6+	0.6-	1998 09 28	423	0.4-	0.2+	1999 12 15	704	0.9+	0.8-
1995 12 14	399	0.0	0.7-	1998 12 08	704	1.7-	0.2+	1999 12 30	704	0.1-	0.1+
1995 12 17	399	0.2-	0.1-	1998 12 08	704	0.9+	1.0-	1999 12 30	704	0.4-	0.3+
1995 12 17	399	1.1+	0.4+	1998 12 08	704	0.3+	1.2+	1999 12 30	704	0.3-	0.1+
1997 04 30	399	0.7-	0.2-	1998 12 08	704	0.8+	0.7+	1999 12 30	704	0.3-	0.4+
1997 04 30	399	2.1-	0.7-	1998 12 08	704	1.1+	0.6+	1999 12 30	704	0.4-	0.2+
1997 05 03	399	0.5+	1.1-	1999 12 12	704	0.0	0.7-	2000 01 13	611	0.1-	0.2+
1997 05 03	399	0.2-	1.5-	1999 12 12	704	0.2+	0.4-	2000 01 13	611	0.5+	0.5+
1998 09 13	423	0.9+	0.0	1999 12 12	704	0.7+	0.4-	2000 01 21	704	0.1+	0.1+
1998 09 13	423	0.2-	0.8+	1999 12 12	704	2.0+	0.8+	2000 01 21	704	0.2+	0.4+
1998 09 15	423	0.2+	0.1-	1999 12 12	704	1.3-	1.2-	2000 01 21	704	0.1+	0.4+
1998 09 15	423	0.6+	0.1+	1999 12 13	704	0.1-	0.5-	2000 01 21	704	0.2+	0.3+
1998 09 15	423	0.1+	0.2-	1999 12 13	704	0.2+	0.6-	2000 01 21	704	0.0	0.2+

(13167)* 1995 WC₅ = 1986 VD₇ = 1999 UH

Discovered 1995 Nov. 24 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 36341)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	322.25302		(2000.0)	P	Q
<i>n</i>	0.22426491	ω	232.20770	-0.14221753	-0.98893889
<i>a</i>	2.6830484	Ω	226.02492	+0.92556196	-0.11777894
<i>e</i>	0.0700853	<i>i</i>	3.35534	+0.35086924	-0.09015534
<i>P</i>	4.39	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1986 11 03	046	1.2+	1.0-	1999 10 02	703	0.2-	0.0	1999 11 04	703	0.5-	0.4-
1986 11 03	046	(2.4+	3.0-)	1999 10 04	704	0.2-	0.7+	1999 11 04	703	0.3+	0.4+
1994 09 01	691	0.9-	0.1-	1999 10 04	704	0.9-	0.1+	1999 11 05	704	0.5+	0.9-
1994 09 01	691	0.6-	0.3+	1999 10 04	704	0.8-	0.1-	1999 11 05	704	0.5+	0.3-
1994 09 01	691	0.3-	0.4-	1999 10 04	704	0.9-	0.0	1999 11 05	704	0.6+	0.4-
1995 11 24	411	0.6-	0.3-	1999 10 04	704	1.1-	0.3-	1999 11 05	704	0.3+	0.5-
1995 11 24	411	0.7-	0.7+	1999 10 06	704	0.1-	0.1+	1999 11 05	704	0.4+	0.7-
1995 11 25	411	0.3-	0.2+	1999 10 06	704	0.3-	0.2+	1999 11 12	071	0.3+	0.2+
1995 11 25	411	0.8-	0.4-	1999 10 06	704	0.1-	0.1+	1999 11 12	071	0.0	0.1+
1995 11 28	411	0.5-	0.2-	1999 10 06	704	0.1-	0.0	1999 11 12	071	0.0	0.0
1995 11 28	411	0.1-	0.2-	1999 10 06	704	0.1+	0.3+	1999 11 12	071	0.0	0.1+
1995 12 01	411	0.3+	0.9+	1999 10 07	704	0.1+	0.5+	1999 11 14	704	0.2+	0.3+
1995 12 01	411	0.7+	0.2-	1999 10 07	704	0.0	0.1+	1999 11 14	704	0.2-	0.2+
1995 12 09	411	0.8-	0.2-	1999 10 07	704	0.3+	0.5+	1999 11 14	704	0.3+	0.4+
1995 12 09	411	0.8+	0.5+	1999 10 07	704	0.2+	0.3+	1999 11 14	704	0.3-	0.7-
1995 12 20	411	0.8+	0.2-	1999 10 07	704	0.2-	0.2+	1999 11 14	704	0.3-	0.3-
1995 12 20	411	0.2-	0.8-	1999 10 16	120	0.3+	0.9-	1999 11 16	704	0.6+	0.2-
1998 06 24	704	0.0	0.1+	1999 10 16	120	0.0	0.6-	1999 11 16	704	0.4+	0.4-
1998 06 24	704	0.6+	0.3+	1999 10 17	120	0.6+	0.9-	1999 11 16	704	0.2-	0.6+
1998 06 24	704	0.8+	1.2-	1999 10 17	120	0.3+	1.0-	1999 11 16	704	0.8-	0.1+
1998 06 24	704	(3.5-	0.9-)	1999 10 19	120	1.3+	0.6-	1999 11 27	699	0.6-	1.4+
1999 09 18	704	0.5-	0.6+	1999 10 19	120	0.1+	0.6-	1999 11 27	699	0.6-	0.5-
1999 09 18	704	0.1-	0.2+	1999 10 30	703	0.2+	0.6+	2000 01 07	704	0.4+	0.2-
1999 09 18	704	0.2+	0.2+	1999 10 30	703	0.1-	0.3+	2000 01 07	704	0.4+	0.8+
1999 09 18	704	0.2+	0.1+	1999 10 30	703	0.2-	0.3+	2000 01 07	704	0.7+	0.7+
1999 09 18	704	0.0	0.5-	1999 10 30	703	0.0	0.2+	2000 01 07	704	(2.0-	0.9-)
1999 10 01	699	0.3-	0.0	1999 11 01	699	0.4+	0.3+	2000 01 09	704	0.5+	0.2+
1999 10 01	699	0.1-	1.2+	1999 11 01	699	0.4+	0.5+	2000 01 09	704	0.1-	0.4+
1999 10 02	703	0.1-	0.3-	1999 11 01	699	1.4+	0.3-	2000 01 09	704	0.8+	0.6+
1999 10 02	703	0.5-	0.0	1999 11 04	703	0.6-	0.4+	2000 01 09	704	0.3+	0.1+
1999 10 02	703	0.8-	0.0	1999 11 04	703	0.4-	0.0	2000 01 09	704	0.5+	0.4+

(13168)* 1995 XW

Discovered 1995 Dec. 6 by AMOS at Haleakala.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	168.54223		(2000.0)	P	Q
<i>n</i>	0.23115058	ω	223.97514	+0.13098578	+0.96622434
<i>a</i>	2.6294973	Ω	54.78604	-0.81793876	+0.23182168
<i>e</i>	0.0964014	<i>i</i>	15.76185	-0.56019542	-0.11255768
<i>P</i>	4.26	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1995 12 06	608	0.3-	0.5-	1996 03 11	608	1.6+	2.0+	1999 10 13	704	0.4-	0.5-
1995 12 06	608	1.1-	0.1-	1996 03 11	608	0.8-	0.7-	1999 11 16	704	0.2-	0.1-
1995 12 08	608	0.1-	0.4+	1997 02 10	608	0.5+	1.1+	1999 11 16	704	0.3-	0.3-
1995 12 08	608	0.1-	0.2-	1997 02 10	608	1.0+	0.0	1999 11 16	704	0.5-	0.3-
1995 12 08	608	0.1+	0.2-	1997 02 13	608	0.6-	0.0	1999 11 16	704	0.6-	0.0
1995 12 09	608	1.0-	0.9+	1997 02 13	608	0.6-	0.2+	1999 11 16	704	0.6-	0.1-
1995 12 09	608	0.3-	0.1+	1998 08 21	426	0.5+	0.3+	1999 12 15	704	0.1-	0.1-
1995 12 13	608	0.6+	1.4+	1998 08 21	426	0.4+	0.2+	1999 12 15	704	0.6+	0.2-
1995 12 13	608	(1.0-	4.0+)	1998 08 21	426	0.5+	0.6+	1999 12 15	704	0.3+	0.1-
1995 12 22	608	0.1+	0.1+	1998 08 23	426	0.2-	0.7+	1999 12 15	704	0.5+	0.2-
1995 12 22	608	0.1+	0.2+	1998 08 23	426	0.2-	0.6+	2000 01 02	704	0.6+	0.2+
1996 01 12	608	0.4-	0.3-	1998 08 23	426	0.3-	0.4+	2000 01 02	704	0.2+	0.0
1996 01 12	608	0.0	0.1+	1998 09 21	704	0.4-	0.5+	2000 01 02	704	1.4+	0.5-
1996 01 13	608	0.0	0.1+	1998 09 21	704	0.2+	0.0	2000 01 02	704	(2.5+	1.0-)
1996 01 13	608	0.2+	0.0	1998 09 21	704	0.5+	0.6+	2000 01 04	704	0.8+	0.3+
1996 02 10	608	0.2+	0.3+	1998 09 21	704	0.7-	1.7-	2000 01 04	704	0.5+	0.7+

1996 02 10	608	0.6+	1.5+	1998 09 21	704	1.8-	0.4+	2000 01 04	704	0.2-	0.1+
1996 02 16	608	0.6+	0.3+	1999 10 13	704	0.2-	0.3-	2000 01 04	704	0.5+	0.3+
1996 02 16	608	0.4+	0.3+	1999 10 13	704	1.5-	1.1-	2000 01 04	704	0.5+	0.6+
1996 03 10	608	0.1-	0.4-	1999 10 13	704	0.9-	0.3-				
1996 03 10	608	0.6-	0.7-	1999 10 13	704	0.2+	0.3-				

(13169)* 1995 XS₁ = 1976 SS₄ = 1987 RG₄ = 1993 FM₂₃

Discovered 1995 Dec. 15 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 26413)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	79.32862		(2000.0)		P		Q
n	0.26431986	ω	173.03497		+0.68255283		-0.73056060
a	2.4046370	Ω	233.91921		+0.66932555		+0.63589798
e	0.2098762	i	1.42306		+0.29347051		+0.24882720
P	3.73	H	14.2	G	0.15	U	1

Residuals in seconds of arc

1976 09 24	095	0.0	1.2+	1995 12 25	411	0.1-	0.4+	1999 11 04	703	1.6+	0.1-
1987 09 02	095	0.4-	0.9-	1995 12 25	411	0.2-	0.2+	1999 11 04	703	0.6+	0.2+
1991 10 17	675	0.5+	1.9+	1995 12 26	411	0.0	0.5+	1999 11 04	703	1.6+	0.7+
1993 03 21	809	0.1+	0.3+	1995 12 26	411	0.0	0.2+	2000 01 05	691	0.1+	0.3-
1993 03 22	809	0.9+	0.3+	1995 12 31	411	1.4-	1.1-	2000 01 05	691	0.1+	0.3-
1993 03 26	809	0.8-	0.5+	1995 12 31	411	0.7+	1.6-	2000 01 05	691	0.1+	0.2-
1993 03 27	809	0.4-	0.9+	1998 08 17	704	1.2+	0.4+	2000 01 07	704	1.1+	0.0
1993 04 16	413	0.4+	0.0	1998 08 17	704	0.5+	0.1-	2000 01 07	704	0.2+	1.0+
1995 12 15	411	0.4+	0.2-	1998 08 17	704	0.1+	0.0	2000 01 07	704	0.0	0.2-
1995 12 15	411	0.4-	0.4-	1998 08 17	704	0.5-	0.5+	2000 01 07	704	0.2-	0.3-
1995 12 16	411	0.9-	0.5-	1998 08 17	704	1.2-	0.8-	2000 01 07	704	0.5-	0.4+
1995 12 16	411	1.1-	0.0	1999 11 04	703	0.3+	0.8+				

(13170)* 1995 YX = 1987 SA₁₁

Discovered 1995 Dec. 19 by T. Kobayashi at Oizumi.

Id. A. Gnädig (*MPC* 35297), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	112.32993		(2000.0)		P		Q	
n	0.25888510	ω	269.57918		+0.99802503		+0.01155809	
a	2.4381739	Ω	89.75778		+0.01395053		+0.91760108	
e	0.2063431	i	3.54001		-0.06124885		+0.39733446	
P	3.81	H	14.0		G	0.15	U	1

Residuals in seconds of arc

1979 08 14	413	0.5-	0.6-	1995 12 30	411	0.1-	1.4+	1999 12 15	703	0.9+	0.3+
1979 08 14	413	0.7+	2.2-	1995 12 30	411	0.0	0.9-	2000 01 04	704	0.0	0.5-
1983 10 01	413	0.3-	0.3+	1996 01 09	411	0.8+	0.6-	2000 01 04	704	0.1-	0.3-
1983 10 01	413	0.3+	0.1-	1996 01 09	411	1.6+	0.4-	2000 01 04	704	0.1-	0.2-
1986 06 26	413	0.2+	0.2-	1998 06 22	691	0.6+	0.2+	2000 01 04	704	0.2+	0.0
1986 06 26	413	0.1+	0.4-	1998 06 22	691	0.5+	0.3+	2000 01 04	704	0.2+	0.2-
1987 09 30	033	0.4+	0.8-	1998 06 22	691	0.5+	0.5+	2000 01 05	699	1.4-	1.5+
1987 09 30	033	0.6+	0.3-	1998 07 24	566	0.2+	0.6+	2000 01 06	704	0.3+	0.4-
1991 10 18	675	0.4+	0.3-	1998 07 24	566	0.0	0.4+	2000 01 06	704	0.4-	0.6-
1991 10 18	675	0.7-	0.3+	1998 07 24	566	0.0	0.0	2000 01 06	704	0.0	0.5+
1995 12 19	411	0.7-	0.1+	1998 08 17	704	0.6-	0.4+	2000 01 06	704	0.7-	0.1-
1995 12 19	411	0.5-	0.5-	1998 08 17	704	0.3-	0.3+	2000 01 06	704	0.9+	0.1-
1995 12 21	411	1.0-	1.6+	1998 08 17	704	0.7-	0.8+	2000 01 06	704	0.4-	0.4-
1995 12 21	411	0.4-	0.3+	1998 08 17	704	0.1-	0.8+	2000 01 06	704	0.1+	0.7+
1995 12 26	411	0.3-	0.6+	1998 08 17	704	0.6-	1.2+	2000 01 06	704	1.0-	0.2-
1995 12 26	411	0.4-	0.1+	1999 12 15	703	(1.4+	2.4+)	2000 01 06	704	0.8+	0.3+
1995 12 27	411	1.3+	0.7+	1999 12 15	703	0.3+	0.1-				
1995 12 27	411	0.1+	0.4+	1999 12 15	703	0.0	0.1+				

(13171)* 1996 AA

Discovered 1996 Jan. 1 by T. Kobayashi at Oizumi.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

M	24.49480		(2000.0)		P		Q
n	0.26850666	ω	206.93031		-0.77666216		-0.62299862
a	2.3795747	Ω	294.22238		+0.59477152		-0.67659344
e	0.0561102	i	5.85975		+0.20746743		-0.39254812
P	3.67	H	14.4	G	0.15	U	2

Residuals in seconds of arc

1989 03 07	675	0.6+	1.5+	1998 09 20	699	0.7-	0.8-	1999 01 05	699	0.4-	0.6-
1989 03 07	675	0.4+	0.7+	1998 09 20	699	0.1-	0.3+	1999 01 05	699	0.1+	0.5-
1995 12 27	566	0.2-	0.0	1998 09 20	699	0.4-	0.4-	1999 11 05	703	0.1+	0.5+
1995 12 27	566	0.1-	0.1-	1998 10 11	699	0.5+	0.4-	1999 11 05	703	0.9-	1.7+
1995 12 27	566	0.0	0.4-	1998 10 11	699	0.7+	0.1-	1999 11 05	703	0.4+	0.4+
1996 01 01	411	0.2-	0.2+	1998 10 11	699	0.7+	0.3+	1999 11 05	703	0.9-	0.3-
1996 01 01	411	0.0	0.0	1998 11 15	566	0.7-	0.7+	1999 12 16	704	0.5-	0.7-
1996 01 02	411	1.1+	0.8-	1998 11 15	566	1.2-	0.1+	1999 12 16	704	1.1-	1.2-
1996 01 02	411	0.2+	0.1+	1998 11 15	566	0.1-	0.5+	1999 12 16	704	0.1-	1.3-
1996 01 10	411	0.3+	0.4+	1998 11 17	699	0.4+	0.6+	1999 12 16	704	0.9-	1.4-
1996 01 10	411	0.6-	1.2+	1998 11 17	699	0.3+	0.4-	2000 01 05	704	1.3+	0.5-
1996 01 18	411	0.0	0.1+	1998 11 17	699	0.6-	0.8+	2000 01 05	704	0.1-	0.6-
1996 01 18	411	0.3+	0.7+	1999 01 05	699	1.4+	0.3-	2000 01 05	704	0.3-	0.6-

(13172)* 1996 AO = 1987 SF₁₄ = 1998 PN

Discovered 1996 Jan. 11 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 32468)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	89.06826		(2000.0)		P		Q
n	0.26100257	ω	97.05261		+0.75384251		-0.63810182
a	2.4249690	Ω	302.73243		+0.50496357		+0.71520194
e	0.1901135	i	10.73417		+0.42039655		+0.28515304
P	3.78	H	14.0	G	0.15	U	2

Residuals in seconds of arc

1987 09 22	095	0.2-	1.0+	1998 08 03	620	1.3-	0.3+	1998 09 15	699	0.4+	0.7+
1996 01 11	411	0.2-	0.2-	1998 08 03	620	0.8-	0.4-	1998 09 15	699	1.3+	1.1+
1996 01 11	411	0.1+	0.3-	1998 08 04	620	0.5-	1.0+	1998 09 22	699	0.1-	0.5+
1996 01 12	411	0.9-	1.2-	1998 08 04	620	0.8-	0.5+	1998 09 22	699	1.2+	0.3-
1996 01 12	411	0.5-	1.9-	1998 08 11	620	0.4-	0.0	1998 09 22	699	0.6+	0.0
1996 01 13	411	1.0-	0.1+	1998 08 11	620	0.1+	0.1+	1999 12 05	704	0.2+	0.5+
1996 01 13	411	1.0-	0.3-	1998 08 11	620	0.9+	0.3+	1999 12 05	704	0.1+	0.1+
1996 01 16	896	(2.5+	1.3-)	1998 08 17	704	0.2-	0.2+	1999 12 05	704	1.3+	0.3+
1996 01 16	896	1.3+	0.6-	1998 08 17	704	0.2+	0.6+	1999 12 05	704	0.9-	0.1+
1996 01 16	896	(2.3+	1.2-)	1998 08 17	704	0.6-	0.1-	1999 12 05	704	0.4-	0.1-
1996 01 26	411	0.3+	0.4-	1998 08 17	704	0.9-	0.5-	2000 01 05	704	0.5+	0.5+
1996 01 26	411	0.7+	0.0	1998 08 17	704	0.3-	0.2+	2000 01 05	704	0.4-	0.2-
1996 01 26	411	0.3+	0.7+	1998 08 23	704	0.2-	0.7-	2000 01 05	704	0.3-	0.5-
1996 01 27	411	(2.6-	2.5+)	1998 08 23	704	0.3-	0.6-	2000 01 05	704	0.1-	0.1-
1996 01 27	411	0.8-	1.9+	1998 08 23	704	1.1-	0.5-	2000 01 05	704	0.6-	0.2-
1996 01 29	411	0.8+	0.1+	1998 08 23	704	0.1-	1.8-	2000 01 08	704	0.2+	0.0
1996 01 29	411	0.1-	0.4+	1998 08 28	699	0.9+	0.9-	2000 01 08	704	0.3+	0.6-
1996 01 29	411	0.4+	0.7+	1998 08 28	699	0.6+	0.6-	2000 01 08	704	0.3+	0.1-
1996 02 12	411	0.6-	1.0+	1998 08 28	699	0.6+	0.8-	2000 01 08	704	0.2+	0.3-
1996 02 12	411	0.4+	0.6+	1998 09 15	699	1.6+	1.5+	2000 01 08	704	0.5+	0.2+

(13173)* 1996 AJ₂ = 1997 ME₅

Discovered 1996 Jan. 13 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 30277)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	15.23750		(2000.0)		P		Q
n	0.26463073	ω	36.19004		-0.86883834		-0.49209888
a	2.4027534	Ω	114.24504		+0.43907912		-0.81663289
e	0.1275945	i	3.42001		+0.22875633		-0.30157821
P	3.72	H	14.4	G	0.15	U	1

2000 JAN. 24

M.P.C. 37533

Residuals in seconds of arc

1996 01 13	411	0.0	0.4+	1997 07 02	704	0.2-	0.1-	1998 10 29	704	1.2+	0.0
1996 01 13	411	0.7-	1.2+	1998 10 11	699	0.2+	0.2+	1998 10 29	704	0.9-	0.2-
1996 01 16	411	0.5+	0.9-	1998 10 11	699	0.1+	0.4+	1998 10 29	704	0.8-	0.6-
1996 01 16	411	0.7-	0.4+	1998 10 11	699	0.5-	0.4-	1998 11 10	704	(2.7-	1.4-)
1996 01 18	411	0.0	0.5-	1998 10 14	704	(2.1+	0.8+)	1998 11 10	704	0.3-	1.9+
1996 01 18	411	0.0	1.3+	1998 10 14	704	1.6+	1.1-	1998 11 10	704	0.1-	0.6+
1996 01 23	411	0.2+	0.7-	1998 10 14	704	1.0+	1.6+	1998 11 10	704	(0.4+	2.4+)
1996 01 23	411	0.2+	0.2-	1998 10 14	704	0.2+	0.2-	1999 12 09	703	1.1+	0.4+
1996 01 23	411	0.5-	0.3-	1998 10 15	704	0.4+	0.0	1999 12 09	703	0.4+	0.4+
1996 02 12	411	0.6+	0.6-	1998 10 15	704	0.5+	0.2+	1999 12 09	703	0.6+	0.3+
1996 02 12	411	0.5+	0.1+	1998 10 15	704	0.3-	1.0+	1999 12 09	703	0.2+	0.7+
1997 06 29	704	0.1-	0.5+	1998 10 15	704	1.2+	1.2-	2000 01 06	699	0.4+	0.1+
1997 06 29	704	0.6+	0.5+	1998 10 28	704	0.4-	0.4-	2000 01 06	699	0.5-	0.3-
1997 06 29	704	0.1-	0.5+	1998 10 28	704	0.4-	0.4-	2000 01 06	699	0.1+	1.1+
1997 06 29	704	0.0	0.2+	1998 10 28	704	0.9-	0.5-	2000 01 08	704	0.2-	0.1-
1997 07 02	704	0.2-	0.3-	1998 10 28	704	0.1-	0.4-	2000 01 08	704	0.3+	0.5+
1997 07 02	704	0.0	0.6+	1998 10 28	704	0.9-	0.6-	2000 01 08	704	0.1-	0.0
1997 07 02	704	0.4+	0.1+	1998 10 29	704	0.1+	0.2+	2000 01 08	704	1.0-	0.0
1997 07 02	704	0.4-	0.1+	1998 10 29	704	1.3-	1.0+	2000 01 08	704	0.1-	0.7-

(13174)* 1996 CT₈ = 1997 LU₃

Discovered 1996 Feb. 14 by U. Munari and M. Tombelli at Cima Ekar.

Id. A. Gnädig (*MPC* 31387)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	46.16775	(2000.0)	P	Q	
<i>n</i>	0.22818779	ω	291.66742	+0.34030356	-0.92330786
<i>a</i>	2.6522092	Ω	137.08992	+0.93007909	+0.30264962
<i>e</i>	0.1043244	<i>i</i>	15.15836	+0.13837042	+0.23644410
<i>P</i>	4.32	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1996 02 14	098	0.2+	0.6+	1998 08 23	704	(1.1+	2.3-)	1998 09 24	704	0.2-	0.4+
1996 02 14	098	0.5+	0.9-	1998 08 23	704	0.1-	0.2+	1998 09 24	704	1.4-	0.4-
1996 02 15	098	0.2+	1.2+	1998 08 23	704	(2.5+	2.7-)	1999 12 05	704	0.8+	1.1-
1996 02 15	098	0.0	0.1+	1998 08 23	704	(2.2+	0.4-)	1999 12 05	704	0.4+	0.6+
1996 02 18	691	0.8+	1.2+	1998 08 23	704	0.9+	0.1-	1999 12 05	704	0.6-	0.2+
1996 02 18	691	0.1-	0.9+	1998 09 17	699	0.2-	0.5-	1999 12 05	704	0.7-	0.6+
1996 02 18	691	0.2-	1.0+	1998 09 17	699	0.1+	0.3+	1999 12 14	704	0.3+	0.1-
1996 02 24	098	1.1-	0.3-	1998 09 17	699	0.3+	0.0	1999 12 14	704	0.2-	0.7-
1996 02 24	098	0.4+	0.6-	1998 09 21	704	0.9-	0.5+	1999 12 14	704	(0.1-	2.3-)
1997 06 05	691	0.1+	0.2+	1998 09 21	704	0.5-	0.5+	1999 12 14	704	0.6-	0.4-
1997 06 05	691	0.0	0.1+	1998 09 21	704	0.5+	0.8+	1999 12 14	704	0.1-	0.9-
1997 06 05	691	0.3+	0.0	1998 09 21	704	0.3-	1.3+	2000 01 07	704	0.5-	0.1-
1997 06 10	691	0.9-	1.0-	1998 09 21	704	0.7-	0.3-	2000 01 07	704	0.0	0.3+
1997 06 10	691	0.2-	0.5+	1998 09 22	699	0.4-	0.6+	2000 01 07	704	0.2+	1.4+
1997 06 10	691	0.2+	0.4+	1998 09 22	699	0.1+	1.1+	2000 01 07	704	0.4+	0.0
1998 07 31	699	1.2+	0.8+	1998 09 22	699	0.6-	0.6-	2000 01 07	704	0.2-	0.2+
1998 07 31	699	0.1+	0.4+	1998 09 24	704	0.7-	0.6+	2000 01 11	704	0.1+	0.0
1998 07 31	699	0.0	0.3-	1998 09 24	704	0.6-	0.6+	2000 01 11	704	0.0	0.1-
1998 08 17	704	(2.4+	0.6-)	1998 09 24	704	0.6-	0.5+	2000 01 11	704	0.4+	0.5-
1998 08 17	704	1.0+	1.1-	1998 09 24	704	0.7-	1.0-	2000 01 11	704	0.1-	0.1-
1998 08 17	704	(2.4+	1.8-)	1998 09 24	704	(3.1-	2.9-)	2000 01 11	704	0.4+	0.7-
1998 08 17	704	1.8+	1.3-	1998 09 24	704	1.2+	1.7+				
1998 08 17	704	0.9+	1.6-	1998 09 24	704	0.3-	0.1-				

(13175)* 1996 EB₂ = 1977 DG₄ = 1998 RA₁₈

Discovered 1996 Mar. 15 at Haleakala by the JPL Near-Earth Asteroid Tracking program.

Id. S. Nakano (*MPC* 32950)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Asher			
<i>M</i>	38.43928	(2000.0)	P	Q	
<i>n</i>	0.21043947	ω	71.67367	+0.40929346	-0.91228526
<i>a</i>	2.7993116	Ω	354.10331	+0.77402874	+0.35567377
<i>e</i>	0.1433671	<i>i</i>	8.19535	+0.48307181	+0.20305607
<i>P</i>	4.68	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1977 02 18	381	0.5-	1.4+	1998 08 17	704	0.5-	0.5+	1998 09 21	699	0.3+	0.3-
1977 02 18	381	(3.4+	0.0)	1998 08 17	704	0.8-	0.3+	1998 09 21	699	0.3+	0.9-
1977 02 19	381	1.3+	0.4-	1998 08 17	704	0.0	0.0	1998 09 22	428	0.5-	1.4-
1977 02 19	381	0.6-	0.8-	1998 08 17	704	0.9-	0.9-	1999 12 12	704	0.0	0.0
1996 03 15	566	0.1-	0.1-	1998 08 17	704	1.1+	1.8-	1999 12 12	704	0.2+	0.3-
1996 03 15	566	0.6-	0.3+	1998 09 14	704	0.0	0.1+	1999 12 12	704	0.2+	0.2-
1996 03 15	566	0.2-	0.1+	1998 09 14	704	0.1-	1.2-	1999 12 12	704	0.1+	0.5-
1996 03 19	566	0.2-	0.7-	1998 09 14	704	0.2-	0.1+	1999 12 12	704	0.2+	0.1-
1996 03 19	566	0.3-	0.9-	1998 09 14	704	1.4+	0.0	1999 12 15	704	0.0	0.3+
1996 03 19	566	0.4-	0.8-	1998 09 14	704	0.3-	1.0+	1999 12 15	704	0.5-	0.5-
1996 03 19	566	0.1+	0.3-	1998 09 18	704	(2.1+	1.1+)	1999 12 15	704	0.6-	0.5-
1996 03 19	566	0.4-	0.2-	1998 09 18	704	1.2+	1.1+	1999 12 15	704	0.9-	0.1-
1996 03 19	566	0.4-	0.4-	1998 09 18	704	(0.7+	2.2-)	1999 12 15	704	1.1-	0.3-
1996 03 20	098	1.5-	1.6-	1998 09 18	704	0.0	0.4+	2000 01 02	704	0.5+	0.3-
1996 03 20	098	(0.0	2.8-)	1998 09 19	428	0.2+	0.4-	2000 01 02	704	0.5+	0.1+
1996 03 23	566	0.1+	0.2+	1998 09 20	428	0.8+	1.0-	2000 01 02	704	0.4+	0.1+
1996 03 23	566	0.5+	0.1+	1998 09 20	428	0.5+	0.5-	2000 01 02	704	0.4+	0.1+
1996 03 23	566	0.6+	0.2-	1998 09 21	699	0.4+	0.5-				

(13176)* 1996 HE₁ = 1998 SY₂₇

Discovered 1996 Apr. 21 by R. H. McNaught and H. Abe at Yatsuka.

Id. G. V. Williams (*MPC* 32675)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	263.48790	(2000.0)	P	Q	
<i>n</i>	0.17203764	ω	128.65456	-0.95961083	+0.07850151
<i>a</i>	3.2017474	Ω	57.44618	-0.21740904	-0.81638246
<i>e</i>	0.1300397	<i>i</i>	18.69399	+0.17855071	-0.57215137
<i>P</i>	5.73	<i>H</i>	12.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1950 04 22	675	0.5+	0.3-	1999 10 12	704	0.6+	0.3-	1999 11 16	704	0.3-	0.1-
1950 04 22	675	0.6-	0.2+	1999 10 12	704	0.7+	0.1+	1999 11 16	704	0.9-	0.5-
1996 04 21	367	0.5+	0.1+	1999 10 12	704	0.1+	0.2+	1999 11 17	699	0.6+	0.2-
1996 04 21	367	0.7+	0.2+	1999 10 15	704	0.5+	0.2+	1999 11 17	699	0.5-	0.4-
1996 04 21	367	0.8+	0.4+	1999 10 15	704	0.2+	0.4-	1999 11 17	699	0.1+	0.6+
1996 04 22	367	0.3+	0.5+	1999 10 15	704	0.1+	0.5-	1999 12 04	691	0.1-	0.0
1996 04 22	367	0.5+	0.1-	1999 10 15	704	0.3+	0.6-	1999 12 04	691	0.1-	0.0
1996 04 22	900	0.0	0.3+	1999 10 22	704	0.0	0.1+	1999 12 04	691	0.1-	0.1+
1996 04 22	900	0.7+	1.0+	1999 10 22	704	0.2-	0.9-	1999 12 05	703	0.3-	0.7+
1996 04 26	367	0.1+	0.6+	1999 10 22	704	0.2+	0.5-	1999 12 05	703	0.2-	0.3+
1996 04 26	367	0.5+	0.4+	1999 10 22	704	0.1+	0.3-	1999 12 05	703	0.5-	0.5+
1996 05 09	897	0.3-	0.1+	1999 10 22	704	0.5+	0.6-	1999 12 05	703	0.6-	0.5+
1996 05 09	897	0.4-	0.4+	1999 10 30	703	0.1+	0.8+	1999 12 07	704	0.2+	0.5-
1996 05 12	367	0.6-	0.4+	1999 10 30	703	0.8+	0.3+	1999 12 07	704	0.2+	0.7-
1996 05 12	367	0.4-	0.1-	1999 10 30	703	0.7+	0.7+	1999 12 07	704	0.4+	0.5-
1996 06 05	367	0.1-	0.6-	1999 10 30	703	0.3-	1.0+	1999 12 07	704	0.4+	1.2-
1996 06 05	367	0.1+	0.1+	1999 11 03	704	1.0+	0.3-	1999 12 07	704	0.5+	0.9-
1996 06 08	809	(2.6+	1.1+)	1999 11 03	704	0.5+	0.3-	1999 12 08	704	0.3+	0.2-
1996 06 08	809	(2.5+	1.2+)	1999 11 03	704	0.1-	0.1-	1999 12 08	704	0.0	0.4-
1996 06 08	809	(2.6+	1.3+)	1999 11 03	704	0.5+	0.2-	1999 12 08	704	0.3+	0.4-
1996 06 10	809	(3.0+	1.3-)	1999 11 03	704	0.3+	0.2+	1999 12 08	704	0.2-	0.5-
1996 06 10	809	(2.4+	1.2-)	1999 11 03	367	1.3-	0.6+	1999 12 08	704	0.0	0.8-
1996 06 10	809	(2.3+	0.8-)	1999 11 03	367	0.3-	0.4+	1999 12 13	703	0.3-	0.2+
1998 09 25	683	0.1-	0.1-	1999 11 03	367	0.2-	0.6+	1999 12 13	703	0.3-	0.2+
1998 09 25	683	0.0	0.1+	1999 11 07	367	0.0	1.6+	1999 12 13	703	0.4-	0.3+
1998 09 25	683	0.4-	0.1+	1999 11 07	367	0.3+	1.5+	1999 12 13	703	0.5-	0.4-
1998 09 26	683	0.1-	0.0	1999 11 07	367	0.1+	1.3+	1999 12 14	691	0.0	0.0
1998 09 26	683	0.1+	0.2+	1999 11 08	120	0.0	0.6-	1999 12 14	691	0.0	0.1+

1998 09 26	683	0.1+	0.0	1999 11 09	120	0.1-	0.5-	1999 12 14	691	0.2+	0.0
1998 10 02	683	0.0	0.7-	1999 11 09	703	0.0	0.4+	1999 12 15	704	0.4+	0.3-
1998 10 02	683	0.1+	0.1-	1999 11 09	703	0.6-	0.1+	1999 12 15	704	0.3-	0.2+
1998 10 02	683	0.5+	0.9-	1999 11 09	703	0.5-	0.2+	1999 12 15	704	0.6-	0.0
1998 10 03	683	0.0	0.6+	1999 11 09	703	0.1-	0.6+	1999 12 15	704	0.1+	0.2+
1998 10 03	683	0.4+	0.5+	1999 11 09	704	0.3+	0.4-	1999 12 15	704	0.5-	0.5-
1998 10 03	683	0.1-	0.2+	1999 11 09	704	0.3+	0.4-	2000 01 03	704	0.2+	0.3+
1998 10 16	704	0.2-	0.6+	1999 11 09	704	0.3+	0.5-	2000 01 03	704	0.0	0.2+
1998 10 16	704	0.7-	0.6+	1999 11 09	704	0.1+	0.6-	2000 01 03	704	0.8-	0.3+
1998 10 16	704	0.6-	0.8+	1999 11 09	704	0.1+	0.5-	2000 01 03	704	0.6-	1.5+
1998 10 16	704	1.2-	1.0+	1999 11 12	704	0.1+	0.7-	2000 01 03	704	(0.9-	2.4+)
1999 10 11	699	1.0-	1.0+	1999 11 12	704	(3.6+	0.5+)	2000 01 04	704	0.6+	0.1-
1999 10 11	699	1.3-	1.2+	1999 11 12	704	0.1+	0.3-	2000 01 04	704	0.6-	0.8-
1999 10 11	699	0.0	0.2+	1999 11 12	704	0.2-	0.6-	2000 01 04	704	0.6-	1.4+
1999 10 12	704	0.9+	0.8-	1999 11 16	704	0.3+	0.0	2000 01 04	704	0.9-	1.1+
1999 10 12	704	0.8+	0.1-	1999 11 16	704	0.4-	0.6-	2000 01 04	704	0.1-	1.6+

(13177)* 1996 HS₁₁ = 1988 WJ = 1996 KZ₅ = 1998 WS₁₇

Discovered 1996 Apr. 17 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (*MPC* 34513), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i> 188.12515				(2000.0)			
<i>n</i>				<i>P</i>			
0.19863410	ω	290.28311		+0.73374319		+0.67917126	<i>Q</i>
2.9091548	Ω	26.94835		-0.60701295		+0.66761566	
0.0676340	<i>i</i>	2.35686		-0.30521502		+0.30498479	
<i>P</i> 4.96				<i>H</i> 13.2			
				<i>G</i> 0.15			
				<i>U</i> 1			

Residuals in seconds of arc

1988 11 17	399	1.1+	0.4-	1998 11 18	704	1.5-	0.4+	1999 11 16	704	1.3+	0.3-
1988 11 17	399	0.1-	0.7-	1998 11 18	704	0.7+	1.4+	1999 11 16	704	0.4+	0.1-
1988 11 17	399	1.3-	0.2+	1998 11 21	704	0.2+	0.1+	1999 11 16	704	1.1-	1.0-
1988 11 17	399	0.7+	0.1-	1998 11 21	704	0.3+	0.8-	1999 12 06	704	0.3+	0.4-
1996 04 17	809	0.1+	0.3-	1998 11 21	704	(2.1+	1.5-)	1999 12 06	704	0.2+	1.0+
1996 04 17	809	0.0	0.7-	1998 11 21	704	1.4+	1.2-	1999 12 06	704	0.3+	0.3+
1996 04 17	809	0.4-	1.7-	1998 11 21	704	0.4-	1.9-	1999 12 06	704	0.0	0.6+
1996 04 18	809	0.6-	1.8-	1998 11 24	704	0.6+	0.3+	2000 01 04	704	0.0	0.3+
1996 04 18	809	(0.4+	2.2-)	1998 11 24	704	0.5+	0.2-	2000 01 04	704	0.4+	0.3+
1996 04 18	809	(0.4+	2.2-)	1998 11 24	704	0.2-	0.8-	2000 01 04	704	0.2+	0.3+
1996 05 19	809	0.3+	1.5+	1998 11 24	704	0.8+	0.4+	2000 01 04	704	0.1+	0.3-
1996 05 19	809	0.3+	1.4+	1998 11 25	699	0.0	1.3+	2000 01 04	704	0.3-	0.4-
1996 05 19	809	0.2+	1.0+	1998 11 25	699	0.1+	0.8+	2000 01 05	704	0.2+	0.5+
1996 05 21	566	0.3+	0.2-	1998 11 25	699	0.4+	1.0+	2000 01 05	704	0.2-	0.0
1996 05 21	566	0.1-	0.3-	1998 12 14	704	0.3-	0.4+	2000 01 05	704	0.2-	0.8-
1996 05 21	566	0.4-	0.1-	1998 12 14	704	0.4+	1.2-	2000 01 05	704	0.1+	0.2-
1996 05 22	809	(0.2+	4.2+)	1998 12 14	704	0.3+	0.0	2000 01 05	704	0.0	1.7-
1996 05 22	809	(0.4+	4.1+)	1998 12 14	704	0.4-	0.0	2000 01 06	704	0.3-	0.9+
1996 05 22	809	(0.2+	4.1+)	1998 12 14	704	0.9-	1.1+	2000 01 06	704	0.2-	0.1-
1998 11 18	704	0.2-	0.1-	1999 01 05	699	0.4-	0.3-	2000 01 06	704	0.2-	0.2+
1998 11 18	704	0.0	0.3-	1999 01 05	699	1.0-	0.6-	2000 01 06	704	0.2+	0.8+
1998 11 18	704	0.4+	0.3+	1999 01 05	699	1.5-	0.0	2000 01 06	704	0.6-	0.6+

(13178)* 1996 HF₁₈ = 1977 XJ₃

Discovered 1996 Apr. 18 by E. W. Elst at the European Southern Observatory.

Id. B. G. Marsden (*MPC* 27720)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Marsden			
<i>M</i> 343.60712				(2000.0)			
<i>n</i>				<i>P</i>			
0.17789964	ω	245.39239		-0.35483063		-0.93395404	<i>Q</i>
3.1310212	Ω	225.46209		+0.87799944		-0.31717399	
0.1501787	<i>i</i>	3.43608		+0.32126658		-0.16471343	
<i>P</i> 5.54				<i>H</i> 13.5			
				<i>G</i> 0.15			
				<i>U</i> 1			

Residuals in seconds of arc

1977 12 07	675	0.1+	0.5+	1999 11 09	704	0.3+	1.0-	1999 12 07	704	0.1+	0.6+
1977 12 08	675	0.1+	1.0+	1999 11 09	704	0.1-	1.8-	1999 12 07	704	0.4+	0.2+
1993 10 12	809	0.3-	0.7+	1999 11 09	704	0.4-	0.6-	1999 12 07	704	0.4+	0.2-
1993 10 12	809	0.9-	0.2-	1999 11 09	704	0.6-	0.8-	1999 12 07	704	0.1-	0.5-
1993 10 12	809	0.8-	0.4+	1999 11 10	691	0.2-	0.4-	1999 12 08	704	0.2+	0.3+
1996 04 18	809	1.0+	0.2-	1999 11 10	691	0.3-	0.4-	1999 12 08	704	0.4+	0.1+
1996 04 18	809	0.2+	0.0	1999 11 10	691	0.3-	0.3-	1999 12 08	704	0.7+	0.0
1996 04 18	809	0.0	0.1+	1999 11 15	704	0.2-	0.3-	1999 12 08	704	0.4+	0.6-
1996 04 20	809	0.4+	1.2+	1999 11 15	704	0.6-	0.3-	1999 12 08	704	0.3+	0.1+
1996 04 20	809	0.9-	1.9+	1999 11 15	704	0.3-	0.4-	1999 12 17	120	0.0	0.0
1996 04 20	809	0.2-	0.5+	1999 11 15	704	0.1-	0.2-	1999 12 17	120	0.2+	0.5-
1996 05 22	809	(0.3+	2.8+)	1999 11 15	704	0.1-	0.3-	1999 12 31	703	0.2+	0.3+
1996 05 22	809	(0.4-	3.7+)	1999 11 16	732	0.5-	0.1-	1999 12 31	703	0.2-	0.7+
1996 05 22	809	(1.7-	3.7+)	1999 11 16	732	0.5-	0.2+	1999 12 31	703	0.5-	0.9+
1996 05 23	809	(0.3+	4.7+)	1999 11 16	732	0.4-	0.1-	1999 12 31	703	0.3+	0.6+
1996 05 23	809	(0.2-	3.9+)	1999 11 17	704	0.5-	0.6-	2000 01 05	704	0.9+	0.8+
1996 05 23	809	(1.5-	3.5+)	1999 11 17	704	0.2+	0.7-	2000 01 05	704	0.6+	0.2+
1998 08 17	704	0.5-	0.6+	1999 11 17	704	0.1-	0.6-	2000 01 05	704	0.2+	0.0
1998 08 17	704	0.8+	0.6+	1999 11 17	704	0.3+	0.1+	2000 01 05	704	0.1-	0.5+
1998 08 17	704	1.2+	0.3+	1999 11 17	704	0.0	0.5-	2000 01 05	704	0.1+	0.7+
1998 08 17	704	0.9-	0.4+	1999 11 17	732	0.1+	0.9+	2000 01 06	704	0.2-	0.2+
1999 10 30	703	0.2-	0.6+	1999 11 17	732	0.2-	0.3-	2000 01 06	704	0.2-	0.8+
1999 10 30	703	0.4+	1.1+	1999 11 17	732	0.5-	0.7+	2000 01 06	704	1.1+	0.2+
1999 10 30	703	0.3-	1.6+	1999 11 27	120	0.5+	0.0	2000 01 06	704	0.4+	0.7+
1999 10 30	703	0.8-	0.4+	1999 11 27	120	0.1-	0.0	2000 01 06	704	0.1-	0.0
1999 11 09	704	0.5-	0.6-	1999 12 07	704	0.5+	0.2+				

(13179)* 1996 HU₁₈ = 1976 UO₁₁ = 1990 GJ₁

Discovered 1996 Apr. 18 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (*MPC* 32471), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i> 251.14754				(2000.0)			
<i>n</i>				<i>P</i>			
0.17991027	ω	53.97353		-0.73865974		+0.67406469	<i>Q</i>
3.1076499	Ω	168.40593		-0.62514971		-0.68263750	
0.1207171	<i>i</i>	1.22893		-0.25213016		-0.28221064	
<i>P</i> 5.48				<i>H</i> 13.7			
				<i>G</i> 0.15			
				<i>U</i> 1			

Residuals in seconds of arc

1976 10 22	381	0.1-	0.4-	1996 05 19	566	1.0-	1.2+	1998 10 29	704	0.1-	0.2-
1976 10 22	381	1.2+	0.3+	1996 05 19	566	1.0-	1.1+	1998 10 29	704	0.7-	1.5-
1990 04 04	809	(0.2-	3.1-)	1996 05 22	809	0.1+	0.6+	1998 10 29	704	1.9+	0.7-
1990 04 04	809	(2.3-	2.5-)	1996 05 22	809	0.6-	0.2+	1998 10 29	704	0.6+	1.2-
1990 04 04	809	(4.0-	1.3-)	1996 05 22	809	1.1-	1.0+	1999 12 07	704	0.0	0.7-
1992 09 23	691	1.5-	0.0	1996 05 23	809	(3.5-	2.9-)	1999 12 07	704	1.7+	0.1-
1992 09 23	691	1.4-	0.2+	1996 05 23	809	(4.0-	3.4-)	1999 12 07	704	0.7-	0.1-
1992 09 23	691	1.7-	0.1+	1996 05 23	809	(4.3-	3.5-)	1999 12 07	704	0.2-	0.7+
1996 04 18	809	1.1+	0.5-	1998 09 16	910	0.5+	0.2+	1999 12 08	704	0.0	0.1-
1996 04 18	809	0.8+	1.0-	1998 09 16	910	0.1-	0.2+	1999 12 08	704	0.5+	0.0
1996 04 18	809	0.4+	1.5-	1998 09 16	910	0.2+	0.2+	1999 12 08	704	0.0	0.3-
1996 04 20	809	1.4+	0.8-	1998 09 18	910	0.3+	0.5+	1999 12 08	704	0.5+	0.7-
1996 04 20	809	1.2+	0.9-	1998 09 18	910	0.6+	0.6+	2000 01 05	704	0.3-	1.0+
1996 04 20	809	1.4+	1.6-	1998 09 18	910	0.6+	0.6+	2000 01 05	704	0.7-	0.7+
1996 05 15	566	0.6-	0.2+	1998 09 20	910	0.4+	0.4+	2000 01 05	704	0.5-	0.1-
1996 05 15	566	0.5-	0.3+	1998 09 20	910	0.6+	0.2+	2000 01 05	704	0.4-	0.7+
1996 05 15	566	0.8-	0.1+	1998 09 20	910	0.4+	0.3+	2000 01 05	704	0.2-	0.0
1996 05 19	809	0.6+	0.3+	1998 10 28	704	0.6-	0.2-	2000 01 06	704	0.6-	0.3+
1996 05 19	809	0.4+	0.3-	1998 10 28	704	1.1+	0.5-	2000 01 06	704	1.1-	0.2+
1996 05 19	809	0.1-	0.4-	1998 10 28	704	(2.4+	0.7-)	2000 01 06	704	0.3-	0.2+
1996 05 19	566	1.0-	1.2+	1998 10 28	704	(0.1-	2.4+)				

Id. A. Gnädig (*MPC* 32675)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17267584	ω	218.89100	+0.23328674	−0.96953945		
<i>a</i>	3.1938536	Ω	217.78708	+0.91982418	+0.24491862		
<i>e</i>	0.1171934	<i>i</i>	6.99653	+0.31543744	+0.00284883		
<i>P</i>	5.71	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 12 18	095	0.1+	1.1−	1998 08 23	704	(0.2−	2.3−)	1999 12 06	704	(3.8+	1.3−)
1996 04 18	809	0.6+	0.4−	1998 08 23	704	1.5+	0.3+	1999 12 06	704	0.5+	1.2−
1996 04 18	809	0.3−	0.3−	1998 08 23	704	1.2−	1.5−	1999 12 06	704	1.1+	0.6+
1996 04 18	809	0.4−	0.8−	1998 08 23	704	(0.3+	3.5−)	1999 12 14	704	0.2−	0.3+
1996 04 20	809	0.2+	0.8−	1999 10 10	704	0.2−	1.5−	1999 12 14	704	0.3−	1.0+
1996 04 20	809	1.2−	0.4−	1999 10 10	704	0.6−	0.1−	1999 12 14	704	0.4−	1.0+
1996 04 20	809	0.0	1.0−	1999 10 10	704	0.2−	1.4−	1999 12 14	704	0.6+	0.2−
1996 05 22	809	0.7+	1.6−	1999 10 10	704	0.3−	1.1−	1999 12 14	704	0.4−	0.2−
1996 05 22	809	0.5−	1.2−	1999 10 10	704	0.0	0.6−	2000 01 05	704	0.1−	0.1+
1996 05 22	809	(1.0−	2.5−)	1999 11 04	704	0.7−	0.8+	2000 01 05	704	0.4+	0.0
1996 05 23	809	0.2+	0.3−	1999 11 04	704	0.4+	0.1−	2000 01 05	704	0.5+	0.2−
1996 05 23	809	0.1+	0.0	1999 11 04	704	1.2+	0.6−	2000 01 05	704	0.2−	0.3−
1996 05 23	809	0.6−	0.0	1999 11 04	704	0.8+	0.5−	2000 01 05	704	0.0	0.7−
1998 08 17	704	0.8+	1.4−	1999 11 04	704	0.4+	0.1−	2000 01 06	704	0.6−	0.5+
1998 08 17	704	(2.7+	2.7−)	1999 11 17	704	0.4−	0.1+	2000 01 06	704	0.1+	0.4−
1998 08 17	704	(0.8+	3.4−)	1999 11 17	704	0.2+	0.3+	2000 01 06	704	0.7−	0.3−
1998 08 17	704	(0.9+	4.1−)	1999 11 17	704	0.5−	0.6+	2000 01 06	704	0.1−	0.4−
1998 08 17	704	0.6−	0.4−	1999 11 17	704	0.1−	0.4+	2000 01 06	704	0.1−	0.9−
1998 08 23	704	0.5+	0.3−	1999 11 17	704	0.7−	0.3−				

(13181)* 1996 RS₂₈ = 1978 EW₈ = 1997 UY₁₁

Discovered 1996 Sept. 11 by the Uppsala-DLR Trojan Survey at the European Southern Observatory.

Id. A. Doppler (*MPC* 36797)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08305817	ω	102.44544	−0.39766632	−0.91749089		
<i>a</i>	5.2025287	Ω	10.99844	+0.82360247	−0.36101698		
<i>e</i>	0.1377889	<i>i</i>	2.54853	+0.40440138	−0.16696467		
<i>P</i>	11.87	<i>H</i>	11.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 03 15	675	0.3−	0.2+	1997 10 07	809	1.9−	1.2−	2000 01 03	704	0.4−	0.3−
1978 03 16	675	0.0	0.1+	1997 10 23	691	0.2+	0.0	2000 01 03	704	0.1−	0.3+
1986 09 30	675	0.2+	0.1−	1997 10 23	691	0.4−	0.4+	2000 01 03	704	0.1+	0.2+
1986 09 30	675	0.5+	0.3+	1997 10 23	691	0.1+	0.2+	2000 01 03	704	0.0	0.3−
1996 09 11	809	0.9+	0.4+	1997 11 01	691	0.2+	0.2+	2000 01 03	704	0.7+	0.1−
1996 09 17	809	0.4−	0.3+	1997 11 01	691	0.1+	0.1+	2000 01 04	704	0.7−	0.8+
1996 10 15	809	0.6+	0.0	1997 11 01	691	0.1+	0.0	2000 01 04	704	0.1−	0.3+
1997 10 06	809	0.1+	0.3−	1999 12 07	704	0.3+	0.5−	2000 01 04	704	0.2−	0.2−
1997 10 06	809	0.1−	0.2−	1999 12 07	704	1.2+	0.6−	2000 01 04	704	0.6−	0.2−
1997 10 07	809	0.3−	0.0	1999 12 07	704	0.8+	0.5+	2000 01 04	704	0.4−	0.2+

(13182)* 1996 SO₈ = 1997 UM₂₂

Discovered 1996 Sept. 16 by the Uppsala-DLR Trojan Survey at the European Southern Observatory.

Id. G. V. Williams (*MPC* 30986)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08172066	ω	64.19288	+0.98878576	−0.12976736		
<i>a</i>	5.2591411	Ω	303.18102	+0.08436155	+0.89374704		
<i>e</i>	0.1119467	<i>i</i>	5.06656	+0.12323088	+0.42939104		
<i>P</i>	12.06	<i>H</i>	10.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1996 09 13	809	0.0	1.0+	1998 01 27	566	0.6−	0.2+	1999 12 07	704	0.3+	0.4+
1996 09 14	809	0.7−	0.2+	1998 11 10	704	1.8−	0.1+	1999 12 07	704	0.1+	0.1−
1996 09 14	809	0.6−	0.3+	1998 11 10	704	1.5+	0.8−	1999 12 07	704	0.2−	0.3−
1996 09 14	809	0.2+	0.3+	1998 11 10	704	0.4+	0.1+	2000 01 03	704	0.3+	0.4+
1996 09 15	809	0.5−	0.1−	1998 11 10	704	0.9−	1.0+	2000 01 03	704	0.4+	0.5−
1996 09 15	809	0.5−	0.0	1998 12 14	704	0.4−	0.4+	2000 01 03	704	0.2−	0.1+
1996 09 16	809	0.5+	0.2−	1998 12 14	704	0.1+	1.0−	2000 01 03	704	0.2−	0.2+
1996 09 17	809	0.9+	0.3+	1998 12 14	704	0.8+	0.4+	2000 01 03	704	0.2−	0.3+
1996 09 22	809	0.0	0.0	1998 12 14	704	1.3+	0.9−	2000 01 04	704	0.0	0.1+
1996 09 22	809	0.0	0.0	1998 12 14	704	1.0−	1.7+	2000 01 04	704	0.6−	0.1+
1997 10 26	098	0.7+	1.0+	1998 12 17	704	0.7+	1.4−	2000 01 04	704	0.2−	0.1+
1997 10 26	098	0.7−	1.4−	1998 12 17	704	0.2+	1.9−	2000 01 04	704	0.1+	0.0
1997 10 29	098	1.0+	0.3−	1998 12 17	704	0.2+	0.4−	2000 01 04	704	0.3−	0.3+
1997 10 29	098	(0.0	2.8−)	1998 12 17	704	(2.3−	2.9−)	2000 01 05	120	0.1−	0.4+
1998 01 27	566	0.6−	0.1+	1999 12 07	704	1.0+	0.3+	2000 01 05	120	0.6−	0.6+
1998 01 27	566	0.8−	0.3+	1999 12 07	704	0.6+	0.6+				

(13183)* 1996 TW

Discovered 1996 Oct. 5 by D. di Cicco at Sudbury.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08335110	ω	314.36843	+0.78740908	+0.61492032		
<i>a</i>	5.1903320	Ω	8.03127	−0.44031097	+0.61002419		
<i>e</i>	0.0890735	<i>i</i>	17.97982	−0.43140839	+0.49974341		
<i>P</i>	11.82	<i>H</i>	10.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 03 31	413	0.3+	0.5+	1996 11 05	817	0.1−	0.3+	1998 12 12	817	0.1+	0.2−
1996 10 05	817	0.6−	0.7+	1996 11 05	817	0.3+	0.3+	1999 01 09	704	0.5−	0.4+
1996 10 05	817	0.8−	0.8−	1996 11 12	817	0.5+	0.1−	1999 01 09	704	1.6+	0.5−
1996 10 05	817	0.6−	0.5+	1996 11 12	817	0.2+	0.3+	1999 01 09	704	1.2−	1.1+
1996 10 05	817	0.8−	0.1−	1996 11 28	817	0.2−	0.2−	1999 12 13	704	0.1−	0.1+
1996 10 05	817	0.4−	0.6+	1996 11 28	817	0.3−	0.6−	1999 12 13	704	0.1−	0.2−
1996 10 05	817	1.9−	0.3+	1997 10 21	817	0.5+	0.7−	1999 12 13	704	0.2−	0.2+
1996 10 06	817	0.0	0.4+	1997 10 21	817	0.0	0.6−	1999 12 13	704	0.2−	0.6+
1996 10 06	817	0.2−	0.4+	1997 10 21	817	0.3+	0.5−	1999 12 13	704	0.6−	0.4+
1996 10 06	817	0.1−	0.4+	1997 10 23	817	0.4+	0.7−	1999 12 16	699	0.4−	0.7+
1996 10 06	817	0.2−	0.4+	1997 10 23	817	0.1+	0.5−	1999 12 16	699	0.5−	0.2−
1996 10 07	817	0.2+	0.5+	1997 10 23	817	0.2+	0.3−	1999 12 16	699	0.4+	1.2+
1996 10 07	817	0.4+	0.4+	1997 10 29	817	0.1+	0.7−	1999 12 30	704	0.1+	0.1+
1996 10 07	817	0.0	0.4+	1997 10 29	817	0.0	0.4−	1999 12 30	704	1.1+	0.9+
1996 10 12	817	0.0	0.2+	1998 11 16	704	0.8+	1.5−	1999 12 30	704	0.5+	0.8+
1996 10 12	817	0.1+	0.3+	1998 11 16	704	0.8+	1.3−	1999 12 30	704	0.8+	0.9+
1996 10 16	817	0.5+	0.1+	1998 11 16	704	(1.1+	2.1−)	1999 12 30	704	0.2+	0.6+
1996 10 16	817	0.1+	0.2−	1998 11 16	704	0.3+	1.4−				
1996 10 16	817	0.1+	0.1+	1998 12 12	817	0.0	0.2+				

(13184)* 1996 TS₄₉ = 1992 GQ₇ = 1997 WJ₅₇

Discovered 1996 Oct. 4 by E. W. Elst at the European Southern Observatory.

Id. M. E. Sansaturio (*MPC* 35608), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08472620	ω	98.39950	+0.82546096	+0.56146342		
<i>a</i>	5.1340203	Ω	227.46662	−0.54393138	+0.76372393		
<i>e</i>	0.0481178	<i>i</i>	4.52048	−0.15084050	+0.31856646		
<i>P</i>	11.63	<i>H</i>	10.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 04 04	809	0.1−	0.2+	1997 10 30	704	1.4+	0.5−	1999 12 08	704	0.3−	0.2−
1992 04 04	809	0.4−	0.4−	1997 10 30	704	(3.3+	1.0−)	1999 12 08	704	0.3−	0.1+
1992 04 04	809	0.2+	0.5−	1997 10 30	704	(2.5+	2.0−)	1999 12 08	704	0.3−	0.3−
1996 09 12	809	1.2−	0.2−	1997 10 30	704	(3.0+	1.2−)	1999 12 08	704	1.2−	1.9−
1996 09 13	809	0.6−	0.2−	1997 10 31	704	1.0+	1.7+	2000 01 05	704	(0.1−	2.5+)
1996 09 13	809	0.8−	0.2−	1997 10 31	704	0.9+	1.8+	2000 01 05	704	1.4−	1.6+

1996 09 14	809	0.5−	0.1+	1997 10 31	704	(2.4+	0.5−)	2000 01 05	704	0.0	0.8+
1996 09 14	809	0.5−	0.1+	1997 10 31	704	(2.6−	2.4+)	2000 01 05	704	0.1−	0.6+
1996 09 16	809	(2.2−	0.3−)	1997 11 06	704	1.6−	0.8−	2000 01 06	704	0.1−	0.3+
1996 09 17	691	0.1+	0.4+	1997 11 06	704	(2.3−	0.5−)	2000 01 06	704	0.2−	0.3+
1996 09 17	691	0.1−	0.1+	1997 11 06	704	(2.5−	0.9−)	2000 01 06	704	0.2+	1.2+
1996 09 17	691	0.0	0.1+	1997 11 06	704	(2.9−	1.3−)	2000 01 07	704	0.4−	0.1+
1996 09 21	809	0.4−	0.2+	1997 11 06	704	(2.6−	1.3−)	2000 01 07	704	0.2−	0.2+
1996 09 21	809	0.5−	0.3+	1997 11 23	691	0.8−	0.0	2000 01 07	704	0.3−	0.2+
1996 10 04	809	(2.3+	0.6−)	1997 11 23	691	0.5−	0.2−	2000 01 07	704	0.1+	0.1−
1996 10 04	809	0.8+	0.9−	1997 11 23	691	0.6−	0.2−	2000 01 07	704	0.2−	0.2−
1996 10 04	809	1.6+	0.6−	1997 11 28	691	0.1+	0.6−	2000 01 09	704	0.3−	0.2−
1996 10 05	809	(2.5+	0.5+)	1997 11 28	691	0.2+	0.3−	2000 01 09	704	0.2+	0.4−
1996 10 05	809	1.2+	0.1−	1997 11 28	691	0.2+	0.1−	2000 01 09	704	0.4+	0.1+
1996 10 05	809	1.1+	1.2+	1997 12 05	691	0.6−	0.2−	2000 01 09	704	0.2+	0.4+
1996 10 10	809	0.4+	1.0+	1997 12 05	691	(0.7−	2.4−)	2000 01 09	704	1.4+	0.7−
1996 10 14	809	(3.3+	0.3+)	1997 12 05	691	0.7−	0.4−	2000 01 10	704	0.6+	0.4−
1996 10 14	809	0.6+	1.3−	1998 12 15	704	0.3+	0.5+	2000 01 10	704	0.8+	0.4−
1997 10 29	704	(2.1+	0.7−)	1998 12 15	704	0.4−	0.1−	2000 01 10	704	0.0	0.0
1997 10 29	704	(2.7+	0.9+)	1998 12 15	704	0.9+	1.5−	2000 01 10	704	0.4+	0.5−
1997 10 29	704	1.3−	0.1+	1998 12 15	704	0.7+	0.2−	2000 01 10	704	0.2−	0.3−
1997 10 29	704	0.2−	0.5−	1998 12 15	704	1.3+	0.3+				
1997 10 29	704	0.5−	0.1+	1999 12 08	704	0.2+	0.3+				

(13185)* 1996 TH₅₂ = 1973 SP

Discovered 1996 Oct. 5 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPC* 32676)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	45.00820	(2000.0)	
<i>n</i>	0.08379840	ω	53.21428
<i>a</i>	5.1718457	Ω	4.35916
<i>e</i>	0.0557910	<i>i</i>	9.12021
<i>P</i>	11.76	<i>H</i>	11.3
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	1

1973 09 19	675	1.7+	1.2−	1996 09 15	809	0.0	0.5+	1998 12 17	704	0.8−	0.8−
1973 09 19	675	0.7−	1.0+	1996 09 16	809	0.1+	0.4+	1998 12 17	704	0.2−	0.8+
1973 09 20	675	0.7−	0.5+	1996 09 16	809	0.1+	0.6+	1998 12 17	704	0.4+	0.8−
1973 09 24	675	0.5−	0.5+	1996 09 22	809	0.2+	1.2+	1998 12 17	704	1.3+	0.0
1973 09 24	675	0.6+	1.1+	1996 09 22	809	0.2+	1.2+	1998 12 15	704	0.2−	1.3+
1973 09 25	675	1.0+	1.3−	1996 10 05	809	0.2+	0.7−	1999 12 15	704	0.4−	0.4−
1973 09 25	675	1.0−	1.0+	1996 10 05	809	0.1+	0.1+	1999 12 15	704	0.9−	0.5−
1973 09 29	675	1.6+	0.9−	1996 10 05	809	0.6−	0.6−	1999 12 15	704	1.2−	0.2−
1973 09 29	675	0.7−	0.9+	1996 10 06	809	0.4+	0.3−	1999 12 15	704	0.6−	0.4−
1973 09 30	675	0.6−	1.6−	1996 10 06	809	0.2+	0.7−	2000 01 02	704	0.2−	0.4+
1973 09 30	675	0.8−	0.1+	1996 10 06	809	0.6−	0.5−	2000 01 02	704	1.0+	1.2+
1973 10 04	675	0.0	0.6−	1997 11 21	691	0.6−	0.6+	2000 01 02	704	0.5+	1.1+
1973 10 04	675	0.4−	0.3−	1997 11 21	691	1.1−	0.2+	2000 01 08	704	0.1+	0.3+
1973 10 05	675	0.6+	1.3−	1997 11 21	691	(2.0−	2.2+)	2000 01 08	704	0.8+	0.6−
1973 10 05	675	0.7+	0.3+	1997 11 28	691	0.1+	0.2+	2000 01 08	704	1.0+	1.3−
1996 09 14	809	0.7−	0.4−	1997 11 28	691	0.1+	0.0				
1996 09 15	809	0.2−	0.4+	1997 11 28	691	0.2+	0.2+				

(13186)* 1996 UM = 1985 SH

Discovered 1996 Oct. 18 by C. W. Hergenrother at the University of Arizona's Catalina Station.

Id. B. G. Marsden (*MPC* 28865)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden			
<i>M</i>	79.81839	(2000.0)	
<i>n</i>	0.36263578	ω	200.22981
<i>a</i>	1.9475515	Ω	190.55876
<i>e</i>	0.0828565	<i>i</i>	21.97767
<i>P</i>	2.72	<i>H</i>	14.4
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1985 09 18	046	(1.1+	3.9+)	1998 04 23	704	0.0	0.4+	1999 11 08	704	0.3−	1.0−
1985 09 18	046	(1.8+	6.2+)	1998 04 23	704	0.2−	0.0	1999 11 08	704	0.5−	0.8+
1985 09 19	046	0.5+	0.7−	1998 04 23	704	0.1−	0.0	1999 11 08	704	0.9−	0.3−
1985 09 19	046	0.5−	0.4+	1998 04 23	704	0.3+	0.1+	1999 11 08	704	0.8−	0.0
1996 10 17	693	0.3−	0.6+	1998 04 25	566	0.5+	1.2−	1999 12 18	704	0.8+	0.2−
1996 10 18	693	0.2−	0.2+	1998 04 25	566	0.3+	1.0−	1999 12 18	704	0.5+	0.3−
1996 10 18	693	0.6−	1.6−	1998 04 25	566	0.8+	1.3−	1999 12 18	704	0.6+	0.2+
1996 10 23	424	0.4+	0.1−	1998 05 23	704	0.6−	0.3+	1999 12 18	704	0.5+	0.4+
1996 10 23	424	0.3+	0.5+	1998 05 23	704	0.2+	0.9+	1999 12 18	704	0.9+	0.2+
1996 10 23	424	0.1+	0.1−	1998 05 23	704	0.3−	0.4+	1999 12 31	704	0.2−	0.2+
1996 11 02	424	0.1−	0.2+	1998 05 23	704	0.5−	0.5+	1999 12 31	704	0.4−	0.2+
1996 11 02	424	1.0−	0.3+	1998 05 23	704	0.7−	1.2+	1999 12 31	704	0.4−	0.0
1996 12 15	696	0.7+	0.2+	1998 06 25	699	0.0	0.1+	1999 12 31	704	0.1+	0.1+
1996 12 15	696	0.7+	0.3+	1998 06 25	699	0.5+	0.0	1999 12 31	704	0.4−	0.2−
1996 12 15	696	0.7+	0.3+	1998 06 25	699	0.4−	0.6+				

(13187)* 1997 AN₄ = 1991 NL₇ = 1995 UX₄₉

Discovered 1997 Jan. 6 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29121)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher			
<i>M</i>	233.08194	(2000.0)	
<i>n</i>	0.28866554	ω	311.48522
<i>a</i>	2.2674589	Ω	286.19703
<i>e</i>	0.1381560	<i>i</i>	0.97070
<i>P</i>	3.41	<i>H</i>	15.2
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	1

1991 07 12	809	0.4−	1.7−	1997 01 07	411	1.1−	0.8+	1998 08 23	699	0.3+	1.9+
1991 07 12	809	0.2−	1.8−	1997 01 11	411	0.7−	0.1−	1998 09 14	704	1.1−	0.6−
1991 07 12	809	0.3+	1.8−	1997 01 11	411	0.3−	0.2−	1998 09 14	704	0.8+	1.5−
1991 07 14	809	0.1+	0.4−	1997 01 16	411	0.7+	0.8+	1998 09 14	704	(2.6+	2.2+)
1991 07 14	809	0.4+	0.4−	1997 01 16	411	0.2−	0.2+	1998 09 14	704	0.1−	1.5−
1991 07 14	809	0.8+	0.5−	1997 01 28	411	0.5+	0.6+	1999 12 07	704	0.1−	0.2+
1991 07 15	809	0.5−	0.1−	1997 01 28	411	0.3−	0.9+	1999 12 07	704	0.0	0.0
1991 07 15	809	0.0	0.2+	1998 08 17	704	0.1−	0.1+	1999 12 07	704	0.2+	0.1−
1991 07 15	809	0.1+	0.1−	1998 08 17	704	0.7−	2.1−	1999 12 07	704	0.3+	0.3+
1991 07 16	809	0.3−	0.8+	1998 08 17	704	0.5−	0.9+	1999 12 15	703	0.1−	0.7+
1991 07 16	809	0.3+	0.9+	1998 08 17	704	0.9+	0.5+	1999 12 15	703	0.5−	0.2+
1991 07 16	809	0.9+	0.7+	1998 08 17	704	0.1+	0.7+	1999 12 15	703	0.6−	0.5+
1995 10 15	691	0.9−	0.1−	1998 08 21	566	1.0−	0.2−	1999 12 15	703	0.4−	1.4+
1995 10 15	691	1.0−	0.5−	1998 08 21	566	0.1−	0.2−	2000 01 03	704	1.1+	1.0−
1995 10 15	691	0.8−	0.5−	1998 08 21	566	0.6−	0.3−	2000 01 03	704	0.8+	1.7−
1995 10 23	010	(4.9+	0.7+)	1998 08 23	704	0.2+	0.1−	2000 01 03	704	0.5+	2.0−
1995 10 23	010	(3.2+	0.6+)	1998 08 23	699	0.2+	0.4+	2000 01 04	704	0.9−	1.3−
1995 10 23	010	1.9+	1.2+	1998 08 23	704	0.6−	0.6−	2000 01 04	704	1.0+	0.5−
1997 01 06	411	0.5−	0.9−	1998 08 23	699	0.7−	1.3+	2000 01 04	704	0.4+	0.2−
1997 01 06	411	1.0+	0.7−	1998 08 23	704	1.2+	2.0+	2000 01 04	704	0.1−	0.1−
1997 01 07	411	0.3+	0.7−	1998 08 23	704	0.6+	1.3+				

(13188)* 1997 AH₅ = 1998 QO₃₂

Discovered 1997 Jan. 3 by N. Sato at Chichibu.

Id. G. V. Williams (*MPC* 32472)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	293.67853	(2000.0)	
<i>n</i>	0.30332143	ω	224.71486
<i>a</i>	2.1938183	Ω	335.04113
<i>e</i>	0.0862369	<i>i</i>	1.90763
<i>P</i>	3.25	<i>H</i>	14.9
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc											
1995 10 15	691	0.0	0.0	1998 08 17	704	0.9+	0.4−	1999 12 07	704	0.5+	0.6−
1995 10 15	691	0.4−	0.1+	1998 08 17	704	1.2−	1.0+	1999 12 07	704	0.1+	0.4−
1995 10 15	691	0.3+	0.0	1998 08 17	704	0.4−	0.4+	1999 12 07	704	0.1−	1.0−
1996 12 19	327	0.2−	0.3+	1998 08 17	704	1.0−	0.3−	1999 12 07	704	0.8−	0.1−

2000 JAN. 24

M.P.C. 37537

1996 12 19	327	1.2+	0.0	1998 08 17	704	0.7-	0.5-	1999 12 31	699	0.5+	1.0+
1996 12 19	327	0.9+	0.2-	1998 08 23	704	0.5+	0.9+	1999 12 31	699	0.1+	0.2+
1997 01 03	369	0.4+	0.3-	1998 08 23	704	(2.9+	0.0)	2000 01 03	704	0.8-	0.0
1997 01 03	369	0.2-	1.1-	1998 08 23	704	1.0+	0.6-	2000 01 03	704	0.2-	0.0
1997 01 03	369	0.1+	0.3+	1998 08 23	704	(0.8-	3.1+)	2000 01 03	704	0.1-	0.3-
1997 01 06	369	(0.8-	2.8-)	1998 08 23	704	(1.1+	2.3+)	2000 01 03	704	0.1-	0.0
1997 01 06	369	1.6-	0.7-	1998 09 14	704	1.0-	1.1-	2000 01 03	704	0.2+	0.7+
1997 01 18	327	0.3-	0.4-	1998 09 14	704	0.8+	0.4-	2000 01 04	704	0.1-	0.2+
1997 01 18	327	0.2-	0.2-	1998 09 14	704	1.0+	0.4+	2000 01 04	704	0.4-	0.4+
1997 01 18	327	0.4-	0.4-	1998 09 14	704	0.0	0.1+	2000 01 04	704	0.1-	0.8+
1997 02 06	657	0.3-	0.2+	1998 09 15	699	0.2-	0.6+	2000 01 04	704	0.4-	0.6+
1997 02 06	657	0.5+	0.8+	1998 09 15	699	0.4+	0.9-	2000 01 04	704	0.0	0.6+
1997 02 06	657	1.0+	1.4+	1998 09 15	699	0.9+	0.1+	2000 01 08	704	0.3-	0.1+
1997 02 06	657	0.4-	0.0	1998 11 06	910	0.4-	0.0	2000 01 08	704	0.1+	0.3-
1997 03 24	658	0.1-	0.2-	1998 11 06	910	0.7-	0.5+	2000 01 08	704	0.6+	0.7-
1997 03 24	658	0.1-	0.1-	1998 11 06	910	0.2-	0.1-	2000 01 08	704	0.1-	0.5-
1997 03 24	658	0.1-	0.5-	1999 12 07	704	1.0+	0.3-	2000 01 08	704	0.4+	0.6-

(13189)* 1997 AF₁₃ = 1980 DP₁

Discovered 1997 Jan. 11 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 32473), A. Gnädig (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>	223.74021		(2000.0)	P		Q	
<i>n</i>	0.28425562	ω	148.67541	-0.44404083		+0.87773271	
<i>a</i>	2.2908501	Ω	94.41644	-0.85488756		-0.35485146	
<i>e</i>	0.1788104	<i>i</i>	10.40310	-0.26831884		-0.32197164	
<i>P</i>	3.47	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 02 21	033	0.1-	2.0-	1998 09 21	704	0.6+	0.7-	1999 12 15	704	0.1-	0.2-
1980 02 22	033	0.3-	1.2+	1998 09 21	704	1.3+	2.0-	2000 01 05	704	0.3+	1.0-
1997 01 11	411	0.6+	0.3-	1999 11 17	704	0.8-	1.0-	2000 01 05	704	0.4-	0.1+
1997 01 11	411	0.5-	0.4-	1999 11 17	704	0.2-	0.3+	2000 01 05	704	0.2-	0.3-
1997 01 12	411	0.6-	0.1-	1999 11 17	704	0.4+	0.0	2000 01 05	704	0.4+	0.1-
1997 01 12	411	0.7-	0.5+	1999 12 08	704	0.7+	0.0	2000 01 05	704	0.7-	0.1-
1997 01 14	411	0.2+	0.4-	1999 12 08	704	0.5+	0.5-	2000 01 06	704	0.2-	0.3-
1997 01 14	411	0.1-	0.5-	1999 12 08	704	0.2-	0.4+	2000 01 06	704	0.5+	1.0+
1997 01 27	411	0.3+	0.3-	1999 12 08	704	0.1-	0.1+	2000 01 06	704	0.2-	0.0
1997 01 27	411	0.0	0.1+	1999 12 08	704	0.3-	0.1+	2000 01 06	704	0.1-	0.3+
1997 02 12	411	0.6+	0.1+	1999 12 14	704	0.2+	0.4-	2000 01 06	704	0.1+	0.4+
1997 02 12	411	0.3+	0.7-	1999 12 14	704	0.2+	0.2+	2000 01 07	704	0.1+	0.3-
1998 08 20	699	0.3-	0.7-	1999 12 14	704	0.5-	1.0+	2000 01 07	704	0.0	0.4-
1998 08 20	699	0.4-	0.7-	1999 12 14	704	0.2+	0.6+	2000 01 07	704	0.2-	0.3-
1998 08 20	699	0.3-	0.5-	1999 12 15	704	0.5+	0.4+	2000 01 07	704	0.1-	0.1-
1998 09 21	704	1.3+	2.0+	1999 12 15	704	0.0	0.1+	2000 01 07	704	0.5+	0.1-
1998 09 21	704	0.7-	0.0	1999 12 15	704	0.8-	0.2+				
1998 09 21	704	0.4-	0.3+	1999 12 15	704	0.1-	0.4+				

(13190)* 1997 BN₁ = 1984 BQ₄

Discovered 1997 Jan. 29 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29636)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>	270.04900		(2000.0)	P		Q	
<i>n</i>	0.30428883	ω	252.73949	-0.84570664		+0.52971066	
<i>a</i>	2.1891661	Ω	319.18209	-0.44426608		-0.76603808	
<i>e</i>	0.0785163	<i>i</i>	5.68108	-0.29564832		-0.36413223	
<i>P</i>	3.24	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 01 25	675	0.2+	0.3+	1998 08 17	704	0.2+	0.7+	1999 12 15	704	0.3+	0.2-
1984 01 26	675	0.3-	0.8-	1998 08 17	704	0.4-	0.4+	1999 12 15	704	0.1-	1.3-
1994 04 05	675	0.3+	0.3-	1998 08 17	704	0.8-	0.5+	1999 12 15	704	0.6+	0.5-
1994 04 05	675	0.6-	0.2+	1998 08 17	704	1.5-	0.5+	2000 01 02	704	0.7-	0.2+
1997 01 29	411	0.3+	0.3-	1998 08 23	704	0.4+	0.4-	2000 01 02	704	0.2-	0.1-
1997 01 29	411	0.3+	0.2-	1998 08 23	704	0.5+	0.7+	2000 01 02	704	0.0	0.2-

1997 01 30	411	0.0	0.8+	1998 08 23	704	0.0	0.6-	2000 01 02	704	0.7-	0.1+
1997 01 30	411	0.3-	0.1-	1998 08 23	704	1.5+	1.4-	2000 01 02	704	0.6+	1.2-
1997 02 04	411	0.2+	0.0	1999 10 09	703	0.0	0.3+	2000 01 04	704	0.4+	0.1+
1997 02 04	411	0.4+	0.0	1999 10 09	703	0.4-	0.6+	2000 01 04	704	0.1+	0.2+
1997 02 13	411	0.3+	0.2+	1999 10 09	703	0.7-	0.4+	2000 01 04	704	0.1-	0.2+
1997 02 13	411	0.5-	0.0	1999 10 09	703	0.3-	1.2+	2000 01 04	704	0.1+	0.5+
1997 02 26	411	0.9+	1.1+	1999 12 15	704	0.2+	0.1+	2000 01 04	704	0.1-	0.5+
1997 02 26	411	0.8-	0.2+	1999 12 15	704	0.3+	0.3-				

(13191)* 1997 BP₃ = 1976 EW

Discovered 1997 Jan. 31 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29638)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>	347.98763		(2000.0)	P		Q	
<i>n</i>	0.28400888	ω	339.50696	-0.46550808		-0.88124285	
<i>a</i>	2.2921768	Ω	138.12182	+0.82814662		-0.46636893	
<i>e</i>	0.0549331	<i>i</i>	7.05022	+0.31221052		-0.07688344	
<i>P</i>	3.47	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 03 01	033	1.7+	1.3+	1999 10 10	704	0.3-	0.1+	1999 12 14	704	0.2-	0.3+
1976 03 02	033	1.5-	0.4+	1999 10 10	704	0.3-	1.5+	2000 01 05	704	0.2-	0.0
1976 03 03	033	(2.4-	1.0+)	1999 10 10	704	0.7+	0.2+	2000 01 05	704	0.0	0.6-
1976 03 03	033	(1.2+	2.3-)	1999 11 04	704	0.8+	0.8+	2000 01 05	704	0.0	0.5-
1994 05 09	691	0.1+	0.0	1999 11 04	704	0.5+	0.5-	2000 01 05	704	0.2-	0.3-
1994 05 09	691	0.3-	0.1-	1999 11 04	704	1.3+	0.1+	2000 01 05	704	0.1-	0.6-
1994 05 09	691	0.0	0.4-	1999 11 04	704	1.1+	2.1-	2000 01 07	704	0.1+	0.2+
1997 01 31	411	0.4+	0.2+	1999 11 04	704	0.4-	0.7-	2000 01 07	704	0.2+	0.3-
1997 01 31	411	0.0	0.0	1999 12 06	704	0.3-	0.1+	2000 01 07	704	0.4-	0.2-
1997 02 01	411	0.1-	0.5+	1999 12 06	704	0.3-	0.3+	2000 01 07	704	0.2-	0.0
1997 02 01	411	0.7-	0.8+	1999 12 06	704	0.3-	0.0	2000 01 07	704	0.4-	0.1-
1997 02 12	411	0.1-	0.1-	1999 12 06	704	0.2-	0.1-	2000 01 09	704	0.1-	0.0
1997 02 12	411	1.7-	0.7-	1999 12 06	704	0.6-	0.1-	2000 01 09	704	0.2-	0.1+
1997 03 01	411	1.0+	0.8-	1999 12 14	704	0.2+	0.5+	2000 01 09	704	0.4+	0.3-
1997 03 01	411	1.0+	0.5-	1999 12 14	704	0.1-	0.2-	2000 01 09	704	0.3+	0.4+
1999 10 10	704	0.2+	0.3+	1999 12 14	704	0.2-	0.0	2000 01 09	704	0.0	0.1+
1999 10 10	704	0.3+	0.4+	1999 12 14	704	0.3-	0.1-				

(13192)* 1997 BU₅ = 1978 WC₁₀

Discovered 1997 Jan. 31 by P. G. Comba at Prescott.

Id. G. V. Williams (*MPC* 29310)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	239.43644		(2000.0)	P		Q	
<i>n</i>	0.28491563	ω	275.44441	-0.50682022		+0.86202467	
<i>a</i>	2.2873109	Ω	324.10070	-0.78622891		-0.46547964	
<i>e</i>	0.1437026	<i>i</i>	0.66798	-0.35352138		-0.20060451	
<i>P</i>	3.46	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 11 29	675	1.5+	0.5+	1998 06 24	684	0.4-	0.7+	1998 09 18	699	0.2+	0.4-
1978 11 30	675	1.6-	0.0	1998 07 25	684	0.1-	0.4+	1998 09 18	704	1.4+	0.5-
1996 12 21	327	1.0+	0.0	1998 07 25	684	0.0	0.3+	1998 09 18	699	0.5-	1.6+
1996 12 21	327	0.3+	0.4+	1998 07 26	684	0.2-	0.3+	1998 09 18	704	(1.8-	2.2+)
1996 12 21	327	0.0	0.9+	1998 07 26	684	0.2-	0.3+	1998 09 18	699	0.2+	0.4-
1996 12 21	327	0.7-	1.0+	1998 08 17	704	0.3-	1.4+	1998 09 20	691	0.1-	0.3+
1997 01 31	684	0.3-	0.9-	1998 08 17	704	0.4-	0.2+	1998 09 20	691	0.0	0.4+
1997 01 31	684	0.3-	0.7-	1998 08 17	704	0.2+	1.1+	1998 09 20	691	0.1-	0.1-
1997 02 01	684	0.2+	0.2-	1998 08 17	704	1.6+	0.0	1998 09 25	704	0.1-	0.2+
1997 02 01	684	0.6-	0.1+	1998 08 17	704	(0.2+	2.7-)	1998 09 25	704	0.1+	1.4-
1997 02 01	684	0.0	0.3-	1998 08 23	704	1.0-	0.4-	1998 09 25	704	1.1+	0.3-
1997 02 01	691	1.2+	0.2-	1998 08 23	704	1.3-	1.8+	1998 09 25	704	(2.2-	0.9-)
1997 02 01	691	0.3-	0.5-	1998 08 23	704	(2.1+	1.3+)	1998 09 25	704	1.3-	0.6-
1997 02 01	691	0.7-	0.0	1998 08 23	704	0.8+	1.2-	1998 09 27	704	1.8+	0.3+
1997 02 02	684	0.0	0.1-	1998 09 12	684	0.0	0.6-	1998 09 27	704	0.3+	0.2-
1997 02 02	684	0.2+	0.1-	1998 09 12	684	0.1-	0.4-	1998 09 27	704	1.0+	0.8-

1997 02 02	684	0.1+	0.0	1998 09 13	684	0.4−	0.0	1998 09 27	704	1.8+	0.1+
1997 02 12	684	0.3−	0.2−	1998 09 13	684	0.6−	0.1+	1998 09 27	704	1.0−	1.9−
1997 02 12	684	0.2−	0.2−	1998 09 14	704	0.6+	0.2+	1999 12 04	684	0.5−	0.3+
1997 03 02	684	0.5−	0.4−	1998 09 14	704	0.9+	0.4+	1999 12 04	684	0.3−	0.5+
1997 03 02	684	0.3−	0.4−	1998 09 14	704	0.1+	1.0−	1999 12 05	684	1.0−	0.2+
1997 03 11	684	0.1+	0.2−	1998 09 14	704	0.8−	0.1−	2000 01 03	704	0.0	0.8+
1997 03 11	684	0.2+	0.0	1998 09 14	704	1.6−	1.1−	2000 01 03	704	0.0	0.7−
1997 03 29	684	0.1+	0.2+	1998 09 14	699	0.4−	0.2+	2000 01 03	704	1.3+	0.1−
1997 03 29	684	0.0	0.1+	1998 09 14	699	0.3+	0.4−	2000 01 04	704	0.1−	0.2+
1997 03 29	684	0.2+	0.0	1998 09 14	699	1.1+	0.4−	2000 01 04	704	0.1+	0.1+
1998 06 22	684	0.3−	0.2−	1998 09 18	704	1.1−	1.0+	2000 01 04	704	0.4+	0.0
1998 06 22	684	1.0−	0.0	1998 09 18	704	0.2−	0.2+	2000 01 04	704	0.1−	0.0
1998 06 24	684	0.3−	0.4−	1998 09 18	704	0.6+	0.6−	2000 01 04	704	0.0	0.2+

(13193)* 1997 CW = 1990 FD₂

Discovered 1997 Feb. 1 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29639), B. G. Marsden (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	277.34539	<i>ω</i>	145.21127	−0.99305343	+0.10732449		
<i>a</i>	2.3324669	<i>Ω</i>	41.03382	−0.11754600	−0.88650092		
<i>e</i>	0.1113458	<i>i</i>	4.21321	−0.00527499	−0.45010839		
<i>P</i>	3.56	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 03 16	046	(4.8−	1.4−)	1998 07 31	699	0.0	0.4+	1999 11 17	727	0.4−	0.2+
1990 03 16	046	2.0−	1.1−	1998 08 17	704	0.8−	0.3+	1999 12 15	704	0.1−	0.3−
1990 03 17	046	(0.7−	2.5−)	1998 08 17	704	0.4+	0.2+	1999 12 15	704	0.2+	0.1−
1990 03 17	046	(3.7−	2.6−)	1998 08 17	704	0.0	0.2+	1999 12 15	704	0.0	0.8−
1990 03 17	046	1.1+	0.6−	1998 08 18	566	0.4+	0.7−	1999 12 15	704	0.6−	0.2−
1990 03 17	046	(2.9+	0.1−)	1998 08 18	566	0.0	0.2−	1999 12 15	704	0.2−	0.6−
1997 02 01	411	0.5−	0.2+	1998 08 18	566	0.3+	0.9−	1999 12 27	749	0.9+	0.3+
1997 02 01	411	0.2−	0.3+	1999 11 03	704	0.0	0.5+	1999 12 27	749	1.3−	1.0−
1997 02 03	411	0.7+	0.3+	1999 11 03	704	0.4−	0.2−	1999 12 28	749	0.0	0.3+
1997 02 03	411	0.6+	0.1+	1999 11 03	704	0.2+	0.4−	1999 12 28	749	0.4−	0.6+
1997 02 11	411	0.4+	0.3−	1999 11 03	704	0.1−	0.1+	1999 12 28	749	0.5+	0.5+
1997 02 11	411	0.4+	0.3−	1999 11 03	704	0.2+	0.7−	2000 01 03	704	0.2−	0.1−
1997 03 01	411	0.2−	0.1+	1999 11 14	704	0.0	0.0	2000 01 03	704	0.1−	0.3+
1997 03 01	411	0.1−	0.4+	1999 11 14	704	0.2+	0.0	2000 01 03	704	0.3+	0.5+
1997 03 07	688	0.4−	0.1−	1999 11 14	704	0.1−	0.1−	2000 01 03	704	0.2+	0.7+
1997 03 07	688	0.4−	0.0	1999 11 14	704	0.2+	0.2−	2000 01 03	704	1.2+	0.8+
1997 03 24	658	0.0	0.1−	1999 11 14	704	0.4−	0.2−	2000 01 04	704	0.0	0.1+
1997 03 24	658	0.0	0.0	1999 11 16	704	0.2−	0.3−	2000 01 04	704	0.5+	0.3−
1997 03 24	658	0.1−	0.1−	1999 11 16	704	0.1+	0.1+	2000 01 04	704	0.6+	0.4−
1998 07 04	699	0.0	0.6−	1999 11 16	704	0.5−	0.3−	2000 01 04	704	0.5+	0.4−
1998 07 04	699	0.7+	0.4−	1999 11 16	704	0.0	0.4−	2000 01 04	704	0.0	0.8−
1998 07 04	699	0.2−	0.7−	1999 11 16	704	0.1+	0.1+	2000 01 06	749	0.3+	2.1+
1998 07 31	699	0.5−	0.8+	1999 11 17	727	0.6−	0.6−	2000 01 06	749	0.2−	0.3+
1998 07 31	699	0.2+	0.2+	1999 11 17	727	0.1+	0.4−				

(13194)* 1997 CA₁ = 1976 DC₁ = 1991 NK₈

Discovered 1997 Feb. 1 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 29127)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28351147	<i>ω</i>	293.83003	−0.21998677	+0.97262197		
<i>a</i>	2.2948570	<i>Ω</i>	323.20885	−0.84331254	−0.22821662		
<i>e</i>	0.0824885	<i>i</i>	7.18586	−0.49033640	−0.04385975		
<i>P</i>	3.48	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 02 27	033	0.1+	1.0+	1998 08 17	704	0.2−	0.1+	1998 09 15	691	0.7−	0.4+
1976 03 01	033	1.7+	1.2+	1998 08 17	704	0.1−	0.5+	1998 09 23	691	1.1−	0.4+
1976 03 02	033	(3.2+	0.8+)	1998 08 17	704	0.7+	0.5−	1998 09 23	691	1.1−	0.3+
1976 03 03	033	1.5−	1.0+	1998 08 20	691	0.2+	0.3+	1998 09 23	691	(2.0−	2.6+)

1976 03 03	033	0.7+	0.6−	1998 08 20	691	0.1−	0.3+	1999 12 12	704	0.6+	0.2−
1991 07 14	675	0.1−	0.1−	1998 08 20	691	0.1−	0.2+	1999 12 12	704	0.5+	0.5+
1991 07 14	675	0.0	0.2−	1998 08 23	704	0.7+	0.2−	1999 12 12	704	1.6+	0.6+
1997 01 09	691	0.2+	0.5−	1998 08 23	704	0.7+	0.8−	1999 12 12	704	0.2+	1.5+
1997 01 09	691	0.4+	1.2−	1998 08 23	704	1.1−	2.1+	1999 12 12	704	0.5+	0.4+
1997 01 09	691	0.2+	0.2−	1998 08 23	704	0.5−	0.7−	1999 12 15	704	0.0	0.1+
1997 02 01	411	0.1−	0.4+	1998 08 23	704	0.4+	0.2−	1999 12 15	704	0.5−	0.4+
1997 02 01	411	0.2−	1.1+	1998 08 26	691	0.0	0.2+	1999 12 15	704	0.3−	0.3+
1997 02 03	411	0.7+	0.4+	1998 08 26	691	0.0	0.1−	2000 01 02	704	0.2+	0.7−
1997 02 03	411	0.7+	0.2+	1998 08 26	691	0.1−	0.1+	2000 01 02	704	0.4−	0.8−
1997 02 03	566	0.2+	0.2−	1998 08 27	699	0.3+	1.0+	2000 01 02	704	0.1−	0.2−
1997 02 03	566	0.1+	0.0	1998 08 27	699	0.8−	0.3−	2000 01 04	704	0.9−	1.0−
1997 02 03	566	0.1−	0.2−	1998 08 27	699	0.0	0.6+	2000 01 04	704	0.4−	1.1−
1997 02 11	411	0.9−	0.2+	1998 08 30	699	0.7+	0.8+	2000 01 04	704	0.3−	0.0
1997 02 11	411	(2.4−	0.4−)	1998 08 30	699	0.1−	0.7+	2000 01 04	704	0.6−	0.1+
1997 03 01	411	1.1+	2.1+	1998 08 30	699	0.1+	1.0+	2000 01 04	704	0.0	0.1+
1997 03 01	411	0.1+	1.9+	1998 09 15	691	0.5−	0.2+				
1998 08 17	704	0.2+	0.1−	1998 09 15	691	0.6−	0.3+				

(13195)* 1997 CG₆ = 1954 JE

Discovered 1997 Feb. 2 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 32676)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.29843506	<i>ω</i>	147.01731	−0.91813337	+0.37877908		
<i>a</i>	2.2177001	<i>Ω</i>	55.66985	−0.38721868	−0.79510849		
<i>e</i>	0.1226565	<i>i</i>	8.10563	−0.08421879	−0.47363372		
<i>P</i>	3.30	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 05 06	760	(1.3−	2.7−)	1997 04 16	689	0.4−	0.5+	1999 10 22	704	0.6−	0.3+
1954 05 06	760	0.3−	0.5−	1997 04 16	689	0.3−	0.9+	1999 10 22	704	0.1+	0.2−
1997 02 02	327	0.1+	0.5−	1997 04 16	689	0.4−	0.8+	1999 10 22	704	0.2+	0.3+
1997 02 02	327	0.6+	0.5−	1998 09 01	426	0.1−	0.4−	1999 10 22	704	0.0	0.2−
1997 02 02	327	1.0+	0.5−	1998 09 01	426	0.1+	0.6−	1999 10 22	704	0.3−	0.1+
1997 02 04	327	0.8+	0.6−	1998 09 01	426	0.3−	0.4−	1999 11 11	703	0.3+	0.4+
1997 02 04	327	0.4+	0.6−	1998 09 12	426	0.1+	0.4−	1999 11 11	703	0.1+	0.4+
1997 02 04	327	0.3+	0.5−	1998 09 12	426	0.3−	0.2−	1999 11 11	703	0.3−	0.2+
1997 02 19	327	0.4+	0.5−	1998 09 12	426	0.1−	0.6−	1999 11 11	703	0.8−	1.1+
1997 02 19	327	0.3+	0.8−	1998 09 17	699	0.4−	0.1+	1999 12 15	704	0.1−	1.2−
1997 02 19	327	0.4+	0.3−	1998 09 17	699	0.4−	0.2−	1999 12 15	704	0.0	1.4−
1997 02 20	327	0.0	0.2+	1998 09 17	699	0.4−	0.3−	1999 12 15	704	0.5+	0.0
1997 02 20	327	0.1−	0.5−	1998 09 24	699	0.3+	0.9+	1999 12 15	704	0.7+	1.4+
1997 02 20	327	0.4−	0.0	1998 09 24	699	0.0	0.9+	2000 01 03	704	0.1+	0.0
1997 04 15	689	1.4−	0.3+	1998 09 24	699	0.3+	1.8+	2000 01 03	704	0.1−	0.0
1997 04 15	689	1.1+	0.4+	1998 09 28	910	0.6+	0.2−	2000 01 03	704	0.0	0.2+
1997 04 15	689	0.3−	0.3+	1998 09 28	910	0.6+	0.4−	2000 01 03	704	0.3−	0.1+
1997 04 16	689	0.4−	0.5+	1998 09 28	910	0.7+	0.5−	2000 01 03	704	0.4−	0.1+

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2000 JAN. 24

M.P.C. 37539

1981 08 12	046	0.6+	2.1-	1998 06 03	704	0.1-	0.1+	1999 12 14	704	0.6-	0.2-
1981 08 12	046	1.0+	1.9-	1998 06 26	699	0.1+	0.4+	1999 12 14	704	0.3-	0.1+
1995 08 04	372	1.5-	1.5+	1998 06 26	699	0.2+	0.1+	1999 12 14	704	0.3-	0.5+
1995 08 04	372	(2.6+	1.8+)	1998 06 26	699	0.1-	1.0-	1999 12 14	704	0.4-	0.4+
1995 08 05	372	(2.6-	0.2-)	1999 10 07	120	0.6+	0.0	1999 12 30	699	0.2-	0.1+
1997 02 01	691	0.5-	0.7-	1999 10 07	120	0.4+	0.1-	1999 12 30	699	0.4+	0.1+
1997 02 01	691	0.2-	0.7-	1999 10 07	120	0.2+	0.5+	1999 12 30	699	0.3+	0.1+
1997 02 01	691	0.3-	0.5-	1999 11 04	704	0.3+	0.5+	2000 01 05	704	0.0	0.1+
1997 02 07	691	0.3+	0.7-	1999 11 04	704	0.4+	0.1+	2000 01 05	704	0.2+	1.0+
1997 02 07	691	0.6-	1.7-	1999 11 04	704	0.2+	0.1-	2000 01 05	704	1.4+	0.4-
1997 02 07	691	0.3+	0.6-	1999 11 04	704	0.0	0.1+	2000 01 07	704	0.0	0.1-
1997 02 08	608	0.6-	1.1-	1999 11 04	704	0.2-	0.0	2000 01 07	704	0.2-	0.2+
1997 02 08	608	0.5-	0.4-	1999 11 05	352	0.4-	0.7+	2000 01 07	704	0.6-	0.4+
1998 05 23	704	0.5+	0.2+	1999 11 05	352	0.2-	0.5+	2000 01 07	704	0.2-	0.8+
1998 05 23	704	1.5-	1.1+	1999 11 05	352	0.4+	0.3+	2000 01 07	704	0.6-	0.9+
1998 05 23	704	0.7+	1.2+	1999 12 06	704	0.0	0.1+				
1998 05 23	704	0.1-	0.0	1999 12 06	704	0.2-	0.2-				

(13197)* 1997 DC = 1993 BC₁₃

Discovered 1997 Feb. 17 by V. S. Casulli at Colleverde di Guidonia.

Id. G. V. Williams (*MPC* 29313)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
232.71291		(2000.0)			
<i>n</i>	0.26677525	ω	86.08228	-0.42758339	+0.90383129
<i>a</i>	2.3898594	Ω	158.58078	-0.84596169	-0.39377398
<i>e</i>	0.1681371	<i>i</i>	2.53765	-0.31862401	-0.16742474
<i>P</i>	3.69	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1993 01 22	809	0.3-	0.4-	1998 08 26	691	0.6+	0.3-	1998 09 29	120	0.6+	0.7+
1993 01 22	809	0.3-	0.6-	1998 08 31	691	0.5+	0.3-	1998 09 29	120	0.2+	0.4-
1993 01 22	809	0.2-	0.1-	1998 08 31	691	0.7+	0.4-	1998 09 29	120	0.2-	0.8+
1993 01 28	809	1.3+	0.1+	1998 08 31	691	0.8+	0.3-	1998 09 29	120	0.3-	0.3+
1993 01 28	809	0.0	0.6-	1998 09 14	704	1.1-	0.8-	1998 10 10	699	0.8+	1.5+
1993 01 28	809	1.0-	1.2-	1998 09 14	704	0.9+	1.3-	1998 10 10	699	0.4+	1.3+
1993 02 17	809	(1.0+	2.4+)	1998 09 14	704	0.4-	0.7-	1998 10 10	699	1.2+	0.3+
1993 02 17	809	(2.2-	3.0+)	1998 09 14	704	0.2+	0.2-	1998 10 10	120	1.0+	0.3-
1993 02 17	809	(3.3-	4.0+)	1998 09 14	704	0.2-	0.3+	1998 10 10	120	0.5+	0.0
1997 02 17	596	0.5-	0.3+	1998 09 17	699	0.1-	0.4+	1999 12 07	704	0.3-	0.5-
1997 02 17	596	1.1-	0.8-	1998 09 17	699	0.4-	0.0	1999 12 07	704	0.1+	0.6-
1997 02 17	596	1.0-	0.7-	1998 09 17	699	0.3+	0.4+	1999 12 07	704	0.2-	0.5-
1997 02 19	596	0.5-	0.2-	1998 09 18	704	0.9-	0.2+	1999 12 07	704	0.5-	0.2-
1997 02 19	596	1.1-	0.2-	1998 09 18	704	1.0-	0.3+	1999 12 08	704	0.3+	0.0
1997 02 19	596	(2.8-	0.4+)	1998 09 18	704	1.4-	0.3-	1999 12 08	704	0.4-	0.4-
1997 03 04	596	0.0	1.4+	1998 09 18	704	1.1-	0.9-	1999 12 08	704	0.0	0.0
1997 03 04	596	0.3+	0.4+	1998 09 18	704	1.6-	0.0	1999 12 08	704	0.2-	0.3-
1997 03 04	596	0.0	0.6+	1998 09 21	120	0.5+	0.2-	1999 12 08	704	0.3-	0.1-
1997 03 07	596	0.4+	0.3+	1998 09 21	120	0.2-	0.2-	1999 12 16	704	0.1+	0.1-
1997 03 07	596	0.1+	0.2-	1998 09 21	120	0.4-	0.5-	1999 12 16	704	0.1+	0.1-
1997 03 14	596	(3.5+	1.9+)	1998 09 22	120	0.2-	0.7-	1999 12 16	704	0.1+	0.0
1997 03 14	596	0.1+	1.1+	1998 09 22	120	0.0	0.4-	1999 12 16	704	0.3-	0.3+
1997 03 16	596	0.8+	0.3+	1998 09 22	120	0.1-	0.3-	1999 12 16	704	0.5+	0.3+
1997 03 16	596	0.3+	0.4+	1998 09 23	120	0.5-	0.5+	1999 12 16	704	0.3+	0.1-
1997 03 16	596	0.7-	0.2+	1998 09 23	120	0.7-	1.0+	1999 12 16	704	0.2-	0.1-
1997 03 27	596	0.1-	0.5-	1998 09 23	120	0.9+	1.2+	1999 12 16	704	0.2+	0.1+
1997 03 27	596	0.5-	0.1-	1998 09 26	704	0.5-	0.6-	1999 12 16	704	0.1-	0.3-
1997 03 27	596	0.0	0.5+	1998 09 26	704	0.7-	1.8-	1999 12 16	704	0.3+	0.4+
1997 04 09	704	1.5+	0.3+	1998 09 26	704	0.7-	0.8-	1999 12 17	704	0.2-	0.3-
1997 04 09	704	1.4+	0.5+	1998 09 26	704	(1.1-	2.9-)	1999 12 17	704	0.6-	0.8+
1997 04 09	704	1.2+	0.1-	1998 09 26	704	0.4-	1.0-	1999 12 17	704	0.7-	0.7+
1997 04 09	704	1.2+	0.6+	1998 09 27	704	1.3-	1.0+	1999 12 29	596	0.8+	0.6+
1998 07 06	596	0.0	0.2+	1998 09 27	704	0.4+	1.1+	1999 12 29	596	0.0	0.1+
1998 07 06	596	1.7-	0.2-	1998 09 27	704	0.6-	1.1+	1999 12 29	596	1.0+	0.9-
1998 07 06	596	0.0	0.0	1998 09 27	704	0.2-	0.0	2000 01 05	704	0.2-	0.5+
1998 07 25	596	0.2+	0.3+	1998 09 27	704	0.3-	1.6+	2000 01 05	704	0.4-	0.3+
1998 07 25	596	1.5+	0.6-	1998 09 29	120	0.1-	0.4+	2000 01 05	704	0.5-	0.7+
1998 08 22	596	0.9+	0.6+	1998 09 29	120	0.4+	1.3+	2000 01 05	704	1.2+	0.7+

1998 08 22	596	0.9+	0.2-	1998 09 29	120	0.4+	0.5+	2000 01 06	704	0.4+	0.7+
1998 08 26	691	0.6+	0.4-	1998 09 29	120	0.1+	0.1+	2000 01 06	704	0.2-	0.8+
1998 08 26	691	0.7+	0.4-	1998 09 29	120	0.2+	0.7+	2000 01 06	704	(0.2+	2.1+)

(13198)* 1997 DT = 1991 PN₅

Discovered 1997 Feb. 27 by K. Endate and K. Watanabe at Kitami.

Id. S. Nakano (*MPC* 29462)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
263.03617		(2000.0)			
<i>n</i>	0.28561031	ω	86.31562	-0.80021244	+0.59771711
<i>a</i>	2.2836005	Ω	130.38373	-0.57257645	-0.73718414
<i>e</i>	0.0723724	<i>i</i>	3.68312	-0.17837114	-0.31510920
<i>P</i>	3.45	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1991 08 03	809	0.4-	0.5+	1997 03 16	400	(0.8+	3.4-)	1998 09 14	704	1.3+	0.1-
1991 08 03	809	0.5-	0.4+	1997 03 28	400	0.4-	1.6-	1999 12 08	704	0.2+	0.4-
1991 08 03	809	0.8-	0.6-	1997 03 28	400	0.7-	1.7-	1999 12 08	704	0.8-	0.7-
1991 08 05	809	2.0+	1.1-	1998 07 26	809	0.3+	1.4-	1999 12 08	704	0.9-	0.4-
1991 08 05	809	1.2+	0.9-	1998 07 26	809	0.1-	1.2-	1999 12 08	704	0.1-	0.2+
1991 08 05	809	0.8-	1.2-	1998 07 26	809	0.4-	1.3-	1999 12 14	704	0.4-	0.8-
1997 02 27	400	0.5+	0.7+	1998 08 23	704	0.0	0.3-	1999 12 14	704	0.1+	1.1-
1997 02 27	400	(0.4-	3.1-)	1998 08 23	704	0.0	0.9-	1999 12 14	704	0.4+	0.0
1997 03 03	400	0.8-	0.4+	1998 08 23	704	0.7-	0.1-	2000 01 05	704	0.6+	0.1-
1997 03 03	400	0.4-	1.4-	1998 08 23	704	1.0-	0.9+	2000 01 05	704	0.1+	0.4-
1997 03 12	400	0.3+	0.8-	1998 09 14	704	0.2+	1.2-	2000 01 05	704	0.1+	0.0
1997 03 12	400	0.6-	1.5-	1998 09 14	704	0.2-	2.0-	2000 01 05	704	0.3+	0.2+
1997 03 12	400	0.5+	1.2-	1998 09 14	704	1.7+	1.5+	2000 01 05	704	0.2+	0.4-
1997 03 16	400	1.0-	1.0-	1998 09 14	704	1.6+	1.5-				

(13199)* 1997 EW₂₅ = 1977 HJ

Discovered 1997 Mar. 3 by T. Okuni at Nanyo.

Id. S. Nakano (*MPC* 29644)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
280.45865		(2000.0)			
<i>n</i>	0.29374424	ω	205.67446	-0.74838303	+0.66243141
<i>a</i>	2.2412474	Ω	15.95067	-0.58575869	-0.63655912
<i>e</i>	0.0708930	<i>i</i>	6.95542	-0.31114241	-0.39493937
<i>P</i>	3.36	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1977 04 24	675	0.3+	0.1+	1998 08 26	809	1.5+	1.1-	1998 10 10	699	0.6-	0.8-
1977 04 25	675	0.4+	1.3+	1998 08 27	809	(0.7-	3.6-)	1998 10 10	699	0.1-	0.7-
1997 03 03	358	1.1-	0.5+	1998 08 27	809	(0.2-	4.0-)	1998 10 10	699	0.3+	0.4-
1997 03 03	358	0.1+	1.1-	1998 08 27	809	(0.2+	2.9-)	1999 12 15	704	0.5+	0.7-
1997 03 05	358	0.1-	1.0-	1998 09 18	704	1.3-	0.4-	1999 12 15	704	1.3+	0.9-
1997 03 05	358	2.0+	0.1-	1998 09 18	704	0.6+	0.8-	1999 12 15	704	0.2+	0.6-
1997 03 07	358	0.1+	0.1+	1998 09 18	704	1.1-	0.4+	1999 12 15	704	0.4-	0.5+
1997 03 07	358	0.3-	0.7+	1998 09 18	704	0.4+	1.4-	2000 01 03	704	0.6-	0.5-
1997 03 17	358	0.5-	1.4-	1998 09 18	704	0.0	1.2+	2000 01 03	704	0.3-	0.4-
1997 03 17	358	0.1+	0.3-	1998 09 24	699	0.5+	0.3-	2000 01 03	704	0.0	0.2+
1997 03 18	358	1.2-	1.1-	1998 09 24	699	0.0	0.3-	2000 01 03	704	0.8-	0.9+
1997 03 18	358	0.2-	0.5+	1998 09 24	699	0.0	0.0	2000 01 03	704	0.7-	0.8+
1997 06 02	566	0.8-	0.2-	1998 09 27	704	0.9-	2.1+	2000 01 06	699	0.6+	0.3+
1997 06 02	566	0.7-	0.2-	1998 09 27	704	0.9+	0.2+	2000 01 06	699	0.2+	0.0
1997 06 02	566	0.6+	0.3-	1998 09 27	704	0.3-	0.6+	2000 01 06	699	0.1-	0.3+
1998 08 26	809	(2.5+	1.0-)	1998 09 27	704	0.6+	0.8+				
1998 08 26	809	1.6+	0.8-	1998 09 27	704	0.7-	0.7-				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 194.89560 (2000.0)			Williams			
<i>n</i>	0.24156544	ω	103.06346	-0.27390751	+0.95716083	
<i>a</i>	2.5533647	Ω	150.51429	-0.93968739	-0.24554768	
<i>e</i>	0.0987354	<i>i</i>	10.99831	-0.20484697	-0.15345838	
<i>P</i>	4.08	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1994 08 10	809	0.2+	1.0-	1997 04 06	104	1.0-	0.6+	1998 08 17	704	0.8-	0.0
1994 08 10	809	(0.6-	2.7-)	1997 04 13	104	0.3-	1.2+	1998 08 17	704	0.4+	0.7+
1994 08 10	809	0.3+	1.3-	1997 04 13	104	0.2+	0.9+	1999 11 29	104	0.4-	0.6+
1994 08 11	809	(0.8-	2.3-)	1997 04 13	104	0.5+	0.8+	1999 11 29	104	0.2+	0.7+
1994 08 11	809	(1.4-	2.4-)	1997 04 14	104	0.1-	0.3+	1999 11 29	104	0.4+	0.7+
1994 08 11	809	(0.3-	2.2-)	1997 04 14	104	0.0	0.5+	1999 11 30	104	0.3-	1.2+
1997 03 13	104	0.6-	1.2-	1997 04 14	104	0.2-	0.4+	1999 11 30	104	0.1+	1.1+
1997 03 13	104	1.0-	0.2-	1997 04 14	104	0.4-	0.8+	1999 11 30	104	1.1+	1.0+
1997 03 13	104	(2.5-	0.4-)	1997 04 25	104	0.1+	0.7-	1999 12 07	104	0.1+	1.4-
1997 03 16	104	0.7+	0.9+	1997 04 25	104	0.5+	0.4-	1999 12 07	104	0.1-	1.2-
1997 03 16	104	0.6+	1.0+	1997 04 25	104	0.8+	0.1-	1999 12 07	104	0.1+	1.3-
1997 03 16	104	0.3+	0.6+	1997 04 25	104	0.9+	0.1+	1999 12 11	104	0.4+	0.1-
1997 03 16	104	0.1+	0.6+	1998 08 13	104	0.8-	0.1+	1999 12 11	104	0.5+	0.3-
1997 03 17	104	0.7-	1.3-	1998 08 13	104	0.2-	0.2+	1999 12 11	104	0.1-	0.7-
1997 03 17	104	0.7-	1.1-	1998 08 13	104	0.2-	0.3+	2000 01 02	104	1.4+	1.0+
1997 03 17	104	0.3-	1.6-	1998 08 13	104	0.6+	0.1+	2000 01 02	104	0.5-	0.4+
1997 04 03	104	(2.1+	0.6-)	1998 08 15	104	1.0-	0.2-	2000 01 02	104	0.8-	0.8+
1997 04 03	104	(2.2+	0.8-)	1998 08 15	104	0.3-	0.2+	2000 01 03	104	1.0-	0.2-
1997 04 03	104	1.9+	0.7-	1998 08 15	104	0.2+	0.8+	2000 01 03	104	0.9-	0.2-
1997 04 06	104	0.3-	0.1-	1998 08 17	704	1.8+	0.9+	2000 01 03	104	0.4-	0.8-
1997 04 06	104	0.3-	0.1-	1998 08 17	704	0.3-	0.2+				
1997 04 06	104	0.3-	0.1-	1998 08 17	704	(2.7-	1.0-)				

(13201)* 1997 EF₄₁ = 1982 UK₄ = 1998 QE₈

Discovered 1997 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (*MPC* 34201)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 161.70373 (2000.0)			Nakano			
<i>n</i>	0.30202121	ω	129.46854	+0.82517936	+0.56439079	
<i>a</i>	2.2001101	Ω	196.21435	-0.54048672	+0.77690825	
<i>e</i>	0.1051197	<i>i</i>	4.78283	-0.16417408	+0.27906381	
<i>P</i>	3.26	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1982 10 20	033	0.6-	0.1-	1998 07 24	566	0.6-	0.4-	1998 09 14	699	0.5+	0.4+
1992 11 19	691	0.3+	0.1-	1998 08 17	704	(3.4-	1.2+)	1998 09 14	699	0.3+	0.0
1992 11 19	691	0.6+	0.1+	1998 08 17	704	0.7-	0.0	1999 12 14	704	0.2+	0.4+
1992 11 19	691	0.2+	0.1+	1998 08 17	704	0.0	0.1+	1999 12 14	704	0.3-	0.1-
1997 03 10	704	1.0+	0.6+	1998 08 17	704	0.8-	0.5+	1999 12 14	704	0.2+	0.4+
1997 03 10	704	0.5+	0.7-	1998 08 17	704	0.7-	0.4+	1999 12 14	704	0.6+	0.6-
1997 03 11	704	0.4+	1.1+	1998 08 23	704	0.3-	0.9+	1999 12 14	704	0.7+	0.1-
1997 03 11	704	0.8+	0.4+	1998 08 23	704	0.6-	1.0+	2000 01 05	704	0.6+	0.2+
1997 03 12	704	0.9+	0.8+	1998 08 23	704	1.2+	1.2+	2000 01 05	704	0.4-	0.1-
1997 03 12	704	0.1+	1.2+	1998 08 23	704	0.9+	1.4+	2000 01 05	704	0.7-	0.3+
1998 06 27	699	0.3-	0.2-	1998 08 23	704	0.8-	0.4+	2000 01 05	704	1.8-	2.0+
1998 06 27	699	0.5-	0.1+	1998 08 28	699	0.1+	0.0	2000 01 07	704	0.3-	0.5+
1998 06 27	699	0.8-	0.3-	1998 08 28	699	0.1-	1.4+	2000 01 07	704	1.6-	0.1-
1998 07 15	699	0.0	0.2+	1998 08 28	699	1.7+	0.7-	2000 01 07	704	0.9+	0.8+
1998 07 15	699	0.2-	0.3+	1998 09 09	910	0.7+	0.2+	2000 01 07	704	0.4-	0.3+
1998 07 15	699	0.1+	0.3-	1998 09 09	910	0.8+	0.1+	2000 01 07	704	0.4+	0.0
1998 07 24	566	0.7-	0.1-	1998 09 09	910	0.9+	0.0				
1998 07 24	566	1.7-	0.9-	1998 09 14	699	0.6+	0.2+				

(13202)* 1997 FT₃ = 1995 SO₅₃

Discovered 1997 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 30461)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 303.09328 (2000.0)			Williams			
<i>n</i>	0.28272951	ω	337.41471	-0.98607490	+0.16098903	
<i>a</i>	2.2990864	Ω	211.93784	-0.13798711	-0.93199992	
<i>e</i>	0.0996624	<i>i</i>	4.52113	-0.09282164	-0.32474403	
<i>P</i>	3.49	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1991 09 12	691	0.3+	0.5+	1997 03 31	704	1.1+	0.5+	1998 09 30	691	0.6-	0.2+
1991 09 12	691	0.5+	0.5+	1997 03 31	704	0.6+	1.3+	1998 09 30	691	0.5-	0.1-
1991 09 12	691	0.1-	0.3-	1997 04 03	704	0.5+	0.5+	1998 09 30	691	0.8-	0.7+
1995 09 28	327	0.0	1.0+	1997 04 03	704	0.0	1.3+	1999 12 14	704	0.3-	0.5-
1995 09 28	327	0.1+	0.9+	1997 04 03	704	0.3+	0.0	1999 12 14	704	0.6+	0.7+
1995 09 28	327	0.1-	0.6+	1997 04 03	704	0.3+	0.5+	1999 12 14	704	0.8-	0.3+
1995 09 28	327	0.1+	0.9+	1997 04 05	704	0.5+	0.7+	1999 12 14	704	0.7+	0.4-
1995 09 29	327	1.2-	1.7+	1997 04 05	704	0.5+	0.4-	1999 12 14	704	0.0	1.2-
1995 09 29	327	0.7-	0.9+	1997 04 06	704	0.6+	0.6+	1999 12 14	704	0.6+	0.8+
1995 09 29	327	0.1-	0.2+	1997 04 06	704	0.4+	0.0	1999 12 14	704	1.0-	1.5-
1995 09 29	327	0.7-	1.0+	1997 04 07	704	0.7+	0.8+	1999 12 14	704	0.9+	1.7+
1995 11 23	327	0.0	0.9-	1997 04 07	704	0.5+	0.4+	2000 01 05	704	0.4-	0.7+
1995 11 23	327	0.2+	0.3+	1998 09 18	704	0.9-	1.5+	2000 01 05	704	0.2-	0.8+
1995 11 23	327	0.6-	0.1+	1998 09 18	704	0.2+	1.8-	2000 01 05	704	0.6+	0.2+
1997 03 11	809	1.9-	0.9+	1998 09 18	704	0.9-	1.7+	2000 01 07	704	0.5-	0.5-
1997 03 11	809	1.6-	0.0	1998 09 18	704	0.1+	0.7+	2000 01 07	704	0.3-	0.3-
1997 03 11	809	1.7-	0.2-	1998 09 27	704	0.5+	1.3+	2000 01 07	704	0.3+	0.5-
1997 03 13	809	1.1+	1.2+	1998 09 27	704	1.5+	1.4-	2000 01 07	704	0.5+	0.8-
1997 03 13	809	(0.1-	2.4+)	1998 09 27	704	0.6+	0.5+				
1997 03 13	809	(0.3+	2.5+)	1998 09 27	704	(2.0+	3.1-)				

(13203)* 1997 FC₅ = 1994 PA₃₃ = 1994 RK₁₈

Discovered 1997 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 30672)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 58.38653 (2000.0)			Williams			
<i>n</i>	0.22127849	ω	193.83008	+0.98720431	-0.15921904	
<i>a</i>	2.7071350	Ω	175.30493	+0.15459189	+0.94212486	
<i>e</i>	0.0659663	<i>i</i>	6.15200	+0.03910235	+0.29504245	
<i>P</i>	4.45	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1994 08 12	809	1.2+	0.8+	1997 04 06	566	0.3-	0.5+	1999 12 04	699	0.1-	0.0
1994 08 12	809	0.0	0.2-	1998 06 26	704	0.6+	0.7+	1999 12 05	704	0.3-	0.2-
1994 08 12	809	1.4-	0.3-	1998 06 26	704	(1.3+	2.1+)	1999 12 05	704	0.3+	0.1+
1994 08 13	809	0.4+	1.4+	1998 06 26	704	0.3-	0.9-	1999 12 05	704	0.0	0.6+
1994 08 13	809	0.2+	1.3+	1998 06 26	704	0.3-	0.6+	1999 12 05	704	0.5+	0.0
1994 08 13	809	0.2-	0.6+	1999 11 05	704	0.4-	0.1-	1999 12 05	704	0.1+	0.7+
1994 09 03	809	(1.5-	3.8-)	1999 11 05	704	0.0	0.3-	1999 12 14	704	(3.5+	1.9+)
1994 09 03	809	(2.3-	4.6-)	1999 11 05	704	0.3-	0.0	1999 12 14	704	0.7+	0.1+
1994 09 03	809	(2.5-	3.0-)	1999 11 05	704	0.4-	0.2-	1999 12 14	704	0.5+	0.1-
1994 09 04	809	(0.4+	2.6-)	1999 11 05	704	0.6-	0.5-	1999 12 14	699	0.5-	0.1+
1994 09 04	809	0.7-	2.0-	1999 11 13	699	1.0-	0.4+	1999 12 14	699	0.1-	0.2+
1994 09 04	809	(0.9-	2.5-)	1999 11 13	699	0.0	0.1+	1999 12 14	699	0.8+	1.8+
1997 03 11	809	(3.7+	0.9+)	1999 11 13	699	0.1+	0.2-	2000 01 05	704	0.2+	1.4-
1997 03 11	809	(3.1+	0.1+)	1999 11 16	703	0.4-	0.3-	2000 01 05	704	0.0	0.5+
1997 03 11	809	(3.6+	0.5-)	1999 11 16	703	0.7-	0.2-	2000 01 05	704	0.1+	1.0+
1997 03 31	704	(2.3+	1.8+)	1999 11 16	703	0.3-	0.1+	2000 01 05	704	0.0	0.5+
1997 03 31	704	1.4+	0.7+	1999 11 16	703	0.3-	0.4-	2000 01 05	704	1.5+	0.4+
1997 04 06	566	0.3-	0.8+	1999 12 04	699	0.1+	0.4-				

Id. S. Nakano (*MPC* 37140), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	352.23474		(2000.0)		P		Q
<i>n</i>	0.25860726	ω	304.39425	−0.12006445	−0.99251453		
<i>a</i>	2.4399199	Ω	152.47582	+0.92598213	−0.12007613		
<i>e</i>	0.1653660	<i>i</i>	2.77186	+0.35796875	−0.02228507		
<i>P</i>	3.81	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 10 22	381	0.3−	0.1+	1999 11 01	703	0.2−	0.1+	1999 12 06	704	0.7−	0.7+
1976 10 22	381	0.9+	0.5+	1999 11 04	704	0.5−	0.2−	1999 12 06	704	0.4+	1.0−
1976 10 24	381	0.9−	0.1+	1999 11 04	704	0.1−	0.0	1999 12 06	704	0.5−	0.4+
1989 03 05	033	0.9+	0.1−	1999 11 04	704	0.1−	0.4+	1999 12 06	704	1.0−	0.4−
1989 03 05	033	0.2−	0.6+	1999 11 04	704	0.5+	0.2+	1999 12 07	704	0.0	0.0
1993 03 24	033	0.2+	1.9−	1999 11 04	704	0.2+	0.6+	1999 12 07	704	0.1+	0.2−
1993 03 26	033	0.9−	0.1+	1999 11 07	120	0.1+	0.3−	1999 12 07	704	0.1−	0.4−
1993 03 26	033	1.0−	0.2−	1999 11 07	120	0.2+	0.2−	1999 12 07	704	0.1−	0.2−
1997 04 03	704	0.4−	0.8+	1999 11 08	120	0.2+	0.1−	1999 12 07	704	0.3−	0.4−
1997 04 03	704	0.2+	0.6+	1999 11 08	120	0.3−	0.5−	1999 12 07	120	0.9+	0.3+
1997 04 05	704	0.2+	0.1+	1999 11 10	120	0.0	0.3+	1999 12 07	120	0.8+	0.1−
1997 04 05	704	0.2+	0.2+	1999 11 10	120	0.2−	0.4−	2000 01 05	704	0.2−	1.2−
1997 04 06	704	0.4+	0.7+	1999 11 15	704	0.1+	0.2+	2000 01 05	704	0.3−	0.0
1997 04 06	704	0.0	1.0+	1999 11 15	704	0.1+	0.2+	2000 01 05	704	0.2+	0.2+
1997 04 07	704	1.3+	0.8−	1999 11 15	704	0.2−	0.2+	2000 01 05	704	0.4+	0.1+
1997 04 07	704	0.3−	0.3+	1999 11 15	704	0.0	0.2+	2000 01 05	704	0.1+	0.3+
1999 09 18	703	0.1−	0.1−	1999 11 15	704	0.0	0.1+	2000 01 07	704	0.1+	0.4+
1999 09 18	703	0.5+	0.1−	1999 11 17	704	0.1−	0.6+	2000 01 07	704	0.2+	0.2−
1999 09 18	703	0.5+	1.2−	1999 11 17	704	0.0	0.2+	2000 01 07	704	0.3+	0.1+
1999 09 18	703	0.1−	0.0	1999 11 17	704	0.2+	0.0	2000 01 07	704	0.2+	0.4−
1999 11 01	703	0.6−	0.2+	1999 11 17	704	0.2−	0.3+	2000 01 07	704	0.4+	0.0
1999 11 01	703	0.4−	0.1+	1999 11 17	704	0.3+	0.6+				
1999 11 01	703	0.9−	0.4+	1999 12 06	704	0.6+	0.4+				

(13205)* 1997 GB₁₉ = 1980 LZ = 1998 SD₁₁₆

Discovered 1997 Apr. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32961)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	248.94619		(2000.0)		P		Q
<i>n</i>	0.28495557	ω	46.29498	−0.16747735	+0.98334510		
<i>a</i>	2.2870972	Ω	214.25055	−0.93675857	−0.18104521		
<i>e</i>	0.1174256	<i>i</i>	7.20580	−0.30730233	+0.01597000		
<i>P</i>	3.46	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 06 10	675	0.0	0.1−	1998 10 20	327	0.1+	0.0	1999 11 08	703	1.0−	1.2−
1997 04 03	704	0.1+	0.2+	1998 10 24	120	1.5−	0.6−	1999 12 05	704	0.5+	0.0
1997 04 03	704	0.1+	0.4+	1998 10 24	120	0.1+	0.7+	1999 12 05	704	0.3+	0.5−
1997 04 05	704	0.2+	0.3+	1998 10 28	704	0.2−	0.1−	1999 12 05	704	0.2+	0.9−
1997 04 05	704	0.3+	0.3+	1998 10 28	704	0.5−	0.7+	1999 12 05	704	0.0	0.7−
1997 04 06	704	0.2+	0.4+	1998 10 28	704	0.5+	0.0	1999 12 05	704	0.2+	0.3−
1997 04 06	704	0.6−	0.1+	1998 10 28	704	0.1−	1.0+	1999 12 14	704	0.2−	0.9+
1997 04 07	704	0.1+	0.2+	1998 10 28	704	0.2+	0.1+	1999 12 14	704	0.2+	0.8−
1997 04 07	704	0.2−	0.1−	1998 10 29	704	1.4+	0.4+	1999 12 14	704	0.1+	0.3−
1998 09 26	704	0.4−	0.1−	1998 10 29	704	1.1+	1.0−	1999 12 14	704	1.0+	0.3−
1998 09 26	704	0.7+	0.5−	1998 10 29	704	0.7+	0.1+	1999 12 15	703	0.5+	0.4+
1998 09 26	704	0.9+	0.0	1998 10 29	704	0.3+	0.6+	1999 12 15	703	0.3−	0.5+
1998 09 26	704	0.0	0.0	1998 10 29	704	1.9+	1.8−	1999 12 15	703	0.8+	0.1−
1998 09 27	704	0.3+	0.3−	1998 11 10	699	0.7−	0.1+	1999 12 15	703	0.6+	0.1−
1998 09 27	704	1.0+	0.0	1998 11 10	699	0.4−	0.0	1999 12 16	699	0.3−	0.8+
1998 09 27	704	(1.2+ 2.2−)		1998 11 10	699	0.5−	0.2+	1999 12 16	699	0.1+	1.0+
1998 09 27	704	0.5+	0.2+	1998 11 16	566	0.7−	0.2+	1999 12 16	699	0.8−	1.2+
1998 10 15	327	0.1−	0.1+	1998 11 16	566	0.7−	0.2+	2000 01 08	704	0.2−	1.5+
1998 10 15	327	0.1−	0.1+	1998 11 16	566	1.0−	0.5+	2000 01 08	704	0.2+	0.2+
1998 10 15	327	0.0	0.2+	1998 11 23	699	1.2−	0.2−	2000 01 08	704	0.0	0.0

1998 10 17	327	0.1−	0.1+	1998 11 23	699	1.0−	0.6+	2000 01 08	704	0.1−	0.2+
1998 10 17	327	0.5−	0.2+	1998 11 23	699	0.3−	0.1−	2000 01 11	704	0.3+	0.9−
1998 10 17	327	0.2−	0.2+	1998 12 09	699	0.8−	0.5+	2000 01 11	704	0.0	0.3−
1998 10 19	327	0.0	0.0	1998 12 09	699	0.4−	0.3+	2000 01 11	704	0.1−	0.3−
1998 10 19	327	0.0	0.0	1998 12 09	699	0.6−	0.5−	2000 01 11	704	0.1+	0.1−
1998 10 19	327	0.1+	0.1+	1999 11 08	703	1.0−	0.9−	2000 01 11	704	0.0	0.3−
1998 10 20	327	0.3+	0.1−	1999 11 08	703	1.3−	0.1−				
1998 10 20	327	0.1−	0.0	1999 11 08	703	0.4−	0.6−				

(13206)* 1997 GC₂₂ = 9541 P-L

Discovered 1997 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Gnädig (*MPC* 33259)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	56.31421		(2000.0)		P		Q
<i>n</i>	0.20531282	ω	216.56464	+0.93852163	−0.34507470		
<i>a</i>	2.8457189	Ω	163.61297	+0.32456129	+0.87208535		
<i>e</i>	0.1014028	<i>i</i>	2.03733	+0.11763124	+0.34697348		
<i>P</i>	4.80	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 10 17	675	0.2−	0.9+	1998 08 17	704	0.5−	0.3+	1999 12 07	704	0.2+	0.7−
1960 10 22	675	1.9−	0.7−	1998 08 17	704	1.2+	0.6−	1999 12 07	704	0.1−	0.5−
1960 10 24	675	1.8+	0.2+	1998 08 17	704	(6.3− 1.9+)		1999 12 07	704	0.0	0.6−
1960 10 26	675	0.5+	0.8−	1999 11 04	704	0.4−	0.4−	1999 12 07	704	0.0	0.3−
1996 02 16	010	0.2+	0.2−	1999 11 04	704	0.0	0.3−	1999 12 08	704	0.1−	0.5−
1996 02 16	010	0.8−	0.1+	1999 11 04	704	1.2−	0.1−	1999 12 08	704	0.1−	0.1+
1996 02 16	010	0.4+	0.3−	1999 11 04	704	0.1+	0.0	1999 12 08	704	0.2−	0.3−
1997 04 06	704	1.7−	0.1−	1999 11 04	704	0.7−	0.5+	1999 12 08	704	0.3+	0.7−
1997 04 06	704	0.2+	0.2+	1999 11 15	704	0.1+	0.3−	1999 12 08	704	0.0	0.7−
1997 04 08	704	0.9−	0.8+	1999 11 15	704	0.3+	0.2−	1999 12 17	691	0.1−	0.1+
1997 04 08	704	0.1−	0.0	1999 11 15	704	0.2+	0.2+	1999 12 17	691	0.0	0.0
1997 04 30	704	1.2+	0.2−	1999 11 15	704	0.1+	0.1−	1999 12 17	691	0.0	0.0
1997 04 30	704	0.2+	0.8−	1999 11 15	704	0.0	0.2+	1999 12 31	699	0.4+	0.5+
1997 04 30	704	0.2−	0.4−	1999 11 17	704	0.3+	0.0	1999 12 31	699	0.4+	1.6+
1997 04 30	704	(3.0− 1.1+)		1999 11 17	704	0.2+	0.1+	2000 01 04	691	0.2−	0.0
1997 05 01	704	1.0+	0.1−	1999 11 17	704	0.4+	0.4−	2000 01 04	691	0.5−	0.1−
1997 05 01	704	0.6+	0.5−	1999 11 17	704	0.1+	0.1+	2000 01 04	691	0.7+	1.5+
1997 05 01	704	0.8+	0.9+	1999 11 17	704	0.0	0.4+	2000 01 05	704	1.4+	0.0
1997 05 01	704	0.1+	0.8+	1999 12 03	699	0.6−	0.1+	2000 01 05	704	1.4−	0.3−
1997 05 01	704	1.3−	0.5−	1999 12 03	699	1.4+	1.1+	2000 01 05	704	1.4−	0.7−
1998 08 17	704	0.3−	0.3+	1999 12 03	699	0.3+	1.4+				
1998 08 17	704	0.4−	0.3+	1999 12 07	704	0.2−	0.0				

(13207)* 1997 GZ₂₅

Discovered 1997 Apr. 10 by A. Nakamura at Kuma Kogen.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	307.41778		(2000.0)		P		Q
<i>n</i>	0.28462862	ω	57.69747	−0.88257835	+0.46823101		
<i>a</i>	2.2888483	Ω	150.15876	−0.45501463	−0.82780539		
<i>e</i>	0.0793206	<i>i</i>	4.91173	−0.11839398	−0.30902744		
<i>P</i>	3.46	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 01 28	809	0.5+	0.3−	1998 09 02	360	0.2−	0.0	1998 10 15	704	1.5−	0.7+
1993 01 28	809	0.1−	0.7−	1998 09 02	360	0.2−	0.4−	1998 10 15	704	0.2+	0.5−
1993 01 28	809	1.2−	1.4−	1998 09 15	691	1.1−	0.2−	1998 10 17	699	0.5+	0.0
1997 04 10	360	0.3+	0.0	1998 09 15	691	1.2−	0.2−	1998 10 17	699	1.1+	1.0−
1997 04 10	360	0.2−	0.1+	1998 09 15	691	0.9−	0.2−	1998 10 17	699	0.9−	0.7+
1997 04 12	360	0.5−	0.2+	1998 09 17	360	0.5−	0.9−	1998 10 28	704	1.0+	1.7+
1997 04 12	360	0.0	0.2+	1998 09 17	360	0.9−	0.3−	1998 10 28	704	1.1−	0.4−
1997 04 12	360	0.1+	0.4−	1998 09 18	704	(1.2+	2.7−)	1998 10 29	360	0.7−	0.2−
1997 05 07	704	1.0+	0.2+	1998 09 18	704	0.3+	1.4−	1998 10 29	360	0.7−	0.1−
1997 05 07	704	0.9+	0.6+	1998 09 18	704	1.2+	0.0	1999 12 07	360	0.0	0.1+
1997 05 07	704	1.2+	0.3+	1998 09 18	704	(3.1−	1.5+)	1999 12 07	360	0.3+	0.2+

1997 05 07	704	0.7+	0.6+	1998 09 18	704	(0.8+	2.7+)	1999 12 15	360	0.2+	0.2+
1997 08 16	709	1.1-	0.5-	1998 09 26	704	0.7-	0.2+	1999 12 15	360	0.1-	0.3+
1997 08 16	709	0.2-	0.2-	1998 09 26	704	1.8+	1.5-	2000 01 03	360	0.4-	0.1+
1997 08 16	709	1.6-	0.6-	1998 09 26	704	0.8+	1.2+	2000 01 03	360	0.3-	0.0
1997 08 16	709	0.9-	1.6-	1998 09 26	704	1.1+	0.0	2000 01 07	704	0.4+	0.3-
1997 08 28	709	1.2-	0.2-	1998 09 26	704	0.7+	0.4-	2000 01 07	704	0.8+	0.1-
1997 08 28	709	0.1-	0.0	1998 09 27	704	0.0	0.3+	2000 01 07	704	0.9+	0.2-
1997 08 28	709	0.9-	1.0-	1998 09 27	704	0.3+	0.6-	2000 01 07	704	1.3-	0.6-
1997 08 28	709	0.5-	0.6-	1998 09 27	704	(0.8+	3.0+)	2000 01 10	360	0.3-	0.3+
1998 08 25	360	0.2+	0.3+	1998 09 27	704	1.1+	2.1+	2000 01 10	360	0.1-	0.3+
1998 08 25	360	0.0	0.3+	1998 09 27	704	1.2+	1.1+	2000 01 10	360	0.5-	0.2+
1998 08 25	360	0.4+	0.4+	1998 10 15	704	0.7-	1.0-				

(13208)* 1997 GA₃₈ = 1993 FJ₄₇

Discovered 1997 Apr. 5 at Haleakala by the JPL Near-Earth Asteroid Tracking program.

Id. G. V. Williams (*MPC* 29936)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	177.49906		(2000.0)	P	Q
n	0.25584230	ω	138.03991	+0.69396088	+0.71999077
a	2.4574677	Ω	175.89281	-0.67971184	+0.65767302
e	0.2043957	i	4.50049	-0.23750811	+0.22153891
P	3.85	H	14.1	G	0.15
				U	2

Residuals in seconds of arc

1993 03 19	809	0.3-	0.2-	1998 09 26	704	0.2-	0.8-	1998 11 11	704	0.5-	0.5+
1993 03 20	809	0.1-	0.6+	1998 09 26	704	0.3-	1.2-	1998 11 11	704	0.8-	0.4+
1993 03 24	809	0.3+	0.8-	1998 09 26	704	0.3-	1.5-	1998 11 11	704	0.6-	0.5+
1997 03 12	809	1.4+	1.1-	1998 09 26	704	0.5-	1.4-	1998 11 11	704	0.4-	0.5+
1997 03 12	809	0.6+	0.9-	1998 09 27	704	0.8+	1.3-	1998 11 11	704	1.0-	0.6+
1997 03 12	809	0.4+	1.0-	1998 09 27	704	1.1+	0.6-	1998 11 14	699	0.0	1.3+
1997 03 13	809	0.3-	1.2-	1998 09 27	704	0.6+	0.7-	1998 11 14	699	0.3-	0.8+
1997 03 13	809	0.8+	0.7-	1998 09 27	704	1.5-	1.5+	1998 11 14	699	0.1-	0.8+
1997 03 13	809	1.0-	0.3-	1998 09 27	704	0.2-	1.7-	1999 12 14	704	0.4+	0.2-
1997 04 05	566	1.2-	0.3+	1998 10 11	699	0.1+	0.2-	1999 12 14	704	0.3+	0.1+
1997 04 05	566	1.3-	0.4+	1998 10 11	699	0.1+	0.0	1999 12 14	704	1.6-	0.3-
1997 04 05	566	1.1-	0.8+	1998 10 11	699	0.3+	0.0	1999 12 15	703	0.4+	0.8+
1997 04 11	704	0.2+	0.7+	1998 10 16	761	0.5+	0.5+	1999 12 15	703	0.2-	0.9+
1997 04 11	704	1.0+	0.9+	1998 10 16	761	0.3-	0.2-	1999 12 15	703	0.3-	0.2+
1998 09 18	809	(1.5-	2.4+)	1998 10 28	704	0.3+	0.4+	1999 12 15	703	0.5-	0.7+
1998 09 18	809	(3.0-	1.4+)	1998 10 28	704	0.6+	0.5-	1999 12 31	699	0.9+	0.5-
1998 09 18	809	(2.9-	2.3+)	1998 10 28	704	0.3+	0.3-	1999 12 31	699	0.1-	0.9-
1998 09 20	809	0.1-	0.8+	1998 10 28	704	0.5-	0.3-	1999 12 31	699	1.0-	0.6-
1998 09 20	809	0.6-	0.2+	1998 10 29	704	0.6+	0.7-	2000 01 05	704	0.1-	0.1-
1998 09 20	809	0.7-	0.2+	1998 10 29	704	0.1+	0.1-	2000 01 05	704	0.4+	0.1-
1998 09 21	809	(0.3+	2.8+)	1998 10 29	704	0.7+	0.1-	2000 01 05	704	0.1+	0.3-
1998 09 21	809	(0.2+	2.2+)	1998 10 29	704	0.3-	0.9-	2000 01 05	704	1.5+	0.5+
1998 09 21	809	(0.3+	2.4+)	1998 10 29	704	0.7+	0.7-	2000 01 05	704	1.0+	0.1+
1998 09 23	809	1.5+	1.0+	1998 11 10	704	0.3+	0.0	2000 01 07	704	1.3-	1.2-
1998 09 23	809	1.6+	1.0+	1998 11 10	704	0.5-	0.3+	2000 01 07	704	0.2-	0.1-
1998 09 23	809	1.9+	0.8+	1998 11 10	704	1.1-	0.2+	2000 01 07	704	0.0	0.2-
1998 09 26	704	0.3-	1.1-	1998 11 10	704	1.1-	0.0	2000 01 07	704	0.2+	0.6+

(13209)* 1997 GQ₄₁ = 1993 BO₁₃ = 1998 QN₁₉

Discovered 1997 Apr. 9 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPC* 34201), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	4.04117		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.27835785	ω	35.57827	-0.56124449		-0.82645140	
<i>a</i>	2.3230955	Ω	88.60361	+0.74867359		-0.52988927	
<i>e</i>	0.1241821	<i>i</i>	2.55284	+0.35283493		-0.19025100	
<i>P</i>	3.54	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1988 11 06	675	0.6+	0.3-	1998 08 23	704	0.0	0.4+	1999 12 18	699	0.0	0.1+
1988 11 06	675	1.3-	1.5-	1998 08 23	704	0.5-	0.2+	1999 12 18	699	0.4+	0.2+
1993 01 22	399	0.4+	1.6-	1998 08 23	704	1.7-	0.7+	1999 12 18	699	0.3-	0.3+
1993 01 22	399	1.0-	0.5-	1999 10 22	704	0.4-	1.1+	1999 12 30	699	0.6-	0.1+
1993 02 10	399	(4.0-	0.3+)	1999 10 22	704	0.5-	0.6+	1999 12 30	699	0.1+	0.0
1993 02 10	399	(3.5-	1.2-)	1999 10 22	704	0.6-	0.5+	1999 12 30	699	0.4+	0.5+
1993 02 13	399	1.8+	0.2-	1999 10 22	704	0.9-	0.6+	2000 01 03	704	0.3+	0.4-
1993 02 13	399	0.2+	0.1-	1999 10 22	704	0.8-	1.0+	2000 01 03	704	0.2+	0.2-
1997 04 09	809	0.4-	0.4-	1999 11 12	703	0.0	0.7+	2000 01 03	704	0.2+	0.4-
1997 04 09	809	0.4-	0.0	1999 11 12	703	0.5-	0.5+	2000 01 03	704	0.2+	0.1+
1997 04 09	809	0.5-	1.0-	1999 11 12	703	0.3+	0.6+	2000 01 04	704	0.2+	0.3-
1997 04 10	809	0.6+	0.4+	1999 11 12	703	0.6+	0.2+	2000 01 04	704	0.3+	0.2-
1997 04 10	809	0.6+	1.0+	1999 11 16	704	0.5-	0.8+	2000 01 04	704	0.2+	0.1-
1997 04 10	809	0.4+	0.6+	1999 11 16	704	0.1+	1.4+	2000 01 04	704	0.0	0.2-
1997 04 11	809	0.9-	1.1+	1999 11 16	704	0.3+	0.6+	2000 01 04	704	0.2+	0.3-
1997 04 11	809	1.4+	0.9+	1999 11 16	704	0.1+	0.1+	2000 01 05	691	0.2-	0.1-
1997 04 11	809	1.0-	1.7+	1999 11 16	704	0.2-	0.7+	2000 01 05	691	0.2-	0.1-
1998 08 17	704	0.4+	0.7+	1999 12 13	691	0.0	0.6+	2000 01 05	691	0.9+	0.3+
1998 08 17	704	0.0	0.2-	1999 12 13	691	0.1-	0.6+	2000 01 08	691	0.4+	0.4-
1998 08 17	704	0.9+	0.3-	1999 12 13	691	0.1+	0.4+	2000 01 08	691	0.4+	0.5-
1998 08 17	704	0.8+	0.2-	1999 12 17	691	0.7-	0.1+	2000 01 08	691	0.5+	0.4-
1998 08 17	704	0.3-	1.7+	1999 12 17	691	0.6-	0.1-				
1998 08 23	704	0.7+	0.7+	1999 12 17	691	0.5-	0.3+				

(13210)* 1997 HP_s = 1998 OS₃

Discovered 1997 Apr. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 32964)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	47.70087		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.22717457	ω	217.14334	+0.70791493		-0.70624278	
<i>a</i>	2.6600895	Ω	187.80514	+0.66259603		+0.66837999	
<i>e</i>	0.0958550	<i>i</i>	3.71862	+0.24458730		+0.23342948	
<i>P</i>	4.34	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 03 02	809	0.3+	0.3+	1997 05 01	704	0.0	0.4+	1998 08 17	704	0.4-	0.9-
1992 03 09	809	(0.7+	3.5-)	1997 05 01	704	0.2+	0.3-	1998 08 17	704	1.5-	0.7+
1992 04 07	809	0.6-	1.0-	1997 05 05	704	0.3-	0.6-	1998 08 17	704	0.6+	1.7-
1997 04 02	704	0.3+	1.0+	1997 05 05	704	1.5-	0.9-	1999 11 04	704	0.7+	0.5+
1997 04 02	704	0.4-	0.6+	1997 05 05	704	0.2-	0.2-	1999 11 04	704	0.4+	0.6+
1997 04 30	704	1.4+	1.3+	1997 05 05	704	0.7-	0.6-	1999 11 04	704	0.2-	0.4-
1997 04 30	704	0.2+	1.0-	1997 05 05	704	(2.3-	0.3+)	1999 11 04	704	0.4-	0.0
1997 04 30	704	0.3+	0.3-	1997 05 26	910	1.4-	0.0	1999 11 04	704	0.9-	0.7-
1997 04 30	704	0.4+	0.0	1997 05 26	910	0.5-	0.0	1999 12 08	704	0.4-	0.7-
1997 04 30	704	0.6+	0.2-	1997 05 26	910	0.4-	0.2-	1999 12 08	704	0.1+	0.7-
1997 04 30	704	0.4-	0.5-	1998 07 24	910	0.3+	0.6+	1999 12 08	704	0.2-	0.6-
1997 04 30	704	0.7+	1.2+	1998 07 24	910	0.3+	0.5+	1999 12 08	704	0.4+	0.9-
1997 04 30	704	0.3-	1.2+	1998 07 24	910	0.4+	0.5+	1999 12 08	704	0.2+	0.9-
1997 04 30	704	(2.1-	1.7-)	1998 07 27	910	0.5+	0.2+	1999 12 15	704	0.3+	0.1+
1997 04 30	704	1.5+	0.6+	1998 07 27	910	0.5+	0.1+	1999 12 15	704	0.3+	1.5+
1997 05 01	704	0.4+	0.2-	1998 07 27	910	0.3+	0.1+	1999 12 15	704	0.1+	1.3+
1997 05 01	704	0.3-	0.6-	1998 08 17	704	0.9+	0.3+	1999 12 15	704	0.3-	1.4+
1997 05 01	704	0.3+	0.0	1998 08 17	704	1.9-	0.3-	1999 12 15	704	0.2-	0.2-

2000 JAN. 24

M.P.C. 37543

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	144.42179	(2000.0)	Williams	
<i>n</i>	0.20215762	ω	207.79718	± 0.65793964
<i>a</i>	2.8752524	Ω	103.49909	± 0.67229418
<i>e</i>	0.1569687	<i>i</i>	5.40088	± 0.33931692
<i>P</i>	4.88	<i>H</i>	13.7	± 0.15

Residuals in seconds of arc

<i>G</i>	0.15	<i>U</i>	1
1996 02 19	691	0.1+	0.1-
1996 02 19	691	0.4-	0.1-
1996 02 19	691	0.3+	0.2-
1997 05 03	809	(2.8-	7.7-)
1997 05 03	809	(3.9-	7.0-)
1997 05 03	809	(2.6-	6.9-)
1997 05 03	691	0.1+	0.2-
1997 05 03	691	0.2+	0.2-
1997 05 03	691	0.1+	0.2-
1997 05 04	809	(0.6-	3.7-)
1997 05 04	809	(0.5-	3.7-)
1997 05 04	809	(0.7-	4.1-)
1997 05 04	809	(4.7+	1.0-)
1997 05 04	809	(4.4+	1.4-)
1997 05 04	809	(3.8+	1.3-)
1997 05 08	691	0.3-	0.2+
1997 05 08	691	0.1-	0.2-
1997 05 08	691	0.3-	0.3-
1997 06 07	809	(3.8-	2.1-)
1997 06 07	809	(4.0-	2.5-)
1997 06 07	809	(3.9-	2.5-)
1997 06 08	809	(3.4-	1.0-)
1997 06 08	809	(2.8-	0.9-)
1997 06 08	809	(2.3-	0.5-)
1998 08 28	704	(1.5+	2.7+)
1998 08 28	704	0.1+	1.1+
1998 08 28	704	1.5-	0.6-
1998 08 28	704	(2.9-	2.3+)
1998 08 28	704	(4.7-	0.5+)
1998 09 14	704	0.1+	0.2+
1998 09 14	704	0.6+	1.3-

(13212)* 1997 JL₁₃ = 1989 GN₆ = 1993 GQ

Discovered 1997 May 3 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 30087)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	239.72893	(2000.0)	Williams	
<i>n</i>	0.25331806	ω	58.61859	± 0.27901277
<i>a</i>	2.4737660	Ω	195.20204	± 0.89935546
<i>e</i>	0.1555809	<i>i</i>	3.28377	± 0.33661793
<i>P</i>	3.89	<i>H</i>	14.1	± 0.15

Residuals in seconds of arc

<i>G</i>	0.15	<i>U</i>	1
1989 04 03	809	0.7-	1.2-
1989 04 03	809	0.0	0.7-
1989 04 03	809	0.2+	0.5-
1993 04 15	399	1.3-	0.8+
1993 04 15	399	0.5+	1.0-
1993 04 16	399	(3.2-	1.5+)
1993 04 16	399	(2.5-	0.3+)
1997 05 03	809	1.1+	1.5+
1997 05 03	809	1.5+	1.8+
1997 05 03	809	1.6+	0.9+
1997 05 04	809	0.4+	0.8+
1997 05 04	809	0.9+	0.8+
1997 05 04	809	(0.9+	2.8+)
1997 05 07	704	0.7-	0.2+
1997 05 07	704	0.7-	0.3+

<i>M</i>	346.62651	(2000.0)	Williams	
<i>n</i>	0.29201503	ω	93.13662	± 0.99145993
<i>a</i>	2.2500866	Ω	80.34817	± 0.07796124
<i>e</i>	0.0912087	<i>i</i>	3.72700	± 0.10454309
<i>P</i>	3.38	<i>H</i>	14.2	± 0.15

Residuals in seconds of arc

<i>G</i>	0.15	<i>U</i>	2
1995 12 16	691	0.2+	0.0
1995 12 16	691	0.1-	0.0
1995 12 16	691	0.1+	0.3+
1996 01 24	691	0.0	0.1+
1996 01 24	691	0.1-	0.1+
1996 01 24	691	0.3-	0.3+
1997 05 03	809	(0.3-	2.4+)
1997 05 03	809	0.8+	1.3+
1997 05 03	809	0.1+	1.6+
1997 05 04	809	0.3+	1.0+
1997 05 04	809	0.1-	1.2+
1997 05 04	809	0.0	0.2-
1997 05 04	809	0.2+	0.1-
1997 06 07	809	0.5+	1.7+
1997 06 07	809	0.2+	1.8+
1997 06 07	809	0.2-	1.2+
1997 06 08	809	0.8+	0.8+
1997 06 08	809	1.3+	1.3+
1997 06 08	809	0.6+	0.8+
1998 09 14	704	0.5-	1.2+
1998 09 14	704	0.1+	0.1+
1998 09 14	704	(0.2+	2.3+)
1998 09 17	699	0.1+	0.8+
1998 09 17	699	0.3-	1.1+
1998 09 17	699	0.1+	0.9+
1998 09 18	704	0.1-	0.7+
1998 09 18	704	0.9+	0.9+
1998 09 18	704	0.4+	1.5+
1998 09 18	704	0.3+	0.3+
1998 09 18	704	0.6+	1.5+

(13214)* 1997 JJ₁₆ = 1977 EJ₃ = 1990 QC₁₃

Discovered 1997 May 3 by E. W. Elst at the European Southern Observatory.

Id. T. B. Spahr (*MPC* 30463)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	266.50671	(2000.0)	Williams	
<i>n</i>	0.25299626	ω	52.90123	± 0.75007421
<i>a</i>	2.4758632	Ω	168.49084	± 0.61881116
<i>e</i>	0.1220022	<i>i</i>	2.30197	± 0.23336972
<i>P</i>	3.90	<i>H</i>	14.1	± 0.15

Residuals in seconds of arc

<i>G</i>	0.15	<i>U</i>	1
1977 03 15	381	1.6+	1.1+
1977 03 15	381	0.3-	1.3+

1990 08 16	809	1.0−	0.4−	1998 09 17	699	1.3+	0.5+	1998 10 15	704	0.9+	1.1+
1990 08 16	809	0.5−	0.9−	1998 09 17	699	1.1−	0.2+	1998 10 15	704	0.6+	1.1+
1990 08 16	809	0.4−	0.2+	1998 09 17	699	0.2−	0.4+	1998 10 15	691	0.5+	0.2+
1997 05 03	809	0.9+	0.1+	1998 09 18	704	0.1−	0.7+	1998 10 15	691	0.5+	0.4−
1997 05 03	809	0.9+	0.2−	1998 09 18	704	0.9−	1.2+	1998 10 15	691	0.6+	0.1+
1997 05 03	809	0.9+	0.4−	1998 09 18	704	0.8−	0.3+	1998 10 27	691	0.5−	0.0
1997 05 04	809	(0.0	2.4−)	1998 09 18	704	0.7−	0.3−	1998 10 27	691	0.5−	0.3−
1997 05 04	809	(0.7−	2.6−)	1998 09 18	704	0.5−	1.3−	1998 10 27	691	0.9−	0.0
1997 05 04	809	0.3+	1.7−	1998 09 19	727	0.7−	0.7+	1999 12 07	704	0.2+	0.2+
1997 05 04	809	(2.5−	0.0)	1998 09 19	727	0.3−	0.2+	1999 12 07	704	0.6−	0.0
1997 05 04	809	(2.9−	0.5+)	1998 09 19	727	0.7−	0.2+	1999 12 07	704	0.2+	0.4+
1997 05 04	809	(2.4−	0.2+)	1998 09 25	699	0.1−	0.6+	1999 12 07	704	0.7+	0.5+
1997 06 07	809	0.6−	0.0	1998 09 25	699	0.1−	0.1−	1999 12 07	704	0.1−	0.2+
1997 06 07	809	0.8−	0.3+	1998 09 25	699	0.2+	0.6+	1999 12 08	704	0.2−	0.1+
1997 06 07	809	0.9−	0.6+	1998 09 26	704	0.1+	0.3−	1999 12 08	704	0.1+	0.1−
1997 06 07	809	0.6+	1.4+	1998 09 26	704	0.0	0.5−	1999 12 08	704	0.1−	0.4+
1997 06 07	809	0.0	1.5+	1998 09 26	704	0.4+	0.3−	1999 12 08	704	0.0	0.6+
1997 06 07	809	0.3−	1.7+	1998 09 26	704	0.9+	0.0	1999 12 08	704	0.8+	0.4+
1997 06 08	809	0.2−	0.1+	1998 09 26	704	0.5+	0.4−	2000 01 05	704	0.0	0.0
1997 06 08	809	0.2+	0.2+	1998 09 27	704	0.3−	0.5+	2000 01 05	704	0.5−	0.3−
1997 06 08	809	0.0	0.4+	1998 09 27	704	0.5−	0.0	2000 01 05	704	0.5−	0.5−
1998 08 31	704	(0.3−	2.5−)	1998 09 27	704	0.4+	1.2+	2000 01 05	704	0.3−	0.2−
1998 08 31	704	1.2+	0.1−	1998 09 27	704	0.1−	0.9+	2000 01 05	704	0.2−	0.3−
1998 08 31	704	(1.0+	2.1−)	1998 09 27	704	0.4−	0.4+	2000 01 06	704	0.2−	0.1+
1998 09 14	704	0.2+	0.4−	1998 09 29	120	0.5−	0.4+	2000 01 06	704	0.0	0.7+
1998 09 14	704	1.9+	1.8−	1998 09 30	120	0.7−	0.2−	2000 01 06	704	0.0	0.0
1998 09 14	704	(1.2+	3.3−)	1998 09 30	120	0.1−	0.2+				
1998 09 16	691	0.1−	0.5−	1998 10 15	704	0.5+	0.8+				

(13215)* 1997 JT₁₆ = 1994 WW₄

Discovered 1997 May 3 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 30087)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	67.35984	(2000.0)	P	Q
<i>n</i>	0.18234605	ω	269.38535	+0.97442850
<i>a</i>	3.0799131	Ω	97.59047	+0.18501594
<i>e</i>	0.1452504	<i>i</i>	10.98734	−0.12750766
<i>P</i>	5.41	<i>H</i>	13.0	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1994 11 27	691	0.2−	0.0	1998 09 21	704	0.3−	0.2−	1999 12 14	704	0.5+	0.3+
1994 11 27	691	0.4−	0.3+	1998 09 21	704	0.4+	0.2−	1999 12 14	704	0.4+	0.4+
1994 11 27	691	0.0	0.5−	1998 09 21	704	1.2+	0.1−	1999 12 14	704	0.2−	0.2+
1994 11 28	691	0.4+	0.0	1998 09 21	704	(2.6−	1.0−)	1999 12 14	704	0.0	0.3+
1994 11 28	691	0.4−	0.1−	1999 11 04	704	0.5+	0.1−	1999 12 17	120	1.5+	0.7+
1994 11 28	691	0.5+	0.1+	1999 11 04	704	0.3+	0.2−	1999 12 17	120	0.8+	0.9+
1997 04 17	327	0.4+	0.4+	1999 11 04	704	0.2+	0.3−	1999 12 31	120	0.4−	0.9+
1997 04 17	327	0.5−	0.6−	1999 11 04	704	0.1+	0.2−	1999 12 31	120	0.3−	0.1+
1997 04 17	327	0.1−	0.6−	1999 11 04	704	0.2+	0.1−	2000 01 05	704	0.0	0.2+
1997 05 03	327	0.2−	0.4−	1999 12 06	704	0.4−	0.2−	2000 01 05	704	0.3−	0.5−
1997 05 03	327	0.0	0.4−	1999 12 06	704	0.1−	0.3−	2000 01 05	704	0.1+	0.2−
1997 05 03	327	0.2−	0.2−	1999 12 06	704	0.7−	0.0	2000 01 05	704	0.2+	0.1−
1997 05 08	327	0.0	0.2−	1999 12 06	704	0.3−	0.8−	2000 01 05	704	0.4−	0.8−
1997 05 08	327	0.1−	0.5−	1999 12 06	704	0.3−	0.8−	2000 01 06	704	0.4−	0.2−
1997 05 08	327	0.5−	0.1−	1999 12 08	704	0.0	0.2−	2000 01 06	704	0.3−	0.3−
1997 05 08	327	0.1+	0.1−	1999 12 08	704	0.2+	0.0	2000 01 06	704	0.1+	0.0
1997 05 31	327	0.0	0.0	1999 12 08	704	0.6+	0.8−	2000 01 06	704	0.3−	0.6−
1997 05 31	327	0.1+	0.0	1999 12 08	704	0.8−	0.5+	2000 01 06	704	0.2−	0.5−
1997 05 31	327	0.0	0.3+	1999 12 08	704	0.3+	0.1−				
1998 09 21	704	1.1−	0.4−	1999 12 14	704	0.2−	0.3+				

(13216)* 1997 LH₄ = 1998 ST₈₃

Discovered 1997 June 9 by K. A. Williams at Lake Clear.

Id. G. V. Williams (*MPC* 32967)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	307.53721	(2000.0)	P	Q
<i>n</i>	0.23586053	ω	352.52276	−0.99899280
<i>a</i>	2.5943737	Ω	185.51400	+0.04074422
<i>e</i>	0.0288629	<i>i</i>	14.89588	−0.01879613
<i>P</i>	4.18	<i>H</i>	14.3	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1992 04 07	809	0.1+	0.3+	1997 07 08	824	0.2−	0.5−	1998 09 29	824	0.6+	0.2−
1997 06 09	824	0.0	0.0	1997 07 08	824	0.3−	0.4−	1998 09 29	824	0.4+	0.4−
1997 06 09	824	0.1−	0.1−	1997 07 23	824	0.2−	1.1−	1999 11 06	704	(0.7+	3.5−)
1997 06 09	824	0.3+	0.1+	1997 07 23	824	0.1+	0.5−	1999 11 06	704	0.4−	0.6−
1997 06 11	824	0.0	0.1+	1997 07 23	824	0.1−	1.2−	1999 11 06	704	0.4+	0.2−
1997 06 11	824	0.3+	0.2+	1998 08 28	704	1.4−	1.1+	1999 11 06	704	0.6−	0.4+
1997 06 11	824	0.3+	0.1−	1998 08 28	704	1.1−	0.3−	1999 12 16	704	0.4−	0.2−
1997 06 15	824	0.2+	0.1+	1998 08 28	704	(3.4−	0.2+)	1999 12 16	704	1.3−	0.3−
1997 06 15	824	0.5+	0.1−	1998 08 28	704	0.0	0.7−	1999 12 16	704	0.7−	0.4−
1997 06 15	824	0.2+	0.2−	1998 08 28	704	(5.4−	1.5+)	1999 12 16	704	(2.2−	2.1−)
1997 06 28	824	0.3−	0.0	1998 09 26	704	0.5+	0.3+	2000 01 09	704	0.6−	1.4−
1997 06 28	824	0.3−	0.0	1998 09 26	704	0.9+	0.9−	2000 01 09	704	0.4+	1.4−
1997 06 28	824	0.1−	0.0	1998 09 26	704	0.4−	0.8−	2000 01 09	704	0.2+	1.0−
1997 06 29	824	0.6+	0.9−	1998 09 26	704	0.3+	0.8−	2000 01 09	704	0.1+	1.6−
1997 06 29	824	0.5+	1.0−	1998 09 27	704	0.1−	0.4−	2000 01 12	704	1.5+	1.6−
1997 06 29	824	0.0	0.8−	1998 09 27	704	0.8+	0.5+	2000 01 12	704	(0.8+	2.4−)
1997 07 06	824	0.2−	0.5−	1998 09 27	704	0.5+	0.5+	2000 01 12	704	(1.3+	3.1−)
1997 07 06	824	0.5−	0.5−	1998 09 27	704	0.4+	0.0	2000 01 12	704	(0.0	3.3−)
1997 07 06	824	0.1−	0.4−	1998 09 27	704	0.7−	0.7−				
1997 07 08	824	0.3−	0.5−	1998 09 29	824	0.4+	0.3−				

(13217)* 1997 ML₂ = 1980 TK₁₁ = 1998 QC₃₅

Discovered 1997 June 30 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPC* 32481)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	49.68028	(2000.0)	P	Q
<i>n</i>	0.26833049	ω	295.81490	−0.04488043
<i>a</i>	2.3806161	Ω	156.71830	+0.93729401
<i>e</i>	0.1674797	<i>i</i>	3.54854	+0.34563809
<i>P</i>	3.67	<i>H</i>	14.8	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1980 10 08	095	0.5−	1.7+	1998 08 23	704	0.7−	0.2−	1998 11 09	910	1.0−	1.7−
1997 06 08	809	1.0−	0.0	1998 08 23	704	0.6−	0.5−	1998 11 11	910	1.2−	0.5−
1997 06 08	809	1.4−	0.7−	1998 09 14	704	0.9+	0.5−	1998 11 11	910	1.0−	0.6−
1997 06 08	809	1.3−	0.0	1998 09 14	704	0.5+	0.0	1998 11 11	910	1.1−	0.5−
1997 06 09	809	0.1+	0.2−	1998 09 14	704	1.8+	0.1+	1999 12 05	704	0.6−	1.0−
1997 06 09	809	0.2+	0.1−	1998 09 14	704	1.9+	0.1−	1999 12 05	704	0.4−	0.9−
1997 06 09	809	0.1+	0.4−	1998 09 14	704	(3.8−	0.9+)	1999 12 05	704	0.2−	0.6−
1997 06 29	691	0.4−	0.2+	1998 09 18	704	1.8+	0.7−	1999 12 05	703	0.3−	1.3+
1997 06 29	691	0.5−	0.4+	1998 09 18	704	1.1−	1.5−	1999 12 05	704	0.7−	0.6+
1997 06 29	691	0.4−	0.2+	1998 09 18	704	0.8+	0.9−	1999 12 05	703	0.1−	0.3+
1997 06 30	910	0.7+	0.1+	1998 09 18	704	0.9−	1.5+	1999 12 05	703	1.0−	0.3+
1997 06 30	910	0.6+	0.1−	1998 09 25	704	0.1+	0.1−	1999 12 05	704	0.5−	0.1+
1997 06 30	910	0.3+	0.1+	1998 09 25	704	0.3+	0.3−	1999 12 05	703	0.3+	0.2+
1997 07 01	910	0.6+	0.1+	1998 09 25	704	0.2+	0.6−	2000 01 05	704	0.2+	0.3−
1997 07 01	910	0.6+	0.2−	1998 09 25	704	(0.6+	2.2−)	2000 01 05	704	0.1+	0.3−
1997 07 01	910	0.9+	0.0	1998 09 25	704	1.0+	0.0	2000 01 05	704	0.4−	0.2−
1998 08 17	704	0.0	0.1+	1998 09 27	704	0.8+	0.7+	2000 01 05	704	0.1−	0.4−
1998 08 17	704	0.5+	0.9+	1998 09 27	704	0.1−	1.4+	2000 01 08	704	0.6−	0.7−
1998 08 17	704	0.5+	1.0+	1998 09 27	704	1.1−	0.7+	2000 01 08	704	0.5+	1.5−
1998 08 17	704	0.1−	0.1+	1998 09 27	704	0.9−	0.0	2000 01 08	704	0.8+	0.1+
1998 08 17	704	0.1+	0.8−	1998 09 27	704	0.5+	1.2−	2000 01 08	704	1.3+	1.3−
1998 08 23	704	0.1+	0.1+	1998 11 09	910	1.0−	1.6−				
1998 08 23	704	(0.7+	2.2−)	1998 11 09	910	0.8−	0.9−				

(13218)* 1997 MC₃ = 1998 UU₃₆

Discovered 1997 June 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33260)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	274.67109		(2000.0)	P	Q		
<i>n</i>	0.23998652	ω	252.62532	−0.63825976	+0.76934614		
<i>a</i>	2.5645519	Ω	337.64412	−0.67656412	−0.57734989		
<i>e</i>	0.0941252	<i>i</i>	4.07619	−0.36726757	−0.27344767		
<i>P</i>	4.11	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 04 06	809	0.4−	0.9−	1997 07 02	704	0.0	1.0+	1999 11 16	704	0.5+	0.7+
1996 04 13	327	0.0	0.5−	1997 07 02	704	0.7−	1.3+	1999 11 16	704	1.6+	0.0
1996 04 13	327	0.2−	0.4−	1998 10 28	704	0.2+	0.0	1999 11 16	704	0.5+	0.2+
1996 04 13	327	0.6−	1.0−	1998 10 28	704	0.2+	0.1−	2000 01 04	704	0.6+	0.6+
1996 04 17	566	0.6+	0.1−	1998 10 28	704	0.5+	0.7+	2000 01 04	704	0.3+	0.5+
1996 04 17	566	0.2−	0.4+	1998 10 28	704	0.8−	0.1−	2000 01 04	704	0.7+	0.7+
1996 04 17	566	0.2−	0.0	1998 10 29	704	0.9+	0.4−	2000 01 04	704	0.4+	0.6+
1997 06 28	704	0.2−	0.9+	1998 10 29	704	0.7−	0.9+	2000 01 05	699	0.8−	1.7+
1997 06 28	704	0.4+	0.8+	1998 10 29	704	0.2−	0.3+	2000 01 05	699	0.5+	0.6+
1997 06 28	704	0.4+	1.0+	1998 10 29	704	0.6+	1.0+	2000 01 05	699	0.2+	0.3+
1997 06 29	704	0.4−	0.8+	1998 10 29	704	1.1−	0.4−	2000 01 05	699	0.2−	1.7+
1997 06 29	704	0.3−	1.0+	1998 11 10	704	0.8+	0.3+	2000 01 05	699	1.0+	0.3+
1997 06 29	704	0.0	0.3−	1998 11 10	704	0.1−	0.5+	2000 01 06	704	0.6+	0.6+
1997 06 29	704	1.4+	1.3+	1998 11 10	704	0.1−	0.7+	2000 01 06	704	0.5+	1.7+
1997 06 29	704	0.3+	0.5+	1998 11 10	704	1.3−	0.1+	2000 01 06	704	0.2+	0.9+
1997 07 02	704	0.1−	0.8+	1999 10 22	704	0.1+	0.1−	2000 01 06	704	0.9+	1.5+
1997 07 02	704	0.6−	0.6+	1999 10 22	704	0.1+	1.2+	2000 01 06	704	0.8+	1.7+
1997 07 02	704	0.5−	0.7+	1999 10 22	704	0.3−	0.0	2000 01 09	704	0.6−	0.9−
1997 07 02	704	0.7−	0.9+	1999 10 22	704	0.1−	0.2+	2000 01 09	704	1.4−	0.1+
1997 07 02	704	0.2−	1.2+	1999 11 16	704	1.2+	0.1+	2000 01 09	704	1.5−	0.7+
1997 07 02	704	0.7−	1.3+	1999 11 16	704	1.0+	0.3+				

(13219)* 1997 MB₉ = 1986 RZ₃ = 1994 BK₅

Discovered 1997 June 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 30284)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	97.56334		(2000.0)	P	Q		
<i>n</i>	0.17229673	ω	87.82004	+0.80804143	−0.49981877		
<i>a</i>	3.1985368	Ω	302.01854	+0.27623097	+0.78898996		
<i>e</i>	0.1087540	<i>i</i>	21.58005	+0.52035133	+0.35731784		
<i>P</i>	5.72	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 09 02	010	(6.5−	2.5+)	1998 11 17	704	0.2−	1.2+	1999 12 06	704	0.6+	0.2+
1986 09 02	010	(5.1−	0.4+)	1998 11 17	704	1.3+	1.0+	1999 12 06	704	0.7+	0.3−
1994 01 18	033	0.1−	0.3−	1998 11 17	704	1.6−	0.5+	1999 12 06	704	1.2+	0.2−
1994 01 18	033	0.7−	0.4−	1998 11 17	704	0.3+	0.5+	1999 12 06	704	0.2+	0.0
1994 01 19	033	0.1+	0.9−	1999 01 09	704	0.5−	1.3−	1999 12 06	704	0.2+	0.3−
1997 06 30	691	0.0	0.4−	1999 01 09	704	0.9+	0.4−	1999 12 07	120	0.8+	0.3+
1997 06 30	691	0.1−	0.1+	1999 01 09	704	0.3+	0.3+	1999 12 07	120	0.4−	0.1+
1997 06 30	691	0.0	0.2+	1999 01 09	704	0.4−	1.3+	1999 12 07	120	0.2+	0.2−
1997 07 07	691	0.3−	1.1+	1999 01 09	704	0.0	1.5−	1999 12 07	704	0.3+	0.4+
1997 07 07	691	0.2+	0.9+	1999 01 23	699	0.1−	0.2−	1999 12 07	704	0.6+	0.1+
1997 07 07	691	0.7−	0.1+	1999 01 23	699	0.0	0.3−	1999 12 07	704	0.0	0.3+
1997 07 11	691	0.6−	0.7+	1999 01 23	699	0.2+	0.0	1999 12 07	704	0.5−	0.5−
1997 07 11	691	0.7−	0.3+	1999 02 08	704	0.4+	0.5+	2000 01 05	704	0.0	1.1+
1997 07 11	691	0.6−	0.2+	1999 02 08	704	0.8+	0.7+	2000 01 05	699	0.2+	0.6+
1997 07 14	691	0.2−	0.2+	1999 02 08	704	1.1+	0.0	2000 01 05	704	0.5−	0.2+
1997 07 14	691	0.5−	0.8+	1999 11 05	703	0.0	0.7+	2000 01 05	704	0.3−	0.6+
1997 07 14	691	0.5−	0.9+	1999 11 05	703	0.3+	0.4+	2000 01 05	699	1.0+	0.8+
1998 08 29	704	1.1+	0.8−	1999 11 05	703	0.5−	1.2+	2000 01 05	704	0.5−	0.5+
1998 08 29	704	1.3−	0.8+	1999 11 05	703	0.3+	0.6+	2000 01 05	699	0.1+	0.8+
1998 08 29	704	1.0−	1.0−	1999 12 04	703	0.5−	0.3−	2000 01 05	704	0.0	0.4+

1998 08 29	704	1.2−	1.6−	1999 12 04	703	0.5+	0.0	2000 01 07	704	0.5−	0.5−
1998 11 06	118	0.1+	0.1−	1999 12 04	703	0.4+	0.5+	2000 01 07	704	0.3−	0.1−
1998 11 06	118	0.2+	0.0	1999 12 04	703	0.6+	0.5+	2000 01 07	704	(2.2−	0.3+)
1998 11 07	118	0.2+	0.0	1999 12 06	120	0.5+	0.4−	2000 01 07	704	0.8−	0.6+
1998 11 07	118	0.1+	0.0	1999 12 06	120	1.0+	0.9−				
1998 11 17	704	0.2−	0.1−	1999 12 06	120	0.7+	0.3−				

(13220)* 1997 NG₃ = 1987 RY₂ = 1987 SD₃₀ = 1988 XA₆

Discovered 1997 July 1 by T. Okuni at Nanyo.

Id. G. V. Williams (*MPC* 30674)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	166.30992		(2000.0)	P	Q		
<i>n</i>	0.18980223	ω	161.99433	+0.77406868	+0.62933478		
<i>a</i>	2.9987149	Ω	158.54321	−0.60157322	+0.76508880		
<i>e</i>	0.0987275	<i>i</i>	10.86627	−0.19730011	+0.13629695		
<i>P</i>	5.19	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 09 01	095	(1.6+	3.2+)	1998 08 31	704	1.0+	0.6+	1999 02 04	704	0.9+	1.1−
1987 09 24	413	0.3−	0.0	1998 08 31	704	0.5+	1.5−	1999 02 04	704	0.3−	0.9−
1987 09 24	413	0.3−	0.9+	1998 08 31	704	1.2−	1.7−	1999 02 04	704	1.7−	0.4−
1988 12 08	808	0.6+	0.5−	1998 08 31	704	1.3−	1.7−	1999 02 04	704	1.1+	0.1+
1988 12 08	808	0.2+	1.0−	1998 08 31	704	1.7+	0.0	1999 02 04	704	0.1−	0.7+
1997 07 01	358	0.6+	1.5+	1998 10 23	744	0.7+	0.5+	1999 10 20	704	1.0−	1.1+
1997 07 01	358	(2.0−	3.5+)	1998 10 23	744	0.3+	0.1+	1999 10 20	704	0.2−	0.1−
1997 07 06	358	0.2−	0.5+	1998 10 23	744	0.6+	0.0	1999 10 20	704	0.4+	0.1+
1997 07 06	358	0.4−	0.2+	1998 10 26	744	0.7−	0.1+	1999 10 20	704	0.1−	0.2−
1997 07 06	358	0.8+	0.8+	1998 10 26	744	0.4−	0.5+	1999 10 20	704	0.5+	0.3−
1997 07 14	358	0.4+	1.3+	1998 10 26	744	0.9−	0.2+	1999 12 14	704	1.9+	1.0+
1997 07 14	358	0.2+	0.3+	1998 11 07	689	0.5+	0.0	1999 12 14	704	(1.6+	3.1+)
1997 07 14	358	1.7−	1.0−	1998 11 13	704	0.2+	0.1−	1999 12 14	704	(0.2+	2.7+)
1997 07 17	358	0.5+	1.1−	1998 11 13	704	0.4−	0.2+	2000 01 04	699	0.3+	0.2+
1997 07 17	358	0.8+	0.2−	1998 11 13	704	0.7−	0.1+	2000 01 04	699	0.6+	0.7+
1997 07 18	358	1.3+	1.3−	1998 11 13	704	1.1−	0.1−	2000 01 04	699	0.5+	0.7+
1997 07 18	358	1.3−	0.2−	1998 11 13	704	1.1−	1.5−	2000 01 05	704	0.4−	0.1+
1997 07 25	358	1.0−	0.0	1998 11 19	699	0.6+	1.0+	2000 01 05	704	0.1−	0.1+
1997 07 25	358	0.5+	0.1+	1998 11 19	699	0.5+	0.9+	2000 01 05	704	0.5−	0.1+
1997 07 25	358	(0.7+	2.3−)	1998 11 19	699	1.1+	0.7+	2000 01 05	704	0.1−	0.1+
1997 09 01	566	1.2−	1.2+	1998 12 14	699	0.3+	0.8+	2000 01 05	704	0.3+	0.1−
1997 09 01	566	0.2+	0.5+	1998 12 14	699	0.8+	0.3+	2000 01 07	704	0.2−	0.5+
1997 09 01	566	0.1−	0.4+	1998 12 14	699	0.7+	0.6+	2000 01 07	704	0.5−	0.0
1997 09 19	595	0.3−	0.4+	1999 01 17	699	0.2+	0.9−	2000 01 07	704	0.2−	0.4+
1997 09 19	595	0.1+	0.0	1999 01 17	699	1.3−	1.3+	2000 01 07	704	0.6−	0.5+
1997 09 19	595	0.8+	0.2+	1999 01 17	699	0.9−	0.0	2000 01 07	704	0.3−	0.1+

(13221)* 1997 OY = 1986 AP

Discovered 1997 July 24 by A. Nakamura at Kuma Kogen.

Id. S. Nakano (*MPC* 32968)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	50.36208		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21797247	ω	149.21484	−0.31419078	−0.94470331
a	2.7344393	Ω	318.88901	+0.83935557	−0.23020092
e	0.1435814	i	8.21166	+0.44358357	−0.23354483
P	4.52	H	13.7	G 0.15	U 1

1997 08 01	360	0.0	0.3+	1998 10 21	360	0.4−	0.1+	1999 01 08	704	0.3+	0.3−
1997 08 01	360	0.1+	0.5+	1998 11 14	704	0.1−	1.3+	1999 01 14	699	1.1−	0.1−
1997 08 03	360	0.6−	0.3+	1998 11 14	704	0.3−	1.6+	1999 01 14	699	1.4−	1.0+
1997 08 03	360	0.0	0.1+	1998 11 14	704	(0.4−	2.5+)	1999 01 14	699	0.5−	0.8+
1997 08 27	360	0.1+	0.0	1998 11 14	704	(2.3−	3.8+)	1999 12 09	703	0.6−	0.3+
1997 08 27	360	0.5+	0.1+	1998 11 15	360	0.0	0.6+	1999 12 09	703	0.3+	0.3+
1997 08 28	360	0.4+	0.3−	1998 11 15	360	0.2−	0.6+	1999 12 09	703	0.8+	0.5+
1997 08 28	360	0.0	0.3−	1998 11 16	704	0.2−	0.4+	1999 12 09	703	0.6+	0.2−
1997 09 04	360	0.1+	0.3−	1998 11 16	704	0.5−	0.3+	2000 01 03	360	0.0	0.3+
1997 09 04	360	0.0	0.1−	1998 11 16	704	0.3+	0.6+	2000 01 03	360	0.0	0.3+
1997 09 28	360	0.4−	0.3−	1998 11 16	704	0.1+	0.5−	2000 01 05	704	0.8+	0.4+
1997 09 28	360	0.5−	0.6−	1998 11 16	704	0.8+	0.4+	2000 01 05	704	0.4+	1.7+
1997 10 21	360	0.3−	0.4+	1998 11 16	566	0.9−	0.4−	2000 01 05	704	0.7+	0.8+
1997 10 21	360	0.1+	0.0	1998 11 16	566	1.0−	0.4−	2000 01 05	704	0.3+	1.0+
1998 10 03	699	0.5+	1.7−	1998 11 16	566	0.9−	0.5−				

(13222)* 1997 OV₂ = 1995 AF₄

Discovered 1997 July 27 by T. Okuni at Nanyo.

Id. S. Nakano (*MPC* 30675)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21847647	ω	263.28376	−0.93754532	+0.31390935		
<i>a</i>	2.7302323	Ω	294.92321	−0.21608778	−0.86323594		
<i>e</i>	0.0613060	<i>i</i>	9.51420	−0.27260749	−0.39532851		
<i>P</i>	4.51	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1995 01 02	010	(5.0+	2.5+)	1997 09 01	566	0.7−	0.0	1999 12 05	703	0.2+	0.4+
1995 01 02	010	(3.4+	2.1+)	1997 09 08	910	1.0+	0.4−	1999 12 05	703	0.3+	0.3+
1995 01 03	010	1.6+	1.1−	1997 09 08	910	1.0+	0.5−	1999 12 14	704	0.2+	0.5+
1995 01 04	010	(3.6+	0.3−)	1997 09 08	910	0.9+	0.4−	1999 12 14	704	0.1+	0.2−
1995 01 05	033	0.2−	0.1−	1998 10 18	704	0.3−	0.3+	1999 12 14	704	0.3+	0.4−
1995 01 05	033	0.7−	0.1+	1998 10 18	704	0.3−	0.5−	1999 12 14	704	0.3−	0.1+
1995 01 07	033	0.9−	0.2+	1998 10 18	704	0.6−	0.4−	1999 12 14	704	0.1−	0.9−
1997 07 27	358	1.0−	1.4+	1998 10 18	704	0.5−	0.3−	2000 01 05	704	0.6−	0.3+
1997 07 27	358	(2.6+	1.5−)	1998 11 14	704	0.7−	0.0	2000 01 05	704	0.1−	0.0
1997 07 27	358	(2.7−	0.1+)	1998 11 14	704	0.7+	0.6−	2000 01 05	704	0.3+	0.2+
1997 07 29	358	1.2−	0.2+	1998 11 14	704	0.2+	0.0	2000 01 05	704	0.5−	0.4−
1997 07 29	358	0.4+	0.0	1998 11 14	704	1.4+	1.4+	2000 01 06	699	0.2−	0.7+
1997 08 01	358	(4.2−	0.5−)	1998 11 16	704	0.5+	0.4−	2000 01 06	699	0.0	1.0+
1997 08 01	358	(2.6−	2.0−)	1998 11 16	704	0.0	0.3−	2000 01 06	699	0.1−	0.7+
1997 08 06	358	0.6+	0.5+	1998 11 16	704	1.1−	0.5−	2000 01 08	704	0.1+	0.2−
1997 08 06	358	0.6−	1.3−	1998 11 16	704	0.7+	0.7+	2000 01 08	704	0.2+	0.5−
1997 08 06	358	0.9+	1.1+	1998 11 16	704	0.2−	1.3+	2000 01 08	704	0.1+	0.3−
1997 09 01	566	0.4−	0.4−	1999 12 05	703	0.0	0.9+	2000 01 08	704	0.9+	0.7−
1997 09 01	566	0.8−	0.5−	1999 12 05	703	0.0	0.0	2000 01 08	704	0.5−	1.0−

(13223)* 1997 PQ₄ = 1996 EK₁₆

Discovered 1997 Aug. 13 by L. Tesi at San Marcello Pistoiese.

Id. G. V. Williams (*MPC* 30678)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28791536	ω	200.24253	+0.99318860	+0.10029741		
<i>a</i>	2.2713959	Ω	153.78508	−0.07956483	+0.95561403		
<i>e</i>	0.1859617	<i>i</i>	7.71517	−0.08512254	+0.27702392		
<i>P</i>	3.42	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 04 07	675	1.6−	0.7−	1997 09 17	104	0.3−	0.3−	1997 11 13	104	0.2−	0.6+
1989 04 07	675	0.9+	1.6−	1997 09 17	104	0.4−	0.3−	1997 11 13	104	0.0	0.5+
1996 03 12	691	0.1−	0.3+	1997 09 21	104	0.0	0.2−	1999 02 14	691	0.3−	0.2−
1996 03 12	691	0.1+	0.2+	1997 09 21	104	0.1+	0.1−	1999 02 14	691	0.3−	0.3−
1996 03 12	691	0.2+	0.2+	1997 09 21	104	0.2+	0.0	1999 02 14	691	0.2−	0.4−
1996 04 21	691	0.1+	0.1+	1997 10 03	108	0.6+	1.1+	1999 02 15	104	1.6+	0.4+
1996 04 21	691	0.3+	0.4+	1997 10 03	104	0.1−	0.6+	1999 02 15	104	1.3+	0.3+

1996 04 21	691	0.1+	0.2+	1997 10 03	104	0.0	0.3+	1999 02 15	104	1.2+	0.9+
1997 08 13	104	0.5−	0.3+	1997 10 03	104	0.1+	0.2+	1999 02 15	104	0.9+	0.2−
1997 08 13	104	0.2−	0.2−	1997 10 03	108	(3.1+	0.4+)	1999 02 16	704	1.7−	0.6+
1997 08 13	104	0.0	0.2+	1997 10 17	104	0.1+	0.4+	1999 02 16	704	1.7−	0.5−
1997 08 13	104	0.1+	0.1−	1997 10 17	104	0.1+	0.6+	1999 02 16	704	0.9−	0.6−
1997 08 13	104	0.1+	0.3+	1997 10 17	104	0.3+	0.3+	1999 02 16	704	0.2+	1.9+
1997 08 13	104	0.3+	0.3−	1997 10 17	104	0.8+	0.3+	1999 02 19	691	0.9−	0.3−
1997 08 15	104	0.6−	0.2+	1997 10 25	104	0.2−	0.8−	1999 03 16	691	0.4+	0.2−
1997 08 15	104	0.7+	0.2+	1997 10 25	104	0.2+	0.8−	1999 03 16	691	0.2−	0.3−
1997 08 15	104	0.6−	1.3−	1997 10 25	104	0.4+	0.8−	1999 03 16	691	0.2+	0.3−
1997 08 22	104	0.5−	0.4−	1997 10 25	104	0.4+	0.6−	1999 03 20	691	0.2+	0.4−
1997 08 22	104	0.9+	0.9−	1997 11 02	104	0.3−	1.0−	1999 03 20	691	0.2−	0.4−
1997 08 31	104	0.6−	1.3+	1997 11 02	104	0.4−	0.8−	1999 03 20	691	0.2+	0.4+
1997 08 31	104	0.1+	0.4+	1997 11 02	104	0.0	0.8−				
1997 09 17	104	0.2−	0.2−	1997 11 13	104	0.3−	1.0+				

(13224)* 1997 PL₅ = 1975 TT = 1981 WO₅ = 1998 UD₂₃

Discovered 1997 Aug. 10 by T. Okuni at Nanyo.

Id. A. Gnädig (*MPC* 33262)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17543181	ω	95.96473	+0.50327869	−0.86146771		
<i>a</i>	3.1603158	Ω	323.56247	+0.74086735	+0.47049384		
<i>e</i>	0.0121349	<i>i</i>	6.54546	+0.44477650	+0.19107309		
<i>P</i>	5.62	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 10 03	095	0.7−	0.5+	1998 10 03	699	(1.1+	4.0−)	1999 10 07	703	0.7+	0.3+
1981 11 24	095	0.2+	0.9+	1998 10 03	699	0.6+	1.8−	1999 10 07	703	1.5+	0.9−
1997 08 10	358	0.1+	1.4−	1998 10 03	699	0.5−	0.9−	1999 10 07	703	0.3−	1.1+
1997 08 10	358	1.7+	1.8−	1998 10 25	098	(1.1−	2.3+)	1999 11 16	704	1.9+	0.9+
1997 08 10	358	1.2−	0.1−	1998 10 25	098	1.8−	2.0+	1999 11 16	704	0.3−	0.3−
1997 08 13	358	0.9+	0.3−	1998 10 31	112	0.2+	0.4−	1999 11 16	704	0.6−	0.8+
1997 08 13	358	1.2+	0.6+	1998 10 31	112	1.0+	0.9+	1999 11 16	704	0.1−	0.7+
1997 08 24	358	0.1−	1.1−	1998 11 14	704	0.2+	0.8−	2000 01 04	704	0.2−	0.1+
1997 08 24	358	(2.9+	1.1−)	1998 11 14	704	0.1−	0.7−	2000 01 04	704	0.0	0.6−
1997 08 30	358	0.8+	1.9−	1998 11 14	704	0.8+	1.2+	2000 01 04	704	0.4−	0.7−
1997 08 30	358	0.5+	0.2+	1998 11 14	704	1.5−	0.2−	2000 01 04	704	0.2−	0.1+
1997 09 27	327	0.1+	0.1+	1998 11 14	704	0.5+	0.3+	2000 01 04	704	0.9−	0.7−
1997 09 27	327	0.3−	0.3+	1998 11 15	112	0.1+	0.5−	2000 01 05	699	0.7−	0.4+
1997 09 27	327	0.3−	0.7+	1998 11 15	112	1.2−	0.4−	2000 01 05	699	0.4+	0.3−
1997 09 29	327	0.2+	0.4+	1998 11 16	704	0.2−	0.2−	2000 01 05	699	0.1−	0.2+
1997 09 29	327	0.3−	0.0	1998 11 16	704	0.0	0.0	2000 01 06	704	0.3−	0.1−
1997 09 29	327	0.4−	1.1+	1998 11 16	704	0.4+	0.5−	2000 01 06	704	0.0	0.3−
1997 09 29	327	0.0	0.2+	1998 11 16	704	0.2+	0.1+	2000 01 06	704	0.0	0.0
1997 09 29	327	0.4+	0.6+	1998 11 16	704	0.2+	0.4−	2000 01 06	704	0.1+	0.7−
1997 09 29	327	0.4+	0.1+	1999 01 08	699	0.2−	0.4+	2000 01 06	704	0.0	0.3−
1997 10 06	327	0.4−	0.3+	1999 01 08	699	0.9+	0.3−	2000 01 11	120	0.4+	0.3−
1997 10 06	327	0.0	0.1+	1999 01 08	699	0.3+	0.7+	2000 01 12	120	0.1−	0.5−
1997 10 06	327	0.5−	0.4+	1999 10 07	703	1.0−	0.5−				

(13225)* 1997 QU₁ = 1995 EN

1995 03 07	691	0.0	0.2+	1998 10 18	699	0.7−	1.5−	1999 12 05	703	0.5+	1.4+
1995 03 07	691	0.6−	0.5+	1998 10 18	699	0.2−	0.4+	1999 12 05	703	0.4+	0.5+
1995 03 07	691	0.4+	0.3+	1998 11 11	704	0.8+	0.4+	1999 12 05	704	0.8+	0.3−
1996 06 21	566	0.8+	0.3+	1998 11 11	704	0.9+	0.9+	1999 12 05	703	1.1−	0.0
1996 06 21	566	0.2−	0.4+	1998 11 11	704	0.0	0.9−	1999 12 05	704	0.7+	0.2+
1996 06 21	566	1.1−	0.1+	1998 11 17	552	0.3+	0.4+	1999 12 05	704	0.5−	0.5−
1997 08 29	552	0.1−	0.2+	1998 11 17	552	0.3−	0.2+	1999 12 05	704	0.8+	1.1−
1997 08 29	552	0.6−	1.1+	1998 11 19	552	0.7−	1.0+	2000 01 06	552	0.1+	0.3+
1997 08 29	552	0.3−	0.2−	1998 11 19	552	0.4−	0.7−	2000 01 06	552	0.3−	0.0
1997 08 30	552	0.0	0.4+	1998 12 11	699	0.2+	0.5−	2000 01 07	704	0.4+	0.3−
1997 08 30	552	0.5−	0.6−	1998 12 11	699	0.4+	0.1+	2000 01 07	704	1.5+	1.3+
1997 08 31	552	0.6+	0.6+	1998 12 11	699	0.7−	0.1−	2000 01 07	704	0.3+	0.3+
1997 08 31	552	0.7+	0.4+	1999 11 17	704	0.6−	0.6+	2000 01 07	704	(0.4+	2.6+)

(13226)* 1997 SH = 1179 T-3

Discovered 1997 Sept. 20 by L. Šarounová at Ondřejov.

Id. G. V. Williams (*MPC* 30772)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19279320	ω	356.91734	+0.02829089	+0.98716245		
<i>a</i>	2.9676197	Ω	274.66537	−0.91370808	−0.03823692		
<i>e</i>	0.0732160	<i>i</i>	9.07438	−0.40538521	+0.15507494		
<i>P</i>	5.11	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 10 16	675	1.0−	1.6−	1997 10 30	557	0.4+	0.0	1998 11 24	704	0.5−	0.0
1977 10 16	675	1.0−	1.7−	1997 10 30	557	0.0	0.0	1998 11 24	704	(1.3+ 2.5−)	
1977 10 17	675	1.9+	1.0+	1997 10 31	557	0.3+	0.3+	1998 11 24	704	0.7−	0.1−
1977 10 17	675	1.5+	0.0	1997 10 31	557	0.2+	0.3+	1999 10 18	557	1.0+	0.0
1977 10 22	675	0.0	1.3−	1997 10 31	557	0.4+	0.3+	1999 10 18	557	0.0	0.4−
1977 10 22	675	0.2+	0.9−	1997 11 03	557	0.3−	0.0	1999 10 18	557	0.1+	0.9+
1997 08 30	566	0.3+	0.0	1997 11 03	557	0.8−	0.8+	1999 10 18	557	0.3−	0.4−
1997 08 30	566	0.9−	0.1−	1997 11 20	557	0.3−	0.4+	1999 10 19	557	0.4+	1.2+
1997 08 30	566	1.0−	0.3+	1997 11 20	557	0.1−	0.6+	1999 10 19	557	0.3+	0.1−
1997 09 20	557	0.2+	0.2−	1998 08 28	557	0.3−	0.2+	2000 01 05	704	0.1−	0.8+
1997 09 20	557	0.1+	0.1−	1998 08 28	557	0.1−	0.1+	2000 01 05	704	1.0−	0.1−
1997 09 20	557	0.1−	0.4−	1998 09 30	557	0.3+	0.2+	2000 01 05	704	0.1−	0.2−
1997 09 21	557	0.2−	0.3−	1998 09 30	557	0.9−	0.1+	2000 01 05	699	1.7+	1.2+
1997 09 21	557	0.1−	0.3−	1998 10 20	557	0.5−	0.6+	2000 01 05	704	0.6−	0.1−
1997 09 24	557	0.0	0.0	1998 10 20	557	0.1+	0.5+	2000 01 05	699	0.7+	0.7−
1997 09 24	557	0.0	0.0	1998 10 21	557	0.2−	0.3+	2000 01 05	699	0.0	0.4+
1997 09 28	557	0.3+	0.1−	1998 10 21	557	0.1−	0.2+	2000 01 08	704	0.2+	0.8−
1997 09 28	557	0.1+	0.2−	1998 11 21	704	(4.3+ 0.6−)		2000 01 08	704	0.2−	0.7−
1997 10 06	557	0.2+	0.2+	1998 11 21	704	1.1+	0.1−	2000 01 08	704	1.6−	0.6−
1997 10 06	557	0.2+	0.3+	1998 11 21	704	(2.2+ 0.4+)		2000 01 08	704	0.5−	0.7−
1997 10 17	557	0.7+	0.5+	1998 11 21	704	1.0+	1.1+	2000 01 08	704	0.3−	0.8−
1997 10 17	557	0.4−	0.8−	1998 11 24	704	0.3+	0.7+				

(13227)* 1997 SR₈ = 1989 EE₁₀ = 1991 PD₈

Discovered 1997 Sept. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 30880)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17538441	ω	182.03245	−0.99988788	−0.01426113		
<i>a</i>	3.1608852	Ω	357.13844	+0.01470274	−0.87718810		
<i>e</i>	0.0969831	<i>i</i>	5.24783	+0.00283886	−0.47993506		
<i>P</i>	5.62	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 03 05	033	0.2+	0.8+	1997 09 29	691	0.0	0.0	1998 11 18	704	0.5−	0.6−
1989 03 05	033	0.1−	1.0+	1997 09 29	691	0.2−	0.1+	1998 11 20	699	0.3−	0.5−
1991 08 06	809	1.7+	0.4+	1997 09 29	691	0.1−	0.4+	1998 11 20	699	0.0	1.5+
1991 08 06	809	1.2+	0.4−	1997 10 06	691	0.5−	0.2+	1998 11 20	699	1.0+	0.8+
1991 08 06	809	0.7+	0.9−	1997 10 06	691	0.6−	0.3+	1999 11 16	704	0.5−	1.4+
1991 08 14	809	0.2−	0.7+	1997 10 06	691	0.6−	0.3+	1999 11 16	704	0.7−	0.6+

1991 08 14	809	0.9−	1.2+	1997 10 21	691	0.2−	0.1+	1999 11 16	704	0.2−	0.1+
1991 08 14	809	1.5−	1.5+	1997 10 21	691	0.1−	0.0	2000 01 04	704	0.5+	0.4+
1997 08 10	327	0.3−	0.1−	1997 10 21	691	(2.1− 0.4+)		2000 01 04	704	0.1+	0.6+
1997 08 10	327	0.1−	0.5+	1998 10 29	704	0.1−	1.3−	2000 01 04	704	0.0	0.7+
1997 08 10	327	0.5−	0.3+	1998 10 29	704	0.4+	0.1+	2000 01 04	704	0.1+	0.5+
1997 09 04	327	0.0	0.4+	1998 10 29	704	0.5+	0.3−	2000 01 04	704	0.0	0.0
1997 09 04	327	0.1−	1.0+	1998 10 29	704	0.6+	1.6−	2000 01 06	704	1.2+	0.3+
1997 09 04	327	0.1+	0.6+	1998 10 29	704	1.4+	0.3−	2000 01 06	704	0.9+	0.0
1997 09 27	691	0.7−	0.3+	1998 11 18	704	0.7+	0.7−	2000 01 06	704	0.9+	0.2−
1997 09 27	691	0.7−	0.1+	1998 11 18	704	(1.1− 2.2−)		2000 01 06	704	0.3+	1.2+
1997 09 27	691	1.6−	0.5+	1998 11 18	704	1.4−	1.4−	2000 01 06	704	0.0	0.9+

(13228)* 1997 SJ₂₅ = 1986 UA₃ = 1991 RF₃₇ = 1995 FH₁₈

Discovered 1997 Sept. 29 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Id. T. Urata (*MPC* 30881; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17578805	ω	213.76750	+0.39996821	+0.91508147		
<i>a</i>	3.1560447	Ω	79.85552	−0.82891052	+0.38513191		
<i>e</i>	0.1680033	<i>i</i>	2.99845	−0.39106620	+0.11957976		
<i>P</i>	5.61	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 10 27	010	(2.3+ 10.0−)	1997 09 30	905	1.3+	0.1+	1998 12 12	369	1.2+	0.1−
1986 10 27	010	(5.3+ 8.8−)	1997 10 05	905	0.7−	0.4−	1998 12 14	704	0.2−	0.3+
1986 10 27	010	(4.8+ 8.5−)	1997 10 05	905	0.8−	0.1+	1998 12 14	704	1.1−	0.7+
1991 09 15	675	1.8+ 1.3−	1997 10 25	385	1.0+	0.9+	1998 12 14	704	1.5+	0.5−
1991 09 15	675	0.7− 0.1−	1997 10 25	385	1.3−	0.4+	1998 12 14	704	1.7+	0.7+
1994 01 04	691	0.5+ 1.3+	1998 11 19	704	0.0	2.0−	1998 12 14	704	(2.9− 0.2−)	
1994 01 04	691	0.0 0.6+	1998 11 19	704	0.1−	0.2+	1999 11 16	704	0.2−	1.7+
1994 01 04	691	0.8− 0.1+	1998 11 19	704	1.8−	0.2+	1999 11 16	704	0.5−	0.9+
1995 03 29	691	0.4− 0.3−	1998 11 19	704	(2.0− 2.4−)		1999 11 16	704	0.5+	0.3+
1995 03 29	691	0.1− 0.0	1998 11 19	704	0.8−	1.5−	2000 01 04	704	0.5+	0.1+
1995 03 29	691	0.3− 0.1−	1998 11 19	704	1.8+	1.7−	2000 01 04	704	0.3+	0.0
1995 04 04	691	0.2− 0.2−	1998 11 19	704	0.3−	0.1−	2000 01 04	704	0.5+	0.4−
1995 04 04	691	0.2− 0.2−	1998 11 19	704	(2.7− 0.7+)		2000 01 04	704	0.1+	0.0
1995 04 04	691	0.0 0.3−	1998 12 09	886	1.3+	1.0−	2000 01 04	704	0.1−	0.4+
1997 09 05	905	0.8− 0.4+	1998 12 09	886	2.1−	0.2+	2000 01 06	704	0.1−	0.2−
1997 09 05	905	1.4− 1.0+	1998 12 11	369	0.6−	0.6+	2000 01 06	704	0.4+	0.4−
1997 09 29	905	1.4+ 0.6−	1998 12 11	369	0.1−	0.1−	2000 01 06	704	0.3+	0.7−
1997 09 29	905	1.0− 0.2+	1998 12 11	369	0.6−	0.3+	2000 01 06	704	0.0	0.2+
1997 09 30	905	0.4+ 0.0	1998 12 12	369	1.0+	0.3−	2000 01 06	704	0.2−	0.2−

(13229)* 1997 VB₁ = 1978 EG₉

Discovered 1997 Nov. 2 at Kleť.

Id. S. Nakano (*MPC* 31116)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08311548	ω	165.25745	−0.85077523	−0.52516363		
<i>a</i>	5.2001368	Ω	343.02035	+0.47511088	−0.75266616		
<i>e</i>	0.0752435	<i>i</i>	3.85085	+0.22461335	−0.39711058		
<i>P</i>	11.86	<i>H</i>	11.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 03 15	675	0.9−	0.5−	1998 11 13	046	1.2+	1.0+	1999 10 22	704	1.2+	0.3+
1978 03 16	675	0.7+	0.1+	1998 11 13	046	0.5+	0.7+	1999 10 22	704	1.3+	0.3+
1997 10 29	704	1.3+	0.4+	1998 11 13	046	0.6+	1.2+	1999 11 05	046	0.9−	0.3+
1997 10 29	704	1.5−	1.3−	1998 11 13	046	1.5+	0.4+	1999 11 05	046	0.9−	0.6+
1997 10 29	704	0.9+	1.2+	1998 11 13	046	2.1+	1.0+	1999 11 05	046	0.1+	0.5+
1997 10 29	704	2.1−	0.5−	1998 11 24	046	0.6+	0.1+	1999 11 05	046	0.0	0.0
1997 11 02	046	0.2−	0.1−	1998 11 25	046	0.3−	0.1−	1999 11 05	046	0.3−	0.6+
1997 11 02	046	0.0	0.2−	1998 11 25	046	0.6−	0.4+	1999 12 17	046	0.6+	0.6+
1997 11 02	046	0.1−	0.2−	1998 11 25	046	0.7−	0.6+	1999 12 17	046	0.0	0.2+
1997 11 04	046	0.3−	0.5−	1998 12 08	046	0.2−	0.5−	1999 12 17	046	0.2−	0.5+

1997 11 04	046	0.1−	0.0	1998 12 08	046	0.2−	0.4−	1999 12 17	046	0.2−	0.0
1997 11 04	046	0.2+	0.0	1998 12 08	046	0.6−	0.6−	2000 01 03	704	0.3−	0.8−
1997 11 04	046	0.4−	0.0	1998 12 09	046	0.4−	0.9−	2000 01 03	704	0.2+	0.1−
1997 11 04	046	0.4+	0.3+	1998 12 09	046	0.4−	0.5−	2000 01 03	704	0.4+	0.3−
1997 11 04	046	0.4−	0.1+	1998 12 09	046	0.6−	0.5−	2000 01 03	704	0.1+	0.9−
1997 11 08	910	0.7+	0.4+	1998 12 11	046	0.1−	0.6−	2000 01 03	704	0.0	0.9−
1997 11 08	910	0.7+	0.3+	1998 12 11	046	0.2−	0.7−	2000 01 04	704	0.1+	0.2−
1997 11 08	910	0.7+	0.3+	1998 12 11	046	0.1+	0.8−	2000 01 04	704	0.0	0.6−
1997 11 10	046	0.3−	0.7+	1998 12 17	704	0.1+	1.1−	2000 01 04	704	0.3−	0.7−
1997 11 10	046	0.4+	0.3+	1998 12 17	704	0.1−	0.9−	2000 01 04	704	0.3+	0.4−
1997 11 10	046	0.8+	0.7+	1998 12 17	704	(0.5−	3.1−)	2000 01 04	704	0.1+	0.5−
1997 12 05	046	0.1−	0.1−	1998 12 17	704	0.1−	1.3−	2000 01 06	046	0.0	0.5+
1997 12 05	046	0.2−	0.1+	1999 01 22	046	0.6−	0.2+	2000 01 06	046	0.0	0.4+
1997 12 05	046	0.1+	0.1+	1999 01 22	046	0.5−	0.7+	2000 01 06	046	0.2−	0.6+
1998 01 17	046	0.4−	0.3−	1999 01 22	046	0.2+	0.3+	2000 01 06	046	0.1−	0.5+
1998 01 17	046	0.2+	0.5−	1999 01 23	046	0.9−	0.3+	2000 01 06	046	0.3−	0.7+
1998 01 17	046	0.1−	0.0	1999 01 23	046	0.3−	0.4+	2000 01 06	046	0.2−	0.6+
1998 01 17	046	0.1−	0.4−	1999 01 23	046	0.1+	0.2+				
1998 01 17	046	0.4−	1.2−	1999 10 22	704	0.1−	0.1−				

(13230)* 1997 VG₁ = 1998 VD₃₈

Discovered 1997 Nov. 1 by T. Urata at the Nihondaira Observatory.

Id. A. Gnädig (*MPC* 33507)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	0.40468	(2000.0)		P	Q		
<i>n</i>	0.08655388	ω	37.56831	−0.02308670	−0.99787361		
<i>a</i>	5.0614897	Ω	53.83510	+0.89795381	−0.04749983		
<i>e</i>	0.0635840	<i>i</i>	4.32996	+0.43948373	+0.04463202		
<i>P</i>	11.39	<i>H</i>	11.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 04 17	675	1.1−	1.5+	1998 10 13	691	1.6−	0.1+	1999 11 03	704	0.9−	0.3+
1991 04 17	675	1.4+	0.7−	1998 10 13	691	1.2−	0.2+	1999 11 03	704	0.1−	0.6+
1997 09 29	809	0.0	1.7−	1998 10 18	699	(2.0+	0.5+)	1999 11 03	704	(2.4−	0.1−)
1997 09 29	809	0.9+	0.6−	1998 10 18	699	1.7+	0.1−	1999 11 14	704	0.9−	0.5−
1997 09 29	809	0.1+	0.6−	1998 10 18	699	(2.2−	0.4+)	1999 11 14	704	0.0	0.8−
1997 09 30	809	1.8−	0.6−	1998 10 28	691	0.6−	0.1+	1999 11 14	704	0.4−	1.5−
1997 09 30	809	1.8−	0.4−	1998 10 28	691	0.6−	0.2+	1999 11 14	704	(1.2−	2.1−)
1997 10 01	809	0.4+	0.1−	1998 10 28	691	0.5−	0.0	1999 11 16	704	0.4+	0.2−
1997 10 01	809	0.4+	0.2−	1998 11 10	704	0.2−	0.7+	1999 11 16	704	0.5+	1.6−
1997 10 05	809	0.5+	0.2+	1998 11 10	704	0.8−	0.1+	1999 11 16	704	0.8+	0.3+
1997 10 05	809	0.5+	0.1+	1998 11 10	704	1.0+	1.2+	1999 12 07	704	0.1−	0.0
1997 10 30	704	1.4+	0.4+	1998 11 10	704	1.3+	0.9−	1999 12 07	704	0.0	0.2−
1997 10 30	704	0.9−	1.2+	1998 11 11	704	0.7−	0.0	1999 12 07	704	0.2+	0.0
1997 10 30	704	0.7+	0.6−	1998 11 11	704	0.5−	1.3+	1999 12 07	704	0.4+	0.4+
1997 10 30	704	(2.3−	1.0+)	1998 11 11	704	0.4−	0.7+	2000 01 03	704	0.6−	1.0−
1997 10 30	704	0.8−	1.7−	1998 11 11	704	0.1+	0.8+	2000 01 03	704	(3.7−	1.5−)
1997 11 01	385	1.0+	0.3+	1998 11 11	699	0.4−	0.1+	2000 01 03	704	0.2+	0.7+
1997 11 01	385	0.7+	0.3+	1998 11 11	704	0.2+	1.2+	2000 01 03	704	0.1+	0.6+
1997 11 04	385	0.6+	0.2−	1998 11 11	699	0.7−	0.4+	2000 01 03	704	0.0	1.5+
1997 11 04	385	0.2+	0.1+	1998 11 11	699	0.6+	0.3+	2000 01 04	704	0.1+	0.2+
1998 09 22	910	0.8+	0.8+	1998 11 24	699	0.3+	0.2−	2000 01 04	704	0.0	0.3−
1998 09 22	910	0.5+	0.5+	1998 11 24	699	0.8+	0.4−	2000 01 04	704	0.0	0.4−
1998 09 22	910	0.2+	0.4+	1998 11 24	699	0.5−	0.0	2000 01 04	704	0.3+	2.0−
1998 10 13	691	1.5−	0.0	1999 11 03	704	0.9+	0.3−	2000 01 04	704	0.3−	0.9−

(13231)* 1998 BL₁₄ = 1985 UX₅ = 1991 UG₂ = 1993 BP₅ = 1996 NW₂

Discovered 1998 Jan. 17 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPC* 37143), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

				P				Q			
<i>M</i>	132.93451	(2000.0)									
<i>n</i>	0.16891409	ω	257.01590	+0.44156058	−0.89722991						
<i>a</i>	3.2410978	Ω	166.78023	+0.82596980	+0.40576995						
<i>e</i>	0.1461444	<i>i</i>	0.41411	+0.35042566	+0.17415289						
<i>P</i>	5.83	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>					

Residuals in seconds of arc

1985 10 18	095	0.2−	0.9+	1996 07 14	809	1.3−	0.5+	1998 01 27	910	0.6+	0.5−
1991 10 29	399	0.2+	0.9+	1996 07 14	809	0.4−	1.8+	1998 02 16	327	0.1+	0.2+
1991 10 29	399	1.4−	1.6+	1996 07 16	809	1.0−	0.8+	1998 02 16	327	0.1−	0.9+
1991 10 31	399	(2.4−	1.0−)	1996 07 16	809	0.4+	1.2+	1998 02 16	327	0.2+	0.2+
1991 10 31	399	1.7−	0.4+	1996 07 16	809	0.3+	1.6+	1999 01 14	699	0.3−	0.5+
1993 01 27	010	(1.0+	3.1−)	1997 08 31	910	0.4−	0.9−	1999 01 14	699	0.2−	1.4+
1993 01 27	010	1.6+	1.0−	1997 08 31	910	0.8−	0.9−	1999 01 14	699	0.7+	0.1+
1993 01 27	010	(0.7+	2.3−)	1997 08 31	910	0.5−	1.0−	1999 01 20	910	0.5+	0.3+
1993 01 28	010	0.2−	0.7−	1997 12 04	704	1.4+	0.4+	1999 01 20	910	0.3+	0.6+
1993 01 28	010	0.5+	0.2+	1997 12 04	704	0.1−	0.5−	1999 01 20	910	0.2+	0.2+
1993 01 28	010	0.1−	0.1−	1997 12 04	704	0.6+	1.5−	1999 02 18	566	0.4−	0.9+
1993 02 20	010	0.7−	0.7−	1997 12 04	704	0.1+	0.5+	1999 02 18	566	0.1−	0.8+
1993 02 20	010	0.3+	0.1−	1998 01 17	910	0.2+	0.3+	1999 02 18	566	0.2−	1.0+
1993 02 20	010	0.0	0.8−	1998 01 17	910	0.1+	0.4+	1999 02 23	699	0.8+	1.5+
1993 02 22	010	0.3−	0.7+	1998 01 17	910	0.1+	0.4+	1999 02 23	699	0.2+	1.7+
1993 02 23	010	(2.3−	3.9−)	1998 01 27	910	0.3+	0.2−	1999 02 23	699	0.0	1.1+
1996 07 14	809	0.4+	1.0+	1998 01 27	910	0.1+	0.3−				

(13232)* 1998 FM₅₄ = 1969 TE₃ = 1984 SU₂

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 31752)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

				P				Q			
<i>M</i>	66.95873	(2000.0)									
<i>n</i>	0.26267479	ω	329.74271	+0.77691903	+0.62944251						
<i>a</i>	2.4146663	Ω	351.20674	−0.55757682	+0.67746531						
<i>e</i>	0.1998757	<i>i</i>	5.29401	−0.29241221	+0.38058230						
<i>P</i>	3.75	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>					

Residuals in seconds of arc

1969 10 09	095	0.2+	0.8−	1999 07 16	704	0.1+	0.6−	1999 10 06	704	0.9−	0.1−
1984 09 25	688	0.4+	0.4−	1999 07 16	704	0.3−	0.6−	1999 10 07	704	0.0	0.0
1984 09 25	688	(2.9+	1.6−)	1999 08 12	699	0.0	0.3+	1999 10 07	704	0.2−	0.0
1984 09 28	688	1.0−	0.7−	1999 08 12	699	0.3−	0.6+	1999 10 07	704	0.2−	0.2+
1984 09 28	688	2.5+	1.7−	1999 08 12	699	0.0	0.2+	1999 10 07	704	0.6+	0.7−
1998 03 20	704	0.0	0.3−	1999 08 22	703	0.1+	0.8+	1999 10 07	704	0.7−	0.1+
1998 03 20	704	0.3+	0.7−	1999 08 22	703	0.1+	0.4+	1999 10 09	704	0.3−	0.0
1998 03 20	704	0.2−	0.7+	1999 08 22	703	0.3+	0.1+	1999 10 09	704	0.2−	0.3+
1998 03 20	704	1.2+	0.9+	1999 08 22	699	0.3+	0.2+	1999 10 09	704	0.4−	0.6+
1998 03 22	704	0.8+	0.0	1999 08 22	703	0.8+	0.7−	1999 10 09	704	0.3−	0.1+
1998 03 22	704	0.8+	0.0	1999 08 22	699	0.1+	0.0	1999 10 09	704	0.6−	0.3+
1998 03 22	704	1.2+	0.3−	1999 08 22	699	0.4+	0.4+	1999 10 15	704	0.3−	0.4−
1998 03 22	704	0.4+	1.7+	1999 08 22	106	0.0	0.4+	1999 10 15	699	0.4−	0.9+
1998 03 24	704	0.6−	0.5−	1999 08 23	106	0.4−	0.5+	1999 10 15	704	0.4−	0.2−
1998 03 24	704	0.4+	0.3−	1999 08 23	106	0.3−	0.5+	1999 10 15	704	0.1−	0.3−
1998 03 24	704	0.9−	0.5−	1999 09 04	699	0.3−	0.4+	1999 10 15	699	0.4+	1.2+
1998 03 24	704	0.0	0.7−	1999 09 04	699	0.0	0.4+	1999 10 15	704	0.6−	0.2−
1998 03 24	704	0.7−	0.5+	1999 09 04	699	1.5−	1.3+	1999 10 15	699	0.1+	0.7+
1998 03 28	704	0.0	0.2+	1999 09 06	691	0.2−	0.4−	1999 10 15	704	0.6−	0.4−
1998 03 28	704	0.5−	0.0	1999 09 06	691	0.4−	0.4−	1999 11 14	704	0.7−	0.2−
1998 03 28	704	0.7−	0.2+	1999 09 06	691	0.2−	0.4−	1999 11 14	704	0.6+	0.4−
1998 03 28	704	0.9+	0.3+	1999 09 06	120	0.5+	0.2+	1999 11 14	704	0.4+	0.0
1998 03 28	704	1.2−	0.2+	1999 09 06	120	0.2+	0.2+	1999 11 14	704	0.8+	0.6+
1998 03 29	704	0.6+	1.7−	1999 09 07	120	0.6+	0.2+	1999 11 16	704	0.4−	0.3−
1998 03 29	704	0.9−	0.2+	1999 09 07	704	0.4+	0.1+	1999 11 16	704	0.2−	0.3−
1998 03 29	704	1.1+	0.5−	1999 09 07	704	0.5+	0.2−	1999 11 16	704	0.6−	0.1+
1998 03 29	704	1.0+	0.6−	1999 09 07	704	0.1+	0.5−	1999 11 16	704	0.2−	0.4−

2000 JAN. 24

M.P.C. 37549

1998 03 29	704	1.1+	1.2-	1999 09 07	704	0.0	0.4-	1999 11 16	704	0.0	0.2+
1998 04 01	704	0.2+	0.1+	1999 09 07	704	0.4-	0.3-	1999 11 28	699	1.1-	0.7+
1998 04 01	704	0.4-	0.6+	1999 09 14	704	0.6+	0.1-	1999 11 28	699	1.1-	1.2+
1998 04 01	704	0.6+	0.2-	1999 09 14	704	0.5+	0.1+	1999 11 28	699	0.3-	0.3+
1998 04 01	704	0.3+	0.0	1999 09 14	704	0.6+	0.2-	1999 12 03	704	(0.5-	2.1-)
1998 04 01	704	1.0-	1.0+	1999 09 14	704	0.5+	0.0	1999 12 03	704	0.0	0.3+
1998 04 18	704	0.1+	1.2+	1999 09 14	704	0.4+	0.2-	1999 12 03	704	0.1+	1.4-
1998 04 18	704	0.7+	1.1+	1999 09 14	703	0.2+	0.3+	1999 12 03	704	0.3+	1.0-
1998 04 18	704	0.7-	1.6+	1999 09 14	703	0.2+	0.2+	1999 12 07	704	0.0	0.8-
1998 04 18	704	1.4-	0.6+	1999 09 14	703	0.1-	0.1-	1999 12 07	704	0.0	0.3-
1998 04 18	704	1.0-	0.8-	1999 09 14	703	0.2-	0.3-	1999 12 07	704	0.0	0.2-
1998 04 19	704	0.1+	0.6+	1999 10 01	699	0.3+	0.3+	1999 12 07	704	0.4+	0.4-
1998 04 19	704	0.5+	0.6+	1999 10 01	699	0.2-	0.3+	1999 12 07	704	0.3+	0.5-
1998 04 19	704	0.3+	0.7+	1999 10 01	699	0.0	0.5+	1999 12 30	699	0.2-	1.2+
1998 04 19	704	0.4+	0.4+	1999 10 02	704	0.4-	0.3+	1999 12 30	699	0.3-	1.7+
1998 04 19	704	0.8+	0.9+	1999 10 02	704	0.3+	0.6-	1999 12 30	699	(0.4-	2.2+)
1998 04 30	566	0.6-	0.6-	1999 10 02	704	0.3-	0.0	2000 01 07	704	0.8+	0.8+
1998 04 30	566	0.3-	0.6-	1999 10 02	704	0.2-	0.4+	2000 01 07	704	0.2+	0.4-
1998 04 30	566	0.5-	0.5-	1999 10 02	704	0.4-	0.2+	2000 01 07	704	0.7-	0.1+
1999 07 16	704	0.2+	0.4-	1999 10 06	704	0.4+	0.2+	2000 01 07	704	0.4-	0.7+
1999 07 16	704	0.3-	0.2-	1999 10 06	704	0.4+	0.0	2000 01 07	704	0.2-	0.7+
1999 07 16	704	0.9-	1.4+	1999 10 06	704	0.2-	0.2-				
1999 07 16	704	(0.3-	2.9-)	1999 10 06	704	0.3-	0.1+				

(13233)* 1998 FC₆₆ = 1973 QE = 1988 TV₃ = 1988 TC₃

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 31756)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	88.68879		(2000.0)	P	Q
<i>n</i>	0.27220444	ω	121.56120	+0.74241360	+0.66795505
<i>a</i>	2.3579752	Ω	196.71680	-0.65922568	+0.71466228
<i>e</i>	0.2225754	<i>i</i>	10.32547	-0.11934637	+0.20759065
<i>P</i>	3.62	<i>H</i>	13.5	<i>G</i>	0.15

Residuals in seconds of arc

1973 08 28	805	1.0+	1.0+	1998 04 01	704	0.2+	0.3+	1999 10 15	704	1.5-	0.3+
1973 09 01	805	0.4-	1.8+	1998 04 04	699	0.7+	0.2+	1999 10 15	704	0.2+	0.0
1988 10 04	046	0.0	1.0+	1998 04 04	699	0.1-	0.0	1999 10 15	704	0.4+	0.2+
1988 10 04	046	0.8-	0.4-	1998 04 04	699	0.6+	0.4-	1999 10 15	704	0.2+	0.1+
1988 10 15	071	(5.6+	1.1-)	1998 04 19	704	0.1+	0.1+	1999 10 20	704	0.5+	0.5+
1988 10 16	071	0.3+	1.5-	1998 04 19	704	0.1+	0.1-	1999 10 20	704	0.5-	0.1+
1998 03 03	704	0.6+	0.6+	1998 04 19	704	0.5+	0.2+	1999 10 20	704	0.5-	0.1+
1998 03 03	704	0.8-	0.3-	1998 04 19	704	0.4-	0.4-	1999 10 20	704	0.6-	0.4+
1998 03 03	704	0.8-	0.2+	1998 04 20	704	0.2-	0.0	1999 10 30	703	0.1-	0.2-
1998 03 03	704	0.6-	0.7+	1998 04 20	704	0.1-	0.8-	1999 10 30	703	0.2-	0.1-
1998 03 03	704	1.3-	1.2+	1998 04 20	704	0.8+	0.5-	1999 10 30	703	0.2-	0.3-
1998 03 20	704	0.0	0.1-	1998 04 20	704	0.6-	1.0-	1999 10 30	703	0.5-	0.1-
1998 03 20	704	0.6-	0.4-	1998 04 20	704	0.1+	0.8-	1999 11 05	704	0.0	0.3-
1998 03 20	704	0.4-	0.3-	1998 04 22	704	0.4+	0.4+	1999 11 05	704	0.2+	0.3-
1998 03 20	704	0.1-	0.5+	1998 04 22	704	0.3+	0.2+	1999 11 05	704	0.3+	0.3-
1998 03 20	704	0.9-	0.5+	1998 04 22	704	0.4-	0.3+	1999 11 05	704	0.6+	0.0
1998 03 22	704	0.3+	0.2+	1998 04 22	704	0.7-	0.0	1999 11 05	704	0.2+	0.1-
1998 03 22	704	0.1+	1.1-	1998 04 22	704	0.0	0.2-	1999 11 14	699	0.3+	0.2-
1998 03 22	704	1.6-	0.3+	1998 04 28	699	1.2+	0.1-	1999 11 14	699	0.1+	0.1-
1998 03 22	704	0.4-	0.3+	1998 04 28	699	0.3+	0.0	1999 11 14	699	0.0	0.1-
1998 03 22	704	0.5-	0.9+	1998 04 28	699	1.2+	1.0-	1999 12 03	704	0.9+	0.5+
1998 03 22	699	0.3-	0.6+	1998 04 30	699	1.1+	0.2+	1999 12 03	704	0.1-	0.2+
1998 03 22	699	0.5-	0.5+	1998 04 30	699	0.3+	0.2-	1999 12 03	704	0.4+	1.5-
1998 03 22	699	0.2-	1.3+	1998 04 30	699	1.1+	0.2-	1999 12 03	704	1.5-	0.8-
1998 03 24	699	0.2+	0.0	1998 04 30	566	0.0	0.6-	1999 12 08	699	0.5+	1.0+
1998 03 24	699	0.5-	0.4-	1998 04 30	566	0.1-	0.7-	1999 12 08	699	0.1-	0.6+
1998 03 24	699	0.5+	0.2-	1998 04 30	566	0.4-	0.5-	1999 12 08	699	0.4-	1.1+
1998 03 25	704	0.4-	0.1+	1998 05 16	704	1.2+	0.7-	1999 12 13	106	0.0	0.2-
1998 03 25	704	0.0	0.6+	1998 05 16	704	0.2-	1.0-	1999 12 13	106	0.2-	0.2-
1998 03 25	704	0.9-	0.4+	1998 05 16	704	1.9+	0.6+	1999 12 13	106	0.4+	0.0

1998 03 25	704	0.2+	0.7+	1998 05 16	704	1.2+	0.1+	2000 01 05	704	0.3-	0.0
1998 03 25	704	0.6+	0.8+	1998 05 16	704	0.1+	0.8-	2000 01 05	704	0.1+	0.4+
1998 03 25	566	0.4-	0.0	1999 09 18	703	0.1+	0.4+	2000 01 05	704	0.1-	0.5+
1998 03 25	566	0.6-	0.1-	1999 09 18	703	0.2-	0.4+	2000 01 05	704	0.3+	0.1+
1998 03 25	566	0.5-	0.3+	1999 09 18	703	0.2+	0.5+	2000 01 05	704	0.2+	0.5+
1998 03 28	704	0.4-	0.3-	1999 09 18	703	0.0	0.3+	2000 01 06	699	0.1+	0.1+
1998 03 28	704	0.2-	0.0	1999 10 02	703	0.1+	0.3+	2000 01 06	699	0.2-	0.5-
1998 03 28	704	0.8-	0.4+	1999 10 02	703	0.0	1.2-	2000 01 06	699	0.4-	0.2+
1998 03 28	704	0.0	0.3-	1999 10 02	703	0.4+	0.4-	2000 01 08	704	0.1+	0.5+
1998 03 28	704	0.3-	0.6-	1999 10 02	703	1.2+	0.7+	2000 01 08	704	0.2+	0.1+
1998 03 29	704	0.2-	0.6+	1999 10 07	704	0.1-	0.3+	2000 01 08	704	0.3-	0.2-
1998 03 29	704	0.4+	0.2-	1999 10 07	704	0.2+	0.3-	2000 01 08	704	0.2+	0.5-
1998 03 29	704	0.1+	0.2+	1999 10 07	704	0.2+	0.0	2000 01 08	704	0.5-	0.1+
1998 03 29	704	0.3+	0.1-	1999 10 07	704	0.1-	0.4-	2000 01 08	704	0.0	0.1-
1998 03 29	704	0.0	0.2+	1999 10 10	704	0.0	0.1+	2000 01 08	704	0.7-	0.0
1998 04 01	704	0.2-	0.1+	1999 10 10	704	0.5+	0.0	2000 01 08	704	0.6+	0.2+
1998 04 01	704	0.3+	0.0	1999 10 10	704	0.1+	0.0	2000 01 08	704	1.0-	0.7+
1998 04 01	704	0.3+	0.2+	1999 10 10	704	0.2+	0.1+	2000 01 08	704	0.8+	0.1+
1998 04 01	704	0.2+	0.2+	1999 10 10	704	0.0	0.2+				

(13234)* 1998 FC₇₄ = 1998 HW₁₄₇

Discovered 1998 Mar. 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (d, *MPC* 32093)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	23.18557		(2000.0)	P	Q
<i>n</i>	0.30651291	ω	278.81111	+0.92110309	-0.38430994
<i>a</i>	2.1785634	Ω	103.80878	+0.37763047	+0.84306956
<i>e</i>	0.1441524	<i>i</i>	3.67529	+0.09468013	+0.37621748
<i>P</i>	3.22	<i>H</i>	14.2	<i>G</i>	0.15

Residuals in seconds of arc

1994 01 17	010	0.6-	0.2-	1998 04 22	704	0.6+	0.3-	1999 09 07	704	0.7+	0.3-
1994 01 17	010	0.7+	1.0-	1998 04 22	704	0.1-	1.0-	1999 09 07	704	0.4+	0.1-
1994 01 17	010	0.0	1.1-	1998 04 22	704	0.7-	0.3+	1999 09 07	699	0.6-	0.5+
1995 05 01	691	0.4+	1.1+	1998 04 22	704	0.9+	0.2-	1999 09 07	704	0.7+	0.1+
1995 05 01	691	0.5+	0.8+	1998 04 28	699	0.5+	0.1+	1999 09 07	106	0.5-	0.3-
1995 05 01	691	0.5+	0.9+	1998 04 28	699	0.3+	0.7+	1999 09 07	106	0.4-	0.1-
1996 11 12	095	0.4-	1.3+	1998 04 28	699	0.5+	0.1-	1999 09 07	106	0.4-	0.3-
1996 11 15	095	0.1+	0.7-	1998 04 28	691	0.1+	0.2+	1999 09 08	703	0.9-	0.1-
1998 03 22	704	0.2-	0.8-	1998 04 28	691	0.4+	0.0	1999 09 08	703	0.3-	0.4-
1998 03 22	704	0.3-	0.4-	1998 04 28	691	0.4+	0.1+	1999 09 08	703	0.4-	0.1+
1998 03 22	704	0.1+	0.4-	1998 04 30	699	0.7+	0.0	1999 09 08	703	0.8-	0.1+
1998 03 22	704	(0.4-	4.1+)	1998 04 30	699	1.0+	0.2+	1999 09 09	704	0.4+	0.4-
1998 03 22	704	0.8+	1.1-	1998 04 30	699	0.0	0.3+	1999 09 09	704	0.5+	0.1+
1998 03 22	699	0.3-	0.7+	1998 05 01	699	0.9+	0.2-	1999 09 09	704	0.8+	0.4-
1998 03 22	699	(2.3-	0.1-)	1998 05 01	699	0.6+	0.4+	1999 09 09	704	1.0+	0.1-
1998 03 22	699	1.1-	0.2-	1998 05 01	699	1.8+	0.4+	1999 09 09	704	0.9+	0.9+
1998 03 24	699	1.1-	0.2-	1998 05 03	691	0.5-	0.1-	1999 09 13	704	0.6+	0.2-
1998 03 24	699	1.9-	0.5-	1998 05 03	691	0.4-	0.2-	1999 09 13	704	0.2+	0.5-
1998 03 24	699	0.4-	0.7-	1998 05 03	691	0.4-	0.0	1999 09 13	704	0.1+	0.3-
1998 03 25	704	0.3-	0.1-	1998 05 16	704	(2.2+	0.7-)	1999 09 13	704	0.2+	0.6-
1998 03 25	704	0.2-	0.4-	1998 05 16	704	(0.4-	2.5-)	1999 09 13	704	0.7+	0.4-
1998 03 25	704	1.1-	0.1-	1998 05 16	704	1.3+	0.2-	1999 09 30	704	0.1-	0.7-
1998 03 25	704	0.8-	0.3-	1998 05 16	704	1.5-	1.3-	1999 09 30	704	0.0	0.6-
1998 03 25	704	1.1-	0.3+	1998 05 16	704	(6.6-	2.0-)	1999 09 30	704	0.1+	0.5-
1998 03 29	704	0.3-	0.2-	1999 07 16	704	0.2-	0.1+	1999 09 30	704	0.0	0.7-
1998 03 29	704	0.4-	0.2-	1999 07 16	704	0.4-	0.4+	1999 09 30	704	0.6-	1.0-
1998 03 29	704	0.9-	1.4-	1999 07 16	704	0.4+	0.3-	1999 10 04	699	0.6+	0.2-
1998 03 29	704	0.3-	0.4-	1999 07 16	704	0.1-	0.0	1999 10 04	699	0.3+	0.6-
1998 03 29	704	0.4-	0.5-	1999 08 12	699	0.1-	0.2+	1999 10 04	699	0.4+	0.6-
1998 04 20	704	0.1-	1.1-	1999 08 12	699	0.0	0.2+	1999 11 08	704	0.9-	0.9-
1998 04 20	704	1.4-	1.2-	1999 08 12	699	0.2+	0.4+	1999 11 08	704	0.1-	0.9-
1998 04 20	704	0.0	0.4-	1999 09 07	699	0.6-	0.3+	1999 11 08	704	0.1-	0.5+
1998 04 20	704	0.0	0.4+	1999 09 07	704	0.2+	0.2-	1999 11 08	704	0.9+	0.7-

1998 04 20 704 0.1+ 1.2- 1999 09 07 699 0.6- 0.5+ 1999 11 08 704 (0.9+ 2.1-)
 1998 04 22 704 0.4+ 0.1- 1999 09 07 704 0.2+ 0.2-

(13235)* 1998 HT₄₂ = 1984 JJ = 1985 SA₆

Discovered 1998 Apr. 30 by T. Okuni at Nanyo.

Id. D. J. Asher (*MPC* 32013)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Asher

<i>M</i>	129.65322		(2000.0)	P	Q
<i>n</i>	0.28082711	ω	102.07074	+0.23619133	+0.97170462
<i>a</i>	2.3094578	Ω	181.59505	-0.91653807	+0.22211509
<i>e</i>	0.0425111	<i>i</i>	4.01413	-0.32275628	+0.08034318
<i>P</i>	3.51	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1984 05 07	675	0.2+	0.9-	1998 05 24	704	0.4-	0.4-	1999 10 28	699	0.1+	0.1-
1984 05 08	675	1.0-	0.4-	1998 05 28	699	0.9+	0.3+	1999 10 28	699	0.6+	0.7+
1984 05 09	675	1.4+	0.2-	1998 05 28	699	0.1+	0.5+	1999 11 01	703	0.8-	0.0
1985 09 21	095	1.2-	0.4+	1998 05 28	699	0.2+	0.3+	1999 11 01	703	0.9-	0.4+
1998 04 22	704	1.6-	1.2-	1999 09 05	699	0.4+	0.1+	1999 11 01	703	0.6-	0.1-
1998 04 22	704	1.5-	0.2-	1999 09 05	699	0.1+	0.2+	1999 11 01	703	0.7-	0.5-
1998 04 22	704	1.3-	0.3+	1999 09 05	699	1.0+	0.2+	1999 11 06	704	0.7-	0.4-
1998 04 22	704	1.2-	0.8+	1999 10 01	106	0.0	0.3+	1999 11 06	704	0.3-	0.7-
1998 04 30	566	0.6-	0.5-	1999 10 01	106	0.3+	0.2-	1999 11 06	704	0.4-	0.6-
1998 04 30	566	0.6-	0.3-	1999 10 01	106	0.0	0.5+	1999 11 06	704	0.5-	0.3-
1998 04 30	566	0.6-	0.3-	1999 10 04	704	0.7+	0.0	1999 11 06	704	0.1-	0.6-
1998 04 30	358	0.3+	0.0	1999 10 04	704	0.2+	0.8+	1999 11 09	691	0.1-	0.5-
1998 04 30	358	1.5+	0.8-	1999 10 04	704	0.3+	0.0	1999 11 09	691	0.1-	0.5-
1998 05 01	704	0.8-	0.3+	1999 10 04	704	0.2-	0.5+	1999 11 09	691	0.0	0.5-
1998 05 01	704	0.6-	0.3+	1999 10 04	704	0.2-	0.6+	1999 11 12	691	0.1+	0.4-
1998 05 01	704	0.6-	0.1-	1999 10 07	704	0.1+	0.2+	1999 11 12	691	0.2+	0.3-
1998 05 01	704	0.2-	0.7+	1999 10 07	704	0.3+	0.3+	1999 11 12	691	0.2+	0.3-
1998 05 01	704	0.6-	0.3-	1999 10 07	704	0.1+	0.5+	1999 11 15	704	0.6+	0.2-
1998 05 01	358	0.3+	0.9+	1999 10 07	704	0.4+	0.8+	1999 11 15	704	0.3+	0.2-
1998 05 01	358	0.1-	0.3+	1999 10 07	704	0.5+	0.6+	1999 11 15	704	0.4-	0.5-
1998 05 04	358	1.9+	1.4+	1999 10 09	704	0.2+	0.2+	1999 11 15	704	0.3+	0.9-
1998 05 04	358	(0.5+ 2.6+)		1999 10 09	704	0.2+	0.4-	1999 11 15	704	0.6-	0.9-
1998 05 19	358	0.8+	0.6-	1999 10 09	704	0.0	0.1-	1999 11 17	704	0.8+	0.5+
1998 05 19	358	0.9-	0.0	1999 10 09	704	0.3+	0.5-	1999 11 17	704	0.3-	0.6+
1998 05 19	358	0.5-	2.0+	1999 10 09	704	0.2-	0.0	1999 11 17	704	0.3+	0.1-
1998 05 22	704	0.6+	0.1-	1999 10 13	699	0.0	0.0	1999 11 17	704	0.6-	1.2-
1998 05 22	704	0.8+	0.2-	1999 10 13	699	0.4-	0.2+	1999 12 07	704	0.9-	0.4-
1998 05 22	704	0.3+	0.4-	1999 10 13	699	0.5-	0.1+	1999 12 07	704	0.1-	0.3-
1998 05 22	704	0.6+	0.6-	1999 10 15	704	0.2+	0.0	1999 12 07	704	0.3-	0.5-
1998 05 22	704	0.1-	0.8-	1999 10 15	704	0.2+	0.1-	1999 12 07	704	0.3-	0.1-
1998 05 23	704	1.0+	0.2-	1999 10 15	704	0.1-	0.2-	1999 12 07	704	0.6+	0.2+
1998 05 23	704	0.5+	0.4-	1999 10 15	704	0.1+	0.2+	1999 12 13	699	0.4+	0.1+
1998 05 23	704	0.7+	0.2+	1999 10 15	704	0.2+	0.0	1999 12 13	699	0.9-	2.0+
1998 05 23	704	0.4+	0.4-	1999 10 19	704	0.2+	0.3-	1999 12 13	699	0.2-	1.8+
1998 05 23	704	0.5+	1.6-	1999 10 19	704	0.1-	0.2-	2000 01 08	704	0.5+	0.4-
1998 05 24	704	0.3+	0.0	1999 10 19	704	0.4+	0.2-	2000 01 08	704	1.6+	0.5-
1998 05 24	704	0.7-	0.2-	1999 10 19	704	0.3+	0.0	2000 01 08	704	0.7+	0.6-
1998 05 24	704	0.1+	0.2+	1999 10 19	704	0.2-	0.4-	2000 01 08	704	0.2-	0.6-
1998 05 24	704	0.1-	0.4-	1999 10 28	699	0.3+	0.1+	2000 01 08	704	0.7+	0.8-

(13236)* 1998 HF₉₆ = 1985 OR = 1992 TN₁

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32018)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	99.05811		(2000.0)	P	Q
<i>n</i>	0.29286265	ω	188.23436	+0.92330354	+0.38081451
<i>a</i>	2.2457430	Ω	149.23176	-0.34658694	+0.88212044
<i>e</i>	0.2139590	<i>i</i>	5.59871	-0.16549339	+0.27720720
<i>P</i>	3.37	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1985 07 19	033	0.3-	0.5+	1998 05 22	704	0.8-	0.4+	1999 11 04	704	0.2+	0.4-
1992 09 30	675	0.3+	0.6-	1998 05 22	704	1.2-	0.3-	1999 12 06	704	0.1+	0.2+
1992 09 30	675	0.1+	0.3-	1998 05 22	704	(2.2-	0.6+)	1999 12 06	704	0.5-	0.2+
1992 10 03	675	0.2-	0.7-	1998 05 24	704	0.0	0.2-	1999 12 06	704	0.4-	0.9+
1992 10 03	675	0.5+	0.3+	1998 05 24	704	0.2-	0.2-	1999 12 06	704	0.1+	0.6-
1992 10 04	675	0.4+	0.7-	1998 05 24	704	0.6-	0.5-	1999 12 06	704	0.1-	0.5-
1992 10 04	675	0.3+	1.0-	1998 05 24	704	0.2+	0.2-	1999 12 14	704	0.1+	0.0
1998 04 21	704	0.4-	0.5+	1998 05 24	704	0.2-	0.4+	1999 12 14	704	0.5+	0.0
1998 04 21	704	0.4+	0.5-	1998 05 27	699	0.1-	0.1+	1999 12 14	704	0.1+	0.1+
1998 04 21	704	0.3-	0.3+	1998 05 27	699	0.2+	0.7+	1999 12 14	704	0.6+	0.3+
1998 04 21	704	0.2-	0.7+	1998 05 27	699	0.2-	0.5+	1999 12 14	704	0.9-	1.0+
1998 04 21	704	0.3+	0.5+	1998 06 02	699	0.4+	0.2+	2000 01 05	704	0.3-	0.2-
1998 04 22	704	0.3+	0.7-	1998 06 02	699	0.1+	0.5-	2000 01 05	704	0.7-	0.3-
1998 04 22	704	0.2+	0.4-	1998 06 02	699	0.3+	0.1-	2000 01 05	704	0.2-	0.2+
1998 04 22	704	1.0+	0.7-	1999 10 10	704	0.5+	0.2+	2000 01 05	704	0.2-	0.4+
1998 04 22	704	0.7+	1.1-	1999 10 10	704	0.5-	0.3-	2000 01 05	704	0.0	0.6+
1998 04 22	704	0.5+	1.1-	1999 10 10	704	0.3-	0.1+	2000 01 07	704	0.2-	0.1+
1998 04 24	704	0.2-	0.3+	1999 10 10	704	0.5+	0.2+	2000 01 07	704	0.7-	1.1-
1998 04 24	704	0.2+	0.4-	1999 10 10	704	0.3+	0.1+	2000 01 07	704	0.0	0.1-
1998 04 24	704	0.1-	0.8-	1999 11 04	704	0.8+	0.9+	2000 01 07	704	0.2-	0.9-
1998 04 24	704	0.0	0.2+	1999 11 04	704	0.2-	0.3+	2000 01 07	704	0.8+	0.1+
1998 05 22	704	0.6-	0.2-	1999 11 04	704	(2.9-	0.7+)	2000 01 07	704	0.2+	0.9-
1998 05 22	704	0.6-	0.5-	1999 11 04	704	0.3+	0.3+	2000 01 07	704	0.1+	1.1-

(13237)* 1998 HC₉₈ = 1989 TR₁₅ = 1992 PO₅

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32019)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	160.50937		(2000.0)	P	Q
<i>n</i>	0.31164451	ω	286.83255	+0.34080125	+0.94012272
<i>a</i>	2.1545822	Ω	3.10598	-0.82466050	+0.30142812
<i>e</i>	0.2170775	<i>i</i>	5.16387	-0.45143058	+0.15909231
<i>P</i>	3.16	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1989 10 03	809	0.4-	0.2-	1998 04 21	704	0.2-	0.2+	1998 05 25	704	1.7+	1.9+
1989 10 03	809	0.4+	0.2-	1998 04 22	704	0.5+	0.7+	1998 05 25	704	0.4-	0.7-
1989 10 03	809	1.2+	0.1-	1998 04 22	704	0.4-	0.1-	1998 05 25	704	0.0	1.0+
1989 10 05	809	0.6-	0.6-	1998 04 22	704	0.0	0.1+	1999 12 12	704	0.5-	0.2-
1989 10 05	809	0.7-	0.5-	1998 04 22	704	1.2-	0.7-	1999 12 12	704	0.0	0.5+
1989 10 06	809	0.2+	0.5+	1998 04 22	704	0.3+	0.8-	1999 12 12	704	0.2+	0.9+
1989 10 06	809	0.3+	0.2+	1998 05 04	566	0.1-	0.4-	1999 12 12	704	0.1-	0.3+
1989 10 06	809	0.9+	0.2+	1998 05 04	566	0.2+	1.0-	1999 12 12	704	0.2+	0.5+
1989 10 07	809	0.1-	0.4-	1998 05 04	566	0.1-	0.3-	1999 12 15	704	1.4+	0.4-
1989 10 07	809	0.0	0.4-	1998 05 22	704	0.5+	1.2-	1999 12 15	704	0.5-	0.4-
1989 10 07	809	0.2+	0.7-	1998 05 22	704	0.6-	0.0	1999 12 15	704	0.0	0.1-
1992 08 03	675	0.2-	0.7-	1998 05 22	704	0.3+	1.3-	2000 01 02	704	0.3-	0.6-
1992 08 03	675	0.4+	0.1+	1998 05 22	704	0.6-	0.7-	2000 01 02	704	0.1+	0.2-
1992 08 06	675	0.0	0.2+	1998 05 24	704	0.3-	0.1+	2000 01 02	704	0.1-	0.5-
1992 08 06	675	0.8-	1.2+	1998 05 24	704	0.3-	0.1-	2000 01 02	704	0.0	0.4-
1998 04 21	704	0.5+	0.7+	1998 05 24	704	1.3-	0.9+	2000 01 04	70		

2000 JAN. 24

M.P.C. 37551

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	140.04613	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28779395	ω 282.35191	+0.54334834	+0.83926087
<i>a</i>	2.2720346	Ω 20.59921	-0.74602255	+0.49381292
<i>e</i>	0.1799452	<i>i</i> 3.31444	-0.38499732	+0.22757412
<i>P</i>	3.42	<i>H</i> 14.9	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1994 02 08	809	(4.4+ 4.4+)	1998 04 28	809	(2.7+ 0.0)	1999 11 14	704	0.0	0.2+
1994 02 08	809	(4.8+ 3.2+)	1998 05 22	704	0.6- 0.6+	1999 11 14	704	0.2+	0.9-
1994 02 08	809	(3.1+ 2.3+)	1998 05 22	704	1.0- 1.8+	1999 11 14	704	0.9-	0.3-
1994 02 10	809	0.5+ 0.6+	1998 05 22	704	0.5+ 0.8+	1999 11 14	704	0.3+	0.2+
1994 02 10	809	0.0 0.6+	1998 05 22	704	0.8+ 0.8+	1999 11 16	704	0.0	0.2+
1994 02 10	809	0.4- 0.1+	1998 05 22	704	0.1+ 2.0+	1999 11 16	704	0.9-	0.2-
1994 02 13	809	(1.2+ 2.4+)	1998 05 24	704	0.1+ 0.3-	1999 11 16	704	0.0	0.2+
1994 02 13	809	(1.5+ 2.4+)	1998 05 24	704	0.5- 0.6-	1999 11 16	704	0.5-	0.0
1994 02 13	809	1.4+ 1.5+	1998 05 24	704	0.1- 0.6-	1999 12 15	704	0.4-	0.5-
1995 08 26	809	0.1+ 0.4+	1998 05 24	704	1.5- 0.5-	1999 12 15	704	0.1-	0.2+
1995 08 27	809	0.4- 0.1+	1998 05 24	704	0.2+ 0.9-	1999 12 15	704	0.2+	0.6-
1995 08 29	809	0.5- 1.0+	1998 06 03	704	1.1- 0.7-	1999 12 15	704	(1.0- 2.6-)	
1995 08 30	809	0.3- 0.9+	1998 06 03	704	0.0 0.1+	2000 01 03	704	0.0	0.4+
1996 12 08	691	0.0 0.5-	1998 06 03	704	1.3- 0.4+	2000 01 03	704	1.0+	1.4+
1996 12 08	691	0.2- 0.5-	1998 06 03	704	0.3+ 0.9+	2000 01 03	704	0.2-	0.3+
1996 12 08	691	0.7- 0.6-	1998 06 03	704	0.1+ 1.4-	2000 01 03	704	0.9+	0.1+
1998 04 25	809	(2.2+ 0.3+)	1998 06 16	704	1.5+ 1.1-	2000 01 03	704	0.6+	0.1+
1998 04 25	809	1.3+ 0.1-	1998 06 16	704	0.1- 0.3-	2000 01 04	704	0.5+	0.2+
1998 04 25	809	1.3+ 0.2+	1998 06 16	704	1.3- 0.6-	2000 01 04	704	0.3-	0.2+
1998 04 28	809	(3.2+ 0.3+)	1998 06 16	704	1.9+ 0.1+	2000 01 04	704	0.4-	1.0+
1998 04 28	809	(2.8+ 0.3+)	1999 11 14	704	0.0 0.0				

(13239)* 1998 KN = 1995 VK₁₀

Discovered 1998 May 21 by A. Nakamura at Kuma Kogen.

Id. S. Nakano (*MPC* 32030)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	131.07317	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27674286	ω 206.38784	+0.68371778	+0.72820037
<i>a</i>	2.3321247	Ω 106.78813	-0.66045645	+0.64515836
<i>e</i>	0.2517719	<i>i</i> 2.84260	-0.31036635	+0.23128969
<i>P</i>	3.56	<i>H</i> 15.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1995 11 15	691	0.1- 0.3-	1998 05 22	402	0.1+ 0.1+	1999 11 16	360	0.2+ 0.1+
1995 11 15	691	0.1+ 0.0	1998 05 23	426	0.2- 0.1-	1999 11 30	360	0.5- 0.0
1995 11 15	691	0.1+ 0.0	1998 05 23	426	0.6- 0.3-	1999 11 30	360	0.3- 0.2+
1995 11 20	691	0.1+ 0.4-	1998 05 23	426	1.0- 0.2+	1999 11 30	360	0.1- 0.3-
1995 11 20	691	0.0 0.2-	1998 05 24	704	0.3+ 0.3-	1999 12 03	360	0.0 0.0
1995 11 20	691	0.2+ 0.2-	1998 05 24	704	0.2- 0.2-	1999 12 03	360	0.2- 0.1+
1997 02 06	566	0.9- 0.2+	1998 05 24	699	0.2+ 0.6+	1999 12 03	360	0.3- 0.1+
1997 02 06	566	0.2+ 0.1-	1998 05 24	704	0.5- 0.1+	1999 12 07	704	0.3+ 0.4-
1997 02 06	566	0.6+ 0.2-	1998 05 24	699	0.5+ 0.3-	1999 12 07	704	0.4- 0.4+
1998 05 21	426	1.0- 0.7-	1998 05 24	699	1.1+ 0.2+	1999 12 07	704	0.6+ 0.1+
1998 05 21	426	0.6- 0.2-	1998 05 24	704	0.0 0.7-	1999 12 08	704	0.5- 0.3-
1998 05 21	402	0.3+ 0.4+	1998 05 24	704	0.0 1.1-	1999 12 08	704	0.5- 0.1-
1998 05 21	426	0.1- 0.1+	1998 05 27	360	0.3- 0.3-	1999 12 08	704	0.4+ 0.2-
1998 05 21	402	0.8+ 0.4+	1998 05 27	360	0.3- 0.3-	1999 12 08	704	0.2+ 0.0
1998 05 21	402	0.2+ 0.6+	1998 06 03	704	0.6+ 0.8+	1999 12 08	704	1.1+ 0.3-
1998 05 21	360	0.0 0.3+	1998 06 03	704	1.1+ 0.1+	2000 01 03	704	0.5+ 1.0+
1998 05 21	360	0.1- 0.3+	1998 06 03	704	0.1+ 0.4-	2000 01 03	704	0.2+ 0.5+
1998 05 21	360	0.0 0.3+	1998 06 03	704	0.6+ 1.2-	2000 01 03	704	0.8+ 0.3+
1998 05 22	704	0.3+ 0.2-	1998 06 16	704	0.3- 0.5+	2000 01 03	704	0.2- 1.6-
1998 05 22	704	1.0- 0.4+	1998 06 16	704	0.4+ 0.6+	2000 01 03	360	0.2- 0.1-
1998 05 22	704	0.5- 0.4+	1998 06 16	704	0.1+ 0.1-	2000 01 03	360	0.5- 0.3-
1998 05 22	704	0.1- 0.9+	1998 06 16	704	0.2- 0.8+	2000 01 05	691	0.1+ 0.3-
1998 05 22	704	0.4+ 0.8+	1998 06 16	704	0.2- 0.3+	2000 01 05	691	0.2+ 0.4-
1998 05 22	699	0.1- 0.4-	1998 06 16	360	0.0 0.7-	2000 01 05	691	0.1+ 0.3-
1998 05 22	699	0.9+ 0.7-	1998 06 16	360	0.2- 1.1-	2000 01 10	360	0.1- 0.0

1998 05 22	699	0.2+ 0.3-	1998 06 18	704	1.3- 0.8-	2000 01 10	360	0.4- 0.4-
1998 05 22	360	0.2+ 0.3+	1998 06 18	704	0.5+ 2.1-	2000 01 10	360	0.1- 0.3+
1998 05 22	360	0.2+ 0.0	1998 06 18	704	0.4- 0.6+	2000 01 11	691	0.2- 0.5-
1998 05 22	402	0.0 0.1-	1998 06 18	704	(0.8+ 3.1+)	2000 01 11	691	0.3- 0.7-
1998 05 22	360	0.2- 0.1+	1999 11 16	360	0.5+ 0.5+	2000 01 11	691	0.7- 0.6+
1998 05 22	402	0.2- 0.1-	1999 11 16	360	0.4+ 0.5+			

(13240)* 1998 KJ₁ = 1995 SH₄₄

Discovered 1998 May 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 32030)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	155.46249	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23328768	ω 351.60733	-0.67363545	+0.73889183
<i>a</i>	2.6134138	Ω 236.04266	-0.67695701	-0.62553863
<i>e</i>	0.1517696	<i>i</i> 1.10128	-0.29655434	-0.25048012
<i>P</i>	4.22	<i>H</i> 14.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1993 01 23	691	0.1+ 0.2-	1998 05 22	704	0.6+ 0.5-	1999 10 06	704	0.6+ 0.3-
1993 01 23	691	0.1- 0.2-	1998 05 22	704	0.6- 0.7+	1999 10 06	704	0.6- 0.3-
1993 01 23	691	0.2- 0.2-	1998 05 22	704	1.0- 0.8-	1999 10 06	704	0.3- 0.9-
1995 09 25	691	0.4- 0.0	1998 05 22	704	0.1- 0.1-	1999 10 06	704	0.0 0.4-
1995 09 25	691	0.3+ 0.0	1998 05 22	704	0.5- 0.2+	1999 10 06	704	0.4+ 0.2-
1995 09 30	691	0.1+ 0.3-	1998 05 22	699	0.1+ 0.2+	1999 10 07	704	0.2- 0.7+
1995 09 30	691	0.5+ 0.5-	1998 05 22	699	0.2+ 0.5-	1999 10 07	704	0.8- 0.8-
1995 09 30	691	0.3+ 0.5-	1998 05 22	699	0.2+ 0.0	1999 10 07	704	0.5- 0.2+
1998 04 22	704	0.4+ 0.5+	1998 05 24	704	1.5- 1.0+	1999 10 09	704	0.1+ 0.0
1998 04 22	704	0.3- 1.4+	1998 05 24	704	0.5- 0.3-	1999 10 09	704	0.9+ 0.2+
1998 04 22	704	0.4+ 0.3-	1998 05 24	704	0.9- 0.1+	1999 10 09	704	0.6- 0.5-
1998 04 22	704	(3.1- 1.1-)	1998 05 24	704	1.0- 0.4+	1999 10 09	704	0.3+ 0.2+
1998 04 30	566	0.6+ 1.0-	1998 05 24	704	0.5+ 1.1+	1999 10 09	704	0.6+ 0.5+
1998 04 30	566	0.2+ 1.1-	1999 09 07	704	0.1+ 0.4-	1999 10 15	704	0.7- 0.3+
1998 04 30	566	0.7+ 1.1-	1999 09 07	704	1.1+ 0.1-	1999 10 15	704	0.8+ 0.7+
1998 05 01	704	0.3+ 0.0	1999 09 07	704	0.4+ 0.7-	1999 10 15	704	0.9- 0.7+
1998 05 01	704	0.4+ 0.7+	1999 09 07	704	0.0 0.1+	1999 10 15	704	0.6- 0.0
1998 05 01	704	0.8+ 0.9+	1999 09 09	704	0.1+ 0.1+	1999 10 30	691	0.1- 0.3-
1998 05 01	704	0.4+ 1.6-	1999 09 09	704	0.5- 1.7+	1999 10 30	691	0.3- 0.3-
1998 05 05	699	0.3- 0.3+	1999 09 09	704	0.1- 0.9-	1999 10 30	691	0.0 0.3-
1998 05 05	699	0.4+ 0.4-	1999 09 09	704	0.3+ 0.6+	1999 11 05	691	0.3- 0.1-
1998 05 05	699	0.5+ 0.1+	1999 09 14	703	0.1+ 1.5+	1999 11 05	691	0.3- 0.2-
1998 05 18	699	0.3- 0.8-	1999 09 14	703	0.4- 0.0	1999 11 05	691	0.3- 0.1-
1998 05 18	699	0.0 0.4-	1999 09 14	703	1.3+ 0.3+			
1998 05 18	699	0.1+ 0.5+	1999 09 14	703	0.1+ 0.8-			

(13241)* 1998 KM₄₁ = 1975 UB₁

Discovered 1998 May 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 32688)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	274.37231	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28733161	ω 92.57675	-0.85480412	-0.50789716
<i>a</i>	2.2744712	Ω 56.91972	+0.41112025	-0.78804409
<i>e</i>	0.0639686	<i>i</i> 7.30482	+0.31668605	-0.34788933
<i>P</i>	3.43	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 10 29	033	1.3+	1.8-	1998 06 03	704	0.3+	0.1+	1999 10 07	106	0.0	0.5+
1975 10 30	033	(3.9+	0.4-)	1999 09 08	699	0.3+	0.3+	1999 11 06	704	0.1-	0.2+
1975 10 31	033	0.3+	1.2-	1999 09 08	699	0.3+	0.1-	1999 11 06	704	0.1-	0.1-
1994 02 12	675	0.5+	0.4+	1999 09 08	699	0.7+	0.4-	1999 11 06	704	0.1-	0.3+
1994 02 12	675	0.1-	0.7+	1999 09 14	704	0.4+	0.5+	1999 11 06	704	0.1-	0.2+
1998 05 22	704	0.4-	0.1+	1999 09 14	704	0.2+	0.3-	1999 11 06	704	0.3-	0.1+
1998 05 22	704	0.3+	0.5+	1999 09 14	704	0.7+	1.2-	1999 11 17	704	0.9+	0.7+
1998 05 22	704	0.8-	0.1-	1999 09 14	704	0.4-	0.2-	1999 11 17	704	0.5+	0.8+

1998 05 22	704	0.1+	0.6+	1999 09 14	704	0.0	0.4-	1999 11 17	704	0.3+	0.3+
1998 05 22	704	0.4-	0.1+	1999 10 02	704	0.1+	0.0	1999 11 17	704	1.8-	1.4+
1998 05 24	704	0.1-	0.4+	1999 10 02	704	0.1-	0.4-	1999 11 27	699	1.1-	1.9+
1998 05 24	704	0.4-	0.4-	1999 10 02	704	0.3-	0.7-	1999 11 27	699	0.5-	1.1+
1998 05 24	704	0.3+	0.4-	1999 10 02	704	0.7-	0.4-	1999 11 27	699	0.2-	1.2+
1998 05 24	704	1.0+	0.7+	1999 10 02	704	0.7-	0.4-	2000 01 08	704	0.7+	0.5-
1998 05 24	704	0.2-	0.1+	1999 10 03	703	0.2-	0.3+	2000 01 08	704	0.1-	0.4+
1998 06 03	704	0.1+	0.9-	1999 10 03	703	0.3-	0.5+	2000 01 08	704	0.2-	0.1+
1998 06 03	704	0.3+	0.2-	1999 10 03	703	0.3-	0.3+	2000 01 08	704	0.5-	0.9-
1998 06 03	704	0.1+	0.7+	1999 10 03	703	0.1+	0.1+	2000 01 08	704	0.6+	0.8+
1998 06 03	704	0.8+	1.3+	1999 10 06	106	0.3-	0.4+				

(13242)* 1998 KR₄₄ = 1991 RC₂₁

Discovered 1998 May 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32280)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	123.62245		(2000.0)	P		Q	
<i>n</i>	0.26488063	ω	181.77086	+0.68579482		+0.72649481	
<i>a</i>	2.4012419	Ω	131.53036	-0.66702277		+0.65130768	
<i>e</i>	0.2126736	<i>i</i>	3.32992	-0.29114617		+0.21909724	
<i>P</i>	3.72	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 09 14	675	0.6+	0.1-	1998 06 03	704	0.4-	1.1+	1999 12 08	704	0.1-	0.4-
1991 09 14	675	0.5-	0.6+	1998 06 03	704	0.4+	0.2+	1999 12 08	704	0.1-	0.0
1991 09 16	675	0.0	0.0	1998 06 29	699	0.6-	0.6+	1999 12 08	704	0.2-	0.5-
1991 09 16	675	0.2-	0.3-	1998 06 29	699	0.6+	0.2-	2000 01 05	704	0.2-	0.3+
1997 03 06	704	0.3-	0.2+	1998 06 29	699	1.0-	0.0	2000 01 05	704	0.1-	0.4-
1997 03 06	704	0.3+	0.4+	1998 07 02	699	0.1-	0.2+	2000 01 05	704	0.1-	0.1+
1998 05 22	704	0.3+	0.6-	1998 07 02	699	0.5-	0.1-	2000 01 05	704	0.2+	0.0
1998 05 22	704	1.0+	0.6+	1998 07 02	699	0.4-	0.3+	2000 01 05	704	0.2+	0.2-
1998 05 22	704	0.8+	0.3+	1999 11 04	704	0.0	0.1-	2000 01 06	704	0.9-	0.3+
1998 05 22	704	0.8+	0.8-	1999 11 04	704	0.5-	0.5-	2000 01 06	704	0.2-	0.3-
1998 05 22	704	0.4+	0.2-	1999 11 04	704	0.5+	0.2+	2000 01 06	704	0.4-	0.0
1998 05 24	704	0.5-	1.0-	1999 11 04	704	0.3+	1.5+	2000 01 06	704	0.5-	0.5-
1998 05 24	704	0.7+	0.8-	1999 11 04	704	0.1+	1.3+	2000 01 06	704	0.3+	0.0
1998 05 24	704	0.3-	0.3+	1999 11 17	704	1.4+	1.1-	2000 01 07	704	0.7-	0.1+
1998 05 24	704	0.0	0.2-	1999 11 17	704	0.5+	0.0	2000 01 07	704	0.5+	0.9+
1998 05 24	704	0.2-	0.3-	1999 11 17	704	1.1+	0.8-	2000 01 07	704	0.4-	0.5-
1998 06 03	704	0.8-	1.2+	1999 12 08	704	0.3-	0.2+	2000 01 07	704	0.4-	0.7+
1998 06 03	704	0.2-	0.3-	1999 12 08	704	0.5+	0.6-	2000 01 07	704	0.7-	0.0

(13243)* 1998 KZ₄₇ = 1995 QH₁₀

Discovered 1998 May 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32282)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	157.78576		(2000.0)	P		Q	
<i>n</i>	0.28489120	ω	176.08913	+0.23544401		+0.96361298	
<i>a</i>	2.2874417	Ω	107.49475	-0.89525104		+0.26571385	
<i>e</i>	0.1184310	<i>i</i>	7.62522	-0.37827462		-0.02908919	
<i>P</i>	3.46	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1995 08 31	372	0.9-	0.1+	1998 06 24	704	0.1+	0.2-	1999 12 06	704	0.6-	0.0
1995 08 31	372	0.1-	0.5-	1998 06 24	704	0.6+	0.4+	1999 12 06	704	0.1+	0.4+
1995 09 04	372	0.6+	1.4+	1998 06 24	704	1.8-	1.3+	1999 12 14	704	0.6-	0.6-
1997 01 07	905	1.1+	1.4+	1998 06 26	704	0.1+	0.1+	1999 12 14	704	0.1-	0.2-
1997 01 07	905	1.0-	1.4+	1998 06 26	704	0.2-	0.1+	1999 12 14	704	0.5+	0.8-
1998 05 22	704	0.6+	1.8-	1998 06 26	704	0.6+	1.8+	1999 12 14	704	0.4+	0.0
1998 05 22	704	0.3-	0.3-	1998 06 26	704	0.0	0.1-	1999 12 14	704	0.1+	0.4+
1998 05 22	704	1.1+	0.4-	1998 06 26	704	0.4-	0.1-	1999 12 30	699	0.2-	1.3+
1998 05 22	704	(0.1-	2.8-)	1999 10 20	704	0.4+	0.1+	1999 12 30	699	0.3+	0.9+
1998 05 24	704	0.2-	0.2-	1999 10 20	704	0.1-	0.8-	1999 12 30	699	0.6+	0.9+

1998 05 24	704	0.4+	0.8+	1999 10 20	704	0.3+	0.3-	2000 01 05	704	0.3+	0.2-
1998 05 24	704	1.0+	0.2-	1999 10 20	704	0.2-	0.5-	2000 01 05	704	0.2-	0.3-
1998 05 24	704	0.3+	1.2+	1999 10 20	704	0.9-	0.1-	2000 01 05	704	0.4+	0.5+
1998 05 24	704	0.3+	0.0	1999 11 04	704	0.1-	0.2-	2000 01 05	704	0.8-	0.3-
1998 06 03	704	(1.3-	2.7+)	1999 11 04	704	0.2+	0.1+	2000 01 05	704	0.8-	0.6-
1998 06 03	704	0.8-	0.5+	1999 11 04	704	0.4-	0.2+	2000 01 07	704	0.7+	0.3-
1998 06 03	704	1.0+	0.4+	1999 11 04	704	0.5+	0.5+	2000 01 07	704	0.1-	0.6-
1998 06 03	704	0.9-	0.1+	1999 11 04	704	0.3+	1.2+	2000 01 07	704	0.2-	0.6-
1998 06 03	704	0.1+	0.6+	1999 12 06	704	0.1-	0.0	2000 01 07	704	0.4-	0.0
1998 06 24	704	0.1-	0.2-	1999 12 06	704	0.1+	0.1+	2000 01 07	704	0.1-	0.5+
1998 06 24	704	0.8-	0.6-	1999 12 06	704	0.1+	0.2+				

(13244)* 1998 MJ₁₄ = 1983 AY₄ = 1989 BV = 1997 MB

Discovered 1998 June 26 by the Catalina Sky Survey.

Id. G. V. Williams (*MPC* 32688)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	149.56046		(2000.0)	P		Q	
<i>n</i>	0.17533605	ω	29.74479	+0.67685399		+0.66147835	
<i>a</i>	3.1614664	Ω	285.03981	-0.72399489		+0.51890898	
<i>e</i>	0.0119485	<i>i</i>	19.53814	-0.13304159		+0.54146086	
<i>P</i>	5.62	<i>H</i>	11.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1983 01 14	095	0.1+	1.0-	1998 06 27	703	0.9+	1.0-	1998 10 19	704	0.1+	0.1-
1989 01 28	897	0.3-	0.3+	1998 06 30	704	0.7-	1.2-	1998 10 19	704	0.0	0.9-
1989 01 28	897	(3.1-	0.2+)	1998 06 30	704	0.8-	0.2+	1998 10 19	704	0.1-	0.5+
1989 02 01	897	0.3+	0.9+	1998 06 30	704	0.1+	1.6+	1999 12 15	704	0.1+	0.2+
1989 02 01	897	(2.9+	2.4+)	1998 06 30	704	0.9-	1.9+	1999 12 15	704	0.1+	0.5+
1997 06 16	327	0.4-	0.5+	1998 08 18	566	0.6-	0.3-	1999 12 15	704	0.1+	0.1+
1997 06 16	327	0.5-	0.2+	1998 08 18	566	0.1-	0.3-	1999 12 15	704	0.5+	0.1-
1997 06 16	327	0.9-	0.5+	1998 08 18	566	0.8-	0.3-	1999 12 15	704	0.4+	0.1+
1997 06 17	327	0.5-	0.9+	1998 09 16	703	0.2-	0.2+	2000 01 03	704	0.0	0.2+
1997 06 17	327	0.6-	1.1+	1998 09 16	703	0.2-	0.3+	2000 01 03	704	0.2+	0.4+
1997 06 17	327	0.4+	0.3+	1998 09 16	703	1.8+	1.3-	2000 01 03	704	0.2+	0.4+
1997 06 29	327	0.2-	0.1+	1998 09 26	699	0.2+	0.3-	2000 01 03	704	0.4+	0.2+
1997 06 29	327	0.2-	0.0	1998 09 26	699	0.1+	0.3-	2000 01 04	704	0.1-	0.2+
1997 06 29	327	0.8+	0.1+	1998 09 26	699	0.2+	0.5+	2000 01 04	704	0.0	0.6+
1997 06 29	327	0.2+	0.7+	1998 10 16	699	0.1-	0.1+	2000 01 04	704	0.0	0.3+
1998 06 26	703	0.6-	0.2-	1998 10 16	699	0.6+	0.1+	2000 01 04	704	0.0	0.7+
1998 06 26	703	0.5-	0.0	1998 10 16	699	0.1-	0.2+	2000 01 04	704	0.2+	0.4+
1998 06 27	703	0.6+	1.3-	1998 10 19	704	0.3+	0.8+				

(13245)* 1998 MM₁₉ = 4229 T-3 = 1993 RN₂

Discovered 1998 June 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32286)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	318.20722		(2000.0)	P		Q	
<i>n</i>	0.36533937	ω	335.52501	-0.98169577		-0.16147531	
<i>a</i>	1.9379314	Ω	196.18200	+0.16724026		-0.98457342	
<i>e</i>	0.0576529	<i>i</i>	21.24629	-0.09112688		-0.06738620	
<i>P</i>	2.70	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 10 16	675	0.3-	1.1+	1998 05 28	704	0.1-	0.4-	1998 06 27	704	0.1-	0.9-
1977 10 16	675	0.7-	2.1+	1998 05 28	704	1.0-	1.0+	1999 10 09	704	0.1-	0.0
1977 10 16	675	0.2-	0.6+	1998 05 28	704	0.2-	0.6-	1999 10 09	704	0.1-	0.7-
1977 10 16	675	(0.0	3.1+)	1998 06 04	704	0.7-	1.3-	1999 10 09	704	0.2+	0

2000 JAN. 24

M.P.C. 37553

1977 10 22	675	0.8+	2.1-	1998 06 23	704	0.7-	1.0-	1999 12 31	704	0.4-	0.9-
1993 09 15	675	0.5+	0.0	1998 06 27	704	0.2-	0.0	1999 12 31	704	0.8+	0.4-
1993 09 15	675	1.4+	0.3+	1998 06 27	704	0.3-	0.1+	1999 12 31	704	0.5+	0.5-
1993 09 16	675	0.2-	0.4-	1998 06 27	704	0.3-	0.1-	1999 12 31	704	0.2+	0.5-
1998 05 28	704	0.2+	0.8+	1998 06 27	704	0.1-	0.5-				

(13246)* 1998 MJ₃₃ = 1990 SX₄ = 1994 RY₂₂

Discovered 1998 June 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 37156)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22504119	ω	91.21397	-0.83341726	+0.54821359		
<i>a</i>	2.6768746	Ω	122.03476	-0.53414139	-0.76662949		
<i>e</i>	0.1553704	<i>i</i>	4.72562	-0.14180497	-0.33427695		
<i>P</i>	4.38	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 09 22	809	1.4+	0.0	1997 02 04	566	0.2+	0.5+	1998 07 26	704	0.8+	0.0
1990 09 22	809	0.4+	0.5+	1997 02 04	566	0.2-	0.4+	1998 07 26	704	1.2+	0.1-
1990 09 22	809	0.7-	0.4-	1998 06 24	704	0.9-	1.6+	1998 07 26	704	0.2+	0.3-
1990 09 25	809	(0.9- 3.5-)		1998 06 24	704	0.3+	1.4+	1998 07 26	704	0.8-	0.1+
1990 09 25	809	(1.2- 3.3-)		1998 06 24	704	(1.1- 2.4+)		1998 07 26	704	0.1+	0.2+
1990 09 25	809	(1.0- 2.4-)		1998 06 24	704	0.1-	1.0+	1999 10 03	703	0.0	1.1+
1994 08 13	809	0.8+	0.3-	1998 06 24	704	(2.4- 1.7+)		1999 10 03	703	0.0	0.8+
1994 08 13	809	0.6+	0.1-	1998 06 26	704	0.8-	1.4+	1999 10 03	703	0.3-	0.2+
1994 08 13	809	0.3+	0.3+	1998 06 26	704	(1.6- 2.4+)		1999 10 03	703	0.7-	0.9+
1994 09 05	809	0.2-	0.7-	1998 06 26	704	(3.1- 2.3+)		1999 10 04	704	0.8+	1.2-
1994 09 05	809	1.1-	1.1-	1998 06 28	809	(0.4- 3.8+)		1999 10 04	704	0.7-	0.8+
1994 09 05	809	0.1+	0.2-	1998 06 28	809	(0.2- 3.4+)		1999 10 04	704	0.2+	0.6+
1994 09 06	809	0.3+	1.1-	1998 06 28	809	(0.7+ 3.7+)		1999 11 01	703	0.5-	0.0
1994 09 06	809	1.0-	1.6-	1998 07 01	809	(0.7- 3.5+)		1999 11 01	703	0.6-	1.2+
1994 09 06	809	0.3+	1.2-	1998 07 01	809	(0.2- 4.2+)		1999 11 01	703	0.2-	0.6+
1997 02 04	566	0.2+	0.2+	1998 07 01	809	(0.1+ 4.1+)		1999 11 01	703	0.1-	0.0

(13247)* 1998 MW₃₄ = 1980 GE₁ = 1997 AH₂₃

Discovered 1998 June 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 33509), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28151384	ω	52.82592	-0.23172467	+0.97245445		
<i>a</i>	2.3057005	Ω	203.81245	-0.91113843	-0.22604974		
<i>e</i>	0.1114219	<i>i</i>	3.58124	-0.34077916	-0.05686698		
<i>P</i>	3.50	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 04 14	805	(4.0+ 1.4-)		1998 06 27	809	0.1-	0.0	1999 11 17	704	0.6+	0.1+
1980 04 15	805	0.6-	0.5-	1998 06 27	809	0.8-	0.2+	1999 11 17	704	0.6-	0.0
1980 04 16	805	0.4+	0.3-	1998 06 27	809	0.1+	0.6+	1999 11 17	704	0.2-	0.4-
1994 04 11	691	0.4-	0.2-	1999 10 20	120	0.8+	0.7-	1999 12 08	704	0.1-	0.1-
1994 04 11	691	0.3-	0.4-	1999 10 20	120	0.8+	1.6-	1999 12 08	704	0.1-	0.1-
1994 04 11	691	0.1-	0.4-	1999 10 20	120	0.3+	0.0	1999 12 08	704	0.1+	0.2-
1997 01 12	568	0.0	0.3-	1999 11 03	704	(3.8+ 0.1+)		1999 12 08	704	0.1+	0.0
1997 01 12	568	0.1-	0.3-	1999 11 03	704	0.2-	0.3-	1999 12 08	704	0.0	0.4+
1997 01 13	568	0.2+	0.0	1999 11 03	704	1.4-	0.6-	1999 12 14	704	0.3-	0.7-
1997 01 13	568	0.3+	0.2-	1999 11 03	704	0.1+	0.5+	1999 12 14	704	0.1-	0.0
1998 06 24	704	0.6+	0.4-	1999 11 04	704	0.1+	1.0-	1999 12 14	704	0.6-	0.5-
1998 06 24	704	0.5-	0.4-	1999 11 04	704	0.3-	0.3-	2000 01 05	704	0.2-	0.3-
1998 06 24	704	0.1+	0.4-	1999 11 04	704	0.0	0.4-	2000 01 05	704	0.5-	0.4+
1998 06 24	704	0.4+	1.6-	1999 11 04	704	0.7+	0.2+	2000 01 05	704	0.2+	0.0
1998 06 24	704	1.0+	0.8-	1999 11 15	704	0.4+	0.3+	2000 01 05	704	0.0	0.6-
1998 06 26	809	0.1-	0.1-	1999 11 15	704	0.7+	0.5+	2000 01 06	704	0.3+	0.0
1998 06 26	809	0.4+	0.1-	1999 11 15	704	1.0-	0.4+	2000 01 06	704	0.2-	0.3-
1998 06 26	809	0.3+	0.5-	1999 11 15	704	0.1-	0.2+	2000 01 06	704	0.0	0.0

1998 06 26	704	0.1-	0.2-	1999 11 15	704	0.0	0.2+	2000 01 06	704	0.2+	0.1+
1998 06 26	704	1.4+	0.1+	1999 11 17	704	0.1+	0.4+	2000 01 06	704	0.9+	0.3-
1998 06 26	704	1.7-	0.8+	1999 11 17	704	0.3-	0.5+				

(13248)* 1998 MT₃₇ = 1997 JY₁₁

Discovered 1998 June 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 32288)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21392714	ω	340.69264	+0.87736379	-0.47811667		
<i>a</i>	2.7688034	Ω	47.93779	+0.44708894	+0.78397803		
<i>e</i>	0.2190796	<i>i</i>	3.12424	+0.17419602	+0.39595821		
<i>P</i>	4.61	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 04 05	691	0.2+	0.1-	1999 10 22	704	0.2-	0.5+	1999 12 27	897	0.5-	0.0
1992 04 05	691	0.1+	0.2+	1999 10 22	704	0.6-	0.2+	1999 12 27	897	1.3-	0.0
1992 04 05	691	0.1+	0.5+	1999 10 22	704	0.1-	0.3+	2000 01 03	704	0.4+	0.4-
1997 05 03	809	(2.1+ 3.2+)		1999 10 22	704	0.2-	0.6+	2000 01 03	704	0.4+	0.5-
1997 05 03	809	(0.3+ 3.1+)		1999 10 22	704	0.3-	0.5+	2000 01 03	704	0.6+	1.0-
1997 05 03	809	1.2-	0.0	1999 11 12	703	0.0	1.0+	2000 01 03	704	0.4+	1.3-
1997 05 04	809	0.2+	1.5+	1999 11 12	703	0.3-	0.4+	2000 01 03	704	0.6+	0.6-
1997 05 04	809	1.6+	1.3+	1999 11 12	703	0.1-	0.9+	2000 01 04	704	0.3+	0.4-
1997 05 04	809	(0.9+ 2.4+)		1999 11 12	703	0.3-	1.1+	2000 01 04	704	0.3+	0.5-
1998 06 24	699	0.6-	1.2+	1999 12 03	699	0.4-	0.2-	2000 01 04	704	0.8+	0.3-
1998 06 24	699	(2.5- 0.4-)		1999 12 03	699	0.2-	0.5+	2000 01 04	704	0.4-	0.4-
1998 06 24	699	0.3-	0.6+	1999 12 03	699	0.1+	0.5+	2000 01 04	704	0.8+	0.2-
1998 07 02	699	0.2+	0.7+	1999 12 07	704	0.6-	0.1-	2000 01 08	704	0.3+	0.1-
1998 07 02	699	0.2-	0.3+	1999 12 07	704	0.2+	0.1+	2000 01 08	704	0.5+	0.2+
1998 07 02	699	0.5+	0.7+	1999 12 07	704	0.1-	0.6+	2000 01 08	704	0.5+	0.0
1998 07 16	699	0.1-	0.2+	1999 12 07	704	0.4-	0.3+	2000 01 08	704	0.4+	0.3-
1998 07 16	699	0.2-	0.0	1999 12 07	704	0.4-	0.7+	2000 01 08	704	0.3+	0.1-
1998 07 16	699	0.3-	0.2-	1999 12 15	704	0.4+	0.0	2000 01 08	704	0.1-	0.2-
1999 10 08	703	0.2+	0.6+	1999 12 15	704	0.1-	0.6+	2000 01 08	704	0.1-	0.2-
1999 10 08	703	0.3-	0.0	1999 12 15	704	0.1-	1.0+	2000 01 08	704	0.1+	0.4+
1999 10 08	703	0.2+	0.9+	1999 12 15	704	0.1-	1.1+				
1999 10 08	703	0.0	0.1-	1999 12 15	704	0.7-	0.9+				

(13249)* 1998 MD₃₈ = 1952 BA₁ = 1961 DG

Discovered 1998 June 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 34921), A. Gnädig (*ibid.*), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22545232	ω	133.57203	+0.50683851	-0.82954241		
<i>a</i>	2.6736193	Ω	284.57600	+0.70452061	+0.55534281		
<i>e</i>	0.1668241	<i>i</i>	14.02014	+0.49675489	+0.05876860		
<i>P</i>	4.37	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1952 01 25	711	0.8+	2.1+	Y	1998 07 15	699	0.2+	0.2-	1999 12 16	171	0.8+	0.5-
1961 02 16	760	0.3-	0.8+		1998 08 19	138	0.3+	0.5+	2000 01 03	704	0.1-	0.1-
1961 02 16	760	1.0+	1.1+		1998 08 19	138	1.7-	0.1-	2000 01 03	704	0.2-	0.3+
1983 03 08	413	1.6+	0.4+		1998 08 21	143	0.4-	0.8+	2000 01 03	704	0.2-	0.4+
1983 03 08	413	0.5-	0.2-		1998 08 21	143	0.6-	0.7+	2000 01 03	704	0.4-	0.1-
1998 06 02	699	0.5-	0.2-		1998 08 21	143	0.7-	0.6+	2000 01 03	704	0.4-	0.7+
1998 06 02	699	0.1-	0.1-		1998 08 23	133	0.7+	0.7+	2000 01 04	704	0.4-	0.2-
1998 06 02	699	0.2-	0.2+		1998 08 23	133	1.0+	0.7+	2000 01 04	704	0.1+	0.2-
1998 06 18	699	0.4+	0.0		1998 08 23	133	0.7+	0.5+	2000 01 04	704	(3.7-	0.6+)
1998 06 18	699	0.3+	0.0		1998 08 24	704	0.4+	0.1+	2000 01 04	704	1.1-	0.9-
1998 06 18	699	0.2+	0.1+		1998 08 24	704	1.2-	0.7+	2000 01 04	704	0.3-	0.6-
1998 06 27	699	0.0	0.7+		1998 08 24	704	1.8-	0.1-	2000 01 05	127	0.6+	0.6+
1998 06 27	699	0.2-	0.5+		1998 08 24	704	0.0	0.6-	2000 01 05	127	0.4+	0.4+
1998 06 27	699	0.3-	0.3+		1998 08 24	704	1.5-	0.7-	2000 01 05	127	0.5+	0.4+

1998 06 29	704	(3.0+ 2.2-)	1999 12 15	704	0.1+ 0.0	2000 01 06	704	0.1+ 0.1-
1998 06 29	704	1.5+ 1.8+	1999 12 15	704	0.0 0.4-	2000 01 06	704	0.2- 0.1-
1998 06 29	704	(0.1- 3.1-)	1999 12 15	704	0.2- 0.4-	2000 01 06	704	0.1- 0.2-
1998 06 29	704	0.6+ 1.2-	1999 12 15	704	0.5- 0.1+	2000 01 11	127	0.3+ 0.7+
1998 06 29	704	0.2- 0.7-	1999 12 15	704	0.8- 0.7-	2000 01 11	127	0.5+ 1.0+
1998 07 15	699	0.2+ 0.1+	1999 12 16	171	0.4+ 0.6-	2000 01 11	127	0.5+ 1.1+
1998 07 15	699	0.5+ 0.3-	1999 12 16	171	0.3+ 0.3-			

(13250)* 1998 OJ = 1991 LH₂

Discovered 1998 July 19 by A. Boattini and L. Tesi at San Marcello Pistoiese.

Id. G. V. Williams (*MPC* 32289)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 233.44383			Williams		
(2000.0)			<i>P</i>	<i>Q</i>	
<i>n</i>	0.29608703	ω	358.21842	-0.52296122	+0.85025541
<i>a</i>	2.2294092	Ω	240.24617	-0.78116733	-0.50617591
<i>e</i>	0.1330025	<i>i</i>	3.95041	-0.34101197	-0.14440115
<i>P</i>	3.33	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1991 06 06	809	1.3- 0.5-	1998 07 23	104	1.2- 0.0	1999 12 07	104	0.4- 0.2-
1991 06 06	809	0.2+ 0.1+	1998 07 23	104	0.5- 0.2+	1999 12 07	104	0.6- 0.3-
1991 06 06	809	0.5- 0.9+	1998 07 29	104	0.2+ 0.3-	1999 12 13	104	0.7- 0.1-
1991 06 08	809	0.6+ 0.4-	1998 07 29	104	0.1+ 0.2+	1999 12 13	104	0.4- 0.3-
1991 06 08	809	0.5+ 1.0-	1998 07 29	104	0.3+ 0.1+	1999 12 13	104	0.4- 0.6-
1991 06 08	809	0.3+ 0.9-	1998 08 11	104	0.1- 0.4+	1999 12 15	703	0.1+ 0.2-
1995 10 28	691	0.2- 0.1+	1998 08 11	104	0.3+ 0.4+	1999 12 15	703	0.1+ 0.1+
1995 10 28	691	0.0 0.0	1998 08 11	104	0.4+ 0.4+	1999 12 15	703	0.2+ 0.3-
1995 10 28	691	0.0 0.4+	1998 08 17	704	(2.3+ 0.3-)	1999 12 15	703	0.3- 0.6+
1998 07 19	104	1.5- 0.6+	1998 08 17	704	0.5- 0.1+	2000 01 01	104	0.1+ 0.3-
1998 07 19	104	0.4+ 0.4+	1998 08 17	704	0.5- 0.1-	2000 01 01	104	1.2- 0.6-
1998 07 19	104	0.6+ 0.2+	1998 08 17	704	0.3+ 0.0	2000 01 05	704	0.6+ 0.1+
1998 07 19	104	0.3- 1.3+	1998 08 23	704	0.1+ 1.9-	2000 01 05	704	0.8- 0.5-
1998 07 19	104	0.0 0.7+	1998 08 23	704	0.3- 1.1-	2000 01 05	704	0.2+ 0.0
1998 07 20	104	0.1- 0.1-	1998 08 23	704	0.7+ 1.2-	2000 01 05	704	0.6+ 0.1+
1998 07 21	104	0.9- 0.5+	1998 08 23	704	1.2+ 0.1+	2000 01 06	704	0.2- 0.9-
1998 07 21	104	1.5+ 0.3-	1999 11 15	704	1.2+ 0.1-	2000 01 06	704	0.7+ 0.3-
1998 07 21	104	1.0+ 0.7-	1999 11 15	704	0.6+ 0.7+	2000 01 06	704	0.3+ 0.0
1998 07 21	104	0.2+ 0.3-	1999 11 15	704	0.3+ 0.1-	2000 01 06	704	0.7+ 0.6+
1998 07 21	104	0.0 0.1+	1999 12 07	104	0.2- 0.4+	2000 01 06	704	0.4+ 0.4-
1998 07 23	104	1.3- 0.4-	1999 12 07	104	0.4- 0.3+			

(13251)* 1998 OP = 1950 PN = 1950 PR = 1995 SU₂

Discovered 1998 July 20 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPC* 32489), O. Kippes (d, *MPC* 777)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 186.41125			Williams		
(2000.0)			<i>P</i>	<i>Q</i>	
<i>n</i>	0.30766936	ω	128.81723	+0.34670237	+0.93773085
<i>a</i>	2.1731009	Ω	161.43423	-0.88007139	+0.33310988
<i>e</i>	0.1800999	<i>i</i>	3.85544	-0.32445619	+0.09848179
<i>P</i>	3.20	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1950 08 12	760	0.5- 1.7+	1998 07 20	910	0.7+ 0.7+	1999 10 10	704	0.1+ 1.3+
1950 08 12	760	(3.3+ 3.3+)	1998 07 20	910	0.8+ 0.5+	1999 12 05	704	(2.4- 1.1+)
1950 08 14	760	(3.1+ 3.0-)	1998 07 20	910	0.4+ 0.9+	1999 12 05	704	(2.3- 0.7+)
1950 08 14	760	(3.0+ 1.3-)	1998 07 20	910	0.0 0.4+	1999 12 05	704	(3.0- 1.8+)
1992 10 31	033	0.9+ 0.0	1998 07 21	910	0.1+ 0.5+	1999 12 14	704	0.9- 0.1+
1992 10 31	033	0.9+ 1.3+	1998 07 21	910	0.1+ 0.5+	1999 12 14	704	0.4- 0.3-
1995 09 19	809	1.5+ 0.5+	1998 07 23	910	0.1- 0.4+	1999 12 14	704	0.1+ 0.5+
1995 09 20	809	0.1- 0.5-	1998 07 24	910	0.3- 0.2+	1999 12 14	704	0.0 0.2+
1995 09 20	399	1.7- 0.9-	1998 07 24	910	0.1- 0.3+	1999 12 15	704	1.0- 0.2-
1995 09 20	399	0.3+ 0.1-	1998 08 17	704	0.3+ 0.6-	1999 12 15	704	0.1- 1.2+
1995 09 21	399	(2.1- 1.8-)	1998 08 17	704	0.4- 0.6-	1999 12 15	704	0.1- 1.1+
1995 09 21	399	(2.5- 0.6-)	1998 08 17	704	0.6- 0.2-	1999 12 15	704	(0.9+ 2.4+)
1995 09 23	809	(5.6+ 1.1-)	1998 08 17	704	0.6+ 0.5-	1999 12 15	704	1.3- 0.8+

1995 09 26	098	(14.9- 0.6-)	1998 08 17	704	1.4+ 1.2-	2000 01 05	704	0.9+ 0.1+
1995 09 26	098	(10.8- 1.2-)	1998 08 17	611	0.2- 0.1+	2000 01 05	704	0.0 0.7-
1995 09 30	399	0.2- 0.8-	1998 08 17	611	0.5- 0.1-	2000 01 05	704	0.2+ 0.4+
1995 09 30	399	0.7- 1.4-	1998 08 17	611	0.6- 0.1+	2000 01 05	704	0.6+ 1.3-
1998 06 26	704	1.0+ 0.1+	1998 08 19	566	0.9- 0.2+	2000 01 06	704	0.1+ 0.1+
1998 06 26	704	0.5+ 1.1+	1998 08 19	566	0.6- 0.1-	2000 01 06	704	0.9+ 0.4-
1998 06 26	704	1.1- 0.4-	1998 08 19	566	0.9- 0.4+	2000 01 06	704	0.2+ 0.3-
1998 06 26	704	0.5+ 1.6-	1999 10 10	704	0.6+ 1.2+			
1998 06 26	704	(3.8- 0.7-)	1999 10 10	704	0.1- 0.2+			

(13252)* 1998 ON₁

Discovered 1998 July 18 by W. Bickel at Bergisch Gladbach.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 88.69873			Williams		
(2000.0)			<i>P</i>	<i>Q</i>	
<i>n</i>	0.21462099	ω	164.03939	+0.99850266	-0.03516364
<i>a</i>	2.7628327	Ω	198.13198	+0.02221747	+0.96068513
<i>e</i>	0.2334318	<i>i</i>	7.73842	+0.04998828	+0.27540442
<i>P</i>	4.59	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1994 12 10	691	0.1- 0.2+	1998 08 19	621	0.6- 0.4-	1999 10 10	704	0.1- 0.4+
1994 12 10	691	0.1+ 0.2-	1998 08 19	621	0.3- 0.2-	1999 10 10	704	0.2- 0.1+
1994 12 10	691	0.0 0.2-	1998 08 24	704	0.3+ 1.6-	1999 11 12	703	0.3- 1.0+
1997 05 07	566	0.7+ 0.8+	1998 08 24	704	0.8- 0.2+	1999 11 12	703	0.5+ 0.7+
1997 05 07	566	0.1+ 0.2+	1998 08 24	704	0.1- 0.4-	1999 11 12	703	0.2- 0.4+
1997 05 07	566	0.1- 0.8+	1998 08 24	704	0.0 0.6+	1999 11 12	703	0.8- 0.3+
1998 06 27	699	0.4+ 0.5-	1998 09 20	621	0.2+ 0.0	1999 11 13	703	0.2- 0.0
1998 06 27	699	0.1- 0.4+	1998 09 20	621	0.4+ 0.4+	1999 11 13	703	0.0 0.9+
1998 06 27	699	0.1+ 0.1+	1998 09 20	621	0.3+ 0.4+	1999 11 13	703	0.4+ 1.5+
1998 07 18	621	0.0 0.2+	1998 09 21	621	0.6+ 0.2+	1999 11 13	703	0.0 0.7+
1998 07 18	621	0.0 0.2+	1998 09 21	621	0.3+ 0.4+	1999 12 05	704	0.0 0.2+
1998 07 19	621	0.2+ 0.2+	1998 09 21	621	0.5+ 0.3+	1999 12 05	704	0.1- 0.2-
1998 07 19	621	0.4- 0.3+	1998 09 21	621	0.1+ 0.4+	1999 12 05	704	0.6- 0.3-
1998 07 19	621	0.0 0.4+	1998 09 21	621	0.8+ 0.5+	1999 12 05	704	0.6+ 0.3-
1998 07 19	621	0.1+ 0.4+	1998 09 21	621	0.3+ 0.5+	1999 12 05	704	0.1- 1.2-
1998 07 19	621	0.1- 0.2+	1998 09 22	621	0.2+ 0.3+	1999 12 14	704	0.4- 0.2+
1998 07 21	621	0.4- 0.0	1998 09 22	621	0.5+ 0.1+	1999 12 14	704	0.3- 0.5-
1998 07 22	621	0.3- 0.2+	1998 09 22	621	0.0 0.4+	1999 12 14	704	0.5- 0.1+
1998 07 22	621	0.1- 0.0	1998 11 19	621	0.1+ 0.2+	1999 12 14	704	0.6- 0.1-
1998 07 26	621	0.3+ 0.1-	1998 11 19	621	0.4- 0.0	2000 01 07	704	0.2+ 0.2-
1998 07 26	621	0.1- 0.1+	1998 11 19	621	0.0 0.1+	2000 01 07	704	1.2+ 0.0
1998 07 30	621	0.1- 0.2+	1998 11 20	621	0.4- 0.3-	2000 01 07	704	0.6+ 0.1+
1998 07 30	621	0.2- 0.0	1998 11 20	621	0.1+ 0.5-	2000 01 07	704	0.2+ 0.2-
1998 07 30	621	0.0 0.0	1998 11 20	621	0.2+ 0.3-	2000 01 11	704	0.5+ 0.2+
1998 08 17	621	0.4- 0.2-	1998 11 20	621	0.1- 0.3+	2000 01 11	704	0.3- 0.2+
1998 08 17	621	0.6- 0.2-	1998 11 20	621	0.2+ 0.0	2000 01 11	704	0.6+ 0.2+
1998 08 17	621	0.4- 0.3-	1998 11 20	621	0.4+ 0.2-	2000 01 11	704	0.1+ 0.1-
1998 08 19	621	0.6- 0.3-	1999 10 10	704	0.2- 0.0			

(13253)* 1998 OM₁₃ = 1990 DC₂

Discovered 1998 July 26 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32492)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 320.79784			Williams		
(2000.0)			<i>P</i>	<i>Q</i>	
<i>n</i>	0.28826643	ω	207.86115	-0.96315624	-0.25780787
<i>a</i>	2.2695513	Ω	316.97267	+0.26287574	-0.84231052
<i>e</i>	0.1101680	<i>i</i>	6.44427	+0.05680149	-0.47333718
<i>P</i>	3.42	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1990 02 24	809	1.1- 0.6+	1998 07 26	809	1.5+ 1.3+	1999 12 12	704	0.2+ 0.1+
1990 02 24	809	0.5- 0.5+	1998 07 26	809	1.0+ 1.3+	1999 12 12	704	0.5+ 0.2+
1990 02 24	809	0.1+ 0.6+	1998 07 27	809	0.3+ 0.7+	1999 12 12	704	0.0 0.3+
1990 02 25	809	0.9- 0.0	1998 07 27	809	0.3+ 1.4+	1999 12 12	704	0.1+ 0.5+

2000 JAN. 24

M.P.C. 37555

1990 02 25	809	0.5−	0.0	1998 07 27	809	0.6+	1.0+	1999 12 15	704	0.3+	0.2+
1990 02 25	809	0.0	0.1−	1998 08 17	704	0.6−	0.9−	1999 12 15	704	0.4+	0.2+
1990 02 26	809	0.3+	0.5−	1998 08 17	704	0.7−	1.4−	1999 12 15	704	0.1+	0.2+
1990 02 26	809	0.4+	0.3−	1998 08 17	704	0.6−	1.3−	1999 12 15	704	0.4+	0.2−
1990 02 26	809	0.6+	0.3−	1998 08 17	704	1.3−	1.3+	1999 12 15	704	0.3+	0.0
1990 02 28	809	0.0	0.7−	1998 08 17	704	0.3+	0.0	2000 01 02	704	0.1+	0.0
1990 02 28	809	0.7+	0.4−	1998 08 23	704	0.0	0.5+	2000 01 02	704	0.0	0.2+
1990 02 28	809	1.3+	0.5−	1998 08 23	704	1.3−	0.2+	2000 01 02	704	0.1+	0.3−
1990 02 28	809	0.6−	1.0+	1998 08 23	704	0.7+	0.7+	2000 01 02	704	0.7−	0.2−
1990 02 28	809	0.1+	0.8+	1998 08 23	704	1.7+	1.6−	2000 01 02	704	0.3+	0.7−
1990 02 28	809	0.6+	0.5+	1998 09 14	704	0.5−	1.2−	2000 01 04	704	1.0−	0.1+
1995 10 26	104	0.2+	0.1−	1998 09 14	704	1.6−	0.9+	2000 01 04	704	0.2−	0.0
1995 10 26	104	0.3+	0.0	1998 09 14	704	1.6−	0.2−	2000 01 04	704	0.4−	0.2+
1995 10 26	104	0.0	0.3−	1998 09 14	704	0.3+	1.6−	2000 01 04	704	0.2+	0.8+
1995 10 26	104	0.2+	0.6−	1998 09 14	704	1.5−	0.4+	2000 01 04	704	0.7−	0.1−
1998 07 26	809	1.6+	1.7+	1999 12 12	704	0.4+	0.3−				

(13254)* 1998 OY₁₃ = 1976 ES = 1997 EF₄₀

Discovered 1998 July 26 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32492)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	238.65597	<i>P</i>	(2000.0)	<i>Q</i>			
<i>n</i>	0.28303248	<i>ω</i>	273.27936	−0.59829520	+0.79767222		
<i>a</i>	2.2974454	<i>Ω</i>	319.65330	−0.68070747	−0.55595908		
<i>e</i>	0.1294149	<i>i</i>	6.73325	−0.42270581	−0.23372748		
<i>P</i>	3.48	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 03 01	033	1.1+	0.8+	1998 07 27	809	(2.2+	3.1+)	1998 09 18	704	1.2−	0.1+
1976 03 02	033	0.3−	1.2+	1998 07 27	809	(1.7+	2.9+)	1998 09 18	704	(3.4−	0.9+)
1976 03 03	033	(3.0−	1.7+)	1998 07 27	809	(1.5+	3.4+)	1999 12 12	704	0.5−	0.3−
1976 03 03	033	(3.2+	0.7+)	1998 08 17	704	0.1−	0.5−	1999 12 12	704	0.7−	0.3−
1997 02 06	566	0.3−	0.4+	1998 08 17	704	0.2+	0.5−	1999 12 12	704	0.4−	0.3−
1997 02 06	566	0.9−	0.1+	1998 08 17	704	1.7+	1.3−	1999 12 12	704	0.2+	0.2−
1997 02 06	566	0.6−	0.0	1998 08 17	704	0.2−	0.8+	1999 12 12	704	0.5−	0.0
1997 03 05	704	1.0+	0.5+	1998 08 17	704	0.3+	0.0	1999 12 15	704	0.6−	0.1−
1997 03 05	704	1.2+	0.6+	1998 08 23	704	0.6−	0.5+	1999 12 15	704	0.4−	0.0
1997 03 06	704	0.3+	0.1+	1998 08 23	704	1.6−	1.6+	1999 12 15	704	0.2−	0.3−
1997 03 06	704	0.8+	0.8+	1998 08 23	704	0.7+	0.5−	1999 12 15	704	0.5−	0.6−
1998 07 15	691	0.7−	0.2−	1998 08 23	704	0.8+	0.8+	2000 01 02	704	0.0	0.0
1998 07 15	691	0.5−	0.2−	1998 09 14	704	0.2−	0.5+	2000 01 02	704	0.4+	0.8+
1998 07 15	691	0.8−	0.0	1998 09 14	704	0.8−	0.6+	2000 01 02	704	0.1−	0.6−
1998 07 26	809	(2.1+	3.3+)	1998 09 14	704	0.2+	0.2+	2000 01 02	704	0.2−	0.8+
1998 07 26	809	(2.2+	2.6+)	1998 09 14	704	0.4−	1.0+	2000 01 04	704	1.7+	0.4−
1998 07 26	809	(1.6+	2.4+)	1998 09 14	704	(2.1−	2.2+)	2000 01 04	704	1.2+	0.3+
1998 07 26	699	0.4+	0.6+	1998 09 18	704	0.6−	0.5+	2000 01 04	704	0.3+	0.7+
1998 07 26	699	0.5+	0.9+	1998 09 18	704	(2.3−	1.5−)				
1998 07 26	699	0.0	0.0	1998 09 18	704	0.5+	0.8−				

(13255)* 1998 OH₁₄ = 1936 YG = 1978 GX₂ = 1980 TO₁₃ = 1991 RS₂₅

Discovered 1998 July 26 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32493)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	46.63530	<i>P</i>	(2000.0)	<i>Q</i>			
<i>n</i>	0.26752627	<i>ω</i>	323.83203	−0.09969616	−0.99107484		
<i>a</i>	2.3853847	<i>Ω</i>	131.71080	+0.93848012	−0.12321144		
<i>e</i>	0.2354220	<i>i</i>	6.80810	+0.33062932	+0.05088820		
<i>P</i>	3.68	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1936 12 22	024	0.3+	0.9−	1998 08 23	704	1.3−	0.7−	1998 12 08	704	0.5+	0.8+
1978 04 11	095	1.5−	0.2−	1998 08 23	704	1.5−	0.2+	1998 12 08	704	1.8−	0.6+
1980 10 12	095	(1.1+	4.0+)	1998 08 23	704	(2.6−	0.7+)	1998 12 08	704	(3.2−	0.3−)

1991 09 12	675	0.6+	0.7−	1998 08 23	704	0.6−	0.1−	1999 12 05	704	0.6+	0.2−
1991 09 12	675	0.2−	0.1−	1998 08 23	704	(2.3−	1.1+)	1999 12 05	704	0.0	0.3+
1991 09 13	675	0.6−	0.1+	1998 08 27	699	0.9−	0.8+	1999 12 05	704	0.7+	0.0
1991 09 13	675	0.7+	0.1+	1998 08 27	699	0.6−	0.3+	1999 12 05	704	0.4+	0.6+
1991 09 15	675	0.0	0.6+	1998 08 27	699	0.8−	0.1−	1999 12 05	704	0.6+	0.4−
1991 09 15	675	0.4+	0.9+	1998 09 14	704	0.3+	0.1−	1999 12 05	699	0.6+	0.5+
1991 09 16	675	0.1−	0.7−	1998 09 14	704	0.7+	0.0	1999 12 05	699	0.3+	0.3−
1991 09 16	675	0.0	0.0	1998 09 14	704	0.4+	0.3+	1999 12 05	699	0.2−	0.1+
1997 04 16	704	1.2+	0.9+	1998 09 14	704	0.1+	0.2+	1999 12 18	699	0.6+	0.4+
1997 04 16	704	1.3+	1.1+	1998 09 14	704	0.6+	0.0	1999 12 18	699	0.4+	0.0
1998 07 26	809	1.8+	1.9−	1998 09 18	704	0.6+	0.1−	1999 12 18	699	0.1−	0.4+
1998 07 26	809	1.6+	1.4−	1998 09 18	704	0.1+	0.2+	2000 01 04	704	0.1+	0.3+
1998 07 26	809	0.8+	1.8−	1998 09 18	704	1.0−	0.1+	2000 01 04	704	0.1+	0.2+
1998 07 27	809	1.0+	1.2−	1998 09 18	704	(2.3+	0.2+)	2000 01 04	704	1.2−	0.1+
1998 07 27	809	0.4+	1.6−	1998 09 18	704	(0.2+	2.6+)	2000 01 04	704	0.2−	0.8−
1998 07 27	809	0.0	1.0−	1998 09 24	699	1.3+	1.0+	2000 01 04	704	0.0	0.4−
1998 08 17	704	0.2−	0.1+	1998 09 24	699	0.1−	1.0+	2000 01 08	704	0.4−	0.0
1998 08 17	704	0.3+	0.1+	1998 09 24	699	0.4−	0.0	2000 01 08	704	0.0	0.3−
1998 08 17	704	0.6−	1.0+	1998 11 20	699	1.4−	1.5+	2000 01 08	704	0.6−	0.1+
1998 08 17	704	0.4−	1.2+	1998 11 20	699	0.8−	1.2+	2000 01 08	704	0.1−	0.4+
1998 08 17	704	0.3−	0.9+	1998 12 08	704	(1.3−	2.6+)	2000 01 08	704	0.0	0.9+

(13256)* 1998 OZ₁₄ = 1971 QF₂ = 1981 EW = 1991 XW₂

Discovered 1998 July 26 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32493)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	106.01234	<i>P</i>	(2000.0)	<i>Q</i>			
<i>n</i>	0.25663449	<i>ω</i>	238.71364	+0.93262721	−0.33569044		
<i>a</i>	2.4524078	<i>Ω</i>	140.46205	+0.35882511	+0.90149595		
<i>e</i>	0.1522635	<i>i</i>	12.00026	−0.03809237	+0.27316108		
<i>P</i>	3.84	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1971 08 19	808	(14.7+	10.2+)	1998 08 23	704	0.8−	1.0−	1999 11 06	703	0.3+	0.2+
1981 03 03	809	0.6−	0.9−	1998 08 23	704	0.1+	0.2−	1999 11 06	703	0.5+	0.5−
1981 03 03	809	0.2−	0.5−	1998 08 28	699	0.2+	0.2+	1999 11 06	703	0.2+	0.4+
1981 03 03	809	0.2+	0.1+	1998 08 28	699	0.0	0.3+	1999 11 06	703	0.6+	0.5−
1991 12 07	809	(2.5+	0.4−)	1998 08 28	699	0.1−	0.8+	1999 11 17	704	0.6+	0.1+
1991 12 07	809	0.6+	0.7−	1998 09 14	704	0.7+	0.5+	1999 11 17	704	0.4+	0.5+
1991 12 07	809	0.2−	0.5−	1998 09 14	704	0.7−	0.8+	1999 11 17	704	0.1−	0.3−
1991 12 09	809	0.5+	0.7−	1998 09 14	704	0.6−	0.2+	1999 11 17	704	1.7−	1.5+
1991 12 09	809	0.0	0.0	1998 09 14	704	0.2−	0.0	1999 11 17	704	0.2−	1.3+
1991 12 09	809	0.2+	1.4−	1998 09 14	704	0.4−	0.7+	1999 12 05	704	1.2−	1.3+
1998 06 30	699	1.1−	0.6−	1998 09 17	699	0.0	0.1−	1999 12 05	704	0.4−	1.3+
1998 06 30	699	1.3−	0.3+	1998 09 17	699	0.1+	0.3−	1999 12 05	704	0.2−	0.2−
1998 06 30	699	0.8−	0.7+	1998 09 17	699	0.1+	0.2−	1999 12 05	704	0.9+	0.7−
1998 07 26	809	1.4+	0.8−	1998 09 18	704	0.2−	0.4−	2000 01 05	704	0.2−	0.1−
1998 07 26	809	1.7+	1.1−	1998 09 18	704	0.6+	1.2+	2000 01 05	699	0.1+	0.6+
1998 07 26	809	0.9+	1.1−	1998 09 18	704	0.9+	0.5+	2000 01 05	704	0.1−	0.9−
1998 07 27	809	1.9+	0.0	1998 09 18	704	0.5+	0.6+	2000 01 05	704	0.3−	0.5−
1998 07 27	809	1.1+	0.2+	1998 09 18	704	0.4+	0.3−	2000 01 05	699	0.1+	0.9+
1998 07 27	809	1.3+	0.5−	1998 09 24	699	0.5−	0.5+	2000 01 05	704	0.1+	0.4−
1998 08 17	704	0.3−	0.1−	1998 09 24	699	0.0	0.3+	2000 01 05	699	0.2+	0.5+
1998 08 17	704	1.7−	1.2+	1998 09 24	699	0.7+	0.2+	2000 01 05	704	0.2−	0.0
1998 08 17	704	0.3−	0.7−	1998 12 08	704	1.0−	0.9+	2000 01 07	704	0.0	0.3−
1998 08 17	704	0.3+	0.2+	1998 12 08	704	0.5−	0.2+	2000 01 07	704	0.2−	0.3−
1998 08 17	704	1.7−	0.6−	1998 12 08	704	0.2−	0.5+	2000 01 07	704	0.1−	0.2−
1998 08 21	566	0.2−	1.1−	1998 12 08	704	0.6−	1.2+	2000 01 07	704	0.1+	0.1−
1998 08 21	566	0.3+	1.0−	1998 12 08	704	1.1−	1.2+	2000 01 07	704	0.0	0.1−
1998 08 21	566	0.2−	1.3−	1999 10 20	704	0.2+	1.0−	2000 01 16	120	0.3+	0.5+
1998 08 23	704	0.3−	1.0−	1999 10 20	704	0.7+	0.9−	2000 01 17	120	1.0−	0.4+
1998 08 23	704	0.9+	0.3−	1999 10 20	704	0.5+	1.5−				
1998 08 23	704	0.4−	0.3−	1999 10 20	704	1.3+	1.1−				

(13257)* 1998 QT₈ = 1981 UV₂₆ = 1992 EP₂₀

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. S. Nakano (*MPC* 32691)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano					
<i>M</i>	99.30707	(2000.0)		P		Q			
<i>n</i>	0.22377217	ω	283.01084	+0.97306740		+0.21772805			
<i>a</i>	2.6869856	Ω	64.45561	-0.16521584		+0.88778717			
<i>e</i>	0.1175961	<i>i</i>	4.81446	-0.16075936		+0.40549777			
<i>P</i>	4.40	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1981 10 25	675	0.2+	0.8+	1998 08 23	704	0.6-	1.4-	1999 12 15	703	0.0	1.0+
1981 10 26	675	1.1-	1.3+	1998 08 29	699	0.6-	0.1-	1999 12 15	703	0.5-	0.1+
1992 03 02	809	0.6+	0.7+	1998 08 29	699	0.4+	1.3-	1999 12 15	703	0.6-	0.5+
1992 03 05	809	0.5-	0.7-	1998 08 29	699	0.6-	0.1+	2000 01 03	704	0.2+	0.3+
1992 03 06	809	(1.3- 2.5-)		1999 11 16	704	0.1-	0.2-	2000 01 03	704	0.1+	0.4-
1998 08 17	704	0.4-	0.3+	1999 11 16	704	0.1-	0.0	2000 01 03	704	0.0	0.4-
1998 08 17	704	0.9+	0.1-	1999 11 16	704	0.2-	0.4-	2000 01 03	704	0.4+	0.7-
1998 08 17	704	0.7+	0.6-	1999 11 16	704	0.6-	0.0	2000 01 03	704	0.0	0.2-
1998 08 17	704	0.2-	0.2-	1999 11 16	704	0.1-	0.0	2000 01 04	704	0.5+	0.4-
1998 08 17	704	1.5+	0.8-	1999 12 07	704	0.3-	0.0	2000 01 04	704	0.2+	0.1-
1998 08 23	704	0.2+	1.1+	1999 12 07	704	0.1-	0.2+	2000 01 04	704	0.1+	0.5-
1998 08 23	704	1.1-	0.4+	1999 12 07	704	0.3-	0.2+	2000 01 04	704	0.3-	0.4-
1998 08 23	704	0.2-	0.0	1999 12 07	704	0.0	0.1+	2000 01 04	704	0.1+	0.4-
1998 08 23	704	0.4+	0.6+	1999 12 15	703	2.0+	1.6-				

(13258)* 1998 QT₁₂ = 1980 RF₇ = 1990 HV

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. G. V. Williams (*MPC* 32497)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	203.44782	(2000.0)		P		Q			
<i>n</i>	0.26990682	ω	330.60372	-0.15583314		+0.98293556			
<i>a</i>	2.3713381	Ω	290.28573	-0.88471162		-0.18289664			
<i>e</i>	0.0934027	<i>i</i>	5.98145	-0.43931923		+0.01965961			
<i>P</i>	3.65	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1980 09 13	675	0.1+	0.5-	1998 08 28	699	0.6-	0.3-	1999 12 15	704	0.0	0.1+
1980 09 14	675	0.3+	0.3-	1998 08 28	699	0.5-	0.1-	1999 12 15	704	0.7-	1.1+
1990 04 26	675	0.8-	1.6+	1998 08 28	699	0.0	0.2+	1999 12 15	704	0.2-	1.1+
1990 04 28	675	1.0+	1.3-	1998 08 30	699	0.2-	0.8-	1999 12 15	704	0.6+	1.3+
1990 04 28	675	0.7-	1.2-	1998 08 30	699	0.2+	0.2+	1999 12 15	703	0.5-	0.1-
1997 03 09	691	0.1+	0.3-	1998 08 30	699	0.2+	0.7+	1999 12 15	703	0.4-	0.2+
1997 03 09	691	0.3-	0.4-	1998 09 15	699	0.3+	1.0-	1999 12 15	703	0.3-	0.5+
1997 03 09	691	0.1-	0.3-	1998 09 15	699	0.6+	1.1-	1999 12 15	703	1.3-	0.6-
1998 08 17	704	0.3+	0.3-	1998 09 15	699	0.1+	0.7-	2000 01 03	704	0.4-	0.2+
1998 08 17	704	0.5+	0.4+	1999 11 14	704	0.5+	0.1-	2000 01 03	704	0.1-	0.1+
1998 08 17	704	0.6+	0.4+	1999 11 14	704	0.3-	0.5-	2000 01 03	704	0.2+	0.6-
1998 08 17	704	0.5+	0.5+	1999 11 14	704	0.3+	0.3-	2000 01 03	704	0.0	0.8-
1998 08 17	704	(2.3- 2.6+)		1999 11 14	704	0.1-	1.0+	2000 01 03	704	0.5+	0.4-
1998 08 23	704	0.1+	0.5-	1999 12 07	704	0.2-	0.4-	2000 01 04	704	0.5+	0.2-
1998 08 23	704	1.1-	1.1+	1999 12 07	704	0.1-	0.5-	2000 01 04	704	0.1+	0.0
1998 08 23	704	(2.0- 2.5+)		1999 12 07	704	0.2+	0.6-	2000 01 04	704	1.2+	0.0
1998 08 23	704	0.7-	0.3+	1999 12 07	704	0.4+	0.7-	2000 01 04	704	0.1+	0.1-

(13259)* 1998 QA₁₅ = 1980 PA₄ = 1997 BK₉

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. G. V. Williams (*MPC* 32497)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	168.22150	(2000.0)		P		Q			
<i>n</i>	0.27420237	ω	143.95464	+0.51322214		+0.85680695			
<i>a</i>	2.3465073	Ω	156.79974	-0.81408291		+0.50437901			
<i>e</i>	0.1213476	<i>i</i>	7.26950	-0.27179411		+0.10716188			
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1980 08 04	675	0.1-	0.8-	1998 08 23	704	(1.8+ 2.3+)		1999 12 14	704	0.0	0.3-
1980 08 05	675	0.4+	0.5-	1998 08 23	704	(0.4+ 2.6+)		1999 12 14	704	0.3-	0.4+
1994 06 07	691	0.6-	0.1-	1998 08 27	699	0.0	0.4+	1999 12 14	704	0.3+	0.0
1994 06 07	691	0.2-	0.3-	1998 08 27	699	0.7+	0.3+	1999 12 14	704	0.2-	0.1-
1994 06 07	691	0.1-	0.1-	1998 08 27	699	0.2+	0.1-	2000 01 05	704	0.3-	0.2-
1997 01 17	599	0.8+	0.9-	1998 09 14	699	0.1-	0.4+	2000 01 05	704	0.8-	0.2-
1997 01 17	599	0.5+	0.1+	1998 09 14	699	0.4+	0.9-	2000 01 05	704	0.6-	0.0
1997 01 18	599	0.7+	0.9+	1998 09 14	699	0.0	0.0	2000 01 05	704	0.2+	0.2-
1997 01 18	599	0.2+	0.8+	1998 09 23	691	0.4+	0.6+	2000 01 07	704	0.0	0.2+
1998 07 20	566	1.2-	0.8-	1998 09 23	691	0.1+	0.3+	2000 01 07	704	0.1-	0.2-
1998 07 20	566	1.9-	0.6-	1998 09 23	691	1.0+	0.3-	2000 01 07	704	0.2+	0.1-
1998 07 20	566	1.4-	0.9-	1998 09 27	691	0.5-	0.6+	2000 01 07	704	0.3+	0.2-
1998 08 17	704	0.5-	0.5+	1998 09 27	691	0.5-	0.6+	2000 01 07	704	0.9-	0.7-
1998 08 17	704	0.5+	0.1+	1998 09 27	691	0.0	0.1-	2000 01 07	704	0.6+	0.1-
1998 08 17	704	0.2+	0.0	1998 10 19	699	1.0+	0.0	2000 01 07	704	0.4+	0.4-
1998 08 17	704	0.6+	0.4+	1998 10 19	699	0.2+	0.2-	2000 01 07	704	0.5+	0.5-
1998 08 23	704	0.6+	0.9+	1998 10 19	699	0.3+	0.4+	2000 01 07	704	0.4-	0.1-
1998 08 23	704	0.8+	0.0	1998 12 14	704	0.1-	0.7+				

(13260)* 1998 QZ₁₅ = 1974 TQ₁

Discovered 1998 Aug. 23 by F. Casarramona and A. Vidal at Montjoia.

Id. A. Gnädig (*MPC* 34924), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	160.26848	(2000.0)		P		Q			
<i>n</i>	0.24228510	ω	7.49638	+0.41540800		+0.88486100			
<i>a</i>	2.5483060	Ω	287.24243	-0.84561248		+0.29023033			
<i>e</i>	0.1573869	<i>i</i>	12.75428	-0.33522489		+0.36440000			
<i>P</i>	4.07	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1952 01 31	675	2.3-	1.3-	1998 08 26	619	0.1-	0.4+	1998 11 21	704	1.4+	0.6+
1952 01 31	675	0.4+	1.0-	1998 08 27	704	0.9+	0.4-	1998 11 21	704	(2.1+ 0.5-)	
1974 10 11	033	0.7+	1.2-	1998 08 27	704	0.5+	0.4-	1998 11 21	704	1.7-	0.7+
1974 10 11	033	0.9+	1.5-	1998 08 27	704	0.3+	0.8+	1998 12 09	704	0.5+	0.0
1990 09 15	675	0.0	0.6+	1998 08 27	704	0.2-	0.9+	1998 12 09	704	0.1+	0.5+
1990 09 15	675	0.4-	0.3-	1998 08 27	704	(1.6- 5.9+)		1998 12 09	704	1.9-	1.9+
1998 06 29	704	1.8+	1.1-	1998 08 29	619	0.3+	0.5+	1998 12 09	704	1.5-	1.4-
1998 06 29	704	0.8+	0.6+	1998 08 29	619	0.1-	0.5-	1998 12 09	704	1.2-	0.1+
1998 06 29	704	(0.1- 2.0+)		1998 08 29	619	0.3+	0.0	1999 10 14	704	0.3-	0.0
1998 06 29	704	0.7-	0.0	1998 09 03	954	0.3-	0.8-	1999 10 14	704	0.8-	0.1+
1998 06 29	704	0.0	1.2+	1998 09 03	954	0.3-	0.9-	1999 10 14	704	1.2-	0.2+
1998 06 30	699	0.7-	0.6+	1998 09 03	954	0.2-	0.8-	1999 10 14	704	0.7-	1.0+
1998 06 30	699	0.3-	0.8+	1998 09 04	954	0.1-	0.5-	1999 10 14	704	0.7-	0.3+
1998 06 30	699	0.3-	0.8+	1998 09 04	954	0.0	0.5-	1999 12 15	704	0.2-	0.3+
1998 08 02	699	0.6+	0.0	1998 09 04	954	0.1+	0.5-	1999 12 15	704	0.3+	0.0
1998 08 02	699	0.4+	0.3-	1998 09 05	954	0.3-	0.8-	1999 12 15	704	0.5+	0.1+
1998 08 02	699	0.4+	0.2-	1998 09 05	954	0.3-	0.9-	1999 12 15	704	0.4+	0.1-
1998 08 23	953	0.3-	0.1+	1998 09 05	954	0.2-	0.9-	1999 12 18	619	0.3+	0.4+</

1998 08 25 619 0.3- 0.0 1998 09 21 954 0.0 0.3- 2000 01 04 704 0.4+ 0.3-
 1998 08 26 619 0.8+ 0.5+ 1998 11 21 704 1.8+ 0.3+ 2000 01 04 704 0.1+ 0.6+
 1998 08 26 619 0.1- 0.4+ 1998 11 21 704 0.2- 1.9+ 2000 01 04 704 0.8+ 0.1+

(13261)* 1998 QM₁₆ = 1990 QA₁₈ = 1997 ET₁₅

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 32693)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	153.66490	(2000.0)		P		Q	
<i>n</i>	0.24522389	ω	112.12231	+0.55714087	+0.83026850		
<i>a</i>	2.5279057	Ω	191.77493	-0.78751422	+0.52224094		
<i>e</i>	0.1504414	<i>i</i>	4.42834	-0.26346803	+0.19472704		
<i>P</i>	4.02	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 08 26	095	1.1+	0.7-	1998 08 17	704	0.2+	1.0+	1999 11 17	704	1.1-	0.5+
1990 08 26	095	0.5-	1.3-	1998 08 17	704	0.7-	0.1+	1999 12 06	704	0.1+	0.7+
1990 08 30	095	(1.8-	6.5+)	1998 08 17	704	0.0	0.0	1999 12 06	704	0.9+	1.0+
1997 03 05	691	0.1-	0.2-	1998 08 23	704	0.2+	0.2-	1999 12 06	704	0.0	0.0
1997 03 05	691	0.1+	0.1-	1998 08 23	704	0.2-	0.5-	1999 12 14	704	0.4-	0.2+
1997 03 05	691	0.0	0.2-	1998 08 23	704	0.2+	0.1+	1999 12 14	704	0.1-	0.4+
1997 03 10	691	0.1+	0.2-	1998 08 23	704	0.3-	1.4-	1999 12 14	704	0.4+	0.4-
1997 03 10	691	0.1-	0.1+	1998 09 10	910	0.6+	0.6+	1999 12 14	704	0.7+	0.8+
1997 03 10	691	0.1-	0.0	1998 09 11	910	0.5+	0.6+	2000 01 05	704	0.5-	0.8-
1998 06 30	699	0.4-	0.1-	1998 09 11	910	0.4+	0.6+	2000 01 05	704	0.4-	0.3-
1998 06 30	699	0.1+	0.4-	1999 11 17	704	0.4+	0.0	2000 01 05	704	0.8+	1.2-
1998 06 30	699	0.4-	0.5+	1999 11 17	704	0.6+	0.3+	2000 01 05	704	0.3-	0.2-
1998 08 17	704	0.2-	0.5+	1999 11 17	704	0.4-	0.0	2000 01 05	704	0.5-	0.3-
1998 08 17	704	0.5-	0.0	1999 11 17	704	0.3-	0.9-				

(13262)* 1998 QF₁₇ = 1991 RM₂₅

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 32498)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	197.40147	(2000.0)		P		Q	
<i>n</i>	0.26903661	ω	146.31101	-0.01870269	+0.99549178		
<i>a</i>	2.3764488	Ω	122.45399	-0.93991943	+0.01420246		
<i>e</i>	0.1026593	<i>i</i>	6.32659	-0.34088368	-0.09377845		
<i>P</i>	3.66	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 09 12	675	1.0+	0.2-	1998 09 14	704	0.3-	0.6+	1999 11 17	704	0.4+	0.3-
1991 09 12	675	0.1-	0.4-	1998 09 14	704	0.1+	0.2+	1999 11 17	704	0.3+	0.4+
1991 09 16	675	0.1+	1.0-	1998 09 14	704	0.6-	0.0	1999 11 17	704	0.0	0.4+
1991 09 16	675	0.3-	0.4-	1998 09 14	704	0.4-	0.3+	1999 12 08	704	0.2-	0.0
1992 12 24	691	0.1+	0.1+	1998 09 14	704	0.2-	0.4-	1999 12 08	704	0.0	0.2-
1992 12 24	691	0.0	0.1+	1998 09 14	699	0.4-	0.2+	1999 12 08	704	0.2-	0.1-
1992 12 24	691	0.1+	0.3+	1998 09 14	699	0.0	0.5+	1999 12 08	704	0.4-	0.5-
1998 07 31	699	1.2-	0.3+	1998 09 14	699	0.0	0.6+	1999 12 08	704	0.1-	0.2-
1998 07 31	699	0.4-	0.6+	1998 09 24	699	0.6-	0.3+	1999 12 14	704	0.2-	0.0
1998 07 31	699	0.9-	0.4+	1998 09 24	699	0.8-	0.6+	1999 12 14	704	0.0	0.1+
1998 08 17	704	0.3+	0.6+	1998 09 24	699	0.5-	1.1+	1999 12 14	704	0.7-	0.8-
1998 08 17	704	0.8+	0.9+	1999 10 10	704	0.8+	0.2+	1999 12 14	704	0.2-	0.2+
1998 08 17	704	1.0+	0.4-	1999 10 10	704	0.2+	0.0	1999 12 14	704	0.0	0.0
1998 08 17	704	0.0	0.7-	1999 10 10	704	0.3+	0.1-	2000 01 05	704	0.3-	1.8+
1998 08 17	704	0.7+	1.1-	1999 10 10	704	0.1-	0.0	2000 01 05	704	0.9-	1.0+
1998 08 23	704	0.1-	0.4-	1999 10 10	704	0.5+	0.2+	2000 01 05	704	0.2-	1.6+
1998 08 23	704	0.2+	0.2+	1999 10 21	704	0.3+	0.2-	2000 01 05	704	0.2-	0.8+
1998 08 23	704	1.4+	0.6-	1999 10 21	704	0.9+	0.1-	2000 01 06	704	0.2-	0.1-
1998 08 23	704	0.6-	1.6-	1999 10 21	704	0.0	0.2-	2000 01 06	704	0.0	0.8-
1998 08 27	699	0.5+	0.1+	1999 10 21	704	0.2+	0.1+	2000 01 06	704	0.3+	1.0-
1998 08 27	699	0.3+	0.2+	1999 10 21	704	0.4+	0.2+	2000 01 06	704	0.1-	0.7-
1998 08 27	699	0.8+	0.3+	1999 11 17	704	0.5+	0.2+	2000 01 06	704	0.0	1.2-

(13263)* 1998 QV₂₂ = 1993 SW₅

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 32695)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	356.16709	(2000.0)		P		Q	
<i>n</i>	0.17974372	ω	66.96706	+0.12784219	-0.99175218		
<i>a</i>	3.1095692	Ω	15.69628	+0.89710313	+0.11169117		
<i>e</i>	0.0859215	<i>i</i>	1.94133	+0.42292121	+0.06287051		
<i>P</i>	5.48	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 09 17	809	(1.6+	2.9+)	1999 10 12	704	0.0	0.1-	1999 11 14	704	0.1+	0.1-
1993 09 17	809	(0.8+	3.2+)	1999 10 12	704	1.0-	0.8-	1999 11 16	704	0.3-	0.4-
1993 09 17	809	(0.3-	2.7+)	1999 10 14	699	1.3-	0.2-	1999 11 16	704	0.1+	0.4-
1993 09 18	809	1.0-	0.1-	1999 10 14	699	0.7-	0.9+	1999 11 16	704	0.2-	0.7-
1993 09 18	809	1.0-	0.7-	1999 10 22	704	1.1+	0.2-	1999 11 16	704	0.0	0.5-
1993 09 18	809	1.2-	0.0	1999 10 22	704	0.4+	0.7-	1999 11 16	704	0.0	0.1-
1993 09 18	675	1.1+	1.1+	1999 10 22	704	0.2+	0.7-	1999 11 19	699	0.3+	0.0
1993 09 18	675	1.9+	0.8+	1999 10 22	704	0.4+	0.8-	1999 11 19	699	0.4-	0.3+
1993 09 22	809	0.8+	0.8-	1999 10 22	704	0.0	1.1-	1999 11 19	699	0.2-	0.0
1993 09 22	809	0.1-	1.0-	1999 11 03	704	1.2+	0.6+	1999 11 30	385	0.5-	0.6-
1993 09 22	809	1.7-	0.5-	1999 11 03	704	0.4+	0.7+	1999 11 30	385	0.1+	0.1-
1993 09 22	675	1.6+	0.4+	1999 11 03	704	0.2+	0.5+	1999 12 02	699	0.3+	0.9+
1993 09 22	675	0.5+	1.7-	1999 11 03	704	0.4+	0.7+	1999 12 02	699	0.2+	0.1-
1993 09 24	809	(2.9+	0.1-)	1999 11 03	704	0.0	0.9+	1999 12 02	699	0.3-	0.1+
1993 09 24	809	(2.5+	0.5-)	1999 11 04	703	0.4-	0.7+	1999 12 05	703	0.0	0.4+
1993 09 24	809	0.9+	1.3-	1999 11 04	703	0.4-	0.0	1999 12 05	703	0.2+	0.2+
1996 03 18	566	0.7+	0.6-	1999 11 04	703	0.6-	0.1-	1999 12 05	703	0.2-	0.4+
1996 03 18	566	0.2+	0.6-	1999 11 04	703	0.1-	0.1-	1999 12 05	703	0.9-	0.2+
1996 03 18	566	0.6+	0.9-	1999 11 05	704	0.2-	0.0	1999 12 07	704	0.3+	0.1-
1996 04 22	566	1.0-	0.0	1999 11 05	704	0.0	0.2+	1999 12 07	704	0.2+	0.6-
1996 04 22	566	0.3-	0.4+	1999 11 05	704	0.4+	0.2+	1999 12 07	704	(0.2+	2.4-)
1996 04 22	566	1.1-	0.0	1999 11 05	704	0.2+	0.5-	1999 12 07	704	0.5-	0.9-
1998 08 17	704	0.1-	0.3+	1999 11 05	704	0.3-	0.9+	1999 12 07	704	0.1-	1.0-
1998 08 17	704	1.1-	0.6-	1999 11 06	704	0.2-	0.7+	1999 12 07	106	1.7+	0.2+
1998 08 17	704	0.4+	0.5-	1999 11 06	704	0.4-	0.4+	1999 12 07	106	0.4-	0.2+
1998 08 17	704	0.6+	0.2+	1999 11 06	704	0.3-	0.4+	1999 12 07	106	0.0	0.3+
1998 08 17	704	0.2-	0.1-	1999 11 06	704	0.1+	0.4+	1999 12 08	704	0.3+	0.4-
1998 08 23	704	0.8-	0.4+	1999 11 09	703	0.4+	1.1+	1999 12 08	704	0.4+	0.3-
1998 08 23	704	1.5-	1.2-	1999 11 09	703	0.4-	0.1-	1999 12 08	704	0.7+	0.1-
1998 08 23	704	1.6-	1.9+	1999 11 09	703	0.4-	0.3+	1999 12 08	704	0.4+	0.2-
1998 08 23	704	1.7+	0.1+	1999 11 09	703	0.3-	0.3+	1999 12 08	704	0.2+	0.4-
1998 09 13	699	0.0	0.2+	1999 11 12	699	0.4-	0.7+	1999 12 13	703	0.4-	0.2+
1998 09 13	699	0.8+	0.2-	1999 11 12	699	0.1-	0.3+	1999 12 13	703	0.2-	0.2+
1998 09 13	699	1.0+	1.5+	1999 11 12	699	0.5+	0.4+	1999 12 13	703	0.4-	0.5+
1999 10 12	704	0.3+	0.6-	1999 11 14	704	0.2+	0.1-	1999 12 13	703	0.1+	0.2+
1999 10 12	704	0.4+	0.8-	1999 11 14	704	0.1-	0.0				
1999 10 12	704	0.5-	0.9-	1999 11 14	704	0.1+	0.3-				

(13264)* 1998 QD₂₃ = 1987 SX₂

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 32499)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	201.09053	(2000.0)		P		Q	
<i>n</i>	0.26161928	ω	249.58608	-0.04713901	+0.99843011		
<i>a</i>	2.4211566	$\$					

1987 09 21	071	0.9–	0.0	1998 08 28	699	0.2–	0.2+	1999 12 12	704	0.4–	0.1–
1987 09 21	071	(2.1+	3.0+)	1998 09 14	704	0.4+	0.5–	1999 12 12	704	0.1–	0.6+
1987 09 21	071	(5.4+	1.0–)	1998 09 14	704	0.6–	0.2+	1999 12 12	704	0.3+	0.8+
1987 09 21	071	(5.2+	1.4–)	1998 09 14	704	0.5–	1.0–	1999 12 13	704	0.5+	0.2+
1997 01 31	910	0.5–	0.5–	1998 09 14	704	0.3+	0.1–	1999 12 13	704	0.5+	0.0
1997 01 31	910	0.3–	0.6–	1998 09 14	704	0.2+	0.8+	1999 12 13	704	0.3–	0.3+
1997 01 31	910	0.5–	0.4–	1998 09 18	704	0.7+	0.9–	1999 12 13	704	0.5+	0.0
1998 07 31	699	0.7–	0.3+	1998 09 18	704	1.3+	0.4–	1999 12 13	704	0.1+	0.4+
1998 07 31	699	0.0	1.0+	1998 09 18	704	0.1–	1.7–	1999 12 15	704	0.0	0.7+
1998 07 31	699	0.2–	0.0	1998 09 18	704	0.1+	1.2–	1999 12 15	704	0.2+	0.2+
1998 08 17	704	(2.1–	0.1+)	1998 09 18	704	0.2+	0.6+	1999 12 15	704	0.2–	0.4+
1998 08 17	704	0.1–	0.5+	1998 09 24	699	0.3–	0.8–	1999 12 15	704	1.1–	0.5+
1998 08 17	704	0.8–	1.1+	1998 09 24	699	0.2–	0.3–	2000 01 02	704	0.3+	0.2+
1998 08 17	704	0.3+	1.1+	1998 09 24	699	0.1+	0.2+	2000 01 02	704	0.0	0.0
1998 08 17	704	0.1+	1.0+	1998 12 08	704	(1.5+	2.6–)	2000 01 02	704	0.1–	0.5–
1998 08 23	704	0.1–	0.1–	1998 12 08	704	1.3–	1.4–	2000 01 04	704	0.1–	0.2+
1998 08 23	704	0.4+	0.3+	1998 12 08	704	1.1–	0.8+	2000 01 04	704	0.1–	0.5+
1998 08 23	704	0.3–	0.4+	1999 10 13	704	0.9–	1.4–	2000 01 04	704	0.1–	0.2+
1998 08 23	704	0.3+	0.4+	1999 10 13	704	0.8+	0.6–	2000 01 04	704	0.4–	0.3+
1998 08 23	704	0.2+	0.3–	1999 10 13	704	1.0+	0.4–				

(13265)* 1998 QP₂₃ = 1555 T-2 = 1991 SC₅

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32696)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	70.83114	(2000.0)	P	Q	
<i>n</i>	0.27389670	ω	76.01821	+0.41087039	–0.91159488
<i>a</i>	2.3482528	Ω	349.69150	+0.80482671	+0.36958876
<i>e</i>	0.1275195	<i>i</i>	4.30338	+0.42829837	+0.17999703
<i>P</i>	3.60	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.9+	0.5–	1998 08 17	704	0.4+	0.5+	1998 09 18	704	1.1+	0.4+
1973 09 19	675	0.1+	0.1+	1998 08 23	699	0.3–	0.2–	1998 09 18	704	0.7+	0.3+
1973 09 20	675	0.2–	0.4–	1998 08 23	704	0.5+	0.1+	1998 09 18	704	0.2–	1.3+
1973 09 24	675	1.1+	1.0–	1998 08 23	704	1.9–	1.0–	1999 11 16	704	0.4–	1.0+
1973 09 24	675	0.3+	1.1–	1998 08 23	699	0.3–	0.2–	1999 11 16	704	0.0	0.1+
1973 09 25	675	0.1–	1.6–	1998 08 23	704	0.1+	0.2+	1999 11 16	704	0.1+	0.2+
1973 09 25	675	0.3+	0.2–	1998 08 23	704	0.3+	0.7–	1999 11 16	704	0.2+	1.0+
1991 09 17	675	1.6–	1.0+	1998 08 23	699	0.5–	0.6–	1999 11 16	704	0.4+	0.2–
1991 09 17	675	1.6+	0.2–	1998 08 23	704	1.0–	1.2–	1999 12 06	704	0.4+	1.2–
1998 07 27	809	0.4+	1.2+	1998 09 13	699	0.6–	0.2+	1999 12 06	704	0.2+	0.3–
1998 07 27	809	0.1–	0.6+	1998 09 13	699	(2.5–	0.7+)	1999 12 06	704	0.6–	0.2+
1998 07 27	809	0.1–	0.8+	1998 09 13	699	0.3–	0.6+	1999 12 06	704	0.1–	0.2+
1998 07 31	699	0.7–	0.8–	1998 09 14	704	1.3–	1.0+	1999 12 15	704	0.6–	0.9+
1998 07 31	699	0.8–	0.6–	1998 09 14	704	0.5+	0.2+	1999 12 15	704	0.8+	1.5+
1998 07 31	699	0.9+	0.1+	1998 09 14	704	0.8–	1.5+	1999 12 15	704	0.0	0.1+
1998 08 17	704	0.5+	0.0	1998 09 14	704	0.6–	1.7+	1999 12 15	704	0.6+	0.7+
1998 08 17	704	0.2–	0.9–	1998 09 14	704	0.1–	1.7+	2000 01 10	699	0.0	0.1+
1998 08 17	704	0.3+	0.1–	1998 09 18	704	1.9–	1.8+	2000 01 10	699	0.5+	0.2+
1998 08 17	704	0.8+	0.8+	1998 09 18	704	1.8+	0.8–	2000 01 10	699	0.6+	0.6+

(13266)* 1998 QY₃₀ = 1992 GN₄ = 1996 CZ₇

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32698)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	106.90206	(2000.0)	P	Q	
<i>n</i>	0.20373147	ω	18.92506	+0.94188900	+0.33554292
<i>a</i>	2.8604255	Ω	321.45756	–0.31142291	+0.85434033
<i>e</i>	0.0860905	<i>i</i>	1.47159	–0.12594001	+0.39687976
<i>P</i>	4.84	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1992 04 04	809	1.3+	0.5+	1998 08 23	704	1.1+	1.4+	1999 11 16	704	0.0	0.6+
1992 04 04	809	0.3–	0.4–	1998 08 23	704	0.3–	0.4+	1999 11 16	704	0.3–	0.0
1992 04 04	809	0.0	1.2–	1998 08 23	699	0.2–	0.0	1999 11 16	704	0.4+	0.1+
1992 04 06	809	0.3+	0.8–	1998 08 23	704	0.1+	0.9–	1999 11 16	704	0.5+	0.4+
1992 04 06	809	0.7–	0.8–	1998 09 14	704	0.7+	0.6–	1999 12 05	703	0.3–	0.1+
1992 04 06	809	1.8–	1.2–	1998 09 14	704	0.1+	0.9–	1999 12 05	703	0.3–	0.4+
1996 02 15	566	1.2–	1.4–	1998 09 14	704	0.4–	1.1–	1999 12 05	703	1.0–	0.1–
1996 02 15	566	1.0–	1.4–	1998 09 14	704	0.0	0.7–	1999 12 05	703	0.2+	0.5+
1996 02 15	566	1.0–	1.7–	1998 09 14	704	0.1+	0.0	1999 12 07	704	0.0	0.4–
1996 02 24	552	0.0	0.7–	1998 09 15	699	0.2+	0.0	1999 12 07	704	0.2+	0.1+
1996 02 24	552	0.0	0.1+	1998 09 15	699	0.8+	0.8–	1999 12 07	704	0.2+	0.1–
1996 03 14	327	0.3+	0.6–	1998 09 15	699	0.3–	0.1+	1999 12 07	704	0.0	0.1+
1996 03 14	327	0.2+	0.3+	1998 09 18	704	0.4+	0.0	2000 01 03	704	0.3–	0.1–
1996 03 14	327	0.2+	0.3–	1998 09 18	704	0.1–	0.5–	2000 01 03	704	0.0	0.2–
1998 08 17	704	0.4–	0.2–	1998 09 18	704	0.1+	0.1+	2000 01 03	704	0.6+	0.6–
1998 08 17	704	0.2–	0.6–	1998 09 18	704	1.2–	0.7–	2000 01 03	704	0.6+	0.7+
1998 08 17	704	0.2–	0.7–	1999 10 13	704	0.8–	0.9–	2000 01 03	704	1.0–	0.0
1998 08 17	704	0.1+	0.8–	1999 10 13	704	0.4–	0.3–	2000 01 04	704	0.1–	0.0
1998 08 17	704	0.3–	0.5–	1999 10 13	704	0.1–	0.8–	2000 01 04	704	0.2+	0.1–
1998 08 23	699	0.7+	0.2+	1999 10 13	704	0.1–	0.8–	2000 01 04	704	0.1–	0.5–
1998 08 23	704	0.3+	0.1+	1999 11 03	704	0.1+	0.1–	2000 01 04	704	0.5+	0.4–
1998 08 23	704	0.9+	0.5–	1999 11 03	704	0.9+	0.4–				
1998 08 23	699	1.0+	0.3–	1999 11 03	704	0.4+	0.7–				

(13267)* 1998 QV₃₂ = 1987 QX₁

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32698)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	90.12356	(2000.0)	P	Q	
<i>n</i>	0.18085005	ω	46.05412	+0.97930005	+0.19491481
<i>a</i>	3.0968746	Ω	302.63433	–0.19927158	+0.88104483
<i>e</i>	0.1725754	<i>i</i>	3.71646	–0.03552804	+0.43100838
<i>P</i>	5.45	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1987 08 21	809	0.6+	2.3+	1998 08 23	704	0.1–	0.7–	1998 09 18	704	1.0+	0.3–
1987 08 21	809	0.0	2.4+	1998 08 23	691	0.2+	0.0	1998 09 18	704	0.4–	1.5–
1987 08 21	809	0.6+	1.5+	1998 08 23	704	0.5+	0.3–	1998 09 18	704	0.1–	0.7–
1987 08 26	809	1.0–	2.0–	1998 08 23	704	0.0	0.3–	1999 11 14	704	0.9–	0.1–
1987 08 26	809	1.8–	1.0–	1998 08 23	704	1.1–	0.7+	1999 11 14	704	0.4+	0.6+
1987 08 26	809	0.2+	0.1+	1998 08 23	704	0.1+	0.7+	1999 11 14	704	0.3–	0.3+
1993 10 08	691	0.0	0.1+	1998 08 26	699	0.8+	0.3+	1999 11 14	704	0.3–	0.1+
1993 10 08	691	0.3–	0.4+	1998 08 26	699	0.1–	0.3+	1999 12 07	704	0.4–	0.2–
1993 10 08	691	0.0	0.3+	1998 08 26	699	0.1–	0.8+	1999 12 07	704	0.1+	0.9–
1993 11 09	691	0.4–	0.5+	1998 09 14	704	0.5+	1.4–	1999 12 07	704	0.1+	0.2–
1993 11 09	691	0.0	0.5+	1998 09 14	704	0.8–	0.9–	1999 12 07	704	0.0	0.1+
1993 11 09	691	0.1+	0.4+	1998 09 14	704	0.3+	1.2–	2000 01 03	704	0.0	0.1+
1998 08 17	704	0.0	0.0	1998 09 14	704	0.1–	0.8–	2000 01 03	704	0.7+	1.6–
1998 08 17	704	0.1+	0.3+	1998 09 14	704	0.4–	0.4+	2000 01 03	704	0.5+	0.3+
1998 08 17	704	0.1–	0.4+	1998 09 15	699	0.7+	0.3–	2000 01 04	704	0.1–	0.9+
1998 08 17	704	0.2–	0.5+	1998 09 15	699	0.2+	0.3–	2000 01 04	704	0.4+	0.5–
1998 08 17	704	0.3+	0.3+	1998 09 15	699	0.3+	0.0	2000 01 04	704	0.6+	0.4+
1998 08 23	691	0.2+	0.0	1998 09 18	704	0.1–	0.4–	2000 01 04	704	1.0–	0.4+
1998 08 23	691	0.3+	0.0	1998 09 18	704	(0.1–	2.2–)	2000 01 04	704	0.1+	0.0

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	165.60621		(2000.0)	P	Q
<i>n</i>	0.23627034	ω	98.32193	+0.38725642	+0.92159205
<i>a</i>	2.5913729	Ω	194.54797	-0.88193915	+0.36192112
<i>e</i>	0.0962526	<i>i</i>	6.04847	-0.26872996	+0.14028967
<i>P</i>	4.17	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1992 02 06	809	1.1+	1.8-	1998 08 17	704	0.3+	0.5+	1998 09 18	704	(0.0	2.1-)
1992 02 06	809	0.0	1.6-	1998 08 17	704	0.2+	0.6-	1998 09 18	704	0.3-	1.1-
1992 02 06	809	1.4+	1.1-	1998 08 17	704	0.5+	0.8-	1998 12 15	910	(2.0-	0.3+)
1994 09 14	691	1.0-	0.2+	1998 08 23	704	0.7-	0.9+	1998 12 15	910	(2.6-	0.5-)
1994 09 14	691	0.3-	0.0	1998 08 23	704	0.7+	1.5+	1998 12 15	910	(2.5-	0.1-)
1994 09 14	691	0.3-	0.2+	1998 08 23	704	(0.8+	2.2+)	1999 12 14	704	0.1-	0.4+
1994 09 27	691	0.7-	0.1-	1998 08 23	704	0.6-	1.7+	1999 12 14	704	0.6+	0.3-
1994 09 27	691	0.8-	0.1-	1998 08 23	704	1.1-	1.4+	1999 12 14	704	1.7-	0.8-
1994 09 27	691	0.7-	0.0	1998 09 14	704	1.6+	0.5-	2000 01 05	704	0.5+	1.3+
1997 03 12	809	0.1+	0.1-	1998 09 14	704	0.3+	0.4-	2000 01 05	704	0.4+	0.7+
1997 03 12	809	0.4+	0.5+	1998 09 14	704	0.7+	0.5-	2000 01 05	704	0.1-	0.9+
1997 03 12	809	0.4-	0.2+	1998 09 14	704	0.4-	0.8-	2000 01 05	704	0.3+	0.4+
1997 03 13	809	0.0	1.3+	1998 09 14	704	0.1+	0.0	2000 01 05	704	0.7+	0.6+
1997 03 13	809	1.4+	0.7+	1998 09 15	699	0.9+	0.4+	2000 01 07	704	0.8-	0.5-
1997 03 13	809	0.3-	1.1+	1998 09 15	699	0.7+	0.0	2000 01 07	704	0.6-	0.9+
1997 04 11	704	0.7-	0.7-	1998 09 15	699	0.8+	0.3-	2000 01 07	704	0.3-	0.9+
1997 04 11	704	1.3-	0.1-	1998 09 18	704	0.5+	0.4-	2000 01 07	704	0.4-	0.1-
1998 08 17	704	0.2-	0.7+	1998 09 18	704	0.2-	1.4-				

(13269)* 1998 QV₃₄ = 1979 OV₃ = 1987 QZ₃

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32700)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	240.14097		(2000.0)	P	Q
<i>n</i>	0.26355273	ω	305.97864	-0.60573884	+0.79032629
<i>a</i>	2.4093009	Ω	286.48109	-0.69563820	-0.58216612
<i>e</i>	0.0807655	<i>i</i>	5.50580	-0.38622267	-0.19096327
<i>P</i>	3.74	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1979 07 24	675	0.3-	0.7+	1998 08 23	704	0.6+	0.6+	1999 11 16	704	1.0+	0.3+
1979 07 24	413	1.1-	0.4-	1998 08 23	704	0.8-	0.4+	1999 11 16	704	1.1+	0.2-
1979 07 25	675	1.3+	0.5+	1998 09 14	704	1.3+	0.1+	1999 12 07	704	0.1-	1.0+
1979 07 27	675	(3.9+	2.1-)	1998 09 14	704	0.3+	0.2+	1999 12 07	704	0.7-	0.6+
1987 08 31	010	0.7-	0.2+	1998 09 14	704	1.4+	0.4-	1999 12 07	704	0.5-	0.2+
1987 08 31	010	0.7+	0.8-	1998 09 14	704	0.7+	0.6+	1999 12 07	704	0.8-	0.5+
1997 04 10	691	0.4+	0.8+	1998 09 18	704	(0.3+	2.4-)	2000 01 03	704	0.2+	0.6+
1997 04 10	691	0.4+	0.8+	1998 09 18	704	0.1+	0.4+	2000 01 03	704	0.9-	0.5+
1997 04 10	691	0.4+	0.7+	1998 09 18	704	0.1-	0.0	2000 01 03	704	0.7-	0.6+
1998 08 17	704	0.9+	0.5+	1998 09 18	704	0.3-	0.9-	2000 01 03	704	0.5-	0.1-
1998 08 17	704	1.4-	1.2+	1998 09 18	704	0.6-	1.5+	2000 01 03	704	0.5+	1.0-
1998 08 17	704	1.0-	0.5-	1998 09 21	699	0.2-	0.2-	2000 01 04	704	0.2+	0.1-
1998 08 17	704	1.7-	1.0-	1998 09 21	699	0.1+	0.2+	2000 01 04	704	0.4+	0.1+
1998 08 23	704	0.6-	0.3+	1998 09 21	699	0.1+	0.5-	2000 01 04	704	0.4+	0.2+
1998 08 23	704	(3.2-	1.1+)	1999 11 16	704	0.8+	0.9-	2000 01 04	704	0.3+	0.1-

(13270)* 1998 QX₃₅ = 1991 EM₆ = 1996 EO₈

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32700)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	351.76388		(2000.0)	P	Q
<i>n</i>	0.20492797	ω	90.51194	-0.18741167	-0.98226072
<i>a</i>	2.8492806	Ω	10.29648	+0.88642696	-0.17191937
<i>e</i>	0.0344028	<i>i</i>	2.04632	+0.42323057	-0.07488391
<i>P</i>	4.81	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1991 03 06	372	0.3+	1.0+	1998 09 14	704	(3.8-	0.5-)	1999 11 16	704	0.4+	0.3-
1991 03 06	372	(2.8-	2.7-)	1998 09 14	704	0.7+	0.5+	1999 11 16	704	(3.0+	0.1+)
1996 03 12	691	0.4+	0.2-	1998 09 18	704	0.6+	0.3+	1999 11 16	704	0.5-	0.2-
1996 03 12	691	0.7+	0.0	1998 09 18	704	0.1+	1.6-	1999 11 16	704	0.1+	0.5+
1996 03 12	691	0.3+	0.6-	1998 09 18	704	0.7-	0.9+	1999 12 07	704	0.3+	0.1+
1996 03 17	691	0.4-	0.1-	1998 09 18	704	1.2-	1.1-	1999 12 07	704	0.2+	0.3-
1996 03 17	691	0.8-	0.2-	1998 09 18	704	(2.5-	1.4+)	1999 12 07	704	0.2+	0.0
1996 03 17	691	0.9-	0.2-	1998 11 09	910	0.1+	0.8-	1999 12 07	704	0.1-	0.1+
1998 08 17	704	0.8-	0.8+	1998 11 09	910	0.1+	0.5-	1999 12 07	704	0.0	0.7+
1998 08 17	704	0.1+	1.6+	1998 11 09	910	0.1-	0.5-	2000 01 03	704	0.1+	0.1+
1998 08 17	704	0.1+	0.7+	1999 11 03	704	0.6+	0.1+	2000 01 03	704	0.2-	0.2+
1998 08 17	704	0.3+	0.3+	1999 11 03	704	0.0	0.4-	2000 01 03	704	1.0-	1.0-
1998 08 17	704	0.4+	0.4-	1999 11 03	704	0.2+	0.5+	2000 01 03	704	0.6-	0.2-
1998 08 23	704	0.0	1.7-	1999 11 03	704	0.5+	1.1+	2000 01 03	704	0.5-	1.1-
1998 08 23	704	(2.4-	1.4-)	1999 11 14	704	0.8-	0.6+	2000 01 04	704	0.1-	0.5+
1998 08 23	704	(2.6+	3.0-)	1999 11 14	704	0.4+	0.0	2000 01 04	704	0.4+	0.5-
1998 08 23	704	0.8-	0.9-	1999 11 14	704	0.3+	0.4-	2000 01 04	704	0.2-	0.2+
1998 09 14	704	0.8+	0.3+	1999 11 14	704	0.5+	0.4+	2000 01 04	704	0.3+	0.2-
1998 09 14	704	0.6+	1.0+	1999 11 14	704	0.1+	0.0	2000 01 04	704	0.3-	0.6-

(13271)* 1998 QZ₃₅ = 1980 TV₅

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32701)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	102.51095		(2000.0)	P	Q
<i>n</i>	0.21633874	ω	21.06692	+0.99837172	+0.01630721
<i>a</i>	2.7481885	Ω	337.78627	-0.04224439	+0.85530093
<i>e</i>	0.1586734	<i>i</i>	8.31329	+0.03833168	+0.51787488
<i>P</i>	4.56	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1980 10 08	675	1.2+	1.6-	1998 09 14	704	0.5+	0.1+	1999 12 12	704	0.7-	0.2+
1980 10 09	675	(2.9+	3.4-)	1998 09 14	704	0.3+	0.2-	1999 12 12	704	0.5+	0.7-
1980 10 10	675	0.0	0.4-	1998 09 14	704	0.1+	0.3-	1999 12 12	704	0.4-	0.3-
1996 02 15	691	0.2-	0.3-	1998 09 14	704	0.5-	0.2+	1999 12 12	704	0.4-	0.9+
1996 02 15	691	0.3-	0.4-	1998 09 14	704	0.3+	0.5-	1999 12 12	704	0.3-	0.8+
1996 02 15	691	0.2-	0.5-	1998 09 14	699	0.9+	0.1+	1999 12 15	704	0.9+	0.3+
1996 02 16	566	(6.4+	4.3-)	1998 09 14	699	0.8+	0.4+	1999 12 15	704	0.1+	0.3-
1996 02 16	566	(4.5+	4.1-)	1998 09 14	699	0.8+	0.3+	1999 12 15	704	0.1+	0.1-
1996 02 16	566	(4.8+	3.8-)	1998 09 18	704	0.0	0.6-	1999 12 15	704	0.4-	0.6-
1998 08 17	704	0.5-	0.6-	1998 09 18	704	1.1+	0.4-	1999 12 15	704	0.7-	0.6-
1998 08 17	704	0.3-	0.0	1998 09 18	704	0.9+	0.5-	2000 01 02	704	0.6+	0.4+
1998 08 17	704	0.3-	0.1+	1998 09 18	704	0.1-	0.3+	2000 01 02	704	0.7-	0.1+
1998 08 17	704	0.0	0.2+	1998 09 18	704	0.1+	0.7+	2000 01 02	704	0.1+	0.7-
1998 08 17	704	1.3-	0.9+	1998 12 09	704	0.7-	0.1+	2000 01 02	704	0.0	0.2-
1998 08 23	704	0.1+	0.4-	1998 12 09	704	(2.8-	0.8-)	2000 01 02	704	0.3+	0.1-
1998 08 23	704	0.6-	1.5-	1998 12 09	704	0.6-	0.7+	2000 01 04	704	0.0	0.2+
1998 08 23	704	0.7-	0.2+	1998 12 09	704	0.1-	1.8+	2000 01 04	704	0.2+	0.5-
1998 08 23	704	0.6-	0.3+	1998 12 09	704	1.1-	0.8+	2000 01 04	704	0.1+	0.0
1998 09 13	691	0.1-	0.2-	1999 12 03	699	0.6+	1.2+	2000 01 04	704	0.1+	0.2-
1998 09 13	691	0.2-	0.0	1999 12 03	699	0.5+	0.7+	2000 01 04	704	0.3+	0.2-
1998 09 13	691	0.1-	0.2+	1999 12 03	699	0.4-	0.8+				

(13272)* 1998 QH₃₇ = 1980 PZ₃ = 1990 ER₁

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32702)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27656258	ω	12.37235	−0.33932940	−0.93894343		
<i>a</i>	2.3331380	Ω	237.81664	−0.86867716	−0.33600519		
<i>e</i>	0.1599025	<i>i</i>	3.85681	−0.36090934	−0.07406589		
<i>P</i>	3.56	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1980 08 04	675	1.2+	0.3−	1998 08 17	704	0.5−	1.7−
1980 08 05	675	0.4−	0.3−	1998 08 23	704	0.2+	0.6−
1990 03 02	809	0.9−	0.5−	1998 08 23	704	1.3+	0.4−
1990 03 02	809	0.0	0.1+	1998 08 23	704	1.3−	0.9−
1990 03 02	809	0.2−	0.7−	1998 08 23	704	(2.3−	0.7+)
1990 03 04	809	0.4−	0.5−	1998 09 14	704	0.1−	0.4−
1990 03 04	809	0.1−	1.0−	1998 09 14	704	1.0+	1.0+
1990 03 04	809	0.4−	0.8−	1998 09 14	704	0.2+	1.0−
1991 10 06	691	(2.9−	0.1−)	1998 09 14	704	(4.9−	0.6−)
1991 10 06	691	(0.5+	3.6+)	1998 09 15	699	0.4−	0.1+
1991 10 06	691	1.2−	0.8−	1998 09 15	699	0.1+	0.3+
1998 08 17	704	1.2+	0.0	1998 09 15	699	0.5+	1.9+
1998 08 17	704	0.5−	0.5+	1998 09 18	704	0.7−	1.2−
1998 08 17	704	0.8+	0.2+	1998 09 18	704	0.6−	0.5−
1998 08 17	704	1.3+	1.5−	1998 09 18	704	0.4+	0.1+

(13273)* 1998 QW₃₇ = 1969 TA_s

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Gnädig (*MPC* 34924), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30328495	ω	203.12981	−0.99369220	−0.10482251		
<i>a</i>	2.1939942	Ω	330.76696	+0.11134596	−0.87997684		
<i>e</i>	0.1026635	<i>i</i>	4.68054	+0.01333771	−0.46330661		
<i>P</i>	3.25	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1969 10 08	033	1.1+	0.3+	1998 09 14	704	0.5−	0.3−
1969 10 08	033	0.2−	0.3+	1998 09 14	704	0.5+	0.4+
1989 11 22	675	1.5−	0.2+	1998 09 14	704	0.0	0.9+
1989 11 22	675	0.3+	0.1−	1998 09 14	704	0.4−	1.6+
1991 09 07	413	1.7−	0.1−	1998 09 18	704	0.5+	0.3+
1995 08 28	691	1.1−	0.0	1998 09 18	704	0.7+	0.5−
1995 08 28	691	1.2−	0.1+	1998 09 18	704	0.9−	1.0−
1995 08 28	691	1.1−	0.1−	1998 09 18	704	0.7−	0.5+
1998 08 17	704	0.4−	0.5−	1998 09 18	704	2.0+	1.3−
1998 08 17	704	0.2+	0.5+	1998 09 23	691	0.7+	0.2−
1998 08 17	704	0.1+	0.4+	1998 09 23	691	0.7+	0.0
1998 08 17	704	0.6−	0.6+	1998 09 23	691	0.6+	0.2−
1998 08 17	704	0.5−	0.7−	1999 10 13	704	0.1+	0.1+
1998 08 23	704	0.4−	1.5−	1999 10 13	704	0.5+	0.9−
1998 08 23	704	(0.4−	2.9−)	1999 10 13	704	0.0	0.6−
1998 08 23	704	1.9+	0.0	1999 10 13	704	0.9+	0.9−
1998 08 23	704	0.8+	0.2+	1999 11 11	703	0.9−	0.1−
1998 08 23	704	1.0−	0.7+	1999 11 11	703	0.3+	0.3+
1998 09 14	704	0.1+	0.7−	1999 11 11	703	0.5+	0.2+

(13274)* 1998 QX₃₇

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25585148	ω	319.13157	+0.41490800	+0.90816599		
<i>a</i>	2.4574089	Ω	335.22963	−0.79647154	+0.33300631		
<i>e</i>	0.0470660	<i>i</i>	7.61898	−0.43986865	+0.25365593		
<i>P</i>	3.85	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1989 02 11	675	1.5+	0.0	1998 09 14	704	0.1−	0.5+
1989 02 15	413	1.4−	0.1+	1998 09 14	704	0.9−	0.6+
1993 02 24	413	0.2+	0.3−	1998 09 14	699	0.4−	0.1+
1993 02 24	413	0.8−	0.7−	1998 09 14	699	0.2−	0.8+
1997 02 09	910	0.3+	0.4+	1998 09 14	699	0.2+	0.9+
1997 02 09	910	0.1+	0.7+	1998 09 18	704	0.8+	1.4−
1997 02 09	910	0.6+	0.7+	1998 09 18	704	0.3+	0.1−
1998 08 17	704	0.2+	0.4−	1998 09 18	699	0.0	1.4+
1998 08 17	704	0.5+	0.7+	1998 09 18	704	(3.0+	1.0+)
1998 08 17	704	0.0	0.0	1998 09 18	699	0.9+	1.0−
1998 08 17	704	1.5−	1.4−	1998 09 18	704	0.4−	0.3+
1998 08 23	704	1.0+	0.1+	1998 09 18	704	0.4+	0.0
1998 08 23	704	(2.1+	2.9−)	1998 09 18	699	0.4−	0.4−
1998 08 23	704	0.2−	1.6−	1999 12 12	704	0.1+	0.2+
1998 08 23	704	0.2−	0.3−	1999 12 12	704	0.3+	0.5+
1998 09 14	704	0.5−	1.5+	1999 12 12	704	0.1+	0.3+
1998 09 14	704	0.5+	0.3−	1999 12 12	704	0.5−	0.2+
1998 09 14	704	(0.6+	2.4+)	1999 12 12	704	0.0	0.5+

(13275)* 1998 QT₃₉ = 1992 DC₆

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32705)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24166829	ω	255.47631	+0.77821295	−0.62280027		
<i>a</i>	2.5526402	Ω	142.94510	+0.61532106	+0.73051083		
<i>e</i>	0.1933576	<i>i</i>	7.69162	+0.12555717	+0.28013167		
<i>P</i>	4.08	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1992 02 29	809	0.8+	0.7+	1998 08 23	704	1.0−	0.1+
1992 03 03	809	0.5−	1.6+	1998 09 14	704	0.2+	0.1−
1992 03 07	809	0.7+	0.1−	1998 09 14	704	0.3+	0.6+
1992 04 06	809	0.3−	1.2+	1998 09 14	704	0.0	0.1+
1996 02 15	691	0.2+	0.1+	1998 09 14	704	0.8+	0.2+
1996 02 15	691	0.1+	0.2−	1998 09 14	704	0.3+	0.7+
1996 02 15	691	0.1−	0.1−	1998 09 16	699	0.4+	0.3+
1997 04 17	327	0.3−	0.8+	1998 09 16	699	0.2−	0.6+
1997 04 17	327	0.0	0.2+	1998 09 16	699	0.0	0.8+
1997 04 17	327	0.5+	0.2+	1998 09 18	704	0.2+	0.5+
1998 08 01	699	0.2−	0.4−	1998 09 18	704	0.8−	0.6+
1998 08 01	699	0.2+	0.1−	1998 09 18	704	0.0	0.1−
1998 08 01	699	0.2+	0.1+	1998 09 18	704	0.2+	0.4+
1998 08 17	704	0.2+	1.0−	1998 09 18	704	0.2−	1.2+
1998 08 17	704	0.4−	0.0	1998 09 22	699	0.2−	0.5+
1998 08 17	704	0.6−	0.4−	1998 09 22	699	0.3+	0.3+
1998 08 17	704	0.3−	0.2+	1998 09 22	699	0.3+	0.5+
1998 08 17	704	0.1−	1.0−	1998 11 11	699	(2.3−	0.4+)
1998 08 23	704	0.6+	0.1+	1998 11 11	699	0.3−	0.5+
1998 08 23	704	0.1−	1.0−	1998 11 11	699	0.4−	0.6+
1998 08 23	704	0.1+	0.7−	1998 12 08	704	1.3+	0.7+
1998 08 23	704	0.2+	0.3−	1998 12 08	704	0.5−	1.0+

(13276)* 1998 QP₄₀ = 1975 EF = 1975 FH = 1979 BK = 1982 YE₁

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

2000 JAN. 24

M.P.C. 37561

Id. G. V. Williams (*MPC* 32706)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23415064	ω	147.65872	-0.30944820	-0.94074281		
<i>a</i>	2.6069887	Ω	319.88088	+0.82021438	-0.19024551		
<i>e</i>	0.1135504	<i>i</i>	12.43229	+0.48113426	-0.28073051		
<i>P</i>	4.21	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1975 03 04	095	1.2+	1.0-	1998 08 23	888	0.0	0.3-	1998 12 09	704	0.6+	0.1-
1975 03 17	095	1.1-	1.7+	1998 08 23	888	0.5-	0.2-	1998 12 09	704	0.5+	1.1+
1979 01 18	330	0.3+	0.0	1998 09 14	704	0.3+	0.3+	1998 12 09	704	0.9+	0.9+
1979 01 24	095	(1.2+	3.1+)	1998 09 14	704	0.5+	0.1+	1998 12 09	704	(2.3-	0.0)
1982 12 23	095	(0.6-	3.4-)	1998 09 14	704	1.7+	0.3+	1999 11 05	699	0.6-	0.6+
1994 09 05	098	0.2-	0.6+	1998 09 14	704	0.7+	0.6-	1999 11 05	699	0.1-	1.0+
1994 09 05	098	0.8-	0.2+	1998 09 14	704	0.3-	0.7-	1999 11 05	699	0.1-	0.9+
1998 08 17	704	0.1+	0.2+	1998 09 16	699	0.3-	0.1+	1999 11 16	703	0.3+	0.5+
1998 08 17	704	0.4-	0.7+	1998 09 16	699	0.6-	0.6+	1999 11 16	703	0.0	0.4+
1998 08 17	704	0.5+	0.8+	1998 09 16	699	1.0+	0.6-	1999 11 16	703	0.2+	0.4+
1998 08 17	704	0.4-	1.0+	1998 09 18	704	0.1+	0.3-	1999 11 16	703	0.2+	0.4+
1998 08 17	704	0.4-	0.2+	1998 09 18	704	0.9+	0.8-	1999 12 15	704	0.5+	0.3-
1998 08 18	566	0.6-	0.3-	1998 09 18	704	0.1+	0.2+	1999 12 15	704	0.3+	0.7-
1998 08 18	566	0.5-	0.0	1998 09 18	704	0.4+	0.3-	1999 12 15	704	0.4-	0.5-
1998 08 18	566	0.7-	0.2+	1998 09 18	704	0.5-	0.8+	1999 12 15	704	0.1+	0.4-
1998 08 23	704	0.2-	0.1+	1998 10 11	699	0.2-	0.1+	1999 12 15	704	1.4-	0.4-
1998 08 23	704	0.5+	1.3-	1998 10 11	699	0.2+	0.2-	2000 01 02	704	0.1-	0.1-
1998 08 23	704	0.7-	1.1-	1998 11 15	699	0.6-	0.2+	2000 01 02	704	0.0	0.3-
1998 08 23	704	0.4-	0.9-	1998 11 15	699	0.1-	0.2+	2000 01 02	704	0.3+	0.3-
1998 08 23	704	0.4-	0.1+	1998 11 15	699	0.2+	0.2+	2000 01 02	704	0.2+	0.4-
1998 08 23	888	0.2+	0.2+	1998 12 09	704	0.2-	1.6-	2000 01 02	704	0.2+	0.3-

(13277)* 1998 QV₄₀ = 1978 JP = 1989 TG₁₁

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32706)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21331143	ω	124.20444	+0.97736366	+0.20569092		
<i>a</i>	2.7741289	Ω	223.98378	-0.20987195	+0.91305301		
<i>e</i>	0.0460177	<i>i</i>	4.08851	-0.02672160	+0.35217247		
<i>P</i>	4.62	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 05 05	095	0.0	0.1+	1998 09 18	704	0.9-	0.7-	1999 11 17	704	0.4-	0.5+
1989 10 03	046	(2.1-	3.3-)	1998 09 18	704	0.2-	0.4-	1999 11 17	704	0.2+	0.3-
1989 10 03	046	0.2+	0.5-	1998 09 18	704	0.2+	0.9-	1999 11 17	704	0.2-	0.1+
1998 08 17	704	0.3-	0.0	1998 09 18	704	0.4-	0.2-	1999 11 17	704	0.3-	0.1-
1998 08 17	704	1.0+	0.1+	1998 09 30	691	0.5-	0.1+	1999 12 08	704	0.3+	0.1-
1998 08 17	704	0.0	0.1+	1998 09 30	691	0.7-	0.1+	1999 12 08	704	0.5+	0.0
1998 08 17	704	0.7+	0.5+	1998 09 30	691	0.6-	0.2+	1999 12 08	704	0.1+	0.5+
1998 08 17	704	0.1-	0.2+	1998 11 15	699	1.1-	0.9+	1999 12 08	704	0.3+	1.0+
1998 08 18	566	0.3+	0.1-	1998 11 15	699	0.8-	0.3+	1999 12 08	704	0.2+	1.3+
1998 08 18	566	0.1+	0.0	1998 11 15	699	0.2-	0.2+	1999 12 14	704	0.2+	0.3-
1998 08 18	566	0.8+	0.0	1999 10 09	703	0.2+	0.2+	1999 12 14	704	0.1-	0.2-
1998 08 23	704	1.1+	0.3+	1999 10 09	703	0.0	0.0	1999 12 14	704	0.1+	0.2-
1998 08 23	704	0.1+	0.3-	1999 10 09	703	0.3-	0.3+	1999 12 14	704	0.0	0.2-
1998 08 23	704	0.2+	0.5-	1999 10 09	703	0.1-	0.8+	1999 12 14	704	0.2-	0.1-
1998 08 23	704	0.1+	0.4-	1999 10 12	704	0.4+	0.8-	1999 12 16	704	0.2+	0.2-
1998 08 23	704	0.4-	0.1+	1999 10 12	704	0.3+	0.4-	1999 12 16	704	0.6-	0.0
1998 08 26	699	1.1+	0.1-	1999 10 12	704	0.4+	0.1-	1999 12 16	704	0.1+	0.2+
1998 08 26	699	0.8+	0.4+	1999 10 12	704	0.4+	0.7-	1999 12 16	704	0.2+	0.3-
1998 08 26	699	0.8+	0.3+	1999 10 12	704	0.8+	0.9-	1999 12 16	704	0.2-	0.2-
1998 09 14	704	0.8-	0.7+	1999 10 22	704	0.6-	0.2+	2000 01 05	704	0.5-	1.4+
1998 09 14	704	0.2+	0.6+	1999 10 22	704	0.4-	0.4-	2000 01 05	704	0.2-	0.2-
1998 09 14	704	1.3-	1.1+	1999 10 22	704	0.3-	0.1+	2000 01 05	704	0.4-	0.1-

1998 09 14	704	1.3-	0.0	1999 10 22	704	0.2+	0.3-	2000 01 05	704	0.2-	0.2+
1998 09 14	704	0.1+	1.3+	1999 11 15	704	0.2+	0.2-	2000 01 05	704	0.6+	1.3+
1998 09 15	699	0.6+	0.8-	1999 11 15	704	0.0	0.6-	2000 01 06	704	0.1+	0.2-
1998 09 15	699	0.5+	0.3-	1999 11 15	704	0.4-	0.6-	2000 01 06	704	0.3+	0.0
1998 09 15	699	0.3-	0.7-	1999 11 15	704	0.4-	0.4-	2000 01 06	704	0.4+	0.1+
1998 09 18	704	0.1-	0.4-	1999 11 15	704	0.9-	0.7-				

(13278)* 1998 QK₄₂ = 1979 OP₁₅ = 1990 KU = 1994 NX₁

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32707)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26186716	ω	93.25159	+0.10378234	+0.99459859		
<i>a</i>	2.4196285	Ω	182.70717	-0.92616190	+0.09602094		
<i>e</i>	0.1862351	<i>i</i>	2.05259	-0.36256498	+0.03941591		
<i>P</i>	3.76	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 07 30	095	0.4-	1.5+	1998 08 17	704	1.0+	0.1-	1998 09 18	699	0.1-	0.2-
1990 05 21	675	(1.2+	2.9-)	1998 08 17	704	0.0	0.0	1998 09 18	704	0.2+	0.6-
1990 05 21	675	1.6+	1.6-	1998 08 17	704	1.4+	0.2+	1998 09 18	699	0.4+	0.2+
1990 05 23	675	0.6+	1.3-	1998 08 23	704	0.2+	0.0	1998 09 18	704	0.1+	0.0
1990 05 23	675	1.0-	0.6-	1998 08 23	704	1.1-	0.9+	1998 09 18	704	0.5-	0.1-
1994 07 04	010	1.7-	1.7-	1998 08 23	704	0.8-	0.1+	1998 09 18	699	0.1-	0.3+
1994 07 04	010	1.8-	1.5-	1998 08 23	704	0.5+	0.3+	1999 12 08	704	0.5-	1.7-
1994 07 04	010	0.0	0.5-	1998 08 23	704	0.1-	0.3+	1999 12 08	704	0.2+	1.8-
1994 07 05	010	1.5-	0.2+	1998 09 14	704	0.5+	0.1-	1999 12 08	704	0.1+	0.4-
1994 07 05	010	1.4-	1.3-	1998 09 14	704	0.1-	0.1-	1999 12 08	704	0.4-	1.7-
1994 07 05	010	0.7-	0.1+	1998 09 14	704	0.6+	0.5-	1999 12 17	704	1.0-	0.7-
1994 07 08	010	1.5+	1.2-	1998 09 14	704	0.1+	0.9-	1999 12 17	704	0.3+	1.2-
1994 07 08	010	1.6+	0.9-	1998 09 14	704	0.7+	0.4-	1999 12 17	704	0.9+	0.1+
1994 07 08	010	1.2+	0.4-	1998 09 14	699	0.0	0.4+	2000 01 05	704	1.0-	0.6-
1997 03 10	691	0.1-	0.4-	1998 09 14	699	0.5-	0.1+	2000 01 05	704	1.4+	0.4-
1997 03 10	691	0.1-	0.5-	1998 09 14	699	0.4-	0.5+	2000 01 05	704	0.8-	0.9-
1997 03 10	691	0.1-	0.6-	1998 09 18	704	0.7+	0.1+	2000 01 05	704	1.1-	1.2-
1998 08 17	704	0.6+	0.5-	1998 09 18	704	0.4+	0.1-				

(13279)* 1998 QN₄₃ = 1995 WZ₉ = 1997 ER₅₅

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32501)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28092702	ω	205.03622	-0.46200812	+0.88520733		
<i>a</i>	2.3089102	Ω	37.51350	-0.79792280	-0.38812531		
<i>e</i>	0.1155192	<i>i</i>	5.12281	-0.38712751	-0.25645024		
<i>P</i>	3.51	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1995 11 16	691	0.2-	0.0	1998 08 23	704	(2.9+	2.7-)	1998 09 25	704	0.4-	0.4+
1995 11 16	691	0.4-	0.1-	1998 08 23	704	1.0-	0.6+	1998 09 25	704	(2.5-	0.6+)
1995 11 16	691	0.4-	0.1-	1998 08 28	699	0.7+	0.3-	1998 09 27	704	1.2-	0.4-
1995 11 21	691	0.6+	0.1+	1998 08 28	699	0.4+	0.2+	1998 09 27	704	0.5-	0.1-
1995 11 21	691	0.3+	0.1-	1998 08 28	699	0.1+	1.2-	1998 09 27	704	0.1+	0.7+
1995 11 21	691	0.3+	0.2-	1998 09 14	704	0.2+	0.4-	1998 09 27	704	1.1+	1.2+
1997 03 12	691	0.5+	0.7-	1998 09 14	704	0.7-	0.0	1998 09 27	704	0.0	0.2+
1997 03 12	691	0.2+	0.4+	1998 09 14	704	0.6-	0.1-	1999 12 15	704	0.4+	0.1+
1997 03 12	691	0.3-	0.1+	1998 09 14	704	0.3-	0.5-	1999 12 15	704	0.0	0.0
1997 03 18	599	0.3-	0.4+	1998 09 14	704	0.2-	0.8-	1999 12 15	704	0.6+	1.1+
1997 03 18	599	0.3+	0.7+	1998 09 16	699	0.3-	0.4+	1999 12 15	704	0.5+	0.4-
1998 07 31	699	0.4-	0.6+	1998 09 16	699	1.3-	0.7+	2000 01 02	704	0.1+	0.3+
1998 07 31	699	1.0-	0.1+	1998 09 16	699	0.6-	0.6-	2000 01 02	704	0.1-	0.1-
1998 07 31	699	0.1+	0.2-	1998 09 18	704	1.5+	0.8-	2000 01 02	704	0.4-	0.2-
1998 08 17	704	1.5+	0.0	1998 09 18	704	0.9-	0.6+	2000 01 02	704	0.6-	0.2-

1998 08 17	704	0.8+	0.1+	1998 09 18	704	1.4-	0.6-	2000 01 04	704	0.2+	0.1-
1998 08 17	704	1.8+	0.9+	1998 09 18	704	0.7-	0.2-	2000 01 04	704	0.1-	0.7-
1998 08 17	704	1.7+	0.5+	1998 09 18	704	0.0	0.2+	2000 01 04	704	0.2+	0.3-
1998 08 17	704	1.7+	0.5+	1998 09 25	704	1.3-	0.7+	2000 01 04	704	0.3-	0.4+
1998 08 23	704	0.7+	0.6-	1998 09 25	704	0.7-	0.1-	2000 01 04	704	0.4-	0.3+
1998 08 23	704	(2.0+	1.0+)	1998 09 25	704	0.4+	0.2-				

(13280)* 1998 QM₄₄ = 1997 EX₂

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32710)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		250.89593		(2000.0)		P		Q	
<i>n</i>		0.27683846	ω	98.48765		-0.59133092		+0.80477949	
<i>a</i>		2.3315877	Ω	135.12820		-0.76565458		-0.54021349	
<i>e</i>		0.0714909	<i>i</i>	4.19038		-0.25318137		-0.24596618	
<i>P</i>		3.56	<i>H</i>	15.1		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 09 30	691	0.0	0.2-	1998 08 23	704	0.4-	0.1-	1999 12 08	704	0.3-	0.4+
1991 09 30	691	0.1-	0.3-	1998 08 23	704	0.4-	0.1+	1999 12 08	704	1.0+	0.5+
1991 09 30	691	0.3-	0.2-	1998 08 23	704	0.7-	0.1+	1999 12 08	704	0.4-	0.8+
1992 12 25	691	0.5+	0.5+	1998 08 23	704	0.7+	1.8+	1999 12 14	704	0.8-	1.1-
1992 12 25	691	0.2+	0.1+	1998 08 30	699	1.2+	0.3-	1999 12 14	704	0.8-	0.1+
1992 12 25	691	0.2+	0.4+	1998 08 30	699	0.5+	0.0	1999 12 14	704	0.5-	0.2+
1997 03 04	411	0.5+	1.2-	1998 08 30	699	0.7+	0.2-	1999 12 14	704	0.2+	0.1-
1997 03 04	411	0.3-	1.3-	1998 09 14	704	0.2-	1.0+	1999 12 14	704	0.6+	0.2-
1997 03 05	411	0.5-	0.2-	1998 09 14	704	1.8-	1.0-	2000 01 05	704	0.1-	0.2-
1997 03 05	411	0.7-	0.3+	1998 09 14	704	1.4+	1.4-	2000 01 05	704	0.1-	0.3-
1997 03 09	411	0.3-	0.3-	1998 09 14	704	0.8+	0.4-	2000 01 05	704	0.6+	0.5-
1997 03 09	411	0.1+	0.3+	1998 09 18	704	0.4-	0.9+	2000 01 05	704	0.2-	0.7-
1998 08 17	704	0.4+	1.1-	1998 09 18	704	0.3+	0.2+	2000 01 06	704	0.2-	0.1+
1998 08 17	704	0.1+	1.1-	1998 09 18	704	0.8+	1.3-	2000 01 06	704	0.3+	0.2-
1998 08 17	704	1.3-	0.7-	1999 12 08	704	0.4+	0.1+	2000 01 06	704	0.3-	0.1+
1998 08 17	704	0.4-	1.4+	1999 12 08	704	0.2+	0.3-				

(13281)* 1998 QW₄₅ = 1977 HE₁ = 1994 JC₃ = 1997 ED₄₄

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32711)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		234.49029		(2000.0)		P		Q	
<i>n</i>		0.29071470	ω	20.40333		-0.29165278		+0.95592635	
<i>a</i>		2.2567912	Ω	232.65476		-0.88338696		-0.28274194	
<i>e</i>		0.1271324	<i>i</i>	2.43782		-0.36683257		-0.07913157	
<i>P</i>		3.39	<i>H</i>	15.0		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 04 24	675	0.6-	0.5-	1998 08 23	704	1.4+	1.3+	2000 01 04	732	1.3-	1.3-
1977 04 25	675	0.4+	0.1-	1998 08 23	704	0.7-	0.1+	2000 01 05	704	(0.5+	3.6-)
1994 05 03	691	0.3-	0.7-	1998 08 23	704	0.4+	1.8+	2000 01 05	704	0.3-	1.1-
1994 05 03	691	0.4-	0.0	1998 08 23	704	0.8+	1.1+	2000 01 05	704	0.2-	1.2+
1994 05 03	691	0.5-	0.2-	1998 09 14	704	0.1+	0.1+	2000 01 05	704	(1.1+	2.7+)
1994 05 10	691	0.3-	0.1-	1998 09 14	704	0.0	0.6-	2000 01 06	704	0.4-	0.3-
1994 05 10	691	0.2-	0.1+	1998 09 14	704	0.7+	0.6-	2000 01 06	704	0.1+	0.4-
1994 05 10	691	0.0	0.1+	1998 09 14	704	0.1+	0.3-	2000 01 06	704	0.4+	0.9-
1997 03 11	704	0.6+	0.4-	1998 09 18	704	0.6+	0.4-	2000 01 07	704	0.5-	0.8-
1997 03 11	704	0.9+	1.4+	1998 09 18	704	0.0	0.8-	2000 01 07	704	0.1-	0.2+
1997 03 12	704	1.0+	0.1+	1998 09 18	704	0.6-	0.2+	2000 01 07	704	0.8+	0.7-
1997 03 12	704	0.9+	0.6-	1998 09 18	704	0.2-	0.7+	2000 01 07	704	1.6+	0.2+
1998 08 17	704	0.0	0.5+	1998 09 18	704	(2.1+	0.5-)	2000 01 07	704	0.4-	0.3-
1998 08 17	704	0.2-	0.7-	1999 12 07	704	1.5-	1.5+	2000 01 07	704	0.2-	0.5+
1998 08 17	704	0.4+	0.8-	1999 12 07	704	0.0	0.7+	2000 01 07	704	0.3-	0.9-
1998 08 17	704	0.7+	1.4-	1999 12 07	704	0.3+	0.3-	2000 01 07	704	0.0	0.3+

1998 08 17	704	0.5-	0.1+	1999 12 07	704	0.8-	0.0
1998 08 23	704	1.8-	0.8-	2000 01 04	732	0.2-	0.8+

(13282)* 1998 QQ₄₉ = 1982 BG₁₄

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32713)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		358.89807		(2000.0)		P		Q	
<i>n</i>		0.21548212	ω	332.57082		-0.38523010		-0.91787508	
<i>a</i>		2.7554671	Ω	139.88420		+0.87148810		-0.39585384	
<i>e</i>		0.1147163	<i>i</i>	8.51542		+0.30349014		-0.02837391	
<i>P</i>		4.57	<i>H</i>	13.8		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 01 30	675	0.8+	0.7-	1998 09 14	704	1.7-	1.0+	1999 12 06	704	0.8+	0.8+
1982 01 31	675	1.0-	0.1-	1998 09 14	704	(0.1-	3.0-)	1999 12 06	704	0.3-	0.0
1996 03 21	691	0.1+	0.2+	1998 09 16	699	0.6+	0.5-	1999 12 06	704	0.2-	0.1+
1996 03 21	691	0.1+	0.3+	1998 09 16	699	0.4+	0.3+	1999 12 06	704	0.5-	0.5-
1996 03 21	691	0.0	0.2+	1998 09 16	699	0.1-	0.7-	1999 12 06	704	0.3-	0.2-
1998 08 17	704	0.7-	0.7+	1998 09 18	704	0.4-	0.2-	1999 12 14	704	0.2-	0.4+
1998 08 17	704	1.1+	0.2+	1998 09 18	704	0.1-	0.6+	1999 12 14	704	0.2-	0.3-
1998 08 17	704	1.1+	0.2-	1998 09 18	704	(1.9+	2.5-)	1999 12 14	704	0.5+	1.4+
1998 08 17	704	0.4+	1.5+	1998 09 18	704	1.1+	1.8-	1999 12 14	704	0.1-	0.3-
1998 08 23	704	0.6-	0.6-	1999 10 10	704	0.3+	0.0	2000 01 05	704	0.2-	0.1-
1998 08 23	704	1.1+	0.2+	1999 10 10	704	0.2+	0.4-	2000 01 05	704	0.2-	0.2-
1998 08 23	704	0.4-	1.2+	1999 10 10	704	0.6+	0.4+	2000 01 05	704	0.3-	0.1-
1998 08 23	704	1.6-	1.5-	1999 10 10	704	0.4+	0.3+	2000 01 05	704	0.2-	0.3-
1998 08 23	704	0.4-	0.8-	1999 10 10	704	0.8+	0.0	2000 01 05	704	0.2-	0.1+
1998 08 30	699	0.3-	0.3+	1999 10 20	704	0.5-	0.6-	2000 01 07	704	0.2-	0.3+
1998 08 30	699	0.2-	0.8+	1999 10 20	704	0.4-	0.2-	2000 01 07	704	0.3+	0.3+
1998 08 30	699	1.0+	0.5-	1999 10 20	704	0.2-	0.3-	2000 01 07	704	0.2+	0.5+
1998 09 14	704	1.2-	0.1+	1999 10 20	704	0.9-	0.7-	2000 01 07	704	0.2+	0.0
1998 09 14	704	0.7+	0.4+	1999 10 20	704	0.1+	0.3-	2000 01 07	704	0.6+	0.4+

(13283)* 1998 QF₅₁ = 1994 NG₁₀

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32714)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		173.54796		(2000.0)		P		Q	
<i>n</i>		0.26503365	ω	8.03787		+0.55081232		+0.83460719	
<i>a</i>		2.4003176	Ω	295.38508		-0.76612938		+0.50271572	
<i>e</i>		0.1897417	<i>i</i>	0.38383		-0.33113677		+0.22518382	
<i>P</i>		3.72	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 11 12	691	0.0	0.2+	1998 08 23	704	1.6-	1.1+	1999 10 22	704	0.8+	0.4-
1991 11 12	691	0.6-	0.1-	1998 08 23	704	0.4-	0.0	1999 10 22	704	0.6+	0.0
1991 11 12	691	0.4+	0.1-	1998 08 23	704	0.0	0.8-	1999 10 22	704	0.1-	1.2+
1994 07 08	809	0.5+	0.7+	1998 08 23	704	1.8-	0.6-	1999 12 04	691	0.1+	0.4+
1994 07 08	809	0.9-	0.7+	1998 08 26	699	0.7+	0.3+	1999 12 04	691	0.1+	0.4+
1994 07 08	809	0.1+	0.7+	1998 08 26	699	0.9+	0.3-	1999 12 04	691	0.1-	0.4+
1994 07 09	809	1.7+	1.2+	1998 08 26	699	0.6+	0.6+	1999 12 13	691	1.0+	1.1+
1994 07 09	809	0.6-	0.8+	1998 09 12	691	0.2-	0.5+	1999 12 13	691	0.3+	0.5+
1994 07 09	809	1.0-	1.1+	1998 09 12	691	0.2-	0.5+	1999 12 13	691	0.3+	0.5+
1997 04 09	704	0.5+	1.9+	1998 09 12	691	0.2-	0.3+	1999 12 16	691	0.2+	0.6+
1997 04 09	704	0.6+	0.8+	1998 09 14	704	0.7+	0.8+	1999 12 16	691	0.2+	0.5+
1997 04 09	704	0.0	1.0+	1998 09 14	704	0.8+	0.4+	1999 12 16	691	0.4+	0.6+
1997 04 09	704	0.1+	0.3+	1998 09 14	704	0.1+	0.3+	1999 12 17	691	0.1-	0.6+

2000 JAN. 24

M.P.C. 37563

1998 08 17	704	0.1−	1.0−	1998 09 18	704	0.6−	0.2+	2000 01 05	704	0.4−	0.3+
1998 08 17	704	0.4−	1.0−	1998 09 18	704	0.7−	0.0	2000 01 05	704	0.1+	0.3+
1998 08 17	704	0.2−	1.8−	1998 09 18	704	0.1−	0.2+				
1998 08 23	704	0.0	0.6−	1998 09 18	704	0.7+	0.2+				

(13284)* 1998 QB₅₂ = 1985 TP₁ = 1997 GC₄₀

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32715)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	130.00543		(2000.0)	P		Q	
<i>n</i>	0.22616069	<i>ω</i>	155.36591	+0.92908007		+0.36968954	
<i>a</i>	2.6680336	<i>Ω</i>	183.01315	−0.36557201		+0.91292779	
<i>e</i>	0.1806802	<i>i</i>	13.00235	−0.05627905		+0.17289447	
<i>P</i>	4.36	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1985 10 15	688	1.5−	1.0+	1998 08 23	704	0.3+	0.2+	1998 12 08	704	1.2−	0.9+
1985 10 15	688	1.2+	1.1+	1998 09 14	704	0.2+	0.4−	1998 12 08	704	0.9+	0.2−
1992 04 07	809	(2.9−	0.5+)	1998 09 14	704	0.1+	0.6−	1998 12 08	704	0.3+	0.9−
1997 04 07	809	0.0	0.4+	1998 09 14	704	0.1−	0.1−	1998 12 08	704	0.5−	0.5−
1997 04 07	809	0.5+	0.3−	1998 09 14	704	0.8+	0.6−	1998 12 14	704	1.5−	0.5+
1997 04 07	809	0.2+	0.3+	1998 09 18	704	0.2−	0.7−	1998 12 14	704	0.6+	1.2−
1997 04 08	809	0.0	0.6+	1998 09 18	704	0.2+	0.5−	1998 12 14	704	1.3−	1.3−
1997 04 08	809	0.1−	1.5+	1998 09 18	704	0.0	0.9−	1998 12 14	704	0.4+	0.6−
1997 04 08	809	0.5−	1.4+	1998 09 18	704	0.7−	0.6−	1998 12 14	704	0.1−	0.1+
1997 04 09	809	(4.9−	0.5+)	1998 09 18	704	1.0−	0.1−	1998 12 16	699	0.9−	0.8−
1997 04 09	809	(4.7−	0.0)	1998 09 25	699	0.1−	0.4−	1998 12 16	699	0.7+	0.0
1997 04 09	809	(4.6−	0.1+)	1998 09 25	699	0.0	0.1−	1998 12 16	699	0.8−	0.0
1998 06 30	704	0.8−	0.7−	1998 09 25	699	0.1−	0.3−	1999 10 19	704	0.6+	0.6−
1998 06 30	704	1.3−	1.0+	1998 09 26	704	0.7+	0.1−	1999 10 19	704	0.1+	0.6+
1998 06 30	704	0.3+	0.2−	1998 09 26	704	0.2+	0.7+	1999 10 19	704	0.2−	0.1+
1998 06 30	704	0.8+	1.5−	1998 09 26	704	0.2+	1.1+	1999 10 19	704	0.3+	0.5+
1998 07 24	566	(1.6+	2.1−)	1998 09 26	704	0.9−	0.2+	1999 10 19	704	0.6−	1.7+
1998 07 24	566	(0.7+	2.1−)	1998 09 26	704	0.8−	0.2−	2000 01 08	704	0.1−	0.7−
1998 07 24	566	(0.6+	2.4−)	1998 09 27	704	0.6+	0.4−	2000 01 08	704	0.1+	0.1−
1998 08 17	704	0.1+	1.0+	1998 09 27	704	1.0+	1.5+	2000 01 08	704	0.1−	0.2−
1998 08 17	704	0.4+	0.2−	1998 09 27	704	0.1−	1.2+	2000 01 08	704	0.2+	0.3−
1998 08 17	704	0.1+	0.3−	1998 09 27	704	1.1+	0.3+	2000 01 08	704	0.2+	1.6−
1998 08 17	704	0.0	0.2−	1998 09 27	704	0.1+	1.6+	2000 01 11	704	0.1+	0.0
1998 08 17	704	0.4−	0.2−	1998 10 13	704	0.1−	0.8−	2000 01 11	704	0.0	0.8+
1998 08 18	566	(0.6−	3.6−)	1998 10 13	704	0.2+	0.8+	2000 01 11	704	0.0	0.2+
1998 08 18	566	(0.2+	2.3−)	1998 10 13	704	0.7+	0.3+	2000 01 11	704	0.0	0.3+
1998 08 18	566	0.5+	1.0+	1998 10 13	704	1.4−	0.5+	2000 01 11	704	0.3+	0.4+
1998 08 23	704	0.7−	0.2+	1998 10 15	704	0.0	0.9+	2000 01 12	704	0.1−	0.1+
1998 08 23	704	0.8+	0.0	1998 10 15	704	0.5−	0.3+	2000 01 12	704	0.1+	0.5+
1998 08 23	704	0.4+	0.2+	1998 10 15	704	0.5+	0.1−	2000 01 12	704	0.2+	0.2+
1998 08 23	704	0.3+	0.2+	1998 12 08	704	0.1+	0.1+	2000 01 12	704	0.5−	0.8+

(13285)* 1998 QK₅₂ = 1991 XC₃ = 1997 GV₄₂

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 32716)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	129.31299		(2000.0)	P		Q	
<i>n</i>	0.25658012	<i>ω</i>	174.05198	+0.99944102		−0.02939051	
<i>a</i>	2.4527543	<i>Ω</i>	187.68652	+0.02359502		+0.95774914	
<i>e</i>	0.1199831	<i>i</i>	6.84138	+0.02368398		+0.28609926	
<i>P</i>	3.84	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 12 01	809	(0.9+	3.0−)	1998 08 23	704	1.1+	0.8−	1998 10 15	704	1.0−	0.1−
1991 12 01	809	(1.1+	3.9−)	1998 09 14	704	0.1+	0.4−	1998 12 08	704	1.5+	0.2−
1991 12 01	809	(0.7+	3.8−)	1998 09 14	704	0.3−	0.0	1998 12 08	704	1.3+	0.3−
1991 12 09	809	0.6+	0.8+	1998 09 14	704	0.4−	1.3−	1999 12 05	704	1.5−	0.5−

1991 12 09	809	0.1+	1.0+	1998 09 14	704	0.7−	0.5−	1999 12 05	704	0.4+	0.2−
1991 12 09	809	0.5−	1.0+	1998 09 18	704	0.5−	0.5−	1999 12 05	704	1.1−	0.3−
1997 04 11	809	0.5−	1.3+	1998 09 18	704	0.7−	0.6−	1999 12 05	704	0.2+	0.5+
1997 04 11	809	0.1+	0.8+	1998 09 18	704	0.3−	0.6−	2000 01 05	704	0.2−	0.5+
1997 04 11	809	0.1+	0.1−	1998 09 18	704	0.1+	0.4−	2000 01 05	704	0.4+	1.1+
1997 04 12	809	0.3+	0.7+	1998 09 18	704	0.8−	0.2−	2000 01 05	704	0.4−	0.4+
1997 04 12	809	0.2+	0.7+	1998 09 25	699	0.2+	0.1−	2000 01 05	699	0.1+	0.0
1997 04 12	809	0.9+	1.0+	1998 09 25	699	0.3+	0.2−	2000 01 05	704	0.2+	0.5+
1998 08 17	704	0.1+	0.0	1998 09 25	699	0.1−	0.1−	2000 01 05	699	0.2+	0.5+
1998 08 17	704	0.9+	0.5+	1998 10 14	704	0.4−	0.0	2000 01 05	704	0.3−	0.9+
1998 08 17	704	1.2−	1.4+	1998 10 14	704	1.3+	0.4−	2000 01 05	699	0.2−	0.1−
1998 08 17	704	0.6−	0.4+	1998 10 14	704	0.1+	1.7+	2000 01 08	704	0.1−	0.1+
1998 08 17	704	0.2−	0.8+	1998 10 14	704	0.9−	1.3+	2000 01 08	704	0.0	0.2−
1998 08 23	704	0.9+	0.9+	1998 10 15	704	1.2−	0.7+	2000 01 08	704	0.6+	0.0
1998 08 23	704	0.0	0.2−	1998 10 15	704	0.1−	1.8+	2000 01 08	704	0.9+	1.7−
1998 08 23	704	0.3+	0.9+	1998 10 15	704	1.4+	0.6+	2000 01 08	704	0.4+	1.3−
1998 08 23	704	0.7+	0.1−	1998 10 15	704	0.8−	0.1−				

(13286)* 1998 QK₅₃ = 1986 GO = 1987 SQ₁₈

Discovered 1998 Aug. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPC* 32716)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	272.60822		(2000.0)	P		Q	
<i>n</i>	0.27178814	<i>ω</i>	264.55395	−0.62953009		+0.77459671	
<i>a</i>	2.3603825	<i>Ω</i>	326.18594	−0.66261790		−0.57606675	
<i>e</i>	0.0727499	<i>i</i>	6.26821	−0.40574546		−0.26104986	
<i>P</i>	3.63	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1986 04 09	688	1.2+	0.1−	1998 09 18	704	0.1−	0.7+	1999 10 12	704	0.3+	1.3−
1986 04 09	688	1.0−	1.4+	1998 09 25	699	0.1+	0.1+	1999 10 22	704	0.5−	0.0
1987 09 16	095	1.5+	1.3−	1998 09 25	699	0.4+	0.4+	1999 10 22	704	0.6−	0.4+
1998 08 20	699	0.3−	0.2+	1998 09 25	699	0.0	0.2+	1999 10 22	704	0.5−	0.7+
1998 08 20	699	0.5−	0.2+	1998 09 29	704	0.7−	0.3+	1999 10 22	704	0.7−	0.1+
1998 08 20	699	0.1−	0.2−	1998 09 29	704	0.6−	0.4+	1999 10 22	704	0.7−	1.0+
1998 08 27	699	0.1−	0.0	1998 09 29	704	0.1−	0.3+	1999 11 16	704	0.4−	0.3−
1998 08 27	699	0.1+	0.4+	1998 09 29	704	0.2+	0.3+	1999 11 16	704	0.3+	0.2+
1998 08 27	699	0.3−	0.3+	1998 09 29	704	0.5+	1.2−	1999 11 16	704	0.7+	0.2+
1998 08 28	699	0.1+	0.6+	1998 09 29	704	0.5−	0.2−	1999 11 16	704	0.1−	0.3+
1998 08 28	699	0.2−	0.4+	1998 09 29	704	0.1+	0.7−	1999 11 16	704	0.5+	0.0
1998 08 28	699	0.5−	0.6+	1998 09 29	704	0.1+	0.0	2000 01 04	704	0.3+	0.4+
1998 08 31	704	1.0+	1.6+	1998 09 29	704	0.8+	0.6−	2000 01 04	704	0.2+	0.7+
1998 08 31	704	0.8+	0.6+	1998 10 14	704	0.2−	0.3+	2000 01 04	704	0.2+	0.5+
1998 08 31	704	1.7−	1.5−	1998 10 14	704	0.5−	0.1+	2000 01 04	704	0.3+	0.1+
1998 08 31	704	0.9+	0.6+	1998 10 14	704	0.3−	0.2+	2000 01 04	704	0.1+	0.2−
1998 08 31	704	(3.5−	0.3+)	1998 10 14	704	0.5−	0.5−	2000 01 06	704	0.5+	0.3−
1998 09 14	704	0.1−	0.3−	1998 10 14	704	0.6−	0.3+	2000 01 06	704	0.6+	0.0
1998 09 14	704	0.8−	1.0−	1998 10 15	704	0.5+	0.3−	2000 01 06	704	0.1+	0.1+
1998 09 14	704	0.2−	1.2−	1998 10 15	704	0.4+	0.2+	2000 01 06	704	0.2+	0.1+
1998 09 17	699	0.3+	0.0	1998 10 15	704	0.5+	0.5+	2000 01 06	704	0.4+	0.0
1998 09 17	699	0.0	0.3+	1998 10 15	704	(1.3+	2.3+)	2000 01 09	704	0.2−	0.4−
1998 09 17	699	0.3+	0.1+	1998 10 15	704	0.1−	1.0+	2000 01 09	704	0.3−	0.3−
1998 09 18	704	0.0	0.3−	1999 10 12	704	1.0−	0.0	2000 01 09	704	0.3+	0.5−
1998 09 18	704	0.2+	0.0	1999 10 12	704	1.7−	0.6−	2000 01 09	704	0.1+	0.2−
1998 09 18	704	0.2+	0.3+	1999 10 12	704	0.3−	0.3−				
1998 09 18	704	0.8−	0.1−	1999 10 12	704	0.4+	0.7−				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	203.07864		(2000.0)	P	Q
<i>n</i>	0.27755924	ω	116.58487	+0.39053500	+0.92056113
<i>a</i>	2.3275495	Ω	176.38098	-0.87934337	+0.37529187
<i>e</i>	0.1178433	<i>i</i>	6.40752	-0.27246587	+0.10827382
<i>P</i>	3.55	<i>H</i>	13.9	<i>G</i>	0.15

Residuals in seconds of arc

1993 01 23	809	0.3-	1.7-	1998 09 16	120	0.0	0.1-	1998 10 15	704	0.5+	0.1+
1993 01 23	809	0.3-	1.5-	1998 09 16	120	0.5+	0.1-	1998 10 15	704	0.2+	0.4+
1993 01 23	809	(0.5+	2.4-)	1998 09 17	699	0.9+	0.2+	1998 10 15	704	0.7+	0.5-
1993 01 28	809	0.7-	1.2-	1998 09 17	699	0.5+	0.5+	1998 10 17	699	0.6+	0.1-
1993 01 28	809	(3.3-	1.6-)	1998 09 17	699	0.0	0.4+	1998 10 17	699	0.6+	0.1+
1993 01 28	809	(3.3-	2.1-)	1998 09 18	704	0.2-	0.3+	1998 10 17	699	0.5+	0.0
1997 03 08	809	(0.7+	2.7+)	1998 09 18	704	0.3-	0.4-	1998 10 20	120	1.0+	0.7-
1997 03 08	809	(0.4+	2.8+)	1998 09 18	704	0.6-	0.5-	1998 10 20	120	0.6+	0.9-
1997 03 08	809	(0.2-	2.7+)	1998 09 21	120	0.2+	0.3+	1998 10 27	120	0.2+	1.0-
1997 03 09	809	(3.1+	4.0+)	1998 09 21	120	0.1-	0.3+	1998 10 27	120	0.3+	0.9-
1997 03 09	809	(2.8+	3.5+)	1998 09 21	120	0.4+	0.1+	1998 10 27	120	1.2+	1.0-
1997 03 09	809	(2.7+	3.6+)	1998 09 21	120	0.5+	0.7+	1998 12 08	704	1.4-	1.2-
1997 04 13	327	0.2+	0.4-	1998 09 25	699	0.2+	1.1+	1998 12 08	704	1.1+	0.5+
1997 04 13	327	0.2-	0.8-	1998 09 25	699	0.3+	0.9+	1998 12 08	704	(0.9-	2.4+)
1997 04 13	327	0.0	0.9-	1998 09 25	699	0.2-	0.7+	1998 12 08	704	1.3+	0.0
1998 06 29	704	(2.2+	0.2-)	1998 09 26	704	1.2-	0.2-	1998 12 08	704	1.0-	1.0+
1998 06 29	704	(0.7-	2.3+)	1998 09 26	704	1.4-	0.8-	1999 11 17	704	1.2-	0.7-
1998 06 29	704	0.2-	0.3+	1998 09 26	704	0.9-	0.3-	1999 11 17	704	0.2-	0.6-
1998 06 29	704	1.8-	0.3-	1998 09 26	704	0.7-	1.4-	1999 11 17	704	0.3-	0.2+
1998 06 29	704	0.2-	0.8+	1998 09 26	704	0.1-	0.9-	1999 11 17	704	0.9-	0.1-
1998 08 29	120	0.2+	0.7+	1998 09 27	704	0.5-	1.1+	1999 11 17	704	0.4-	0.4+
1998 08 29	120	0.4+	0.7+	1998 09 27	704	0.6-	0.4+	1999 12 14	704	1.9+	1.9+
1998 08 29	120	0.4-	0.4+	1998 09 27	704	0.3-	0.1-	1999 12 14	704	0.0	0.6+
1998 08 30	120	0.3-	0.0	1998 09 27	704	0.9-	0.8-	1999 12 14	704	1.0-	0.4+
1998 08 30	120	0.0	0.6+	1998 09 27	704	0.7-	0.2-	2000 01 04	699	0.7+	0.7+
1998 08 31	120	0.1-	0.3+	1998 09 29	120	0.1+	0.5+	2000 01 04	699	0.5+	0.6+
1998 08 31	120	0.5-	0.3+	1998 09 29	120	0.0	0.6+	2000 01 04	699	1.2+	0.1+
1998 08 31	120	0.6-	0.4+	1998 09 30	120	0.3+	0.7+	2000 01 05	704	1.7+	0.8+
1998 08 31	120	0.2+	0.4+	1998 10 11	120	0.8+	0.1-	2000 01 05	704	0.6-	0.7+
1998 09 06	120	1.5-	0.5+	1998 10 11	120	1.2+	0.6-	2000 01 05	704	(1.0+	2.3+)
1998 09 06	120	0.2+	1.3+	1998 10 11	120	0.9+	0.5-	2000 01 05	704	0.6-	1.2+
1998 09 14	704	0.1-	0.3-	1998 10 14	704	1.0+	0.7-	2000 01 05	704	0.6-	1.3+
1998 09 14	704	0.7-	0.2-	1998 10 14	704	0.1-	1.0-	2000 01 07	704	0.1+	0.4+
1998 09 14	704	0.1-	0.7-	1998 10 14	704	0.3-	0.9-	2000 01 07	704	0.2+	0.3-
1998 09 16	120	0.1-	0.1+	1998 10 14	704	0.5-	0.7-	2000 01 07	704	0.3-	0.3-
1998 09 16	120	0.1+	0.1+	1998 10 14	704	0.6+	0.5-	2000 01 07	704	0.2-	0.2-
1998 09 16	120	0.1+	0.1-	1998 10 15	704	0.3+	0.4-	2000 01 07	704	0.2-	0.1+
1998 09 16	120	0.3-	0.0	1998 10 15	704	0.5+	0.1-				

(13288)* 1998 QV₆₇ = 1985 QJ₁

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32719)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	44.82447		(2000.0)	P	Q
<i>n</i>	0.22786431	ω	250.87779	+0.17036311	-0.98478667
<i>a</i>	2.6547187	Ω	189.51014	+0.96391371	-0.17376233
<i>e</i>	0.2480110	<i>i</i>	11.95653	+0.20456483	+0.00136595
<i>P</i>	4.33	<i>H</i>	14.1	<i>G</i>	0.15

Residuals in seconds of arc

1985 08 16	675	1.2-	0.8+	1998 08 27	704	0.7-	1.6+	1999 12 14	704	0.3-	0.5+
1985 08 16	675	1.1+	2.1+	1998 08 27	704	0.8-	1.4+	1999 12 16	704	0.4-	0.5-
1985 08 17	675	(4.0-	1.1-)	1998 09 14	704	0.1+	0.1+	1999 12 16	704	0.1-	0.3+
1985 08 17	675	0.6-	1.9+	1998 09 14	704	0.4-	0.0	1999 12 16	704	0.2+	0.4+
1994 10 11	691	0.2-	0.4-	1998 09 14	704	1.3+	0.0	1999 12 16	704	0.4-	0.5+
1994 10 11	691	0.3-	0.6-	1998 09 14	704	1.0+	1.4+	1999 12 16	704	0.2-	0.4+

1994 10 11	691	0.1+	0.5-	1998 09 14	704	0.7+	0.3+	2000 01 07	699	0.7+	1.2+
1998 08 02	699	0.3-	0.1+	1998 09 18	704	0.2+	0.3+	2000 01 07	699	1.2+	0.3+
1998 08 02	699	0.6-	0.5+	1998 09 18	704	0.3+	1.8-	2000 01 07	699	1.4+	0.8+
1998 08 02	699	0.2-	0.3-	1998 09 18	704	0.7+	0.6+	2000 01 08	106	0.4+	0.5+
1998 08 24	704	0.9+	0.8-	1998 09 18	704	0.2+	1.6-	2000 01 08	106	0.3+	0.6+
1998 08 24	704	0.5-	0.8+	1998 09 18	704	0.6-	0.8+	2000 01 08	106	0.6+	0.6+
1998 08 24	704	0.9-	0.4-	1998 10 11	699	1.4+	0.3-	2000 01 11	704	0.9+	0.1-
1998 08 24	704	0.0	0.0	1998 10 11	699	0.1+	0.6-	2000 01 11	704	0.2-	0.2-
1998 08 24	704	0.6+	1.4-	1998 10 11	699	0.1-	0.2-	2000 01 11	704	0.5-	0.2-
1998 08 27	704	0.6-	0.3+	1999 12 14	704	0.0	0.2-	2000 01 11	704	1.6-	0.4-
1998 08 27	704	0.7-	0.1+	1999 12 14	704	1.3-	0.7+				
1998 08 27	704	0.8-	0.1-	1999 12 14	704	0.5-	0.1+				

(13289)* 1998 QK₇₅ = 1978 WV₁₄ = 1983 VY₁

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32719)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	65.39518		(2000.0)	P	Q
<i>n</i>	0.19014505	ω	150.47282	+0.81271610	-0.56484364
<i>a</i>	2.9951094	Ω	244.60941	+0.49874068	+0.80126666
<i>e</i>	0.1098373	<i>i</i>	9.10657	+0.30124787	+0.19729016
<i>P</i>	5.18	<i>H</i>	12.4	<i>G</i>	0.15

Residuals in seconds of arc

1978 11 28	330	2.1+	0.1+	1998 09 23	704	1.0+	1.7-	1999 12 14	106	0.2-	0.0
1983 11 08	046	0.3+	0.1+	1998 11 02	725	0.0	0.5-	1999 12 14	704	0.1-	0.2-
1983 11 09	046	0.2-	0.6+	1998 11 02	725	0.1-	0.3-	1999 12 14	704	0.6-	0.1-
1983 11 09	046	0.5+	0.2+	1998 11 02	725	0.2+	0.3-	1999 12 14	704	0.1-	0.1+
1983 11 10	046	1.0-	0.1-	1998 11 20	704	0.1-	0.3-	1999 12 14	704	0.4-	0.2+
1983 11 10	046	2.3-	0.4-	1998 11 20	704	(0.7-	2.1-)	1999 12 14	704	0.1-	0.3+
1998 08 19	704	0.6+	0.7+	1998 11 20	704	(3.0+	1.3-)	1999 12 15	704	0.2-	0.1-
1998 08 19	704	1.8-	1.1+	1998 11 20	704	1.6+	0.6+	1999 12 15	704	0.4-	0.0
1998 08 19	704	0.0	0.0	1998 12 09	704	0.6+	1.1-	1999 12 15	704	0.2-	0.3-
1998 08 19	704	1.7+	0.2-	1998 12 09	704	1.4+	0.4+	1999 12 15	704	0.0	0.1-
1998 08 19	704	1.7-	1.2+	1998 12 09	704	1.1+	0.6+	1999 12 15	704	0.2-	0.0
1998 08 24	704	0.5+	0.7+	1998 12 09	704	0.6-	1.2+	1999 12 15	704	0.1-	0.1-
1998 08 24	704	0.4-	1.2+	1998 12 09	704	0.1-	0.5-	1999 12 15	704	0.4-	0.4-
1998 08 24	704	0.3-	0.1-	1999 10 21	704	0.3-	0.3-	1999 12 15	704	0.4-	0.4-
1998 08 24	704	0.1+	0.8-	1999 10 21	704	0.0	0.5-	1999 12 15	704	0.4-	0.4-
1998 08 24	704	1.4-	0.1-	1999 10 21	704	0.0	0.4-	1999 12 15	704	0.4-	0.4-
1998 08 27	704	0.4-	0.8+	1999 10 21	704	0.1-	0.4-	2000 01 05	704	0.5+	0.0
1998 08 27	704	0.0	0.3+	1999 10 21	704	0.0	0.7-	2000 01 05	704	0.5+	0.2+
1998 08 27	704	(1.2+	2.3+)	1999 11 17	704	0.3+	0.3+	2000 01 05	704	0.4+	0.0
1998 08 27	704	(2.1-	1.2-)	1999 11 17	704	0.1+	0.5+	2000 01 05	704	0.4+	0.3-
1998 08 27	704	0.7-	0.2-	1999 11 17	704	0.8+	0.3+	2000 01 05	704	0.3+	0.2-
1998 09 19	704	0.3+	0.1+	1999 11 17	704	0.3+	0.2-	2000 01 06	704	0.8+	0.2+
1998 09 19	699	0.4-	0.1+	1999 11 17	704	0.2+	0.2-	2000 01 06	704	0.9+	0.1+
1998 09 19	704	0.5+	0.3+	1999 12 06	704	0.2-	0.9+	2000 01 06	704	0.2+	0.3+
1998 09 19	699	0.2-	0.0	1999 12 06	704	0.9-	1.0+	2000 01 09	704	0.0	0.4-
1998 09 19	699	0.1-	0.2-	1999 12 06	704	0.9-	0.8+	2000 01 09	704	0.1+	0.0
1998 09 19	704	0.4-	0.4-	1999 12 06	704	0.1-	0.5+	2000 01 09	704	0.2+	0.1-
1998 09 23	704	(0.2-	2.5-)	1999 12 06	704	0.4-	0.1+	2000 01 09	704	0.5+	0.1-
1998 09 23	704	0.4+	1.0-	1999 12 14	106	0.1+	0.2+	2000 01 09	704	0.4+	0.2-
1998 09 23	704	0.6+	0.8-	1999 12 14	106	0.1-	0.6+				

2000 JAN. 24

M.P.C. 37565

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	86.30183		(2000.0)	P	Q
<i>n</i>	0.22726331	ω	202.51008	+0.86405007	-0.50058449
<i>a</i>	2.6593969	Ω	188.16356	+0.49978341	+0.86568520
<i>e</i>	0.0950157	<i>i</i>	22.01249	+0.06028280	-0.00207425
<i>P</i>	4.34	<i>H</i>	12.3	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1968 10 23	095	0.1-	0.7+	1998 08 27	704	0.0	0.9+	1998 12 08	704	1.4-	0.7+
1972 09 10	095	(1.8-	3.2-)	1998 08 27	704	0.0	0.4-	1998 12 08	704	(2.1-	1.8+)
1979 04 20	095	0.4+	2.2-	1998 09 19	704	0.2-	0.7+	1998 12 08	704	(2.2-	2.3+)
1991 01 10	413	1.4-	0.6+	1998 09 19	704	0.3+	0.5+	1999 10 08	704	0.2-	0.4-
1991 01 10	413	0.5-	0.2+	1998 09 19	704	0.5-	0.6-	1999 10 08	704	1.3-	0.5+
1994 10 30	675	1.4+	1.3-	1998 09 25	704	1.0+	0.2+	1999 10 08	704	(2.3-	0.9+)
1994 10 30	675	1.1+	1.4-	1998 09 25	704	0.9+	0.2-	1999 10 08	704	(1.1-	2.4-)
1998 06 30	704	0.1-	0.7-	1998 09 25	704	1.2+	0.1+	1999 10 08	704	(2.3-	1.3+)
1998 06 30	704	1.3-	0.0	1998 09 25	704	1.5+	0.6+	1999 12 18	704	0.3+	0.1+
1998 06 30	704	0.8-	0.3+	1998 09 25	704	(2.4+	0.4+)	1999 12 18	704	0.5+	0.2-
1998 06 30	704	0.2-	1.1+	1998 09 27	699	0.4+	0.1+	1999 12 18	704	0.0	0.4-
1998 06 30	704	0.3+	0.8+	1998 09 27	699	0.3+	0.1+	1999 12 18	704	0.1+	0.4-
1998 07 01	699	0.1+	0.2+	1998 09 27	699	1.6+	0.0	1999 12 18	704	0.1-	1.2-
1998 07 01	699	0.2-	0.7-	1998 10 11	699	0.3-	0.0	2000 01 03	423	0.5-	0.4-
1998 07 01	699	0.3-	0.5-	1998 10 11	699	0.5-	0.1-	2000 01 03	423	0.6+	0.8-
1998 08 19	704	1.2-	0.3-	1998 10 11	699	0.5-	0.1-	2000 01 04	423	0.2-	1.1+
1998 08 19	704	0.3-	1.9-	1998 10 12	704	0.6-	0.1-	2000 01 04	423	0.8+	1.5+
1998 08 19	704	0.6-	1.4-	1998 10 12	704	0.6-	0.2-	2000 01 08	808	0.1+	0.2+
1998 08 24	704	0.4+	0.4+	1998 10 12	704	1.0-	0.6-	2000 01 08	808	0.2-	0.0
1998 08 24	704	0.4-	0.8+	1998 10 12	704	0.1-	1.4-	2000 01 10	704	0.4+	0.2+
1998 08 24	704	0.3-	0.3+	1998 10 12	704	(2.3-	1.5-)	2000 01 10	704	0.3+	0.4+
1998 08 24	704	0.4+	0.3-	1998 11 15	699	0.5-	0.3+	2000 01 10	704	0.1-	0.2+
1998 08 24	704	0.2-	0.4+	1998 11 15	699	0.5-	0.7+	2000 01 10	704	0.1+	0.2-
1998 08 27	704	0.1+	0.1-	1998 11 15	699	0.3-	0.3+	2000 01 10	704	0.8-	0.4-
1998 08 27	704	0.2+	0.2+	1998 11 19	689	0.2-	0.3-				
1998 08 27	704	1.3+	0.5+	1998 12 08	704	(2.3-	0.4+)				

(13291)* 1998 QH₇₇ = 1989 ES₃ = 1997 MP₄

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32982)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	67.12198		(2000.0)	P	Q
<i>n</i>	0.17061449	ω	92.59238	+0.85213664	-0.47791731
<i>a</i>	3.2195273	Ω	296.03282	+0.33376787	+0.81012960
<i>e</i>	0.1068076	<i>i</i>	13.72626	+0.40306594	+0.33953655
<i>P</i>	5.78	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 03 02	809	1.1-	1.4+	1998 08 24	704	0.3+	0.1-	1999 12 08	106	0.3+	0.6+
1989 03 02	809	1.2-	0.6+	1998 08 24	704	0.2+	0.5-	1999 12 08	106	0.3+	0.2+
1989 03 02	809	0.4-	0.8+	1998 08 24	704	0.7-	0.6-	1999 12 12	704	0.6+	0.5+
1989 03 03	809	0.9+	0.3-	1998 08 24	704	0.4+	0.9-	1999 12 12	704	0.2+	0.2+
1989 03 03	809	0.8+	0.5-	1998 08 27	704	0.3+	0.3-	1999 12 12	704	0.0	0.7+
1989 03 03	809	0.5+	0.3+	1998 08 27	704	0.4+	0.0	1999 12 12	704	0.5+	0.8+
1989 03 03	809	0.7+	0.1+	1998 08 27	704	0.2+	0.2+	1999 12 12	704	0.2-	1.1+
1989 03 03	809	0.7+	0.1+	1998 08 27	704	0.8+	0.4+	1999 12 15	704	0.3+	0.3-
1989 03 03	809	0.9+	0.3+	1998 08 27	704	0.3+	0.0	1999 12 15	704	0.4+	0.2-
1997 06 28	704	0.3-	0.3+	1998 09 19	704	0.4-	0.6+	1999 12 15	704	0.1+	0.7-
1997 06 28	704	0.7-	0.5+	1998 09 19	704	0.0	1.2+	1999 12 15	704	0.0	0.3-
1997 06 28	704	0.0	0.1-	1998 09 19	704	0.1-	0.1+	1999 12 15	704	0.1-	0.4-
1997 06 29	704	0.2-	0.2-	1998 09 23	704	0.1-	0.1-	2000 01 02	704	0.2+	0.0
1997 06 29	704	0.2-	0.4+	1998 09 23	704	0.1+	0.2+	2000 01 02	704	0.2+	0.4+
1997 06 29	704	0.0	0.5+	1998 09 23	704	1.8-	0.4+	2000 01 02	704	0.7-	1.2+
1997 06 29	704	0.0	0.8+	1998 10 10	699	1.0-	1.4-	2000 01 02	704	0.3+	1.3+
1997 06 29	704	0.8-	0.8+	1998 10 10	699	0.2-	0.4+	2000 01 02	704	0.1-	0.3-
1997 07 02	704	0.2-	0.6+	1998 10 10	699	0.1+	0.6+	2000 01 04	704	0.3-	0.1-

1997 07 02	704	0.1+	0.6-	1998 12 09	704	(2.1-	1.1+)	2000 01 04	704	0.3-	0.3-
1997 07 02	704	1.6+	0.9+	1998 12 09	704	0.1+	1.1-	2000 01 04	704	0.2-	0.4-
1997 07 02	704	0.6-	1.0+	1998 12 09	704	1.7-	1.3+	2000 01 04	704	0.4-	0.3-
1997 07 02	704	0.4-	0.6+	1998 12 09	704	1.0+	1.2+	2000 01 04	704	0.4-	0.7-
1998 08 24	704	1.7+	0.1-	1998 12 09	704	0.8-	0.3+				

(13292)* 1998 QT₉₀ = 1990 SO₅ = 1993 GJ₁

Discovered 1998 Aug. 28 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32720)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	192.44264		(2000.0)	P	Q
<i>n</i>	0.24611881	ω	230.54853	+0.23765970	+0.96834520
<i>a</i>	2.5217741	Ω	53.36568	-0.85942986	+0.24624349
<i>e</i>	0.1210430	<i>i</i>	5.45784	-0.45265681	+0.04088664
<i>P</i>	4.00	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1990 09 22	809	1.3+	1.4+	1998 09 18	704	0.4-	0.1-	1998 10 15	704	0.2+	0.6-
1990 09 22	809	0.1-	0.4-	1998 09 18	704	1.0-	0.0	1998 10 15	704	0.8-	0.3+
1990 09 22	809	0.6+	1.5+	1998 09 18	704	0.3+	0.1-	1998 10 15	704	0.3-	0.4-
1990 09 25	809	0.2-	1.0-	1998 09 18	704	0.0	0.9+	1998 10 15	704	1.2-	0.5+
1990 09 25	809	1.0-	0.5-	1998 09 24	699	0.4+	0.5-	1998 10 15	704	0.1-	1.0-
1990 09 25	809	0.6-	0.9-	1998 09 24	699	0.8+	0.3-	1998 10 15	704	0.7+	0.9+
1993 04 15	675	0.2-	0.5-	1998 09 24	699	0.7+	0.0	1998 10 15	704	0.2+	0.4-
1993 04 15	675	0.2-	0.3+	1998 09 26	704	0.4+	1.1-	1998 10 17	699	0.4-	0.3-
1993 04 16	675	0.4-	1.4-	1998 09 26	704	0.8+	1.4-	1998 10 17	699	0.1-	0.2-
1993 04 16	675	(2.1-	2.1-)	1998 09 26	704	(1.9+	3.4-)	1998 10 17	699	0.4+	0.2-
1993 04 19	675	0.0	0.3-	1998 09 26	704	(1.3+	2.7-)	1998 11 15	699	0.7-	0.1+
1993 04 19	675	0.3-	0.5-	1998 09 26	704	(2.4+	3.2-)	1998 11 15	699	0.5+	1.2+
1998 08 28	704	0.1+	0.4+	1998 09 27	704	0.6+	0.5-	1998 11 15	699	0.3+	1.6+
1998 08 28	704	(2.1-	0.1+)	1998 09 27	704	0.4-	0.1-	1999 12 15	704	0.8+	0.1-
1998 08 28	704	(2.1+	2.2-)	1998 09 27	704	0.6+	1.1-	1999 12 15	704	0.2+	0.5-
1998 08 28	704	(2.2-	0.1+)	1998 09 27	704	0.1+	0.7-	1999 12 15	704	0.0	0.6-
1998 08 28	704	(2.8-	0.3-)	1998 09 27	704	0.0	1.5-	1999 12 15	704	0.2-	1.2-
1998 08 31	704	1.1-	0.6+	1998 10 14	704	0.8+	0.5+	1999 12 15	704	0.9-	1.0-
1998 08 31	704	1.7-	0.6-	1998 10 14	704	0.0	0.5-	2000 01 03	704	0.1+	0.0
1998 08 31	704	1.0-	0.8+	1998 10 14	704	1.5+	0.3+	2000 01 03	704	0.6-	0.3+
1998 08 31	704	0.3-	0.1-	1998 10 14	704	0.8+	0.1+	2000 01 03	704	0.8-	0.8+
1998 08 31	704	0.1+	1.0-	1998 10 14	704	0.3+	0.7-	2000 01 03	704	0.3-	0.1+
1998 09 14	704	0.1-	0.4+	1998 10 14	704	(2.0-	1.5-)	2000 01 03	704	0.3+	0.5+
1998 09 14	704	0.2-	0.2-	1998 10 14	704	0.6+	0.3+	2000 01 04	704	0.0	0.1+
1998 09 14	704	0.5-	0.7-	1998 10 14	704	0.9-	0.5+	2000 01 04	704	0.2-	0.1-
1998 09 17	699	0.9+	0.7+	1998 10 14	704	0.1-	0.7+	2000 01 04	704	0.4+	0.3+
1998 09 17	699	0.4+	0.2+	1998 10 14	704	0.4-	1.3+	2000 01 04	704	0.1+	0.2-
1998 09 17	699	0.3+	0.1+	1998 10 15	704	0.5+	0.3+	2000 01 04	704	0.5+	0.3+
1998 09 18	704	0.8-	0.3-	1998 10 15	704	0.0	0.5+				

(13293)* 1998 QO₁₀₄ = 1992 AN₄

Discovered 1998 Aug. 26 by E. W. Elst at the European Southern

Observatory.

Id. A. Gnädig (*MPC* 35340), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	1.93805		(2000.0)	P	Q
n	0.25496171	ω	64.14592	-0.68782453	-0.71967332
a	2.4631229	Ω	69.65376	+0.62458357	-0.65325628
e	0.0336649	i	5.79674	+0.36985508	-0.23521597
P	3.87	H	14.0	G 0.15	U 2

1992 01 25	675	0.6+	0.1+	1998 09 26	704	0.3+	1.9-	1999 12 15	704	0.5-	0.1-
1998 08 26	809	0.1+	0.2+	1998 09 27	699	0.2-	0.0	1999 12 15	704	1.1-	0.0
1998 08 26	809	0.3+	0.1+	1998 09 27	704	0.6-	0.3+	1999 12 15	704	0.1+	0.7+
1998 08 26	809	0.3-	0.6+	1998 09 27	699	0.5-	0.6+	2000 01 03	704	0.2+	0.0
1998 08 27	809	0.4-	0.4+	1998 09 27	704	0.0	0.5+	2000 01 03	704	0.2-	0.1+
1998 08 27	809	0.2+	0.6+	1998 09 27	699	0.0	0.0	2000 01 03	704	0.2-	0.1+
1998 08 27	809	0.5-	0.2+	1998 09 27	704	0.1+	0.1+	2000 01 03	704	0.0	0.0
1998 08 28	704	1.5+	0.1+	1998 09 27	704	0.5-	0.2-	2000 01 03	704	0.3-	0.2-
1998 08 28	704	1.3+	1.2+	1998 09 27	704	1.1-	0.7-	2000 01 04	704	0.4-	0.1+
1998 08 28	704	1.2+	0.5-	1999 11 16	704	0.4+	1.1+	2000 01 04	704	0.4-	0.5+
1998 08 28	704	0.6-	0.9+	1999 11 16	704	0.8+	0.3+	2000 01 04	704	0.2-	0.1-
1998 09 17	699	0.2+	0.4-	1999 11 16	704	1.1+	0.4+	2000 01 04	704	0.2+	0.3-
1998 09 17	699	0.6+	0.3-	1999 11 16	704	0.5+	0.2+	2000 01 04	704	0.0	0.3+

(13294)* 1998 QO₁₀₅ = 1997 FH

Discovered 1998 Aug. 25 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 32723)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	302.79253			Williams							
				P		Q					
<i>n</i>	0.29061665	ω	148.87515	-0.95026950		+0.30216907					
<i>a</i>	2.2572988	Ω	48.90732	-0.30233042		-0.83700183					
<i>e</i>	0.0983463	<i>i</i>	5.74012	-0.07472747		-0.45620367					
<i>P</i>	3.39	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1				

Residuals in seconds of arc

1995 11 12	046	0.3+	0.4-	1998 09 14	704	0.5+	0.0	1998 10 14	704	1.3-	0.8+
1995 11 12	046	0.3+	0.8-	1998 09 14	704	0.0	0.5+	1998 10 15	704	1.0-	1.3+
1995 11 12	046	0.3-	0.3-	1998 09 14	704	0.2-	0.5+	1998 10 15	704	0.8-	1.1+
1995 11 12	046	0.5+	0.4-	1998 09 18	704	0.6+	0.0	1998 10 15	704	1.5-	0.4-
1995 11 12	046	0.3+	0.3-	1998 09 18	704	0.9+	0.9-	1998 10 15	704	0.8-	1.3+
1995 11 12	046	0.4+	0.1-	1998 09 18	704	0.5-	0.6-	1999 11 16	704	0.1+	0.0
1997 03 20	327	0.4+	0.5+	1998 09 18	704	0.4-	0.2-	1999 11 16	704	0.1+	0.3-
1997 03 20	327	0.0	0.6+	1998 09 18	704	0.1-	0.4+	1999 11 16	704	0.1-	0.4-
1997 03 20	327	0.2+	0.5+	1998 09 26	704	0.2-	1.7-	1999 11 16	704	0.1-	0.3-
1997 03 20	327	0.5+	0.2+	1998 09 26	704	0.6-	0.8-	1999 11 16	704	0.7-	0.3-
1997 03 21	327	0.1-	0.5+	1998 09 26	704	0.6-	0.1-	1999 12 08	703	0.1+	0.7+
1997 03 21	327	0.3+	0.4+	1998 09 26	704	1.8-	0.3+	1999 12 08	703	0.0	0.7+
1997 03 21	327	0.2+	0.3+	1998 09 26	704	0.9-	0.9+	1999 12 08	703	0.5+	0.6+
1997 03 22	327	0.2+	0.1+	1998 09 27	704	0.1+	0.4-	1999 12 08	703	0.0	0.6+
1997 03 22	327	0.1-	0.4+	1998 09 27	704	0.2+	0.6-	1999 12 15	704	0.5+	0.4-
1997 03 22	327	0.2-	0.4+	1998 09 27	704	0.2-	0.1+	1999 12 15	704	0.2+	0.0
1997 05 22	327	0.2-	0.1-	1998 09 27	704	0.7-	0.6-	1999 12 15	704	0.9+	0.0
1997 05 22	327	0.1+	0.6-	1998 09 27	704	0.0	0.6+	1999 12 15	704	1.0+	0.3+
1997 05 22	327	0.6+	0.2+	1998 09 27	699	0.1+	0.2-	1999 12 15	704	0.3-	0.7+
1998 08 25	809	0.7+	0.9+	1998 09 27	699	0.3+	1.0+	2000 01 03	704	0.0	0.2+
1998 08 25	809	0.0	0.8+	1998 09 27	699	0.1+	0.0	2000 01 03	704	0.4-	0.3-
1998 08 25	809	0.2+	0.1+	1998 10 12	699	0.1-	0.2+	2000 01 03	704	0.2-	0.1-
1998 08 26	809	1.1+	1.4+	1998 10 12	699	0.6+	0.1-	2000 01 03	704	0.3-	0.5+
1998 08 26	809	0.8+	1.3+	1998 10 12	699	0.4-	0.2+	2000 01 03	704	0.2-	0.5+
1998 08 26	809	0.8+	0.7+	1998 10 14	704	0.5+	0.3-				
1998 09 14	704	0.2-	0.3-	1998 10 14	704	0.6+	0.0				

(13295)* 1998 RE = 1939 HB = 1975 UU

Discovered 1998 Sept. 2 by A. Sugie at the Dync Astronomical Observatory.

Id. S. Nakano (*MPC* 32723)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	337.18377			Nakano							
				P		Q					
<i>n</i>	0.17674439	ω	127.47298	-0.97576071		+0.08618019					
<i>a</i>	3.1446498	Ω	58.31531	-0.17799685		-0.84728775					
<i>e</i>	0.0924989	<i>i</i>	13.67359	+0.12731126		-0.52409584					
<i>P</i>	5.58	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1				

Residuals in seconds of arc

1939 04 20	024	1.5+	2.5+	1998 09 08	402	0.3+	0.1-	1998 12 14	704	0.4-	0.7+
1975 10 30	033	0.2+	0.2+	1998 09 08	402	0.2+	0.1-	1998 12 14	704	0.4-	0.5-
1975 10 31	033	0.0	0.3-	1998 09 19	402	0.2+	0.1+	1998 12 14	704	0.4-	0.5-
1992 11 18	691	0.1-	1.1+	1998 09 19	402	0.1+	0.2+	1998 12 17	704	0.1-	0.3+
1992 11 18	691	0.1-	0.8+	1998 09 19	402	0.8+	0.1+	1998 12 17	704	0.0	0.1+
1992 11 18	691	0.2-	0.6+	1998 10 25	402	0.1+	0.2+	1998 12 17	704	1.3+	0.2-
1995 05 05	399	0.1+	1.1-	1998 10 25	402	0.3+	0.2+	1998 12 17	704	0.1+	0.6-
1995 05 05	399	1.2-	0.2+	1998 10 25	402	0.2+	0.3-	1998 12 17	704	0.4+	0.3+
1998 09 02	402	0.2-	0.2+	1998 10 25	402	0.4+	0.2-	1999 11 11	699	0.2-	0.9-
1998 09 02	402	0.3-	0.4+	1998 11 03	402	0.6+	0.6-	1999 11 11	699	0.0	0.4-
1998 09 02	402	0.4-	0.5+	1998 11 03	402	0.9+	1.2-	1999 11 11	699	0.5-	0.1-
1998 09 02	402	0.2-	0.1+	1998 11 03	402	0.5+	0.5-	1999 12 17	699	0.7+	0.4+
1998 09 03	402	0.1-	0.5+	1998 11 29	402	1.0-	0.6-	1999 12 17	699	0.7+	0.3-
1998 09 03	402	0.2-	0.6+	1998 11 29	402	1.3-	1.0-	1999 12 17	699	0.1+	0.3+
1998 09 03	402	0.2+	0.2+	1998 11 29	402	0.9-	0.7-				
1998 09 08	402	1.5-	0.5+	1998 12 14	704	0.6-	1.7+				

(13296)* 1998 RV = 1991 EG₃

Discovered 1998 Sept. 11 by F. B. Zoltowski at Woomera.

Id. G. V. Williams (*MPC* 32723)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	67.88641			Williams							
				P		Q					
<i>n</i>	0.19108536	ω	3.72184	+0.98860810		-0.14978315					
<i>a</i>	2.9852756	Ω	4.96622	+0.13330241		+0.82566686					
<i>e</i>	0.0965630	<i>i</i>	9.84351	+0.06988909		+0.54391107					
<i>P</i>	5.16	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1				

Residuals in seconds of arc

1991 03 11	809	0.8-	0.1-	1998 09 16	429	0.4+	0.1+	1998 11 17	428	0.2-	0.6-
1991 03 11	809	0.7-	0.1-	1998 09 16	429	0.8+	0.2+	1999 10 14	704	1.1-	0.2-
1991 03 11	809	0.4-	0.1-	1998 09 21	611	(2.7+	1.5+)	1999 10 14	704	0.4-	0.1+
1991 03 13	809	0.2-	0.9-	1998 09 21	611	0.6+	1.1+	1999 10 14	704	0.1+	0.2-
1991 03 13	809	0.1-	0.9-	1998 09 22	422	0.0	0.2-	1999 10 14	704	0.3+	0.7-
1991 03 13	809	0.1+	1.0-	1998 09 22	422	0.2-	0.0	1999 12 06	106	0.3+	0.4+
1996 03 26	566	0.5+	0.6+	1998 09 22	422	0.3-	0.1+	1999 12 06	106	0.1-	0.4+
1996 03 26	566	0.4+	0.4+	1998 09 24	699	0.4+	0.5-	1999 12 06	106	0.5-	0.1+
1996 03 26	566	0.0	0.4+	1998 09 24	699	0.4+	0.5+	1999 12 12	704	0.3+	0.0
1998 07 31	699	0.1-	0.4-	1998 09 24	699	0.5+	0.2+	1999 12 12	704	0.3+	0.1-
1998 07 31	699	0.5+	0.4-	1998 09 25	429	0.3-	0.7-	1999 12 12	704	0.4+	0.5+
1998 07 31	699	1.8-	0.0	1998 09 25	429	0.0	0.2-	1999 12 12	704	0.7+	1.6+
1998 09 11	426	0.7+	0.2-	1998 09 25	429	0.0	0.3-	1999 12 12	704	0.6+	1.0+
1998 09 11	426	0.8+	0.2-	1998 09 29	429	0.1+	0.4+	1999 12 15	704	0.1-	0.2+
1998 09 11	426	0.5+	0.2-	1998 09 29	429	0.2-	0.4-	1999 12 15	704	0.0	0.5-
1998 09 12	426	0.3+	0.2-	1998 09 30	428	0.3+	0.1+	1999 12 15	704	0.5-	0.1-
1998 09 12	426	0.3+	0.6-	1998 09 30	428	1.5-	0.3+	1999 12 15	704	0.1-	0.2-
1998 09 12	426	0.2+	0.5-	1998 10 07	428	0.1-	0.8-	1999 12 15	704	0.2-	0.5-
1998 09 13	428	0.0	0.1-	1998 10 07	428	0.8-	0.2-	2000 01 02	704	0.2-	0.4+
1998 09 13	428	0.5-	0.3-	1998 10 21	428	0.6+	0.8+	2000 01 02	704	0.0	0.9-
1998 09 15	428	0.3+	0.3+	1998 10 21	428	1.1-	0.3+	2000 01 02	704	0.1-	0.9-
1998 09 15	428	0.3-	0.2-	1998 10 21	428	0.1+	0.8+	2000 01 02	704	0.4+	1.4-
1998 09 16	428	0.2+	0.2-	1998 10 21	428	1.0-	0.5+	2000 01 02	704	0.3+	0.3-
1998 09 16	428	1.0+	0.2+	1998 11 17	428	0.1+	0.8-				

2000 JAN. 24

M.P.C. 37567

Residuals in seconds of arc

1975 10 03	095	1.3–	1.0+	1998 09 26	704	0.8–	0.5+	1998 10 29	704	0.6–	1.2+
1978 03 15	675	0.6+	0.5+	1998 09 26	704	0.2+	0.3–	1998 10 29	704	0.0	0.1+
1978 03 16	675	0.4+	0.6+	1998 09 27	704	0.2+	0.7–	1998 10 29	704	0.4–	1.2+
1981 10 03	095	0.3–	1.9+	1998 09 27	704	0.3–	0.1–	1998 10 29	704	0.1+	0.5+
1998 08 31	704	0.7+	0.0	1998 09 27	704	0.8+	0.6+	1998 12 24	699	0.1+	0.3–
1998 08 31	704	1.5+	1.5+	1998 09 27	704	1.1+	0.0	1998 12 24	699	0.2+	0.5–
1998 08 31	704	1.2–	0.1–	1998 09 27	704	0.1–	0.1+	1998 12 24	699	0.3+	1.2+
1998 08 31	704	(4.9–	2.8–)	1998 10 02	411	1.0–	0.2–	1998 12 09	903	0.0	0.5–
1998 09 12	411	1.7–	0.3+	1998 10 02	411	1.2–	0.0	1998 12 09	903	0.3–	0.5–
1998 09 12	411	0.8–	0.4+	1998 10 11	699	0.5+	0.4+	1998 12 10	903	1.5–	0.4–
1998 09 13	411	0.2+	0.2+	1998 10 11	699	0.2+	0.3+	1998 12 10	903	0.2+	1.1–
1998 09 13	411	0.5–	0.2+	1998 10 11	699	0.5+	0.2+	1998 12 10	903	1.4–	0.1–
1998 09 14	704	0.0	0.4–	1998 10 14	704	0.1+	0.8–	1998 12 12	704	0.2–	0.0
1998 09 14	704	0.7–	1.4–	1998 10 14	704	0.5–	0.3+	1998 12 12	704	0.1+	0.3+
1998 09 14	704	0.7–	1.6–	1998 10 14	704	0.6–	1.5–	1998 12 12	704	0.3–	0.2+
1998 09 15	699	0.1–	0.5+	1998 10 14	704	0.4+	0.5–	1998 12 12	704	0.5–	0.3–
1998 09 15	699	0.1+	0.4+	1998 10 14	704	0.7+	0.8–	1998 12 12	704	0.6–	0.3–
1998 09 15	699	0.0	0.6+	1998 10 15	704	0.2–	0.7–	1998 12 15	704	0.1–	0.1+
1998 09 16	411	0.3+	0.4+	1998 10 15	704	0.4–	0.2+	1998 12 15	704	0.1–	0.0
1998 09 16	411	0.2–	0.3+	1998 10 15	704	0.3+	1.3–	1998 12 15	704	0.1–	0.2+
1998 09 18	704	0.6+	0.2+	1998 10 15	704	0.0	0.0	1998 12 15	704	0.1–	0.4+
1998 09 18	704	1.3+	0.4+	1998 10 15	704	0.3–	0.4+	1998 12 15	704	0.2–	0.4+
1998 09 18	704	1.3+	0.3–	1998 10 28	704	0.2+	0.4–	2000 01 02	704	0.7+	0.2–
1998 09 18	704	1.1+	0.3+	1998 10 28	704	0.5+	0.4–	2000 01 02	704	1.2+	0.2+
1998 09 18	704	0.4–	0.0	1998 10 28	704	0.4–	0.8–	2000 01 02	704	1.2+	0.4+
1998 09 26	704	1.1+	0.5+	1998 10 28	704	0.2+	0.1–	2000 01 02	704	1.2+	0.6+
1998 09 26	704	0.1–	1.4–	1998 10 28	704	0.6–	0.9–				
1998 09 26	704	0.0	0.4+	1998 10 29	704	0.0	0.6+				

(13298)* 1998 RD₅ = 1976 UQ₁₄ = 1997 GW₃₉

Discovered 1998 Sept. 15 by J. Broughton at Reedy Creek.

Id. A. Doppler (*MPC* 32990), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	251.24805		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.26760105	ω	168.99848	−0.39787638	+0.91186922		
a	2.3849402	Ω	77.49366	−0.84938775	−0.32454360		
e	0.1054189	i	5.93461	−0.34674896	−0.25132841		
P	3.68	H	14.4	G	0.15	U	1

Residuals in seconds of arc

1976 10 22	381	0.2+	0.7+	1998 09 26	704	0.3+	0.2–	1998 10 28	704	0.3–	0.8+
1976 10 22	381	0.4–	0.1–	1998 09 26	704	0.8+	1.1–	1998 10 28	704	0.3+	0.0
1997 04 07	809	0.0	0.3+	1998 09 26	704	0.0	0.8–	1998 10 28	704	(3.2–	1.2–)
1997 04 07	809	0.0	0.2+	1998 09 26	704	0.5+	0.5–	1998 10 29	704	0.9+	0.1+
1997 04 07	809	0.4–	0.0	1998 09 26	704	0.5+	0.1–	1998 10 29	704	0.2+	0.7+
1997 04 08	809	(0.1–	2.6–)	1998 09 27	704	0.1+	0.3–	1998 10 29	704	0.3–	0.1–
1997 04 08	809	(1.1–	2.8–)	1998 09 27	704	0.4–	0.4+	1998 10 29	704	1.3+	2.0–
1997 04 08	809	(1.1–	2.7–)	1998 09 27	704	0.4+	0.2+	1998 10 29	704	1.2+	0.7–
1997 04 09	809	(1.1+	2.4+)	1998 09 27	704	0.3–	0.8–	1998 11 10	428	0.3–	1.2+
1997 04 09	809	(1.4+	2.2+)	1998 09 27	704	0.4–	0.8–	1998 11 10	428	0.1+	0.9+
1997 04 09	809	(0.7+	2.5+)	1998 09 28	428	0.5+	0.6+	1998 11 15	699	0.7–	1.1+
1997 04 10	809	0.9+	1.7+	1998 09 28	428	1.2+	0.2+	1998 11 15	699	0.1+	1.8+
1997 04 10	809	0.7+	1.4+	1998 10 10	428	1.5–	0.5+	1998 11 26	428	0.6–	0.7+
1997 04 10	809	1.0+	1.7+	1998 10 10	428	1.5–	0.7+	1998 11 26	428	0.7–	0.2–
1998 09 14	704	0.5–	0.3+	1998 10 14	704	0.2–	0.5+	1999 12 15	704	0.5–	0.1+
1998 09 14	704	1.2–	0.5–	1998 10 14	704	0.2–	0.8+	1999 12 15	704	0.3–	0.3–
1998 09 15	428	0.4–	0.9+	1998 10 14	704	1.4–	1.7–	1999 12 15	704	0.3–	0.6+
1998 09 15	428	0.7+	0.2+	1998 10 14	704	0.2+	1.7–	1999 12 15	704	0.2+	1.0+
1998 09 16	428	0.7+	0.4+	1998 10 15	704	1.3–	0.2+	2000 01 03	704	0.7–	0.5+
1998 09 18	704	0.1–	0.1+	1998 10 15	704	1.2+	0.3–	2000 01 03	704	0.4+	0.4–
1998 09 18	704	0.2–	0.0	1998 10 15	704	0.2–	1.2+	2000 01 03	704	0.6+	0.5–
1998 09 18	704	0.6+	0.2+	1998 10 15	704	1.8–	0.2–	2000 01 03	704	0.1–	0.3–
1998 09 18	704	0.6+	0.4+	1998 10 15	704	1.4–	0.8+	2000 01 04	704	0.3+	0.2+
1998 09 18	704	0.8+	0.3+	1998 10 17	699	0.4+	0.6+	2000 01 04	704	0.2+	0.1+
1998 09 19	428	0.5+	0.4+	1998 10 17	699	0.4+	0.7+	2000 01 04	704	0.1–	0.4–

1998 09 19	428	0.5+	0.2–	1998 10 17	699	0.2+	0.4+	2000 01 04	704	0.1+	0.0
1998 09 21	699	0.1+	0.3–	1998 10 21	428	1.3–	0.6–	2000 01 04	704	0.6+	0.3+
1998 09 21	699	0.0	0.3–	1998 10 21	428	0.1–	0.2+				
1998 09 21	699	0.8+	0.4+	1998 10 28	704	1.3–	0.2–				

(13299)* 1998 RU₁₅ = 1983 GE

Discovered 1998 Sept. 4 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 32724)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	254.19046		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28291248	ω	78.32049	-0.27421092	$+0.96164741$
a	2.2980950	Ω	175.74771	-0.91306254	-0.25821380
e	0.1149450	i	5.05194	-0.30186944	-0.09251970
P	3.48	H	13.9	G 0.15	U 1

Residuals in seconds of arc

1983 04 05	372	0.3+	0.5+	1998 09 27	704	0.1+	0.4–	1998 10 28	704	0.2–	0.9–
1983 04 05	372	0.8–	0.8+	1998 09 27	704	0.7+	0.0	1998 10 28	704	0.9–	1.0+
1983 04 08	372	(3.4–	0.0)	1998 09 29	327	1.0–	0.2+	1998 10 28	704	0.1–	1.1–
1983 04 08	372	1.6+	1.8+	1998 09 29	327	0.8–	0.3+	1998 10 29	704	0.5–	0.1+
1991 10 06	691	0.0	0.1–	1998 09 29	327	1.1–	0.0	1998 10 29	704	0.0	0.4+
1991 10 06	691	0.2–	0.2–	1998 10 10	699	0.0	0.2+	1998 10 29	704	0.7–	0.9+
1991 10 06	691	0.0	0.2+	1998 10 10	699	0.2–	0.4+	1998 10 29	704	0.7+	1.2+
1998 09 04	327	0.5–	0.5+	1998 10 10	699	0.0	0.5+	1998 10 29	704	0.5+	0.8–
1998 09 04	327	0.4–	0.5+	1998 10 13	327	0.5–	0.2–	1999 11 17	704	0.2+	1.2–
1998 09 04	327	0.7–	0.1+	1998 10 13	327	0.1+	0.2–	1999 11 17	704	0.0	0.6–
1998 09 06	327	0.7–	1.0+	1998 10 13	327	0.0	0.1+	1999 11 17	704	0.0	0.6+
1998 09 06	327	1.1–	0.8+	1998 10 14	704	0.2–	0.7–	2000 01 05	704	0.2+	0.2+
1998 09 06	327	0.6–	0.7+	1998 10 14	704	0.5+	0.4–	2000 01 05	704	0.2–	0.3+
1998 09 23	327	0.2–	0.8+	1998 10 14	704	0.6+	0.0	2000 01 05	699	0.2+	0.7+
1998 09 23	327	0.4+	0.4–	1998 10 14	704	1.3+	1.9–	2000 01 05	704	0.3–	0.6+
1998 09 23	327	0.9+	0.8+	1998 10 14	704	0.3+	0.8+	2000 01 05	699	0.4+	0.3+
1998 09 25	327	1.6+	0.1+	1998 10 15	704	0.8–	0.3–	2000 01 05	704	0.3–	0.5–
1998 09 25	327	1.7+	0.3+	1998 10 15	704	0.3+	1.5–	2000 01 05	704	0.1+	0.5–
1998 09 25	327	1.9+	0.2+	1998 10 15	704	0.5–	1.2–	2000 01 05	699	0.4+	0.8+
1998 09 26	704	0.2+	0.4–	1998 10 15	704	0.1+	0.4–	2000 01 07	704	0.1–	0.0
1998 09 26	704	0.6+	0.5+	1998 10 15	704	0.1–	0.2+	2000 01 07	704	0.1+	0.0
1998 09 26	704	0.1+	0.5+	1998 10 19	699	0.7–	0.2+	2000 01 07	704	0.2–	0.3–
1998 09 26	704	0.1+	0.5+	1998 10 19	699	0.3–	0.3–	2000 01 07	704	0.2–	0.1–
1998 09 26	704	0.5–	0.4+	1998 10 19	699	0.6–	0.4+	2000 01 07	704	0.1–	0.1–
1998 09 27	704	0.8+	0.2+	1998 10 28	704	0.2+	0.9+				
1998 09 27	704	(2.6+	2.6+)	1998 10 28	704	0.9–	0.3–				

(13300)* 1998 RF₁₆ = 1981 RU₆ = 1997 GM₃₈

Discovered 1998 Sept. 14 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPC* 32724)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	194.61922		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.23600613	ω	145.39699	+0.17207227	+0.98297426
a	2.5933066	Ω	134.41514	−0.92295358	+0.18373885
e	0.1745916	i	5.17615	−0.34430774	−0.00127739
P	4.18	H	13.8	G 0.15	U 1

1998 09 14	327	0.5+	0.2-	1998 09 27	704	0.2+	0.5-	1999 12 08	704	0.2-	0.4+
1998 09 14	327	0.4+	0.4-	1998 09 27	704	0.9+	0.0	1999 12 08	704	0.1-	0.4+
1998 09 17	327	0.6-	0.0	1998 09 27	704	0.4-	0.7-	1999 12 08	704	0.4-	0.4+
1998 09 17	327	0.7-	0.2+	1998 09 27	704	0.2-	0.1+	1999 12 14	704	0.4+	0.7-
1998 09 17	327	0.5-	0.2+	1998 09 27	704	1.0-	1.8-	1999 12 14	704	0.1+	0.3+
1998 09 20	327	(3.6- 1.7+)		1998 10 15	704	0.4+	1.3-	1999 12 14	704	0.1+	0.1-
1998 09 20	327	(3.3- 1.6+)		1998 10 15	704	(2.3- 0.7+)		1999 12 14	704	0.6+	0.6+
1998 09 20	327	(3.5- 1.9+)		1998 10 15	704	1.2-	1.2-	2000 01 05	704	0.6-	0.2+
1998 09 22	699	0.2-	0.8+	1998 10 15	704	0.3+	0.1+	2000 01 05	704	0.1+	0.1-
1998 09 22	699	0.4+	1.1+	1998 10 15	704	0.9-	1.5+	2000 01 05	704	0.2+	0.2-
1998 09 22	699	0.4-	1.3+	1998 10 28	704	0.1-	1.0-	2000 01 05	704	0.1-	0.4-
1998 09 24	699	0.5-	0.5+	1998 10 28	704	0.8+	0.2+	2000 01 05	704	0.2+	1.7-
1998 09 24	699	0.5-	0.7-	1998 10 28	704	0.5+	0.2+				

(13301)* 1998 RP₁₉ = 1981 XQ₁ = 1996 DB₂

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. A. Milani (*MPC* 34221)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.76725	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.22363232	ω 93.96896	+0.89811339	-0.43945667
<i>a</i>	2.6881056	Ω 292.10090	+0.39610869	+0.82462860
<i>e</i>	0.0894122	<i>i</i> 1.01653	+0.19102421	+0.35618186
<i>P</i>	4.41	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1981 12 04	511	0.5-	1.0+	1998 09 18	704	0.3+	1.3-	1999 12 08	704	0.4-	0.0
1981 12 04	511	0.0	1.8+	1998 09 18	704	0.9+	0.4-	1999 12 08	704	0.1+	0.0
1996 02 17	587	0.7-	0.8-	1998 09 23	691	0.6-	0.4+	1999 12 08	704	0.4-	0.8+
1996 02 17	587	0.2-	0.7+	1998 09 23	691	0.5-	0.5-	2000 01 03	704	0.5+	0.2+
1996 02 18	587	0.2+	0.2-	1998 09 23	691	0.1-	0.2-	2000 01 03	704	0.4+	0.5-
1996 02 20	566	0.8-	0.6+	1998 09 26	691	0.4+	0.4-	2000 01 03	704	0.4+	0.1-
1996 02 20	566	0.4+	0.7+	1998 09 26	691	0.4+	0.1-	2000 01 03	704	0.1-	0.6-
1996 02 20	566	0.2+	0.2+	1998 09 26	691	0.7+	0.2-	2000 01 03	704	0.1+	0.1+
1996 02 22	587	0.3+	1.5-	1998 12 08	910	1.7-	0.7-	2000 01 04	704	0.2-	0.9-
1996 02 23	587	0.4-	0.4-	1998 12 08	910	1.5-	0.2-	2000 01 04	704	0.1+	0.1+
1996 02 23	587	0.3+	1.1-	1998 12 08	910	1.5-	0.7-	2000 01 04	704	0.0	0.2+
1996 02 24	587	0.0	0.8-	1999 10 12	704	0.6+	0.7+	2000 01 04	704	0.1+	0.2-
1996 02 24	587	0.5-	0.3+	1999 10 12	704	0.5+	0.2-	2000 01 04	704	0.1+	0.1+
1996 02 24	587	1.0-	1.9-	1999 10 12	704	0.2+	0.9+	2000 01 06	046	0.7+	0.0
1998 08 17	704	0.5-	0.7-	1999 10 12	704	1.2+	0.5-	2000 01 06	046	0.2+	0.0
1998 08 17	704	0.0	0.1-	1999 10 12	704	0.2-	0.1-	2000 01 06	046	0.2+	0.1-
1998 08 17	704	0.5+	1.2-	1999 10 22	704	0.4+	0.9-	2000 01 06	704	0.2-	0.9+
1998 08 17	704	(5.7- 1.2-)		1999 10 22	704	0.1+	0.5-	2000 01 06	704	0.2+	0.2-
1998 09 14	704	0.9+	0.3+	1999 10 22	704	0.6-	0.2-	2000 01 06	704	0.4-	0.0
1998 09 14	704	0.5+	0.9-	1999 10 22	704	0.4+	0.5-	2000 01 06	704	0.4+	0.3-
1998 09 14	704	0.7-	1.1-	1999 10 22	704	0.3+	0.7-	2000 01 08	691	0.0	0.2-
1998 09 14	704	0.2+	0.3-	1999 12 07	704	0.8-	1.1-	2000 01 08	691	0.0	0.3-
1998 09 14	704	0.2+	0.4+	1999 12 07	704	0.2-	0.2-	2000 01 08	691	0.2+	0.0
1998 09 14	699	0.4+	0.2+	1999 12 07	704	0.9-	0.7+	2000 01 14	691	0.3+	0.2-
1998 09 14	699	0.6+	0.5+	1999 12 07	704	0.9-	0.1-	2000 01 14	691	0.3+	0.0
1998 09 14	699	0.7+	0.1-	1999 12 07	704	1.0-	0.4+	2000 01 14	691	0.2+	0.1-
1998 09 18	704	0.6-	1.1+	1999 12 08	704	1.0-	0.5+				
1998 09 18	704	1.1+	0.1-	1999 12 08	704	0.0	0.2+				

(13302)* 1998 RO₃₁ = 1978 VJ₁ = 1995 VD₁

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. G. V. Williams (*MPC* 32992)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	17.79873	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.28905241	ω 223.66574	-0.66388899	-0.74307274
<i>a</i>	2.2654352	Ω 268.11976	+0.70718684	-0.58718688
<i>e</i>	0.0802726	<i>i</i> 4.83423	+0.24318341	-0.32102099
<i>P</i>	3.41	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1978 10 30	010	0.9-	0.3+	1998 09 18	704	0.0	1.0+	1999 12 05	704	0.4+	0.1+
1978 11 01	010	0.1-	1.0+	1998 09 27	699	0.6+	0.3+	1999 12 05	703	0.4-	0.2+
1978 11 01	010	0.1+	0.6+	1998 09 27	699	0.0	0.5+	1999 12 05	704	0.7-	1.2+
1978 11 02	010	0.8+	0.0	1998 09 27	699	0.2+	0.1-	1999 12 05	704	0.3-	1.0+
1978 11 02	010	0.1-	1.3-	1998 10 11	699	1.2-	0.9+	1999 12 05	704	1.0+	0.5+
1995 11 12	358	0.9-	0.5-	1998 10 11	699	0.5-	0.2-	1999 12 14	704	0.1-	0.6-
1995 11 12	358	1.3+	0.6-	1998 10 11	699	1.2-	0.4+	1999 12 14	704	0.4-	0.2+
1995 11 16	358	(0.5+ 2.6-)		1999 11 07	327	0.1+	0.6-	1999 12 14	704	0.0	0.7-
1995 11 16	358	0.7+	1.9-	1999 11 07	327	0.2-	0.9-	1999 12 14	704	0.7-	0.2+
1998 08 17	704	1.8+	0.0	1999 11 07	327	0.1+	0.2-	1999 12 14	704	0.2+	0.2-
1998 08 17	704	0.4+	0.1+	1999 11 07	327	0.0	0.5-	1999 12 16	699	0.7+	1.3-
1998 08 17	704	0.0	0.4-	1999 11 08	327	0.3-	0.2+	1999 12 16	699	0.1-	0.4+
1998 08 17	704	0.1+	0.4-	1999 11 08	327	0.0	0.2+	1999 12 16	699	0.8-	0.8+
1998 08 17	704	0.8+	0.2+	1999 11 08	327	0.7+	0.1+	2000 01 05	704	0.8-	1.4+
1998 09 14	704	0.1-	0.1+	1999 11 17	704	1.5-	0.9-	2000 01 05	704	1.7+	0.6+
1998 09 14	704	0.2+	0.1+	1999 11 17	704	0.4-	0.8+	2000 01 05	704	0.2+	1.3+
1998 09 14	704	0.4-	0.3+	1999 11 17	704	0.2-	0.3+	2000 01 05	704	1.4+	1.7-
1998 09 14	704	0.2-	0.4-	1999 11 17	704	0.5-	1.0-	2000 01 08	704	0.1+	1.0+
1998 09 18	704	0.6-	0.5-	1999 11 17	704	0.3-	0.3+	2000 01 08	704	0.0	0.2+
1998 09 18	704	0.5-	0.4+	1999 12 05	703	0.5-	0.4-	2000 01 08	704	0.2+	0.2+
1998 09 18	704	0.1-	0.4+	1999 12 05	703	0.3+	0.5+	2000 01 08	704	0.5+	0.0
1998 09 18	704	1.1-	0.8+	1999 12 05	703	1.0+	1.0+	2000 01 08	704	0.0	0.5-

(13303)* 1998 RX₃₂ = 1982 YN₂ = 1986 WO₄ = 1996 FV₁

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. A. Milani (*MPC* 34221), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	58.78515	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23864719	ω 294.59523	+0.19131750	-0.98126148
<i>a</i>	2.5741380	Ω 144.35124	+0.91413808	+0.16964489
<i>e</i>	0.1920791	<i>i</i> 2.24993	+0.35742019	+0.09135924
<i>P</i>	4.13	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1982 12 22	095	(5.1+ 1.5+)		1998 08 17	704	1.1-	1.8-	1998 10 10	699	0.3+	1.3-
1986 11 25	010	0.8-	0.7-	1998 08 17	704	0.3-	0.6-	1998 10 12	699	0.4-	0.4+
1986 11 25	010	(4.7- 1.1-)		1998 08 17	704	(4.2- 0.6+)		1998 10 12	699	0.1+	0.1+
1986 11 25	010	1.0-	0.0	1998 08 23	704	1.1+	1.4+	1998 10 12	699	1.1+	0.3+
1986 11 25	010	1.6+	0.2-	1998 08 23	704	(0.5- 2.7+)		1999 11 16	704	0.3-	0.6-
1994 11 01	033	0.0	0.5+	1998 08 23	704	1.9-	1.5+	1999 11 16	704	0.9+	0.4+
1994 11 01	033	1.2+	0.5+	1998 08 23	704	(5.4- 0.4+)		1999 11 16	704	0.1-	0.0
1996 03 17	566	(1.0- 2.7+)		1998 09 14	704	0.0	0.6+	1999 11 16	704	0.1+	0.7+
1996 03 17	566	0.4-	0.6+	1998 09 14	704	(0.1- 2.6+)		1999 11 16	704	0.5+	0.9+
1996 03 17	566	0.7-	0.9+	1998 09 14	704	(0.9- 2.4+)		1999 12 05	704	0.3+	0.5-
1996 03 21	566	0.1-	0.1-	1998 09 14	704	(0.6- 2.3+)		1999 12 05	704	0.7-	1.1-
1996 03 21	566	0.2+	0.5+	1998 09 18	704	0.3-	0.0	1999 12 05	704	0.4+	0.1+
1996 03 21	566	0.1-	0.5-	1998 09 18	704	0.7-	0.2+	1999 12 05	704	0.1+	0.1-
1996 03 22	566	0.7+	0.2-	1998 09 18	704	0.7+	0.3-	1999 12 05	704	0.0	1.1+
1996 03 22	566	0.6+	0.2-	1998 09 18	704	0.2+	0.6+	2000 01 04	704	0.2-	1.0+
1996 03 22	566	0.5+	0.3-	1998 09 18	704	0.9-	0.8-	2000 01 04	704	0.3+	0.0
1998 08 17	704	0.9+	0.2+	1998 10 10	699	0.4-	0.4+	2000 01 04	704	0.0	0.8+
1998 08 17	704	0.4-	1.5+	1998 10 10	699	0.3+	0.4-	2000 01 04	704	0.4-	0.0

(13304)* 1998 RP₄₇ = 1985 CO₂ = 1996 FK₃

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. G. V. Williams (*MPC* 32994)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	164.94312		(2000.0)	P	Q
n	0.18477199	ω	317.34583	+0.24259892	+0.96645277
a	3.0528957	Ω	326.43529	-0.84388692	+0.16734233
e	0.0678242	i	8.77554	-0.47854010	+0.19484760
P	5.33	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1985 02 15	809	1.3-	0.1-	1996 03 25	566	0.6-	1.4-	1998 09 26	704	0.0	1.3-
1985 02 15	809	1.0-	0.0	1996 03 26	566	1.2-	0.8-	1998 09 27	704	0.3+	0.2-
1985 02 15	809	0.7-	0.0	1996 03 26	566	1.0-	0.8-	1998 09 27	704	0.5-	1.1+
1985 02 16	809	1.0-	0.1-	1996 03 26	566	0.9-	0.9-	1998 09 27	704	1.4+	0.2-
1985 02 16	809	0.9-	0.1-	1998 08 23	704	(0.8-	2.7-)	1998 09 27	704	0.1+	1.1-
1985 02 16	809	0.9-	0.1-	1998 08 23	704	1.1+	0.0	1998 09 27	699	0.2-	0.5+
1985 02 17	809	1.1+	0.0	1998 08 23	704	0.7+	0.8-	1998 09 27	704	0.1+	0.4-
1985 02 17	809	1.4+	0.0	1998 08 23	704	(0.6+	3.2-)	1998 09 27	699	0.3+	0.1+
1985 02 17	809	1.5+	0.0	1998 08 23	704	(4.4-	2.4-)	1998 09 27	699	0.3-	0.0
1985 02 21	809	0.9+	0.5-	1998 09 14	704	1.1+	0.5-	1999 12 12	704	0.2+	0.3+
1985 02 21	809	1.2+	0.8-	1998 09 14	704	0.1+	0.0	1999 12 12	704	0.4+	0.2+
1985 02 21	809	1.6+	0.5-	1998 09 14	704	0.3-	0.7-	1999 12 12	704	0.5+	0.1+
1985 02 22	809	0.6-	0.1-	1998 09 14	704	0.4+	0.1+	1999 12 12	704	0.0	0.8-
1985 02 22	809	0.5-	0.0	1998 09 14	704	0.8-	1.7-	1999 12 12	704	0.4+	1.3+
1985 02 22	809	0.4-	0.2-	1998 09 18	704	0.4+	0.3+	1999 12 15	704	0.3-	0.6+
1985 02 24	809	1.0-	0.5-	1998 09 18	704	0.3+	0.1+	1999 12 15	704	0.3-	0.9+
1985 02 24	809	0.8-	0.4-	1998 09 18	704	0.0	0.1+	1999 12 15	704	0.5-	0.1+
1985 02 24	809	0.7-	0.4-	1998 09 18	704	0.0	0.2-	1999 12 15	704	0.8-	0.3+
1996 03 24	566	(2.1-	2.3-)	1998 09 18	704	0.8+	0.7-	1999 12 15	704	0.7-	0.0
1996 03 24	566	(1.9-	2.4-)	1998 09 26	704	0.1+	0.3-	2000 01 02	704	0.7+	0.9-
1996 03 24	566	(2.0-	2.1-)	1998 09 26	704	0.5-	1.0-	2000 01 02	704	0.3-	0.9+
1996 03 25	566	0.1-	1.3-	1998 09 26	704	0.3+	1.3-	2000 01 02	704	0.6+	0.4-
1996 03 25	566	0.5-	1.2-	1998 09 26	704	0.9+	1.8-	2000 01 02	704	0.6+	0.5-

(13305)* 1998 RD₅₄ = 1989 EX₃

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 32997)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	212.86684		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.26306714	ω	49.52818	+0.09100328	+0.99395469		
a	2.4122648	Ω	225.80851	-0.93763790	+0.06474250		
e	0.0862722	i	4.91406	-0.33549004	+0.08867064		
P	3.75	H	14.8	G	0.15	U	1

Residuals in seconds of arc

1989 03 02	809	0.8+	1.3+	1998 09 18	704	1.2+	0.5-	1999 12 06	704	0.1+	0.8+
1989 03 02	809	0.6-	1.5+	1998 09 18	704	0.6+	1.2-	1999 12 06	704	0.3+	0.5-
1989 03 02	809	(1.3-	2.8+)	1998 09 18	704	1.5-	0.5-	1999 12 14	704	0.7+	0.1-
1989 03 03	809	(0.3-	2.8+)	1998 09 18	704	0.4-	0.1+	1999 12 14	704	0.2+	0.0
1989 03 03	809	(1.8+	3.2+)	1998 09 18	704	0.4-	0.6+	1999 12 14	704	0.4-	1.2-
1989 03 03	809	1.3+	2.4+	1998 09 18	704	1.4+	1.4+	1999 12 14	704	0.2-	0.7-
1997 02 09	910	0.1+	0.1-	1998 09 18	704	1.2+	1.1+	2000 01 05	704	0.2+	0.4+
1997 02 09	910	0.1-	0.1-	1998 09 18	704	0.1-	0.3-	2000 01 05	704	0.1+	1.1-
1997 02 09	910	0.0	0.1-	1998 09 18	704	1.4-	1.2-	2000 01 05	704	0.5+	0.1-
1998 08 27	699	0.0	0.4+	1998 10 14	327	0.0	0.2-	2000 01 05	704	(0.0	2.2-)
1998 08 27	699	0.1+	0.0	1998 10 14	327	0.3+	0.1+	2000 01 07	704	0.3-	0.3+
1998 08 27	699	0.3+	0.0	1998 10 14	327	0.3-	0.1-	2000 01 07	704	0.2-	0.4+
1998 09 14	704	0.1+	0.6+	1998 10 17	327	0.7-	0.2+	2000 01 07	704	0.0	0.7-
1998 09 14	704	0.6-	0.2+	1998 10 17	327	0.4-	0.3+	2000 01 07	704	0.2+	0.1+
1998 09 14	704	0.1-	0.2+	1998 10 17	327	0.4-	0.1+	2000 01 07	704	0.4-	0.8-
1998 09 14	704	0.4+	0.4+	1999 12 06	704	0.7-	0.1-				
1998 09 18	704	0.3-	0.9+	1999 12 06	704	1.0-	0.1+				

(13306)* 1998 RT₅₈ = 1991 ET₇ = 1999 WJ

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 37169)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	185.55324		(2000.0)	P	Q
n	0.19776009	ω	293.75687	+0.03628638	+0.99930198
a	2.9177200	Ω	338.31704	-0.90790542	+0.02925181
e	0.0624978	i	1.37721	-0.41760155	+0.02323550
P	4.98	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1991 03 14	809	0.4-	1.0+	1998 09 26	704	0.3-	0.5+	1999 12 07	704	0.1-	0.0
1991 03 14	809	0.1-	0.4-	1998 09 26	704	0.4+	0.1-	1999 12 07	704	0.3+	0.3+
1991 03 14	809	0.0	1.8-	1998 09 26	704	0.5+	1.2-	1999 12 07	704	0.2+	0.4+
1996 02 15	566	0.2-	0.2+	1998 09 26	704	1.1+	0.4-	1999 12 10	704	0.6+	0.1+
1996 02 15	566	0.2-	0.1-	1998 09 26	704	0.6+	0.7-	1999 12 10	704	0.2+	0.9-
1996 02 15	566	0.4-	0.1+	1998 09 27	704	0.3-	0.7+	1999 12 10	704	0.4+	0.6-
1996 03 17	566	0.1+	0.7-	1998 09 27	704	0.5-	0.5+	1999 12 10	704	1.1+	0.4-
1996 03 17	566	0.2+	0.6-	1998 09 27	704	0.3+	0.2+	1999 12 15	703	0.1-	0.1+
1996 03 17	566	0.1-	0.4-	1998 09 27	704	0.2-	0.6-	1999 12 15	703	0.0	0.3+
1998 08 28	704	1.7+	0.4-	1998 09 27	704	0.5+	0.6-	1999 12 15	703	0.1+	0.2+
1998 08 28	704	(2.9-	1.1+)	1999 11 03	704	0.8+	0.9-	1999 12 15	703	0.8+	0.0
1998 08 28	704	1.2+	1.7-	1999 11 03	704	0.4-	0.0	1999 12 15	703	0.5-	0.3+
1998 08 28	704	1.2+	0.4-	1999 11 03	704	0.1+	0.6+	1999 12 15	703	0.3+	0.8-
1998 08 28	704	(3.4-	1.8+)	1999 11 16	704	0.1-	0.1-	1999 12 15	703	0.4-	0.5-
1998 09 14	704	0.3-	0.6+	1999 11 16	704	0.0	0.2-	1999 12 15	703	0.1-	0.1-
1998 09 14	704	0.6-	0.3+	1999 11 16	704	0.5-	0.1-	2000 01 03	704	0.1+	0.0
1998 09 14	704	0.7-	0.5+	1999 11 16	704	0.1+	0.2-	2000 01 03	704	0.4-	0.1+
1998 09 16	699	0.6-	0.2+	1999 11 16	704	0.4-	0.0	2000 01 03	704	0.7-	0.0
1998 09 16	699	0.8-	0.3+	1999 11 16	411	(0.2-	4.1+)	2000 01 03	704	0.1+	1.0+
1998 09 16	699	0.7-	0.4+	1999 11 16	411	(0.1-	5.0+)	2000 01 03	704	1.3-	0.2-
1998 09 18	704	0.0	0.4-	1999 11 18	411	0.7-	1.0+	2000 01 04	704	0.3-	0.3-
1998 09 18	704	0.7-	0.3-	1999 11 18	411	0.1+	1.9+	2000 01 04	704	0.2+	0.2-
1998 09 18	704	0.2-	0.4-	1999 11 21	411	0.3-	0.5+	2000 01 04	704	0.0	0.4-
1998 09 18	704	0.4+	0.1+	1999 11 21	411	0.4+	0.2+	2000 01 04	704	0.3+	0.1+
1998 09 18	704	0.6-	0.1+	1999 12 07	704	0.3-	0.2-	2000 01 04	704	0.5+	0.2-

(13307)* 1998 RE₅₉ = 1991 HB₃ = 1992 OZ₇

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Gnädig (*MPC* 34927), M. E. Sansaturio (*ibid.*), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	155.80876		(2000.0)	P	Q
n	0.18755558	ω	72.34604	+0.49517000	+0.86816051
a	3.0226142	Ω	227.38210	-0.81324132	+0.44971108
e	0.0545472	i	2.58789	-0.30568812	+0.20989826
P	5.26	H	13.8	G 0.15	U 1

Residuals in seconds of arc

1982 10 17	413	1.1+	1.5+	1998 09 14	704	0.9-	0.2-	1998 09 27	704	0.1+	1.8-
1982 10 17	413	1.3-	0.6-	1998 09 16	699	0.0	0.4-	1998 10 14	699	0.3-	0.6-
1989 12 07	675	0.5+	0.8+	1998 09 16	699	0.4+	0.4-	1998 10 14	699	0.1+	0.0
1991 04 19	809	(0.2+	2.3-)	1998 09 16	699	0.9-	0.5+	1998 10 14	699	0.1-	0.0
1991 04 19	809	0.6-	1.3-	1998 09 18	704	0.7+	1.0-	1999 12 08	704	0.4-	0.9+
1991 04 19	809	1.4-	1.5-	1998 09 18	704	0.2+	0.6-	1999 12 08	704	0.1+	0.3-
1992 05 10	413	0.1-	1.0-	1998 09 18	704	0.2+	0.4-	1999 12 08	704	0.0	0.2-
1992 05 10	413	0.0	0.3-	1998 09 18	704	0.9-	1.4+	1999 12 08	704	0.6-	0.6+
1992 07 21	809	(2.4-	1.8-)	1998 09 18	704	1.4-	0.8+	2000 01 05	704	0.1+	0.3+
1992 07 22	809	0.2+	0.7-	1998 09 26	704	0.5+	0.7+	2000 01 05	704	0.1-	1.1-
1992 07 22	809	(3.2+	0.5+)	1998 09 26	704	0.4-	0.1-	2000 01 05	704	0.1+	0.3-
1993 09 16	691	0.1-	0.3+	1998 09 26	704	1.1+	0.9-	2000 01 05	704	0.3-	0.7-
1993 09 16	691	0.2+	0.1+	1998 09 26	704	(2.5+	0.1+)	2000 01 05	704	0.9-	0.2+
1993 09 16	691	0.1+	0.1+	1998 09 26	704	1.8+	0.0	2000 01 06	704	0.3+	0.2-

1996 03 24	413	0.7−	0.0	1998 09 27	704	0.8+	0.4−	2000 01 06	704	1.5+	0.1+
1996 03 24	413	1.9+	0.4−	1998 09 27	704	0.6+	0.1−	2000 01 06	704	0.2−	1.3−
1998 09 14	704	0.2−	0.3+	1998 09 27	704	(2.1+	0.2+)	2000 01 06	704	0.4−	1.6−
1998 09 14	704	0.6+	0.7+	1998 09 27	704	0.8−	0.6−				

(13308)* 1998 RL₅₉ = 1951 RW = 1989 UQ₇ = 1993 PP₄

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33000, *MPC* 34534)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
51.89381			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.21035524	<i>ω</i>	223.81395	+0.34849345	−0.93694827
<i>a</i>	2.8000589	<i>Ω</i>	205.82392	+0.87561356	+0.33535682
<i>e</i>	0.0820727	<i>i</i>	3.43260	+0.33444462	+0.09830433
<i>P</i>	4.69	<i>H</i>	13.9	<i>G</i>	0.15

Residuals in seconds of arc

1951 09 04	024	(3.0+	4.4−)	1998 09 14	704	0.6−	1.4+	1998 10 14	699	0.1−	0.8+
1989 10 23	033	0.6+	0.5+	1998 09 16	699	1.3+	0.4+	1998 10 14	699	0.4+	0.2+
1989 10 23	033	0.6+	0.2−	1998 09 16	699	0.7+	0.4+	1998 10 14	699	0.2+	0.4+
1989 10 25	033	0.4−	0.2−	1998 09 16	699	1.4−	1.2+	1999 10 21	704	0.1−	0.8+
1989 10 25	033	0.2+	0.0	1998 09 18	704	0.9+	0.5−	1999 10 21	704	1.3−	1.0+
1989 10 27	033	0.0	0.7−	1998 09 18	704	0.1−	1.5−	1999 10 21	704	1.0−	1.1+
1993 08 15	010	1.1+	1.9−	1998 09 18	704	0.5+	0.6−	1999 10 21	704	1.2−	0.8+
1993 08 15	010	0.0	1.0−	1998 09 18	704	0.3+	0.4−	2000 01 05	704	0.1−	0.4−
1993 08 16	010	0.8−	1.3−	1998 09 18	704	0.9+	0.5−	2000 01 05	704	0.4+	0.6−
1993 08 16	010	0.4−	0.9−	1998 09 26	704	0.2−	0.3+	2000 01 05	704	0.2−	0.3−
1993 08 16	010	0.6−	1.7−	1998 09 26	704	0.1+	0.2+	2000 01 05	704	0.2+	0.6−
1996 03 18	566	0.5+	0.0	1998 09 26	704	0.8+	0.9−	2000 01 05	704	0.2+	0.5−
1996 03 18	566	0.6+	0.3−	1998 09 26	704	0.3−	0.3+	2000 01 07	704	0.0	0.6−
1996 03 18	566	0.5+	0.3−	1998 09 26	704	0.7−	0.6+	2000 01 07	704	0.0	0.8−
1996 04 20	566	0.1+	0.1+	1998 09 27	704	0.1−	0.3+	2000 01 07	704	0.2−	0.5−
1996 04 20	566	1.0+	0.1+	1998 09 27	704	0.8−	0.6+	2000 01 07	704	0.8−	0.6−
1996 04 20	566	1.5−	0.0	1998 09 27	704	0.4−	0.8+	2000 01 07	704	0.1+	0.5−
1998 09 14	704	0.0	0.1+	1998 09 27	704	0.0	0.3+				
1998 09 14	704	0.5+	0.0	1998 09 27	704	0.5−	0.4+				

(13309)* 1998 RA₆₀ = 1996 BP₁₇

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33000)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
322.55407			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.19404789	<i>ω</i>	160.63332	−0.81760470	−0.57410323
<i>a</i>	2.9548137	<i>Ω</i>	344.09574	+0.50487721	−0.67817320
<i>e</i>	0.0185260	<i>i</i>	9.22053	+0.27680599	−0.45878818
<i>P</i>	5.08	<i>H</i>	13.2	<i>G</i>	0.15

Residuals in seconds of arc

1993 10 20	675	0.2+	0.0	1998 09 18	704	0.6−	0.5+	1998 10 15	699	0.0	0.3−
1993 10 20	675	0.6+	1.0−	1998 09 18	704	0.6−	0.0	1998 10 15	699	1.1−	0.8+
1993 10 21	675	0.2+	0.5−	1998 09 18	704	0.7−	0.7+	1998 10 15	699	0.5+	0.8+
1996 01 30	809	1.2+	1.1+	1998 09 18	704	0.5−	0.4−	1999 12 12	704	0.4−	0.1−
1996 01 31	809	0.2+	1.3+	1998 09 18	704	0.2−	0.1−	1999 12 12	704	0.1−	0.2−
1998 08 02	699	0.1−	0.6−	1998 09 26	704	0.2−	0.1+	1999 12 12	704	0.1−	0.3−
1998 08 02	699	0.3−	1.7+	1998 09 26	704	0.1−	0.1−	1999 12 12	704	0.0	0.7−
1998 08 02	699	0.3+	0.1+	1998 09 26	704	0.1+	0.6−	1999 12 15	704	0.1−	0.2+
1998 08 28	704	0.2+	0.2−	1998 09 26	704	0.5+	0.6−	1999 12 15	704	0.6−	0.0
1998 08 28	704	0.2−	0.3−	1998 09 26	704	0.8−	1.0+	1999 12 15	704	0.3−	0.5+
1998 08 28	704	0.3−	0.5−	1998 09 27	704	0.2+	1.1−	1999 12 15	704	0.1+	0.5+
1998 08 28	704	(5.1−	0.6−)	1998 09 27	704	0.8+	0.4−	1999 12 15	704	0.1+	0.2+
1998 09 14	704	0.3−	0.2−	1998 09 27	704	0.8+	0.3+	2000 01 02	704	0.2+	0.1+
1998 09 14	704	0.1−	0.1+	1998 09 27	704	0.6+	0.8+	2000 01 02	704	0.1+	0.4−
1998 09 14	704	0.9−	0.2+	1998 09 27	704	0.7−	0.5+	2000 01 02	704	0.2+	0.3+
1998 09 16	699	0.0	0.2+	1998 10 14	699	1.0+	0.3+	2000 01 02	704	0.6+	0.3−

1998 09 16	699	0.3−	0.3+	1998 10 14	699	0.7+	0.2+	2000 01 02	704	0.4+	0.4+
1998 09 16	699	0.2+	0.1−	1998 10 14	699	0.3−	0.8+				

(13310)* 1998 RX₆₃ = 1982 XL₄ = 1987 SA₂₈ = 1997 JZ₁₆ = 1997 LX₁₂

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33002)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
121.33393			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.17976448	<i>ω</i>	210.27978	+0.76381641	+0.64329161
<i>a</i>	3.1093298	<i>Ω</i>	109.58770	−0.58042645	+0.72020916
<i>e</i>	0.2009707	<i>i</i>	3.19685	−0.28229350	+0.25975888
<i>P</i>	5.48	<i>H</i>	13.7	<i>G</i>	0.15

Residuals in seconds of arc

1982 12 14	381	0.7+	0.3+	1998 09 14	704	0.4−	0.4+	1998 10 17	699	0.2−	0.7+
1982 12 14	381	0.5+	0.1+	1998 09 14	704	0.7−	0.3+	1998 10 17	699	0.7+	0.1+
1987 09 24	095	1.3−	0.4+	1998 09 14	704	0.6−	0.1−	1998 11 15	699	1.2−	0.9+
1996 01 26	691	0.7−	0.1+	1998 09 18	704	0.1+	0.8−	1998 11 15	699	0.4+	1.3+
1996 01 26	691	0.5−	0.0	1998 09 18	704	0.2−	1.2−	1999 12 07	704	0.9−	0.3+
1996 01 26	691	0.6−	0.1+	1998 09 18	704	0.7−	0.4+	1999 12 07	704	0.5−	0.9−
1997 05 03	809	(0.1−	2.2+)	1998 09 18	704	0.0	0.6−	1999 12 07	704	0.7−	0.6+
1997 05 03	809	0.4−	1.5+	1998 09 26	704	0.4+	0.4+	1999 12 08	704	0.1+	0.6−
1997 05 03	809	0.3−	1.2+	1998 09 26	704	0.6+	1.2−	1999 12 08	704	0.1−	0.3−
1997 05 04	809	0.1−	1.8−	1998 09 26	704	0.9+	1.1−	1999 12 08	704	0.6+	0.7−
1997 05 04	809	1.3−	0.5−	1998 09 26	704	0.9+	1.3−	1999 12 08	704	1.0+	0.2−
1997 05 04	809	1.3−	1.3−	1998 09 26	704	1.7+	0.7−	2000 01 05	704	0.5+	0.0
1997 06 07	809	1.6+	0.7+	1998 09 27	704	0.3−	0.3−	2000 01 05	704	0.2+	0.3−
1997 06 07	809	0.7+	0.3−	1998 09 27	704	0.7−	0.1−	2000 01 05	704	0.4+	0.5−
1997 06 07	809	0.3+	0.2+	1998 09 27	704	0.4+	0.0	2000 01 05	704	0.1+	0.1−
1997 06 08	809	1.3+	0.7−	1998 09 27	704	0.1−	0.5+	2000 01 05	704	0.1−	0.8−
1997 06 08	809	0.2+	1.2−	1998 09 27	704	0.0	1.0−				
1997 06 08	809	0.4−	1.6−	1998 10 17	699	0.1−	1.3+				

(13311)* 1998 RA₆₈ = 1979 SP₃ = 1996 BT₃

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33005)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
132.96320			(2000.0)		
			<i>P</i>	<i>Q</i>	
<i>n</i>	0.20949480	<i>ω</i>	336.42389	+0.89761018	+0.44071462
<i>a</i>	2.8077206	<i>Ω</i>	357.38360	−0.37062202	+0.74457167
<i>e</i>	0.1687124	<i>i</i>	10.29731	−0.23861115	+0.50138175
<i>P</i>	4.70	<i>H</i>	12.6	<i>G</i>	0.15

Residuals in seconds of arc

1979 09 24	095	0.2−	0.2+	1998 09 18	704	0.0	0.0	1999 01 08	704	0.8+	0.4+
1996 01 27	385	0.7−	0.2+	1998 09 18	704	0.4−	0.1−	1999 02 04	699	1.4−	1.6+
1996 01 27	385	0.2−	0.1−	1998 09 18	704	1.1+	0.1−	1999 02 04	699	1.7−	0.6+
1996 01 27	385	0.2−	0.2−	1998 09 18	704	0.1−	0.0	1999 02 04	699	0.9−	0.4+
1996 01 30	887	0.1−	0.1−	1998 09 18	704	1.3−	0.9−	1999 12 03	699	0.7−	0.4+
1996 01 30	887	0.7−	0.4−	1998 09 26	704	1.4−	0.4+	1999 12 03	699	0.8−	1.0+
1996 01 30	887	0.1−	0.4−	1998 09 26	704	0.1−	1.0−	1999 12 03	699	0.1−	0.6+
1996 01 30	887	0.3−	0.2−	1998 09 26	704	0.4−	1.3−	1999 12 12	704	0.5−	0.0
1996 01 30	887	0.6−	0.4−	1998 09 26	704	1.6−	1.3−	1999 12 12	704	0.5−	0.1+
1996 01 30	887	0.3−	0.7−	1998 09 26	704	0.8−	0.9−	1999 12 12	704	0.5−	0.5−
1996 04 20	566	1.8+	1.8+	1998 09 27	704	0.4+	0.2+	1999 12 12	704	0.7−	0.8−
1996 04 20	566	1.8+	1.7+	1998 09 27	704	0.6+	1.1+	1999 12 12	704	0.3−	0.2−
1996 04 20	566	1.4+	1.9+	1998 09 27	704	1.1+	0.9+	1999 12 15	704	0.2−	0.3−
1998 08 02	699	0.1+	0.3+	1998 09 27	704	1.4+	1.4+	1999 12 15	704	0.2+	0.2−
1998 08 02	699	(2.2+	0.5−)	1998 09 27	704	0.6+	0.4+	1999 12 15	704	0.0	0.2+
1998 08 02	699	1.3+	0.1−	1998 12 09	704	1.0−	0.2−	1999 12 15	704	0.2−	0.3−
1998 08 31	704	1.4+	0.7+	1998 12 09	704	0.5+	1.1−	1999 12 15	704	0.1+	0.8−
1998 08 31	704	(3.1+	2.0−)	1998 12 09	704	1.3+	0.7−	1999 12 31	699	0.2+	0.1−
1998 08 31	704	(0.1−	3.3+)	1998 12 09	704	0.9+	1.1+	1999 12 31	699	0.8+	0.4+

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1998 08 31	704	(3.5− 0.6−)	1998 12 09	704	(2.5+ 0.8−)	1999 12 31	699	0.6+ 0.5+
1998 09 14	704	0.5− 0.0	1998 12 24	699	0.6− 0.4+	2000 01 02	704	0.5+ 0.6−
1998 09 14	704	0.6+ 0.7−	1998 12 24	699	0.2− 0.5+	2000 01 02	704	0.3+ 0.5−
1998 09 14	704	0.5− 0.3−	1998 12 24	699	1.0− 0.3+	2000 01 02	704	0.1− 0.7−
1998 09 15	699	0.0 0.0	1999 01 08	704	1.1− 1.6+	2000 01 02	704	0.8+ 0.8−
1998 09 15	699	0.4+ 0.3+	1999 01 08	704	0.4− 0.5+	2000 01 02	704	0.1+ 0.4−
1998 09 15	699	0.1+ 0.0	1999 01 08	704	0.9− 0.3+			

(13312)* 1998 RK₆₈ = 1550 T-2 = 1990 VG₇ = 1994 TO₁₆

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 33274), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	33.44630	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.23730737	<i>ω</i>	271.80609	−0.29342140	−0.95573906
<i>a</i>	2.5838179	<i>Ω</i>	195.30985	+0.90641265	−0.27095299
<i>e</i>	0.0853788	<i>i</i>	4.69326	+0.30384206	−0.11466180
<i>P</i>	4.15	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	0.7+ 0.1−	1998 09 26	704	0.5− 0.2−	1999 11 06	703	0.3+ 0.0
1973 09 19	675	0.5+ 1.2−	1998 09 26	704	0.8− 0.1+	1999 11 06	703	0.4+ 0.1−
1973 09 20	675	0.3+ 1.7−	1998 09 27	704	1.0− 0.1−	1999 11 17	704	0.2− 0.4−
1973 09 24	675	0.5+ 1.3−	1998 09 27	704	0.5− 0.5+	1999 11 17	704	0.4+ 0.4−
1973 09 24	675	1.0+ 0.8−	1998 09 27	704	0.2− 0.9+	1999 11 17	704	0.5+ 0.7−
1973 09 25	675	0.6− 2.3−	1998 09 27	704	0.4− 0.4+	1999 11 17	704	0.3+ 0.2−
1973 09 25	675	0.4+ 0.1−	1998 09 27	704	1.6− 0.6+	1999 11 17	704	0.2+ 0.9+
1990 11 10	046	(2.4+ 1.7−)	1998 10 19	699	0.2+ 0.0	1999 12 05	704	0.6− 1.1−
1990 11 10	046	(0.7+ 3.0−)	1998 10 19	699	0.2+ 0.6−	1999 12 05	704	0.1− 0.7−
1990 11 13	046	(9.3− 1.7−)	1998 10 19	699	0.7+ 0.1+	1999 12 05	704	1.4− 1.0−
1990 11 13	046	(7.3− 1.6−)	1998 10 28	704	0.2+ 0.4−	1999 12 05	704	0.6− 0.9−
1994 10 05	033	0.1+ 1.1−	1998 10 28	704	1.1− 0.2+	1999 12 05	704	0.2− 0.5−
1994 10 06	033	0.1+ 0.8−	1998 10 28	704	0.6− 0.9+	1999 12 14	704	0.1− 0.6+
1994 10 07	033	0.7− 0.4−	1998 10 28	704	0.8+ 0.8+	1999 12 14	704	0.7− 0.1+
1994 10 10	033	0.1+ 0.7−	1998 10 28	704	0.4− 0.0	1999 12 14	704	0.0 0.1−
1998 09 14	704	0.2+ 0.0	1998 10 29	704	0.5+ 0.1+	1999 12 14	704	0.2+ 0.2+
1998 09 14	704	0.4+ 0.3−	1998 10 29	704	1.6+ 0.3+	1999 12 14	704	0.5− 0.2+
1998 09 14	691	0.4+ 0.4+	1998 10 29	704	0.3− 1.1+	2000 01 05	704	0.8+ 0.2−
1998 09 14	704	0.7+ 0.8−	1998 10 29	704	1.0+ 0.9+	2000 01 05	704	0.3− 1.4−
1998 09 14	691	0.6+ 0.0	1998 10 29	704	0.0 0.7+	2000 01 05	704	0.4− 0.6+
1998 09 14	691	0.4+ 0.0	1998 11 11	699	0.2− 0.5+	2000 01 05	704	0.2+ 1.1+
1998 09 15	699	0.0 0.2−	1998 11 11	699	1.4+ 0.8+	2000 01 05	704	0.7− 0.8+
1998 09 15	699	0.2+ 1.3+	1998 11 11	699	0.7+ 0.2−	2000 01 08	106	0.7+ 0.5+
1998 09 15	699	0.2+ 1.4+	1998 12 08	704	(1.7− 2.2−)	2000 01 08	106	0.4+ 0.3+
1998 09 18	704	0.7− 0.4−	1998 12 08	704	0.1− 0.1−	2000 01 08	106	0.8+ 0.2+
1998 09 18	704	1.2− 1.2+	1998 12 08	704	(0.2− 2.5+)	2000 01 08	704	0.4+ 0.2+
1998 09 18	704	1.2− 0.3−	1998 12 08	699	0.1+ 0.7−	2000 01 08	704	0.2+ 0.3+
1998 09 18	704	0.6− 0.8+	1998 12 08	704	0.6+ 1.4+	2000 01 08	704	0.2− 0.3+
1998 09 18	704	1.7− 0.8+	1998 12 08	699	0.2+ 0.8−	2000 01 08	704	0.0 0.4+
1998 09 26	704	0.0 0.1−	1998 12 08	699	0.7− 0.2−	2000 01 08	704	0.8− 0.1+
1998 09 26	704	0.0 0.5−	1999 11 06	703	1.5+ 0.1+			
1998 09 26	704	0.0 0.8+	1999 11 06	703	0.2+ 0.5−			

(13313)* 1998 RU₆₈ = 1976 UC₁₉ = 1995 FZ₅

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33005)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	50.48319	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17689869	<i>ω</i>	50.35311	+0.47711589	−0.87868639
<i>a</i>	3.1428210	<i>Ω</i>	11.18477	+0.77811353	+0.41365596
<i>e</i>	0.1438069	<i>i</i>	4.86537	+0.40853368	+0.23832536
<i>P</i>	5.57	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1976 10 24	381	0.9+ 0.2+	1998 09 18	704	0.2− 0.7+	1999 11 16	704	0.2− 0.0
1976 10 24	381	0.6− 0.8−	1998 09 25	699	1.0+ 0.8+	1999 11 16	704	0.4− 0.4+
1995 02 04	691	0.3+ 0.6+	1998 09 25	699	0.2− 0.5+	1999 11 16	704	0.5+ 1.6−
1995 02 04	691	0.2− 1.6+	1998 09 25	699	0.4− 1.2+	1999 12 15	704	0.1+ 0.6−
1995 02 04	691	0.6+ 0.7+	1998 09 26	704	0.5+ 0.5−	1999 12 15	704	0.1+ 0.0
1995 03 23	691	0.5+ 0.2+	1998 09 26	704	0.5− 1.0−	1999 12 15	704	0.2+ 0.4−
1995 03 23	691	0.3+ 0.3+	1998 09 26	704	0.6− 0.5−	1999 12 15	704	0.7− 1.6+
1995 03 23	691	0.3+ 0.2+	1998 09 26	704	0.7− 0.1+	1999 12 15	704	0.4− 0.9+
1995 04 04	691	0.0 0.1+	1998 09 26	704	0.6− 0.0	2000 01 03	704	0.6+ 0.1−
1995 04 04	691	0.2+ 0.2+	1998 09 27	704	0.2+ 0.2+	2000 01 03	704	0.2+ 0.0
1995 04 04	691	0.1+ 0.5+	1998 09 27	704	0.8− 0.2+	2000 01 03	704	0.2+ 0.3−
1998 09 14	704	0.4+ 0.2−	1998 09 27	704	0.0 0.5+	2000 01 03	704	0.2+ 0.7−
1998 09 14	704	1.1− 1.3−	1998 09 27	704	0.4− 0.1+	2000 01 03	704	0.6+ 0.5−
1998 09 14	704	0.9+ 0.8−	1998 09 27	704	0.0 0.4+	2000 01 04	704	0.2+ 0.1−
1998 09 18	704	0.9+ 0.6−	1998 10 14	699	1.2− 0.4+	2000 01 04	704	0.5− 0.5−
1998 09 18	704	0.6+ 1.4+	1998 10 14	699	0.3+ 0.2−	2000 01 04	704	0.2− 0.2−
1998 09 18	704	0.3+ 0.4+	1998 10 14	699	0.6− 0.3+	2000 01 04	704	0.0 0.7−
1998 09 18	704	0.1+ 1.4+	1999 11 16	704	0.2− 1.7+	2000 01 04	704	0.9− 0.2−

(13314)* 1998 RH₇₁ = 1984 UH₂ = 1992 GP₄

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33007, *MPC* 34535)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	108.35493	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.21056777	<i>ω</i>	324.84766	+0.99488957	−0.08529330
<i>a</i>	2.7981745	<i>Ω</i>	40.15188	+0.10056842	+0.88472043
<i>e</i>	0.2171785	<i>i</i>	4.80698	−0.00898528	+0.45825191
<i>P</i>	4.68	<i>H</i>	13.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1984 10 19	801	0.6− 1.1+	1998 09 18	704	0.6− 0.5+	1998 12 08	699	0.0 0.7+
1992 04 04	809	0.5+ 1.5+	1998 09 18	704	0.1+ 1.1−	1998 12 08	699	0.4− 0.7+
1992 04 04	809	0.4− 0.6+	1998 09 18	704	0.2− 0.4+	1998 12 08	699	1.4+ 0.2+
1992 04 04	809	1.1− 0.0	1998 09 26	704	1.2− 0.1+	1999 11 16	704	0.7− 0.3+
1992 04 06	809	0.8+ 0.3+	1998 09 26	704	0.3− 1.1+	1999 11 16	704	0.4− 1.1+
1992 04 06	809	1.4+ 0.9+	1998 09 26	704	0.8− 0.3+	1999 11 16	704	0.0 0.8+
1992 04 06	809	2.0+ 0.2+	1998 09 26	704	0.7− 1.0+	1999 11 16	704	0.4− 1.0−
1992 05 08	691	0.5− 0.1+	1998 09 26	704	0.6− 0.6+	1999 11 16	704	0.4− 0.4+
1992 05 08	691	0.3− 0.1−	1998 09 27	704	0.6− 0.8+	2000 01 03	704	0.3− 0.1+
1992 05 08	691	0.4− 0.0	1998 09 27	704	0.0 0.4−	2000 01 03	704	0.4+ 0.3+
1998 06 29	704	0.6+ 0.5−	1998 09 27	704	0.4− 0.5+	2000 01 03	704	0.4+ 0.9−
1998 06 29	704	0.0 0.6−	1998 09 27	704	0.2+ 0.1−	2000 01 03	704	0.4+ 0.1−
1998 06 29	704	0.1− 0.4−	1998 09 27	704	0.0 1.1−	2000 01 03	704	0.3− 0.7+
1998 06 29	704	0.7− 0.4+	1998 10 17	699	0.3+ 0.3−	2000 01 04	704	0.0 0.1−
1998 06 29	704	0.9− 1.5+	1998 10 17	699	0.4+ 0.5−	2000 01 04	704	0.3+ 0.0
1998 09 14	704	0.8+ 0.3+	1998 10 17	699	0.4+ 0.6−	2000 01 04	704	0.1+ 0.3+
1998 09 14	704	0.1+ 0.2−	1998 10 27	120	0.4+ 0.1−	2000 01 04	704	0.0 0.0
1998 09 14	704	0.5− 1.0−	1998 10 27	120	0.6+ 0.0	2000 01 04	704	0.3− 0.1+
1998 09 17	699	0.6− 0.3+	1998 10 27	120	1.0+ 0.2−	2000 01 05	699	0.2+ 0.4−
1998 09 17	699	0.5− 0.5+	1998 10 27	120	0.8+ 0.3−	2000 01 05	699	0.2+ 0.7+
1998 09 17	699	0.5− 0.2+	1998 11 15	699	0.1+ 0.9+	2000 01 05	699	0.8+ 0.2+
1998 09 18	704	0.7+ 0.2+	1998 11 15	699	0.0 0.1+			
1998 09 18	704	0.8+ 1.2−	1998 11 15	699	0.0 0.1+			

(13315)* 1998 RX₇₁ = 1970 GR = 1979 SG₁₃ = 1981 EN₄₈ = 1989 GZ₅

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 33969)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Williams				
M	25.14396		(2000.0)		P		Q		
a	0.26006772	ω	104.97832		−0.55253623		−0.83260956		
n	2.4307768	Ω	18.71514		+0.71152835		−0.49510522		
e	0.0905498	i	6.85112		+0.43408653		−0.24825821		
P	3.79	H	14.3		G	0.15	U	1	
Residuals in seconds of arc									
1970 04 10	805	0.1+	1.5+	1998 08 28	704	(1.8+ 2.9−)	1998 09 27	704	0.3− 1.7+
1970 04 10	805	0.6+	0.9+	1998 08 28	704	(3.0− 0.0)	1998 09 27	704	0.2+ 1.4+
1970 04 10	805	0.3+	0.7+	1998 09 14	704	0.8− 0.6+	1998 09 27	704	0.9+ 1.7+
1979 09 20	675	0.2+	0.2−	1998 09 14	704	1.0− 0.4+	1998 09 27	704	0.4+ 0.3+
1979 09 21	675	0.7+	0.0	1998 09 14	704	0.8− 0.4−	1998 10 15	691	0.1− 0.7−
1981 03 01	095	0.8+	0.9+	1998 09 17	699	0.1− 0.0	1998 10 15	691	0.3− 0.8−
1989 04 05	809	(3.2− 1.9−)	1998 09 17	699	0.8+ 0.3−	1998 10 15	691	0.4− 0.5−	
1989 04 05	809	(2.9− 2.0−)	1998 09 17	699	0.3+ 0.1+	1998 12 15	699	0.5− 0.5−	
1989 04 05	809	(3.4− 1.7−)	1998 09 18	704	0.5+ 0.4−	1998 12 15	699	0.2− 1.0−	
1989 04 08	809	0.1+ 0.1−	1998 09 18	704	0.4+ 0.4+	1998 12 15	699	0.9+ 0.9−	
1989 04 08	809	0.3− 0.4−	1998 09 18	704	0.0 0.5−	1999 11 17	703	0.5+ 1.5+	
1989 04 08	809	0.3+ 0.1−	1998 09 18	704	0.7− 1.6+	1999 11 17	703	0.3− 0.6+	
1989 04 10	809	0.4+ 0.3+	1998 09 18	704	0.3− 0.1−	1999 11 17	703	0.6+ 0.4+	
1989 04 10	809	0.3− 0.1+	1998 09 26	704	0.3− 0.5+	1999 11 17	703	0.6− 0.1−	
1989 04 10	809	0.0 0.0	1998 09 26	704	0.0 0.3+	1999 12 15	704	0.9− 0.6−	
1998 08 28	704	1.1− 1.2−	1998 09 26	704	0.2− 0.3+	1999 12 15	704	0.2− 0.3−	
1998 08 28	704	0.7+ 0.4−	1998 09 26	704	0.5− 0.4−	1999 12 15	704	0.8+ 0.0	
1998 08 28	704	(2.3+ 3.9−)	1998 09 26	704	0.6− 1.8+	1999 12 15	704	0.6+ 0.3−	

(13316)* 1998 RJ₇₅ = 1980 GD₁ = 1995 VW₁₅

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33010)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Williams						
M	341.01576		(2000.0)		P		Q				
n	0.29251095	ω	120.26854	−0.99957906	+0.00658984						
a	2.2475428	Ω	60.12233	−0.01766307	−0.91080511						
e	0.0830437	i	1.86730	+0.02301580	−0.41278400						
P	3.37	H	15.0	G	0.15	U	1				
Residuals in seconds of arc											
1980 04 14	805	0.8+	0.8+	1998 09 18	704	0.6−	0.4−	1998 10 19	699	0.1+	0.4+
1980 04 15	805	0.1−	0.2+	1998 09 18	704	0.8−	0.5−	1998 10 19	699	0.0	1.1+
1980 04 16	805	0.2+	0.2+	1998 09 18	704	1.2−	0.7−	1998 10 19	699	0.4+	1.1+
1994 07 11	809	0.3−	1.0−	1998 09 18	704	0.3+	0.9−	1999 12 05	704	0.3+	0.2−
1994 07 11	809	0.7−	1.4−	1998 09 18	704	(2.7−	1.0−)	1999 12 05	704	0.0	0.1+
1994 07 11	809	1.0+	1.3−	1998 09 26	704	0.2+	1.1+	1999 12 05	704	0.5−	1.3−
1995 11 15	691	0.2−	0.8−	1998 09 26	704	1.3+	0.9−	2000 01 05	699	0.3+	0.4−
1995 11 15	691	0.1−	0.7−	1998 09 26	704	0.3+	1.1+	2000 01 05	699	0.1−	0.6−
1995 11 15	691	0.2−	0.9−	1998 09 26	704	0.1+	0.4+	2000 01 05	699	0.2+	0.2−
1995 11 27	691	0.1−	0.9−	1998 09 26	704	0.2+	0.2−	2000 01 07	704	0.2+	0.1+
1995 11 27	691	0.0	0.8−	1998 09 27	704	0.2+	0.3−	2000 01 07	704	0.2−	0.7+
1995 11 27	691	0.1−	0.6−	1998 09 27	704	0.1+	0.9+	2000 01 07	704	0.7−	0.6+
1997 06 02	566	0.4+	0.1−	1998 09 27	704	0.2−	1.2+	2000 01 07	704	0.4+	0.3+
1997 06 02	566	0.1−	0.6+	1998 09 27	704	0.4+	0.5+	2000 01 10	699	0.8+	0.2−
1997 06 02	566	0.9−	0.2−	1998 09 27	704	0.5−	0.4+	2000 01 10	699	0.7+	1.4−
1998 09 14	704	0.4−	1.2−	1998 10 17	699	0.8+	0.1−	2000 01 10	699	1.0−	1.0+
1998 09 14	704	0.2+	1.0+	1998 10 17	699	0.2+	1.2+				
1998 09 14	704	0.5−	1.3−	1998 10 17	699	0.7−	1.2+				

(13317)* 1998 RQ₇₇ = 1990 SM₂₃

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Gnädig (*MPC* 34927), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i> 72.26290			(2000.0)			P			Q		
<i>n</i>	0.12400052	ω	315.36853	+0.99410650	+0.07191793						
<i>a</i>	3.9827867	Ω	40.71429	−0.02413199	+0.87629423						
<i>e</i>	0.2030802	<i>i</i>	7.14372	−0.10568778	+0.47637825						
<i>P</i>	7.95	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1979 05 19	413	0.8−	0.2+	1998 09 26	704	0.8+	1.1−	1999 11 14	704	0.3+	0.5+
1979 05 19	413	0.5+	0.4−	1998 09 26	704	0.3−	1.0−	1999 11 14	704	0.6+	0.2+
1982 10 15	413	0.8−	0.7−	1998 09 26	704	0.2+	0.6−	1999 11 14	704	0.5+	0.6+
1982 10 15	413	0.8−	0.3+	1998 09 27	704	0.4+	0.2+	1999 11 14	704	0.6+	0.8+
1990 09 25	809	(2.5+ 0.4−)		1998 09 27	704	0.6−	0.3−	1999 11 14	704	0.4+	0.5+
1990 09 25	809	1.7+	0.2+	1998 09 27	704	0.2−	0.0	1999 11 16	704	0.9+	0.1−
1990 09 25	809	1.6+	0.6+	1998 09 27	704	0.1−	0.3−	1999 11 16	704	0.3−	0.5+
1994 02 08	809	1.0+	1.9+	1998 09 27	704	0.6−	0.4−	1999 11 16	704	0.0	0.0
1994 02 08	809	0.3+	1.3+	1998 10 17	699	0.4−	0.6−	1999 11 16	704	0.5+	1.2+
1994 02 08	809	0.8+	0.9+	1998 10 17	699	0.4−	0.1−	1999 12 15	704	0.3+	0.4−
1998 09 14	704	0.0	0.1+	1998 10 17	699	0.4+	0.3+	1999 12 15	704	0.1−	0.9−
1998 09 14	704	0.1−	0.2−	1998 10 19	699	0.2−	0.3+	1999 12 15	704	0.5+	0.2−
1998 09 14	704	0.9−	0.3−	1998 10 19	699	0.0	0.4+	1999 12 15	704	1.3+	0.1−
1998 09 18	704	0.2+	0.3+	1998 10 19	699	0.3−	0.8+	1999 12 15	704	0.1+	0.9−
1998 09 18	704	0.3+	0.1+	1998 10 28	704	1.7−	0.7+	2000 01 02	704	1.4−	0.2−
1998 09 18	704	0.2−	1.5+	1998 10 28	704	1.2−	0.9−	2000 01 02	704	0.4−	0.5−
1998 09 18	704	0.2−	0.5+	1998 10 28	704	0.7−	1.4−	2000 01 02	704	1.4−	1.3−
1998 09 18	704	0.1+	0.6+	1998 10 28	704	0.2−	0.3+	2000 01 04	704	0.0	0.1−
1998 09 25	699	0.6+	0.9+	1998 10 29	704	0.6+	0.9−	2000 01 04	704	0.4−	0.3−
1998 09 25	699	0.6+	0.4+	1998 10 29	704	1.3−	0.4−	2000 01 04	704	0.6−	0.0
1998 09 25	699	0.2−	0.9+	1998 10 29	704	0.1−	0.7+	2000 01 04	704	0.4−	0.9−
1998 09 26	704	0.2+	0.6+	1998 10 29	704	1.5+	0.5+	2000 01 04	704	0.3−	0.4−
1998 09 26	704	0.0	0.1−	1998 10 29	704	0.2+	1.0+				

(13318)* 1998 RV₇₇ = 1991 FW₆ = 1993 TQ₁₁

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 33275, *MPC* 35341)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Williams						
<i>M</i>	125.43797		(2000.0)		P		Q				
<i>n</i>	0.19103283	ω	312.89250		+0.89500326		+0.44040923				
<i>a</i>	2.9858229	Ω	21.27976		−0.33086091		+0.76186509				
<i>e</i>	0.1101448	<i>i</i>	11.24530		−0.29916588		+0.47497505				
<i>P</i>	5.16	<i>H</i>	13.2		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1991 03 25	809	0.6−	0.6+	1998 09 26	704	0.6+	1.1−	1999 12 13	704	0.0	0.1−
1991 03 25	809	0.3+	0.2−	1998 09 26	704	0.0	0.2+	1999 12 13	704	0.0	0.4−
1991 03 25	809	1.3+	0.9−	1998 09 26	704	0.9+	1.1−	1999 12 13	704	0.3−	0.2−
1993 10 13	675	(0.0	2.7−)	1998 09 26	704	0.8+	0.6−	1999 12 13	704	0.4−	0.1+
1993 10 13	675	0.3+	1.1−	1998 09 27	704	0.3+	0.8+	1999 12 13	704	0.2+	0.2−
1993 10 15	675	0.4+	1.1−	1998 09 27	704	0.7−	0.6+	1999 12 15	704	0.3+	0.2+
1996 04 23	566	(1.2+	6.0−)	1998 09 27	704	0.3−	0.6+	1999 12 15	704	0.6+	0.4−
1996 04 23	566	0.3−	0.2+	1998 09 27	704	0.5−	0.9+	1999 12 15	704	0.5+	0.7−
1996 04 23	566	(1.4+	5.9−)	1998 09 27	704	0.7+	1.6−	1999 12 15	704	0.2−	0.0
1996 04 23	566	0.5−	0.3−	1998 10 19	699	0.4−	0.5+	1999 12 15	704	0.1+	0.6+
1996 04 23	566	(1.3+	6.1−)	1998 10 19	699	0.0	0.7+	1999 12 30	704	0.1+	0.4+
1996 04 23	566	1.0−	0.3+	1998 10 19	699	0.2−	0.6+	1999 12 30	704	1.1−	0.7+
1998 09 14	704	1.3−	0.8+	1998 10 28	704	0.6−	0.3+	1999 12 30	704	0.6−	1.3+
1998 09 14	704	0.1−	0.3+	1998 10 28	704	0.4+	0.2−	1999 12 30	704	0.9−	1.2+
1998 09 14	704	0.6−	0.4+	1998 10 28	704	0.3+	0.4−	1999 12 31	704	0.1−	0.1−
1998 09 18	704	0.1+	0.4+	1998 10 28	704	0.5−	0.3−	1999 12 31	704	0.3−	0.1−
1998 09 18	704	0.2+	0.2+	1998 10 28	704	0.2+	0.8−	1999 12 31	704	0.6+	0.3−
1998 09 18	704	0.1+	0.2−	1998 10 29	704	0.3−	0.3+	1999 12 31	704	0.0	0.1+
1998 09 18	704	1.2−	1.1−	1998 10 29	704	1.2−	0.6+	1999 12 31	704	0.5−	0.1−
1998 09 18	704	1.1−	1.0−	1998 10 29	704	0.5+	0.5−	2000 01 21	704	0.3+	0.4+
1998 09 25	699	0.8+	1.2+	1998 10 29	704	0.5+	0.6+	2000 01 21	704	0.7+	0.4−

2000 JAN. 24

M.P.C. 37573

1998 09 25 699 0.6+ 0.9+ 1998 11 16 691 0.2+ 0.0 2000 01 21 704 1.6+ 1.1-
 1998 09 25 699 0.2+ 0.3+ 1998 11 16 691 0.3+ 0.0
 1998 09 26 704 0.6+ 0.4- 1998 11 16 691 0.1+ 0.1-

(13319)* 1998 RD₇₉ = 1977 CA₃ = 1991 OD

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 33011)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	270.34362		(2000.0)	P	Q
<i>n</i>	0.29927991	ω	186.55034	-0.50989410	+0.85594593
<i>a</i>	2.2135246	Ω	52.82809	-0.78428466	-0.42156992
<i>e</i>	0.1330461	<i>i</i>	6.18267	-0.35341984	-0.29939166
<i>P</i>	3.29	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1977 02 12	675	0.1-	0.1+	1998 09 21	699	0.2+	0.6+	1998 10 29	704	(4.0-	0.4+)
1977 02 13	675	0.0	0.3-	1998 09 26	704	0.3-	0.4+	1999 12 15	703	0.7+	0.5+
1991 07 13	675	0.4-	0.1+	1998 09 26	704	0.6-	0.2-	1999 12 15	703	0.3+	0.1-
1991 07 13	675	0.1-	0.7-	1998 09 26	704	0.2-	1.0+	1999 12 15	704	0.6-	0.2-
1991 07 16	675	0.1+	1.0-	1998 09 26	704	1.0-	0.3-	1999 12 15	703	0.4-	1.0+
1991 07 16	675	0.9+	0.0	1998 09 26	704	0.3+	0.0	1999 12 15	704	1.1-	0.3-
1995 12 19	691	0.2+	0.3-	1998 09 27	704	1.5+	0.8+	1999 12 15	703	1.0-	0.3+
1995 12 19	691	0.3+	0.1-	1998 09 27	704	1.2-	0.6+	1999 12 15	704	1.2-	0.8-
1995 12 19	691	0.2+	0.4-	1998 09 27	704	1.2+	1.9+	1999 12 15	704	0.6-	0.3-
1998 08 28	704	0.9+	1.1-	1998 09 27	704	0.0	1.3+	1999 12 15	704	0.2+	0.3-
1998 08 28	704	0.2-	0.6+	1998 09 27	704	0.0	1.3+	2000 01 03	704	0.1+	0.4-
1998 08 28	704	(0.8+	2.1-)	1998 10 17	699	1.3-	0.3-	2000 01 03	704	0.2-	1.0-
1998 08 28	704	(8.0-	1.0-)	1998 10 17	699	0.3+	0.2-	2000 01 03	704	0.1-	0.7-
1998 09 14	704	0.9-	0.7-	1998 10 17	699	0.7+	0.9-	2000 01 03	704	0.5-	0.1+
1998 09 14	704	0.9+	0.3+	1998 10 28	704	0.9-	1.3-	2000 01 03	704	0.3-	0.5-
1998 09 14	704	1.4+	0.3+	1998 10 28	704	0.4-	0.9-	2000 01 06	699	0.1-	0.4+
1998 09 18	704	0.1-	0.7+	1998 10 28	704	0.7+	0.2+	2000 01 06	699	0.2+	0.1+
1998 09 18	704	0.8-	0.1+	1998 10 28	704	1.7-	0.1-	2000 01 06	699	0.4+	1.0+
1998 09 18	704	0.4-	0.3-	1998 10 28	704	0.7+	0.2+	2000 01 08	704	0.9+	0.7+
1998 09 18	704	0.2-	0.8-	1998 10 29	704	0.7+	0.6-	2000 01 08	704	1.0+	0.1-
1998 09 18	704	0.1+	1.4-	1998 10 29	704	0.1-	0.4-	2000 01 08	704	0.2+	0.0
1998 09 21	699	1.5+	0.2+	1998 10 29	704	1.3-	1.2-	2000 01 08	704	0.7+	0.1-
1998 09 21	699	0.3-	0.5+	1998 10 29	704	(2.3-	1.5-)	2000 01 08	704	0.6+	0.1+

(13320)* 1998 RL₇₉ = 1977 TM₅ = 1980 NL = 1989 AW = 1991 TZ₅

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 33012)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	161.28721		(2000.0)	P	Q
<i>n</i>	0.27997573	ω	228.99430	+0.96075342	+0.27091315
<i>a</i>	2.3141373	Ω	115.21018	-0.23059201	+0.89948853
<i>e</i>	0.1782333	<i>i</i>	3.78066	-0.15420825	+0.34282130
<i>P</i>	3.52	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1977 10 08	095	(2.9+	2.7+)	1998 09 18	704	0.2-	1.3+	1998 10 29	704	0.3-	1.2-
1980 07 11	805	1.0-	0.4-	1998 09 18	704	1.0-	1.7+	1998 10 29	704	0.9-	0.4+
1980 07 11	805	0.0	1.2-	1998 09 26	704	0.5+	0.5-	1998 11 15	699	0.3-	0.3+
1980 07 12	805	0.8+	1.0+	1998 09 26	704	0.5+	0.1+	1998 11 15	699	0.1+	0.2+
1980 07 12	805	0.3+	0.3+	1998 09 26	704	0.9+	1.3+	1998 11 15	699	0.2+	0.9+
1989 01 02	675	1.5-	0.3-	1998 09 26	704	0.2+	0.1+	1998 12 08	704	0.8-	1.1+
1989 01 05	675	0.1+	0.9-	1998 09 26	704	0.3+	1.1-	1998 12 08	704	0.4+	0.9+
1991 10 06	046	(2.5-	2.3-)	1998 09 27	704	0.1-	0.6-	1998 12 08	704	0.0	0.5+
1991 10 06	046	(1.8-	2.1-)	1998 09 27	704	0.9+	0.7+	1998 12 08	704	0.1-	0.2-
1991 10 07	046	0.5+	0.1-	1998 09 27	704	0.1-	0.8+	1998 12 08	704	(3.2-	0.9+)
1991 10 07	046	(0.5+	2.1-)	1998 09 27	704	0.5+	0.3-	1998 12 05	703	0.4-	1.1-
1996 01 17	566	0.9+	0.9-	1998 09 27	704	1.1-	0.9+	1999 12 05	703	1.5-	1.0+
1996 01 17	566	0.2+	0.8-	1998 10 17	699	0.4-	0.5-	1999 12 05	703	0.5+	1.7-

1996 01 17	566	0.8+	0.8-	1998 10 17	699	0.1+	0.8-	1999 12 05	703	1.0+	1.6+
1998 09 14	704	0.7+	0.8-	1998 10 17	699	0.1-	0.4-	2000 01 07	704	0.5+	0.8-
1998 09 14	704	0.6+	0.1-	1998 10 28	704	0.7-	0.4-	2000 01 07	704	0.2-	0.0
1998 09 14	704	0.5+	0.5+	1998 10 28	704	0.4+	0.5-	2000 01 07	704	0.3+	0.9+
1998 09 17	699	0.2+	0.1-	1998 10 28	704	0.3-	0.3-	2000 01 07	704	0.3+	0.7+
1998 09 17	699	0.4+	0.0	1998 10 28	704	1.8-	0.7-	2000 01 07	704	1.0-	1.2+
1998 09 17	699	0.2+	0.1+	1998 10 28	704	1.5-	1.1-	2000 01 10	699	0.8+	0.2+
1998 09 18	704	0.4+	0.5+	1998 10 29	704	0.1-	0.4-	2000 01 10	699	0.4+	1.6+
1998 09 18	704	0.4+	0.5-	1998 10 29	704	0.3-	0.1-	2000 01 10	699	0.5+	0.9+
1998 09 18	704	0.1+	0.2+	1998 10 29	704	0.6-	0.6+				

(13321)* 1998 RC₈₀ = 1987 RO = 1987 SD₁₆

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. A. Gnädig (*MPC* 34535)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	72.19541		(2000.0)	P	Q
<i>n</i>	0.18392218	ω	242.79303	+0.78179970	-0.61822424
<i>a</i>	3.0622923	Ω	155.13050	+0.61825128	+0.75168381
<i>e</i>	0.1150191	<i>i</i>	11.12791	+0.08096039	+0.22971775
<i>P</i>	5.36	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1982 10 13	413	0.5-	0.5+	1998 09 18	704	1.1-	0.4-	1999 12 14	704	0.1-	0.0
1982 10 13	413	0.2-	0.9-	1998 09 18	704	1.0-	0.1-	1999 12 14	703	0.1-	0.1-
1982 11 06	413	0.2-	0.6+	1998 09 18	704	0.3+	1.5-	1999 12 14	704	1.2-	0.3+
1982 11 06	413	0.2+	0.3+	1998 09 24	910	0.9+	0.5+	1999 12 14	703	0.4-	1.2+
1982 11 19	413	0.8+	0.3+	1998 09 24	910	0.7+	0.4+	1999 12 14	704	1.0-	0.4+
1982 11 19	413	0.4-	0.7+	1998 09 24	910	0.7+	0.4+	1999 12 14	703	0.3-	0.0
1987 09 03	809	1.3-	0.5-	1998 10 18	699	0.2-	0.1-	1999 12 14	703	0.2-	0.7-
1987 09 03	809	0.2+	1.0-	1998 10 18	699	0.1-	0.1-	2000 01 07	704	0.4+	0.4-
1987 09 03	809	1.5+	0.2+	1998 10 18	699	0.4+	0.5+	2000 01 07	704	0.0	0.3-
1987 09 25	095	(0.4-	2.9+)	1998 12 18	699	(0.3-	2.3-)	2000 01 07	704	0.2-	0.4-
1998 08 31	704	(2.2+	1.0+)	1998 12 18	699	0.1+	1.0+	2000 01 07	704	0.1+	0.5-
1998 08 31	704	0.4+	0.0	1998 12 18	699	0.1-	1.0-	2000 01 07	704	0.0	0.2-
1998 08 31	704	0.7-	0.9+	1999 10 10	704	0.6+	1.0-	2000 01 11	704	0.3+	0.2-
1998 08 31	704	(0.3+	4.0-)	1999 10 10	704	0.3-	0.6-	2000 01 11	704	1.0+	1.1+
1998 09 14	704	0.1-	0.5-	1999 10 10	704	0.3+	0.7-	2000 01 11	704	0.3+	0.5+
1998 09 14	704	0.1+	0.6-	1999 10 10	704	0.1+	1.3-	2000 01 11	704	0.6+	0.7+
1998 09 14	704	1.1-	1.4+	1999 10 10	704	0.3+	0.8-	2000 01 11	704	0.4+	0.2+
1998 09 18	704	0.1-	0.5-	1999 12 14	704	0.6+	0.2+				
1998 09 18	704	0.5+	0.2+	1999 12 14	704	0.9-	0.5+				

(13322)* 1998 RH₈₀ = 1987 SZ₁₀

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid
 Research Team at Socorro.

Id. G. V. Williams (*MPC* 33012)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	115.13088		(2000.0)	P	Q
<i>n</i>	0.17989253	ω	294.62664	+0.93387528	+0.35000465
<i>a</i>	3.1078541	Ω	44.98287	-0.27898750	+0.84134557
<i>e</i>	0.1805214	<i>i</i>	5.95232	-0.22370279	+0.41186695
<i>P</i>	5.48	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1987 09 29	033	0.2+	0.0	1998 09 26	704	0.2-	2.0-	1998 11 25	699	0.5-	0.2+
1987 09 29	033	1.0+	0.4-	1998 09 27	704	0.1-	0.4-	1998 11 25	699	0.2-	0.0
1987 09 30	033	0.1+	0.2-	1998 09 27	704	0.1-	0.9+	1999 01 11	704	(3.2-	1.0-)
1987 09 30	033	0.1+	0.4-	1998 09 27	704	0.5-	0.0	1999 01 11	704	1.6+	1.8+
1987 10 01	033	0.4-	1.1-	1998 09 27	704	0.0	0.8-	1999 01 11	704	1.6+	0.7+
1996 03 12	691	0.1-	0.4-	1998 09 27	704	0.6-	0.6-	1999 01 11	704	(2.7-	0.8+)
1996 03 12	691	0.1-	0.3-	1998 10 19	699	0.1+	0.6+	1999 01 14	910	1.5-	0.0
1996 03											

1998 09 14	704	1.2+	1.0+	1998 10 28	704	0.0	0.0	1999 10 08	703	0.5+	0.8+
1998 09 17	699	0.1-	0.1+	1998 10 28	704	0.1+	0.4-	1999 10 08	703	0.6-	0.9+
1998 09 17	699	0.1-	0.4+	1998 10 28	704	0.0	0.8+	1999 10 08	703	0.7+	0.4+
1998 09 17	699	0.1-	0.4+	1998 10 28	704	0.6-	0.0	1999 12 15	704	0.2-	0.2+
1998 09 18	704	0.2-	0.2-	1998 10 29	704	0.3+	0.5+	1999 12 15	704	0.6+	0.3-
1998 09 18	704	0.5-	0.1+	1998 10 29	704	0.0	0.4+	1999 12 15	704	0.6+	0.7-
1998 09 18	704	0.3-	0.0	1998 10 29	704	0.2+	0.4-	1999 12 15	704	0.1+	0.0
1998 09 18	704	0.9-	0.2+	1998 10 29	704	0.1+	0.6-	1999 12 15	704	0.8+	0.3-
1998 09 18	704	1.3-	0.4-	1998 10 29	704	1.0+	0.5-	2000 01 04	704	0.7+	0.3+
1998 09 26	704	0.4+	0.3-	1998 11 06	699	0.3+	0.3+	2000 01 04	704	1.4-	0.0
1998 09 26	704	0.7+	0.5-	1998 11 06	699	0.2+	0.7+	2000 01 04	704	0.3-	0.1-
1998 09 26	704	0.6+	1.5-	1998 11 06	699	0.2+	0.6+	2000 01 04	704	0.1+	0.0
1998 09 26	704	1.3+	0.6-	1998 11 25	699	0.1-	0.1-	2000 01 04	704	1.9-	1.5-

(13323)* 1998 SQ = 1999 VF₃₅

Discovered 1998 Sept. 16 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPC* 36819)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	0.23127	(2000.0)	P	Q	
<i>n</i>	0.08216862	ω	254.05299	+0.23362055	-0.97232761
<i>a</i>	5.2400094	Ω	182.43699	+0.89800538	+0.21602703
<i>e</i>	0.0938439	<i>i</i>	0.90188	+0.37283746	+0.08894567
<i>P</i>	11.99	<i>H</i>	10.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1949 11 21	675	1.6-	0.8+	1998 10 15	470	(7.2-	3.3+)	1999 11 12	704	0.1-	0.0
1949 11 21	675	1.3+	0.3+	1998 10 15	470	(6.3-	3.2+)	1999 11 12	704	0.0	0.1-
1997 09 29	809	0.0	0.0	1998 10 28	704	0.2+	0.5-	1999 11 12	704	0.4-	0.2+
1997 09 29	809	0.5-	0.1-	1998 10 28	704	0.5-	1.0+	1999 11 12	704	1.1-	0.0
1997 09 29	809	0.0	0.2+	1998 10 28	704	0.1+	0.3-	1999 11 17	704	0.6+	0.5+
1997 09 29	809	0.0	0.2+	1998 10 28	704	0.3-	0.1-	1999 11 17	704	0.2+	0.9+
1997 09 30	809	0.1+	0.2-	1998 10 29	704	0.5-	0.2-	1999 11 17	704	0.1-	1.0+
1997 09 30	809	0.6+	0.5+	1998 10 29	704	0.1-	0.2+	1999 11 17	704	0.3-	1.7+
1997 10 01	809	0.8+	0.6-	1998 10 29	704	0.1+	1.2-	1999 11 17	704	0.3-	1.3+
1997 10 01	809	0.6+	1.1-	1998 10 29	704	0.5-	0.4+	1999 11 26	120	0.3-	0.4-
1997 10 01	809	0.1+	0.0	1998 10 29	704	0.9-	0.7+	1999 11 26	120	0.1-	0.3-
1997 10 01	809	0.0	0.2-	1998 11 10	704	1.0-	0.4+	1999 12 06	557	0.7+	0.8-
1997 10 05	809	0.1-	0.4+	1998 11 10	704	0.6-	1.0-	1999 12 06	557	0.4+	0.1-
1997 10 05	809	0.2-	0.4+	1998 11 10	704	1.2-	0.3-	1999 12 06	557	0.6+	0.4-
1997 10 05	809	0.4+	0.2-	1998 11 10	704	2.0-	1.0-	1999 12 06	557	0.5+	0.5-
1997 10 05	809	1.0-	1.1-	1998 11 11	704	(1.0-	2.3-)	1999 12 06	120	0.3+	0.8-
1998 09 14	699	0.1+	0.6+	1998 11 11	704	1.3-	0.0	1999 12 06	120	0.8+	0.6-
1998 09 14	699	0.6+	0.4-	1998 11 11	704	0.2-	0.1+	1999 12 06	106	0.0	0.8+
1998 09 14	699	0.3-	0.9+	1998 11 11	704	1.0-	0.2-	1999 12 06	106	0.1-	0.8+
1998 09 16	910	0.0	0.1-	1998 11 14	699	1.0-	0.8-	1999 12 06	106	0.7-	0.8+
1998 09 16	910	0.2+	0.0	1998 11 14	699	0.1-	0.5+	1999 12 07	704	0.6+	0.7-
1998 09 16	910	0.1+	0.1-	1998 11 23	699	0.7+	0.0	1999 12 07	704	1.0+	0.7-
1998 09 18	910	0.1+	0.3+	1998 11 23	699	1.1+	0.1-	1999 12 07	704	0.3+	0.9-
1998 09 18	910	0.2+	0.3+	1998 11 23	699	0.5+	0.3+	1999 12 07	704	0.7+	0.4-
1998 09 18	910	0.1+	0.4+	1999 01 15	691	0.5-	0.4-	1999 12 07	704	0.8+	0.8-
1998 09 18	809	1.7+	1.5-	1999 01 15	691	0.5-	0.5-	1999 12 08	704	0.7+	0.3-
1998 09 18	809	0.2+	2.0-	1999 01 15	691	0.4-	0.5-	1999 12 08	704	0.7+	0.7-
1998 09 18	809	(0.8-	2.3-)	1999 01 20	691	0.3+	0.5-	1999 12 08	704	0.4+	0.7-
1998 09 20	910	0.0	0.4+	1999 01 20	691	0.1+	0.4-	1999 12 08	704	0.8+	0.6-
1998 09 20	910	0.3+	0.5+	1999 01 20	691	0.2-	0.7-	1999 12 08	704	0.3+	1.0-
1998 09 20	910	0.4+	0.3+	1999 10 30	703	1.6-	0.6+	1999 12 31	699	0.2-	1.1+
1998 09 20	809	(2.7+	0.7-)	1999 10 30	703	1.0-	0.4+	1999 12 31	699	0.9-	0.5+
1998 09 20	809	2.0+	0.1+	1999 10 30	703	0.1-	0.5+	1999 12 31	699	0.0	0.9+
1998 09 20	809	1.2+	0.2+	1999 10 30	703	0.0	0.9+	2000 01 05	704	0.2+	0.1+
1998 09 26	704	0.3+	1.0+	1999 11 03	704	0.2-	0.0	2000 01 05	704	0.5+	0.1+
1998 09 26	704	0.6-	0.9+	1999 11 03	704	0.7-	0.4-	2000 01 05	704	0.7-	0.3-
1998 09 26	704	0.7+	0.2+	1999 11 03	704	1.1-	0.0	2000 01 05	704	0.2-	0.2-
1998 09 26	704	1.2-	1.2+	1999 11 03	704	1.9-	0.9+	2000 01 06	704	0.5+	0.5-
1998 09 27	704	1.5+	0.6-	1999 11 09	704	0.6+	0.0	2000 01 06	704	0.5+	0.6+
1998 09 27	704	0.1-	0.6+	1999 11 09	704	0.2+	0.0	2000 01 06	704	0.3+	0.7-
1998 09 27	704	1.6+	0.1-	1999 11 09	704	0.1-	0.4-	2000 01 06	704	0.1-	0.3-
1998 09 27	704	0.1-	0.1+	1999 11 09	704	0.3-	0.4-	2000 01 06	704	0.0	0.8-

1998 09 27	704	0.4+	1.6+	1999 11 09	704	0.7-	0.4-
1998 10 15	470	(6.9-	3.5+)	1999 11 12	704	0.1+	0.1-

(13324)* 1998 SK₂

Discovered 1998 Sept. 18 by T. Stafford at the Zeno Observatory, Edmond.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	102.03523	(2000.0)	P	Q	
<i>n</i>	0.17595687	ω	317.43819	+0.97866491	+0.20507851
<i>a</i>	3.1540258	Ω	30.73437	-0.18127703	+0.89062628
<i>e</i>	0.2240914	<i>i</i>	1.40848	-0.09671417	+0.40586653
<i>P</i>	5.60	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1995 01 27	691	1.8-	0.9-	1998 09 24	727	0.2+	0.5-	1998 10 27	727	0.4-	0.7+
1995 01 27	691	(5.0-	0.2-)	1998 09 25	699	0.1-	0.0	1998 10 27	727	0.5+	0.9+
1995 01 27	691	(5.5-	0.6-)	1998 09 25	699	0.0	0.1+	1998 10 28	691	0.2+	0.3-
1995 02 02	691	0.4+	1.3-	1998 09 25	699	0.1+	0.0	1998 10 28	691	0.2+	0.1-
1995 02 02	691	0.0	0.4-	1998 09 26	704	0.4-	0.1+	1998 10 28	691	0.2+	0.1-
1995 02 02	691	0.1-	0.9-	1998 09 26	704	0.3-	0.1-	1998 10 30	727	0.0	0.3-
1996 04 08	327	0.2+	0.0	1998 09 26	704	0.5-	0.0	1998 10 30	727	0.6+	0.2-
1996 04 08	327	0.3+	0.0	1998 09 26	704	0.6+	0.4-	1998 10 30	727	0.2-	0.3-
1996 04 08	327	0.1-	0.0	1998 09 26	704	0.1-	0.9-	1998 12 08	699	0.6+	0.7-
1998 09 14	704	0.5+	0.5-	1998 09 27	704	0.1+	0.6+	1998 12 08	699	0.7+	0.0
1998 09 14	704	0.5+	0.7-	1998 09 27	704	0.6-	0.0	1998 12 08	699	1.1+	0.5+
1998 09 14	704	0.8+	1.1-	1998 09 27	704	0.4+	0.8+	1999 10 12	704	0.4-	0.7-
1998 09 16	691	0.5-	0.6-	1998 09 27	704	0.1+	0.3-	1999 10 12	704	0.7-	1.4-
1998 09 16	691	0.4-	0.5-	1998 09 27	704	0.5-	0.9-	1999 10 12	704	0.2-	0.0
1998 09 16	691	0.2-	0.5-	1998 09 29	727	0.9-	0.1-	1999 12 07	704	1.4+	1.1+
1998 09 17	699	0.4+	0.2+	1998 09 29	727	0.3-	0.0	1999 12 07	704	0.0	0.3-
1998 09 17	699	0.0	0.4+	1998 09 29	727	0.7-	0.1+	1999 12 07	704	0.8-	0.7+
1998 09 17	699	0.4+	0.2+	1998 10 09	727	0.0	0.4-	1999 12 07	704	0.6-	0.7+
1998 09 18	727	0.0	0.4+	1998 10 09	727	0.0	0.1-	1999 12 07	704	0.1-	0.2-
1998 09 18	727	0.1-	0.1+	1998 10 09	727	0.0	0.1-	2000 01 03	704	0.0	0.1-
1998 09 18	727	0.2-	0.1-	1998 10 14	699	0.3+	0.2+	2000 01 03	704	(0.2-	2.4+)
1998 09 18	704	0.6+	0.3+	1998 10 14	699	0.3-	0.1+	2000 01 03	704	0.3+	0.0
1998 09 18	704	0.9-	0.3+	1998 10 14	699	0.3+	0.5+	2000 01 03	704	1.0+	1.0+
1998 09 18	704	0.2+	0.2-	1998 10 19	699	0.0	0.8+	2000 01 03	704	0.7+	0.0
1998 09 18	704	0.2+	0.2-	1998 10 19	699	0.6+	0.8+	2000 01 03	704	0.2-	0.9+
1998 09 18	704	0.6-	0.4+	1998 10 19	699	0.5+	0.2-	2000 01 03	704	0.2+	0.1+
1998 09 19	727	0.5-	0.1-	1998 10 20	727	0.6-	0.4+	2000 01 03	704	0.9-	0.1-
1998 09 19	727	0.5-	0.3-	1998 10 20	727	0.3-	0.8+	2000 01 03	704	0.3+	0.2+
1998 09 19	727	0.4-	0.2-	1998 10 20	727	0.4-	0.3+	2000 01 04	704	0.1-	0.3-
1998 09 21	727	0.2+	0.2-	1998 10 24	691	0.6+	0.4+	2000 01 04	704	0.0	0.0
1998 09 21	727	0.4-	0.4-	1998 10 24	691	0.7+	0.4+	2000 01 04	704	0.8-	0.3+
1998 09 24	727	0.2-	0.7-	1998 10 24	691	0.6+	0.2+	2000 01 04	704	1.0+	0.2+
1998 09 24	727	0.3+	0.6-	1998 10 27	727	0.2-	0.8+				

2000 JAN. 24

M.P.C. 37575

1997 04 08	809	0.6+	1.5-	1998 09 27	704	0.0	1.1+	1998 11 11	704	0.3-	0.4-
1997 04 08	809	0.8+	1.6-	1998 10 01	910	0.4+	0.1-	1998 11 14	699	0.3+	0.1+
1997 04 08	809	0.3-	1.1-	1998 10 01	910	0.2+	0.2-	1998 11 14	699	1.4+	1.1+
1997 04 09	809	(3.8+ 4.9+)		1998 10 01	910	0.3+	0.2-	1998 11 14	699	0.7+	0.2-
1997 04 09	809	(2.5+ 5.0+)		1998 10 02	704	1.6-	1.8+	1999 11 16	704	0.2-	0.6-
1997 04 09	809	(2.7+ 4.4+)		1998 10 02	704	(3.2- 2.3+)		1999 11 16	704	0.5+	1.2-
1997 04 10	809	(2.6+ 5.9+)		1998 10 02	704	(3.4- 2.8+)		1999 11 16	704	1.3+	0.5+
1997 04 10	809	(2.6+ 5.6+)		1998 10 02	704	(2.8- 3.4+)		1999 11 16	704	0.9+	0.3-
1997 04 10	809	(2.7+ 5.6+)		1998 10 02	704	0.1+	0.8+	1999 11 17	703	(1.8- 3.6+)	
1997 05 01	691	1.4-	0.1-	1998 10 02	704	0.7+	1.4+	1999 11 17	703	0.4-	0.5+
1997 05 01	691	0.6-	0.1+	1998 10 02	704	0.5-	0.6-	1999 11 17	703	0.6-	0.0
1997 05 01	691	0.5-	0.7+	1998 10 02	704	0.4-	0.0	1999 11 17	703	0.2-	0.3-
1998 09 18	699	0.5+	0.0	1998 10 02	704	0.2-	0.8-	1999 12 06	704	0.5+	0.2-
1998 09 18	699	0.4+	0.8-	1998 10 20	699	0.3-	0.2+	1999 12 06	704	0.6+	0.2+
1998 09 18	699	0.4-	0.6+	1998 10 20	699	0.3+	0.7+	1999 12 06	704	0.6-	0.4+
1998 09 21	809	(2.6- 2.6+)		1998 10 20	699	0.3+	0.4+	2000 01 04	704	0.1-	0.2-
1998 09 21	809	(4.0- 1.9+)		1998 10 28	704	0.3+	0.3-	2000 01 04	704	0.6-	0.4-
1998 09 21	809	(3.6- 2.5+)		1998 10 28	704	0.7+	1.1-	2000 01 04	704	1.1-	0.4-
1998 09 22	699	0.6+	0.6-	1998 10 28	704	1.0+	1.2-	2000 01 04	704	0.1-	0.0
1998 09 22	699	0.5-	0.6+	1998 10 28	704	0.1-	0.6+	2000 01 04	704	0.1-	0.7-
1998 09 22	699	0.2-	0.0	1998 10 29	704	0.2+	0.4-	2000 01 07	704	1.4-	0.2+
1998 09 24	699	0.1+	0.1+	1998 10 29	704	0.8-	0.2-	2000 01 07	704	0.9-	0.4+
1998 09 24	699	0.1+	0.1+	1998 10 29	704	0.6-	0.3+	2000 01 07	704	0.2+	0.3-
1998 09 24	699	0.3+	1.2+	1998 10 29	704	0.8-	0.7-	2000 01 07	704	0.1+	0.5-
1998 09 26	704	0.6+	0.7-	1998 10 29	704	0.9-	0.5-	2000 01 10	699	0.2-	0.8+
1998 09 26	704	0.2+	0.3-	1998 11 10	704	0.3+	1.1-	2000 01 10	699	0.6+	0.2+
1998 09 26	704	0.1-	0.1-	1998 11 10	704	0.3+	0.1-	2000 01 10	699	0.8+	0.6+

(13326)* 1998 SH₂₃ = 1981 QN₂ = 1987 SS₂₁

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33019)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	124.36207		(2000.0)	P	Q
<i>n</i>	0.17678122	ω	168.50674	+0.65971021	+0.74911706
<i>a</i>	3.1442130	Ω	142.72572	-0.69712663	+0.63985128
<i>e</i>	0.2109741	<i>i</i>	5.69044	-0.28070785	+0.17150503
<i>P</i>	5.58	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1981 08 23	809	(3.8- 4.0-)	1981 09 02	809	0.2+	0.4-	1998 09 24	699	0.7+	1.2+
1981 08 23	809	(3.9- 4.6-)	1981 09 02	675	0.3+	1.1-	1998 09 24	699	1.0-	1.2+
1981 08 23	809	(3.7- 5.0-)	1981 09 03	809	0.6-	0.1+	1998 09 24	699	0.3-	0.7+
1981 08 24	809	0.0	1981 09 03	809	0.3-	0.0	1998 09 26	704	1.6+	0.2-
1981 08 24	809	0.0	1981 09 03	809	0.5+	0.1-	1998 09 26	704	0.8-	0.3-
1981 08 24	809	0.3+	1981 09 03	809	0.3-	0.2+	1998 09 26	704	0.3-	1.0-
1981 08 25	809	0.8-	1981 09 03	809	0.1-	0.3-	1998 09 26	704	0.6-	0.3-
1981 08 25	809	0.7-	1981 09 03	809	0.4+	0.3-	1998 09 27	704	0.5-	1.3-
1981 08 25	809	0.0	1981 09 03	809	0.4+	0.4+	1998 09 27	704	1.1+	0.3+
1981 08 26	809	0.5-	1981 09 03	809	0.7+	1.0+	1998 09 27	704	0.2+	0.6+
1981 08 26	809	0.6+	1981 09 03	809	0.7+	0.4+	1998 09 27	704	0.2-	0.5-
1981 08 26	809	0.4+	1981 09 05	809	0.3-	0.6-	1998 09 27	704	0.2-	0.4-
1981 08 27	809	0.7-	1981 09 05	809	1.2-	0.8-	1998 10 17	699	1.1-	0.0
1981 08 27	809	0.5-	1981 09 05	809	0.4-	0.2-	1998 10 17	699	1.5-	0.1-
1981 08 27	809	0.5-	1981 09 05	809	0.8-	0.3-	1998 10 17	699	0.8+	0.8-
1981 08 27	809	0.5-	1981 09 05	809	0.9-	0.5-	1998 11 15	699	1.0-	0.5+
1981 08 27	809	0.9-	1981 09 05	809	0.6-	0.8-	1998 11 15	699	0.2-	0.0
1981 08 27	809	0.5-	1981 09 05	809	0.2-	1.0-	1998 11 15	699	0.2+	0.0
1981 08 28	809	0.2-	1981 09 05	809	0.7+	0.2-	1998 12 16	699	0.8+	0.6-
1981 08 28	809	0.5+	1981 09 05	809	1.5+	0.1-	1998 12 16	699	0.8-	0.6+
1981 08 28	809	0.3+	1981 09 06	809	0.2-	0.3-	1998 12 16	699	0.4+	0.9-
1981 08 28	809	0.3-	1981 09 06	809	0.6-	0.7-	1999 11 17	704	0.1-	0.5+
1981 08 28	809	0.0	1981 09 06	809	0.4-	0.7-	1999 11 17	704	(2.2+ 0.2+)	
1981 08 28	809	0.3-	1981 09 06	809	0.0	0.4+	1999 11 17	704	0.7-	1.1+
1981 08 31	809	0.7+	1981 09 06	809	0.2-	0.5+	1999 11 17	704	0.2-	0.8+
1981 08 31	809	0.7+	1981 09 06	809	0.1+	0.1-	1999 12 06	704	(2.4+ 3.0-)	

1981 08 31	809	0.4+	0.3-	1981 09 07	809	(2.7- 1.0-)	1999 12 06	704	(0.9+ 2.3-)	
1981 09 01	809	0.8+	0.9+	1981 09 07	809	2.2-	0.9-	1999 12 06	704	1.0-
1981 09 01	809	1.3+	1.1+	1981 09 07	809	1.7-	0.7-	1999 12 06	704	(3.6- 1.1+)
1981 09 01	809	1.4+	0.5+	1981 09 07	809	1.1-	0.1+	1999 12 14	704	0.1-
1981 09 01	809	0.5-	0.7+	1981 09 07	809	1.0-	0.1+	1999 12 14	704	0.3+
1981 09 01	809	0.2-	0.8+	1981 09 07	809	0.7-	0.2+	1999 12 14	704	0.2-
1981 09 01	809	0.3+	0.9+	1987 09 18	095	(0.2+ 3.8-)		1999 12 14	704	0.2-
1981 09 01	809	0.3+	0.4+	1996 03 26	566	0.1+	0.1-	1999 12 14	704	0.0
1981 09 01	809	0.7+	0.5+	1996 03 26	566	0.1-	0.2-	2000 01 05	704	0.3+
1981 09 01	809	0.5+	0.7+	1996 03 26	566	0.1-	0.3-	2000 01 05	704	0.4-
1981 09 01	809	0.7+	1.0-	1998 06 29	704	0.0	0.6+	2000 01 05	704	0.4-
1981 09 01	809	0.4+	0.8-	1998 06 29	704	0.3-	1.4+	2000 01 05	704	0.5+
1981 09 01	809	0.7+	0.9-	1998 06 29	704	0.6+	1.0+	2000 01 05	704	0.6+
1981 09 01	675	0.0	0.3-	1998 06 29	704	0.7-	1.1+	2000 01 06	704	0.2-
1981 09 02	809	1.3+	0.4+	1998 09 14	704	0.0	0.6+	2000 01 06	704	0.3+
1981 09 02	809	1.5+	0.2+	1998 09 14	704	0.7+	0.0	2000 01 06	704	0.0
1981 09 02	809	1.4+	0.5+	1998 09 14	704	0.4-	0.8-	2000 01 06	704	0.1+
1981 09 02	809	0.5+	0.6+	1998 09 17	699	0.3-	0.1-	2000 01 06	704	0.0
1981 09 02	809	0.5+	0.6+	1998 09 17	699	0.5-	0.2+	2000 01 07	704	0.1+
1981 09 02	809	0.9+	0.9+	1998 09 17	699	0.3-	0.1-	2000 01 07	704	0.6+
1981 09 02	809	0.4-	0.8+	1998 09 18	704	1.0+	0.0	2000 01 07	704	0.4+
1981 09 02	809	0.4-	0.8+	1998 09 18	704	0.3+	0.8+	2000 01 07	704	0.1+
1981 09 02	809	0.4-	0.6+	1998 09 18	704	0.5+	0.2+	2000 01 07	704	0.4+
1981 09 02	809	0.1+	0.2-	1998 09 18	704	0.6+	0.1+			
1981 09 02	809	0.1+	0.4-	1998 09 18	704	0.3+	0.5-			

(13327)* 1998 SC₂₄ = 9610 P-L

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33020)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	72.39210		(2000.0)	P	Q
<i>n</i>	0.18153642	ω	304.05815	+0.87020563	-0.48954436
<i>a</i>	3.0890638	Ω	85.30956	+0.46841739	+0.78708956
<i>e</i>	0.1709226	<i>i</i>	3.19652	+0.15273280	+0.37528167
<i>P</i>	5.43	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1960 10 17	675	0.6+	0.7-	1998 09 26	704	1.2-	0.6-	1999 12 07	704	1.0-	0.2-
1960 10 22	675	0.4+	0.2-	1998 09 27	704	0.9-	0.2-	1999 12 07	704	0.4-	0.3-
1960 10 25	675	0.1+	0.3-	1998 09 27	704	0.8-	0.5+	1999 12 08	704	0.2+	0.6+
1960 10 26	675	0.8-	0.5+	1998 09 27	704	0.3-	0.0	1999 12 08	704	0.1-	0.1+
1996 04 19	691	0.0	0.4+	1998 09 27	704	0.5-	0.3+	1999 12 08	704	0.3-	0.8+
1996 04 19	691	0.2+	0.2+	1998 09 27	704	0.1-	0.0	1999 12 08	704	0.4-	0.4+
1996 04 19	691	0.0	0.1-	1998 10 14	704	0.6-	1.4+	1999 12 08	704	1.4-	0.0
1998 09 14	704	0.1+	0.1+	1998 10 14	704	(2.8+	0.3-)	1999 12 12	691	0.2+	0.4-
1998 09 14	704	0.8+	0.2+	1998 10 14	704	(1.6+	2.1-)	1999 12 12	691	0.1-	0.3+
1998 09 14	704	0.2-	0.1-	1998 10 14	704	1.5+	0.4+	1999 12 12	691	0.9+	0.1-
1998 09 17	699	0.2+	0.1-	1998 10 14	704	0.6-	1.2-	1999 12 14	691	0.0	0.5-
1998 09 17	699	1.1-	0.8+	1998 10 15	704	0.5+	0.6+	1999 12 14	691	0.4-	0.2-
1998 09 17	699	0.1+	1.0+	1998 10 15	704	0.8+	1.4-	1999 12 14	691	0.7-	0.0
1998 09 18	704	0.2-	0.5-	1998 10 15	704	0.2+	0.5+	1999 12 17	691	0.1+	0.1+
1998 09 18	704	1.6+	1.0-	1998 10 15	704	0.5+	1.1-	1999 12 17	691	0.1+	0.2+
1998 09 18	704	0.8-	0.1+	1998 10 15	704	2.0+	0.1-	1999 12 17	691	0.2+	0.2+
1998 09 18	704	0.5-	1.2+	1998 10 17	699	0.8+	0.1-	2000 01 03	704	1.1+	0.2-
1998 09 18	704	0.6-	1.2+	1998 10 17	699	0.3-	0.8+	2000 01 03	704	0.4+	0.2-
1998 09 24	699	0.3-	0.2+	1998 10 17	699	0.3+	0.1-	2000 01 03	704	0.4+	0.4-
1998 09 24	699	0.1-	0.4+	1999 12 05	691	0.1-	0.1-	2000 01 03	704	0.0	0.5-
1998 09 24	699	0.3+	0.7+	1999 12 05	691	0.1-	0.0	2000 01 03	704	0.5+	0.5-
1998 09 26	704	0.2+	1.3-	1999 12 05	691	0.1-	0.0	2000 01 04	704	0.1+	0.3+
1998 09 26	704	0.5-	0.8-	1999 12 07	704	1.2+	0.2-	2000 01 04	704	0.2-	0.1+
1998 09 26	704	0.2+	0.5-	1999 12 07	704	0.4+	0.1+	2000 01 04	704	0.1-	1.0+
1998 09 26	704	0.6-	0.4-	1999 12 07	704	0.3-	0.6+				

(13328)* 1998 SP₂₄ = 1993 TK₂₉ = 1995 BE₁₆ = 1996 JL₁₄

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33020)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	50.84194		(2000.0)	P	Q		
<i>n</i>	0.18733495	ω	278.71585	+0.56593143	−0.82284197		
<i>a</i>	3.0249870	Ω	136.68404	+0.78286881	+0.51674786		
<i>e</i>	0.1159176	<i>i</i>	4.30566	+0.25853056	+0.23643761		
<i>P</i>	5.26	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 10 09	809	0.4−	0.4−	1998 09 14	704	0.4+	0.2+	1998 09 27	704	0.1−	1.1−
1993 10 09	809	1.2−	0.1−	1998 09 14	704	0.5−	0.1−	1998 09 27	704	1.3−	1.7−
1993 10 09	809	1.6−	0.1−	1998 09 14	704	1.2+	0.2+	1998 10 15	704	0.0	0.9+
1993 10 09	809	(2.1+ 0.9+)		1998 09 14	704	0.5−	0.4−	1998 10 15	704	0.1+	0.6+
1993 10 09	809	1.3+ 1.3+		1998 09 14	704	0.4+	0.9+	1998 10 15	704	0.3+ 0.3+	
1993 10 09	809	1.2+ 1.4+		1998 09 17	699	0.2+	0.2+	1998 10 15	704	1.0+	0.1−
1993 10 11	809	(0.9− 2.3−)		1998 09 17	699	0.1−	1.4+	1999 12 05	704	0.7+ 0.1+	
1993 10 11	809	(1.2− 2.7−)		1998 09 17	699	0.5−	0.8−	1999 12 05	704	0.0	0.1−
1993 10 11	809	(2.1− 2.0−)		1998 09 17	699	0.2−	1.3+	1999 12 05	704	0.3+ 0.2+	
1993 10 21	809	(1.1+ 2.9+)		1998 09 17	699	0.1+ 0.2+		1999 12 05	704	0.4+ 0.1+	
1993 10 21	809	(1.1+ 2.7+)		1998 09 17	699	1.6+ 1.0+		1999 12 05	704	0.1+ 0.1−	
1993 10 21	809	(1.3− 2.4+)		1998 09 18	704	0.6+	0.2−	1999 12 07	704	0.5− 0.5−	
1995 01 30	033	0.6+ 0.7+		1998 09 18	704	0.5+	0.9−	1999 12 07	704	0.4− 0.0	
1995 01 31	033	0.5− 0.3+		1998 09 18	704	0.2+	0.6−	1999 12 07	704	0.2− 0.3+	
1995 02 03	033	0.3+ 0.5+		1998 09 18	704	0.1−	0.1−	1999 12 07	704	0.1− 0.2+	
1996 05 12	691	1.0− 0.0		1998 09 24	699	0.7+ 0.3+		1999 12 08	704	0.1− 0.5−	
1996 05 12	691	0.7− 0.0		1998 09 24	699	0.5− 1.3+		1999 12 08	704	0.5− 0.5+	
1996 05 12	691	0.7− 0.1−		1998 09 24	699	0.7− 0.1−		1999 12 08	704	0.4− 0.5−	
1996 05 18	691	0.8+ 0.1+		1998 09 26	704	(0.2− 2.2−)		1999 12 08	704	0.3+ 1.1−	
1996 05 18	691	1.1+ 0.1+		1998 09 26	704	0.7− 0.9−		2000 01 05	704	0.1− 0.6+	
1996 05 18	691	0.6+ 0.1+		1998 09 26	704	0.5− 1.6−		2000 01 05	704	0.8− 0.4−	
1998 09 14	704	0.7+ 0.2−		1998 09 26	704	(0.2− 2.7−)		2000 01 05	704	0.5+ 0.6−	
1998 09 14	704	1.0− 0.1+		1998 09 26	704	0.2+ 1.4−		2000 01 05	704	0.2− 0.4−	
1998 09 14	704	0.3− 1.1−		1998 09 27	704	1.6− 0.6+		2000 01 05	704	0.4+ 0.3−	
1998 09 14	704	0.2− 0.9+		1998 09 27	704	0.9+ 0.5+		2000 01 05	704	0.2+ 0.2+	
1998 09 14	704	0.2+ 0.9−		1998 09 27	704	0.0	0.2+				

(13329)* 1998 SB₃₂ = 1993 TQ₂₁

Discovered 1998 Sept. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 33022)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	137.32686		(2000.0)	P	Q		
<i>n</i>	0.19370622	ω	140.63206	+0.84493766	+0.53468482		
<i>a</i>	2.9582872	Ω	187.08641	−0.51472046	+0.80578968		
<i>e</i>	0.0830591	<i>i</i>	6.45737	−0.14540704	+0.25458817		
<i>P</i>	5.09	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 10 09	809	(1.0+ 3.1+)		1998 09 26	704	0.4−	0.2+	1999 10 10	704	0.4−	0.8+
1993 10 09	809	(0.6+ 3.6+)		1998 09 26	704	0.7−	0.7+	1999 10 10	704	0.3+ 0.5+	
1993 10 09	809	(1.0+ 3.1+)		1998 09 26	704	0.3−	0.7+	1999 10 10	704	0.5+ 0.9+	
1993 10 10	675	0.3+ 0.8−		1998 09 26	691	0.2+	0.0	1999 10 10	704	0.1+ 0.4+	
1993 10 10	675	0.2− 0.4+		1998 09 26	691	0.3+ 0.5−		1999 10 21	704	0.1− 1.1+	
1993 10 13	675	0.1+ 0.3+		1998 09 26	691	0.1+ 0.5−		1999 10 21	704	0.4− 0.6+	
1993 10 13	675	0.1− 0.1−		1998 09 27	704	0.4− 0.2−		1999 10 21	704	0.8− 1.3+	
1993 10 20	809	(0.2+ 2.9+)		1998 09 27	704	0.3+ 0.7−		1999 10 21	704	0.6− 0.9+	
1993 10 20	809	(0.3+ 2.8+)		1998 09 27	704	0.7− 0.1−		1999 12 06	704	0.4+ 0.4−	
1993 10 20	809	(0.3− 2.8+)		1998 09 27	704	0.3+ 1.0−		1999 12 06	704	0.1+ 0.0	
1996 04 21	566	0.2+ 0.1+		1998 09 27	704	0.8− 0.5−		1999 12 06	704	0.2− 0.2−	
1996 04 21	566	0.4− 0.3+		1998 10 14	699	0.1+ 0.9−		1999 12 08	704	1.3− 0.5+	
1996 04 21	566	0.3+ 0.3+		1998 10 14	699	0.5+ 0.1+		1999 12 08	704	0.0	0.2−
1998 09 14	704	0.2− 0.2−		1998 10 14	699	0.7+ 0.3−		1999 12 08	704	0.4+ 0.9−	
1998 09 14	704	0.7+ 1.3+		1998 10 15	704	0.5+ 0.4−		1999 12 14	704	(1.1+ 2.2−)	

1998 09 15	699	0.1+ 0.1+		1998 10 15	704	(2.9+ 2.2+)		1999 12 14	704	0.7+ 1.0−	
1998 09 15	699	0.8+ 0.5+		1998 10 15	704	(2.4− 1.0−)		1999 12 14	704	1.4+ 0.0	
1998 09 15	699	0.8+ 0.4+		1998 10 15	704	0.9+ 0.3−		1999 12 14	704	1.0− 0.3−	
1998 09 18	704	0.0 0.1+		1998 10 15	704	0.4+ 0.4−		2000 01 05	704	0.0	0.1−
1998 09 18	704	0.7+ 0.1−		1998 10 28	704	0.5+ 0.7+		2000 01 05	704	0.6+ 0.0	
1998 09 18	704	0.0 0.6+		1998 10 28	704	0.7+ 0.5−		2000 01 05	704	0.3+ 0.4−	
1998 09 18	704	0.2+ 0.9+		1998 10 28	704	0.5+ 0.7−		2000 01 05	704	0.5+ 0.1−	
1998 09 18	704	0.1+ 0.8+		1998 10 28	704	0.5− 0.9+		2000 01 05	704	0.0	0.4−
1998 09 20	691	0.8− 0.4−		1998 10 28	704	1.1+ 0.1+		2000 01 07	704	0.0	0.3−
1998 09 20	691	1.3− 0.3−		1998 10 29	704	0.9− 0.6−		2000 01 07	704	0.1+ 0.3−	
1998 09 20	691	0.6− 0.3−		1998 10 29	704	1.6− 1.2+		2000 01 07	704	0.3− 0.5−	
1998 09 26	704	0.3+ 0.4−		1998 10 29	704	0.0 0.7−		2000 01 07	704	0.5− 0.2−	
1998 09 26	704	0.6− 0.5+		1998 10 29	704	1.0− 0.2+					

(13330)* 1998 SM₄₆ = 1976 SU₄ = 1990 EV₇ = 1992 PK₄

Discovered 1998 Sept. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 33025); 1998 SM₄₆ = 1926 RS (*ibid.*) is invalid

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	137.25675		(2000.0)	P	Q		
<i>n</i>	0.18024641	ω	25.17498	+0.81740888	+0.57604390		
<i>a</i>	3.1037850	Ω	299.65166	−0.52930209	+0.74829273		
<i>e</i>	0.1749892	<i>i</i>	0.26492	−0.22733681	+0.32898542		
<i>P</i>	5.47	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 09 24	095	0.4−	0.8+	1998 10 09	120	0.4+	0.4+	1998 11 23	699	0.7+	0.3+
1990 03 03	809	(2.4+ 3.0−)		1998 10 10	699	0.7−	0.6+	1998 11 23	699	0.4+	0.3+
1990 03 03	809	1.7+ 1.3−		1998 10 10	699	0.2−	0.2−	1998 11 23	699	0.1+	0.6+
1990 03 03	809	1.0+ 0.3+		1998 10 10	699	0.1−	0.1+	1999 12 07	704	0.1−	0.2+
1992 08 02	675	0.3− 0.8−		1998 10 15	120	1.0−	0.5−	1999 12 07	704	0.2−	0.3−
1992 08 02	675	0.3− 0.5−		1998 10 15	120	0.8−	0.5−	1999 12 07	704	0.8+	0.6+
1992 08 06	675	0.4− 1.7−		1998 10 27	120	0.0	0.4+	1999 12 07	704	0.8−	1.3+
1992 08 06	675	(0.4− 2.4−)		1998 10 27	120	0.0	0.3+	1999 12 08	704	0.4−	0.2+
1996 04 20	566	0.3+ 0.9−		1998 10 27	120	0.0	0.4+	1999 12 08	704	0.0	0.5+
1996 04 20	566	0.8− 1.0−		1998 10 28	704	0.0	0.3+	1999 12 08	704	0.2−	0.2+
1996 04 20	566	0.4− 0.6−		1998 10 28	704	0.4+	0.0	1999 12 08	704	0.7−	0.0
1998 09 20	809	(0.2− 2.2+)		1998 10 28	704	0.3+	0.2−	1999 12 08	704	1.5−	0.3+
1998 09 20	809	1.5− 1.6+		1998 10 28	704	1.0+	0.7−	2000 01 03	704	0.4−	0.2−
1998 09 20	809	0.9− 1.7+		1998 10 29	704	0.4−	0.4+	2000 01 03	704	0.7−	0.1+
1998 09 21	809	(2.4+ 3.9+)		1998 10 29	704	0.3+	0.0	2000 01 03	704	0.4−	0.6−
1998 09 21	809	(2.0+ 3.8+)		1998 10 29	704	1.0+	1.7+	2000 01 04	704	0.1−	0.3−
1998 09 21	809	(1.4+ 4.3+)		1998 10 29	704	(2.6− 0.2+)		2000 01 04	704	0.2+	0.0
1998 09 24	120	0.1− 0.5−		1998 10 29	704	0.2−	0.3+	2000 01 04	704	0.1+	0.4+
1998 09 25	120	0.7+ 0.7+		1998 11 06	120	0.7−	0.4−	2000 01 04	704	0.2−	0.2+
1998 09 25	120	0.4+ 0.5+		1998 11 06	120	0.3+	0.0	2000 01 04	704	0.3+	0.3+
1998 09 25	691	0.7+ 0.1−		1998 11 10	704	1.0+	0.6−	2000 01 06	704	0.2+	0.9−
1998 09 25	691	0.4+ 0.0		1998 11 10	704	0.3−	0.6−	2000 01 06	704	(1.0− 2.2−)	
1998 09 25	691	0.6+ 0.1−		1998 11 10	704	0.3+	1.7−	2000 01 06	704	0.4+	0.7−
1998 09 30	120	0.2+ 0.3−		1998 11 10	704	0.0	1.5−	2000 01 06	704	1.6−	1.5−
1998 09 30	120	0.0 0.2+		1998 11 11	704	0.5+	0.1−	2000 01 14	691	0.1+	0.3+
1998 09 30	691	0.2− 0.3−		1998 11 11	704	0.0	0.0	2000 01 14	691	0.1+	0.1+
1998 09 30	691	0.0 0.3−		1998 11 11	704	0.4+	0.2−	2000 01 14	691	0.2+	0.1+
1998 09 30	691	0.0 0.2−		1998 11 11	704	0.0	1.4−				
1998 10 09	120	0.1− 0.0		1998 11 11	704	1.8+	0.7−				

Residuals in seconds of arc

1993 05 23	675	0.3+	1.1+	1998 10 26	910	0.1+	0.3+	1999 11 16	704	1.0+	0.9-
1993 05 23	675	0.4+	1.2+	1998 10 26	910	0.2+	0.8+	1999 11 16	327	0.4+	0.1-
1997 09 29	809	0.8+	0.8-	1998 10 26	910	0.1+	0.3+	1999 11 16	327	0.7+	0.0
1997 09 29	809	0.9-	1.6-	1998 10 28	704	0.5+	0.5+	1999 11 16	327	0.5-	0.5-
1997 10 01	809	0.0	0.1-	1998 10 28	704	0.5-	0.3-	1999 11 19	327	0.1-	0.2-
1997 10 01	809	0.5+	0.1+	1998 10 28	704	1.3-	0.0	1999 11 19	327	0.2+	0.0
1997 10 05	809	0.4+	0.1-	1998 10 28	704	0.0	1.1+	1999 11 19	327	0.6+	0.3+
1997 10 05	809	0.5-	1.6-	1998 10 29	704	0.4-	0.5-	1999 12 07	106	0.7-	1.2+
1997 10 06	809	0.6+	0.0	1998 10 29	704	0.4+	0.1-	1999 12 07	106	0.2-	0.3+
1997 10 06	809	0.4+	0.0	1998 10 29	704	0.9-	0.0	1999 12 07	106	0.5-	0.2+
1998 09 14	699	0.6+	1.0+	1998 10 29	704	0.0	0.3-	1999 12 07	704	0.4-	1.1+
1998 09 14	699	0.3-	0.7+	1998 10 29	704	1.2-	0.2-	1999 12 07	704	0.3-	0.3+
1998 09 14	699	0.3-	1.2+	1998 10 30	327	0.5-	0.1-	1999 12 07	704	0.2-	0.4+
1998 09 21	691	0.3+	0.3+	1998 10 30	327	0.1-	0.1+	1999 12 07	704	0.4-	0.3+
1998 09 21	691	0.4+	0.3+	1998 10 30	327	0.2-	0.9+	1999 12 07	704	0.0	0.9+
1998 09 21	691	0.4+	0.0	1998 11 11	704	1.0-	0.9-	1999 12 10	704	0.4-	0.2-
1998 09 26	704	0.6+	0.3+	1998 11 11	704	1.1-	1.5-	1999 12 10	704	0.7-	1.2+
1998 09 26	704	0.4-	0.3+	1998 11 11	704	(1.0-	2.2+)	1999 12 10	704	0.2+	0.2+
1998 09 26	704	1.0+	0.5-	1998 11 11	704	0.3-	1.3+	1999 12 10	704	0.7-	0.5-
1998 09 26	704	0.7+	0.0	1998 11 11	704	1.5-	0.9+	1999 12 10	704	0.4-	0.7+
1998 09 26	704	0.1+	1.2-	1998 11 13	120	(2.8-	1.4+)	2000 01 03	704	0.2+	0.4-
1998 09 27	704	0.6+	1.5-	1998 11 13	120	0.5-	0.2-	2000 01 03	704	0.0	1.0-
1998 09 27	704	0.2+	1.9-	1998 11 13	120	0.3-	1.4+	2000 01 03	704	0.4+	0.4-
1998 09 27	704	0.3-	1.2+	1998 11 13	120	(1.8-	2.3-)	2000 01 03	704	0.8+	1.4-
1998 09 27	704	1.0+	0.8-	1998 11 13	120	(4.3-	0.9-)	2000 01 03	704	0.2-	1.0-
1998 09 30	691	0.2+	0.1-	1998 11 13	120	(3.4-	1.2-)	2000 01 04	704	0.1+	0.1+
1998 09 30	691	0.8+	0.4-	1998 11 15	120	0.2-	0.6+	2000 01 04	704	0.0	0.0
1998 09 30	691	0.2+	0.2+	1998 11 15	120	0.3-	0.4-	2000 01 04	704	0.1-	0.3-
1998 10 01	691	0.3-	0.0	1998 11 15	120	0.4-	0.6-	2000 01 04	704	0.1-	0.6-
1998 10 01	691	0.5-	0.1-	1998 11 15	120	0.0	0.1-	2000 01 04	704	0.3+	0.1-
1998 10 01	691	0.5-	0.1-	1998 11 17	699	0.3+	0.8+	2000 01 04	704	0.1+	0.4-
1998 10 11	699	0.2+	0.4-	1998 11 17	699	0.2+	0.9+	2000 01 04	704	0.2+	0.1+
1998 10 11	699	0.4+	0.5-	1998 11 17	699	0.2-	0.5+	2000 01 04	704	0.2-	0.7-
1998 10 11	699	0.3-	0.0	1998 12 08	699	0.5-	0.5+	2000 01 04	704	0.9-	0.3-
1998 10 12	910	1.3+	0.7+	1998 12 08	699	0.2-	0.3+	2000 01 04	704	0.6-	0.4-
1998 10 12	910	0.9+	0.7+	1998 12 08	699	0.4-	1.2+	2000 01 06	704	0.3+	0.5+
1998 10 13	910	1.0+	0.5+	1999 11 16	704	1.0+	0.1-	2000 01 06	704	0.1-	0.7-
1998 10 14	910	0.3+	0.3+	1999 11 16	704	0.3-	0.3+	2000 01 06	704	0.4-	0.5-
1998 10 15	910	0.2+	0.2+	1999 11 16	704	1.2+	0.6-	2000 01 06	704	0.3-	0.4+
1998 10 15	910	0.2+	0.1+	1999 11 16	704	1.2+	0.6-	2000 01 06	704	0.2-	0.1+

(13332)* 1998 SM₅₈ = 1993 QO₂

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object

Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33032)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	73.08567	(2000.0)	P	Q	
<i>n</i>	0.20604819	ω	239.17262	+0.72021692	-0.69367193
<i>a</i>	2.8389441	Ω	164.74058	+0.64916490	+0.66860191
<i>e</i>	0.0593036	<i>i</i>	2.25084	+0.24468862	+0.26793794
<i>P</i>	4.78	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1993 08 16	010	0.1+	0.3+	1998 09 27	704	0.7+	1.9+	1998 10 28	704	(2.1+	0.2+)
1993 08 16	010	0.1+	0.9-	1998 09 27	704	0.4-	0.4-	1998 10 28	704	0.1-	0.8-
1993 08 16	010	0.7+	0.0	1998 09 27	704	0.3+	0.0	1999 10 21	704	0.7-	0.1-
1993 08 17	010	1.2-	0.9+	1998 09 27	704	0.3+	0.1-	1999 10 21	704	0.6-	0.4-
1996 03 17	566	0.2-	0.4-	1998 09 27	704	0.4-	1.2-	1999 10 21	704	1.0+	0.4-
1996 03 17	566	0.2-	0.1-	1998 10 14	704	0.9+	0.1+	1999 12 06	703	0.2-	0.7+
1996 03 17	566	0.1+	0.5-	1998 10 14	704	0.5+	0.2-	1999 12 06	703	0.4-	0.1+
1998 09 14	704	0.6-	0.1+	1998 10 14	699	0.3-	0.6+	1999 12 06	703	0.4+	0.7+
1998 09 14	704	0.9-	0.9-	1998 10 14	704	1.2-	0.9-	1999 12 06	703	0.1+	1.6+
1998 09 14	704	0.0	0.0	1998 10 14	704	0.2-	0.5-	1999 12 08	704	0.4+	0.6+
1998 09 16	691	0.1-	0.4-	1998 10 14	699	1.4+	0.8+	1999 12 08	704	0.5+	0.4-
1998 09 16	691	0.0	0.3-	1998 10 14	699	0.5+	0.0	1999 12 08	704	0.3-	1.0-

1998 09 16	691	0.3+	0.4-	1998 10 15	704	0.3+	0.1-	1999 12 08	704	0.9-	0.5+
1998 09 17	699	0.4-	0.7-	1998 10 15	704	0.7-	1.3+	1999 12 08	704	0.1+	0.8-
1998 09 17	699	0.3+	0.2+	1998 10 15	704	0.2+	0.5+	1999 12 30	699	0.7-	1.1+
1998 09 17	699	0.9-	0.2-	1998 10 15	704	1.0+	0.7-	1999 12 30	699	1.1+	1.2+
1998 09 18	704	0.3+	0.0	1998 10 15	704	0.1-	1.0+	2000 01 05	704	0.6+	0.5-
1998 09 18	704	0.3+	0.2-	1998 10 19	699	0.0	0.8+	2000 01 05	704	1.1-	0.4-
1998 09 18	704	0.1+	0.0	1998 10 19	699	0.4-	1.4+	2000 01 05	704	0.1+	0.3-
1998 09 18	704	(2.3-	0.0)	1998 10 19	699	0.0	1.6+	2000 01 05	704	0.2+	0.7-
1998 09 25	699	0.1+	0.4+	1998 10 22	691	0.1+	0.5-	2000 01 05	704	0.3+	0.6-
1998 09 25	699	0.4+	0.2+	1998 10 22	691	0.1+	0.5-	2000 01 06	704	0.1+	0.4+
1998 09 25	699	0.4-	0.1+	1998 10 27	691	0.3+	0.5-	2000 01 06	704	0.2-	0.0
1998 09 26	704	0.5+	0.5-	1998 10 27	691	0.1-	0.5-	2000 01 06	704	0.4+	0.1+
1998 09 26	704	0.5-	0.5+	1998 10 27	691	0.6+	0.1+	2000 01 11	143	0.8+	0.5-
1998 09 26	704	0.4-	0.4+	1998 10 28	704	0.1+	0.0	2000 01 11	143	0.5-	0.1+
1998 09 26	704	0.6-	0.3+	1998 10 28	704	0.1+	1.3-	2000 01 11	143	0.1-	0.3-
1998 09 26	704	0.2-	0.1-	1998 10 28	704	0.0	1.9-	2000 01 11	143	0.7-	0.2-

(13333)* 1998 SU₅₉ = 7645 P-L = 1994 RC₁₂

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object

Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33033)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	278.71705	(2000.0)	P	Q	
<i>n</i>	0.26009261	ω	61.34328	-0.75914558	+0.64963179
<i>a</i>	2.4306217	Ω	159.08547	-0.63006205	-0.71756683
<i>e</i>	0.0825306	<i>i</i>	6.58637	-0.16346193	-0.25115009
<i>P</i>	3.79	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1960 10 17	675	0.3+	1.3-	1998 09 26	704	0.6-	0.2-	1999 12 31	699	0.1+	0.6+
1960 10 22	675	0.8+	0.0	1998 09 26	704	0.6-	1.1+	1999 12 31	699	0.1+	1.0+
1960 10 25	675	0.8-	0.4-	1998 09 26	704	0.9-	1.3+	1999 12 31	699	0.3-	0.4+
1960 10 26	675	0.3+	0.6-	1998 09 26	704	0.2-	1.0+	2000 01 05	704	0.2+	0.3-
1994 09 01	033	0.3-	0.4-	1998 09 27	704	0.1+	0.5-	2000 01 05	704	0.0	0.9-
1994 09 02	033	0.3-	0.3-	1998 09 27	704	0.2-	0.7-	2000 01 05	704	0.5+	0.2-
1994 09 03	033	1.2+	1.3-	1998 09 27	704	0.5+	1.1-	2000 01 05	704	0.4+	0.7-
1998 09 17	699	0.5+	0.0	1998 09 27	704	1.2-	0.8-	2000 01 05	704	1.1+	0.5-
1998 09 17	699	0.1+	1.6+	1998 09 27	704	(0.9-	2.1-)	2000 01 07	704	0.1+	0.2-
1998 09 17	699	0.7+	0.7+	1999 12 14	704	0.1+	0.2+	2000 01 07	704	0.2+	0.5-
1998 09 25	699	0.8-	1.0+	1999 12 14	704	0.1-	0.1+	2000 01 07	704	0.5-	0.3+
1998 09 25	699	0.0	0.5+	1999 12 14	704	0.6+	0.5+	2000 01 07	704	0.1-	0.1+
1998 09 25	699	0.9+	0.4-	1999 12 14	704	0.9-	0.5-	2000 01 07	704	0.6-	0.2+
1998 09 26	704	0.5+	0.4+	1999 12 14	704	1.2-	0.7-				

(13334)* 1998 SX₆₀ = 1993 TU₄₄

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object

Search at the Anderson Mesa Station.

Id. S. Nakano (*MPC* 33034)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	82.47292		(2000.0)	P	Q
n	0.19262988	ω	11.15520	+0.90161013	-0.42999777
a	2.9692969	Ω	14.58701	+0.38114071	+0.73848043
e	0.1170803	i	10.73603	+0.20452611	+0.51937326
P	5.12	H	14.0	G 0.15	U 1

1998 08 28	704	0.3+	0.2+	1998 09 26	704	0.1-	0.0	1999 12 12	704	0.2-	0.1-
1998 08 28	704	(2.8+	1.3+)	1998 09 26	704	0.9+	0.5+	1999 12 12	704	0.6+	0.2-
1998 08 28	704	1.2+	1.4-	1998 09 26	704	1.7-	1.8-	1999 12 15	704	0.1+	0.3+
1998 08 28	704	1.8-	1.2-	1998 09 27	704	0.8-	0.1+	1999 12 15	704	0.4+	0.4+
1998 09 14	704	0.3+	0.3+	1998 09 27	704	0.2-	0.3-	1999 12 15	704	0.2+	0.0
1998 09 14	704	0.2-	0.5-	1998 09 27	704	0.9-	0.5-	1999 12 15	704	0.2+	0.6+
1998 09 14	704	1.1-	0.2+	1998 09 27	704	0.3-	0.0	1999 12 15	704	0.2-	0.6+
1998 09 17	699	0.3+	0.7+	1998 09 27	704	0.2-	0.1+	2000 01 02	704	0.1-	0.1-
1998 09 17	699	0.3-	0.4+	1998 11 14	691	0.1+	0.5-	2000 01 02	704	0.2+	1.0-
1998 09 17	699	0.7+	0.3+	1998 11 14	691	0.0	0.3-	2000 01 02	704	0.6-	0.4-
1998 09 18	704	0.2-	1.4+	1998 11 14	691	0.3+	0.4-	2000 01 02	704	0.9-	0.2-

(13335)* 1998 SK₆₁ = 1980 TS₅ = 1989 UY₇ = 1996 FZ₂

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33035)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	103.18081		(2000.0)			P		Q		
<i>n</i>	0.21924036	ω	42.69355			+0.88528107		-0.46187971		
<i>a</i>	2.7238867	Ω	344.55005			+0.35248642		+0.74252389		
<i>e</i>	0.1343423	<i>i</i>	11.75318			+0.30336572		+0.48510350		
<i>P</i>	4.50	<i>H</i>	13.4			<i>G</i>	0.15	<i>U</i>	2	
Residuals in seconds of arc										
1980 10 08	675	0.9+	0.7-	1998 09 18	704	1.1-	0.2+	1999 01 08	704	(1.9- 2.6+)
1980 10 09	675	1.8+	1.2-	1998 09 18	704	1.0-	0.3+	1999 01 08	704	0.3+ 1.9+
1980 10 10	675	0.8+	0.7-	1998 09 18	704	0.8-	1.2+	1999 11 16	703	0.1- 0.5-
1989 10 24	095	(1.5+ 11.6-)		1998 09 25	699	0.2+	0.0	1999 11 16	703	0.1- 1.2+
1989 10 24	095	0.5-	1.4-	1998 09 25	699	0.0	0.5+	1999 11 16	703	0.1+ 0.8+
1989 10 26	095	0.3-	1.2-	1998 09 25	699	0.4+	0.6+	1999 11 16	703	0.0 0.7+
1989 10 26	095	0.4-	1.8-	1998 10 02	704	0.3+	0.1+	1999 12 04	703	0.2+ 0.2+
1996 03 23	566	0.2+	1.1+	1998 10 02	704	0.3+	0.4+	1999 12 04	703	0.2- 0.1-
1996 03 23	566	0.1-	1.1+	1998 10 02	704	0.6-	0.5-	1999 12 04	703	0.8- 0.7+
1996 03 23	566	0.3-	1.2+	1998 10 02	704	0.6-	0.4-	1999 12 04	703	0.5+ 0.2+
1996 03 24	566	1.3+	1.0-	1998 10 02	704	0.2+	0.2-	2000 01 04	704	0.2+ 0.3-
1996 03 24	566	1.1+	1.0-	1998 10 12	699	0.1+	0.1+	2000 01 04	704	0.2- 0.1-
1996 03 24	566	0.9+	1.1-	1998 10 12	699	0.2+	0.2-	2000 01 04	704	0.2+ 0.3-
1996 03 25	327	0.0	1.1+	1998 10 12	699	0.2+	0.1+	2000 01 04	704	0.1+ 1.3-
1996 03 25	327	0.2-	0.9+	1998 10 18	704	0.7-	0.4+	2000 01 04	704	0.9- 0.4-
1996 03 25	327	0.5-	0.9+	1998 10 18	704	0.2+	0.3-	2000 01 06	704	0.3+ 0.3-
1998 09 14	704	0.1+	0.0	1998 10 18	704	0.4+	0.1-	2000 01 06	704	0.6- 0.4-
1998 09 14	704	0.4+	0.9+	1998 10 18	704	0.4+	0.8-	2000 01 06	704	0.0 0.3-
1998 09 14	704	(2.3+ 3.3+)		1998 10 18	704	0.0	0.5-	2000 01 06	704	0.1+ 0.3-
1998 09 17	699	0.4-	1.2+	1998 12 09	704	(2.2- 0.0)		2000 01 06	699	0.2- 0.1-
1998 09 17	699	0.2-	0.9+	1998 12 09	704	1.0-	1.2-	2000 01 06	704	0.1+ 0.8-
1998 09 17	699	0.3-	1.1+	1998 12 09	704	0.7-	0.8+	2000 01 06	699	0.1- 0.5+
1998 09 18	704	0.7-	0.8+	1999 01 08	704	0.2+	0.6+	2000 01 06	699	0.1+ 0.8+
1998 09 18	704	0.3-	1.2+	1999 01 08	704	0.4+	1.8+			

(13336)* 1998 SN₁₁₄ = 1978 SK

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33041)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	99.32022		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.20184668	ω	260.38592		+0.94998718		-0.30709368				
a	2.8782044	Ω	117.48000		+0.30569733		+0.87734146				
e	0.1763570	i	3.66600		+0.06382394		+0.36873492				
P	4.88	H	13.6	G	0.15	U	1				
Residuals in seconds of arc											
1978 09 27	809	0.0	0.7-	1998 10 18	327	0.0	0.0	1999 11 16	704	0.7-	0.8+
1978 09 28	809	0.4+	0.1+	1998 10 18	327	0.1-	0.2+	2000 01 04	704	0.4+	0.3-
1978 09 29	809	0.2-	0.7-	1998 10 19	699	0.4-	0.3+	2000 01 04	704	0.4+	0.9-
1996 04 09	691	0.2-	0.4-	1998 10 19	699	0.4-	0.1-	2000 01 04	704	0.6+	0.9-

1996 04 09	691	0.1-	0.5-	1998 10 19	699	0.2-	0.1+	2000 01 04	704	0.3+	0.7+
1996 04 09	691	0.2-	0.4-	1998 10 19	327	0.2-	0.2+	2000 01 04	704	0.0	0.2-
1998 09 23	327	1.4+	0.1-	1998 10 19	327	0.4-	0.0	2000 01 04	691	0.1-	0.8+
1998 09 23	327	1.3+	0.0	1998 10 19	327	0.1-	0.3+	2000 01 04	691	0.0	0.6+
1998 09 23	327	1.1+	0.3+	1998 10 28	704	0.8+	1.1-	2000 01 04	691	0.0	0.4+
1998 09 26	704	0.2+	0.2-	1998 10 28	704	0.3-	0.7-	2000 01 06	704	0.1-	0.7-
1998 09 26	704	0.4-	0.3-	1998 10 28	704	0.5-	0.2-	2000 01 06	704	0.5-	0.2-
1998 09 26	704	1.2+	0.1-	1998 10 28	704	0.2+	1.3-	2000 01 06	704	0.4-	0.2+
1998 09 26	704	0.5+	0.1-	1998 10 28	704	0.5-	0.8-	2000 01 06	704	0.0	0.3+
1998 09 26	704	0.3-	0.7+	1998 10 29	704	0.6-	0.2+	2000 01 07	120	0.5-	0.9+
1998 09 27	704	0.3+	0.2+	1998 10 29	704	0.3-	0.1-	2000 01 07	120	0.5-	1.0-
1998 09 27	704	0.2+	0.9+	1998 10 29	704	0.5-	0.7+	2000 01 11	691	0.0	0.5-
1998 09 27	704	0.3+	0.1+	1998 10 29	704	0.9-	0.2-	2000 01 11	691	0.1-	0.3-
1998 09 27	704	0.1-	0.3+	1998 10 29	704	0.6-	0.5-	2000 01 11	691	0.0	0.4-
1998 09 27	704	0.3-	0.3+	1999 11 16	704	1.4+	0.1-				
1998 10 18	327	0.2-	0.3+	1999 11 16	704	0.0	0.3+				

(13337)* 1998 SZ₁₁₄ = 1994 XB₆

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33285)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	143.65313		(2000.0)		P		Q				
<i>n</i>	0.21818486	ω	250.28439		+0.93194247		+0.36174274				
<i>a</i>	2.7326645	Ω	88.50186		-0.32261442		+0.85867030				
<i>e</i>	0.0625691	<i>i</i>	1.43352		-0.16553901		+0.36308058				
<i>P</i>	4.52	<i>H</i>	13.4		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1992 04 29	691	0.5-	1.2-	1998 10 28	704	0.6+	0.1-	1999 11 16	704	0.4+	0.7+
1992 04 29	691	0.4-	0.7-	1998 10 28	704	0.6-	0.3+	1999 11 16	704	0.4-	0.0
1992 04 29	691	0.4-	0.1-	1998 10 28	704	1.0-	0.9+	1999 11 16	704	0.5+	0.4-
1994 12 04	098	0.7-	0.5-	1998 10 28	704	0.1+	1.3+	1999 11 16	704	0.1+	0.1-
1994 12 04	098	1.8+	0.2+	1998 10 29	704	0.3-	0.9-	1999 11 16	704	0.3-	0.3+
1994 12 04	098	0.4-	0.5-	1998 10 29	704	1.4-	1.1-	2000 01 04	704	0.2-	0.1-
1996 01 26	691	0.2+	0.2+	1998 10 29	704	0.6+	0.4-	2000 01 04	704	0.1-	0.2+
1996 01 26	691	0.2+	0.2+	1998 10 29	704	1.5-	1.5-	2000 01 04	704	0.3-	0.2-
1996 01 26	691	0.0	0.2+	1998 10 29	704	1.1+	0.5-	2000 01 04	704	0.4+	0.4-
1998 09 15	699	0.2+	0.3+	1998 11 11	699	0.0	0.1-	2000 01 04	704	0.2+	0.3-
1998 09 15	699	0.7+	0.8+	1998 11 11	699	0.2+	0.2+	2000 01 06	704	0.3-	1.3-
1998 09 15	699	0.2+	1.0+	1998 11 11	699	0.0	0.8+	2000 01 06	704	0.7-	0.2-
1998 09 26	704	0.6+	0.2-	1999 01 09	910	1.8-	0.4-	2000 01 06	704	0.2+	0.5-
1998 09 26	704	0.7+	0.0	1999 01 09	910	1.7-	0.1-	2000 01 06	704	0.0	0.2+
1998 09 26	704	1.8+	0.0	1999 01 09	910	1.5-	0.0	2000 01 06	704	0.2+	0.8-
1998 09 26	704	1.2+	0.5-	1999 01 14	910	1.2-	0.0	2000 01 06	704	0.2+	0.1-
1998 09 26	704	1.7+	0.3-	1999 01 14	910	1.4-	0.6-	2000 01 06	704	0.0	0.8-
1998 09 27	704	0.3+	0.2+	1999 01 14	910	1.3-	0.2-	2000 01 06	704	0.3-	0.1+
1998 09 27	704	0.5-	0.6+	1999 01 22	704	1.0+	0.9+	2000 01 06	704	0.3-	0.8-
1998 09 27	704	0.7+	0.5+	1999 01 22	704	0.4+	0.4-	2000 01 08	106	0.6+	1.1+
1998 09 27	704	0.9+	0.4+	1999 01 22	704	0.9-	0.2-	2000 01 08	106	0.5+	1.1+
1998 09 27	704	0.6-	1.4-	1999 01 22	704	1.1-	0.3+	2000 01 08	106	0.3+	0.8+
1998 10 28	704	0.3-	1.1-	1999 01 22	704	0.0	0.0				

2000 JAN. 24

M.P.C. 37579

Residuals in seconds of arc

1989 10 30	872	1.2−	1.0−	1998 09 27	704	0.6+	0.2+	1999 01 11	704	1.2−	0.4−
1989 10 30	872	1.3+	1.2−	1998 09 27	704	0.9+	0.2+	1999 02 04	699	0.2+	0.9+
1991 03 06	877	1.7+	0.6−	1998 09 27	704	(0.6−	2.4−)	1999 02 04	699	1.2−	0.8+
1991 03 06	877	0.3−	0.3+	1998 10 22	691	1.4−	0.1+	1999 02 04	699	0.4−	0.2−
1996 03 22	809	(2.8+	1.3+)	1998 10 22	691	1.4−	0.3−	1999 11 11	699	0.6−	0.4+
1996 03 22	809	1.9+	0.7+	1998 10 22	691	1.5−	0.1−	1999 11 11	699	0.5+	0.8+
1996 03 22	809	1.7+	1.7+	1998 10 28	704	0.3+	0.8+	1999 11 11	699	0.1+	0.7+
1996 03 26	809	1.6+	1.6+	1998 10 28	704	0.6+	1.4+	1999 12 08	704	0.7−	0.1+
1996 03 26	809	0.3+	1.3+	1998 10 28	704	0.6−	0.8+	1999 12 08	704	0.6−	0.5−
1996 03 26	809	0.6+	1.3+	1998 10 28	704	0.6+	1.1+	1999 12 08	704	0.4−	0.2−
1996 04 23	566	0.4+	0.1−	1998 10 28	704	0.2−	1.0+	1999 12 08	704	0.0	0.6−
1996 04 23	566	0.2+	0.1+	1998 10 29	704	0.3−	0.4+	1999 12 08	704	0.2+	0.7−
1996 04 23	566	0.4+	0.1−	1998 10 29	704	0.4−	0.1+	1999 12 15	704	1.4−	0.2+
1996 04 23	566	1.1−	0.7+	1998 10 29	704	0.3−	0.8+	1999 12 15	704	0.0	0.3−
1996 04 23	566	0.9−	1.1+	1998 10 29	704	0.2+	0.5+	1999 12 15	704	0.7−	0.4−
1996 04 23	566	1.0−	1.1+	1998 10 29	704	0.3−	0.0	1999 12 15	704	0.3+	0.1+
1998 09 26	704	0.2−	0.1−	1998 11 10	699	0.6+	0.2+	1999 12 31	106	0.3+	0.9+
1998 09 26	704	0.1+	0.0	1998 11 10	699	0.2−	1.0+	1999 12 31	106	0.4+	1.1+
1998 09 26	704	0.4−	0.5−	1998 11 10	699	0.5+	0.1+	1999 12 31	106	1.5+	1.4+
1998 09 26	704	0.5−	0.2+	1999 01 11	704	0.0	0.9+	2000 01 03	704	0.8+	1.7−
1998 09 26	704	0.3−	1.0+	1999 01 11	704	1.0−	0.5+	2000 01 03	704	(1.2+	4.3+)
1998 09 27	704	0.5−	0.3+	1999 01 11	704	0.5+	0.3+	2000 01 03	704	(0.7+	3.7+)
1998 09 27	704	0.0	0.0	1999 01 11	704	0.3+	0.2−				

(13339)* 1998 SF₁₂₃

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	146.67900	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.19332040	ω	307.51996	+0.78387936
<i>a</i>	2.9622219	Ω	14.39586	−0.49755571
<i>e</i>	0.1029460	<i>i</i>	10.37802	−0.37144511
<i>P</i>	5.10	<i>H</i>	13.5	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1993 10 10	691	0.0	0.2−	1998 09 27	704	0.8+	0.2−	1998 11 23	699	1.1−	0.3−
1993 10 10	691	0.2−	0.0	1998 09 27	704	1.1+	1.2+	1999 01 05	699	0.1−	0.3−
1993 10 10	691	0.2−	0.1+	1998 09 27	704	0.2−	1.2+	1999 01 05	699	0.2−	0.3+
1993 11 06	691	0.2+	0.0	1998 09 27	704	0.4+	0.4−	1999 01 05	699	0.2+	0.2+
1993 11 06	691	0.3+	0.0	1998 09 27	704	0.3+	0.3−	1999 12 03	699	0.1−	0.5+
1993 11 06	691	0.0	0.2+	1998 10 28	704	0.7−	0.4−	1999 12 03	699	0.1−	0.3−
1996 02 16	691	0.3+	0.2+	1998 10 28	704	1.9−	0.1+	1999 12 03	699	0.1−	0.2+
1996 02 16	691	0.2+	0.0	1998 10 28	704	0.7−	1.7−	1999 12 12	704	0.2+	0.9−
1996 02 16	691	0.2+	0.1+	1998 10 28	704	0.8−	0.1+	1999 12 12	704	0.2+	0.9−
1996 04 19	566	0.3−	0.2−	1998 10 28	704	(2.4−	0.1−)	1999 12 12	704	0.0	1.1−
1996 04 19	566	0.5−	0.4−	1998 10 29	704	0.5−	0.7−	1999 12 12	704	0.5+	1.0−
1996 04 19	566	(5.0−	8.3−)	1998 10 29	704	1.0−	0.4−	1999 12 15	704	0.3−	0.3−
1998 09 18	699	0.2−	0.2−	1998 10 29	704	1.1−	0.1+	1999 12 15	704	0.4−	0.2+
1998 09 18	699	1.0+	0.3−	1998 10 29	704	0.0	0.7+	1999 12 15	704	0.3+	0.4−
1998 09 18	699	1.0+	0.3−	1998 10 29	704	0.3−	0.2+	1999 12 15	704	0.6+	0.1−
1998 09 26	704	0.4+	0.4+	1998 11 10	699	0.8−	0.1−	2000 01 02	704	0.1−	0.6+
1998 09 26	704	1.2+	0.2−	1998 11 10	699	0.9+	0.4+	2000 01 02	704	0.3−	0.8+
1998 09 26	704	1.0+	0.0	1998 11 10	699	0.2−	0.0	2000 01 02	704	0.4−	0.9+
1998 09 26	704	1.6+	0.5+	1998 11 23	699	0.9−	0.4−	2000 01 02	704	0.3−	0.5+
1998 09 26	704	1.0+	0.4+	1998 11 23	699	0.3−	0.1−	2000 01 02	704	0.1−	0.3+

(13340)* 1998 SM₁₂₃ = 1993 HF₆ = 1997 EG₅₈

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33042)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	197.31934	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.24091327	ω	254.23531	+0.10346004
<i>a</i>	2.5579707	Ω	21.80047	−0.87134134
<i>e</i>	0.2388816	<i>i</i>	5.57335	−0.47964600
<i>P</i>	4.09	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1993 04 26	033	0.4−	0.3−	1998 09 26	704	0.6+	0.4−	1998 10 29	704	1.1+	1.2+
1993 04 26	033	0.1+	0.0	1998 09 26	704	0.3−	0.2+	1998 10 29	704	0.1−	0.3−
1993 04 27	033	0.1−	0.4−	1998 09 27	704	0.2−	0.3+	1998 11 23	699	0.3−	0.1−
1997 03 10	809	0.5+	1.2+	1998 09 27	704	0.3+	0.7+	1998 11 23	699	1.1−	0.1+
1997 03 10	809	0.3+	1.2+	1998 09 27	704	0.7−	1.1+	1998 11 23	699	0.1+	0.2−
1997 03 10	809	0.1−	1.1+	1998 09 27	704	0.4−	1.3+	1999 12 15	704	1.1+	0.9−
1997 03 11	809	0.5−	0.4−	1998 09 27	704	0.7−	0.7+	1999 12 15	704	0.1−	1.2+
1997 03 11	809	0.9−	0.7−	1998 10 11	699	0.6+	1.2−	1999 12 15	704	0.5−	2.0+
1997 03 11	809	0.7−	0.7−	1998 10 11	699	(2.0−	3.2+)	2000 01 02	704	0.6−	0.7−
1997 03 31	704	1.1+	0.1+	1998 10 11	699	(3.5−	4.4+)	2000 01 02	704	0.0	0.5−
1997 03 31	704	1.4+	0.9+	1998 10 28	704	0.5+	0.7+	2000 01 02	704	0.7+	0.7+
1998 09 18	699	0.1+	0.8+	1998 10 28	704	0.5+	0.2−	2000 01 04	704	0.1+	0.3−
1998 09 18	699	0.4−	0.2−	1998 10 28	704	0.4−	0.6−	2000 01 04	704	0.0	0.4−
1998 09 18	699	1.1+	0.0	1998 10 28	704	0.9−	0.4+	2000 01 04	704	0.1+	0.6−
1998 09 26	704	0.3+	0.2+	1998 10 29	704	0.9−	0.4−	2000 01 04	704	0.4−	1.1−
1998 09 26	704	0.5+	0.7−	1998 10 29	704	1.3−	1.4−				
1998 09 26	704	0.3+	0.7−	1998 10 29	704	0.4+	0.6+				

(13341)* 1998 ST₁₂₃ = 1996 EM₁₆

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33287)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	56.29805	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21731199	ω	248.65285	+0.16688718
<i>a</i>	2.7399770	Ω	191.89447	+0.95485783
<i>e</i>	0.0783753	<i>i</i>	9.53876	+0.24575435
<i>P</i>	4.54	<i>H</i>	13.6	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1993 08 16	691	0.2+	0.4−	1998 09 27	704	0.2+	1.4+	1998 11 11	699	0.2−	0.2−
1993 08 16	691	0.2+	0.8−	1998 10 10	699	0.4+	0.1+	1998 11 11	699	0.3+	0.5+
1993 08 16	691	0.1+	0.6−	1998 10 10	699	0.1+	0.9+	1998 11 11	699	0.2−	0.2+
1996 03 15	566	0.2+	0.3+	1998 10 10	699	0.2+	1.0+	1998 11 25	699	1.1−	0.4−
1996 03 15	566	0.1−	0.3+	1998 10 18	888	0.0	0.0	1998 11 25	699	0.1−	0.1+
1996 03 15	566	0.1+	0.8+	1998 10 18	888	0.1−	0.0	1998 11 25	699	0.1+	1.2−
1996 03 17	691	0.9−	0.9+	1998 10 18	888	0.3−	0.1−	1999 12 14	704	0.7−	0.6+
1996 03 17	691	1.0−	0.8+	1998 10 22	888	0.0	0.1−	1999 12 14	704	0.1+	0.2−
1996 03 17	691	1.0−	0.7+	1998 10 22	888	0.3+	0.1+	1999 12 14	704	0.6+	0.0
1996 04 20	566	0.6+	0.0	1998 10 22	888	0.2−	0.1+	1999 12 14	704	0.2+	1.9−
1996 04 20	566	0.4+	0.2+	1998 10 28	704	0.1+	0.2−	2000 01 07	699	0.1+	0.6+
1996 04 20	566	0.6+	0.1+	1998 10 28	704	0.6−	0.2+	2000 01 07	699	0.9+	0.8+
1996 04 21	566	0.0	0.9+	1998 10 28	704	0.5−	0.7−	2000 01 07	699	0.9+	0.3+
1996 04 21	566	1.3+	1.1+	1998 10 28	704	0.3+	0.2+	2000 01 08	704	0.2−	0.2−
1996 04 21	566	1.2+	1.0+	1998 10 28	704	0.5−	0.3+	2000 01 08	704	0.2−	0.1−
1998 09 26	704	0.1−	0.8+	1998 10 29	704	0.5+	0.7−	2000 01 08	704	0.0	0.2−
1998 09 26	704	0.2−	1.6+	1998 10 29	704	0.7+	0.6−	2000 01 08	704	0.1−	0.4−
1998 09 26	704	1.1−	0.2−	1998 10 29	704	(2.1+	0.3−)	2000 01 08	704	0.5−	0.4−
1998 09 26	704	0.3−	1.2+	1998 10 29	704	0.7+	0.9−	2000 01 11	704	0.2−	0.4−
1998 09 26	704	0.5+	1.5+	1998 11 10	704	0.0	0.9+	2000 01 11	704	0.6−	0.3+
1998 09 27	704	1.0−	0.2+	1998 11 10	704	0.4−	0.3+	2000 01 11	704	0.4−	0.2−
1998 09 27	704	0.4+	1.5+	1998 11 10	704	0.6−	0.1−	2000 01 11	704	0.1−	0.4−
1998 09 27	704	0.3+	0.2−	1998 11 10	704	0.3+	0.0	2000 01 11	704	0.1+	0.1+

Id. A. Gnädig (*MPC* 34929), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	356.96869		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17827784	ω	72.87526	-0.37225718	-0.91807169
<i>a</i>	3.1265914	Ω	39.84705	+0.75002850	-0.38404596
<i>e</i>	0.0244163	<i>i</i>	12.27902	+0.54670087	-0.09825000
<i>P</i>	5.53	<i>H</i>	12.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1976 10 22	381	0.3-	0.1+	1998 10 19	699	0.2+	0.4-	1999 12 15	704	1.0-	1.0-
1976 10 22	381	0.3+	1.0+	1998 10 19	699	0.1-	0.8-	1999 12 15	704	0.1-	0.6-
1979 05 19	413	1.1-	0.3+	1998 10 28	704	0.7-	0.1-	1999 12 15	704	0.3+	1.1-
1979 05 19	413	0.1+	0.2-	1998 10 28	704	0.2-	0.5+	1999 12 15	704	0.1+	0.8-
1996 03 17	566	0.3-	0.2+	1998 10 28	704	0.3+	0.4+	1999 12 16	704	0.2-	0.3-
1996 03 17	566	0.1+	0.0	1998 10 28	704	0.3+	0.9-	1999 12 16	704	0.0	0.3-
1996 03 17	566	0.2-	0.2+	1998 10 28	704	0.5-	0.1-	1999 12 16	704	0.1-	0.5-
1996 05 21	566	0.3+	0.1-	1998 10 29	704	0.4-	0.3-	1999 12 16	704	0.3+	0.2+
1996 05 21	566	0.3+	0.3-	1998 10 29	704	0.4+	0.2+	1999 12 16	704	0.0	0.4-
1996 05 21	566	0.8+	0.5+	1998 10 29	704	0.0	0.8+	1999 12 16	704	0.1+	0.2+
1998 09 26	704	1.2-	0.4+	1998 10 29	704	0.6-	0.5+	1999 12 16	704	0.1+	0.5-
1998 09 26	704	0.3+	0.5+	1998 10 29	704	0.4-	0.3+	1999 12 16	704	0.1-	0.5+
1998 09 26	704	0.7-	0.2+	1998 11 11	699	0.4+	0.2-	1999 12 16	704	0.1-	0.7-
1998 09 26	704	0.1-	0.3-	1998 11 11	699	0.1-	0.8+	1999 12 16	704	0.5-	0.2+
1998 09 26	704	0.0	0.8+	1998 11 11	699	0.8-	0.3+	1999 12 30	704	0.8-	0.4+
1998 09 27	704	0.1+	0.1-	1999 12 07	106	0.6-	0.9+	1999 12 30	704	0.5-	0.3+
1998 09 27	704	0.9+	0.6-	1999 12 07	106	0.2+	0.4+	1999 12 30	704	0.3-	0.3+
1998 09 27	704	0.4-	0.1+	1999 12 07	106	0.4+	0.7+	1999 12 30	704	0.5-	0.4+
1998 09 27	704	0.0	0.9-	1999 12 12	704	0.0	0.0	2000 01 21	704	0.4-	0.4+
1998 09 27	704	0.7+	1.1-	1999 12 12	704	0.5+	0.1-	2000 01 21	704	0.1+	0.7+
1998 10 17	699	0.4+	0.4-	1999 12 12	704	0.5+	0.1-	2000 01 21	704	0.0	0.4+
1998 10 17	699	0.5+	0.4-	1999 12 12	704	0.6+	0.4+	2000 01 21	704	0.2+	0.0
1998 10 17	699	0.5+	0.2-	1999 12 12	704	0.8+	0.7+				
1998 10 19	699	0.9+	0.5+	1999 12 15	704	0.8+	0.8-				

(13343)* 1998 SY₁₂₇ = 1989 VG₃

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Gnädig (*MPC* 34929), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	66.45829		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21388929	ω	268.74015	+0.43111455	-0.90134374
<i>a</i>	2.7691300	Ω	155.58904	+0.86261327	+0.39823797
<i>e</i>	0.0554946	<i>i</i>	5.75888	+0.26464807	+0.17025267
<i>P</i>	4.61	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 11 03	809	0.7-	0.6+	1998 10 10	699	0.1+	0.8-	1998 11 10	704	0.1-	0.5+
1989 11 03	809	0.4-	1.9+	1998 10 10	699	0.1+	0.1+	1999 11 17	704	1.5+	0.1+
1989 11 03	809	0.2-	1.6+	1998 10 10	699	1.3-	0.4+	1999 11 17	704	0.4-	0.4-
1991 01 24	675	0.6+	0.8+	1998 10 17	699	0.4-	0.4+	1999 11 17	704	0.8+	0.8+
1991 01 24	675	(3.1+	1.2-)	1998 10 17	699	1.0+	0.5+	1999 11 17	704	0.3+	1.4+
1992 06 05	413	0.9-	0.2-	1998 10 17	699	0.7+	0.4+	1999 12 31	699	0.5-	0.3-
1992 06 05	413	0.7+	0.3+	1998 10 19	699	0.5+	0.3-	1999 12 31	699	0.4+	0.1+
1996 03 26	691	0.0	0.0	1998 10 19	699	0.5+	0.4-	1999 12 31	699	0.4+	0.4-
1996 03 26	691	0.2+	0.3-	1998 10 19	699	0.3+	0.2-	2000 01 05	704	0.3-	0.1+
1996 03 26	691	0.1+	0.3-	1998 10 28	704	0.1-	0.4-	2000 01 05	704	0.5-	0.9-
1998 09 24	699	0.4-	0.2-	1998 10 28	704	0.9+	0.7-	2000 01 05	704	0.0	0.5-
1998 09 24	699	0.5+	0.5+	1998 10 28	704	1.2+	0.6-	2000 01 05	704	0.6-	0.7-
1998 09 24	699	0.1-	0.8+	1998 10 28	704	0.5-	0.9-	2000 01 05	704	0.3-	0.5-
1998 09 26	704	1.5-	1.2-	1998 10 28	704	0.6-	0.4-	2000 01 07	704	0.2-	0.3+
1998 09 26	704	0.3+	0.6-	1998 10 29	704	1.6+	1.3-	2000 01 07	704	0.1+	0.4-
1998 09 26	704	0.1+	1.1-	1998 10 29	704	0.3+	0.0	2000 01 07	704	0.2-	0.2+
1998 09 26	704	0.0	0.4-	1998 10 29	704	0.0	1.3+	2000 01 07	704	0.3-	0.2-
1998 09 27	704	0.4+	0.5-	1998 10 29	704	0.3+	1.3-	2000 01 07	704	0.4+	0.7-
1998 09 27	704	0.2-	0.2+	1998 10 29	704	1.1+	0.7-	2000 01 08	106	0.8-	0.0

1998 09 27	704	0.7-	0.2-	1998 11 10	704	0.7-	0.2+	2000 01 08	106	0.1-	0.2-
1998 09 27	704	0.1-	0.7+	1998 11 10	704	(0.3+	2.6+)	2000 01 08	106	0.0	0.1+
1998 09 27	704	1.0-	0.3+	1998 11 10	704	0.7-	1.6+				

(13344)* 1998 SD₁₃₀ = 1993 RB₅ = 1996 FW

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 33290)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	155.13350		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.20424916	ω	131.75767	+0.80707674	+0.59041140
<i>a</i>	2.8555900	Ω	192.06082	-0.55046248	+0.74843081
<i>e</i>	0.0564018	<i>i</i>	1.76698	-0.21358416	+0.30210213
<i>P</i>	4.83	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1993 09 15	809	(2.5+	2.4+)	1998 09 26	704	0.3+	0.3-	1998 11 10	704	1.2-	0.0
1993 09 15	809	(1.8+	2.3+)	1998 09 26	704	0.7+	1.3-	1998 11 10	704	0.8-	0.6+
1993 09 15	809	0.0	1.9+	1998 09 26	704	0.5+	1.2-	1998 11 10	704	0.0	0.5+
1993 09 16	809	(4.5+	0.7-)	1998 09 26	704	0.1-	0.7-	1998 11 10	699	0.5-	0.8+
1993 09 16	809	(4.0+	0.6-)	1998 09 27	704	0.3+	1.0-	1998 11 10	699	0.3-	0.1-
1993 09 16	809	(2.8+	1.0-)	1998 09 27	704	0.7+	1.2+	1998 11 10	699	1.4+	0.1-
1993 09 17	809	0.2-	0.3-	1998 09 27	704	0.2-	0.2-	1998 11 11	704	0.0	0.8-
1993 09 17	809	1.3-	0.3+	1998 09 27	704	0.8-	1.1-	1998 11 11	704	0.8-	0.6-
1993 09 17	809	0.8-	0.1-	1998 09 27	704	0.5-	0.1-	1998 11 11	704	0.3+	0.1-
1993 09 18	809	0.1+	0.1-	1998 10 11	699	0.1+	0.2+	1998 11 11	704	0.7+	0.3-
1993 09 18	809	0.5-	0.5-	1998 10 11	699	0.1-	0.1-	1998 11 11	704	0.3+	0.3-
1993 09 18	809	0.7-	0.2-	1998 10 11	699	0.0	0.6-	1999 12 07	704	0.2+	0.6-
1993 09 18	675	0.2+	0.1-	1998 10 17	699	0.2+	0.3+	1999 12 07	704	0.3+	0.0
1993 09 18	675	0.5-	0.8+	1998 10 17	699	0.1+	1.0+	1999 12 07	704	0.1-	0.9-
1993 09 22	675	0.5+	0.0	1998 10 17	699	0.0	1.5+	1999 12 07	704	0.5-	0.2-
1993 09 22	675	0.4+	0.3-	1998 10 28	704	0.4+	0.3+	1999 12 07	704	0.2-	0.2+
1993 09 23	809	(2.2+	0.2+)	1998 10 28	704	1.1+	0.0	2000 01 05	704	0.1-	0.1-
1993 09 23	809	1.9+	0.5+	1998 10 28	704	0.4-	0.1-	2000 01 05	704	0.3-	0.1-
1993 09 23	809	0.7+	1.1-	1998 10 28	704	0.7+	0.4-	2000 01 05	704	0.2+	0.3+
1996 03 16	566	0.3-	0.3-	1998 10 28	704	1.5+	0.1-	2000 01 05	704	0.2+	0.5+
1996 03 16	566	0.7+	0.7-	1998 10 29	704	0.2-	0.1-	2000 01 05	704	0.4-	0.3+
1996 03 16	566	0.7+	0.9-	1998 10 29	704	0.2-	0.4+	2000 01 14	049	0.4+	0.8+
1996 03 20	566	0.5-	0.7-	1998 10 29	704	0.5-	0.5-	2000 01 15	049	0.3+	0.6+
1996 03 20	566	1.3-	0.6-	1998 10 29	704	0.1-	0.2-	2000 01 15	049	0.3+	0.6+
1996 03 20	566	0.7-	0.6-	1998 10 29	704	1.0-	0.4+				
1998 09 26	704	0.5+	0.9-	1998 11 10	704	0.6-	0.4-				

(13345)* 1998 SW₁₃₂ = 1991 LD₄ = 1996 HU₁₉

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 33292)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	78.01165		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18323684	ω	184.68839	+0.73893250	-0.66614263
<i>a</i>	3.0699232	Ω	217.72954	+0.62343086	+0.73291139
<i>e</i>	0.1076638	<i>i</i>	9.51507	+0.25556352	+0.13818425
<i>P</i>	5.38	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1991 06 06	809	1.1+	1.4+	1998 09 27	704	(2.2+ 2.2-)	1999 10 20	704	1.7+	1.1-	
1991 06 06	809	0.5+	1.5+	1998 09 27	704	1.3+	0.5-	1999 10 20	704	1.1+	0.9-
1991 06 06	809	1.2-	0.6+	1998 10 11	699	1.1-	0.2+	1999 11 08	703	0.0	0.4-
1991 06 08	809	0.4-	1.9+	1998 10 11	699	0.8-	0.1-	1999 11 08	703	0.0	0.2-
1991 06 08	809	0.3-	1.6+	1998 10 11	699	1.4-	0.1+	1999 11 08	703	0.6+	0.3-
1991 06 08	809	(1.4- 2.2+)		1998 10 17	699	0.2+	0.6+	1999 11 08	703	0.2+	0.4+
1996 04 18	809	1.0+	0.4+	1998 10 17	699	0.3+	0.5+	1999 12 05	704	0.3+	0.4+
1996 04 18	809	1.0+	0.0	1998 10 17	699	0.1+	0.4+	1999 12 05	704	0.1-	0.7-
1996 04 18	809	1.2+	0.4-	1998 10 28	704	1.4-	0.5+	1999 12 05	704	0.5-	0.3+
1996 04 20	809	(0.1- 4.0-)		1998 10 28	704	1.7-	1.0+	1999 12 05	704	0.6+	0.1-

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M.P.C. 37581

1996 04 20	809	(0.8– 3.1–)	1998 10 28	704	1.9– 0.8+	1999 12 14	704	1.0+ 0.7+
1996 04 20	809	(0.6– 3.9–)	1998 10 28	704	1.2– 1.7+	1999 12 14	704	0.1+ 0.1+
1996 05 19	809	1.4+ 0.9–	1998 10 29	704	0.1– 0.1+	1999 12 14	704	1.1+ 1.0–
1996 05 19	809	0.2– 1.8–	1998 10 29	704	0.1– 0.4+	1999 12 14	704	0.2+ 0.5–
1996 05 19	809	0.8+ 0.7–	1998 10 29	704	0.7+ 0.5+	1999 12 14	704	0.3– 1.4–
1996 05 19	566	0.7– 0.4–	1998 10 29	704	0.6+ 0.7–	1999 12 16	699	0.1+ 0.2+
1996 05 19	566	0.7– 0.4–	1998 10 29	704	0.5+ 0.4–	1999 12 16	699	0.2– 0.3–
1996 05 19	566	1.5– 0.9–	1998 11 10	704	1.7– 1.8+	1999 12 16	699	0.2– 0.1+
1996 05 22	809	1.1– 0.7+	1998 11 10	704	0.2– 0.4–	1999 12 31	106	0.1– 0.2+
1996 05 22	809	0.3– 0.3–	1998 11 10	704	0.5– 0.4–	1999 12 31	106	0.0 0.4+
1996 05 22	809	0.6– 0.4–	1998 11 10	704	0.1– 0.4–	1999 12 31	106	0.3+ 0.7+
1998 09 14	699	0.5+ 1.1+	1998 11 10	704	0.2– 0.1–	2000 01 04	699	0.8+ 0.7+
1998 09 14	699	0.3– 0.9+	1998 11 11	704	0.7– 0.2+	2000 01 04	699	0.1+ 0.3+
1998 09 14	699	0.3– 1.1+	1998 11 11	704	0.9– 0.2–	2000 01 04	699	0.0 0.5+
1998 09 26	704	0.9– 0.9+	1998 11 11	704	0.6+ 0.6–	2000 01 08	704	1.0– 0.0
1998 09 26	704	0.5+ 0.1–	1998 11 11	704	0.7+ 0.4–	2000 01 08	704	0.8– 0.4–
1998 09 26	704	0.3+ 1.4–	1998 11 11	704	0.7+ 1.2–	2000 01 08	704	0.9– 0.1–
1998 09 26	704	0.7+ 0.5–	1998 11 23	699	0.3+ 0.2–	2000 01 08	704	0.5– 0.8+
1998 09 26	704	1.0+ 1.3–	1998 11 23	699	0.2– 0.0	2000 01 08	704	0.6– 0.6+
1998 09 26	704	1.3+ 1.2–	1998 11 23	699	0.1+ 0.2–	2000 01 11	704	0.4– 0.5–
1998 09 26	704	0.8+ 1.1–	1999 01 11	704	2.0+ 0.7–	2000 01 11	704	0.9– 0.7+
1998 09 26	704	1.2+ 0.9–	1999 01 11	704	(1.2– 2.1+)	2000 01 11	704	0.2+ 0.8+
1998 09 26	704	0.3+ 0.4–	1999 01 11	704	0.1+ 0.2+	2000 01 11	704	0.6– 1.1+
1998 09 27	704	1.5+ 0.8+	1999 01 11	704	(3.9– 1.0–)	2000 01 11	704	0.5– 1.1+
1998 09 27	704	(2.2+ 0.5+)	1999 10 20	704	1.1+ 0.4–			
1998 09 27	704	(2.8+ 0.8+)	1999 10 20	704	0.7+ 0.4–			

(13346)* 1998 SP₁₃₃ = 1994 PR₁₁ = 1997 EW₄₈

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 33292), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26755991	ω	44.03973	+0.06217099	+0.99789949		
<i>a</i>	2.3851848	Ω	229.53340	–0.92219651	+0.05046018		
<i>e</i>	0.1842116	<i>i</i>	1.37110	–0.38169145	+0.04062495		
<i>P</i>	3.68	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1994 08 10	809	(3.0– 1.7–)	1998 09 26	704	0.4+ 1.9+	1998 11 10	704	0.3– 0.8+
1994 08 10	809	(3.5– 2.1–)	1998 09 26	704	0.3– 1.0+	1998 11 10	704	0.6– 0.2+
1994 08 10	809	(4.2– 2.3–)	1998 09 26	704	0.0 1.0+	1999 01 20	691	0.3– 0.7–
1994 08 11	809	(0.5– 2.8+)	1998 09 26	704	0.1+ 1.5+	1999 01 20	691	0.2– 0.9–
1994 08 11	809	(0.3– 3.0+)	1998 09 27	704	0.1+ 0.4–	1999 01 20	691	0.7– 0.9–
1994 08 11	809	(0.9– 3.3+)	1998 09 27	704	1.0– 0.5–	1999 12 07	704	0.9+ 0.1–
1994 09 03	809	0.2– 0.6+	1998 09 27	704	0.3+ 0.5–	1999 12 07	704	0.4+ 0.4+
1994 09 03	809	0.2+ 0.4+	1998 09 27	704	(0.2– 2.8–)	1999 12 07	704	0.8– 0.6+
1994 09 03	809	0.5– 0.8+	1998 10 10	699	0.3+ 0.2–	1999 12 07	704	0.2+ 0.8–
1997 03 11	809	(2.0+ 4.9+)	1998 10 10	699	0.7+ 0.4–	1999 12 08	704	(2.5+ 0.3+)
1997 03 11	809	(2.4+ 5.5+)	1998 10 10	699	0.8+ 0.7+	1999 12 08	704	1.1+ 0.1–
1997 03 11	809	(1.8+ 5.2+)	1998 10 17	699	0.8+ 0.0	1999 12 08	704	0.4– 0.0
1997 03 12	809	(2.0+ 4.8+)	1998 10 17	699	0.3+ 0.2+	1999 12 08	704	0.6+ 0.9+
1997 03 12	809	(2.3+ 4.6+)	1998 10 17	699	0.3+ 0.1–	1999 12 08	704	0.4– 0.5+
1997 03 12	809	(1.9+ 4.9+)	1998 10 28	704	(0.7+ 3.5–)	2000 01 05	704	0.4+ 0.5+
1997 04 28	691	0.3– 0.5+	1998 10 28	704	0.6+ 1.2–	2000 01 05	704	0.6– 0.4–
1997 04 28	691	0.3– 0.6+	1998 10 28	704	1.2+ 1.4–	2000 01 05	704	(2.2– 0.8–)
1997 04 28	691	0.0 0.5+	1998 10 28	704	1.5– 0.2–	2000 01 07	704	0.2+ 0.1–
1997 05 09	691	0.2+ 0.0	1998 10 29	704	0.4– 0.7–	2000 01 07	704	0.3– 0.1–
1997 05 09	691	0.3+ 0.2–	1998 10 29	704	1.2+ 0.6+	2000 01 07	704	0.1+ 0.2+
1997 05 09	691	0.3+ 0.2–	1998 10 29	704	1.6– 0.1–	2000 01 07	704	0.3+ 0.7+
1998 09 14	699	0.1+ 0.5–	1998 10 29	704	(0.1+ 2.1–)	2000 01 07	704	0.2+ 0.6+
1998 09 14	699	0.5+ 0.7–	1998 10 29	704	0.1– 0.4+	2000 01 16	691	0.3– 0.0
1998 09 14	699	0.6– 0.4–	1998 11 10	704	0.2– 0.4–	2000 01 16	691	0.3– 0.3–
1998 09 26	704	0.7– 0.3+	1998 11 10	704	(2.3– 0.4+)	2000 01 16	691	0.3– 0.4–

(13347)* 1998 SF₁₃₆ = 4304 T-2 = 1976 JH₂ = 1994 NT₉

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33294)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.27717073	ω	184.78467	+0.09258065	+0.99369806		
<i>a</i>	2.3297240	Ω	90.53701	–0.91143217	+0.11012597		
<i>e</i>	0.2322212	<i>i</i>	3.62310	–0.40089927	–0.02089087		
<i>P</i>	3.56	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 09 29	675	1.1– 0.7–	1998 09 26	704	0.1– 0.0	1999 12 05	691	0.0 0.3+
1973 09 29	675	0.9– 2.1–	1998 09 26	704	0.6– 0.1–	1999 12 05	691	0.0 0.4+
1973 09 30	675	1.2+ 0.4+	1998 09 26	704	0.4– 0.5–	1999 12 05	691	0.0 0.4+
1973 09 30	675	0.2+ 0.6–	1998 09 26	704	0.4– 0.1+	1999 12 07	691	0.8– 0.4+
1973 10 04	675	1.6+ 1.1–	1998 09 27	704	0.6+ 0.2–	1999 12 07	691	1.0– 0.6+
1973 10 04	675	0.8+ 0.2–	1998 09 27	704	0.4+ 1.1+	1999 12 07	691	0.9– 0.8+
1973 10 05	675	0.3– 0.2+	1998 09 27	704	1.4+ 0.4+	1999 12 12	691	0.9+ 0.1+
1973 10 05	675	0.0 0.5+	1998 09 27	704	0.2– 1.2+	1999 12 12	691	0.8+ 0.3+
1976 05 02	095	0.1+ 0.3–	1998 09 27	704	0.6+ 0.5–	1999 12 12	691	0.8+ 0.5+
1993 01 25	691	0.1– 0.3+	1998 10 19	699	0.1+ 0.3–	1999 12 14	691	0.2+ 0.3+
1993 01 25	691	0.1+ 0.6+	1998 10 19	699	0.2+ 0.3+	1999 12 14	691	0.3+ 0.1+
1993 01 25	691	0.5– 0.5+	1998 10 19	699	0.1– 0.8–	1999 12 14	691	0.1– 0.2+
1994 07 08	809	0.1+ 1.4+	1998 10 28	704	0.1– 1.8+	1999 12 15	691	0.7+ 0.4+
1994 07 08	809	0.4+ 1.5+	1998 10 28	704	0.9– 0.4+	1999 12 15	691	0.5+ 0.4+
1994 07 08	809	0.1+ 1.3+	1998 10 28	704	1.1+ 1.0–	1999 12 15	691	0.3+ 0.3+
1994 07 09	809	(0.1– 2.4+)	1998 10 28	704	0.0 1.3+	1999 12 17	691	0.1+ 0.3+
1994 07 09	809	(0.4– 2.6+)	1998 10 28	704	0.4– 0.9+	1999 12 17	691	0.0 0.3+
1994 07 09	809	1.0– 1.9+	1998 10 29	704	0.7– 0.2+	1999 12 17	691	0.3+ 0.4+
1998 09 24	699	0.2– 0.4–	1998 10 29	704	1.0– 0.5–	2000 01 04	704	0.4– 0.2+
1998 09 24	699	0.0 0.4–	1998 10 29	704	1.4+ 0.4–	2000 01 04	704	0.2– 0.5+
1998 09 24	699	0.6– 0.4+	1998 10 29	704	0.3– 1.6+	2000 01 04	704	0.1– 0.2–
1998 09 26	704	0.6– 0.3–	1998 10 29	704	0.6– 0.2–	2000 01 04	704	0.0 0.1+

(13348)* 1998 SF₁₃₈ = 1998 SO₁₄₃ = 1998 TF₃₁ = 1979 FF₃ = 1986 PR

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33385), A. Doppler (*MPC* 33708)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17578847	ω	233.40267	–0.06472004	+0.99783473		
<i>a</i>	3.1560396	Ω	32.89237	–0.90853316	–0.05406497		
<i>e</i>	0.1389570	<i>i</i>	1.23580	–0.41276969	–0.03745451		
<i>P</i>	5.61	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

Residuals in seconds of arc											
1979 03 31	095	0.4–	0.2–	1998 09 27	704	0.4+	0.0	1998 11 11	704	1.0+	0.6+
1986 08 01	675(12.3+	0.8+)		1998 09 27	704	0.8–	1.8+	1999 01 20	691	0.4–	0.7–
1986 08 01	675(11.6+	0.7+)		1998 09 27	704	0.5–	0.9+	1999 01 20	691	0.4–	0.7–
1986 08 02	675(31.8–	0.4+)	1998 09 27	704	0.9–	1.0+		1999 01 20	691	0.6–	1.0–
1986 08 02	675(28.8–	1.7+)	1998 10 10	699	0.7+	0.2+		1999 11 16	704	0.0	1.1+
1995 02 04	560	0.4+	0.3+	1998 10 10	699	0.4+	1.0+	1999 11 16	704	0.4+	0.2+
1995 02 04	560	(2.2+	0)	1998 10 10	699	0.3+	0.2–	1999 11 16	704	0.1–	0.1–
1995 02 04	560	1.4+	0.2–	1998 10 17	699	0.3+	0.4+	1999 11 16	704	1.2+	0.1–
1996 03 16	691	0.6–	0.4+	1998 10 17	699	0.3+	0.1–	1999 11 16	704	0.0	0.2+
1996 03 16	691	0.5–	0.2+	1998 10 17	699	0.3+	0.0	1999 12 07	106	0.0	1.0+
1996 03 16	691	0.5–	0.3+	1998 10 28	704	0.9–	0.1–	1999 12 07	106	0.4–	0.7+
1996 05 13	566	0.9+	0.3+	1998 10 28	704	0.4–	0.8–	1999 12 07	106	0.1–	0.9+
1996 05 13	566	1.0+	0.5+	1998 10 28	704	1.2–	0.8–	1999 12 07	704	0.2–	0.4–
1996 05 13	566	0.6+	0.4+	1998 10 28	704	1.6–	0.8–	1999 12 07	704	0.0	0.1+
1998 09 16	411	0.2–	0.0	1998 10 28	704	(2.2–	1.6+)	1999 12 07	704	0.1+	0.1+
1998 09 16	411	0.1+	0.2+	1998 10 29	704	0.6+	0.3–	1999 12 07	704	0.2+	0.6+
1998 09 18	809	(2.7+	1.6+)	1998 10 29	704	0.3+	0.3–	2000 01 03	704	0.5+	0.2–

1998 09 18	809	(1.1+ 2.3+)	1998 10 29	704	0.0	0.2-	2000 01 03	704	0.8+	0.0
1998 09 18	809	1.3+ 2.0+	1998 10 29	704	0.5-	0.7-	2000 01 03	704	0.7-	0.3-
1998 09 20	809	(2.6+ 2.5+)	1998 10 29	704	1.0-	1.0-	2000 01 03	704	0.7-	1.2-
1998 09 20	809	2.0+ 1.5+	1998 11 10	704	0.2-	0.2-	2000 01 03	704	0.6-	1.2-
1998 09 20	809	(1.2+ 2.2+)	1998 11 10	704	0.6-	0.2+	2000 01 04	704	0.4-	0.4-
1998 09 26	704	0.0 0.3-	1998 11 10	704	1.1+	0.2-	2000 01 04	704	0.4-	0.1+
1998 09 26	704	0.6+ 0.4+	1998 11 10	704	0.1-	0.6-	2000 01 04	704	0.4-	0.6-
1998 09 26	704	0.4+ 0.6-	1998 11 10	704	0.2+	0.4-	2000 01 04	704	0.3-	0.4-
1998 09 26	704	0.0 0.7-	1998 11 11	704	0.0	0.7+	2000 01 04	704	0.2-	0.1-
1998 09 26	704	0.4- 0.7-	1998 11 11	704	0.3+	0.7+				
1998 09 27	704	0.5+ 0.4+	1998 11 11	704	0.5-	0.7+				

(13349)* 1998 SD₁₃₉ = 1993 PG₇ = 1997 MY₁₀

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33295)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	192.89522		(2000.0)		P		Q	
<i>n</i>	0.21662579	ω	327.49622		+0.45569680		+0.88917039	
<i>a</i>	2.7457603	Ω	329.55489		−0.79821107		+0.38759522	
<i>e</i>	0.0394644	<i>i</i>	4.68986		−0.39395368		+0.24319943	
<i>P</i>	4.55	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc								
1993 08 15	010	0.2+ 0.7−	1998 09 26	704	1.0−	0.4+	1998 11 11	704 (2.2+ 1.6+)
1993 08 15	010	(0.5− 2.0−)	1998 09 26	704	0.1−	0.4−	1998 11 11	704 1.3+ 0.2−
1993 08 15	010	(1.0− 3.0−)	1998 09 26	704	0.3−	0.3−	1998 11 11	704 1.2+ 0.8−
1993 08 17	010	(1.7− 2.3−)	1998 09 27	704	0.4+	0.7−	1998 11 11	704 0.4− 0.6+
1993 09 18	010	0.4− 0.8+	1998 09 27	704	0.2+	0.1+	1999 12 15	703 0.8+ 0.2+
1993 09 18	010	0.9+ 1.8+	1998 09 27	704	0.8−	0.1+	1999 12 15	703 0.4+ 0.6+
1993 09 18	010	(0.4− 2.5+)	1998 09 27	704	0.3+	0.8−	1999 12 15	704 0.7+ 0.7−
1996 03 20	566	0.5− 0.5+	1998 09 27	704	1.7−	0.6−	1999 12 15	703 0.3+ 0.9+
1996 03 20	566	0.6− 0.5+	1998 10 28	704	0.5−	1.0+	1999 12 15	704 0.1− 0.9+
1996 03 20	566	0.7− 0.3+	1998 10 28	704	0.2−	0.8+	1999 12 15	703 0.0 0.5+
1997 06 28	704	0.5+ 0.2+	1998 10 28	704	0.3−	0.5+	1999 12 15	704 0.3− 0.5+
1997 06 28	704	0.1− 0.6+	1998 10 28	704	0.7−	0.2+	2000 01 03	704 0.3+ 1.2+
1997 06 28	704	0.6+ 0.2+	1998 10 29	704	(1.6+ 2.1−)		2000 01 03	704 0.5+ 0.2+
1997 06 29	704	0.6− 1.0+	1998 10 29	704	(0.6− 2.3−)		2000 01 03	704 0.1+ 0.2+
1997 06 29	704	0.4+ 0.4+	1998 10 29	704	(0.3+ 3.5−)		2000 01 03	704 0.7+ 0.5−
1997 06 29	704	0.0 0.4+	1998 10 29	704	(0.5+ 2.6−)		2000 01 04	704 0.6+ 2.0−
1997 06 29	704	0.0 0.5−	1998 10 29	704	(0.5− 3.6−)		2000 01 04	704 0.9− 0.7+
1997 06 29	704	0.2+ 0.1+	1998 11 10	704	0.1+ 0.3−		2000 01 04	704 0.5+ 1.0+
1997 06 29	704	0.0 0.5+	1998 11 10	704	0.2+ 0.2+		2000 01 04	704 0.3− 1.0+
1997 06 29	704	1.6+ 1.1+	1998 11 10	704	0.6+ 0.5+		2000 01 05	699 0.9+ 0.7+
1997 06 29	704	1.0− 1.0+	1998 11 10	704	0.6− 0.5−		2000 01 05	699 0.4+ 0.6+
1997 06 29	704	1.9− 1.1+	1998 11 11	704	0.1− 0.3+		2000 01 05	699 0.6+ 0.1−

(13350)* 1998 ST₁₄₄ = 1981 UT₂₂ = 1992 SO₂₅

Discovered 1998 Sept. 20 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 33297)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	77.83330		(2000.0)		P		Q				
<i>n</i>	0.17192789	ω	197.30440		+0.79356514		−0.60594786				
<i>a</i>	3.2031098	Ω	200.30068		+0.57549513		+0.77704190				
<i>e</i>	0.0742848	<i>i</i>	9.20694		+0.19763532		+0.17039096				
<i>P</i>	5.73	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1981 10 24	675	0.3+	0.3+	1998 10 10	699	0.1+	0.3−	1999 10 10	704	0.4−	0.8+
1981 10 25	675	0.3+	0.4+	1998 11 10	704	0.0	0.1−	1999 10 20	704	0.3−	0.3+
1981 10 26	675	0.8−	0.0	1998 11 10	704	0.2+	0.6−	1999 10 20	704	0.4+	1.1−
1992 09 30	675	0.6+	0.7−	1998 11 10	704	0.2−	1.1−	1999 10 20	704	0.2+	0.4−
1992 09 30	675	0.7+	1.5−	1998 11 10	704	0.4−	1.2−	1999 10 20	704	1.0+	0.3−
1992 10 03	675	0.2+	0.8−	1998 11 11	704	1.2+	0.6+	1999 12 30	106	0.6+	0.3+

1992 10 03	675	0.4- 0.8-	1998 11 11	704	0.7+ 1.0-	1999 12 31	106	0.5+ 0.3-	
1998 09 14	699	0.5+ 0.3+	1998 11 11	704	(3.0+ 0.3-)	2000 01 07	704	0.4+ 0.4-	
1998 09 14	699	0.4+ 0.8+	1998 11 11	704	1.1+ 0.2-	2000 01 07	704	0.1- 0.4+	
1998 09 14	699	1.0- 0.1-	1998 11 11	704	1.4+ 1.1-	2000 01 07	704	0.1- 0.1-	
1998 09 20	809	(1.7+ 2.8+)	1998 11 14	699	0.2+ 0.2+	2000 01 07	704	0.4- 0.6-	
1998 09 20	809	(0.3+ 2.3+)	1998 11 14	699	0.9- 0.6+	2000 01 07	704	0.2+ 0.4-	
1998 09 20	809	(0.0 2.3+)	1998 11 14	699	0.2- 0.6+	2000 01 11	704	0.0 0.4-	
1998 09 21	809	0.4+ 1.6+	1998 11 23	699	0.1- 1.3+	2000 01 11	704	0.4- 0.1-	
1998 09 21	809	0.9- 0.7+	1998 11 23	699	0.7- 0.3+	2000 01 11	704	0.1- 0.3+	
1998 09 21	809	1.0- 1.6+	1998 11 23	699	0.1- 0.0	2000 01 11	704	1.0- 0.3+	
1998 10 10	699	0.4- 0.9+	1999 10 10	704	1.0- 0.1+				
1998 10 10	699	0.9- 0.2-	1999 10 10	704	0.2+ 0.5+				

(13351)* 1998 SQ₁₄₅ = 1963 GB = 1981 TR₄ = 1991 RT₁₃ = 1993 AF = 1997 JL₁₈

Discovered 1998 Sept. 20 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 33298, *MPC* 34223, *MPC* 34536), A. Milani (*MPC* 34223)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	311.78151			(2000.0)		P		Q			
<i>n</i>	0.29214268		ω	17.42895		−0.78095122		+0.62328813			
<i>a</i>	2.2494312		Ω	201.28503		−0.58547697		−0.75301124			
<i>e</i>	0.1207566		<i>i</i>	6.37987		−0.21755898		−0.21091698			
<i>P</i>	3.37		<i>H</i>	13.2		<i>G</i>	0.15		<i>U</i>	1	
Residuals in seconds of arc											
1963 04 15	760	(2.1− 3.0+)	X	1998 10 10	699	0.1+	0.0	1999 11 17	704	0.0	0.6+
1981 10 04	688	0.9+ 1.6+		1998 10 10	699	0.2+	1.5+	1999 11 17	704	1.8+	0.4−
1981 10 04	688	1.7− 1.3−		1998 10 28	704	0.0	0.1+	1999 11 17	704	0.8+	0.5+
1991 09 13	675	1.3+ 1.1−		1998 10 28	704	0.4−	0.3−	1999 11 19	699	1.0−	0.1+
1991 09 13	675	0.3+ 0.9−		1998 10 28	704	0.1−	0.2+	1999 11 19	699	0.2−	0.2+
1991 09 15	675	0.3+ 0.6−		1998 10 28	704	0.1+	0.3+	1999 11 19	699	0.2−	0.7−
1991 09 15	675	0.3− 0.2−		1998 10 29	704	0.3−	0.0	1999 12 14	704	0.7−	0.5−
1993 01 13	400	(3.1− 2.3+)		1998 10 29	704	0.3−	1.2+	1999 12 14	704	0.9−	0.7−
1993 01 14	400	1.2+ 1.4+		1998 10 29	704	0.7−	0.8−	1999 12 14	704	0.6−	1.0−
1993 01 14	400	(5.3+ 1.5−)		1998 10 29	704	0.3+	0.7+	1999 12 14	704	0.1−	0.6−
1997 05 03	809	0.4+ 0.1−		1998 10 29	704	0.1−	0.6+	1999 12 14	704	0.2−	0.7−
1997 05 03	809	0.0 0.2+		1998 11 10	704	0.5−	0.1+	2000 01 05	704	0.2−	0.2+
1997 05 03	809	0.4− 0.2+		1998 11 10	704	(0.3+ 2.1−)		2000 01 05	704	1.2−	1.0−
1997 05 04	809	0.0 1.2+		1998 11 10	704	0.9−	0.6+	2000 01 05	704	0.9−	0.9+
1997 05 04	809	0.2− 1.3+		1998 11 10	704	1.3−	0.6+	2000 01 05	704	0.0	0.8+
1997 05 04	809	0.6− 1.6+		1998 11 11	704	0.2+	0.6+	2000 01 07	106	0.7+	0.1+
1997 08 03	566	0.6+ 1.0−		1998 11 11	704	0.1+	0.1+	2000 01 07	106	0.7+	0.2+
1997 08 03	566	0.4+ 0.3−		1998 11 11	704	1.0+	0.3−	2000 01 07	106	0.4+	0.3+
1997 08 03	566	0.7+ 0.1−		1998 11 11	704	0.8+	0.5−	2000 01 09	704	0.4−	0.6−
1998 09 20	809	(1.5+ 2.7+)		1998 11 11	704	0.7+	0.6−	2000 01 09	704	0.4−	0.1−
1998 09 20	809	(0.6+ 3.2+)		1999 01 11	704	1.6−	0.3−	2000 01 09	704	0.6−	0.9−
1998 09 20	809	(0.0 2.9+)		1999 01 11	704	0.8−	0.9+	2000 01 11	699	0.6+	0.3+
1998 09 21	809	(1.9+ 3.8+)		1999 01 11	704	1.2−	0.6+	2000 01 11	699	0.6+	0.1−
1998 09 21	809	(1.8+ 3.6+)		1999 01 11	704	(0.3+ 2.7+)		2000 01 11	699	0.6+	0.1+
1998 09 21	809	(1.6+ 3.6+)		1999 11 17	704	0.9+	0.3−				
1998 10 10	699	1.5+ 0.4+		1999 11 17	704	0.7−	0.3+				

(13352)* 1998 SZ₁₆₃ = 5004 T-3

Discovered 1998 Sept. 18 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPC* 33301)

2000 JAN. 24

M.P.C. 37583

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	4.82459		(2000.0)		P		Q				
<i>n</i>	0.23701271	ω	101.56408		-0.89672170		-0.39649628				
<i>a</i>	2.5859589	Ω	55.37464		+0.25144833		-0.82207565				
<i>e</i>	0.1109604	<i>i</i>	13.82789		+0.36423060		-0.40863470				
<i>P</i>	4.16	<i>H</i>	13.2		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1977 10 11	675	1.7+	0.2-	1998 11 10	704	1.0-	0.3-	1999 01 14	691	0.3+	0.0
1977 10 11	675	2.2+	0.5-	1998 11 10	704	0.3+	0.6-	1999 01 14	691	0.4+	0.2+
1977 10 12	675	0.3+	0.7-	1998 11 10	704	0.8-	0.6-	1999 01 14	691	0.7+	0.5+
1977 10 12	675	0.5+	0.8-	1998 11 11	704	1.7-	1.4+	1999 11 11	699	0.2+	0.2+
1977 10 16	675	0.4-	2.1-	1998 11 11	704	1.0-	1.3+	1999 11 11	699	0.2-	0.4+
1977 10 16	675	0.4-	2.3-	1998 11 11	704	0.6-	0.4+	1999 11 11	699	0.2-	0.7-
1992 05 04	691	0.0	0.6-	1998 11 11	704	0.4-	0.4+	2000 01 01	106	0.9-	0.3-
1992 05 04	691	0.2-	0.6-	1998 11 11	704	0.3-	0.1+	2000 01 01	106	0.0	0.0
1992 05 04	691	0.0	0.1+	1998 11 15	566	0.4+	0.3-	2000 01 01	106	0.0	0.4-
1998 09 18	809	1.9+	1.2+	1998 11 15	566	0.0	0.1-	2000 01 02	104	0.2+	1.0-
1998 09 18	809	0.8+	0.2+	1998 11 15	566	1.0+	0.4-	2000 01 02	104	0.0	0.9-
1998 09 18	809	1.0-	0.0	1998 11 19	699	0.4+	0.3+	2000 01 03	104	0.5+	0.1+
1998 09 19	809	0.4+	0.7+	1998 11 19	699	0.3+	0.4+	2000 01 03	104	0.0	0.1-
1998 09 19	809	0.5-	0.4+	1998 11 19	699	0.4+	0.5+	2000 01 06	704	0.7-	0.2+
1998 09 19	809	1.9-	0.3+	1999 01 11	704	1.4+	1.1-	2000 01 06	704	0.0	0.5+
1998 11 10	704	0.1+	0.4+	1999 01 11	704	0.7+	0.3+	2000 01 06	704	0.4-	0.1+
1998 11 10	704	0.9-	0.2-	1999 01 11	704	1.2-	0.3-				

(13353)* 1998 TU₁₂ = 1987 YO₆ = 1988 AP₂

Discovered 1998 Oct. 13 by Spacewatch at Kitt Peak.

Id. A. Gnädig (*MPC* 34929), M. E. Sansaturio (*ibid.*), G. V. Williams (d, *ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	342.06277		(2000.0)		P		Q				
n	0.08402347	ω	74.04026		-0.41513024		-0.89216675				
a	5.1626060	Ω	41.95815		+0.69909370		-0.43807879				
e	0.1354919	i	15.44556		+0.58218115		-0.11011569				
P	11.73	H	11.3		G	0.15	U	1			
Residuals in seconds of arc											
1951 11 30	675	0.4-	0.4-	1998 11 11	704	0.0	0.1+	1999 10 14	704	0.5-	0.2+
1951 11 30	675	1.5+	0.6-	1998 11 11	704	0.2-	1.6+	1999 10 14	704	0.1-	0.1-
1953 03 10	675	0.7-	0.0	1998 11 11	704	0.1+	0.5-	1999 10 14	704	0.0	0.3+
1987 12 20	010	0.6-	0.3-	1998 11 11	704	1.1+	1.4+	1999 12 12	704	0.6-	0.1+
1987 12 20	010	(4.8-	0.1+)	1998 11 11	699	0.5+	0.2+	1999 12 12	704	0.2-	0.1+
1988 01 11	033	0.4-	1.0+	1998 11 11	704	1.1-	0.7+	1999 12 12	704	0.6+	0.4+
1988 01 11	033	0.8+	0.4+	1998 11 11	699	0.5-	0.8+	1999 12 12	704	0.7-	0.6+
1998 10 13	691	0.3-	0.4-	1998 11 11	699	0.0	1.6+	1999 12 12	704	0.4+	0.1+
1998 10 13	691	0.2-	0.4-	1998 11 16	691	0.0	0.5-	1999 12 15	704	0.2-	0.2-
1998 10 13	691	0.1-	0.3-	1998 11 16	691	0.0	0.4-	1999 12 15	704	0.3-	0.2+
1998 10 18	699	0.3+	1.2-	1998 11 16	691	0.2+	0.4-	1999 12 15	704	0.5+	0.4-
1998 10 18	699	0.6+	0.9-	1998 11 24	699	(2.1+	1.1+)	1999 12 15	704	1.0+	0.8-
1998 10 18	699	0.2-	0.2+	1998 11 24	699	0.2+	0.8-	1999 12 15	704	0.5+	1.4-
1998 10 18	691	0.2-	0.3-	1998 11 24	699	0.1-	0.3+	2000 01 02	704	0.0	0.0
1998 10 18	691	0.2-	0.5-	1998 11 27	691	0.2-	0.4-	2000 01 02	704	0.0	0.0
1998 11 10	704	0.1-	0.1+	1998 11 27	691	0.0	0.3-	2000 01 02	704	0.2+	0.2+
1998 11 10	704	1.2-	0.7-	1998 11 27	691	0.3-	0.6-	2000 01 02	704	0.4-	0.0
1998 11 10	704	0.1-	0.3+	1999 10 14	704	0.1+	0.2+	2000 01 02	704	0.5-	0.1+
1998 11 10	704	1.0+	1.4+	1999 10 14	704	0.4+	0.1-				

(13354)* 1998 TO₁₅ = 1976 UX₁ = 1987 HK₂

Discovered 1998 Oct. 15 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Gnädig (*MPC* 33303)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	50.01188		(2000.0)		P		Q				
<i>n</i>	0.22412614	ω	243.81917		-0.26554766		-0.95433219				
<i>a</i>	2.6841557	Ω	222.33139		+0.94112221		-0.22578419				
<i>e</i>	0.1375707	<i>i</i>	11.72725		+0.20922101		-0.19563122				
<i>P</i>	4.40	<i>H</i>	12.9		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1954 09 06	675	1.4+	0.1-	1998 10 20	910	0.9+	1.2+	1998 11 11	704	0.6-	0.1+
1976 10 26	095	0.1+	1.5-	1998 10 20	910	1.0+	1.3+	1998 11 11	704	0.1+	0.3+
1987 04 23	010	0.5-	1.6+	1998 10 27	120	0.0	0.4-	1998 11 11	704	0.0	0.2-
1987 04 23	010	1.3-	0.9+	1998 10 27	120	0.3-	0.2-	1998 11 11	704	0.8+	0.3-
1987 04 23	010	1.6-	0.9+	1998 10 27	120	0.4-	0.2-	1998 11 11	704	1.0+	0.6-
1991 03 18	413	0.0	1.5-	1998 10 28	704	0.1+	0.2-	1999 01 11	704	0.3-	0.2-
1991 03 18	413	1.5-	1.5-	1998 10 28	704	0.0	0.5-	1999 01 11	704	0.2+	0.1-
1993 09 14	675	(0.5-	2.6-)	1998 10 28	704	0.0	0.3-	1999 01 11	704	0.1+	0.7+
1993 09 14	675	(3.3+	2.1-)	1998 10 28	704	0.1+	0.0	1999 01 11	704	0.6-	0.4-
1996 05 13	566	0.7+	0.3+	1998 10 28	120	0.3-	0.0	1999 12 16	704	0.1+	1.1-
1996 05 13	566	0.3+	0.9+	1998 10 28	120	0.5-	0.2-	1999 12 16	704	0.6+	0.3-
1996 05 13	566	0.6+	0.0	1998 10 29	704	1.1-	0.7-	1999 12 16	704	0.5+	0.9-
1996 05 13	566	0.2+	1.3+	1998 10 29	704	0.9-	1.1+	1999 12 16	704	0.5+	1.1-
1996 05 13	566	0.3+	0.1-	1998 10 29	704	0.9-	0.3-	1999 12 16	704	(0.4+	2.1-)
1996 05 13	566	1.0+	1.4+	1998 10 29	704	0.1-	0.7-	2000 01 10	704	0.2-	0.8+
1998 10 11	699	0.4-	0.4+	1998 10 29	704	0.5-	0.1-	2000 01 10	704	0.1+	1.1+
1998 10 11	699	0.1+	0.3+	1998 11 06	120	0.1-	0.1+	2000 01 10	704	0.2+	0.8+
1998 10 11	699	0.1-	1.1+	1998 11 06	120	1.4-	0.1+	2000 01 10	704	0.1+	1.0+
1998 10 15	910	0.8+	0.8+	1998 11 06	132	0.3-	0.9+	2000 01 10	704	0.2+	0.1+
1998 10 15	910	0.7+	0.9+	1998 11 06	132	0.5-	0.4+	2000 01 11	704	0.1-	0.7+
1998 10 15	910	0.7+	0.9+	1998 11 06	132	1.8-	0.1+	2000 01 11	704	0.5+	0.8+
1998 10 19	699	0.4+	0.9+	1998 11 10	704	0.6+	0.2-	2000 01 11	704	0.3+	0.4+
1998 10 19	699	0.6+	1.0+	1998 11 10	704	0.2-	0.5-	2000 01 11	704	0.4+	1.1+
1998 10 19	699	0.6+	1.1+	1998 11 10	704	0.8-	0.1+	2000 01 11	704	0.7+	0.3+
1998 10 20	910	0.9+	1.3+	1998 11 10	704	0.1+	0.4-				

(13355)* 1998 TP₁₇ = 1987 SO₇ = 1991 KK

Discovered 1998 Oct. 14 by G. A. Sala at Promiod.

Id. A. Doppler (*MPC* 33303)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	170.99104		(2000.0)		P		Q				
<i>n</i>	0.18577129	<i>ω</i>	186.25735		+0.55756442		+0.81301841				
<i>a</i>	3.0419377	<i>Ω</i>	117.75088		-0.75318135		+0.58039228				
<i>e</i>	0.0797455	<i>i</i>	10.92330		-0.34905555		+0.04632357				
<i>P</i>	5.31	<i>H</i>	11.6		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1987 09 18	010	0.4+	0.6-	1998 11 13	704	1.0+	0.1-	1999 12 06	704	0.3-	0.3+
1987 09 18	010	0.0	0.7-	1998 11 13	704	1.2-	0.3+	1999 12 06	704	0.2+	0.1+
1987 09 18	010	0.4+	0.0	1998 11 13	704	0.1+	0.7+	1999 12 06	704	0.2-	0.2+
1987 09 18	010	0.0	0.2+	1998 11 13	704	0.4+	1.3+	1999 12 06	704	0.7-	0.2+
1991 05 18	413	0.8-	1.4+	1998 11 13	704	0.3-	1.5+	1999 12 07	704	0.5+	1.2-
1991 05 18	413	0.5+	0.3+	1998 11 17	158	0.1+	0.3-	1999 12 07	704	0.1-	1.0-
1991 05 18	413	1.6+	0.9+	1998 11 17	158	0.0	0.2-	1999 12 07	704	0.2-	0.0
1992 08 06	675	1.1-	1.3-	1998 11 17	158	0.0	0.5-	1999 12 07	704	0.5+	0.2+
1992 08 06	675	0.4+	0.6-	1998 11 18	158	0.3+	0.1-	1999 12 07	704	0.2-	0.3-
1994 12 28	691	0.1-	0.0	1998 11 18	158	0.3+	0.1+	1999 12 08	704	1.3+	0.3-
1994 12 28	691	0.1-	0.2-	1999 10 10	704	0.1+	0.0	1999 12 08	704	0.3+	0.4-
1994 12 28	691	0.2-	0.2-	1999 10 10	704	0.9-	0.8-	1999 12 08	704	0.3+	0.7+
1998 10 14	158	0.3-	0.2+	1999 10 10	704	0.8-	0.0	1999 12 08	704	0.3+	0.3+
1998 10 14	158	0.2-	0.8+	1999 10 10	704	0.8-	1.2-	1999 12 08	704	0.7-	0.9+
1998 10 15	158	0.3+	0.1-	1999 10 10	704	0.4-	1.6-	1999 12 30	106	0.4+	0.5+
1998 10 19	158	1.5+	1.2-	1999 10 21	704	0.1+	0.2+	1999 12 30	106	0.1+	0.2+
1998 10 20	158	(1.0-	3.0-)	1999 10 21	704	0.4-	0.2+	1999 12 30	106	0.3+	0.4+
1998 10 20	158	0.9-	0.2+	1999 10 21	704	0.1+	0.1-	2000 01 05	704	0.6+	0.4+
1998 10 20	158	0.1-	0.4-	1999 10 21	704	0.1-	0.0	2000 01 05	704	0.5+	0.3+
1998 10 20	158	(0.4-	2.2-)	1999 10 21	704	0.1-	0.5-	2000 01 05	704	0.4+	1.1+
1998 10 20	158	0.5-	0.7+	1999 10 21	704	0.2-	0.1-	2000 01 05	704	0.3+	0.6+

1998 10 20	158	0.0	0.6+	1999 10 21	704	0.3+	0.5-	2000 01 06	704	0.1-	0.1-
1998 10 20	158	0.1+	0.3+	1999 10 21	704	0.8-	0.0	2000 01 06	704	0.3-	0.0
1998 10 21	158	0.1-	0.5+	1999 10 21	704	0.9+	0.9-	2000 01 06	704	0.0	0.1+
1998 10 21	158	0.0	0.3+	1999 10 21	704	0.2-	0.0	2000 01 07	704	0.0	0.1+
1998 10 21	158	0.1-	0.4+	1999 12 04	691	(2.3-	0.0)	2000 01 07	704	0.2-	0.0
1998 10 27	158	1.2-	0.9+	1999 12 04	691	0.8-	0.8-	2000 01 07	704	0.1-	0.1+
1998 10 28	158	0.3-	0.3-	1999 12 04	691	1.0-	0.0	2000 01 07	704	0.2+	0.2-
1998 10 28	158	0.2-	0.2+	1999 12 06	704	0.8+	0.0	2000 01 07	704	0.0	0.2-

(13356)* 1998 TX₁₇

Discovered 1998 Oct. 14 by K. Korlević at Višnjan.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	358.94074	(2000.0)		P	Q		
<i>n</i>	0.17157441	ω	313.55211	-0.64501990	-0.76412512		
<i>a</i>	3.2075077	Ω	176.58659	+0.73372340	-0.62217323		
<i>e</i>	0.0243790	<i>i</i>	7.60692	+0.21353994	-0.17033280		
<i>P</i>	5.74	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 02 11	675	1.1-	1.1+	1998 10 18	809	(2.6-	0.1-)	1999 12 14	704	0.5-	0.6+
1989 02 11	675	0.9+	1.2-	1998 10 19	809	0.6-	1.5-	1999 12 14	704	1.0-	0.7+
1989 02 15	413	0.4-	0.7-	1998 10 19	809	0.6-	1.8-	1999 12 31	106	0.7+	0.3-
1989 02 15	413	0.3+	0.1-	1998 10 19	809	0.4-	1.8-	1999 12 31	106	0.3-	0.1-
1997 09 19	910	0.3+	0.6+	1998 10 24	120	1.4+	0.1-	1999 12 31	106	0.2+	0.2+
1997 09 19	910	0.3+	0.5+	1998 10 24	120	0.8+	0.9+	2000 01 05	704	0.6+	0.3+
1997 09 19	910	0.1+	0.5+	1998 11 11	704	1.5+	0.5+	2000 01 05	704	0.6+	0.6+
1997 10 09	327	0.2-	0.2+	1998 11 11	704	0.3-	1.4+	2000 01 05	704	0.1-	0.1-
1997 10 09	327	0.4-	0.2-	1998 11 11	704	0.9-	0.2+	2000 01 05	704	0.5-	0.1+
1997 10 09	327	0.8-	0.3+	1998 11 15	120	0.9+	0.4-	2000 01 05	704	0.4-	0.5-
1998 10 14	120	(3.1+	1.8+)	1998 11 15	120	1.4+	0.1-	2000 01 07	704	0.9-	0.2+
1998 10 14	120	1.6+	0.5+	1998 11 26	120	1.2-	0.6+	2000 01 07	704	0.5+	0.5+
1998 10 15	120	0.8+	0.4+	1998 11 26	120	0.4-	0.1+	2000 01 07	704	1.3+	1.0-
1998 10 18	809	2.0-	0.5+	1998 11 26	120	0.2-	0.9-	2000 01 07	704	0.8-	0.5+
1998 10 18	809	1.6-	0.4-	1999 12 14	704	1.0+	1.0+				

(13357)* 1998 TE₂₉ = 1976 UR = 1991 FX

Discovered 1998 Oct. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPC* 34223)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	354.88434	(2000.0)		P	Q		
<i>n</i>	0.21611230	ω	295.63502	-0.94685719	-0.30976993		
<i>a</i>	2.7501079	Ω	226.45500	+0.32092159	-0.89162884		
<i>e</i>	0.1650435	<i>i</i>	6.86391	+0.02169794	-0.33021298		
<i>P</i>	4.56	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1976 10 31	809	0.5+	0.1-	1998 10 19	699	0.0	0.8+	1998 12 08	699	0.1-	0.5+
1976 11 01	809	0.0	0.0	1998 10 19	699	0.8-	0.6+	1998 12 08	699	0.7+	0.2+
1976 11 01	809	0.6-	0.2+	1998 10 20	691	0.1-	0.4+	1999 12 14	704	0.7-	0.2-
1976 11 02	809	0.2-	0.9-	1998 10 20	691	0.0	0.0	1999 12 14	704	0.5-	0.6-
1976 11 02	809	0.1+	0.7+	1998 10 20	691	0.1-	0.1-	1999 12 14	704	0.5-	0.5-
1991 03 18	402	0.5+	0.3-	1998 11 10	704	0.4-	0.2+	1999 12 14	704	0.8+	0.8-
1991 03 18	402	0.1-	0.4+	1998 11 10	704	0.3+	0.4-	1999 12 14	704	0.9-	0.7-
1991 03 19	402	(3.6-	1.5-)	1998 11 10	704	1.1+	0.7-	2000 01 06	699	0.3+	0.0
1991 03 19	402	(0.2+	3.7+)	1998 11 10	704	0.8-	1.0-	2000 01 06	699	0.5+	0.4+
1996 05 21	566	0.1-	0.4+	1998 11 10	704	1.2+	1.6+	2000 01 06	699	0.6+	0.3+
1996 05 21	566	0.3+	0.7+	1998 11 11	704	0.7-	0.9-	2000 01 07	106	0.4+	0.1+
1996 05 21	566	0.2-	0.5+	1998 11 11	704	0.2+	0.6-	2000 01 07	106	0.6+	0.3+
1998 10 13	910	1.1+	0.7+	1998 11 11	704	0.3-	0.3-	2000 01 07	106	0.2+	0.0
1998 10 13	910	0.9+	0.7+	1998 11 11	704	0.8-	1.1-	2000 01 11	704	0.1-	1.7+
1998 10 13	910	1.3+	0.5+	1998 11 11	704	0.6-	0.9-	2000 01 11	704	0.9-	0.4+
1998 10 15	691	0.2-	0.2+	1998 11 14	699	0.7-	0.4+	2000 01 11	704	(0.8+	3.2-)
1998 10 15	691	0.7-	0.2+	1998 11 14	699	0.4-	1.0+	2000 01 11	704	(0.8-	3.0-)
1998 10 15	691	0.5-	0.1+	1998 11 14	699	0.3+	0.6+				
1998 10 19	699	0.1+	0.3-	1998 12 08	699	0.5-	0.1+				

(13358)* 1998 TA₃₄ = 1989 TS₁₅ = 1996 FS₂₂

Discovered 1998 Oct. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33307)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	9.40651	(2000.0)		P	Q		
<i>n</i>	0.22678357	ω	314.90031	-0.87979364	-0.47077120		
<i>a</i>	2.6631461	Ω	197.35231	+0.47406233	-0.85872342		
<i>e</i>	0.1145176	<i>i</i>	12.75757	+0.03504368	-0.20240690		
<i>P</i>	4.35	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1989 10 03	809	1.2+	0.4-	1996 04 19	691	(2.4-	0.8-)	1999 01 17	699	0.1+	0.9-
1989 10 03	809	1.6+	0.3-	1998 10 14	699	0.0	0.7+	1999 02 04	704	0.3-	0.4+
1989 10 03	809	1.8+	0.4-	1998 10 14	699	0.1-	0.9+	1999 02 04	704	0.1+	2.0+
1989 10 03	809	1.1-	0.1-	1998 10 14	699	0.0	1.0+	1999 02 04	704	1.1-	1.2-
1989 10 03	809	0.7-	0.0	1998 10 20	699	0.2+	0.1-	1999 02 04	704	0.5-	1.2+
1989 10 03	809	0.3-	0.0	1998 10 20	699	0.1-	0.7+	1999 12 16	704	0.2+	0.6-
1989 10 05	809	1.1+	1.0-	1998 10 20	699	0.1-	0.5+	1999 12 16	704	0.5+	0.9-
1989 10 05	809	0.9+	0.8-	1998 11 10	704	0.0	0.1+	1999 12 16	704	0.5+	0.3-
1989 10 06	809	0.0	0.3-	1998 11 10	704	0.3+	0.3+	1999 12 16	704	0.3-	0.4-
1989 10 06	809	0.3+	0.2-	1998 11 10	704	0.1-	0.1-	1999 12 16	704	0.1+	0.3-
1989 10 06	809	0.5+	0.3-	1998 11 10	704	0.6+	0.1+	2000 01 07	808	0.5-	1.1-
1989 10 07	809	1.4-	1.1-	1998 11 10	704	0.2+	0.1+	2000 01 07	808	0.5-	0.4-
1989 10 07	809	1.2-	1.1-	1998 11 11	704	0.1+	0.8+	2000 01 10	704	0.2-	0.1-
1989 10 07	809	1.0-	1.1-	1998 11 11	704	0.4+	0.4+	2000 01 10	704	0.1-	0.6-
1996 03 24	809	0.3-	0.9+	1998 11 11	704	0.3-	0.4+	2000 01 10	704	0.2-	0.1-
1996 03 24	809	0.5-	1.6+	1998 11 11	704	0.0	0.4+	2000 01 10	704	0.8-	0.3-
1996 03 24	809	1.1-	1.9+	1998 11 11	704	0.5+	1.1+	2000 01 10	704	0.7+	0.8-
1996 03 27	809	1.6+	0.1+	1998 11 19	699	0.7-	0.5+	2000 01 11	704	0.7-	0.2+
1996 03 27	809	1.2+	0.3+	1998 11 19	699	0.7-	0.5+	2000 01 11	704	0.1-	0.4-
1996 03 27	809	1.6+	0.1+	1998 11 19	699	0.7-	0.5+	2000 01 11	704	0.7+	0.1+
1996 04 19	691	1.3-	0.0	1999 01 17	699	0.1+	0.1-	2000 01 11	704	0.2-	0.3-
1996 04 19	691	1.2-	0.1-	1999 01 17	699	0.1-	0.0	2000 01 11	704	0.9+	0.3-

(13359)* 1998 UC₄ = 1972 RK₁ = 1981 UY₂₂ = 1984 OM

Discovered 1998 Oct. 20 by K. Korlević at Višnjan.

Id. G. V. Williams (*MPC* 33050)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	223.05625	(2000.0)		P	Q		
<i>n</i>	0.23166696	ω	66.39530	+0.08972577	+0.99052592		
<i>a</i>	2.6255884	Ω	209.34085	-0.97353575	+0.06519780		
<i>e</i>	0.1681148	<i>i</i>	12.24906	-0.21018427	+0.12086210		
<i>P</i>	4.25	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1972 09 10	095	0.6+	1.1+	1998 10 28	120	0.1+	0.2-	2000 01 08	704	(2.8-	0.6-)
1981 10 24	675	0.0	0.4-	1998 10 28	120	0.4+	0.3+	2000 01 08	704	0.0	0.2+
1981 10 24	675	0.1+	0.1-	1998 11 06	120	0.3+	0.7-	2000 01 08	704	0.0	0.5-
1981 10 25	675	0.9-	1.3-	1998 11 06	120	1.1-	0.3-	2000 01 08	704	0.2+	0.1-
1981 10 25	675	0.0	0.8+	1998 11 10	704	0.5-	0.4+	2000 01 08	704	0.1-	0.5+
1981 10 26	675	0.4-	0.5-	1998 11 10	704	0.6-	0.8+	2000 01 10	704	0.2-	0.3-
1984 07 18	413	0.5+	0.2+	1998 11 10	704	0.6-	0.7+	2000 01 10	704	0.0	0.1+
1984 07 18	413	1.3-	0.4-	1998 11 10	704	0.3+	0.9+	2000 01 10	704	0.1-	0.1-
1984 07 18	413	1.8+	0.1-	1998 11 10	704	0.9-	1.4+	2000 01 10	704	0.1-	0.1+
1984 07 18	413	1.4-	0.1-	1998 11 11	704	0.4+	0.0	2000 01 10	704	0.2-	0.7+
1998 10 10	699	1.0+	1.4-	1998 11 11	704	0.3+	0.1-	2000 01 11	704	0.2-	0.2-
1998 10 10	699	0.6-	1.1-	1998 11 11	704	0.5+	0.4-	2000 01 11	704	0.4-	0.2-
1998 10 10	699	0.7-	0.6-	1998 11 15	120	0.2+	0.1+	2000 01 11	704	0.4-	0.0
1998 10 20	120	0.3-	0.0	1998 11 15	120	0.3+	0.5+	2000 01 11	704	0.2+	0.3-
1998 10 20	120	0.1+	0.2-	1998 12 11	699	0.2+	0.4+	2000 01 11	704	0.6-	0.3+
1998 10 23	120	0.3+	0.4-	1998 12 11	699	0.4+	0.1+	2000 01 12	704	0.1-	0.3-
1998 10 23	120	0.2+	0.4-	1998 12 11	699	0.5+	0.2-	2000 01 12	704	0.1+	0.3-
1998 10 24	120	0.4+	0.4-	1999 12 13	703	0.9+	0.4+	2000 01 12	704	0.3-	0.3-
1998 10 24	120	0.1+	0.2+	1999 12 13	703	0.7+	0.0	2000 01 12	704	0.2+	0.5-

1998 10 27 120 0.3− 0.7+ 1999 12 13 703 1.0+ 1.0+
1998 10 27 120 0.3− 0.3− 1999 12 13 703 0.7+ 0.2+

(13360)* 1998 UD₈ = 1981 FW = 1996 GE₁₈

Discovered 1998 Oct. 23 by K. Korlević at Višnjan.

Id. A. Doppler (*MPC* 33309), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
209.72493		(2000.0)			
<i>n</i>	0.20058055	ω	212.17088	+0.33591458	+0.94040841
<i>a</i>	2.8903038	Ω	77.50366	−0.85229911	+0.32736896
<i>e</i>	0.0427252	<i>i</i>	3.10324	−0.40093344	+0.09198691
<i>P</i>	4.91	<i>H</i>	12.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1981 03 27	046	(6.5− 1.6−)	1998 11 10	704	1.7− 0.4−	1999 11 08	120	0.4+ 0.2−
1981 03 27	046	(7.2− 0.5−)	1998 11 11	699	1.3+ 0.0	1999 11 08	120	0.2− 0.0
1996 04 15	809	(0.6+ 4.6+)	1998 11 11	704	0.5+ 0.4+	1999 11 10	703	0.8− 0.9+
1996 04 15	809	(1.4+ 4.2+)	1998 11 11	704	0.5+ 0.2+	1999 11 10	703	0.2+ 0.6+
1996 04 15	809	(1.6+ 3.8+)	1998 11 11	699	0.5+ 0.1+	1999 11 10	703	0.2+ 0.4+
1996 04 17	809	1.0+ 1.0+	1998 11 11	704	1.0+ 0.1+	1999 11 10	703	0.2+ 0.3+
1996 04 17	809	0.6+ 1.2+	1998 11 11	699	0.5+ 0.1+	1999 11 16	704	0.4+ 0.1−
1996 04 17	809	0.4+ 1.0+	1998 11 18	704	0.2− 0.7−	1999 11 16	704	0.0 0.2−
1996 04 18	691	0.2− 0.2+	1998 11 18	704	0.4− 1.5−	1999 11 16	704	0.7− 0.0
1996 04 18	691	0.1− 0.8+	1998 11 18	704	0.2− 1.7−	1999 11 16	704	0.3+ 0.4+
1997 09 02	566	0.4− 1.2+	1998 11 18	704	(0.3+ 3.2−)	1999 12 30	106	0.4+ 0.6+
1997 09 02	566	0.2− 1.1+	1998 11 18	704	(2.3− 5.4−)	1999 12 30	106	0.0 0.5+
1997 09 02	566	0.3− 1.3+	1998 11 24	699	0.1+ 0.4+	1999 12 30	106	0.2+ 0.9+
1998 10 18	699	0.3+ 1.1+	1998 11 24	699	0.1+ 0.2+	2000 01 04	704	0.5+ 0.9−
1998 10 18	699	0.0 1.3+	1998 11 24	699	0.5+ 0.3+	2000 01 04	704	0.3− 0.1−
1998 10 18	699	0.3+ 1.2+	1998 11 24	120	0.1− 0.5+	2000 01 04	704	0.4− 0.4+
1998 10 23	120	0.5− 0.3+	1998 11 24	120	0.3− 0.4+	2000 01 04	704	0.0 0.7+
1998 10 24	120	0.2− 0.7+	1998 11 24	120	0.4+ 0.5+	2000 01 04	704	0.5− 0.3+
1998 10 24	120	0.3− 0.3+	1998 11 24	120	0.4+ 0.5+	2000 01 05	699	0.5+ 0.2+
1998 10 24	120	1.2− 0.1−	1998 11 28	120	0.5− 0.9+	2000 01 05	699	0.2+ 0.2+
1998 10 24	120	1.1− 0.5+	1998 11 28	120	0.5+ 0.8+	2000 01 05	699	0.2+ 0.6+
1998 10 29	120	0.5− 0.0	1998 12 08	704	1.5+ 0.5+	2000 01 06	704	0.2− 0.3+
1998 10 29	120	0.2+ 0.1+	1998 12 08	704	(2.4+ 2.6−)	2000 01 06	704	0.2− 0.3−
1998 11 10	704	0.7− 0.6+	1998 12 08	704	0.6− 1.4−	2000 01 06	704	0.4+ 0.8−
1998 11 10	704	0.3− 0.1−	1998 12 08	704	0.4+ 1.9−	2000 01 06	704	0.2+ 0.7−
1998 11 10	704	(0.4− 2.4−)	1998 12 08	704	1.1− 0.8−	2000 01 06	704	0.0 0.2−

(13361)* 1998 UM₈ = 1950 MF = 1981 UE₂₂ = 1997 JU₁₇ = 1997 LP₁₃

Discovered 1998 Oct. 24 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 33309)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
274.18419		(2000.0)			
<i>n</i>	0.29249388	ω	174.25729	−0.00693143	+0.99667375
<i>a</i>	2.2476302	Ω	95.32655	−0.92067541	+0.02533044
<i>e</i>	0.1747882	<i>i</i>	4.67777	−0.39026753	−0.07745837
<i>P</i>	3.37	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1950 06 24	839	0.0 1.1+	1997 06 08	809	(1.3+ 3.2+)	1998 11 24	704	1.2− 1.2+
1981 10 24	675	0.7− 0.0	1997 08 03	566	0.3+ 0.1+	1998 11 24	704	2.0− 1.8+
1981 10 25	675	0.1+ 0.0	1997 08 03	566	0.0 0.3+	1998 11 24	704	(1.7− 2.3+)
1981 10 26	675	0.1− 0.2+	1997 08 03	566	0.1− 0.5−	1998 12 08	699	0.2− 0.4−
1997 04 22	327	0.3− 0.3+	1998 10 24	411	0.0 0.4−	1998 12 08	699	0.5+ 0.4−
1997 04 22	327	0.5+ 0.1+	1998 10 24	411	0.6+ 0.7−	1998 12 08	699	0.8+ 0.2+
1997 04 22	327	0.1− 0.3+	1998 10 25	411	0.2+ 0.1−	1999 01 06	699	0.3+ 0.5+
1997 05 03	809	(2.8+ 1.8+)	1998 10 25	411	0.1− 0.2−	1999 01 06	699	1.2+ 0.0
1997 05 03	809	(3.1+ 2.9+)	1998 11 07	411	0.3− 0.1+	1999 01 06	699	0.5− 0.1−
1997 05 03	809	2.0+ 2.1+	1998 11 07	411	0.1+ 0.0	1999 12 05	704	1.3+ 0.5−
1997 05 04	809	(2.4+ 3.0+)	1998 11 18	704	0.2+ 0.2+	1999 12 05	704	0.7+ 1.0−
1997 05 04	809	(2.9+ 2.6+)	1998 11 18	704	0.4− 0.5+	1999 12 05	704	0.1− 0.7+
1997 05 04	809	(3.1+ 2.5+)	1998 11 18	704	(4.0− 0.3+)	1999 12 05	704	0.8− 1.6−

1997 05 29	691	0.1− 0.2+	1998 11 18	704	0.3+ 1.3+	1999 12 05	704	0.1− 0.6−
1997 05 29	691	0.1+ 0.2+	1998 11 18	704	0.1− 1.2+	2000 01 04	704	0.2− 0.4+
1997 05 29	691	0.1+ 0.0	1998 11 21	704	0.6+ 1.2+	2000 01 04	704	0.4+ 0.2+
1997 06 07	809	0.2+ 0.2+	1998 11 21	704	0.2− 0.3−	2000 01 04	704	0.3− 0.2+
1997 06 07	809	0.5− 0.3+	1998 11 21	704	0.6+ 0.2−	2000 01 04	704	1.3+ 0.7−
1997 06 07	809	0.8− 0.3+	1998 11 21	704	0.1− 0.2−	2000 01 07	704	1.0− 1.6+
1997 06 08	809	0.6+ 0.5+	1998 11 21	704	0.4+ 1.8−	2000 01 07	704	0.1− 0.3+
1997 06 08	809	0.5− 0.4+	1998 11 23	411	0.1+ 0.3+	2000 01 07	704	(0.9− 2.3+)
1997 06 08	809	0.2+ 0.3+	1998 11 23	411	1.1− 1.7+	2000 01 07	704	0.3− 1.1+
1997 06 08	809	(1.5+ 2.8+)	1998 11 24	704	0.5− 1.2+			
1997 06 08	809	(0.8+ 2.9+)	1998 11 24	704	0.3− 0.8+			

(13362)* 1998 UQ₁₆

Discovered 1998 Oct. 26 by K. Korlević at Višnjan.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
280.76886		(2000.0)			
<i>n</i>	0.08229793	ω	111.26437	−0.97225178	−0.18921124
<i>a</i>	5.2345189	Ω	58.06631	+0.10379077	−0.87590752
<i>e</i>	0.0311206	<i>i</i>	9.32897	+0.20965197	−0.44383006
<i>P</i>	11.98	<i>H</i>	10.5	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1989 01 31	675	1.5+ 0.2−	1998 10 28	120	0.0 0.8+	1999 12 07	106	0.0 0.4+
1989 01 31	675	1.4− 0.2+	1998 10 28	120	1.2+ 0.5+	1999 12 07	106	0.6− 0.4−
1990 03 19	675	0.6− 0.3−	1998 11 24	120	0.2− 1.1+	1999 12 08	106	0.2− 0.3+
1990 03 19	675	0.1+ 0.5−	1998 11 24	120	0.4+ 0.1−	1999 12 08	106	0.2+ 0.2−
1991 04 09	675	0.8− 0.3+	1998 11 24	120	0.5− 0.4−	1999 12 08	106	0.9− 0.1+
1991 04 09	675	0.4− 0.4−	1998 11 24	120	0.1+ 0.1+	1999 12 10	704	0.2+ 0.3+
1992 05 30	675	1.6+ 1.8+	1998 11 28	120	(2.5− 0.5+)	1999 12 10	704	0.3− 0.6+
1992 05 30	675	1.9+ 1.5+	1998 11 28	120	1.0+ 0.2−	1999 12 10	704	0.4+ 0.5+
1997 10 01	809	1.5− 0.2−	1998 12 08	699	1.0+ 0.2−	1999 12 15	704	0.3+ 0.3+
1997 10 01	809	0.2− 0.3+	1998 12 08	699	0.4− 0.2−	1999 12 15	704	0.1− 0.1+
1997 10 05	809	0.3− 0.5−	1998 12 08	699	0.3+ 0.1+	1999 12 15	704	0.1+ 0.9+
1997 10 05	809	0.4− 0.5−	1998 12 17	120	0.7+ 0.2−	1999 12 15	704	0.1+ 1.1+
1997 10 06	809	0.3− 0.1−	1998 12 17	120	1.3+ 0.4+	2000 01 03	704	0.1+ 0.1−
1997 10 06	809	0.2− 0.2−	1998 12 17	120	0.5+ 0.1−	2000 01 03	704	0.0 0.0
1997 10 26	809	0.8+ 0.6+	1999 11 14	704	0.0 0.6−	2000 01 03	704	0.3− 0.6−
1997 10 26	809	1.0+ 0.1−	1999 11 14	704	0.2+ 0.4−	2000 01 03	704	0.3+ 0.2+
1997 10 28	809	1.0− 0.1−	1999 11 14	704	0.2− 1.0+	2000 01 03	704	0.7− 0.6+
1997 10 28	809	1.8− 0.7−	1999 11 14	704	0.7− 0.1−	2000 01 04	704	0.4− 0.4−
1998 10 26	120	0.7− 0.3+	1999 12 07	106	0.2− 0.3−	2000 01 04	704	0.5− 0.7−
1998 10 26	120	0.3+ 1.1+	1999 12 07	106	0.1+ 0.2−	2000 01 04	704	0.0 0.5−
1998 10 27	120	(2.8− 2.2+)	1999 12 07	106	0.2+ 0.4+	2000 01 04	704	0.6− 0.3−
1998 10 27	120	0.2+ 1.1+	1999 12 07	106	0.1+ 0.6−			

(13363)* 1998 UR₁₆ = 1986 PJ₃ = 1996 FX₁₉

Discovered 1998 Oct. 26 by K. Korlević at Višnjan.

Id. G. V. Williams (*MPC* 33311, unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
190.98992		(2000.0)			
<i>n</i>	0.17907382	ω	204.61433	+0.28233408	+0.95819356
<i>a</i>	3.1173195	Ω	81.81229	−0.87220719	+0.27653373
<i>e</i>	0.1424724	<i>i</i>	2.68664	−0.39942720	+0.07344515
<i>P</i>	5.50	<i>H</i>	12.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1986 08 01	675	(21.0− 0.9−)	1998 11 11	704	0.9+ 0.8−	1999 12 08	704	0.8− 1.8−
1986 08 01	675	(16.9− 2.2+)	1998 11 11	704	0.0 1.3−	1999 12 08	704	0.7− 0.3−
1986 08 02	675	(48.8+ 0.4−)	1998 11 11	704	0.0 0.4−	1999 12 08	704	0.5− 0.1−
1986 08 02	675	(52.7+ 1.7+)	1998 11 11	699	0.1+ 0.1+	1999 12 08	704	0.3+ 0.0
1995 02 05	691	0.0 0.4−	1998 11 11	704	1.2− 0.6+	1999 12 08	704	0.9+ 1.1+
1995 02 05	691	0.0 0.3−	1998 11 11	699	0.0 0.0	1999 12 30	120	0.5+ 0.5+
1995 02 05	691	0.1− 0.0	1998 11 11	699	0.3+ 0.3+	1999 12 30	120	0.4− 0.5+
1996 03 18	566	0.6+ 0.3+	1998 12 07	120	0.2− 0.9+	2000 01 03	704	0.6− 0.5+
1996 03 18	566	0.6+ 0.7+	1998 12 07	120	0.7+ 1.4+	2000 01 03	704	0.2+ 0.6−

1996 03 18	566	1.1+	0.1-	1998 12 07	120	0.0	0.9+	2000 01 03	704	0.4-	0.9-
1996 03 24	809	0.1+	1.4+	1998 12 09	120	0.0	1.1-	2000 01 03	704	0.3+	1.6-
1996 03 24	809	0.1+	1.1+	1998 12 09	120	0.8+	0.9+	2000 01 03	704	0.6-	1.9-
1996 03 24	809	0.6-	1.4+	1998 12 09	120	0.3-	0.0	2000 01 04	704	0.4+	0.1-
1996 03 26	809	(0.5+	3.6+)	1998 12 14	120	(2.8+	0.3-)	2000 01 04	704	0.0	0.0
1996 03 26	809	(0.4+	3.4+)	1998 12 14	120	1.1+	0.1-	2000 01 04	704	0.2-	0.2-
1996 03 26	809	(0.4+	2.9+)	1998 12 14	120	0.1-	0.3-	2000 01 04	704	0.1+	0.3-
1998 10 12	691	0.4-	0.3+	1998 12 15	120	0.4+	0.4-	2000 01 04	704	0.1+	0.1-
1998 10 12	691	0.2-	0.4+	1998 12 15	120	0.7+	0.6-	2000 01 04	120	0.5-	0.2+
1998 10 18	699	0.3+	0.9+	1998 12 22	120	0.9-	0.1+	2000 01 04	120	1.0+	0.1+
1998 10 18	699	0.4-	1.0+	1998 12 22	120	0.8+	0.2-	2000 01 05	120	0.3+	0.8+
1998 10 18	699	0.4+	0.7+	1999 10 15	704	1.7-	0.2+	2000 01 05	120	0.4+	0.4-
1998 10 24	120	1.0-	0.3-	1999 10 15	704	1.3-	0.7-	2000 01 06	120	0.6+	0.7+
1998 10 26	120	1.2-	0.6+	1999 10 15	704	1.9-	0.4+	2000 01 06	120	0.3-	0.4+
1998 10 26	120	0.2+	0.6+	1999 10 15	704	0.9-	0.4+	2000 01 07	106	0.2+	0.8+
1998 10 27	120	1.4-	0.3+	1999 12 07	704	0.3+	0.8-	2000 01 07	106	0.7+	0.5+
1998 10 27	120	1.1-	0.4+	1999 12 07	704	0.0	1.0-	2000 01 07	106	0.0	0.5+
1998 10 28	120	0.5+	0.1+	1999 12 07	704	0.2+	0.5+	2000 01 15	691	0.4+	0.2+
1998 10 28	120	0.0	0.4+	1999 12 07	704	0.1+	0.8+	2000 01 15	691	0.3+	0.2+
1998 11 11	704	0.1-	0.1-	1999 12 07	704	1.2+	0.3+	2000 01 15	691	0.3+	0.1+

(13364)* 1998 UK₂₀ = 1975 WT₁ = 1980 XM₁ = 1991 CH₃ = 1996 DE₃

Discovered 1998 Oct. 20 by S. Ueda and H. Kaneda at Kushiro.

Id. A. Doppler (*MPC* 33312)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	251.09218		(2000.0)	P	Q		
<i>n</i>	0.21816595	ω	230.21816	-0.32757055	+0.94007810		
<i>a</i>	2.7328224	Ω	21.24516	-0.76727832	-0.20624613		
<i>e</i>	0.1135509	<i>i</i>	15.13471	-0.55134519	-0.27150634		
<i>P</i>	4.52	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 11 26	381	0.6+	0.6+	1998 11 12	399	0.2+	0.4-	1999 12 12	703	0.1+	0.1+
1975 11 26	381	0.0	1.3-	1998 11 12	399	0.3+	0.6+	1999 12 12	703	0.2+	0.3+
1980 12 10	095	(3.9-	0.5+)	1998 11 16	704	2.0+	1.0+	1999 12 12	704	0.0	0.6-
1991 02 07	675	0.3-	1.9-	1998 11 16	704	(2.4+	1.0+)	1999 12 12	704	0.2+	0.4-
1991 02 09	675	0.8-	1.0-	1998 11 16	704	(2.3+	0.6+)	1999 12 12	704	0.3+	0.2+
1996 02 24	107	0.6-	0.7+	1998 11 16	704	(2.3+	0.4+)	1999 12 12	704	0.2+	0.4+
1996 02 24	107	0.3-	0.5+	1998 11 18	399	0.6+	0.3-	1999 12 12	704	0.0	0.8+
1996 03 03	107	1.2+	0.1-	1998 11 18	399	0.4+	0.1+	1999 12 30	106	0.2+	0.6+
1996 03 03	107	0.4+	0.1-	1998 11 19	399	1.3-	1.2-	1999 12 30	106	0.0	0.1+
1998 10 20	399	1.3-	1.5+	1998 11 19	399	0.7+	0.0	1999 12 30	106	0.0	0.4+
1998 10 20	399	0.5+	0.8-	1999 10 15	699	(2.2+	1.0+)	1999 12 30	704	0.5+	0.9-
1998 10 25	399	(2.0-	1.3+)	1999 10 15	699	0.0	0.9+	1999 12 30	704	0.3-	1.2-
1998 10 25	399	0.6-	0.2-	1999 10 15	699	0.5+	1.1+	1999 12 30	704	0.1-	0.1-
1998 10 28	399	1.5-	0.5+	1999 12 12	703	0.4+	0.4+	1999 12 30	704	0.5-	0.0
1998 10 28	399	0.6-	0.2-	1999 12 12	703	0.2-	0.7+	1999 12 30	704	0.2-	0.3-

(13365)* 1998 UL₂₀ = 1982 VG = 1987 QM₃ = 1987 SP₂₆

Discovered 1998 Oct. 26 by T. Okuni at Nanyo.

Id. S. Nakano (*MPC* 33312)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	170.92384		(2000.0)	P	Q		
<i>n</i>	0.18769833	ω	79.20794	+0.79145441	+0.59516725		
<i>a</i>	3.0210815	Ω	244.12274	-0.60363194	+0.72528801		
<i>e</i>	0.1104099	<i>i</i>	8.89997	-0.09606458	+0.34602492		
<i>P</i>	5.25	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 11 11	046	2.1-	1.5-	1998 11 21	704	0.1+	0.1+	1998 12 25	691	0.8-	0.3+
1982 11 11	046	0.6+	1.1-	1998 11 21	704	0.1-	0.0	1998 12 25	691	1.2-	0.4+
1982 11 12	046	1.6+	1.0-	1998 11 21	704	0.2-	0.5+	1999 10 20	704	0.5+	0.6+
1982 11 12	046	0.5+	0.2-	1998 11 21	704	0.3+	0.9+	1999 10 20	704	0.9+	0.7-
1987 08 30	010	0.5+	0.8+	1998 11 21	704	0.1+	0.0	1999 10 20	704	(2.5+	3.0-)
1987 08 30	010	0.6+	0.7+	1998 11 24	704	0.3-	0.4+	1999 12 05	704	0.2-	0.6+

1987 09 26	095	1.5-	1.4+	1998 11 24	704	1.2+	1.3-	1999 12 05	704	0.4-	0.7-
1998 10 26	358	0.5+	0.4+	1998 11 24	704	0.3+	0.9-	1999 12 05	704	1.0+	0.2-
1998 10 26	358	1.0+	0.5+	1998 11 24	704	0.2-	1.1-	1999 12 05	704	0.1+	1.2-
1998 10 26	358	(0.2-	2.9+)	1998 11 24	704	0.8-	1.9-	1999 12 14	704	1.2+	0.4+
1998 10 28	358	0.5-	2.1+	1998 11 25	699	0.4+	0.8+	1999 12 14	704	1.0-	0.6+
1998 10 28	358	0.3+	1.8+	1998 11 25	699	0.8+	0.8+	1999 12 14	704	0.1+	1.1+
1998 10 29	358	2.1-	2.1-	1998 11 25	699	0.3-	0.4+	1999 12 14	704	0.5-	1.0+
1998 10 29	358	0.6+	0.0	1998 12 08	699	0.4+	0.1-	1999 12 14	704	0.5+	0.9-
1998 10 29	358	0.2-	0.5-	1998 12 08	699	0.6+	0.5-	1999 12 31	106	0.8-	0.2-
1998 11 10	704	0.3-	1.6-	1998 12 08	699	1.3+	0.9-	1999 12 31	106	1.4+	0.6-
1998 11 10	704	0.1-	0.5-	1998 12 10	399	0.5-	0.7+	2000 01 05	699	0.1-	0.6+
1998 11 10	704	0.2-	0.6+	1998 12 10	399	0.2-	0.4-	2000 01 05	699	0.6+	0.8+
1998 11 10	704	(2.8-	0.4-)	1998 12 11	691	0.7+	0.8+	2000 01 05	699	0.4+	0.1+
1998 11 12	399	0.7+	0.7-	1998 12 11	691	0.9+	0.2+	2000 01 08	704	0.3-	0.4-
1998 11 18	704	0.5-	0.1+	1998 12 11	691	0.7+	0.4+	2000 01 08	704	0.2-	0.1+
1998 11 18	704	0.5+	0.5-	1998 12 15	704	1.0+	0.5-	2000 01 08	704	0.1-	0.2+
1998 11 18	704	1.3+	0.5-	1998 12 15	704	0.3-	0.5+	2000 01 08	704	0.5+	0.6+
1998 11 18	704	0.4+	1.0-	1998 12 15	704	1.5+	0.7+	2000 01 08	704	0.7-	0.0
1998 11 18	704	0.5+	0.1-	1998 12 15	704	2.1-	0.5-	2000 01 11	704	0.5-	0.4-
1998 11 18	399	1.8-	0.4-	1998 12 17	691	0.2-	0.1+	2000 01 11	704	0.5-	0.1+
1998 11 18	399	0.7-	0.4+	1998 12 17	691	0.6-	0.2+	2000 01 11	704	0.2-	0.3-
1998 11 19	399	0.1+	1.4+	1998 12 17	691	0.5-	0.0	2000 01 11	704	0.3-	0.2-
1998 11 19	399	1.3-	1.6+	1998 12 25	691	0.8-	0.2+	2000 01 11	704	0.3-	0.1-

(13366)* 1998 US₂₄ = 1996 RX₂₉

Discovered 1998 Oct. 18 by the Lowell Observatory Near-Earth Object Search

at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33314)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	9.46598		(2000.0)	P	Q		
<i>n</i>	0.08246150	ω	354.20231	-0.00956619	-0.99333379		
<i>a</i>	5.2275944	Ω	96.30725	+0.92202159	-0.05322561		
<i>e</i>	0.1059363	<i>i</i>	6.63682	+0.38702025	+0.10224979		
<i>P</i>	11.95	<i>H</i>	11.1	<i>G</i>	0.15	<i>U</i>	0

Residuals in seconds of arc

1954 02 10	675	1.9-	0.1+	1998 11 11	704	0.1+	0.6+	1999 12 07	704	0.2+	0.2-
1954 02 10	675	1.1+	1.5-	1998 11 11	699	0.7+	0.7+	1999 12 07	704	0.5+	0.7-
1979 06 24	675	1.9+	1.5+	1998 11 11	704	0.7-	0.2-	1999 12 07	704	0.2+	0.6-
1979 06 24	675	0.0	1.7+	1998 11 11	704	1.2+	0.0	1999 12 07	704	0.7-	1.1-
1996 09 12	809	0.4-	0.4-	1998 11 11	699	0.3-	0.9+	1999 12 08	704	0.1+	0.3-
1996 09 13	809	0.2-	0.4+	1998 11 11	704	0.2-	0.2+	1999 12 08	704	0.2-	0.3-
1996 09 13	809	0.0	0.4+	1998 11 18	704	0.4+	0.1-	1999 12 08	704	0.2-	0.3-
1996 09 14	809	0.2+	0.3-	1998 11 18	704	0.4+	0.8-	1999 12 08	704	0.1-	0.6-
1996 09 14	809	0.2+	0.4-	1998 11 18	704	0.1+	1.3-	1999 12 29	106	0.4+	0.6+
1996 09 16	809	0.3-	0.1-	1998 11 18	704	1.6+	1.9-	1999 12 29	106	0.0	0.5+
1997 10 01	809	0.2+	0.5+	1998 11 18	704	(4.7-	0.9-)	1999 12 29	106	0.8+	0.4+
1997 10 01	809	0.2-	0.2-	1998 11 21	704	0.1+	0.2-	2000 01 03	704	0.2-	0.1-
1997 10 05	809	0.1-	0.3+	1998 11 21	704	0.4-	0.6-	2000 01 03	704	0.3+	0.6+
1997 10 05	809	0.2-	0.1+	1998 11 21	704	0.4+	0.0	2000 01 03	704	0.5-	1.7+
1997 10 06	809	0.1-	0.3-	1998 11 21	704	0.4-	0.3-	2000 01 03	704	0.4-	0.9+
1997 10 06	809	0.1+	0.3-	1998 11 21	704	0.7-	0.2+	2000 01 03	704	(0.1-	2.2+)
1998 10 18	699	0.1-	0.5-	1998 11 23	699	0.1-	1.3+	2000 01 04	704	0.3-	0.2+
1998 10 18	699	0.4+	0.7+	1998 11 23	699	0.4+	0.5+	2000 01 04	704	0.0	0.1+
1998 10 18	699	0.2+	0.3-	1998 11 23	699	1.0+	1.4+	2000 01 04	704	0.2-	0.1-
1998 10 20	699	0.5-	0.5-	1998 11 24	704	0.4+	0.4+	2000 01 04	704	0.2+	0.5-
1998 10 20	699	1.0-	1.1+	1998 11 24	704	0.1-	0.2+	2000 01 04	704	0.5-	0.5-
1998 10 20	699	0.0	0.7+	1998 11 24	704	1.0-	0.1+				
1998 11 11	699	0.7-	0.4+	1998 11 24	704	0.7-	0.3+				

2000 JAN. 24

M.P.C. 37587

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	153.75764	(2000.0)	P	Q
<i>n</i>	0.17275981	ω	267.86926	+0.84226975
<i>a</i>	3.1928185	Ω	63.51610	+0.81015707
<i>e</i>	0.0797040	<i>i</i>	16.21742	+0.33992847
<i>P</i>	5.71	<i>H</i>	12.9	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1980 09 30	413	0.5–	0.5+	1998 11 21	704	0.6+	0.1+	1999 01 19	910	0.8–	0.0
1980 09 30	413	1.6+	0.1–	1998 11 21	704	0.5+	0.3+	1999 01 19	910	0.7–	0.4+
1981 12 04	511	0.0	1.2+	1998 11 21	704	(1.3+ 2.2+)		1999 12 07	703	0.3+	0.4+
1981 12 04	511	0.8–	0.6+	1998 11 21	704	0.1–	2.0+	1999 12 07	703	0.9+	0.2+
1989 03 06	675	1.9–	0.8–	1998 12 07	910	1.1+	0.6–	1999 12 07	703	0.0	0.1–
1989 03 06	675	0.7–	1.0+	1998 12 07	910	1.2+	0.6–	1999 12 07	703	0.3+	0.2–
1996 06 12	566	0.5–	0.7–	1998 12 07	910	1.3+	0.5–	1999 12 08	703	0.2–	0.2–
1996 06 12	566	0.5–	0.7–	1998 12 08	699	0.0	0.6–	1999 12 08	703	(2.4– 0.4+)	
1996 06 12	566	0.6–	0.7–	1998 12 08	699	0.0	0.1+	1999 12 08	703	0.3–	0.4–
1998 10 18	699	1.6–	0.2–	1998 12 08	699	0.5+	0.6+	1999 12 08	703	0.4–	0.2+
1998 10 18	699	0.1+	0.5+	1998 12 08	910	1.7+	1.1–	1999 12 12	703	0.4+	0.3+
1998 10 18	699	0.7–	0.1+	1998 12 08	910	1.6+	1.0–	1999 12 12	703	0.0	0.2+
1998 10 20	699	0.3–	0.2–	1998 12 08	910	1.6+	1.0–	1999 12 12	703	0.8–	1.0+
1998 10 20	699	1.1–	0.4–	1998 12 21	910	0.6–	0.4+	1999 12 12	703	(2.1+ 0.4+)	
1998 10 20	699	0.7–	0.1–	1998 12 21	910	0.5–	0.5+	2000 01 02	704	0.0	0.2–
1998 11 11	699	0.0	0.4+	1998 12 21	910	0.6–	0.5+	2000 01 02	704	0.1+	0.0
1998 11 11	699	0.5+	0.1–	1999 01 13	910	0.5–	0.4+	2000 01 02	704	0.0	0.1+
1998 11 11	699	0.4+	0.6+	1999 01 13	910	0.4–	0.5+	2000 01 02	704	1.7+	0.1–
1998 11 18	704	0.3+	1.3–	1999 01 13	910	0.7–	0.2+	2000 01 02	704	0.6+	0.7–
1998 11 18	704	0.6+	1.1–	1999 01 14	910	0.6–	0.4+	2000 01 10	699	0.7+	0.5–
1998 11 18	704	0.1+	1.6–	1999 01 14	910	0.4–	0.3+	2000 01 10	699	0.4+	0.7–
1998 11 18	704	0.3–	1.1–	1999 01 14	910	0.6–	0.5+	2000 01 10	699	0.3+	0.6–
1998 11 18	704	0.9–	1.8–	1999 01 19	910	0.8–	0.3+				

(13368)* 1998 UV₂₄ = 1978 WV₇ = 1996 HA₉

Discovered 1998 Oct. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPC* 33314)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	106.35263	(2000.0)	P	Q
<i>n</i>	0.19470637	ω	331.57854	+0.89824313
<i>a</i>	2.9481479	Ω	54.43314	+0.41190963
<i>e</i>	0.0803406	<i>i</i>	2.79776	+0.15326362
<i>P</i>	5.06	<i>H</i>	13.6	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1978 11 29	675	0.1+	0.5+	1998 11 11	704	0.2–	1.3–	1998 12 13	691	0.6–	0.4–
1978 11 30	675	0.2–	0.1–	1998 11 11	704	1.3+	1.0–	1999 01 10	327	0.3–	0.5+
1996 04 17	809	(1.4+ 3.6+)		1998 11 11	704	0.1+	1.2–	1999 01 10	327	0.0	0.2+
1996 04 17	809	(0.7+ 3.9+)		1998 11 14	699	0.0	0.9+	1999 01 10	327	0.3–	0.0
1996 04 17	809	(0.5+ 3.8+)		1998 11 14	699	0.3–	0.2+	1999 01 11	327	0.4–	0.3+
1996 04 18	809	0.3–	0.5+	1998 11 14	699	0.3–	0.1+	1999 01 11	327	0.3–	0.6+
1996 04 18	809	0.2–	0.6+	1998 11 15	691	0.2–	0.3–	1999 01 11	327	0.3–	0.1–
1996 04 18	809	1.1+	0.8+	1998 11 15	691	0.1–	0.3–	1999 12 07	704	0.7–	0.4–
1998 10 10	699	0.1+	0.0	1998 11 15	691	0.2–	0.4–	1999 12 07	704	0.3–	0.9+
1998 10 10	699	0.1+	0.0	1998 11 15	120	0.2+	0.1+	1999 12 07	704	0.5+	0.4–
1998 10 10	699	0.4+	0.1+	1998 11 15	120	0.5+	0.0	1999 12 07	704	0.7+	0.9+
1998 10 13	120	1.4–	1.2+	1998 11 25	691	0.2–	0.1–	2000 01 04	704	1.2+	0.2–
1998 10 13	120	0.0	1.3+	1998 11 25	691	0.2+	0.2–	2000 01 04	704	0.3+	0.3–
1998 10 18	699	0.2–	0.6+	1998 11 25	691	0.3+	0.2–	2000 01 04	704	0.5–	0.4–
1998 10 18	699	0.7+	0.2–	1998 12 08	699	0.9–	0.0	2000 01 04	704	0.1+	0.1–
1998 10 18	699	0.4+	0.5+	1998 12 08	699	0.0	0.3–	2000 01 04	704	0.1+	0.8–
1998 10 19	699	0.4+	0.6+	1998 12 08	699	0.1+	1.1+	2000 01 06	704	0.1–	1.4–
1998 10 19	699	0.7+	0.3+	1998 12 09	691	0.4–	0.2–	2000 01 06	704	0.2–	0.2+
1998 10 19	699	0.4–	0.2+	1998 12 09	691	0.4–	0.1–	2000 01 06	704	0.2–	0.6+
1998 11 06	120	0.7+	0.1–	1998 12 09	691	0.3–	0.3–	2000 01 06	704	0.2+	0.1+

1998 11 06	120	1.3+	0.5–	1998 12 13	691	0.6–	0.3–	2000 01 06	704	1.1–	1.0+
1998 11 11	704	0.3–	0.8+	1998 12 13	691	0.5–	0.3–				

(13369)* 1998 UF₃₇ = 1984 BJ₆ = 1996 FQ

Discovered 1998 Oct. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33709)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	175.50470	(2000.0)	P	Q
<i>n</i>	0.17866413	ω	250.87475	+0.24496688
<i>a</i>	3.1220832	Ω	33.31359	+0.22801456
<i>e</i>	0.1478137	<i>i</i>	1.34593	+0.09046854
<i>P</i>	5.52	<i>H</i>	13.3	<i>G</i> 0.15 <i>U</i> 1

Residuals in seconds of arc

1984 01 25	675	0.3+	0.4–	1998 10 28	704	0.1–	0.5+	1999 01 09	691	0.7–	0.7–
1984 01 26	675	0.5–	0.3–	1998 10 28	704	1.2+	0.2–	1999 01 15	691	0.6+	0.1+
1996 03 17	566	0.3–	0.4+	1998 10 29	704	1.3–	0.3+	1999 01 15	691	0.9+	0.1–
1996 03 17	566	0.5–	0.3+	1998 10 29	704	0.0	0.0	1999 01 15	691	1.3+	0.5+
1996 03 17	566	0.2–	0.5+	1998 10 29	704	0.4+	0.6–	1999 01 19	691	0.6–	0.0
1996 03 19	566	0.2+	0.5–	1998 10 29	704	0.1+	1.2–	1999 01 19	691	0.1–	0.2+
1996 03 19	566	0.0	0.8–	1998 10 29	704	0.5–	0.6–	1999 01 19	691	0.3–	0.1–
1996 03 19	566	0.0	0.7–	1998 11 10	704	1.2–	0.9–	1999 12 07	704	0.3–	0.3–
1996 04 19	566	0.1+	0.7–	1998 11 10	704	0.5+	1.3+	1999 12 07	704	0.2–	0.3+
1996 04 19	566	0.1+	0.3–	1998 11 10	704	0.9+	1.4+	1999 12 07	704	0.1–	0.0
1996 04 19	566	0.2–	0.6–	1998 11 10	704	0.3+	0.5+	1999 12 07	704	0.5–	0.2+
1998 09 14	699	0.6+	1.6–	1998 11 16	566	1.5–	1.2–	2000 01 03	704	0.1+	0.6–
1998 09 14	699	(2.2+ 0.8–)		1998 11 16	566	1.5–	1.3–	2000 01 03	704	0.5+	0.1+
1998 09 14	699	0.3+	0.8+	1998 11 16	566	1.4–	1.1–	2000 01 03	704	0.5–	0.7+
1998 09 18	809	(2.3+ 0.4+)		1999 01 07	691	0.5+	0.4–	2000 01 03	704	0.2+	0.6+
1998 09 18	809	1.7+	1.0+	1999 01 07	691	0.5+	0.4–	2000 01 04	704	0.5+	0.5+
1998 09 18	809	(2.4+ 2.0+)		1999 01 07	691	0.4+	0.5–	2000 01 04	704	0.2–	0.3–
1998 10 28	704	0.2+	0.3+	1999 01 09	691	0.0	0.0	2000 01 04	704	0.7+	0.6+
1998 10 28	704	0.6+	0.4+	1999 01 09	691	0.2+	0.3–	2000 01 04	704	0.4–	0.3+

(13370)* 1998 VF = 1985 PN₂ = 1985 SY₁ = 1991 JA₆ = 1998 QT₁₀₆

Discovered 1998 Nov. 7 by P. Kolény and L. Kornoš at the Astronomical and Geophysical Observatory, Modra.

Id. B. G. Marsden (*MPC* 33316), N. S. Chernykh (d, *ibid.*), M. E. Sansaturio (unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	198.09459	(2000.0)	P	Q
<i>n</i>	0.30381166	ω	245.55874	+0.44985390
<i>a</i>	2.1914577	Ω	51.40022	+0.43340757
<i>e</i>	0.1942675	<i>i</i>	5.68399	+0.14323998
<i>P</i>	3.24	<i>H</i>	14.4	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1985 08 13	095	(3.6– 1.2–)	1998 11 08	118	0.2– 0.8+	1999 12 15	703	0.1– 0.5+
1985 09 19	095	(0.7+ 3.0–)	1998 11 08	118	0.4– 0.5+	1999 12 15	703	0.3+ 0.7+
1985 09 20	095	0.2+ 2.2–	1998 11 08	118	0.7– 0.8+	1999 12 15	704	0.5+ 0.3–
1991 05 05	372	0.3+ 1.3–	1998 11 11	118	0.2+ 0.0	1999 12 15	703	0.1– 0.0
1991 05 05	372	(1.1+ 3.4+)	1998 11 11	118	0.5+ 0.4+	1999 12 15	704	0.1– 0.7+
1995 10 15	327	0.7+ 0.2–	1998 11 11	118	0.3+ 0.3–	1999 12 15	703	0.3– 0.2–
1995 10 15	327	1.2+ 0.3+	1998 11 12	118	0.2+ 0.3+	1999 12 15	704	0.1– 0.0
1995 10 15	327	0.9+ 0.3+	1998 11 12	118	0.2+ 0.0	1999 12 15	704	0.7+ 0.4+
1997 01 30	327	0.4– 0.2–	1998 11 12	118	0.2– 0.2+	1999 12 15	704	0.5– 0.1–
1997 01 30	327	0.4+ 0.1–	1998 11 13	118	0.1– 0.2–	1999 12 17	118	0.0 0.2–
1997 01 30	327	0.7– 0.0	1998 11 13	118	0.1+ 0.1–	1999 12 17	118	0.7+ 0.1+
1998 06 29	704	0.1– 0.6+	1998 11 13	118	0.2+ 0.1–	1999 12 17	118	0.4– 0.5+
1998 06 29	704	0.7– 0.1–	1998 11 16	118	0.0 0.2–	2000 01 03	704	0.4+ 0.2–
1998 06 29	704	0.1+ 1.3+	1998 11 16	118	0.3– 0.1+	2000 01 03	704	0.1– 0.0
1998 06 29	704	1.3– 0.1+	1998 11 23	699	1.1+ 1.0–	2000 01 03	704	0.5+ 0.4+
1998 06 29	704	0.3– 0.4+	1998 11 23	699	0.2+ 0.4–	2000 01 03	704	0.4+ 0.4+

1998 08 25	809	0.3+	0.4+	1998 11 23	699	0.0	0.5-	2000 01 03	704	0.2-	0.0
1998 08 25	809	1.0-	0.0	1998 11 23	118	0.3+	0.8-	2000 01 04	704	0.3-	0.3-
1998 08 25	809	1.5-	1.0-	1998 11 23	118	0.3+	0.6-	2000 01 04	704	0.4-	0.6-
1998 08 26	809	0.3+	0.6+	1998 11 23	118	0.1-	0.5-	2000 01 04	704	0.2-	0.4+
1998 08 26	809	0.7+	0.5+	1998 12 09	118	0.0	0.7-	2000 01 04	704	1.0-	0.0
1998 08 26	809	0.8+	0.8+	1998 12 09	118	0.6-	0.0	2000 01 04	704	0.7-	0.2+
1998 11 07	118	0.5+	0.4+	1998 12 16	699	1.3-	0.1+	2000 01 06	118	0.1+	0.3+
1998 11 07	118	0.8+	0.1-	1998 12 16	699	1.4-	0.3+	2000 01 06	118	0.3+	0.3+
1998 11 07	118	0.3+	0.2+	1998 12 16	699	1.6-	0.5-				

(13371)* 1998 VH₅ = 1979 FU = 1987 SK₃

Discovered 1998 Nov. 8 by Y. Shimizu and T. Urata at the Nachi-Katsuura Observatory.

Id. S. Nakano (*MPC* 33317)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>	325.54844		(2000.0)	P		Q	
<i>n</i>	0.28293355	ω	298.09722	-0.77114995		+0.62833333	
<i>a</i>	2.2979809	Ω	281.01677	-0.54128541		-0.73189999	
<i>e</i>	0.0833646	<i>i</i>	5.99937	-0.33516841		-0.26366576	
<i>P</i>	3.48	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 03 29	808	0.8-	1.5-	1998 11 10	704	0.6+	0.7-	1998 12 16	699	0.2+	0.1-
1979 03 29	808	0.5+	0.9-	1998 11 10	704	0.2+	0.4-	1998 12 16	699	0.2+	0.2-
1987 09 25	054	1.1+	0.8+	1998 11 10	704	0.7+	0.5-	1998 12 16	699	0.4+	0.3+
1987 09 25	054	0.3+	0.2-	1998 11 10	704	1.4+	0.4-	1998 12 19	385	1.0+	0.2+
1987 09 29	054	0.7+	1.1+	1998 11 10	704	1.3+	1.5-	1998 12 19	385	0.2-	1.1+
1987 09 29	054	0.6+	0.5-	1998 11 10	888	0.2+	0.2+	1999 01 08	699	0.2+	0.9-
1987 09 30	054	0.2-	0.7-	1998 11 10	888	0.3-	0.2+	1999 01 08	699	0.6-	0.6-
1987 09 30	054	2.1-	2.0-	1998 11 10	888	0.3-	0.0	1999 01 08	699	0.1+	0.2-
1991 11 28	691	1.4-	0.5+	1998 11 11	704	0.2+	0.6+	1999 02 05	704	0.7+	0.1+
1991 11 28	691	1.4-	0.7+	1998 11 11	704	0.2+	0.2+	1999 02 05	704	0.5+	0.6-
1991 11 28	691	0.9-	0.6+	1998 11 11	704	0.1-	0.5-	1999 02 05	704	0.2+	2.0-
1995 12 07	327	0.2-	0.3-	1998 11 11	704	0.4-	1.1-	1999 02 05	704	1.1-	1.5+
1995 12 07	327	0.7-	0.5-	1998 11 11	704	0.3-	0.2+	1999 11 08	703	1.1-	0.0
1995 12 07	327	0.1+	0.6-	1998 11 11	886	1.6-	0.3+	1999 11 08	703	0.0	0.1-
1998 10 03	699	0.4+	0.1-	1998 11 11	886	1.5-	0.1-	1999 11 08	703	0.3-	0.4+
1998 10 03	699	0.1+	0.6-	1998 11 13	385	0.3-	0.7+	1999 11 08	703	0.7+	0.9+
1998 10 03	699	0.3-	0.1+	1998 11 13	385	0.1-	1.0+	2000 01 10	704	0.6+	1.7+
1998 10 25	098	0.2+	0.3-	1998 11 19	886	0.1-	0.7-	2000 01 10	704	0.0	0.0
1998 10 25	098	0.7+	1.4-	1998 11 19	886	0.8+	1.7+	2000 01 10	704	0.1-	0.5+
1998 11 08	905	0.3+	0.1-	1998 12 11	888	0.3+	0.9+	2000 01 10	704	0.1-	0.1-
1998 11 08	905	0.2+	1.2+	1998 12 11	888	0.2+	0.9+				

(13372)* 1998 VU₆ = 1996 TW₆₈

Discovered 1998 Nov. 12 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 35637)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	67.76660		(2000.0)	P		Q	
<i>n</i>	0.08294479	ω	304.29294	+0.74841918		-0.65107135	
<i>a</i>	5.2072685	Ω	96.67381	+0.64262372		+0.66475039	
<i>e</i>	0.0485594	<i>i</i>	7.31093	+0.16402282		+0.36635095	
<i>P</i>	11.88	<i>H</i>	10.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1996 09 15	809	0.4+	0.4-	1998 12 12	411	(0.1+	2.1+)	1999 12 07	704	0.6-	0.1+
1996 10 09	809	0.8+	0.1-	1998 12 15	704	(2.3+	0.8-)	1999 12 07	704	0.3+	0.3+
1996 10 12	809	0.1+	1.7-	1998 12 15	704	0.8+	0.8-	1999 12 07	704	0.0	0.4+
1997 10 29	704	1.7+	0.4+	1998 12 15	704	0.7+	0.2-	1999 12 07	704	0.3-	0.2-
1997 10 29	704	0.5+	1.1+	1998 12 15	704	0.1+	0.6-	1999 12 08	704	0.3+	0.9-
1997 10 29	704	0.8+	1.5+	1998 12 21	411	1.5-	0.0	1999 12 08	704	0.4-	0.0
1997 10 29	704	0.1-	0.5+	1998 12 21	411	0.1+	0.6-	1999 12 08	704	0.4-	0.6-
1997 10 29	704	0.8-	0.5+	1998 12 22	704	0.2+	0.1-	1999 12 08	704	0.2+	0.8+
1997 10 30	704	(1.5+	2.0-)	1998 12 22	704	0.1+	0.9-	1999 12 08	704	0.1-	0.2+
1997 10 30	704	0.3+	0.4-	1998 12 22	704	1.6+	1.6-	1999 12 30	106	0.1-	0.8+

1997 10 30	704	0.7+	0.9-	1998 12 22	704	1.1+	1.6-	1999 12 30	106	0.1+	0.3+
1997 10 30	704	(1.1+	2.3-)	1999 10 15	704	0.7-	0.3-	2000 01 03	704	0.2+	0.4+
1997 11 06	704	0.4-	1.1+	1999 10 15	704	0.1-	0.7-	2000 01 03	704	0.4+	0.2+
1997 11 06	704	0.7+	0.0	1999 10 15	704	0.2+	0.9-	2000 01 03	704	1.9-	1.6-
1997 11 06	704	1.8-	0.3-	1999 10 15	704	1.2+	0.8-	2000 01 03	704	0.6-	0.2+
1997 11 06	704	1.4-	0.5+	1999 10 16	704	0.6+	0.7+	2000 01 04	704	0.0	0.4+
1997 11 29	809	1.1-	0.4-	1999 10 16	704	0.3+	0.3-	2000 01 04	704	0.2+	0.3+
1997 11 29	809	1.3-	0.2-	1999 10 16	704	0.5+	0.7+	2000 01 04	704	0.4+	0.1+
1998 11 12	411	0.6-	1.6+	1999 10 16	704	0.5+	0.2-	2000 01 04	704	0.5-	0.5-
1998 11 12	411	0.3-	0.4+	1999 10 16	704	0.3+	0.6+	2000 01 08	704	0.8+	1.5+
1998 11 14	411	(1.6-	2.0+)	1999 10 22	704	0.6-	0.2-	2000 01 08	704	0.1-	0.2+
1998 11 14	411	(2.4-	0.9+)	1999 10 22	704	0.3-	0.3-	2000 01 08	704	0.4+	0.6-
1998 11 20	411	0.2+	1.3+	1999 10 22	704	0.8-	0.3+	2000 01 08	704	1.2-	0.5-
1998 11 20	411	0.6-	0.7+	1999 10 22	704	0.1-	0.3+	2000 01 08	704	0.4+	0.6-
1998 11 20	411	0.5-	0.2-	1999 10 22	704	0.9+	0.4+				
1998 12 12	411	0.2-	0.0	1999 12 07	704	0.9+	0.2-				

(13373)* 1998 VL₇ = 1998 ST₁₃₃ = 1978 WZ₁₇ = 1997 MW₃

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33318), A. Doppler (*MPC* 35342)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	91.73910		(2000.0)	P		Q	
<i>n</i>	0.19452847	ω	169.20357	+0.85818391		-0.51321572	
<i>a</i>	2.9499451	Ω	221.68110	+0.46969557		+0.79398600	
<i>e</i>	0.1227428	<i>i</i>	0.98248	+0.20713874		+0.32587706	
<i>P</i>	5.07	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 11 30	675	0.3+	0.1-	1998 09 27	704	0.7+	0.4-	1998 11 11	704	0.7-	0.3-
1978 12 01	675	0.3-	0.6-	1998 09 27	704	0.9-	0.8+	1998 11 11	704	0.7-	0.3-
1995 01 31	691	0.2+	0.3-	1998 09 27	704	0.6-	1.5+	1998 11 11	704	1.1+	0.4-
1995 01 31	691	0.3+	0.1-	1998 10 17	699	0.1+	0.6+	1998 11 11	704	0.0	0.8-
1995 01 31	691	0.2+	0.3-	1998 10 17	699	0.0	0.4+	1998 11 23	699	0.3-	0.1-
1997 06 28	704	0.3-	0.5-	1998 10 17	699	0.3+	0.7+	1998 11 23	699	0.3+	1.3+
1997 06 28	704	0.2+	0.5-	1998 10 28	704	0.7+	0.4-	1998 11 23	699	1.2+	0.1+
1997 06 28	704	0.5+	0.6-	1998 10 28	704	1.7+	0.2+	1999 11 05	703	0.5-	1.2+
1997 07 02	704	0.1+	0.6+	1998 10 28	704	0.1+	1.3-	1999 11 05	703	0.2-	1.2+
1997 07 02	704	0.1+	0.4+	1998 10 28	704	0.1-	0.8-	1999 11 05	703	(1.8+	4.1+)
1997 07 02	704	0.6-	0.5+	1998 10 28	704	1.0-	1.0-	1999 11 05	703	(4.4-	8.5+)
1997 07 02	704	0.2-	0.3+	1998 10 29	704	0.9-	0.4-	2000 01 05	704	0.2-	0.1+
1998 09 18	809	1.3+	1.8+	1998 10 29	704	1.1+	0.7-	2000 01 05	704	0.5+	0.4-
1998 09 18	809	0.1+	0.7+	1998 10 29	704	0.4-	0.5+	2000 01 05	704	0.3-	0.1+
1998 09 18	809	0.8-	1.8+	1998 10 29	704	0.1+	0.8-	2000 01 05	704	0.1-	0.5-
1998 09 20	809	0.9-	1.1-	1998 10 29	704	0.6+	0.4-	2000 01 05	704	0.2+	0.8-
1998 09 20	809	1.3-	1.7-	1998 11 10	704	0.6+	0.9+	2000 01 07	704	0.1-	0.4+
1998 09 20	809	1.1-	1.2-	1998 11 10	704	0.8+	0.9+	2000 01 07	704	0.3+	0.2-
1998 09 26	704	0.6-	0.1+	1998 11 10	704	0.3+	0.4-	2000 01 07	704	0.3+	1.4+
1998 09 26	704	0.4+	0.2-	1998 11 10	704	1.0-	0.5+	2000 01 07	704	0.0	0.6+
1998 09 26	704	0.1+	0.6-	1998 11 10	699	0.9+	0.6-	2000 01 07	704	0.3+	0.2+
1998 09 26	704	0.8-	0.4-	1998 11 10	704	0.3+	1.3-	2000 01 12	120	(2.4-	0.2+)
1998 09 26	704	0.6-	0.5+	1998 11 10	699	0.1+	0.3+	2000 01 12	120	0.7-	0.8-
1998 09 27	704	0.3-	0.5+	1998 11 10	699	0.1+	0.9+				
1998 09 27	704	0.7+	0.2+	1998 11 11	704	0.6-	1.7+				

2000 JAN. 24

M.P.C. 37589

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	269.51338		(2000.0)	P	Q
<i>n</i>	0.30337592	ω	207.93093	-0.15532229	+0.98625144
<i>a</i>	2.1935556	Ω	53.18765	-0.89271107	-0.11567625
<i>e</i>	0.1329914	<i>i</i>	4.04101	-0.42301527	-0.11801315
<i>P</i>	3.25	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1971 03 19	095	0.4+	0.2-	1998 10 14	699	0.3-	0.0	1999 11 16	704	0.4+	0.8+
1974 02 19	029	0.3-	0.5-	1998 11 10	704	0.2+	0.4+	1999 11 16	704	0.9+	0.1+
1974 02 20	029	0.9-	0.5-	1998 11 10	704	0.7-	0.7+	1999 11 16	704	0.2+	0.2+
1984 03 29	095	(3.8+	1.5-)	1998 11 10	704	0.9+	0.0	1999 11 16	704	1.4+	1.8+
1984 04 04	095	1.4+	0.4-	1998 11 10	704	0.6+	0.6-	1999 11 16	704	0.6+	0.2-
1987 02 23	010	1.2-	0.4+	1998 11 10	704	0.6+	0.8-	1999 12 15	704	0.3-	0.0
1987 02 23	010	0.6+	0.4+	1998 11 11	704	0.0	0.3+	1999 12 15	704	0.2+	0.4-
1987 02 23	010	0.8-	0.8+	1998 11 11	704	0.2-	0.3-	1999 12 15	704	0.9-	0.6-
1997 02 15	691	0.1+	0.1+	1998 11 11	704	0.5-	0.7-	1999 12 15	704	0.5-	0.5-
1997 02 15	691	0.0	0.0	1998 11 11	704	0.1-	0.1-	2000 01 01	106	0.3+	0.3+
1997 02 15	691	0.0	0.5-	1998 11 11	704	0.3-	0.0	2000 01 01	106	0.1-	0.4-
1997 02 16	691	0.0	0.3-	1998 11 14	699	0.3-	0.3+	2000 01 01	106	0.7+	0.2-
1997 02 16	691	0.1-	0.0	1998 11 14	699	0.2-	0.2+	2000 01 04	704	0.6-	1.0-
1997 02 16	691	0.1-	0.0	1998 11 14	699	0.1-	0.4+	2000 01 04	704	1.4-	1.9-
1997 04 11	704	0.4-	0.5+	1999 11 10	703	0.7+	0.6+	2000 01 04	704	0.7+	0.4+
1997 04 11	704	0.6-	0.9+	1999 11 10	703	0.8+	0.9+	2000 01 07	704	1.1-	1.3-
1998 10 14	699	0.1+	0.2+	1999 11 10	703	0.1+	0.3+	2000 01 07	704	0.3+	1.0+
1998 10 14	699	0.2+	0.2-	1999 11 10	703	0.1-	0.6+	2000 01 07	704	1.3+	0.0

(13375)* 1998 VH₂₆ = 1995 BA₁₆

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 34931)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	289.76446		(2000.0)	P	Q
<i>n</i>	0.19706504	ω	234.30966	-0.84865541	+0.52888565
<i>a</i>	2.9245766	Ω	337.61723	-0.47826107	-0.77370569
<i>e</i>	0.0529414	<i>i</i>	1.20342	-0.22594322	-0.34879719
<i>P</i>	5.00	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1995 01 30	033	0.0	0.8+	1998 11 11	704	(1.3+	2.9-)	2000 01 04	704	0.5+	0.3+
1995 01 31	033	0.2-	1.1+	1998 11 20	699	0.6-	1.4+	2000 01 04	704	0.3-	0.6-
1995 01 31	691	0.2-	1.2-	1998 11 20	699	1.2-	0.5+	2000 01 04	704	0.3+	0.3+
1995 01 31	691	0.7+	1.8-	1998 11 20	699	1.1-	0.8+	2000 01 05	120	1.0-	0.2-
1995 01 31	691	0.5+	0.5+	1998 11 25	691	0.4-	0.8-	2000 01 05	120	0.1-	0.1-
1995 02 03	033	0.2-	0.3+	1998 11 25	691	0.3-	0.6-	2000 01 05	691	0.4+	0.2+
1995 02 22	033	0.2-	0.5+	1998 11 25	691	0.3-	0.5-	2000 01 05	691	0.5+	0.2+
1995 02 22	033	0.5-	0.2+	1999 10 10	704	0.3+	1.8-	2000 01 05	691	0.6+	0.1+
1997 07 08	688	0.4+	0.8-	1999 10 10	704	0.2+	1.2-	2000 01 06	704	0.0	0.4-
1997 07 08	688	0.4+	0.9-	1999 10 10	704	0.9+	2.0-	2000 01 06	704	0.4+	0.0
1998 10 18	699	0.1+	0.4+	1999 10 10	704	(2.5+	2.1-)	2000 01 06	704	0.5+	0.2+
1998 10 18	699	0.1-	0.6-	1999 11 16	704	0.4-	1.0+	2000 01 06	704	0.3+	0.9-
1998 10 18	699	0.3+	1.0+	1999 11 16	704	0.6-	0.0	2000 01 07	120	0.9+	0.6+
1998 11 10	704	1.9+	0.4+	1999 11 16	704	0.1-	0.2-	2000 01 07	120	1.0+	0.3-
1998 11 10	704	0.8+	0.8-	1999 11 16	704	0.2-	0.5+	2000 01 09	704	1.1-	0.1+
1998 11 10	704	1.3-	1.4-	1999 11 16	704	0.8-	0.0	2000 01 09	704	0.2-	0.7-
1998 11 10	704	0.7+	0.0	2000 01 03	120	1.1-	0.4+	2000 01 09	704	0.2-	0.1+
1998 11 11	704	1.1+	0.0	2000 01 03	120	0.5-	0.1-	2000 01 11	120	1.1-	0.0
1998 11 11	704	0.3-	0.4+	2000 01 04	704	0.2+	0.8+	2000 01 11	120	0.1-	0.5-
1998 11 11	704	0.6+	0.9+	2000 01 04	704	0.3+	0.3+				

(13376)* 1998 VO₃₂ = 1970 EC₂

Discovered 1998 Nov. 15 by I. P. Griffin at the BCC Observatory, Cocoa.

Id. A. Gnädig (*MPC* 35638), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	203.46231		(2000.0)	P	Q
<i>n</i>	0.22913600	ω	3.47606	+0.61910019	+0.77340343
<i>a</i>	2.6448873	Ω	304.82477	-0.72445330	+0.49549712
<i>e</i>	0.1468740	<i>i</i>	9.55342	-0.30312106	+0.39538555
<i>P</i>	4.30	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1970 03 04	805	0.4-	0.7+	1998 11 17	758	0.2-	0.1+	1998 12 16	758	0.1-	0.4+
1970 03 04	805	0.3+	0.2+	1998 11 17	758	0.4-	0.2-	1999 01 06	758	0.3+	0.3+
1970 03 04	805	1.1+	0.5+	1998 11 18	758	0.1+	0.1-	1999 01 06	758	0.1+	0.1-
1983 03 07	413	0.7+	0.0	1998 11 18	758	0.1+	0.3-	1999 01 06	758	0.0	0.4+
1983 03 07	413	0.8-	0.6+	1998 11 18	758	0.7-	0.5-	1999 11 17	704	0.1+	0.8+
1991 03 08	675	0.1-	0.7+	1998 11 19	758	0.8-	0.9-	1999 11 17	704	1.3+	0.1-
1991 03 08	675	0.8+	1.3+	1998 11 19	758	0.4+	0.3-	1999 11 17	704	(2.4+	0.6+)
1992 04 25	413	0.4+	0.1-	1998 11 20	758	0.0	0.2-	1999 12 05	703	0.2-	0.0
1992 04 25	413	0.2-	0.2+	1998 11 20	758	0.1-	0.3-	1999 12 05	703	0.7-	0.4-
1998 11 15	758	0.5+	0.3-	1998 11 20	758	0.2+	0.3-	1999 12 05	703	0.1+	0.4+
1998 11 15	758	0.1-	0.1+	1998 11 25	758	0.1+	0.1+	1999 12 05	703	0.1-	0.5+
1998 11 15	758	0.0	0.1+	1998 11 25	758	0.1+	0.3+	2000 01 05	704	0.1+	0.2+
1998 11 16	704	1.1+	0.8-	1998 11 25	758	0.1+	0.2+	2000 01 05	704	0.9-	0.4+
1998 11 16	758	0.3-	0.6+	1998 11 28	758	0.5-	0.5+	2000 01 05	704	0.0	1.1-
1998 11 16	758	0.5+	0.0	1998 11 28	758	0.1-	0.1-	2000 01 05	704	0.4-	0.5-
1998 11 16	704	0.2-	0.6-	1998 11 28	758	0.7+	0.2+	2000 01 05	704	0.8-	0.9-
1998 11 16	758	0.1-	0.0	1998 12 10	758	0.2-	0.6+	2000 01 07	704	0.0	0.3-
1998 11 16	704	0.5-	0.3-	1998 12 10	758	0.1-	1.0+	2000 01 07	704	0.3-	0.3-
1998 11 16	704	0.5-	0.4-	1998 12 10	758	0.2-	0.6+	2000 01 07	704	0.1-	0.9-
1998 11 16	704	0.2-	0.2+	1998 12 16	758	0.3+	0.1+	2000 01 07	704	0.4-	0.8-
1998 11 17	758	0.1+	0.4-	1998 12 16	758	0.1+	0.5+	2000 01 07	704	0.3+	0.8-

**(13377)* 1998 VN₃₃ = 1989 ER₁₁ = 1991 PM₂ = 1991 PX₃₁
= 1991 PC₃₀ = 1991 RB₃₉ = 1991 RH₃₉
= 1994 AN₆**

Discovered 1998 Nov. 15 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 33518)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	40.28900		(2000.0)	P	Q
<i>n</i>	0.18269387	ω	12.79333	-0.54076310	-0.83822567
<i>a</i>	3.0760028	Ω	109.98209	+0.76501688	-0.52486639
<i>e</i>	0.0550649	<i>i</i>	4.29465	+0.34974911	-0.14796282
<i>P</i>	5.39	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1989 03 03	808	0.9+	0.7-	1994 01 17	691	0.1+	0.4+	1998 12 21	411	0.7-	0.4+
1989 03 03	808	0.1-	0.0	1994 01 17	691	0.3+	0.3+	1998 12 21	411	0.1+	1.1+
1991 08 02	809	0.4+	0.3+	1998 11 15	411	0.4+	1.1+	1998 12 22	704	0.5-	0.1+
1991 08 02	809	(0.4+	2.4+)	1998 11 15	411	0.0	1.4+	1998 12 22	704	0.8+	0.9-
1991 08 02	809	0.8-	1.0+	1998 11 17	411	0.6+	0.1-	1998 12 22	704	0.7+	0.6-
1991 08 07	809	0.4+	0.4+	1998 11 17	411	0.9-	1.0+	1998 12 22	704	0.4+	1.0-
1991 08 07	809	1.2-	0.9+	1998 11 26	411	0.2-	0.9+	1998 12 22	704	0.8+	0.6-
1991 08 07	809	0.7-	0.1-	1998 11 26	411	0.4-	0.8+	1999 11 10	703	0.4-	1.0+
1991 08 14	809	0.8+	0.7+	1998 11 26	411	0.6-	0.4+	1999 11 10	703	0.3+	1.5+
1991 08 14	809	0.0	1.5+	1998 12 12	411	1.1-	1.2+	1999 11 10	703	0.9+	0.5+
1991 08 14	809	0.8+	1.6+	1998 12 12	411	(2.4+	0.5+)	1999 11 10	703	0.3-	0.0
1991 09 05	809	0.0	0.5-	1998 12 15	704	0.2-	1.3-	1999 12 18	699	0.3-	0.5-
1991 09 05	809	(4.0-	0.5-)	1998 12 15	704	0.4-	1.1-	1999 12 18	699	0.1-	1.4+
1991 09 05	809	(4.5-	0.4+)	1998 12 15	704	0.6+	0.8-	1999 12 18	699	0.3-	1.0+
1991 09 06	809	1.2-	0.6-	1998 12 15	704	0.9+	0.8-	2000 01 04	704	0.5-	0.9+
1991 09 06	809	(8.0-	1.7-)	1998 12 15	704	0.7-	0.4-	2000 01 04	704	1.0+	0.1-
1991 09 06	809	(12.6-	2.7-)	1998 12 16	704	0.6+	0.3+	2000 01 04	704	0.9+	0.8-
1994 01 07	691	0.7-	1.3+	1998 12 16	704	0.4+	0.0	2000 01 10	699	0.2-	0.4+
1994 01 07	691	0.0	0.5+	1998 12 16	704	0.9+	0.1-	2000 01 10	699	0.2-	0.0
1994 01 07	691	0.8-	0.3+	1998 12 16	704	0.5-	0.3+	2000 01 10	699	0.6+	0.2-
1994 01 17	691	0.1-	0.3+	1998 12 16	704	0.0	1.0-				

(13378)* 1998 VF₃₅ = 1985 JT = 1991 NJ₂

Discovered 1998 Nov. 12 by S. Ueda and H. Kaneda at Kushiro.

Id. A. Lowe (*MPC* 33321), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	18.20729		(2000.0)	P	Q		
<i>n</i>	0.18849118	ω	301.27216	−0.63385051	−0.77304863		
<i>a</i>	3.0126039	Ω	188.20349	+0.75588392	−0.61225017		
<i>e</i>	0.0521195	<i>i</i>	10.12606	+0.16392992	−0.16596854		
<i>P</i>	5.23	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1985 05 11	675	(1.9+ 4.1−)	1998 11 14	699	0.5+ 0.8+	1999 11 19	699	0.8+ 0.2+
1985 05 13	675	0.1− 0.2+	1998 11 18	399	0.2− 0.5−	1999 11 19	699	1.7+ 0.2−
1991 07 14	675	(0.4− 7.7−)	1998 11 18	399	1.7− 1.5−	1999 12 14	704	0.8− 0.5+
1991 07 14	675	0.2+ 1.8−	1998 11 19	399	1.0− 0.1−	1999 12 14	704	0.2− 0.2−
1991 07 18	675	0.1− 0.9−	1998 11 19	399	0.2− 0.1+	1999 12 14	704	1.6− 1.2−
1991 07 18	675	0.3+ 1.1−	1998 11 22	399	0.1+ 1.3−	1999 12 14	704	0.1+ 1.2−
1992 09 30	691	0.1+ 0.1+	1998 11 22	399	0.5+ 0.5−	1999 12 14	704	0.1− 1.3−
1992 09 30	691	0.0 0.4−	1998 12 10	399	1.8− 0.2+	1999 12 31	106	0.5+ 0.6+
1992 09 30	691	0.1− 0.0	1998 12 10	399	0.8− 0.4−	1999 12 31	106	0.3+ 0.3+
1998 08 28	704	0.7− 1.1+	1998 12 14	699	0.7+ 1.1+	1999 12 31	106	0.5+ 0.5+
1998 08 28	704	(2.5− 1.6+)	1998 12 14	699	0.1− 0.5+	2000 01 07	808	0.5+ 0.3−
1998 08 28	704	1.0+ 1.0−	1998 12 14	699	0.2+ 0.5+	2000 01 07	808	1.8− 0.6−
1998 08 28	704	0.0 0.2−	1999 01 17	699	0.1− 0.7+	2000 01 07	699	0.4+ 0.5+
1998 11 11	704	0.3+ 0.1−	1999 01 17	699	0.7− 0.6+	2000 01 07	699	0.4− 0.1−
1998 11 11	704	0.3+ 0.2−	1999 01 17	699	0.3+ 0.6+	2000 01 07	699	0.4+ 0.1+
1998 11 11	704	0.7+ 1.2−	1999 01 17	732	0.1+ 0.4+	2000 01 08	704	1.3+ 0.4−
1998 11 12	399	0.0 0.8−	1999 01 17	732	0.6+ 0.1+	2000 01 08	704	0.2− 0.8+
1998 11 12	399	1.8− 1.3−	1999 01 17	732	0.7+ 0.1+	2000 01 08	704	1.7− 1.2−
1998 11 13	704	1.6+ 0.5−	1999 01 18	732	0.1− 0.2+	2000 01 10	808	0.0 0.0
1998 11 13	704	0.6+ 1.5+	1999 01 18	732	0.1+ 0.5+	2000 01 10	808	0.4+ 0.0
1998 11 13	704	0.3+ 0.7−	1999 11 08	703	0.3+ 0.2+	2000 01 11	704	0.6+ 0.3−
1998 11 13	704	0.3+ 0.0	1999 11 08	703	0.3+ 0.6+	2000 01 11	704	0.4− 0.2+
1998 11 13	704	0.1− 1.2−	1999 11 08	703	0.3+ 0.1−	2000 01 11	704	1.1− 1.3−
1998 11 14	699	0.4+ 0.7+	1999 11 08	703	0.8+ 0.2+	2000 01 11	704	0.1− 0.3−
1998 11 14	699	0.5+ 0.7+	1999 11 19	699	1.3+ 0.3+	2000 01 11	704	1.8− 0.2−

(13379)* 1998 WX₉ = 1996 RU₂₉

Discovered 1998 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 33323)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	31.68415		(2000.0)	P	Q		
<i>n</i>	0.08455932	ω	336.38912	+0.40634029	−0.90969094		
<i>a</i>	5.1407727	Ω	89.54323	+0.85139032	+0.34288986		
<i>e</i>	0.0664378	<i>i</i>	4.91827	+0.33169578	+0.23428389		
<i>P</i>	11.66	<i>H</i>	11.3	<i>G</i>	0.15	<i>U</i>	0

Residuals in seconds of arc

1989 01 10	675	1.3− 0.6+	1998 11 11	699	0.4− 0.4+	1998 12 08	691	0.9− 0.0
1989 01 10	675	0.9+ 0.1+	1998 11 11	704	0.4+ 0.4−	1998 12 08	699	1.1+ 0.8+
1989 12 08	675	0.1+ 0.4−	1998 11 11	699	0.1− 0.1+	1998 12 08	699	0.2− 0.2−
1989 12 08	675	0.4+ 0.1−	1998 11 11	699	0.1+ 1.1+	1998 12 08	699	1.6+ 0.3+
1991 04 17	675	(1.4− 2.8+)	1998 11 18	704	0.5+ 1.0−	1998 12 12	691	0.1+ 0.0
1991 04 17	675	0.1− 1.4−	1998 11 18	704	0.5− 1.6−	1998 12 12	691	0.3+ 0.2+
1992 04 29	691	0.3− 0.8+	1998 11 18	704	(0.6+ 2.1−)	1998 12 12	691	0.3+ 0.2−
1992 04 29	691	0.5+ 0.6+	1998 11 18	704	(0.3− 2.5−)	1998 12 15	910	0.3+ 1.1+
1996 09 12	809	0.6− 0.4−	1998 11 18	704	(2.3− 2.9−)	1998 12 15	910	0.5+ 1.2+
1996 09 16	809	0.4− 0.1−	1998 11 19	704	0.5− 0.6−	1998 12 15	910	0.3+ 1.2+
1997 10 01	809	0.9− 0.2+	1998 11 19	704	0.8− 1.4−	1998 12 21	910	0.1+ 0.8+
1997 10 01	809	0.4+ 0.3+	1998 11 19	704	1.3+ 1.3−	1998 12 21	910	0.0 0.6+
1997 10 05	809	0.3− 0.5+	1998 11 19	704	1.0− 0.3−	1998 12 21	910	0.2+ 0.9+
1997 10 05	809	0.4− 0.4+	1998 11 19	704	0.2− 0.1−	1998 11 16	704	0.1+ 0.8−
1997 10 06	809	0.6− 0.2+	1998 11 21	704	0.5+ 0.9+	1999 11 16	704	0.5− 0.4−
1997 10 06	809	0.4− 0.2+	1998 11 21	704	0.2− 0.4−	1999 11 16	704	1.1+ 0.1−

1997 10 26	809	0.3− 0.4−	1998 11 21	704	0.2+ 1.4−	1999 11 16	704	0.2− 0.8−
1997 10 26	809	0.2− 0.0	1998 11 21	704	0.3+ 1.0+	1999 11 16	704	0.1+ 0.0
1997 10 28	809	0.9+ 0.4+	1998 11 24	704	0.7+ 0.6−	2000 01 03	704	0.1+ 0.5+
1997 10 28	809	0.8+ 0.3+	1998 11 24	704	1.8− 1.3+	2000 01 03	704	0.9− 0.4+
1997 10 30	704	0.4+ 1.2+	1998 11 24	704	0.3− 0.9−	2000 01 03	704	0.5+ 0.6−
1997 10 30	704	1.7+ 0.8−	1998 11 24	704	0.7− 0.4−	2000 01 03	704	0.4+ 0.4−
1997 10 30	704	0.1+ 1.0−	1998 11 24	704	1.0− 0.1+	2000 01 03	704	0.2− 0.5+
1997 10 30	704	0.7+ 0.9−	1998 11 26	691	0.1− 0.1−	2000 01 04	704	0.1− 0.2−
1997 10 30	704	(3.6− 1.3−)	1998 11 26	691	0.3− 0.0	2000 01 04	704	0.3− 0.6+
1998 11 11	704	0.0 0.6−	1998 11 26	691	0.6− 0.0	2000 01 04	704	0.3+ 0.0
1998 11 11	704	1.1+ 0.2+	1998 12 08	691	0.6− 0.0	2000 01 04	704	0.4− 0.6+
1998 11 11	704	(1.2− 2.2−)	1998 12 08	691	0.9− 0.1−	2000 01 04	704	0.1+ 0.1+

(13380)* 1998 WQ₁₁ = 1990 ER₇ = 1997 LJ₁₇

Discovered 1998 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 33711)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	289.25271		(2000.0)	P	Q		
<i>n</i>	0.29874041	ω	85.30642	−0.20157694	+0.97944889		
<i>a</i>	2.2161887	Ω	173.05315	−0.91954246	−0.18683796		
<i>e</i>	0.1552911	<i>i</i>	3.23579	−0.33735502	−0.07597004		
<i>P</i>	3.30	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1988 11 06	675	1.1− 0.6−	1998 11 11	704	0.1− 0.2−	1998 11 24	704	0.3+ 0.4+
1988 11 06	675	0.5− 0.7−	1998 11 11	704	0.7+ 0.7−	1998 11 24	704	0.8+ 0.3−
1990 03 03	809	0.2+ 0.2−	1998 11 11	704	(0.6+ 2.8−)	1998 11 24	704	0.4+ 0.8−
1990 03 03	809	0.8+ 0.1−	1998 11 11	704	1.1− 0.3−	1998 11 24	704	0.7+ 1.4−
1990 03 03	809	1.0+ 0.0	1998 11 16	566	0.1+ 0.2+	1998 12 11	699	0.5− 1.2+
1990 03 05	809	0.6− 0.3+	1998 11 16	566	0.6+ 0.2+	1998 12 11	699	1.4+ 0.6+
1990 03 05	809	0.0 0.1+	1998 11 16	566	0.1− 0.6+	1998 12 11	699	0.4+ 1.0+
1990 03 05	809	0.1+ 0.2+	1998 11 18	704	0.7− 1.7+	1999 12 09	703	1.3− 0.9−
1997 06 08	809	1.1+ 0.6+	1998 11 18	704	0.5− 0.1−	1999 12 09	703	1.6+ 0.1−
1997 06 08	809	0.1+ 0.6+	1998 11 18	704	0.3− 0.5+	1999 12 09	703	0.3− 0.4+
1997 06 08	809	0.6+ 0.4+	1998 11 18	704	0.3− 0.8+	1999 12 09	703	1.2+ 1.3+
1997 06 09	809	0.1− 1.4+	1998 11 18	704	0.1+ 0.5+	2000 01 05	704	1.0− 0.4−
1997 06 09	809	0.1+ 1.7+	1998 11 21	704	0.0 1.0+	2000 01 05	704	0.9− 0.0
1997 06 09	809	0.4− 1.5+	1998 11 21	704	0.2− 0.9+	2000 01 05	704	1.1− 0.6−
1997 06 10	691	(3.2− 0.6+)	1998 11 21	704	0.0 0.6+	2000 01 06	699	0.8+ 1.4+
1997 06 10	691	(4.4− 0.5−)	1998 11 21	704	0.7− 1.3+	2000 01 06	699	0.2+ 0.2+
1997 06 10	691	(2.5− 0.2+)	1998 11 21	704	0.3− 1.8+	2000 01 06	699	0.6− 0.1+

(13381)* 1998 WJ₁₇ = 1989 SB₇

Discovered 1998 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 35343), A. Doppler (*ibid.*), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	136.92400		(2000.0)	P	Q		
<i>n</i>	0.12389887	ω	83.09106	+0.73244994	+0.67821390		
<i>a</i>	3.9849649	Ω	234.18419	−0.65003884	+0.67066407		
<i>e</i>	0.2149182	<i>i</i>	4.20949	−0.20240203	+0.30039243		
<i>P</i>	7.95	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1986 04 02	413	2.5−	0.8+	1998 11 24	704	1.0−	1.2−	1999 02 07	691	0.2−	0.1−
1986 04 02	413	1.5+	1.3−	1998 11 24	704	0.7−	0.2+	1999 02 07	691	0.0	0.2+
1989 09 30	675	0.5+	0.8−	1998 11 24	704	1.1−	0.4+	1999 02 12	691	0.5+	0.1+
1989 09 30	675	1.1+	1.8−	1998 11 25	699	0.6+	0.2+	1999 02 12	691	0.2+	0.3−
1995 05 29	413	0.8−	1.1−	1998 11 25	699	0.7+	0.1+	1999 02 12	691	0.6+	0.5+
1995 05 29	413	0.4+	0.2−	1998 11 25	699	0.5+	0.3+	1999 12 08	704	0.8+	0.2−
1998 11 20	699	0.3+	0.3+	1998 12 25	691	1.2−	0.2+	1999 12 08	704	0.5−	0.0
1998 11 20	699	0.1+	1.4+	1998 12 25	691	1.3−	0.4+	1999 12 08	704	0.5−	0.1−
1998 11 20	699	0.9−	1.2+	1998 12 25	691	1.2−	0.4+	2000 01 05	704	0.0	0.4−
1998 11 21	704	0.2+	0.1+	1999 01 05	699	0.5+	0.4+	2000 01 05	704	0.1+	0.8−

2000 JAN. 24

M.P.C. 37591

1998 11 21	704	0.1+	0.6-	1999 01 05	699	0.7-	0.2+	2000 01 05	704	0.5+	0.6-
1998 11 21	704	0.9+	0.1-	1999 01 05	699	0.1-	0.1-	2000 01 06	704	0.0	0.3-
1998 11 21	704	(2.2+	2.2-)	1999 01 07	691	0.2-	0.1-	2000 01 06	704	0.3+	0.5-
1998 11 21	704	1.0+	0.5-	1999 01 07	691	0.3-	0.2+	2000 01 06	704	0.9+	0.6-
1998 11 24	704	0.3+	0.8-	1999 01 07	691	0.2-	0.1+				
1998 11 24	704	0.6+	1.1-	1999 02 07	691	0.1-	0.0				

(13382)* 1998 XC₄ = 1978 QL₁ = 1979 YH₇ = 1990 DC₆ = 1996 LC₁

Discovered 1998 Dec. 11 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 33530)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	114.86168		(2000.0)	P		Q	
<i>n</i>	0.20558809	ω	127.88312	+0.62779418		-0.77820404	
<i>a</i>	2.8431782	Ω	283.22116	+0.70871542		+0.58025516	
<i>e</i>	0.0669883	<i>i</i>	0.97239	+0.32186475		+0.24021329	
<i>P</i>	4.79	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 08 31	095	0.2+	0.1+	1998 12 12	411	0.1-	0.5-	1999 01 08	704	0.7+	1.2+
1978 09 05	095	0.8-	0.8+	1998 12 12	411	0.5-	0.1-	1999 01 08	704	1.9-	0.1+
1979 12 18	095	(0.2-	3.9-)	1998 12 14	704	0.4-	0.2-	1999 01 08	704	0.2-	1.6+
1990 02 23	033	0.4+	0.6+	1998 12 14	704	0.2+	0.3+	1999 01 08	704	0.1+	1.5+
1990 02 23	033	0.5+	0.8+	1998 12 14	704	0.3+	0.4-	1999 01 08	704	(2.3-	0.0)
1996 06 13	566	0.2-	0.4-	1998 12 14	704	0.3+	0.2-	1999 01 11	704	1.9+	0.6-
1996 06 13	566	0.5-	0.5-	1998 12 16	704	0.2+	0.5-	1999 01 11	704	1.6+	1.0+
1996 06 13	566	0.3-	0.5-	1998 12 16	704	0.4+	0.8-	1999 01 11	704	0.9+	0.6+
1996 06 14	566	0.3-	0.5-	1998 12 16	704	0.3-	0.8-	1999 01 11	704	(1.0-	2.8-)
1996 06 14	566	1.2+	0.7+	1998 12 16	704	0.0	1.1-	1999 01 11	704	0.4-	0.4-
1996 06 14	566	0.1-	0.2-	1998 12 16	704	0.0	0.5-	1999 12 09	703	1.2-	0.3-
1996 06 14	566	1.4+	0.8+	1998 12 17	704	0.1-	0.3-	1999 12 09	703	0.6-	0.6+
1996 06 14	566	0.4-	0.4-	1998 12 17	704	0.4-	0.2+	1999 12 09	703	0.1-	0.7+
1996 06 14	566	1.2+	1.2+	1998 12 17	704	0.1-	0.9-	1999 12 09	703	0.3+	0.2+
1996 06 21	566	0.5-	0.2-	1998 12 17	704	0.0	0.3+	2000 01 05	704	0.0	0.2+
1996 06 21	566	0.7-	0.2-	1998 12 17	704	0.5-	0.3-	2000 01 05	704	0.2-	0.2+
1996 06 21	566	0.9-	0.2-	1998 12 19	411	0.5-	0.3+	2000 01 05	704	0.6-	1.2-
1997 08 30	566	0.1-	0.4+	1998 12 19	411	0.5-	0.2-	2000 01 05	704	0.8+	0.3-
1997 08 30	566	0.2-	0.5+	1998 12 26	411	0.5-	0.1-	2000 01 11	699	0.2-	0.6+
1997 08 30	566	0.1-	0.5+	1998 12 26	411	0.3-	0.1-	2000 01 11	699	1.4+	0.2+
1998 12 11	411	0.4-	0.1+	1999 01 02	411	0.4+	0.3+	2000 01 11	699	0.1+	0.2+
1998 12 11	411	0.2+	0.6-	1999 01 02	411	0.1-	0.8+				

(13383)* 1998 XS₃₁ = 1996 SQ₈

Discovered 1998 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 34226)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	51.51939		(2000.0)	P		Q	
<i>n</i>	0.08511752	ω	160.85664	+0.59898495		-0.79367551	
<i>a</i>	5.1182724	Ω	252.20637	+0.71935456		+0.59163888	
<i>e</i>	0.0658217	<i>i</i>	6.40890	+0.35177557		+0.14157197	
<i>P</i>	11.58	<i>H</i>	11.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1951 12 01	675	0.9-	0.1+	1998 12 17	704	0.4-	0.3-	1999 12 30	106	0.4+	0.1-
1951 12 01	675	0.8+	0.1-	1999 01 05	699	(0.8-	2.1+)	2000 01 05	704	0.2-	0.1-
1996 09 16	809	0.3+	0.7+	1999 01 05	699	0.6+	1.2+	2000 01 05	704	0.3-	0.0
1996 09 17	809	0.4+	0.2+	1999 01 05	699	0.0	0.2-	2000 01 05	704	0.4-	0.9+
1997 11 22	691	0.6-	0.2+	1999 10 10	704	0.8-	0.4+	2000 01 05	704	0.7-	0.4+
1997 11 22	691	1.3-	0.2+	1999 10 10	704	0.5-	0.1+	2000 01 05	704	0.0	0.2+
1997 11 22	691	1.3-	0.2+	1999 10 10	704	0.2-	0.2-	2000 01 06	704	0.4-	0.2+
1998 11 24	704	0.0	0.6-	1999 10 10	704	0.6+	0.6-	2000 01 06	704	0.5+	0.1+
1998 11 24	704	0.8-	0.6-	1999 10 10	704	0.1-	0.6-	2000 01 06	704	0.5+	0.7+
1998 11 24	704	0.6-	1.3-	1999 10 21	704	0.7-	0.2-	2000 01 07	704	0.1+	0.6+
1998 11 24	704	1.0-	1.1-	1999 10 21	704	0.0	0.6+	2000 01 07	704	1.3+	0.4+
1998 12 11	699	1.7+	0.2+	1999 10 21	704	0.6-	0.3-	2000 01 07	704	(2.3+	0.6+)

1998 12 11	699	1.5+	0.1+	1999 10 21	704	0.4+	1.0+	2000 01 09	704	0.3+	0.5-
1998 12 11	699	1.3+	0.7-	1999 10 21	704	0.1+	0.7+	2000 01 09	704	0.2+	0.1-
1998 12 14	704	0.3-	0.1+	1999 12 08	704	0.6-	0.1+	2000 01 09	704	0.4+	0.0
1998 12 14	704	0.4+	1.4+	1999 12 08	704	0.3-	0.2+	2000 01 09	704	0.0	0.0
1998 12 14	704	0.3-	0.1-	1999 12 08	704	(2.0-	0.7+)	2000 01 09	704	0.1-	0.6-
1998 12 14	704	0.9+	1.6-	1999 12 14	704	0.5+	0.3+	2000 01 10	704	0.1-	0.5-
1998 12 14	704	0.1+	1.4+	1999 12 14	704	0.2-	0.2-	2000 01 10	704	0.2+	0.6-
1998 12 17	704	0.9-	0.5-	1999 12 14	704	0.1-	0.2-	2000 01 10	704	0.0	0.3-
1998 12 17	704	0.1-	0.3-	1999 12 14	704	0.1-	0.0	2000 01 10	704	0.2+	0.0
1998 12 17	704	0.5+	0.1+	1999 12 14	704	0.1-	0.4-	2000 01 10	704	0.2-	0.3+
1998 12 17	704	0.7+	0.3-	1999 12 30	106	0.1-	0.6+				

(13384)* 1998 XG₇₉ = 1980 NO

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 34228)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	113.04240		(2000.0)	P		Q	
<i>n</i>	0.17597467	ω	262.98565	+0.92482720		-0.32271862	
<i>a</i>	3.1538131	Ω	115.67344	+0.37176981		+0.87888408	
<i>e</i>	0.2373769	<i>i</i>	12.91000	-0.08051003		+0.35130538	
<i>P</i>	5.60	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 07 11	805	1.8+	0.5+	1998 12 22	704	0.9-	0.5-	2000 01 04	704	0.5+	1.0-
1980 07 12	805	1.2-	0.4-	1998 12 22	704	0.2+	0.0	2000 01 04	704	0.0	0.6-
1980 07 12	805	0.8-	0.5-	1998 12 22	704	0.2+	0.4+	2000 01 04	704	0.5+	0.0
1980 07 13	805	0.7+	0.4-	1998 12 22	704	0.4+	0.7+	2000 01 04	704	0.6-	0.1+
1980 07 13	805	0.5-	0.7+	1999 01 07	699	0.7-	0.3-	2000 01 06	704	0.2+	0.7-
1997 08 03	566	0.2-	0.3+	1999 01 07	699	0.8-	0.1+	2000 01 06	704	0.3+	0.6+
1997 08 03	566	0.3-	0.3+	1999 01 07	699	0.5-	0.2+	2000 01 06	704	0.3+	0.9+
1997 08 03	566	0.5+	0.4+	1999 01 23	699	0.3-	0.4-	2000 01 08	704	0.2-	0.4-
1998 12 15	704	0.0	0.2-	1999 01 23	699	0.5-	0.4+	2000 01 08	704	0.3+	0.2-
1998 12 15	704	0.3+	0.6-	1999 01 23	699	0.5-	0.2+	2000 01 08	704	0.0	0.1+
1998 12 15	704	1.1+	0.1-	1999 02 04	699	0.1+	1.1+	2000 01 08	704	0.4-	0.6-
1998 12 15	704	0.2+	0.4-	1999 02 04	699	0.3-	1.1+	2000 01 08	704	0.1+	1.2+
1998 12 15	704	0.0	0.5-	1999 02 04	699	0.3-	0.1-	2000 01 10	699	0.2-	0.6+
1998 12 16	699	0.2+	0.1-	1999 12 15	704	0.5-	0.1+	2000 01 10	699	0.3+	1.4+
1998 12 16	699	0.3+	0.2-	1999 12 15	704	0.5-	0.2-	2000 01 10	699	0.9-	0.4+
1998 12 16	699	0.1+	0.1-	1999 12 15	704	0.0	1.6-				
1998 12 22	704	1.2+	0.5+	1999 12 15	704	0.6+	0.2-				

(13385)* 1998 XO₇₉ = 1996 RH₂₉

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 33720)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	142.01540		(2000.0)	P		Q	
<i>n</i>	0.08282025	ω	166.52664	+0.80828724		+0.58126692	
<i>a</i>	5.2124874	Ω	157.14240	-0.56011281		+0.80821605	
<i>e</i>	0.0442176	<i>i</i>	13.97543	-0.18150860		+0.09442235	
<i>P</i>	11.90	<i>H</i>	10.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 03 19	675	(0.5-	2.7+)	1997 11 26	809	0.9+	0.7+	1999 10 10	704	0.7+	0.3+
1980 03 19	675	0.8+	1.4+	1997 11 28	809	0.2+	0.3+	1999 10 10	704	0.2+	0.2-
1980 03 20	675	(0.7+	3.1+)	1997 11 28	809	0.0	0.0	1999 10 10	704	0.5+	0.2-
1980 03 20	675	0.6+	0.3+	1998 12 15	704	1.0-	1.2-	1999 10 10	704	0.6+	0.3-
1989 03 07	675	1.2-	1.0-	1998 12 15	704	0.4+	1.1-	1999 12 05	704	1.2+	0.7-

1996 10 15	809	0.7+	1.0−	1998 12 22	704	(2.5−	2.6−)	2000 01 07	704	0.2−	0.8+
1996 10 15	809	0.7+	0.6−	1998 12 22	704	0.7+	1.2+	2000 01 07	704	0.0	0.2+
1996 11 02	675	(0.5+	3.4+)	1998 12 22	704	0.4−	0.5−	2000 01 07	704	0.1−	0.9+
1997 11 05	327	(0.9−	2.0+)	1999 01 14	699	1.8+	0.4+	2000 01 11	704	0.1+	0.1+
1997 11 05	327	0.3−	1.1+	1999 01 14	699	0.1−	1.1+	2000 01 11	704	0.2+	0.2+
1997 11 05	327	0.1−	1.1+	1999 01 14	699	0.1+	1.8+	2000 01 11	704	0.3−	0.4−
1997 11 26	809	0.2+	0.8+	1999 10 10	704	0.2−	0.1−	2000 01 11	704	0.1+	0.1−

(13386)* 1998 XG₈₀ = 1991 NL₃

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 33974)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		147.18538		(2000.0)		P		Q	
<i>n</i>		0.17523604	ω	232.26515		+0.95783851		+0.16062966	
<i>a</i>		3.1626692	Ω	117.33361		−0.09348924		+0.95824214	
<i>e</i>		0.1521092	<i>i</i>	15.55410		−0.27167102		+0.23658005	
<i>P</i>		5.62	<i>H</i>	12.3		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 07 06	809	0.0	0.9+	1999 01 23	699	0.1−	0.4+	1999 12 04	703	0.8−	0.1+
1991 07 06	809	0.1−	0.8+	1999 01 23	699	0.4+	0.3+	2000 01 04	704	0.3+	0.5−
1991 07 06	809	0.0	0.6+	1999 01 23	699	0.2+	0.1+	2000 01 04	704	0.5+	0.7−
1991 07 07	809	0.4+	0.2−	1999 02 04	699	0.3−	0.9+	2000 01 04	704	0.2+	0.7−
1997 08 30	566	0.0	0.1−	1999 02 04	699	1.2+	1.1+	2000 01 04	704	0.6+	0.6−
1997 08 30	566	0.1−	0.1−	1999 02 04	699	0.4+	0.3+	2000 01 04	704	0.0	0.8−
1997 08 30	566	0.1+	0.2+	1999 02 14	910	0.6−	0.3−	2000 01 06	704	0.3+	0.2−
1998 12 15	704	0.3−	0.3−	1999 02 14	910	0.6−	0.4−	2000 01 06	704	0.6−	0.2−
1998 12 15	704	1.0−	0.5−	1999 02 14	910	0.5−	0.4−	2000 01 06	704	0.0	0.1−
1998 12 15	704	0.2+	0.2+	1999 02 16	910	0.3−	0.2−	2000 01 06	704	0.2−	0.4−
1998 12 15	704	0.4−	0.2−	1999 02 16	910	0.0	0.5−	2000 01 06	699	0.6−	0.6+
1998 12 15	704	1.3+	0.6+	1999 02 16	910	0.0	0.4−	2000 01 06	704	0.2+	0.1−
1998 12 22	704	0.2−	0.5−	1999 11 16	704	0.1+	0.4+	2000 01 06	699	0.2+	0.1+
1998 12 22	704	0.1+	0.1−	1999 11 16	704	0.2−	1.8+	2000 01 06	699	0.6+	0.7+
1998 12 22	704	0.3−	0.2−	1999 11 16	704	0.3+	1.0+	2000 01 08	704	0.2−	0.0
1998 12 22	704	0.2+	0.7−	1999 11 16	704	0.4−	0.5−	2000 01 08	704	0.3+	0.0
1998 12 22	704	0.9−	0.5+	1999 11 16	704	0.2−	0.3+	2000 01 08	704	0.2−	0.2+
1999 01 14	699	0.1−	0.5+	1999 12 04	703	0.6+	0.8+	2000 01 08	704	0.3+	0.3+
1999 01 14	699	0.4+	0.5+	1999 12 04	703	0.4+	0.2+	2000 01 08	704	0.3−	0.1+
1999 01 14	699	0.8+	0.1+	1999 12 04	703	0.7−	0.7+				

(13387)* 1998 YW₆ = 1996 RT₂₈

Discovered 1998 Dec. 22 at Farra d'Isonzo.

Id. G. V. Williams (*MPC* 33724)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		80.05714		(2000.0)		P		Q	
<i>n</i>		0.08235314	ω	19.16760		+0.96465181		−0.26338634	
<i>a</i>		5.2321792	Ω	356.07285		+0.22232073		+0.83096323	
<i>e</i>		0.0953396	<i>i</i>	7.24090		+0.14149336		+0.49002831	
<i>P</i>		11.97	<i>H</i>	11.8		<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1996 09 11	809	0.0	0.2+	1998 12 23	595	0.6+	0.4+	1999 12 12	704	0.6−	0.1−
1996 09 17	809	0.2+	0.7−	1999 01 05	595	0.7−	0.4−	1999 12 12	704	0.1−	1.0−
1997 10 05	691	0.1+	0.1−	1999 01 05	595	0.1+	0.5−	1999 12 12	704	0.2−	0.5−
1997 10 05	691	0.2+	0.2−	1999 01 09	595	0.8−	0.1−	1999 12 12	704	0.4−	0.1+
1997 10 05	691	0.3−	0.5−	1999 01 09	595	0.0	0.1+	1999 12 15	704	0.7−	0.9+
1997 11 21	691	0.1−	0.5+	1999 01 09	595	1.0−	0.9+	1999 12 15	704	0.3+	0.4+
1997 11 21	691	0.3+	0.3+	1999 01 09	595	0.3+	0.5−	1999 12 15	704	0.2+	0.2+
1997 11 21	691	0.1−	0.0	1999 01 13	595	0.7−	0.4+	1999 12 15	704	0.1+	0.1−
1998 12 22	595	0.5+	0.0	1999 01 13	595	0.2−	0.4+	2000 01 04	704	0.4+	0.4−
1998 12 22	595	0.3+	0.5−	1999 01 23	595	0.3+	0.5+	2000 01 04	704	0.9+	0.2−
1998 12 23	595	0.6+	0.3−	1999 01 23	595	0.3−	0.5+	2000 01 04	704	0.4+	0.6−
1998 12 23	595	0.3+	0.4+	1999 12 12	704	0.4−	0.2−				

(13388)* 1999 AE₆ = 1981 RK₂ = 1986 XH₄

Discovered 1999 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 34229)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		85.75163		(2000.0)		P		Q	
<i>n</i>		0.23620510	ω	178.34779		+0.42991456		−0.87477459	
<i>a</i>		2.5918500	Ω	246.13933		+0.82553883		+0.48108768	
<i>e</i>		0.0683704	<i>i</i>	14.14428		+0.36559419		−0.05765471	
<i>P</i>		4.17	<i>H</i>	12.5		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 09 07	095	1.2−	0.7+	1998 11 14	704	0.0	1.0−	1999 01 11	704	0.0	1.1+
1981 09 27	095	(0.4+	9.9+)	1998 12 09	704	1.3−	1.0+	1999 01 11	704	0.3+	1.2−
1981 10 03	095	0.3−	1.0+	1998 12 09	704	(2.5−	1.4−)	1999 01 11	704	1.7+	0.9−
1986 12 05	010	1.2−	0.2−	1998 12 09	704	1.2−	1.2−	1999 12 16	704	0.3+	0.3+
1986 12 05	010	1.3+	0.7+	1998 12 09	704	1.0+	1.0−	1999 12 16	704	0.2+	0.0
1986 12 05	010	1.2+	0.5+	1998 12 09	704	0.3−	1.5−	1999 12 16	704	0.5+	0.3+
1995 02 03	691	0.1−	0.1+	1999 01 05	699	0.3+	0.4+	1999 12 16	704	0.5+	0.3−
1995 02 03	691	0.4−	0.3−	1999 01 05	699	0.3+	0.3+	1999 12 16	704	0.5+	0.2+
1995 02 03	691	0.3−	0.3−	1999 01 05	699	0.6+	0.1+	2000 01 07	808	0.6−	0.1−
1997 07 01	327	0.9+	0.2+	1999 01 08	704	0.2+	0.5+	2000 01 07	808	0.5−	0.7−
1997 07 01	327	0.3−	0.4−	1999 01 08	704	0.6+	0.8+	2000 01 10	808	0.7−	0.2−
1997 07 01	327	0.6+	0.1−	1999 01 08	704	0.1+	1.1−	2000 01 10	808	1.4−	0.1+
1998 11 14	704	0.2−	0.8+	1999 01 08	704	0.0	0.4−	2000 01 10	704	0.0	1.0+
1998 11 14	704	0.0	0.7+	1999 01 08	704	0.8+	0.0	2000 01 10	704	0.2+	0.2+
1998 11 14	704	0.7−	0.1−	1999 01 11	704	0.1−	0.6−	2000 01 10	704	0.2+	0.2+
1998 11 14	704	0.0	0.2+	1999 01 11	704	0.0	0.6+				

(13389)* 1999 AG₂₄ = 1991 US = 1993 BU₁ = 1997 WS₄₆

Discovered 1999 Jan. 10 by J. V. McClusky at Fair Oaks Ranch.

Id. S. Nakano (*MPC* 33981)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		261.42396		(2000.0)		P		Q	
<i>n</i>		0.17865254	ω	337.54057		+0.43313354		+0.90108875	
<i>a</i>		3.1222182	Ω	318.11812		−0.82213728		+0.38549398	
<i>e</i>		0.1633707	<i>i</i>	1.78904		−0.36943961		+0.19857857	
<i>P</i>		5.52	<i>H</i>	12.5		<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 10 18	399	1.3−	1.9−	1997 11 26	704	(4.1−	1.7+)	1999 02 05	376	1.6+	0.2+
1991 10 18	399	1.9−	0.1+	1997 11 29	704	0.3+	0.8+	1999 02 05	376	1.0+	0.6+
1991 10 19	399	(2.9−	1.4−)	1997 11 29	704	0.7+	0.8+	1999 02 21	725	1.3−	0.5+
1991 10 19	399	(4.1−	0.5−)	1997 11 29	704	0.6+	1.9+	1999 02 21	725	1.2−	0.9+
1993 01 16	010	1.6+	1.1−	1997 11 29	704	1.0+	0.4+	1999 02 22	725	1.6−	0.1+
1993 01 16	010	0.0	1.2−	1997 11 29	704	0.3+	0.1−	1999 02 22	725	1.4−	0.8+
1993 01 16	010	0.0	0.6−	1997 11 30	566	0.6+	0.5−	1999 12 14	725	0.9+	0.7−
1993 01 17	010	1.0+	1.2−	1997 11 30	566	0.5+	0.7−	1999 12 14	725	1.0+	0.4−
1993 01 17	010	1.8+	0.5−	1997 11 30	566	0.7+	1.0−	1999 12 14	725	1.0+	0.9−
1993 01 17	010	1.5+	0.0	1999 01 10	725	1.2−	1.0+	1999 12 17	725	0.0	0.0
1994 06 12	691	0.4−	0.6−	1999 01 10	725	1.2−	1.0+	1999 12 17	725	0.5+	0.3+
1994 06 12	691	0.1−	0.6−	1999 01 15	725	0.8−	0.8+	2000 01 11	699	1.4+	0.5−
1994 06 12	691	0.1−	0.2−	1999 01 15	725	1.3−	0.8+	2000 01 11	699	0.6−	0.3−
1997 11 26	704	(3.5−	2.1+)	1999 01 25	725	0.8−	0.5+	2000 01 11	699	0.6−	0.9−
1997 11 26	704	(3.7−	2.4+)	1999 01 25	725	0.9−	0.6+				

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M.P.C. 37593

Discovered 1999 May 20 by the Lincoln Laboratory Near-Earth Asteroid

Williams

M	50.84785		(2000.0)		P		Q	
n	0.23575871	ω	145.25502		+0.68865014		+0.72335573	
a	2.5951207	Ω	167.99240		-0.70787344		+0.68567490	
e	0.1692047	i	13.95592		-0.15708655		+0.08127985	
P	4.18	H	14.3		G	0.15	U	2
Residuals in seconds of arc								
1991 09 13	675 1.1-	1.0-	1998 03 24	704 0.6+	0.0	1999 09 09	704 0.2+	0.0
1991 09 13	675 1.0+	1.4-	1998 03 24	704 0.1+	0.9+	1999 09 09	704 0.5-	0.6+
1991 09 15	675 0.1-	0.7-	1998 03 24	704 0.4-	0.1+	1999 09 13	704 0.5-	0.5+
1991 09 15	675 0.2-	0.5-	1998 03 24	704 0.1+	0.4+	1999 09 13	704 0.1+	0.3+
1991 09 16	675 0.0	1.7-	1998 03 24	704 1.6-	0.6-	1999 09 13	704 0.2-	0.3-
1991 09 16	675 0.7-	1.5-	1999 05 20	704 1.1-	1.1-	1999 09 13	704 0.5-	0.3+
1995 08 24	809 0.1+	0.8+	1999 05 20	704 0.9-	0.4-	1999 09 13	704 0.4-	0.3-
1995 08 25	809 0.0	0.4+	1999 05 20	704 0.8-	0.4-	1999 09 29	704 0.1+	0.2-
1995 08 26	809 (2.9+	0.9-)	1999 05 20	704 (2.7-	0.1-)	1999 09 29	704 0.3-	0.1-
1995 09 01	809 0.2+	0.3+	1999 05 21	704 0.8+	1.2-	1999 09 29	704 0.2+	1.0+
1995 09 18	809 (2.2-	2.3+)	1999 05 21	704 1.5-	0.4-	1999 09 29	704 0.1-	0.3+
1995 09 18	809 0.7+	1.1-	1999 05 21	704 0.8-	0.6-	1999 09 29	704 0.7+	0.2+
1995 09 20	809 0.3-	0.3+	1999 05 21	704 1.0+	0.7-	1999 09 30	704 0.2-	0.3-
1995 09 22	809 0.2+	1.0+	1999 05 21	704 1.3-	0.6-	1999 09 30	704 0.1+	0.9+
1995 09 22	809 0.9+	0.1-	1999 07 12	704 0.9+	0.1-	1999 09 30	704 0.3+	0.5+
1995 09 23	809 0.4+	0.1+	1999 07 12	704 0.4-	0.3+	1999 09 30	704 0.5+	0.7+
1995 09 24	809 0.4+	0.5+	1999 07 12	704 1.2+	1.8-	1999 10 10	699 1.0-	0.5-
1995 09 29	809 0.3+	0.4+	1999 07 12	704 (1.3+	3.0-)	1999 10 10	699 0.1+	0.7+
1998 02 01	327 0.0	0.5-	1999 07 12	704 0.5-	1.7-	1999 10 10	699 0.6-	0.5+
1998 02 01	327 0.1+	1.0-	1999 07 22	704 0.1+	0.7-	1999 10 15	704 0.3+	0.5+
1998 02 01	327 0.1-	0.6-	1999 07 22	704 0.0	0.3-	1999 10 15	704 0.5+	0.7+
1998 02 28	809 (2.3-	3.2+)	1999 07 22	704 0.0	0.2-	1999 10 15	704 0.6+	0.4+
1998 02 28	809 0.4+	0.4-	1999 07 22	704 0.4+	0.4-	1999 10 15	704 0.0	0.6+
1998 03 02	809 0.1-	0.5+	1999 07 22	704 0.3+	0.5+	1999 10 15	704 0.7+	0.2+
1998 03 02	809 0.1-	0.3-	1999 09 04	703 0.1-	0.1+	1999 10 16	704 0.8+	0.4+
1998 03 22	704 0.2-	0.2-	1999 09 04	703 0.3-	0.4+	1999 10 16	704 0.3+	0.5+
1998 03 22	704 0.7+	0.2-	1999 09 04	703 0.4-	0.2-	1999 10 16	704 0.8+	0.2+
1998 03 22	704 1.5+	1.2+	1999 09 04	703 0.1+	0.2-	1999 10 16	704 0.2-	0.1-
1998 03 22	704 0.7+	0.7+	1999 09 08	703 0.1-	0.8+	1999 10 16	704 0.4+	0.1-
1998 03 22	704 1.2-	0.8+	1999 09 08	703 0.0	0.3+	1999 11 06	703 0.1-	0.1+
1998 03 24	704 0.6-	0.3-	1999 09 08	703 0.2-	0.3+	1999 11 06	703 0.6-	0.4+
1998 03 24	704 0.7+	0.1+	1999 09 08	703 0.8-	0.5+	1999 11 06	703 0.7-	0.3-
1998 03 24	704 0.1-	0.2+						

M	203.23138		(2000.0)			$\mathbf{P}$		$\mathbf{Q}$			
n	0.18420758	ϖ	195.72144			+0.27976174		-0.95160481			
a	3.0591285	Ω	238.18735			+0.89619443		+0.30636790			
e	0.0806066	i	8.60924			+0.34433836		-0.02422789			
P	5.35	H	12.5			G	0.15	U	1		
Residuals in seconds of arc											
1990 09 17	675	0.1+	0.7-	1999 04 15	704	1.2-	0.7-	1999 05 18	704	0.3-	0.6-
1990 09 17	675	0.2-	0.6-	1999 05 08	699	1.0+	0.4-	1999 05 18	704	0.9-	0.3-
1990 09 19	675	0.6+	0.6-	1999 05 08	699	0.2+	0.4-	1999 05 18	704	0.4+	0.4-
1990 09 19	675	0.4+	0.6-	1999 05 08	699	0.1-	0.1+	1999 05 18	704	1.1-	0.7+
1996 11 12	095	0.1-	1.8+	1999 05 10	704	0.3+	0.2+	1999 05 18	704	0.1+	0.6+
1996 11 15	095	(3.6+	0.6-)	1999 05 10	704	0.2+	0.5-	1999 06 04	699	1.0+	0.1+
1996 11 15	095	(0.6+	2.1+)	1999 05 10	704	0.4-	0.4+	1999 06 04	699	1.4+	0.1+
1998 01 24	566	0.5-	0.2+	1999 05 10	704	0.1-	0.7+	1999 06 04	699	0.4+	0.4+
1998 01 24	566	0.2-	0.1+	1999 05 10	704	0.4-	1.0+	1999 06 07	703	0.5+	0.3+
1998 01 24	566	0.8-	0.1+	1999 05 13	704	0.5-	0.1+	1999 06 07	703	0.3-	0.1+
1998 02 25	566	0.3-	0.9-	1999 05 13	704	1.1-	0.1-	1999 06 07	703	1.0+	0.1-
1998 02 25	566	0.3-	0.7-	1999 05 13	704	0.1+	0.2+	1999 06 07	703	0.9+	1.1-
1998 02 25	566	0.1-	0.7-	1999 05 13	704	1.1-	0.3-	1999 06 09	704	0.4+	1.0-
1998 03 25	699	0.1+	0.0	1999 05 13	704	0.2-	0.0	1999 06 09	704	1.4+	0.8+
1998 03 25	699	0.9+	0.3+	1999 05 14	704	0.7-	0.1+	1999 06 09	704	0.4+	0.8+
1998 03 25	699	0.6+	0.4-	1999 05 14	704	0.6-	0.6+	1999 06 09	704	(2.1+	2.4+
1999 04 15	704	0.1-	1.0+	1999 05 14	704	0.3-	0.7-	1999 06 14	699	0.9+	0.2+
1999 04 15	704	0.2-	1.4-	1999 05 14	704	1.2-	0.1-	1999 06 14	699	1.3+	0.1-
1999 04 15	704	0.3+	0.7-	1999 05 14	704	1.0-	0.6+	1999 06 14	699	0.4+	0.2-

Williams

[illegible]

1996 11 15	095	0.6−	1.2+	1999 07 16	704	0.6−	0.9−	1999 10 05	699	0.4−	0.0
1998 02 25	566	0.6+	0.2−	1999 07 16	704	0.5−	1.3−	1999 10 15	704	0.5+	0.7+
1998 02 25	566	0.4+	0.3−	1999 07 16	704	0.6−	1.0−	1999 10 15	704	0.3+	1.4+
1998 02 25	566	0.6+	0.5−	1999 07 20	699	0.2−	0.7+	1999 10 15	704	0.3−	0.9+
1998 03 24	704	0.3−	0.3+	1999 07 20	699	0.2+	0.8+	1999 10 15	704	0.0	1.2+
1998 03 24	704	0.7−	0.6+	1999 07 20	699	0.0	0.3+	1999 10 15	704	0.3+	1.8+
1998 03 24	704	0.3−	0.0	1999 09 07	704	1.0+	0.4+	1999 11 06	703	0.8+	0.1+
1998 03 24	704	0.1−	0.7+	1999 09 07	704	0.4+	0.6+	1999 11 06	703	1.5−	1.0−
1998 04 19	704	0.8+	1.0+	1999 09 07	704	0.1−	0.9−	1999 11 06	703	0.6−	0.3+
1998 04 19	704	1.0+	1.0+	1999 09 07	704	0.2−	0.3+	1999 11 06	703	(0.8+	2.2+)
1998 04 19	704	1.0+	0.1+	1999 09 07	704	0.2−	0.1−	1999 11 10	704	0.5+	0.1−
1998 04 19	704	0.2+	0.3−	1999 09 11	704	0.0	1.2+	1999 11 10	704	1.2+	0.2−
1998 04 19	704	1.4−	1.7+	1999 09 11	704	0.2+	0.7+	1999 11 10	704	0.7+	0.4−
1999 07 13	704	0.5−	0.4−	1999 09 11	704	0.1−	0.7+	1999 11 10	704	0.8+	0.6+

(13394)* 1999 RL₃₁ = 1982 RS₁ = 1989 UH₃

Discovered 1999 Sept. 9 by K. Korlević at Višnja.

Id. G. V. Williams (*MPC* 36397)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	26.89960		(2000.0)	P	Q
n	0.29106121	ω	25.66552	+0.85783746	−0.51377735
a	2.2549997	Ω	5.29862	+0.44592884	+0.73238053
e	0.1443475	i	7.56287	+0.25546497	+0.44682391
P	3.39	H	14.1	G 0.15	U 2

Residuals in seconds of arc

1982 09 15	046	(6.7−	2.6+)	1999 08 13	699	0.1+	0.1+	1999 10 07	704	0.2+	0.1−
1982 09 15	046	1.8−	1.3+	1999 09 05	699	0.4+	0.0	1999 10 07	704	0.1+	0.1+
1982 09 15	046	1.5−	0.7−	1999 09 05	699	0.1+	0.1+	1999 10 07	704	0.3+	0.2+
1982 09 15	046	0.0	0.5−	1999 09 05	699	0.2+	0.2−	1999 10 08	106	0.1+	0.3−
1982 09 16	046	(5.5+	0.5+)	1999 09 09	120	0.4−	0.5−	1999 10 08	106	0.2−	0.3+
1982 09 16	046	(5.9+	0.7+)	1999 09 09	120	0.6−	0.1+	1999 10 08	106	0.1−	0.7−
1982 09 17	046	0.9+	0.1+	1999 09 10	120	0.2+	0.3−	1999 10 29	703	0.0	0.3+
1982 09 17	046	1.6+	0.6+	1999 09 10	120	0.6+	0.3−	1999 10 29	703	0.0	0.5+
1989 10 29	400	0.1−	1.4−	1999 09 11	120	0.3−	0.3−	1999 10 29	703	0.1−	0.4+
1989 10 29	400	0.8−	0.8−	1999 09 11	120	0.3+	0.5−	1999 10 29	703	0.2+	0.4+
1989 10 29	400	2.0+	0.5+	1999 09 23	848	0.1−	0.1−	1999 11 05	704	0.7+	0.5−
1989 11 04	400	(0.8−	3.1+)	1999 09 23	848	0.0	0.0	1999 11 05	704	0.0	0.3−
1989 11 04	400	(0.5+	3.2+)	1999 09 23	848	0.1+	0.3−	1999 11 05	704	0.3−	0.3−
1989 11 04	400	(0.4−	6.6+)	1999 09 29	120	0.2+	0.3+	1999 11 05	704	0.2+	0.0
1998 04 29	566	0.1+	0.8−	1999 09 29	120	0.4+	0.1+	1999 11 05	704	0.7−	0.4−
1998 04 29	566	0.0	0.9−	1999 09 30	703	0.1+	0.3+	1999 11 16	704	0.4+	1.0−
1998 04 29	566	0.4−	1.1−	1999 09 30	703	0.1−	0.2+	1999 11 16	704	1.4+	0.4+
1998 05 01	704	0.3−	0.6−	1999 09 30	703	0.3−	0.3+	1999 11 16	704	0.8+	0.2−
1998 05 01	704	0.0	0.3−	1999 09 30	703	0.1+	0.1+	1999 11 16	704	0.5+	1.2+
1998 05 01	704	0.4+	0.5−	1999 09 30	120	1.0−	0.6+	1999 12 05	704	0.3−	0.2−
1998 05 01	704	0.1−	0.6+	1999 09 30	120	0.4+	0.3−	1999 12 05	704	0.3−	0.2−
1998 05 22	704	0.2−	1.2+	1999 09 30	120	0.1+	0.3−	1999 12 05	704	0.5−	0.1−
1998 05 22	704	0.6−	0.2+	1999 10 02	120	0.3+	0.8−	1999 12 05	704	0.0	0.1−
1998 05 22	704	0.9+	0.5+	1999 10 02	120	0.7−	0.0	1999 12 05	704	0.3−	0.1+
1998 05 22	704	1.9−	0.0	1999 10 04	704	0.1+	0.2+	2000 01 07	704	0.6−	0.1+
1998 05 27	704	0.6+	0.2−	1999 10 04	704	0.3+	0.4+	2000 01 07	704	0.2−	0.5+
1998 05 27	704	0.6+	0.2−	1999 10 04	704	0.1−	0.2+	2000 01 07	704	0.4−	0.5+
1998 05 27	704	0.5+	0.5+	1999 10 04	704	0.4−	0.0	2000 01 07	704	0.2+	1.2+
1998 05 27	704	0.6+	0.5+	1999 10 04	704	0.7−	0.1−	2000 01 07	704	0.1+	0.8+
1998 05 27	704	1.4−	0.6−	1999 10 06	704	0.4+	0.1−	2000 01 09	704	0.6−	0.3+
1998 05 27	704	0.6+	0.9−	1999 10 06	704	0.3+	0.1+	2000 01 09	704	0.5−	0.0
1998 05 27	704	1.2+	1.8+	1999 10 06	704	0.0	0.2−	2000 01 09	704	0.7−	0.0
1998 05 27	704	0.5−	1.1+	1999 10 06	704	0.1−	0.2−	2000 01 09	704	0.9−	0.0
1998 05 27	704	(4.4−	0.3+)	1999 10 06	704	0.1+	0.1+	2000 01 09	704	1.0−	0.1−
1999 08 13	699	0.4−	0.2+	1999 10 07	704	0.0	0.1+				
1999 08 13	699	0.3+	0.0	1999 10 07	704	0.1+	0.1−				

(13395)* 1999 RH₃₅ = 1978 NB₂ = 1982 VX₄ = 1982 XV₄ = 1998 FS₄₀

Discovered 1999 Sept. 10 by L. Bernasconi at St. Michel sur Meurthe.

Id. G. V. Williams (*MPC* 36038, *MPC* 37181), M. E. Sansaturio (*MPC* 37181)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	85.18455		(2000.0)	P	Q
n	0.28590545	ω	138.60661	+0.67129462	+0.74116518
a	2.2820286	Ω	173.55187	−0.69360248	+0.63109365
e	0.1916971	i	3.13474	−0.26130276	+0.22889951
P	3.45	H	14.6	G 0.15	U 2

Residuals in seconds of arc

1978 07 06	095	(6.4+	3.0+)	1999 09 10	164	1.0−	0.2−	1999 10 13	704	0.0	0.9−
1982 11 14	381	0.3−	1.7+	1999 09 10	164	0.9+	0.7−	1999 10 13	704	0.1−	0.7−
1982 11 14	381	0.5+	0.2+	1999 09 10	164	0.9+	0.4+	1999 10 13	704	0.3+	0.3−
1982 12 13	381	1.1−	0.0	1999 09 10	164	1.1+	0.1−	1999 10 13	704	0.5+	0.7−
1982 12 13	381	(3.3−	1.1−)	1999 09 12	164	1.0−	1.3+	1999 10 15	704	0.3+	0.2−
1982 12 14	381	0.3−	0.3+	1999 09 12	164	0.7+	0.5+	1999 10 15	704	0.1−	0.3−
1982 12 14	381	(3.8+	0.2−)	1999 09 12	164	0.3−	0.3+	1999 10 15	704	0.2+	0.6−
1982 12 14	381	0.1−	0.2+	1999 09 12	164	1.7−	0.0	1999 10 15	704	0.0	0.7−
1982 12 14	381	0.3+	1.0+	1999 09 16	120	0.7+	0.6−	1999 10 15	704	0.2−	0.6−
1992 09 03	095	(1.8−	7.6−)	1999 09 16	120	1.0+	0.4+	1999 10 28	699	0.0	1.1+
1992 09 03	095	0.7+	1.4−	1999 09 16	120	0.3+	0.4+	1999 10 28	699	0.3−	0.5+
1998 02 25	566	0.1−	0.1+	1999 09 17	120	0.1−	0.1−	1999 10 28	699	0.2−	0.6+
1998 02 25	566	0.0	0.3−	1999 09 18	120	0.6+	0.4+	1999 10 30	691	0.5+	0.2−
1998 02 25	566	0.0	0.1−	1999 10 01	699	0.1−	0.7+	1999 10 30	691	0.6+	0.2−
1998 03 20	704	0.8−	1.5+	1999 10 01	699	0.1−	1.2+	1999 10 30	691	0.2+	0.4−
1998 03 20	704	0.6+	1.0+	1999 10 01	699	0.0	1.2+	1999 11 04	691	0.1+	0.6+
1998 03 20	704	0.6−	0.8+	1999 10 02	703	0.0	0.3+	1999 11 04	691	0.1−	0.3−
1998 03 20	704	(2.1−	1.4−)	1999 10 02	703	0.0	0.2+	1999 11 04	691	0.0	0.2−
1998 03 22	704	0.7−	1.1−	1999 10 02	703	0.3−	0.5+	1999 11 06	704	0.4+	0.1−
1998 03 22	704	0.2+	0.4+	1999 10 02	703	0.1+	0.7+	1999 11 06	704	0.2+	0.3−
1998 03 22	704	0.2−	1.8−	1999 10 04	704	0.0	0.4−	1999 11 06	704	0.3−	0.5−
1998 03 22	704	0.7−	0.0	1999 10 04	704	0.1+	0.5−	1999 11 06	704	0.1−	1.4−
1998 03 22	704	0.1−	0.5−	1999 10 04	704	0.1−	0.1−	1999 11 06	704	0.3+	0.4−
1998 03 29	704	0.5+	1.0−	1999 10 04	704	0.1−	0.1−	1999 11 27	699	0.2−	0.4+
1998 03 29	704	0.4−	0.1−	1999 10 04	704	0.3+	0.3−	1999 11 27	699	0.1−	0.7+
1998 03 29	704	0.4−	1.2−	1999 10 07	704	0.4−	0.2−	1999 11 27	699	0.6−	1.4+
1998 03 29	704	1.0−	0.7−	1999 10 07	704	0.3−	0.1−	1999 12 07	704	1.2−	0.1−
1998 03 29	704	1.2−	0.8−	1999 10 07	704	0.5−	0.3+	1999 12 07	704	0.2+	0.0
1998 04 19	704	1.3+	0.4−	1999 10 07	704	0.2−	0.1+	1999 12 07	704	0.2−	1.1−
1998 04 19	704	0.3+	1.0−	1999 10 07	704	0.3−	0.0	1999 12 07	704	0.1−	0.3+
1998 04 19	704	0.1+	0.6−	1999 10 09	704	0.3−	0.0	1999 12 07	704	0.3−	0.1−
1998 04 19	704	0.8+	0.1+	1999 10 09	704	0.4−	0.4−	2000 01 08	704	1.2+	0.9−
1998 04 19	704	1.5+	1.7+	1999 10 09	704	0.3−	0.5−	2000 01 08	704	0.8+	0.6−
1999 08 13	699	0.3+	0.2+	1999 10 09	704	0.3−	0.6−	2000 01 08	704	0.7+	0.0
1999 08 13	699	0.1+	0.1+	1999 10 09	704	0.3−	0.5−	2000 01 08	704	0.9+	0.6−
1999 08 13	699	0.8+	1.3−	1999 10 12	711	0.0	0.3−	2000 01 08	704	0.7−	0.1−
1999 09 05	699	0.5−	0.7+	1999 10 12	711	0.1+	0.3−	2000 01 08	704	1.0+	0.8+
1999 09 05	699	0.4−	0.1+	1999 10 12	711	0.3+	0.3−	2000 01 08	704	0.4−	1.4−
1999 09 05	699	0.4−	0.6+	1999 10 13	704	0.2+	0.7−	2000 01 08	704	0.7+	1.0−

1998 05 23	704	0.5−	0.1−	1999 09 07	704	0.4+	0.0	1999 09 29	704	0.1−	0.4−
1998 05 23	704	0.1+	0.3+	1999 09 07	704	0.4−	0.2−	1999 09 29	704	1.4−	0.6−
1998 05 23	704	0.5−	0.5−	1999 09 07	704	0.0	0.1−	1999 09 29	704	0.3+	0.1+
1998 05 23	704	(5.0−	0.2+)	1999 09 07	704	0.4+	0.3−	1999 09 29	704	0.2−	0.2−
1998 05 26	704	1.0+	1.1−	1999 09 09	704	0.7+	0.1+	1999 09 29	704	0.2+	0.1−
1998 05 26	704	1.7−	0.7+	1999 09 09	704	0.3−	0.2−	1999 09 29	704	0.1+	0.6−
1998 05 26	704	(0.0	2.4−)	1999 09 09	704	0.2+	0.1−	1999 09 29	704	0.1−	0.9+
1998 05 26	704	(0.7+	2.9−)	1999 09 09	704	0.3+	0.1−	1999 09 30	704	0.1−	0.5−
1998 06 03	704	0.5−	1.4−	1999 09 11	164	1.8−	0.9+	1999 09 30	704	0.1+	0.3−
1998 06 03	704	0.3−	0.5+	1999 09 11	164	0.1+	0.4+	1999 09 30	704	0.1+	0.1+
1998 06 03	704	0.6+	0.5−	1999 09 11	164	0.4+	1.0+	1999 09 30	704	0.0	0.5−
1998 06 03	704	0.8−	0.3+	1999 09 13	704	0.7+	0.3+	1999 09 30	704	0.1−	0.5−
1998 06 03	704	(4.4−	3.2−)	1999 09 13	704	0.1+	0.4+	1999 11 10	704	0.1−	0.1−
1998 06 19	704	1.0+	0.1+	1999 09 13	704	0.2+	0.4−	1999 11 10	704	0.7−	0.2−
1998 06 19	704	0.7+	1.2−	1999 09 13	704	0.7+	0.2+	1999 11 10	704	1.5−	0.3−
1998 06 19	704	(2.7+	1.4−)	1999 09 13	704	0.8+	0.1+	1999 11 10	704	1.6−	0.3−
1998 06 19	704	(2.2−	2.8−)	1999 09 13	138	0.9+	0.1−	1999 11 10	704	0.9−	1.1+
1999 08 22	703	0.0	0.5+	1999 09 13	138	0.6+	0.1+				
1999 08 22	703	0.1−	0.3+	1999 09 13	138	0.6−	0.4−				

(13397)* 1999 RF₄₇ = 3162 T-1 = 1992 YJ₁ = 1998 HE₃₉

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 36411)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	12.87469		(2000.0)	P	Q		
n	0.25747035	ω	347.88439	+0.97866316	−0.20463705		
a	2.4470973	Ω	23.94799	+0.19211605	+0.87941400		
e	0.2088775	i	2.61166	+0.07286865	+0.42983100		
P	3.83	H	14.8	G	0.15	U	2

Residuals in seconds of arc

1971 03 25	675	0.3+	0.8−	1998 04 20	704	1.1+	1.4−	1999 08 13	703	0.5+	0.2−
1971 03 26	675	1.7−	2.2+	1998 04 20	704	1.5−	0.5+	1999 09 07	704	0.5+	0.2+
1971 03 26	675	0.6−	2.4−	1998 04 20	704	1.0+	1.3+	1999 09 07	704	0.6−	0.4−
1971 03 26	675	0.2+	0.1+	1998 04 21	704	0.2−	1.9−	1999 09 07	704	0.5+	0.1−
1971 03 26	675	(0.5−	4.2−)	1998 04 21	704	1.4−	0.4−	1999 09 07	704	0.2−	0.2−
1971 03 27	675	0.8+	1.2−	1998 04 21	704	0.1−	0.9+	1999 09 11	704	0.1+	0.2−
1992 12 18	010	0.3−	0.9−	1998 04 21	704	1.0−	0.3+	1999 09 11	704	0.2−	0.8+
1992 12 19	010	0.1+	0.6−	1999 06 22	703	0.9−	0.1+	1999 09 11	704	0.2−	0.5+
1992 12 19	010	0.1+	1.6−	1999 06 22	703	0.5−	0.9−	1999 09 11	704	0.1+	1.1+
1992 12 19	010	(2.1+	2.4−)	1999 06 22	703	0.4+	0.3−	1999 09 11	704	0.3−	0.6+
1992 12 19	010	(0.2+	2.9−)	1999 06 22	703	1.0+	0.6−	1999 09 29	704	0.6−	1.3−
1992 12 20	010	(0.1+	2.4−)	1999 07 14	704	0.7+	0.1+	1999 09 29	704	0.8+	0.2+
1998 03 25	704	0.1−	0.1+	1999 07 14	704	0.0	0.4−	1999 09 29	704	0.7−	0.3+
1998 03 25	704	1.1−	1.0−	1999 07 14	704	0.0	0.6−	1999 09 29	704	0.8+	1.0+
1998 03 25	704	0.6+	0.2+	1999 07 14	704	0.4+	0.8−	1999 09 29	699	0.5+	0.3+
1998 03 25	704	(4.4−	0.9+)	1999 07 14	704	0.7+	0.3−	1999 09 29	699	0.3+	1.2+
1998 03 29	704	1.7+	0.3+	1999 07 20	699	0.2+	0.4−	1999 09 29	699	0.9−	1.0−
1998 03 29	704	1.2+	1.5+	1999 07 20	699	0.3−	0.6−	1999 11 10	704	0.2+	0.0
1998 03 29	704	0.7+	1.3+	1999 07 20	699	0.3−	1.3−	1999 11 10	704	0.3+	0.5+
1998 03 29	704	(2.6+	1.2+)	1999 08 13	703	0.9−	0.2+	1999 11 10	704	0.8−	0.6−
1998 03 29	704	(4.7−	1.2−)	1999 08 13	703	0.6+	0.3−				
1998 04 20	704	0.2−	0.5−	1999 08 13	703	0.3−	0.5+				

(13398)* 1999 RF₆₂ = 1975 EV₅ = 1986 CZ = 1990 FF₅ = 1998 KA₁₈

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPC* 36414)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	261.89402		(2000.0)	P			Q				
<i>n</i>	0.26038876	ω	111.35931	−0.57006156			−0.82116815				
<i>a</i>	2.4287784	Ω	13.49477	+0.70506001			−0.50562315				
<i>e</i>	0.1174702	<i>i</i>	6.56903	+0.42180587			−0.26462822				
<i>P</i>	3.79	<i>H</i>	13.4	<i>G</i>	0.15		<i>U</i>	1			
Residuals in seconds of arc											
1975 03 15	095	1.2+	2.1+	1998 05 03	566	0.2−	0.2−	1999 09 13	704	0.4+	0.6−
1986 02 05	054	(2.6+	1.2+)	1998 05 05	699	0.1+	0.1+	1999 09 13	704	0.0	0.2+
1986 02 07	054	1.8+	0.0	1998 05 05	699	0.0	0.2−	1999 09 29	704	(2.1−	0.7−)
1986 02 09	801	1.1−	0.7+	1998 05 05	699	0.4+	0.5+	1999 09 29	704	0.0	0.4−
1990 03 17	095	(3.6−	1.5−)	1998 05 22	704	0.1−	0.0	1999 09 29	704	0.5+	0.2−
1990 03 17	095	1.5−	1.5−	1998 05 22	704	(3.2+	1.0+)	1999 09 29	704	1.0+	0.1−
1998 03 31	046	0.3−	0.3−	1998 05 22	704	0.9−	1.2+	1999 09 30	704	0.6+	0.6−
1998 03 31	046	0.3−	0.0	1998 05 22	704	0.3+	1.2+	1999 09 30	704	0.2+	0.4+
1998 03 31	046	0.4−	0.0	1998 05 22	704	0.5−	1.2+	1999 09 30	704	0.6+	0.3−
1998 03 31	046	0.3−	0.1−	1998 05 24	704	0.2−	0.1−	1999 09 30	704	0.7+	0.0
1998 03 31	046	0.3−	0.1−	1998 05 24	704	0.3+	1.1−	1999 09 30	704	0.6+	0.4−
1998 04 22	704	0.0	0.2−	1998 05 24	704	0.3+	0.5−	1999 11 09	699	0.7−	1.1+
1998 04 22	704	0.8−	0.2+	1998 05 24	704	0.2+	0.4−	1999 11 09	699	0.0	0.5+
1998 04 22	704	0.3−	0.5−	1998 05 24	704	0.6+	1.3−	1999 11 09	699	1.2−	0.9+
1998 04 22	704	0.2+	0.1+	1999 09 07	704	0.3−	0.3+	1999 11 10	704	0.6−	0.2+
1998 04 22	704	0.5−	0.1−	1999 09 07	704	0.6−	1.3+	1999 11 10	704	0.5−	0.5−
1998 05 01	704	0.1+	0.2−	1999 09 07	704	0.6−	0.2+	1999 11 10	704	0.1−	0.5+
1998 05 01	704	0.3+	0.5−	1999 09 07	704	0.3−	0.1−	1999 11 10	704	0.2−	0.3+
1998 05 01	704	1.6+	1.0+	1999 09 07	704	0.9−	0.1+	1999 12 09	699	(2.2−	0.6+)
1998 05 01	704	1.0+	0.9+	1999 09 13	704	0.0	0.3−	1999 12 09	699	(2.4−	0.9+)
1998 05 03	566	0.0	0.4−	1999 09 13	704	0.2−	0.8−	1999 12 09	699	0.1−	0.8+
1998 05 03	566	0.2−	0.3−	1999 09 13	704	0.4+	0.6−				

(13399)* 1999 RJ₈₈ = 1982 JU₄ = 1992 GP₈ = 1998 MT₈

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 37182), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	46.93116		(2000.0)		P		Q				
<i>n</i>	0.18693927	ω	156.46181		+0.93580025		+0.35241748				
<i>a</i>	3.0292540	Ω	182.94684		−0.34471743		+0.90945986				
<i>e</i>	0.1001168	<i>i</i>	10.00786		−0.07380915		+0.22064606				
<i>P</i>	5.27	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1982 05 15	095	0.1−	0.4+	1999 07 23	704	0.1−	0.4−	1999 10 02	704	1.1+	0.1−
1992 04 10	372	1.8+	1.9−	1999 07 23	704	0.2−	0.5+	1999 10 02	704	1.1+	0.4−
1992 04 10	372	1.8−	0.0	1999 07 23	704	0.4−	0.4+	1999 11 05	703	0.3−	0.1+
1998 05 26	704	0.2+	0.2−	1999 07 23	704	0.4+	0.1+	1999 11 05	703	0.5−	0.6+
1998 05 26	704	0.3−	0.6+	1999 09 07	704	0.2−	0.1−	1999 11 05	703	0.3+	0.0
1998 05 26	704	0.3−	0.5+	1999 09 07	704	0.0	0.2−	1999 11 05	703	0.0	0.2+
1998 05 26	704	0.3−	0.2−	1999 09 07	704	0.0	0.2−	1999 11 07	704	0.3+	1.1+
1998 05 26	704	0.7+	0.7−	1999 09 07	704	0.2−	0.5−	1999 11 07	704	0.6+	0.8−
1998 06 03	704	0.9+	0.1−	1999 09 07	704	0.5−	0.6−	1999 11 07	704	0.4−	1.1−
1998 06 03	704	0.7+	0.3+	1999 09 09	704	0.2−	0.1−	1999 11 28	699	0.7−	0.4+
1998 06 03	704	0.4+	1.2+	1999 09 09	704	0.2+	0.2−	1999 11 28	699	0.2+	0.7+
1998 06 03	704	1.4+	0.3+	1999 09 09	704	0.1−	0.2−	1999 11 28	699	0.4−	0.1+
1998 06 19	704	0.2−	0.5−	1999 09 09	704	0.2−	0.1+	1999 12 02	704	1.4−	0.3−
1998 06 19	704	1.0−	1.1+	1999 09 09	704	0.0	0.2−	1999 12 02	704	1.3−	1.3−
1998 06 19	704	0.5−	0.3+	1999 09 14	703	0.3−	0.3+	1999 12 02	704	1.3−	0.4−
1998 06 19	704	0.9−	0.3+	1999 09 14	703	0.3+	0.4+	1999 12 02	704	0.2+	0.5−
1998 06 19	704	0.6−	0.4+	1999 09 14	703	0.9+	1.0+	1999 12 07	704	0.1−	0.7−
1998 06 25	704	0.2−	0.0	1999 09 14	703	0.8+	0.6+	1999 12 07	704	0.2−	0.2−
1998 06 25	704	0.3+	0.3−	1999 09 29	703	0.2+	0.2+	1999 12 07	704	0.1+	0.6−
1998 06 25	704	0.2−	0.5+	1999 09 29	703	0.0	0.3+	1999 12 07	704	0.1+	0.2−
1998 06 25	704	0.0	0.9−	1999 09 29	703	0.0	0.2+	1999 12 07	704	0.1+	0.7−
1998 07 19	566	0.0	1.2−	1999 09 29	703	0.3+	0.0	1999 12 23	699	1.3−	1.4+

1998 07 19	566	0.1+	0.5-	1999 10 02	704	0.8+	0.0	1999 12 23	699	0.0	0.1+
1998 07 19	566	0.7-	0.9-	1999 10 02	704	0.9+	0.1-	1999 12 23	699	0.3-	0.4+
1999 07 23	704	0.8-	0.0	1999 10 02	704	0.9+	0.4-				

(13400)* 1999 RC₉₄ = 1992 SP₂₃ = 1998 HM₁₁₃

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 36424)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	39.42192		(2000.0)		P		Q
n	0.27840800	ω	222.87473		+0.98799635		-0.13778147
a	2.3228165	Ω	144.86441		+0.15262665		+0.94044179
e	0.1348536	i	6.97150		-0.02383950		+0.31078208
P	3.54	H	14.0	G	0.15	U	2

Residuals in seconds of arc

1992 09 30	675	0.5+	1.1-	1998 04 24	704	0.8+	0.8-	1999 09 05	699	0.4-	0.5+
1992 09 30	675	0.6+	0.8-	1998 04 24	704	0.4+	1.2-	1999 09 07	704	0.3-	0.1-
1992 10 03	675	0.1-	1.1-	1998 04 24	704	0.6-	0.9-	1999 09 07	704	0.3-	0.2-
1992 10 03	675	0.0	0.6-	1998 05 16	704	0.7+	0.4-	1999 09 07	704	0.4-	0.5-
1994 03 05	691	0.2+	0.2-	1998 05 16	704	1.4-	0.7+	1999 09 07	704	0.1-	0.3-
1994 03 05	691	0.2+	0.3-	1998 05 16	704	0.4-	1.4-	1999 09 07	704	0.6-	0.8-
1994 03 05	691	0.3+	0.3-	1998 05 16	704	(0.8-	2.7-)	1999 09 14	704	0.4+	0.6-
1998 03 24	704	0.1+	0.4+	1998 05 24	699	0.0	0.0	1999 09 14	704	0.2-	0.6-
1998 03 24	704	0.2-	1.1+	1998 05 24	699	0.2-	1.2+	1999 09 14	704	0.1-	0.8-
1998 03 24	704	1.2-	1.3+	1998 05 24	699	1.5-	1.9+	1999 09 14	704	0.3-	0.5-
1998 03 24	704	(2.3-	1.5-)	1999 07 16	704	0.8+	0.7+	1999 09 14	704	0.0	0.3-
1998 04 21	704	0.4-	0.3+	1999 07 16	704	0.2+	0.1-	1999 10 08	106	0.2-	1.0+
1998 04 21	704	0.4-	0.3-	1999 07 16	704	0.4+	0.2+	1999 10 08	106	0.1-	1.2+
1998 04 21	704	0.1+	0.0	1999 07 16	704	0.5+	0.5+	1999 10 08	106	(1.8-	2.1+)
1998 04 21	704	0.2+	0.3-	1999 08 22	699	0.7+	0.7+	1999 12 02	704	0.0	1.2-
1998 04 21	704	0.2+	0.8+	1999 08 22	703	0.6+	0.7+	1999 12 02	704	0.0	1.5-
1998 04 23	704	0.5+	0.2-	1999 08 22	703	0.5+	0.4+	1999 12 02	704	0.0	1.0-
1998 04 23	704	0.5-	1.0-	1999 08 22	703	0.5+	0.0	1999 12 02	704	0.1+	1.2-
1998 04 23	704	0.1+	0.8-	1999 08 22	699	0.2+	1.0+	2000 01 09	704	0.2-	0.5-
1998 04 23	704	0.7+	1.2-	1999 08 22	703	0.5+	0.5-	2000 01 09	704	0.0	0.5+
1998 04 23	704	0.0	1.5-	1999 08 22	699	0.7+	0.9+	2000 01 09	704	0.2-	0.9+
1998 04 24	704	0.4+	1.0-	1999 09 05	699	0.5-	0.3+	2000 01 09	704	1.7-	0.1-
1998 04 24	704	0.1-	1.0-	1999 09 05	699	0.0	0.6+				

(13401)* 1999 RA₁₃₃ = 1933 QG₁ = 1985 RK₁ = 1998 FN₉₈

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 36440), G. V. Williams (unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	70.01694		(2000.0)		P		Q
n	0.20916478	ω	343.86924		+0.25580554		+0.95553248
a	2.8106732	Ω	300.74449		-0.86702419		+0.15964602
e	0.2405784	i	9.82798		-0.42758926		+0.24793310
P	4.71	H	13.2	G	0.15	U	1

Residuals in seconds of arc

1933 08 28	024	0.4+	0.1+	1998 04 01	704	(2.8-	1.7-)	1999 09 14	704	0.0	0.1-
1985 09 09	046	(5.4-	2.9+)	1998 04 01	704	1.0-	0.6-	1999 09 14	703	0.0	0.2+
1985 09 09	046	(4.2-	2.0-)	1998 04 01	704	0.5-	1.1+	1999 09 14	704	0.5-	0.3-
1985 09 10	046	(2.8-	1.2+)	1999 09 08	699	0.3+	0.2+	1999 09 14	703	0.1-	0.1+
1985 09 10	046	2.5-	0.6+	1999 09 08	704	0.2-	0.3-	1999 10 31	699	1.3+	0.4+
1985 09 11	046	0.1+	1.0+	1999 09 08	699	0.4+	0.2+	1999 10 31	699	0.2-	0.6+
1985 09 11	046	0.9-	1.3-	1999 09 08	704	0.2+	0.1+	1999 10 31	699	1.0+	0.3-
1997 01 12	566	0.0	0.2-	1999 09 08	704	0.2+	0.0	1999 11 06	704	0.3-	0.5-
1997 01 12	566	0.3-	0.0	1999 09 08	699	0.1+	0.4+	1999 11 06	704	0.1+	0.3-
1997 01 12	566	0.3+	0.4-	1999 09 08	704	1.5-	0.2-	1999 11 06	704	0.2-	0.2-
1998 02 25	566	0.6+	0.0	1999 09 09	704	0.1+	0.0	1999 11 06	704	0.0	0.5-
1998 02 25	566	0.5+	0.1-	1999 09 09	704	0.2-	0.1+	1999 11 06	704	0.1-	0.6-
1998 02 25	566	0.5+	0.3-	1999 09 09	704	0.1+	0.2-	1999 12 03	704	0.1-	0.6-

1998 03 31	704	0.4+	0.5+	1999 09 09	704	0.4+	0.3+	1999 12 03	704	1.1+	0.1-
1998 03 31	704	0.4-	0.1-	1999 09 09	704	0.3+	0.2+	1999 12 03	704	0.4+	0.7-
1998 03 31	704	0.4-	0.2+	1999 09 14	704	0.2+	0.2-	1999 12 03	704	0.6+	0.6+
1998 03 31	704	0.4-	0.0	1999 09 14	704	0.2+	0.4-	1999 12 03	704	1.2+	0.1-
1998 03 31	704	0.2+	0.1-	1999 09 14	703	0.1+	0.0	2000 01 07	699	0.4-	1.5+
1998 04 01	704	0.0	0.4-	1999 09 14	704	0.2+	0.5-	2000 01 07	699	0.6-	0.5+
1998 04 01	704	0.4+	0.1+	1999 09 14	703	0.1+	0.1+	2000 01 07	699	0.6-	0.2+

(13402)* 1999 RV₁₆₅

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	64.69241		(2000.0)		P		Q
n	0.08303804	ω	124.30298		+0.26897143		+0.96221502
a	5.2033694	Ω	161.16282		-0.92118844		+0.26985247
e	0.1202524	i	7.54337		-0.28118717		+0.03635789
P	11.87	H	11.6	G	0.15	U	1

Residuals in seconds of arc

1954 12 22	675	1.6+	0.0	1998 08 17	704	(3.2-	2.4+)	1999 09 09	704	0.2-	1.0+
1984 05 30	413	0.0	0.6+	1998 08 27	699	1.1+	1.3+	1999 09 09	704	0.1-	0.1-
1984 05 30	413	0.3+	0.3+	1998 08 27	699	0.3+	0.3+	1999 09 09	704	0.4+	0.9+
1986 09 21	413	1.1-	0.1+	1998 08 27	699	(0.2-	2.4+)	1999 09 11	699	0.6-	1.0-
1986 09 21	413	1.5-	0.7-	1999 08 12	699	0.1+	0.5+	1999 09 11	699	0.5-	1.2+
1988 11 03	413	0.1+	0.5+	1999 08 12	699	0.1-	0.4+	1999 09 11	699	0.6+	0.1+
1988 11 03	413	0.3+	0.7+	1999 08 12	699	0.7+	1.2-	1999 09 14	704	0.2+	1.0-
1996 03 25	413	0.9+	0.2-	1999 08 17	691	0.1-	0.1+	1999 09 14	704	0.4-	0.7-
1996 03 25	413	0.8-	0.9+	1999 08 17	691	0.1+	0.0	1999 09 14	704	0.3+	0.1+
1998 07 29	910	0.9+	0.0	1999 08 17	691	0.1+	0.0	1999 09 14	704	0.3-	0.3+
1998 07 29	910	0.8+	0.1+	1999 09 07	704	0.4-	0.4+	1999 09 28	120	0.3+	0.4+
1998 07 29	910	0.7+	0.1-	1999 09 07	704	0.7-	0.0	1999 09 28	120	0.3-	0.0
1998 08 17	704	0.6+	0.0	1999 09 07	704	0.2-	0.1+	1999 10 07	704	0.9+	1.0+
1998 08 17	704	0.4+	0.7-	1999 09 07	704	0.6-	0.3-	1999 10 07	704	0.8-	1.0-
1998 08 17	704	0.2-	1.4-	1999 09 07	704	0.1+	0.1+	1999 10 07	704	0.9-	0.2-
1998 08 17	704	(0.6-	2.5+)	1999 09 09	704	0.6-	0.3-				

(13403)* 1999 RJ₁₆₇ = 1979 UN₃ = 1979 VF = 1985 JE = 1998 DQ₁₁

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPC* 36457), G. V. Williams (*MPC* 37185), M. E. Sansaturio (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Epoch	2000 Feb. 26.0	TT = JDT 2451600.5			Williams		
<i>M</i>	92.32666	(2000.0)			P	Q	
<i>n</i>	0.29276009	ω	256.89092		+0.28931973	+0.95607402	
<i>a</i>	2.2462675	Ω	30.05564		−0.83779977	+0.27670568	
<i>e</i>	0.1817328	<i>i</i>	5.39393		−0.46301798	+0.09672869	
<i>P</i>	3.37	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 10 16	095	0.2-	0.9+	1999 09 07	704	0.0	0.3+	1999 10 07	704	0.2+	0.7-
1979 11 11	095	0.3+	1.5-	1999 09 07	704	0.2-	0.3-	1999 10 07	704	0.1-	0.2+
1985 05 15	688	1.0-	1.5+	1999 09 07	704	0.3-	0.1+	1999 10 07	704	0.1-	0.1+
1985 05 15	688	1.8+	0.4-	1999 09 08	703	0.1+	0.6-	1999 10 07	704	0.3+	0.8+
1998 01 28	566	0.1-	0.2+	1999 09 08	703	0.1+	0.1-	1999 10 07	704	0.3-	0.6+
1998 01 28	566	0.6+	0.2-	1999 09 08	703	0.4+	0.2-	1999 11 08	704	0.3-	0.1-
1998 01 28	566	0.1-	0.0	1999 09 08	703	0.9+	1.0-	1999 11 08	704	0.3+	0.0
1998 02 24	566	0.1-	0.2+	1999 09 09	704	0.6+	0.2+	1999 11 08	704	0.4+	0.1+
1998 02 24	566	0.8-	0.4-	1999 09 09	704	0.0	0.2-	1999 11 08	704	0.3+	0.1+
1998 02 24	566	0.2-	0.2+	1999 09 09	704	0.0	0.9-	1999 11 08	704	0.5+	0.8+
1998 02 25	566	0.2-	0.4+	1999 09 09	704	0.7-	0.6-	1999 11 15	704	0.1-	0.3-
1998 02 25	566	0.1-	0.3+	1999 09 09	704	1.7-	1.6-	1999 11 15	704	0.5-	0.4-
1998 02 25	566	0.1-	0.4+	1999 09 13	704	0.0	0.4+	1999 11 15	704	0.3+	0.0
1998 03 24	566	0.7+	0.3+	1999 09 13	704	0.3-	0.4+	1999 11 15	704	0.2-	0.4-
1998 03 24	566	0.8+	0.2+	1999 09 13	704	0.3-	0.1+	1999 11 15	704	0.4+	0.7-
1998 03 24	566	0.5+	0.4+	1999 09 13	704	0.5-	0.1+	1999 12 07	704	0.2-	0.8+

1999 07 16	704	0.1−	0.2+	1999 09 30	704	0.1+	0.5−	1999 12 07	704	0.5+	1.1+
1999 07 16	704	0.0	0.2+	1999 09 30	704	0.3+	0.2+	1999 12 07	704	0.4+	0.8+
1999 07 16	704	0.7−	0.3+	1999 09 30	704	0.3+	0.3−	1999 12 07	704	0.7+	0.7+
1999 07 16	704	0.1+	0.5+	1999 09 30	704	0.7+	0.5+	1999 12 07	704	0.1+	1.3+
1999 08 12	699	0.2−	0.4+	1999 09 30	704	0.3+	0.8−	1999 12 31	699	1.5−	1.2+
1999 08 12	699	0.0	0.6+	1999 10 05	699	0.3−	0.7+	1999 12 31	699	1.4−	0.4+
1999 08 12	699	0.1−	0.4+	1999 10 05	699	0.4+	0.9+				
1999 09 07	704	0.3−	0.1+	1999 10 05	699	0.3+	0.1+				

(13404)* 1999 RT₁₇₇ = 1992 SB₆ = 1994 CB₁₃ = 1998 KK₂₅

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 36464)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	313.09434		(2000.0)		P		Q
n	0.28371411	ω	86.78385		-0.13255515		-0.99110772
a	2.2937641	Ω	10.85407		+0.88316213		-0.12341580
e	0.1044853	i	3.53253		+0.44994865		-0.04973961
P	3.47	H	14.8	G	0.15	U	1

Residuals in seconds of arc

1992 09 26	691	0.5−	0.3+	1998 05 01	704	1.1−	1.3−	1999 09 14	704	0.0	0.4−
1992 09 26	691	0.1+	0.2−	1998 05 22	704	1.0+	0.2−	1999 09 14	704	0.3+	0.1+
1992 09 26	691	0.1	0.2−	1998 05 22	704	0.8+	0.4−	1999 09 14	704	0.2+	0.1+
1992 09 27	691	0.0	0.5−	1998 05 22	704	1.6+	0.1−	1999 09 14	704	0.8+	0.2−
1992 09 27	691	1.4+	0.2+	1998 05 22	704	0.7+	0.7−	1999 09 14	704	0.2+	0.2−
1992 09 27	691	0.3−	0.3−	1998 05 22	566	0.2−	1.0+	1999 09 30	699	0.6+	0.7+
1992 09 29	691	0.0	0.1+	1998 05 22	566	0.8−	0.3−	1999 09 30	699	0.7+	0.1+
1992 09 29	691	0.5−	0.1+	1998 05 22	566	0.7−	1.6+	1999 09 30	699	0.4+	0.9+
1994 02 07	809	0.3+	0.1+	1998 05 24	704	0.5−	0.5−	1999 10 03	699	0.4+	0.5+
1994 02 07	809	0.4+	0.6+	1998 05 24	704	1.0+	0.7−	1999 10 03	699	0.5+	1.2+
1994 02 07	809	1.5−	0.6+	1998 05 24	704	0.8−	0.4+	1999 10 03	699	0.4+	1.0+
1994 02 08	809	(5.9+	3.2+)	1998 05 24	704	1.0−	1.4+	1999 10 07	704	0.2−	0.2+
1994 02 08	809	(5.4+	3.4+)	1998 05 24	704	(0.4+	2.2+)	1999 10 07	704	0.2−	0.0
1994 02 08	809	(5.0+	3.1+)	1999 09 07	704	0.2−	0.0	1999 10 07	704	0.1−	0.4+
1994 02 09	809	0.2−	0.4−	1999 09 07	704	0.3−	0.4+	1999 10 07	704	0.9−	0.4+
1994 02 09	809	0.8−	0.7−	1999 09 07	704	0.2+	0.1−	1999 10 07	704	0.1−	0.2+
1994 02 09	809	0.6−	1.6−	1999 09 07	704	0.3+	0.3+	1999 11 12	704	0.6−	1.0−
1994 02 10	809	1.1+	1.4+	1999 09 07	704	(2.5+	0.0)	1999 11 12	704	0.0	1.0−
1994 02 10	809	0.6+	0.3+	1999 09 09	704	0.4−	0.4+	1999 11 12	704	0.9+	1.0−
1994 02 10	809	0.1+	0.7+	1999 09 09	704	0.4−	0.1+	1999 11 12	704	0.2−	0.2−
1994 02 13	809	(2.9+	1.4+)	1999 09 09	704	0.6−	0.6−	1999 12 07	704	0.5+	0.6−
1994 02 13	809	(2.1+	1.7+)	1999 09 09	704	0.4−	0.6−	1999 12 07	704	0.1+	0.7+
1994 02 13	809	1.6+	0.7+	1999 09 09	704	1.1−	0.4−	1999 12 07	704	0.9−	0.3−
1998 05 01	704	0.2−	0.3−	1999 09 11	699	0.5−	0.6+	1999 12 07	704	0.6−	1.1−
1998 05 01	704	0.2+	0.6+	1999 09 11	699	0.0	0.5+				
1998 05 01	704	0.2−	0.2−	1999 09 11	699	0.2+	0.1+				

(13405)* 1999 ST₁ = 1980 BM₄ = 1985 SW₃ = 1987 BO₂

Discovered 1999 Sept. 21 by G. W. Billings at Calgary.

Id. A. Doppler (*MPC* 36477), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	253.75919		(2000.0)		P		Q
n	0.28333411	ω	189.57352		−0.92494768		−0.37747990
a	2.2958146	Ω	328.13411		+0.35406948		−0.81310862
e	0.0980959	i	4.83583		+0.13822658		−0.44312899
P	3.48	H	13.8	G	0.15	U	1

Residuals in seconds of arc

1980 01 22	095	1.2−	1.1+	1999 09 07	704	0.0	0.6−	1999 10 04	704	0.7+	0.7−
1980 01 23	095	(3.4+	0.8+)	1999 09 07	704	0.1−	0.3−	1999 10 07	704	0.6−	0.3−
1985 09 20	095	(1.6+	5.5+)	1999 09 07	704	0.5+	0.4−	1999 10 07	704	0.7−	0.2+
1987 01 31	046	0.4−	0.1+	1999 09 07	704	0.3−	0.4−	1999 10 07	704	0.4−	0.4+
1987 01 31	046	0.3+	0.4−	1999 09 07	704	0.4−	0.4−	1999 10 07	704	0.4−	0.4+
1987 02 01	046	0.6−	0.4+	1999 09 08	699	0.2−	0.4+	1999 10 07	704	0.0	0.2−

1987 02 01	046	0.3−	0.3+	1999 09 08	699	0.2−	0.7+	1999 11 05	703	0.7−	0.2+
1987 02 02	046	2.2+	1.7−	1999 09 08	699	0.3+	0.3−	1999 11 05	703	0.3+	0.5+
1987 02 02	046	1.1+	0.9−	1999 09 21	681	0.3+	0.5−	1999 11 05	703	0.2−	0.1+
1994 02 11	675	0.5−	0.1+	1999 09 21	681	0.6+	0.7−	1999 11 05	703	0.1+	0.1+
1994 02 11	675	0.9−	0.1+	1999 09 22	681	0.7+	0.4+	1999 11 06	704	1.4+	0.1+
1998 05 22	704	0.1+	0.0	1999 09 22	681	0.8+	0.1−	1999 11 06	704	0.7−	0.2+
1998 05 22	704	0.5−	0.4−	1999 09 28	681	0.2+	0.4+	1999 11 06	704	(1.5+	2.6−)
1998 05 22	704	0.2−	0.8−	1999 09 28	681	0.1+	0.4+	1999 11 06	704	(0.8−	3.1−)
1998 05 22	704	0.0	0.8+	1999 09 29	703	0.0	0.2−	1999 11 28	699	0.7−	0.4+
1998 05 22	704	1.2−	1.3+	1999 09 29	703	0.1+	0.1+	1999 11 28	699	0.1−	0.4+
1998 06 16	704	1.4+	0.9+	1999 09 29	703	0.3+	0.0	1999 11 28	699	0.5−	0.3+
1998 06 16	704	(2.7+	4.2+)	1999 09 29	703	0.5−	0.2−	1999 12 03	704	0.2+	0.5−
1998 06 16	704	1.3+	0.7+	1999 10 02	699	0.1+	0.0	1999 12 03	704	0.2+	0.4+
1998 06 16	704	1.7+	0.2+	1999 10 02	699	0.2+	0.6+	1999 12 03	704	0.5+	0.4−
1998 06 18	704	0.4+	0.8−	1999 10 02	699	0.6−	0.1+	1999 12 03	704	0.6−	0.2+
1998 06 18	704	1.0−	1.8−	1999 10 04	704	0.4+	0.1−	1999 12 03	704	0.2−	0.2−
1998 06 18	704	0.9−	0.6−	1999 10 04	704	0.2+	0.7−	1999 12 30	699	1.0−	0.9+
1998 06 18	704	0.8−	0.6+	1999 10 04	704	0.7+	0.4−	1999 12 30	699	0.7−	1.1+
1998 06 18	704	(7.5−	2.6−)	1999 10 04	704	0.1+	0.5−	1999 12 30	699	0.1−	0.7−

(13406)* 1999 TA₄ = 1981 UW₅

Discovered 1999 Oct. 2 by L. Šarounová at Ondřejov.

Id. A. Gnädig (*MPC* 37189)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	139.67284		(2000.0)		P		Q
n	0.21682646	ω	38.38767		−0.01830294		+0.98560089
a	2.7440659	Ω	231.21616		−0.96232951		−0.06297987
e	0.1662609	i	12.45310		−0.27126907		+0.15692168
P	4.55	H	13.4	G	0.15	U	1

Residuals in seconds of arc

1949 11 21	675	0.3+	0.7−	1999 10 15	699	0.1−	1.7+	1999 11 15	557	0.2−	0.2+
1949 11 21	675	0.5+	1.6−	1999 10 18	557	0.1−	0.5−	1999 11 15	557	0.4−	0.2+
1980 07 17	413	0.9−	0.1−	1999 10 18	557	0.2−	0.3−	1999 11 16	557	0.3−	0.0
1980 07 17	413	0.7−	0.0	1999 10 22	704	0.2+	0.4−	1999 11 16	557	0.3−	0.0
1981 10 30	381	1.8+	0.4−	1999 10 22	704	0.1−	0.1+	1999 11 16	557	0.2−	0.5+
1981 10 30	381	1.4+	0.2+	1999 10 22	704	0.1−	0.2−	1999 11 16	704	0.5−	0.0
1983 01 13	413	0.8−	0.7−	1999 10 22	704	0.2−	0.2+	1999 11 16	704	0.3−	0.1+
1983 01 13	413	0.9+	0.1−	1999 10 22	704	0.2+	0.2+	1999 11 16	704	0.6−	0.1−
1983 01 15	413	1.1−	0.2+	1999 11 01	557	0.1+	0.2−	1999 11 16	704	0.3−	0.1+
1990 11 10	675	1.0−	0.2−	1999 11 01	557	0.1−	0.1−	1999 11 16	704	0.3−	0.4−
1990 11 10	675	0.5+	0.5+	1999 11 01	557	0.1−	0.1+	1999 11 19	557	0.3−	0.1+
1993 04 01	413	1.1−	0.1−	1999 11 01	557	0.1−	0.0	1999 11 19	557	0.3−	0.2+
1993 04 01	413	0.8+	0.8−	1999 11 04	704	0.7+	0.7+	1999 11 19	557	0.1−	0.4+
1998 06 19	704	0.4+	0.7+	1999 11 04	704	0.5+	0.6+	1999 11 28	557	0.3−	0.4+
1998 06 19	704	1.2+	1.1−	1999 11 04	704	0.3+	0.2−	1999 11 28	557	0.3+	0.2+
1998 06 19	704	(1.1+	3.0−)	1999 11 04	704	0.2+	0.1−	1999 12 04	703	0.6−	0.6−
1998 06 19	704	0.3+	0.4−	1999 11 04	704	0.7+	0.2−	1999 12 04	703	0.4−	0.4−
1999 10 02	557	0.1−	0.5+	1999 11 05	704	0.3+	0.0	1999 12 04	703	0.8−	0.1−
1999 10 02	557	0.1−	0.5+	1999 11 05	704	0.2−	0.0	1999 12 04	703	0.7−	1.0+
1999 10 04	557	0.1−	0.3−	1999 11 05	704	0.0	0.1+	1999 12 04	699	0.5+	0.0
1999 10 04	557	0.0	0.1+	1999 11 05	704	0.2+	0.2+	1999 12 04	699	0.6+	1.2+
1999 10 04	557	0.1+	0.1−	1999 11 05	704	0.3−	0.1−	1999 12 04	699	0.8+	0.5+
1999 10 12	704	0.0	0.5−	1999 11 07	704	0.0	0.4−	1999 12 06	704	0.1−	0.2+
1999 10 12	704	0.1+	0.4−	1999 11 07	704	0.5−	0.7−	1999 12 06	704	0.6+	0.7−
1999 10 12	704	0.3+	0.2−	1999 11 07	704	0.3−	1.0−	1999 12 06	704	0.2+	0.1+
1999 10 12	704	0.2+	0.3−	1999 11 07	704	0.5−	0.7−	1999 12 06	704	0.0	0.7+
1999 10 12	704	0.1+	0.2−	1999 11 07	704	0.1−	0.3−	1999 12 07	704	0.3−	0.2+
1999 10 13	557	0.1+	0.2−	1999 11 11	703	0.9+	0.2+	1999 12 07	704	0.3+	0.1−
1999 10 13	557	0.3+	0.0	1999 11 11	703	0.5−	0.5+	1999 12 07	704	1.0+	0.3−
1999 10 15	704	0.5−	0.6−	1999 11 11	703	0.4−	0.3+	1999 12 07	704	0.3+	0.1+
1999 10 15	704	0.2−	0.2−	1999 11 11	703	0.2+	0.7+	1999 12 07	704	0.8+	0.1+
1999 10 15	699	0.4−	0.3+	1999 11 14	704	0.0	0.5+	1999 12 12	703	0.7−	0.5−
1999 10 15	704	0.1+	0.5−	1999 11 14	704	0.7+	0.2−	1999 12 12	703	0.2+	0.3−
1999 10 15	704	0.0	0.8−	1999 11 14	704	0.4−	0.4−	1999 12 12	703	0.5−	0.2−

1999 10 15 699 0.5- 1.8+ 1999 11 14 704 0.2- 0.0 1999 12 12 703 0.7+ 0.3+
 1999 10 15 704 0.1- 0.6- 1999 11 14 704 0.0 0.8-

(13407)* 1999 TF₄ = 1972 TT₃ = 1979 AC = 1983 YT = 1996 FG₁₉

Discovered 1999 Oct. 4 by K. Watanabe at the JCPM Sapporo Station.

Id. G. V. Williams (*MPC* 36839)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	350.32898	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.18291623	ω	31.03239	+0.02927345	-0.99902970		
<i>a</i>	3.0735095	Ω	57.30914	+0.90888480	+0.01290237		
<i>e</i>	0.2654680	<i>i</i>	2.24073	+0.41601861	+0.04210935		
<i>P</i>	5.39	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1972 10 05	095	(3.8+ 4.4-)	1999 10 14	392	0.1- 0.8+	1999 11 12	704	0.2+ 0.5-
1972 10 13	095	(4.3+ 0.2-)	1999 10 16	120	0.6+ 0.2-	1999 11 12	704	0.2+ 0.5-
1979 01 04	330	0.5+ 0.4-	1999 10 17	120	0.2+ 0.1-	1999 11 12	704	0.1- 0.7-
1983 12 28	033	0.5+ 0.9-	1999 10 17	120	0.3- 0.4-	1999 11 12	691	0.1- 0.2-
1983 12 29	033	0.4+ 0.6-	1999 10 17	120	0.0 0.4+	1999 11 12	691	0.1- 0.3-
1983 12 29	033	0.8- 1.5-	1999 10 18	392	0.5- 0.6+	1999 11 12	691	0.1- 0.2-
1996 03 15	566	0.1+ 0.0	1999 10 18	392	0.9- 0.6+	1999 11 16	704	0.1+ 0.2+
1996 03 15	566	0.0 0.0	1999 10 29	703	0.4- 0.2+	1999 11 16	704	0.0 0.7+
1996 03 15	566	0.4+ 0.1+	1999 10 29	703	0.5- 0.3+	1999 11 16	704	0.2+ 0.3+
1996 03 24	809	0.1- 1.0+	1999 10 29	703	0.5- 0.2+	1999 11 16	704	0.1- 0.2+
1996 03 24	809	0.1- 0.8+	1999 10 29	703	0.5- 0.3+	1999 11 16	704	0.1- 0.4+
1996 03 24	809	0.8- 0.3+	1999 10 31	691	0.2+ 0.3-	1999 11 17	704	0.5+ 0.6+
1996 03 26	809	0.7+ 0.7+	1999 10 31	691	0.1+ 0.3-	1999 11 17	704	0.6+ 0.6+
1996 03 26	809	(2.0+ 2.1+)	1999 10 31	691	0.2+ 0.3-	1999 11 17	704	0.0 0.7+
1996 03 26	809	1.4+ 2.0+	1999 11 03	703	0.1+ 0.5+	1999 11 17	704	0.8+ 0.4+
1998 08 17	704	0.2- 1.8-	1999 11 03	703	0.1+ 0.3-	1999 11 17	704	0.6+ 0.7+
1998 08 17	704	0.0 0.5-	1999 11 03	703	0.1- 0.5+	1999 12 02	699	0.0 0.3+
1998 08 17	704	0.3+ 0.9+	1999 11 03	703	0.2- 0.6+	1999 12 02	699	0.3- 1.0+
1998 08 17	704	0.5+ 0.1-	1999 11 04	392	1.2- 0.1+	1999 12 02	699	0.5- 0.3+
1999 10 01	703	0.0 0.2+	1999 11 04	392	0.5+ 0.3+	1999 12 30	699	0.6- 0.8+
1999 10 01	703	0.2- 0.5+	1999 11 05	704	0.1- 0.1-	1999 12 30	699	0.0 0.3+
1999 10 01	703	0.4- 0.4+	1999 11 05	704	0.3- 0.2-	1999 12 30	699	0.4- 1.0+
1999 10 01	703	0.3- 0.4+	1999 11 05	704	0.3- 0.1-	2000 01 04	704	0.2- 0.7-
1999 10 04	392	(2.2- 0.1-)	1999 11 05	704	0.0 0.2-	2000 01 04	704	0.2- 0.8-
1999 10 05	392	1.5- 0.9-	1999 11 05	704	0.0 0.1-	2000 01 04	704	0.1+ 0.9-
1999 10 05	392	(2.9- 0.1-)	1999 11 09	704	0.3+ 0.0	2000 01 04	704	0.1+ 0.8-
1999 10 07	704	0.5+ 0.4-	1999 11 09	704	0.5+ 0.3+	2000 01 04	704	0.4+ 1.7-
1999 10 07	704	0.4- 0.7+	1999 11 09	704	0.1- 0.1-	2000 01 07	704	0.1- 0.3-
1999 10 07	704	0.2+ 1.2+	1999 11 09	704	0.1+ 0.3+	2000 01 07	704	0.3- 0.6+
1999 10 07	704	0.3+ 0.9-	1999 11 09	704	0.2- 0.3+	2000 01 07	704	0.0 0.4+
1999 10 07	704	0.0 0.5-	1999 11 12	704	0.5+ 0.1-	2000 01 07	704	0.3+ 0.2-
1999 10 14	392	0.9+ 0.9+	1999 11 12	704	0.2+ 0.5-			

(13408)* 1999 TF₁₄ = 2135 T-1 = 1984 WB₁ = 1998 KH₂₄

Discovered 1999 Oct. 10 by K. Korlević and M. Jurić at Višnja.

Id. G. V. Williams (*MPC* 36489, *MPC* 37189), M. E. Sansaturio (*MPC* 37189)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	43.09899	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.26129564	ω	322.35950	+0.97097332	-0.23456506		
<i>a</i>	2.4231555	Ω	51.27207	+0.23143370	+0.87192414		
<i>e</i>	0.1795781	<i>i</i>	3.43911	+0.06040909	+0.42979939		
<i>P</i>	3.77	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 25	675	0.7- 0.0	1999 10 19	120	0.4- 0.1-	1999 11 17	704	0.0 0.3+
1971 03 25	675	0.7+ 0.6-	1999 10 19	120	0.4- 0.1-	1999 11 30	106	0.0 0.7+
1971 03 26	675	0.5+ 1.3-	1999 11 02	703	0.0 0.0	1999 11 30	106	0.0 0.3+
1971 03 27	675	1.9+ 2.2-	1999 11 02	703	0.0 0.1+	1999 11 30	106	0.1+ 0.0
1984 11 27	046	0.1- 2.2-	1999 11 02	703	0.4+ 0.1+	1999 12 02	699	0.4+ 0.4+
1984 11 27	046	2.4- 0.1+	1999 11 02	703	0.1- 0.1+	1999 12 02	699	0.5- 0.0
1997 01 14	566	0.4- 0.0	1999 11 05	704	0.1- 1.0+	1999 12 02	699	0.3+ 0.1+

1997 01 14	566	0.3- 0.3+	1999 11 05	704	0.1- 0.1+	1999 12 05	704	0.7- 0.9-
1997 01 14	566	0.6- 0.2+	1999 11 05	704	0.3- 0.0	1999 12 05	704	1.8- 0.7+
1998 05 22	704	0.5+ 1.0+	1999 11 05	704	0.1+ 0.2-	1999 12 05	704	0.5- 0.2-
1998 05 22	704	2.0- 0.3+	1999 11 05	704	0.3+ 0.3+	1999 12 05	704	0.6- 0.3-
1998 05 22	704	1.5+ 0.5-	1999 11 09	704	0.9+ 0.2+	1999 12 05	704	0.9+ 0.6+
1998 05 22	704	0.5+ 0.9+	1999 11 09	704	0.8- 0.2-	1999 12 07	704	0.2- 0.5-
1998 05 22	704	0.6- 0.7-	1999 11 09	704	0.0 0.3+	1999 12 07	704	0.2+ 0.2-
1998 05 24	704	0.2- 0.8-	1999 11 09	704	0.0 0.2+	1999 12 07	704	0.0 0.2-
1998 05 24	704	1.5- 0.5+	1999 11 09	704	0.6- 0.2+	1999 12 07	704	0.0 0.2+
1998 05 24	704	0.2+ 0.5+	1999 11 12	704	0.2+ 0.7+	1999 12 07	704	0.3+ 0.4+
1998 05 24	704	0.3+ 1.0+	1999 11 12	704	0.1- 0.1+	2000 01 04	704	0.4- 0.3-
1998 05 24	704	1.1- 0.8-	1999 11 12	704	0.4- 0.6+	2000 01 04	704	0.3- 0.5+
1999 10 07	704	1.0+ 0.8-	1999 11 12	704	0.3- 1.0+	2000 01 04	704	0.2+ 0.7-
1999 10 07	704	0.1+ 1.3-	1999 11 12	704	0.3- 1.4+	2000 01 04	704	0.3- 0.7-
1999 10 07	704	0.2+ 1.4-	1999 11 14	699	0.8+ 0.4-	2000 01 04	704	0.1+ 0.7-
1999 10 07	704	0.1- 1.3-	1999 11 14	699	0.4- 0.2+	2000 01 07	704	0.3- 0.1-
1999 10 07	704	0.1- 0.6-	1999 11 14	699	0.3- 0.6-	2000 01 07	704	0.6+ 0.7-
1999 10 10	120	1.6+ 0.6-	1999 11 17	704	0.5+ 0.3+	2000 01 07	704	0.1- 0.3-
1999 10 11	120	1.6+ 0.5-	1999 11 17	704	0.1+ 0.9+	2000 01 07	704	0.1+ 0.1+
1999 10 13	120	0.3+ 0.1+	1999 11 17	704	0.3+ 0.8+	2000 01 07	704	0.1- 0.2+
1999 10 13	120	0.8+ 0.3-	1999 11 17	704	0.4+ 0.8+			

(13409)* 1999 US = 1980 ER₁ = 1985 DR₃ = 1998 RT₂₈

Discovered 1999 Oct. 16 by K. Korlević at Višnja.

Id. G. V. Williams (*MPC* 36855)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams					
<i>M</i>	227.06328	(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	0.18110495	ω	73.50412	-0.89171479	+0.45059202		
<i>a</i>	3.0939681	Ω	133.25487	-0.43434476	-0.82552286		
<i>e</i>	0.1073720	<i>i</i>	3.35026	-0.12723741	-0.33982177		
<i>P</i>	5.44	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1980 03 15	095	0.5- 0.6+	1998 09 18	704	0.4- 0.8+	1999 12 04	703	0.4+ 1.0+
1985 02 20	675	0.1- 0.3-	1999 10 16	120	0.9+ 0.3-	1999 12 04	703	0.5- 0.3+
1985 02 22	675	1.0+ 0.2-	1999 10 16	120	0.6- 0.2-	1999 12 04	703	0.2+ 0.1+
1996 03 26	566	0.7+ 1.3+	1999 10 17	120	(2.2+ 1.3-)	1999 12 04	703	0.2+ 0.3-
1996 03 26	566	0.6+ 1.1+	1999 10 17	120	0.0 1.1-	1999 12 06	704	0.1+ 0.1-
1996 03 26	566	0.0 1.8+	1999 10 20	120	1.4- 0.2-	1999 12 06	704	0.6- 0.5+
1998 08 17	704	(3.5- 2.9+)	1999 10 20	120	(5.9- 1.8-)	1999 12 06	704	0.5+ 1.0+
1998 08 17	704	0.5- 0.3+	1999 10 20	120	0.1+ 0.2-	1999 12 06	704	0.6+ 0.9+
1998 08 17	704	0.3+ 0.8+	1999 11 04	704	0.2- 0.3-	1999 12 06	704	(2.1+ 0.0)
1998 08 17	704	0.1+ 1.0+	1999 11 04	704	0.4+ 0.2-	1999 12 07	704	0.0 0.5+
1998 08 23	704	0.2- 1.4+	1999 11 04	704	0.3- 0.1-	1999 12 07	704	0.6+ 0.2+
1998 08 23	704	0.8- 0.6+	1999 11 04	704	0.0 0.1-	1999 12 07	704	1.1- 1.7-
1998 08 23	704	1.9- 0.9-	1999 11 04	704	0.2+ 0.1-	1999 12 07	704	0.5- 0.1-
1998 08 23	704	1.5+ 0.6-	1999 11 05	120	0.1+ 0.1+	1999 12 07	704	0.9- 0.0
1998 08 23	704	(5.6- 0.4+)	1999 11 06	120	0.2+ 0.4-	1999 12 08	704	0.1- 2.0+
1998 08 30	699	0.1- 0.1+	1999 11 07	120	1.0+ 0.2-	1999 12 08	704	0.5- 0.8+
1998 08 30	699	0.5- 1.2+	1999 11 07	120	0.5+ 0.1+	1999 12 08	704	0.2+ 0.5-
1998 08 30	699	0.6- 0.6+	1999 11 15	704	0.1- 0.3-	1999 12 08	704	0.3+ 0.1-
1998 09 14	704	0.2+ 1.0-	1999 11 15	704	0.3+ 0.0	1999 12 08	704	0.5+ 0.8-
1998 09 14	704	0.6+ 1.4+	1999 11 15	704	0.5+ 0.0	1999 12 12	703	0.3- 0.6+
1998 09 14	704	0.2- 0.8-	1999 11 15	704	0.4+ 0.0	1999 12 12	703	0.5+ 0.3-
1998 09 14	704	0.8+ 0.5+	1999 11 15	704	0.3+ 0.0	1999 12 12	703	0.5- 0.8+
1998 09 18	699	0.0 0.3-	1999 11 17	704	0.2+ 0.7-	1999 12 12	703	0.8- 0.1-
1998 09 18	699	0.3- 0.7-	1999 11 17	704	0.2- 0.5-	1999 12 14	704	0.4+ 0.6+</

Id. S. Nakano (*MPC* 37191), A. Doppler (*ibid.*), G. V. Williams (d, *ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	96.55370		(2000.0)		P		Q
<i>n</i>	0.30447426	ω	52.87619	+0.67623892	+0.73188369		
<i>a</i>	2.1882772	Ω	259.89699	-0.70005249	+0.60294283		
<i>e</i>	0.2166756	<i>i</i>	4.89153	-0.22940670	+0.31749993		
<i>P</i>	3.24	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1970 11 23	033	0.0	0.4-	1999 09 04	703	0.8-	1.6+	1999 11 16	704	0.1-	0.2-
1986 10 04	688	(6.4+ 1.7+)		1999 10 03	704	0.9+	0.2+	1999 11 16	704	0.2-	0.3+
1986 10 04	688	(1.5- 2.7-)		1999 10 03	704	1.3+	0.3-	1999 11 16	704	0.1-	0.1-
1986 10 11	095	0.1-	0.2-	1999 10 03	704	0.9+	1.2+	1999 11 16	704	0.4+	0.3-
1991 01 18	801	1.5+	0.3-	1999 10 03	704	0.7+	0.7+	1999 11 16	704	0.2-	0.3-
1991 01 18	801	0.6+	0.8-	1999 10 03	704	0.4-	0.6-	1999 12 03	699	0.7-	0.8+
1996 12 04	098	0.3-	1.2-	1999 10 15	699	0.1+	0.1-	1999 12 03	699	0.1+	0.8+
1996 12 04	098	0.1+	0.2-	1999 10 15	699	0.2+	0.1-	1999 12 04	703	0.4-	0.2+
1996 12 06	098	(2.9+ 0.7+)		1999 10 15	699	0.1-	0.0	1999 12 04	703	0.6-	0.7+
1996 12 06	098	(3.4+ 0.7+)		1999 10 29	703	0.2-	0.0	1999 12 04	703	0.1+	0.7+
1996 12 08	098	1.6-	0.7-	1999 10 29	703	0.4-	0.1-	1999 12 04	703	0.1+	0.4+
1996 12 08	098	0.2-	0.8-	1999 10 29	703	0.3-	0.3-	1999 12 30	699	0.5-	0.2-
1998 03 31	704	0.8+	0.4+	1999 10 31	703	0.4-	0.2-	1999 12 30	699	0.7-	0.5+
1998 03 31	704	0.3-	0.5-	1999 10 31	703	0.1+	0.3-	1999 12 30	699	0.4-	0.4+
1998 03 31	704	0.1+	0.4+	1999 10 31	703	0.3+	1.1-	2000 01 04	704	0.0	0.6+
1998 03 31	704	1.9-	0.7+	1999 10 31	703	0.0	0.3-	2000 01 04	704	0.2-	0.3+
1998 03 31	704	0.6+	0.2+	1999 11 03	704	0.2+	0.1-	2000 01 04	704	0.6-	0.2+
1998 04 01	704	0.6+	0.5+	1999 11 03	704	0.0	0.2-	2000 01 04	704	0.8-	0.6+
1998 04 01	704	0.7+	0.4-	1999 11 03	704	0.1-	0.2-	2000 01 04	704	0.6-	0.2+
1998 04 01	704	0.1+	0.6+	1999 11 03	704	0.1+	0.1-	2000 01 06	704	0.3+	0.2+
1998 04 01	704	0.0	0.0	1999 11 03	704	0.2-	0.1+	2000 01 06	704	0.1-	0.3+
1998 04 01	704	0.7-	0.0	1999 11 11	703	0.1-	0.3+	2000 01 06	704	0.4+	0.1+
1999 09 04	703	0.8+	0.3-	1999 11 11	703	0.6+	0.9-	2000 01 06	704	0.2-	0.5+
1999 09 04	703	0.3+	0.2-	1999 11 11	703	0.0	0.2-	2000 01 06	704	0.8+	0.6+
1999 09 04	703	0.1-	1.2+	1999 11 11	703	0.1+	0.5-				

(13411)* 1999 UO₇ = 1995 WK₃₀ = 1998 HE₈₉

Discovered 1999 Oct. 31 by P. Antonini at Bedoin.

Id. G. V. Williams (*MPC* 37192)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	88.06212		(2000.0)		P		Q
<i>n</i>	0.22816585	ω	264.80807	+0.51087365	+0.84937322		
<i>a</i>	2.6523792	Ω	36.90252	-0.67502791	+0.49184018		
<i>e</i>	0.1866754	<i>i</i>	12.75442	-0.53230201	+0.19146376		
<i>P</i>	4.32	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1995 11 19	691	0.2-	0.1-	1998 05 01	704	0.8+	0.8-	1999 11 11	691	0.2-	0.3+
1995 11 19	691	0.1-	0.1+	1998 05 01	704	0.9+	0.6-	1999 11 11	691	0.1+	0.2-
1995 11 19	691	0.0	0.3+	1998 05 01	566	0.7+	0.1-	1999 11 15	704	0.2-	0.2-
1995 11 24	691	0.1-	0.2+	1998 05 01	566	0.4+	0.4-	1999 11 15	704	0.2-	0.1-
1995 11 24	691	0.1+	0.3+	1998 05 01	566	0.3-	0.5-	1999 11 15	704	0.7+	0.2+
1995 11 24	691	0.1-	0.1+	1998 05 25	699	0.1+	0.2-	1999 11 15	704	0.5-	0.3-
1997 02 06	566	0.0	0.3+	1998 05 25	699	0.3-	1.1+	1999 11 15	704	0.3-	0.5+
1997 02 06	566	0.1-	0.3-	1998 05 25	699	0.6+	0.9+	1999 11 17	704	1.3+	0.4+
1997 02 06	566	0.1-	0.0	1999 09 08	699	0.9+	0.5-	1999 11 17	704	0.1+	0.1+
1998 03 29	910	(2.1+ 1.0+)		1999 09 08	699	0.2+	0.3-	1999 11 17	704	1.2+	0.2+
1998 03 29	910	1.1+	0.7+	1999 09 08	699	0.2+	0.0	1999 11 17	704	2.0-	0.7-
1998 03 29	910	0.8+	0.6+	1999 09 14	704	0.4-	0.5+	1999 11 26	132	0.4-	0.3+
1998 04 21	704	0.2-	0.1+	1999 09 14	704	0.3-	0.7-	1999 11 26	132	0.6+	0.8-
1998 04 21	704	0.2-	0.4-	1999 09 14	704	0.6-	0.2-	1999 11 26	132	(1.3+ 2.3-)	
1998 04 21	704	0.6-	0.2-	1999 09 14	704	0.1-	0.2-	1999 11 26	132	0.5-	1.0-
1998 04 21	704	0.3-	0.3-	1999 09 14	704	0.4-	0.5-	1999 11 27	699	(0.9- 2.6+)	
1998 04 21	704	(2.1- 0.7+)		1999 10 31	132	0.4+	0.4+	1999 11 27	699	0.6-	0.6+
1998 04 22	704	0.9-	0.1-	1999 10 31	132	0.7-	0.7+	1999 11 27	699	(0.3- 2.8+)	
1998 04 22	704	0.6-	0.2-	1999 10 31	132	0.1-	0.3+	1999 11 29	557	0.3-	0.2+

1998 04 22	704	1.3-	0.2+	1999 10 31	132	0.4-	0.2+	1999 11 29	557	0.5+	0.3+
1998 04 22	704	0.9-	0.3+	1999 11 04	691	0.1+	0.1-	1999 12 07	704	0.2+	0.7-
1998 04 22	704	0.6-	0.2+	1999 11 04	691	0.2+	0.0	1999 12 07	704	0.3-	0.3+
1998 04 30	699	0.2+	0.3+	1999 11 04	691	1.0+	0.1-	1999 12 07	704	0.7+	0.1+
1998 04 30	699	0.2-	0.6+	1999 11 04	132	0.4-	0.3+	1999 12 07	704	0.0	0.0
1998 04 30	699	0.4+	0.4+	1999 11 04	132	0.3+	1.0+	1999 12 07	704	0.4-	0.2-
1998 05 01	704	0.6+	0.0	1999 11 04	132	0.1+	0.6+	1999 12 09	691	0.4+	0.0
1998 05 01	704	1.0+	0.7+	1999 11 05	132	1.6-	1.2+	1999 12 09	691	0.3+	0.1+
1998 05 01	704	0.5+	0.0	1999 11 11	691	0.2+	0.2-	1999 12 09	691	0.3+	0.1+

(13412)* 1999 UJ₈ = 1979 SY₁₃ = 1992 HP₆ = 1997 GO₃₆

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Id. G. V. Williams (*MPC* 37192)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	10.29816		(2000.0)		P		Q
<i>n</i>	0.20192283	ω	33.24709	+0.49970208	-0.86603100		
<i>a</i>	2.8774808	Ω	26.78421	+0.78627972	+0.44528950		
<i>e</i>	0.0644133	<i>i</i>	2.15878	+0.36340339	+0.22739299		
<i>P</i>	4.88	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1979 09 20	675	0.2+	0.7-	1999 11 01	703	0.7-	0.5+	1999 11 15	691	0.1-	0.1+
1979 09 21	675	0.5+	0.2-	1999 11 01	703	0.3-	0.0	1999 11 15	691	0.2-	0.1+
1992 04 25	809	0.9-	1.7-	1999 11 01	703	0.1-	0.3+	1999 11 15	691	0.1-	0.1+
1992 04 25	809	1.4-	1.3-	1999 11 01	703	0.0	0.6+	1999 11 16	704	0.0	0.1+
1992 04 25	809	(0.2-	2.6-)	1999 11 04	704	0.1+	0.5+	1999 11 16	704	0.3+	0.3+
1997 04 06	704	1.0+	0.0	1999 11 04	704	0.4+	0.0	1999 11 16	704	0.4+	0.6+
1997 04 06	704	0.4+	0.3+	1999 11 04	704	0.2+	0.2+	1999 11 16	704	0.7-	1.0-
1997 04 11	704	0.2+	0.1-	1999 11 04	704	0.1-	0.3-	1999 12 04	703	0.7-	0.0
1997 04 11	704	0.5+	0.1+	1999 11 04	704	0.4-	0.7-	1999 12 04	703	0.3-	0.5+
1997 05 07	704	0.9-	0.5+	1999 11 09	704	0.4+	0.5+	1999 12 04	703	1.1-	1.0+
1997 05 07	704	0.2+	0.2+	1999 11 09	704	0.5+	0.0	1999 12 04	703	0.5-	0.1+
1997 05 07	704	0.5+	1.1+	1999 11 09	704	0.1+	0.2-	1999 12 06	704	0.6-	0.1-
1997 05 07	704	0.8+	0.5+	1999 11 10	691	0.2+	0.0	1999 12 06	704	1.2+	0.2-
1997 05 07	704	0.1+	1.0+	1999 11 10	691	0.2+	0.0	1999 12 06	704	0.1+	0.0
1997 05 07	704	0.3+	0.4-	1999 11 10	691	0.2+	0.2-	1999 12 06	704	0.1-	0.9-
1997 05 07	704	0.2-	1.0+	1999 11 14	704	0.1+	0.0	1999 12 06	704	0.2-	0.4-
1997 05 07	704	0.3+	0.2-	1999 11 14	704	0.3+	0.1+	1999 12 07	704	0.3+	0.5+
1997 05 07	704	0.1-	0.7+	1999 11 14	704	0.3+	0.2-	1999 12 07	704	0.1-	0.3+
1998 07 16	699	(1.3+	2.9+)	1999 11 14	704	0.2+	0.1-	1999 12 07	704	0.5-	0.6+
1998 07 16	699	1.0+	0.9+	1999 11 14	704	0.0	0.3-	1999 12 07	704	0.2+	0.2+
1998 07 16	699	0.8+	1.0+	1999 11 15	704	0.1-	0.2+	1999 12 07	704	0.1-	0.1+
1998 08 17	704	0.9-	1.1-	1999 11 15	704	0.4+	0.2-	1999 12 12	703	0.2+	0.1-
1998 08 17	704	0.6-	0.1+	1999 11 15	704	0.2-	0.2+	1999 12 12	703	0.3-	0.1-
1998 08 17	704	0.5-	0.0	1999 11 15	704	0.6+	0.0	1999 12 12	703	0.5-	0.4+
1998 08 17	704	0.3-	0.5-	1999 11 15	704	0.3-	0.0	1999 12 12	703	0.4-	0.4+
1998 08 17	704	(4.3-	3.3+)	1999 11 15	704	0.3+	0.2-	2000 01 06	704	0.8-	0.4-
1999 10 29	703	0.4+	0.2-	1999 11 15	704	0.3-	0.2+	2000 01 06	704	0.3-	0.0
1999 10 29	703	0.8-	0.6-	1999 11 15	704	0.4+	0.2+	2000 01 06	704	1.1+	0.3-
1999 10 29	703	0.2+	0.1-	1999 11 15	704	0.3-	0.4+	2000 01 06	704	0.6+	0.8-
1999 10 29	703	0.0	0.6+	1999 11 15	704	0.3+	0.1-				

1989 11 04	675	0.8+	1.1-	1999 10 29	703	0.4-	0.1+	1999 12 04	703	0.1+	0.1+
1989 11 04	675	(1.1+	2.7-)	1999 10 29	703	0.1+	0.9+	1999 12 04	703	0.2+	0.5+
1991 02 07	372	0.0	0.8-	1999 11 01	703	0.5-	0.4+	1999 12 04	703	0.5-	0.1+
1991 02 07	372	0.4-	0.4-	1999 11 01	703	0.1+	0.2+	1999 12 04	703	0.5-	0.4+
1997 04 06	704	0.2+	0.3-	1999 11 01	703	0.1-	0.3+	1999 12 07	704	0.8-	1.1-
1997 04 06	704	0.4-	0.2-	1999 11 01	703	0.4-	0.2-	1999 12 07	704	0.2-	0.6-
1997 04 07	704	0.9-	0.3+	1999 11 04	704	0.5-	0.1-	1999 12 07	704	0.3+	0.0
1997 04 07	704	1.1+	0.5+	1999 11 04	704	0.1+	0.2-	1999 12 07	704	0.2+	0.1-
1997 04 11	704	0.1+	0.9-	1999 11 04	704	0.4-	0.3-	1999 12 08	704	0.2+	0.3+
1997 04 11	704	0.4-	1.3+	1999 11 04	704	0.0	0.2+	1999 12 08	704	0.3+	0.5+
1997 04 11	704	0.5-	0.3-	1999 11 04	704	0.2-	0.2+	1999 12 08	704	0.2+	0.3+
1997 04 11	704	0.0	0.8-	1999 11 14	704	0.2+	0.3+	1999 12 08	704	0.3+	0.3-
1997 05 07	704	0.3+	0.4+	1999 11 14	704	0.1+	0.2+	1999 12 08	704	0.4-	0.4-
1997 05 07	704	1.1+	1.3+	1999 11 14	704	0.0	0.1+	1999 12 12	703	0.0	0.6+
1997 05 07	704	0.6+	0.4+	1999 11 14	704	0.4+	0.1+	1999 12 12	703	0.1-	0.8+
1997 05 07	704	0.4-	0.5+	1999 11 14	704	0.4-	0.0	1999 12 12	703	0.3-	0.4+
1999 10 06	704	1.4+	0.0	1999 11 16	704	1.4+	1.1+	1999 12 12	703	0.1-	0.7+
1999 10 06	704	0.0	0.6-	1999 11 16	704	0.6-	0.5+	2000 01 06	704	0.4-	0.1+
1999 10 06	704	0.1+	0.3+	1999 11 16	704	0.1+	0.0	2000 01 06	704	1.0-	0.0
1999 10 06	704	0.2+	1.1-	1999 11 16	704	0.0	0.1+	2000 01 06	704	0.3-	0.1+
1999 10 06	704	1.4-	1.0-	1999 11 16	704	0.3+	0.1+	2000 01 06	704	1.4+	0.0

(13414)* 1999 UN₂₅ = 1989 SH₁₂

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Id. A. Doppler (*MPC* 37196), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	92.42484		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.20635412	ω	22.63485	+0.88275289	+0.46954903		
a	2.8361375	Ω	309.34963	-0.43426117	+0.80203384		
e	0.0670310	i	1.21991	-0.17934482	+0.36914149		
P	4.78	H	13.5	G	0.15	U	1

Residuals in seconds of arc

1989 09 27	675	0.0	0.8-	1998 08 17	704	0.1-	0.5-	1999 11 14	704	0.4-	0.1-
1989 09 27	675	1.7-	1.3-	1998 08 17	704	0.3+	0.9+	1999 11 14	704	0.5-	0.3-
1989 09 30	809	0.6+	0.2+	1998 08 17	704	1.6+	0.6+	1999 11 14	704	0.5-	0.2-
1989 09 30	809	1.0+	0.1+	1998 08 17	704	0.1-	0.4-	1999 11 16	704	0.6-	0.2-
1989 09 30	809	1.3+	0.3+	1999 10 06	704	1.8+	1.1-	1999 11 16	704	0.7-	0.1-
1989 10 01	809	0.6+	0.4+	1999 10 06	704	(0.8+	2.1-)	1999 11 16	704	0.8-	0.2+
1989 10 01	809	0.8+	0.3+	1999 10 06	704	0.7+	1.5-	1999 11 16	704	0.1-	0.5+
1989 10 01	809	1.1+	0.4+	1999 10 06	704	(0.1+	2.2-)	1999 11 16	704	0.2-	0.2-
1989 10 02	809	1.6-	0.4+	1999 10 06	704	(0.5-	2.1-)	1999 12 04	703	0.9-	0.2+
1989 10 02	809	1.3-	0.4+	1999 10 29	703	0.8-	0.2-	1999 12 04	703	0.2+	0.3+
1989 10 02	809	0.9-	0.4+	1999 10 29	703	0.2+	1.1+	1999 12 04	703	0.3+	0.0
1994 11 01	033	0.0	1.1-	1999 10 29	703	1.0+	0.5+	1999 12 04	703	0.2-	0.1+
1994 11 01	033	0.3+	0.7-	1999 10 29	703	0.5-	0.9+	1999 12 07	704	0.2+	0.2+
1996 01 17	566	0.2-	0.4+	1999 11 03	704	0.3+	0.3-	1999 12 07	704	0.3+	0.2-
1996 01 17	566	0.2+	0.4+	1999 11 03	704	0.3+	0.2+	1999 12 07	704	0.6+	0.1-
1996 01 17	566	0.5-	0.3+	1999 11 03	704	0.4+	0.3+	1999 12 07	704	0.1+	0.1-
1997 04 01	809	0.6+	0.7+	1999 11 03	704	0.6+	0.6+	1999 12 07	704	0.2+	0.3-
1997 04 01	809	0.2+	0.0	1999 11 03	704	0.1+	0.6+	1999 12 08	704	0.1-	0.2+
1997 04 01	809	0.0	0.5-	1999 11 04	703	0.6-	0.5+	1999 12 08	704	0.1+	0.1+
1998 06 26	704	0.9-	0.7+	1999 11 04	703	0.3-	0.5+	1999 12 08	704	0.0	0.0
1998 06 26	704	1.7-	0.0	1999 11 04	703	0.2-	0.1+	1999 12 08	704	0.2+	0.5+
1998 06 26	704	0.5-	0.4-	1999 11 04	703	0.0	0.1+	1999 12 08	704	0.8+	0.6-
1998 06 26	704	(2.3-	0.2-)	1999 11 14	704	0.3-	0.3-				
1998 08 17	704	0.6+	0.1+	1999 11 14	704	0.3-	0.4-				

**(13415)* 1999 UT₂₅ = 1991 PD₂₂ = 1991 PT₂₉ = 1995 UH₁₈
= 1998 HE₉₄**

Discovered 1999 Oct. 29 by Catalina Sky Survey.

Id. S. Nakano (*MPC* 37196), A. Doppler (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

M	112.45867		(2000.0)	P	Q
n	0.26499847	ω	334.35462	+0.57053131	+0.82111118
a	2.4005300	Ω	330.42439	-0.74765347	+0.51099588
e	0.1897863	i	1.90942	-0.33986514	+0.25428260
P	3.72	H	15.1	G 0.15	U 2

Residuals in seconds of arc

1991 08 02	809	0.4+	0.0	1998 05 22	704	0.8+	1.2-	1999 11 12	699	1.1-	1.3-
1991 08 02	809	1.4-	0.4-	1999 10 29	703	1.1-	0.1+	1999 11 12	699	0.2-	0.0
1991 08 02	809	1.4-	0.7+	1999 10 29	703	0.6+	0.4+	1999 11 12	699	0.5-	0.1+
1991 08 14	809	(2.7+	1.3-)	1999 10 29	703	0.3-	0.3+	1999 11 14	704	0.5+	1.0-
1991 08 14	809	1.3+	1.2-	1999 10 29	703	0.9+	0.2-	1999 11 14	704	0.3+	0.9-
1991 08 14	809	2.0+	0.4-	1999 11 03	704	1.1+	1.0+	1999 11 14	704	0.6+	0.4-
1995 10 18	691	0.5-	0.1+	1999 11 03	704	0.2+	0.0	1999 11 14	704	0.2+	0.3-
1995 10 18	691	0.4-	0.3+	1999 11 03	704	0.4+	0.1-	1999 11 14	704	0.4+	0.5-
1995 10 18	691	0.1-	0.2+	1999 11 03	704	0.2-	0.4-	1999 11 16	704	0.5+	0.8-
1995 10 28	691	0.3-	0.1+	1999 11 03	704	0.1+	0.4-	1999 11 16	704	1.1+	0.7-
1995 10 28	691	0.0	0.2-	1999 11 04	704	0.4+	0.0	1999 11 16	704	1.3+	0.3-
1995 10 28	691	0.0	0.1+	1999 11 04	704	0.4-	0.1-	1999 11 16	704	0.3+	0.8-
1998 04 21	704	0.3-	0.1-	1999 11 04	703	1.5-	0.0	1999 11 16	704	0.6+	1.3-
1998 04 21	704	1.1-	0.1-	1999 11 04	704	0.7+	0.0	1999 12 04	703	2.1-	0.9+
1998 04 21	704	0.6-	0.2+	1999 11 04	703	0.6+	0.3-	1999 12 04	703	0.3+	1.0-
1998 04 21	704	0.7-	0.8+	1999 11 04	704	0.4+	0.5+	1999 12 04	703	1.2+	0.9-
1998 04 21	704	0.7+	0.9+	1999 11 04	703	0.3-	0.2-	1999 12 04	703	1.1-	1.0-
1998 04 22	704	0.3+	0.8+	1999 11 04	704	0.4+	0.1-	1999 12 08	704	0.0	0.0
1998 04 22	704	0.4-	0.9-	1999 11 04	703	0.8-	0.1-	1999 12 08	704	0.0	0.4+
1998 04 22	704	0.2+	0.2+	1999 11 05	704	1.1-	0.6+	1999 12 08	704	0.5+	0.4-
1998 05 01	704	0.1+	0.3-	1999 11 05	704	0.3-	0.3+	1999 12 08	704	0.3+	0.4-
1998 05 01	704	2.0-	0.1+	1999 11 05	704	0.1+	1.0+	1999 12 08	704	0.5+	0.0
1998 05 01	704	1.3+	0.3-	1999 11 05	704	0.3+	0.9+	1999 12 12	703	0.2-	0.3+
1998 05 01	704	1.7-	0.7-	1999 11 05	704	0.1-	0.0	1999 12 12	703	0.1+	0.4-
1998 05 01	704	1.9-	1.0-	1999 11 09	703	0.1+	1.1+	1999 12 12	703	0.8-	0.0
1998 05 22	704	2.1+	0.6-	1999 11 09	703	0.5-	0.1+	1999 12 12	703	0.1+	0.1+
1998 05 22	704	0.5+	0.9-	1999 11 09	703	0.0	1.0+				
1998 05 22	704	1.3+	1.0-	1999 11 09	703	0.3-	0.1-				

(13416)* 1999 UX₂₅ = 1977 XY₁ = 1982 SG₁ = 1998 MB₂₀

Discovered 1999 Oct. 30 by the Catalina Sky Survey.

Id. A. Doppler (*MPC* 37196)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	68.11598		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.17489586	ω	83.36202	+0.72559684	+0.68585139
a	3.1667688	Ω	233.31767	-0.65564871	+0.66444793
e	0.2200150	i	3.99206	-0.20888752	+0.29684479
P	5.64	H	12.9	G 0.15	U 1

Residuals in seconds of arc

1977 12 07	675	0.5+	0.4+	1998 06 26	704	0.5+	1.0+	1999 11 04	703	0.4-	0.1+
1977 12 08	675	0.5-	0.1-	1998 06 26	704	0.0	0.1-	1999 11 04	703	0.3+	0.2+
1982 09 19	095	1.2+	0.9+	1998 06 26	704	0.0	0.1+	1999 11 05	704	0.7+	0.3+
1982 09 21	095	0.3-	0.9+	1999 07 23	704	0.3+	0.0	1999 11 05	704	0.5+	0.6+
1982 09 22	688	(3.6-	3.9-)	1999 07 23	704	0.2+	0.2+	1999 11 05	704	0.6+	0.2+
1982 09 22	688	(18.6-	29.1+)	1999 07 23	704	0.2-	0.1+	1999 11 05	704	0.4+	0.2+
1982 09 28	095	1.2-	0.8-	1999 07 23	704	0.1-	0.1+	1999 11 05	704	0.3+	0.0
1998 05 22	704	0.2-	1.1-	1999 09 05	703	0.3+	0.7+	1999 11 14	704	0.4+	0.3-
1998 05 22	704	1.4+	0.3+	1999 09 05	703	0.1+	0.0	1999 11 14	704	0.1+	0.9-

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M.P.C. 37601

1998 06 03	704	(0.0	2.8−)	1999 10 04	704	0.4+	0.1−	1999 11 27	699	0.1+	0.9+
1998 06 24	704	0.4+	0.3−	1999 10 04	704	1.2+	1.2+	1999 11 27	699	0.2+	0.0
1998 06 24	704	0.1−	1.6+	1999 10 30	703	0.1+	0.1+	1999 12 13	699	0.1−	0.2+
1998 06 24	704	0.2−	0.1−	1999 10 30	703	0.5−	0.3+	1999 12 13	699	0.6−	0.5+
1998 06 24	704	0.2+	0.3−	1999 10 30	703	0.2−	0.0	1999 12 13	699	0.7−	0.5+
1998 06 24	704	0.2−	0.3+	1999 10 30	703	0.4−	0.1+	2000 01 07	704	0.1−	0.3+
1998 06 26	704	0.3+	0.2+	1999 11 04	703	0.5+	0.4+	2000 01 07	704	0.2−	0.4+
1998 06 26	704	0.4+	0.0	1999 11 04	703	0.8−	0.4+	2000 01 07	704	0.2+	0.3+

(13417)* 1999 VH₆ = 1972 TP₇ = 1981 UA₃₀ = 1990 VZ₃

Discovered 1999 Nov. 5 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 37200)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22208231	<i>ω</i>	125.41366	+0.93218055		+0.35509378	
<i>a</i>	2.7005988	<i>Ω</i>	213.94505	−0.35932326		+0.88410776	
<i>e</i>	0.0726460	<i>i</i>	7.23672	−0.04388868		+0.30374640	
<i>P</i>	4.44	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1972 10 06	095	(3.1−	2.8+)	1998 08 24	704	0.3−	0.2−	1999 12 14	704	0.6−	0.3+
1981 10 23	095	1.1+	1.4−	1999 11 04	704	0.4+	0.1−	1999 12 14	704	0.2+	0.5+
1990 11 12	364	1.3+	1.5+	1999 11 04	704	0.0	0.4+	1999 12 14	704	1.2+	0.4−
1990 11 12	364	1.2−	0.6−	1999 11 04	704	0.5+	0.3+	1999 12 14	704	0.5+	0.2−
1990 11 14	364	1.2−	1.1+	1999 11 04	704	0.1+	0.5+	1999 12 30	699	0.5−	1.3+
1990 11 14	364	0.7−	0.5−	1999 11 04	704	0.1+	0.8+	1999 12 30	699	0.1+	0.5+
1997 04 01	809	0.6+	2.1+	1999 11 05	411	0.2−	1.1+	1999 12 30	699	0.1+	0.9+
1997 04 01	809	0.7+	1.1+	1999 11 05	411	0.4+	0.5+	1999 12 30	106	0.2+	0.3+
1997 04 01	809	0.0	1.2+	1999 11 08	411	0.9−	0.9−	1999 12 30	106	0.0	0.8+
1998 06 27	699	0.2+	0.8+	1999 11 08	411	0.3−	0.2−	1999 12 30	106	0.6+	0.1−
1998 06 27	699	0.4+	0.4+	1999 11 13	411	0.1+	0.1−	2000 01 05	704	0.7+	0.1+
1998 06 27	699	0.0	0.2+	1999 11 13	411	0.3−	0.1−	2000 01 05	704	0.4−	0.1+
1998 07 15	699	0.7+	0.6+	1999 11 17	704	1.4+	0.9+	2000 01 05	704	0.4−	0.3−
1998 07 15	699	0.2+	0.7+	1999 11 17	704	0.1−	0.4−	2000 01 05	704	0.6−	0.7−
1998 07 15	699	0.1−	0.6+	1999 11 17	704	0.1−	0.3+	2000 01 05	704	0.7−	0.1−
1998 08 19	566	0.4+	0.4+	1999 11 17	704	0.4+	0.1+	2000 01 07	704	0.4+	0.1+
1998 08 19	566	0.2+	0.0	1999 11 30	411	0.3+	0.2+	2000 01 07	704	0.5−	1.0−
1998 08 19	566	0.1−	0.0	1999 11 30	411	0.6−	0.5−	2000 01 07	704	0.2−	0.6+
1998 08 24	704	0.4+	0.4+	1999 12 06	704	0.0	0.3+	2000 01 07	704	0.1−	0.2+
1998 08 24	704	1.0−	0.3−	1999 12 06	704	0.2+	0.0	2000 01 07	704	0.7−	0.5−
1998 08 24	704	0.2−	0.6−	1999 12 06	704	0.0	0.1−				
1998 08 24	704	1.9−	1.3+	1999 12 06	704	0.0	0.2−				

(13418)* 1999 VO₉ = 1950 PT = 1980 RR₁ = 1991 PT₂₆ = 1998 KC₃₀

Discovered 1999 Nov. 8 by K. Korlević at Višnjan.

Id. G. V. Williams (*MPC* 36863, *MPC* 37203), M. E. Sansaturio (*MPC* 37203)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26393816	<i>ω</i>	147.73971	+0.99949256		+0.03140013	
<i>a</i>	2.4069548	<i>Ω</i>	210.46227	−0.03100573		+0.92054522	
<i>e</i>	0.1910912	<i>i</i>	0.60507	−0.00729898		+0.38937197	
<i>P</i>	3.73	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1950 08 14	760	(2.0−	3.8−)	1999 10 30	703	0.3−	1.1+	1999 11 17	704	0.2−	1.5−
1950 08 14	760	0.7+	2.3−	1999 10 30	703	0.5−	1.3+	1999 11 17	704	0.0	0.7−
1980 09 14	688	0.8−	0.8+	1999 11 03	704	1.2+	0.1−	1999 11 17	704	0.3+	0.8−
1980 09 14	688	0.4+	0.6+	1999 11 03	704	0.7−	0.4−	1999 12 02	691	0.2−	0.5−
1991 08 05	809	(2.0+	5.8+)	1999 11 03	704	0.3+	0.6−	1999 12 02	691	0.1−	0.3−
1991 08 05	809	(1.0+	5.2+)	1999 11 03	704	0.1+	0.1−	1999 12 02	691	0.1−	0.4−
1991 08 05	809	(1.1+	5.7+)	1999 11 03	704	0.1+	0.7−	1999 12 03	699	0.3+	0.3+
1998 04 25	809	0.6−	0.1+	1999 11 08	120	0.3−	0.6+	1999 12 03	699	0.2+	0.6+
1998 04 25	809	1.0−	0.5+	1999 11 09	120	0.1+	0.5+	1999 12 03	699	0.2+	0.3+
1998 04 25	809	(2.3−	0.8−)	1999 11 09	704	0.1+	0.6+	1999 12 05	703	1.4+	1.3+
1998 05 22	704	0.6−	0.3+	1999 11 09	704	0.5+	0.6+	1999 12 05	703	0.2−	0.2+

1998 05 22	704	0.5+	0.8−	1999 11 09	704	0.3+	0.8+	1999 12 05	703	0.4−	0.4+
1998 05 22	704	(1.7+	2.2−)	1999 11 09	704	0.6+	0.8+	1999 12 05	703	0.6−	0.2+
1998 05 22	704	(2.3+	1.2−)	1999 11 09	704	0.6+	1.1+	1999 12 07	704	0.3−	0.3−
1998 05 22	704	1.4+	0.2+	1999 11 09	120	0.3+	0.0	1999 12 07	704	0.0	0.4−
1998 05 24	704	0.3+	0.0	1999 11 10	120	0.1+	0.3+	1999 12 07	704	0.2−	0.6−
1998 05 24	704	0.8−	1.1−	1999 11 10	704	0.0	0.2+	1999 12 07	704	0.0	0.2−
1998 05 24	704	1.2−	0.6+	1999 11 10	704	0.1−	0.5+	1999 12 07	704	0.1+	0.3+
1998 05 24	704	0.6−	0.8+	1999 11 10	704	0.1+	0.6+	1999 12 08	691	0.0	0.2−
1998 05 25	699	1.2+	0.1+	1999 11 10	704	0.1+	0.8+	1999 12 08	691	0.2−	0.3−
1998 05 25	699	0.6+	0.4+	1999 11 10	704	0.2+	0.8+	1999 12 08	691	0.2−	0.3−
1998 05 25	699	0.3+	0.4−	1999 11 10	120	0.2+	0.1+	1999 12 08	704	0.3−	0.4−
1998 06 18	704	0.2−	0.3+	1999 11 10	120	0.1+	0.0	1999 12 08	704	0.2−	0.4−
1998 06 18	704	0.4−	1.3−	1999 11 12	704	0.3+	0.2+	1999 12 08	704	0.0	0.3−
1998 06 18	704	1.0+	0.7−	1999 11 12	704	0.3+	0.2+	1999 12 08	704	0.1−	0.2−
1998 06 18	704	0.8−	1.0−	1999 11 12	704	0.3+	0.1+	1999 12 08	704	0.1−	0.0
1999 10 19	292	1.1−	0.3−	1999 11 12	704	0.4+	0.1+	1999 12 13	691	0.1+	0.4−
1999 10 19	292	0.8−	0.2+	1999 11 17	704	0.7+	0.4−	1999 12 13	691	0.0	0.5−
1999 10 19	292	1.0−	0.2−	1999 11 17	704	0.3+	0.4−	1999 12 13	691	0.1−	0.4−
1999 10 22	292	0.3−	0.2−	1999 11 17	704	0.7+	0.7−	2000 01 11	691	0.3+	0.6−
1999 10 22	292	0.7−	0.9−	1999 11 17	704	0.4+	0.4−	2000 01 11	691	0.2+	0.6−
1999 10 22	292	0.9−	0.7−	1999 11 17	704	0.7+	0.3−	2000 01 11	691	0.3+	0.7−
1999 10 30	703	0.7−	1.0+	1999 11 17	704	0.4+	1.3−				
1999 10 30	703	0.9−	1.1+	1999 11 17	704	0.9−	1.7−				

(13419)* 1999 VJ₁₀ = 1982 VD₉ = 1982 XS = 1998 RN₁₄

Discovered 1999 Nov. 9 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 37204)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Nakano			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17541552	<i>ω</i>	5.68019	−0.04550677		−0.99895597	
<i>a</i>	3.1605115	<i>Ω</i>	86.92811	+0.91637330		−0.04334333	
<i>e</i>	0.1536671	<i>i</i>	0.23023	+0.39772994		−0.01443340	
<i>P</i>	5.62	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 11 09	095	1.2+	1.1−	1999 11 09	704	0.4+	0.2−	1999 12 07	704	0.0	0.3−
1982 12 13	381	0.8−	0.1+	1999 11 09	704	0.4+	0.3−	1999 12 07	704	0.1−	0.4−
1982 12 13	381	0.3+	1.1−	1999 11 09	411	0.9+	1.7−	1999 12 07	704	0.3+	0.8−
1982 12 14	381	0.7−	0.2−	1999 11 09	411	0.0	0.2−	1999 12 07	704	0.1−	1.0−
1982 12 14	381	0.7+	0.7−	1999 11 10	411	0.1−	0.2−	1999 12 08	704	0.3+	0.3−
1996 04 18	809	0.7+	1.5−	1999 11 10	411	0.4−	0.3−	1999 12 08	704	0.1+	0.3−
1996 04 18	809	1.3−	1.5−	1999 11 12	704	0.6+	0.1−	1999 12 08	704	0.2−	0.1+
1996 04 18	809	0.8−	2.1−	1999 11 12	704	0.6+	0.1−	1999 12 08	704	0.2+	0.7−
1998 08 17	704	0.4+	0.0	1999 11 12	704	0.5+	0.1−	1999 12 18	691	0.5+	0.4+
1998 08 17	704	1.3+	1.1−	1999 11 12	704	0.5+	0.2−	1999 12 18	691	0.4+	0.2+
1998 08 17	704	0.5−	1.4−	1999 11 12	704	0.6+	0.2+	1999 12 18	691	0.5+	0.2+
1998 08 17	704	(2.4−	1.0−)	1999 11 17	704	0.0	0.1+	1999 12 30	106	0.5−	0.3+
1998 09 14	691	0.3+	0.3+	1999 11 17	704	0.0	0.2+	1999 12 30	106	0.4−	0.7+
1998 09 14	691	0.4+	0.4+	1999 11 17	704	0.8+	0.1−	1999 12 30	106	0.2+	0.8+
1998 09 14	691	0.4+	0.5+	1999 11 17	704	0.3−	0.0	2000 01 03	704	0.2−	0.2+
1998 09 20	691	0.6−	0.3+	1999 11 17	704	0.6+	0.4+	2000 01 03	704	0.6−	0.1+
1998 09 20	691	0.7−	0.1+	1999 11 18	411	1.2−	0.2−	2000 01 03	704	0.7−	0.3+
1998 09 20	691	0.8−	0.1+	1999 11 18	411	0.2+	0.8−	2000 01 03	704	1.2−	0.3−
1999 11 03	704	0.9+	0.2+	1999 12 02	691	0.2−	0.1+	2000 01 03	704	1.6−	0.2−
1999 11 03	704	0.3−	0.2+	1999 12 02	691	0.6+	0.0	2000 01 04	704	0.2−	0.4+
1999 11 03	704	0.1−	0.4+	1999 12 02	691	0.2−	0.2+	2000 01 04	704	0.1−	0.3+
1999 11 09	704	0.7+	0.3+	1999 12 04	411	0.7−	0.2−	2000 01 04	704	0.6−	0.8+
1999 11 09	704	0.3+	0.0	1999 12 04	411	0.7−	0.0	2000 01 04	704	0.9−	0.3+
1999 11 09	704	0.6+	0.1+	1999 12 07	704	0.1−	0.2+	2000 01 04	704	0.2−	0.3−

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5	Nakano										
M	79.81624	(2000.0)			$\mathbf{P}$		$\mathbf{Q}$				
n	0.21140918	ω	101.29029		+0.98736865		-0.12935132				
a	2.7907450	Ω	266.18938		+0.08391507		+0.91676616				
e	0.0446795	i	5.26130		+0.13439273		+0.37789951				
P	4.66 <th>H</th> <td>12.9<th>G</th><td>0.15<th>U</th><td>1</td><td colspan="3"></td></td></td>	H	12.9 <th>G</th> <td>0.15<th>U</th><td>1</td><td colspan="3"></td></td>	G	0.15 <th>U</th> <td>1</td> <td colspan="3"></td>	U	1				
Residuals in seconds of arc											
1980 11 01	675	0.1+	0.0	1998 10 20	699	0.3-	0.9-	1999 12 07	704	0.0	0.3-
1980 11 02	675	0.2+	0.7-	1998 10 20	699	0.5-	0.3+	1999 12 07	704	0.3+	0.0
1993 07 12	809	0.4-	0.3-	1999 11 03	704	0.2+	0.5+	1999 12 07	704	0.4+	0.1-
1993 07 12	809	0.6+	0.4-	1999 11 03	704	0.5+	0.3-	1999 12 07	704	0.3+	0.1+
1993 07 12	809	1.2-	0.1+	1999 11 03	704	0.0	0.1+	1999 12 30	106	0.4-	0.3+
1993 07 12	809	1.6+	1.8-	1999 11 03	704	0.3-	0.0	1999 12 30	106	0.5-	0.6+
1993 07 12	809	1.8+	0.7-	1999 11 03	704	0.7-	0.1+	1999 12 30	106	0.1-	0.4+
1993 07 12	809	1.6+	0.8-	1999 11 09	411	0.2+	1.1+	1999 12 31	106	0.6-	0.3-
1993 07 19	809	0.3-	0.9-	1999 11 09	411	0.2+	0.8+	1999 12 31	106	0.1-	0.2+
1993 07 19	809	0.5-	1.5-	1999 11 10	411	0.5+	0.0	1999 12 31	106	0.4+	0.5+
1993 07 19	809	1.2-	1.2-	1999 11 10	411	0.6+	0.1-	2000 01 03	704	0.1+	0.4-
1993 07 19	809	(3.2+ 1.4-)		1999 11 14	704	0.5+	0.5-	2000 01 03	704	0.5-	0.5-
1993 07 19	809	(2.8+ 1.5-)		1999 11 14	704	0.4+	0.4-	2000 01 03	704	0.1-	0.4-
1993 07 19	809	(3.2+ 1.9-)		1999 11 14	704	0.5+	1.2-	2000 01 03	704	0.1-	0.1-
1998 08 17	704	0.0	1.0+	1999 11 14	704	0.1+	0.7-	2000 01 03	704	0.4-	0.5-
1998 08 17	704	0.8-	1.0+	1999 11 14	704	0.3+	1.1-	2000 01 04	704	0.1-	0.3-
1998 08 17	704	0.5-	1.0+	1999 11 16	704	0.4+	0.6-	2000 01 04	704	0.0	0.1+
1998 08 17	704	0.2-	0.5+	1999 11 16	704	0.1+	0.4-	2000 01 04	704	0.4-	0.2-
1998 08 17	704	0.1-	0.5+	1999 11 16	704	0.2+	0.5-	2000 01 04	704	0.3-	0.1-
1998 08 23	699	0.1+	0.5+	1999 11 16	704	0.6+	0.4-	2000 01 04	704	0.6-	0.2+
1998 08 23	699	0.2+	0.2+	1999 11 16	704	0.4+	0.5-	2000 01 04	704	0.2-	0.2+
1998 08 23	699	0.1+	0.6+	1999 11 18	411	0.7+	0.4+	2000 01 04	704	0.9-	0.1+
1998 09 15	699	0.4-	0.3+	1999 11 18	411	0.4+	0.3-	2000 01 04	704	0.5-	0.2+
1998 09 15	699	0.0	0.0	1999 12 04	411	0.4-	0.5-	2000 01 04	704	0.8-	0.5-
1998 09 15	699	0.2+	0.7+	1999 12 04	411	0.8-	0.7+	2000 01 04	704	0.1-	0.5+
1998 10 20	699	0.4-	0.7-	1999 12 07	704	0.1+	0.0				

(13421)* 1999 VO₁₂ = 1960 VD = 4883 T-1 = 1990 SQ₂ = 1998 MM₂₈

Discovered 1999 Nov. 11 by C. W. Juels at Fountain Hills.

Id. G. V. Williams (*MPC* 37206)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5	Williams									
<i>M</i>	49.87269		(2000.0)	<i>P</i>		<i>Q</i>				
<i>n</i>	0.22797890	ω	262.08984	+0.89713790		-0.43917348				
<i>a</i>	2.6538291	Ω	123.94930	+0.42455333		+0.82738037				
<i>e</i>	0.0965229	<i>i</i>	3.29279	+0.12205762		+0.35009766				
<i>P</i>	4.32	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1			

Residuals in seconds of arc											
1960 11 12	760	0.5-	0.9+	1999 11 02	691	0.6+	0.1-	1999 11 24	849	0.3-	0.6-
1971 05 13	675	0.2-	0.7+	1999 11 02	691	0.6+	0.1-	1999 11 25	739	0.9-	1.6-
1971 05 14	675	0.2+	1.1-	1999 11 02	691	0.6+	0.1-	1999 11 25	739	0.5+	0.9-
1971 05 16	675	0.5+	1.4-	1999 11 04	704	0.0	0.1+	1999 11 25	739	0.1-	0.9-
1990 09 18	675	0.7+	1.2-	1999 11 04	704	0.0	0.2+	1999 11 27	678	0.0	1.3-
1990 09 18	675	0.0	0.0	1999 11 04	704	0.2+	0.2+	1999 11 27	678	0.5-	1.2-
1990 09 20	675	0.1+	0.2-	1999 11 04	704	0.4-	0.3+	1999 12 04	703	0.0	0.8+
1990 09 20	675	0.2-	1.8-	1999 11 04	704	0.1+	0.6+	1999 12 04	703	0.3-	0.8+
1997 04 03	704	0.6-	0.3+	1999 11 11	678	0.4+	0.9-	1999 12 04	703	0.4+	0.6+
1997 04 03	704	0.5-	0.2+	1999 11 11	678	0.6-	0.3-	1999 12 04	703	0.2+	0.5+
1998 06 24	704	1.1-	1.0+	1999 11 12	678	0.2+	0.5+	1999 12 05	703	0.1+	0.5+
1998 06 24	704	0.8-	1.0+	1999 11 12	678	0.3-	0.6+	1999 12 05	703	0.2-	0.6+
1998 06 24	704	0.0	0.3-	1999 11 12	678	0.2-	0.4-	1999 12 05	703	0.1-	0.5+
1998 06 24	704	0.5+	0.4-	1999 11 15	704	0.5-	0.0	1999 12 05	703	(2.7-	0.8+)
1998 06 24	704	0.6+	0.5-	1999 11 15	704	0.7-	0.2-	1999 12 06	704	0.4+	0.1+
1998 06 26	704	0.1+	0.1+	1999 11 15	704	1.0-	0.3-	1999 12 06	704	0.1-	0.3+
1998 06 26	704	0.3+	0.1+	1999 11 15	704	0.9-	0.6-	1999 12 06	704	0.1-	0.3-
1998 06 26	704	0.3-	0.8+	1999 11 15	704	0.8-	0.4-	1999 12 06	704	0.2-	0.2-
1998 06 26	704	(2.8-	1.7-)	1999 11 17	678	0.8-	0.0	1999 12 06	704	0.5-	0.4-
1998 07 21	704	0.5-	0.2+	1999 11 17	678	1.6-	0.0	1999 12 07	704	0.5+	0.1+

1998 07 21	704	0.1+	0.3+	1999 11 17	704	0.1+	0.3+	1999 12 07	704	0.3+	0.3+
1998 07 21	704	1.3+	0.2+	1999 11 17	704	0.4-	0.1-	1999 12 07	704	0.2+	0.1+
1998 07 21	704	(2.5- 2.5+)		1999 11 17	704	0.0	0.2+	1999 12 07	704	0.1+	0.1+
1999 10 30	703	1.0+	0.1+	1999 11 17	704	0.1+	0.2+	1999 12 07	704	0.0	0.2+
1999 10 30	703	1.1+	0.3+	1999 11 17	704	0.1-	0.1+	1999 12 13	699	0.5+	0.3+
1999 10 30	703	0.1-	0.4+	1999 11 22	849	(0.8- 2.6+)		1999 12 13	699	0.5+	0.4+
1999 10 30	703	0.1+	0.6+	1999 11 22	849	0.5+	1.1+	1999 12 13	699	0.3+	0.5+
1999 11 02	691	0.9+	0.3+	1999 11 22	849	1.5+	0.0	1999 12 30	699	0.1-	0.2+
1999 11 02	691	0.9+	0.3+	1999 11 24	849	0.2-	0.4-	1999 12 30	699	0.3-	0.0
1999 11 02	691	0.9+	0.2+	1999 11 24	849	0.7-	0.3-	1999 12 30	699	0.2-	0.4-

(13422)* 1999 VM₁₉ = 1976 UN₁₃ = 1991 RJ₁₂ = 1998 KL₁₉

Discovered 1999 Nov. 10 by K. Korlević at Višnjan.

Id. G. V. Williams (*MPC* 37208)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	66.06719		(2000.0)	<i>P</i>		<i>Q</i>				
<i>n</i>	0.25837724	ω	212.25180	+0.98783053		+0.15133320				
<i>a</i>	2.4413678	Ω	138.99581	-0.12854603		+0.92432957				
<i>e</i>	0.2042419	<i>i</i>	3.13692	-0.08756001		+0.35030432				
<i>P</i>	3.81	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	1			

Residuals in seconds of arc											
1976 10 22	381	0.4+	0.5-	1999 11 01	703	0.5-	0.2+	1999 11 17	704	0.4-	0.5+
1976 10 22	381	0.1-	0.4-	1999 11 01	703	0.7-	0.0	1999 11 17	704	0.2-	0.3+
1991 09 04	809	0.4+	0.1+	1999 11 01	703	0.0	0.0	1999 11 17	704	0.2-	0.7+
1991 09 04	809	0.0	0.1+	1999 11 01	703	0.3-	0.0	1999 11 28	120	1.1+	0.3-
1991 09 04	809	0.9-	0.8+	1999 11 05	704	0.4-	0.0	1999 11 28	120	0.1-	0.3+
1991 09 06	809	0.6+	0.7-	1999 11 05	704	0.0	0.2-	1999 11 28	120	0.0	0.1+
1991 09 06	809	0.1-	0.9-	1999 11 05	704	0.2+	0.2-	1999 11 30	120	0.1+	0.0
1991 09 06	809	0.0	0.7-	1999 11 05	704	0.1-	0.3-	1999 11 30	120	0.7+	0.1-
1991 09 07	809	(2.4+ 2.0+)		1999 11 05	704	0.1+	0.1-	1999 11 30	120	1.4+	0.4-
1991 09 07	809	0.5-	0.6+	1999 11 10	120	0.5-	0.4+	1999 12 05	704	1.0+	0.5+
1991 09 07	809	0.4+	0.6+	1999 11 10	120	1.4-	0.0	1999 12 05	704	0.4+	0.5-
1998 05 01	704	1.2-	0.2+	1999 11 10	120	0.3-	0.2+	1999 12 05	704	0.6+	0.1-
1998 05 01	704	0.9-	0.3+	1999 11 12	120	0.2-	0.5+	1999 12 05	704	0.8+	0.1-
1998 05 01	704	0.5-	0.2-	1999 11 12	120	0.4+	0.5+	1999 12 05	704	0.1+	0.5-
1998 05 01	704	(2.2+ 1.2+)		1999 11 13	120	0.3-	0.2+	2000 01 05	704	0.0	0.3+
1998 05 22	704	1.4+	0.2+	1999 11 13	120	0.1-	0.3+	2000 01 05	704	0.2+	0.3-
1998 05 22	704	0.7-	0.8+	1999 11 15	704	0.2-	0.2+	2000 01 05	704	0.8-	0.2+
1998 05 22	704	1.7+	1.5+	1999 11 15	704	0.0	0.4+	2000 01 05	704	0.4+	0.6+
1998 05 22	704	0.3-	1.8+	1999 11 15	704	0.2-	0.3+	2000 01 07	704	0.1-	0.6-
1998 05 22	704	1.3+	1.8-	1999 11 15	704	0.3-	0.4+	2000 01 07	704	0.1-	0.5+
1998 05 24	704	0.2+	0.3+	1999 11 15	704	0.1-	0.0	2000 01 07	704	0.1-	0.3-
1998 05 24	704	(0.9+ 2.2+)		1999 11 17	704	0.3-	0.4+	2000 01 07	704	0.2-	0.3-
1998 05 24	704	(1.4+ 3.1+)		1999 11 17	704	0.1-	0.2+				

2000 JAN. 24

M.P.C. 37603

1990 10 22	675	1.3−	0.1+	1999 10 28	703	0.1−	0.1−	1999 12 31	106	0.6−	0.5+
1990 10 22	675	0.5−	0.6−	1999 10 28	703	0.3−	0.1−	2000 01 04	704	0.6−	0.0
1990 11 24	402	1.0+	1.0−	1999 11 04	703	1.6−	0.3+	2000 01 04	704	0.1−	0.0
1990 11 24	402	0.2−	0.4−	1999 11 04	703	0.9−	0.5+	2000 01 04	704	0.4−	0.1+
1996 01 16	098	1.0+	0.2+	1999 11 04	703	0.7−	0.1−	2000 01 04	704	0.2+	0.1+
1996 01 16	098	0.6−	0.0	1999 11 04	703	0.8−	0.2−	2000 01 04	704	0.7+	0.3−
1996 01 17	098	0.1−	0.2−	1999 11 12	699	0.4−	0.7+	2000 01 07	704	0.3+	0.6−
1996 01 19	098	0.7+	0.2+	1999 11 12	699	0.0	0.5+	2000 01 07	704	0.3+	0.6−
1996 01 19	098	1.1−	0.6−	1999 11 12	699	0.5−	0.3+	2000 01 07	704	0.2+	0.5−
1999 09 18	699	1.3+	1.6+	1999 11 13	678	0.6+	0.5+	2000 01 07	704	0.8+	1.3−
1999 09 18	699	0.5−	0.1−	1999 11 13	678	1.3+	0.1+				

(13424)* 1999 VD₂₄ = 1989 EU₄ = 1998 KJ₁₈

Discovered 1999 Nov. 8 by R. Pacheco and À. López at Observatorio Astronómico de Mallorca.

Id. A. Doppler (*MPC* 37212)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	84.33701	(2000.0)		P		Q	
<i>n</i>	0.24576589	ω	67.43852	+0.83290836		+0.54654190	
<i>a</i>	2.5241877	Ω	259.33021	−0.53467504		+0.75419812	
<i>e</i>	0.1860435	<i>i</i>	5.07458	−0.14278051		+0.36397410	
<i>P</i>	4.01	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1989 03 02	809	0.6−	1.6−	1998 05 24	704	0.1−	0.2−	1999 11 16	704	0.4+	0.1−
1989 03 02	809	(3.2−	0.1−)	1998 05 24	704	0.4−	1.0+	1999 11 16	704	0.3+	0.6−
1989 03 02	809	2.0−	0.8−	1998 05 24	704	0.0	0.9+	1999 11 16	704	0.1+	0.3−
1989 03 03	809	0.3+	0.1−	1998 05 24	704	1.0−	1.2+	1999 11 16	704	0.4+	0.2−
1989 03 03	809	0.0	0.6+	1999 10 03	704	1.2+	0.7+	1999 11 16	704	0.1+	0.1+
1989 03 03	809	1.5+	1.0+	1999 10 03	704	(1.7+	2.1−)	1999 12 04	703	0.2+	0.5+
1995 10 25	033	0.5+	0.6−	1999 10 03	704	1.2−	1.7−	1999 12 04	703	0.1+	0.5+
1995 10 25	033	0.2+	0.4−	1999 10 29	703	0.2−	0.3+	1999 12 04	703	0.1+	0.0
1998 04 22	704	0.3+	1.0−	1999 10 29	703	0.3−	0.4+	1999 12 04	703	0.2−	0.2+
1998 04 22	704	0.4+	0.2−	1999 10 29	703	0.5−	0.3+	1999 12 07	699	0.1−	0.2+
1998 04 22	704	1.3+	0.6−	1999 10 29	703	0.6−	0.0	1999 12 07	699	0.1−	1.1+
1998 04 22	704	1.6+	0.4−	1999 11 03	704	0.3−	0.6−	1999 12 07	699	0.9−	0.0
1998 04 22	704	1.9−	0.0	1999 11 03	704	0.7−	0.6−	1999 12 08	704	0.0	0.4+
1998 05 01	704	0.4+	0.3+	1999 11 03	704	0.6−	1.2−	1999 12 08	704	0.3+	0.1−
1998 05 01	704	0.4+	0.3−	1999 11 03	704	0.0	0.9−	1999 12 08	704	0.1−	0.8−
1998 05 01	704	1.1+	0.6+	1999 11 03	704	0.4−	1.2−	1999 12 08	704	0.5−	0.6−
1998 05 01	704	0.8+	0.2+	1999 11 08	620	0.2−	0.2−	1999 12 08	704	0.5−	0.5−
1998 05 01	704	0.9−	0.4−	1999 11 08	620	0.4−	0.1−	1999 12 12	703	0.1+	0.7+
1998 05 05	699	0.4+	0.1+	1999 11 09	699	0.5+	0.0	1999 12 12	703	0.1−	0.8+
1998 05 05	699	(2.1+	0.4+)	1999 11 09	699	0.1+	0.8+	1999 12 12	703	0.4+	0.3+
1998 05 05	699	0.5−	0.3+	1999 11 09	699	0.2+	0.2+	1999 12 12	703	0.1−	0.5+
1998 05 22	704	0.1+	0.1+	1999 11 11	703	0.3+	0.5+	2000 01 04	704	0.5−	0.3−
1998 05 22	704	0.5−	0.4+	1999 11 11	703	0.3−	0.5+	2000 01 04	704	0.4+	1.3+
1998 05 22	704	1.0+	0.9−	1999 11 11	703	0.1−	0.7+	2000 01 04	704	0.0	0.3+
1998 05 22	704	0.2+	1.0+	1999 11 11	703	0.0	0.6+	2000 01 04	704	0.7+	0.1−
1998 05 22	704	0.9+	0.1−	1999 11 13	620	0.2−	0.8−	2000 01 04	704	1.6+	1.4+
1998 05 23	704	0.1−	0.8+	1999 11 13	620	0.3−	0.5−	2000 01 06	704	0.6+	0.9+
1998 05 23	704	0.6−	1.3+	1999 11 14	620	0.3−	0.0	2000 01 06	704	0.0	0.7+
1998 05 23	704	0.5+	0.2+	1999 11 14	703	0.2+	0.5+	2000 01 06	704	0.5+	0.7+
1998 05 23	704	0.1+	1.2+	1999 11 14	703	0.0	0.4+	2000 01 06	704	0.4+	1.1+
1998 05 23	704	1.4−	0.8−	1999 11 14	703	0.1−	0.6+	2000 01 06	704	0.6+	1.0+
1998 05 24	704	0.3−	0.8+	1999 11 14	703	0.7−	0.5+				

(13425)* 1999 VG₂₄ = 1999 VC₁₀ = 1977 TM = 1978 WU₈ = 1981 JY₃
= 1988 RR₉ = 1996 JO₂ = 1997 JQ₁₁

Discovered 1999 Nov. 15 by C. W. Juels at Fountain Hills.

Id. S. Nakano (*MPC* 37213)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	13.64442	(2000.0)		P		Q	
<i>n</i>	0.18478620	ω	337.83736	+0.74236053		−0.66992152	
<i>a</i>	3.0527391	Ω	64.22785	+0.61641646		+0.67688682	
<i>e</i>	0.1533957	<i>i</i>	0.65509	+0.26254828		+0.30500721	
<i>P</i>	5.33	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 10 09	809	0.5+	0.3−	1996 05 14	327	0.4−	0.6+	1999 11 09	704	0.2+	0.6−
1978 11 29	675	0.7−	0.6−	1996 05 15	327	0.5−	0.0	1999 11 09	704	0.4+	0.3−
1978 11 30	675	0.9+	0.5+	1996 05 15	327	0.3+	0.2−	1999 11 09	704	0.3+	0.4−
1981 05 08	675	0.2−	0.3−	1996 05 15	327	0.3−	0.2+	1999 11 12	704	1.2+	0.2+
1981 05 09	675	1.7+	0.3−	1997 04 06	704	1.9+	0.4−	1999 11 12	704	1.0+	0.3+
1988 09 06	809	0.9+	0.3+	1997 04 06	704	1.4+	0.4+	1999 11 12	704	1.1+	0.3+
1988 09 06	809	1.0+	0.4+	1997 05 03	809	0.5+	0.8−	1999 11 12	704	1.0+	0.4+
1988 09 06	809	0.9+	0.4+	1997 05 03	809	0.6−	1.9−	1999 11 12	704	0.5+	0.1+
1988 09 08	809	0.8−	0.2+	1997 05 03	809	2.0−	1.6−	1999 11 14	699	0.1+	0.1−
1988 09 08	809	0.8−	0.2+	1997 05 04	809	0.5+	1.8+	1999 11 14	699	0.1−	0.6−
1988 09 08	809	0.8−	0.2+	1997 05 04	809	1.4−	1.7+	1999 11 14	699	0.1+	0.3−
1988 09 10	809	0.2−	0.6−	1997 05 04	809	(0.8−	2.6+)	1999 11 15	678	0.0	0.6+
1988 09 10	809	0.1−	0.6−	1999 11 02	703	0.1−	0.1+	1999 11 15	678	1.0+	0.2+
1988 09 10	809	0.2−	0.5−	1999 11 02	703	0.3−	0.6−	1999 11 16	678	1.8−	0.0
1988 09 12	809	0.8−	0.4−	1999 11 02	703	0.6−	0.2+	1999 11 16	704	0.1+	0.0
1988 09 12	809	0.6−	0.2−	1999 11 02	703	0.1−	0.1−	1999 11 16	704	0.3−	0.7+
1988 09 12	809	0.4−	0.2−	1999 11 05	704	0.0	0.2−	1999 11 16	678	1.7−	0.2+
1988 09 18	809	(16.5−	13.5−)	1999 11 05	704	0.2−	0.5−	1999 11 16	704	0.1+	0.6+
1988 09 18	809	(16.4−	13.4−)	1999 11 05	704	0.6+	0.5−	1999 11 16	704	0.3−	0.3+
1988 09 18	809	(16.2−	13.8−)	1999 11 05	704	0.0	0.5−	1999 11 16	704	1.1−	0.7+
1994 12 03	098	0.9+	0.1+	1999 11 05	704	0.4−	0.2+	1999 11 27	678	0.2+	0.4+
1994 12 03	098	0.4−	1.4−	1999 11 09	757	0.9−	0.9+	1999 11 27	678	0.4−	0.2−
1996 05 14	327	0.2+	0.5+	1999 11 09	704	0.8+	0.6−	1999 11 27	678	0.1−	0.5+
1996 05 14	327	1.6−	0.1+	1999 11 09	757	0.3+	0.6+				
1996 05 14	327	0.2+	0.1−	1999 11 09	704	0.6+	0.6−				

(13426)* 1999 VA₂₅ = 1975 TY₃ = 1992 SF₂₃

Discovered 1999 Nov. 13 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPC* 37214)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	53.88578	(2000.0)		P		Q	
<i>n</i>	0.28982916	ω	325.12163	+0.84783354		−0.52280666	
<i>a</i>	2.2613858	Ω	66.63573	+0.50581903		+0.74722934	
<i>e</i>	0.2069345	<i>i</i>	5.53900	+0.15913958		+0.41027005	
<i>P</i>	3.40	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1975 10 03	095	1.0+	1.3+	1999 11 03	704	0.3+	0.2−	1999 12 06	411	0.7−	0.5−
1975 10 11	033	1.1−	0.7−	1999 11 03	704	0.3+	0.0	1999 12 07	704	0.4+	0.1−
1992 09 29	675	1.2+	0.7−	1999 11 03	704	0.1+	0.3+	1999 12 07	704	0.3+	0.3−
1992 09 29	675	0.3−	1.0−	1999 11 03	704	0.6+	0.6+	1999 12 07	704	0.3+	0.2+
1992 10 04	675	0.5+	0.8−	1999 11 09	704	0.3+	0.5+	1999 12 07	704	0.4+	0.8−
1992 10 04	675	0.3−	0.8−	1999 11 09	704	0.1−	0.6+	1999 12 07	704	0.6+	0.3+
1998 05 24	704	0.9+	1.1+	1999 11 09	704	0.1+	0.8+	1999 12 10	704	0.1+	0.5+
1998 05 24	704	(1.9+	2.0+)	1999 11 09	704	0.3−	1.3+	1999 12 10	704	0.1+	0.4−
1998 05 24	704	1.4−	0.1+	1999 11 09	704	0.7−	1.4+	1999 12 10	704	0.3+	0.6−
1998 05 24	704	0.0	1.6−	1999 11 13	411	(3.5+	0.8−)	1999 12 10	704	0.5+	0.5−
1998 05 24	704	0.6+	0.1+	1999 11 13	411	(3.6+	2.4−)	1999 12 10	704	1.0+	0.5−
1999 10 12	704	0.0	0.0	1999 11 16	704	0.1−	0.1−	1999 12 29	106	0.0	0.6+
1999 10 12	704	0.0	0.3−	1999 11 16	704	0.5−	0.1−	1999 12 29	106	0.4−	0.2+
1999 10 12	704	0.3−	0.1−	1999 11 16	704	0.3−	0.1+	1999 12 29	106	0.5−	0.3+
1999 10 12	704	0.0	0.1+	1999 11 16	704	0.0	0.0	2000 01 03	704	1.1+	0.6−
1999 10 15	704	0.6+	0.5+	1999 11 16	704	0.2−	0.2+	2000 01 03	704	0.5−	0.3−
1999 10 15	704	0.9+	0.5+	1999 11 16	411	0.1+	1.0−	2000 01 03	704	0.4−	0.6−
1999 10 15	704	0.4+	0.8+	1999 11 16	411	0.6−	0.9−	2000 01 03	704	0.5+	1.5−
1999 10 15	704	0.5+	1.3+	1999 11 18	411	1.3−	0.5+	2000 01 03	704	0.6+	0.7−
1999 10 22	704	0.3−	0.1−	1999 11 18	411	1.3−	0.1−	2000 01 04	704	0.1+	0.2−
1999 10 22	704	0.5−	0.4+	1999 12 05	703	1.5−	0.6+	2000 01 04	704	0.4+	0.3−

1999 10 22	704	0.2+	0.5+	1999 12 05	703	0.4+	0.9+	2000 01 04	704	0.1+	0.6-
1999 10 22	704	0.6-	0.3-	1999 12 05	703	0.0	0.5+	2000 01 04	704	0.3+	0.1-
1999 10 22	704	0.3+	0.2+	1999 12 05	703	0.3-	0.5+	2000 01 04	704	0.4+	0.6-
1999 11 03	704	0.6+	0.7-	1999 12 06	411	0.8-	0.5-				

(13427)* 1999 VM₂₅ = 1985 TU₁ = 1990 YS = 1998 MV₂₉

Discovered 1999 Nov. 13 by T. Kobayashi at Oizumi.

Id. S. Nakano (*MPC* 36865)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	32.78249		(2000.0)	P	Q
<i>n</i>	0.21631301	ω	151.74841	+0.58776267	-0.79093208
<i>a</i>	2.7484064	Ω	261.75745	+0.70613046	+0.60419046
<i>e</i>	0.2524650	<i>i</i>	9.90162	+0.39486050	+0.09685211
<i>P</i>	4.56	<i>H</i>	13.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1985 10 15	688	0.3+	0.0	1999 11 14	704	0.6-	1.0+	1999 12 07	704	0.2+	0.5-
1985 10 15	688	0.4+	0.0	1999 11 14	704	0.8-	0.4+	1999 12 07	704	0.1+	0.6-
1990 12 20	399	0.8+	0.1-	1999 11 14	704	0.1+	0.4+	1999 12 07	704	0.2+	0.4-
1990 12 20	399	0.8+	0.7+	1999 11 14	704	0.5-	0.6+	1999 12 07	704	0.6-	0.2+
1990 12 25	399	0.3+	1.1+	1999 11 16	411	0.1+	0.6-	1999 12 07	704	0.0	1.0-
1990 12 25	399	0.8-	1.7-	1999 11 16	411	0.1-	0.8-	1999 12 15	703	0.2-	0.5+
1990 12 25	399	0.2+	0.3+	1999 11 18	411	0.8+	0.1-	1999 12 15	703	0.2-	0.4+
1990 12 25	399	1.4-	1.4-	1999 11 18	411	0.5+	0.0	1999 12 15	703	0.1-	0.4+
1998 06 24	704	0.9+	1.1-	1999 12 04	732	0.0	0.8-	1999 12 15	703	0.1-	0.3+
1998 06 24	704	0.3+	1.9+	1999 12 04	732	1.2+	0.4-	1999 12 27	691	0.1+	0.7+
1998 06 24	704	0.4-	0.3+	1999 12 04	732	0.1+	0.3+	1999 12 27	691	0.2+	0.6+
1998 06 24	704	1.0-	0.9+	1999 12 04	732	0.0	0.1-	1999 12 27	691	0.2+	1.0+
1998 06 26	704	0.7-	1.3-	1999 12 04	732	0.2-	0.1+	1999 12 29	106	0.2+	0.7+
1998 06 26	704	1.1-	0.9+	1999 12 04	732	0.1-	0.1+	1999 12 29	106	0.1+	0.5+
1998 06 26	704	0.2+	0.6-	1999 12 05	732	0.4+	0.2+	1999 12 29	106	0.1+	0.7+
1998 07 21	704	(3.2-	0.9+)	1999 12 05	732	0.2+	0.4+	2000 01 05	704	0.0	0.0
1998 07 21	704	0.0	1.7-	1999 12 05	732	0.5+	0.1+	2000 01 05	704	0.1-	0.4-
1998 07 21	704	1.7+	0.7+	1999 12 05	732	0.1+	0.3+	2000 01 05	704	0.1-	0.6-
1998 07 21	704	(3.6-	0.1-)	1999 12 05	732	0.2+	0.1+	2000 01 05	704	0.4+	0.3-
1999 10 05	704	0.7+	0.1-	1999 12 05	732	0.4-	0.4+	2000 01 05	704	0.4+	0.5-
1999 10 05	704	0.0	0.2-	1999 12 05	703	0.2-	0.3+	2000 01 06	704	0.1-	0.3-
1999 10 05	704	0.3+	0.0	1999 12 05	703	0.3-	0.0	2000 01 06	704	0.2-	0.2-
1999 10 05	704	0.6+	0.0	1999 12 05	703	0.2-	0.3+	2000 01 06	704	0.2-	0.3-
1999 10 05	704	0.5+	0.1+	1999 12 05	703	0.3+	0.9+	2000 01 06	704	0.1-	0.1-
1999 11 13	411	0.8-	0.6-	1999 12 06	411	0.0	0.2-	2000 01 06	704	0.1-	0.3-
1999 11 13	411	1.2-	1.7-	1999 12 06	411	0.6-	0.2-				

(13428)* 1999 VC₃₅ = 1992 GS₄ = 1993 QT₂ = 1997 EU₅₇

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 37221), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	77.02613		(2000.0)	P	Q
<i>n</i>	0.18261653	ω	0.31813	+0.89649898	+0.44302846
<i>a</i>	3.0768713	Ω	333.38351	-0.40650590	+0.81901010
<i>e</i>	0.2873300	<i>i</i>	0.50132	-0.17618893	+0.36462068
<i>P</i>	5.40	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1992 04 04	809	1.3+	1.5-	1999 11 03	704	0.6+	0.2-	1999 12 07	704	0.7+	0.4+
1992 04 04	809	0.9+	0.2-	1999 11 03	704	0.4+	0.0	1999 12 07	704	0.5+	0.7+
1992 04 04	809	1.4-	0.0	1999 11 09	704	0.1+	0.4-	1999 12 07	704	1.6+	0.4+
1992 04 06	809	(7.2-	0.9+)	1999 11 09	704	0.3-	0.6-	1999 12 08	704	0.5+	0.2+
1992 04 06	809	(7.8-	1.9+)	1999 11 09	704	0.1-	0.7-	1999 12 08	704	0.8+	0.3-
1992 04 06	809	(9.6-	1.8+)	1999 11 09	704	0.1-	0.7-	1999 12 08	704	0.2+	0.4-
1993 08 16	010	1.3+	0.8-	1999 11 09	704	0.4-	0.5-	1999 12 08	704	0.1+	0.4-
1993 08 16	010	1.0+	1.0-	1999 11 12	704	0.4-	0.1+	1999 12 08	704	0.2-	0.7-
1993 08 16	010	0.1+	1.4-	1999 11 12	704	0.7-	0.1+	1999 12 31	703	0.1+	0.1-
1993 08 17	010	0.9-	1.0-	1999 11 12	704	0.3-	0.0	1999 12 31	703	0.6+	0.2-

1996 02 12	327	0.1-	0.0	1999 11 12	704	0.3-	0.0	1999 12 31	703	0.4+	0.1+
1996 02 12	327	0.4+	0.1+	1999 11 12	704	0.6+	0.0	1999 12 31	703	0.2+	0.0
1996 02 12	327	0.8-	0.2+	1999 11 16	704	0.1-	0.6+	2000 01 04	704	0.3-	0.3-
1997 03 10	809	0.0	1.5-	1999 11 16	704	0.1+	0.3+	2000 01 04	704	0.6-	0.3-
1997 03 10	809	0.9-	1.2-	1999 11 16	704	0.2-	0.0	2000 01 04	704	0.3-	0.1+
1997 03 10	809	0.3-	1.8-	1999 11 16	704	0.0	0.0	2000 01 04	704	0.7-	0.3-
1997 03 11	809	0.4-	1.2-	1999 11 16	704	0.6-	0.2-	2000 01 04	704	0.8-	0.5-
1997 03 11	809	1.1-	1.9-	1999 12 05	703	0.1-	0.8+	2000 01 06	704	0.3+	0.4+
1997 03 11	809	(0.4-	2.1-)	1999 12 05	703	0.7+	1.6-	2000 01 06	704	0.2-	0.7-
1997 03 31	704	0.1+	1.7+	1999 12 05	703	0.4-	0.3+	2000 01 06	704	1.1-	0.9-
1997 03 31	704	0.6-	0.9+	1999 12 05	703	0.2-	0.9+	2000 01 06	704	0.7-	0.2-
1999 11 03	704	0.0	0.0	1999 12 07	704	1.0+	0.2+	2000 01 06	704	1.0-	0.1+
1999 11 03	704	0.6+	0.3-	1999 12 07	704	0.7+	0.5+				

(13429)* 1999 VM₃₅ = 1986 WD₉ = 1996 HO₁₆ = 1998 RL₃₈

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 37221)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	43.25264		(2000.0)	P	Q
<i>n</i>	0.15390926	ω	259.73585	+0.82943215	-0.55829605
<i>a</i>	3.4484682	Ω	134.19920	+0.52215631	+0.76301346
<i>e</i>	0.0623186	<i>i</i>	1.49069	+0.19848200	+0.32575448
<i>P</i>	6.40	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1986 11 30	381	1.4-	0.8+	1998 10 10	699	0.1-	0.3-	1999 12 07	704	0.1-	0.3+
1986 11 30	381	0.6-	1.2+	1998 10 10	699	0.5+	0.7-	1999 12 07	704	0.7+	0.2-
1986 12 01	381	2.3+	2.0+	1999 10 30	703	1.3-	0.3+	1999 12 07	704	0.4+	0.2+
1986 12 01	381	1.3-	0.2-	1999 10 30	703	1.0+	0.1-	1999 12 07	704	0.5+	0.2-
1996 04 18	809	1.6+	2.0+	1999 10 30	703	1.9-	0.6+	1999 12 08	704	0.1-	0.2-
1996 04 18	809	(1.4+	2.5+)	1999 10 30	703	1.0+	0.4+	1999 12 08	704	0.3-	0.1+
1996 04 18	809	(1.0+	2.4+)	1999 11 03	704	0.9-	0.3-	1999 12 08	704	0.1+	0.1+
1996 04 20	809	0.7-	0.8+	1999 11 03	704	0.6-	0.1-	1999 12 08	704	0.5+	0.3-
1996 04 20	809	0.3-	0.6+	1999 11 03	704	0.9-	0.1-	1999 12 08	704	0.1+	0.2+
1996 04 20	809	0.1-	0.2+	1999 11 03	704	0.7-	0.6-	1999 12 17	120	1.4+	0.3+
1996 05 19	809	(1.6+	3.2+)	1999 11 12	704	0.1+	0.1+	1999 12 17	120	0.6+	0.5-
1996 05 19	809	(1.9+	2.5+)	1999 11 12	704	0.2-	0.1-	1999 12 17	120	0.4-	0.1+
1996 05 19	809	(0.9+	2.4+)	1999 11 12	704	0.2-	0.3-	1999 12 17	120	0.1-	0.2+
1997 07 02	704	0.0	0.3+	1999 11 12	704	0.1-	0.3-	1999 12 31	699	0.2-	1.1+
1997 07 02	704	0.5+	0.6+	1999 11 12	704	0.5-	0.7-	1999 12 31	699	0.3-	1.1+
1997 07 02	704	0.1-	0.3-	1999 11 17	704	0.2-	0.0	1999 12 31	699	(0.8-	2.1+)
1997 07 02	704	0.6+	0.4+	1999 11 17	704	0.1-	0.0	2000 01 05	704	0.5+	0.2+
1997 07 02	704	0.2-	0.1+	1999 11 17	704	0.3+	0.3+	2000 01 05	704	0.2-	0.8-
1998 09 14	704	0.6+	0.6-	1999 11 17	704	0.5-	0.4+	2000 01 05	704	0.4-	0.2+
1998 09 14	704	0.2-	1.2+	1999 11 17	704	0.2-	0.1+	2000 01 05	704	0.0	0.4-
1998 09 14	704	0.1+	1.4-	1999 11 27	120	0.3+	0.2+	2000 01 05	704	0.7-	0.2-
1998 09 14	704	0.7-	0.5+	1999 11 27	120	0.6+	0.2-	2000 01 06	704	0.3+	0.3+
1998 09 18	704	0.3+	0.3+	1999 11 28	120	0.7+	0.2-	2000 01 06	704	0.5-	0.4-
1998 09 18	704	0.8-	0.5-	1999 11 28	120	0.5+	0.3-	2000 01 06	704	0.2-	0.2-
1998 09 18	704	(2.5+	1.1-)	1999 12 03	699	0.5+	0.2+	2000 01 06	704	0.2-	0.4-
1998 09 18	704	(0.4-	2.3+)	1999 12 03	699	0.8+	0.9+	2000 01 06	704	0.4-	1.3-
1998 09 18	704	0.1-	1.5+	1999 12 03	699	0.9+	0.7+				
1998 10 10	699	0.5-	0.6-	1999 12 07	704	0.4+	0.2+				

2000 JAN. 24

M.P.C. 37605

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	62.78620		(2000.0)		P		Q				
<i>n</i>	0.23314916	ω	135.35120	+0.99790644			-0.06263366				
<i>a</i>	2.6144488	Ω	228.24690	+0.05163984			+0.92168585				
<i>e</i>	0.2490020	<i>i</i>	1.23793	+0.03893671			+0.38284751				
<i>P</i>	4.23	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1952 08 28	024	0.2-	0.5+	1999 11 09	704	0.6-	0.3+	1999 12 07	704	0.4+	0.6+
1986 09 11	095	(0.8-	4.5-)	1999 11 09	704	0.8-	0.2+	1999 12 08	704	0.3+	0.7+
1986 10 05	095	0.4+	0.9-	1999 11 09	704	0.7-	0.1-	1999 12 08	704	0.6+	0.5+
1993 03 21	809	0.1-	0.4-	1999 11 12	704	0.3-	0.3+	1999 12 08	704	0.2+	0.8+
1993 03 22	809	0.4+	0.2-	1999 11 12	704	0.2-	0.0	1999 12 08	704	0.2-	1.0+
1995 12 27	608	0.5-	0.2+	1999 11 12	704	0.1+	0.8-	1999 12 08	704	0.0	1.1+
1995 12 27	608	0.5-	0.2+	1999 11 12	704	0.7-	0.3+	1999 12 31	106	0.0	0.2+
1995 12 28	608	0.3+	0.2+	1999 11 12	704	0.5-	0.3+	1999 12 31	106	0.1+	0.9+
1995 12 28	608	0.0	0.9+	1999 11 16	704	0.4+	0.5-	1999 12 31	106	0.2+	0.0
1998 06 01	809	0.2+	0.2+	1999 11 16	704	0.6+	0.0	2000 01 05	704	0.6+	0.1+
1998 06 01	809	0.7-	0.8+	1999 11 16	704	0.5-	0.4-	2000 01 05	704	0.4+	0.5-
1998 06 01	809	0.3+	1.0+	1999 11 16	704	0.1-	0.0	2000 01 05	704	0.2+	0.5-
1998 06 02	809	0.6+	1.6+	1999 11 16	704	0.7+	0.7-	2000 01 05	704	0.5+	0.3+
1998 06 02	809	0.1-	1.2+	1999 11 27	120	(2.1-	0.3-)	2000 01 05	704	0.1-	0.6-
1998 06 02	809	0.1+	1.7+	1999 11 27	120	0.4+	0.9+	2000 01 06	704	0.6+	1.0-
1999 11 03	704	0.3-	0.0	1999 11 28	120	0.0	0.2+	2000 01 06	704	0.6+	1.0-
1999 11 03	704	0.0	0.5+	1999 11 28	120	0.2+	0.0	2000 01 06	704	0.3-	0.5-
1999 11 03	704	0.7-	0.4+	1999 12 07	704	0.5+	0.5+	2000 01 06	704	0.0	0.4-
1999 11 03	704	1.1-	0.3+	1999 12 07	704	0.4+	0.5+	2000 01 06	704	0.6-	1.1-
1999 11 09	704	0.1-	0.5+	1999 12 07	704	0.0	0.7+				
1999 11 09	704	0.6-	0.3+	1999 12 07	704	0.4+	0.7+				

(13431)* 1999 VB₃₇ = 1978 NS₄ = 1990 HE₆ = 1995 WT₄₂

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 37223), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	84.32487		(2000.0)		P		Q					
<i>n</i>	0.24301694	ω	275.01982	+0.97578627			+0.21487005					
<i>a</i>	2.5431873	Ω	72.57678	-0.17983564			+0.89455386					
<i>e</i>	0.1854762	<i>i</i>	2.45625	-0.12450016			+0.39192379					
<i>P</i>	4.06	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2					
Residuals in seconds of arc												
1978 07 10	675	(1.8-	3.1-)	Y	1999 11 09	704	0.4+	0.4+	1999 12 07	704	0.6-	0.6-
1978 07 11	675	(5.8+	1.0+)	Y	1999 11 09	704	0.4+	0.0	1999 12 08	704	1.1-	0.0
1978 07 13	675	0.1+	0.2+	Y	1999 11 09	704	0.5+	0.0	1999 12 08	704	0.5-	0.8-
1990 04 29	413	0.7+	0.7-		1999 11 09	704	0.6+	0.1+	1999 12 08	704	1.3-	0.3-
1990 05 01	413	0.6-	0.9-		1999 11 12	704	0.2+	0.2-	1999 12 08	704	1.4-	0.5-
1990 05 02	413	0.1-	0.8-		1999 11 12	704	0.0	0.1-	1999 12 08	704	0.9-	0.0
1995 11 30	327	0.1+	0.0		1999 11 12	704	0.0	0.2-	2000 01 03	704	1.0+	0.8+
1995 11 30	327	0.3-	0.1-		1999 11 12	704	0.0	0.1-	2000 01 03	704	1.3+	0.5+
1995 11 30	327	0.6-	0.4-		1999 11 12	704	0.2-	0.0	2000 01 03	704	0.8+	0.3-
1995 12 03	327	0.4-	0.4-		1999 11 17	704	1.6-	0.8+	2000 01 03	704	0.3+	0.7-
1995 12 03	327	0.1-	0.8+		1999 11 17	704	0.9-	0.1-	2000 01 03	704	0.6+	0.2-
1995 12 03	327	0.3+	0.8-		1999 11 17	704	0.2+	0.1+	2000 01 04	704	1.1+	0.8+
1995 12 31	327	0.4-	0.1-		1999 11 17	704	0.2-	0.3+	2000 01 04	704	1.0+	0.2-
1995 12 31	327	0.1+	0.1-		1999 12 02	691	0.2-	0.2-	2000 01 04	704	0.2+	0.4+
1995 12 31	327	0.7+	0.1+		1999 12 02	691	0.1-	0.3-	2000 01 04	704	0.6+	0.2+
1999 11 03	704	0.4+	0.3-		1999 12 02	691	0.0	0.2-	2000 01 04	704	0.3-	0.3-
1999 11 03	704	0.2+	0.1-		1999 12 06	120	0.8+	0.1+	2000 01 05	704	(1.7+	2.8+
1999 11 03	704	0.3-	0.0		1999 12 06	120	0.1-	0.4-	2000 01 05	704	0.8+	1.7+
1999 11 03	704	0.3-	0.2-		1999 12 07	704	0.3-	0.1+	2000 01 05	704	0.6+	0.3+
1999 11 03	704	0.0	0.1-		1999 12 07	704	0.7-	0.4-	2000 01 05	704	0.7+	0.7-
1999 11 09	704	0.3+	0.9+		1999 12 07	704	0.3-	0.5-				

(13432)* 1999 VW₄₉ = 1993 OJ₅ = 1994 WE₁₀ = 1996 DM₅

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. A. Doppler (*MPC* 37228), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	26.61904		(2000.0)		P		Q				
<i>n</i>	0.20114271	ω	38.16149		+0.71072890		-0.70345779				
<i>a</i>	2.8849161	Ω	6.54681		+0.63786301		+0.64240199				
<i>e</i>	0.0720987	<i>i</i>	1.70967		+0.29663986		+0.30408357				
<i>P</i>	4.90	<i>H</i>	13.9		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1993 07 20	809	0.6+	0.5+	1999 10 06	704	0.7+	1.2+	1999 11 14	704	0.3+	0.2+
1993 07 20	809	0.0	0.3+	1999 10 06	704	0.1-	0.4+	1999 11 14	704	0.1-	0.5-
1993 07 20	809	0.2-	0.0	1999 10 06	704	0.0	0.8+	1999 11 14	704	0.0	0.5-
1993 07 24	809	0.5-	0.1-	1999 10 06	704	0.1+	0.1-	1999 11 14	704	0.2-	0.4-
1994 11 30	691	0.2-	0.3-	1999 11 03	704	0.8+	0.1+	1999 11 16	704	0.0	0.1-
1994 11 30	691	0.5-	0.4-	1999 11 03	704	0.4-	0.0	1999 11 16	704	0.4+	0.2-
1994 11 30	691	0.2-	0.2-	1999 11 03	704	0.1-	0.5+	1999 11 16	704	0.2+	0.2-
1994 12 01	691	0.1-	0.2-	1999 11 03	704	0.1-	0.5-	1999 11 16	704	0.1-	0.2+
1994 12 01	691	0.2+	0.1-	1999 11 03	704	0.3+	0.7-	1999 11 16	704	0.1-	0.2+
1996 02 16	010	1.4+	0.3-	1999 11 04	704	0.2-	0.5+	1999 12 04	703	0.7+	0.9+
1996 02 16	010	1.3+	0.2-	1999 11 04	704	0.2+	0.4-	1999 12 04	703	0.4-	0.5+
1996 02 16	010	0.9+	0.7+	1999 11 04	704	0.1+	0.5-	1999 12 04	703	0.1-	0.2+
1996 02 17	010	0.7+	0.7+	1999 11 04	704	0.2-	0.5-	1999 12 04	703	0.3-	0.5+
1996 02 17	010	0.1+	0.6+	1999 11 04	703	(3.6-	1.9+)	1999 12 07	704	0.3-	0.4-
1996 02 17	010	0.0	1.5+	1999 11 04	704	0.3+	0.3+	1999 12 07	704	0.1+	0.3-
1997 04 11	704	0.3+	0.6-	1999 11 04	704	0.7+	0.3+	1999 12 07	704	0.6-	0.7-
1997 04 11	704	0.8+	1.4-	1999 11 04	703	(2.3+	2.9+)	1999 12 07	704	0.3-	0.5-
1997 05 07	704	0.1-	0.1-	1999 11 04	704	(3.0-	2.7+)	1999 12 07	704	0.6-	0.2-
1997 05 07	704	1.9-	1.8+	1999 11 04	704	0.1+	0.1+	1999 12 08	704	0.3-	0.2-
1997 05 07	704	0.5-	0.4+	1999 11 04	703	0.2-	0.7+	1999 12 08	704	0.4+	0.7-
1997 05 07	704	1.2-	0.6+	1999 11 04	704	0.3-	0.1+	1999 12 08	704	0.1+	0.1+
1997 05 07	704	0.8-	0.3+	1999 11 04	704	0.2-	0.1-	1999 12 08	704	0.4-	0.6-
1998 08 17	704	0.5+	1.8+	1999 11 04	703	0.3-	0.7+	1999 12 08	704	0.4-	0.7-
1998 08 17	704	0.8+	1.8+	1999 11 09	703	0.5-	0.7+	1999 12 12	703	0.3-	0.4+
1998 08 17	704	0.8+	0.2+	1999 11 09	703	0.3-	0.1+	1999 12 12	703	0.8-	0.6+
1998 08 17	704	0.9+	0.6-	1999 11 09	703	0.5-	0.3+	1999 12 12	703	0.2+	0.2-
1998 08 17	704	0.9-	0.9+	1999 11 09	703	0.1-	0.4+	1999 12 12	703	0.5-	0.3+
1999 10 06	704	1.7+	0.5-	1999 11 14	704	0.5+	0.3-				

(13433)* 1999 VP₅₂ = 1991 NN₂ = 1997 EA₃₃ = 1998 KO₃₉

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 37229)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	110.62225		(2000.0)		P		Q				
<i>n</i>	0.26935675	ω	243.35658		+0.82945694		+0.55121072				
<i>a</i>	2.3745654	Ω	83.06626		-0.47464184		+0.78083888				
<i>e</i>	0.1775657	<i>i</i>	5.22358		-0.29447635		+0.29403637				
<i>P</i>	3.66	<i>H</i>	14.3		<i>G</i>	0.15	<i>U</i>	1			
Residuals in seconds of arc											
1991 07 14	675	0.5-	0.6-	1998 06 03	704	0.6+	0.8-	1999 11 28	691	0.5+	0.2+
1991 07 14	675	0.5+	0.0	1998 06 27	699	0.0	0.9+	1999 12 03	691	0.3+	0.2+
1991 07 19	675	0.1+	0.1+	1998 06 27	699	0.1+	1.4+	1999 12 03	691	0.4+	0.3-
1997 03 04	704	(3.5+	0.6-)	1998 06 27	699	0.2-	0.3+	1999 12 03	691	0.4+	0.4+
1997 03 04	704	0.8-	0.5-	1999 11 03	704	0.4-	0.1-	1999 12 07	704	0.2+	0.3-
1997 03 06	704	0.0	0.1-	1999 11 03	704	0.8-	0.2-	1999 12 07	704	0.4+	0.4-
1997 03 06	704	0.7+	0.7+	1999 11 03	704	0.2-	0.1-	1999 12 07	704	0.3+	0.2-
1998 05 22	704	0.0	0.2+	1999 11 03	704	1.0-	0.2+	1999 12 07	704	0.1+	0.4-
1998 05 22	704	0.1-	0.6+	1999 11 03	704	0.3-	0.7+	1999 12 07	704	0.2+	0.0
1998 05 22	704	0.0	0.7-	1999 11 04	704	0.6-	0.2+	1999 12 08	704	0.3+	0.1-
1998 05 22	704	0.0	0.0	1999 11 04	704	0.5-	0.3-	1999 12 08	704	0.3+	0.2-

1998 05 22	704	0.8−	0.8+	1999 11 04	704	0.3−	0.4+	1999 12 08	704	0.3+	0.2−
1998 05 24	704	0.3−	0.6+	1999 11 04	704	0.7−	0.4+	1999 12 08	704	0.4+	0.1−
1998 05 24	704	0.3+	0.7−	1999 11 04	704	0.3+	0.4+	2000 01 05	704	0.3+	0.1−
1998 05 24	704	0.2−	0.8+	1999 11 15	704	0.1−	0.1−	2000 01 05	704	0.5+	0.1−
1998 05 24	704	0.5−	0.2+	1999 11 15	704	0.2−	0.0	2000 01 05	704	0.1+	0.5+
1998 05 24	704	0.7−	0.3+	1999 11 15	704	0.1−	0.2−	2000 01 05	704	0.2+	0.4+
1998 05 26	704	0.3+	1.2−	1999 11 15	704	0.0	0.3+	2000 01 05	704	0.8+	0.0
1998 05 26	704	0.4+	0.2+	1999 11 15	704	0.1+	0.6+	2000 01 06	704	0.1+	0.4+
1998 05 26	704	0.4−	0.7−	1999 11 17	704	1.8−	1.5−	2000 01 06	704	0.1+	0.2−
1998 05 26	704	0.1−	0.6−	1999 11 17	704	(3.0−	0.9−)	2000 01 06	704	0.1−	0.1−
1998 06 03	704	0.2+	1.4−	1999 11 17	704	0.5−	0.5−	2000 01 06	704	0.5+	0.3−
1998 06 03	704	0.5+	0.1−	1999 11 17	704	0.7−	0.3−	2000 01 06	704	0.2+	0.4+
1998 06 03	704	0.8+	0.1−	1999 11 28	691	0.5+	0.2+				
1998 06 03	704	(2.6+	0.7−)	1999 11 28	691	0.4+	0.0				

**(13434)* 1999 VK₅₈ = 1991 PX₁₈ = 1991 RP₃₄ = 1995 US₄₆
= 1996 XF₃₅ = 1998 KZ₂₃**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. A. Doppler (*MPC* 37230), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

						Williams	
<i>M</i>	125.51415		P		Q		
<i>n</i>	0.26385162	ω	83.33346	+0.43321948	+0.90110228		
<i>a</i>	2.4074811	Ω	212.35840	−0.83985006	+0.39622905		
<i>e</i>	0.1815443	<i>i</i>	1.96142	−0.32706691	+0.17611707		
<i>P</i>	3.74	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 08 09	675	0.8−	0.2+	1998 05 22	704	0.6−	1.4+	1999 11 12	704	0.0	0.0
1991 08 09	675	0.5+	1.3−	1998 05 22	704	1.4−	0.0	1999 11 12	704	0.2−	0.2+
1991 09 12	675	0.0	0.9+	1998 05 22	699	0.2−	0.2−	1999 11 12	704	0.2−	0.2+
1991 09 12	675	0.2+	0.0	1998 05 22	699	0.4−	0.6−	1999 11 12	704	0.6+	0.0
1995 10 20	010	(2.9+	0.5+)	1998 05 22	699	0.3+	0.1−	1999 11 17	704	0.8+	0.6−
1995 10 20	010	(3.1+	1.2+)	1998 05 24	704	0.5+	0.3−	1999 11 17	704	1.4−	0.5−
1995 10 20	010	(2.2+	1.1+)	1998 05 24	704	1.3+	1.2−	1999 11 17	704	0.5+	0.1+
1995 10 23	010	1.7+	1.0−	1998 05 24	704	(2.1+	2.1−)	1999 11 17	704	0.2−	0.6+
1995 10 23	010	0.2−	1.5−	1998 05 24	704	1.0−	1.5+	1999 11 17	704	1.4−	0.0
1995 10 23	010	(0.7−	2.2−)	1998 05 24	704	0.5+	0.8−	1999 12 04	703	0.1−	0.3+
1996 12 11	691	0.1−	0.8−	1999 11 01	703	0.0	0.5+	1999 12 04	703	1.4+	0.7+
1996 12 11	691	0.2+	0.7−	1999 11 01	703	1.1−	0.3+	1999 12 04	703	0.2+	0.2−
1996 12 11	691	0.2+	0.4−	1999 11 01	703	0.3−	0.7+	1999 12 04	703	1.4+	0.5+
1996 12 15	691	0.1+	1.0−	1999 11 01	703	0.2−	0.2+	1999 12 06	704	0.1+	0.5+
1996 12 15	691	1.0−	0.1+	1999 11 04	704	0.4+	0.4−	1999 12 06	704	0.2+	0.3−
1996 12 15	691	0.1−	0.7−	1999 11 04	704	0.2−	0.3+	1999 12 06	704	0.2−	0.3−
1998 04 22	704	0.8+	1.0+	1999 11 04	704	0.0	0.4+	1999 12 07	704	0.2+	0.4+
1998 04 22	704	0.7−	1.5+	1999 11 04	704	1.4+	1.0−	1999 12 07	704	0.6−	1.1+
1998 04 22	704	0.8+	0.4+	1999 11 04	704	0.3−	1.1−	1999 12 07	704	0.5−	1.3−
1998 04 22	704	0.1−	0.1−	1999 11 09	704	0.0	0.6+	1999 12 07	704	0.8+	0.6+
1998 04 22	704	0.5−	1.3+	1999 11 09	704	0.1−	0.3+	1999 12 07	704	0.6−	0.8+
1998 05 01	704	0.6+	1.6−	1999 11 09	704	0.1+	0.4+	1999 12 12	703	0.6−	0.0
1998 05 01	704	0.1+	0.2+	1999 11 09	704	1.2+	0.2+	1999 12 12	703	0.6−	0.8+
1998 05 01	704	0.4+	0.5−	1999 11 09	704	0.3+	0.6+	1999 12 12	703	0.3−	0.4−
1998 05 01	704	(4.4+	0.4+)	1999 11 12	699	1.0−	0.0	1999 12 12	703	0.6+	0.6−
1998 05 22	704	0.7−	0.2−	1999 11 12	699	0.6−	0.9+	1999 12 17	691	0.2−	0.1−
1998 05 22	704	0.3+	0.3+	1999 11 12	704	0.2+	0.1+	1999 12 17	691	0.0	0.2−
1998 05 22	704	0.4+	0.5+	1999 11 12	699	0.1−	0.2+	1999 12 17	691	1.3−	1.1+

(13435)* 1999 VX₆₇ = 1991 JJ₃ = 1998 LR

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid
Research Team at Socorro.

Id. A. Doppler (*MPC* 37235), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams	
<i>M</i>	170.83088		(2000.0)	P	Q
<i>n</i>	0.28228101	ω	191.54206	−0.14085591	+0.98806593
<i>a</i>	2.3015210	Ω	70.38447	−0.90298695	−0.10240267
<i>e</i>	0.1636442	<i>i</i>	3.79418	−0.40592387	−0.11506261
<i>P</i>	3.49	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1991 05 12	809	1.5+	0.2+	1998 06 03	704	0.2−	0.8+	1999 11 12	704	0.6+	0.3−
1991 05 12	809	0.7−	0.5−	1998 06 03	704	0.1−	0.7+	1999 11 12	704	0.0	0.1−
1991 05 12	809	0.2+	0.7−	1998 06 03	704	0.7−	0.1+	1999 11 12	704	0.3+	0.7−
1991 05 17	809	0.8−	0.0	1998 06 24	704	1.1+	0.7−	1999 11 12	704	0.2+	0.3−
1991 05 17	809	0.6−	0.7−	1998 06 24	704	0.7−	0.7+	1999 11 17	704	0.2−	1.0+
1991 05 17	809	0.0	0.2+	1998 06 24	704	1.2−	0.2+	1999 11 17	704	0.2−	0.0
1995 08 28	809	0.3+	0.8+	1998 06 24	704	0.5−	1.1+	1999 11 17	704	0.2−	0.7−
1995 08 29	809	0.5−	1.2+	1998 06 24	704	0.1−	0.4+	1999 11 17	704	0.1+	0.1−
1995 08 31	809	1.1+	1.3−	1999 11 01	703	0.2+	0.2−	1999 12 03	691	0.0	0.0
1995 09 01	809	0.3+	1.6−	1999 11 01	703	0.2+	0.5+	1999 12 03	691	0.0	0.0
1998 05 22	704	0.3+	0.1−	1999 11 01	703	0.0	0.6+	1999 12 03	691	0.0	0.1+
1998 05 22	704	0.2+	0.3+	1999 11 01	703	0.4+	0.2+	1999 12 06	704	0.1+	0.1−
1998 05 22	704	0.2−	1.3−	1999 11 04	704	0.6+	1.2−	1999 12 06	704	0.3+	0.2−
1998 05 22	704	0.4−	1.3−	1999 11 04	704	0.3+	0.1−	1999 12 06	704	0.4+	0.9+
1998 05 24	704	0.8+	0.0	1999 11 04	704	0.9+	1.1+	1999 12 06	704	0.2−	0.2+
1998 05 24	704	1.6+	0.6+	1999 11 05	691	0.2+	0.4−	1999 12 07	704	0.4−	0.7+
1998 05 24	704	0.2−	0.6+	1999 11 05	691	0.1+	0.3−	1999 12 07	704	0.2+	0.4+
1998 05 24	704	1.0+	0.9+	1999 11 05	691	0.2+	0.4−	1999 12 07	704	1.2−	0.0
1998 05 24	704	(3.8−	0.6+)	1999 11 09	704	0.7+	0.2−	1999 12 07	704	0.7−	0.9+
1998 06 01	809	(2.1+	2.4+)	1999 11 09	704	0.3−	0.0	1999 12 12	703	0.1−	0.5+
1998 06 01	809	(1.2+	2.6+)	1999 11 09	704	0.1+	0.3−	1999 12 12	703	1.1−	0.2+
1998 06 01	809	(0.6+	2.4+)	1999 11 09	704	0.3−	0.0	1999 12 12	703	0.6−	0.7+
1998 06 02	809	(2.5+	3.0+)	1999 11 09	704	0.0	0.2+	1999 12 12	703	1.3−	0.0
1998 06 02	809	(1.9+	3.2+)	1999 11 11	691	0.4−	0.2+	1999 12 17	691	0.1+	0.0
1998 06 02	809	(2.6+	2.8+)	1999 11 11	691	0.4−	0.3+	1999 12 17	691	0.3+	0.0
1998 06 03	704	0.1−	0.8+	1999 11 11	691	0.9−	0.4+	1999 12 17	691	0.3+	0.1+
1998 06 03	704	0.2+	0.8+	1999 11 12	704	0.2−	0.0				

**(13436)* 1999 WF = 1972 BL = 1981 SN₄ = 1989 CW₈ = 1996 HB₂₄
= 1998 QY₄₈**

Discovered 1999 Nov. 17 by T. Stafford at the Zeno Observatory, Edmond.

Id. G. V. Williams (*MPC* 37237)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams	
<i>M</i>	332.62060		(2000.0)	P	Q
<i>n</i>	0.17145822	ω	291.25975	−0.47335849	−0.88086798
<i>a</i>	3.2089566	Ω	186.99361	+0.81364642	−0.43643806
<i>e</i>	0.1237965	<i>i</i>	0.86032	+0.33750740	−0.18328509
<i>P</i>	5.75	<i>H</i>	12.4	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1972 01 17	095	0.1+	1.6+	1999 11 03	704	0.6−	0.1−	1999 12 03	699	0.3−	0.5+
1981 09 25	095	0.8+	0.6−	1999 11 09	704	0.6+	0.2−	1999 12 03	699	0.6−	0.9+
1989 02 04	071(10.9−	0.1−)		1999 11 09	704	0.5+	0.4−	1999 12 03	699	0.0	0.6+
1989 02 04	071	0.2+	0.1−	1999 11 09	704	0.6+	0.3−	1999 12 04	703	0.5−	0.6+
1996 04 20	809	1.3+	1.0−	1999 11 09	704	0.5+	0.0	1999 12 04	703	0.6−	0.7+
1996 04 20	809	0.1+	0.6−	1999 11 09	704	0.1+	0.1−	1999 12 04	703	0.6−	0.8+
1996 04 20	809	0.1+	0.6−	1999 11 12	704	0.9+	0.5−	1999 12 04	703	0.2−	0.7+
1996 04 21	809	0.3+	1.6+	1999 11 12	704	0.7+	0.8−	1999 12 07	704	0.4+	0.1+
1996 04 21	809	0.9−	1.3+	1999 11 12	704	0.6+	0.7−	1999 12 07	704	0.2+	0.0
1996 04 21	809	1.1−	1.8+	1999 11 12	704	0.6+	0.8−	1999 12 07	704	0.1+	0.2−
1996 05 14	566	0.0	1.5−	1999 11 12	704	0.3+	1.2−	1999 12 07	704	0.2−	0.2−
1996 05 14	566	0.2−	1.1−	1999 11 17	727	0.5+	0.1−	1999 12 07	704	0.0	0.3−
1996 05 14	566	0.1−	1.7−	1999 11 17	727	0.7+	0.3+	1999 12 08	704	0.0	0.2−
1998 08 17	704	0.5−	0.4+	1999 11 17	704	0.4+	0.1−	1999 12 08	704	0.7+	0.1−
1998 08 17	704	0.5+	0.8−	1999 11 17	704	0.7+	0.8−	1999 12 08	704	0.2−	1.0−
1998 08 17	704	0.2−	0.4+	1999 11 17	704	0.1−	1.5−	1999 12 08	704	0.7−	0.4−
1998 08 17	704	0.4−	0.4+	1999 11 17	704	0.7−	0.4−	1999 12 08	704	0.2−	0.1+

2000 JAN. 24

M.P.C. 37607

1998 08 17	704	0.0	1.0+	1999 11 17	704	0.1-	0.3+	1999 12 29	106	0.5-	0.0
1998 08 23	704	1.1+	0.1-	1999 11 18	727	0.4-	0.1-	1999 12 29	106	0.9-	0.2-
1998 08 23	704	0.9-	0.5+	1999 11 18	727	0.4-	0.1+	1999 12 29	106	0.2-	0.8+
1998 08 23	704	1.0+	0.9-	1999 11 18	727	0.3-	0.0	2000 01 05	704	1.8+	0.2+
1998 08 23	704	0.7-	0.4+	1999 11 25	739	1.0+	1.2-	2000 01 05	704	0.0	0.5+
1998 09 18	699	1.1-	0.0	1999 11 25	739	1.4-	0.9-	2000 01 05	704	0.6+	1.3-
1998 09 18	699	0.8-	0.2+	1999 11 26	120	0.5-	0.1-	2000 01 05	704	1.3-	0.2+
1998 09 18	699	0.7-	0.5-	1999 11 26	120	0.8-	0.4+	2000 01 06	691	0.1-	0.2+
1998 11 15	699	1.7+	0.2-	1999 11 27	120	0.4-	0.0	2000 01 06	691	0.0	0.2+
1998 11 15	699	0.2-	0.3-	1999 11 27	120	0.4-	0.1+	2000 01 06	691	0.2-	0.1+
1998 11 15	699	0.3+	1.9+	1999 11 30	727	0.2+	0.1+	2000 01 06	704	1.7+	0.3+
1999 11 03	704	0.1+	0.2+	1999 11 30	727	0.0	0.1+	2000 01 06	704	0.3-	1.4+
1999 11 03	704	0.2-	0.0	1999 11 30	727	0.1+	0.3+	2000 01 06	704	0.0	1.4-
1999 11 03	704	0.4-	0.0	1999 11 30	411	0.5+	0.9+	2000 01 06	704	0.7-	0.1-
1999 11 03	704	0.1-	0.2-	1999 11 30	411	0.6+	1.4+				

(13437)* 1999 WF₈ = 1977 RP₁₇ = 1997 AX₂₀ = 1998 MS₂₀

Discovered 1999 Nov. 28 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Id. A. Doppler (*MPC* 37241)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	104.61719	(2000.0)	
<i>n</i>	0.27414958	ω	162.05244
<i>a</i>	2.3468085	Ω	171.95878
<i>e</i>	0.0895505	<i>i</i>	1.44657
<i>P</i>	3.60	<i>H</i>	14.8
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	1

1977 09 09	675	0.3-	1.5-	1999 10 30	703	0.6-	0.6+	1999 11 28	049	1.6+	0.8+
1977 09 10	675	1.1+	0.6-	1999 10 30	703	0.0	0.3+	1999 11 28	049	1.6+	0.6+
1990 04 15	675	0.2+	0.5-	1999 10 30	703	0.0	0.4+	1999 11 28	049	1.7+	0.6+
1997 01 11	691	0.0	0.3-	1999 10 30	703	0.6-	0.2-	1999 11 29	049	1.6+	0.1-
1997 01 11	691	0.0	0.1+	1999 11 03	704	1.2+	1.2+	1999 11 29	049	1.9+	0.3-
1997 01 11	691	0.2+	0.1-	1999 11 03	704	0.2-	0.8+	1999 11 29	049	1.7+	0.1-
1997 01 17	691	0.2-	0.4-	1999 11 03	704	0.2-	0.4+	1999 12 07	704	0.7-	0.3-
1997 01 17	691	0.4-	0.4-	1999 11 03	704	0.4+	1.5+	1999 12 07	704	1.1-	0.1+
1997 01 17	691	0.4-	0.6-	1999 11 03	704	0.9+	0.5+	1999 12 07	704	0.7-	0.4-
1998 06 24	704	1.1-	1.0+	1999 11 10	699	0.2-	0.9+	1999 12 07	704	0.3-	0.5-
1998 06 24	704	0.4+	1.0-	1999 11 10	699	(3.3-	1.2+)	1999 12 08	704	0.5-	0.1-
1998 06 24	704	1.1+	0.7-	1999 11 10	699	0.7-	0.7+	1999 12 08	704	1.0-	0.2-
1998 06 24	704	(2.8-	0.2+)	1999 11 15	704	0.2-	0.0	1999 12 08	704	0.2-	0.2+
1998 06 26	704	0.5-	0.7+	1999 11 15	704	0.2-	0.2-	1999 12 08	704	0.5-	0.0
1998 06 26	704	0.1-	0.2-	1999 11 15	704	0.0	0.4-	1999 12 08	704	0.3-	0.0
1998 06 26	704	(2.2+	1.1+)	1999 11 15	704	0.2+	0.4-	1999 12 17	691	0.4-	0.2-
1998 06 26	704	0.2+	0.4+	1999 11 15	704	0.1-	0.4-	1999 12 17	691	0.4-	0.1-
1999 10 22	704	0.4-	0.5-	1999 11 17	704	0.3-	0.1-	1999 12 17	691	0.3-	0.2-
1999 10 22	704	0.6-	0.2-	1999 11 17	704	0.0	0.7-	2000 01 04	691	0.5-	0.1-
1999 10 22	704	0.7+	0.9-	1999 11 17	704	0.0	1.0-	2000 01 04	691	0.5-	0.1+
1999 10 22	704	0.4-	0.2-	1999 11 17	704	0.1-	0.1-	2000 01 04	691	0.7-	0.2-
1999 10 22	704	1.5-	0.5-	1999 11 17	704	0.2+	0.3+				

(13438)* 1999 XD₈₆ = 1990 CK = 1990 DC₇ = 1994 LP₆ = 1995 SY₄₂

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid

Research Team at Socorro.

Id. G. V. Williams (*MPC* 37248)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	346.67776	(2000.0)	
<i>n</i>	0.29228506	ω	56.60552
<i>a</i>	2.2487006	Ω	86.53764
<i>e</i>	0.1186714	<i>i</i>	2.17418
<i>P</i>	3.37	<i>H</i>	14.9
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	2

1990 02 01	372	0.7-	1.6-	1999 12 03	699	0.4-	0.0	2000 01 03	704	0.1-	0.2-
1990 02 01	372	0.1+	0.2-	1999 12 03	699	0.5-	0.6+	2000 01 03	704	0.4-	0.3-
1990 02 20	372	1.3-	1.0-	1999 12 03	699	0.7+	0.9+	2000 01 03	704	0.7-	0.3-

1990 02 20	372	1.6+	1.5+	1999 12 07	704	1.4+	1.1-	2000 01 03	704	0.5-	0.3-
1994 06 03	809	(1.3+	2.0+)	1999 12 07	704	0.5-	0.4-	2000 01 03	704	0.6-	0.4-
1994 06 03	809	(1.3+	2.5+)	1999 12 07	704	1.6+	0.1+	2000 01 04	704	0.3-	0.0
1994 06 03	809	1.0+	1.9+	1999 12 07	704	0.2+	0.8+	2000 01 04	704	0.3-	0.1-
1994 06 04	809	(0.2+	2.7+)	1999 12 08	704	1.6+	1.2-	2000 01 04	704	0.3-	0.3+
1994 06 04	809	(0.4+	2.3+)	1999 12 08	704	0.3+	1.2-	2000 01 04	704	0.5-	0.3-
1994 06 04	809	0.2-	1.8+	1999 12 08	704	0.6+	1.0+	2000 01 04	704	0.1-	0.1-
1995 09 25	691	0.2-	0.1-	1999 12 08	704	1.6+	0.7+	2000 01 06	106	0.5-	0.4+
1995 09 25	691	0.2+	0.1-	1999 12 08	704	0.3-	1.1+	2000 01 06	106	0.4+	1.2+
1995 09 25	691	0.2-	0.1-	1999 12 12	691	0.7+	0.1-	2000 01 06	106	0.3-	0.1+
1995 09 30	691	0.0	0.1+	1999 12 12	691	0.7+	0.0	2000 01 08	704	(0.6-	2.2+)
1995 09 30	691	0.0	0.2+	1999 12 12	691	0.7+	0.2-	2000 01 08	704	0.1-	0.3-
1995 09 30	691	0.2-	0.1+	1999 12 14	691	1.2-	0.4+	2000 01 08	704	0.4-	0.3-
1999 11 16	704	0.3-	0.6+	1999 12 14	691	1.5-	0.5+	2000 01 08	704	0.4-	0.0
1999 11 16	704	0.2+	0.5+	1999 12 14	691	1.4-	0.4+	2000 01 08	704	0.5-	0.4-
1999 11 16	704	0.4+	0.0	1999 12 18	699	0.6+	0.7+	2000 01 15	691	0.2+	0.1-
1999 11 16	704	0.5+	1.3+	1999 12 18	699	0.5+	0.1+	2000 01 15	691	0.2+	0.0
1999 11 16	704	0.5+	0.4+	1999 12 18	699	0.1+	0.4+	2000 01 15	691	0.3+	0.0

(13439)* 2072 P-L = 1995 SW₃₇

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld

on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 25968)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	357.00861	(2000.0)	
<i>n</i>	0.28059831	ω	115.69108
<i>a</i>	2.3107130	Ω	353.24178
<i>e</i>	0.1454194	<i>i</i>	6.64317
<i>P</i>	3.51	<i>H</i>	15.7
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	1

1960 09 24	675	0.1+	0.5+	1995 09 29	691	0.3-	0.3+	1999 12 13	704	0.5-	0.1+
1960 09 26	675	0.0	1.1-	1997 03 10	691	0.2+	0.3-	1999 12 13	704	0.2+	0.8+
1960 09 28	675	0.0	0.8-	1997 03 10	691	0.1+	0.2-	1999 12 13	704	0.6-	0.1-
1960 09 29	675	1.7+	0.9-	1997 03 10	691	0.3+	0.5-	1999 12 13	704	0.6-	0.0
1960 10 22	675	0.3-	0.5-	1997 03 13	691	0.8-	0.5-	1999 12 13	704	0.2+	0.7-
1960 10 25	675	0.8+	0.2-	1997 03 13	691	0.6-	0.6-	1999 12 13	704	1.8+	1.7-
1960 10 26	675	0.1+	1.4-	1997 03 13	691	0.7-	0.5-	1999 12 15	704	0.7-	0.2-
1995 09 19	809	0.1+	0.5-	1999 12 12	704	0.3+	0.7-	1999 12 15	704	0.7-	0.2-
1995 09 19	809	0.7+	0.7+	1999 12 12	704	0.1-	0.1+	1999 12 15	704	0.1-	0.2-
1995 09 20	809	0.8+	0.1-	1999 12 12	704	0.5+	0.8+	1999 12 15	704	0.2-	0.1-
1995 09 24	691	0.9-	0.2+	1999 12 12	704	0.6+	0.5+	1999 12 15	704	0.2+	0.1-
1995 09 24	691	0.4-	0.1+	1999 12 13	704	0.4-	0.2-	2000 01 02	704	0.0	0.7+
1995 09 24	691	0.4-	0.0	1999 12 13	704	0.2-	0.2+	2000 01 02	704	0.2+	0.6+
1995 09 29	691	0.3-	0.4+	1999 12 13	704	0.2-	0.1+	2000 01 02	704	0.1-	0.5+
1995 09 29	691	0.3-	0.2+	1999 12 13	704	0.6-	0.1+	2000 01 02	704	0.7+	1.0+

(13440)* 2095 P-L = 1977 RR₁₇

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld

on Palomar Schmidt plates taken by T. Gehrels.

Id. E. Bowell (*MPC* 17973)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	11.77265	(2000.0)	
<i>n</i>	0.23029931	ω	117.41578
<i>a</i>	2.6359730	Ω	330.16017
<i>e</i>	0.1251738	<i>i</i>	2.53014
<i>P</i>	4.28	<i>H</i>	15.4
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc											
1960 09 24	675	1.1−	0.9+	1994 09 05	809	(2.2−	2.7−)	1999 11 16	704	0.1−	0.3+
1960 09 26	675	0.3+	0.3+	1994 09 06	809	0.4+	1.7−	1999 12 15	704	0.1−	0.2+
1960 09 28	675	0.7−	0.3+	1994 09 06	809	0.7+	1.1−	1999 12 15	704	0.5+	0.1+
1960 09 29	675	0.5+	0.4−	1994 09 06	809	0.7+	1.2−	1999 12 15	704	0.0	1.1+
1960 10 17	675	0.3−	0.1−	1998 09 14	691	0.5−	1.0+	2000 01 03	704	1.1−	0.6−
1960 10 22	675	0.1−	1.0+	1998 09 14	691	0.1+	0.9+	2000 01 03	704	0.2+	0.8−

1960 10 25	675	1.2+	0.1+	1998 09 14	691	0.3-	1.1+	2000 01 03	704	0.3+	0.4+
1960 10 26	675	0.5-	0.3-	1999 11 14	704	0.5-	0.6+	2000 01 03	704	0.8+	0.2+
1977 09 09	675	1.4-	1.2-	1999 11 14	704	0.6-	0.2-	2000 01 03	704	0.1+	0.5-
1977 09 10	675	1.6+	0.4+	1999 11 14	704	0.2-	0.6-	2000 01 04	704	0.7-	0.1-
1992 03 08	809	0.3-	0.6-	1999 11 16	704	1.4+	0.1-	2000 01 04	704	0.2-	0.4-
1994 09 05	809	(1.8-	3.2-)	1999 11 16	704	0.4+	0.4+	2000 01 04	704	0.8-	0.9-
1994 09 05	809	(1.9-	2.7-)	1999 11 16	704	0.6-	0.1+	2000 01 04	704	1.4+	1.0+

(13441)* 2098 P-L = 1990 UM₁

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

Id. G. V. Williams (*MPC* 17460)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23148317	ω	158.14628	+0.98375303	+0.17422454		
<i>a</i>	2.6269780	Ω	192.06507	-0.17941722	+0.96255067		
<i>e</i>	0.2653436	<i>i</i>	11.95854	+0.00627926	+0.20770658		
<i>P</i>	4.26	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.7-	0.3+	1994 08 09	801	0.1-	0.3+	1999 10 10	704	0.4+	0.2-
1960 09 26	675	0.8-	2.0-	1994 09 03	801	0.5+	0.3+	1999 10 10	704	0.9-	0.9+
1960 09 28	675	0.6+	0.1+	1994 09 03	801	0.4+	0.3+	1999 10 10	704	1.9+	0.1-
1960 09 29	675	0.6+	2.1+	1994 09 07	801	0.2+	0.0	1999 10 19	704	0.4+	0.1+
1960 09 29	675	0.4+	1.3-	1994 09 07	801	0.4+	0.1+	1999 10 19	704	0.3+	0.1+
1960 10 17	675	0.4+	0.9+	1994 11 01	033	0.3-	0.1-	1999 10 19	704	0.9+	0.1+
1960 10 22	675	0.6-	0.7+	1994 11 01	033	1.1-	0.2-	1999 10 19	704	0.5+	0.1+
1960 10 25	675	0.5+	0.6+	1997 03 08	809	0.7-	0.4+	1999 10 19	704	0.8+	0.0
1960 10 26	675	0.1+	0.2+	1997 03 08	809	1.4-	0.2+	1999 12 30	106	1.1+	0.4-
1990 10 16	809	1.8+	0.2-	1997 03 08	809	1.6-	0.9+	1999 12 30	106	0.8+	0.1-
1990 10 16	809	0.5+	0.7-	1997 03 09	809	0.2+	0.8+	1999 12 30	106	0.8+	0.1-
1990 10 16	809	0.9+	0.2-	1997 03 09	809	0.3-	0.7+	2000 01 08	704	0.1+	0.4-
1990 10 20	809	1.2-	0.5-	1997 03 09	809	0.6-	0.5+	2000 01 08	704	0.0	0.3-
1990 10 20	809	1.6-	0.4+	1997 03 10	809	(4.0+	0.6+)	2000 01 08	704	0.2-	0.2-
1990 10 20	809	1.2-	0.9-	1997 03 10	809	(3.3+	0.6+)	2000 01 08	704	0.1-	0.1-
1990 10 20	402	0.1-	0.9-	1997 03 10	809	(3.0+	1.0+)	2000 01 08	704	0.1-	0.0
1990 10 20	402	0.1-	1.0+	1997 03 11	809	(3.9+	0.9+)	2000 01 10	704	0.0	0.1-
1990 10 21	402	(0.2+	2.2-)	1997 03 11	809	(3.4+	1.2+)	2000 01 10	704	0.2-	0.1-
1990 10 21	402	0.3-	1.2-	1997 03 11	809	(3.8+	0.8+)	2000 01 10	704	0.1-	0.2-
1990 10 27	413	0.5-	0.3-	1998 06 19	704	0.6+	0.9-	2000 01 10	704	1.0+	0.5+
1990 10 28	402	(0.2-	2.5-)	1998 06 19	704	0.0	1.1+	2000 01 10	704	1.2-	0.6+
1990 10 28	402	1.9-	1.7+	1998 06 19	704	(2.5+	1.1-)	2000 01 11	704	0.3+	0.0
1990 10 28	413	1.0-	0.2-	1998 06 25	704	(1.1+	3.0+)	2000 01 11	704	0.3+	0.4-
1994 08 07	801	0.0	0.4+	1998 06 25	704	0.9+	1.9-	2000 01 11	704	0.3+	0.6-
1994 08 07	801	0.1-	0.3+	1998 06 25	704	0.4+	0.5-	2000 01 11	704	0.2+	0.4-
1994 08 09	801	0.2-	0.4+	1999 10 10	704	0.4+	0.2-				

(13442)* 2646 P-L = 1992 DR₁₂

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

Id. A. Gnädig (*MPC* 35046)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23022524	ω	21.61834	+0.76191324	-0.64699247		
<i>a</i>	2.6365383	Ω	18.79354	+0.57984694	+0.66088466		
<i>e</i>	0.1596045	<i>i</i>	5.31024	+0.28855803	+0.38030541		
<i>P</i>	4.28	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.2-	0.1-	1992 03 01	809	(4.6+	0.9-)	1999 12 15	704	0.4-	0.3+
1960 09 26	675	0.0	0.8+	1999 10 13	704	0.2-	0.7+	1999 12 15	704	0.1-	0.1+
1960 09 28	675	0.3-	0.1+	1999 10 13	704	0.8+	0.1+	1999 12 15	704	0.2-	0.1-
1960 09 29	675	0.5+	0.0	1999 10 13	704	1.1+	1.2+	2000 01 02	704	0.1+	0.2-
1960 10 22	675	0.1-	0.8+	1999 10 13	704	0.8+	0.8+	2000 01 02	704	0.2+	0.0
1960 10 25	675	0.6+	0.9-	1999 10 13	704	0.3+	0.8+	2000 01 02	704	0.3+	0.4-

1960 10 26	675	0.6-	0.3-	1999 12 12	704	0.7+	0.8+	2000 01 02	704	0.0	0.8-
1976 05 30	413	0.5-	1.0-	1999 12 12	704	0.4+	0.2-	2000 01 04	704	0.1-	0.2+
1976 05 30	413	(2.0+	3.9-)	1999 12 12	704	0.1-	0.4-	2000 01 04	704	1.2-	0.3-
1992 02 27	691	1.0+	0.5+	1999 12 12	704	0.1+	0.5-	2000 01 04	704	0.1-	0.2-
1992 02 27	691	0.3+	0.4+	1999 12 12	704	0.7-	0.6-	2000 01 04	704	0.2+	0.2+
1992 02 27	691	0.1+	0.9+	1999 12 15	704	1.4-	1.9-	2000 01 04	704	0.2+	0.4-

(13443)* 2785 P-L = 1960 UC = 3185 T-3

Discovered 1960 Sept. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. H. Kaneda (*MPC* 16034), G. V. Williams (d, *MPC* 29936)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23281246	ω	250.65183	+0.95980817	+0.27809799		
<i>a</i>	2.6169689	Ω	93.18729	-0.24118867	+0.88620561		
<i>e</i>	0.1028499	<i>i</i>	2.17038	-0.14351413	+0.37054167		
<i>P</i>	4.23	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 26	675	1.0+	0.6-	1997 05 07	704	1.8-	0.9+	1998 09 27	704	1.0+	0.3-
1960 09 28	675	0.7+	0.5+	1998 08 23	704	0.5-	0.2+	1998 09 27	704	0.1-	0.3+
1960 09 29	675	0.4+	0.8+	1998 08 23	704	1.0+	0.9-	1998 09 27	704	0.3-	0.3-
1960 10 26	675	0.4+	0.2+	1998 08 23	704	1.8-	1.8-	1998 09 27	704	(1.3-	3.2-)
1977 10 11	675	2.3-	1.2+	1998 08 23	704	0.5+	0.2-	1998 09 27	704	(2.5-	1.2-)
1977 10 11	675	1.7-	0.2+	1998 08 27	809	0.8+	1.3+	1999 12 13	691	0.1+	0.7+
1977 10 12	675	1.3-	0.7-	1998 08 27	809	1.9+	1.7+	1999 12 13	691	0.1-	0.7+
1977 10 12	675	1.3-	0.2-	1998 08 27	809	(2.9+	1.7+)	1999 12 13	691	0.2-	0.7+
1977 10 16	675	1.0+	1.0-	1998 09 14	704	0.1+	0.2+	1999 12 16	691	0.1-	0.3+
1977 10 16	675	0.1+	0.5-	1998 09 14	704	0.8-	1.1-	1999 12 16	691	0.2+	0.4+
1977 10 17	675	0.9+	0.7-	1998 09 14	704	1.0+	1.6-	1999 12 16	691	0.1+	0.4+
1977 10 17	675	0.6-	0.6-	1998 09 14	704	(2.5-	0.7+)	1999 12 27	691	0.2-	0.1+
1977 10 21	675	0.6-	0.8+	1998 09 18	704	0.1-	1.0+	1999 12 27	691	0.1+	0.2+
1977 10 21	675	1.5-	0.7-	1998 09 18	704	0.5-	0.8+	1999 12 27	691	0.2+	0.3+
1977 10 22	675	2.0+	0.5-	1998 09 18	704	0.2-	0.8+	1999 12 31	691	0.3-	0.3-
1977 10 22	675	1.6+	1.0-	1998 09 18	704	1.4-	0.7+	1999 12 31	691	0.1-	0.4-
1997 05 03	809	0.6-	1.0+	1998 09 18	704	0.5-	0.6+	1999 12 31	691	0.5-	0.4-
1997 05 03	809	0.3-	1.1+	1998 09 24	699	0.3+	0.9+	2000 01 04	704	0.4+	0.8+
1997 05 03	809	(0.6-	2.6+)	1998 09 24	699	0.3+	0.0	2000 01 04	704	0.0	0.4+
1997 05 04	809	1.4+	1.9+	1998 09 24	699	0.8-	1.8+	2000 01 04	704	0.3-	0.7-
1997 05 04	809	(0.4-	3.5+)	1998 09 26	704	0.2-	0.2+	2000 01 04	704	1.0+	0.1+
1997 05 04	809	(0.1+	4.7+)	1998 09 26	704	0.7+	0.2+	2000 01 06	691	0.4+	0.1+
1997 05 07	704	(3.4+	1.3-)	1998 09 26	704	1.5+	1.1-	2000 01 06	691	0.4+	0.1+
1997 05 07	704	0.6+	1.4-	1998 09 26	704	1.8-	1.7+	2000 01 06	691	0.5+	0.0
1997 05 07	704	0.7+	0.3-	1998 09 26	704	(0.7+	2.2-)				

(13444)* 3040 P-L = 1977 PS₁

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

Id. K. Hurukawa (*MPC* 9299)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23003229	ω	57.70403	+0.96246573	+0.23676451		
<i>a</i>	2.6380125	Ω	288.30659	-0.27117272	+0.85905896		
<i>e</i>	0.2217309	<i>i</i>	8.03317	+0.01118402	+0.45382847		
<i>P</i>	4.28	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	1.0+	0.3+	1990 10 16	801	0.6-	0.9+	1999 12 15	704	0.8+	0.8+
1960 09 24	675	0.3+	1.1-	1990 11 15	801	0.3-	0.6-	1999 12 15	704	0.0	0.6-
1960 09 25	675	0.6-	1.1-	1990 11 15	801	0.4-	0.3+	1999 12 15	704	0.2+	0.3+
1960 09 25	675	0.5-	0.4+	1994 09 02	801	0.7-	0.0	1999 12 15	704	0.1+	0.2+
1960 09 26	675	0.7+	0.4+	1994 09 02	801	0.6+	0.8+	1999 12 15	704	0.5+	0.1-
1960 09 26	675	0.1-	0.4-	1994 09 03	801	0.6+	0.1-	1999 12 15	704	0.1+	0.2-
1960 09 27	675	0.5+	0.6-	1995 12 23	566	0.3-	0.5+	1999 12 15	704	0.4-	0.5-
1960 09 28	675	1.5+	0.6-	1995 12 23	566	0.6-	0.1+	1999 12 15	704	0.5-	0.8-

1960 09 28	675	0.8+	0.3+	1995 12 23	566	0.8-	0.3+	2000 01 03	704	0.3+	0.2+
1960 10 17	675	0.9-	0.7+	1998 05 28	689	0.1-	0.2+	2000 01 03	704	0.4+	0.6+
1960 10 17	675	0.9+	0.2+	1999 12 01	106	0.1-	0.4+	2000 01 03	704	1.5-	0.3-
1960 10 22	675	0.2+	1.2-	1999 12 01	106	0.2-	0.1+	2000 01 03	704	0.2+	0.0
1960 10 24	675	0.8-	0.4-	1999 12 01	106	0.6+	0.2+	2000 01 03	704	0.2+	0.2+
1960 10 25	675	0.5-	1.1-	1999 12 15	704	0.3+	0.0	2000 01 04	704	0.1+	0.4-
1960 10 26	675	0.6-	0.3+	1999 12 15	704	0.4+	0.1-	2000 01 04	704	0.2+	0.1+
1977 08 14	095	(0.5-	2.6+)	1999 12 15	704	0.1-	0.6-	2000 01 04	704	0.4-	0.4+
1977 08 21	095	(1.0-	7.2-)	1999 12 15	704	0.1+	0.1-	2000 01 04	704	0.0	0.0
1990 10 15	801	0.5-	0.7+	1999 12 15	704	0.1+	0.2-	2000 01 04	704	0.1+	0.1-
1990 10 15	801	0.4-	0.7+	1999 12 15	704	0.7+	0.1+				
1990 10 16	801	1.3-	1.0+	1999 12 15	704	0.5+	0.4+				

(13445)* 3063 P-L = 1991 RX₂₉

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

Id. E. Bowell (*MPC* 20648)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.16021178	ω	246.95842	-0.99326960	-0.02824384		
<i>a</i>	3.3574258	Ω	291.27067	+0.07470957	-0.89732705		
<i>e</i>	0.0161721	<i>i</i>	6.92330	-0.08850981	-0.44046163		
<i>P</i>	6.15	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.3+	0.3+	1996 08 19	566	0.2-	0.4+	1999 11 17	704	0.3+	0.3-
1960 09 25	675	0.2+	0.4+	1996 08 19	566	0.2+	0.3+	1999 11 17	704	0.1-	0.1-
1960 09 26	675	0.5+	0.1+	1998 12 09	327	0.2-	0.0	1999 11 17	704	0.1+	0.0
1960 09 27	675	0.4-	0.3+	1998 12 09	327	0.9-	0.4+	1999 11 17	704	0.1+	0.7-
1960 09 28	675	0.1+	0.3+	1998 12 09	327	0.6+	0.8+	1999 11 17	704	0.5-	0.0
1960 09 29	675	0.2+	0.5-	1998 12 14	704	0.3+	0.9-	2000 01 05	704	0.1-	0.3-
1960 09 29	675	1.4-	0.8+	1998 12 14	704	0.6-	0.7+	2000 01 05	704	0.5-	0.6-
1991 09 14	675	0.7+	1.3-	1998 12 14	704	0.4+	0.3+	2000 01 05	704	0.5+	0.9+
1991 09 14	675	0.6-	1.0-	1998 12 14	704	1.1-	0.6+	2000 01 05	704	0.0	0.5-
1991 09 16	675	0.1+	1.7-	1998 12 14	704	(0.5-	2.4+)	2000 01 05	704	0.5-	0.1-
1991 09 16	675	0.4+	1.5-	1998 12 17	704	0.2+	0.3+	2000 01 08	704	0.4-	0.1-
1996 08 09	566	0.1+	0.2+	1998 12 17	704	0.5+	0.2+	2000 01 08	704	0.2-	0.1+
1996 08 09	566	0.1+	0.0	1998 12 17	704	0.0	0.6+	2000 01 08	704	0.2+	0.5+
1996 08 09	566	0.4+	0.1+	1998 12 17	704	1.5+	0.5+	2000 01 08	704	0.4-	0.6-
1996 08 19	566	0.2-	0.2+	1998 12 17	704	1.3+	0.0	2000 01 08	704	0.6-	0.1-

(13446)* 3087 P-L = 1997 OW₁

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

Id. G. V. Williams (*MPC* 30465)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18395780	ω	86.99967	+0.96933910	+0.19986736		
<i>a</i>	3.0618970	Ω	261.43934	-0.23986505	+0.89593338		
<i>e</i>	0.1052379	<i>i</i>	8.31184	+0.05335224	+0.39668176		
<i>P</i>	5.36	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.1-	0.3+	1998 08 31	704	0.6-	1.2-	1999 11 06	703	0.8-	0.1+
1960 09 25	675	0.7-	0.7+	1998 08 31	704	0.9-	1.2-	1999 11 06	703	0.8-	0.3+
1960 09 26	675	0.0	0.5+	1998 10 29	704	0.1+	0.4-	1999 11 17	704	0.2-	0.7+
1960 09 27	675	0.5-	0.2+	1998 10 29	704	0.6+	0.6-	1999 11 17	704	0.3-	0.5+
1960 09 28	675	0.1-	0.6-	1998 10 29	704	0.1+	0.7-	1999 11 17	704	0.0	0.3+
1960 09 28	675	0.5-	0.4-	1998 10 29	704	0.7+	0.7-	1999 11 17	704	0.5+	1.3+
1960 09 29	675	1.3-	0.8-	1998 10 29	704	0.4+	0.6-	1999 11 17	704	0.1-	0.5+
1960 10 17	675	0.3-	0.5+	1998 11 11	704	0.3+	0.5-	1999 12 14	704	0.1-	1.6+
1960 10 17	675	0.8+	0.8+	1998 11 11	704	0.6+	1.0-	1999 12 14	704	(1.9-	2.8+)
1960 10 17	675	0.3+	0.3-	1998 11 11	704	0.1-	1.9-	1999 12 14	704	0.3+	0.6+
1960 10 22	675	0.3-	0.4+	1998 11 18	704	0.3+	0.5+	1999 12 14	704	0.4-	0.5-
1960 10 22	675	0.5+	0.3-	1998 11 18	704	0.0	0.4+	1999 12 31	106	0.5+	0.1+

1960 10 22	675	0.7+	0.1-	1998 11 18	704	0.8-	1.4+	1999 12 31	106	0.0	0.6-
1960 10 24	675	0.0	0.8-	1998 11 18	704	0.2+	1.7+	1999 12 31	106	0.7+	0.2-
1960 10 24	675	0.5-	0.6+	1998 11 18	704	0.0	1.3+	2000 01 05	704	0.1+	0.3-
1960 10 25	675	0.4+	0.0	1998 11 20	699	0.4+	0.4+	2000 01 05	704	0.2+	0.3-
1960 10 25	675	0.8+	0.4+	1998 11 20	699	0.3+	0.5+	2000 01 05	699	0.3+	0.6+
1960 10 26	675	0.1+	0.2+	1998 11 20	699	0.6+	0.5+	2000 01 05	704	0.0	0.2-
1960 10 26	675	0.4-	0.8+	1998 12 13	716	0.4-	0.1+	2000 01 05	699	0.5+	1.0+
1997 07 30	595	0.5-	0.3+	1998 12 13	716	0.6-	0.3+	2000 01 05	704	0.3-	0.1-
1997 07 30	595	0.1-	0.3+	1998 12 16	699	0.8-	0.2+	2000 01 05	704	0.2-	0.7-
1997 08 01	595	0.1-	0.6+	1998 12 16	699	0.7-	0.0	2000 01 05	699	0.6+	0.9+
1997 08 01	595	0.5-	0.0	1998 12 16	699	0.2-	0.1-	2000 01 07	704	0.5+	0.3+
1997 08 08	595	0.4+	0.3+	1999 02 11	691	0.6+	0.1+	2000 01 07	704	0.1-	0.1+
1997 08 08	595	0.1+	0.4+	1999 02 11	691	0.1-	1.6-	2000 01 07	704	0.2+	0.0
1998 08 31	704	0.6+	0.9-	1999 02 11	691	0.4+	0.7-	2000 01 07	704	0.1-	0.1+
1998 08 31	704	0.8-	0.5-	1999 11 06	703	0.6-	1.0+	2000 01 07	704	0.9+	1.0-
1998 08 31	704	0.1-	0.4+	1999 11 06	703	0.8-	0.1+				

(13447)* 4115 P-L = 1998 OJ₉

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

Id. B. G. Marsden (*MPC* 32503)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Marsden			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23163413	ω	168.76185	+0.84595491	-0.53310244		
<i>a</i>	2.6258365	Ω	223.46129	+0.48780542	+0.78327851		
<i>e</i>	0.0989630	<i>i</i>	1.06049	+0.21542090	+0.31980708		
<i>P</i>	4.26	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.1-	0.8-	1997 05 01	704	0.5+	0.3+	1999 12 08	704	0.4-	0.4-
1960 09 24	675	0.5+	1.2+	1997 05 01	704	0.3+	0.8-	1999 12 08	704	0.1-	0.2-
1960 09 25	675	0.2+	0.1+	1997 05 01	704	0.2+	0.3+	1999 12 08	704	0.3+	0.7+
1960 09 26	675	0.0	0.5-	1998 07 26	809	0.1+	0.9-	2000 01 05	704	0.7-	0.1+
1960 09 26	675	0.4+	0.1-	1998 07 26	809	(1.0-	2.4-)	2000 01 05	704	0.5-	1.6+
1960 09 27	675	0.8+	1.2+	1998 07 26	809	0.4-	0.6-	2000 01 05	704	0.4+	0.2+
1960 09 28	675	0.2+	0.9+	1998 07 27	809	0.7+	0.3-	2000 01 06	704	0.7+	0.4-
1960 10 17	675	1.1-	0.8-	1998 07 27	809	0.5+	0.2-	2000 01 06	704	0.9+	0.6-
1960 10 22	675	0.3-	0.4-	1998 07 27	809	0.2-	1.4-	2000 01 06	704	0.0	0.3-
1960 10 24	675	0.8-	0.5-	1998 08 17	704	0.3+	1.4+	2000 01 09	704	0.6+	0.3-
1960 10 26	675	0.4+	0.2+	1998 08 17	704	0.6-	0.9+	2000 01 09	704	0.2+	0.4-
1992 03 02	809	1.6-	0.8+	1998 08 17	704	1.9-	0.1-	2000 01 09	704	0.2-	0.1+
1997 05 01	704	0.4+	0.1-	1998 08 17	704	1.0+	0.6+	2000 01 09	704	0.6+	0.6-
1997 05 01	704	0.1+	0.5+	1999 12 08	704	0.8-	0.6+	2000 01 09	704	0.1+	0.3-

(13448)* 4526 P-L = 1994 RY₁₁

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

Id. G. V. Williams (*MPC* 26577)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25938316	ω	136.73537	-0.70759730	-0.70661488		
<i>a</i>	2.4350517	Ω	358.30302	+0.63664263	-0.63678194		
<i>e</i>	0.1421230	<i>i</i>	2.34485	+0.30658151	-0.30855172		
<i>P</i>	3.80	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.7+	0.5-	1998 09 18	704	1.4-	0.5+	1999 11 16	704	0.1-	0.3+
1960 09 26	675	0.9+	0.2-	1998 09 18	704	0.2+	0.5+	1999 11 16	704	0.2+	0.0
1960 09 27	675	0.1+	0.9+	1998 09 18	704	1.4-	1.4+	1999 11 16	704	0.2+	0.3-
1960 09 28	675	0.9-	0.1-	1998 09 26	704	0.7+	0.2-	1999 11 17	703	(3.5+, 0.3-)	
1960 09 28	675	0.9-	0.3-	1998 09 26	704	0.6+	0.1+	1999 11 17	703	1.0+	0.2+
1960 10 17	675	0.1-	0.2-	1998 09 26	704	0.2+	0.0	1999 11 17	703	0.1+	0.6+
1960 10 22	675	0.2+	0.2+	1998 09 26	704	0.2+	0.2+	1999 11 17	703	0.6+	0.1+
1960 10 26	675	1.1+	2.0-	1998 09 26	704	0.4-	0.1-	1999 12 05	704	0.4+	0.7-
1994 09 01	033	0.6-	0.4-	1998 09 27	704	0.1+	0.6-	1999 12 05	704	0.1+	0.0

1994 09 02	033	0.7−	0.1−	1998 09 27	704	0.5+	0.5−	1999 12 05	704	0.1−	0.7−
1994 09 03	033	1.2+	1.1+	1998 09 27	704	0.5+	0.1−	1999 12 05	704	0.5−	0.5−
1996 01 10	411	0.1−	1.2−	1998 09 27	704	0.3+	0.0	1999 12 05	699	0.5+	1.1+
1996 01 10	411	0.1−	1.2−	1998 09 27	704	0.9+	0.4−	1999 12 05	699	0.3−	1.0+
1996 01 12	411	0.8−	0.0	1998 10 14	704	0.3−	0.7−	1999 12 05	699	0.5−	1.1+
1996 01 12	411	0.0	0.1+	1998 10 14	704	1.0−	0.4+	1999 12 18	699	1.4+	1.0+
1996 01 16	046	0.5−	0.5−	1998 10 14	699	0.3+	0.3+	1999 12 18	699	0.1+	0.4−
1996 01 16	046	0.5+	0.2−	1998 10 14	704	0.1+	1.5−	1999 12 18	699	0.8−	0.2+
1996 01 26	691	0.5−	0.6−	1998 10 14	699	0.6−	0.2+	2000 01 01	106	0.1+	0.2−
1996 01 26	691	0.2−	0.7−	1998 10 14	704	1.0+	0.8−	2000 01 01	106	0.1−	1.1+
1996 01 26	691	0.1−	0.6−	1998 10 14	704	0.3+	0.2+	2000 01 01	106	0.3−	0.5+
1998 08 28	704	1.2+	0.9−	1998 10 14	699	0.5+	0.7+	2000 01 04	704	0.9−	0.3+
1998 08 28	704	0.2+	0.0	1998 10 15	704	0.3+	0.3+	2000 01 04	704	0.2−	0.0
1998 08 28	704	0.9−	0.9+	1998 10 15	704	1.0−	0.0	2000 01 04	704	0.1+	1.2+
1998 08 28	704	1.1+	1.1−	1998 10 15	704	0.5−	0.3−	2000 01 04	704	0.8−	0.4+
1998 08 28	704	(3.2−	1.0−)	1998 10 15	704	0.9−	0.8+	2000 01 04	704	0.0	0.8+
1998 09 14	704	0.3+	0.2−	1998 10 15	704	0.9−	1.4+	2000 01 08	704	0.2+	0.7+
1998 09 14	704	0.2−	0.2−	1998 10 28	704	0.1+	0.1+	2000 01 08	704	0.7+	1.0+
1998 09 14	704	0.2+	0.3−	1998 10 28	704	0.1+	0.4+	2000 01 08	704	0.6+	0.5+
1998 09 15	699	0.2−	0.3−	1998 10 28	704	0.1+	0.2+	2000 01 08	704	0.8+	0.0
1998 09 15	699	0.0	0.1−	1998 10 28	704	0.0	0.3−	2000 01 08	704	1.1+	0.6−
1998 09 15	699	0.5−	0.4+	1998 10 28	704	0.7−	0.6+	2000 01 10	699	0.6−	0.7+
1998 09 18	704	0.3−	1.5+	1999 11 16	704	0.6+	0.4−	2000 01 10	699	0.5+	0.0
1998 09 18	704	1.0−	1.4+	1999 11 16	704	0.2+	0.6−	2000 01 10	699	0.6+	0.3−

(13449)* 4845 P-L = 1993 TQ₃₈

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

Id. G. V. Williams (*MPC* 23245)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	39.17188		(2000.0)	P	Q
<i>n</i>	0.18047993	ω	242.78817	+0.57438943	−0.81815268
<i>a</i>	3.1011072	Ω	171.99620	+0.80214860	+0.55610536
<i>e</i>	0.1125037	<i>i</i>	10.97718	+0.16320049	+0.14619512
<i>P</i>	5.46	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.7−	0.1−	1998 08 17	704	0.4−	0.7+	1999 12 05	704	0.8+	0.5−
1960 09 26	675	0.5−	0.0	1998 09 14	704	0.0	0.1+	1999 12 05	704	1.3−	0.5+
1960 09 27	675	0.0	1.6+	1998 09 14	704	0.1−	0.1−	1999 12 05	704	0.0	0.5+
1960 09 28	675	0.4+	0.2−	1998 09 14	704	0.1+	0.1+	1999 12 05	704	0.8−	0.9+
1960 10 25	675	0.6+	0.7+	1998 09 14	704	0.3+	1.1−	1999 12 05	704	0.0	0.3+
1960 10 26	675	0.1−	0.0	1998 09 18	704	0.5+	0.4+	2000 01 08	704	0.0	0.0
1993 10 09	809	0.3+	1.7−	1998 09 18	704	0.8−	1.9+	2000 01 08	704	0.1−	0.3−
1993 10 09	809	0.6−	1.3−	1998 09 18	704	1.3+	0.8−	2000 01 08	704	0.8+	0.9+
1993 10 09	809	0.1−	1.4−	1998 09 18	704	1.0+	0.8+	2000 01 08	704	0.2+	1.0+
1993 10 11	809	0.9+	0.5−	1998 09 25	704	0.0	0.8+	2000 01 08	704	0.7+	1.0+
1993 10 11	809	0.7+	0.7−	1998 09 25	704	0.6+	0.7+	2000 01 11	704	0.0	0.3−
1993 10 11	809	0.4−	0.7−	1998 09 25	704	0.4−	1.3+	2000 01 11	704	0.1−	0.2−
1998 08 17	704	0.3+	1.7−	1998 09 27	704	0.3−	0.9+	2000 01 11	704	0.2+	0.1+
1998 08 17	704	1.1−	1.5+	1998 09 27	704	0.3−	0.3−	2000 01 11	704	0.3−	0.4−
1998 08 17	704	0.6−	0.1+	1998 09 27	704	0.9−	0.4+				
1998 08 17	704	0.0	0.9−	1998 09 27	704	0.1+	1.2−				

(13450)* 6077 P-L = 1993 VF₆

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

Id. G. V. Williams (*MPC* 22966)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.39156		(2000.0)	P	Q
<i>n</i>	0.18118085	ω	59.84954	+0.72986040	−0.68340456
<i>a</i>	3.0931040	Ω	343.24280	+0.60629302	+0.65808188
<i>e</i>	0.0783175	<i>i</i>	3.21839	+0.31577298	+0.31604817
<i>P</i>	5.44	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.2−	0.9−	1998 08 26	691	0.8+	0.8−	1998 09 27	704	1.9+	0.7+
1960 09 25	675	0.1−	0.8−	1998 08 26	691	0.5−	0.8−	1998 09 27	704	0.0	0.1+
1960 09 26	675	0.0	0.6−	1998 09 14	704	0.9−	0.3−	1998 09 27	704	0.9+	0.5−
1960 09 28	675	0.5+	0.2+	1998 09 14	704	0.9+	0.8−	1998 09 27	704	0.1+	0.9−
1960 10 17	675	0.8+	0.4+	1998 09 14	704	0.9−	0.3−	1998 09 27	704	1.1−	0.4+
1960 10 22	675	0.6+	0.6−	1998 09 14	704	0.4−	0.2−	1999 11 16	704	1.0−	0.6−
1960 10 24	675	0.3+	0.3−	1998 09 15	691	0.6−	0.2−	1999 11 16	704	0.4−	0.1−
1960 10 26	675	0.3+	1.5−	1998 09 15	691	0.5−	0.2−	1999 11 16	704	0.0	0.3+
1993 11 09	691	0.4+	0.7+	1998 09 15	691	0.5−	0.2−	1999 11 16	704	0.6+	0.4−
1993 11 09	691	0.0	0.7+	1998 09 18	704	0.3−	1.8+	1999 12 15	704	0.2+	0.3+
1993 11 09	691	0.3+	0.6+	1998 09 18	704	0.1−	0.3+	1999 12 15	704	0.2+	0.3+
1993 11 09	691	0.0	0.5+	1998 09 18	704	0.0	1.1−	1999 12 15	704	0.2−	0.3+
1993 11 09	691	0.1−	0.6+	1998 09 18	704	(0.5+	2.1+)	1999 12 15	704	0.7+	0.9−
1993 11 09	691	0.2−	0.3+	1998 09 18	704	0.6+	0.8+	2000 01 03	704	0.3−	0.2−
1993 11 11	691	1.0−	0.6+	1998 09 20	691	0.1−	0.0	2000 01 03	704	0.0	0.4−
1993 11 11	691	0.9−	0.8+	1998 09 20	691	0.3+	0.2−	2000 01 03	704	0.2−	0.1−
1993 11 11	691	0.8−	0.8+	1998 09 21	691	0.3−	0.2+	2000 01 03	704	0.4+	0.1−
1998 08 23	704	0.8−	1.9+	1998 09 21	691	0.2−	0.3+	2000 01 03	704	0.0	0.3−
1998 08 23	704	0.2−	1.4−	1998 09 21	691	1.1+	0.2+	2000 01 04	704	0.3−	0.5−
1998 08 23	704	(0.2−	2.8+)	1998 09 23	691	0.5−	0.2+	2000 01 04	704	0.2−	0.5−
1998 08 23	704	(3.2−	0.2−)	1998 09 23	691	0.7−	0.2+	2000 01 04	704	0.4+	0.4−
1998 08 26	699	0.5+	0.1+	1998 09 23	691	0.7−	0.3+	2000 01 04	704	0.5−	0.8−
1998 08 26	699	0.3+	0.5−	1998 09 26	691	0.5+	0.4+	2000 01 04	704	0.5+	0.5+
1998 08 26	691	0.1−	0.3−	1998 09 26	691	0.5+	0.0				
1998 08 26	699	0.7+	0.4+	1998 09 26	691	0.7+	0.1−				

(13451)* 6103 P-L = 1993 TJ₄

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

Id. G. V. Williams (*MPC* 22966)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.55561		(2000.0)	P	Q
<i>n</i>	0.18002649	ω	58.46394	+0.51050901	−0.85987140
<i>a</i>	3.1063123	Ω	0.84167	+0.75547772	+0.44779912
<i>e</i>	0.2153782	<i>i</i>	5.13289	+0.41065067	+0.24514715
<i>P</i>	5.47	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.3+	0.5−	1993 10 24	691	0.0	0.2+	1999 12 15	704	0.2+	0.8−
1960 09 25	675	0.2−	0.4−	1993 11 08	691	0.1+	0.1−	1999 12 15	704	0.1+	0.5−
1960 09 26	675	0.6+	1.0−	1993 11 08	691	0.2−	0.1−	1999 12 15	704	0.1+	0.6−
1960 09 28	675	0.7+	0.5+	1993 11 08	691	0.1−	0.0	2000 01 02	704	0.3−	0.1+
1960 10 17	675	0.6−	1.8+	1998 10 14	910	0.2+	0.0	2000 01 02	704	1.0+	0.1−
1960 10 22	675	0.4−	0.3+	1998 10 14	910	0.4−	0.5+	2000 01 02	704	0.3−	0.2+
1960 10 24	675	0.1+	1.0−	1998 10 14	910	0.2+	0.6−	2000 01 02	704	0.0	0.2−
1960 10 26	675	0.3−	0.1−	1999 12 12	704	0.1+	0.1+	2000 01 04	704	0.0	0.4+
1993 10 08	691	0.1−	0.0	1999 12 12	704	0.1+	0.4+	2000 01 04	704	0.3−	0.0
1993 10 08	691	0.3−	0.0	1999 12 12	704	1.0+	0.1−	2000 01 04	704	0.0	0.1−
1993 10 08	691	0.2−	0.3+	1999 12 12	704	1.7−	0.7+	2000 01 04	704	0.3+	0.1+
1993 10 24	691	0.3+	0.2+	1999 12 15	704	0.1−	0.1+	2000 01 04	704	0.3+	0.1−
1993 10 24	691	0.2+	0.0	1999 12 15	704	0.5−	0.2+				

(13452)* 6513 P-L = 1988 FR₂ = 1992 EG₉

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

Id. G. V. Williams (*MPC* 23786, unpublished), A. Milani (unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Residuals in seconds of arc

1960 09 24	675	0.0	0.5−	1992 04 04	809	0.9−	0.9−	1999 12 12	704	0.0	0.5+
1960 09 26	675	0.8−	0.8−	1998 11 14	704	0.6+	0.4−	1999 12 12	704	0.3−	0.1−
1960 09 27	675	1.2+	0.4−	1998 11 14	704	0.5+	0.1−	1999 12 12	704	0.7−	0.3+
1960 09 28	675	0.3+	0.6−	1998 11 14	704	0.3+	0.2−	1999 12 12	704	0.0	0.2+
1960 10 17	675	0.1−	0.4+	1998 11 14	704	0.2−	1.3−	2000 01 02	704	0.2−	0.1−
1960 10 22	675	1.2−	0.3+	1998 11 16	704	0.4−	1.1−	2000 01 02	704	0.7−	0.3+
1960 10 24	675	0.5+	0.7+	1998 11 16	704	0.4+	1.1+	2000 01 02	704	0.0	0.4−
1960 10 26	675	0.5+	0.7+	1998 11 16	704	1.2+	1.2−	2000 01 02	704	0.1+	0.1−
1988 03 21	071	1.4−	1.3−	1998 11 16	704	0.0	1.1−	2000 01 02	704	0.1+	0.0
1988 03 21	071	0.6−	1.1−	1999 12 08	703	1.0+	1.3+	2000 01 10	699	0.6+	0.1−
1992 03 02	809	1.1+	0.1+	1999 12 08	703	1.3+	1.0+	2000 01 10	699	0.1−	0.6−
1992 03 05	809	0.9−	0.2−	1999 12 08	703	0.1+	0.2+	2000 01 10	699	0.5+	0.5+
1992 03 07	809	0.4−	0.4−	1999 12 08	703	0.6+	0.9+				

(13453)* 6538 P-L = 1962 CS = 1998 VB₂₅

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

Id. T. B. Spahr (*MPC* 33996)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	62.62690		(2000.0)	P	Q
<i>n</i>	0.18252843	ω	321.51139	+0.16700264	−0.98555586
<i>a</i>	3.0778613	Ω	118.85870	+0.91235537	+0.14366740
<i>e</i>	0.1903659	<i>i</i>	1.83879	+0.37378845	+0.08966224
<i>P</i>	5.40	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.3+	0.4−	1998 10 27	691	0.6−	0.3−	1998 11 24	699	0.9+	0.3−
1960 09 26	675	0.1−	0.5+	1998 10 27	691	0.7−	0.6−	1998 12 08	704	(2.7+	0.8+)
1960 09 27	675	1.8+	0.0	1998 11 10	704	0.8−	0.7−	1998 12 08	704	0.6+	0.2−
1960 09 28	675	1.0+	0.2+	1998 11 10	704	1.6−	0.3−	1998 12 08	704	0.6−	0.3−
1960 10 17	675	0.4−	0.5+	1998 11 10	704	1.5−	0.4−	1998 12 08	704	1.0−	1.9−
1960 10 22	675	2.2−	0.8−	1998 11 10	704	1.8−	0.1+	1998 12 08	704	1.5−	1.5+
1960 10 22	675	0.1−	1.4−	1998 11 10	704	(2.6−	1.3+)	1998 12 08	699	0.8−	0.4+
1960 10 24	675	0.3−	0.5+	1998 11 11	704	0.4+	0.4+	1998 12 08	699	0.8+	0.5+
1960 10 26	675	0.1+	0.5−	1998 11 11	704	0.3+	1.1+	1998 12 08	699	0.1+	0.2−
1962 02 10	033	(5.3−	0.2+)	1998 11 11	704	0.6+	0.4+	1999 01 06	699	0.0	0.5−
1962 02 10	033	0.1−	1.4−	1998 11 11	704	0.4+	0.4+	1999 01 06	699	0.9−	0.5−
1998 08 31	704	1.1+	0.8−	1998 11 11	704	1.1+	0.3+	1999 01 06	699	0.4−	0.4−
1998 08 31	704	0.7+	1.7−	1998 11 11	704	0.3+	1.6+	1999 12 18	699	0.2+	1.4+
1998 08 31	704	(1.4−	2.7−)	1998 11 11	704	0.4+	0.2+	1999 12 18	699	(0.5−	2.2+)
1998 08 31	704	(1.0+	3.1−)	1998 11 11	704	0.1+	1.5+	1999 12 18	699	0.2+	0.1+
1998 10 10	699	0.3−	0.6−	1998 11 11	704	0.5+	0.4+	2000 01 04	704	0.6−	0.2−
1998 10 10	699	1.0+	0.7−	1998 11 11	704	1.4+	1.3+	2000 01 04	704	0.8−	1.0−
1998 10 10	699	0.3+	0.6−	1998 11 11	699	0.3+	0.0	2000 01 04	704	0.2+	0.2+
1998 10 18	699	(2.7+	3.1−)	1998 11 11	699	0.5+	0.1−	2000 01 04	704	0.5+	0.5−
1998 10 18	699	(2.2+	0.5−)	1998 11 11	699	0.3+	0.1+	2000 01 07	120	(2.3+	0.2+)
1998 10 18	699	0.4−	0.8+	1998 11 24	699	0.9+	0.0	2000 01 07	120	0.1+	0.0
1998 10 27	691	0.5−	0.2−	1998 11 24	699	0.3+	0.0				

(13454)* 6594 P-L = 1994 RT₁₂

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

Id. B. G. Marsden (*MPC* 24578)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	125.46010		(2000.0)	P	Q
<i>n</i>	0.25962647	ω	195.39035	+0.97362913	−0.22809635
<i>a</i>	2.4335302	Ω	177.78117	+0.21925622	+0.93037314
<i>e</i>	0.0718161	<i>i</i>	6.35682	+0.06303198	+0.28701547
<i>P</i>	3.80	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1960 09 24	675	0.4+	1.3−	1998 09 18	704	1.2−	1.2+	1998 10 15	704	(3.1−	0.9−)
1960 09 26	675	0.5+	0.7−	1998 09 25	699	0.2−	1.5+	1998 10 15	704	1.6−	1.4−

1960 09 27	675	0.8+	0.5+	1998 09 25	699	0.4+	0.8+	1998 10 22	910	0.5−	0.1+
1960 09 28	675	0.2+	0.5−	1998 09 25	699	0.9+	1.3+	1998 10 22	910	0.5−	0.2−
1960 10 17	675	1.7−	0.0	1998 09 26	704	0.4+	0.3+	1998 10 22	910	0.3−	0.1−
1960 10 22	675	1.2−	0.1−	1998 09 26	704	1.2+	0.5−	1998 12 08	704	0.3−	1.7+
1960 10 24	675	1.1+	0.8+	1998 09 26	704	1.4+	0.2−	1998 12 08	704	0.9−	1.3−
1960 10 26	675	0.1+	0.8+	1998 09 26	704	(2.4+	1.2−)	1998 12 08	704	1.3−	0.6+
1994 09 03	809	(2.1−	0.2+)	1998 09 26	704	1.2+	0.9−	1998 12 08	704	(1.9−	2.3−)
1994 09 03	809	1.1−	0.0	1998 09 27	704	0.8+	0.5+	1999 12 05	704	1.4−	1.2+
1994 09 03	809	0.6−	0.5+	1998 09 27	704	0.9+	0.4+	1999 12 05	704	0.0	0.1+
1994 09 04	809	(1.0+	2.6+)	1998 09 27	704	1.1+	0.3+	1999 12 05	704	0.9+	0.3−
1994 09 04	809	1.0+	1.6+	1998 09 27	704	1.8+	1.1−	1999 12 05	704	0.1+	0.2−
1994 09 04	809	1.0+	1.4+	1998 09 27	704	0.2−	0.3−	2000 01 05	704	0.1+	0.5+
1994 09 07	675	0.5−	0.6−	1998 09 28	691	0.2−	0.1−	2000 01 05	704	0.1−	0.7+
1994 09 07	675	0.9−	0.2+	1998 09 28	691	0.1+	0.2−	2000 01 05	704	0.3−	0.2−
1998 09 14	704	0.2+	0.3+	1998 09 28	691	0.0	0.2−	2000 01 05	704	1.0−	0.3+
1998 09 14	704	0.7−	0.1+	1998 10 14	704	0.7+	1.3−	2000 01 08	704	0.3+	0.5+
1998 09 14	704	0.3+	0.6−	1998 10 14	704	0.7−	1.8−	2000 01 08	704	0.3+	0.2−
1998 09 18	704	0.2+	0.7+	1998 10 14	704	0.4+	0.8−	2000 01 08	704	0.9+	0.2−
1998 09 18	704	1.5−	0.3+	1998 10 15	704	(0.7+	3.3−)	2000 01 08	704	0.5+	0.8−
1998 09 18	704	0.2−	1.4+	1998 10 15	704	0.4+	0.1−	2000 01 08	704	0.2+	1.1+
1998 09 18	704	1.7−	0.2−	1998 10 15	704	0.8−	1.3−				

(13455)* 6626 P-L = 1976 EZ

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

Id. G. V. Williams (*MPC* 16882)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	235.04956		(2000.0)	P	Q
<i>n</i>	0.28216698	ω	221.08733	−0.73382621	+0.67933592
<i>a</i>	2.3021410	Ω	1.70622	−0.61093088	−0.65906963
<i>e</i>	0.0623642	<i>i</i>	2.57797	−0.29709014	−0.32269170
<i>P</i>	3.49	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.2−	0.6+	1994 04 14	691	0.5−	0.2+	1999 11 14	704	0.3+	0.3−
1960 09 26	675	0.1+	0.6+	1997 01 10	566	0.2+	0.2+	1999 11 14	704	0.2+	0.4+
1960 09 27	675	1.1+	0.2+	1997 01 10	566	0.0	0.3+	1999 12 31	703	1.0−	0.8−
1960 09 28	675	0.3−	1.0−	1997 01 10	566	0.1+	0.2+	1999 12 31	703	0.4+	0.2−
1960 10 17	675	0.9−	1.0+	1998 07 02	699	1.9+	0.4+	1999 12 31	703	0.2−	0.0
1960 10 22	675	0.2−	0.1+	1998 07 02	699	0.3−	0.5+	1999 12 31	703	0.0	0.2+
1960 10 24	675	1.0−	0.3−	1998 07 02	699	0.3−	0.7+	2000 01 03	704	0.3+	0.2+
1960 10 26	675	0.2−	0.0	1999 11 03	704	0.5−	1.0−	2000 01 03	704	0.6−	0.1+
1976 03 01	033	(2.8+	1.2+)	1999 11 03	704	0.4−	0.4−	2000 01 03	704	0.4−	0.8+
1976 03 02	033	1.0+	0.9+	1999 11 03	704	0.1+	0.3−	2000 01 03	704	1.2−	0.6−
1976 03 03	033	(6.5−	2.3+)	1999 11 03	704	1.6+	0.2+	2000 01 04	704	0.9+	0.5+
1976 03 03	033	1.1+	0.3+	1999 11 14	704	0.7+	0.0	2000 01 04	704	0.4−	0.9+
1994 04 14	691	0.3−	0.3+	1999 11 14	704	0.5+	0.0	2000 01 04	704	0.4−	0.3−
1994 04 14	691	0.6−	0.2+	1999 11 14	704	0.5+	0.1+	2000 01 04	704	1.3−	0.8−

(13456)* 6640 P-L = 1999 XR₁₂₈

Discovered 1960 Sept. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 37250)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	25.95294		(2000.0)	P	Q
<i>n</i>	0.17978828	ω	55.38194	+0.49012252	−0.87162099
<i>a</i>	3.1090554	Ω	5.28612	+0.77056659	+0.42922554
<i>e</i>	0.1585163	<i>i</i>	4.69112	+0.40743962	+0.23673255
<i>P</i>	5.48	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1960 09 26	675	0.9+

1960 10 17	675	0.3−	1.4−	1999 12 10	704	(1.0−	2.5−)	2000 01 02	704	0.5−	0.2+
1960 10 22	675	0.7−	0.4−	1999 12 10	704	0.1−	1.0−	2000 01 02	704	0.2−	0.7+
1960 10 24	675	0.0	0.0	1999 12 10	704	(0.8−	2.0−)	2000 01 03	704	0.2−	0.8−
1960 10 26	675	0.0	0.5−	1999 12 10	704	0.2+	0.8−	2000 01 03	704	0.3+	0.8−
1993 10 22	809	0.2−	1.8+	1999 12 13	704	0.2−	0.2−	2000 01 03	704	0.3+	0.4+
1993 10 22	809	0.5−	0.1−	1999 12 13	704	0.4−	0.1+	2000 01 03	704	0.9+	0.2−
1993 10 22	809	0.0	0.4−	1999 12 13	704	0.6−	0.2+	2000 01 04	704	0.1−	0.3+
1998 08 17	704	0.6+	0.2+	1999 12 13	704	0.3−	0.2+	2000 01 04	704	0.5+	0.2−
1998 08 17	704	1.9+	0.2+	1999 12 13	704	0.9−	0.5+	2000 01 04	704	0.3+	0.6−
1998 08 17	704	1.6−	1.6−	1999 12 15	704	0.4+	0.5−	2000 01 04	704	0.7+	0.3−
1998 08 17	704	0.9−	0.9+	1999 12 15	704	0.2+	0.2+	2000 01 04	704	0.8+	0.2−
1998 08 17	704	0.3−	0.8+	1999 12 15	704	0.1−	0.3−	2000 01 06	106	0.2−	0.1−
1999 11 16	704	0.1+	0.0	1999 12 15	704	0.1−	0.6+	2000 01 06	106	0.5+	0.6+

(13457)* 6761 P-L = 1992 RH₂

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

Id. B. G. Marsden (*MPC* 21121)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	354.42276	ω	317.56160	−0.67477669	−0.73786324		
<i>a</i>	3.0680585	Ω	174.80696	+0.71436922	−0.65821867		
<i>e</i>	0.0569398	<i>i</i>	9.73551	+0.18534572	−0.14935202		
<i>P</i>	5.37	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.1−	0.6−	1998 09 26	704	0.2−	0.7+	1998 11 11	704	0.4−	0.5+
1960 09 26	675	0.3+	0.4+	1998 09 26	704	0.9+	0.6+	1999 10 10	704	0.1+	0.0
1960 09 27	675	1.1+	0.3+	1998 09 26	704	1.3+	0.0	1999 10 10	704	0.5+	0.3−
1960 09 28	675	0.2−	0.6+	1998 09 26	704	0.6+	0.3−	1999 10 10	704	0.6+	0.3−
1960 10 17	675	0.7−	1.7−	1998 10 11	699	0.1−	0.3+	1999 10 10	704	0.8+	0.5−
1960 10 22	675	(2.8−	2.7−)	1998 10 11	699	0.1+	0.1−	1999 10 20	704	0.5−	0.4+
1960 10 26	675	0.2−	0.7−	1998 10 11	699	0.2+	0.1−	1999 10 20	704	0.1+	0.0
1992 09 02	809	0.9−	1.2+	1998 10 15	704	0.5+	0.5−	1999 10 20	704	0.4+	0.6+
1992 09 02	809	(2.3−	0.8−)	1998 10 15	704	0.0	0.0	1999 10 20	704	0.2−	0.3+
1992 09 02	809	(3.3−	0.3−)	1998 10 15	704	(2.5+	1.5+)	1999 10 20	704	0.4−	1.0−
1992 09 03	809	1.9−	1.2+	1998 10 20	699	0.6+	0.2−	1999 12 14	704	0.7+	1.2−
1992 09 22	809	1.2+	0.8−	1998 10 20	699	0.0	0.3−	1999 12 14	704	1.8−	2.0+
1992 09 22	809	0.7+	0.7−	1998 10 20	699	0.3+	0.1−	1999 12 14	704	(2.1−	2.5+)
1992 09 22	809	0.0	0.2−	1998 10 28	704	1.0−	0.5+	1999 12 31	106	0.1−	0.2−
1992 09 23	809	0.8+	0.8+	1998 10 28	704	0.2+	0.3−	1999 12 31	106	0.3−	0.9+
1992 09 23	809	0.1+	0.8−	1998 10 28	704	0.5−	0.2−	1999 12 31	106	0.6+	0.7+
1992 09 23	809	0.1−	0.9+	1998 10 28	704	0.5−	0.1+	2000 01 07	704	0.2−	0.3−
1998 09 18	699	0.1+	0.8+	1998 10 29	704	0.9−	0.7−	2000 01 07	704	0.1+	0.0
1998 09 18	699	0.5+	1.3+	1998 10 29	704	1.0−	1.6−	2000 01 07	704	0.4+	0.5+
1998 09 18	699	0.9+	0.5+	1998 10 29	704	0.1+	0.2−	2000 01 07	704	0.2+	0.5+
1998 09 20	809	(3.2+	1.1+)	1998 10 29	704	0.0	0.0	2000 01 07	704	0.3−	0.8+
1998 09 20	809	(2.4+	0.1+)	1998 10 29	704	0.9−	0.6−	2000 01 11	704	0.1−	0.0
1998 09 20	809	(2.5+	0.1+)	1998 11 11	704	0.6−	0.3−	2000 01 11	704	0.2−	0.5−
1998 09 21	809	(3.9+	1.6+)	1998 11 11	704	0.2−	0.5+	2000 01 11	704	0.2+	0.5−
1998 09 21	809	(3.6+	0.2+)	1998 11 11	704	(1.4−	2.1−)	2000 01 11	704	0.1−	0.7−
1998 09 21	809	(2.9+	0.9+)	1998 11 11	704	0.3−	0.2−	2000 01 11	704	0.3+	0.6−

(13458)* 4214 T-1 = 1977 RE₁₉

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (*MPC* 19880)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.23404328	ω	332.16332	−0.59025849	−0.80652144		
<i>a</i>	2.6077859	Ω	153.96976	+0.75403759	−0.56568713		
<i>e</i>	0.1206433	<i>i</i>	4.36989	+0.28813579	−0.17181748		
<i>P</i>	4.21	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	0.5+	0.6+	1996 02 12	327	0.1+	0.0	1999 12 14	704	0.3+	0.1−
1971 03 26	675	1.0−	0.4+	1998 09 27	704	0.8−	0.4+	1999 12 14	704	0.2−	0.2−
1971 03 26	675	0.1+	0.2+	1998 09 27	704	0.3+	2.1+	1999 12 14	704	0.4−	0.3−
1971 03 27	675	0.1+	0.5+	1998 09 27	704	0.1−	0.8−	1999 12 30	106	0.9+	0.8−
1971 04 02	675	0.5+	0.0	1998 09 27	704	0.4−	1.2+	1999 12 30	106	0.8+	0.4+
1971 04 16	675	(2.5+	0.8−)	1999 11 17	704	(2.9+	0.5−)	1999 12 30	106	0.1−	0.3+
1971 04 16	675	0.1−	1.2−	1999 11 17	704	1.4+	0.1−	2000 01 05	704	1.3−	0.3−
1977 09 09	675	0.2+	1.9−	1999 11 17	704	0.5+	0.5−	2000 01 05	704	0.3−	0.3−
1977 09 10	675	0.1+	1.0+	1999 11 17	704	0.5−	0.5+	2000 01 05	704	0.3−	0.3−
1996 02 12	327	0.4+	0.6+	1999 11 17	704	0.6+	0.4+	2000 01 05	704	0.7−	0.6−
1996 02 12	327	0.1+	0.6+	1999 12 14	704	0.3+	0.0	2000 01 05	704	0.4−	0.0
1996 02 12	327	0.0	0.7+	1999 12 14	704	0.3−	0.8+				

(13459)* 4235 T-1 = 1999 XV₃₁

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 37250)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	60.84932	ω	297.55689	+0.29017718	−0.95574290		
<i>a</i>	2.1949045	Ω	135.48535	+0.90059816	+0.25559244		
<i>e</i>	0.1246518	<i>i</i>	3.96715	+0.32360494	+0.14569833		
<i>P</i>	3.25	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	0.9+	1.4−	1998 08 17	704	0.6−	0.6+	1999 12 07	704	0.4−	0.2+
1971 03 26	675	0.1+	0.5−	1998 08 17	704	(2.1+	0.2−)	1999 12 07	704	0.2−	0.8−
1971 03 26	675	0.4−	0.3−	1998 08 17	704	0.4+	0.3+	1999 12 07	704	0.5−	0.0
1971 03 27	675	1.5−	2.1−	1998 08 17	704	(3.2−	2.6+)	1999 12 07	704	0.7−	0.4−
1971 04 02	675	0.0	1.0+	1999 12 05	703	0.5+	1.2+	1999 12 07	704	1.5−	0.3−
1971 04 16	675	0.4+	1.8−	1999 12 05	703	0.4+	1.2+	2000 01 05	704	0.8+	0.2−
1971 04 16	675	0.2−	0.7+	1999 12 05	703	0.1−	0.8−	2000 01 05	704	1.8+	0.1+
1971 05 13	675	0.3−	0.0	1999 12 05	703	0.4+	0.2−	2000 01 05	704	0.2+	0.3−
1971 05 14	675	(3.0−	0.6−)	1999 12 06	704	0.1−	1.0−	2000 01 05	704	0.5+	0.9+
1971 05 16	675	0.3−	1.5+	1999 12 06	704	0.6−	0.0	2000 01 05	704	0.3−	1.4+
1997 04 06	566	0.1−	0.7+	1999 12 06	704	0.0	0.4−	2000 01 06	106	0.5+	0.3+
1997 04 06	566	0.4+	0.7+	1999 12 06	704	0.1−	0.9−	2000 01 06	106	0.1+	0.6+
1997 04 06	566	0.5+	1.2+	1999 12 06	704	0.2−	0.6−	2000 01 06	106	0.7−	0.8+

(13460)* 1083 T-2 = 1996 CU₇

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

Id. G. V. Williams (*MPC* 26912)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	5.47435	ω	119.47748	−0.49460376	−0.86911858		
<i>a</i>	2.6063827	Ω	0.16638	+0.77823956	−0.44296334		
<i>e</i>	0.1926645	<i>i</i>	2.99137	+0.38692416	−0.22003723		
<i>P</i>	4.21	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1971 04 16	675	0.7+	0.7+	1996 02 24	098	1.0+	1.6−	1998 09 25	704	(3.3+	1.1−)
1971 04 16	675	1.6−	1.0−	1996 03 14	098	0.8−	0.2−	1998 09 27	704	1.2−	0.3−
1973 09 19	675	0.1−	0.2−	1996 03 14	098	0.1−	0.1+	1998 09 27	704	1.3+	0.1+
1973 09 19	675	0.7+	0.1−	1996 03 15	566	0.2−	0.6−	1998 09 27	704	(1.5+	2.1+)
1973 09 24	675	1.2−	0.7−	1996 03 15	566	0.1+	0.4−	1998 09 27	704	(0.2+	2.7+)
1973 09 24	675	0.6−	0.2+	1996 03 15	566	0.3−	0.4−	1998 09 30	691	0.3−	0.5+
1973 09 25	675	0.8−	2.0−	1996 03 20	098	1.5−	0.8−	1998 09 30	691	0.3−	0.3+
1973 09 25	675	0.4−	0.0	1996 03 20	098	(2.5−	1.9−)	1998 09 30	691	0.0	0.4+
1973 09 29	675	1.9+	0.2+	1996 03 21	566	0.2−	0.1+	1999 11 16	704	0.7−	0.2+
1973 09 29	675	0.9+	1.4−	1996 03 21	566	0.5−	0.2+	1999 11 16	704	0.1−	0.9+
1973 09 30	675	0.3+	0.0	1996 03 21	566	0.8−	0.1+	1999 11 16	704	0.1−	0.4+
1973 09 30	675	0.0	0.5−	1998 09 13	691	0.6−	0.3+	1999 11 16	704	0.1−	0.4+

2000 JAN. 24

M.P.C. 37613

1973 10 04	675	1.5+	1.9-	1998 09 13	691	0.6-	0.5+	1999 12 15	704	0.1+	0.1-
1973 10 04	675	0.5+	0.9-	1998 09 13	691	0.6-	0.4+	1999 12 15	704	0.3-	0.0
1973 10 05	675	1.4+	0.6+	1998 09 14	704	0.8+	0.5+	1999 12 15	704	0.0	0.0
1973 10 05	675	(1.8+	2.7+)	1998 09 14	704	0.4+	1.3+	1999 12 15	704	0.2+	0.0
1996 01 17	098	0.5+	0.9-	1998 09 14	704	(0.1-	2.0+)	1999 12 15	704	0.6-	0.4+
1996 01 18	098	0.1-	1.5-	1998 09 14	704	0.8-	0.7+	1999 12 30	106	0.2-	1.3+
1996 01 20	098	1.1+	0.8-	1998 09 14	704	0.4-	1.9+	1999 12 30	106	0.1+	1.0+
1996 02 14	098	0.3-	1.1+	1998 09 18	704	0.3+	1.3-	1999 12 30	106	0.1+	1.1+
1996 02 14	098	0.2+	0.4+	1998 09 18	704	0.5-	1.2-	2000 01 03	704	0.0	0.2-
1996 02 14	691	0.5+	0.2-	1998 09 18	704	0.2+	0.9-	2000 01 03	704	0.5+	0.2-
1996 02 14	691	0.0	0.2-	1998 09 19	691	0.2-	0.2+	2000 01 03	704	0.1-	0.3-
1996 02 14	691	0.2+	0.1-	1998 09 19	691	0.2-	0.3+	2000 01 03	704	0.2+	0.3-
1996 02 15	098	0.1-	0.5+	1998 09 19	691	0.1-	0.1+	2000 01 03	704	0.1+	0.1-
1996 02 15	098	1.0+	0.3+	1998 09 24	691	0.2+	0.3+	2000 01 04	704	0.1+	0.3-
1996 02 16	566	0.2+	0.3+	1998 09 24	691	0.2+	0.3+	2000 01 04	704	0.1+	0.4-
1996 02 16	566	0.1+	0.3+	1998 09 24	691	0.5+	0.1+	2000 01 04	704	0.2+	0.4-
1996 02 16	566	0.5+	0.3+	1998 09 25	704	0.9-	0.6-	2000 01 04	704	0.1+	0.1-
1996 02 24	098	1.0-	1.1-	1998 09 25	704	1.1+	1.1-	2000 01 04	704	0.0	0.2+

(13461)* 1607 T-2 = 1982 BS₆ = 1991 PG₁₀

Discovered 1973 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.

Id. E. Bowell (*MPC* 18832), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	88.73831		(2000.0)	P	Q		
<i>n</i>	0.27249265	ω	42.21997	+0.88873743	-0.45716745		
<i>a</i>	2.3563123	Ω	344.87953	+0.37826923	+0.77303002		
<i>e</i>	0.1259999	<i>i</i>	7.44924	+0.25895592	+0.43979825		
<i>P</i>	3.62	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 09 19	675	1.2-	1.1+	1991 09 16	675	0.1+	0.3-	1999 11 17	703	0.5+	0.7+
1973 09 19	675	0.4+	0.6+	1991 09 16	675	0.2+	0.1-	1999 11 17	703	0.5-	0.2+
1973 09 20	675	1.3-	0.2+	1998 07 24	566	0.0	1.0-	1999 12 15	704	0.5-	0.9-
1973 09 24	675	0.9+	1.0+	1998 07 24	566	0.4+	0.8-	1999 12 15	704	1.0-	1.3-
1973 09 24	675	1.3+	0.6+	1998 07 24	566	0.1+	1.2-	1999 12 15	704	0.3-	0.1+
1973 09 25	675	0.7-	0.9-	1998 08 17	704	0.8-	0.3-	1999 12 15	704	0.6-	0.1-
1973 09 25	675	0.4-	0.3+	1998 08 17	704	1.4+	0.2-	1999 12 15	704	0.5-	0.3+
1982 01 26	381	1.3-	0.4+	1998 08 17	704	1.4+	0.5-	1999 12 30	106	0.1-	0.3-
1982 01 26	381	0.8+	0.6+	1998 08 17	704	1.0-	1.4+	1999 12 30	106	0.0	0.3-
1991 08 07	675	0.0	0.8+	1998 08 17	704	0.1-	1.5+	1999 12 30	106	0.1+	0.8+
1991 08 07	675	1.5+	1.4-	1999 10 15	704	1.6-	0.6-	2000 01 03	704	0.4+	0.7-
1991 08 07	675	0.3-	0.8-	1999 10 15	704	0.6+	0.2-	2000 01 03	704	0.9+	0.3-
1991 08 07	675	0.0	1.9-	1999 10 15	704	0.0	0.8-	2000 01 03	704	0.8+	1.7-
1991 08 08	675	0.3-	0.7+	1999 10 15	704	0.3-	0.5+	2000 01 03	704	0.5+	0.8-
1991 08 08	675	0.1-	1.0+	1999 10 15	704	0.5+	0.1-	2000 01 03	704	0.4+	0.5-
1991 08 10	675	0.5-	1.6-	1999 10 15	704	1.0+	0.3+	2000 01 06	699	0.2+	0.1+
1991 09 10	675	(0.5+	2.7-)	1999 10 15	704	1.1-	0.4+	2000 01 06	699	0.2-	0.0
1991 09 11	675	0.4+	0.4-	1999 11 17	703	0.6-	1.0+	2000 01 06	699	0.1+	0.5+
1991 09 11	675	0.4-	0.2-	1999 11 17	703	0.3-	0.1+				

(13462)* 2076 T-2 = 1996 XK₃₀

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

Id. G. V. Williams (*MPC* 28880)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	241.82216		(2000.0)	P	Q		
<i>n</i>	0.31187392	ω	60.93104	-0.47354097	+0.88077149		
<i>a</i>	2.1535255	Ω	180.80563	-0.82499552	-0.44384199		
<i>e</i>	0.1034695	<i>i</i>	2.96217	-0.30844990	-0.16506322		
<i>P</i>	3.16	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	1.0+	1.4+	1973 10 05	675	1.6-	0.1-	1999 12 08	704	0.6+	0.6+
1973 09 19	675	0.6+	1.7-	1992 09 30	691	1.4-	0.6+	1999 12 08	704	0.1+	0.1+

1973 09 20	675	1.1-	0.3-	1992 09 30	691	1.1-	0.5+	1999 12 08	704	0.0	0.2+
1973 09 24	675	0.1-	0.8-	1992 09 30	691	1.4-	0.9+	1999 12 08	704	0.0	0.0
1973 09 24	675	0.4+	0.7+	1995 08 19	809	0.2-	0.7+	1999 12 14	704	0.8+	0.5-
1973 09 25	675	0.3+	2.2-	1995 08 20	809	0.3+	1.4+	1999 12 14	704	0.4-	0.0
1973 09 25	675	1.3+	1.1-	1995 08 22	809	0.5+	0.2+	1999 12 14	704	0.1+	0.1+
1973 09 29	675	0.1+	1.4+	1996 12 15	691	0.2-	0.2+	1999 12 14	704	0.4-	0.2-
1973 09 29	675	1.6+	0.5-	1996 12 15	691	0.4-	0.6+	2000 01 05	704	0.2-	0.3+
1973 09 29	675	0.7-	0.5-	1996 12 15	691	0.1-	0.5+	2000 01 05	704	0.0	0.1-
1973 09 29	675	1.2+	1.0-	1996 12 17	691	0.0	0.3+	2000 01 05	704	0.3+	0.3-
1973 09 30	675	1.1+	1.0-	1996 12 17	691	0.3-	0.3+	2000 01 05	704	0.2+	1.4-
1973 09 30	675	0.7-	1.4+	1996 12 17	691	0.8-	0.5+	2000 01 07	704	0.5+	0.2+
1973 09 30	675	0.3+	0.1-	1998 08 17	704	0.4+	0.3+	2000 01 07	704	0.9+	0.3+
1973 09 30	675	0.2-	0.4+	1998 08 17	704	0.4-	0.6+	2000 01 07	704	0.4+	0.0
1973 10 04	675	0.7-	1.1-	1998 08 17	704	0.3-	0.1+	2000 01 07	704	0.2+	0.5+
1973 10 04	675	(1.4-	3.1+)	1998 08 17	704	0.2-	0.0	2000 01 07	704	0.2-	0.2+
1973 10 04	675	1.0+	2.4-	1998 08 17	704	1.4-	1.1+	2000 01 07	704	0.3-	0.1-
1973 10 04	675	0.6-	1.8+	1998 08 23	704	0.3+	0.8+	2000 01 07	704	0.2-	0.3+
1973 10 05	675	1.2+	1.4-	1998 08 23	704	0.1-	0.8+	2000 01 07	704	0.2+	0.6+
1973 10 05	675	0.6-	0.2-	1998 08 23	704	0.3-	1.0+	2000 01 07	704	0.4+	0.3+
1973 10 05	675	0.2-	0.1-	1998 08 23	704	1.0+	0.4-	2000 01 07	704	0.1+	1.0+

(13463)* 5159 T-2 = 1996 SQ₇

Discovered 1973 Sept. 25 by C. J. van Houten and I. van Houten-Groeneveld
on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 28083)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	48.11300		(2000.0)	P	Q		
<i>n</i>	0.08431959	ω	95.16221	+0.50899900	-0.85388228		
<i>a</i>	5.1505119	Ω	323.57370	+0.69934626	+0.48382832		
<i>e</i>	0.0081849	<i>i</i>	10.54336	+0.50183147	+0.19182078		
<i>P</i>	11.69	<i>H</i>	11.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 09 20	675	(3.5+ 2.5-)	1996 10 03	809	(0.5+ 2.2+)	1997 10 26	688	0.6- 0.1+
1973 09 20	675	(4.0+ 3.6-)	1996 10 03	809	(0.6+ 2.6+)	1997 10 26	688	1.1- 0.1-
1973 09 24	675	0.0 0.2+	1996 10 03	809	(0.1- 2.5+)	1998 12 17	704	0.6+ 0.7+
1973 09 24	675	1.3+ 0.1+	1996 10 04	809	(1.8+ 2.7+)	1998 12 17	704	1.4+ 0.1-
1973 09 25	675	0.3+ 0.1-	1996 10 04	809	(1.0+ 2.5+)	1998 12 17	704	0.1- 0.8-
1973 09 25	675	0.7- 0.7-	1996 10 04	809	(1.4+ 3.1+)	1998 12 17	704	1.3+ 1.6-
1973 09 29	675	0.7+ 0.1-	1996 10 04	549	1.3+ 1.5+	1999 12 12	704	0.4+ 0.6+
1973 09 29	675	0.7+ 0.0	1996 10 04	549	1.6+ 1.2+	1999 12 12	704	0.0 0.1+
1973 09 30	675	1.1+ 1.5-	1996 10 06	816	0.6- 0.4+	1999 12 12	704	0.1- 0.1+
1973 09 30	675	0.4+ 1.2-	1996 10 06	816	0.5- 0.3+	1999 12 12	704	0.1- 0.4-
1973 10 04	675	1.0- 1.4-	1996 10 06	816	0.2- 0.2+	1999 12 12	704	0.1+ 0.6-
1973 10 04	675	0.9- 1.0-	1996 10 06	816	0.2- 0.2+	1999 12 15	704	0.2- 0.2+
1973 10 05	675	0.6+ 1.1+	1996 10 07	816	0.6+ 0.9+	1999 12 15	704	0.2+ 0.9+
1973 10 05	675	0.5+ 0.3-	1996 10 07	816	0.0 0.7+	1999 12 15	704	0.1+ 0.3+
1996 09 14	809	0.4- 0.3-	1996 10 07	816	0.6- 0.2+	1999 12 15	704	0.2- 0.1-
1996 09 15	809	0.0 0.0	1996 10 07	816	0.1- 0.1+	1999 12 15	704	0.3- 0.2+
1996 09 15	809	0.1+ 0.0	1996 10 10	809	0.9- 0.5-	2000 01 02	704	0.3- 0.1-
1996 09 16	809	0.2+ 0.4-	1996 10 16	691	0.1+ 0.7+	2000 01 02	704	0.8+ 0.3-
1996 09 16	809	0.2+ 0.3-	1996 10 16	691	0.1+ 0.7+	2000 01 02	704	0.9- 0.7+
1996 09 16	809	0.9- 0.5-	1996 10 16	691	0.2+ 0.4+	2000 01 04	704	0.2- 0.4+
1996 09 22	809	0.4- 0.0	1996 10 18	809	1.6- 0.0	2000 01 04	704	0.5+ 0.4+
1996 09 22	809	0.2- 0.1-	1996 10 18	809	1.5- 0.7+	2000 01 04	704	0.2- 0.1-
1996 09 30	549	0.7+ 0.1+	1997 10 25	688	1.2- 0.0			
1996 09 30	549	1.0+ 0.8-	1997 10 25	688	0.5- 0.2+			

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Nakano				
M	10.15654		(2000.0)		P		Q		
n	0.18371040	ω	124.26317		-0.14899270		-0.98640394		
a	3.0646453	Ω	334.04078		+0.84717592		-0.09116614		
e	0.1940676	i	9.11488		+0.50999425		-0.13673336		
P	5.37	H	13.4		G	0.15	U	1	
Residuals in seconds of arc									
1977 10 07	675	0.3-	0.4-	1998 08 17	704	0.0	0.6-	1999 12 12	704
1977 10 11	675	0.1-	1.6+	1998 08 17	704	0.4+	1.3-	1999 12 12	704
1977 10 11	675	(0.6+	2.5+)	1998 08 17	704	0.2-	0.0	1999 12 12	704
1977 10 12	675	0.8+	1.8+	1998 08 17	704	0.4-	0.3-	1999 12 13	704
1977 10 12	675	0.5-	1.3+	1998 08 17	704	(3.6-	1.5-)	1999 12 13	704
1977 10 16	675	1.5-	0.8-	1998 09 14	704	0.1-	0.3+	1999 12 13	704
1977 10 16	675	1.0-	0.3-	1998 09 14	704	0.9+	1.0-	1999 12 13	704
1977 10 17	675	0.1-	0.3-	1998 09 14	704	1.1-	0.4-	1999 12 13	704
1977 10 17	675	0.9+	0.3+	1998 09 14	704	0.2-	0.4+	1999 12 15	704
1977 10 22	675	(0.3+	4.6-)	1998 09 18	704	0.4+	1.0+	1999 12 15	704
1977 10 22	675	(0.6+	3.7-)	1998 09 18	704	0.5-	1.0-	1999 12 15	704
1995 02 02	372	0.3-	0.1+	1998 09 18	704	0.0	0.1+	1999 12 15	704
1995 02 02	372	1.3-	0.5-	1998 09 18	704	0.9+	0.8-	1999 12 15	704
1995 02 05	372	0.4-	0.4+	1998 09 18	704	1.5+	1.0+	2000 01 02	704
1995 02 05	372	1.1+	0.6+	1999 12 07	106	0.6-	0.2+	2000 01 02	704
1995 02 07	372	0.7-	1.0-	1999 12 07	106	0.1+	0.6+	2000 01 02	704
1995 02 07	372	1.4-	0.7+	1999 12 07	106	0.0	0.4+	2000 01 02	704
1995 02 19	372	1.3+	1.1-	1999 12 12	704	0.3+	0.5-	2000 01 02	704
1995 02 19	372	2.1+	1.4+	1999 12 12	704	0.4+	0.3-		

(13465)* 1194 T-3 = 1991 OE₁

Discovered 1977 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPC* 19883)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i>	125.31969		(2000.0)		P		Q				
<i>n</i>	0.27388850	ω	8.73023		+0.77469579		+0.62726363				
<i>a</i>	2.3482997	Ω	312.10664		−0.58646490		+0.66548040				
<i>e</i>	0.1289120	<i>i</i>	6.18390		−0.23644314		+0.40456912				
<i>P</i>	3.60	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1977 10 16	675	0.1+	0.3+	1997 03 05	704	0.6−	0.1−	1999 12 15	704	0.5+	0.4−
1977 10 16	675	0.4−	0.2+	1999 10 14	704	0.1−	0.8+	1999 12 15	704	0.2+	0.6−
1977 10 17	675	0.4−	0.3+	1999 10 14	704	0.4−	0.3+	1999 12 15	704	0.3+	0.9−
1977 10 17	675	0.6+	0.6+	1999 10 14	704	0.2−	0.5+	1999 12 15	704	0.4+	0.8−
1977 10 22	675	0.1+	0.4−	1999 10 14	704	0.0	0.4−	2000 01 02	704	0.4+	0.4−
1977 10 22	675	0.6−	0.2+	1999 10 14	704	0.4+	0.4−	2000 01 02	704	1.0+	0.4+
1991 07 18	809	1.8−	0.9+	1999 12 01	106	0.3+	0.3+	2000 01 02	704	0.9−	0.6−
1991 07 18	809	1.3−	0.9+	1999 12 01	106	0.7−	0.1−	2000 01 02	704	0.4−	1.0−
1991 07 18	809	0.9−	0.8+	1999 12 01	106	0.6−	0.4−	2000 01 04	704	0.4+	0.2−
1991 07 19	809	0.4+	0.3+	1999 12 12	704	0.2−	0.3+	2000 01 04	704	0.2−	0.1+
1991 07 19	809	0.9+	0.3+	1999 12 12	704	0.2−	1.1+	2000 01 04	704	0.4+	0.0
1991 08 05	809	1.5+	1.5−	1999 12 12	704	(1.1−	2.4+)	2000 01 04	704	0.3+	0.1−
1991 08 05	809	0.5+	1.9−	1999 12 12	704	0.2−	0.7+	2000 01 04	704	0.4+	0.3−
1991 08 05	809	1.3+	1.9−	1999 12 12	704	0.2+	0.4+				
1997 03 05	704	0.3+	0.5−	1999 12 15	704	0.9−	0.1+				

(13466)* 2349 T-3 = 1990 DO₈ = 1998 VX₂₀

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

Id. G. V. Williams (*MPC* 33328), A. Doppler (*MPC* 34569), A. Milani (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i>	83.91445		(2000.0)	P		Q					
<i>n</i>	0.18961249	ω	187.72616	+0.62808681		-0.76987895					
<i>a</i>	3.0007151	Ω	223.45736	+0.72243827		+0.63093780					
<i>e</i>	0.0679714	<i>i</i>	9.46500	+0.28911920		+0.09593691					
<i>P</i>	5.20	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1977 10 07	675	(3.0+	0.8-)	1998 10 19	691	0.2+	0.1+	1998 12 08	699	0.3+	1.4+
1977 10 11	675	0.4-	0.1+	1998 10 19	691	0.2+	0.2+	1998 12 08	699	0.3+	0.4+
1977 10 11	675	0.2-	0.1-	1998 10 19	691	0.3+	0.3+	1999 01 06	699	1.0-	1.2+
1977 10 12	675	0.4+	0.9-	1998 11 10	704	0.0	0.1+	1999 01 06	699	0.6-	1.3+
1977 10 12	675	1.5-	1.9-	1998 11 10	704	0.1+	0.3+	1999 01 06	699	0.5+	0.8+
1977 10 16	675	0.9+	1.1-	1998 11 10	704	0.8-	0.2+	1999 12 14	704	0.7+	0.4+
1977 10 16	675	0.8+	1.8-	1998 11 10	704	0.7+	0.6-	1999 12 14	704	0.2+	1.0-
1977 10 17	675	0.5-	0.7+	1998 11 11	704	0.1+	0.6-	1999 12 14	704	0.7-	0.6-
1977 10 17	675	1.0-	0.2+	1998 11 11	704	0.9-	0.4-	1999 12 14	704	0.8+	0.7-
1977 10 21	675	2.0+	1.2-	1998 11 11	704	0.0	0.5-	2000 01 07	699	0.3-	0.3-
1977 10 21	675	(2.8+	1.0-)	1998 11 11	704	0.0	0.1-	2000 01 07	699	0.3-	0.4+
1977 10 22	675	1.1+	0.5-	1998 11 11	699	0.3+	0.1+	2000 01 07	699	0.4+	1.2+
1977 10 22	675	0.2+	1.0-	1998 11 11	704	1.0-	0.2+	2000 01 08	704	0.3-	0.1-
1990 02 24	809	(1.0-	4.4+)	1998 11 11	699	0.3+	0.1-	2000 01 08	704	0.0	0.0
1990 02 24	809	(2.1-	5.7+)	1998 11 11	699	0.2+	0.1+	2000 01 08	704	0.0	0.0
1990 02 24	809	(2.2-	4.6+)	1998 11 24	699	0.4+	0.7+	2000 01 08	704	0.6+	0.1-
1996 05 14	566	0.2-	0.6-	1998 11 24	699	0.1-	0.4+	2000 01 08	704	0.1-	0.2+
1996 05 14	566	0.1+	0.1-	1998 11 24	699	0.4-	0.5-	2000 01 11	704	0.1-	0.2-
1996 05 14	566	0.1-	0.2+	1998 11 25	691	0.3+	0.1-	2000 01 11	704	0.3-	0.6-
1998 10 18	699	1.1-	1.1+	1998 11 25	691	0.3+	0.1-	2000 01 11	704	0.8-	0.4-
1998 10 18	699	0.2-	1.0+	1998 11 25	691	0.1+	0.2-	2000 01 11	704	0.2-	0.8-
1998 10 18	699	0.4-	0.6+	1998 12 08	699	0.7+	0.7+	2000 01 11	704	0.4-	1.5-

(13467)* 2676 T-3

Discovered 1977 Oct. 11 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5					Williams				
<i>M</i>	225.93450		(2000.0)		P		Q		
<i>n</i>	0.27791237	ω	39.80594		-0.31073952		+0.94977395		
<i>a</i>	2.3255774	Ω	212.14002		-0.88882406		-0.30415775		
<i>e</i>	0.1159043	<i>i</i>	3.99019		-0.33679777		-0.07360374		
<i>P</i>	3.55	<i>H</i>	14.8		<i>G</i>	0.15	<i>U</i>	2	
Residuals in seconds of arc									
1977 10 07	675	1.2+	0.8-	1998 08 03	699	0.9+	0.7-	1998 09 21	699
1977 10 07	675	(0.9+	2.9-)	1998 08 17	704	0.7-	0.1+	1998 09 21	699
1977 10 11	675	0.0	0.2-	1998 08 17	704	1.2-	0.2+	1998 09 25	704
1977 10 11	675	0.5-	0.6-	1998 08 17	704	1.3-	0.7+	1998 09 25	704
1977 10 11	675	0.1+	0.2-	1998 08 17	704	1.4-	0.3+	1998 09 25	704
1977 10 11	675	0.1-	0.0	1998 08 17	704	1.9-	0.2+	1998 09 25	704
1977 10 12	675	0.2-	0.3+	1998 08 23	704	0.0	0.1+	1998 09 25	704
1977 10 12	675	0.7+	0.1+	1998 08 23	704	1.2-	1.5-	1998 09 27	704
1977 10 12	675	0.1+	0.2-	1998 08 23	704	(0.6+	2.1-)	1998 09 27	704
1977 10 12	675	0.4+	0.1-	1998 08 23	704	1.2-	0.7+	1998 09 27	704
1977 10 16	675	0.7+	1.4-	1998 08 23	704	(2.2-	1.3+)	1998 09 27	704
1977 10 16	675	0.7+	1.8-	1998 08 26	699	0.7-	0.5+	1998 09 27	704
1977 10 17	675	0.4-	0.3-	1998 08 26	699	1.4-	0.3+	1999 12 08	704
1977 10 17	675	0.8+	1.9-	1998 08 26	699	0.2-	0.6+	1999 12 08	704
1977 10 21	675	0.2-	0.7+	1998 09 14	704	0.8+	0.1-	1999 12 08	704
1977 10 21	675	1.6-	1.4+	1998 09 14	704	0.3-	0.4+	1999 12 08	704
1977 10 22	675	(3.9-	0.8-)	1998 09 14	704	0.8+	0.1+	1999 12 14	704
1977 10 22	675	1.2+	0.1+	1998 09 14	704	(0.8+	2.8-)	1999 12 14	704
1991 09 15	691	1.5-	0.0	1998 09 14	704	1.1+	0.3-	1999 12 14	704
1991 09 15	691	1.1-	0.2-	1998 09 15	699	0.9+	1.4-	2000 01 05	704
1991 09 15	691	1.1-	0.1+	1998 09 15	699	0.2+	1.0+	2000 01 05	704
1997 04 29	704	0.3+	0.1+	1998 09 15	699	0.8-	0.6+	2000 01 05	704
1997 04 29	704	0.1-	0.6-	1998 09 18	704	1.5+	0.5+	2000 01 05	704
1997 04 29	704	0.7-	0.7-	1998 09 18	704	(2.2+	1.6-)	2000 01 06	704

2000 JAN. 24

1997 04 29	704	0.1−	0.8−	1998 09 18	704	1.8+	1.4−	2000 01 06	704	0.3−	0.1−
1998 08 03	699	1.1−	0.5+	1998 09 18	704	0.7+	1.0+	2000 01 06	704	0.4−	0.3+
1998 08 03	699	0.0	0.6−	1998 09 21	699	0.8+	0.9+				

(13468)* 3378 T-3

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

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	6.57510		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.27868995	ω	8.57353	−0.83525322		−0.54976984	
<i>a</i>	2.3212496	Ω	138.06991	+0.50357725		−0.77229780	
<i>e</i>	0.1597870	<i>i</i>	0.87938	+0.22082123		−0.31829110	
<i>P</i>	3.54	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 10 07	675	1.3−	0.4−	1998 08 30	691	1.8+	0.8+	1998 09 27	704	1.1−	1.6−
1977 10 11	675	0.9−	0.1+	1998 08 30	691	1.3+	0.2−	1998 09 27	704	0.2+	0.3+
1977 10 11	675	1.4−	1.1+	1998 08 30	691	0.2−	0.4+	1998 09 27	704	1.5+	0.7−
1977 10 12	675	2.0+	1.7−	1998 09 14	704	0.2−	0.2−	1998 09 27	704	0.2−	0.0
1977 10 12	675	1.6+	1.2−	1998 09 14	704	0.4+	0.8−	1998 09 30	691	0.6−	0.3+
1977 10 16	675	0.6+	0.5−	1998 09 14	704	0.0	1.3−	1998 09 30	691	0.4−	0.3+
1977 10 16	675	1.4+	0.3−	1998 09 14	704	(2.3−	2.0+)	1998 09 30	691	0.5−	0.2+
1977 10 17	675	0.9+	1.3−	1998 09 17	699	0.7+	0.1−	1999 12 05	703	0.2+	0.4+
1977 10 17	675	0.1−	0.2+	1998 09 17	699	0.1−	1.7+	1999 12 05	703	0.5+	1.1+
1977 10 21	675	1.2−	0.9−	1998 09 17	699	0.4−	1.1+	1999 12 05	703	0.5+	0.9+
1977 10 21	675	0.2−	0.5−	1998 09 18	704	0.3+	1.5−	1999 12 05	703	1.1+	0.8+
1977 10 22	675	1.2+	1.8−	1998 09 18	704	0.4+	1.0−	2000 01 03	691	0.4−	0.0
1991 09 15	691	0.1+	0.0	1998 09 18	704	0.6−	0.4−	2000 01 03	691	0.4−	0.0
1991 09 15	691	0.3+	0.2+	1998 09 18	704	1.8−	0.4+	2000 01 03	691	0.3−	0.0
1995 11 16	411	0.4+	0.7+	1998 09 18	704	0.2+	0.8+	2000 01 04	704	0.5−	0.0
1995 11 16	411	0.3+	0.3−	1998 09 20	691	0.1−	0.6+	2000 01 04	704	0.2−	0.3−
1995 11 17	411	1.1−	0.8+	1998 09 20	691	0.1−	0.8+	2000 01 04	704	0.4−	0.5+
1995 11 17	411	0.0	0.5+	1998 09 21	691	0.2−	0.7+	2000 01 04	704	0.0	0.1+
1995 11 23	372	1.9−	0.6−	1998 09 21	691	0.2−	0.5+	2000 01 04	704	0.2−	0.9−
1995 11 23	372	(1.0−	2.2+)	1998 09 21	691	0.6−	0.8+	2000 01 07	704	0.2−	0.4+
1995 11 26	411	0.9+	0.5+	1998 09 23	691	0.6−	0.7+	2000 01 07	704	0.2+	0.3−
1995 11 26	411	0.7+	0.3+	1998 09 23	691	1.0−	1.1+	2000 01 07	704	0.2+	0.4−
1995 11 26	411	0.3+	0.3−	1998 09 23	691	0.8−	0.7+	2000 01 07	704	0.4+	0.3+
1998 08 27	691	0.4+	0.1−	1998 09 26	691	0.4−	0.4+	2000 01 07	704	0.6+	0.6−
1998 08 27	691	0.6+	0.1−	1998 09 26	691	0.4−	0.7+				
1998 08 27	691	0.4+	0.1+	1998 09 26	691	0.1−	0.6+				

(13469)* 3424 T-3 = 2073 T-1 = 1997 GY₂₂

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

Id. G. V. Williams (*MPC* 19331, *MPC* 29939)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	137.20459		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.23099911	ω	172.71718	+0.82010645		+0.57190968	
<i>a</i>	2.6306466	Ω	152.37355	−0.52699168		+0.76754162	
<i>e</i>	0.0324797	<i>i</i>	2.29474	−0.22294658		+0.28948088	
<i>P</i>	4.27	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1971 03 24	675	(2.5−	0.4−)	1997 04 30	704	0.6+	0.2+	1998 09 14	704	0.4−	0.4−
1971 03 25	675	2.3−	0.6+	1997 04 30	704	0.1−	0.8+	1998 09 14	704	0.2−	0.8−
1971 03 25	675	2.0−	0.2−	1997 04 30	704	1.1+	0.5−	1998 09 15	426	0.5−	0.7−
1971 03 26	675	2.0−	1.5−	1997 04 30	704	1.0+	0.2−	1998 09 15	426	0.1+	0.6−
1971 03 27	675	2.1−	0.6−	1997 05 01	704	0.7+	0.4−	1998 09 15	426	0.7−	0.2−
1977 10 07	675	2.2+	0.6+	1997 05 01	704	0.0	0.0	1998 09 27	704	(0.6+	2.0−)
1977 10 11	675	(1.8−	2.5+)	1997 05 01	704	1.1+	0.1+	1998 09 27	704	1.4−	1.2−
1977 10 11	675	0.5+	1.7+	1997 05 01	704	1.1+	0.2−	1998 09 27	704	1.6−	0.5+
1977 10 12	675	(3.0+	0.0)	1997 05 01	704	0.7+	0.0	1998 09 27	704	1.1−	0.2+
1977 10 16	675	0.4+	0.7−	1997 05 05	704	0.0	0.1−	1998 11 09	910	1.0−	0.7−
1977 10 16	675	2.1+	0.0	1997 05 05	704	0.6+	0.4−	1998 11 09	910	1.1−	0.5−

M.P.C. 37615

1977 10 17	675	0.7+	0.2−	1997 05 05	704	1.1+	0.1+	1998 11 09	910	1.1−	0.4−
1977 10 17	675	1.1+	0.1+	1997 05 05	704	0.7+	0.5+	1999 12 07	704	0.1+	0.7−
1977 10 21	675	0.2−	0.3+	1997 05 27	910	0.0	0.0	1999 12 07	704	0.4−	0.4−
1977 10 21	675	0.5+	1.3+	1997 05 27	910	0.2+	0.0	1999 12 07	704	0.2+	0.5−
1977 10 22	675	(5.0+	0.7−)	1997 05 27	910	0.3+	0.2−	1999 12 07	704	0.3−	0.6−
1994 10 06	691	0.6−	0.5+	1997 05 29	910	0.3−	0.2−	1999 12 08	704	0.2−	0.7−
1994 10 06	691	0.3−	0.6+	1997 05 29	910	0.2−	0.1−	1999 12 08	704	0.4−	0.7−
1994 10 06	691	0.0	0.0	1997 05 29	910	0.6−	0.3−	1999 12 08	704	0.4+	0.1−
1997 04 06	704	1.5+	0.1−	1998 08 17	704	0.5−	0.9+	1999 12 08	704	0.5+	1.0−
1997 04 06	704	0.4−	0.3−	1998 08 17	704	1.2+	1.0−	1999 12 16	704	0.2−	0.4+
1997 04 07	809	(0.5−	2.4+)	1998 08 17	704	0.3−	1.0+	1999 12 16	704	0.1−	0.2+
1997 04 07	809	(1.2−	2.3+)	1998 08 17	704	0.2+	0.4−	1999 12 16	704	0.4+	0.2+
1997 04 07	809	1.2−	1.1+	1998 08 17	704	0.8+	1.8−	2000 01 05	704	0.1−	0.4+
1997 04 08	809	0.9−	1.0−	1998 09 12	426	0.6+	0.5+	2000 01 05	704	0.4−	0.4+
1997 04 08	809	0.5−	1.4−	1998 09 12	426	0.1+	0.2+	2000 01 05	704	0.2−	0.6+
1997 04 08	809	0.4−	0.7−	1998 09 12	426	0.8−	0.3+	2000 01 05	704	0.5−	0.3+
1997 04 08	704	0.3+	0.6+	1998 09 14	704	1.1+	1.3−	2000 01 05	704	0.5+	0.2+
1997 04 08	704	0.2+	0.9+	1998 09 14	704	0.1−	1.1−				
1997 04 30	704	1.6+	0.2+	1998 09 14	704	0.6−	1.0−				

(13470)* 3517 T-3 = 1994 TZ₁

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

Id. T. Kobayashi (*MPC* 24238), G. V. Williams (*ibid.*)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	90.84926		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.23236379	ω	353.15694	+0.88638313		−0.46250863	
<i>a</i>	2.6203366	Ω	34.41549	+0.42643191		+0.79863559	
<i>e</i>	0.1101139	<i>i</i>	2.05490	+0.18022423		+0.38505450	
<i>P</i>	4.24	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 10 07	675	1.7+	2.2−	1994 10 26	691	0.7+	0.5+	1998 09 27	704	0.2−	0.8+
1977 10 11	675	0.0	1.0+	1994 10 26	691	0.6+	1.1+	1998 09 27	704	0.5+	0.2+
1977 10 11	675	0.2+	0.3+	1994 10 29	114	0.2−	0.1−	1998 10 10	699	0.6+	1.3+
1977 10 12	675	1.0+	0.3+	1994 10 29	114	(3.1−	1.2−)	1998 10 10	699	0.3+	0.4+
1977 10 12	675	0.6+	2.0+	1994 11 01	114	0.4+	0.9−	1998 10 10	699	(3.3−	0.4+)
1977 10 16	675	0.1−	0.1−	1994 11 01	114	(2.9−	1.0−)	1999 11 16	704	0.2−	0.5−
1977 10 16	675	0.8−	1.4−	1998 08 17	704	0.1−	1.3+	1999 11 16	704	0.6−	0.1−
1977 10 17	675	0.7−	1.2−	1998 08 17	704	0.6−	0.6+	1999 11 16	704	0.4+	1.2−
1977 10 17	675	1.0−	0.8−	1998 08 17	704	1.3−	0.1+	1999 12 15	703	0.3+	1.2+
1977 10 21	675	0.5+	0.5+	1998 08 17	704	0.8+	0.3+	1999 12 15	703	0.3−	1.2+
1977 10 21	675	0.9−	0.2−	1998 08 17	704	1.4−	0.3−	1999 12 15	703	0.1+	0.7+
1977 10 22	675	0.8+	1.1−	1998 09 14	704	0.1+	0.6−	1999 12 15	703	0.2−	0.9+
1977 10 22	675	(1.3+	2.7−)	1998 09 14	704	0.8−	0.4−	2000 01 04	704	0.2+	0.5−
1994 10 03	114	1.1+	0.0	1998 09 14	704	0.5−	0.1−	2000 01 04	704	0.0	0.6−
1994 10 03	114	(3.7−	2.8+)	1998 09 14	704	0.7−	1.3−	2000 01 04	704	0.1+	0.2−
1994 10 04	114	1.9−	0.1−	1998 09 25	704	0.1−	0.6+	2000 01 04	704	0.0	0.3−
1994 10 04	114	0.4−	0.4−	1998 09 25	704	0.9+	1.1−	2000 01 04	704	0.1−	0.5−
1994 10 05	114	(3.7−	0.0)	1998 09 25	704	0.4+	0.2+	2000 01 06	704	0.9−	0.5−
1994 10 07	114	(1.5−	2.8+)	1998 09 25	704	0.7+	1.2−	2000 01 06	704	0.1+	0.4−
1994 10 08	114	(0.4+	2.2+)	1998 09 25	704	0.6+	1.4−	2000 01 06	704	0.3+	0.1+
1994 10 09	114	1.9−	1.4+	1998 09 27	704	0.4+	0.3+	2000 01 06	704	0.5+	0.2+
1994 10 10	114	0.1+	1.8+	1998 09 27	704	0.5+	0.2−				
1994 10 26	691	0.1−	0.6+	1998 09 27	704	0.6+	0.4−				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	260.21376		(2000.0)	P		Q			
<i>n</i>	0.28622820	ω	166.77248	+0.15634047	+0.98421866				
<i>a</i>	2.2803128	Ω	112.17273	−0.91415246	+0.17596747				
<i>e</i>	0.1531405	<i>i</i>	5.13557	−0.37400929	−0.01868373				
<i>P</i>	3.44 <th><i>H</i></th> <td>14.2<th><i>G</i></th><td>0.15<th><i>U</i></th><td>2<td colspan="2"></td></td></td></td>	<i>H</i>	14.2 <th><i>G</i></th> <td>0.15<th><i>U</i></th><td>2<td colspan="2"></td></td></td>	<i>G</i>	0.15 <th><i>U</i></th> <td>2<td colspan="2"></td></td>	<i>U</i>	2 <td colspan="2"></td>		
Residuals in seconds of arc									
1977 10 07	675	1.6+	0.8+	1997 06 07	691	0.2+	0.0	1998 11 24	704 0.1+ 0.1+
1977 10 11	675	0.2+	1.1−	1997 06 07	691	0.2+	0.1−	1998 11 24	704 0.3− 0.9+
1977 10 11	675	1.0−	1.7−	1997 06 08	809	1.4+	1.3+	1998 11 24	704 1.0− 1.3−
1977 10 12	675	0.3+	1.9−	1997 06 08	809	0.7+	1.7+	1998 11 24	704 1.3− 0.6+
1977 10 12	675	0.4−	1.2−	1997 06 08	809	0.8+	1.6+	1998 11 24	704 0.8− 1.4+
1977 10 16	675	0.8−	1.4+	1997 06 09	809	0.3+	1.4+	1999 12 06	704 1.0+ 0.7−
1977 10 16	675	1.4−	0.9+	1997 06 09	809	0.9+	1.9+	1999 12 06	704 1.0+ 0.2−
1977 10 17	675	0.2+	0.8+	1997 06 09	809	0.1−	1.8+	1999 12 06	704 1.2+ 0.7+
1977 10 17	675	0.6+	1.2+	1997 06 11	691	0.1−	0.2−	1999 12 06	704 0.7− 1.0+
1977 10 21	675	(2.7+ 0.1+)		1997 06 11	691	0.0	0.2−	1999 12 06	704 1.0+ 0.4+
1977 10 21	675	2.1+	0.2−	1997 06 11	691	0.1−	0.5−	1999 12 06	704 0.1− 1.2+
1977 10 22	675	(3.5+ 0.3−)		1997 07 03	691	0.7−	0.2−	1999 12 06	704 0.5− 0.3−
1977 10 22	675	1.7+	0.1−	1997 07 03	691	0.5−	0.3−	2000 01 04	704 0.2− 0.4−
1990 04 18	372	1.7−	1.0−	1997 07 03	691	0.6−	0.8−	2000 01 04	704 0.4+ 0.3−
1990 04 18	372	(0.6− 2.4+)		1997 07 08	691	0.3−	1.0−	2000 01 04	704 0.4+ 1.0−
1990 04 24	372	(2.8+ 0.1+)		1997 07 08	691	0.4−	0.4−	2000 01 04	704 0.6+ 0.8+
1990 04 29	372	1.3−	1.5−	1997 07 08	691	0.4−	0.3−	2000 01 08	704 0.2+ 0.5−
1990 04 29	372	1.7−	0.1+	1998 11 11	704	0.1−	0.3+	2000 01 08	704 0.2+ 0.0
1990 05 15	372	(4.4− 1.0−)		1998 11 11	704	0.8+	0.9−	2000 01 08	704 0.1+ 0.7−
1990 05 15	372	1.1−	0.1−	1998 11 11	704	0.2+	1.5−	2000 01 08	704 0.5+ 0.1−
1997 05 30	596	0.5+	0.3−	1998 11 11	704	1.9−	1.5+	2000 01 08	704 1.2+ 0.1+
1997 05 30	596	0.8+	0.3−	1998 11 11	699	0.2−	1.5+	2000 01 10	699 0.8+ 0.1+
1997 05 30	596	0.5+	0.4−	1998 11 11	699	0.2−	0.4−	2000 01 10	699 0.7+ 0.4−
1997 06 07	691	0.2+	0.1−	1998 11 11	699	0.2−	0.1+	2000 01 10	699 1.8− 0.3−

(13472)* 4064 T-3 = 1996 GY₁₆

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

Id. T. Kobayashi (*MPC* 27565)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	68.56903		(2000.0)	P		Q					
<i>n</i>	0.18557566	ω	216.95051	+0.88022579	−0.47366030						
<i>a</i>	3.0440752	Ω	171.17663	+0.46801907	+0.85631332						
<i>e</i>	0.1059105	<i>i</i>	10.94698	+0.07849016	+0.20584803						
<i>P</i>	5.31	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1977 10 07	675	0.7+	0.2+	1998 08 17	704	0.7−	0.0	1998 09 18	704	(3.5−	2.5+)
1977 10 11	675	0.1+	0.9−	1998 08 17	704	0.7−	0.6−	1998 09 27	704	0.5+	0.0
1977 10 11	675	0.0	1.7−	1998 08 17	704	0.1−	0.9−	1998 09 27	704	0.8+	0.5−
1977 10 12	675	1.5−	0.2−	1998 08 17	704	(2.1−	0.4+)	1998 09 27	704	0.2+	0.6−
1977 10 12	675	0.7−	1.0−	1998 08 23	704	0.4−	0.1+	1998 09 27	704	0.8+	1.3+
1977 10 16	675	0.3−	0.2+	1998 08 23	704	0.6+	0.7+	1998 09 27	704	0.6−	0.8+
1977 10 16	675	0.6−	0.9+	1998 08 23	704	0.5−	0.6−	1999 10 20	704	0.2−	0.6−
1977 10 17	675	1.7+	0.2−	1998 08 23	704	1.7−	2.0−	1999 10 20	704	0.5+	1.2+
1977 10 17	675	0.2+	0.8−	1998 08 23	704	1.2−	1.4−	1999 10 20	704	0.1+	0.9+
1977 10 21	675	0.1+	1.4+	1998 08 26	699	0.2+	0.9+	1999 12 05	704	0.3+	0.1−
1977 10 21	675	1.0−	0.5+	1998 08 26	699	0.8−	0.2+	1999 12 05	704	0.5+	0.0
1977 10 22	675	(3.2+ 0.7−)		1998 08 26	699	0.2−	0.6+	1999 12 05	704	1.0+	0.4−
1977 10 22	675	1.8+	0.9−	1998 09 14	704	0.5+	0.3+	1999 12 05	704	0.0	0.3+
1996 04 15	691	0.1−	1.1−	1998 09 14	704	0.6+	0.1+	2000 01 07	704	0.1+	1.3+
1996 04 15	691	0.0	1.1−	1998 09 14	704	1.0+	0.8−	2000 01 07	704	0.5−	0.3−
1996 04 15	691	(0.2− 2.4−)		1998 09 14	704	0.8+	0.5+	2000 01 07	704	0.4+	1.2−
1996 04 21	691	0.3−	1.1−	1998 09 18	704	0.1+	0.1−	2000 01 11	704	0.6−	0.7−
1996 04 21	691	0.5−	0.9−	1998 09 18	704	(1.0−	2.1+)	2000 01 11	704	0.5−	0.2−
1996 04 21	691	0.3−	1.1−	1998 09 18	704	0.3+	0.0	2000 01 11	704	0.7−	1.2−
1998 08 17	704	0.2+	0.6−	1998 09 18	704	1.1+	0.2−	2000 01 11	704	0.5−	0.3−

1937 UD = 1999 AZ₉

Id. DANEOPS

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	210.36126		(2000.0)	P			Q		
n	0.30863643	ω	314.26941	+0.97200240			+0.21879280		
a	2.1685591	Ω	33.36751	−0.14536845			+0.84642237		
e	0.3340040	i	8.96201	−0.18460594			+0.48548829		
P	3.19	H	15.0	G	0.15		U	4	
Residuals in seconds of arc									
1937 10 26	024	(4.7+ 2.7−)	1999 01 14	046	0.2+	0.5+	1999 01 15	046	0.3+ 0.1+
1937 10 27	024	(6.3+ 2.2+)	1999 01 14	557	0.2−	0.0	1999 01 15	046	0.5+ 0.3+
1937 10 28	024	0.1+ 0.2−	1999 01 14	046	0.3+	0.5+	1999 01 15	046	0.6+ 0.0
1937 11 03	024	(2.3− 13.9+)	1999 01 14	046	0.4+	0.4+	1999 01 15	046	0.2+ 0.4−
1937 11 07	024	(0.8+ 5.1+)	1999 01 14	557	0.6−	0.0	1999 01 15	046	0.0 0.1+
1995 12 01	675	0.6− 1.0−	1999 01 14	046	0.2+	0.4+	1999 01 16	704	0.7− 0.3−
1995 12 01	675	0.1− 0.4−	1999 01 14	557	0.3−	0.0	1999 01 16	704	0.8− 0.5−
1998 11 24	699	0.2+ 0.6+	1999 01 15	734	0.5+	0.5−	1999 01 16	704	0.1− 0.4+
1998 11 24	699	0.1+ 0.3−	1999 01 15	734	0.0	0.5+	1999 01 16	704	0.9− 0.1+
1998 11 24	699	0.4− 0.8+	1999 01 15	734	0.5−	0.2+	1999 01 19	704	0.4+ 1.0−
1999 01 09	699	0.3+ 0.4+	1999 01 15	734	0.1−	0.3−	1999 01 19	704	1.2+ 0.6−
1999 01 09	699	1.1+ 0.3+	1999 01 15	422	0.2−	0.1+	1999 01 19	704	0.6+ 0.2−
1999 01 09	699	0.2− 0.3+	1999 01 15	422	0.3−	0.1+	1999 01 19	704	0.2+ 0.3+
1999 01 14	557	0.3− 0.0	1999 01 15	422	1.5−	0.8−			
1999 01 14	046	0.5+ 0.1+	1999 01 15	046	0.2−	0.1−			

1966 PP = 1992 GC₃ = 1999 XG₁₀₀

Id. T. Kobayashi

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	269.32294		(2000.0)	P			Q		
n	0.22122472	ω	164.20737	−0.81478308			+0.57866243		
a	2.7075737	Ω	51.20463	−0.53676770			−0.72961257		
e	0.1627941	i	2.62931	−0.21910948			−0.36443833		
P	4.46	H	13.2	G	0.15	U	4		
Residuals in seconds of arc									
1966 08 07	074	0.0	0.2+	1999 11 16	704	0.7+	0.1−	2000 01 03	704 0.6− 0.5+
1966 08 07	074	0.7−	0.4+	1999 11 16	704	0.6+	0.2−	2000 01 03	704 0.4− 0.1+
1966 08 08	074	1.8+	1.0−	1999 11 16	704	0.5+	0.2−	2000 01 03	704 0.1− 0.6−
1966 08 08	074	0.7+	0.9+	1999 11 16	704	0.5−	0.1+	2000 01 03	704 1.0− 0.9+
1966 08 09	074	(0.6− 2.8−)		1999 12 07	704	0.1+	0.5−	2000 01 04	704 0.5− 0.1+
1966 08 10	074	0.7−	2.4−	1999 12 07	704	0.7+	0.1−	2000 01 04	704 0.1− 0.3−
1966 08 12	074	0.0	1.8−	1999 12 07	704	0.3−	0.3−	2000 01 04	704 0.3− 0.5−
1966 08 16	074	(9.5− 3.4−)		1999 12 07	704	0.4−	1.1−	2000 01 04	704 0.3− 1.2−
1992 04 04	809	0.3+	0.2−	1999 12 07	704	0.0	1.1−	2000 01 04	704 0.1− 0.7−
1992 04 04	809	0.3−	0.6−	1999 12 10	704	1.0−	1.5−	2000 01 24	849 0.3− 1.1+
1992 04 04	809	0.8−	0.6−	1999 12 10	704	0.5+	0.0	2000 01 24	849 0.2+ 0.9+
1992 04 06	809	0.1+	0.4−	1999 12 10	704	0.9+	0.5−	2000 01 24	849 1.5+ 0.7+
1992 04 06	809	0.0	0.5−	1999 12 10	704	0.5+	0.1−		
1992 04 06	809	0.3−	0.7−	2000 01 03	704	0.4−	0.4+		

1967 KC = 1982 HF₃ = 1997 EF₂₅

Id. A. Doppler

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	133.18528		(2000.0)			P		Q			
<i>n</i>	0.19127091	ω	216.59439			−0.24746088		+0.96480462			
<i>a</i>	2.9833447	Ω	39.29956			−0.85231126		−0.17309502			
<i>e</i>	0.1705983	<i>i</i>	8.07477			−0.46079132		−0.19796503			
<i>P</i>	5.15	<i>H</i>	13.2		<i>G</i>	0.15		<i>U</i>	2		
Residuals in seconds of arc											
1967 05 31	808	0.2−	0.2+	1999 10 03	703	0.5−	0.4+	1999 10 09	704	0.5+	0.6+
1967 06 02	808	0.1+	0.0	1999 10 03	703	0.4−	0.2−	1999 10 09	704	0.4+	0.5+
1982 04 25	033	1.5−	0.8−	1999 10 04	704	0.5−	1.2−	1999 10 09	704	0.1+	0.2+

2000 JAN. 24

M.P.C. 37617

1982 04 25	033	0.3−	0.4−	1999 10 04	704	0.3+	0.6−	1999 10 09	704	0.2+	0.1−
1982 04 27	033	0.8+	1.2−	1999 10 04	704	0.2+	0.6−	1999 10 09	704	0.6+	0.2+
1982 04 27	033	0.5−	1.2−	1999 10 04	704	0.1+	0.1−	1999 11 01	703	0.4+	1.4+
1997 03 07	691	0.3−	0.2+	1999 10 04	704	0.8+	1.0−	1999 11 01	703	0.0	1.2+
1997 03 07	691	0.4−	0.1+	1999 10 07	704	0.3+	1.0−	1999 11 01	703	0.1+	0.8+
1997 03 07	691	0.5−	0.1−	1999 10 07	704	0.2−	1.1−	1999 11 01	703	0.1+	0.8+
1997 03 12	691	0.4+	0.0	1999 10 07	704	0.2−	1.3−	1999 11 12	704	0.7+	0.6−
1997 03 12	691	0.3+	0.0	1999 10 07	704	0.4−	0.0	1999 11 12	704	0.5+	1.0−
1997 03 12	691	0.1+	0.0	1999 10 08	704	0.1−	0.8−	1999 11 12	704	0.1+	1.2−
1999 10 03	703	1.5−	0.2+	1999 10 08	704	0.6+	0.1+	1999 11 12	704	0.1+	0.3−
1999 10 03	703	0.5−	0.7+	1999 10 08	704	0.2+	0.0	1999 11 12	704	0.1+	0.0

1968 OJ = 1999 GS₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Kobayashi

<i>M</i>	336.41862		(2000.0)	P	Q		
<i>n</i>	0.21645311	ω	156.04515	+0.63741271	+0.76360152		
<i>a</i>	2.7472203	Ω	153.19475	−0.73870080	+0.64363437		
<i>e</i>	0.1362908	<i>i</i>	13.20856	−0.21914873	+0.05145405		
<i>P</i>	4.55	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1968 07 18	805	(2.8+	4.6−)	1999 04 12	704	1.2−	0.2+	1999 04 16	704	0.5+	0.5+
1968 07 19	805	0.4−	0.4−	1999 04 12	704	0.0	0.2−	1999 04 16	704	2.1+	0.5−
1968 07 25	805	0.2+	0.8+	1999 04 12	704	0.7+	0.5−	1999 04 16	704	0.1+	1.0+
1968 07 30	805	0.1+	0.5−	1999 04 12	704	1.4−	0.5+	1999 04 16	704	(1.2−	3.0+)
1999 04 12	704	0.3−	0.1−	1999 04 16	704	0.6−	0.8−				

1973 SU₁ = 1999 WR₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	322.86714		(2000.0)	P	Q		
<i>n</i>	0.08264643	ω	336.37281	−0.47326144	−0.87760653		
<i>a</i>	5.2197934	Ω	141.75025	+0.82661947	−0.47237878		
<i>e</i>	0.0646035	<i>i</i>	7.08475	+0.30450591	−0.08163989		
<i>P</i>	11.93	<i>H</i>	10.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	(4.9+	1.1−)	1998 11 11	704	1.8−	1.3−	1999 12 06	704	0.4+	0.4−
1973 09 19	675	1.3+	1.9−	1998 11 11	704	1.5−	1.5+	1999 12 06	704	0.6−	0.1+
1973 09 20	675	0.7+	0.4−	1999 11 04	704	0.3+	0.2−	1999 12 13	699	0.2−	1.2+
1973 09 24	675	0.2−	0.7−	1999 11 04	704	0.3+	0.0	1999 12 13	699	0.3+	1.3+
1973 09 24	675	0.1−	1.1−	1999 11 04	704	0.2+	0.5−	1999 12 13	699	1.6+	1.5+
1973 09 25	675	2.0+	0.6−	1999 11 04	704	0.3+	0.2−	1999 12 14	704	0.4+	0.4−
1973 09 25	675	0.7+	0.4+	1999 11 04	704	0.6−	0.6−	1999 12 14	704	0.2−	0.1−
1973 09 29	675	1.3−	0.9−	1999 11 17	699	1.1−	0.2+	1999 12 14	704	0.1+	0.6−
1973 09 29	675	0.4−	1.6+	1999 11 17	699	0.5−	0.1+	1999 12 14	704	0.1+	0.0
1973 09 30	675	0.2+	1.3+	1999 11 17	699	0.3−	0.4+	1999 12 14	704	0.1−	0.2+
1973 09 30	675	0.4−	0.1+	1999 11 28	143	0.7−	0.2−	1999 12 18	143	0.1+	0.0
1973 10 04	675	0.3+	2.4−	1999 11 28	143	0.3−	0.2−	1999 12 18	143	0.6+	0.4−
1973 10 04	675	0.3−	0.7+	1999 11 28	143	0.4+	0.5−	2000 01 05	704	0.1+	0.7−
1973 10 05	675	0.2−	0.3−	1999 11 29	143	0.2−	0.8−	2000 01 05	704	0.2+	0.7−
1973 10 05	675	1.2−	0.8+	1999 11 29	143	0.3+	0.3−	2000 01 05	704	0.2+	0.0
1998 09 18	699	0.5+	0.5+	1999 11 29	143	0.0	0.5−	2000 01 05	704	0.0	0.9+
1998 09 18	699	0.3−	1.1+	1999 11 30	143	0.7−	0.3−	2000 01 05	704	0.3−	0.3+
1998 09 18	699	0.4−	1.1+	1999 11 30	143	0.5−	0.3−	2000 01 07	704	1.6+	0.5−
1998 10 12	699	1.0+	1.1+	1999 11 30	143	0.0	0.1−	2000 01 07	704	0.7−	0.1−
1998 10 12	699	0.1+	0.3−	1999 12 03	699	0.7−	0.3+	2000 01 07	704	0.1−	1.2−
1998 10 12	699	1.5+	0.5−	1999 12 03	699	0.6+	0.1−	2000 01 07	704	0.1−	1.4−
1998 11 11	704	0.0	0.2+	1999 12 03	699	0.7−	1.8+				
1998 11 11	704	0.5−	1.5+	1999 12 06	704	0.8+	0.0				

1973 SC₂ = 2000 AV₁₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	40.73382		(2000.0)	P	Q		
<i>n</i>	0.08346303	ω	25.34697	+0.39751786	−0.91665936		
<i>a</i>	5.1856910	Ω	41.26472	+0.83082217	+0.34040119		
<i>e</i>	0.1166949	<i>i</i>	3.60015	+0.38950492	+0.20943410		
<i>P</i>	11.81	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	0.4+	0.3+	1973 09 30	675	(2.8+	0.3−)	2000 01 04	704	0.5+	0.5+
1973 09 20	675	0.1+	0.5+	1973 10 04	675	0.0	0.2+	2000 01 04	704	0.2−	0.1−
1973 09 24	675	0.8−	1.0+	1973 10 04	675	1.2−	0.6−	2000 01 08	704	0.6+	0.5+
1973 09 24	675	1.4−	1.2+	1973 10 05	675	0.2+	0.6+	2000 01 08	704	0.1+	0.2+
1973 09 29	675	1.2+	2.3−	1973 10 05	675	0.2+	0.5−	2000 01 08	704	0.2−	0.2−
1973 09 29	675	0.5+	0.2−	2000 01 04	704	0.4−	0.1+	2000 01 08	704	0.4−	0.1−
1973 09 30	675	0.8+	0.2−	2000 01 04	704	0.4−	0.8−	2000 01 08	704	0.3+	0.1−

1977 PC₁ = 1977 QR₅ = 1977 RF₄ = 1991 NB₃ = 1993 BY₁₃**= 2000 AQ₅₀**Id. G. V. Williams (d, *MPC* 32287), S. Nakano; 1998 MC₃₂ = 1977 PC₁ (*MPC* 32287) is invalid

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	96.40916		(2000.0)	P	Q		
<i>n</i>	0.27761077	ω	83.57536	+0.97244588	−0.21122278		
<i>a</i>	2.3272614	Ω	288.58490	+0.15054205	+0.89208514		
<i>e</i>	0.2316738	<i>i</i>	5.97467	+0.17800588	+0.39946093		
<i>P</i>	3.55	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 08 14	095	0.9+	0.5−	1993 01 28	809	0.3−	0.3−	2000 01 06	704	0.0	0.4+
1977 08 21	095	0.9−	0.2+	1993 01 28	809	0.6−	1.4−	2000 01 06	678	0.5+	0.1+
1977 09 09	095	0.2+	0.1+	2000 01 05	704	0.1−	0.2+	2000 01 06	704	0.1+	0.3+
1991 07 04	809	1.4−	0.3−	2000 01 05	678	0.0	0.5+	2000 01 06	678	0.3+	0.0
1991 07 04	809	1.1−	0.2−	2000 01 05	704	0.1−	0.2−	2000 01 06	704	0.0	0.4+
1991 07 04	809	0.7−	0.0	2000 01 05	704	0.1−	0.1−	2000 01 06	704	0.1+	0.2+
1991 07 05	809	0.6+	0.8+	2000 01 05	704	0.1+	0.2−	2000 01 11	678	1.4−	0.6+
1991 07 05	809	1.0+	0.7+	2000 01 05	678	1.0+	1.1+	2000 01 11	678	0.5+	0.7+
1991 07 05	809	1.2+	0.6+	2000 01 05	704	0.7+	0.3−				
1993 01 23	809	0.1−	0.5−	2000 01 06	704	0.0	0.1−				

1978 RK₉ = 1999 XW₁₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	347.92636		(2000.0)	P	Q		
<i>n</i>	0.28827133	ω	121.37270	−0.32403195	−0.94587231		
<i>a</i>	2.2695256	Ω	347.49490	+0.83705298	−0.27771532		
<i>e</i>	0.1587360	<i>i</i>	4.80432	+0.44084646	−0.16792790		
<i>P</i>	3.42	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 09 02	809	1.1+	0.4+	1999 12 10	704	0.0	0.6−	1999 12 31	699	0.2−	0.1+
1978 09 02	809	1.5+	0.7+	1999 12 10	704	0.0	0.5−	1999 12 31	699	0.6−	0.4+
1978 09 02	809	1.7+	1.0+	1999 12 10	704	0.4+	0.5−	2000 01 03	704	1.1−	0.6+
1978 09 02	809	1.6+	0.5+	1999 12 10	704	0.2+	0.4−	2000 01 03	704	0.6−	0.1+
1978 09 02	809	1.5+	0.2+	1999 12 10	704	0.3+	0.4−	2000 01 03	704	0.4−	0.7+
1978 09 06	809	1.5+	0.0	1999 12 13	703	0.5−	0.2−	2000 01 03	704	0.3+	0.8+
1978 09 10	809	0.6+	2.4+	1999 12 13	703	0.3−	0.1−	2000 01 03	704	1.8+	0.3+
1978 09 10	809	1.9+	0.1−	1999 12 13	703	0.4−	0.2−	2000 01 04	704	0.8−	0.1+
1978 09 10	809	(3.3+	2.7+)	1999 12 13	703	0.1+	0.1+	2000 01 04	704	0.1+	0.4+
1978 09 10	809	1.7+	1.2+	1999 12 15	704	0.1−	0.2−	2000 01 04	704	0.1−	0.7+
1999 12 07	703	0.2+	0.2−	1999 12 15	704	0.2+	1.0−	2000 01 04	704	0.1−	1.0+
1999 12 07	703	0.2+	0.3+	1999 12 15	704	0.5−	1.1−	2000 01 04	704	0.7+	0.7+
1999 12 07	703	0.3+	0.4+	1999 12 15	704	0.6+	0.8−				
1999 12 07	703	0.3+	0.0	1999 12 31	699	0.0	0.1−				

1978 UW₄ = 1999 XF₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28296154	ω	290.71791	-0.94347765	-0.32200835		
<i>a</i>	2.2978294	Ω	230.58323	+0.32911978	-0.88228477		
<i>e</i>	0.0515343	<i>i</i>	5.83118	+0.03911633	-0.34334270		
<i>P</i>	3.48	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 10 27	675	0.3+	0.2+	1999 11 04	704	0.0	0.1+	1999 12 06	704	0.2+	0.3-
1978 10 28	675	0.0	0.4+	1999 11 04	703	0.0	0.3+	1999 12 06	704	0.5+	0.1+
1978 10 29	675	0.4+	0.6+	1999 11 04	704	0.2+	0.1+	1999 12 07	704	1.0+	0.7+
1978 11 28	675	0.9-	0.4-	1999 11 04	703	0.0	0.1+	1999 12 07	704	1.5+	0.1+
1978 11 29	675	0.4-	0.1-	1999 11 04	704	0.1-	0.3+	1999 12 07	704	(2.1+	0.8-)
1998 06 26	704	0.0	1.2+	1999 11 04	703	0.3+	0.5+	1999 12 07	704	0.9+	0.1+
1998 06 26	704	0.4+	0.1+	1999 11 04	703	0.0	0.4+	1999 12 07	704	0.2-	0.7-
1998 06 26	704	1.0-	0.8-	1999 11 05	704	0.5-	0.6-	2000 01 04	704	0.4+	0.5-
1998 06 26	704	0.6+	0.6-	1999 11 05	704	0.0	1.1-	2000 01 04	704	0.0	0.3+
1998 06 26	704	(5.7-	2.0+)	1999 11 05	704	0.6-	0.7-	2000 01 04	704	0.1-	0.4+
1999 10 03	704	0.7-	1.0-	1999 11 05	704	0.4-	0.6-	2000 01 04	704	1.5-	0.4-
1999 10 03	704	0.0	0.4+	1999 11 05	704	0.5-	0.7-	2000 01 04	704	1.4+	0.3+
1999 10 03	704	0.3-	0.1+	1999 12 04	699	0.2+	0.3+	2000 01 07	704	0.4-	0.4-
1999 10 03	704	0.4-	0.0	1999 12 04	699	0.1-	0.6-	2000 01 07	704	0.8-	0.2+
1999 10 03	704	0.4-	0.1-	1999 12 04	699	0.0	0.6+	2000 01 07	704	0.3-	0.1-
1999 11 04	704	0.4-	0.2+	1999 12 06	704	1.0+	0.9+	2000 01 07	704	0.0	0.3-
1999 11 04	704	0.1-	0.1-	1999 12 06	704	0.9+	0.9+	2000 01 07	704	0.1+	0.5+

1978 VO₅ = 1999 XH₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28388727	ω	119.37228	+0.85176701	-0.52198745		
<i>a</i>	2.2928313	Ω	272.12674	+0.46374123	+0.79108648		
<i>e</i>	0.1126817	<i>i</i>	2.57908	+0.24379710	+0.31892207		
<i>P</i>	3.47	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 11 05	675	0.1+	0.6-	1999 12 07	704	0.7+	0.6+	2000 01 03	704	0.3-	0.1+
1978 11 06	675	0.6-	0.2-	1999 12 07	704	0.4+	0.1+	2000 01 03	704	0.0	0.5-
1978 11 07	675	1.0+	1.0+	1999 12 07	704	0.1-	1.1+	2000 01 03	704	0.5+	0.6-
1978 11 08	675	0.1+	0.4+	1999 12 08	704	0.3+	0.6+	2000 01 05	704	0.2-	0.1+
1978 11 29	675	0.1-	0.2-	1999 12 08	704	0.2+	0.2+	2000 01 05	704	0.1+	0.1-
1978 11 30	675	0.4-	0.9-	1999 12 08	704	0.6-	0.0	2000 01 05	704	0.2-	0.0
1999 11 21	557	0.5-	0.6+	1999 12 08	704	0.6+	0.3-	2000 01 05	704	0.1+	0.1-
1999 11 21	557	0.4+	0.4-	1999 12 08	704	0.3+	0.5-	2000 01 05	704	0.0	0.2+
1999 12 07	704	1.4-	0.7-	2000 01 03	704	0.2+	0.1+				
1999 12 07	704	0.2-	0.3-	2000 01 03	704	0.2-	0.2+				

1978 VX₆ = 1999 XV₉₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23690872	ω	72.18850	-0.68419396	-0.70488254		
<i>a</i>	2.5867156	Ω	62.49600	+0.56333987	-0.67376379		
<i>e</i>	0.1335867	<i>i</i>	12.17976	+0.46317040	-0.22177230		
<i>P</i>	4.16	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 05	675	0.6+	1.1-	1999 12 10	411	0.9-	0.9-	1999 12 19	411	0.0	1.0-
1978 11 06	675	0.5+	0.0	1999 12 10	411	0.4+	0.3+	2000 01 02	704	0.6-	0.3+
1978 11 07	675	0.3+	1.0+	1999 12 15	704	0.2+	0.2-	2000 01 02	704	0.5-	0.2+
1978 11 08	675	0.4-	0.2-	1999 12 15	704	0.4+	0.0	2000 01 02	704	0.1-	0.5+
1978 11 29	675	0.6+	0.1-	1999 12 15	704	0.4+	0.2-	2000 01 02	704	0.3-	0.0
1978 11 30	675	1.7-	0.5+	1999 12 15	704	0.2+	0.4-	2000 01 02	704	0.5+	0.0
1999 12 09	411	0.1+	1.2+	1999 12 15	704	0.6+	0.2+				
1999 12 09	411	0.0	0.1-	1999 12 19	411	0.3-	0.3-				

1978 VQ₈ = 1999 XT₁₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23735616	ω	317.50656	-0.99862755	+0.00591766		
<i>a</i>	2.5834638	Ω	222.91663	+0.01243085	-0.93842302		
<i>e</i>	0.1263191	<i>i</i>	4.38295	-0.05087728	-0.34543772		
<i>P</i>	4.15	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1978 11 05	675	0.5+	0.4+	1999 12 08	704	0.2+	0.5-	2000 01 05	704	0.1-	0.9-
1978 11 06	675	(3.4+	0.6+)	1999 12 08	704	0.4-	0.4+	2000 01 05	704	0.4-	0.4+
1978 11 07	675	0.3+	0.4+	1999 12 08	704	0.4-	0.3+	2000 01 05	704	0.3-	0.4+
1978 11 08	675	0.0	0.3-	1999 12 14	704	0.2+	0.1-	2000 01 05	704	0.4-	0.3-
1978 11 29	675	0.9-	0.0	1999 12 14	704	0.2+	0.2-	2000 01 06	704	0.0	0.3+
1978 11 30	675	0.2+	0.6-	1999 12 14	704	0.1-	0.1+	2000 01 06	704	0.7+	0.0
1999 12 08	704	0.4+	0.1+	1999 12 14	704	0.2+	0.0	2000 01 06	704	0.5+	0.4+
1999 12 08	704	0.2-	0.1+	2000 01 05	704	0.2-	0.2-				

1979 DA = 1999 XY₁₂₀

Id. G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22667865	ω	137.63721	-0.98448525	+0.04872375		
<i>a</i>	2.6639678	Ω	46.00479	-0.13303935	-0.83365081		
<i>e</i>	0.2459528	<i>i</i>	13.55134	+0.11440855	-0.55013845		
<i>P</i>	4.35	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 02 26	046	1.6-	0.2+	1999 11 09	703	0.2-	0.5-	1999 12 15	704	0.6+	0.1-
1979 02 26	046	0.9-	0.2+	1999 11 09	703	0.6+	1.1-	1999 12 15	704	1.2+	0.6-
1979 03 02	046	1.5+	0.5-	1999 11 09	703	0.2-	1.1+	1999 12 31	699	0.4+	0.3-
1979 03 04	046	0.5+	0.7-	1999 11 14	704	0.2-	0.0	1999 12 31	699	0.2+	1.1+
1979 03 04	046	0.5+	0.8-	1999 11 14	704	0.0	0.2+	1999 12 31	699	0.7-	0.6+
1979 03 19	046	(4.0+	0.8+)	1999 11 14	704	0.0	0.6+	2000 01 03	704	0.1+	0.5+
1979 03 19	046	2.0+	1.2+	1999 11 14	704	0.4+	0.3+	2000 01 03	704	0.0	0.3+
1979 03 24	046	1.8-	0.4-	1999 11 14	704	0.2+	0.6+	2000 01 03	704	0.1+	0.7+
1979 03 24	046	0.4-	0.8+	1999 11 16	704	0.1-	0.4-	2000 01 03	704	0.3-	0.2-
1999 10 06	704	0.3+	0.2-	1999 11 16	704	0.6-	0.3+	2000 01 04	704	0.3-	0.4+
1999 10 06	704	0.2+	0.1-	1999 11 16	704	1.2-	0.8-	2000 01 04	704	0.0	1.2-
1999 10 06	704	0.1+	0.5+	1999 12 05	703	0.5+	0.6+	2000 01 04	704	1.2+	0.3+
1999 10 06	704	0.2+	0.6+	1999 12 05	703	(2.3-	0.7+)	2000 01 04	704	0.2+	0.3-
1999 10 06	704	0.2+	0.6+	1999 12 05	703	0.0	0.4+	2000 01 04	704	0.1-	0.5-
1999 11 03	704	0.8+	0.8-	1999 12 05	703	0.6-	0.5+	2000 01 05	046	0.1-	0.1+
1999 11 03	704	0.3-	0.0	1999 12 13	703	1.1-	0.9+	2000 01 05	046	0.0	0.3-
1999 11 03	704	0.7+	0.4-	1999 12 13	703	0.7-	0.8-	2000 01 05	046	0.3+	0.2-
1999 11 03	704	1.0+	0.4-	1999 12 13	703	1.6-	0.4-	2000 01 06	046	0.1-	0.1-
1999 11 03	704	0.3+	0.1-	1999 12 13	703	0.6-	0.3-	2000 01 06	046	0.3-	0.1-
1999 11 09	703	0.4+	0.1-	1999 12 15	704	0.2+	0.2-	2000 01 06	046	0.8-	0.4-

1979 MQ₃

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25515727	ω	273.72894	+0.57387971	-0.81115679		
<i>a</i>	2.4618641	Ω	140.54433	+0.80398419	+0.53188033		
<i>e</i>	0.2188605	<i>i</i>	10.20929	+0.15579315	+0.24316244		
<i>P</i>	3.86	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 06 23	413	0.4+	0.3+	1999 10 07	703	0.1-	0.2+	1999 12 08	699	0.6-	0.8+
1979 06 24	413	0.2+	0.4+	1999 10 07	703	0.1-	0.1+	1999 12 08	699	0.1-	0.3+
1979 06 25	413	1.3+	0.9+	1999 10 09	704	0.1+	0.9+	1999 12 08	699	0.1-	0.1+
1979 06 29	413	0.4+	0.3+	1999 10 09	704	0.4+	0.2-	2000 01 08	704	0.1+	0.4+
1979 07 24	675	(0.3+	3.0+)	1999 10 09	704	0.5+	0.2-	2000 01 08	704	0.2+	0.1-
1979 07 25	675	0.7+	2.1+	1999 10 09	704	0.6+	0.8-	2000 01 08	704	0.0	0.0

2000 JAN. 24

1979 07 26	675	0.8−	1.9−	1999 11 01	703	0.3+	0.2+	2000 01 08	704	0.1+	0.2−
1979 07 28	413	1.4−	1.5−	1999 11 01	703	0.0	0.2−	2000 01 08	704	0.3+	0.2−
1979 08 23	675	0.8−	1.0−	1999 11 01	703	0.1−	0.1+	2000 01 10	699	0.1−	0.2+
1998 06 25	704	(0.4−	2.3+)	1999 11 01	703	0.1+	0.4+	2000 01 10	699	0.7−	0.7+
1998 06 25	704	1.0+	0.2+	1999 12 03	704	0.0	0.7−	2000 01 10	699	0.2−	0.3−
1998 06 25	704	(2.9+	2.0−)	1999 12 03	704	0.1−	0.4−	2000 01 11	704	0.2+	0.1−
1998 06 25	704	0.9−	0.4+	1999 12 03	704	0.5−	0.4−	2000 01 11	704	0.6+	0.1+
1999 10 07	703	0.3−	0.1+	1999 12 03	704	0.1−	0.6+	2000 01 11	704	0.9+	0.3−
1999 10 07	703	0.6−	0.4+	1999 12 03	704	0.6−	0.5−	2000 01 11	704	0.3+	0.5−

1979 MA₇ = 2000 AC₁₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	165.94903		(2000.0)	P		Q	
<i>n</i>	0.21268643	ω	50.20464	+0.33972098		+0.93914443	
<i>a</i>	2.7795609	Ω	239.72569	−0.87994851		+0.29824040	
<i>e</i>	0.0334433	<i>i</i>	3.38315	−0.33208474		+0.17047113	
<i>P</i>	4.63	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1979 06 24	413	(3.2−	0.6−)	1998 08 17	704	0.1+	1.2+	2000 01 05	704	0.0	0.2+
1979 06 25	413	0.7−	0.1−	1998 08 17	704	(1.2+	2.5+)	2000 01 05	704	0.5−	0.7−
1979 06 29	413	0.3−	1.3−	1999 12 08	704	0.2+	0.0	2000 01 05	704	0.8+	0.3+
1979 07 24	675	0.7+	0.4+	1999 12 08	704	0.8−	1.4+	2000 01 06	704	0.3−	1.0−
1979 07 24	413	0.8−	0.7+	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.5−	0.1+
1979 07 25	675	1.5+	0.9+	1999 12 08	704	1.0−	0.2−	2000 01 06	704	0.6+	0.3−
1979 08 23	675	0.7−	0.3−	1999 12 08	704	0.2+	0.8+	2000 01 06	704	1.1+	0.0
1998 08 17	704	0.2−	0.9−	2000 01 05	704	0.3−	0.1+				
1998 08 17	704	0.4+	0.9−	2000 01 05	704	0.6+	0.5−				

1980 VH = 1936 FK = 1985 YD = 1999 XQ₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	71.63394		(2000.0)	P		Q	
<i>n</i>	0.21246724	ω	102.47635	+0.98926057		−0.05577032	
<i>a</i>	2.7814723	Ω	260.83587	+0.00120082		+0.92741265	
<i>e</i>	0.2473912	<i>i</i>	7.86568	+0.14615776		+0.36985868	
<i>P</i>	4.64	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1936 03 21	012	(67.7+	2.1−)	1999 11 03	704	0.2+	0.4−	2000 01 05	704	0.4−	1.4+
1980 11 08	688	(2.7+	1.8+)	1999 11 03	704	0.3−	0.6−	2000 01 05	704	0.3+	0.3−
1980 11 08	688	0.8+	0.3+	1999 12 07	704	0.1−	0.5+	2000 01 05	704	0.2+	0.3−
1980 11 11	688	0.6+	0.9+	1999 12 07	704	0.0	0.1+	2000 01 05	704	0.4+	0.1+
1980 11 11	688	1.0−	1.5−	1999 12 07	704	0.2+	0.1+	2000 01 05	704	0.1−	0.1−
1980 11 29	688	0.2+	0.1+	1999 12 07	704	0.1+	0.0	2000 01 06	704	0.1−	0.8−
1980 11 29	688	1.2−	1.1+	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.0	0.1−
1980 12 04	688	0.5+	1.2−	1999 12 08	704	0.1+	0.1+	2000 01 06	704	0.3−	0.1−
1985 12 16	801	(15.7−	1.2+)	1999 12 08	704	0.1−	0.2−	2000 01 06	704	0.4−	0.5−
1999 11 03	704	0.0	0.5+	1999 12 08	704	0.2−	0.3+	2000 01 06	704	0.1−	0.3−
1999 11 03	704	0.9+	0.6+	1999 12 08	704	0.1+	0.0				

1980 XB = 1999 VV₄₆ = 1999 XN₁₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	10.64375		(2000.0)	P		Q	
<i>n</i>	0.25959122	ω	40.96877	−0.32005280		−0.86668660	
<i>a</i>	2.4337505	Ω	70.93870	+0.72882430		−0.48328559	
<i>e</i>	0.3732460	<i>i</i>	23.88156	+0.60529443		+0.12365025	
<i>P</i>	3.80	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 12 13	662	0.3+	1.4−	1999 12 13	704	0.1−	0.0	1999 12 15	704	0.1−	0.0
1980 12 14	662	0.4−	1.4+	1999 12 13	704	0.1−	0.1+	1999 12 15	719	0.0	1.1−
1980 12 15	662	0.4−	1.7+	1999 12 13	704	0.2−	0.4+	1999 12 15	704	0.1−	0.0
1980 12 16	662	1.5+	1.0−	1999 12 14	704	0.3−	0.1−	1999 12 15	704	0.1+	0.0
1980 12 16	688	(7.5+	7.9−)	1999 12 14	704	0.3−	0.3−	1999 12 15	670	0.1−	0.0
1980 12 16	688	(3.1+	2.8−)	1999 12 14	704	0.3−	0.2−	1999 12 15	704	0.0	0.1−

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1980 12 30	688	(3.4+	2.3−)	1999 12 14	704	0.2−	0.4−	1999 12 15	704	0.0	0.0
1980 12 30	688	0.5−	0.6+	1999 12 14	704	0.4−	0.4−	1999 12 15	670	0.1−	0.9−
1981 01 09	662	0.3−	1.5−	1999 12 14	704	0.3−	0.3−	1999 12 15	670	0.3+	0.3+
1999 11 03	704	0.4−	0.5+	1999 12 14	670	0.5−	0.5−	1999 12 15	355	0.3+	0.3+
1999 11 03	704	0.4−	0.3+	1999 12 14	704	0.3−	0.1−	1999 12 15	355	0.2+	0.7+
1999 11 03	704	0.2−	0.3+	1999 12 14	704	0.3−	0.3−	1999 12 15	355	0.2+	0.3+
1999 11 03	704	0.3+	0.7−	1999 12 14	704	1.3+	0.8−	1999 12 17	652	0.5+	0.3−
1999 11 04	704	0.3−	0.4+	1999 12 14	704	1.7+	0.7−	1999 12 17	652	0.5+	0.4−
1999 11 04	704	0.2−	0.4+	1999 12 14	670	0.5−	0.4−	1999 12 17	652	0.1−	0.1−
1999 11 04	704	0.1−	0.2+	1999 12 14	557	0.2−	1.3−	1999 12 17	652	0.4+	0.3+
1999 11 04	704	0.2−	0.2+	1999 12 14	557	0.1−	0.8+	1999 12 17	652	0.1−	0.6+
1999 11 04	704	0.2−	0.3+	1999 12 14	557	0.2−	0.8+	1999 12 17	652	0.3+	0.2+
1999 11 05	704	0.3−	0.2+	1999 12 14	557	0.3−	1.6−	1999 12 17	652	0.5−	0.2+
1999 11 05	704	0.0	0.0	1999 12 14	611	0.0	0.0	1999 12 17	652	0.2−	0.0
1999 11 05	704	0.2+	0.6+	1999 12 14	611	0.1−	0.7+	1999 12 22	652	0.1+	0.3+
1999 11 05	704	0.4−	0.1+	1999 12 14	611	0.2−	0.0	1999 12 22	652	1.1+	0.4+
1999 11 05	704	0.3−	0.1+	1999 12 14	611	0.1−	0.2+	1999 12 22	652	0.2−	0.0
1999 11 16	704	0.2+	0.6−	1999 12 15	046	0.1+	0.4+	1999 12 22	652	0.3−	0.4+
1999 11 16	704	0.4+	0.7−	1999 12 15	046	0.0	0.4+	1999 12 30	699	0.5+	0.6−
1999 11 16	704	0.1−	0.6−	1999 12 15	046	0.0	0.5+	1999 12 30	699	0.4+	0.5−
1999 11 16	704	0.2+	1.0−	1999 12 15	046	0.0	0.5+	1999 12 30	699	0.5+	0.4−
1999 11 17	704	0.3+	0.6−	1999 12 15	713	0.0	0.5+	2000 01 05	127	0.2−	0.1+
1999 11 17	704	0.1+	0.4−	1999 12 15	713	0.1+	0.7+	2000 01 05	127	0.2−	0.1+
1999 11 17	704	0.2+	0.2−	1999 12 15	713	0.3−	0.5+	2000 01 05	127	0.2−	0.3+
1999 11 17	704	0.2+	0.4−	1999 12 15	713	0.4−	0.7+	2000 01 11	127	0.0	0.0
1999 11 17	704	1.6+	0.5+	1999 12 15	713	0.4−	0.4+	2000 01 11	127	0.0	0.3+
1999 12 13	704	0.2−	0.3−	1999 12 15	719	0.2−	1.1+	2000 01 11	127	0.1+	0.1+
1999 12 13	704	0.3−	0.2−	1999 12 15	713	0.3−	0.6+	2000 01 13	611	0.1−	0.5−

1981 DR₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	183.77385		(2000.0)	P		Q	
<i>n</i>	0.24446183	ω	42.76639	−0.10460128		+0.98395722	
<i>a</i>	2.5331564	Ω	221.88659	−0.96106723		−0.13693761	
<i>e</i>	0.1433208	<i>i</i>	12.53931	−0.25599515		+0.11435155	
<i>P</i>	4.03	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 02 04	413	1.2−	0.3−	1998 06 23	699	0.2+	0.4−	1999 12 06	704	0.2+	0.3+
1981 02 08	413	1.2−	0.0	1998 08 24	704	0.2−	0.9−	1999 12 13	699	0.5+	0.1−
1981 02 28	413	1.4−	0.5+	1998 08 24	704	1.5−	1.5+	1999 12 13	699	0.6+	1.4+
1981 02 28	413	1.4+	0.6−	1998 08 24	704	(5.1+	0.7+)	1999 12 13	699	0.2+	0.9+
1981 03 06	413	0.8−	1.8+	1998 08 24	704	1.2+	0.3+	1999 12 14	704	0.7−	0.5−
1981 03 06	413	1.1+	0.5−	1998 08 24	704	0.5+	1.3+	1999 12 14	704	0.4−	0.0
1981 03 08	413	1.5−	0.5+	1999 10 10	704	0.4+	0.1−	1999 12 14	704	1.0−	0.6+
1981 03 08	413	0.4+	0.9−	1999 10 10	704	0.1−	0.8−	1999 12 14	704	0.5−	0.2+
1981 03 12	413	0.6−	0.4−	1999 10 10	704	0.3+	0.0	2000 01 05	704	0.7+	0.0
1981 03 12	413	0.6+	0.6−	1999 10 10	704	0.0	0.3+	2000 01 05	704	1.1+	0.1+
1981 04 07	413	0.6−	0.9+	1999 11 04	704	0.4−	0.1−	2000 01 05	704	0.7+	1.0−
1981 04 08	413	0.5+	0.3+	1999 11 04	704	0.0	0.1−	2000 01 05	704	0.6+	0.2−
1981 04 08	413	1.1+	0.2−	1999 11 04	704	0.0	0.7−	2000 01 05	704	0.8+	0.6−
1981 04 09	413	0.7+	0.4+	1999 11 04	704	0.8−	0.9−	2000 01 07	704	0.2−	0.1+
1981 05 01	413	0.1+	1.2−	1999 12 06	704	0.2−	0.2+	2000 01 07	704	1.1−	0.3−
1981 05 03	413	1.0+	0.1+	1999 12 06	704	0.1−	0.0	2000 01 07	704	0.1+	0.3−
1998 06 23	699	0.5+	1.6−	1999 12 06	704	0.2−	0.1+	2000 01 07	704	0.1+	0.2−
1998 06 23	699	0.8−	1.2−	1999 12 06	704	0.0	0.7+	2000 01 07	704	0.5−	0.6−

Residuals in seconds of arc

1981 02 02	413	0.2−	0.2+	1981 03 12	413	1.9−	0.4+	1999 12 07	704	0.2+	0.3−
1981 02 14	413	0.2+	0.6+	1981 03 12	413	1.1+	0.1−	2000 01 03	704	0.3−	0.3+
1981 03 02	413	1.3−	0.3−	1981 04 09	413	0.6−	0.7+	2000 01 03	704	0.0	0.5+
1981 03 02	413	2.3+	1.1−	1981 04 09	413	0.5+	0.7−	2000 01 03	704	1.1−	0.4−
1981 03 07	413	0.9−	0.1+	1981 05 01	413	0.9+	0.9+	2000 01 03	704	0.4−	0.2+
1981 03 07	413	1.7+	0.1−	1981 05 03	413	0.7−	0.3+	2000 01 05	704	0.3−	0.2−
1981 03 10	413	1.0−	0.4−	1999 12 07	704	0.5+	0.6+	2000 01 05	704	0.2+	0.3−
1981 03 10	413	(2.9+	0.9−)	1999 12 07	704	0.4+	0.4+	2000 01 05	704	0.8+	0.5−

1981 EX₈ = 2000 AM₁₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	145.30309		(2000.0)	P	Q	Williams	
<i>n</i>	0.24443590	ω	2.83523	+0.45343032	+0.88950215		
<i>a</i>	2.5333356	Ω	294.13431	−0.81895648	+0.39079973		
<i>e</i>	0.1498231	<i>i</i>	3.54656	−0.35172607	+0.23677309		
<i>P</i>	4.03	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 09	413	0.8+	0.1+	1981 04 05	413	0.7+	0.4−	2000 01 04	704	0.9+	0.5−
1981 02 13	413	0.0	0.3−	1981 04 06	413	1.4−	0.9+	2000 01 04	704	0.5−	0.5+
1981 03 01	413	1.5−	0.7+	1981 04 06	413	0.8+	0.7−	2000 01 08	704	0.7−	0.5−
1981 03 01	413	1.9+	0.8−	1981 04 12	413	1.3−	1.5+	2000 01 08	704	0.4−	0.2+
1981 03 07	413	0.3−	0.3+	1981 04 12	413	2.0+	2.1−	2000 01 08	704	0.4+	0.4+
1981 03 11	413	0.2−	0.3−	1981 04 30	413	0.6+	0.3+	2000 01 08	704	0.0	0.5−
1981 03 15	413	2.1−	1.2+	1981 05 02	413	0.3−	0.1−	2000 01 08	704	0.2+	0.2+
1981 03 15	413	2.3+	1.7−	2000 01 04	704	0.4+	0.2+				
1981 04 05	413	1.9−	1.3+	2000 01 04	704	0.3−	0.1+				

1981 EV₁₁ = 1999 VW₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	108.87062		(2000.0)	P	Q	Williams	
<i>n</i>	0.29623293	ω	109.51584	+0.79469566	+0.60284133		
<i>a</i>	2.2286771	Ω	213.52037	−0.59391193	+0.74804680		
<i>e</i>	0.0514255	<i>i</i>	7.38700	−0.12540900	+0.27750372		
<i>P</i>	3.33	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 02	413	0.7−	0.9+	1981 05 02	413	(0.1−	3.3−)	1999 11 05	704	0.8−	0.1−
1981 02 14	413	2.0−	2.2−	1999 10 29	703	1.1−	0.1−	1999 11 05	704	0.1+	0.1+
1981 03 07	413	2.1+	0.1−	1999 10 29	703	0.5+	0.7+	1999 11 05	704	0.3−	0.3−
1981 03 11	413	0.3+	1.6+	1999 10 29	703	0.1−	0.9+	1999 11 05	704	0.7−	0.8−
1981 03 11	413	1.8+	0.1−	1999 10 29	703	0.8−	0.4+	1999 12 07	704	0.7+	0.3+
1981 03 15	413	1.3−	0.4+	1999 11 04	704	0.2−	0.8−	1999 12 07	704	0.5+	0.1+
1981 04 12	413	0.1−	0.0	1999 11 04	704	0.3+	0.6−	1999 12 07	704	0.9+	0.6+
1981 04 12	413	0.4−	0.7−	1999 11 04	704	0.8+	0.9−	1999 12 07	704	0.5+	0.7+

1981 EC₁₇ = 2000 AO₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	296.42831		(2000.0)	P	Q	Williams	
<i>n</i>	0.30586691	ω	245.38422	−0.90905072	+0.41446414		
<i>a</i>	2.1816298	Ω	319.06438	−0.35465279	−0.82372713		
<i>e</i>	0.0650206	<i>i</i>	3.76010	−0.21874227	−0.38690191		
<i>P</i>	3.22	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 12	413	0.0	0.7−	1981 04 09	413	0.3−	0.3+	2000 01 06	704	0.1−	0.2+
1981 03 06	413	1.6+	0.1+	1981 05 01	413	0.7+	0.3−	2000 01 06	704	0.2−	0.3−
1981 03 08	413	1.1−	0.3−	1981 05 03	413	0.7−	0.7−	2000 01 06	704	0.1−	0.4−
1981 03 08	413	0.4−	1.0+	2000 01 04	704	0.6−	0.3−	2000 01 06	704	0.6+	0.7+
1981 03 12	413	0.2+	0.4+	2000 01 04	704	0.1−	0.1−				
1981 04 09	413	(3.8−	1.7+)	2000 01 04	704	0.3+	0.1+				

1981 EW₂₅ = 1999 XX₂₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	7.11208		(2000.0)	P	Q	Williams	
<i>n</i>	0.25409422	ω	111.27858	−0.32877199	−0.94437440		
<i>a</i>	2.4687258	Ω	357.86502	+0.76538633	−0.26140187		
<i>e</i>	0.2145687	<i>i</i>	12.59231	+0.55325649	−0.19956465		
<i>P</i>	3.88	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 02 09	413	0.9−	0.5+	1981 04 12	413	1.2+	0.5+	1999 12 13	704	0.1+	0.3−
1981 02 12	413	1.1−	0.6+	1981 05 02	413	0.8−	1.1+	1999 12 13	704	0.0	0.3−
1981 03 02	413	(4.3−	1.2−)	1981 05 03	413	0.7−	0.2−	1999 12 18	704	0.5−	1.3+
1981 03 06	413	0.4+	1.3−	1999 11 01	704	0.2−	1.2−	1999 12 18	704	0.3−	0.6−
1981 03 06	413	(2.5+	0.3+)	1999 11 01	704	0.3+	0.2−	1999 12 18	704	0.3−	0.1−
1981 03 11	413	0.8+	0.7−	1999 11 01	704	0.4+	0.5−	1999 12 18	704	0.3+	0.8+
1981 03 11	413	1.5+	0.4−	1999 11 01	704	0.4−	1.6−	1999 12 18	704	0.1−	1.1+
1981 03 15	413	1.2−	0.1−	1999 11 01	704	0.6+	0.2−	2000 01 21	704	0.1−	0.5+
1981 03 15	413	0.9+	0.4−	1999 12 13	704	0.0	0.0	2000 01 21	704	0.2+	0.4−
1981 04 05	413	2.2−	0.4+	1999 12 13	704	0.1−	0.3+	2000 01 21	704	0.6−	0.2+
1981 04 12	413	1.0+	0.5−	1999 12 13	704	0.1−	0.1−	2000 01 21	704	0.7+	0.7+

1981 ET₃₀ = 1999 LX₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	134.81518		(2000.0)	P	Q	Williams	
<i>n</i>	0.28037192	ω	9.34404	−0.99793654	+0.06326416		
<i>a</i>	2.3119568	Ω	174.24904	−0.06367753	−0.95322999		
<i>e</i>	0.0523775	<i>i</i>	6.28437	−0.00823644	−0.29555071		
<i>P</i>	3.52	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1981 02 09	413	0.3+	1.3+	1981 03 11	413	0.6+	0.7−	1999 06 14	704	0.1−	0.1+
1981 02 12	413	0.9−	2.0−	1981 03 15	413	2.2−	1.6+	1999 06 14	704	0.8+	0.3−
1981 02 13	413	1.0+	2.4+	1981 04 26	413	1.2+	1.0−	1999 06 14	704	0.2+	0.4−
1981 03 02	413	0.7+	0.5−	1981 05 01	413	0.3−	0.4+	1999 06 14	704	1.2−	0.1+
1981 03 06	413	1.1+	0.8−	1999 06 13	691	0.4+	0.1−	1999 06 14	704	0.6−	1.1+
1981 03 06	413	0.5−	1.1−	1999 06 13	691	0.3+	0.3−				
1981 03 11	413	0.7−	0.4+	1999 06 13	691	0.2+	0.0				

1981 EX₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	158.99568		(2000.0)	P	Q	Marsden	
<i>n</i>	0.20854303	ω	205.12873	+0.92673349	−0.37568360		
<i>a</i>	2.8162568	Ω	176.92379	+0.35897267	+0.88126907		
<i>e</i>	0.1287650	<i>i</i>	5.54352	+0.11092190	+0.28675189		
<i>P</i>	4.73	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1981 02 12	413	0.2−	0.3+	1981 05 01	413	1.2+	0.2−	2000 01 06	046	0.0	0.6−
1981 03 02	413	0.5+	0.5+	2000 01 06	046	0.0	0.2+	2000 01 13	046	0.3−	0.3+
1981 03 06	413	1.5−	0.3+	2000 01 06	046	0.4+	0.3−	2000 01 13	046	0.0	0.2+
1981 03 06	413	1.2+	0.3+	2000 01 06	046	0.0	0.0	2000 01 13	046	0.3+	0.6−
1981 03 11	413	1.5−	0.9−	2000 01 06	046	0.0	0.2−	2000 01 13	046	0.5−	0.2−
1981 03 11	413	0.5+	0.1−	2000 01 06	046	0.1+	0.7+				

1981 EH₄₅ = 2000 AT₁₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	18.45807		(2000.0)	P	Q	Williams	
<i>n</i>	0.25242314	ω	161.63375	−0.10884998	−0.98966710		
<i>a</i>	2.4796094	Ω	294.52811	+0.89869016	−0.05784407		
<i>e</i>	0.1105516	<i>i</i>	5.88828	+0.42486196	−0.13119872		
<i>P</i>	3.90	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

2000 JAN. 24

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Residuals in seconds of arc

1981 02 14	413	0.0	0.4−	1981 03 12	413	1.5+	1.1−	2000 01 04	704	0.3−	0.0
1981 03 01	413	1.5−	0.4+	1981 05 03	413	0.3+	0.6+	2000 01 04	704	0.6+	0.2−
1981 03 06	413	(5.6−	0.8+)	2000 01 03	704	1.0−	0.5−	2000 01 04	704	0.8−	0.6−
1981 03 06	413	1.1+	0.7+	2000 01 03	704	0.8−	0.2+	2000 01 04	704	0.6+	0.1−
1981 03 08	413	1.5−	0.2−	2000 01 03	704	0.3+	1.1+				
1981 03 08	413	(3.2+	0.6−)	2000 01 04	704	1.5+	0.4+				

1981 EW₄₆ = 1999 VC₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	342.51006		(2000.0)	P	Q	Williams					
<i>n</i>	0.19249227	ω	41.68281	+0.27195570	−0.96227676						
<i>a</i>	2.9707118	Ω	32.53885	+0.87893531	+0.24501224						
<i>e</i>	0.1225729	<i>i</i>	0.84917	+0.39180712	+0.11828968						
<i>P</i>	5.12	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1981 02 13	413	0.4−	1.0−	1981 05 02	413	0.2+	0.4+	1999 11 12	704	0.3+	0.6−
1981 03 02	413	(3.9−	0.0)	1999 11 09	704	0.1−	0.6+	1999 11 12	704	0.1−	0.3−
1981 03 07	413	1.0−	1.0+	1999 11 09	704	0.0	0.8+	1999 11 12	704	0.1+	0.0
1981 03 07	413	1.3+	0.2−	1999 11 09	704	0.1+	0.4+	1999 11 12	704	0.2−	0.3+
1981 03 11	413	(3.5+	0.1+)	1999 11 09	704	0.5+	0.0	1999 11 12	704	0.1−	1.1−
1981 04 26	413	(1.4+	3.6−)	1999 11 09	704	0.5−	0.2+				

1981 RX₁ = 1999 XJ₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	55.17064		(2000.0)	P	Q	Williams					
<i>n</i>	0.22462996	ω	104.64938	+0.94216393	−0.26091830						
<i>a</i>	2.6801407	Ω	270.81133	+0.16333682	+0.90551865						
<i>e</i>	0.2081675	<i>i</i>	12.14433	+0.29265715	+0.33460067						
<i>P</i>	4.39	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1981 09 07	095	0.7−	0.7+	1999 12 10	704	0.8+	0.2−	1999 12 31	703	0.6+	0.1+
1981 09 27	095	0.7−	0.4+	1999 12 10	704	0.5+	0.2−	1999 12 31	703	0.3−	0.5+
1981 10 03	095	1.3+	0.7−	1999 12 10	704	0.5+	0.4−	2000 01 03	704	0.3+	0.6+
1999 10 05	704	0.7−	0.5−	1999 12 10	704	0.4+	0.2−	2000 01 03	704	0.2−	0.0
1999 10 05	704	0.2−	0.4−	1999 12 10	704	1.1+	0.4+	2000 01 03	704	0.2+	0.6−
1999 10 05	704	0.0	0.1−	1999 12 15	704	0.3+	0.1−	2000 01 03	704	0.7−	1.4+
1999 10 05	704	0.3−	0.2−	1999 12 15	704	0.1−	0.5+	2000 01 03	704	(2.3−	0.1−)
1999 10 05	704	0.3−	0.3+	1999 12 15	704	0.0	0.1+	2000 01 04	704	0.4+	0.2+
1999 12 07	703	0.7−	0.2−	1999 12 15	704	0.0	0.4+	2000 01 04	704	0.0	0.3+
1999 12 07	703	0.5−	0.2+	1999 12 15	704	0.3+	0.7−	2000 01 04	704	0.0	0.0
1999 12 07	703	0.8−	0.1+	1999 12 31	703	0.2+	1.0−	2000 01 04	704	1.0−	0.7+
1999 12 07	703	0.4−	0.2+	1999 12 31	703	1.1+	0.9−	2000 01 04	704	0.9−	0.3−

1981 RL₂ = 1998 MC₃₀ = 1999 XJ₁₀₁

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<i>M</i>	70.65739		(2000.0)	P	Q	Williams					
<i>n</i>	0.22667150	ω	87.34292	+0.93761232	−0.30067371						
<i>a</i>	2.6640238	Ω	290.10957	+0.19579970	+0.87156343						
<i>e</i>	0.2511065	<i>i</i>	10.71447	+0.28730753	+0.38726283						
<i>P</i>	4.35	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2				

Residuals in seconds of arc

1981 09 07	095	1.9−	1.2+	1999 12 07	704	0.3−	0.3−	2000 01 04	704	0.1+	0.0
1981 09 27	095	1.2+	0.5−	1999 12 07	704	0.3+	0.3−	2000 01 04	704	0.0	0.3−
1981 10 03	095	0.8+	0.7−	1999 12 07	704	1.0+	1.4−	2000 01 04	704	0.0	0.2−
1998 06 24	704	(0.2+	2.4+)	1999 12 10	704	0.1−	0.4+	2000 01 04	704	0.1−	0.3−
1998 06 24	704	0.5−	0.2+	1999 12 10	704	0.8−	0.5+	2000 01 04	120	0.6−	0.2+
1998 06 24	704	(1.1−	2.3+)	1999 12 10	704	0.2−	0.1+	2000 01 04	120	0.0	1.1−
1998 06 24	704	0.4+	0.2−	1999 12 10	704	0.0	0.2+	2000 01 04	106	0.1+	0.3+
1999 11 12	703	0.1+	0.0	1999 12 10	704	0.1−	0.2−	2000 01 04	106	0.1+	0.3+
1999 11 12	703	0.4−	0.2+	1999 12 26	739	0.2+	0.1+	2000 01 05	106	0.0	0.2+
1999 11 12	703	0.4+	0.1−	1999 12 26	739	0.1−	0.2+	2000 01 12	691	0.4+	0.0

1999 11 12	703	0.2−	0.2+	2000 01 03	704	0.1+	0.0	2000 01 12	691	0.4+	0.1−
1999 12 03	699	0.4−	0.8+	2000 01 03	704	0.7−	0.0	2000 01 12	691	0.3+	0.1−
1999 12 03	699	0.2+	0.9+	2000 01 03	704	0.1−	0.9+	2000 01 15	691	0.2+	0.0
1999 12 03	699	0.2−	0.2−	2000 01 03	704	0.1−	0.0	2000 01 15	691	0.3+	0.2−
1999 12 07	704	0.2+	0.1−	2000 01 03	704	0.4−	0.8−	2000 01 15	691	0.1+	0.0
1999 12 07	704	0.3−	0.5−	2000 01 04	704	0.8+	1.1+				

1981 UC₂₃ = 1981 WV₃ = 2000 AH₁₉₆Id. S. Nakano (d, *MPC* 20606), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	348.59679		(2000.0)	P	Q	Williams					
<i>n</i>	0.17469414	ω	304.89446	−0.84418509	−0.53270093						
<i>a</i>	3.1692062	Ω	203.09508	+0.52800516	−0.80704469						
<i>e</i>	0.0337200	<i>i</i>	8.77542	+0.09253157	−0.25477164						
<i>P</i>	5.64	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1981 10 24	675	2.3+	0.0	1998 11 11	699	0.4−	0.5+	2000 01 05	699	0.5+	1.4+
1981 10 24	675	0.9+	0.3+	1998 11 11	704	1.4−	0.1−	2000 01 05	699	0.5+	1.9+
1981 10 25	675	1.7−	1.4−	1998 11 11	699	0.1−	0.7+	2000 01 05	699	0.1+	0.0
1981 10 25	675	0.6+	0.1+	1998 11 18	704	1.6−	0.2−	2000 01 08	704	0.1−	0.5+
1981 10 26	675	0.4−	0.6−	1998 11 18	704	1.1+	0.2−	2000 01 08	704	0.4+	0.1+
1981 11 24	033	0.2−	0.1+	1998 11 18	704	1.6+	0.1−	2000 01 08	704	0.2−	0.3+
1981 11 24	033	1.1−	0.5−	1998 11 18	704	0.7+	0.0	2000 01 08	704	0.4−	0.2+
1998 10 18	699	0.1−	0.2+	1998 11 24	699	0.0	0.6+	2000 01 08	704	0.7−	0.2+
1998 10 18	699	0.1−	0.6+	1998 11 24	699	1.4+	0.5−	2000 01 11	704	0.4+	0.3−
1998 10 18	699	0.4−	0.3−	1998 11 24	699	0.5+	0.0	2000 01 11	704	0.7−	1.1−
1998 11 11	699	0.2−	0.6+	1998 12 11	699	0.4−	0.1−	2000 01 11	704	0.2+	1.3−
1998 11 11	704	0.1−	0.1+	1998 12 11	699	0.4+	0.2+	2000 01 11	704	0.0	1.8−
1998 11 11	704	0.1+	0.5+	1998 12 11	699	0.9−	0.4−				

1982 QP = 2000 AJ₁₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	190.87447		(2000.0)	P	Q	Williams					
<i>n</i>	0.25266758	ω	18.58134	+0.76351427	+0.62310227						
<i>a</i>	2.4780099	Ω	301.67916	−0.61489939	+0.62116063						
<i>e</i>	0.1972558	<i>i</i>	11.50084	−0.19734410	+0.47529257						
<i>P</i>	3.90	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1982 08 19	675	1.0−	0.9−	1998 12 24	699	0.1−	0.9+	2000 01 05	704	0.2−	0.6+
1982 08 19	675	0.9+	1.4−	1999 01 06	699	0.8+	1.3+	2000 01 10	704	0.2+	0.3+
1982 08 26	675	0.4−	0.0	1999 01 06	699	0.1+	0.9−	2000 01 10	704	0.2+	0.5−
1982 08 26	675	0.9+	0.8+	1999 01 06	699	0.1+	0.2−	2000 01 10	704	0.2+	0.3+
1982 08 29	675	0.4+	0.1+	2000 01 05	704	0.5+	0.1−	2000 01 10	704	0.6−	0.5−
1998 12 24	699	0.3−	0.3−	2000 01 05	704	1.6−	1.0−				
1998 12 24	699	0.7−	0.1−	2000 01 05	704	0.2+	0.9−				

1982 VK₄ = 1986 VY₄ = 1999 XN₁₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	89.48199		(2000.0)	P	Q	Williams					
<i>n</i>	0.23521567	ω	289.99475	+0.96675750	+0.16213630						
<i>a</i>	2.5991133	Ω	61.12302	−0.04650931	+0.87185622						
<i>e</i>	0.1732436	<i>i</i>	13.04943	−0.25142954	+0.46214560						
<i>P</i>	4.19	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1982 11 14	381	1.7−	1.2+	1999 11 14	704	0.2+	0.1−	1999 12 15	704	0.2+	0.6−
1982 11 14	381	1.1+	0.4−	1999 11 14	704	0.3+	0.0	2000 01 02	704	0.4+	0.5−
1982 12 13	381	1.0−	0.9+	1999 12 12	704	0.3+	0.4+	2000 01 02	704	0.2−	0.2+
1982 12 13	381	0.2−	0.2+	1999 12 12	704	0.0	0.3+	2000 01 02	704	0.1−	0.2+
1982 12 14	381	1.0+	0.6−	1999 12 12	704	0.2+	0.1+	2000 01 02	704	0.4−	0.0
1982 12 14	381	0.0	0.3+	1999 12 12	704	0.2+	0.1+	2000 01 02	704	0.3−	0.1−
1986 11 07	010	0.1−	1.8−	1999 12 12	704	0.2+	0.1+	2000 01 04	704	0.5−	0.4+
1986 11 07	010	0.5+	1.2+	1999 12 15	704	0.3+	0.2+	2000 01 04	704	0.1+	0.1+

1999 11 14	704	0.4−	0.7−	1999 12 15	704	0.1+	0.0	2000 01 04	704	0.0	0.5−
1999 11 14	704	0.0	0.3−	1999 12 15	704	0.2+	0.0	2000 01 04	704	0.1+	0.1+
1999 11 14	704	0.2−	0.2−	1999 12 15	704	0.2+	0.3−	2000 01 04	704	0.8−	0.4−

1985 PG = 2000 AH₁₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams							
<i>M</i>	222.30891	(2000.0)		P				Q			
<i>n</i>	0.24033759	ω	120.99372	+0.31400285				+0.94895406			
<i>a</i>	2.5620538	Ω	167.20272	−0.91050858				+0.30988033			
<i>e</i>	0.1788924	<i>i</i>	7.73336	−0.26902850				+0.05882495			
<i>P</i>	4.10	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>		3			

Residuals in seconds of arc

1985 08 14	688	0.8+	0.8+	1998 11 13	704	0.3+	1.0−	2000 01 05	704	0.2−	1.3+
1985 08 14	688	0.5−	1.3−	1998 11 13	704	0.0	1.3−	2000 01 05	704	0.2+	0.0
1985 08 20	688	1.0−	0.5−	1998 11 13	704	0.6−	0.2−	2000 01 07	704	0.6−	0.2+
1985 08 22	688	1.1+	1.3+	1998 11 13	704	(3.7−	4.3−)	2000 01 07	704	0.4+	0.1−
1985 08 22	688	(3.8+	0.3+)	1998 11 14	699	0.1−	0.2+	2000 01 07	704	0.4+	0.2+
1985 09 12	688	0.8+	2.3+	1998 11 14	699	0.1+	0.4+	2000 01 07	704	0.1−	0.3−
1985 09 12	688	1.2−	2.2−	1998 11 14	699	1.0−	0.8+	2000 01 07	704	0.5+	0.6−
1998 11 13	704	1.3+	0.9+	2000 01 05	704	0.5−	0.3−				

1985 QL₅ = 2000 AA₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams							
<i>M</i>	161.18972	(2000.0)		P				Q			
<i>n</i>	0.29685904	ω	309.85551	+0.48344713				+0.87529409			
<i>a</i>	2.2255423	Ω	349.03687	−0.78301175				+0.42637444			
<i>e</i>	0.2302225	<i>i</i>	3.55588	−0.39137127				+0.22817776			
<i>P</i>	3.32	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>		5			

Residuals in seconds of arc

1985 08 23	095	0.0	0.1+	1999 12 15	704	0.4−	0.2+	2000 01 04	704	0.4+	0.3+
1985 09 15	095	1.0−	0.6−	2000 01 03	704	0.5−	0.5−	2000 01 04	704	0.7+	1.0+
1985 09 20	095	1.0+	0.5+	2000 01 03	704	1.5−	0.0	2000 01 04	704	0.3−	0.4+
1999 12 15	704	0.1−	0.0	2000 01 03	704	1.1+	1.1−	2000 01 04	704	0.3+	0.5+
1999 12 15	704	0.1−	0.7−	2000 01 03	704	0.1+	0.5+				
1999 12 15	704	0.0	0.3−	2000 01 03	704	0.2+	0.2−				

1985 RT = 1955 OL = 2000 AC₉₆

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams							
<i>M</i>	114.88365	(2000.0)		P				Q			
<i>n</i>	0.29714722	ω	21.37330	+0.96800889				−0.25083060			
<i>a</i>	2.2241032	Ω	353.14348	+0.22153546				+0.86661511			
<i>e</i>	0.1873668	<i>i</i>	3.14166	+0.11781696				+0.43134935			
<i>P</i>	3.32	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>		2			

Residuals in seconds of arc

1955 07 24	675	0.2+	0.2−	1985 09 14	688	1.0−	2.4−	1998 07 01	809	0.2+	0.3+
1955 07 24	675	0.2−	0.1+	1985 09 18	809	1.6+	0.3+	1999 12 04	703	0.2+	0.7−
1985 08 22	688	1.3−	0.8+	1985 09 18	809	2.0+	0.2+	1999 12 04	703	0.1−	0.2−
1985 08 22	688	2.2+	0.2−	1985 09 18	809	2.2+	0.2+	1999 12 04	703	(0.3+	3.7+)
1985 09 08	809	0.9−	0.4−	1985 09 18	688	0.3+	1.3+	1999 12 04	703	0.3+	0.9+
1985 09 08	809	0.8−	0.4−	1985 09 18	688	0.8−	0.2−	2000 01 04	704	0.3+	0.1−
1985 09 08	809	0.6−	0.5−	1985 09 20	809	1.6−	0.8+	2000 01 04	704	0.2+	0.3−
1985 09 10	809	0.0	0.0	1985 09 20	809	1.4−	0.6+	2000 01 04	704	0.1+	0.1−
1985 09 10	809	0.3+	0.1+	1985 09 20	809	1.1−	0.5+	2000 01 04	704	0.1+	0.8−
1985 09 10	809	1.0+	0.1+	1985 09 22	809	1.3−	0.1+	2000 01 04	688	0.7−	0.2+
1985 09 11	809	1.0+	0.6−	1985 09 22	809	0.9−	0.2+	2000 01 04	704	0.4+	0.7+
1985 09 11	809	1.2+	0.6−	1985 10 12	688	1.1−	0.3+	2000 01 04	688	0.4−	0.2+
1985 09 11	809	1.5+	0.5−	1998 06 26	704	0.1+	0.8+	2000 01 07	704	0.4+	1.1−
1985 09 11	054	2.2+	0.2+	1998 06 26	704	0.2−	0.2−	2000 01 07	704	0.0	0.2+
1985 09 14	809	1.3−	0.2−	1998 06 26	704	0.3+	1.5−	2000 01 07	704	1.1−	1.2−
1985 09 14	809	0.6−	0.4−	1998 06 26	704	0.8−	0.8−	2000 01 07	704	1.2−	1.0−

1985 09 14	809	0.0	0.5−	1998 07 01	809	0.2−	0.8+
1985 09 14	688	(4.0+	0.1−)	1998 07 01	809	0.9+	0.8−

1986 PP = 1982 SD₆ = 1999 WT₆

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams							
<i>M</i>	67.98883	(2000.0)		P				Q			
<i>n</i>	0.23663617	ω	233.99175	+0.99798687				+0.04753808			
<i>a</i>	2.5887014	Ω	123.24794	−0.02854479				+0.92778355			
<i>e</i>	0.2329324	<i>i</i>	2.87730	−0.05663397				+0.37007813			
<i>P</i>	4.17	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>		2			

Residuals in seconds of arc

1982 09 16	095	0.6−	1.4+	1986 09 08	809	0.2−	0.4−	1999 12 08	704	0.5+	0.2−
1986 08 01	675(20.9+	0.2+)		1986 09 10	809	0.7+	0.2+	1999 12 08	704	0.6+	0.1−
1986 08 01	675(22.5+	1.7+)		1986 09 10	809	0.7+	0.0	1999 12 08	704	0.5+	0.4+
1986 08 02	675(30.0−	0.8+)		1986 09 10	809	0.5+	0.2+	1999 12 13	120	1.8−	0.8+
1986 08 02	675(25.5−	1.3+)		1999 11 15	704	0.2+	0.0	1999 12 13	120	0.6−	0.2−
1986 08 27	809	0.1−	0.8−	1999 11 15	704	0.5+	0.3−	1999 12 17	120	0.1+	0.0
1986 08 27	809	0.1−	1.2−	1999 11 15	704	0.1+	0.1−	1999 12 17	120	0.1−	0.1−
1986 08 27	809	0.1+	1.1−	1999 11 15	704	0.1+	0.1−	1999 12 31	699	0.4+	0.2−
1986 08 29	809	0.3−	0.3+	1999 11 15	704	0.2−	0.2−	1999 12 31	699	0.1+	0.7+
1986 08 29	809	0.2+	0.1+	1999 11 17	704	0.7+	0.1−	1999 12 31	699	0.5+	0.8+
1986 08 29	809	0.2+	0.4+	1999 11 17	704	0.2+	0.1−	1999 12 31	703	0.2−	0.1+
1986 09 01	809	0.5−	0.3+	1999 11 17	704	0.6+	0.1−	1999 12 31	703	0.4−	0.3+
1986 09 01	809	0.6−	0.8+	1999 11 17	704	0.3+	0.2−	1999 12 31	703	0.5−	0.0
1986 09 01	809	0.5−	0.8+	1999 11 17	704	0.4+	0.3−	1999 12 31	703	0.0	0.3+
1986 09 02	809	0.2+	0.4+	1999 11 28	120	0.5+	0.6−	2000 01 05	704	0.0	0.1−
1986 09 02	809	0.3+	0.3+	1999 11 28	120	0.3+	0.8−	2000 01 05	704	0.2+	0.3+
1986 09 02	809	0.3+	0.1+	1999 11 29	120	0.4−	0.9−	2000 01 05	704	0.3−	0.3+
1986 09 04	809	0.1−	0.0	1999 11 29	120	0.7−	0.4−	2000 01 05	704	0.3+	0.1+
1986 09 04	809	0.0	0.2−	1999 11 29	120	0.1+	0.5−	2000 01 05	704	0.2−	0.8+
1986 09 04	809	0.1−	0.2−	1999 11 30	120	0.1−	0.1−	2000 01 06	704	0.2+	0.6+
1986 09 06	809	0.1−	0.1−	1999 11 30	120	0.4+	0.1+	2000 01 06	704	0.1−	1.9+
1986 09 06	809	0.3−	0.1+	1999 12 06	120	1.4−	0.7−	2000 01 06	704	0.9−	0.2+
1986 09 06	809	0.1−	0.1−	1999 12 06	120	0.5+	0.4−	2000 01 06	704	0.1−	0.3+
1986 09 08	809	0.1−	0.2−	1999 12 08	704	0.1+	0.8−	2000 01 06	704	0.7−	0.1+
1986 09 08	809	0.1−	0.1−	1999 12 08	704	0.4+	0.0				

1986 QW₁ = 2000 AG₁₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams							
<i>M</i>	160.53492	(2000.0)		P				Q			

2000 JAN. 24

M.P.C. 37623

1986 09 06	809	0.1+	0.3-	1998 11 11	704	1.3-	0.1+	2000 01 15	691	0.5-	0.4+
1986 09 06	809	0.2+	0.3-	1998 11 11	704	0.5+	0.3+				
1986 09 06	809	0.6+	0.4-	1998 11 11	704	0.5-	0.3-				

1987 SF₆ = 1999 XZ₂₁₄

Id. G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	97.54267		(2000.0)	P	Q
<i>n</i>	0.25862129	ω	181.19317	+0.99470827	+0.10199789
<i>a</i>	2.4398317	Ω	172.91705	-0.09341465	+0.94782843
<i>e</i>	0.2324102	<i>i</i>	5.73605	-0.04276858	+0.30202267
<i>P</i>	3.81	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1987 09 04	095	(5.9- 6.6+)	1987 10 01	809	0.5+	0.6-	2000 01 05	704	0.3+	0.7-	
1987 09 17	809	0.1- 0.0	1987 10 01	809	0.5+	0.4-	2000 01 05	704	0.3-	0.0	
1987 09 17	809	0.4+	0.0	1987 10 01	809	0.1+	0.6-	2000 01 05	704	0.3-	0.4-
1987 09 17	809	1.3+	0.3+	1987 10 02	809	0.2-	0.6-	2000 01 05	704	0.5-	0.1+
1987 09 21	046	(4.2- 1.8+)	1987 10 02	809	0.1+	0.6-	2000 01 07	704	0.0	0.2-	
1987 09 21	046	2.0- 1.3+	1987 10 02	809	0.4+	0.6-	2000 01 07	704	0.3+	0.5-	
1987 09 23	809	0.2- 0.2-	1999 12 14	704	0.7-	0.2-	2000 01 07	704	0.2+	0.3-	
1987 09 23	809	0.3+	0.4-	1999 12 14	704	0.6-	0.2+	2000 01 07	704	0.6+	0.6-
1987 09 23	809	0.4+	0.4-	1999 12 14	704	0.8+	0.4-	2000 01 12	046	0.6+	0.0
1987 09 24	809	0.3+	0.3+	1999 12 14	704	0.0	0.4-	2000 01 12	046	0.6+	0.6+
1987 09 24	809	0.8+	0.3+	1999 12 14	704	0.2+	0.2-	2000 01 12	046	0.2-	0.4+
1987 09 24	809	1.0+	0.1+	1999 12 15	704	0.5-	0.9-	2000 01 12	046	0.1+	0.4+
1987 09 24	095	1.1- 1.4+	1999 12 15	704	0.2+	0.8+	2000 01 12	046	0.3+	0.3+	
1987 09 26	809	0.6-	0.0	1999 12 15	704	0.2+	0.2+	2000 01 12	046	0.3+	0.4+
1987 09 26	809	0.3-	0.1-	1999 12 15	704	0.3-	0.2+	2000 01 14	046	0.1+	0.3+
1987 09 26	809	0.5-	0.2+	1999 12 15	704	0.2+	0.0	2000 01 14	046	0.2+	0.5+
1987 09 27	095	1.2-	0.7+	2000 01 05	704	1.4-	0.2+	2000 01 14	046	0.2-	0.5+

1988 AX₁ = 2000 AW₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	329.18345		(2000.0)	P	Q
<i>n</i>	0.23530020	ω	161.32907	-0.32880966	-0.92748329
<i>a</i>	2.5984908	Ω	307.47554	+0.83541041	-0.19779110
<i>e</i>	0.1525142	<i>i</i>	12.95596	+0.44042441	-0.31725926
<i>P</i>	4.19	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1987 12 24	010	2.1- 0.8-	1988 02 15	809	(3.0+ 2.5+)	1999 10 28	703	0.6-	0.2+	
1987 12 24	010	1.2+ 0.4+	1988 02 15	809	2.1+ 0.2-	1999 10 28	703	0.5-	0.3+	
1987 12 24	010	0.3+ 0.3+	1988 02 16	809	1.8+ 1.2-	1999 10 28	703	0.3-	0.3+	
1988 01 14	046	(3.5- 1.0-)	1988 02 16	809	0.8+	1.1-	1999 11 10	703	0.0	0.3+
1988 01 14	046	2.2- 1.2-	1988 02 16	809	0.6-	1.2-	1999 11 10	703	0.2-	0.1-
1988 01 15	046	1.7- 1.2-	1988 02 17	809	1.1+ 0.1+	1999 11 10	703	0.2-	0.1+	
1988 01 15	046	1.5- 0.7-	1988 02 17	809	0.7+ 0.3-	1999 11 10	703	0.1+	0.1+	
1988 01 16	046	1.7- 0.1-	1988 02 17	809	0.2+ 0.1-	1999 12 10	704	0.3+	0.2+	
1988 01 16	046	1.3- 0.7+	1988 02 21	809	1.7+ 2.2-	1999 12 10	704	0.1-	0.5-	
1988 01 20	046	0.0	1988 02 21	809	0.8+	1.9-	1999 12 10	704	0.2+	0.5-
1988 01 20	046	1.0- 0.3+	1988 02 21	809	0.1+ 1.3-	1999 12 10	704	0.8-	0.7-	
1988 02 10	809	0.6- 1.0+	1988 02 23	809	0.7+ 0.1-	1999 12 10	704	0.6-	1.6-	
1988 02 10	809	0.3- 0.3-	1988 02 23	809	0.6+ 0.4+	2000 01 03	704	0.2-	0.4+	
1988 02 10	809	1.9- 1.2-	1988 02 23	809	1.3- 0.7+	2000 01 03	704	0.3+	0.3+	
1988 02 11	809	1.1+ 0.3-	1999 07 23	704	0.1+ 0.4-	2000 01 03	704	0.2+	0.7-	
1988 02 12	809	1.1- 0.5+	1999 07 23	704	0.4+ 0.0	2000 01 03	704	0.3+	0.9-	
1988 02 12	809	0.2+ 0.6+	1999 07 23	704	1.7+ 1.7-	2000 01 04	704	0.2-	0.4+	
1988 02 12	809	0.3- 1.7+	1999 07 23	704	0.7+ 0.2+	2000 01 04	704	0.2+	0.7+	
1988 02 12	809	1.7- 0.1-	1999 07 23	704	0.9+ 1.0-	2000 01 04	704	0.6+	0.4+	
1988 02 12	809	0.3- 0.3+	1999 09 07	703	0.1- 0.1+	2000 01 04	704	0.5+	0.5+	
1988 02 12	809	0.7- 0.4+	1999 09 07	703	0.6- 0.2+	2000 01 04	704	0.5-	0.7+	
1988 02 13	809	1.7+ 1.0+	1999 09 07	703	0.2+ 0.5+	2000 01 12	046	0.1-	0.2+	
1988 02 13	809	2.1+ 1.0+	1999 09 07	703	0.2+ 1.0+	2000 01 12	046	0.1-	0.3+	
1988 02 13	809	1.5+ 0.1+	1999 10 05	704	0.2+ 0.3-	2000 01 12	046	0.1-	0.2+	
1988 02 14	809	0.2+ 1.9+	1999 10 05	704	0.2- 0.2-	2000 01 13	046	0.1-	0.1+	

1988 02 14	809	0.1+	1.3+	1999 10 05	704	0.2+	0.1-	2000 01 13	046	0.1-	0.4+
1988 02 14	809	0.6-	0.1-	1999 10 05	704	0.1-	0.0	2000 01 13	046	0.1+	0.0
1988 02 15	809	1.1+	0.7+	1999 10 05	704	0.1-	0.5+				
1988 02 15	809	1.4+	1.5+	1999 10 28	703	0.4-	0.4+				

1988 CS₅ = 1999 XA₁₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	31.52404		(2000.0)	P	Q
<i>n</i>	0.23131749	ω	96.10567	+0.78682823	-0.59798014
<i>a</i>	2.6282322	Ω	300.72373	+0.47229402	+0.74268351
<i>e</i>	0.1941592	<i>i</i>	10.23272	+0.39729043	+0.30139834
<i>P</i>	4.26	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1988 02 13	809	0.3- 0.2+	1999 11 14	699	0.7+	0.6-	1999 12 10	704	0.8+	0.2-
1988 02 15	809	(3.2- 0.9-)	1999 11 14	699	0.7+	0.1+	1999 12 10	704	0.6+	0.3+
1988 02 16	809	0.3- 0.9-	1999 11 14	699	0.6+	0.2+	1999 12 10	704	0.2+	0.2-
1988 02 16	809	0.5- 1.0-	1999 12 06	703	1.1-	0.2-	1999 12 10	704	0.8+	0.3+
1988 02 16	809	0.3- 0.9-	1999 12 06	703	0.2+	0.9+	1999 12 10	704	1.4+	0.2-
1988 02 21	809	0.4+ 0.5-	1999 12 06	703	1.3-	0.4+	2000 01 03	704	0.8+	0.3+
1988 02 21	809	0.1+ 0.3-	1999 12 06	703	1.4-	1.0+	2000 01 03	704	0.2-	0.9-
1988 02 21	809	0.4+ 0.3+	1999 12 07	703	0.9-	0.5+	2000 01 03	704	0.2-	1.6-
1988 02 23	809	0.0 1.6+	1999 12 07	703	0.9-	0.7+	2000 01 03	704	0.3+	1.0-
1988 02 23	809	0.6- 1.4+	1999 12 07	703	0.2-	1.0+	2000 01 03	704	1.0-	1.4-
1988 02 23	809	1.3+ 0.8+	1999 12 07	703	0.3-	0.1-				

1988 RB₂ = 1999 XU₁₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	115.51077		(2000.0)	P	Q
<i>n</i>	0.28294145	ω	173.36830	+0.83417928	+0.55107570
<i>a</i>	2.2979381	Ω	153.15606	-0.50814329	+0.78314855
<i>e</i>	0.2054886	<i>i</i>	2.72385	-0.21432528	+0.28808665
<i>P</i>	3.48	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1988 09 08	046	0.9- 1.1-	1998 06 16	704	1.5+	0.1+	1999 12 14	704	1.0+	0.1-
1988 09 08	046	0.4+ 1.1-	1998 06 16	704	1.1+	0.6-	1999 12 14	704	0.0	0.2+
1988 09 09	046	0.3- 1.8-	1998 06 16	704	0.4+	1.4-	1999 12 14	704	0.1+	0.4-
1988 09 09	046	0.3+ 1.1-	1998 06 16	704	0.3+	0.5+	1999 12 14	704	0.0	0.2+
1988 09 10	046	1.0+ 0.0	1998 06 16	704	0.6-	0.6+	1999 12 14	704	0.1-	0.1+
1988 09 10	046	1.0- 1.9-	1998 06 18	704	1.4+	1.0+	2000 01 03	046	0.1-	0.3+
1988 09 14	807	0.4+ 1.5+	1998 06 18	704	0.5+	0.5+	2000 01 03	046	0.3+	0.4+
1988 09 15	807	0.5+ 1.6+	1998 06 18	704	1.0+	0.2+	2000 01 03	046	0.1+	0.1+
1988 10 06	807	0.9+ 0.6+	1998 06 18	704	(4.9- 0.9-)		2000 01 03	046	0.1+	0.4-
1988 10 07	807	0.2- 0.2-	1999 11 15	704	0.0	0.0	2000 01 05	704	0.2-	0.8-
1988 11 04	807	0.1+ 1.4+	1999 11 15	704	0.2+	0.5+	2000 01 05	704	0.4+	0.2-
1988 11 06	807	0.3- 1.5+	1999 11 15	704	0.1-	0.0	2000 01 05	704	(1.4+ 2.4-)	
1998 05 05	699	0.5- 0.4-	1999 11 15	704	0.5+	0.8-	2000 01 05	704	0.1+	0.1-
1998 05 05	699	0.3- 0.3-	1999 11 15	704	0.3-	0.1-	2000 01 05	704	0.0	0.7-
1998 05 05	699	1.2- 0.3-	1999 11 17	704	0.6+	1.3+	2000 01 06	704	0.5+	0.2-
1998 05 22	704	0.2- 0.0	1999 11 17	704	0.9-	0.2+	2000 01 06	704	0.2-	0.8-
1998 05 22	704	0.7- 0.3-	1999 11 17	704	0.2+	0.0	2000 01 06	704	0.2+	1.5-
1998 05 22	704	0.2- 0.7-	1999 11 17	704	0.4-	0.1-	2000 01 06	704	0.3-	0.7-
1998 05 22	704	0.2- 0.9-	1999 11 17	704	0.7+	0.2-	2000 01 06	704	0.1+	0.5-
1998 05 22	699	0.6- 0.2-	1999 12 08	704	0.4+	0.1-	2000 01 06	046	0.2+	0.1+
1998 05 22	704	0.1- 0.6-	1999 12 08	704	0.2-	0.2-	2000 01 06	046	0.5-	0.2+
1998 05 22	699	0.5- 1.0+	1999 12 08	704	1.1-	0.4+	2000 01 06			

1988 RK₆ = 2000 AP₁₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	107.92992	(2000.0)	P		Q	
<i>n</i>	0.28543223	ω	175.78134	+0.99779555	+0.06635753	
<i>a</i>	2.2845502	Ω	180.41668	-0.06377686	+0.95532011	
<i>e</i>	0.1412301	<i>i</i>	6.66468	-0.01834517	+0.28802805	
<i>P</i>	3.45	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1988 09 06	809	(3.8- 4.5-)	1988 09 18	809	0.5+ 0.3+	2000 01 07	704	0.1- 0.0
1988 09 06	809	(3.4- 4.6-)	1988 09 20	809	0.2+ 1.1+	2000 01 07	704	0.0 0.1-
1988 09 06	809	(3.2- 4.8-)	1988 09 20	809	0.4+ 1.1+	2000 01 07	704	0.4+ 0.3-
1988 09 08	809	0.6+ 0.1+	1988 09 20	809	0.5+ 0.9+	2000 01 07	704	0.3+ 0.7-
1988 09 08	809	1.0+ 0.2+	1988 10 06	807	0.6+ 0.6+	2000 01 07	704	1.0+ 0.4+
1988 09 08	809	1.6+ 0.2+	1988 10 07	807	0.6- 1.0-	2000 01 09	704	0.1- 0.1-
1988 09 10	809	1.5- 1.9-	1988 10 07	675	0.9- 0.2+	2000 01 09	704	0.2- 0.2-
1988 09 10	809	1.3- 1.8-	1988 10 07	675	0.3+ 0.1-	2000 01 09	704	0.5- 0.3-
1988 09 10	809	1.0- 1.6-	1988 10 09	675	1.1+ 0.7+	2000 01 09	704	0.1- 0.1+
1988 09 14	809	0.8- 0.4-	1988 10 09	675	0.8+ 0.8+	2000 01 09	704	0.6+ 0.2-
1988 09 14	809	0.6- 0.4-	1999 12 14	704	(2.2- 1.2+)	2000 01 11	704	1.2- 0.3-
1988 09 14	809	0.5- 0.4-	1999 12 14	704	0.4+ 0.6+	2000 01 11	704	0.2+ 0.0
1988 09 18	809	0.3- 0.8+	1999 12 14	704	0.1+ 0.0	2000 01 11	704	0.4- 0.1-
1988 09 18	809	0.1+ 0.4+	1999 12 14	704	0.3- 0.4+			

1988 RH₈ = 2000 AV₁₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	41.50817	(2000.0)	P		Q	
<i>n</i>	0.27103990	ω	27.44342	+0.98811937	-0.15114695	
<i>a</i>	2.3647246	Ω	341.18808	+0.12037702	+0.87374340	
<i>e</i>	0.1836382	<i>i</i>	4.95170	+0.09554834	+0.46230625	
<i>P</i>	3.64	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1988 09 11	675	1.3- 0.9+	1988 09 16	675	0.3+ 0.1+	2000 01 07	704	1.1- 0.1-
1988 09 11	675	1.2- 1.5+	1988 09 18	809	0.8+ 1.0+	2000 01 07	704	0.2+ 0.6+
1988 09 11	675	0.2- 1.5-	1988 09 18	809	0.3+ 0.5+	2000 01 07	704	0.4- 0.7-
1988 09 11	675	0.3- 1.0-	1988 09 18	809	0.1- 0.1-	2000 01 07	704	0.8- 0.9-
1988 09 11	071	(3.4- 3.7+)	1988 10 07	675	0.1- 0.2-	2000 01 09	704	0.1- 0.9+
1988 09 11	071	(0.8+ 4.6+)	1988 10 07	675	0.7+ 1.6-	2000 01 09	704	0.1+ 0.5+
1988 09 16	675	0.4- 0.6+	1988 10 09	675	1.6+ 0.5-	2000 01 09	704	0.5+ 0.5+
1988 09 16	675	0.4+ 0.5+	1988 10 09	675	0.7+ 1.2-	2000 01 09	704	1.1+ 0.1-
1988 09 16	675	0.5- 0.3+	2000 01 07	704	0.7- 0.1-	2000 01 09	704	0.7+ 0.5+

1988 TU = 1981 WC₉ = 1999 XO₇₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	44.64997	(2000.0)	P		Q	
<i>n</i>	0.27460735	ω	180.25425	+0.71375201	-0.69946730	
<i>a</i>	2.3441997	Ω	224.20508	+0.64269444	+0.67456658	
<i>e</i>	0.2214986	<i>i</i>	2.96831	+0.27839169	+0.23601996	
<i>P</i>	3.59	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1981 11 25	095	0.1- 0.0	1988 11 06	399	1.3- 0.4-	1999 12 08	704	0.4- 1.2-
1988 10 07	675	1.0- 0.9-	1999 11 03	704	(1.8- 2.1+)	1999 12 14	704	0.0 0.3-
1988 10 07	675	0.9- 1.1-	1999 11 03	704	0.6- 1.7+	1999 12 14	704	0.6+ 0.1-
1988 10 13	675	1.1- 0.5+	1999 11 03	704	1.0- 1.8+	1999 12 14	704	0.3+ 0.2-
1988 10 13	675	1.0- 0.1-	1999 11 03	704	0.2- 0.6+	1999 12 14	704	0.6+ 0.6+
1988 10 13	399	1.3- 0.1+	1999 11 15	704	0.8+ 0.4+	1999 12 14	704	0.2+ 0.3+
1988 10 13	399	0.7+ 0.9+	1999 11 15	704	0.7+ 0.2+	2000 01 05	704	(4.3- 0.7-)
1988 10 13	399	0.6+ 0.6-	1999 11 15	704	0.4+ 0.1+	2000 01 05	704	0.0 0.1-
1988 10 15	399	0.5+ 1.2-	1999 11 15	704	0.5+ 0.4-	2000 01 05	704	0.1- 0.2-
1988 10 16	399	0.5+ 0.6-	1999 11 15	704	0.6- 0.0	2000 01 05	704	0.2- 0.2-
1988 10 16	399	1.2- 0.6-	1999 12 07	704	0.1+ 0.2-	2000 01 05	704	0.3- 0.3-
1988 10 19	399	0.1+ 0.9-	1999 12 07	704	1.5+ 0.9+	2000 01 06	704	0.2+ 0.3-
1988 10 19	399	1.5+ 0.6-	1999 12 07	704	1.9- 0.1-	2000 01 06	704	0.2- 0.1+

1988 10 19	399	1.5+ 0.3+	1999 12 07	704	0.4+ 0.5+	2000 01 06	704	0.4- 0.3-
1988 10 31	399	1.1+ 1.9+	1999 12 08	704	0.1+ 0.4-	2000 01 06	704	0.2- 0.3-
1988 10 31	399	0.2- 1.7+	1999 12 08	704	0.3- 0.1-	2000 01 06	704	0.5- 0.2-
1988 10 31	399	1.2+ 0.2+	1999 12 08	704	0.2- 0.5-			
1988 11 06	399	0.7+ 0.6+	1999 12 08	704	0.4+ 1.0-			

1989 AA = 1999 YN₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	13.98096	(2000.0)	P		Q	
<i>n</i>	0.36720404	ω	249.41336	-0.85310251	-0.41992015	
<i>a</i>	1.9313653	Ω	264.65608	+0.51304070	-0.78310508	
<i>e</i>	0.0831476	<i>i</i>	18.11962	-0.09489653	-0.45870853	
<i>P</i>	2.68	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1989 01 02	675	0.8+ 0.4-	1998 06 19	699	0.3+ 0.4-	1999 12 19	704	0.1+ 0.6-
1989 01 03	675	0.1+ 1.5+	1998 06 19	699	0.2- 0.7+	1999 12 19	704	0.2- 0.6+
1989 01 05	675	0.9- 0.5-	1999 12 18	704	0.7- 0.9-	1999 12 19	704	0.0 0.4+
1989 01 05	675	0.1- 0.7-	1999 12 18	704	0.2+ 0.2+	1999 12 19	704	0.0 0.0
1989 02 11	675	0.1+ 0.1+	1999 12 18	704	1.0- 1.2+	1999 12 19	704	0.0 0.3+
1989 02 11	675	(3.5- 6.8+)	1999 12 18	704	0.5+ 1.0-			
1998 06 19	699	0.1+ 0.6-	1999 12 18	704	1.0+ 0.6-			

1989 BB = 1978 EM₈ = 1999 XZ₂₀₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	342.69750	(2000.0)	P		Q	
<i>n</i>	0.26391356	ω	168.20230	-0.64885218	-0.75428432	
<i>a</i>	2.4071043	Ω	322.12612	+0.68417564	-0.52068386	
<i>e</i>	0.1537400	<i>i</i>	9.39621	+0.33300834	-0.39992936	
<i>P</i>	3.73	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1978 03 05	095	1.1- 1.0+	1998 08 17	704	0.0 0.0	1999 12 13	704	0.0 0.1+
1989 01 29	400	1.0+ 0.6-	1998 08 17	704	0.4- 0.5+	1999 12 13	704	0.2- 0.4+
1989 01 29	400	0.3- 1.4-	1998 08 17	704	0.2+ 0.4-	1999 12 13	704	0.6+ 0.3+
1989 01 29	400	1.6+ 1.3-	1998 08 17	704	0.3+ 0.1+	1999 12 13	704	0.5- 0.4-
1989 01 30	400	0.8- 1.3-	1998 08 17	704	0.5+ 0.2-	1999 12 15	704	0.1- 0.2+
1989 01 30	400	0.6+ 1.9-	1999 09 27	704	0.1- 0.3+	1999 12 15	704	0.1- 0.1-
1989 01 30	400	0.3+ 1.6+	1999 09 27	704	0.1- 0.9+	1999 12 15	704	0.4- 0.5-
1989 01 30	400	0.9- 1.3+	1999 09 27	704	1.2- 0.6+	1999 12 15	704	0.7- 0.6-
1989 02 04	071(23.1+ 8.2+)		1999 09 27	704	0.4- 1.0+	1999 12 15	704	(2.2+ 0.4-)
1989 02 05	071	1.1+ 0.2-	1999 11 01	704	0.1- 0.4-	2000 01 02	704	0.6- 0.1+
1989 02 07	400	(3.4- 5.5+)	1999 11 01	704	0.4+ 0.5-	2000 01 02	704	0.3- 0.1-
1989 02 07	400	(3.0- 3.5+)	1999 11 01	704	0.8+ 0.6-	2000 01 02	704	0.0 0.0
1989 02 23	400	0.1- 1.9+	1999 11 01	704	0.8+ 0.0	2000 01 02	704	0.0 0.0
1989 02 23	400	0.3- 0.7+	1999 11 01	704	0.2+ 0.7+	2000 01 02	704	0.1- 0.2-
1989 02 23	400	0.3+ 0.4+	1999 12 13	704	0.2- 0.1+			

1989 EB₁ = 1986 RT₈ = 2000 AB₂₀₅

Id. T. Urata

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	357.80606	(2000.0)	P		Q	
<i>n</i>	0.17722704	ω	162.25590	-0.68139387	-0.71725760	
<i>a</i>	3.1389380	Ω	330.17793	+0.63097103	-0.47473306	
<i>e</i>	0.0946739	<i>i</i>	17.04266	+0.37091501	-0.51006867	
<i>P</i>	5.56	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1986 09 08	095	0.3+ 0.4-	1989 03 08	875	1.2+ 1.2+	2000 01 10	699	0.0 0.8+
1989 02 02	675	1.5- 1.2+	1989 03 08	875	0.8+ 0.8-	2000 01 10	699	0.7- 0.9+
1989 02 02	675	0.7- 1.8-	1989 03 10	033	0.8+ 0.3-	2000 01 10	699	0.5+ 1.1+
1989 03 01	875	1.1- 0.7-	1989 03 10	033	0.1+ 0.8-	2000 01 10	905	0.2+ 1.2-
1989 03 01	875	0.4- 0.8+	2000 01 08	905	0.2- 0.4-	2000 01 10	905	1.3+ 0.4-
1989 03 07	033	0.4+ 0.3+	2000 01 08	905	0.6- 0.2-			

1989 GJ₈ = 1999 XP₁₈

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	26.07714		(2000.0)	P		Q			
<i>n</i>	0.23712481	ω	337.08294	+0.90049828		−0.42215516			
<i>a</i>	2.5851439	Ω	48.31499	+0.41748270		+0.77210468			
<i>e</i>	0.0775662	<i>i</i>	8.03167	+0.12170065		+0.47501514			
<i>P</i>	4.16	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1989 04 06	033	0.4−	0.5+	1999 11 17	704	1.0−	0.0	1999 12 07	704	0.1+	0.2−
1989 04 07	033	0.6+	0.2−	1999 11 17	704	0.8−	0.1+	1999 12 07	704	0.3+	0.4−
1989 04 09	033	0.9−	0.4−	1999 11 27	699	0.3+	0.3+	1999 12 07	704	0.2+	0.2+
1989 04 09	033	0.2+	0.8−	1999 11 27	699	0.2+	0.3+	1999 12 13	699	0.7−	0.5+
1999 11 15	704	1.0+	0.6−	1999 11 27	699	0.6+	0.7+	1999 12 13	699	0.2−	0.1+
1999 11 15	704	0.2−	0.1+	1999 12 03	704	0.6+	0.4−	1999 12 13	699	0.3−	1.3+
1999 11 15	704	0.2+	0.5−	1999 12 03	704	(2.5+	0.2−)	2000 01 08	704	0.1+	0.1−
1999 11 15	704	1.4+	0.2−	1999 12 03	704	0.4−	0.1−	2000 01 08	704	0.0	0.3+
1999 11 15	704	0.9−	0.8−	1999 12 03	704	0.7−	0.8−	2000 01 08	704	0.2+	0.2+
1999 11 17	704	0.7+	0.7−	1999 12 03	704	0.0	0.3+	2000 01 08	704	0.4−	0.4+
1999 11 17	704	0.2+	0.7−	1999 12 07	704	0.2+	0.4+	2000 01 08	704	0.8−	0.4−
1999 11 17	704	0.1+	0.6+	1999 12 07	704	0.1+	0.6−				

1989 RP₁ = 1976 SS₆

Id. E. Bowell (1998, 2000 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	174.33940		(2000.0)	P		Q			
<i>n</i>	0.22851248	ω	155.53066	+0.74942010		+0.65872978			
<i>a</i>	2.6496963	Ω	162.73832	−0.63844693		+0.74565112			
<i>e</i>	0.2335456	<i>i</i>	12.98348	−0.17537111		+0.10039661			
<i>P</i>	4.31	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1976 09 25	095	0.1−	0.4−	1989 10 03	809	(2.9+	0.4+)	1998 11 13	704	1.4−	0.4+
1989 09 02	675	0.8+	0.3−	1989 10 06	675	0.6+	2.4−	1998 11 19	699	0.1−	0.3+
1989 09 02	675	1.4+	0.2−	1989 10 06	675	0.3+	1.4−	1998 11 19	699	0.4+	0.2+
1989 09 04	675	0.3−	0.6+	1989 10 07	809	0.7−	0.0	1998 11 19	699	0.3+	0.2−
1989 09 04	675	0.2+	0.3+	1989 10 07	809	0.5−	0.0	2000 01 05	699	0.3−	0.3−
1989 09 05	675	0.2+	1.3+	1989 10 07	809	0.4−	0.3−	2000 01 05	699	0.3+	0.2−
1989 09 05	675	1.2−	0.7+	1989 10 08	809	0.6−	1.4+	2000 01 05	699	0.0	0.2+
1989 09 07	675	1.0−	0.4+	1989 10 08	809	0.6−	1.3+	2000 01 08	704	0.7+	0.6+
1989 09 07	675	1.1−	0.8+	1989 10 08	809	0.4−	1.3+	2000 01 08	704	0.6−	0.5+
1989 10 02	675	0.2+	0.7−	1998 11 13	704	0.4+	0.4−	2000 01 08	704	0.3−	0.0
1989 10 02	675	0.0	1.1−	1998 11 13	704	0.0	0.9−	2000 01 08	704	0.2+	0.4+
1989 10 03	809	1.1+	0.1−	1998 11 13	704	0.5+	1.4−	2000 01 08	704	0.4+	1.0+
1989 10 03	809	1.8+	0.3+	1998 11 13	704	0.3−	0.8+				

1989 TP = 1999 YQ₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	151.26686		(2000.0)	P		Q			
<i>n</i>	0.40960591	ω	107.61644	+0.80461269		+0.53696614			
<i>a</i>	1.7956647	Ω	220.94883	−0.57372826		+0.81306856			
<i>e</i>	0.1005930	<i>i</i>	22.75592	+0.15308266		+0.22491528			
<i>P</i>	2.41	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1989 10 04	675	0.8+	1.6+	1989 10 28	675	0.6+	0.7+	1999 12 31	704	0.2+	0.5−
1989 10 04	675	0.4−	0.9+	1989 10 28	675	0.9−	0.4−	2000 01 02	704	0.6+	0.3−
1989 10 06	675	0.5−	1.2−	1999 12 31	704	0.4+	0.5+	2000 01 02	704	0.3−	0.9−
1989 10 06	675	0.1−	1.5−	1999 12 31	704	1.3−	0.1+	2000 01 02	704	0.0	0.2−
1989 10 26	675	0.8−	0.3+	1999 12 31	704	1.5+	1.7+				
1989 10 26	675	1.3+	0.3−	1999 12 31	704	1.1−	0.4−				

1989 VR₁ = 1999 YV

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	357.44829		(2000.0)	P		Q			
<i>n</i>	0.29713256	ω	302.84457	−0.10055803		−0.99372192			
<i>a</i>	2.2241764	Ω	152.79911	+0.94493025		−0.11081709			
<i>e</i>	0.1191620	<i>i</i>	6.15856	+0.31144005		+0.01537277			
<i>P</i>	3.32	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1989 11 03	809	2.2+	1.2−	1999 11 05	704	0.2+	0.6+	1999 12 16	678	1.8−	0.0
1989 11 03	809	0.5+	0.4+	1999 11 05	704	0.1+	0.5+	1999 12 16	678	0.5+	0.8−
1989 11 03	809	0.3+	0.1−	1999 11 05	704	0.1−	0.8+	1999 12 17	678	0.4−	0.8−
1989 11 06	809	0.4−	1.6−	1999 11 13	699	0.4+	0.9+	1999 12 17	678	0.0	1.2−
1989 11 06	809	1.1−	1.6−	1999 11 13	699	0.1−	0.8+	2000 01 06	699	0.4−	0.7+
1989 11 06	809	1.1−	1.6−	1999 11 13	699	0.2−	1.0+	2000 01 06	699	1.1−	0.3−
1989 12 02	809	0.3+	1.1+	1999 12 05	704	0.9+	0.7−	2000 01 06	699	0.6−	0.0
1989 12 02	809	0.3−	0.8+	1999 12 05	704	0.5+	0.6−	2000 01 07	704	0.5+	0.1+
1989 12 02	809	0.1−	0.1+	1999 12 05	704	0.2−	0.8−	2000 01 07	704	0.8+	0.4−
1989 12 03	809	0.0	1.2+	1999 12 05	704	0.3+	0.9−	2000 01 07	704	0.5+	0.2−
1989 12 03	809	0.5+	1.5+	1999 12 05	704	0.1+	1.2−	2000 01 07	704	0.2+	0.1+
1989 12 03	809	0.7−	0.9+	1999 12 14	699	0.4+	0.3+	2000 01 07	704	0.6+	0.3+
1999 11 05	704	0.2−	0.4+	1999 12 14	699	0.2−	0.4+				
1999 11 05	704	0.4−	0.4+	1999 12 14	699	0.1−	0.5+				

1989 YO₂ = 1982 UQ₉ = 1999 XY₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams					
<i>M</i>	53.85238		(2000.0)	P		Q			
<i>n</i>	0.29478708	ω	313.17427	+0.44217739		−0.89041891			
<i>a</i>	2.2359586	Ω	110.29260	+0.85266887		+0.37999951			
<i>e</i>	0.1388566	<i>i</i>	6.60335	+0.27827136		+0.25050854			
<i>P</i>	3.34	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1982 10 22	095	0.1+	0.3−	1999 12 18	699	0.5+	0.3+	2000 01 06	704	0.1+	0.0
1989 12 30	413	0.0	1.9−	1999 12 18	699	0.2−	0.6+	2000 01 06	704	0.1+	0.3+
1989 12 30	413	0.1+	0.4−	1999 12 30	699	0.3+	0.6+	2000 01 06	704	0.0	0.7+
1989 12 31	413	0.5−	1.1−	1999 12 30	699	0.6+	0.0	2000 01 07	691	0.1+	0.6+
1989 12 31	413	0.4+	0.2−	1999 12 30	699	0.7+	0.5+	2000 01 07	691	0.1+	0.6+
1990 01 21	372	1.0−	1.7−	2000 01 02	678	0.3+	0.1+	2000 01 07	691	0.1+	0.6+
1990 01 21	372	0.2−	2.0−	2000 01 02	678	0.1+	0.7−	2000 01 10	691	0.1+	0.8+
1999 12 07	704	0.0	1.2−	2000 01 03	678	0.4+	0.3−	2000 01 10	691	0.0	0.9+
1999 12 07	704	0.3+	1.2−	2000 01 03	678	0.8+	1.0−	2000 01 10	691	0.0	0.8+
1999 12 07	704	0.3+	0.8−	2000 01 04	704	0.2−	0.6−	2000 01 15	587	0.2−	1.0+
1999 12 07	704	1.1−	1.4+	2000 01 04	704	0.0	0.8−	2000 01 15	587	0.1−	1.0+
1999 12 07	704	0.3−	0.5+	2000 01 04	704	0.3−	0.8−	2000 01 15	587	0.0	1.1+
1999 12 08	704	0.2−	1.3−	2000 01 04	704	0.4−	1.2−	2000 01 17	587	0.0	1.4+
1999 12 08	704	0.4−	0.8+	2000 01 04	704	0.3−	0.9−	2000 01 17	587	0.1+	1.4+
1999 12 08	704	0.1−	0.9+	2000 01 06	704	0.6−	0.1+				
1999 12 18	699	0.1+	0.8+	2000 01 06	704	0.3−	0.4+				

1989 YE₄ = 1990 BF₃ = 1999 XY₁₃₆Id. S. Nakano (d, *MPC* 16553), H. Kaneda (d, *ibid.*), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	334.42031		(2000.0)	P	Q
n	0.28630430	ω	1.27518	−0.60930265	−0.78866332
a	2.2799088	Ω	126.27068	+0.72660041	−0.59683729
e	0.0987510	i	5.85338	+0.31749351	−0.14763273
P	3.44	H	14.6	G 0.15	U 4

1990 01 29	033	0.7+	0.8−	1999 12 14	704	0.1−	0.1−	2000 01 05	704	0.8−	0.2−
1999 11 04	704	0.4+	0.2+	1999 12 14	704	0.2+	0.1+	2000 01 05	704	0.4−	0.3+
1999 11 04	704	0.7−	0.8+	1999 12 14	704	1.0+	1.3−	2000 01 05	704	0.7−	0.8+
1999 11 04	704	0.3+	0.6−	1999 12 14	704	0.1−	0.7−	2000 01 07	704	0.4+	0.8−
1999 11 04	704	0.2−	0.6−	1999 12 14	678	0.4+	0.6−	2000 01 07	704	0.1+	0.2−
1999 11 04	704	0.0	0.0	1999 12 14	678	1.4−	0.3−	2000 01 07	704	0.1−	0.4+
1999 12 06	704	0.4+	0.1+	1999 12 15	678	0.4−	1.1−	2000 01 07	704	0.1−	0.2+
1999 12 06	704	0.3+	0.2+	1999 12 15	678	0.1+	0.2−	2000 01 07	704	0.0	1.7+
1999 12 06	704	0.4+	0.0	1999 12 30	699	0.7−	0.5+				
1999 12 06	704	0.2−	0.1+	1999 12 30	699	0.1+	0.1+				

1990 EB = 1999 RM₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	233.30354		(2000.0)		P		Q
<i>n</i>	0.26912395	ω	54.02332	−0.90388715			+0.41482493
<i>a</i>	2.3759346	Ω	150.07665	−0.42777026			−0.87608093
<i>e</i>	0.1492616	<i>i</i>	12.08549	−0.00078753			−0.24576917
<i>P</i>	3.66	<i>H</i>	13.6	<i>G</i>	0.15		<i>U</i> 3

Residuals in seconds of arc

1990 03 04	402	1.1+	0.0	1999 09 08	703	0.3+	0.1−	1999 11 07	704	0.2−	1.5−
1990 03 04	402	1.6−	0.1+	1999 09 08	703	1.5+	0.1+	1999 11 07	704	1.0−	0.2+
1990 03 05	402	0.9+	0.4+	1999 09 13	703	0.2+	0.7+	1999 12 02	704	0.4−	0.5−
1990 03 05	402	(1.7−	2.1+)	1999 09 13	703	0.2−	0.9+	1999 12 02	704	0.3−	0.7−
1990 03 17	095	1.1−	0.3−	1999 09 13	703	0.7+	0.7+	1999 12 02	704	0.3−	0.4−
1990 03 17	095	(1.3+	5.5−)	1999 09 13	703	0.1−	0.1+	1999 12 02	704	0.3−	1.2−
1990 03 21	402	(2.3+	0.7−)	1999 10 02	704	0.6−	0.2−	2000 01 09	704	0.8+	0.4−
1990 03 21	402	0.1+	1.5−	1999 10 02	704	0.5+	0.3−	2000 01 09	704	0.1−	0.4+
1990 03 26	402	0.3+	1.7+	1999 10 02	704	0.1−	0.6+	2000 01 09	704	0.8−	0.9−
1990 03 26	402	0.5+	0.5+	1999 10 02	704	0.1+	0.2−	2000 01 09	704	0.3+	0.6−
1998 06 25	704	0.5−	0.6+	1999 10 02	704	0.1+	0.1−	2000 01 09	704	0.2+	0.6−
1998 06 25	704	0.3+	0.4+	1999 10 04	703	0.4−	0.2+	2000 01 11	699	0.7+	1.2+
1998 06 25	704	0.1−	0.4−	1999 10 04	703	0.7+	0.7+	2000 01 11	704	0.0	1.0+
1998 06 25	704	0.6+	0.7−	1999 10 04	703	0.2+	0.4+	2000 01 11	699	0.4−	0.8−
1998 06 25	704	0.4−	0.1−	1999 10 04	703	0.5+	0.4+	2000 01 11	704	0.0	0.6−
1999 09 08	703	0.3−	0.5+	1999 11 07	704	1.1+	0.8+	2000 01 11	704	0.2+	0.0
1999 09 08	703	0.1+	0.4+	1999 11 07	704	1.7−	0.8+	2000 01 11	699	0.6−	0.4−

1990 HW = 1999 VD₁₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	196.80550		(2000.0)		P		Q
<i>n</i>	0.36148471	ω	154.58293	−0.63198868			+0.67575344
<i>a</i>	1.9516837	Ω	73.69320	−0.76126840			−0.44964668
<i>e</i>	0.0613810	<i>i</i>	23.28510	−0.14512314			−0.58410200
<i>P</i>	2.73	<i>H</i>	14.0	<i>G</i>	0.15		<i>U</i> 4

Residuals in seconds of arc

1990 04 26	675	1.0+	1.0−	1999 09 30	704	0.4−	0.5+	1999 11 13	704	0.5−	0.7−
1990 04 26	675	0.4−	0.4−	1999 09 30	704	1.0+	1.1+	1999 11 13	704	0.2−	0.3+
1990 04 28	675	1.8−	0.4−	1999 09 30	704	0.4+	0.8−	1999 11 13	704	0.5+	0.2−
1990 04 28	675	0.3−	0.9−	1999 09 30	704	0.2+	0.7−	1999 11 13	704	0.2−	0.7−
1990 05 18	675	(0.1−	2.5−)	1999 11 10	704	0.2+	0.2−	2000 01 09	704	1.2−	1.6−
1990 05 18	675	0.1−	0.3−	1999 11 10	704	0.1+	0.4+	2000 01 09	704	1.0−	0.2−
1990 05 21	675	(0.4−	2.5+)	1999 11 10	704	0.2+	0.1+	2000 01 09	704	0.6−	0.9−
1990 05 21	675	0.6+	1.5+	1999 11 10	704	0.5+	0.0	2000 01 09	704	1.1−	0.5+
1999 09 30	704	1.2+	0.2+	1999 11 10	704	0.5+	0.3+				

1990 OY = 1986 PQ₄ = 2000 AW₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	105.40971		(2000.0)		P		Q
<i>n</i>	0.24223633	ω	188.72661	+0.95650332			+0.27246154
<i>a</i>	2.5486480	Ω	154.70134	−0.25076518			+0.95051177
<i>e</i>	0.2024501	<i>i</i>	14.11866	−0.14905777			+0.14930530
<i>P</i>	4.07	<i>H</i>	13.7	<i>G</i>	0.15		<i>U</i> 3

Residuals in seconds of arc

1986 08 09	071	1.0+	1.5+	1990 08 19	675	1.5−	0.2−	2000 01 08	704	0.2−	0.4+
1986 08 09	071	0.3+	0.3+	1990 09 15	675	(0.5−	2.9−)	2000 01 08	704	0.0	0.1+
1990 07 19	675	(2.9+	1.2−)	1990 09 15	675	(1.3+	3.5−)	2000 01 08	704	0.2+	0.4+
1990 07 19	675	0.8+	2.0−	1998 06 19	704	0.7+	1.3+	2000 01 08	704	0.0	0.3+
1990 07 22	675	(3.0+	1.7−)	1998 06 19	704	0.6+	0.6+	2000 01 11	704	0.2+	0.1−
1990 07 22	675	0.0	1.6−	1998 06 19	704	1.0+	1.0−	2000 01 11	704	0.9+	0.4+
1990 08 16	675	0.9−	0.4+	1998 06 19	704	0.4−	0.2+	2000 01 11	704	1.8−	0.5−
1990 08 16	675	1.2−	0.8+	1998 06 19	704	0.8−	1.9+	2000 01 11	704	0.2+	0.3+
1990 08 19	675	0.8+	0.4−	2000 01 08	704	0.4+	0.6+				

1990 OB₁ = 2000 AX₂₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	283.29327		(2000.0)		P		Q
<i>n</i>	0.27739850	ω	37.84905	−0.01426237			+0.99295000
<i>a</i>	2.3284485	Ω	231.64592	−0.95011535			−0.05012917
<i>e</i>	0.2122191	<i>i</i>	8.63019	−0.31157247			+0.10741216
<i>P</i>	3.55	<i>H</i>	13.5	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1990 07 22	675	0.2−	0.6−	1990 08 17	675	(2.4−	2.5+)	2000 01 10	704	0.4−	1.0−
1990 07 22	675	0.2+	0.4−	1990 08 20	675	0.1−	0.6+	2000 01 10	704	0.7−	0.2+
1990 07 23	675	0.6−	0.2−	1990 08 20	675	0.3+	1.8+	2000 01 11	704	0.1+	0.0
1990 07 23	675	0.3+	0.2−	1990 09 15	675	(0.7−	2.7−)	2000 01 11	704	0.4+	0.2−
1990 07 29	675	(2.1−	3.4−)	1990 09 15	675	0.4+	1.8−	2000 01 11	704	0.2+	0.1+
1990 07 29	675	(2.8−	1.9−)	2000 01 10	704	0.4+	0.2−	2000 01 11	704	0.2−	0.2+
1990 08 17	675	(1.0−	2.7+)	2000 01 10	704	0.2−	0.2+	2000 01 11	704	0.3+	0.2+

1990 QT₆ = 2000 AG₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	276.07556		(2000.0)		P		Q
<i>n</i>	0.26326585	ω	239.57633	−0.44878995			+0.89363440
<i>a</i>	2.4110508	Ω	3.75976	−0.80757717			−0.40448219
<i>e</i>	0.1412758	<i>i</i>	1.98189	−0.38263127			−0.19445236
<i>P</i>	3.74	<i>H</i>	14.5	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1990 08 20	809	0.4−	0.3−	1990 09 15	809	0.0	0.9−	2000 01 04	704	0.3+	0.5−
1990 08 20	809	0.1−	0.8−	1990 09 16	809	0.0	0.5+	2000 01 06	704	0.2−	0.7−
1990 08 20	809	1.0−	0.8−	1990 09 16	809	0.0	0.3+	2000 01 06	704	0.2−	0.8+
1990 08 26	809	0.5−	0.8+	1990 09 16	809	0.3−	0.3+	2000 01 06	704	0.2−	0.0
1990 08 26	809	0.5+	1.0+	2000 01 04	704	1.0+	0.2+	2000 01 06	704	0.1+	0.5−
1990 08 26	809	1.8+	1.6+	2000 01 04	704	0.2−	0.6+	2000 01 06	704	1.2−	0.4+
1990 09 15	809	0.2−	1.0−	2000 01 04	704	0.3+	0.2−				
1990 09 15	809	0.0	0.7−	2000 01 04	704	0.3+	0.1+				

1990 RU₉ = 1990 PHId. S. Nakano (d, *MPC* 20912), E. Bowell (1999-2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	127.90472		(2000.0)		P		Q
<i>n</i>	0.24010227	ω	154.44710	+0.57668023			+0.81155409
<i>a</i>	2.5637275	Ω	150.49734	−0.77846669			+0.58073337
<i>e</i>	0.1780864	<i>i</i>	10.99380	−0.24784979			+0.06425509
<i>P</i>	4.10	<i>H</i>	13.7	<i>G</i>	0.15		<i>U</i> 3

Residuals in seconds of arc

1990 08 15	511	1.1−	1.2−	1999 11 05	704	0.3+	1.2−	1999 12 05	704	0.1+	0.2+
1990 08 15	511	1.0+	0.4−	1999 11 05	704	0.3+	0.3+	1999 12 05	704	0.8−	0.3+
1990 09 14	675	0.1+	0.3+	1999 11 05	704	0.2+	0.8+	2000 01 04	699	0.6−	0.0
1990 09 14	675	0.8+	0.6+	1999 11 05	704	0.0	0.7+	2000 01 04	699	1.1+	0.2−
1990 09 18	675	0.4−	0.6+	1999 11 14	699	0.0	0.4−	2000 01 04	699	0.7+	0.1+
1990 09 18	675	0.2−	0.2−	1999 11 14	699	1.1−	0.0	2000 01 11	704	0.5+	0.4−
1998 06 19	704	0.6+	0.1−	1999 11 14	699	0.2−	0.0	2000 01 11	704	0.4+	0.9+
1998 06 19	704	0.1+	0.3+	1999 12 05	704	0.2+	0.5−	2000 01 11	704	0.3−	0.2−

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1998 06 19 704 0.7− 0.4+ 1999 12 05 704 1.3− 0.4− 2000 01 11 704 (0.1+ 2.1+)
 1998 06 19 704 (3.3− 1.0+) 1999 12 05 704 0.1+ 0.0 2000 01 11 704 0.6+ 0.2+

1990 ST₄ = 1986 VF₆ = 2000 AD₁₂₁
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.69947		(2000.0)	P	Q			
<i>n</i>	0.23664258	ω	196.17590	+0.97310761	−0.23030714			
<i>a</i>	2.5886547	Ω	177.12784	+0.22003527	+0.92357897			
<i>e</i>	0.3358046	<i>i</i>	5.14600	+0.06816201	+0.30652977			
<i>P</i>	4.16	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1986 11 06	688	0.7+	0.0	1990 09 19	675	0.7−	1.3+	2000 01 05	704	0.6+	0.3−
1986 11 06	688	0.1−	2.4−	1990 09 24	046	(3.2+	0.4+)	2000 01 05	704	1.0+	0.2−
1990 09 13	675	0.2−	0.1+	1990 09 24	046	(2.2+	1.5+)	2000 01 07	704	0.2+	0.2+
1990 09 13	675	0.1−	1.1−	1990 10 15	372	0.3−	1.6−	2000 01 07	704	0.6−	0.4+
1990 09 16	675	0.0	1.0+	1990 10 15	372	1.1−	1.6+	2000 01 07	704	0.1+	0.2+
1990 09 16	675	0.6+	1.4+	2000 01 04	699	0.5−	0.6+	2000 01 07	704	0.0	1.4+
1990 09 16	046	1.9−	0.1+	2000 01 04	699	0.5−	1.7+	2000 01 07	704	0.9−	0.1−
1990 09 16	046	(2.7−	1.3−)	2000 01 04	699	0.9+	0.3+	2000 01 14	046	0.3+	0.1+
1990 09 18	675	0.8+	0.2+	2000 01 05	704	0.9−	0.1+	2000 01 14	046	0.3+	0.0
1990 09 18	675	0.9+	0.8−	2000 01 05	704	0.1−	0.3−	2000 01 14	046	0.5+	0.1−
1990 09 19	675	0.6+	0.9+	2000 01 05	704	0.3+	0.1+				

1990 YR = 1999 XJ₁₁₉

Id. B. G. Marsden

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	31.80629		(2000.0)	P	Q			
<i>n</i>	0.21207846	ω	10.37503	+0.76602593	−0.63966958			
<i>a</i>	2.7848706	Ω	29.69210	+0.58020884	+0.64555298			
<i>e</i>	0.1853649	<i>i</i>	7.36057	+0.27669834	+0.41723395			
<i>P</i>	4.65	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1990 12 23	877	0.6+	1.3−	1999 11 03	012	1.1−	0.4−	1999 12 05	703	0.2+	0.1−
1990 12 23	877	0.8−	1.1−	1999 11 09	703	0.3+	0.3+	1999 12 05	703	0.0	0.2−
1990 12 24	877	0.7+	0.8−	1999 11 09	703	0.2+	0.0	1999 12 13	703	0.1+	0.2−
1990 12 27	877	0.7−	0.8+	1999 11 09	703	0.2+	0.1+	1999 12 13	703	0.1−	0.3−
1990 12 27	877	(3.8+	1.8−)	1999 11 09	703	0.2+	0.1+	1999 12 13	703	0.1−	0.1−
1991 01 06	877	(4.2−	0.8+)	1999 11 16	704	0.3+	0.1−	1999 12 13	703	0.0	0.2−
1991 01 06	877	1.5+	0.8+	1999 11 16	704	0.7+	1.5+	1999 12 15	704	0.0	0.2−
1991 01 20	877	0.3−	1.2+	1999 11 16	704	0.1−	0.3−	1999 12 15	704	0.7−	1.0+
1991 01 20	877	1.4−	0.2−	1999 11 16	704	0.1−	0.5−	1999 12 15	704	0.2−	1.0+
1999 11 01	012	(0.6+	2.6−)	1999 11 16	704	0.2+	0.7−	1999 12 15	704	0.6−	0.4+
1999 11 01	012	0.5+	0.1+	1999 12 05	703	0.2+	0.3−				
1999 11 03	012	0.7−	0.2−	1999 12 05	703	0.2+	0.1−				

1991 AK₁ = 1999 WE₁

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.62994		(2000.0)	P	Q			
<i>n</i>	0.21941842	ω	191.16238	−0.17780622	−0.98227243			
<i>a</i>	2.7224129	Ω	269.09951	+0.90737392	−0.14029689			
<i>e</i>	0.2791625	<i>i</i>	3.40457	+0.38086419	−0.12432884			
<i>P</i>	4.49	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1991 01 15	889	0.4+	0.4−	1999 11 17	327	0.1+	0.1+	2000 01 03	888	0.5+	0.2−
1991 01 15	889	(4.5+	1.0+)	1999 11 17	327	0.0	0.3+	2000 01 03	888	0.4+	0.1+
1991 01 16	675	0.5+	0.7−	1999 11 17	327	0.0	0.2+	2000 01 05	704	0.1−	0.1+
1991 01 16	675	0.7+	0.6−	1999 11 20	327	0.1−	0.3−	2000 01 05	704	0.1+	0.1−
1991 01 17	675	0.3+	0.3+	1999 11 20	327	0.3+	0.1+	2000 01 05	704	0.2+	0.0
1991 01 17	675	0.2−	0.1+	1999 11 20	327	0.1−	0.0	2000 01 05	704	0.3+	0.2+
1991 01 18	889	0.0	0.6+	1999 12 06	704	0.9−	0.1+	2000 01 05	704	0.0	0.1+
1991 01 18	889	(3.0+	0.6+)	1999 12 06	704	0.4+	0.3−	2000 01 06	704	0.2−	0.1+

1991 01 20	889	0.4−	0.6−	Y	1999 12 06	704	0.5+	0.4−	2000 01 06	704	0.1−	0.1+
1991 01 20	889	(1.0+	2.8−)	Y	1999 12 06	704	0.6−	0.0	2000 01 06	704	0.2−	0.4+
1991 02 08	889	0.9−	1.2+		1999 12 06	704	0.5+	0.5−	2000 01 06	704	0.3−	0.3+
1991 02 08	889	0.7−	0.4−		1999 12 07	704	0.1−	0.2−	2000 01 07	704	0.2+	0.5−
1999 11 17	704	0.6−	0.1+		1999 12 07	704	0.0	0.1+	2000 01 07	704	0.0	0.5+
1999 11 17	704	0.1−	0.5+		1999 12 07	704	0.1−	0.2−	2000 01 07	704	0.3−	0.1+
1999 11 17	704	0.0	1.1+		1999 12 07	704	0.1−	0.1+	2000 01 07	704	0.1+	0.3+
1999 11 17	704	0.5+	0.1−		1999 12 07	704	0.0	1.0−				

1991 EL = 1999 XN₁₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	238.53653		(2000.0)	P	Q			
<i>n</i>	0.08252925	ω	298.04088	−0.71751915	+0.58571444			
<i>a</i>	5.2247331	Ω	280.34949	−0.42412997	−0.79669256			
<i>e</i>	0.0857516	<i>i</i>	22.53220	−0.55252152	−0.14906231			
<i>P</i>	11.94	<i>H</i>	11.2	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1991 02 12	413	0.5+	0.1−	1999 12 12	704	0.2+	0.2−	1999 12 15	704	0.2−	0.1−
1991 03 06	413	(2.8−	0.7−)	1999 12 12	704	0.3+	0.2+	2000 01 02	704	0.4−	0.7−
1991 03 10	413	0.5+	0.1+	1999 12 12	704	0.7−	0.6+	2000 01 02	704	0.6+	0.6−
1991 03 12	413	0.4−	0.5+	1999 12 15	704	0.1−	0.2+	2000 01 02	704	0.4+	0.4+
1991 03 20	413	0.4−	0.1−	1999 12 15	704	0.1−	0.0	2000 01 02	704	0.1−	0.4+
1991 05 12	413	0.3+	0.5−	1999 12 15	704	0.1+	0.0				
1991 05 15	413	0.6−	0.1+	1999 12 15	704	0.1−	0.1−				

1991 GW₂ = 1999 VB₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	169.71800		(2000.0)	P	Q			
<i>n</i>	0.17091459	ω	167.42939	−0.63176212	+0.77460124			
<i>a</i>	3.2157575	Ω	63.38253	−0.71402255	−0.56670352			
<i>e</i>	0.1062744	<i>i</i>	1.89018	−0.30174232	−0.28078469			
<i>P</i>	5.77	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1991 03 20	809	0.5+	0.1+	1991 04 08	809	1.8+	0.3+	1999 11 09	704	0.1+	0.3−
1991 03 20	809	0.9+	0.2−	1991 04 10	809	0.4+	0.2−	1999 11 09	704	0.2−	0.8+
1991 03 20	809	1.2+	0.1−	1991 04 10	809	0.5−	0.6−	1999 11 09	704	0.1+	0.1+
1991 03 21	809	0.3−	0.2−	1991 04 10	809	0.3−	0.3−	1999 11 12	704	0.2−	0.6−
1991 03 21	809	0.1+	0.2−	1991 04 15	675	1.6+	0.9−	1999 11 12	704	0.2−	0.4−
1991 03 21	809	0.4+	0.1−	1991 04 15	675	0.3+	1.1−	1999 11 12	704	0.4−	0.5−
1991 04 08	809	0.8+	0.2−	1999 11 09	704	0.9+	0.7+	1999 11 12	704	0.7−	0.0
1991 04 08	809	0.5+	0.4+	1999 11 09	704	0.0	1.1+	1999 11 12	704	0.4−	1.6−

1991 RV = 2000 AL₁₅₃

Id. B. G. Marsden

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	115.73684		(2000.0)	P	Q			
<i>n</i>	0.27126840	ω	228.79226	+0.99758167	+0.05658361			
<i>a</i>	2.3633965	Ω	127.92494	−0.03778231	+0.92889855			
<i>e</i>	0.2366587	<i>i</i>	2.93299	−0.05833784	+0.36598604			
<i>P</i>	3.63	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5	

Residuals in seconds of arc

1991 09 07	675	0.3−	0.9−	1991 09 16	675	0.6+	0.7−	2000 01 11	684	0.2−	0.6−
1991 09 07	675	(1.0+	2.7−)	1991 09 16	675	0.3+	0.2+	2000 01 12	684	0.3−	0.4−
1991 09 09	675	0.3+	1.1+	1991 09 30	691	0.4−	0.4+	2000 01 12	684	0.0	0.4−
1991 09 09	675	1.3−	0.6−	1991 09 30	691	0.3−	0.3+	2000 01 13	699	1.5+	0.1+
1991 09 14	675	0.8+	0.3−	1991 09 30	691	0.2−	0.6+	2000 01 13	699	0.2−	1.4+
1991 09 14	675	0.5+	0.2−	2000 01 11	684	0.2−	0.8−	2000 01 13	699	0.7−	0.3+

1991 RS₄ = 2000 AN₂₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26743093	ω	24.41058	+0.97306234	+0.22979455		
<i>a</i>	2.3859516	Ω	322.28936	-0.21619118	+0.88158429		
<i>e</i>	0.2355910	<i>i</i>	1.73797	-0.08006907	+0.41231493		
<i>P</i>	3.69	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 13	033	0.0	0.3-	1991 10 04	033	0.1-	0.0	1991 10 10	691	0.4+	0.0
1991 09 13	033	0.4+	0.7+	1991 10 04	033	0.3-	0.5-	2000 01 08	691	0.1-	0.0
1991 09 13	033	0.0	0.3+	1991 10 07	033	0.1-	0.1+	2000 01 08	691	0.2-	0.0
1991 09 14	033	0.1-	0.0	1991 10 07	033	0.6-	0.2+	2000 01 08	691	0.5-	0.2-
1991 09 15	033	0.2+	0.3-	1991 10 08	033	0.6-	0.3+	2000 01 11	691	0.3+	0.1+
1991 09 15	033	0.8-	0.2-	1991 10 09	033	0.5+	0.0	2000 01 11	691	0.3+	0.1+
1991 09 18	033	0.1+	0.3+	1991 10 10	691	0.3+	0.1+	2000 01 11	691	0.2+	0.0
1991 10 03	033	0.4+	0.5-	1991 10 10	691	0.2+	0.3-				

1991 RT₉ = 1980 TB₈ = 2000 AF₁₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26785959	ω	22.81760	+0.92415409	+0.38147845		
<i>a</i>	2.3834054	Ω	314.74048	-0.35476402	+0.83725913		
<i>e</i>	0.2257432	<i>i</i>	1.64031	-0.14170991	+0.39175418		
<i>P</i>	3.68	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 10 10	095	0.1-	0.1+	1999 12 08	704	0.8-	0.2+	2000 01 04	704	0.2-	0.3+
1991 09 10	675	1.0+	0.3-	1999 12 08	704	0.5-	0.3+	2000 01 04	704	0.4-	0.1-
1991 09 10	675	0.6-	0.5-	1999 12 08	704	0.7-	1.1-	2000 01 04	704	0.8+	0.3+
1991 09 17	675	0.1+	0.4-	2000 01 03	704	1.0+	0.1-	2000 01 12	691	0.0	0.1+
1991 09 17	675	0.4-	0.5-	2000 01 03	704	0.2+	0.1+	2000 01 12	691	0.0	0.0
1991 10 07	033	0.0	0.3+	2000 01 03	704	0.1+	0.1+	2000 01 12	691	0.0	0.1-
1991 10 07	033	0.2-	0.8+	2000 01 03	704	0.2+	0.2-	2000 01 15	691	0.2+	0.1+
1991 10 08	033	0.2+	0.5+	2000 01 03	704	0.2+	0.0	2000 01 15	691	0.2+	0.0
1999 12 08	704	0.4-	0.8-	2000 01 04	704	0.6-	0.6+	2000 01 15	691	0.1+	0.0

1991 RF₁₇

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26701448	ω	326.78973	+0.99594601	-0.05068928		
<i>a</i>	2.3884318	Ω	36.34035	+0.08061393	+0.86949734		
<i>e</i>	0.1338524	<i>i</i>	7.20401	-0.03991170	+0.49132980		
<i>P</i>	3.69	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 09 12	675	0.5+	1.2+	1991 10 14	691	0.6-	1.1+	1999 12 12	704	1.2-	1.9+
1991 09 15	675	0.9-	1.0-	1991 10 14	691	1.1-	0.1-	1999 12 13	699	0.7+	0.9+
1991 09 15	675	0.1+	0.7+	1999 12 03	699	0.9+	1.0+	1999 12 13	699	0.5+	0.7+
1991 09 17	675	1.2-	1.2-	1999 12 03	699	0.0	0.1+	1999 12 13	699	0.0	0.7+
1991 09 17	675	0.8+	0.8+	1999 12 03	699	0.0	0.3+	1999 12 15	704	0.3+	1.5-
1991 09 17	675	(2.7+	1.2-)	1999 12 12	704	0.4-	1.0-	1999 12 15	704	0.1+	0.8-
1991 09 17	675	(0.8+	2.7-)	1999 12 12	704	0.5-	0.6-	1999 12 15	704	0.1+	1.4-
1991 10 02	675	0.4+	1.1-	1999 12 12	704	0.2+	0.5-	1999 12 15	704	0.4-	0.3-
1991 10 02	675	1.1+	0.4-	1999 12 12	704	0.6-	0.9-	2000 01 02	704	0.6+	0.8+
1991 10 07	675	0.9+	0.0	1999 12 12	704	0.5-	1.0-	2000 01 02	704	0.5-	0.4+
1991 10 07	675	0.5+	1.0-	1999 12 12	704	0.0	0.3+	2000 01 02	704	0.4+	0.4+
1991 10 14	691	0.5-	1.0+	1999 12 12	704	0.5+	0.8+	2000 01 02	704	0.4-	0.1-

1991 RE₁₉ = 1997 EJ₅₉ = 1999 XK₁₉₀

Id. G. V. Williams, A. Doppler

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26580557	ω	6.94671	+0.90180128	+0.42830356		
<i>a</i>	2.3956682	Ω	327.49874	-0.40146432	+0.78103086		
<i>e</i>	0.1358638	<i>i</i>	6.14712	-0.15994014	+0.45447426		
<i>P</i>	3.71	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 09 12	808	0.4+	0.2+	1997 03 03	691	0.5+	0.1-	1999 12 15	704	1.3+	0.6+
1991 09 12	808	(4.0-	0.9-)	1997 03 03	691	0.5+	0.0	2000 01 02	704	0.3-	0.1+
1991 09 14	675	0.1+	0.4+	1997 03 03	691	0.4+	0.0	2000 01 02	704	1.5-	0.8-
1991 09 14	675	0.7+	1.1+	1997 03 04	691	0.7-	0.2-	2000 01 02	704	0.3+	0.5-
1991 09 15	675	1.2-	1.8-	1997 03 04	691	0.9-	0.3+	2000 01 02	704	0.3+	0.2-
1991 09 15	691	1.0-	1.1+	1999 12 12	704	0.4-	0.1-	2000 01 02	704	0.5+	0.7-
1991 09 15	691	0.4-	0.4+	1999 12 12	704	0.7-	1.1+	2000 01 04	704	0.1+	0.3+
1991 09 15	675	(0.7-	2.7-)	1999 12 12	704	0.4+	0.0	2000 01 04	704	0.0	0.0
1991 09 15	691	0.4-	0.7+	1999 12 12	704	0.3+	0.5+	2000 01 04	704	0.2-	0.3-
1991 09 17	675	0.1+	0.9-	1999 12 12	704	0.3+	0.1+	2000 01 04	704	0.4-	0.2-
1991 09 17	675	0.2+	1.4-	1999 12 15	704	0.4-	0.0	2000 01 04	704	0.6+	0.1-
1991 09 17	675	0.6+	0.2+	1999 12 15	704	0.2-	0.3+				
1991 09 17	675	0.9+	0.1-	1999 12 15	704	0.0	0.3-				

1991 RA₂₀ = 1999 XM₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26468832	ω	13.82985	+0.80770491	+0.58441240		
<i>a</i>	2.4024048	Ω	310.13509	-0.55016682	+0.69955947		
<i>e</i>	0.1559768	<i>i</i>	5.85135	-0.21196519	+0.41119181		
<i>P</i>	3.72	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 09 06	511	1.7+	0.9-	1999 12 12	704	0.9-	0.2-	2000 01 03	704	0.3+	0.6+
1991 09 14	675	0.4+	0.0	1999 12 12	704	0.7-	0.1-	2000 01 03	704	0.1+	0.4-
1991 09 14	675	0.7-	0.8+	1999 12 15	704	0.4+	0.1-	2000 01 03	704	0.1+	0.0
1991 09 17	675	0.7-	0.1-	1999 12 15	704	0.2-	0.3+	2000 01 04	704	0.1-	0.2+
1991 09 17	675	0.4-	0.4+	1999 12 15	704	0.3+	0.4-	2000 01 04	704	0.3-	0.1+
1999 12 12	704	0.2+	0.1+	1999 12 15	704	0.7+	0.5+	2000 01 04	704	0.7+	0.7-
1999 12 12	704	0.4-	0.0	2000 01 03	704	0.5+	0.0	2000 01 04	704	0.3+	0.1+
1999 12 12	704	0.8-	0.2-	2000 01 03	704	0.1-	0.2+				

1991 RA₂₄ = 2000 AR₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26689484	ω	13.25072	+0.91030003	-0.41387781		
<i>a</i>	2.3891455	Ω	11.20725	+0.37609589	+0.81916254		
<i>e</i>	0.2216995	<i>i</i>	2.26539	+0.17293278	+0.39708677		
<i>P</i>	3.69	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 08	675	0.0	0.1-	1991 09 16	675	0.1+	0.1+	2000 01 03	704	0.4+	0.4+
1991 08 08	675	0.1-	0.3+	1991 09 16	675	0.1-	0.4+	2000 01 04	704	0.0	0.1+
1991 09 11	675	0.4-	0.0	2000 01 03	704	0.5-	1.4-	2000 01 04	704	0.0	0.0
1991 09 11	675	0.4-	0.2-	2000 01 03	704	0.6-	0.4-	2000 01 04	704	0.0	0.0
1991 09 12	675	0.3+	0.3-	2000 01 03	704	0.5-	0.2-	2000 01 04	704	0.8+	0.7+
1991 09 12	675	0.5+	0.1-	2000 01 03	704	0.3+	0.2-	2000 01 04	704	0.1-	1.1+

1991 SS₁

Id. DANEOPS (1995 observations)

2000 JAN. 24

M.P.C. 37629

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Gnädig

<i>M</i>	96.36801		(2000.0)		P		Q	
<i>n</i>	0.26990829	ω	353.88275		+0.84946468		-0.52404821	
<i>a</i>	2.3713295	Ω	37.92804		+0.48824808		+0.73648098	
<i>e</i>	0.3674954	<i>i</i>	5.74300		+0.20005894		+0.42774903	
<i>P</i>	3.65	<i>H</i>	17.1		<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 09 12	675	0.3+	0.3+	1991 09 29	691	0.1-	0.2-	1991 10 14	691	0.3+	0.0
1991 09 12	675	0.9-	1.6+	1991 10 02	691	0.6-	0.1+	1991 10 14	691	0.3+	0.2+
1991 09 15	675	0.0	1.3-	1991 10 02	691	0.6-	0.4+	1991 11 06	801	0.5+	0.1-
1991 09 15	675	1.5-	0.3-	1991 10 02	691	0.4-	0.4+	1991 11 06	801	0.2+	0.2-
1991 09 17	675	0.8-	0.7-	1991 10 02	675	0.2+	0.6-	1991 11 27	691	0.4-	0.0
1991 09 17	675	0.9-	0.2+	1991 10 02	675	0.4-	0.5+	1991 11 27	691	0.5-	0.1+
1991 09 17	675	0.9+	0.1+	1991 10 07	675	0.9+	0.6+	1991 11 27	691	0.4-	0.1-
1991 09 17	675	0.6+	0.5-	1991 10 07	675	0.8+	1.1-	1995 12 01	675	1.1+	0.4+
1991 09 29	691	0.3-	0.0	1991 10 08	675	1.0+	0.1-	1995 12 01	675	0.9-	0.1+
1991 09 29	691	0.0	0.1-	1991 10 14	691	0.1+	0.0				

1991 SJ₂ = 1999 XJ₁₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	98.64571		(2000.0)			P		Q		
<i>n</i>	0.26250160	ω	14.22997			+0.89632175		+0.43346346		
<i>a</i>	2.4157282	Ω	319.66457			−0.41961674		+0.76117982		
<i>e</i>	0.2225164	<i>i</i>	8.29350			−0.14327985		+0.48240514		
<i>P</i>	3.75	<i>H</i>	15.4			<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1991 08 08	675	0.3−	0.2+	1991 09 16	675	0.6+	1.1−	1999 12 12	704	0.8+	0.6−
1991 08 08	675	0.2+	0.2−	1991 09 16	675	0.2−	0.4−	1999 12 15	704	0.9−	0.6−
1991 09 10	675	0.7+	0.0	1991 09 17	675	1.1+	0.7−	1999 12 15	704	0.2+	0.5+
1991 09 10	675	0.6−	0.8+	1991 09 17	675	1.3+	0.1−	1999 12 15	704	1.4−	0.0
1991 09 15	691	0.9−	0.4+	1999 12 12	704	0.2+	0.4+	1999 12 15	704	0.4−	0.6+
1991 09 15	691	1.0−	1.0+	1999 12 12	704	0.9+	0.2−				
1991 09 15	691	0.9−	0.3+	1999 12 12	704	0.5+	0.0				

1991 VG₄ = 1999 XC₁₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	10.28259		(2000.0)			P		Q			
<i>n</i>	0.24453061	ω	180.70891			+0.29351249		-0.93582353			
<i>a</i>	2.5326814	Ω	252.23772			+0.87807721		+0.34463058			
<i>e</i>	0.1447046	<i>i</i>	11.82491			+0.37792966		-0.07391948			
<i>P</i>	4.03	<i>H</i>	13.7			<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc											
1991 11 05	402	0.3+	0.5-	1999 11 12	699	0.7-	0.1-	1999 12 13	703	0.1+	0.4+
1991 11 05	402	1.4-	1.0+	1999 11 12	699	0.0	0.2-	1999 12 13	703	0.1+	0.4+
1991 11 09	402	1.7+	0.4-	1999 12 05	703	0.2+	0.1+	2000 01 04	704	0.1+	0.1+
1991 11 09	402	1.0+	0.1+	1999 12 05	703	0.0	0.5+	2000 01 04	704	0.0	0.4+
1991 11 30	402	0.3+	1.7-	1999 12 05	703	0.0	0.3+	2000 01 04	704	0.1-	0.0
1991 11 30	402	1.3-	1.4-	1999 12 05	703	0.3+	0.6+	2000 01 04	704	0.2+	0.2-
1991 12 09	399	1.5-	1.2+	1999 12 08	704	0.1-	0.1-	2000 01 04	704	0.4+	0.2-
1991 12 09	399	0.9+	0.4+	1999 12 08	704	0.2-	0.1-	2000 01 06	704	0.2-	0.1+
1998 06 26	704	1.1-	0.9+	1999 12 08	704	0.1-	0.1-	2000 01 06	704	0.1-	0.1-
1998 06 26	704	0.4+	1.7-	1999 12 08	704	0.0	0.1-	2000 01 06	704	0.2+	0.2-
1998 06 26	704	0.8+	0.5+	1999 12 08	704	0.2-	0.0	2000 01 06	704	0.1-	0.1-
1998 06 26	704	(3.7-	0.7+)	1999 12 13	703	0.2+	0.0	2000 01 06	704	0.1+	0.7-
1999 11 12	699	0.2-	0.0	1999 12 13	703	0.0	0.2+				

1991 VA₅

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	19.80757		(2000.0)		P		Q				
<i>n</i>	0.25830357	ω	32.59544		-0.35152172		-0.90360713				
<i>a</i>	2.4418320	Ω	79.01096		+0.79660266		-0.42606877				
<i>e</i>	0.1737624	<i>i</i>	14.44034		+0.49178927		+0.04426689				
<i>P</i>	3.82	<i>H</i>	13.3		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1991 11 02	809	1.0+	0.6-	1991 11 12	809	0.2-	0.0	1999 12 10	704	0.5-	0.1-
1991 11 02	809	0.1-	0.4-	1991 11 12	809	0.2+	0.1-	1999 12 10	704	0.6-	0.0
1991 11 02	809	1.8-	0.3-	1991 11 30	402	0.3-	0.5-	1999 12 10	704	0.4-	0.1+
1991 11 04	402	1.0+	1.3+	1991 11 30	402	1.5+	1.7+	1999 12 10	704	0.4-	0.0
1991 11 04	402	(2.9+	1.3+)	1999 10 12	704	0.7+	1.4+	1999 12 15	704	0.1-	0.6-
1991 11 05	402	0.3+	1.8+	1999 10 12	704	0.2-	0.0	1999 12 15	704	0.0	0.0
1991 11 05	402	1.7-	0.8+	1999 10 12	704	0.1-	0.1+	1999 12 15	704	0.1-	0.1+
1991 11 06	809	0.2+	1.1-	1999 10 12	704	0.2-	0.2+	1999 12 15	704	0.1-	0.1+
1991 11 06	809	0.3-	1.5-	1999 10 12	704	0.1+	0.3+	2000 01 02	704	0.4+	0.1-
1991 11 06	809	1.7-	1.2-	1999 12 08	703	0.1-	0.1+	2000 01 02	704	0.5+	0.3-
1991 11 09	809	1.8+	1.2-	1999 12 08	703	0.2-	0.8+	2000 01 02	704	0.3+	0.6-
1991 11 09	809	(0.4+	2.4-)	1999 12 08	703	0.2-	0.6+	2000 01 02	704	0.5+	0.7-
1991 11 09	809	(0.5-	3.1-)	1999 12 08	703	0.2-	0.5+	2000 01 02	704	0.6+	0.5-
1991 11 12	809	0.4+	0.7+	1999 12 10	704	0.5-	0.1+				

1992 BH₂ = 1998 KT₄₃ = 1999 XV₁₂₁

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	79.57460		(2000.0)		P		Q				
<i>n</i>	0.22460504	ω	56.03421		+0.85283914		+0.48505042				
<i>a</i>	2.6803390	Ω	274.25482		-0.51976807		+0.75305252				
<i>e</i>	0.1838899	<i>i</i>	11.18066		-0.05006543		+0.44456495				
<i>P</i>	4.39	<i>H</i>	13.3		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1992 01 30	809	0.2+	0.5+	1998 07 13	699	1.0+	0.3-	1999 12 10	704	0.0	0.9-
1992 01 30	809	0.6-	0.5+	1998 07 13	699	0.5-	0.0	1999 12 10	704	0.2+	0.2-
1992 01 30	809	0.8-	1.0+	1998 07 13	699	0.6+	0.3-	1999 12 10	704	0.8+	0.3-
1992 02 02	809	0.4+	1.2+	1999 09 03	704	0.4-	0.0	1999 12 10	704	0.2+	0.9-
1992 02 02	809	0.4+	0.1-	1999 09 03	704	0.3+	0.3+	1999 12 13	703	0.4-	0.4+
1992 02 02	809	0.6-	0.9-	1999 09 03	704	0.2-	1.0+	1999 12 13	703	0.0	0.5+
1992 02 06	809	1.2+	0.9-	1999 10 05	704	(2.2+	1.2+)	1999 12 13	703	0.6-	0.4+
1992 02 06	809	0.7-	0.0	1999 10 05	704	0.5+	0.3+	1999 12 13	703	0.5+	0.3-
1992 02 06	809	0.8+	0.5-	1999 10 05	704	1.8+	0.1-	1999 12 15	704	0.5+	0.3+
1998 05 22	704	0.2-	0.4+	1999 10 05	704	0.5+	0.7-	1999 12 15	704	0.2+	0.1+
1998 05 22	704	0.5-	0.9+	1999 11 10	703	0.7-	0.4+	1999 12 15	704	0.3-	0.6-
1998 05 22	704	0.1-	0.3+	1999 11 10	703	0.4-	0.4+	1999 12 15	704	0.2+	1.0-
1998 05 22	704	0.7-	1.0+	1999 11 10	703	0.4-	0.2+	2000 01 03	704	0.0	1.2+
1998 05 22	704	(1.6-	2.4+)	1999 11 10	703	0.5-	0.5+	2000 01 03	704	0.4-	0.0
1998 05 24	704	(2.8+	1.9+)	1999 12 07	703	0.1-	0.6+	2000 01 03	704	0.6+	0.0
1998 05 24	704	0.7+	0.3+	1999 12 07	703	0.2-	0.3+	2000 01 03	704	0.2-	0.8-
1998 05 24	704	0.2-	0.7+	1999 12 07	703	0.2-	0.3+	2000 01 03	704	1.3-	1.0-
1998 05 24	704	0.6+	0.5-	1999 12 07	703	0.0	0.2+				
1998 05 24	704	0.6-	1.3-	1999 12 10	704	0.2+	0.3+				

1992 BK₄ = 2000 AO₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	51.47618		(2000.0)			P		Q			
n	0.24370379	ω	41.21567			+0.43554887		-0.89996300			
a	2.5384066	Ω	22.98366			+0.81255487		+0.38395207			
e	0.0760440	i	2.79982			+0.38736515		+0.20651248			
P	4.04	H	15.1		G	0.15		U	5		

Residuals in seconds of arc

1992 01 29	691	0.1+	0.3-	1992 02 09	691	0.3+	0.5-	2000 01 03	704	0.7+	1.5-
1992 01 29	691	0.2-	0.0	1992 02 09	691	0.5+	0.1-	2000 01 03	704	0.3-	0.4+
1992 01 29	691	0.1-	0.5+	1999 12 15	704	0.0	0.4-	2000 01 04	704	0.3+	0.1-

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1992 01 30	691	0.1−	0.3+	1999 12 15	704	0.3+	0.2+	2000 01 04	704	0.2+	0.1−
1992 01 30	691	0.3+	0.4+	1999 12 15	704	0.1+	1.5+	2000 01 04	704	0.1−	0.1+
1992 01 30	691	0.7−	0.4+	2000 01 03	704	0.2−	0.3−	2000 01 04	704	0.1+	0.4−
1992 02 09	691	0.2+	0.3−	2000 01 03	704	1.0−	0.2+	2000 01 04	704	0.0	0.1+

1992 DY₅ = 1999 NQ₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19479055	<i>ω</i>	296.08277	+0.80620688	−0.58874074		
<i>a</i>	2.9472985	<i>Ω</i>	100.03903	+0.56180802	+0.73085553		
<i>e</i>	0.1011525	<i>i</i>	3.40222	+0.18547835	+0.34530355		
<i>P</i>	5.06	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 29	809	0.7+	0.2−	1999 07 14	704	0.0	0.2+	1999 07 14	704	0.0	0.0
1992 03 03	809	0.8−	0.2+	1999 07 14	704	0.2+	0.6+	1999 07 20	699	0.5+	0.3+
1992 03 07	809	0.0	0.1−	1999 07 14	704	0.7−	0.8−	1999 07 20	699	0.1−	0.5−
1992 04 06	809	0.1+	0.1+	1999 07 14	704	0.3+	0.0	1999 07 20	699	0.2−	0.1+

1992 EA₁ = 1999 XW₁₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22587210	<i>ω</i>	225.41337	−0.55199539	−0.80868846		
<i>a</i>	2.6703057	<i>Ω</i>	259.13788	+0.81162838	−0.46517303		
<i>e</i>	0.1568360	<i>i</i>	11.94612	+0.19120788	−0.36005143		
<i>P</i>	4.36	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 03 10	413	0.4+	0.1+	1999 11 09	703	0.2−	0.1−	1999 12 15	704	0.3+	0.7−
1992 03 10	413	1.3+	0.8−	1999 11 09	703	0.3−	0.1−	1999 12 15	704	0.4+	0.8−
1992 03 11	413	0.3+	0.2−	1999 11 09	703	0.4−	0.2−	2000 01 04	704	0.1−	0.7+
1992 03 11	413	0.8−	0.2+	1999 12 05	703	0.5−	0.1−	2000 01 04	704	0.1−	0.5+
1992 03 13	413	0.4+	0.1−	1999 12 05	703	0.3−	0.2−	2000 01 04	704	0.6+	0.3+
1992 03 14	413	1.3−	0.3+	1999 12 05	703	0.3−	0.1+	2000 01 04	704	0.3−	0.1+
1992 03 15	413	0.3+	0.1−	1999 12 05	703	0.6−	0.5+	2000 01 04	704	0.5−	0.1+
1992 03 31	413	0.8−	0.4−	1999 12 10	704	0.2+	0.8−	2000 01 06	704	0.2+	0.2+
1992 04 30	413	0.6−	0.2+	1999 12 10	704	0.7+	0.0	2000 01 06	704	0.4+	0.3+
1998 08 27	704	0.7+	0.4−	1999 12 10	704	0.9+	0.3−	2000 01 06	704	0.1−	0.1−
1998 08 27	704	0.0	0.6−	1999 12 10	704	0.2+	0.2+	2000 01 06	704	0.5+	0.4+
1998 08 27	704	0.5−	1.6+	1999 12 10	704	0.2−	0.5+	2000 01 06	704	0.1+	0.6−
1998 08 27	704	0.1+	1.3−	1999 12 15	704	0.7+	0.1+				
1999 11 09	703	0.9−	0.0	1999 12 15	704	0.0	0.0				

1992 ER₁

Id. E. Bowell (1998, 1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22310532	<i>ω</i>	353.84340	−0.70394600	−0.69670893		
<i>a</i>	2.6923371	<i>Ω</i>	140.76927	+0.66060239	−0.71364327		
<i>e</i>	0.1477392	<i>i</i>	12.60765	+0.26089176	−0.07286934		
<i>P</i>	4.42	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1992 03 08	399	(3.0+	0.5+)	1998 09 24	699	0.2−	0.2+	1999 12 16	704	0.0	0.6−
1992 03 08	399	1.4+	0.6+	1998 09 24	699	(0.4−	2.2−)	1999 12 16	704	0.2−	0.3−
1992 03 22	372	0.5+	1.2−	1998 09 24	699	0.8−	0.9−	1999 12 16	704	0.1−	0.4−
1992 03 22	372	0.9−	0.1−	1999 10 09	704	0.6+	0.1−	1999 12 16	704	0.7−	0.4−
1992 04 02	372	(0.1+	2.8−)	1999 10 09	704	0.4+	0.5−	2000 01 08	704	0.2+	0.1−
1992 04 02	372	1.3−	0.5−	1999 10 09	704	0.6+	0.2−	2000 01 08	704	0.0	0.3−
1997 06 01	566	0.3+	0.2−	1999 10 09	704	0.9+	0.5−	2000 01 08	704	0.3−	0.2−
1997 06 01	566	0.2−	0.4−	1999 10 09	704	0.2+	0.5−	2000 01 08	704	0.8−	0.5−
1997 06 01	566	0.4−	0.2−	1999 12 03	704	0.2−	1.2−	2000 01 10	699	0.1+	0.3+
1998 08 17	704	0.3−	0.1−	1999 12 03	704	0.1−	0.4−	2000 01 10	699	0.4+	0.4+
1998 08 17	704	0.2−	0.1−	1999 12 03	704	0.8−	0.9−	2000 01 10	699	0.2+	0.5+
1998 08 17	704	0.0	0.3+	1999 12 03	704	0.4+	0.4−	2000 01 11	704	0.0	0.1+

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1998 08 17	704	1.0−	0.6+	1999 12 03	704	0.4−	0.9−	2000 01 11	704	0.2−	0.3+
1998 08 17	704	0.8+	1.5−	1999 12 08	699	0.3−	1.6+	2000 01 11	704	0.1−	0.8+
1998 08 27	699	0.7+	1.1+	1999 12 08	699	1.1+	0.7+	2000 01 11	704	0.1−	1.0+
1998 08 27	699	0.7+	0.5+	1999 12 08	699	0.1−	0.2+	2000 01 11	704	0.0	1.3+
1998 08 27	699	0.6+	0.1−	1999 12 16	704	0.1−	0.3−				

1992 EC₈ = 2000 AX₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22742022	<i>ω</i>	283.63951	−0.08720247	−0.99615932		
<i>a</i>	2.6581736	<i>Ω</i>	171.35159	+0.93308269	−0.08445154		
<i>e</i>	0.0746384	<i>i</i>	3.00954	+0.34893039	−0.02312004		
<i>P</i>	4.33	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 02 25	675	1.5+	0.8−	1998 08 17	704	1.2+	0.8−	1999 12 08	704	0.7−	0.0
1992 02 25	675	1.1+	1.6−	1998 08 17	704	1.0−	1.3+	2000 01 05	704	0.2+	0.0
1992 03 02	809	1.1−	1.7+	1999 11 04	704	0.4+	0.3−	2000 01 05	704	0.3+	0.9+
1992 03 04	809	1.1−	0.9+	1999 11 04	704	0.1−	0.1+	2000 01 05	704	0.4+	0.3−
1992 03 07	809	0.6−	0.3+	1999 11 04	704	0.4−	0.1−	2000 01 05	704	0.2−	0.1+
1992 04 06	809	0.7+	1.1+	1999 12 08	704	0.2−	0.3+	2000 01 06	704	0.2−	0.6+
1998 08 17	704	(2.7+	2.3−)	1999 12 08	704	0.2−	0.2−	2000 01 06	704	0.1+	0.2+
1998 08 17	704	0.6+	0.2−	1999 12 08	704	0.2+	0.4−	2000 01 06	704	0.7−	1.1+
1998 08 17	704	1.3−	1.7+	1999 12 08	704	0.1−	0.9−	2000 01 06	704	1.0+	0.1−

1992 ED₁₈

Id. E. Bowell (1998, 1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22159767	<i>ω</i>	26.31456	−0.87918448	+0.47641362		
<i>a</i>	2.7045349	<i>Ω</i>	182.18698	−0.46584626	−0.86298551		
<i>e</i>	0.0312033	<i>i</i>	12.17015	−0.10010952	−0.16818464		
<i>P</i>	4.45	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 02 28	675	0.4+	0.2+	1998 08 24	704	1.5+	1.0+	1999 12 03	704	0.5−	0.6+
1992 02 28	675	0.7+	0.8+	1998 08 24	704	0.7−	0.1+	1999 12 03	704	0.5−	0.6−
1992 03 03	809	0.9−	0.9+	1998 08 24	704	0.2−	0.5−	1999 12 03	704	0.0	1.6−
1992 03 05	809	0.3+	0.1−	1999 11 05	704	0.4+	0.4+	1999 12 16	699	0.1+	0.2+
1992 03 08	809	0.3−	0.5−	1999 11 05	704	0.5−	0.4−	1999 12 16	699	0.9−	0.6−
1997 02 14	327	0.2−	0.3+	1999 11 05	704	0.9+	0.2+	1999 12 16	699	1.3+	0.9+
1997 02 14	327	0.2−	0.4+	1999 11 05	704	0.0	0.7+	2000 01 11	704	0.1−	0.0
1997 02 14	327	0.7+	0.8+	1999 11 05	704	0.5−	0.4−	2000 01 11	704	0.3−	0.4+
1998 08 23	699	0.8−	0.5+	1999 11 14	699	1.2+	0.3+	2000 01 11	704	0.6+	0.2+
1998 08 23	699	0.1−	0.2−	1999 11 14	699	0.7+	0.1−	2000 01 11	704	0.4+	0.8+
1998 08 23	699	0.1−	0.1+	1999 11 14	699	0.9−	0.3+	2000 01 11	704	0.3−	0.2+
1998 08 24	704	0.7+	0.2+	1999 12 03	704	0.4−	0.8−				
1998 08 24	704	0.6−	1.1+	1999 12 03	704	0.8−	0.7+				

1992 EF₂₂ = 1986 UH₂ = 1998 QW₄₃ = 2000 AU₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23974169	<i>ω</i>	35.61212	+0.33695321	−0.94044597		
<i>a</i>	2.5662976	<i>Ω</i>	34.75951	+0.84452286	+0.28077059		
<i>e</i>	0.1295237	<i>i</i>	4.52578	+0.41622551	+0.19164876		
<i>P</i>	4.11	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

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1998 08 17	704	0.6−	0.5+	2000 01 03	704	0.4−	0.2−	2000 01 06	699	0.7+	0.8+
1998 08 17	704	0.1−	0.4−	2000 01 03	704	0.0	0.1+	2000 01 06	699	0.4−	0.3+
1998 08 17	704	0.2−	0.4−	2000 01 03	704	0.1−	0.3+				

1992 EW₂₄ = 2000 AD₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	358.44798			(2000.0)	P	Q					
<i>n</i>	0.23353689	ω		28.04598	−0.39701749	−0.91517857					
<i>a</i>	2.6115543	Ω		85.41703	+0.82850503	−0.38992392					
<i>e</i>	0.1572238	<i>i</i>		3.99602	+0.39491331	−0.10201725					
<i>P</i>	4.22	<i>H</i>		14.8	<i>G</i>	0.15	<i>U</i>		4		

Residuals in seconds of arc

1992 02 29	691	0.4+	0.4−	1999 12 07	704	0.6−	0.2−	2000 01 03	704	0.0	0.4−
1992 02 29	691	0.3+	0.4−	1999 12 07	704	0.4+	0.5−	2000 01 04	704	0.2+	0.3+
1992 02 29	691	0.0	0.2−	1999 12 07	704	0.0	0.4−	2000 01 04	704	0.0	0.2+
1992 03 04	809	0.9−	1.4+	2000 01 03	704	0.3+	0.3−	2000 01 04	704	0.6−	0.4−
1992 03 09	809	0.2+	0.2−	2000 01 03	704	0.3+	0.0	2000 01 04	704	0.2−	0.3+
1992 04 06	809	0.1−	0.2−	2000 01 03	704	0.0	0.0	2000 01 04	704	0.2−	0.2+
1999 12 07	704	0.4+	0.9+	2000 01 03	704	0.1−	0.2+				

1992 FC₂ = 1998 TN₂₈ = 2000 AU₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	318.27802			(2000.0)	P	Q					
<i>n</i>	0.23831689	ω		207.34583	−0.93090881	+0.36523616					
<i>a</i>	2.5765159	Ω		354.07328	−0.32887221	−0.84216390					
<i>e</i>	0.2203141	<i>i</i>		1.86849	−0.15890834	−0.39668945					
<i>P</i>	4.14	<i>H</i>		13.6	<i>G</i>	0.15	<i>U</i>		3		

Residuals in seconds of arc

1992 03 23	400	(3.9−	1.0+)	1999 12 07	704	0.4+	0.2−	2000 01 05	699	0.2+	0.1+
1992 03 23	400	1.8−	0.9+	1999 12 07	704	0.2−	0.4−	2000 01 05	699	0.1+	0.3+
1992 03 28	400	0.8+	0.3−	1999 12 07	704	0.4−	0.0	2000 01 06	704	0.2+	0.1−
1992 03 28	400	1.4+	0.3+	1999 12 07	704	0.3+	0.2−	2000 01 06	704	0.2+	0.5−
1992 04 23	400	(3.8+	1.9+)	1999 12 09	699	0.2+	0.6+	2000 01 06	704	0.1+	0.3−
1992 04 23	400	(0.7+	2.6−)	1999 12 09	699	0.1−	0.2+	2000 01 06	704	0.0	0.2−
1998 10 15	691	0.3+	0.1+	1999 12 09	699	0.4−	0.5+	2000 01 06	704	0.0	0.2+
1998 10 15	691	0.3+	0.1+	2000 01 04	704	0.3+	0.0	2000 01 11	120	0.1−	0.3+
1998 10 15	691	0.3+	0.3+	2000 01 04	704	0.1+	0.3−	2000 01 12	120	0.3−	0.9+
1998 10 20	691	0.4−	0.3+	2000 01 04	704	0.1−	0.2+	2000 01 12	120	0.8−	0.9−
1998 10 20	691	0.5−	0.1+	2000 01 04	704	0.1−	0.1−	2000 01 12	120	0.5−	0.5−
1998 10 20	691	0.3−	0.2+	2000 01 04	704	0.0	0.7−				
1999 12 07	704	0.1−	0.3+	2000 01 05	699	0.7+	0.4+				

1992 GO = 2000 AH₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	205.76494			(2000.0)	P	Q					
<i>n</i>	0.22492451	ω		129.29888	+0.22248238	+0.96921076					
<i>a</i>	2.6778003	Ω		152.99147	−0.95066268	+0.23966766					
<i>e</i>	0.1621644	<i>i</i>		13.43459	−0.21619910	−0.05647933					
<i>P</i>	4.38	<i>H</i>		13.1	<i>G</i>	0.15	<i>U</i>		3		

Residuals in seconds of arc

1992 03 08	399	0.1+	1.7+	1998 11 13	704	0.3+	0.5+	2000 01 07	704	0.2+	0.3−
1992 03 08	399	0.3−	1.7+	1998 11 13	704	(1.3−	2.9+)	2000 01 07	704	0.3+	0.4−
1992 03 26	399	(2.8+	2.3−)	1998 11 13	704	0.9+	0.6+	2000 01 07	704	0.7+	1.0−
1992 03 26	399	0.5−	1.1−	1998 11 13	704	1.2−	0.3+	2000 01 07	704	0.4−	1.0−
1992 04 03	399	0.9+	0.7+	1999 12 14	704	0.3+	0.7+	2000 01 07	704	0.7+	0.7−
1992 04 03	399	0.2−	1.8−	1999 12 14	704	0.2−	0.2−	2000 01 11	704	0.0	0.2−
1992 04 07	399	0.3+	0.8−	1999 12 14	703	0.2−	0.7+	2000 01 11	704	0.1−	0.2+
1992 04 07	399	0.0	0.6+	1999 12 14	703	0.1+	0.6+	2000 01 11	704	0.2+	0.6−
1998 10 29	699	0.2+	0.3−	1999 12 14	704	0.2−	0.7+	2000 01 11	704	0.1+	0.6−
1998 10 29	699	0.1+	0.4−	1999 12 14	703	0.2+	1.2+	2000 01 11	704	0.3−	0.8−
1998 10 29	699	0.5−	0.0	1999 12 14	704	0.7−	0.4+				
1998 11 13	704	(2.2+	0.0)	1999 12 14	703	0.7−	0.6+				

1992 GN₂ = 2000 AF₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	267.85835			(2000.0)	P	Q					
<i>n</i>	0.22545302	ω		239.02799	−0.59957546	+0.80031329					
<i>a</i>	2.6736138	Ω		354.13014	−0.72458036	−0.54432358					
<i>e</i>	0.1454562	<i>i</i>		1.57572	−0.33984198	−0.25141695					
<i>P</i>	4.37	<i>H</i>		14.1	<i>G</i>	0.15	<i>U</i>		5		

Residuals in seconds of arc

1992 04 04	809	0.2−	0.4+	1992 04 25	809	1.9+	0.5+	2000 01 04	704	0.1−	0.5−
1992 04 04	809	1.0−	0.1−	1996 03 15	566	0.3+	0.8+	2000 01 07	734	0.7−	0.9−
1992 04 04	809	1.2−	0.2−	1996 03 15	566	0.3+	0.7+	2000 01 07	734	0.2−	1.9+
1992 04 06	809	0.5+	0.1+	1996 03 15	566	0.5+	1.0+	2000 01 07	734	0.5−	0.3+
1992 04 06	809	0.4−	0.5−	2000 01 03	704	0.2−	0.8−	2000 01 08	691	0.7+	0.2−
1992 04 06	809	1.0−	1.0−	2000 01 03	704	0.1+	0.0	2000 01 08	691	0.5−	0.4−
1992 04 23	809	0.5+	1.3−	2000 01 03	704	0.6−	0.8+	2000 01 08	691	0.5+	1.0−
1992 04 23	809	0.2+	0.4−	2000 01 03	704	0.1−	0.0	2000 01 13	691	0.5+	0.3−
1992 04 23	809	1.8−	0.5−	2000 01 03	704	0.5−	0.4−	2000 01 13	691	0.6+	0.2−
1992 04 25	809	0.4+	1.0+	2000 01 04	704	0.1+	0.3+	2000 01 13	691	0.6+	0.2−
1992 04 25	809	1.3+	0.4+	2000 01 04	704	0.1−	0.1−				

1992 PP₁ = 1999 VA₁₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	331.36014			(2000.0)	P	Q					
<i>n</i>	0.29386353	ω		162.62763	−0.03982262	−0.99744498					
<i>a</i>	2.2406409	Ω		289.62264	+0.90911353	−0.01153679					
<i>e</i>	0.1472871	<i>i</i>		3.61012	+0.41464051	−0.07050113					
<i>P</i>	3.35	<i>H</i>		15.3	<i>G</i>	0.15	<i>U</i>		7		

Residuals in seconds of arc

1992 07 26	809	0.4−	0.6+	1992 08 08	010	2.4−	0.1−	1999 11 04	703	0.7+	0.0
1992 07 26	809	0.6−	0.7+	1992 08 08	010	1.4−	1.4−	1999 11 04	703	1.0+	0.0
1992 07 26	809	1.1−	0.6+	1992 08 09	010	2.1+	0.0	1999 11 05	703	0.6+	0.5−
1992 07 30	809	0.4−	0.2+	1992 08 09	010	1.3+	0.0	1999 11 05	703	0.3−	0.0
1992 07 30	809	0.1−	0.7−	1992 08 09	010	1.7+	0.5−	1999 11 05	703	1.8−	1.5+
1992 07 30	809	0.3−	1.0−	1999 11 04	703	0.3−	1.3−	1999 11 05	703	0.1−	0.2−
1992 08 08	010	1.4+	1.4+	1999 11 04	703	0.2+	0.6+				

1992 UQ₆ = 1999 XG₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	48.15465			(2000.0)	P	Q					
<i>n</i>	0.28325962	ω		56.24375	+0.85216572	−0.52111579					
<i>a</i>	2.2962170	Ω		335.06350	+0.43512982	+0.75607508					
<i>e</i>	0.1792434	<i>i</i>		6.46258	+0.29064690	+0.39596567					
<i>P</i>	3.48	<i>H</i>		13.9	<i>G</i>	0.15	<i>U</i>		4		

Residuals in seconds of arc

1992 10 28	399	(3.0−	0.5−)	1999 12 12	704	0.6+	0.1−	1999 12 28	739	0.5−	0.0
1992 10 28	399	1.2−	0.0	1999 12 12	704	0.5+	0.0	2000 01 02	704	0.3−	0.2+
1992 11 02	399	(2.5−	0.5+)	1999 12 12	704	0.2+	0.1−	2000 01 02	704	0.2+	0.2−
1992 11 02	399	0.2+	0.2−	1999 12 12	704	0.3+	0.0	2000 01 02	704	0.2−	0.6−
1992 11 21	399	0.5−	0.2+	1999 12 12	704	0.4+	0.2−	2000 01 02	704	0.2+	0.4−
1992 11 21	399	0.4+	0.2+	1999 12 15	704	0.6+	0.3−	2000 01 02	704	0.1+	0.1−
1992 11 27	399	0.3+	1.0+	1999 12 15	704	0.2−	0.0	2000 01 08	704	0.3−	0.4+
1992 11 27	399	0.2+	0.6+	1999 12 15	704	0.1+	0.0	2000 01 08	704	0.0	0.2+
1999 10 05	704	0.3+	0.4−	1999 12 15	704	0.3−	0.4+	2000 01 08	704	0.3+	0.3+
1999 10 05	704	0.0	0.2+	1999 12 15	704	0.2−	0.0	2000 01 08	704	0.2−	0.1+
1999 10 05	704	0.2+	0.1−	1999 12 28	739	0.4−	0.2−	2000 01 08	704	0.5+	0.4−
1999 10 05	704	0.4−	0.5−	1999 12 28	739	0.5−	0.1−				
1999 10 05	704	0.2+	0.2−	1999 12 28	739	0.7−	0.2−				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	52.10113		(2000.0)	P	Q
<i>n</i>	0.27528842	ω	219.24337	+0.99561385	-0.09144917
<i>a</i>	2.3403318	Ω	145.98807	+0.09224061	+0.92417092
<i>e</i>	0.0748128	<i>i</i>	2.02356	+0.01564417	+0.37087081
<i>P</i>	3.58	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 11 19	691	0.5+	0.0	1999 10 03	703	0.2-	0.5-	1999 10 09	704	0.3+	0.0
1992 11 19	691	0.5+	0.3-	1999 10 03	703	0.5-	0.0	1999 10 09	704	0.1-	0.1+
1992 11 19	691	0.4+	0.0	1999 10 03	703	0.5-	0.1+	1999 10 09	704	0.6+	0.1+
1992 11 20	691	0.2-	0.2-	1999 10 03	703	0.9-	0.3-	1999 10 09	704	0.0	0.0
1992 11 20	691	0.4-	0.2-	1999 10 04	704	0.3+	0.2+	1999 11 01	703	0.8-	0.4-
1992 11 20	691	0.4-	0.3-	1999 10 04	704	0.7+	0.1-	1999 11 01	703	0.0	0.3-
1998 04 22	704	1.2+	0.3+	1999 10 04	704	0.8+	0.4+	1999 11 01	703	0.4-	0.1+
1998 04 22	704	1.1+	0.5-	1999 10 04	704	0.2+	1.3+	1999 11 01	703	0.8-	0.1-
1998 04 22	704	1.3-	0.8-	1999 10 04	704	0.8+	0.5-	1999 11 15	704	0.5+	0.1+
1998 04 22	704	(5.5-	0.2+)	1999 10 07	704	0.6-	0.0	1999 11 15	704	0.1-	0.5+
1998 05 24	704	0.6+	1.0-	1999 10 07	704	1.0+	0.3-	1999 11 15	704	0.1-	0.3+
1998 05 24	704	(0.4+	2.8+)	1999 10 07	704	0.2+	0.4-	1999 11 15	704	0.1+	0.1+
1998 05 24	704	(2.5-	0.5+)	1999 10 07	704	0.1+	0.1+	1999 11 15	704	0.9-	0.0
1998 05 24	704	0.1-	1.2+	1999 10 07	704	0.2+	0.4-				
1998 05 24	704	1.6-	0.1+	1999 10 09	704	0.1-	0.0				

1992 YP = 1999 XS₁₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	56.58808		(2000.0)	P	Q
<i>n</i>	0.28595964	ω	292.67512	+0.69451267	-0.71398197
<i>a</i>	2.2817403	Ω	113.02027	+0.69044429	+0.62668940
<i>e</i>	0.1262911	<i>i</i>	5.53545	+0.20233345	+0.31223411
<i>P</i>	3.45	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 12 16	372	0.5+	1.0+	1999 11 04	704	0.2+	0.5-	2000 01 05	704	0.0	0.5+
1992 12 16	372	0.0	0.2+	1999 12 08	704	0.5-	0.2-	2000 01 05	704	0.2+	0.4-
1992 12 17	372	1.2+	0.5-	1999 12 08	704	0.1+	0.1-	2000 01 05	704	0.0	0.2-
1992 12 17	372	(0.4-	2.7-)	1999 12 08	704	0.0	0.0	2000 01 06	704	0.3+	0.0
1992 12 21	372	1.9-	0.2-	1999 12 08	704	0.0	0.7-	2000 01 06	704	0.0	0.4+
1992 12 21	372	0.7+	0.4-	1999 12 08	704	0.3-	0.3-	2000 01 06	704	0.1-	0.0
1992 12 25	372	0.2+	0.1+	1999 12 14	704	0.8-	0.5-	2000 01 07	704	0.1-	0.0
1992 12 25	372	1.0-	0.9+	1999 12 14	704	0.6-	0.2-	2000 01 07	704	0.2+	0.0
1999 11 04	704	0.0	0.1-	1999 12 14	704	0.1-	0.6+	2000 01 07	704	0.0	0.1-
1999 11 04	704	0.2+	0.1-	1999 12 14	704	0.0	0.2+	2000 01 07	704	0.0	0.2+
1999 11 04	704	0.2+	0.1+	2000 01 05	704	0.6+	0.2-	2000 01 07	704	0.3+	0.4+
1999 11 04	704	0.2+	0.1+	2000 01 05	704	0.3+	0.3-				

1992 YP₁ = 1999 YV₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	340.68895		(2000.0)	P	Q
<i>n</i>	0.28190051	ω	63.38966	-0.73255330	-0.67676597
<i>a</i>	2.3035915	Ω	73.92158	+0.59432681	-0.68829051
<i>e</i>	0.0757524	<i>i</i>	4.36707	+0.33187543	-0.26123550
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1992 12 18	010	1.0+	0.2+	1999 12 30	106	0.3-	0.1+	2000 01 04	704	0.1-	0.6-
1992 12 19	010	0.9+	0.5-	1999 12 30	106	0.9+	0.4+	2000 01 04	704	0.1+	0.3-
1992 12 19	010	0.2+	0.1+	1999 12 30	106	0.1-	0.2-	2000 01 04	704	0.1+	0.6-
1992 12 19	010	0.6-	1.1+	2000 01 01	106	0.3+	0.1-	2000 01 04	704	0.3+	0.4-
1992 12 19	010	2.0-	0.8+	2000 01 01	106	0.7-	0.9+	2000 01 04	106	0.0	0.3+
1992 12 20	010	1.7-	0.4+	2000 01 01	106	0.1+	0.1+	2000 01 04	106	0.8-	0.0
1993 01 16	010	1.0+	0.6-	2000 01 03	704	0.0	0.0	2000 01 05	106	0.1+	0.2+
1993 01 16	010	0.6+	0.7-	2000 01 03	704	0.1+	0.3-	2000 01 24	849	0.0	0.0
1993 01 16	010	0.1+	1.0-	2000 01 03	704	0.9+	0.5-	2000 01 24	849	0.7-	0.9+
1993 01 17	010	0.1+	0.3-	2000 01 03	704	0.4+	0.7-	2000 01 24	849	0.3-	0.7+

1993 01 17	010	0.2+	0.6+	2000 01 03	704	0.6+	0.9-	2000 01 24	849	0.9-	1.6+
1993 01 17	010	0.5+	0.1-	2000 01 04	704	0.2-	0.1-				

1992 YB₄ = 1997 EO₅₉ = 1999 XR₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	18.82843		(2000.0)	P	Q
<i>n</i>	0.27630595	ω	73.04423	+0.20358494	-0.97904640
<i>a</i>	2.3345825	Ω	5.21566	+0.87783623	+0.18044682
<i>e</i>	0.2055421	<i>i</i>	2.91128	+0.43353977	+0.09437739
<i>P</i>	3.57	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1992 12 29	372	0.9+	2.0+	1999 11 14	704	0.1+	0.1+	1999 12 10	704	0.5-	0.2+
1992 12 31	372	1.3-	0.5+	1999 11 14	704	0.2-	0.1-	1999 12 15	704	0.2-	0.1+
1993 01 16	372	(3.7-	1.2-)	1999 11 14	704	0.4+	0.0	1999 12 15	704	0.3+	0.4+
1993 01 16	372	0.7+	0.8-	1999 11 16	704	0.3+	0.2-	1999 12 15	704	0.0	0.1-
1997 03 06	809	0.6-	0.3-	1999 11 16	704	0.1-	0.2-	1999 12 15	704	0.0	0.2+
1997 03 06	809	0.3+	0.1-	1999 11 16	704	0.1+	0.6-	1999 12 15	704	0.3+	0.2-
1997 03 06	809	0.2-	0.4-	1999 11 16	704	0.1-	0.1-	2000 01 04	704	0.3-	0.7+
1997 03 09	809	(3.0+	3.1+)	1999 11 16	704	0.2+	0.4-	2000 01 04	704	1.7+	0.7-
1997 03 09	809	(3.7+	2.5+)	1999 12 10	704	0.1-	0.5+	2000 01 04	704	0.3+	1.6-
1997 03 09	809	(3.8+	3.1+)	1999 12 10	704	0.2-	0.0	2000 01 04	704	0.1+	0.0
1999 11 14	704	0.1+	0.3-	1999 12 10	704	0.6-	0.5+	2000 01 04	704	1.2-	0.5-
1999 11 14	704	0.1+	0.1-	1999 12 10	704	0.3-	0.6+				

1993 BB = 1999 YH₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	348.01857		(2000.0)	P	Q
<i>n</i>	0.28298927	ω	25.07761	-0.98299876	-0.17411530
<i>a</i>	2.2976793	Ω	144.73971	+0.14679933	-0.93593933
<i>e</i>	0.1389743	<i>i</i>	5.79476	+0.11028780	-0.30610690
<i>P</i>	3.48	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 01 16	372	(2.9+	2.9-)	1993 01 30	372	(1.2-	2.0+)	2000 01 05	699	0.3+	1.1+
1993 01 16	372	(2.5+	2.4-)	1999 12 05	703	0.0	0.1-	2000 01 05	699	0.4+	0.3+
1993 01 19	372	(4.2-	2.1-)	1999 12 05	703	1.6+	0.0	2000 01 05	691	0.1-	0.4-
1993 01 19	372	1.1-	0.6+	1999 12 05	703	0.4-	0.7+	2000 01 05	691	0.1-	0.3-
1993 01 25	372	(1.8-	2.3+)	1999 12 05	703	1.3-	0.7-	2000 01 05	691	0.1-	0.4-
1993 01 25	372	1.1+	0.6-	1999 12 31	691	0.0	0.5-	2000 01 12	691	0.1-	0.1-
1993 01 26	372	0.3-	0.2-	1999 12 31	691	0.1+	0.5-	2000 01 12	691	0.2-	0.1-
1993 01 26	372	0.5+	0.5-	1999 12 31	691	0.1-	0.6-	2000 01 12	691	0.1-	0.0
1993 01 30	372	0.4-	0.5+	2000 01 05	699	0.1+	1.8+				

1993 BV₄ = 2000 AE₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	359.39244		(2000.0)	P	Q
<i>n</i>	0.27811077	ω	0.67927	-0.68310906	-0.72559096
<i>a</i>	2.3244712	Ω	132.41215	+0.66952128	-0.66755847
<i>e</i>	0.1401738	<i>i</i>	6.45041	+0.29172465	-0.16698337
<i>P</i>	3.54	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 01 27	010	0.4+	0.3-	1993 02 20	010	0.0	0.9+	2000 01 05	704	0.2+	1.1+
1993 01 27	010	0.8-	0.4-	1993 02 20	010	0.0	0.1-	2000 01 06	704	0.0	0.7-
1993 01 27	010	0.3+	0.2-	1993 02 22	010	0.4+	0.8-	2000 01 06	704	0.1+	0.9-
1993 01 28	010	0.6+	1.2+	1993 02 23	010	0.7-	0.5-	2000 01 06	704	0.6+	0.5-
1993 01 28	010	0.5+	0.1+	2000 01 05	704	0.2-	0.0	2000 01 06	704	0.2-	0.4-
1993 01 28	010	0.9-	0.4-	2000 01 05	704	0.6-	0.8+				
1993 02 20	010	0.4+	0.6+	2000 01 05	704	0.1+	0.5+				

2000 JAN. 24

M.P.C. 37633

1993 BB₁₀ = 1999 VW₁₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	336.07011		(2000.0)		P		Q				
<i>n</i>	0.26685938	ω	76.23029		-0.51286480		-0.85820782				
<i>a</i>	2.3893572	Ω	44.64527		+0.77552143		-0.47375475				
<i>e</i>	0.1376317	<i>i</i>	1.72803		+0.36815242		-0.19757474				
<i>P</i>	3.69	<i>H</i>	16.5		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 01 22	691	0.2-	0.2-	1993 01 29	691	0.3-	0.0	1999 11 09	704	0.3-	0.7+
1993 01 22	691	0.1-	0.0	1993 01 29	691	0.4+	0.0	1999 11 12	704	0.3+	0.4-
1993 01 22	691	0.3+	0.2-	1993 01 29	691	0.0	0.0	1999 11 12	704	1.0+	0.8-
1993 01 26	691	0.1-	0.1+	1999 11 09	704	0.1+	0.5+	1999 11 12	704	0.3+	0.2+
1993 01 26	691	0.1+	0.1+	1999 11 09	704	0.6-	0.1-	1999 11 12	704	0.6-	0.1-
1993 01 26	691	0.1-	0.1+	1999 11 09	704	0.2-	0.0				

1993 FV₄ = 1993 FE₆ = 2000 AC₈₉Id. G. V. Williams (d, *MPC* 23484; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	315.12143		(2000.0)		P		Q				
<i>n</i>	0.27003475	ω	54.63947		-0.97327526		+0.22750788				
<i>a</i>	2.3705891	Ω	138.48586		-0.22300708		-0.90391915				
<i>e</i>	0.1476455	<i>i</i>	2.70083		-0.05480074		-0.36217444				
<i>P</i>	3.65	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1993 03 17	809	0.6+	0.1+	1993 03 23	809	0.0	1.1+	2000 01 05	704	0.2-	0.0
1993 03 18	809	0.4+	0.1+	1993 04 16	413	0.2+	0.4+	2000 01 06	704	0.5+	0.1-
1993 03 22	372	1.6-	0.9-	2000 01 05	704	1.0-	0.3+	2000 01 06	704	0.8+	0.5-
1993 03 22	372	0.3+	0.8-	2000 01 05	704	0.5-	0.7+	2000 01 06	704	0.3+	0.3-

1993 FH₁₂ = 2000 AD₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	300.82492		(2000.0)		P		Q				
<i>n</i>	0.26760501	ω	101.20358		-0.88804673		+0.45656128				
<i>a</i>	2.3849167	Ω	105.98091		-0.44071646		-0.81186704				
<i>e</i>	0.1472609	<i>i</i>	3.22490		-0.13092746		-0.36390068				
<i>P</i>	3.68	<i>H</i>	14.6		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 03 17	809	0.5-	0.1-	2000 01 04	704	0.8+	0.1-	2000 01 06	704	1.7+	0.0
1993 03 18	809	0.0	0.4+	2000 01 04	704	1.1-	1.1-	2000 01 06	704	0.3+	1.0+
1993 03 23	809	0.6+	0.3-	2000 01 04	704	0.8-	0.4+				
1993 04 16	413	0.2-	0.1+	2000 01 06	704	0.9-	0.3-				

1993 FQ₁₂ = 2000 AN₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	289.18606		(2000.0)		P		Q				
<i>n</i>	0.26630365	ω	102.72720		-0.79849163		+0.59949277				
<i>a</i>	2.3926801	Ω	114.13250		-0.57305744		-0.72895690				
<i>e</i>	0.1143153	<i>i</i>	3.45202		-0.18443505		-0.33050000				
<i>P</i>	3.70	<i>H</i>	14.4		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 03 17	809	1.2-	0.9+	2000 01 04	704	1.4-	0.5+	2000 01 05	699	0.1+	1.4-
1993 03 18	809	0.4+	0.0	2000 01 04	704	0.1-	1.0-	2000 01 06	704	0.7-	0.5+
1993 03 23	809	1.1+	0.8-	2000 01 04	704	0.6-	0.6+	2000 01 06	704	0.3+	0.8-
1993 04 16	413	0.3-	0.1-	2000 01 05	699	1.0+	0.1+	2000 01 06	704	0.1-	0.2-
2000 01 04	704	0.4+	0.3-	2000 01 05	699	0.7+	0.7+	2000 01 06	704	0.4+	1.3+

1993 FV₁₅ = 2000 AJ₂₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	231.62855		(2000.0)		P		Q				
<i>n</i>	0.25225370	ω	131.33204		-0.56272407		+0.82357999				
<i>a</i>	2.4807196	Ω	104.28745		-0.77866457		-0.49921389				
<i>e</i>	0.0228694	<i>i</i>	4.20854		-0.27753039		-0.26926103				
<i>P</i>	3.91	<i>H</i>	14.9		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1993 03 17	809	0.3+	0.2+	2000 01 05	691	0.5-	0.1+	2000 01 11	691	0.4+	0.1-
1993 03 18	809	0.9-	0.4+	2000 01 05	691	0.4-	0.1-	2000 01 11	691	0.3+	0.1-
1993 03 23	809	0.4-	0.2+	2000 01 05	691	0.3-	0.1+				
1993 04 16	413	1.1+	0.9-	2000 01 11	691	0.5+	0.0				

1993 FU₂₀ = 2000 AE₁₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	358.76075		(2000.0)		P		Q				
n	0.26731600	ω	339.74731		-0.67385674		-0.73737827				
a	2.3866354	Ω	152.55420		+0.69110688		-0.65144035				
e	0.1684335	i	5.82795		+0.26132043		-0.17860222				
P	3.69	H	15.0		G	0.15	U	6			
Residuals in seconds of arc											
1993 03 19	809	0.8+	0.5-	1993 04 16	413	0.1+	0.1-	2000 01 07	704	1.2-	0.4-
1993 03 20	809	0.2+	1.3-	2000 01 05	704	0.1+	0.3+	2000 01 07	704	0.2+	0.3-
1993 03 23	809	0.4-	1.6+	2000 01 05	704	0.1-	0.1+	2000 01 07	704	0.5+	0.0
1993 03 26	691	0.9+	0.2-	2000 01 05	704	0.1-	0.6+	2000 01 07	704	0.3+	0.5-
1993 03 26	691	0.1+	0.2-	2000 01 05	704	0.0	0.3+	2000 01 07	704	0.1+	0.4-
1993 03 26	691	0.5+	0.0	2000 01 05	704	0.3+	0.3+				

1993 FD₂₅ = 1953 RJ₂ = 2000 AJ₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	232.69798		(2000.0)			P		Q			
n	0.26534463	ω	287.78505			+0.18581622		+0.98249138			
a	2.3984418	Ω	352.88254			-0.85508705		+0.15490731			
e	0.1114667	i	6.26837			-0.48404387		+0.10351045			
P	3.71	H	14.0	G	0.15	U	4				
Residuals in seconds of arc											
1953 09 06	675	0.2-	0.3+	1999 12 08	704	0.2+	0.1-	2000 01 04	704	0.4+	0.6-
1953 09 06	675	0.2+	0.4-	1999 12 08	704	0.2+	0.4-	2000 01 04	704	0.1+	0.1-
1993 03 21	809	0.1+	0.4-	1999 12 08	704	0.5-	0.5-	2000 01 06	704	0.4-	0.6-
1993 03 22	809	0.8+	0.3-	2000 01 04	704	0.2-	0.1-	2000 01 06	704	0.4-	0.8+
1993 03 26	809	0.6-	0.0	2000 01 04	704	0.2-	0.1-	2000 01 06	704	0.7+	0.4+
1993 04 18	413	0.3-	0.5+	2000 01 04	704	0.7+	1.2+	2000 01 06	704	0.5-	0.1+

1993 FR₂₅ = 2000 AF₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	343.70665		(2000.0)			P		Q			
n	0.26875745	ω	276.49780			-0.91897070		-0.39363978			
a	2.3780941	Ω	240.32322			+0.37153982		-0.84460897			
e	0.1534111	i	1.53344			+0.13210231		-0.36288209			
P	3.67	H	14.8			G	0.15	U	4		
Residuals in seconds of arc											
1993 03 21	809	0.6-	0.5+	1993 05 09	695	0.1+	0.1+	2000 01 05	704	0.1+	0.3+
1993 03 22	809	0.2+	0.9+	1999 12 31	699	0.3+	0.1-	2000 01 05	704	0.2+	0.1-
1993 03 26	809	0.3+	0.0	1999 12 31	699	0.7-	0.7+	2000 01 06	704	0.1-	0.8-
1993 04 18	413	0.5+	1.3-	1999 12 31	699	0.4-	0.6+	2000 01 06	704	0.2-	0.4-
1993 05 09	695	0.2-	0.2-	2000 01 05	704	0.1+	0.8-	2000 01 06	704	0.4-	0.1-
1993 05 09	695	0.1-	0.0	2000 01 05	704	0.1-	0.5-	2000 01 06	704	0.5+	0.2+
1993 05 09	695	0.1-	0.2+	2000 01 05	704	0.6+	0.7+				

1993 FB₂₉ = 2000 AE₁₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	228.29524		(2000.0)	P			Q				
<i>n</i>	0.25620830	ω	0.54178	-0.14224723			+0.98678058				
<i>a</i>	2.4551267	Ω	261.28198	-0.90844756			-0.16130079				
<i>e</i>	0.1600662	<i>i</i>	4.50577	-0.39305057			+0.01568884				
<i>P</i>	3.85	<i>H</i>	14.5	<i>G</i>	0.15		<i>U</i>	6			
Residuals in seconds of arc											
1993 03 21	809	0.6-	1.0+	2000 01 05	704	0.4+	0.1+	2000 01 07	704	1.7-	0.1+
1993 03 22	809	1.3+	0.7+	2000 01 05	704	0.0	0.0	2000 01 07	704	0.8-	0.4+
1993 03 26	809	0.7-	1.6-	2000 01 05	704	0.2+	0.6-	2000 01 07	704	0.6+	0.0
1993 04 17	413	0.0	0.2-	2000 01 07	704	0.4+	0.2-				
2000 01 05	704	0.4+	0.0	2000 01 07	704	0.6+	0.1+				

1993 FP₃₃ = 1999 XJ₂₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	9.56469		(2000.0)	P		Q					
<i>n</i>	0.24601022	ω	290.24305	+0.33548041	-0.94110901						
<i>a</i>	2.5225161	Ω	140.07655	+0.88691391	+0.30049189						
<i>e</i>	0.1332319	<i>i</i>	3.75528	+0.31754780	+0.15497886						
<i>P</i>	4.01	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1993 03 19	809	1.0+	0.2-	1999 11 05	704	0.3+	0.4+	1999 12 15	704	0.0	0.2+
1993 03 20	809	0.8+	0.1-	1999 11 05	704	0.9-	0.1+	1999 12 15	704	0.6+	0.8+
1993 03 24	809	0.7-	1.7+	1999 12 04	699	0.2-	0.7-	1999 12 15	704	0.5-	0.6+
1993 04 18	413	(7.7-	1.5-)	1999 12 04	699	0.2+	0.2+	2000 01 05	704	0.1+	0.1+
1993 04 20	691	0.3-	0.3-	1999 12 04	699	0.5+	0.1+	2000 01 05	704	0.6+	0.6-
1993 04 20	691	0.3-	0.3-	1999 12 05	704	1.0-	0.0	2000 01 05	704	0.7+	0.4-
1993 04 20	691	0.4-	0.3-	1999 12 05	704	0.4+	0.7+	2000 01 05	704	0.7+	0.5-
1999 11 01	703	0.1+	0.4+	1999 12 05	704	1.4-	0.0	2000 01 05	704	0.3-	1.5+
1999 11 01	703	0.4+	0.4-	1999 12 14	704	0.4+	0.3-	2000 01 07	704	0.1+	1.1-
1999 11 01	703	0.2-	0.2+	1999 12 14	704	0.3+	0.2-	2000 01 07	704	0.3-	0.3-
1999 11 01	703	0.0	0.1-	1999 12 14	704	0.3+	0.6-	2000 01 07	704	0.6-	0.1-
1999 11 05	704	0.2-	0.3-	1999 12 14	704	0.2+	1.2+	2000 01 07	704	0.1+	0.9-
1999 11 05	704	0.4-	0.2+	1999 12 15	704	0.5-	0.1-	2000 01 07	704	0.0	0.3-
1999 11 05	704	0.6+	0.1-	1999 12 15	704	0.1+	0.2+				

1993 FQ₃₅ = 2000 AR₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	82.40379		(2000.0)	P		Q					
<i>n</i>	0.25943516	ω	357.42838	+0.81529990		-0.57787254					
<i>a</i>	2.4347264	Ω	37.94972	+0.53231822		+0.72304114					
<i>e</i>	0.1898153	<i>i</i>	3.42449	+0.22786702		+0.37851662					
<i>P</i>	3.80	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1993 03 19	809	0.3+	0.6+	2000 01 04	704	1.2-	0.6-	2000 01 06	704	0.0	0.2-
1993 03 20	809	0.4-	0.3-	2000 01 04	704	0.6+	0.7+	2000 01 06	699	0.1-	0.5+
1993 03 24	809	0.3+	0.2-	2000 01 04	704	0.8-	0.3+	2000 01 06	704	0.3-	0.6+
1993 04 18	413	0.3+	0.2+	2000 01 04	704	0.4-	0.7+	2000 01 06	704	1.3-	0.6+
1993 04 21	413	0.4-	0.3-	2000 01 04	888	0.7+	0.6-	2000 01 06	699	0.2-	0.0
2000 01 03	888	0.5+	0.4-	2000 01 04	888	0.6+	0.1-	2000 01 06	699	0.9+	0.1+
2000 01 03	888	0.0	1.0-	2000 01 06	704	0.6+	0.7-				
2000 01 03	888	0.3+	0.5-	2000 01 06	704	0.0	0.4+				

1993 FY₃₅ = 1999 RV₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	326.65073		(2000.0)	P				Q			
<i>n</i>	0.23643694	ω	70.90280			+0.03430447		-0.99675032			
<i>a</i>	2.5901554	Ω	17.61385			+0.80231283		-0.01601790			
<i>e</i>	0.1330734	<i>i</i>	13.93714			+0.59591721		+0.07894445			
<i>P</i>	4.17	<i>H</i>	14.0		<i>G</i>	0.15		<i>U</i>		4	
Residuals in seconds of arc											
1993 03 19	809	0.8-	0.1-	1999 09 14	704	0.2-	0.0	1999 11 07	704	(1.1-	2.2-)
1993 03 20	809	0.4+	0.2-	1999 09 14	704	0.0	0.9-	1999 11 07	704	0.4+	1.4-
1993 03 24	809	0.1+	0.1-	1999 09 14	704	0.2+	0.1+	1999 11 07	704	0.8-	0.0
1993 04 18	413	(0.9-	3.2-)	1999 09 14	704	0.4-	0.2-	1999 11 07	704	0.2-	1.7-
1999 09 05	699	0.6+	0.0	1999 10 02	704	0.1+	0.2-	1999 11 12	704	0.2+	1.1-
1999 09 05	699	0.7+	0.1+	1999 10 02	704	0.4-	0.1-	1999 11 12	704	0.2+	0.6+
1999 09 05	699	0.5+	0.1-	1999 10 02	704	0.2-	0.2-	1999 11 12	704	0.1+	0.8+
1999 09 07	704	0.5+	0.9+	1999 10 02	704	0.9-	0.8-	1999 11 12	704	0.2+	0.4-
1999 09 07	704	0.6+	0.0	1999 10 02	704	0.3-	0.2-	1999 12 07	704	0.1-	0.1-
1999 09 07	704	0.1+	0.5+	1999 11 05	703	0.6-	1.1+	1999 12 07	704	0.1-	0.2+
1999 09 07	704	0.0	0.4+	1999 11 05	703	0.2-	0.5+	1999 12 07	704	0.4+	0.4-
1999 09 07	704	0.2-	0.6+	1999 11 05	703	0.8+	1.0+	1999 12 07	704	0.4-	0.1+
1999 09 14	704	0.5-	0.1-	1999 11 05	703	0.3+	0.3+	1999 12 07	704	0.3+	0.4+

1993 FT₄₂ = 2000 AO₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	14.09022		(2000.0)	P			Q				
n	0.26653316	ω	81.13593	-0.34468251		-0.93850042					
a	2.3913064	Ω	29.05202	+0.84401973		-0.31929014					
e	0.1676853	i	2.39247	+0.41088278		-0.13141826					
P	3.70	H	14.4	G	0.15	U	3				
Residuals in seconds of arc											
1993 03 19	809	1.0-	0.3+	1999 12 15	704	0.3+	0.2-	2000 01 03	704	0.1+	0.9-
1993 03 20	809	0.2-	0.4-	1999 12 15	704	0.3-	0.2+	2000 01 03	704	0.0	0.6-
1993 03 24	809	0.9+	0.4-	1999 12 15	704	0.0	0.5+	2000 01 04	704	0.0	0.5-
1993 04 21	413	(5.1-	2.9+)	1999 12 15	704	1.0+	0.5+	2000 01 04	704	0.1+	0.3-
1998 08 17	704	1.5+	0.2+	1999 12 15	704	0.4-	0.1-	2000 01 04	704	0.3+	0.3-
1998 08 17	704	0.1+	0.0	1999 12 31	699	0.4+	0.1+	2000 01 04	704	0.2+	0.1-
1998 08 17	704	0.6+	1.5-	1999 12 31	699	0.6+	0.4+	2000 01 04	704	0.4+	0.2-
1998 08 17	704	1.6-	0.2-	1999 12 31	699	0.2+	0.6+	2000 01 05	678	1.2-	0.0
1999 12 03	699	0.1+	1.1+	2000 01 03	704	0.0	0.3-	2000 01 05	678	0.3-	0.2-
1999 12 03	699	0.6-	0.1-	2000 01 03	704	0.2+	0.5-	2000 01 06	678	0.4-	0.5+
1999 12 03	699	0.6-	0.4-	2000 01 03	704	0.1+	0.3-	2000 01 06	678	0.4-	0.5+

1993 FD₄₇ = 1999 LQ₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	75.23320		(2000.0)			P		Q			
n	0.18045467	ω	54.39363			-0.85719067		+0.51490677			
a	3.1013966	Ω	156.59293			-0.48008928		-0.79208584			
e	0.1082996	i	1.40717			-0.18638250		-0.32782775			
P	5.46	H	14.4			G	0.15	U	5		
Residuals in seconds of arc											
1993 03 19	809	0.0	0.1-	1999 06 12	703	0.7+	0.1-	1999 06 15	704	0.1-	0.3+
1993 03 20	809	0.2-	0.3+	1999 06 12	703	0.7-	0.4+	1999 06 15	704	0.3+	0.0
1993 03 24	809	0.2+	0.5-	1999 06 12	703	0.0	0.5-	1999 06 15	704	0.1-	0.0
1993 04 17	413	0.1+	0.3+	1999 06 12	703	0.2+	0.2+	1999 06 15	704	0.3-	0.3-

1993 FS₄₇

Id. E. Bowell (1999 observations)

2000 JAN. 24

M.P.C. 37635

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	31.85685	(2000.0)	P		Q	
<i>n</i>	0.26181710	ω	77.51049	+0.05863579	-0.99811430	
<i>a</i>	2.4199369	Ω	9.18605	+0.86604795	+0.04181423	
<i>e</i>	0.0756556	<i>i</i>	6.53078	+0.49651062	+0.04493779	
<i>P</i>	3.76	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1993 03 19	809	0.1+	0.4+	1999 12 03	699	0.2-	0.8+	1999 12 15	704	0.4+	0.1-
1993 03 20	809	0.2+	0.1+	1999 12 12	704	0.0	0.2-	1999 12 15	704	0.4+	0.1+
1993 03 24	809	0.2-	1.0+	1999 12 12	704	0.4-	0.4-	1999 12 15	704	0.3-	0.1-
1993 04 17	413	0.5-	0.7+	1999 12 12	704	0.1-	0.8-	1999 12 15	704	0.1+	0.8-
1993 04 18	691	0.1+	0.9-	1999 12 12	704	0.3+	0.4-	1999 12 15	704	0.4+	0.6-
1993 04 18	691	0.2+	0.9-	1999 12 12	704	0.1+	0.2-	1999 12 31	699	0.6+	0.6+
1993 04 18	691	0.0	0.9-	1999 12 13	699	0.1-	0.4+	1999 12 31	699	0.1-	0.8+
1998 08 17	704	0.2-	1.4-	1999 12 13	699	0.3+	1.0+	1999 12 31	699	0.3+	0.6+
1998 08 17	704	0.4-	1.3+	1999 12 13	699	0.1-	0.6+	2000 01 02	704	(0.2-	3.7+)
1998 08 17	704	1.2+	1.0-	1999 12 14	704	0.5-	0.7-	2000 01 02	704	0.1-	0.3+
1998 08 17	704	1.5+	1.5+	1999 12 14	704	0.4-	0.2-	2000 01 02	704	0.5-	1.1-
1998 08 17	704	1.9-	0.9-	1999 12 14	704	0.3+	0.6-	2000 01 02	704	(1.2-	3.8-)
1999 12 03	699	0.2-	0.5+	1999 12 14	704	0.0	0.3-				
1999 12 03	699	0.2+	0.7+	1999 12 14	704	0.6-	0.4-				

1993 FV₅₀ = 2000 AQ₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	1.98636	(2000.0)	P		Q	
<i>n</i>	0.27114565	ω	262.01595	-0.72070306	-0.69294877	
<i>a</i>	2.3641097	Ω	234.11728	+0.64546800	-0.66010558	
<i>e</i>	0.1618889	<i>i</i>	1.43046	+0.25289950	-0.28997004	
<i>P</i>	3.63	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 19	809	0.2+	0.8+	2000 01 05	704	0.3+	0.5-	2000 01 05	704	0.4+	0.1+
1993 03 20	809	0.2-	0.2+	2000 01 05	704	0.3-	0.8+	2000 01 05	704	0.3-	0.3+
1993 03 24	809	0.2+	0.5-	2000 01 05	704	0.2-	0.5-	2000 01 05	704	0.9+	1.2+
1993 04 17	413	0.2-	0.5-	2000 01 05	704	0.2+	0.4+	2000 01 06	704	0.6+	0.5+
1999 12 31	699	0.1+	0.6-	2000 01 05	704	0.2+	0.8-	2000 01 06	704	0.1+	1.0-
1999 12 31	699	0.1+	0.4+	2000 01 05	704	0.9-	1.1+	2000 01 06	704	0.2+	0.0
1999 12 31	699	0.6-	0.3-	2000 01 05	704	0.5-	1.2-	2000 01 06	704	0.4-	0.3+

1993 FD₈₃ = 1999 XZ₇₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	110.99400	(2000.0)	P		Q	
<i>n</i>	0.22966826	ω	230.65442	+0.77456222	+0.62826095	
<i>a</i>	2.6407993	Ω	90.29866	-0.55550102	+0.73096810	
<i>e</i>	0.2065153	<i>i</i>	4.19131	-0.30244336	+0.26640912	
<i>P</i>	4.29	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1993 03 19	809	0.5+	0.8+	1999 12 03	691	1.1-	1.1+	1999 12 08	704	0.6-	0.2+
1993 03 20	809	(2.7+	3.8-)	1999 12 03	691	0.1-	0.0	1999 12 08	704	0.4+	0.3+
1993 03 24	809	0.1+	0.7+	1999 12 03	691	0.0	1.6-	1999 12 11	376	0.4+	0.2-
1993 03 25	691	0.4-	0.8-	1999 12 07	704	0.3-	0.1+	1999 12 11	376	0.1+	0.2+
1993 03 25	691	0.1+	0.3+	1999 12 07	704	0.6-	0.3-	1999 12 11	376	0.3+	0.1+
1993 03 25	691	0.2-	1.0-	1999 12 07	704	0.3-	0.5-	1999 12 13	376	0.1+	0.7+
1999 11 28	691	0.1+	0.3+	1999 12 07	704	0.2-	0.2-	1999 12 13	376	0.8-	0.7-
1999 11 28	691	0.3+	0.2+	1999 12 08	704	0.2+	0.1-				
1999 11 28	691	0.2+	0.0	1999 12 08	704	1.9+	0.2+				

1993 HB = 1999 XQ₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	24.69415	(2000.0)	P		Q	
<i>n</i>	0.26173614	ω	241.62541	+0.13967667	-0.99018331	
<i>a</i>	2.4204359	Ω	200.34746	+0.91367899	+0.13092027	
<i>e</i>	0.1581264	<i>i</i>	0.86314	+0.38168199	+0.04895806	
<i>P</i>	3.77	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 04 17	413	(9.2+	3.6-)	1993 04 21	589	0.8+	1.4-	2000 01 05	704	0.1-	0.5+
1993 04 17	589	0.9-	0.1-	1993 04 21	589	0.4-	1.2-	2000 01 05	704	0.2-	0.6+
1993 04 17	589	0.5+	0.3+	1993 04 21	589	0.5+	0.9-	2000 01 05	704	0.2-	0.6+
1993 04 17	589	0.4+	0.4-	1993 04 21	589	0.7-	0.5-	2000 01 05	704	0.9+	0.5+
1993 04 17	589	0.6-	0.8+	1993 04 21	589	0.1-	0.4-	2000 01 05	704	0.7-	1.3-
1993 04 17	589	0.3-	0.3+	1993 04 23	589	0.4-	0.0	2000 01 06	704	0.4-	1.3+
1993 04 18	589	0.2+	0.0	1993 04 23	589	0.1-	0.3-	2000 01 06	704	0.1-	0.3+
1993 04 18	589	0.3+	0.1+	1993 04 23	589	1.0+	0.2-	2000 01 06	704	0.0	1.1+
1993 04 18	589	1.3+	0.4+	1999 12 07	704	0.3-	0.7-	2000 01 06	704	0.4+	0.8+
1993 04 18	589	0.1-	0.0	1999 12 07	704	0.8-	0.5-	2000 01 06	704	0.5+	0.7-
1993 04 19	589	0.7-	0.5+	1999 12 07	704	0.1+	0.7-	2000 01 06	704	0.6+	1.4+
1993 04 19	589	1.3-	1.5+	1999 12 07	704	0.0	0.8-	2000 01 07	704	0.1+	0.4+
1993 04 19	589	0.1-	0.2-	1999 12 08	704	0.6-	0.7-	2000 01 07	704	1.3+	0.4+
1993 04 20	589	0.2-	0.8+	1999 12 08	704	0.0	0.3-	2000 01 07	704	1.3-	1.4-
1993 04 20	589	0.0	0.5-	1999 12 08	704	0.2+	0.5-	2000 01 07	704	0.3-	0.4+
1993 04 20	589	0.7+	0.2-	1999 12 08	704	1.1+	0.7-	2000 01 07	704	0.3-	0.1+
1993 04 20	589	0.2-	0.3+	1999 12 08	704	0.1-	0.2-				

1993 HL₃ = 1989 EH₁₀ = 2000 AG₉₅

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	60.89804	(2000.0)	P		Q	
<i>n</i>	0.26533557	ω	302.53306	+0.38840118	-0.92025728	
<i>a</i>	2.3984963	Ω	124.53955	+0.86366730	+0.34551096	
<i>e</i>	0.1501576	<i>i</i>	3.31660	+0.32128386	+0.18370824	
<i>P</i>	3.71	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1989 03 05	033	0.3+	1.0+	1993 04 24	691	0.2-	0.8-	2000 01 04	704	0.2+	0.0
1989 03 05	033	0.4+	1.1+	1998 08 17	704	0.0	0.2-	2000 01 04	704	0.6+	0.4+
1993 03 19	809	0.1+	0.2-	1998 08 17	704	0.4+	1.1-	2000 01 04	704	0.2+	0.2-
1993 03 20	809	0.8-	0.1+	1998 08 17	704	0.4+	0.4+	2000 01 05	704	(0.4+	2.1-)
1993 03 24	809	0.9-	1.3+	1998 08 17	704	0.0	0.6-	2000 01 05	704	0.3-	0.9+
1993 04 18	413	(2.2-	3.6+)	1998 08 17	704	0.4-	0.8+	2000 01 05	704	(0.0	2.3+)
1993 04 20	691	0.2+	0.4-	1999 12 07	704	0.6+	1.2-	2000 01 07	704	0.6-	0.2-
1993 04 20	691	0.2+	0.6-	1999 12 07	704	0.4-	0.7-	2000 01 07	704	0.2-	0.2-
1993 04 20	691	0.2+	0.2-	1999 12 07	704	0.3-	1.5-	2000 01 07	704	0.1-	0.3+
1993 04 24	691	0.1+	1.0-	2000 01 04	704	0.2+	0.2-	2000 01 07	704	0.2+	0.5-
1993 04 24	691	0.3+	0.3-	2000 01 04	704	0.1-	0.4-	2000 01 07	704	0.4-	0.8+

1993 LF₁ = 1999 XT₂₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	219.34679	(2000.0)	P		Q	
<i>n</i>	0.24055524	ω	279.58526	-0.32319005	+0.94088889	
<i>a</i>	2.5605081	Ω	330.91942	-0.76568907	-0.32294205	
<i>e</i>	0.1470147	<i>i</i>	12.03842	-0.55611909	-0.10215929	
<i>P</i>	4.10	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1993 06 13	413	0.5+	1.2+	1999 11 01	704	0.0	0.6-	1999 12 15	704	0.3+	0.8+
1993 06 13	413	0.2+	0.4-	1999 11 01	704	0.5+	0.5-	1999 12 15	704	0.0	0.4+
1993 06 14	413	0.4+	0.8+	1999 11 01	704	0.7-	0.2+	1999 12 15	704	0.5+	0.4+
1993 06 15	413	0.4+	0.6+	1999 11 01	704	0.3-	0.5+	1999 12 30	704	0.2+	0.4-
1993 06 15	413	0.0	0.6-	1999 12 13	704	0.7+	0.4-	1999 12 30	704	0.3-	0.5-
1993 06 15	413	0.4-	0.4-	1999 12 13	704	0.2-	0.4+	1999 12 30	704	0.0	0.6+
1993 06 18	413	0.2-	0.7-	1999 12 13	704	0.3-	0.1-	1999 12 30	704	0.4-	0.2-

1993 06 18 413 1.1− 0.5− 1999 12 13 704 0.1− 0.5−
 1999 11 01 704 0.4+ 0.0 1999 12 13 704 0.1− 0.4−

1993 OU₁

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	13.85132		(2000.0)	P	Q				
<i>n</i>	0.17541152	ω	229.67639	+0.88464105	−0.46493487				
<i>a</i>	3.1605596	Ω	157.95998	+0.45123183	+0.83457703				
<i>e</i>	0.2265262	<i>i</i>	5.39709	+0.11747359	+0.29549408				
<i>P</i>	5.62	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1993 06 12	691	0.1+	0.3−	1993 07 26	691	0.2+	0.0	1999 10 07	703	0.4+	0.2+
1993 06 12	691	0.1−	0.4−	1999 09 14	704	0.1−	0.4−	1999 10 07	703	0.1−	0.0
1993 06 12	691	0.0	0.0	1999 09 14	704	0.6+	0.8−	1999 10 07	703	0.1+	0.8−
1993 07 24	691	0.3+	1.3+	1999 09 14	704	0.1−	1.7+	1999 10 07	703	0.1+	0.5−
1993 07 24	691	(2.4+	0.7+)	1999 09 14	704	0.1−	0.1+	1999 10 07	704	0.3−	0.7+
1993 07 25	691	0.1−	0.4−	1999 09 14	704	0.5+	0.2+	1999 10 07	704	0.2−	0.9+
1993 07 25	691	0.4−	0.4−	1999 10 02	704	0.1+	0.0	1999 10 07	704	0.5+	0.2+
1993 07 25	691	0.0	0.1+	1999 10 02	704	0.3−	0.2−	1999 10 07	704	0.3−	0.5−
1993 07 26	691	0.4−	0.1+	1999 10 02	704	0.1−	0.5−	1999 10 07	704	0.7−	0.3−
1993 07 26	691	0.3+	0.2−	1999 10 02	704	0.3+	0.1+				

1993 OD₂ = 2000 AV₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	215.62548		(2000.0)	P	Q				
<i>n</i>	0.23585069	ω	169.91621	+0.64823410	+0.74044920				
<i>a</i>	2.5944459	Ω	140.16252	−0.71649220	+0.67208510				
<i>e</i>	0.2317528	<i>i</i>	16.09151	−0.25774304	−0.00604986				
<i>P</i>	4.18	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1993 07 23	675	(0.2−	2.2−)	1998 12 22	704	0.2−	0.0	2000 01 04	704	0.0	0.4+
1993 07 23	675	0.5−	1.5−	1998 12 22	704	0.2−	0.3+	2000 01 05	699	0.2+	0.2+
1993 07 26	675	1.3+	0.5−	1998 12 22	704	0.7+	0.5+	2000 01 05	699	0.5−	1.3+
1993 07 26	675	0.4−	0.0	1999 12 05	703	0.3+	0.4+	2000 01 05	699	0.6−	0.9−
1993 08 19	675	(1.2+	4.9+)	1999 12 05	703	1.1+	1.0−	2000 01 07	704	0.6−	1.7−
1993 08 19	675	0.5−	0.5+	1999 12 05	703	0.2−	0.1+	2000 01 07	704	0.2+	0.1−
1993 08 21	675	0.0	1.8−	1999 12 05	703	0.4+	0.1+	2000 01 07	704	0.5+	0.3−
1993 08 21	675	0.3+	1.3+	2000 01 04	704	0.4−	0.1−	2000 01 07	704	0.5−	0.2−
1998 12 22	704	0.0	0.8−	2000 01 04	704	0.4−	0.7−	2000 01 07	704	0.1−	0.3−
1998 12 22	704	0.2−	0.1−	2000 01 04	704	0.3+	0.3−				

1993 OY₁₂ = 1999 XR₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	274.29321		(2000.0)	P	Q				
<i>n</i>	0.23925808	ω	301.19959	−0.64525368	+0.72926393				
<i>a</i>	2.5697546	Ω	286.83007	−0.59469897	−0.66651748				
<i>e</i>	0.0759445	<i>i</i>	13.75855	−0.47956316	−0.15468865				
<i>P</i>	4.12	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1993 07 12	809	0.1+	1.2−	1993 07 26	809	(3.2−	4.1+)	1999 12 07	704	1.7+	0.2+
1993 07 12	809	0.1−	1.6−	1993 07 26	809	(3.2−	3.4+)	1999 12 07	704	1.1+	0.0
1993 07 12	809	0.6−	1.5−	1993 07 26	809	(2.2−	4.1+)	1999 12 07	704	1.9+	0.2+
1993 07 19	809	0.8+	0.8+	1998 11 16	566	0.8−	1.8−	1999 12 15	703	0.4+	0.4+
1993 07 19	809	0.5+	1.1+	1998 11 16	566	0.0	0.8−	1999 12 15	703	0.3+	0.9+
1993 07 19	809	0.8+	0.7+	1998 11 16	566	1.2+	1.6+	1999 12 15	703	0.2+	0.8+
1993 07 19	809	0.5−	1.4+	1999 12 05	699	0.5+	0.3+	1999 12 15	703	0.2+	0.2+
1993 07 19	809	1.0−	1.8+	1999 12 05	699	0.4+	0.6+	2000 01 06	106	1.0−	0.7−
1993 07 19	809	1.0−	1.0+	1999 12 05	699	1.0+	0.8+	2000 01 06	106	1.5−	0.2−
1993 07 23	809	(5.1−	0.4−)	1999 12 06	704	1.0+	1.1+	2000 01 06	106	0.9−	0.4−
1993 07 23	809	(4.4−	0.2+)	1999 12 06	704	1.0+	1.0+	2000 01 07	704	1.1−	0.4−
1993 07 23	809	(4.8−	0.6−)	1999 12 06	704	(0.0	3.0+)	2000 01 07	704	1.5−	0.3−

1993 07 23 809 (3.3− 0.3−) 1999 12 06 704 1.7+ 0.7− 2000 01 07 704 1.4− 0.5−
 1993 07 23 809 (2.7− 0.1+) 1999 12 07 704 1.3+ 0.8+ 2000 01 07 704 1.6− 0.2−
 1993 07 23 809 (2.7− 0.3−) 1999 12 07 704 1.7+ 0.1+ 2000 01 07 704 1.4− 0.6−

1993 RA₃ = 2000 AV₂₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	199.04540		(2000.0)	P	Q				
<i>n</i>	0.22422291	ω	99.85234	+0.54174283	+0.83627016				
<i>a</i>	2.6833834	Ω	203.56111	−0.83004538	+0.51638673				
<i>e</i>	0.1709082	<i>i</i>	12.22719	−0.13243625	+0.18438266				
<i>P</i>	4.40	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1993 09 14	675	0.4+	1.0−	1998 08 31	704	0.3−	0.9+	2000 01 09	704	0.1+	1.0−
1993 09 14	675	0.4+	1.2−	1998 08 31	704	0.5+	0.2−	2000 01 09	704	1.2+	0.1−
1993 09 16	675	1.7−	0.5+	1998 12 14	699	0.4+	0.2+	2000 01 11	704	1.5−	0.4+
1993 10 20	675	0.4+	0.0	1998 12 14	699	0.0	0.7+	2000 01 11	704	0.6−	0.3−
1993 10 20	675	0.2+	0.5+	1998 12 14	699	0.9+	0.3+	2000 01 11	704	0.9−	0.3−
1993 10 21	675	0.9+	0.1+	2000 01 07	699	0.4+	0.2+	2000 01 11	704	0.9−	0.4+
1998 08 31	704	1.8−	0.5−	2000 01 07	699	1.0+	1.0+	2000 01 11	704	0.4−	1.3−
1998 08 31	704	0.7+	0.7+	2000 01 07	699	0.1+	0.0				
1998 08 31	704	0.8−	1.1−	2000 01 09	704	1.1+	0.6−				

1993 RU₃ = 2000 AJ₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	224.42186		(2000.0)	P	Q				
<i>n</i>	0.22059763	ω	5.35712	−0.19192958	+0.96205919				
<i>a</i>	2.7127024	Ω	253.68534	−0.90776245	−0.24912591				
<i>e</i>	0.1104821	<i>i</i>	11.65725	−0.37300184	+0.11125823				
<i>P</i>	4.47	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1993 08 21	675	0.6−	1.2−	1998 09 20	699	0.3−	0.8+	1999 12 14	704	0.6−	0.6−
1993 08 21	675	0.2+	0.1+	1998 09 20	699	0.2+	0.4+	2000 01 07	704	0.1+	0.2+
1993 08 23	675	0.5−	0.1+	1998 09 20	699	0.1−	0.3+	2000 01 07	704	0.1+	0.4+
1993 08 23	675	0.9+	2.0−	1999 12 06	704	0.4+	0.4−	2000 01 07	704	0.1+	0.0
1993 09 12	675	0.6+	0.1−	1999 12 06	704	0.8−	1.3−	2000 01 07	704	0.4+	0.2−
1993 09 12	675	1.1+	0.4+	1999 12 06	704	0.4−	0.3−	2000 01 07	704	0.4+	0.7−
1993 09 14	675	0.2−	0.8−	1999 12 06	704	0.2−	0.8−	2000 01 11	704	0.5−	0.5+
1993 09 14	675	(1.5−	2.9−)	1999 12 14	704	0.5−	0.3−	2000 01 11	704	0.2+	0.6+
1998 09 20	699	0.1−	1.7+	1999 12 14	704	0.3−	0.7−	2000 01 11	704	0.4+	0.4+
1998 09 20	699	0.2+	0.4−	1999 12 14	704	0.4−	0.4−	2000 01 11	704	0.5+	0.4+
1998 09 20	699	0.4−	0.7+	1999 12 14	704	0.9−	0.6−	2000 01 11	704	0.7+	0.8+

1993 SN₇ = 1998 UK₄ = 1999 XP₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	8.34899		(2000.0)	P	Q				
<i>n</i>	0.17818347	ω	113.66291	+0.29947966	−0.95399915				
<i>a</i>	3.1276954	Ω	318.90248	+0.86739756	+0.27837055				
<i>e</i>	0.1343442	<i>i</i>	1.22518	+0.39740837	+0.11133486				
<i>P</i>	5.53	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1993 09 17	809	1.2−	0.1+	1998 10 21	910	0.0	0.0	1999 12 02	699	0.1−	0.5+
1993 09 17	809	1.8−	0.3−	1998 10 21	910	0.1+	0.2−	1999 12 02	699	0.2−	0.3+
1993 09 17	809	(2.2−	1.4−)	1998 10 21	910	0.1−	0.1+	1999 12 04	691	0.4+	0.1−
1993 09 18	809	1.5+	1.3+	1999 11 03	704	0.9+	0.6−	1999 12 04	691	0.4+	0.1−
1993 09 18	809	0.6+	0.7+	1999 11 03	704	0.2+	0.2−	1999 12 04	691	0.9+	0.1+
1993 09 18	809	0.2−	0.7+	1999 11 03	704	0.4+	0.7−	1999 12 07	704	0.2−	0.6+
1993 09 22	809	1.0−	1.2+	1999 11 03	704	0.9+	0.7−	1999 12 07	704	0.4+	0.9+
1993 09 22	809	(2.9−	0.4+)	1999 11 03	704	0.8+	0.8−	1999 12 07	704	0.1+	0.5+
1993 09 22	809	0.6−	0.5+	1999 11 09	703	0.9−	1.0+	1999 12 07	704	0.1−	0.0
1993 09 24	809	(2.5+	0.3+)	1999 11 09	703	0.6−	0.3+	1999 12 07	704	0.1+	0.4+
1993 09 24	809	1.3+	0.3−	1999 11 09	703	0.4−	1.0+	1999 12 08	704	0.2−	0.3+
1993 09 24	809	0.1−	0.2−	1999 11 09	703	0.5−	0.1−	1999 12 08	704	0.4−	0.1−

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1998 08 17	704	0.1+	0.7-	1999 11 14	704	0.3-	0.3-	1999 12 08	704	0.3+	0.2-
1998 08 17	704	0.4+	0.5-	1999 11 14	704	0.1+	0.6-	1999 12 08	704	0.2-	0.4+
1998 08 17	704	1.6+	1.2+	1999 11 14	704	0.1-	0.5-	1999 12 08	704	0.0	0.2+
1998 08 17	704	(2.5+	1.8-)	1999 11 14	704	0.1-	0.5-	1999 12 13	703	0.8-	0.1+
1998 08 17	704	1.1-	1.1-	1999 11 14	704	0.1-	0.4-	1999 12 13	703	0.7-	0.0
1998 08 23	699	0.2+	1.0-	1999 11 16	704	0.0	0.8-	1999 12 13	703	0.6-	0.0
1998 08 23	699	0.5+	1.2-	1999 11 16	704	0.0	0.8-	1999 12 13	703	0.2-	0.7+
1998 08 23	699	0.1-	0.4+	1999 11 16	704	0.0	0.3-	1999 12 14	691	0.0	0.7-
1998 10 20	910	0.4-	0.5+	1999 11 16	704	0.1+	0.7-	1999 12 14	691	0.1+	0.6-
1998 10 20	910	0.4-	0.2-	1999 11 16	704	0.1+	0.5-	1999 12 14	691	0.1+	0.4-
1998 10 20	910	0.0	0.0	1999 12 02	699	0.6+	0.8+				

1993 TR₁ = 1999 XB₃₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	42.60319		(2000.0)	P	Q		
<i>n</i>	0.17484058	ω	358.84029	+0.84321530	-0.52095075		
<i>a</i>	3.1674363	Ω	33.64370	+0.49512401	+0.65649387		
<i>e</i>	0.0576945	<i>i</i>	13.85374	+0.20938047	+0.54555120		
<i>P</i>	5.64	<i>H</i>	12.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 10 13	675	0.7+	0.4-	1999 11 03	704	0.3-	0.3+	1999 12 10	704	0.1-	0.3-
1993 10 13	675	0.8-	0.5-	1999 11 03	704	0.0	0.5+	1999 12 10	704	0.2+	0.4-
1993 10 15	675	0.1-	0.4-	1999 11 03	704	0.2-	0.1+	1999 12 10	704	0.3-	0.5-
1993 10 15	400	(2.4-	2.1+)	1999 12 05	699	0.5-	0.0	1999 12 15	704	0.4+	0.1-
1993 10 15	400	1.1-	0.4+	1999 12 05	699	0.1-	0.7+	1999 12 15	704	0.0	0.1+
1993 10 16	400	1.1-	1.2+	1999 12 05	699	0.0	1.0+	1999 12 15	704	0.3-	0.1+
1993 10 20	400	0.9+	1.3-	1999 12 07	678	0.7+	0.4-	1999 12 15	704	0.5-	0.2+
1993 10 20	400	0.1+	1.5+	1999 12 07	678	0.7+	0.2-	1999 12 15	704	0.1-	0.1-
1993 11 10	400	0.9+	0.6-	1999 12 07	703	0.1-	0.2+	1999 12 31	699	0.0	0.9+
1993 11 10	400	0.1+	0.5+	1999 12 07	703	0.1+	0.3+	1999 12 31	699	0.1+	0.7+
1999 10 05	704	0.8+	1.7-	1999 12 07	703	0.2-	0.3+	1999 12 31	699	0.7-	0.9+
1999 10 05	704	1.4+	0.5-	1999 12 07	703	0.1-	0.2+	2000 01 02	704	1.0+	0.3+
1999 10 05	704	0.5-	0.7-	1999 12 08	678	0.1-	0.0	2000 01 02	704	0.4+	1.0-
1999 10 05	704	0.2+	1.0+	1999 12 08	678	0.2+	0.2-	2000 01 02	704	0.4-	1.0-
1999 11 03	704	0.0	0.3-	1999 12 10	704	0.1+	0.0	2000 01 02	704	0.8-	0.7-
1999 11 03	704	0.5+	0.5+	1999 12 10	704	0.2+	0.3-	2000 01 02	704	1.4-	0.8-

1993 TV₃ = 1999 XM₁₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	48.93718		(2000.0)	P	Q		
<i>n</i>	0.17809982	ω	35.65116	+0.85819901	-0.51326727		
<i>a</i>	3.1286745	Ω	355.21388	+0.44884527	+0.75709928		
<i>e</i>	0.1655844	<i>i</i>	4.91828	+0.24906300	+0.40417495		
<i>P</i>	5.53	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 10 08	691	0.1+	0.3+	1998 08 17	704	0.6+	1.2+	2000 01 02	704	1.0+	0.3-
1993 10 08	691	0.2+	0.3+	1998 08 17	704	0.4+	1.0+	2000 01 02	704	0.7+	0.0
1993 10 08	691	0.0	0.1-	1999 12 12	704	0.4+	1.0-	2000 01 02	704	0.3-	0.4-
1993 10 13	691	0.7-	0.1+	1999 12 12	704	0.7-	0.8+	2000 01 02	704	1.2+	1.0-
1993 10 13	691	0.3-	0.1+	1999 12 12	704	0.2-	0.8-	2000 01 02	704	0.5-	2.0-
1993 11 08	691	1.5+	0.3-	1999 12 12	704	1.0-	0.8-	2000 01 04	704	0.2+	0.6+
1993 11 08	691	0.2-	0.2-	1999 12 15	704	0.1-	0.6+	2000 01 04	704	0.0	1.0+
1993 11 08	691	0.6-	0.0	1999 12 15	704	0.2-	1.4+	2000 01 04	704	0.4+	0.2-
1998 08 17	704	0.7+	1.0-	1999 12 15	704	0.5-	0.5+	2000 01 04	704	0.6+	0.1+
1998 08 17	704	1.4-	1.7-	1999 12 15	704	0.8-	1.3+				

1993 TB₆ = 1999 XX₁₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	14.87871		(2000.0)	P	Q		
<i>n</i>	0.17471270	ω	74.57012	+0.37813770	-0.92570213		
<i>a</i>	3.1689818	Ω	353.18947	+0.81625478	+0.33816112		
<i>e</i>	0.1185567	<i>i</i>	4.52269	+0.43673793	+0.16947747		
<i>P</i>	5.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1993 10 09	691	0.3-	0.1+	1993 10 16	691	0.7+	0.1-	1999 12 10	704	0.4+	0.3+
1993 10 09	691	0.1-	0.0	1993 10 16	691	0.1+	0.0	1999 12 10	704	1.6-	0.2+
1993 10 09	691	0.5-	0.2+	1999 12 07	703	0.2+	0.4-	1999 12 15	704	0.6+	0.4+
1993 10 15	691	0.2-	0.0	1999 12 07	703	0.8-	0.1+	1999 12 15	704	0.4+	0.4-
1993 10 15	691	0.1-	0.1-	1999 12 07	703	0.3-	0.3+	1999 12 15	704	0.1+	0.1+
1993 10 15	691	0.2+	0.1-	1999 12 07	703	0.3+	0.5+	1999 12 15	704	0.2-	0.5+
1993 10 16	691	0.1+	0.1+	1999 12 10	704	1.6+	1.2-	1999 12 15	704	0.7-	0.5-

1993 TJ₂₁ = 1991 HE₄

Id. A. Doppler (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	204.22140		(2000.0)	P	Q		
<i>n</i>	0.17964930	ω	200.73844	-0.69487570	+0.70662545		
<i>a</i>	3.1106587	Ω	25.83271	-0.60907426	-0.47958458		
<i>e</i>	0.1378608	<i>i</i>	17.84381	-0.38233011	-0.52026830		
<i>P</i>	5.49	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 04 19	809	0.9+	1.1+	1993 10 22	809	(2.6+	1.9-)	1999 12 05	699	0.4+	0.4+
1991 04 19	809	1.2+	1.2+	1993 10 22	809	0.5-	0.2-	1999 12 05	699	0.2-	0.2+
1991 04 19	809	0.9+	1.3+	1993 10 22	809	(7.1-	2.9+)	1999 12 05	699	0.7-	0.3+
1993 10 09	809	0.6-	1.3+	1999 10 12	704	0.0	0.4-	1999 12 10	704	1.1+	0.1-
1993 10 09	809	0.8-	1.5+	1999 10 12	704	0.1-	0.6-	1999 12 10	704	0.9+	0.3-
1993 10 09	809	0.8-	1.9+	1999 10 12	704	0.4-	0.6-	1999 12 10	704	0.5+	1.2-
1993 10 10	675	0.7-	1.0-	1999 10 12	704	0.5-	0.0	1999 12 10	704	1.0+	1.2-
1993 10 10	675	0.3-	1.3-	1999 10 12	704	0.9-	0.3+	1999 12 10	704	0.5+	0.6-
1993 10 11	809	(1.3+	2.3+)	1999 10 13	704	0.3+	0.4-	1999 12 13	703	0.2-	0.6+
1993 10 11	809	0.7+	1.3+	1999 10 13	704	0.6-	0.3-	1999 12 13	703	0.4-	1.5+
1993 10 11	809	0.9+	1.6+	1999 10 13	704	0.6-	0.3+	1999 12 13	703	0.7-	0.8+
1993 10 13	675	1.3-	0.1-	1999 10 13	704	0.5-	0.1+	1999 12 13	703	0.2-	1.1+
1993 10 13	675	0.8-	0.0	1999 10 13	704	1.1-	0.3+	1999 12 15	704	0.1+	0.0
1993 10 20	809	0.1+	0.6-	1999 11 08	699	0.9+	0.6-	1999 12 15	704	0.5+	0.3+
1993 10 20	809	0.9+	0.9-	1999 11 08	699	1.1-	0.9+	1999 12 15	704	0.1-	0.1-
1993 10 20	809	0.5+	0.5-	1999 11 08	699	0.3+	0.1+	1999 12 15	704	1.0+	0.9+

1993 VL₁ = 1999 XU₂₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	77.24705		(2000.0)	P	Q		
<i>n</i>	0.19296669	ω	302.36039	+0.81576507	-0.42865196		
<i>a</i>	2.9658406	Ω	85.72458	+0.56732978	+0.72365452		
<i>e</i>	0.2039735	<i>i</i>	22.91679	-0.11253567	+0.54090815		
<i>P</i>	5.11	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 10 08	413	0.6-	0.3+	1994 01 21	413	0.6-	0.3+	1999 12 15	704	0.5+	0.7-
1993 10 08	413	0.1+	0.3+	1994 01 21	413	0.8-	0.6+	1999 12 15	704	0.2+	0.1-
1993 11 04	413	0.2-	0.1+	1999 12 12	704	0.6+	0.3+	1999 12 15	704	0.8+	1.1-
1993 11 04	413	0.2+	1.2-	1999 12 12	704	0.6-	1.4+	2000 01 02	704	0.0	0.2+
1993 11 06	413	1.8+	1.0-	1999 12 12	704	0.1+	0.6-	2000 01 02	704	0.2+	0.5+
1993 11 09	413	0.7+	0.0	1999 12 12	704	0.1+	0.2+	2000 01 02	704	1.7-	0.8-
1993 11 09	413	1.1-	0.8+	1999 12 15	704	0.0	0.3+				

1994 EE₃ = 1998 HA₁₂₁ = 1999 RZ₁₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	238.39016		(2000.0)		P		Q		
<i>n</i>	0.25645458	ω	6.63169		−0.79336828		−0.60167543		
<i>a</i>	2.4535547	Ω	135.93691		+0.55222297		−0.77528383		
<i>e</i>	0.0903143	<i>i</i>	7.64216		+0.25615732		−0.19215010		
<i>P</i>	3.84	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	3	
Residuals in seconds of arc									
1994 03 12	098	1.0+	0.8+	1998 05 01	699	0.3+	1.6+	1999 09 07	704 0.3+ 0.7+
1994 03 13	098	0.9−	0.1−	1998 05 01	699	0.3+	0.6+	1999 09 07	704 0.3− 0.3−
1994 03 14	098	0.1+	0.5−	1998 05 23	704	1.3−	0.8−	1999 09 07	704 0.2+ 0.5+
1994 03 14	098	0.5+	1.5−	1998 05 23	704	0.1−	0.8−	1999 09 07	704 0.3− 0.2+
1994 04 11	675	1.0−	1.0+	1998 05 23	704	0.1−	0.3−	1999 09 09	704 0.6+ 0.1−
1994 04 11	675	1.6+	0.4−	1998 05 23	704	0.9−	0.6−	1999 09 09	704 0.5+ 1.1−
1994 04 14	675	1.6−	0.8−	1998 05 23	704	1.2−	1.1+	1999 09 09	704 0.4+ 1.0−
1994 04 14	675	(3.0−	0.4−)	1998 05 27	699	0.2−	0.2−	1999 09 09	704 0.1+ 0.6−
1998 04 23	704	0.4+	0.2−	1998 05 27	699	0.4−	0.5+	1999 09 09	704 0.9− 0.8−
1998 04 23	704	0.5+	0.5+	1998 05 27	699	0.2−	0.2+	1999 09 13	704 0.5+ 0.3+
1998 04 23	704	0.1+	0.0	1999 07 16	704	0.3+	0.3−	1999 09 13	704 0.0 0.6+
1998 04 23	704	0.2−	0.0	1999 07 16	704	0.1+	0.7−	1999 09 13	704 0.2+ 0.0
1998 04 23	704	0.4+	0.3−	1999 07 16	704	1.0−	0.8−	1999 09 13	704 0.2− 0.5+
1998 04 24	704	0.5+	0.1−	1999 07 16	704	0.2+	0.9−	1999 09 30	704 0.8+ 1.0+
1998 04 24	704	0.7+	0.5−	1999 09 07	699	0.5+	1.0+	1999 09 30	704 1.2− 0.3+
1998 04 24	704	0.9+	0.2−	1999 09 07	699	0.5−	1.1+	1999 09 30	704 0.5+ 0.1−
1998 04 24	704	0.2+	0.3+	1999 09 07	704	0.2−	0.4+	1999 09 30	704 0.7− 1.3−
1998 05 01	699	0.7+	0.7+	1999 09 07	699	0.2+	0.8+		

1994 GO₉ = 1999 XC₉₄

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	152.68599		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28476342	ω	228.78575	+0.80947627	+0.56680657
a	2.2881259	Ω	96.14034	−0.48198270	+0.79049572
e	0.1866177	i	8.86524	−0.33532200	+0.23204919
P	3.46	H	13.6	G 0.15	U 2

Residuals in seconds of arc

1994 04 11	675	0.2+	0.6+	1998 12 08	704	1.5−	0.3−	1999 12 08	704 0.1+ 0.5+
1994 04 11	675	0.8+	1.8+	1998 12 08	704	0.1−	1.0+	1999 12 08	704 0.1− 1.2+
1994 04 13	675	1.6+	1.2−	1998 12 08	704	0.8+	1.2+	1999 12 15	704 0.6− 0.0
1994 04 13	675	0.3−	0.7−	1999 11 11	703	0.9−	1.3+	1999 12 15	704 0.2− 0.4+
1994 05 04	675	0.0	0.3+	1999 11 11	703	0.3−	1.0+	1999 12 15	704 0.6− 0.3−
1994 05 04	675	0.4−	0.9+	1999 11 11	703	0.1+	0.1+	1999 12 15	704 0.7− 0.7−
1994 05 05	675	0.9−	0.5+	1999 11 11	703	0.5−	0.0	1999 12 15	704 1.0− 1.6+
1994 05 05	675	(3.3− 0.4+)		1999 11 16	704	1.0+	0.1+	2000 01 03	704 0.8+ 1.0+
1998 06 24	699	0.3−	0.6+	1999 11 16	704	0.4+	0.4+	2000 01 03	704 1.0+ 0.5−
1998 06 24	699	0.5−	0.7+	1999 11 16	704	1.6+	0.1+	2000 01 03	704 (1.3+ 2.4−)
1998 06 24	699	0.4−	0.4+	1999 12 07	704	0.1+	0.2−	2000 01 03	704 (2.1+ 4.0−)
1998 06 29	704	1.5+	0.5+	1999 12 07	704	0.2−	0.0	2000 01 04	704 0.1− 0.1−
1998 06 29	704	(2.9+ 0.4−)		1999 12 07	704	0.4−	0.4−	2000 01 04	704 0.1− 0.0
1998 06 29	704	0.8−	0.7+	1999 12 07	704	0.0	0.3+	2000 01 04	704 0.2+ 0.2+
1998 06 29	704	(1.7− 2.2+)		1999 12 07	704	0.4−	0.1+	2000 01 04	704 0.4+ 0.1−
1998 06 29	704	(2.2− 1.0+)		1999 12 08	704	0.1−	0.7−	2000 01 04	704 0.3+ 0.1+
1998 12 08	704	0.3+	0.4+	1999 12 08	704	0.2+	0.4+		
1998 12 08	704	0.6−	0.6+	1999 12 08	704	0.2+	0.4−		

1994 HB₁ = 1994 JY₁ = 1999 WE₃Id. A. Doppler (d, *MPC* 36125), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	22.02918		(2000.0)		P		Q			
n	0.26988986		ω	202.05406	+0.79762462		−0.60285965			
a	2.3714375		Ω	195.06647	+0.56364850		+0.75614035			
e	0.1260174		i	4.15795	+0.21469824		+0.25458206			
P	3.65 <th>H</th> <td>16.3<th>G</th><td>0.15<th>U</th><td>4<td colspan="2"></td></td></td></td>		H	16.3 <th>G</th> <td>0.15<th>U</th><td>4<td colspan="2"></td></td></td>	G	0.15 <th>U</th> <td>4<td colspan="2"></td></td>	U	4 <td colspan="2"></td>		
Residuals in seconds of arc										
1994 04 19	691	0.9−	1.3−	1994 05 03	691	0.2−	1.0−	1999 11 27	540	0.2− 0.1−
1994 04 19	691	0.2−	1.0+	1994 05 03	691	0.4−	0.9−	1999 11 27	540	0.5− 0.3+
1994 04 19	691	0.4−	0.2−	1999 11 09	691	0.0	0.2−	1999 11 28	540	0.2− 0.2−
1994 04 19	691	0.3+	0.4+	1999 11 09	691	0.0	0.3−	1999 11 28	540	0.2+ 0.3+
1994 04 19	691	0.4+	0.2+	1999 11 09	691	0.2+	0.4−	1999 11 28	540	0.6+ 0.4+
1994 04 19	691	0.3+	0.3+	1999 11 12	704	0.3−	0.1+	1999 11 28	540	0.3− 0.6−
1994 04 20	691	0.3+	0.3−	1999 11 12	704	0.9+	0.5−	1999 11 30	540	0.5+ 0.6−
1994 04 20	691	0.2+	0.2−	1999 11 12	704	(0.5+ 2.5+)		1999 11 30	540	0.1+ 0.1−
1994 04 20	691	0.2+	0.2+	1999 11 13	691	0.3−	0.0	1999 11 30	540	0.0 0.2+
1994 05 01	691	0.3+	0.6+	1999 11 13	691	0.2−	0.2−	1999 11 30	540	0.4+ 0.1+
1994 05 01	691	0.3+	0.3+	1999 11 13	691	0.2−	0.3+	1999 12 09	540	0.9− 0.1−
1994 05 01	691	0.0	0.3+	1999 11 27	540	0.3+	0.2+	1999 12 09	540	0.1+ 0.2−
1994 05 03	691	0.5−	0.8−	1999 11 27	540	1.0+	0.7+	1999 12 09	540	0.7− 0.3−

1994 PL₁ = 2000 AF₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	241.89246		(2000.0)			P		Q		
n	0.28940928	ω	117.85362			−0.05023585		+0.97789932		
a	2.2635726	Ω	147.25996			−0.99625967		−0.03476075		
e	0.1642416	i	22.04041			−0.07030664		−0.20616646		
P	3.41	H	14.8		G	0.15		U	3	
Residuals in seconds of arc										
1994 08 01	413	0.8+	0.9+	1994 08 28	413	0.0	0.4+	2000 01 08	704	0.3+ 0.3−
1994 08 03	413	0.6+	0.6−	1994 09 17	413	0.1+	0.4−	2000 01 08	704	0.9+ 0.2−
1994 08 03	413	1.2−	0.8−	1994 09 17	413	0.2+	0.4−	2000 01 11	704	0.1+ 0.4−
1994 08 26	413	0.3−	0.1+	1994 09 18	413	0.1−	0.1−	2000 01 11	704	0.4− 0.2−
1994 08 26	413	0.0	0.1+	1994 09 18	413	0.0	0.1−	2000 01 11	704	0.4− 0.0
1994 08 26	413	0.2−	0.2+	2000 01 08	704	0.1−	0.6+			
1994 08 28	413	0.0	0.3+	2000 01 08	704	0.3−	0.2+			

1994 PH₁₉ = 1999 XQ₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	314.17851		(2000.0)		P		Q		
n	0.25571188	ω	236.32541		−0.99668660		−0.07880580		
a	2.4583032	Ω	299.14727		+0.08015196		−0.90946839		
e	0.1222025	i	1.32110		+0.01383761		−0.40823632		
P	3.85	H	14.4		G	0.15	U	5	
Residuals in seconds of arc									
1994 08 12	809	0.4+	0.9−	1999 12 07	704	0.1−	0.3+	2000 01 04	704 0.4+ 0.9+
1994 08 12	809	0.5+	1.4−	1999 12 07	704	0.1−	0.0	2000 01 04	704 0.2− 0.9+
1994 08 12	809	0.8−	1.6−	1999 12 08	704	0.8−	1.1−	2000 01 08	704 0.4− 0.5+
1994 08 13	809	1.6+	0.6+	1999 12 08	704	0.2−	0.6−	2000 01 08	704 0.6− 0.2+
1994 08 13	809	0.5+	0.5+	1999 12 08	704	0.5−	0.0	2000 01 08	704 0.4+ 0.0
1994 08 13	809	0.8+	0.2+	1999 12 08	704	0.8+	0.4+	2000 01 08	704 0.2+ 0.0
1994 09 05	809	1.1−	0.7−	1999 12 08	704	0.7−	0.4+	2000 01 08	704 0.3+ 0.4+
1994 09 05	809	0.1−	0.4+	2000 01 03	704	0.7−	0.5+	2000 01 08	704 0.2+ 0.1−
1994 09 05	809	0.7−	1.4−	2000 01 03	704	0.1−	0.3−	2000 01 08	704 0.0 0.1−
1994 09 06	809	0.6−	1.9+	2000 01 03	704	0.6+	0.1+	2000 01 08	704 0.1− 0.1−
1994 09 06	809	0.7−	0.8+	2000 01 03	704	0.2+	0.2−	2000 01 08	704 0.2+ 0.1+
1994 09 06	809	0.2+	1.8+	2000 01 03	704	0.1+	0.1+	2000 01 08	704 0.0 0.2−
1999 12 07	704	0.2−	0.7−	2000 01 04	704	1.1−	0.1+	2000 01 09	691 0.4+ 0.0
1999 12 07	704	0.3+	1.7−	2000 01 04	704	1.0+	0.3+	2000 01 09	691 0.5+ 0.7−
1999 12 07	704	0.5−	0.1+	2000 01 04	704	0.0	0.3+	2000 01 09	691 0.4+ 0.1−

2000 JAN. 24

M.P.C. 37639

1994 PR₂₂ = 2000 AK₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	271.75014	(2000.0)	P		Q		Williams			
<i>n</i>	0.27000003	ω	208.18002	-0.68584356	+0.72771596					
<i>a</i>	2.3707923	Ω	18.52081	-0.66352845	-0.62137846					
<i>e</i>	0.2183796	<i>i</i>	1.25101	-0.29891238	-0.29037611					
<i>P</i>	3.65	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5			

Residuals in seconds of arc

1994 08 12	809	0.7+	0.0	1994 09 05	809	0.1-	0.5-	2000 01 03	704	0.7+	0.1-
1994 08 12	809	0.3+	0.2-	1994 09 05	809	1.2-	1.1-	2000 01 03	704	0.0	1.3-
1994 08 12	809	1.0+	1.1+	1994 09 06	809	0.9+	1.1+	2000 01 04	704	0.1+	1.3+
1994 08 13	809	0.8+	0.4-	1994 09 06	809	0.4+	0.6+	2000 01 04	704	0.5-	0.6+
1994 08 13	809	1.2-	0.6-	1994 09 06	809	0.4+	1.2+	2000 01 04	704	0.7-	0.1+
1994 08 13	809	1.4-	0.3-	2000 01 03	704	0.5+	1.1-				
1994 09 05	809	0.4-	0.9-	2000 01 03	704	0.0	0.4+				

1994 PX₂₄ = 1999 YF₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	83.11846	(2000.0)	P		Q		Williams			
<i>n</i>	0.23698400	ω	285.38124	+0.94441212	-0.32696919					
<i>a</i>	2.5861678	Ω	93.71316	+0.31328305	+0.86338519					
<i>e</i>	0.1848944	<i>i</i>	1.97011	+0.09969692	+0.38426185					
<i>P</i>	4.16	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	6			

Residuals in seconds of arc

1994 08 12	809	(1.5+	3.7+)	1994 09 05	809	0.2-	0.2-	1999 12 27	691	0.3-	0.6-
1994 08 12	809	(1.6+	3.4+)	1994 09 05	809	(2.3-	1.1-)	1999 12 31	691	0.2-	0.3-
1994 08 12	809	(1.1+	3.0+)	1994 09 06	809	1.1+	0.9+	1999 12 31	691	0.2-	0.4-
1994 08 13	809	0.7-	0.5-	1994 09 06	809	0.7+	1.0+	1999 12 31	691	0.4+	0.2-
1994 08 13	809	0.6+	0.2+	1994 09 06	809	0.8+	1.0+	2000 01 08	691	0.3+	1.0+
1994 08 13	809	1.6+	0.9-	1999 12 27	691	0.3-	0.6-	2000 01 08	691	0.3+	0.9+
1994 09 05	809	0.1+	0.0	1999 12 27	691	0.4-	1.0-	2000 01 08	691	0.2+	1.0+

1994 PB₃₆ = 1981 JO₄ = 1999 XX₈₅Id. B. G. Marsden (*MPC* 24570), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	35.76099	(2000.0)	P		Q		Williams			
<i>n</i>	0.24676571	ω	198.28160	+0.18022876	-0.98349071					
<i>a</i>	2.5173649	Ω	241.33806	+0.90475118	+0.17223074					
<i>e</i>	0.0822757	<i>i</i>	1.06025	+0.38593120	+0.05552114					
<i>P</i>	3.99	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2			

Residuals in seconds of arc

1981 05 08	675	0.7+	1.0+	1998 08 17	704	1.4+	0.6-	1999 12 08	704	0.4-	1.3-
1981 05 09	675	0.1-	0.8+	1998 08 17	704	0.0	0.7-	1999 12 08	704	0.1-	0.3-
1994 08 10	809	(1.3-	3.0-)	1998 08 17	704	0.6-	1.2-	1999 12 08	704	0.2+	0.2-
1994 08 10	809	(2.2-	5.6-)	1998 08 17	704	1.4-	1.0+	1999 12 08	704	0.3+	0.1+
1994 08 10	809	(1.5-	3.6-)	1998 08 17	704	0.4+	0.3-	1999 12 08	704	1.0+	0.3+
1994 08 11	809	(0.1-	3.5-)	1998 08 23	699	0.2+	0.0	2000 01 05	704	0.3+	0.3+
1994 08 11	809	(0.6-	3.6-)	1998 08 23	699	0.1+	0.3+	2000 01 05	704	0.3-	0.2-
1994 08 11	809	(0.2+	4.0-)	1998 08 23	699	0.5+	0.9+	2000 01 05	704	0.2+	0.9+
1994 09 01	691	0.2-	0.4+	1999 11 12	703	0.6+	0.6-	2000 01 05	704	0.1+	0.8+
1994 09 01	691	0.1-	0.1-	1999 11 12	703	0.2+	0.7+	2000 01 05	704	0.3+	0.8+
1994 09 01	691	0.2+	0.3-	1999 11 12	703	0.8+	0.2+	2000 01 07	704	0.4-	0.3+
1994 09 03	809	(0.0	2.1+)	1999 11 12	703	0.2+	0.3+	2000 01 07	704	0.3-	0.1+
1994 09 03	809	1.6-	0.8+	1999 12 07	704	0.1-	0.4-	2000 01 07	704	0.6-	0.1+
1994 09 03	809	0.1+	1.3+	1999 12 07	704	0.3-	0.2+	2000 01 07	704	0.2-	0.1-
1994 09 04	809	0.6+	0.9+	1999 12 07	704	0.1-	0.5-	2000 01 07	704	0.7-	0.0
1994 09 04	809	1.0-	0.4-	1999 12 07	704	0.1-	0.2+				
1994 09 04	809	0.5+	0.1+	1999 12 07	704	0.0	0.4+				

1994 PF₃₇ = 2000 AU₁₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	1.72081	(2000.0)	P		Q		Williams			
<i>n</i>	0.25766932	ω	332.80852	-0.65300274	-0.75638117					
<i>a</i>	2.4458374	Ω	157.89198	+0.71209052	-0.63045286					
<i>e</i>	0.0902608	<i>i</i>	5.85693	+0.25790406	-0.17440389					
<i>P</i>	3.83	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4			

Residuals in seconds of arc

1994 08 10	809	0.7+	0.2-	1994 09 03	809	0.9+	0.5-	2000 01 05	704	0.0	0.1-
1994 08 10	809	0.0	0.7-	1994 09 04	809	0.3+	0.1-	2000 01 05	704	0.2+	0.5-
1994 08 10	809	0.0	0.8-	1994 09 04	809	0.5+	0.5+	2000 01 05	704	0.3-	0.3-
1994 08 11	809	0.1+	0.6+	1994 09 04	809	0.7-	0.7+	2000 01 05	704	0.2-	0.8-
1994 08 11	809	0.6-	0.5+	1999 12 31	699	0.5-	0.7+	2000 01 07	704	0.2+	0.0
1994 08 11	809	0.4-	0.6+	1999 12 31	699	0.2+	0.6+	2000 01 07	704	0.3+	0.1-
1994 09 03	809	0.8-	0.3+	1999 12 31	699	0.5+	0.6+	2000 01 07	704	0.2-	0.2+
1994 09 03	809	0.1+	1.0-	2000 01 05	704	0.2-	0.2-				

1994 PK₃₇ = 1999 XC₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	307.53800	(2000.0)	P		Q		Williams			
<i>n</i>	0.26920518	ω	254.58412	-0.97858621	+0.19610888					
<i>a</i>	2.3754566	Ω	296.69136	-0.15157856	-0.89210382					
<i>e</i>	0.1625474	<i>i</i>	4.01347	-0.13925865	-0.40705292					
<i>P</i>	3.66	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5			

Residuals in seconds of arc

1994 08 10	809	1.8+	0.4-	1999 12 03	699	0.4-	1.4+	1999 12 30	120	0.3+	0.3+
1994 08 10	809	0.9+	0.7-	1999 12 06	703	0.2-	0.5+	2000 01 03	704	0.5+	0.1+
1994 08 10	809	0.5+	1.2-	1999 12 06	703	0.5+	0.2-	2000 01 03	704	0.3+	0.4-
1994 08 11	809	1.2-	0.6+	1999 12 06	703	0.6-	0.3+	2000 01 03	704	0.2+	0.1+
1994 08 11	809	0.8-	0.9+	1999 12 06	703	0.2-	0.1+	2000 01 03	704	0.1+	0.1-
1994 08 11	809	1.0+	0.1+	1999 12 07	704	0.4+	1.4-	2000 01 03	704	0.1+	0.2+
1994 09 03	809	0.4-	0.6+	1999 12 07	704	0.2+	0.9-	2000 01 04	704	0.0	0.7+
1994 09 03	809	0.8-	0.3+	1999 12 07	704	0.6-	0.1+	2000 01 04	704	0.2+	0.7-
1994 09 03	809	1.2-	0.2+	1999 12 07	704	1.1-	1.1-	2000 01 04	704	0.8-	1.0+
1994 09 04	809	(2.6-	1.6-)	1999 12 10	704	0.6-	0.7+	2000 01 09	691	0.3+	0.1+
1994 09 04	809	(5.6-	3.1-)	1999 12 10	704	0.4-	0.7-	2000 01 09	691	0.2+	0.2+
1994 09 04	809	(3.3-	2.4-)	1999 12 10	704	0.0	0.5-	2000 01 09	691	0.1+	0.2+
1994 09 07	675	(1.7-	3.0-)	1999 12 10	704	0.0	0.5-	2000 01 15	691	0.5+	0.0
1994 09 07	675	(1.3-	3.6-)	1999 12 10	704	0.2-	0.6-	2000 01 15	691	0.4+	0.0
1999 12 03	699	(0.0	2.2+)	1999 12 30	120	0.6-	0.4+	2000 01 15	691	0.4+	0.0
1999 12 03	699	0.4+	0.3+	1999 12 30	120	0.2+	0.6+				

1994 PQ₃₉ = 1999 VU₁₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	109.36666	(2000.0)	P		Q		Williams			
<i>n</i>	0.21820962	ω	330.26633	+0.37984039	+0.92088221					
<i>a</i>	2.7324577	Ω	321.86517	-0.81822324	+0.29021561					
<i>e</i>	0.1387627	<i>i</i>	8.16799	-0.43154606	+0.26028994					
<i>P</i>	4.52	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4			

Residuals in seconds of arc

1994 08 10	809	0.0	0.1-	1994 09 07	675	0.6-	0.7-	1999 11 03	704	0.3+	0.1+
1994 08 10	809	0.3-	0.1-	1999 09 07	703	0.4+	0.5-	1999 11 03	704	0.7+	0.2-
1994 08 10	809	0.5-	0.0	1999 09 07	703	0.5-	0.2+	1999 11 03	704	0.6+	0.1+
1994 08 10	809	0.7-	1.0-	1999 09 07	703	1.2-	0.0	1999 11 09	703	0.2-	0.1+
1994 08 10	809	0.4-	0.8-	1999 09 07	703	1.1-	0.1-	1999 11 09	703	0.5-	0.2+
1994 08 10	809	0.7-	1.5-	1999 10 03	704	0.2-	0.3-	1999 11 09	703	0.0	0.2+
1994 08 11	809	0.5-	0.6-	1999 10 03	704	0.3+	0.6-	1999 11 09	703	0.0	0.3+
1994 08 11	809	0.9-	0.2+	1999 10 03	704	0.2+	0.2+	1999 11 11	703	0.2+	0.0
1994 08 11	809	0.7-	0.3+	1999 10 03	704	0.1-	0.7-	1999 11 11	703	0.1-	0.1+

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1994 09 04	809	(3.0+ 1.2+)	1999 10 28	703	0.9− 0.6+	2000 01 06	704	0.6− 0.2−
1994 09 04	809	1.8+ 1.1+	1999 10 28	703	0.1+ 0.9+	2000 01 06	704	0.5− 0.4−
1994 09 04	809	(2.4+ 1.4+)	1999 11 03	704	0.9+ 0.2+	2000 01 06	704	0.3− 0.6−
1994 09 07	675	0.7− 0.1−	1999 11 03	704	0.6+ 0.2+			

1994 RA = 1999 VS₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	21.84413		(2000.0)		P		Q	
<i>n</i>	0.20994811	ω	239.46233	+0.56044617			−0.82811399	
<i>a</i>	2.8036776	Ω	176.39026	+0.80793506			+0.54369341	
<i>e</i>	0.1764051	<i>i</i>	10.32380	+0.18204679			+0.13647234	
<i>P</i>	4.69	<i>H</i>	14.6	<i>G</i>	0.15		<i>U</i>	3

Residuals in seconds of arc

1994 09 01	595	0.4+ 0.5+	1999 11 01	703	0.8+ 0.6+	1999 12 03	704	0.3− 0.6+
1994 09 01	595	0.3− 0.2+	1999 11 01	703	0.2− 0.4+	1999 12 03	704	0.3− 0.0
1994 09 02	595	0.4− 0.3−	1999 11 01	703	0.9− 0.5−	1999 12 03	704	0.9− 0.0
1994 09 02	595	0.2+ 1.2−	1999 11 01	703	0.3+ 1.0+	1999 12 03	704	0.2+ 0.3−
1994 09 03	595	0.4− 0.4+	1999 11 05	704	0.4− 0.4−	1999 12 03	704	0.3− 0.3+
1994 09 04	595	0.6− 0.2−	1999 11 05	704	0.2+ 0.1+	2000 01 08	704	(2.4− 0.5−)
1994 09 05	595	0.4+ 0.6+	1999 11 05	704	0.4+ 0.1+	2000 01 08	704	2.0− 0.5+
1994 09 06	595	1.1+ 0.1+	1999 11 05	704	0.1− 0.2−	2000 01 08	704	1.0+ 0.7+
1994 09 11	595	0.3+ 0.1−	1999 11 05	704	0.4+ 0.2−	2000 01 11	704	1.4+ 1.9−
1994 09 11	595	0.1− 0.3+	1999 11 08	704	0.1− 0.1+	2000 01 11	704	0.0 0.1+
1994 10 09	595	0.5− 0.5−	1999 11 08	704	0.1− 0.3−	2000 01 11	704	0.5+ 0.4−
1994 10 09	595	0.9− 0.0	1999 11 08	704	0.4+ 0.8−	2000 01 11	704	0.4− 0.2+
1994 10 09	595	0.1+ 0.2−	1999 11 08	704	0.1− 0.0			
1994 10 09	595	0.9+ 0.1+	1999 11 08	704	0.5+ 0.4+			

1994 RF = 1999 XG₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	6.99777		(2000.0)		P		Q	
<i>n</i>	0.21022265	ω	221.64292	+0.20526639			−0.97765757	
<i>a</i>	2.8012361	Ω	216.57903	+0.91683781			+0.20827730	
<i>e</i>	0.1832941	<i>i</i>	4.35882	+0.34245313			+0.02839437	
<i>P</i>	4.69	<i>H</i>	15.2	<i>G</i>	0.15		<i>U</i>	4

Residuals in seconds of arc

1994 09 04	595	0.4+ 0.4−	1999 11 13	704	(0.9+ 2.4−)	1999 11 17	704	0.4+ 0.9−
1994 09 04	595	0.6+ 0.7−	1999 11 13	704	0.3+ 0.7−	1999 11 28	691	0.5+ 0.7−
1994 09 04	595	0.3− 1.0−	1999 11 13	704	0.6+ 0.3−	1999 11 28	691	0.5+ 0.6−
1994 09 05	595	1.1− 0.3+	1999 11 13	704	0.5− 1.7+	1999 11 28	691	0.4+ 0.6−
1994 09 05	595	0.3− 1.1+	1999 11 14	704	0.3− 0.4−	1999 12 02	699	0.3− 1.2+
1994 09 10	595	0.9+ 0.6−	1999 11 14	704	0.4+ 0.2+	1999 12 02	699	0.1− 0.1−
1994 09 11	595	0.6− 0.4+	1999 11 14	704	0.0 0.4+	1999 12 02	699	0.6+ 0.0
1994 09 15	595	0.8+ 1.3+	1999 11 14	704	0.7− 0.7+	1999 12 05	703	0.1− 0.2+
1994 09 16	595	0.5− 0.3−	1999 11 14	704	0.2− 0.4+	1999 12 05	703	1.2− 0.3+
1999 11 04	704	0.0 1.7+	1999 11 15	704	1.4− 0.2+	1999 12 05	703	0.6+ 0.3−
1999 11 04	704	0.0 0.3+	1999 11 15	704	0.4+ 0.6+	1999 12 05	703	0.2+ 0.4−
1999 11 04	704	0.6− 1.3−	1999 11 15	704	0.4− 0.3+	1999 12 06	704	0.6+ 0.4+
1999 11 12	120	0.4+ 0.1−	1999 11 15	704	0.5+ 0.5+	1999 12 06	704	0.1− 0.2−
1999 11 12	120	1.1+ 0.1+	1999 11 15	704	0.5− 0.3−	1999 12 06	704	0.1− 0.2+
1999 11 13	704	0.3+ 1.1−	1999 11 17	704	0.1− 0.9+	1999 12 07	704	0.6− 0.5+
1999 11 13	704	0.6+ 0.2−	1999 11 17	704	0.3+ 0.3+	1999 12 07	704	0.3− 0.7−
1999 11 13	704	0.0 0.5−	1999 11 17	704	0.3+ 1.1−	1999 12 07	704	0.3− 0.5+
1999 11 13	704	0.3− 0.0	1999 11 17	704	0.5− 1.4−	1999 12 07	704	0.4− 0.6+

1994 RG = 1999 XK₇₃

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.05133		(2000.0)		P		Q	
<i>n</i>	0.22603205	ω	138.33910	+0.97431993			−0.22199886	
<i>a</i>	2.6690458	Ω	234.52558	+0.19243235			+0.90776407	
<i>e</i>	0.2019722	<i>i</i>	2.64951	+0.11692075			+0.35592260	
<i>P</i>	4.36	<i>H</i>	15.0	<i>G</i>	0.15		<i>U</i>	4

Residuals in seconds of arc

1994 09 04	595	0.6+ 0.3+	1994 09 09	589	0.1− 0.1+	1999 11 17	704	0.5− 1.3+
1994 09 04	589	0.4− 0.2−	1994 09 09	589	1.0+ 0.8−	1999 12 07	704	0.5− 0.9+
1994 09 04	595	0.5+ 0.0	1994 09 10	589	0.2− 0.3+	1999 12 07	704	0.4− 0.0
1994 09 04	589	0.6− 0.3+	1994 09 10	589	0.2− 0.6+	1999 12 07	704	0.3− 0.3−
1994 09 04	595	0.2+ 0.1−	1994 09 24	589	0.1+ 0.5−	1999 12 07	704	0.0 0.2+
1994 09 04	589	0.3− 0.6+	1994 09 24	589	0.5+ 0.0	1999 12 08	704	1.3+ 0.2+
1994 09 05	595	0.4− 0.2−	1994 10 05	658	0.8− 0.3+	1999 12 08	704	0.3− 0.1+
1994 09 05	589	0.0 0.0	1994 10 05	658	1.0− 0.3+	1999 12 08	704	0.5− 0.5+
1994 09 05	589	0.3+ 0.4+	1994 10 05	658	0.6− 0.1+	1999 12 08	704	0.4− 1.1+
1994 09 05	595	0.2− 0.2−	1994 10 07	658	0.3+ 0.3−	1999 12 08	704	0.0 0.9+
1994 09 06	595	(3.3+ 1.4+)	1994 10 07	658	0.1+ 0.2−	2000 01 05	704	0.3+ 0.4+
1994 09 06	595	0.7+ 0.2−	1994 10 07	658	0.0 0.3−	2000 01 05	704	0.9+ 0.1−
1994 09 06	589	0.1− 0.5−	1994 10 07	589	1.2+ 0.5−	2000 01 05	704	0.2− 0.8−
1994 09 06	589	0.8− 0.5+	1994 10 07	589	0.4+ 0.2−	2000 01 05	704	0.3+ 0.5−
1994 09 06	589	0.0 0.1−	1999 11 09	704	0.6+ 0.2−	2000 01 06	704	0.9− 0.3+
1994 09 07	595	0.0 0.3−	1999 11 09	704	0.4− 0.4−	2000 01 06	704	0.0 0.4−
1994 09 07	589	0.2− 0.2+	1999 11 09	704	0.5+ 0.7−	2000 01 06	704	0.1− 0.6−
1994 09 07	589	0.3− 0.2−	1999 11 09	704	0.4+ 1.3−	2000 01 06	704	0.0 0.8−
1994 09 07	595	0.0 0.1+	1999 11 17	704	0.1+ 1.3+	2000 01 06	704	0.4+ 0.9−
1994 09 09	589	0.5+ 0.1+	1999 11 17	704	0.0 0.4−			

1994 RA₁ = 2000 AZ₂₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	195.49100		(2000.0)		P		Q	
<i>n</i>	0.27173604	ω	151.55509	+0.78301207			+0.62196763	
<i>a</i>	2.3606842	Ω	169.97601	−0.57798193			+0.73167743	
<i>e</i>	0.2180851	<i>i</i>	2.28959	−0.22984555			+0.27893440	
<i>P</i>	3.63	<i>H</i>	16.0	<i>G</i>	0.15		<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	1.4+ 1.9+	1994 09 04	809	1.9+ 1.1+	1994 09 10	046	0.3− 0.1+
1994 08 10	809	1.5+ 2.0+	1994 09 04	809	0.8+ 0.2−	2000 01 05	691	0.2+ 0.4+
1994 08 10	809	0.1+ 0.4+	1994 09 04	809	1.5+ 0.5+	2000 01 05	691	0.1− 0.4+
1994 08 11	809	1.2− 1.2−	1994 09 09	046	0.5− 0.0	2000 01 05	691	0.3− 0.2+
1994 08 11	809	1.7− 1.2−	1994 09 09	046	1.0− 0.1−	2000 01 12	691	0.2+ 0.1−
1994 08 11	809	1.5− 0.8−	1994 09 09	046	0.5+ 0.2−	2000 01 12	691	0.0 0.0
1994 09 03	809	1.1+ 1.0−	1994 09 09	046	0.8− 0.3+	2000 01 12	691	0.2+ 0.1−
1994 09 03	809	0.4+ 0.8−	1994 09 10	046	1.8− 0.3+			
1994 09 03	809	0.2+ 0.7−	1994 09 10	046	0.9− 0.3+			

1994 RG₇ = 1999 QZ₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.77322		(2000.0)		P		Q	
<i>n</i>	0.18313691	ω	324.96033	+0.17998611			+0.98350269	
<i>a</i>	3.0710399	Ω	315.40083	−0.89651083			+0.15644002	
<i>e</i>	0.0288620	<i>i</i>	1.47679	−0.40481271			+0.09082387	
<i>P</i>	5.38	<i>H</i>	14.4	<i>G</i>	0.15		<i>U</i>	6

Residuals in seconds of arc

1994 09 12	691	0.1+ 0.1+	1994 09 28	691	0.1− 0.0	1999 08 21	691	0.2− 0.3−
1994 09 12	691	0.0 0.1+	1994 09 28	691	0.1− 0.0	1999 08 21	691	0.4− 0.2−
1994 09 12	691	0.2+ 0.2−	1994 09 29	691	0.2+ 0.2+	1999 08 22	703	0.6− 0.3+
1994 09 14	691	0.1+ 0.1−	1994 09 29	691	0.2− 0.1−	1999 08 22	703	0.1+ 0.3+
1994 09 14	691	0.4− 0.1+	1994 09 29	691	0.1+ 0.0	1999 08 22	703	0.5+ 0.3+
1994 09 14	691	0.1+ 0.0	1999 08 21	691	0.1− 0.0	1999 08 22	703	0.7+ 0.5−

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1994 TH₁₅ = 2000 AK₁₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	61.08608		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21783351	ω	183.02398	+0.83741024	−0.53906816		
<i>a</i>	2.7356021	Ω	210.15357	+0.50516843	+0.82640198		
<i>e</i>	0.3603294	<i>i</i>	10.35326	+0.20868386	+0.16268152		
<i>P</i>	4.52	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 09 30	675	0.0	0.1+	2000 01 07	046	0.3−	0.8+	2000 01 10	711	0.1−	1.0−
1994 09 30	675	0.0	0.3−	2000 01 07	046	0.1+	0.2+	2000 01 10	711	0.2−	0.9−
1994 10 07	675	1.0+	0.4+	2000 01 07	046	0.5+	1.2+	2000 01 10	711	0.3+	1.0−
1994 10 07	675	0.6+	0.4+	2000 01 07	046	0.7+	0.9+	2000 01 11	704	0.8−	0.2−
1994 10 13	894	1.0−	0.1+	2000 01 08	704	0.2−	0.5+	2000 01 11	704	0.7−	0.1+
1994 10 13	894	1.0−	0.9−	2000 01 08	704	0.2−	0.5−	2000 01 11	704	0.6−	0.3+
1994 10 25	894	0.7−	0.8+	2000 01 08	704	0.4−	0.7−	2000 01 11	711	0.4−	0.7−
1994 10 25	894	1.8−	0.5+	2000 01 08	704	0.5+	0.5−	2000 01 11	704	1.2−	0.6−
1994 10 29	675	1.5+	0.3+	2000 01 08	711	(5.2−	0.5+)	2000 01 11	711	0.8−	0.8−
1994 10 29	675	(4.5+	0.1+)	2000 01 08	711	0.3−	0.3−	2000 01 11	704	0.4−	0.4+
1994 10 31	894	(2.8−	1.0+)	2000 01 08	711	0.2+	0.9−	2000 01 11	704	0.4−	0.1−
1994 11 01	675	1.9+	0.5+	2000 01 08	422	0.2+	1.6+	2000 01 11	704	0.7−	1.0−
1994 11 01	675	2.0+	1.1+	2000 01 08	422	0.0	0.4+	2000 01 11	704	0.1+	0.9−
1994 11 03	894	0.2−	0.3−	2000 01 08	422	0.2+	0.4+	2000 01 11	422	0.7+	0.5+
1994 11 03	894	1.2+	0.5−	2000 01 09	046	0.8+	0.3+	2000 01 11	422	0.3+	0.8+
1994 11 08	894	1.7−	0.6−	2000 01 09	046	0.4+	0.1+	2000 01 11	422	0.4+	0.2−
1994 11 08	894	1.7−	1.9−	2000 01 09	046	0.2+	0.8+	2000 01 11	422	0.8+	0.0
2000 01 07	699	(2.3+	1.2+)	2000 01 09	046	0.9+	0.2+	2000 01 12	557	1.1−	0.7−
2000 01 07	699	0.5+	0.6+	2000 01 09	651	0.6−	0.5−	2000 01 12	557	0.4−	1.0−
2000 01 07	699	(1.2+	2.1+)	2000 01 09	651	0.2−	0.5−	2000 01 12	046	0.2−	0.4+
2000 01 07	595	0.7+	0.4+	2000 01 09	651	0.0	0.6−	2000 01 12	046	0.2+	0.8+
2000 01 07	595	0.6+	0.6+	2000 01 09	711	0.6+	0.4−	2000 01 12	046	0.7+	0.4+
2000 01 07	595	0.3+	0.5+	2000 01 09	711	0.9−	0.0	2000 01 12	046	0.6+	0.3+
2000 01 07	046	0.5+	0.5+	2000 01 09	711	0.4−	0.5−	2000 01 12	046	0.0	1.0+

1994 UL = 1999 XB₁₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	59.86433		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.20284435	ω	315.21496	+0.94880476	−0.26294205		
<i>a</i>	2.8687593	Ω	60.77835	+0.31539257	+0.81889520		
<i>e</i>	0.1783028	<i>i</i>	11.56843	−0.01723506	+0.51016872		
<i>P</i>	4.86	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 31	411	0.2−	0.1−	1999 11 14	704	0.3+	0.1−	1999 12 15	704	0.9−	0.7−
1994 10 31	411	0.0	0.7+	1999 11 14	704	0.5−	0.4+	1999 12 15	704	0.2−	0.5−
1994 11 01	411	0.7−	0.2+	1999 11 14	704	0.2+	0.5+	1999 12 15	704	0.3−	0.7−
1994 11 01	411	0.1−	0.1+	1999 11 14	704	0.3+	0.8+	1999 12 15	704	0.2−	0.3−
1994 11 05	675	(1.7−	2.3−)	1999 11 14	704	0.6+	0.7+	2000 01 03	704	0.4+	0.4+
1994 11 05	675	0.5−	1.1−	1999 11 16	704	0.9+	0.7+	2000 01 03	704	0.2+	0.3+
1994 11 08	411	0.3+	0.4−	1999 11 16	704	0.0	0.3+	2000 01 03	704	0.5−	0.3+
1994 11 08	411	1.1−	0.7+	1999 11 16	704	0.6+	0.1−	2000 01 03	704	0.1+	0.2−
1994 11 27	411	0.1−	0.0	1999 11 16	704	1.1+	0.2+	2000 01 03	704	0.3−	0.3+
1994 11 27	411	0.5+	0.7+	1999 11 16	704	0.1−	0.3−	2000 01 04	704	0.3−	0.1+
1994 11 28	675	1.0+	0.4−	1999 12 10	704	0.3−	0.4−	2000 01 04	704	0.5+	0.2+
1994 11 28	675	1.0+	0.3−	1999 12 10	704	0.4−	0.2+	2000 01 04	704	0.2−	0.1−
1999 11 03	704	0.2−	0.2−	1999 12 10	704	0.0	0.0	2000 01 04	704	0.4+	0.4+
1999 11 03	704	0.2−	0.4−	1999 12 10	704	0.4−	0.2+	2000 01 04	704	0.5−	0.1+
1999 11 03	704	0.3−	0.2−	1999 12 10	704	0.7+	1.2−				
1999 11 03	704	0.3−	0.6−	1999 12 15	704	0.0	0.2+				

1994 UA₆ = 1999 XH₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.18617		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21182063	ω	8.44948	+0.81785809	−0.57142205		
<i>a</i>	2.7871299	Ω	26.75443	+0.51875634	+0.68127713		
<i>e</i>	0.2280769	<i>i</i>	8.65106	+0.24899800	+0.45753505		
<i>P</i>	4.65	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 10 28	691	0.4−	0.1+	1994 11 10	691	0.2−	0.1+	1999 12 15	704	0.3−	0.3+
1994 10 28	691	0.3−	0.2+	1994 11 10	691	0.3−	0.2+	1999 12 15	704	0.2−	0.1+
1994 10 28	691	0.1−	0.0	1994 11 10	691	0.5−	0.2+	1999 12 15	704	0.1+	0.0
1994 11 05	691	0.0	0.1−	1999 12 12	704	0.3−	0.2+	1999 12 15	704	0.1−	0.1+
1994 11 05	691	0.1+	0.2+	1999 12 12	704	0.0	0.3−	2000 01 02	704	0.3−	0.4+
1994 11 05	691	0.2−	0.1−	1999 12 12	704	0.2+	0.3−	2000 01 02	704	0.2+	0.7−
1994 11 09	905	1.6+	0.2−	1999 12 12	704	1.2+	0.8−	2000 01 02	704	0.2+	0.1+
1994 11 09	905	0.2+	0.9−	1999 12 15	704	0.5−	0.2+	2000 01 02	704	0.2−	0.6+

1994 UH₇ = 2000 AW₁₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	33.27617		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21597532	ω	194.76995	+0.39668564	−0.91100892		
<i>a</i>	2.7512705	Ω	231.98779	+0.85604871	+0.41146049		
<i>e</i>	0.1222174	<i>i</i>	8.22456	+0.33139268	+0.02762263		
<i>P</i>	4.56	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 10 28	691	0.1+	0.6+	1998 08 27	704	1.1+	1.0−	1999 12 14	704	0.2+	0.4−
1994 10 28	691	0.1−	0.2+	1999 11 04	704	0.4+	0.1+	2000 01 05	704	0.5−	0.5−
1994 10 28	691	0.1−	0.2+	1999 11 04	704	0.3−	0.2+	2000 01 05	704	0.4+	0.3−
1994 11 01	691	0.1+	0.1−	1999 11 04	704	0.2+	0.0	2000 01 05	704	1.3−	0.7−
1994 11 01	691	0.1−	0.0	1999 11 04	704	1.1+	0.7−	2000 01 05	704	0.7−	0.7−
1994 11 01	691	0.1+	0.1+	1999 12 06	704	0.6+	0.8+	2000 01 07	704	0.5−	0.0
1994 11 11	691	0.2+	0.3−	1999 12 06	704	0.4+	0.9+	2000 01 07	704	0.2+	0.3+
1994 11 11	691	0.2−	0.3−	1999 12 06	704	(3.8+	1.4−)	2000 01 07	704	0.1+	0.1+
1994 11 11	691	0.0	0.2−	1999 12 14	704	0.1+	0.3−	2000 01 07	704	0.1−	0.3−
1998 08 27	704	0.9−	0.3−	1999 12 14	704	0.2+	0.1+	2000 01 07	704	0.4−	0.1−
1998 08 27	704	1.8−	0.8+	1999 12 14	704	0.1+	0.4+				
1998 08 27	704	1.8+	0.3−	1999 12 14	704	0.0	0.3+				

1994 VL₁ = 1999 XK₁₃₄

Id. T. Kobayashi

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	122.23330		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.22346512	ω	275.11316	+0.92372522	+0.33269363		
<i>a</i>	2.6894464	Ω	65.56284	−0.21266872	+0.85765658		
<i>e</i>	0.2146434	<i>i</i>	12.03690	−0.31859650	+0.39209711		
<i>P</i>	4.41	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 11 04	411	0.6+	1.1−	1999 12 12	704	0.6−	1.8+	1999 12 15	704	0.8+	0.8+
1994 11 04	411	0.3+	0.3+	1999 12 12	704	0.6−	0.5+	1999 12 15	704	0.2−	0.2−
1994 11 08	411	1.1+	0.2−	1999 12 13	704	0.0	0.1+	1999 12 31	699	0.5+	0.2+
1994 11 08	411	0.5+	0.2+	1999 12 13	704	0.5−	0.3−	1999 12 31	699	0.7−	0.9+
1994 11 10	411	1.2−	0.1+	1999 12 13	704	0.1−	0.2−	1999 12 31	699	0.3−	0.8+
1994 11 10	411	1.4−	0.3+	1999 12 13	704	0.2+	0.3+	2000 01 08	704	0.0	0.6−
1994 11 24	411	0.1+	0.4+	1999 12 13	704	0.2−	0.3+	2000 01 08	704	0.8+	0.3−
1994 11 24	411	0.0	0.2+	1999 12 15	704	0.2−	0.3−	2000 01 08	704	0.4+	0.5−
1999 12 12	704	0.5−	0.2−	1999 12 15	704	0.2+	0.4−	2000 01 08	704	0.1+	0.2−
1999 12 12	704	0.6+	1.6−	1999 12 15	704	0.6−	0.7−	2000 01 08	704	0.8+	0.3−

1994 VV₂ = 1999 XT₁₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	90.80272	(2000.0)	P		Q	
<i>n</i>	0.21347043	ω	290.38596	+0.98387905	-0.06287296	
<i>a</i>	2.7727511	Ω	73.51336	+0.13124173	+0.88977239	
<i>e</i>	0.1812260	<i>i</i>	10.05521	-0.12148100	+0.45205319	
<i>P</i>	4.62	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1994 11 04	400	0.8-	0.4+	1999 11 12	703	0.3+	0.0	2000 01 02	704	0.1-	0.1-
1994 11 04	400	1.1-	0.8-	1999 11 16	704	0.4-	0.9-	2000 01 02	704	0.1-	0.4+
1994 11 06	400	1.8-	0.9-	1999 11 16	704	0.5+	0.3-	2000 01 02	704	0.3+	0.2+
1994 11 06	400	0.1+	0.0	1999 11 16	704	0.3+	0.3+	2000 01 02	704	0.3-	0.1-
1994 11 26	400	0.9+	0.5+	1999 11 16	704	0.7+	0.4-	2000 01 02	704	(0.3-	2.8-)
1994 11 26	400	(0.3-	2.6-)	1999 11 16	704	0.3+	0.2+	2000 01 02	704	0.8-	0.1-
1994 11 27	675	1.1+	0.6-	1999 12 10	704	0.8+	0.2-	2000 01 04	704	0.0	0.0
1994 11 27	675	0.9+	0.2-	1999 12 10	704	0.2+	0.4-	2000 01 04	704	0.2-	0.1+
1994 11 28	675	0.1+	0.7+	1999 12 10	704	0.1+	0.4-	2000 01 04	704	0.1-	0.2-
1994 11 28	675	0.3+	1.1+	1999 12 10	704	0.1+	0.5-	2000 01 04	704	1.3-	0.2-
1998 12 08	704	0.7+	0.2+	1999 12 10	704	0.7-	0.4-	2000 01 04	704	0.9-	0.6+
1998 12 08	704	0.2-	0.9+	1999 12 15	704	0.1+	0.5+	2000 01 08	704	0.2+	0.2+
1998 12 08	704	0.4-	1.0-	1999 12 15	704	0.1+	0.1-	2000 01 08	704	0.1-	0.4+
1998 12 08	704	0.0	0.0	1999 12 15	704	0.1-	0.0	2000 01 08	704	0.1-	0.1+
1999 11 12	703	0.2-	0.4+	1999 12 15	704	0.4+	0.1+	2000 01 08	704	0.2+	0.2-
1999 11 12	703	0.3+	0.1-	1999 12 15	704	0.3+	0.2+	2000 01 08	704	0.6+	0.4+
1999 11 12	703	0.1+	0.6+	2000 01 02	704	0.0	0.3-				

1994 WG₁ = 1999 XK₂₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	91.09574	(2000.0)	P		Q	
<i>n</i>	0.21254804	ω	310.45568	+0.97092656	-0.18410974	
<i>a</i>	2.7807673	Ω	60.66570	+0.23539470	+0.85043230	
<i>e</i>	0.1756058	<i>i</i>	10.10715	-0.04348515	+0.49281692	
<i>P</i>	4.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1994 11 02	033	0.3+	0.3+	1999 12 10	704	0.6-	0.4+	1999 12 15	704	0.5+	0.1+
1994 11 02	033	0.3+	0.6-	1999 12 10	704	(0.6-	2.8+)	1999 12 15	704	0.4-	0.6+
1994 11 27	411	0.1-	1.4+	1999 12 12	704	0.5+	0.3+	2000 01 02	704	0.3-	1.0-
1994 11 27	411	0.6+	0.3+	1999 12 12	704	0.1-	0.4-	2000 01 02	704	0.8-	0.2+
1994 11 28	411	0.7+	1.3-	1999 12 12	704	0.1-	0.0	2000 01 02	704	0.4-	0.0
1994 11 28	411	0.2-	0.0	1999 12 12	704	0.4-	0.2-	2000 01 02	704	0.8+	0.6-
1994 12 04	411	0.6-	0.4-	1999 12 12	704	0.1-	0.2+	2000 01 02	704	0.1+	0.5-
1994 12 04	411	0.3-	0.2+	1999 12 13	699	0.7+	0.4-	2000 01 08	704	0.1+	0.5+
1994 12 21	411	0.7-	0.8+	1999 12 13	699	0.3+	0.2-	2000 01 08	704	0.4+	0.1-
1994 12 21	411	0.0	0.8-	1999 12 13	699	0.2-	0.4+	2000 01 08	704	0.6+	0.1+
1999 12 10	704	0.0	0.4-	1999 12 15	704	0.0	0.2-	2000 01 08	704	0.5+	0.2+
1999 12 10	704	0.5-	0.3-	1999 12 15	704	0.1-	0.3+	2000 01 08	704	0.2-	0.9+
1999 12 10	704	0.2-	0.1+	1999 12 15	704	0.2-	0.3-				

1994 WV₁ = 1972 TC₁₀

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	344.46556	(2000.0)	P		Q	
<i>n</i>	0.18226734	ω	318.33701	+0.26674384	-0.96302173	
<i>a</i>	3.0807999	Ω	116.16075	+0.89503127	+0.23294067	
<i>e</i>	0.1438063	<i>i</i>	2.42045	+0.35744474	+0.13538018	
<i>P</i>	5.41	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1972 10 09	033	0.4+	0.7-	1999 10 03	703	0.0	0.2+	1999 11 15	704	0.6-	0.3+
1972 10 09	033	1.5+	0.7-	1999 10 03	703	0.2-	0.2+	1999 11 17	704	0.5+	0.3+
1972 10 09	033	0.0	0.9-	1999 10 03	703	0.1-	0.3+	1999 11 17	704	0.8+	0.5-
1972 10 09	033	0.6-	1.2-	1999 10 04	704	0.3-	0.0	1999 11 17	704	0.9-	1.1+
1994 11 28	596	0.6-	0.4+	1999 10 04	704	0.5+	0.8-	1999 11 17	704	0.9+	0.7-

1994 11 28	596	0.1-	0.0	1999 10 04	704	0.2+	0.7-	1999 11 27	699	1.1-	1.1+
1994 11 28	596	0.5+	0.2-	1999 10 04	704	0.6+	0.1-	1999 11 27	699	0.9-	0.5+
1994 11 29	596	0.8-	1.3-	1999 10 04	704	0.1-	0.3-	1999 11 27	699	0.2-	1.2+
1994 11 29	596	0.3+	1.2-	1999 11 01	703	0.2-	0.4+	1999 12 13	699	0.5-	1.7+
1994 11 29	596	0.5+	1.3-	1999 11 01	703	0.3-	0.3-	1999 12 13	699	(0.6+	2.4+)
1994 11 30	596	(1.9+	3.0+)	1999 11 01	703	0.1-	0.1-	1999 12 13	699	(0.3-	3.0+)
1994 11 30	596	(3.3+	2.1+)	1999 11 01	703	0.4-	0.2+	2000 01 08	704	0.7-	0.8+
1994 11 30	596	(3.9+	1.6+)	1999 11 15	704	0.0	0.1-	2000 01 08	704	0.4-	0.0
1994 12 02	596	0.4+	0.8+	1999 11 15	704	0.1-	0.5+	2000 01 08	704	0.2-	0.6+
1994 12 02	596	0.2+	0.4+	1999 11 15	704	0.0	1.0-	2000 01 08	704	0.0	1.7+
1999 10 03	703	0.1+	0.3+	1999 11 15	704	0.9+	0.0				

1994 WK₂ = 1982 DY = 1999 XP₁₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	3.82936	(2000.0)	P		Q	
<i>n</i>	0.21813151	ω	38.25776	-0.78928724	-0.59160826	
<i>a</i>	2.7331100	Ω	104.68178	+0.51316422	-0.78257593	
<i>e</i>	0.2234247	<i>i</i>	9.78449	+0.33717672	-0.19384161	
<i>P</i>	4.52	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1982 02 20	688	0.7-	2.1-	1999 12 04	703	0.0	0.0	1999 12 15	704	0.5-	0.8+
1982 02 20	688	(6.4-	0.7-)	1999 12 04	703	0.0	0.5+	1999 12 15	704	0.0	0.2+
1994 11 28	399	0.1-	0.9-	1999 12 04	703	0.1+	0.2+	2000 01 04	704	0.2-	0.9-
1994 11 28	399	1.3-	1.0+	1999 12 06	704	0.2+	0.0	2000 01 04	704	0.5+	0.6-
1994 11 29	399	1.3+	1.3-	1999 12 06	704	0.8+	0.1-	2000 01 04	704	0.4+	0.2-
1994 11 29	399	0.6+	0.7+	1999 12 06	704	0.4+	0.3+	2000 01 04	704	0.5+	0.5-
1994 12 09	399	0.4-	0.9-	1999 12 06	704	0.2+	0.0	2000 01 04	704	0.0	0.1+
1994 12 09	399	0.2-	0.5+	1999 12 06	704	0.1+	0.0	2000 01 06	704	0.0	0.1-
1998 09 21	699	0.7+	0.7-	1999 12 09	699	0.7-	0.9+	2000 01 06	704	0.2+	0.1-
1998 09 21	699	0.2+	0.1-	1999 12 09	699	0.1+	1.1+	2000 01 06	704	0.1+	0.6-
1998 09 21	699	0.3-	0.1-	1999 12 09	699	0.0	0.4+	2000 01 06	704	0.7+	0.2-
1999 11 16	704	0.1+	0.1-	1999 12 13	678	0.3-	0.3+	2000 01 06	699	0.0	0.5+
1999 11 16	704	0.3+	0.2-	1999 12 13	678	0.7-	0.7+	2000 01 06	704	0.1+	0.2+
1999 11 16	704	0.3+	0.3-	1999 12 15	678	0.8-	0.1-	2000 01 06	699	0.0	0.4+
1999 11 16	704	0.3+	0.2+	1999 12 15	678	0.8-	0.3-	2000 01 06	699	0.0	0.4+
1999 11 16	704	0.2+	0.4-	1999 12 15	704	1.0-	0.5-				
1999 12 04	703	0.1+	0.3+	1999 12 15	704	0.4-	0.5+				

1994 WA₈ = 2000 AX₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	54.38106	(2000.0)	P		Q	
<i>n</i>	0.21221962	ω	214.54898	+0.65915510	-0.75131117	
<i>a</i>	2.7836355	Ω	194.30733	+0.71610811	+0.64023768	
<i>e</i>	0.2229313	<i>i</i>	7.52034	+0.22957293	+0.16008509	
<i>P</i>	4.64	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1994 11 28	691	0.0	0.0	1994 12 10	691	0.1-	0.5-	2000 01 07	704	0.7+	0.1+
1994 11 28	691	0.1+	0.4+	1999 12 14	704	0.2+	0.0	2000 01 07	704	0.7+	0.0
1994 11 28	691	0.2+	0.0	1999 12 14	704	0.1+	0.5+	2000 01 07	704	1.9+	1.0+
1994 12 03	691	0.1-	0.1-	1999 12 14	704	0.4+	0.1+	2000 01 11	704	1.0-	0.1+
1994 12 03	691	0.1+	0.1+	1999 12 14	704	0.2-	0.5+	2000 01 11	704	1.8-	0.4-
1994 12 03	691	0.2+	0.3-	1999 12 14	704	0.7-	0.2-	2000 01 11	704	0.9-	1.2-
1994 12 10	691	0.3-	0.2+	2000 01 07	704	0.4+	0.3+				
1994 12 10	691	0.1-	0.1-	2000 01 07	704	0.1+	0.5-				

1995 BE₂ = 2000 AZ₁₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	279.08282	(2000.0)	P		Q	
<i>n</i>	0.18639886	ω	71.40275	-0.89419137	+0.42374464	
<i>a</i>	3.0351062	Ω	133.37640	-0.44754370	-0.85421031	
<i>e</i>	0.0509457	<i>i</i>	11.46185	+0.01124442	-0.30127267	
<i>P</i>	5.29	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i>	5

2000 JAN. 24

M.P.C. 37643

Residuals in seconds of arc

1995 01 30	411	0.5+	0.8+	1995 02 10	411	0.3-	0.6-	2000 01 05	704	0.4-	0.2-
1995 01 30	411	1.0+	0.3-	1995 02 19	411	0.6-	1.0+	2000 01 05	704	0.2-	0.1+
1995 01 31	411	0.7+	0.4+	1995 02 19	411	1.8-	0.6-	2000 01 05	704	0.2-	0.4+
1995 01 31	411	1.1-	0.7-	1999 12 06	704	0.1-	0.6-	2000 01 05	704	0.7-	0.1-
1995 02 06	411	1.0+	0.3-	1999 12 06	704	1.1+	0.3+	2000 01 09	704	0.6+	0.3-
1995 02 06	411	0.5-	0.1-	1999 12 06	704	0.6+	0.2-	2000 01 09	704	0.1+	0.5+
1995 02 10	411	1.0+	0.3+	2000 01 05	704	0.5-	0.1-	2000 01 09	704	0.2-	0.2+

1995 BF₂ = 1999 XR₁₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	290.66623		(2000.0)	P	Q
n	0.18553877	ω	222.29097	-0.91368908	+0.40371574
a	3.0444786	Ω	341.36053	-0.32262186	-0.79045481
e	0.0778208	i	8.41148	-0.24715865	-0.46064606
P	5.31	H	12.6	G	0.15
				U	1

Residuals in seconds of arc

1995 01 30	411	0.2-	0.2-	1997 09 02	566	0.2-	0.5+	1999 12 15	704	0.6+	0.6+
1995 01 30	411	0.5-	0.3-	1998 11 14	704	0.4-	0.8-	1999 12 15	704	1.0+	0.9+
1995 01 31	411	0.1-	0.1-	1998 11 14	704	0.2+	0.1-	1999 12 15	704	0.2+	1.3+
1995 01 31	411	0.4-	0.3+	1998 11 14	704	0.7+	0.7-	2000 01 01	849	0.6-	0.4+
1995 02 06	411	0.6+	0.4-	1998 11 14	704	0.3+	1.3-	2000 01 01	849	0.3-	0.0
1995 02 06	411	0.5-	0.2+	1998 11 14	704	0.2+	1.7-	2000 01 01	849	0.1-	0.4+
1995 02 10	411	0.2+	0.2-	1998 11 16	704	0.8+	0.0	2000 01 01	849	1.0-	0.5+
1995 02 10	411	0.6-	0.3+	1998 11 16	704	0.2-	0.2+	2000 01 03	704	0.5-	0.1-
1995 02 19	411	(2.1+	0.2-)	1998 11 16	704	0.8+	0.8+	2000 01 03	704	0.5-	0.4-
1995 02 19	411	0.2+	0.5+	1998 11 16	704	1.3-	1.3+	2000 01 03	704	0.6-	0.3-
1995 02 21	372	0.8+	0.4-	1998 11 16	704	(3.7-	0.7+)	2000 01 03	704	1.1-	0.7-
1995 02 21	372	(3.6-	1.1-)	1999 12 10	704	1.0+	0.3-	2000 01 03	704	0.7-	0.6-
1995 02 22	372	0.1-	0.2+	1999 12 10	704	0.8+	0.2+	2000 01 04	704	0.5-	0.3-
1995 02 22	372	0.5-	0.3+	1999 12 10	704	1.1+	0.5+	2000 01 04	704	0.6-	0.2-
1995 03 01	411	0.1-	0.6-	1999 12 10	704	0.6+	0.4+	2000 01 04	704	0.6-	0.3-
1995 03 01	411	0.4+	1.1-	1999 12 10	704	0.3-	0.3+	2000 01 04	704	1.5+	0.6-
1997 09 02	566	0.1+	0.4+	1999 12 15	704	1.2+	0.3+				
1997 09 02	566	0.6-	0.3+	1999 12 15	704	1.2+	1.2+				

1995 BW₁₁ = 2000 AC₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	209.42658		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.18264046	<i>ω</i>	189.28299	+0.17371179		+0.98425506	
<i>a</i>	3.0766025	<i>Ω</i>	90.72572	-0.90142488		+0.17226968	
<i>e</i>	0.0454762	<i>i</i>	1.87134	-0.39655694		+0.03956185	
<i>P</i>	5.40	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 01 29	691	0.1-	0.1+	1998 10 18	699	0.1-	0.7+	2000 01 04	704	0.1+	0.3+
1995 01 29	691	0.0	0.1+	1998 11 11	704	0.3-	0.9+	2000 01 04	704	0.3+	0.4-
1995 01 29	691	0.0	0.1+	1998 11 11	704	0.2+	0.4-	2000 01 04	704	0.1+	0.1-
1995 02 01	691	0.1-	0.0	1998 11 11	704	0.0	0.2-	2000 01 04	704	0.2+	0.6-
1995 02 01	691	0.2-	0.1+	1998 11 11	699	0.1-	0.2-	2000 01 04	704	0.7-	0.9-
1995 02 01	691	0.1+	0.1+	1998 11 11	704	1.6-	0.3-	2000 01 06	704	0.8+	0.6+
1995 02 07	691	0.1-	0.1-	1998 11 11	699	0.2-	0.6-	2000 01 06	704	0.0	0.6-
1995 02 07	691	0.4+	0.3+	1998 11 11	699	0.6+	0.5-	2000 01 06	704	0.6-	0.2+
1995 02 07	691	0.2+	0.1+	1998 11 24	699	0.3-	0.7+	2000 01 06	704	0.6-	0.4+
1998 10 18	699	0.9+	1.0-	1998 11 24	699	0.1+	0.6+				
1998 10 18	699	0.3+	0.2+	1998 11 24	699	0.2+	0.6+				

1995 CC₂ = 1999 XN₁₇₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	270.05985		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.36666974	<i>ω</i>	291.77568	-0.68081449		+0.67989688	
<i>a</i>	1.9332410	<i>Ω</i>	292.26045	-0.51470126		-0.70873578	
<i>e</i>	0.0447336	<i>i</i>	17.12133	-0.52112786		-0.18823873	
<i>P</i>	2.69	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 02 07	413	0.2-	0.5+	1999 12 08	703	0.1+	0.1-	2000 01 03	704	0.5-	0.3-
1995 02 07	413	0.6+	1.9+	1999 12 10	704	0.0	0.0	2000 01 04	704	0.1+	0.0
1995 02 09	413	0.2+	0.8+	1999 12 10	704	0.3-	0.2-	2000 01 04	704	0.1-	0.2+
1995 02 09	413	0.2+	0.7+	1999 12 10	704	0.1-	0.2-	2000 01 04	704	0.2-	0.0
1995 02 21	413	0.4+	0.7-	1999 12 10	704	0.1+	0.0	2000 01 04	704	0.5+	0.4+
1995 02 21	413	0.3+	0.5-	1999 12 10	704	0.1-	0.3-	2000 01 06	704	0.2+	0.3-
1995 03 07	413	0.5+	1.1-	1999 12 15	704	0.1+	0.5-	2000 01 06	704	0.3+	0.4-
1995 03 07	413	0.6+	1.1-	1999 12 15	704	0.1-	0.2+	2000 01 06	704	0.3+	0.0
1995 04 16	413	0.8-	0.7-	1999 12 15	704	0.5+	1.2+	2000 01 06	691	0.0	0.3-
1995 04 16	413	0.7-	0.6-	1999 12 15	704	0.0	0.5+	2000 01 06	691	0.1-	0.2-
1995 06 02	413	1.2-	1.6+	1999 12 15	704	0.2+	0.5-	2000 01 06	691	0.0	0.2-
1995 06 02	413	0.2+	0.7+	2000 01 03	704	0.0	0.2-	2000 01 10	691	0.1+	0.6+
1999 12 08	703	0.2+	0.3+	2000 01 03	704	0.1-	0.3-	2000 01 10	691	0.0	0.5+
1999 12 08	703	0.2-	0.2-	2000 01 03	704	0.2-	0.6-	2000 01 10	691	0.0	0.5+
1999 12 08	703	0.1-	0.2+	2000 01 03	704	0.7-	0.1+				

1995 ES₆ = 1999 XH₂₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	331.95761		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.17946957	<i>ω</i>	156.85687	-0.92733148		-0.37424084	
<i>a</i>	3.1127352	<i>Ω</i>	1.16589	+0.34068442		-0.84455867	
<i>e</i>	0.1239223	<i>i</i>	0.96087	+0.15488850		-0.38296794	
<i>P</i>	5.49	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 03 02	691	0.1-	0.0	1999 12 05	691	0.2+	0.1-	2000 01 04	704	0.6+	0.1-
1995 03 02	691	0.0	0.1+	1999 12 05	691	0.0	0.1+	2000 01 04	704	0.9-	0.2+
1995 03 02	691	0.7-	0.1+	1999 12 05	691	0.0	0.0	2000 01 04	704	1.1+	0.8-
1995 03 08	691	0.1-	0.3-	1999 12 15	691	0.3-	0.0	2000 01 04	704	1.1-	0.0
1995 03 08	691	0.2+	0.2-	1999 12 15	691	0.3-	0.1+	2000 01 04	691	0.4+	0.3+
1995 03 08	691	0.1+	0.3+	1999 12 15	691	0.4-	0.1-	2000 01 04	691	0.4+	0.1+
1995 03 27	691	0.4+	0.8+	1999 12 16	691	0.1+	0.0	2000 01 04	691	0.4+	0.0
1995 03 27	691	0.2+	0.4-	1999 12 16	691	0.4-	0.2-				
1995 03 27	691	0.0	0.5-	1999 12 16	691	0.1+	0.5+				

1995 KK = 1999 OE₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	133.92652		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.27548066	<i>ω</i>	318.55371	-0.80690123		+0.58715091	
<i>a</i>	2.3392428	<i>Ω</i>	257.51472	-0.52305352		-0.76099560	
<i>e</i>	0.1975519	<i>i</i>	3.78965	-0.27445476		-0.27593388	
<i>P</i>	3.58	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 05 19	596	1.1-	0.1-	1995 05 27	596	0.2+	1.0-	1999 07 23	704	0.1-	0.2+
1995 05 19	596	0.2-	0.3+	1995 05 30	596	0.6-	0.7+	1999 07 23	704	0.7-	0.0
1995 05 19	596	0.8+	0.8+	1995 05 30	596	0.1+	0.8+	1999 07 23	704	0.2+	0.5-
1995 05 22	589	0.8+	0.1-	1999 07 21	699	0.2+	0.5+	1999 07 23	704	0.4-	0.2-
1995 05 22	589	0.2-	0.0	1999 07 21	699	0.3-	0.8+				
1995 05 27	596	0.3+	1.3-	1999 07 21	699	1.0+	0.8-				

1995 KE₂ = 2000 AZ₁₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30247827	ω	164.47036	−0.42712322	+0.89669824		
<i>a</i>	2.1978932	Ω	80.12783	−0.84163453	−0.34731282		
<i>e</i>	0.0877366	<i>i</i>	6.77249	−0.33048008	−0.27441952		
<i>P</i>	3.26	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1995 05 23	894	0.2−	1.2+	1999 09 14	704	0.1+	0.1−
1995 05 23	894	0.1−	0.7+	1999 09 14	704	0.2−	0.3−
1995 05 31	894	0.4+	0.9+	1999 09 21	699	0.2+	0.7+
1995 05 31	894	(2.8+	1.2−)	1999 09 21	699	0.3+	0.9+
1995 06 01	894	0.4+	1.7−	1999 09 21	699	0.3+	0.3−
1995 06 01	894	0.2−	0.5−	1999 10 02	704	0.1−	0.6−
1998 04 24	704	0.3−	1.0−	1999 10 02	704	0.1−	0.7−
1998 04 24	704	0.2+	1.0+	1999 10 02	704	0.0	0.5−
1998 04 24	704	0.9−	0.9+	1999 10 02	704	0.4+	0.6−
1998 04 24	704	1.1−	0.3−	1999 10 02	704	0.6+	0.3−
1998 04 24	704	0.5−	0.8−	1999 11 05	703	0.8+	0.3+
1998 05 16	704	0.4+	0.6+	1999 11 05	703	0.5+	0.8+
1998 05 16	704	0.9+	0.6+	1999 11 05	703	0.1−	0.8+
1998 05 16	704	0.7+	0.1+	1999 11 05	703	0.1−	0.8+
1998 05 16	704	0.3+	1.5+	1999 11 07	704	0.1+	0.2−
1998 05 16	704	1.4+	1.0−	1999 11 07	704	0.4−	0.0
1999 09 14	704	0.2−	0.1−	1999 11 07	704	0.2−	0.2−
1999 09 14	704	0.4−	0.2−	1999 11 07	704	0.3−	0.2+
1999 09 14	704	0.0	0.2+	1999 11 07	704	0.7−	0.2+

1995 ME₄ = 1995 OK₂ = 2000 AO₁₁₀Id. G. V. Williams (d, *MPC* 25936; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08114401	ω	177.60242	+0.27536611	−0.94845336		
<i>a</i>	5.2840275	Ω	256.38197	+0.87930395	+0.31445250		
<i>e</i>	0.1214428	<i>i</i>	9.28890	+0.38858470	−0.03944421		
<i>P</i>	12.15	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1995 06 29	691	0.5−	0.3+	1995 07 27	691	0.2+	0.5+
1995 06 29	691	0.1−	0.1−	1995 08 02	691	0.3+	0.6+
1995 06 29	691	0.8−	0.3+	1998 11 24	704	1.0−	0.3−
1995 07 04	691	0.1+	0.2+	1998 11 24	704	0.2+	1.0−
1995 07 04	691	0.5−	0.5+	1998 11 24	704	1.8+	0.1+
1995 07 22	691	0.0	0.1+	1998 11 24	704	1.1−	1.1−
1995 07 22	691	0.2−	0.3+	1998 11 24	704	0.1+	0.1+
1995 07 22	691	0.1+	0.2+	1999 12 14	704	0.3−	1.1−
1995 07 27	691	0.2+	0.1+	1999 12 14	704	1.1+	1.0+
1995 07 27	691	0.0	0.2+	1999 12 14	704	0.2+	0.8+

1995 OV₃ = 2000 AN₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28247950	ω	276.29484	+0.37751504	−0.92577199		
<i>a</i>	2.3004427	Ω	151.49768	+0.86582346	+0.34496405		
<i>e</i>	0.1951428	<i>i</i>	2.48658	+0.32837803	+0.15474505		
<i>P</i>	3.49	<i>H</i>	16.2	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1995 07 22	691	0.3−	0.3−	1995 09 02	691	0.2−	0.4+
1995 07 22	691	0.3−	0.2−	1995 09 02	691	0.2−	0.6+
1995 07 22	691	0.5−	0.1−	1995 09 02	691	0.1+	0.5+
1995 07 27	691	0.1+	0.1−	1999 12 08	704	0.3+	0.2+
1995 07 27	691	0.3+	0.0	1999 12 08	704	0.1−	0.3+
1995 07 27	691	0.3+	0.2−	1999 12 08	704	0.3+	0.3−

1995 08 03	691	0.2+	0.2−	1999 12 08	704	0.1−	0.0	2000 01 06	704	0.1+	0.2−
1995 08 03	691	0.0	0.2−	1999 12 08	704	0.1−	0.0	2000 01 06	704	0.3+	0.1−
1995 08 03	691	0.6+	0.4−	2000 01 05	704	0.9−	0.0	2000 01 06	704	0.3+	0.1+

1995 QF = 2000 AY₁₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29795760	ω	183.72342	+0.97121771	−0.23767683		
<i>a</i>	2.2200687	Ω	190.06753	+0.22079010	+0.92300497		
<i>e</i>	0.1858134	<i>i</i>	5.14648	+0.08937502	+0.30260792		
<i>P</i>	3.31	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1995 08 16	966	0.6+	1.2+	1995 09 02	966	0.3+	0.0
1995 08 16	966	0.6+	0.7+	1995 09 19	966	0.4+	0.4−
1995 08 16	966	2.0+	0.0	1995 09 19	966	0.6+	1.1+
1995 08 16	966	0.7+	1.0−	1995 09 20	966	0.7−	0.6−
1995 08 17	966	0.5−	0.4+	1995 09 20	966	1.5+	0.6+
1995 08 17	966	1.0−	0.9−	2000 01 05	704	0.1−	1.1−
1995 08 17	966	0.0	0.5−	2000 01 05	704	0.8−	0.7−
1995 09 02	966	0.1+	0.6+	2000 01 05	704	0.2−	0.4+

1995 QV₁ = 1999 XN₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30265438	ω	355.06201	+0.97212317	+0.23417945		
<i>a</i>	2.1970406	Ω	351.36799	−0.21236929	+0.85827499		
<i>e</i>	0.1560550	<i>i</i>	4.46498	−0.09937717	+0.45664430		
<i>P</i>	3.26	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 08 20	905	0.1−	0.3−	1999 12 10	704	1.2+	0.6−
1995 08 20	905	0.5+	0.1+	1999 12 15	704	1.4−	0.5+
1995 08 24	905	0.3+	0.1+	1999 12 15	704	0.9+	1.3+
1995 08 24	905	0.8+	0.8−	1999 12 15	704	0.1−	0.4+
1995 08 28	905	1.3−	0.1+	1999 12 15	704	0.3+	1.1+
1995 08 28	905	0.1−	0.5+	1999 12 31	699	0.4+	0.6−
1999 12 10	704	0.6−	0.5−	1999 12 31	699	0.4−	0.7+
1999 12 10	704	0.1−	0.1−	1999 12 31	699	0.6+	0.3+
1999 12 10	704	0.5−	0.4−	2000 01 03	704	0.1−	0.2−

1995 QA₃ = 1999 XK₁₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28191106	ω	336.94752	+0.73398519	+0.67772435		
<i>a</i>	2.3035341	Ω	340.17845	−0.60104601	+0.61786446		
<i>e</i>	0.1081023	<i>i</i>	7.49320	−0.31624268	+0.39866430		
<i>P</i>	3.50	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1995 08 31	411	0.6+	0.8+	1995 09 28	411	0.5+	0.0
1995 08 31	411	0.6+	1.4+	1995 09 28	411	0.1+	0.5−
1995 09 01	411	0.0	0.1−	1995 09 28	411	0.4+	0.1+
1995 09 01	411	0.0	0.7+	1995 10 14	411	0.6−	0.7+
1995 09 01	411	1.1−	0.2−	1995 10 14	411	0.7−	0.4−
1995 09 04	411	0.2+	0.9+	1995 10 14	411	0.1+	0.0
1995 09 17	411	0.1−	0.1+	1995 11 23	801	1.0+	0.5−
1995 09 17	411	0.1−	0.1+	1995 11 23	801	0.7+	0.3+
1995 09 17	411	1.2−	0.0	1999 12 12	704	0.6−	0.1+
1995 09 21	411	0.0	1.2−	1999 12 12	704	0.4−	0.5+
1995 09 21	411	0.2+	1.0−	1999 12 12	704	0.1−	0.2+
1995 09 21	411	0.0	1.0−	1999 12 12	704	0.2−	0.4+

2000 JAN. 24

M.P.C. 37645

1995 QP₃ = 1999 XD₁₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	77.68942			(2000.0)			P		Q		
<i>n</i>	0.28304112	ω	333.10971				+0.98641578		−0.15487828		
<i>a</i>	2.2973986	Ω	35.93240				+0.16243937		+0.87009767		
<i>e</i>	0.1930974	<i>i</i>	5.35252				+0.02444097		+0.46791321		
<i>P</i>	3.48	<i>H</i>	15.0			<i>G</i>	0.15		<i>U</i>	3	
Residuals in seconds of arc											
1995 08 20	905	0.5+	0.5−	1999 11 16	704	0.3+	0.4−	1999 12 15	704	0.4+	1.5+
1995 08 20	905	0.4+	0.4−	1999 11 16	704	0.3−	1.2−	1999 12 15	704	0.0	0.0
1995 08 28	905	0.7−	0.4+	1999 11 16	704	0.2−	0.6−	1999 12 15	704	0.1+	0.0
1995 08 28	905	0.0	0.3+	1999 11 16	704	1.0−	0.5−	2000 01 02	704	0.2+	0.5−
1995 09 01	905	0.3−	0.1+	1999 12 12	704	0.2+	0.1+	2000 01 02	704	0.1+	0.1−
1995 09 01	905	0.2+	0.2−	1999 12 12	704	0.0	0.2+	2000 01 02	704	0.1+	0.2−
1998 05 24	704	(2.8+	1.1−)	1999 12 12	704	(0.5+	2.7+)	2000 01 02	704	0.8+	0.8−
1998 05 24	704	0.6−	1.4−	1999 12 12	704	1.0+	1.5+	2000 01 04	704	0.3+	1.1−
1998 05 24	704	0.4+	0.5+	1999 12 12	704	0.4−	0.4+	2000 01 04	704	0.0	0.2−
1998 05 24	704	(1.9−	2.6−)	1999 12 15	704	0.5−	0.3+	2000 01 04	704	0.5−	0.1−
1999 11 16	704	0.1−	0.3+	1999 12 15	704	0.3−	0.2−	2000 01 04	704	0.1−	0.1+

1995 QC₆ = 2000 AK₁₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	27.59615		(2000.0)			P		Q			
<i>n</i>	0.08139713	ω	143.95372			+0.15546930		−0.96565505			
<i>a</i>	5.2730672	Ω	296.26511			+0.84327961		+0.23949939			
<i>e</i>	0.1011758	<i>i</i>	13.42367			+0.51449858		−0.10074904			
<i>P</i>	12.11	<i>H</i>	12.3		<i>G</i>	0.15		<i>U</i>	4		
Residuals in seconds of arc											
1995 08 22	691	0.0	0.2−	1995 09 02	691	0.3+	0.3+	2000 01 08	704	0.0	0.0
1995 08 22	691	0.1+	0.5−	1995 09 02	691	0.1−	0.2+	2000 01 08	704	0.3+	0.4+
1995 08 22	691	0.1−	0.3−	2000 01 04	704	0.2−	0.3−	2000 01 08	704	0.5−	0.2−
1995 08 28	691	0.0	0.2+	2000 01 04	704	0.2−	0.0	2000 01 08	704	0.0	0.0
1995 08 28	691	0.3−	0.3+	2000 01 04	704	0.5+	0.4+	2000 01 08	704	0.3−	0.2−
1995 08 28	691	0.3+	0.5−	2000 01 04	704	0.3+	0.3−				
1995 09 02	691	0.1−	0.5+	2000 01 04	704	0.1+	0.1+				

1995 RH = 1999 XE₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.26313		(2000.0)		P		Q				
<i>n</i>	0.26827151	ω	259.97055		+0.91803889		+0.01023695				
<i>a</i>	2.3809650	Ω	98.61534		+0.12303178		+0.94296608				
<i>e</i>	0.3101881	<i>i</i>	23.63330		−0.37691879		+0.33273138				
<i>P</i>	3.67	<i>H</i>	15.1		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1995 09 03	413	1.3+	0.5−	1999 12 07	704	0.4−	0.5−	2000 01 03	704	0.1+	0.0
1995 09 03	413	0.1−	0.1−	1999 12 07	704	1.0+	0.7+	2000 01 03	704	0.5−	0.3−
1995 09 06	413	0.0	0.4+	1999 12 07	704	0.0	0.1+	2000 01 03	704	0.4−	0.0
1995 09 06	413	1.1−	0.7+	1999 12 07	704	0.1−	0.5−	2000 01 04	704	0.3−	0.2+
1995 09 07	413	0.1−	0.2−	1999 12 08	704	0.2+	0.5+	2000 01 04	704	0.2−	0.0
1995 09 07	413	0.0	0.1−	1999 12 08	704	0.5+	0.4−	2000 01 04	704	0.3+	0.1+
1995 09 08	413	0.1+	0.6−	1999 12 08	704	0.3+	1.3+				
1995 09 08	413	0.1−	0.4+	1999 12 08	704	0.4−	1.4−				

1995 SE = 2000 AQ₂₈

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	47.77201		(2000.0)		P		Q				
n	0.27755494	ω	342.41540		+0.54639869		−0.83580603				
a	2.3275735	Ω	74.43341		+0.77495035		+0.48024875				
e	0.2153037	i	3.19174		+0.31764827		+0.26606281				
P	3.55	H	16.7		G	0.15	U	5			
Residuals in seconds of arc											
1995 08 29	809	0.5+	0.9+	1995 09 24	046	0.7+	2.0−	2000 01 03	704	0.4+	1.5−
1995 08 31	809	0.4+	0.1+	1995 09 28	046	0.4+	0.0	2000 01 03	704	0.1−	0.0
1995 09 01	809	0.7−	0.8−	1995 09 28	046	0.6−	0.6+	2000 01 04	704	0.0	0.5−
1995 09 17	046	0.9+	0.2+	1995 09 28	046	0.3−	0.2+	2000 01 04	704	0.5−	0.1−
1995 09 17	046	0.5−	0.4−	1995 10 15	046	0.3+	0.5−	2000 01 04	704	0.1−	0.1−
1995 09 17	046	0.4−	0.5+	1995 10 15	046	0.6+	1.4−	2000 01 04	704	0.3+	0.1−
1995 09 17	046	0.3+	0.2−	1995 10 15	046	0.0	0.4+	2000 01 04	688	0.1+	0.3+
1995 09 17	046	0.7−	0.3+	1995 10 16	046	0.0	0.6+	2000 01 04	704	0.7−	0.3+
1995 09 17	046	0.7−	0.7+	1995 10 16	046	0.0	0.6+	2000 01 04	688	0.1+	0.1+
1995 09 19	046	0.1−	0.5+	1995 10 16	046	0.3−	1.3+	2000 01 06	046	0.1+	0.2+
1995 09 19	046	0.2−	0.8+	1995 10 22	046	0.5−	0.4+	2000 01 06	046	0.3+	0.5+
1995 09 19	046	0.8+	0.3−	1995 10 22	046	0.4−	0.0	2000 01 06	046	0.7+	0.5+
1995 09 19	046	0.7−	0.1+	1995 10 22	046	0.0	0.1+	2000 01 06	046	0.0	0.4−
1995 09 19	046	0.1+	0.2−	2000 01 03	704	0.2−	0.6+	2000 01 06	046	0.4+	0.2+
1995 09 24	046	0.2+	1.3−	2000 01 03	704	0.9−	0.3+	2000 01 06	046	0.5+	0.2−
1995 09 24	046	0.8+	1.3−	2000 01 03	704	0.4−	0.3−	2000 01 06	046	0.1+	0.0

1995 SM = 1999 VF₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	34.90413		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.25558383	ω	64.98852		+0.85641103		−0.51616284				
a	2.4591242	Ω	326.08324		+0.46583641		+0.78225703				
e	0.2216179	i	1.19784		+0.22261307		+0.34878341				
P	3.86	H	17.3	G	0.15	U	5				
Residuals in seconds of arc											
1995 09 17	557	0.2−	0.9+	1995 09 24	557	0.2+	0.3−	1995 10 24	557	0.7−	0.0
1995 09 17	557	0.9−	0.2−	1995 09 26	557	0.3−	0.0	1999 11 04	704	0.2+	1.2+
1995 09 17	557	0.5−	0.8+	1995 09 26	557	1.1+	0.5−	1999 11 04	704	0.3−	0.0
1995 09 19	557	0.2+	0.0	1995 09 28	557	0.3+	0.1+	1999 11 04	704	0.8−	1.1+
1995 09 19	557	0.2−	0.0	1995 09 28	557	0.2+	0.0	1999 11 04	704	0.9+	0.7−
1995 09 19	557	0.5+	0.2−	1995 10 21	557	0.1−	0.0	1999 11 07	704	0.0	1.1−
1995 09 22	557	0.2−	0.2−	1995 10 21	557	0.8+	0.3+	1999 11 07	704	0.3−	0.5−
1995 09 23	557	0.5−	0.4−	1995 10 24	557	0.1+	0.5−	1999 11 07	704	0.2+	0.0
1995 09 24	557	0.3+	0.1−	1995 10 24	557	0.3−	0.3+	1999 11 07	704	0.0	0.0

1995 SW₃ = 2000 AF₁₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	87.62756	(2000.0)		P			Q				
n	0.27387205	ω	15.40337	+0.99085126			+0.12699673				
a	2.3483937	Ω	337.15046	−0.13288511			+0.85898712				
e	0.3384564	i	6.75403	−0.02356521			+0.49599693				
P	3.60	H	14.9	G	0.15	U	4				
Residuals in seconds of arc											
1995 09 20	400	0.3−	0.2−	1995 10 11	400	0.2+	0.5−	2000 01 04	704	0.4+	0.2+
1995 09 20	400	0.5+	0.5−	1995 10 11	400	0.0	0.2+	2000 01 08	704	0.1+	0.6−
1995 09 21	400	0.4−	0.8+	2000 01 04	704	0.3+	0.1−	2000 01 08	704	0.4−	0.2+
1995 09 21	400	0.2+	0.0	2000 01 04	704	0.1−	0.3−	2000 01 08	704	0.4−	0.6+
1995 09 30	400	0.2−	0.2+	2000 01 04	704	0.1+	0.2+	2000 01 08	704	0.2−	0.2−
1995 09 30	400	0.1+	0.0	2000 01 04	704	0.4+	0.1−	2000 01 08	704	0.1−	0.1+

1995 SN₄ = 1999 XE₁₇₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	115.70756		(2000.0)	P		Williams		Q	
<i>n</i>	0.29175414	ω	323.43775	+0.99382649		+0.10045806			
<i>a</i>	2.2514279	Ω	30.89676	−0.06687030		+0.88103905			
<i>e</i>	0.1435072	<i>i</i>	5.26126	−0.08852833		+0.46225358			
<i>P</i>	3.38	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1995 09 20	400	0.3−	0.2−	1999 12 10	704	0.2+	0.4−	1999 12 31	699	0.5+	0.9+
1995 09 20	400	(2.9+	0.9−)	1999 12 10	704	0.2−	0.2+	2000 01 02	704	0.0	0.7−
1995 09 21	400	0.9+	0.1+	1999 12 10	704	0.3−	0.4+	2000 01 02	704	0.5+	0.8−
1995 09 30	400	0.5−	0.0	1999 12 10	704	0.2−	0.5+	2000 01 02	704	0.5−	0.2−
1995 09 30	400	(2.6+	0.0)	1999 12 10	704	0.1−	0.2+	2000 01 02	704	0.3−	0.0
1995 10 11	400	0.1+	0.1+	1999 12 15	704	0.0	0.1−	2000 01 04	704	0.1+	0.1−
1995 10 11	400	0.2−	0.2+	1999 12 15	704	0.4+	0.1−	2000 01 04	704	0.5+	0.4−
1999 11 16	704	0.3−	0.8−	1999 12 15	704	0.2−	1.1+	2000 01 04	704	0.3−	0.6−
1999 11 16	704	0.5−	0.4−	1999 12 15	704	0.5−	0.8+	2000 01 04	704	0.2−	0.7−
1999 11 16	704	0.1+	0.5−	1999 12 15	704	0.4−	1.1+	2000 01 04	704	0.1+	0.5−
1999 11 16	704	0.0	0.8−	1999 12 31	699	0.2+	1.4+				
1999 11 16	704	1.0+	0.7−	1999 12 31	699	0.7+	0.7+				

1995 SX₄ = 1975 VH₆ = 1975 XY₂ = 2000 AD

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	86.77791		(2000.0)	P		Williams		Q	
<i>n</i>	0.29072951	ω	79.57564	+0.91638566		−0.38981219			
<i>a</i>	2.2567146	Ω	303.31123	+0.31126630		+0.83687213			
<i>e</i>	0.1663793	<i>i</i>	6.25243	+0.25169547		+0.38430651			
<i>P</i>	3.39	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1975 11 06	095	1.3+	0.9−	2000 01 01	104	0.3+	0.1+	2000 01 04	704	0.4+	0.1+
1975 12 02	095	1.2−	0.5+	2000 01 01	104	0.3−	0.6−	2000 01 05	952	0.1+	0.1+
1995 09 20	693	0.6+	1.5+	2000 01 02	946	0.7+	0.1+	2000 01 06	952	0.5−	0.7+
1995 09 20	693	1.5+	0.7+	2000 01 02	946	0.2+	0.0	2000 01 06	952	0.2+	0.2+
1995 09 21	399	0.1−	0.0	2000 01 02	946	0.1+	0.1−	2000 01 06	704	0.0	0.1−
1995 09 21	399	1.7−	0.6−	2000 01 02	678	0.6−	0.5−	2000 01 06	704	0.3+	0.0
1995 09 28	399	0.1−	0.4−	2000 01 02	678	0.3−	0.4−	2000 01 06	704	0.0	0.1+
1995 09 28	399	0.3−	1.0−	2000 01 02	946	0.4+	0.0	2000 01 06	704	0.1+	0.4+
1999 12 18	699	0.4−	0.3+	2000 01 02	946	0.9+	0.3+	2000 01 06	691	0.7−	0.2−
1999 12 18	699	0.1−	0.1−	2000 01 02	946	0.5+	0.3+	2000 01 06	691	0.2+	0.1+
1999 12 18	699	0.1+	0.4+	2000 01 03	678	0.7−	0.5−	2000 01 06	691	0.7−	0.2−
1999 12 30	699	0.4+	0.1+	2000 01 03	678	0.1−	0.0	2000 01 11	691	0.5−	0.6−
1999 12 30	699	0.4+	0.7+	2000 01 04	704	0.2+	0.1−	2000 01 11	691	0.5−	0.6−
1999 12 30	699	0.1+	0.7+	2000 01 04	704	0.0	0.1+	2000 01 11	691	0.4−	0.6−
2000 01 01	104	0.1−	0.0	2000 01 04	704	0.1+	0.1−				
2000 01 01	104	0.4−	0.0	2000 01 04	704	0.7+	0.1+				

1995 SZ₁₀ = 1999 XR₂₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	66.74825		(2000.0)	P		Williams		Q	
<i>n</i>	0.26324145	ω	356.76291	+0.98883055		−0.14873232			
<i>a</i>	2.4111998	Ω	11.80370	+0.13778153		+0.88754407			
<i>e</i>	0.2086606	<i>i</i>	2.69982	+0.05683656		+0.43605529			
<i>P</i>	3.74	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1995 09 17	691	0.2+	0.6−	1995 10 20	010	(2.1−	5.4−)	1999 12 14	704	0.4−	0.3−
1995 09 17	691	0.1+	0.3−	1995 10 23	010	0.6−	0.1+	1999 12 14	704	0.5−	0.5+
1995 09 17	691	0.4+	0.5−	1995 10 23	010	1.5−	0.8+	1999 12 14	704	0.6+	0.0
1995 09 22	691	0.8+	0.1−	1995 10 23	010	0.1−	1.9+	1999 12 15	704	0.0	0.4−
1995 09 22	691	0.2+	0.4−	1999 11 14	704	0.2−	0.8−	1999 12 15	704	0.2+	0.7+
1995 09 22	691	0.3+	0.4−	1999 11 14	704	0.6−	0.4−	1999 12 15	704	0.5+	0.2+
1995 10 20	010	(2.7−	5.6−)	1999 11 14	704	0.0	0.3+	1999 12 15	704	0.9−	0.4+
1995 10 20	010	(2.7−	5.3−)	1999 12 14	704	1.2+	0.5−	1999 12 15	704	0.1+	0.7−

1995 SG₂₁ = 1999 XF₁₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	51.58224		(2000.0)	P		Williams		Q	
<i>n</i>	0.27434241	ω	32.64792	+0.88396463		−0.46754379			
<i>a</i>	2.3457087	Ω	355.22399	+0.42070778		+0.79823254			
<i>e</i>	0.1319006	<i>i</i>	2.10424	+0.20398897		+0.37977311			
<i>P</i>	3.59	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1995 09 17	327	0.0	0.2−	1999 11 14	704	1.8+	0.2+	1999 12 05	703	0.2−	0.1+
1995 09 17	327	0.4+	0.3+	1999 11 14	704	1.3−	0.4−	1999 12 05	703	0.1+	0.5+
1995 09 17	327	0.2−	0.2−	1999 11 14	704	0.6−	1.0−	1999 12 10	704	0.6+	0.2+
1995 09 19	691	0.1−	0.2+	1999 11 16	704	0.4+	0.6−	1999 12 10	704	0.2+	0.1−
1995 09 19	691	0.0	0.2+	1999 11 16	704	0.3−	0.3−	1999 12 10	704	0.3+	0.6−
1995 09 19	691	0.0	0.3+	1999 11 16	704	0.0	0.3−	1999 12 10	704	1.3−	0.0
1995 09 25	691	0.0	0.2−	1999 11 16	704	0.1−	1.5−	1999 12 10	704	0.1−	0.0
1995 09 25	691	0.1−	0.1−	1999 11 16	704	0.1−	0.4−	1999 12 13	703	0.2−	0.4+
1995 09 25	691	0.2−	0.0	1999 11 17	699	0.6−	0.3+	1999 12 13	703	0.1+	0.2+
1999 11 03	704	0.8+	0.6−	1999 11 17	699	0.4−	0.3+	1999 12 13	703	0.2−	0.3+
1999 11 03	704	0.5+	0.1−	1999 11 17	699	0.3−	0.7−	1999 12 13	703	0.1+	0.1+
1999 11 03	704	0.5+	0.1−	1999 12 02	699	0.7+	0.1+	1999 12 15	691	0.3+	0.3+
1999 11 03	704	0.0	0.2+	1999 12 02	699	0.0	1.0+	1999 12 15	691	0.2+	0.2+
1999 11 03	704	0.0	0.4+	1999 12 02	699	0.1−	0.6+	1999 12 15	691	0.3+	0.3+
1999 11 14	704	0.4−	0.2−	1999 12 05	703	0.5−	0.4+				
1999 11 14	704	0.2+	0.6+	1999 12 05	703	0.4−	0.2+				

1995 SB₂₅ = 1999 XC₂₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	94.61519		(2000.0)	P		Williams		Q	
<i>n</i>	0.28131195	ω	346.59828	+0.99404191		−0.09862650			
<i>a</i>	2.3068035	Ω	19.24571	+0.10839750		+0.84984512			
<i>e</i>	0.1425003	<i>i</i>	8.09330	+0.01143043		+0.51772201			
<i>P</i>	3.50	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1995 09 19	691	0.3+	0.1−	1995 09 30	691	0.2−	0.2+	1999 12 12	704	0.1+	0.0
1995 09 19	691	0.2+	0.0	1995 12 17	046	0.4−	0.1+	1999 12 12	704	1.0+	1.7+
1995 09 19	691	0.2+	0.3−	1995 12 17	046	0.7+	0.2−	1999 12 15	704	0.7−	0.2−
1995 09 25	691	0.2−	0.1+	1995 12 17	046	0.6+	0.8−	1999 12 15	704	0.4−	0.1−
1995 09 25	691	0.1−	0.1+	1995 12 17	046	0.3+	0.6+	1999 12 15	704	0.0	0.1−
1995 09 30	691	0.4−	0.4+	1995 12 17	046	0.1+	1.0−	1999 12 15	704	0.0	0.2−
1995 09 30	691	0.4−	0.3+	1999 12 12	704	0.0	0.3−	1999 12 15	704	0.1+	0.2−

1995 SY₂₇ = 1995 TY₃ = 1999 XQ₂₀₇Id. S. Nakano (d, *MPC* 31161), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	332.05242		(2000.0)	P		Williams		Q	
<i>n</i>	0.28653329	ω	132.81911	−0.87266485		−0.48677704			
<i>a</i>	2.2786939	Ω	18.15987	+0.40382067		−0.76403534			
<i>e</i>	0.0471528	<i>i</i>	7.14834	+0.27456317		−0.42343607			
<i>P</i>	3.44	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1995 09 19	691	0.1−	0.2+	1995 10 15	691	0.3+	0.3−	1999 12 12	704	0.2−	1.2−
1995 09 19	691	0.1−	0.2+	1995 10 15	691	0.2+	0.1−	1999 12 15	704	0.2−	0.3−
1995 09 19	691	0.1+	0.1−	1995 10 21	691	0.6−	0.1+	1999 12 15	704	0.7+	0.1+
1995 10 01	691	0.2+	0.2−	1995 10 21	691	0.2−	0.2+	1999 12 15	704	0.2+	0.4−
1995 10 01	691	0.1+	0.1−	1995 10 21	691	0.2−	0.2+	1999 12 15	704	0.1−	0.5+
1995 10 01	691	0.2+	0.1−	1999 12 12	704	0.1+	1.0+	1999 12 15	704	0.0	0.6+
1995 10 15	691	0.2+	0.0	1999 12 12	704	0.4−	0.3−				

1995 SQ₄₄ = 1999 XJ₄₆

Id. M. E. Sansaturio

2000 JAN. 24

M.P.C. 37647

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.55344		(2000.0)	P	Q	Williams
<i>n</i>	0.25880523	ω	59.04323	+0.99967817	-0.02466320	
<i>a</i>	2.4386755	Ω	302.36940	+0.02020860	+0.91575787	
<i>e</i>	0.1911313	<i>i</i>	0.40298	+0.01533539	+0.40097287	
<i>P</i>	3.81	<i>H</i>	16.3	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1995 09 25	691	0.2-	0.7+	1999 11 09	704	0.1+	0.3-	1999 12 07	704	0.2+	0.4-
1995 09 25	691	0.1-	0.7+	1999 11 09	704	0.4+	0.2-	1999 12 07	704	0.5-	0.6+
1995 10 01	691	0.5-	0.2+	1999 11 09	704	0.2-	0.5-	1999 12 07	704	0.0	0.8+
1995 10 01	691	0.1-	0.3+	1999 11 09	704	0.1+	0.0	1999 12 08	691	0.3+	0.3-
1995 10 01	691	0.3-	0.3+	1999 11 12	704	0.0	0.2-	1999 12 08	691	0.3+	0.1-
1995 10 15	691	0.3+	0.4+	1999 11 12	704	0.2-	0.0	1999 12 08	704	0.7+	0.2+
1995 10 15	691	0.1+	0.6+	1999 11 12	704	0.0	0.7-	1999 12 08	704	0.9-	0.4+
1995 10 15	691	0.1+	0.7+	1999 11 12	704	0.0	0.6-	1999 12 08	691	0.3+	0.2-
1995 10 20	010	0.8+	1.9-	1999 11 12	704	0.4-	0.8-	1999 12 08	704	0.4+	0.2+
1995 10 20	010	0.3+	1.0-	1999 11 16	704	0.9-	0.8-	1999 12 08	704	0.2+	0.3+
1995 10 20	010	0.2-	0.9-	1999 11 16	704	0.2+	0.8+	1999 12 13	691	0.6+	0.1-
1995 10 23	010	(0.3-	3.3-)	1999 11 16	704	0.1+	1.1+	1999 12 13	691	0.6+	0.1-
1995 10 23	010	(0.2-	2.6-)	1999 11 16	704	0.6-	0.1-	1999 12 13	691	0.6+	0.0
1995 10 23	010	(0.4+	3.1-)	1999 11 16	704	0.2-	0.0	2000 01 08	691	0.1-	0.1+
1999 11 09	703	0.6+	0.1-	1999 12 05	703	1.2-	0.1+	2000 01 08	691	0.1-	0.4+
1999 11 09	703	0.2+	0.8+	1999 12 05	703	0.8-	0.1+	2000 01 08	691	0.3-	0.0
1999 11 09	703	0.5+	0.8-	1999 12 05	703	0.4+	0.7+	2000 01 10	691	0.3+	0.1-
1999 11 09	703	0.5-	0.3+	1999 12 05	703	1.0-	0.1+	2000 01 10	691	0.0	0.3-
1999 11 09	704	0.7+	0.5-	1999 12 07	704	0.0	0.8+	2000 01 10	691	0.1-	0.5-

1995 TP = 2000 AP₁₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	88.62268		(2000.0)	P	Q	Williams
<i>n</i>	0.27105444	ω	157.89914	+0.99825502	+0.04641606	
<i>a</i>	2.3646400	Ω	199.54660	-0.05527445	+0.95199825	
<i>e</i>	0.1437127	<i>i</i>	6.26360	+0.02077614	+0.30256385	
<i>P</i>	3.64	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1995 09 25	691	0.8-	0.4+	1995 10 13	817	0.2-	0.2-	1995 10 27	817	0.7-	0.2-
1995 09 25	691	0.5+	0.9+	1995 10 13	817	0.2-	0.2+	2000 01 07	704	0.9-	0.2+
1995 09 25	691	0.2+	0.3+	1995 10 13	817	0.3-	0.2+	2000 01 07	704	0.0	0.1+
1995 09 30	691	0.2-	0.6-	1995 10 14	817	0.6+	0.1+	2000 01 07	704	0.5-	0.3-
1995 09 30	691	0.1-	0.6-	1995 10 14	817	0.4+	0.0	2000 01 07	704	0.4+	0.2-
1995 10 12	817	0.2+	0.2+	1995 10 14	817	0.5+	0.3+	2000 01 07	704	1.0-	0.1-
1995 10 12	817	0.4+	0.1+	1995 10 23	817	0.2-	1.0-	2000 01 11	704	1.1+	0.8+
1995 10 12	817	0.2+	0.1+	1995 10 23	817	0.0	0.3-	2000 01 11	704	0.8+	0.1+
1995 10 12	817	0.2+	0.1+	1995 10 27	817	0.7-	0.0	2000 01 11	704	0.1+	0.4-

1995 TS₃ = 1999 VN₁₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	54.10811		(2000.0)	P	Q	Williams
<i>n</i>	0.23836350	ω	75.89651	+0.88737250	+0.46092344	
<i>a</i>	2.5761801	Ω	256.65581	-0.42722638	+0.81311675	
<i>e</i>	0.1910160	<i>i</i>	0.64407	-0.17334264	+0.35551474	
<i>P</i>	4.13	<i>H</i>	17.2	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1995 10 02	691	0.1-	0.0	1995 10 15	691	0.1-	0.2-	1999 11 09	691	0.5+	0.4-
1995 10 02	691	0.1+	0.1+	1995 10 21	691	0.1-	0.0	1999 11 09	691	0.1-	0.2+
1995 10 02	691	0.0	0.1+	1995 10 21	691	0.4+	0.0	1999 11 10	691	0.1+	0.1+
1995 10 15	691	0.2-	0.0	1995 10 21	691	0.0	0.2+	1999 11 10	691	0.3-	0.0
1995 10 15	691	0.0	0.1-	1999 11 09	691	0.0	0.2-	1999 11 10	691	0.1-	0.1+

1995 UD = 2000 AB₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	83.73073		(2000.0)	P	Q	Williams
<i>n</i>	0.28405815	ω	128.32469	+0.82783642	-0.55782092	
<i>a</i>	2.2919117	Ω	265.65626	+0.49431847	+0.77540368	
<i>e</i>	0.1119696	<i>i</i>	3.41244	+0.26520956	+0.29594756	
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1995 10 17	587	0.6-	0.4+	1995 10 27	587	0.2-	0.0	2000 01 05	704	0.2+	0.2+
1995 10 17	587	0.5-	0.6+	1995 10 27	587	0.2-	0.0	2000 01 05	704	0.3+	0.2+
1995 10 18	587	0.5-	0.4-	1995 10 27	587	0.1-	0.4+	2000 01 05	704	0.3+	0.0
1995 10 18	587	0.7-	0.6-	1995 10 31	587	0.2-	0.1+	2000 01 06	704	0.6-	0.2+
1995 10 19	587	0.8+	0.0	1995 10 31	587	0.6-	0.3-	2000 01 06	704	0.4-	0.2-
1995 10 19	587	0.5+	0.3+	1995 10 31	587	0.1+	0.1-	2000 01 06	704	0.2-	0.2-
1995 10 23	587	1.6+	0.3-	2000 01 05	704	0.5+	0.1-	2000 01 06	704	0.3-	0.1+
1995 10 23	587	0.5+	0.0	2000 01 05	704	0.2+	0.2-				

1995 UP = 2000 AW₁₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	105.13615		(2000.0)	P	Q	Williams
<i>n</i>	0.27640066	ω	94.79833	+0.96756828	+0.24351825	
<i>a</i>	2.3340492	Ω	251.11918	-0.25062926	+0.89220753	
<i>e</i>	0.1934795	<i>i</i>	4.07024	-0.03156903	+0.38034797	
<i>P</i>	3.57	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1995 10 19	587	0.2+	0.1+	1995 10 27	587	0.3+	0.3-	2000 01 05	704	0.3-	1.4+
1995 10 19	587	0.2-	0.2+	1995 10 31	587	0.1-	0.1-	2000 01 05	704	0.5+	0.2-
1995 10 20	587	0.8-	0.5-	1995 10 31	587	0.4-	0.2-	2000 01 07	704	0.0	0.4-
1995 10 20	587	0.2-	0.3+	1995 10 31	587	0.3-	0.1+	2000 01 07	704	0.0	0.3-
1995 10 23	587	0.2+	0.6+	1997 03 12	704(71.2-	29.1+)		2000 01 07	704	0.2-	0.4-
1995 10 23	587	0.8+	0.1+	1997 03 12	704(64.9-	28.0+)		2000 01 07	704	0.1-	0.2-
1995 10 27	587	0.2+	0.1-	2000 01 05	704	0.3+	0.2+				
1995 10 27	587	0.4+	0.0	2000 01 05	704	0.1-	0.1+				

1995 UQ = 1999 VW₁₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	141.46351		(2000.0)	P	Q	Williams
<i>n</i>	0.25718835	ω	294.22100	-0.10963874	+0.99122108	
<i>a</i>	2.4488858	Ω	329.20265	-0.85156695	-0.13201323	
<i>e</i>	0.1821754	<i>i</i>	8.29794	-0.51265298	+0.00729904	
<i>P</i>	3.83	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1995 10 19	560	0.0	0.5+	1995 10 26	560	1.0-	0.1-	1999 11 03	704	1.0-	0.3-
1995 10 19	560	0.2+	0.1+	1995 10 26	560	0.8-	1.8+	1999 11 03	704	0.2-	0.9-
1995 10 19	560	0.2+	0.8+	1995 11 02	560	(2.3+	1.5-)	1999 11 03	704	0.6+	0.7-
1995 10 20	560	1.0-	1.4-	1995 11 02	560	1.6+	0.4-	1999 11 03	704	0.1-	0.3-
1995 10 20	560	1.6+	0.5-	1995 11 02	560	0.8-	0.9-	1999 11 09	703	0.1-	0.4+
1995 10 20	560	(2.4+	0.9+)	1998 04 29	566	0.2-	0.2+	1999 11 09	703	0.3-	0.1-
1995 10 21	560	0.6-	0.5+	1998 04 29	566	0.0	0.2+	1999 11 09	703	0.3+	0.0
1995 10 21	560	(0.5+	2.4+)	1998 04 29	566	0.2+	0.4-	1999 11 09	703	0.6-	1.4+
1995 10 22	560	(1.3+	4.8-)	1999 10 28	703	0.7-	0.3+	1999 11 11	703	0.0	1.1-
1995 10 22	560	(0.6-	5.1-)	1999 10 28	703	0.1+	1.1+	1999 11 11	703	0.4+	0.2+
1995 10 22	560	(0.3+	3.6-)	1999 10 28	703	0.0	0.1+	1999 11 11	703	0.5+	0.8+
1995 10 26	560	0.7+	0.9-	1999 10 28	703	0.5-	0.5-	1999 11 11	703	1.5+	0.1-

1995 UA₂ = 2000 AL₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	63.69510		(2000.0)			P		Q	
<i>n</i>	0.28104498	ω	303.02970			+0.56230506		-0.81059787	
<i>a</i>	2.3082641	Ω	111.90680			+0.80526278		+0.49178287	
<i>e</i>	0.1242316	<i>i</i>	10.15222			+0.18805550		+0.31793192	
<i>P</i>	3.51	<i>H</i>	15.1		<i>G</i>	0.15		<i>U</i>	5
Residuals in seconds of arc									
1995 10 20	587	0.3+	0.1-	1999 12 07	704	0.6-	0.2-	1999 12 30	699 (1.3+ 2.2+)
1995 10 20	587	0.1+	0.7-	1999 12 07	704	1.3+	1.1-	1999 12 30	699 0.3+ 0.2-
1995 10 21	587	0.2+	1.2-	1999 12 07	704	0.6+	0.5-	2000 01 04	704 0.4+ 0.1-
1995 10 23	587	0.0	0.1-	1999 12 07	704	0.8+	0.6-	2000 01 04	704 0.1+ 0.1+
1995 10 24	587	1.2+	1.1+	1999 12 15	703	0.5-	0.3+	2000 01 04	704 0.0 0.2-
1995 10 24	587	0.1+	0.3-	1999 12 15	703	0.5-	0.4-	2000 01 04	704 0.0 0.1-
1995 10 24	587	0.1+	0.3-	1999 12 15	703	0.4-	1.2+	2000 01 04	704 0.4- 0.6-
1995 10 26	587	0.4-	1.2+	1999 12 15	703	0.5+	0.1+	2000 01 06	704 0.0 0.4+
1995 10 26	587	0.4-	1.4+	1999 12 18	699	0.6+	0.3+	2000 01 06	704 0.2- 0.1+
1995 10 31	587	0.7-	0.6-	1999 12 18	699	0.4-	0.1+	2000 01 06	704 0.1+ 0.0
1995 10 31	587	0.6-	0.1-	1999 12 18	699	0.3-	0.5-	2000 01 06	704 0.1- 0.6+
1999 12 07	704	0.5-	0.7-	1999 12 30	699	0.6-	1.6+		

1995 UC₄ = 2000 AG₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	61.64178		(2000.0)			P		Q			
<i>n</i>	0.26334012	ω	355.50535			+0.85864956		-0.51171698			
<i>a</i>	2.4105975	Ω	35.32279			+0.47184038		+0.76669034			
<i>e</i>	0.1835332	<i>i</i>	2.91857			+0.20021884		+0.38772625			
<i>P</i>	3.74	<i>H</i>	15.4		<i>G</i>	0.15		<i>U</i>	4		
Residuals in seconds of arc											
1995 10 20	411	0.1+	1.4-	1995 11 09	411	1.0-	0.8-	2000 01 03	704	0.7+	0.1-
1995 10 20	411	0.2+	0.3+	1995 11 18	411	1.3+	1.0+	2000 01 03	704	0.1+	0.4-
1995 10 25	411	0.1+	0.7+	1995 11 18	411	0.2+	0.4-	2000 01 03	704	0.0	0.1-
1995 10 25	411	0.4-	0.5+	1995 11 28	691	0.1+	0.6-	2000 01 03	704	0.0	0.9-
1995 10 27	411	0.1+	0.6+	1995 11 28	691	0.8+	1.5-	2000 01 04	704	0.2-	0.2-
1995 10 27	411	0.6+	0.0	1995 11 28	691	0.4+	0.6-	2000 01 04	704	0.2-	0.3+
1995 11 01	411	1.1-	0.8+	1999 12 15	704	0.4-	0.2-	2000 01 04	704	0.2-	0.1-
1995 11 01	411	0.5-	0.5+	1999 12 15	704	0.3+	0.2-	2000 01 04	704	0.1+	0.9+
1995 11 09	411	0.4-	0.2+	1999 12 15	704	0.0	1.6+				

1995 UE₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	30.53921		(2000.0)			P		Q			
<i>n</i>	0.26873819	ω	211.76608			+0.20220950		-0.97592880			
<i>a</i>	2.3782078	Ω	226.70934			+0.92039594		+0.21788042			
<i>e</i>	0.0729871	<i>i</i>	6.44435			+0.33463807		-0.00954516			
<i>P</i>	3.67	<i>H</i>	14.2		<i>G</i>	0.15		<i>U</i>	5		
Residuals in seconds of arc											
1995 10 20	411	0.5+	0.5-	1995 11 09	411	0.9-	0.9-	2000 01 05	046	0.3-	0.4+
1995 10 20	411	0.6-	0.6+	1995 11 18	411	0.3-	0.2+	2000 01 07	704	0.1-	0.2-
1995 10 25	411	0.2+	0.4-	1995 11 18	411	0.5+	0.1+	2000 01 07	704	0.2+	0.6-
1995 10 25	411	0.6-	0.2+	2000 01 05	704	0.1-	0.0	2000 01 07	704	0.3-	0.4-
1995 10 25	411	1.0+	0.1-	2000 01 05	704	0.0	0.1+	2000 01 07	704	0.2+	0.8-
1995 10 27	411	0.1-	0.8+	2000 01 05	704	0.1-	0.2+	2000 01 07	704	1.1+	1.1-
1995 10 27	411	0.2-	0.1+	2000 01 05	704	0.2+	0.6+	2000 01 08	046	0.1+	0.4+
1995 11 01	411	0.1+	0.1-	2000 01 05	704	0.2+	0.2+	2000 01 08	046	0.1+	0.3+
1995 11 01	411	0.2+	0.4-	2000 01 05	046	0.8-	0.2+	2000 01 08	046	0.1-	0.2+
1995 11 09	411	0.1+	0.2+	2000 01 05	046	0.3-	0.0	2000 01 08	046	0.1+	0.4+

1995 UQ₄ = 1937 VR = 1955 VP = 1966 VD

Id. T. Kobayashi

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	95.09200		(2000.0)			P		Q				
<i>n</i>	0.27192007	ω	318.24298			+0.96649173		-0.17373017				
<i>a</i>	2.3596189	Ω	52.75102			+0.24843251		+0.81835562				
<i>e</i>	0.1948890	<i>i</i>	13.73326			-0.06461441		+0.54782470				
<i>P</i>	3.62	<i>H</i>	12.9			<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc												
1937 11 03	029	(10.2-	14.2+)	Y	1995 11 26	411	0.7+	0.0	1999 12 30	704	0.9+	1.3-
1937 11 03	029	(5.8-	12.0+)	Y	1995 12 09	411	0.1-	0.0	1999 12 30	704	0.1-	0.4-
1955 11 10	760	0.0	0.0		1995 12 24	411	0.7-	0.8+	1999 12 30	704	0.2-	0.8-
1955 11 10	760	(0.1-	6.4-)		1995 12 24	411	0.6-	0.2+	1999 12 31	610	0.2+	0.3-
1966 11 11	095	(2.8+	5.9-)		1996 01 08	411	0.5-	0.2+	1999 12 31	610	0.2+	0.4-
1995 10 25	411	0.2-	0.1+		1996 01 08	411	0.3-	0.2+	1999 12 31	610	0.3+	0.6-
1995 10 25	411	0.0	0.2-		1999 11 17	703	0.0	0.5+	1999 12 31	610	0.3+	0.7-
1995 10 25	372	0.9-	1.4+		1999 11 17	703	0.1+	0.8+	1999 12 31	610	0.3+	0.8-
1995 10 26	411	0.2-	0.2-		1999 11 17	703	0.1-	0.5+	2000 01 03	610	0.2-	0.6+
1995 10 26	411	0.1+	0.1+		1999 11 17	703	0.1+	0.5+	2000 01 03	610	0.2-	0.4+
1995 10 26	372	0.3-	0.7-		1999 12 12	704	0.2-	0.1+	2000 01 03	610	0.2-	0.3+
1995 11 02	411	0.5+	0.3-		1999 12 12	704	0.5-	0.2+	2000 01 03	610	0.2-	0.0
1995 11 02	411	0.3+	0.3-		1999 12 12	704	0.2-	0.3+	2000 01 03	610	0.1-	0.2-
1995 11 09	411	0.4+	0.6-		1999 12 12	704	0.4-	0.4+	2000 01 11	699	0.2+	0.5+
1995 11 09	411	0.3+	0.2-		1999 12 12	704	0.5-	0.8+	2000 01 11	699	0.5-	0.4+
1995 11 09	411	0.0	0.4-		1999 12 30	704	0.6-	0.3-	2000 01 11	699	0.5+	0.6+
1995 11 26	411	0.7+	0.1+		1999 12 30	704	0.5+	0.8-				

1995 UF₈ = 1999 XF₂₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	238.62564		(2000.0)		P		Q				
<i>n</i>	0.26999626	<i>ω</i>	191.09785		−0.63747840		+0.75431845				
<i>a</i>	2.3708144	<i>Ω</i>	39.57849		−0.68669340		−0.46389351				
<i>e</i>	0.0787364	<i>i</i>	14.25841		−0.34939012		−0.46454978				
<i>P</i>	3.65	<i>H</i>	13.6		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1995 10 27	411	0.0	0.5−	1995 11 18	411	0.7+	0.1−	1999 12 15	704	0.0	0.1−
1995 10 27	411	0.0	0.7+	1995 11 18	411	0.4−	0.1+	1999 12 15	704	0.7+	0.2−
1995 11 01	411	0.4+	0.1−	1999 12 13	704	0.6+	0.4+	1999 12 15	704	0.1+	1.1−
1995 11 01	411	0.5+	0.2−	1999 12 13	704	0.4−	0.3+	1999 12 30	704	0.3−	0.0
1995 11 03	411	0.4−	0.4+	1999 12 13	704	0.6−	0.1+	1999 12 30	704	0.2−	0.1−
1995 11 03	411	0.1−	0.0	1999 12 13	704	0.3−	0.2+	1999 12 30	704	0.0	0.2+
1995 11 11	411	0.3−	0.4−	1999 12 15	704	0.6−	0.3+	1999 12 30	704	0.5+	0.3+
1995 11 11	411	0.2−	0.1+	1999 12 15	704	0.0	0.3−	1999 12 30	704	0.6+	0.1−

1995 UQ₁₂ = 2000 AQ₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	60.22214		(2000.0)		P		Q				
<i>n</i>	0.27773877	ω	45.35625		+0.54898934		-0.83578541				
<i>a</i>	2.3265463	Ω	11.35515		+0.75401216		+0.49079951				
<i>e</i>	0.1987111	<i>i</i>	2.49488		+0.36066102		+0.24612718				
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i>	0.15		<i>U</i>	4			
Residuals in seconds of arc											
1995 10 17	691	0.5-	0.3+	1997 04 11	704	1.5+	0.4-	2000 01 05	699	0.3+	0.7+
1995 10 17	691	0.3-	0.1+	1999 11 11	703	0.3+	0.4+	2000 01 05	699	0.2+	0.1+
1995 10 17	691	0.2-	0.1+	1999 11 11	703	1.0-	0.4-	2000 01 05	699	0.7+	0.3+
1995 10 22	691	0.4+	0.1+	1999 11 11	703	0.8+	0.4+	2000 01 06	704	0.1-	0.0
1995 10 22	691	0.0	0.3+	1999 11 11	703	(0.0	2.7+)	2000 01 06	704	0.3+	0.0
1995 10 22	691	0.1+	0.2-	2000 01 04	704	0.0	0.1+	2000 01 06	704	0.6-	0.6+
1995 10 28	691	0.5+	0.3-	2000 01 04	704	0.1+	0.6-	2000 01 06	704	0.5-	0.2-
1995 10 28	691	0.0	0.2-	2000 01 04	704	0.2+	0.3-	2000 01 06	704	0.4-	0.0
1995 10 28	691	0.2+	0.3-	2000 01 04	704	0.0	0.5-				
1997 04 11	704	1.6-	0.1+	2000 01 04	704	0.1-	0.4-				

2000 JAN. 24

M.P.C. 37649

1995 US₁₂ = 2000 AO₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	40.64426	ω	70.62688	+0.12266815	−0.99239974		
<i>a</i>	2.3237842	Ω	12.33915	+0.89255352	+0.10601526		
<i>e</i>	0.1834435	<i>i</i>	2.61805	+0.43393632	+0.06247817		
<i>P</i>	3.54	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 17	691	0.2−	0.2+	1995 10 28	691	0.3+	0.1−	2000 01 04	704	0.1−	0.6−
1995 10 17	691	0.3−	0.0	1995 10 28	691	0.0	0.1−	2000 01 04	704	0.0	0.1−
1995 10 17	691	0.1+	0.1−	1995 10 28	691	0.1−	0.1−	2000 01 06	704	0.5−	0.9+
1995 10 22	691	0.1+	0.3+	2000 01 04	704	0.3−	0.3−	2000 01 06	704	0.0	0.3−
1995 10 22	691	0.0	0.0	2000 01 04	704	0.0	0.6+	2000 01 06	704	0.9+	0.3−
1995 10 22	691	0.1+	0.2−	2000 01 04	704	0.1+	0.3−	2000 01 06	704	0.1−	0.5+

1995 UC₁₇ = 1999 XZ₁₇₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	102.42039	ω	305.05926	+0.98028308	−0.15769567		
<i>a</i>	2.3413492	Ω	64.27741	+0.19474060	+0.87312221		
<i>e</i>	0.1330986	<i>i</i>	7.59470	−0.03348414	+0.46129132		
<i>P</i>	3.58	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1995 10 17	691	0.3−	0.2+	1998 06 24	704	0.1−	0.2−	1999 12 10	704	0.1−	0.6−
1995 10 17	691	0.1−	0.3+	1998 06 24	704	0.9−	1.1+	1999 12 10	704	0.2−	0.3−
1995 10 17	691	0.1−	0.1+	1998 07 24	566	1.0−	0.7−	1999 12 15	704	0.3−	0.0
1995 10 25	691	0.1−	0.0	1998 07 24	566	1.0−	0.8−	1999 12 15	704	0.4−	0.7−
1995 10 25	691	0.1−	0.0	1998 07 24	566	0.9−	0.8−	1999 12 15	704	0.3−	0.0
1995 10 25	691	0.1−	0.1+	1999 11 16	704	0.1+	0.2+	1999 12 15	704	0.1−	0.2+
1995 11 16	808	(1.2+ 2.2+)		1999 11 16	704	0.6+	0.4+	1999 12 15	704	0.2−	0.3−
1995 11 16	808	(1.8+ 2.1−)		1999 11 16	704	0.2−	0.4+	2000 01 02	704	0.3−	0.8+
1995 11 20	121	0.7+ 0.4−		1999 11 16	704	0.9+	0.1+	2000 01 02	704	0.2+	0.0
1995 11 20	121	0.0	0.1+	1999 11 16	704	1.1+	0.2−	2000 01 02	704	0.1+	1.6+
1998 06 24	704	1.9+	1.6+	1999 12 10	704	0.1+	0.3+	2000 01 02	704	0.1−	0.0
1998 06 24	704	1.2+	1.5+	1999 12 10	704	0.5+	0.5−	2000 01 02	704	0.8−	1.0+
1998 06 24	704	0.6+	0.7+	1999 12 10	704	0.2+	0.4−				

1995 UE₄₅

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	359.36168	ω	14.09773	+0.46713811	−0.85892180		
<i>a</i>	2.6055544	Ω	48.52586	+0.78166907	+0.29025263		
<i>e</i>	0.1670244	<i>i</i>	16.26456	+0.41324985	+0.42190846		
<i>P</i>	4.21	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 10 28	400	1.2−	1.6+	1999 09 14	704	0.3−	0.1−	1999 12 03	704	0.6+	0.1−
1995 10 28	400	(0.7+ 2.9+)		1999 09 14	704	0.5−	0.3−	1999 12 13	699	0.4+	0.5+
1995 10 30	400	(2.4+ 0.5−)		1999 10 02	704	0.4+	0.3−	1999 12 13	699	0.5−	0.3−
1995 10 30	400	(2.2+ 0.4−)		1999 10 02	704	0.5+	0.2+	1999 12 13	699	0.1−	0.7−
1995 11 01	894	1.0−	0.3−	1999 10 02	704	0.1+	0.2+	1999 12 13	699	0.4+	0.7+
1995 11 01	894	1.5−	0.7+	1999 10 02	704	0.4−	0.1+	1999 12 13	699	0.2−	0.3+
1995 11 02	894	0.9−	1.4+	1999 10 02	704	0.4−	0.0	1999 12 13	699	0.3−	0.5+
1995 11 02	894	0.0	0.4−	1999 11 07	704	0.3+	1.2−	1999 12 14	699	0.3−	0.5+
1995 11 12	400	0.5+	0.3−	1999 11 07	704	0.2+	1.1−	1999 12 14	699	1.8−	1.5+
1995 11 15	400	0.9+	0.3−	1999 11 07	704	0.8+	0.8−	1999 12 14	699	0.9−	0.3+
1995 11 15	400	1.8+	1.0−	1999 11 07	704	0.7+	0.7−	2000 01 08	704	0.1+	0.5−
1995 11 15	894	0.2+	0.2+	1999 11 07	704	0.8+	0.9−	2000 01 08	704	0.6+	0.3−
1995 11 15	894	0.5+	0.1−	1999 12 03	704	0.1+	0.2−	2000 01 08	704	0.5−	0.4+
1999 09 14	704	0.5+	0.1+	1999 12 03	704	0.1+	0.3−	2000 01 08	704	0.3+	0.1+
1999 09 14	704	0.2−	0.7+	1999 12 03	704	0.3+	0.0	2000 01 08	704	1.1+	0.4+
1999 09 14	704	1.3−	1.2+	1999 12 03	704	0.1+	0.3−				

1995 VC = 1999 XC₁₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	28.27085	ω	43.37224	+0.14617138	−0.98869147		
<i>a</i>	2.4473034	Ω	38.25873	+0.89220261	+0.11712121		
<i>e</i>	0.1579781	<i>i</i>	3.10245	+0.42732707	+0.09365786		
<i>P</i>	3.83	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 01	411	0.3−	1.5+	1999 11 16	704	0.1+	0.7−	2000 01 03	704	0.5+	0.6+
1995 11 01	411	1.3−	0.3−	1999 11 16	704	1.2+	0.8−	2000 01 03	704	0.2−	0.3+
1995 11 02	411	0.3+	0.3+	1999 11 16	704	0.1−	0.0	2000 01 03	704	0.2+	0.0
1995 11 02	411	0.7+	0.4−	1999 12 10	704	0.1+	0.7+	2000 01 03	704	0.0	0.2+
1995 11 03	411	0.5+	0.3−	1999 12 10	704	0.1−	0.2+	2000 01 04	704	0.3−	0.2+
1995 11 03	411	0.4−	0.5−	1999 12 10	704	0.7−	0.9+	2000 01 04	704	0.3−	0.6+
1995 11 11	411	0.4−	0.8+	1999 12 15	704	0.4−	0.8+	2000 01 04	704	0.3−	0.3+
1995 11 11	411	1.5+	0.1−	1999 12 15	704	0.1+	1.2+	2000 01 04	704	0.2−	0.6+
1995 11 26	411	0.6−	1.0−	1999 12 15	704	0.8+	0.0	2000 01 08	704	0.1+	0.7−
1995 11 26	411	0.1−	0.5+	1999 12 15	704	0.2+	0.5−	2000 01 08	704	0.0	1.0−
1999 11 16	704	1.4−	1.2−	1999 12 15	704	0.1−	0.9−	2000 01 08	704	0.1−	0.7−
1999 11 16	704	0.2+	0.1−	2000 01 03	704	0.4+	0.6−				

1995 VZ = 2000 AV₁₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	74.32588	ω	213.33410	+0.78597625	−0.61825028		
<i>a</i>	2.3699577	Ω	184.85722	+0.57425981	+0.73172354		
<i>e</i>	0.2157440	<i>i</i>	1.90548	+0.22905678	+0.28696210		
<i>P</i>	3.65	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1995 10 24	033	0.6+	1.2−	1995 11 29	411	1.2−	0.0	2000 01 05	704	0.2+	0.6+
1995 10 25	033	0.2−	1.2−	1997 04 03	704	1.1−	0.6−	2000 01 05	704	0.4−	0.2−
1995 10 25	033	1.3+	1.6−	1997 04 03	704	0.7+	0.8+	2000 01 05	704	0.1−	0.1+
1995 11 15	411	0.5+	0.1−	1997 04 03	704	0.0	0.4−	2000 01 05	704	0.5−	0.5+
1995 11 15	411	0.1+	0.7+	1997 04 03	704	0.9+	1.1+	2000 01 07	704	0.3+	0.2−
1995 11 16	411	0.2+	0.3+	1998 06 26	704	0.1−	0.3+	2000 01 07	704	0.3−	0.1−
1995 11 16	411	1.0+	0.3+	1998 06 26	704	1.4+	1.3−	2000 01 07	704	0.1−	0.8−
1995 11 24	411	0.2−	0.6+	1998 06 26	704	1.3−	0.6+	2000 01 07	704	0.4+	0.6−
1995 11 24	411	0.4−	0.6+	1998 06 26	704	(0.0 2.5+)		2000 01 07	704	0.0	0.7−
1995 11 27	372	(4.3− 0.0)		1998 06 26	704	(5.2− 2.0+)		2000 01 07	704	0.6+	0.2+
1995 11 27	372	(5.2− 2.1+)		1999 12 31	699	0.1−	0.7+	2000 01 07	704	0.0	0.4−
1995 11 28	372	1.8−	0.8+	1999 12 31	699	0.8−	0.3−	2000 01 07	704	0.1+	0.4−
1995 11 28	372	0.5−	1.8+	1999 12 31	699	(0.1− 2.1+)		2000 01 07	704	0.0	0.0
1995 11 29	411	0.3+	0.3−	2000 01 05	704	0.6−	0.7−	2000 01 07	704	0.7+	0.2+

1995 VH₁ = 2000 AN₁₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	96.10865		(2000.0)		P		Q	
n	0.27904441	ω	139.81472		+0.93223023		−0.33938921	
a	2.3192834	Ω	240.44930		+0.28378108		+0.90093362	
e	0.2109825	i	8.29784		+0.22453304		+0.27043221	
P	3.53	H	15.0		G	0.15	U	4

Residuals in seconds of arc

1995 11 15	400	0.1+	0.1−	1995 12 19	400	0.2+	0.5+	2000 01 08	704	0.1−	0.4−
1995 11 15	400	0.2−	0.3−	1995 12 19	400	0.2−	0.1+	2000 01 11	704	0.3+	0.1−
1995 11 16	400	0.2−	0.3+	2000 01 05	699	0.2−	0.7+	2000 01 11	704	0.1+	0.1+
1995 11 16	400	0.0	0.1+	2000 01 05	699	0.6+	0.4−	2000 01 11	704	0.1−	0.4+
1995 11 21	400	0.3+	0.3−	2000 01 05	699	0.6+	0.2+	2000 01 11	704	0.6−	0.3+
1995 11 21	400	0.0	0.4+	2000 01 08	704	0.5−	0.4−	2000 01 11	704	0.5+	0.6−
1995 11 25	400	0.1+	0.6−	2000 01 08	704	1.0−	0.0				
1995 11 25	400	0.1+	0.2−	2000 01 08	704	0.3+	0.0				

1995 VM₁ = 2000 AY₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.28733876	ω	288.31748	+0.98859471	−0.09639657				
<i>a</i>	2.2744335	Ω	77.33880	+0.13655726	+0.89774332				
<i>e</i>	0.1954699	<i>i</i>	6.81080	−0.06350283	+0.42984257				
<i>P</i>	3.43	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1995 11 13	905	0.4+	0.1+	1995 12 16	691	0.1+	0.3+	2000 01 06	704 0.5+ 0.1−
1995 11 13	905	0.3−	0.7−	1995 12 16	691	0.0	0.1+	2000 01 06	704 0.1− 0.4+
1995 11 15	400	0.8+	0.8−	1995 12 18	400	0.8−	1.0−	2000 01 06	704 0.8− 0.0
1995 11 15	400	0.9−	1.0−	1995 12 18	400	0.6+	0.5−	2000 01 06	699 1.3+ 0.3−
1995 11 16	400	0.7+	0.5−	1999 12 15	704	0.4−	0.3−	2000 01 06	704 0.5− 0.1+
1995 11 16	400	(2.5−	0.3−)	1999 12 15	704	0.3−	0.5−	2000 01 06	699 0.0 0.4+
1995 11 16	905	0.3−	0.0	1999 12 15	704	0.2+	0.5−	2000 01 06	699 0.2+ 0.3+
1995 11 16	905	0.1−	0.5+	2000 01 04	704	0.5+	0.1+	2000 01 08	704 0.8− 0.8−
1995 11 21	400	0.1+	1.0+	2000 01 04	704	0.5+	0.1+	2000 01 08	704 0.6− 0.3−
1995 11 21	400	0.1−	1.1+	2000 01 04	704	0.0	0.2−	2000 01 08	704 0.7− 0.4−
1995 11 25	400	0.8−	0.7+	2000 01 04	704	0.4+	0.3+	2000 01 08	704 0.9− 0.6+
1995 11 25	400	0.3+	0.6+	2000 01 04	704	0.4+	0.5+		
1995 12 16	691	0.1+	0.2+	2000 01 06	704	1.1+	0.5+		

1995 VN₁ = 1980 DH₁ = 2000 AR₁₃₈

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.23565574	ω	328.83486	+0.76473456	−0.59802461				
<i>a</i>	2.5958766	Ω	69.82517	+0.63119745	+0.62045022				
<i>e</i>	0.1701315	<i>i</i>	14.80745	+0.12950226	+0.50735400				
<i>P</i>	4.18	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc									
1980 02 20	033	0.5+	0.7−	1995 11 25	046	(2.2+	0.6+)	1995 12 21	905 0.3− 0.6+
1980 02 20	033	0.7−	0.2+	1995 11 26	046	0.2+	0.2+	2000 01 05	704 0.0 0.1+
1995 11 15	400	1.2+	1.2−	1995 11 26	046	0.3+	0.2+	2000 01 05	704 0.2+ 0.0
1995 11 15	400	0.5+	0.7−	1995 11 26	046	0.3+	0.1−	2000 01 05	704 0.3+ 0.2−
1995 11 16	400	(2.1−	1.0−)	1995 11 26	046	0.2+	0.1−	2000 01 05	704 0.5+ 0.1+
1995 11 16	400	0.2−	0.4−	1995 11 26	046	0.2+	0.0	2000 01 05	704 0.7+ 0.3+
1995 11 21	400	0.8−	0.3−	1995 12 18	400	0.2−	0.6+	2000 01 08	704 0.0 0.2−
1995 11 21	400	1.0−	0.9+	1995 12 18	400	0.2−	0.5+	2000 01 08	704 0.2− 0.2−
1995 11 25	400	1.2−	1.0+	1995 12 19	905	0.0	0.7−	2000 01 08	704 0.2− 0.0
1995 11 25	400	0.2−	0.5−	1995 12 19	905	0.5+	0.4+	2000 01 08	704 0.1− 0.7−
1995 11 25	046	0.0	1.0+	1995 12 21	905	0.0	0.3−	2000 01 08	704 0.2− 0.7−

1995 WC = 2000 AC₁₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.27670980	ω	151.96344	+0.94081430	−0.33011962				
<i>a</i>	2.3323105	Ω	227.52721	+0.28824800	+0.89846856				
<i>e</i>	0.2102731	<i>i</i>	5.97212	+0.17827379	+0.28943960				
<i>P</i>	3.56	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1995 11 16	411	0.8+	0.2+	1995 12 01	411	0.0	0.1+	2000 01 05	704 0.2+ 0.4−
1995 11 16	411	0.9−	0.3−	1995 12 08	411	0.3+	0.2−	2000 01 05	704 0.8− 0.7+
1995 11 17	411	0.5+	0.4+	1995 12 08	411	0.4−	0.0	2000 01 08	704 0.2+ 0.1+
1995 11 17	411	0.2−	0.5−	1996 01 15	691	0.0	0.4−	2000 01 08	704 0.0 0.4−
1995 11 24	411	0.1−	0.4+	1996 01 15	691	0.1+	0.0	2000 01 08	704 0.1− 0.3−
1995 11 24	411	0.2−	0.0	1996 01 15	691	0.1−	0.2−	2000 01 08	704 0.4− 0.4+
1995 11 27	411	0.1+	0.1+	2000 01 05	704	0.4+	0.2+	2000 01 08	704 0.2+ 0.1+
1995 11 27	411	0.5−	0.5+	2000 01 05	704	0.5−	0.4+		
1995 12 01	411	0.7+	0.5−	2000 01 05	704	0.8+	0.7−		

1995 WK = 1999 XX₁₆₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.26076968	ω	354.31399	+0.48383629	−0.86687932				
<i>a</i>	2.4264126	Ω	66.69859	+0.80800757	+0.38976990				
<i>e</i>	0.1208059	<i>i</i>	7.51349	+0.33619371	+0.31080488				
<i>P</i>	3.78	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1995 11 16	411	0.3+	1.0−	1995 12 08	411	0.9−	0.4−	1999 12 15	704 1.0+ 0.4−
1995 11 16	411	0.2+	0.5−	1995 12 19	566	0.7+	0.2−	1999 12 15	704 0.4+ 0.4−
1995 11 17	411	0.9+	1.5+	1995 12 19	566	0.7+	0.1−	2000 01 02	704 0.4− 0.4+
1995 11 17	411	0.3+	0.6+	1995 12 19	566	0.8+	0.2−	2000 01 02	704 0.1− 0.3−
1995 11 24	411	0.5+	0.0	1999 12 10	704	0.3−	0.4−	2000 01 02	704 0.5− 0.6−
1995 11 24	411	0.6−	0.2−	1999 12 10	704	0.6−	0.1+	2000 01 02	704 0.8− 0.5−
1995 11 27	411	0.2−	0.4+	1999 12 10	704	0.4+	0.8−	2000 01 04	704 1.0+ 0.5+
1995 11 27	411	0.1−	0.1+	1999 12 10	704	1.2−	0.3+	2000 01 04	704 0.3− 0.5+
1995 12 01	411	1.1−	1.0+	1999 12 15	704	0.1+	0.1+	2000 01 04	704 0.1− 0.7+
1995 12 01	411	0.5−	0.4−	1999 12 15	704	0.8+	0.2+	2000 01 04	704 0.3− 0.2+
1995 12 08	411	0.6−	0.5−	1999 12 15	704	0.6+	0.1−	2000 01 04	704 0.1− 0.4+

1995 WM = 1999 XY₂₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.26113996	ω	198.22401	+0.38117547	−0.92097634				
<i>a</i>	2.4241184	Ω	229.45268	+0.86087417	+0.38539951				
<i>e</i>	0.0978612	<i>i</i>	6.09427	+0.33704736	+0.05718219				
<i>P</i>	3.77	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc									
1995 11 16	411	0.4+	0.3−	1998 08 14	699	0.4+	0.8+	1999 12 14	704 0.2− 0.3+
1995 11 16	411	1.4+	0.4−	1998 08 14	699	0.3+	0.5−	1999 12 14	704 0.4− 0.3+
1995 11 17	411	0.4+	0.2−	1998 08 17	704	0.5+	1.0+	1999 12 15	704 0.4+ 0.5−
1995 11 17	411	0.7+	0.5+	1998 08 17	704	0.3+	0.9−	1999 12 15	704 0.5− 1.0−
1995 11 18	399	0.1−	1.0−	1998 08 17	704	0.5−	1.3−	1999 12 15	704 0.5− 0.4−
1995 11 18	399	1.8−	0.2+	1998 08 17	704	0.3−	0.3−	1999 12 15	704 0.5− 0.6−
1995 11 24	411	0.3−	0.3+	1999 11 17	704	0.2−	1.7+	1999 12 15	704 0.9− 0.1−
1995 11 24	411	0.7+	0.5−	1999 11 17	704	0.1+	0.1−	2000 01 05	704 1.2− 0.6−
1995 11 27	411	(3.5−	0.4−)	1999 11 17	704	1.2+	0.7−	2000 01 05	704 0.0 0.8−
1995 11 27	411	(2.8−	1.7+)	1999 11 17	704	1.3+	1.2−	2000 01 05	704 0.0 0.5−
1995 12 01	411	0.4−	0.2−	1999 12 06	704	0.0	0.5+	2000 01 05	704 0.7+ 0.6−
1995 12 01	411	0.8−	0.1−	1999 12 06	704	0.1−	1.0+	2000 01 07	704 0.1+ 0.1−
1995 12 08	411	0.1+	0.5+	1999 12 06	704	0.5−	0.5+	2000 01 07	704 0.2+ 0.0
1995 12 08	411	0.2−	1.8+	1999 12 06	704	0.8−	1.4+	2000 01 07	704 1.1+ 0.1−
1996 01 14	691	0.1+	0.4−	1999 12 06	704	0.2+	0.1+	2000 01 07	704 0.3+ 0.2+
1996 01 14	691	0.1−	0.9−	1999 12 14	704	0.2+	0.8+	2000 01 07	704 0.7+ 0.1−
1996 01 14	691	0.0	0.3−	1999 12 14	704	0.0	1.1+		
1998 08 14	699	0.6−	1.2+	1999 12 14	704	0.2−	0.2+		

1995 WC₁ = 2000 AW₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	86.45900	(2000.0)		P		Q			
n	0.27074185	ω	145.22004	+0.93518696	-0.35351896				
a	2.3664598	Ω	235.49639	+0.31881235	+0.86642588				
e	0.2176438	i	1.47452	+0.15422072	+0.35260537				
P	3.64	H	14.9	G	0.15	U	5		
Residuals in seconds of arc									
1995 11 16	399	(1.0+	3.0+)	1995 11 24	369	0.3+	0.0	1995 11 29	369 1.1- 0.3-
1995 11 16	399	1.7+	0.1+	1995 11 24	369	0.0	0.4-	1995 12 17	369 0.2+ 0.4+
1995 11 17	399	0.7-	1.7+	1995 11 27	691	0.1-	0.0	1995 12 17	369 0.4- 0.1+
1995 11 17	399	1.5-	0.5+	1995 11 27	691	0.2+	0.1+	1995 12 17	369 0.3- 0.3-
1995 11 18	369	0.0	0.3+	1995 11 27	691	0.1+	0.1-	2000 01 05	704 0.4+ 0.9-
1995 11 18	369	0.1-	0.1+	1995 11 27	369	0.1+	0.0	2000 01 05	704 0.7+ 0.0
1995 11 18	369	0.2-	0.6-	1995 11 27	369	0.3+	0.3-	2000 01 05	704 0.4+ 0.6+

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1995 11 21	399	1.2−	1.4−	1995 11 27	369	0.6+	0.5−	2000 01 06	704	0.1−	0.9+
1995 11 21	399	0.0	1.4+	1995 11 29	369	1.1+	0.4−	2000 01 06	704	0.5−	0.1−
1995 11 24	369	0.2+	0.2−	1995 11 29	369	0.8+	0.3−	2000 01 06	704	0.9−	0.3−

1995 WP₁ = 1999 XM₁₃₂

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	346.40665	(2000.0)		P	Q		
<i>n</i>	0.25500869	ω	166.48482	−0.69146799	−0.72086222		
<i>a</i>	2.4628203	Ω	327.22338	+0.65442324	−0.59737396		
<i>e</i>	0.1838671	<i>i</i>	5.00387	+0.30594484	−0.35142854		
<i>P</i>	3.86	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 17	966	0.2+	0.2+	1999 12 12	704	0.0	0.1−	1999 12 15	704	0.4+	0.4−
1995 11 17	966	0.3+	0.3+	1999 12 12	704	0.0	0.2−	1999 12 15	704	0.4+	0.0
1995 11 17	966	0.2+	0.0	1999 12 12	704	0.2+	0.3+	1999 12 15	704	0.8+	0.9−
1995 11 18	966	0.1+	0.4+	1999 12 12	704	0.1+	0.4−	2000 01 02	704	0.6+	0.3−
1995 11 18	966	0.8−	0.4−	1999 12 12	704	0.1−	0.2+	2000 01 02	704	0.3+	0.3+
1995 12 10	966	0.0	0.2−	1999 12 13	704	0.2−	0.1−	2000 01 02	704	0.3−	0.0
1995 12 10	966	0.0	0.4−	1999 12 13	704	0.2−	0.1+	2000 01 02	704	0.3+	0.8+
1998 08 23	704	0.9+	1.8−	1999 12 13	704	0.7−	0.0	2000 01 04	704	0.1+	0.2−
1998 08 23	704	0.1−	1.1+	1999 12 13	704	0.6−	0.2+	2000 01 04	704	0.1−	0.4+
1998 08 23	704	0.6−	0.4−	1999 12 13	704	0.6−	0.5+	2000 01 04	704	0.0	0.2−
1998 08 23	704	0.3−	1.1+	1999 12 15	704	0.2+	0.1−	2000 01 04	704	0.7−	0.6+
1998 08 23	704	(3.6−	0.5−)	1999 12 15	704	0.2+	0.4+	2000 01 04	704	0.2−	0.7−

1995 WY₄ = 1994 LA₄ = 2000 AT₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	72.28703	(2000.0)		P	Q		
<i>n</i>	0.26886922	ω	305.06539	+0.80748456	−0.58712388		
<i>a</i>	2.3774350	Ω	90.95404	+0.55808927	+0.72905161		
<i>e</i>	0.2180727	<i>i</i>	3.27072	+0.19106294	+0.35180861		
<i>P</i>	3.67	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 06 03	809(18.5−	2.7+)	1995 11 25	411	0.3−	0.5+	2000 01 04	704	0.1+	1.1−	
1994 06 03	809(16.8−	2.9+)	1995 11 28	411	0.3+	0.3−	2000 01 04	704	0.1−	0.4−	
1994 06 03	809(11.4−	1.5+)	1995 11 28	411	0.4+	0.4−	2000 01 04	704	0.5−	0.4−	
1994 06 04	809	0.1−	0.7−	1995 12 08	411	0.6−	0.4−	2000 01 05	699	0.6+	1.3+
1994 06 04	809	0.5+	0.3+	1995 12 08	411	0.2−	0.2+	2000 01 05	699	0.7+	0.9+
1994 06 04	809	0.5−	1.0+	1995 12 17	411	0.7−	0.3−	2000 01 05	699	1.0+	0.5+
1995 11 07	327	0.9+	0.1−	1995 12 17	411	1.1−	0.4−	2000 01 06	704	0.9−	0.2+
1995 11 07	327	0.7+	0.4+	1997 04 07	566	0.5−	0.9−	2000 01 06	704	0.4−	0.1+
1995 11 07	327	0.9+	0.0	1997 04 07	566	0.5+	0.8−	2000 01 06	704	0.6+	0.5+
1995 11 24	411	0.9−	0.6−	1997 04 07	566	0.6−	0.6−	2000 01 06	704	0.1−	0.3+
1995 11 24	411	0.6+	0.3−	2000 01 04	704	0.1+	0.6−	2000 01 06	704	0.2+	0.5+
1995 11 25	411	0.2+	0.1+	2000 01 04	704	1.1−	0.0				

1995 WV₆ = 2000 AN₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	0.01583	(2000.0)		P	Q		
<i>n</i>	0.26488007	ω	98.06209	−0.65461208	−0.75542415		
<i>a</i>	2.4012453	Ω	32.88470	+0.67119432	−0.59819166		
<i>e</i>	0.1448545	<i>i</i>	3.01839	+0.34782353	−0.26739689		
<i>P</i>	3.72	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 16	358	0.9+	0.4+	1999 12 15	704	0.1−	0.7+	2000 01 04	704	1.3−	0.3−
1995 11 16	358	0.4−	1.6−	1999 12 15	704	0.1+	0.2+	2000 01 04	704	0.3−	0.5−
1995 11 17	358	(1.0+	3.1−)	1999 12 15	704	0.3+	0.0	2000 01 04	704	0.1+	0.1−
1995 11 17	358	(4.8−	2.1−)	1999 12 15	704	0.1−	0.0	2000 01 04	704	0.5+	0.0
1995 11 30	896	0.7+	0.3−	2000 01 03	704	0.4−	0.1−	2000 01 04	704	0.1+	0.3+
1995 11 30	896	0.5−	0.4+	2000 01 03	704	0.0	0.7−	2000 01 04	704	0.3+	0.1−
1995 12 20	358	0.6−	0.7+	2000 01 03	704	0.2−	0.1−	2000 01 04	704	0.0	0.4+

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1995 12 20	358	0.3−	0.5+	2000 01 03	704	0.2+	0.2+	2000 01 04	704	0.2+	0.2+
1999 12 15	704	0.1+	0.3+	2000 01 03	704	0.5+	0.4−				

1995 WE₇ = 1999 XT₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	92.84147	(2000.0)		P	Q		
<i>n</i>	0.25547529	ω	308.59420	+0.99338901	+0.00445967		
<i>a</i>	2.4598207	Ω	51.45258	+0.05118107	+0.87723079		
<i>e</i>	0.0977856	<i>i</i>	8.43404	−0.10275593	+0.48004818		
<i>P</i>	3.86	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 21	358	(2.2−	0.5+)	1999 11 16	704	0.1−	0.3−	1999 12 15	704	0.2+	0.1+
1995 11 22	358	0.7−	0.0	1999 11 16	704	0.1−	0.4+	1999 12 15	704	0.1+	0.2+
1995 11 22	358	(2.6−	1.4−)	1999 11 16	704	0.1−	0.3−	2000 01 02	704	0.1+	0.1−
1995 11 30	896	0.9+	0.7+	1999 11 16	704	0.5+	0.7+	2000 01 02	704	0.2−	0.2−
1995 11 30	896	(3.1+	0.7+)	1999 11 16	704	0.3−	0.6−	2000 01 02	704	0.2−	1.1−
1995 12 21	358	0.8−	0.0	1999 11 16	704	0.3+	0.1+	2000 01 02	704	1.5−	0.3−
1995 12 21	358	0.3+	0.3−	1999 11 16	704	0.0	0.2−	2000 01 04	704	0.1−	0.8−
1999 11 14	704	0.4−	0.1−	1999 12 12	704	0.2+	0.0	2000 01 04	704	0.1+	0.2+
1999 11 14	704	0.3−	0.1−	1999 12 12	704	0.2+	0.2+	2000 01 04	704	0.0	1.2+
1999 11 14	704	0.2+	0.1−	1999 12 12	704	0.1+	0.1−	2000 01 04	704	0.4−	0.1+
1999 11 14	704	0.3+	0.1+	1999 12 12	704	0.1−	0.2+	2000 01 04	704	0.4+	0.6+
1999 11 16	704	0.1+	0.4−	1999 12 12	704	0.5+	0.7−				
1999 11 16	704	0.6−	1.1+	1999 12 15	704	0.4+	0.3+				

1995 WZ₇ = 1992 AH₄ = 1999 XK₁₆₆

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	54.58573	(2000.0)		P	Q		
<i>n</i>	0.23744253	ω	93.63342	+0.96329763	−0.19517840		
<i>a</i>	2.5828372	Ω	277.68573	+0.10411929	+0.90445961		
<i>e</i>	0.1777369	<i>i</i>	10.71718	+0.24742039	+0.37928644		
<i>P</i>	4.15	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 01 02	033	0.1−	0.1−	1995 12 30	385	0.7+	0.8+	1999 12 15	704	0.5+	0.4−
1992 01 03	033	0.3−	0.3−	1995 12 30	385	1.4+	1.7+	1999 12 31	699	0.8−	0.4+
1995 11 29	411	0.5−	0.1+	1999 09 03	704	1.5−	0.6+	1999 12 31	699	0.0	0.7+
1995 11 29	411	0.3+	0.0	1999 09 03	704	0.0	1.1−	1999 12 31	699	0.0	1.0+
1995 11 30	411	0.1+	0.1+	1999 09 03	704	0.3+	1.0−	2000 01 03	704	0.3+	0.8+
1995 11 30	411	0.2+	0.6−	1999 12 10	704	0.3+	0.5+	2000 01 03	704	0.2−	0.5+
1995 12 01	411	0.3−	0.3−	1999 12 10	704	0.6+	0.5+	2000 01 03	704	0.3+	0.6+
1995 12 01	411	0.1−	0.1−	1999 12 10	704	0.3+	0.1−	2000 01 03	704	0.6−	0.8+
1995 12 09	411	0.5+	0.1−	1999 12 10	704	0.6+	0.3−	2000 01 03	704	0.7+	0.6−
1995 12 09	411	0.4+	1.0−	1999 12 10	704	0.1−	0.1+	2000 01 04	704	0.2−	0.1+
1995 12 22	411	1.8−	0.8−	1999 12 13	703	0.3−	0.2+	2000 01 04	704	0.5−	0.1+
1995 12 22	411	0.1−	0.9−	1999 12 13	703	0.8−	0.4+	2000 01 04	704	0.2−	0.4+
1995 12 29	385	0.0	0.6−	1999 12 13	703	0.3−	0.2+	2000 01 04	704	0.0	0.2+
1995 12 29	385	0.1+	0.4−	1999 12 13	703	0.2−	0.1−	2000 01 04	704	0.0	0.0
1995 12 29	385	0.1−	0.6−	1999 12 15	704	0.9+	0.0				
1995 12 30	385	0.5−	0.0	1999 12 15	704	0.6−	1.4−				

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Residuals in seconds of arc

1995 11 29	411	1.3−	0.5+	1999 11 16	704	0.0	0.1+	1999 12 08	704	0.1+	0.0
1995 11 29	411	0.1+	0.6−	1999 11 16	704	0.0	0.4+	1999 12 08	704	0.1+	1.3−
1995 12 01	411	0.1+	0.2+	1999 11 16	704	0.1−	0.4+	2000 01 05	704	0.4−	0.0
1995 12 01	411	0.2+	0.8+	1999 12 07	704	0.7−	0.2−	2000 01 05	704	0.4−	0.0
1995 12 10	411	0.8+	0.4−	1999 12 07	704	0.3+	0.6−	2000 01 05	704	0.0	0.6+
1995 12 10	411	0.2−	0.4+	1999 12 07	704	0.4−	0.2−	2000 01 05	704	0.1−	0.7+
1995 12 16	411	1.0+	0.7−	1999 12 07	704	0.1−	0.9−	2000 01 05	704	0.4+	1.3+
1995 12 16	411	0.7−	0.5+	1999 12 08	704	0.5+	0.2−	2000 01 06	704	0.2+	0.1−
1999 11 16	704	0.4−	0.4−	1999 12 08	704	0.4+	0.3−	2000 01 06	704	0.2+	0.1−
1999 11 16	704	0.2−	0.9+	1999 12 08	704	0.2−	0.3−	2000 01 06	704	0.3+	0.4−

1995 WM₁₇ = 2000 AH₁₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
77.70076			(2000.0)		
<i>n</i>			<i>P</i>	<i>Q</i>	
0.27021226			ω	18.18717	+0.93303556
<i>a</i>			Ω	2.90201	−0.35977782
2.3695508					+0.32464001
<i>e</i>			<i>i</i>	2.41642	+0.83932322
0.2079380					+0.15509192
<i>P</i>			<i>H</i>	15.6	+0.40754933
3.65					<i>U</i> 4

Residuals in seconds of arc

1995 10 17	691	0.1+	0.5−	1995 11 23	691	0.0	0.2+	2000 01 03	704	0.4−	0.1−
1995 10 17	691	0.2+	0.5−	1995 11 30	691	0.4−	0.3+	2000 01 08	704	0.0	0.4−
1995 10 17	691	0.3+	0.4−	1995 11 30	691	0.4−	0.5+	2000 01 08	704	0.6+	0.6+
1995 11 17	691	0.1−	0.1−	1995 11 30	691	0.2−	0.5+	2000 01 08	704	0.3+	0.1−
1995 11 17	691	0.1+	0.0	2000 01 03	704	0.2+	0.2+	2000 01 08	704	0.3−	0.2+
1995 11 17	691	0.1+	0.1+	2000 01 03	704	0.8−	0.1+	2000 01 08	704	0.6+	0.0
1995 11 23	691	0.0	0.3+	2000 01 03	704	0.3+	0.6−				
1995 11 23	691	0.1+	0.1+	2000 01 03	704	0.7−	0.5−				

1995 WQ₄₁ = 2000 AP₁₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
121.12219			(2000.0)		
<i>n</i>			<i>P</i>	<i>Q</i>	
0.28096908			ω	152.10283	+0.98830191
<i>a</i>			Ω	199.51164	+0.14773580
2.3086797					−0.15228857
<i>e</i>			<i>i</i>	6.50887	+0.94259781
0.1766278					−0.00821678
<i>P</i>			<i>H</i>	15.2	+0.29947205
3.51					<i>U</i> 3

Residuals in seconds of arc

1995 10 23	691	0.5−	0.0	1995 11 25	399	(5.8−	0.5−)	2000 01 07	704	1.1+	0.1−
1995 10 23	691	0.5−	0.1−	1998 06 19	704	0.1−	0.1−	2000 01 07	704	0.4−	0.4+
1995 11 16	399	0.7−	0.5+	1998 06 19	704	0.6+	1.3+	2000 01 11	704	0.9−	0.7−
1995 11 16	399	1.0+	0.4+	1998 06 19	704	1.6−	1.3−	2000 01 11	704	0.1+	0.3−
1995 11 17	399	0.1−	0.0	1998 06 19	704	1.1+	0.3+	2000 01 11	704	0.8+	0.7+
1995 11 17	399	0.8+	0.6−	1998 06 19	704	(3.4−	1.5−)	2000 01 11	704	0.6−	0.3−
1995 11 25	399	(4.5−	0.7−)	2000 01 07	704	0.1−	0.6+				

1995 YA₁

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
350.19501			(2000.0)		
<i>n</i>			<i>P</i>	<i>Q</i>	
0.23679371			ω	15.41098	−0.51210053
<i>a</i>			Ω	105.84417	−0.55719544
2.5875531					+0.76195167
<i>e</i>			<i>i</i>	13.19520	−0.00171979
0.2548704					+0.39646273
<i>P</i>			<i>H</i>	14.7	+0.00171979
4.16					<i>U</i> 3

Residuals in seconds of arc

1995 12 21	411	0.5+	0.0	1999 11 05	704	0.2+	0.2−	1999 12 30	699	0.1+	0.5+
1995 12 21	411	0.0	0.1−	1999 11 05	704	1.3−	0.1+	1999 12 30	699	0.0	0.4−
1995 12 22	411	0.6−	0.2−	1999 12 05	704	0.2+	0.1+	1999 12 30	699	0.1−	0.1−
1995 12 22	411	0.9−	0.5−	1999 12 05	704	0.2−	0.1+	2000 01 05	704	0.8−	0.2−
1995 12 26	411	0.2+	0.7+	1999 12 05	704	1.0−	0.1−	2000 01 05	704	0.1−	0.4−
1995 12 26	411	0.3+	0.9−	1999 12 05	704	0.4+	0.0	2000 01 05	704	0.0	0.2−
1995 12 30	411	0.1−	0.3−	1999 12 05	704	0.7−	0.7−	2000 01 05	704	0.4−	0.4+
1995 12 30	411	0.6+	1.3+	1999 12 14	704	0.9+	0.2−	2000 01 05	704	0.4+	0.6−

1996 01 10	411	0.2−	0.2−	1999 12 14	704	0.1+	0.6+	2000 01 07	704	0.4−	0.4+
1996 01 10	411	0.2+	0.1+	1999 12 14	704	0.4+	0.1+	2000 01 07	704	0.3−	0.0
1996 01 24	411	0.0	0.0	1999 12 14	704	0.0	0.1−	2000 01 07	704	0.4−	0.2+
1996 01 24	411	0.0	0.3−	1999 12 14	704	0.6+	1.0+	2000 01 07	704	0.1−	0.2−
1999 11 05	704	0.7+	0.3+	1999 12 14	699	0.1+	0.6+	2000 01 07	704	0.6+	0.4−
1999 11 05	704	0.3−	1.0−	1999 12 14	699	0.5+	0.5+				
1999 11 05	704	0.2+	0.5−	1999 12 14	699	0.5+	0.5+				

1995 YK₁ = 1999 XA₁₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
22.35736			(2000.0)		
<i>n</i>			<i>P</i>	<i>Q</i>	
0.23782841			ω	328.55217	+0.31711388
<i>a</i>			Ω	102.78976	+0.89044410
2.5800427					+0.25888619
<i>e</i>			<i>i</i>	6.02007	+0.32641704
0.2423038					+0.20976004
<i>P</i>			<i>H</i>	14.7	<i>U</i> 3
4.14					

Residuals in seconds of arc

1995 12 21	411	0.4+	1.5+	1996 01 10	411	0.7+	0.5−	1999 12 14	704	0.5+	0.1−
1995 12 21	411	0.4+	0.2+	1996 01 25	411	0.7−	0.7+	1999 12 14	704	0.1+	0.4−
1995 12 22	411	0.4+	0.4−	1996 01 25	411	0.0	0.4−	1999 12 14	704	0.2+	0.4−
1995 12 22	411	1.0−	1.0+	1999 11 17	704	0.0	0.1+	1999 12 14	704	0.2+	0.5−
1995 12 23	658	0.3+	0.5+	1999 11 17	704	0.5−	0.1+	2000 01 05	704	0.4+	0.3−
1995 12 23	658	0.1−	0.3+	1999 11 17	704	0.6−	0.1+	2000 01 05	704	0.1+	0.5−
1995 12 23	658	0.0	0.3+	1999 11 17	704	0.6−	0.2+	2000 01 05	704	0.1+	0.5−
1995 12 24	658	0.1−	0.4+	1999 11 17	704	0.8−	1.0+	2000 01 05	704	0.2+	0.5−
1995 12 24	658	0.1−	0.5+	1999 12 08	704	0.5−	0.3+	2000 01 05	704	0.1+	0.2−
1995 12 27	411	0.7−	0.9−	1999 12 08	704	0.2+	0.2+	2000 01 06	704	0.5+	0.0
1995 12 27	411	0.9+	0.9−	1999 12 08	704	0.1+	0.3+	2000 01 06	704	0.3+	0.2−
1995 12 30	411	0.1−	0.0	1999 12 08	704	0.3−	0.0	2000 01 06	704	0.6+	0.1+
1995 12 30	411	0.2−	0.2−	1999 12 08	704	0.3−	0.2+	2000 01 06	704	0.0	0.6−
1996 01 10	411	0.1+	0.4+	1999 12 14	704	0.4+	0.1+	2000 01 06	704	0.3+	0.5−

1995 YQ₁

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams		
19.36497			(2000.0)		
<i>n</i>			<i>P</i>	<i>Q</i>	
0.23632103			ω	325.91693	+0.36167753
<i>a</i>			Ω	102.61465	−0.92424838
2.5910023					+0.88087523
<i>e</i>			<i>i</i>	7.19881	+0.29581169
0.2751562					+0.30536569
<i>P</i>			<i>H</i>	15.1	+0.24137185
4.17					<i>U</i> 3

Residuals in seconds of arc

1995 12 21	411	1.2+	0.5−	1999 11 05	704	0.5−	0.1+	1999 12 14	704	0.8+	0.7+
1995 12 21	411	0.0	0.1−	1999 11 05	704	0.4−	0.7+	1999 12 14	704	0.2+	0.2+
1995 12 22	411	1.1+	0.0	1999 11 05	704	0.6−	0.1+	1999 12 30	699	0.1+	0.3−
1995 12 22	411	0.3−	0.3−	1999 11 05	704	0.2−	0.1−	1999 12 30	699	0.2+	0.5−
1995 12 26	411	1.0−	0.6+	1999 11 05	704	0.6−	0.3+	1999 12 30	699	0.2−	0.3−
1995 12 26	411	0.4+	0.2+	1999 12 03	699	0.7+	0.1+	1999 12 31	699	0.2+	0.1−
1995 12 30	411	1.1−	0.2+	1999 12 03	699	0.5+	0.4+	1999 12 31	699	0.3+	0.3+
1995 12 30	411	0.4+	0.2−	1999 12 03	699	0.4−	0.2−	1999 12 31	699	0.5+	0.8−
1995 12 31	411	0.6−	1.0+	1999 12 06	704	0.0	0.2−	2000 01 05	704	0.2+	0.1−
1995 12 31	411	1.1+	0.6−	1999 12 06	704	0.1+	0.5−	2000 01 05	704	0.4+	0.5+
1996 01 10	411	0.8+	0.1+	1999 12 06	704	0.1−	0.6−	2000 01 05	704	0.2−	0.6+
1996 01 10	411	0.0	0.5−	1999 12 06	704	0.2−	0.7−	2000 01 05	704	0.9+	0.8+
1996 01 24	411	1.0−	1.1+	1999 12 06	704	0.4+	1.0−	2000 01 05	704	0.5+	0.5+
1996 01 24	411	0.9−	0.3+	1999 12 13	699	1.1−	1.5−	2000 01 06	704	0.2+	0.0
1999 10 10	704	0.2−	0.0	1999 12 13	699	0.5−	0.3−	2000 01 06	704	0.2+	1.4−
1999 10 10	704	0.1+	0.3+	1999 12 13	699	0.0	0.2+	2000 01 06	704	(2.5+	0.5+)
1999 10 10	704	0.2+	0.6+	1999 12 14	704	0.3−	0.4+	2000 01 12	691	0.6−	0.2−
1999 10 10	704	0.3−	0.0	1999 12 14	704	0.8+	0.9+	2000 01 12	691	0.5−	0.2−
1999 10 10	704	0.1+	0.4+	1999 12 14	704	0.1+	0.2+	2000 01 12	691	0.5−	0.2−

2000 JAN. 24

M.P.C. 37653

1995 YW₁ = 1999 XR₁₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	78.03989		(2000.0)			P		Q			
<i>n</i>	0.24399287	ω	323.13397			+0.99575052		+0.00343229			
<i>a</i>	2.5364013	Ω	36.99387			+0.04371713		+0.86191186			
<i>e</i>	0.2157837	<i>i</i>	8.79727			−0.08105375		+0.50704652			
<i>P</i>	4.04	<i>H</i>	15.5			<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc											
1995 12 17	360	0.1−	0.2+	1995 12 27	360	0.4−	0.1−	1999 12 15	704	0.1+	0.3+
1995 12 17	360	0.1−	0.7+	1996 01 11	360	0.4−	0.3−	1999 12 15	704	0.5−	1.0−
1995 12 17	360	0.1+	0.4+	1996 01 11	360	0.7−	0.5+	1999 12 15	704	0.7−	0.7+
1995 12 21	360	0.4−	0.5−	1999 12 12	704	0.2−	0.6−	2000 01 04	360	0.2+	0.0
1995 12 21	360	0.2+	0.6−	1999 12 12	704	0.1+	0.4+	2000 01 04	360	0.3+	0.0
1995 12 22	360	1.1+	0.0	1999 12 12	704	0.1−	0.6−	2000 01 10	360	0.2+	0.2−
1995 12 22	360	0.4+	0.4−	1999 12 15	704	0.2+	0.5+	2000 01 10	360	0.3+	0.0
1995 12 27	360	0.2+	0.3+	1999 12 15	704	0.2+	0.3+	2000 01 10	360	0.0	0.1

1995 YC₂ = 2000 AD₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	75.81296		(2000.0)			P		Q	
n	0.25431836	ω	163.49804			+0.93790136		−0.34334576	
a	2.4672751	Ω	216.70317			+0.30817599		+0.89023265	
e	0.1954183	i	4.75512			+0.15927522		+0.29933179	
P	3.88	H	15.0	G	0.15	U	5		
Residuals in seconds of arc									
1995 12 19	411	0.4−	0.3+	1995 12 30	411	1.5−	1.3+	2000 01 05	704 0.2+ 0.3−
1995 12 19	411	0.0	0.5−	1996 01 09	411	0.8+	0.0	2000 01 05	704 0.2− 0.2−
1995 12 24	411	0.9+	0.4+	1996 01 09	411	0.2−	0.4−	2000 01 05	704 0.2+ 0.1−
1995 12 24	411	0.4−	0.5−	1997 04 05	566	0.1−	0.2+	2000 01 06	704 0.0 0.1−
1995 12 24	411	0.5+	0.1+	1997 04 05	566	0.4+	0.1−	2000 01 06	704 0.1+ 0.3−
1995 12 26	411	0.9+	0.2−	1997 04 05	566	0.2−	0.1+	2000 01 06	704 0.4− 1.2+
1995 12 26	411	0.1−	0.3−	2000 01 05	704	0.0	0.2−		
1995 12 30	411	0.5−	0.4+	2000 01 05	704	0.0	0.4−		

1995 YU₂ = 1999 VQ₈₆ = 1999 XF₂₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	352.35245		(2000.0)			P		Q			
<i>n</i>	0.20623702	ω	135.34602			+0.51383641		−0.85777145			
<i>a</i>	2.8372110	Ω	283.72943			+0.78296816		+0.47564089			
<i>e</i>	0.1026308	<i>i</i>	0.83473			+0.35061802		+0.19492017			
<i>P</i>	4.78	<i>H</i>	14.5		<i>G</i>	0.15		<i>U</i>	4		
Residuals in seconds of arc											
1995 12 22	385	0.1+	0.2+	1995 12 30	385	0.4−	0.2+	1999 10 30	703	0.9−	0.1+
1995 12 22	385	0.1−	0.5+	1995 12 30	385	0.2−	0.1−	1999 10 30	703	0.4−	0.5−
1995 12 22	385	0.3−	0.2+	1996 01 13	385	0.6+	0.0	1999 10 30	703	0.0	0.2+
1995 12 26	887	1.1+	0.7−	1996 01 13	385	0.1−	0.8+	1999 11 07	704	0.4+	0.9+
1995 12 26	887	(2.3+	0.6+)	1996 01 13	385	1.6−	0.6+	1999 11 07	704	1.2−	0.7+
1995 12 26	887	0.7+	1.8−	1999 10 01	703	1.1−	0.4+	1999 11 07	704	0.3−	0.6+
1995 12 27	566	0.2+	0.7+	1999 10 01	703	1.4−	0.6+	1999 11 07	704	0.2−	0.5+
1995 12 27	566	0.3−	0.6+	1999 10 01	703	1.0−	0.0	1999 11 07	704	0.2+	0.6+
1995 12 27	566	0.2+	0.6+	1999 10 01	703	0.6−	0.8+	1999 11 12	704	1.1+	0.5−
1995 12 27	887	0.3+	0.2+	1999 10 04	704	0.9−	1.1+	1999 11 12	704	1.0+	1.6−
1995 12 27	887	0.1−	0.1−	1999 10 04	704	0.4+	0.6+	1999 11 12	704	1.5+	1.8−
1995 12 27	887	0.2+	0.3−	1999 10 04	704	0.9+	0.6+	1999 11 12	704	0.1+	1.0−
1995 12 27	887	0.6−	0.2+	1999 10 04	704	0.5−	0.9+	1999 12 07	704	0.4−	0.6−
1995 12 29	385	0.2−	0.1+	1999 10 04	704	1.7+	0.1+	1999 12 07	704	0.4+	0.5−
1995 12 29	385	0.1+	0.3−	1999 10 08	468	1.2+	0.7+	1999 12 07	704	0.2+	0.9−
1995 12 29	385	0.0	0.5−	1999 10 08	468	0.4−	1.1−	1999 12 07	704	0.8+	1.7−
1995 12 30	385	0.4+	0.0	1999 10 30	703	(2.3−	0.2−)				

1995 YZ₂ = 1999 XW₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	322.26620		(2000.0)		P		Q				
n	0.23836400		ω	237.72171	−0.90458208		−0.15890018				
a	2.5761765		Ω	290.40974	+0.35591845		−0.79224304				
e	0.2285536		i	24.96565	−0.23463443		−0.58915337				
P	4.13 <th>H</th> <td>14.2<th>G</th><td>0.15<th>U</th><td>4</td></td></td>		H	14.2 <th>G</th> <td>0.15<th>U</th><td>4</td></td>	G	0.15 <th>U</th> <td>4</td>	U	4			
Residuals in seconds of arc											
1995 12 26	411	0.8+	0.2−	1999 11 01	704	0.7−	0.1+	2000 01 02	704	0.0	0.3−
1995 12 26	411	0.3+	0.2+	1999 11 01	704	0.1−	0.4−	2000 01 02	704	0.2+	0.5−
1995 12 27	411	0.2+	0.5−	1999 11 01	704	0.2−	0.4+	2000 01 02	704	0.2+	0.9−
1995 12 27	411	0.2−	0.0	1999 11 01	704	1.2+	0.2−	2000 01 02	704	0.5−	0.8−
1995 12 30	411	0.3−	1.0−	1999 12 13	704	0.1−	0.5+	2000 01 02	704	0.5−	0.4−
1995 12 30	411	0.6−	0.0	1999 12 13	704	0.0	1.1+	2000 01 08	704	0.3−	0.4+
1996 01 10	411	0.6+	0.2+	1999 12 13	704	0.2+	1.5+	2000 01 08	704	0.5−	0.2+
1996 01 10	411	0.2+	0.6+	1999 12 15	704	0.4+	0.1−	2000 01 08	704	0.2−	0.1−
1996 01 23	411	0.8−	0.2+	1999 12 15	704	0.3+	0.7−	2000 01 08	704	0.1−	0.2+
1996 01 23	411	0.0	0.5+	1999 12 15	704	0.8+	0.1−	2000 01 08	704	0.1−	0.4+
1999 11 01	704	0.5−	0.3−	1999 12 15	704	0.4+	0.4−				

1995 YF₅ = 2000 AC₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	259.72253	(2000.0)		P			Q				
n	0.27022788	ω	134.29111	−0.74158220			+0.66819515				
a	2.3694595	Ω	87.73306	−0.63127776			−0.66490552				
e	0.1206028	i	3.42864	−0.22703352			−0.33379019				
P	3.65	H	15.1	G	0.15	U	5				
Residuals in seconds of arc											
1995 12 16	691	0.3−	0.0	1995 12 28	691	0.2−	0.1+	2000 01 04	704	0.3−	0.1−
1995 12 16	691	0.1+	0.1−	1995 12 28	691	0.0	0.1−	2000 01 04	704	0.1+	0.1+
1995 12 16	691	0.0	0.1+	1995 12 28	691	0.0	0.0	2000 01 04	704	0.6+	0.1−
1995 12 22	691	0.1−	0.0	2000 01 03	704	0.4+	0.7+	2000 01 04	704	0.4−	0.2+
1995 12 22	691	0.3+	0.1+	2000 01 03	704	0.2−	0.3−				
1995 12 22	691	0.2+	0.0	2000 01 03	704	0.2−	0.4−				

1995 YR₆ = 1999 YU₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	321.38959		(2000.0)			P		Q	
n	0.25578079	ω	57.71995			−0.87370727		−0.48342773	
a	2.4578617	Ω	93.31913			+0.42607839		−0.81423408	
e	0.1337724	i	3.10984			+0.23471857		−0.32143505	
P	3.85	H	15.4	G	0.15	U	2		
Residuals in seconds of arc									
1995 12 16	691	0.1−	0.3+	1997 04 11	704	0.4+	1.0+	2000 01 02	691 0.0 0.2−
1995 12 16	691	0.3−	0.1+	1997 04 11	704	0.6+	0.7−	2000 01 02	691 0.4− 0.1+
1995 12 16	691	0.0	0.3+	1997 04 11	704	0.2+	0.1+	2000 01 02	691 0.7− 0.0
1995 12 22	691	0.1+	0.3+	1997 05 04	809	0.0	0.5−	2000 01 05	704 0.3+ 0.6+
1995 12 22	691	0.1+	0.4+	1997 05 04	809	0.7−	0.1−	2000 01 05	704 0.3+ 0.1+
1995 12 22	691	0.1−	0.2+	1997 05 04	809	0.6−	1.2+	2000 01 05	704 0.8+ 0.2−
1995 12 28	691	0.3−	0.3+	1999 12 08	704	0.3−	0.3−	2000 01 05	704 0.9+ 0.1−
1995 12 28	691	0.2+	0.3+	1999 12 08	704	0.8−	0.1−	2000 01 06	704 0.5+ 0.0
1995 12 28	691	0.0	0.4+	1999 12 08	704	1.7+	0.6+	2000 01 06	704 0.5+ 1.1−
1996 01 24	691	0.2−	0.1−	1999 12 08	704	0.7−	0.6−	2000 01 06	704 0.2+ 0.1−
1996 01 24	691	0.2−	0.1+	1999 12 27	691	0.7−	0.1+	2000 01 06	704 0.3+ 0.6−
1996 01 24	691	0.0	0.5+	1999 12 27	691	0.7−	0.2+		
1997 04 11	704	0.6+	0.1+	1999 12 27	691	0.7−	0.0		

1995 YB₁₀ = 1999 XT₁₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21767539	ω	62.61526	+0.94854512	+0.24090031		
<i>a</i>	2.7369267	Ω	282.84953	-0.30878144	+0.84744420		
<i>e</i>	0.1983625	<i>i</i>	12.16782	+0.07011538	+0.47308072		
<i>P</i>	4.53	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 18	691	0.2+	0.1-	1996 01 21	691	0.2+	0.1-	2000 01 03	704	1.0-	0.5+
1995 12 18	691	0.4+	0.2+	1996 01 21	691	0.3+	0.2-	2000 01 03	704	0.0	0.2+
1995 12 18	691	0.1+	0.0	1999 12 12	704	0.4-	0.5+	2000 01 03	704	0.6-	0.1-
1995 12 25	691	0.4-	0.2-	1999 12 12	704	0.5+	0.1-	2000 01 03	704	0.7+	0.3-
1995 12 25	691	0.4-	0.1+	1999 12 12	704	0.3+	0.7+	2000 01 03	704	0.1+	0.1+
1995 12 25	691	0.1-	0.3+	1999 12 12	704	0.5+	0.5+	2000 01 04	704	0.6-	0.5+
1995 12 30	691	0.1-	0.3-	1999 12 15	704	0.1-	0.6+	2000 01 04	704	0.9-	0.0
1995 12 30	691	0.2-	0.1+	1999 12 15	704	0.3+	1.0-	2000 01 04	704	0.3+	0.8-
1995 12 30	691	0.1-	0.4+	1999 12 15	704	0.1+	0.3-	2000 01 04	704	0.3+	0.9-
1996 01 21	691	0.2+	0.0	1999 12 15	704	0.5+	0.4-				

1995 YH₁₂

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26724196	ω	342.91838	+0.51204178	-0.85734030		
<i>a</i>	2.3870762	Ω	76.25363	+0.79428818	+0.44922572		
<i>e</i>	0.1689724	<i>i</i>	3.11204	+0.32698548	+0.25132423		
<i>P</i>	3.69	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 07	327	0.6-	0.2+	1999 12 06	703	1.6-	0.6-	1999 12 31	699	0.1+	1.0+
1995 12 07	327	0.2-	0.3-	1999 12 06	703	1.0-	1.2+	1999 12 31	699	0.9+	0.2+
1995 12 07	327	0.3+	0.0	1999 12 06	703	0.9-	0.3+	1999 12 31	699	0.4+	0.2+
1995 12 19	691	0.1-	0.1+	1999 12 08	704	0.6-	1.8-	2000 01 03	704	0.6+	0.3+
1995 12 19	691	0.3+	0.1-	1999 12 08	704	1.0+	0.6-	2000 01 03	704	0.2+	0.4-
1995 12 19	691	0.0	0.3-	1999 12 08	704	0.6-	1.0-	2000 01 03	704	0.0	0.0
1995 12 26	691	0.4+	0.0	1999 12 08	704	1.2+	0.2-	2000 01 03	704	0.3+	0.8-
1995 12 26	691	0.1+	0.0	1999 12 08	704	0.4-	0.1-	2000 01 03	704	0.2-	0.5-
1995 12 26	691	0.2+	0.2-	1999 12 14	691	0.1+	0.7-	2000 01 04	704	0.1-	0.2-
1999 11 12	703	1.7+	1.0+	1999 12 14	691	0.4+	0.3-	2000 01 04	704	1.1-	0.6-
1999 11 12	703	0.9-	1.7+	1999 12 14	691	0.4+	0.2-	2000 01 04	704	0.2+	0.2-
1999 11 12	703	0.4+	0.4-	1999 12 18	699	(1.3+	2.5+)	2000 01 04	704	0.3-	0.2-
1999 11 12	703	0.3-	0.2+	1999 12 18	699	0.0	2.0+	2000 01 04	704	0.1-	0.2-
1999 12 06	703	0.1+	0.9+	1999 12 18	699	0.0	1.2+				

1996 AK = 2000 AJ₁₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18543974	ω	238.85714	+0.46980958	+0.85541172		
<i>a</i>	3.0455625	Ω	60.71481	-0.70065305	+0.51159552		
<i>e</i>	0.1521444	<i>i</i>	14.47820	-0.53699559	+0.08087527		
<i>P</i>	5.31	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1996 01 07	608	0.1-	0.7+	1998 05 22	704	0.8-	0.1+	1999 11 02	703	0.3+	0.1+
1996 01 07	608	0.8+	0.6+	1999 09 14	704	0.1+	0.2-	1999 11 07	704	(3.2+	1.7-)
1996 01 08	608	0.6+	0.0	1999 09 14	704	0.3-	0.2-	1999 11 07	704	0.2+	0.4-
1996 01 08	608	0.4+	0.6-	1999 09 14	704	0.1+	0.4-	1999 11 07	704	0.3-	0.3-
1996 01 10	608	0.3+	0.2+	1999 09 14	704	0.4+	0.5-	1999 11 07	704	0.7+	0.0
1996 01 10	608	0.3+	0.2+	1999 09 14	704	1.0-	0.3+	1999 12 02	704	0.7+	0.8-
1996 01 29	608	1.1-	0.2-	1999 10 02	704	1.0-	0.7+	1999 12 02	704	0.8+	1.0-
1996 01 29	608	1.5-	0.3-	1999 10 02	704	1.1-	0.8+	1999 12 02	704	0.8-	0.6-
1996 02 08	608	0.6-	0.5+	1999 10 02	704	0.7-	0.0	1999 12 02	704	0.7-	0.2-
1996 02 08	608	0.5-	0.4+	1999 10 02	704	0.4-	0.2+	2000 01 08	704	0.5+	0.2-
1996 02 15	608	0.7+	1.1-	1999 10 02	704	1.0-	0.0	2000 01 08	704	1.1+	0.1+

1996 02 15	608	0.4+	0.0	1999 10 05	703	0.5+	0.1+	2000 01 08	704	1.1+	0.8-
1996 02 16	608	0.2+	0.0	1999 10 05	703	0.5+	0.4+	2000 01 08	704	0.0	0.3+
1996 02 16	608	0.1+	0.0	1999 10 05	703	0.5+	0.2-	2000 01 10	704	0.0	0.2-
1998 05 22	704	0.1-	0.2+	1999 10 05	703	0.2+	0.0	2000 01 10	704	0.7-	0.4+
1998 05 22	704	0.8+	0.2+	1999 11 02	703	0.0	0.2+	2000 01 10	704	0.3+	0.3+
1998 05 22	704	0.1-	1.0-	1999 11 02	703	0.2+	0.7+	2000 01 10	704	0.4-	0.1+
1998 05 22	704	(2.7-	1.5+)	1999 11 02	703	0.3+	0.6+	2000 01 10	704	1.3+	0.1-

1996 AA₂ = 1999 YN₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24600782	ω	58.98148	-0.72524022	-0.62926410		
<i>a</i>	2.5225325	Ω	80.47066	+0.49453491	-0.75843616		
<i>e</i>	0.0671251	<i>i</i>	16.45662	+0.47902176	-0.16970937		
<i>P</i>	4.01	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 15	595	0.7+	0.9-	1999 12 06	704	0.3-	0.0	1999 12 31	691	0.2-	0.1-
1996 01 15	595	0.5+	0.4-	1999 12 06	704	0.3+	0.1-	2000 01 04	691	0.4-	0.2+
1996 01 16	595	0.3+	0.5-	1999 12 14	704	0.3+	0.5-	2000 01 04	691	0.6-	0.1+
1996 01 16	595	0.7+	0.2-	1999 12 14	704	0.5+	0.4-	2000 01 04	691	0.6-	0.1+
1996 01 19	595	0.1-	0.1-	1999 12 14	704	0.5+	0.8-	2000 01 05	704	0.2-	0.4-
1996 01 19	595	0.9-	0.1-	1999 12 14	704	0.6+	1.1-	2000 01 05	704	0.5+	0.5+
1999 11 04	704	0.3+	0.4+	1999 12 27	691	0.4-	0.1-	2000 01 05	704	0.4-	0.5+
1999 11 04	704	0.4+	0.8-	1999 12 27	691	0.5-	0.2-	2000 01 05	704	0.3+	0.2-
1999 11 04	704	0.5-	0.6-	1999 12 27	691	0.4-	0.2-	2000 01 05	704	0.7+	0.0
1999 11 04	704	0.2+	0.4-	1999 12 30	699	0.4-	1.3+	2000 01 06	704	0.6-	0.6+
1999 11 04	704	0.3-	0.3-	1999 12 30	699	0.9-	0.6+	2000 01 06	704	0.4+	0.3-
1999 11 12	699	0.3+	1.2+	1999 12 30	699	0.0	1.2+	2000 01 06	704	0.9+	0.2+
1999 11 12	699	0.3+	0.8+	1999 12 31	699	1.1-	0.3+	2000 01 06	704	0.6+	0.1+
1999 11 12	699	0.6-	0.4+	1999 12 31	699	0.2+	0.0	2000 01 06	704	0.5+	0.4+
1999 12 06	704	0.5-	0.3-	1999 12 31	699	0.2+	0.4+	2000 01 10	691	0.3-	0.3-
1999 12 06	704	0.1+	0.6+	1999 12 31	691	0.2+	0.2+	2000 01 10	691	0.3-	0.3-
1999 12 06	704	0.0	0.2-	1999 12 31	691	0.2-	0.1-	2000 01 10	691	0.2-	0.2-

1996 AU₃ = 1999 XN₂₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22973439	ω	195.64989	+0.85571048	+0.48217815		
<i>a</i>	2.6402925	Ω	133.94090	-0.44236315	+0.86994337		
<i>e</i>	0.1808788	<i>i</i>	15.11721	-0.26846679	+0.10345414		
<i>P</i>	4.29	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 01 13	399	0.2-	0.4+	1998 12 08	704	0.4+	0.2+	1999 12 15	704	0.1-	0.4+
1996 01 13	399	1.7+	0.0	1998 12 08	704	0.5+	0.8-	1999 12 15	704	0.8+	0.2-
1996 01 18	399	1.8+	0.3-	1998 12 08	704	0.3-	0.5-	1999 12 15	704	0.4-	0.3-
1996 01 18	399	0.6-	1.7+	1998 12 08	704	0.0	0.1+	1999 12 15	704	0.0	0.1-
1996 01 21	399	0.4-	0.7-	1998 12 08	704	1.0-	0.3-	1999 12 15	704	0.1-	0.0
1996 01 21	399	0.7-	0.0	1999 12 05	704	1.4-	1.2-	2000 01 07	704	0.6+	0.0
1996 02 16	399	1.3-	1.1-	1999 12 05	704	0.4+	0.4+	2000 01 07	704	0.3-	0.1+
1996 02 16	399	0.2-	0.2-	1999 12 05	704	0.3+	0.9+	2000 01 07	704	0.1+	0.3-
1998 06 29	704	0.2-	0.1-	1999 12 05	704	0.0	0.8+	2000 01 07	704	0.1-	0.4-
1998 06 29	704	(0.1+	2.6+)	1999 12 14	704	0.1-	0.0	2000 01 09	704	0.1-	0.0
1998 06 29	704	0.5+	1.4+	1999 12 14	704	0.3-	0.2+	2000 01 09	704	0.2-	0.2+
1998 06 29	704	(0.9+	2.6+)	1999 12 14	704	0.1+	0.3+	2000 01 09	704	0.0	0.1+
1998 06 29	704	(2.0+	2.6+)	1999 12 14	704	0.4+	0.4-	2000 01 09	704	0.3+	0.4+

199

2000 JAN. 24

M.P.C. 37655

Residuals in seconds of arc

1996 01 13	691	0.6+	0.0	1998 09 19	699	0.6+	0.3-	1999 12 15	704	0.1+	0.0
1996 01 13	691	0.1+	0.1+	1998 11 20	699	0.1+	0.1+	1999 12 15	704	0.4-	1.4+
1996 01 13	691	0.2+	0.0	1998 11 20	699	0.4-	1.0+	2000 01 02	704	0.2-	1.3+
1996 01 20	691	0.1+	0.0	1998 11 20	699	0.1+	0.4+	2000 01 02	704	0.1+	0.2-
1996 01 20	691	0.0	0.0	1999 12 12	704	0.1-	0.1-	2000 01 02	704	0.4+	0.1+
1996 01 20	691	0.0	0.0	1999 12 12	704	0.1+	0.4-	2000 01 02	704	0.0	0.2-
1996 01 27	691	0.3-	0.1+	1999 12 12	704	0.2-	0.4-	2000 01 04	704	0.1-	0.3+
1996 01 27	691	0.4-	0.0	1999 12 12	704	0.5-	1.0-	2000 01 04	704	0.3+	0.2+
1996 01 27	691	0.6-	0.7-	1999 12 12	704	0.1-	1.2-	2000 01 04	704	0.1+	0.0
1998 09 19	699	0.4-	0.6-	1999 12 15	704	0.1+	0.3-	2000 01 04	704	0.2+	0.9+
1998 09 19	699	0.0	0.6-	1999 12 15	704	0.0	0.2-	2000 01 04	704	0.3+	0.1+

1996 AT₁₂ = 2000 AF₁₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22736650	<i>ω</i>	222.43765	+0.91783543	-0.39086243		
<i>a</i>	2.6585922	<i>Ω</i>	160.24097	+0.39640202	+0.89319702		
<i>e</i>	0.1895738	<i>i</i>	11.83167	+0.02106112	+0.22231880		
<i>P</i>	4.33	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 15	691	0.2-	0.1+	1996 01 27	691	0.0	0.0	2000 01 11	704	0.7+	0.1-
1996 01 15	691	0.2+	0.1+	1996 01 27	691	0.0	0.0	2000 01 11	704	0.3-	0.4-
1996 01 15	691	0.2+	0.2-	1996 01 27	691	0.1-	0.0	2000 01 11	704	0.5+	0.0
1996 01 21	691	0.1-	0.0	2000 01 08	704	0.2-	0.1-	2000 01 11	704	0.2+	0.1+
1996 01 21	691	0.0	0.1+	2000 01 08	704	0.6-	0.1+				
1996 01 21	691	0.0	0.0	2000 01 08	704	0.4-	0.3+				

1996 BV₂

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23842974	<i>ω</i>	333.40521	-0.01923460	-0.96869947		
<i>a</i>	2.5757029	<i>Ω</i>	116.79918	+0.95959072	-0.08739265		
<i>e</i>	0.1125631	<i>i</i>	16.09741	+0.28074130	+0.23234428		
<i>P</i>	4.13	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1996 01 26	365	0.3-	0.8+	1999 11 08	699	0.3+	0.4+	2000 01 05	704	0.7-	0.3-
1996 01 26	365	0.1+	0.5+	1999 11 08	699	0.3+	0.1-	2000 01 05	704	0.5-	0.1+
1996 01 27	365	0.0	0.8+	1999 12 06	704	0.1+	1.6-	2000 01 06	704	0.7+	0.0
1996 01 27	365	0.0	0.6+	1999 12 06	704	1.0+	0.9-	2000 01 06	704	0.3+	0.1+
1996 02 22	365	0.1-	0.4+	1999 12 06	704	0.8+	0.4-	2000 01 06	704	0.1-	0.0
1996 02 22	365	0.4+	0.0	1999 12 06	704	0.7+	0.6+	2000 01 16	691	0.9-	0.5+
1998 12 08	704	1.7+	0.9+	1999 12 30	699	0.2+	0.2+	2000 01 16	691	0.2-	0.2+
1998 12 08	704	0.1-	0.1+	1999 12 30	699	0.2+	0.0	2000 01 16	739	0.1+	0.7-
1998 12 08	704	0.9-	1.1+	1999 12 30	699	0.0	0.1+	2000 01 16	739	0.3-	0.6-
1998 12 08	704	0.5-	0.9+	2000 01 05	704	0.0	0.2-	2000 01 16	691	0.6-	0.2+
1998 12 08	704	0.6-	0.6-	2000 01 05	704	0.5-	0.1+	2000 01 16	739	0.1-	0.2-
1999 11 08	699	0.7+	0.2+	2000 01 05	704	0.3-	0.1-				

1996 BA₃ = 1999 XF₂₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21589013	<i>ω</i>	311.15285	+0.40975947	-0.89763334		
<i>a</i>	2.7519943	<i>Ω</i>	113.96814	+0.88108207	+0.34338656		
<i>e</i>	0.1658653	<i>i</i>	10.23292	+0.23620237	+0.27629705		
<i>P</i>	4.57	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 27	411	0.4-	0.3+	1999 10 02	704	0.1+	0.3+	1999 12 15	704	0.8+	0.8+
1996 01 27	411	0.2+	0.3+	1999 11 07	704	0.6-	0.3+	2000 01 08	704	0.7+	0.2-
1996 01 29	411	0.3+	0.7-	1999 11 07	704	(2.2-	0.4-)	2000 01 08	704	0.5+	0.4+
1996 01 29	411	0.7-	0.9-	1999 11 07	704	1.1-	0.9-	2000 01 08	704	0.1+	0.3-

1996 01 29	411	0.5+	0.2-	1999 11 07	704	0.7-	1.2-	2000 01 08	704	0.1+	0.4-
1996 02 12	411	0.0	0.7+	1999 11 07	704	1.7-	0.8-	2000 01 08	704	0.1-	0.0
1996 02 12	411	0.2-	1.2+	1999 12 14	704	0.6+	1.0+	2000 01 11	704	0.2-	0.1-
1996 02 12	411	0.4+	0.6+	1999 12 14	704	1.2+	0.4+	2000 01 11	704	1.1-	0.5-
1999 10 02	704	0.5+	0.9+	1999 12 14	704	0.8+	0.5-	2000 01 11	704	0.6+	0.1-
1999 10 02	704	0.6-	1.1+	1999 12 14	704	0.6+	0.8+	2000 01 11	704	0.2-	0.4-
1999 10 02	704	0.6-	0.2+	1999 12 15	704	0.3-	0.3-	2000 01 11	704	0.0	1.1-
1999 10 02	704	0.5+	0.6+	1999 12 15	704	1.1+	0.3-				

1996 CJ₂ = 1999 WO₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21520681	<i>ω</i>	80.53025	-0.87334830	-0.45648257		
<i>a</i>	2.7578166	<i>Ω</i>	72.14720	+0.34660653	-0.82755412		
<i>e</i>	0.1001319	<i>i</i>	10.28578	+0.34223773	-0.32676880		
<i>P</i>	4.58	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 02 12	399	0.3-	1.2+	1999 11 12	704	0.2-	0.7-	1999 12 07	632	0.8-	1.0-
1996 02 12	399	0.2-	1.3-	1999 11 12	704	0.2-	0.0	1999 12 07	632	1.7+	1.4+
1996 02 16	399	0.3+	0.8+	1999 11 12	704	0.1+	0.1+	1999 12 08	704	0.4-	0.3+
1996 02 16	399	0.7-	0.2-	1999 11 17	704	0.5+	0.2-	1999 12 08	704	0.6-	0.1-
1996 02 22	399	0.8-	1.6-	1999 11 17	704	0.0	0.1+	1999 12 08	704	0.5-	0.0
1996 02 22	399	0.5-	0.6+	1999 11 17	704	0.2+	0.3-	1999 12 08	704	0.1+	0.1+
1996 02 24	399	0.8+	0.0	1999 11 17	704	0.1-	0.6-	1999 12 08	704	1.5-	0.7-
1996 02 24	399	1.4+	0.5+	1999 11 17	704	0.3+	0.0	2000 01 03	704	0.1+	0.6-
1999 11 03	704	0.2+	0.0	1999 11 26	120	0.1-	0.8+	2000 01 03	704	0.3-	0.4-
1999 11 03	704	0.0	0.9-	1999 11 26	120	0.2+	0.4+	2000 01 03	704	0.3+	0.2-
1999 11 03	704	0.1+	0.8-	1999 11 27	120	0.4+	0.9+	2000 01 03	704	0.0	0.3-
1999 11 09	704	1.0+	0.3-	1999 11 27	120	0.8+	1.0+	2000 01 03	704	0.2-	0.8-
1999 11 09	704	0.3-	0.1+	1999 12 05	120	1.1-	0.9+	2000 01 04	704	0.3+	0.5-
1999 11 09	704	0.6+	0.2+	1999 12 05	120	0.6-	0.6-	2000 01 04	704	0.8+	0.2-
1999 11 09	704	0.5+	0.3+	1999 12 07	704	0.5-	0.6+	2000 01 04	704	0.4+	0.0
1999 11 12	704	0.6+	0.2+	1999 12 07	704	0.4-	0.9+	2000 01 04	704	0.5-	0.4+
1999 11 12	704	0.1-	0.7-	1999 12 07	704	0.5-	1.2+	2000 01 04	704	0.3+	0.5-

1996 DJ = 1999 YF₇

Id. K. Sárneczky

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23298928	<i>ω</i>	235.28601	-0.91361423	+0.01541839		
<i>a</i>	2.6156447	<i>Ω</i>	302.20562	+0.24652492	-0.77363035		
<i>e</i>	0.3539548	<i>i</i>	28.69637	-0.32331795	-0.63344956		
<i>P</i>	4.23	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 02 18	413	0.5-	1.4-	1996 03 26	413	0.0	0.1-	1999 12 31	704	0.7-	0.1+
1996 02 18	413	0.2+	0.8+	1996 03 26	413	0.1+	0.1-	1999 12 31	704	0.2-	0.1-
1996 02 19	422	0.7-	0.2+	1999 12 13	704	0.6+	0.1-	1999 12 31	704	0.0	0.1-
1996 02 19	422	0.5-	0.1+	1999 12 13	704	0.0	0.1+	1999 12 31	461	0.1+	0.2+
1996 02 19	422	0.4-	0.2-	1999 12 13	704	0.1-	0.1-	1999 12 31	461	0.2+	0.2+
1996 02 26	413	0.3+	0.0	1999 12 13	704	0.2-	0.0	1999 12 31	461	0.3+	0.2+
1996 02 26	413	0.5+	0.2-	1999 12 13	704	0.5-	0.0	2000 01 01	461	0.1-	0.1+
1996 02 27	413	0.3+	0.1+	1999 12 30	704	0.0	0.1-	2000 01 01	461	0.0	0.3+
1996 02 27	413	0.3+	0.0	1999 12 30	704	1.6+	0.1-	2000 01 01	461	0.1-	0.3+
1996 02 27	413	0.3+	0.1+	1999 12 30	704	0.5+	0.0	2000 01 21	704	0.3+	0.5+
1996 02 29	413	0.0	0.4+	1999 12 30	704	0.5+	0.2-	2000 01 21	704	0.1-	0.2+
1996 02 29	413	0.0	0.3+	1999 12 31	704	0.4-	0.5-	2000 01 21	704	0.3-	0.2-
1996 03 26	413	0.1+	0.2-	1999 12 31	704	0.6-	0.5-	2000 01 21	704	0.6-	0.2-

1996 DU = 1971 BS₃ = 2000 AV₁₄₁

Id. G. V. Williams, S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	330.41975		(2000.0)	P		Q		Williams			
<i>n</i>	0.23846494	ω	35.99013	−0.97678422	+0.19026928						
<i>a</i>	2.5754494	Ω	154.44145	−0.20662481	−0.95808741						
<i>e</i>	0.2189507	<i>i</i>	13.18917	+0.05655766	−0.21416374						
<i>P</i>	4.13	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1971 01 29	805	0.1−	1.3−	1996 03 09	411	0.9−	0.0	2000 01 05	704	0.1−	1.0+
1996 02 19	411	0.1−	0.1+	1996 03 09	411	0.2−	0.6−	2000 01 08	704	0.1−	0.4−
1996 02 19	411	0.7−	0.8+	1996 03 22	411	0.2+	0.2−	2000 01 08	704	0.3−	0.1−
1996 02 21	411	0.2+	0.1+	1996 03 22	411	1.7+	0.2−	2000 01 08	704	0.3−	0.0
1996 02 21	411	0.5−	0.1−	2000 01 05	704	0.5+	0.5−	2000 01 08	704	0.5−	0.2−
1996 02 21	411	0.5+	0.8+	2000 01 05	704	1.0+	1.0+	2000 01 08	704	0.5−	0.3−
1996 02 27	411	0.0	0.0	2000 01 05	704	0.0	0.2+				
1996 02 27	411	0.0	0.2−	2000 01 05	704	0.4+	0.3+				

1996 DC₃ = 1999 XB₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	356.57308		(2000.0)	P		Q		Williams			
<i>n</i>	0.23502242	ω	102.54643	−0.31759664	−0.94819565						
<i>a</i>	2.6005379	Ω	5.98745	+0.83935046	−0.28483774						
<i>e</i>	0.1452159	<i>i</i>	4.16432	+0.44116117	−0.14068571						
<i>P</i>	4.19	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1996 02 27	118	0.4+	0.3+	1998 08 17	704	0.2−	0.1−	1999 12 15	704	0.2−	0.2+
1996 02 27	118	0.1−	0.4+	1998 08 17	704	1.1−	1.7+	1999 12 15	704	0.3−	0.1+
1996 02 27	118	0.2−	0.7+	1998 08 17	704	1.1+	0.6+	1999 12 15	704	0.4−	0.2+
1996 02 28	118	0.1+	0.5−	1998 08 17	704	0.7−	0.2+	1999 12 15	704	0.2+	0.0
1996 02 28	118	0.4−	0.3+	1998 08 17	704	0.7+	1.8−	2000 01 02	704	0.1+	0.2+
1996 02 28	118	0.4−	0.0	1999 11 16	704	(2.1−	1.2+)	2000 01 02	704	0.3+	0.2−
1996 03 09	118	1.0+	0.4+	1999 11 16	704	0.3−	0.1+	2000 01 02	704	0.1−	0.3−
1996 03 20	118	0.0	0.8−	1999 11 16	704	0.1+	0.2−	2000 01 02	704	0.5+	1.1+
1996 04 17	118	1.0−	0.4−	1999 11 16	704	0.1+	0.0	2000 01 02	704	0.2+	1.1+
1996 04 17	118	0.2−	0.2+	1999 11 16	704	0.3+	0.1+	2000 01 04	704	0.1−	0.2−
1996 04 17	118	0.7−	0.7−	1999 12 10	704	0.4+	0.5−	2000 01 04	704	0.2−	0.5−
1996 04 18	118	0.5+	0.0	1999 12 10	704	1.1−	0.9−	2000 01 04	704	0.1−	0.4−
1996 04 18	118	0.0	0.1+	1999 12 10	704	0.4+	0.2−	2000 01 04	704	0.1−	0.3−
1996 04 20	118	1.0+	0.6+	1999 12 10	704	0.2+	0.2+				

1996 EG₁ = 2000 AR₁₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	220.01907		(2000.0)	P		Q		Williams			
<i>n</i>	0.19745142	ω	71.00368	+0.04831340	+0.99509721						
<i>a</i>	2.9207600	Ω	202.30489	−0.98044993	+0.03074745						
<i>e</i>	0.0766786	<i>i</i>	13.14278	−0.19074523	+0.09400075						
<i>P</i>	4.99	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1996 03 15	566	0.2+	0.3−	1996 03 24	608	0.1−	0.3+	2000 01 08	704	0.8−	0.5−
1996 03 15	566	0.5+	1.0−	1996 03 25	608	0.0	0.1−	2000 01 08	704	1.0−	0.4−
1996 03 15	566	0.2+	0.0	1996 03 25	608	0.2−	0.0	2000 01 08	704	0.8−	0.1−
1996 03 17	566	0.0	0.1+	1998 11 15	120	0.1−	0.0	2000 01 08	704	0.5−	0.1−
1996 03 17	566	0.0	0.1−	1998 11 15	120	0.1+	0.3+	2000 01 11	704	0.9−	0.2−
1996 03 17	566	0.0	0.2+	1999 12 13	703	1.5+	0.3+	2000 01 11	704	0.3+	0.7+
1996 03 21	566	0.1−	0.1+	1999 12 13	703	0.8+	0.7+	2000 01 11	704	0.7+	0.7−
1996 03 21	566	0.4+	0.4+	1999 12 13	703	1.5+	0.4−	2000 01 11	704	0.8−	0.7+
1996 03 21	566	0.8−	0.5+	1999 12 13	703	1.4+	0.5+	2000 01 11	704	0.4−	0.2−
1996 03 24	608	0.1+	0.3+	2000 01 08	704	0.5−	0.3−				

1996 GT₂

Id. E. Bowell (1997, 1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	261.57693		(2000.0)	P		Q		Williams			
<i>n</i>	0.17861702	ω	57.93438	−0.96069797	+0.14916309						
<i>a</i>	3.1226321	Ω	129.52627	−0.19810131	−0.95918705						
<i>e</i>	0.1626716	<i>i</i>	17.66914	+0.19446152	−0.24023024						
<i>P</i>	5.52	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1996 04 08	327	0.1+	0.2−	1996 05 07	327	0.1+	0.4−	1999 11 07	704	0.3+	0.1+
1996 04 08	327	0.3+	0.1−	1996 05 07	327	0.5−	0.0	1999 11 07	704	0.4−	0.1−
1996 04 08	327	0.6+	0.3−	1996 05 07	327	0.6−	0.0	1999 11 07	704	0.6−	0.6+
1996 04 08	327	0.3+	0.5+	1997 08 01	688	0.2+	0.5+	1999 12 09	699	0.8+	0.9+
1996 04 08	327	0.3+	0.5+	1997 08 01	688	0.2−	1.1+	1999 12 09	699	0.5−	0.6+
1996 04 08	327	0.4+	0.0	1999 10 08	704	0.2+	0.2−	1999 12 09	699	0.9+	0.7+
1996 04 11	327	0.0	0.6+	1999 10 08	704	0.6−	1.1−	1999 12 16	704	0.6+	1.2−
1996 04 11	327	0.5+	0.0	1999 10 08	704	0.9−	0.4−	1999 12 16	704	0.5+	0.4−
1996 04 11	327	0.3+	0.5+	1999 10 08	704	0.6+	0.2−	1999 12 16	704	0.4+	0.2−
1996 04 25	327	0.2−	0.1−	1999 10 08	704	0.1+	0.1+	1999 12 16	704	0.2+	0.2−
1996 04 25	327	0.4−	0.2+	1999 11 02	703	1.0−	0.1−	1999 12 16	704	0.6+	0.1+
1996 04 25	327	0.1−	0.4−	1999 11 02	703	0.4+	0.0	2000 01 10	699	0.3−	0.6+
1996 05 04	327	0.1−	0.4+	1999 11 02	703	1.1+	0.4+	2000 01 10	699	0.5−	1.1+
1996 05 04	327	0.1−	0.2+	1999 11 02	703	1.3−	0.6+	2000 01 10	699	0.9−	1.1+
1996 05 04	327	0.4−	0.3+	1999 11 07	704	0.2−	0.2+				
1996 05 07	327	0.1+	0.1+	1999 11 07	704	0.3−	0.4−				

1996 GY₁₉ = 1999 YA₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	217.83119		(2000.0)	P		Q		Williams			
<i>n</i>	0.17018009	ω	141.01949	−0.49504544	+0.86769122						
<i>a</i>	3.2250036	Ω	99.26482	−0.80818847	−0.44075552						
<i>e</i>	0.1178277	<i>i</i>	2.62423	−0.31900064	−0.22988371						
<i>P</i>	5.79	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1996 03 24	809	0.3−	0.0	1996 04 15	809	0.6+	0.3+	1999 12 27	691	0.2−	0.0
1996 03 24	809	0.2−	0.1−	1996 04 15	809	0.7+	0.6+	1999 12 27	691	0.2−	0.1+
1996 03 24	809	0.1−	0.1−	1996 04 15	809	0.5−	0.1−	1999 12 27	691	0.2−	0.1+
1996 03 27	809	0.5−	0.0	1996 04 17	809	0.7+	0.6−	2000 01 02	691	0.4+	0.5−
1996 03 27	809	1.0+	0.7−	1996 04 17	809	0.9−	0.0	2000 01 02	691	0.0	0.1+
1996 03 27	809	0.4+	0.8+	1996 04 17	809	0.8−	0.2−	2000 01 02	691	0.2+	0.2+

1996 JE₂ = 2000 AR₁₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	268.80165		(2000.0)	P			Q				
n	0.18185147	ω	111.96501	−0.72292197			+0.62868807				
a	3.0854949	Ω	108.21908	−0.69090828			−0.66104279				
e	0.1842772	i	17.56082	+0.00543825			−0.40960192				
P	5.42	H	13.9	G	0.15		U	3			
Residuals in seconds of arc											
1996 05 11	327	0.1−	0.6+	1996 05 21	327	0.4−	0.3−	2000 01 05	704	0.1+	1.1−
1996 05 11	327	0.2+	0.2+	1996 05 24	327	0.1+	0.6−	2000 01 05	704	0.1−	0.5−
1996 05 11	327	0.1+	0.6+	1996 05 24	327	0.3+	0.3−	2000 01 05	704	0.2−	0.6−
1996 05 12	327	0.1−	0.4+	1996 05 24	327	0.1+	0.5−	2000 01 07	704	0.0	0.3−
1996 05 12	327	0.1+	0.4+	1996 06 06	327	0.2+	0.5+	2000 01 07	704	0.1−	0.3+
1996 05 12	327	0.6+	0.9+	1996 06 06	327	0.4+	0.1−	2000 01 07	704	0.0	0.2+
1996 05 14	327	0.2+	0.3−	1996 06 06	327	0.1+	0.5+	2000 01 07	704	0.0	0.4+
1996 05 14	327	0.4−	0.2−	1996 06 06	327	0.3+	0.1−	2000 01 07	704	0.3−	0.0
1996 05 14	327	0.1+	0.1−	1996 06 07	327	0.5+	0.3+	2000 01 07	704	0.5−	0.2−
1996 05 19	327	0.2+	0.2−	1996 06 07	327	0.1+	0.0	2000 01 07	704	0.3−	1.3−
1996 05 19	327	0.4−	0.0	1996 06 07	327	0.1+	0.2−	2000 01 07	704	0.0	0.3+
1996 05 19	327	0.1−	0.2+	1996 06 07	327	0.3+	0.4−	2000 01 07	704	0.1−	0.3+
1996 05 20	327	0.4−	0.3+	1996 06 08	684	0.1−	0.3−	2000 01 07	704	0.1−	0.9+
1996 05 20	327	0.3−	0.3−	1996 06 08	684	0.1+	0.0	2000 01 07	704	0.4+	0.6+
1996 05 21	327	0.5−	0.0	1996 06 08	684	0.1+	0.5−	2000 01 07	704	0.2+	0.6+

2000 JAN. 24

M.P.C. 37657

1996 05 21	327	0.4−	0.3+	1996 06 09	684	0.5−	0.6+	2000 01 07	704	0.0	0.5+
1996 05 21	327	0.2−	0.2−	1996 06 09	684	0.0	0.2+	2000 01 07	704	0.5+	0.7+
1996 05 21	327	0.4−	0.7−	1996 06 09	684	0.1−	0.1+				
1996 05 21	327	0.4+	1.0−	2000 01 05	704	0.3+	0.7−				

1996 RQ = 1999 XX₁₄₁

Id. G. V. Williams, E. Bowell (1988 observation)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	133.79675	(2000.0)		P	Q		
<i>n</i>	0.36926072	ω	41.97848	+0.67402990	+0.66932692		
<i>a</i>	1.9241871	Ω	273.06053	−0.73323504	+0.55481586		
<i>e</i>	0.0721126	<i>i</i>	18.23968	−0.08972221	+0.49414658		
<i>P</i>	2.67	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 08 19	675	0.0	0.1−	1999 12 12	704	1.5−	0.2−	1999 12 16	704	0.1+	0.3+
1996 09 07	693	0.8+	1.1−	1999 12 12	704	0.7−	0.3+	1999 12 16	704	0.0	0.2−
1996 09 07	693	0.5−	0.7−	1999 12 12	704	0.3−	1.8−	1999 12 16	723	0.1+	0.3−
1996 09 08	693	1.1−	1.1+	1999 12 12	704	1.6−	0.0	1999 12 16	704	0.1+	0.2−
1996 09 08	693	0.3+	1.6−	1999 12 12	704	0.2+	1.0+	1999 12 31	699	0.0	1.4+
1996 09 12	608	0.8+	0.1+	1999 12 12	704	(2.8−	1.0−)	1999 12 31	699	0.2+	1.4+
1996 09 12	608	0.9+	0.2+	1999 12 12	704	1.0−	0.4+	1999 12 31	699	0.0	0.8+
1996 09 15	693	0.1−	0.1−	1999 12 12	704	0.7+	1.2+	2000 01 03	704	0.5+	0.1+
1996 09 23	658	0.4−	0.3+	1999 12 15	704	0.1−	0.6−	2000 01 03	704	0.1−	0.4−
1996 09 23	658	0.4−	0.4+	1999 12 15	704	0.0	0.3+	2000 01 03	704	0.6+	0.2+
1996 09 25	658	0.3−	0.3+	1999 12 15	704	0.4+	0.3−	2000 01 03	704	0.2−	0.1−
1996 09 25	658	0.2−	0.2+	1999 12 15	704	1.2+	0.1−	2000 01 03	704	0.1+	0.3−
1996 09 25	658	0.5−	0.1+	1999 12 15	704	0.4+	0.6−	2000 01 04	704	0.2−	0.1−
1996 09 26	658	0.2−	0.5+	1999 12 16	723	(2.2+	0.9+)	2000 01 04	704	0.2+	0.2−
1996 09 26	658	0.1−	0.7+	1999 12 16	704	0.1−	0.1−	2000 01 04	704	0.3+	0.6−
1996 10 18	608	0.4+	0.4−	1999 12 16	704	0.1−	0.1−	2000 01 04	704	0.4+	0.5−
1996 10 18	608	0.6+	0.1+	1999 12 16	723	0.1+	0.5−	2000 01 04	704	0.7+	0.3−

1996 RY₂₂ = 1999 LV₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	39.14823	(2000.0)		P	Q		
<i>n</i>	0.27610054	ω	108.83240	+0.35179845	+0.93607542		
<i>a</i>	2.3357402	Ω	181.76557	−0.86839908	+0.32604183		
<i>e</i>	0.1347444	<i>i</i>	1.50195	−0.34945799	+0.13213451		
<i>P</i>	3.57	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1996 09 13	691	0.1+	0.2−	1996 10 06	809	0.6+	0.9+	1999 06 15	704	1.7+	0.6+
1996 09 13	691	0.3+	0.3−	1996 10 06	809	0.0	0.5+	1999 06 15	704	0.2+	0.4+
1996 09 13	691	0.5+	0.4−	1996 10 06	809	0.6+	1.4+	1999 06 15	704	0.6−	1.4−
1996 09 22	691	0.8−	1.0−	1999 06 13	691	0.4−	0.2+	1999 06 15	704	0.1+	1.0−
1996 09 22	691	0.8−	0.5−	1999 06 13	691	0.3−	0.6+				
1996 09 22	691	0.5−	0.4−	1999 06 13	691	0.6−	0.8+				

1996 RF₃₃ = 1997 TC₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	351.88922	(2000.0)		P	Q		
<i>n</i>	0.08520296	ω	356.42211	−0.32913802	−0.93814072		
<i>a</i>	5.1148502	Ω	112.77054	+0.86923048	−0.34549323		
<i>e</i>	0.0092471	<i>i</i>	6.69627	+0.36892620	−0.02294370		
<i>P</i>	11.57	<i>H</i>	10.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 09 15	809	0.8+	0.1−	1997 10 05	809	0.2+	0.1−	1997 10 28	809	0.7+	0.3+
1996 09 16	809	0.0	0.3+	1997 10 05	809	0.2+	0.1−	1997 12 07	704	0.1−	0.1−
1996 09 16	809	0.1−	0.4+	1997 10 06	809	0.1+	0.4−	1997 12 07	704	0.7−	0.1−
1996 09 17	809	0.7+	0.2+	1997 10 06	809	0.1+	0.4−	1997 12 07	704	0.4+	0.3−
1996 10 07	809	1.6−	0.1−	1997 10 26	809	0.3−	0.4−	2000 01 05	704	0.2+	0.6−
1997 10 01	809	1.3−	0.7−	1997 10 26	809	0.0	0.4+	2000 01 05	704	0.0	0.8+
1997 10 01	809	0.3+	0.4+	1997 10 28	809	0.2+	0.4+	2000 01 05	704	0.0	0.6+

1996 TD₁₁ = 1969 TA₆ = 1980 WH₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	235.32541	(2000.0)		P	Q		
<i>n</i>	0.18308646	ω	250.20761	+0.91604600	−0.39971069		
<i>a</i>	3.0716041	Ω	133.33660	+0.38288069	+0.84700064		
<i>e</i>	0.2543857	<i>i</i>	2.60296	+0.11942405	+0.35045866		
<i>P</i>	5.38	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1969 10 15	095	0.4−	0.5−	1996 10 14	721	0.1−	0.1−	1996 11 12	095	0.4+	0.7+
1969 10 17	095	0.9+	0.6−	1996 10 14	721	0.4−	0.6+	1996 11 15	095	0.0	0.1+
1980 11 30	095	0.0	0.2−	1996 10 16	721	0.1−	0.3+	1996 11 15	095	(3.5+	1.0−)
1980 12 10	095	0.1+	0.8−	1996 10 16	721	0.3−	0.3+				

1996 TC₅₁ = 2000 AN₁₀₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	90.60417	(2000.0)		P	Q		
<i>n</i>	0.08182253	ω	181.78636	+0.99478611	−0.10161179		
<i>a</i>	5.2547750	Ω	184.07637	+0.09501937	+0.95445237		
<i>e</i>	0.1006605	<i>i</i>	7.02716	+0.03703926	+0.28052758		
<i>P</i>	12.05	<i>H</i>	11.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 09 10	809	0.7+	1.3+	1996 10 17	910	0.8−	0.2−	2000 01 07	704	0.5+	0.3−
1996 09 11	809	0.2−	0.2−	1996 10 17	910	0.6−	0.3−	2000 01 07	704	0.2+	0.5−
1996 09 13	809	0.9+	0.4−	1996 10 17	910	1.1−	0.5−	2000 01 07	704	0.1+	0.5+
1996 09 13	809	1.8+	1.0+	1996 10 18	809	0.2−	0.6−	2000 01 07	704	0.5+	0.6+
1996 09 13	809	0.5−	0.3−	1996 10 18	910	0.7−	0.6−	2000 01 13	046	0.1+	0.4−
1996 09 13	809	0.5−	0.4−	1996 10 18	910	0.5−	1.0−	2000 01 13	046	0.2+	0.3−
1996 09 14	809	0.2+	0.3−	1996 10 18	910	0.8−	0.6−	2000 01 13	046	0.2+	0.2−
1996 09 15	809	0.3−	0.0	1997 10 20	608	0.1+	0.1−	2000 01 13	046	0.0	0.2−
1996 09 15	809	0.3−	0.1+	1997 10 20	608	0.1−	0.0	2000 01 13	046	0.2+	0.1−
1996 09 16	809	0.7−	0.2−	1999 12 14	704	1.6−	0.2−	2000 01 13	046	0.4+	0.1−
1996 09 16	809	0.7−	0.1−	1999 12 14	704	0.0	0.6+	2000 01 13	046	0.2−	0.8−
1996 10 05	809	1.2+	1.7+	1999 12 14	704	0.8−	0.8+	2000 01 14	046	0.0	0.0
1996 10 05	809	0.3+	0.1+	2000 01 05	704	0.2+	0.0	2000 01 14	046	0.0	0.3+
1996 10 05	809	1.8+	0.3+	2000 01 05	704	0.3+	0.1+	2000 01 14	046	0.1−	0.3+
1996 10 06	809	0.7+	0.4−	2000 01 05	704	0.2−	0.1−	2000 01 14	046	0.1+	0.3+
1996 10 06	809	0.8+	0.4+	2000 01 05	704	0.0	0.2−	2000 01 14	046	0.2+	0.3+
1996 10 06	809	0.4+	0.6+	2000 01 05	704	0.1−	0.1−				
1996 10 12	809	1.2−	0.5+	2000 01 07	704	0.1+	0.1−				

1996 VX = 1986 EU₁ = 1999 XL₁₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	300.36527	(2000.0)		P	Q		
<i>n</i>	0.34310211	ω	137.39104	−0.99587820	+0.05263684		
<i>a</i>	2.0207866	Ω	45.78738	−0.08092787	−0.88339357		
<i>e</i>	0.2930373	<i>i</i>	5.91505	+0.04095481	−0.46566636		
<i>P</i>	2.87	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1986 03 06	688	0.2+	0.5−	1996 11 14	709	0.6+	0.2−	1999 12 13	703	0.2−	0.6+
1986 03 06	688	0.7−	0.6−	1996 11 14	709	0.1+	0.3+	1999 12 13	703	0.3+	0.9+
1996 11 03	540	0.5+	1.6−	1996 11 17	816	1.7+	0.5−	1999 12 13	557	0.2−	0.2−
1996 11 03	540	0.8+	0.2+	1996 11 17	816	0.1−	0.3				

1996 11 09	709	0.1−	0.8−	1999 11 15	704	0.5+	0.2+	1999 12 18	651	0.2+	0.4−
1996 11 09	709	0.1−	0.4−	1999 11 15	704	0.4+	0.5+	1999 12 18	651	0.3+	0.3−
1996 11 14	817	0.4+	0.0	1999 12 08	704	0.4−	0.4−	1999 12 18	413	0.5+	0.4−
1996 11 14	817	1.1−	0.6+	1999 12 08	704	1.8−	0.7+	1999 12 18	413	0.4+	0.6+
1996 11 14	817	1.2−	0.1+	1999 12 08	704	0.4−	0.4+	2000 01 04	704	0.5−	0.1+
1996 11 14	709	0.2−	0.5+	1999 12 08	704	0.4+	0.3−	2000 01 04	704	0.6−	0.0
1996 11 14	709	0.4+	1.0−	1999 12 13	703	0.7−	0.6+	2000 01 04	704	1.0−	0.6+
1996 11 14	709	0.5−	0.1+	1999 12 13	703	0.6−	0.6+	2000 01 04	704	0.8−	0.6+

1996 XU₁₄ = 1999 XP₂₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	101.77085		(2000.0)	P	Q		
<i>n</i>	0.35837315	ω	62.21807	+0.89742543	−0.40401688		
<i>a</i>	1.9629643	Ω	320.87234	+0.23566962	+0.77857233		
<i>e</i>	0.1108840	<i>i</i>	16.30756	+0.37294427	+0.48020359		
<i>P</i>	2.75	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 08	693	0.9−	0.3+	1996 12 12	046	0.3+	0.2−	1999 12 08	703	0.2−	0.1+
1996 12 08	693	0.5−	0.1−	1996 12 16	696	0.4+	0.3+	1999 12 08	703	0.2−	0.1+
1996 12 09	693	0.3+	0.1−	1996 12 16	696	0.6+	0.2+	1999 12 08	703	0.2+	0.1+
1996 12 09	693	1.8−	0.3+	1996 12 16	696	0.5+	0.3+	1999 12 08	703	0.8−	0.1−
1996 12 12	046	0.3+	0.0	1996 12 21	046	0.0	0.0	1999 12 10	704	0.2−	0.4+
1996 12 12	046	0.2+	0.2−	1996 12 21	046	0.2−	0.0	1999 12 10	704	0.0	0.5−
1996 12 12	046	0.0	0.2−	1996 12 21	046	0.2+	0.1−	1999 12 10	704	0.9+	0.2+
1996 12 12	046	0.3+	0.3−	1997 03 21	693	0.1−	0.1+	1999 12 10	704	0.3+	0.3−
1996 12 12	046	0.3+	0.2−	1997 03 21	693	0.1−	0.2−				

1996 XD₃₁ = 1999 XN₁

Id. E. Bowell

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	28.86615		(2000.0)	P	Q		
<i>n</i>	0.27708388	ω	260.83916	+0.94406414	−0.32056325		
<i>a</i>	2.3302108	Ω	117.82520	+0.32634041	+0.87450847		
<i>e</i>	0.1538748	<i>i</i>	5.01728	+0.04737977	+0.36396996		
<i>P</i>	3.56	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 12 14	411	0.7+	0.5+	1999 07 16	704	0.0	1.0−	1999 09 30	704	0.2+	0.1−
1996 12 14	411	0.3−	0.5+	1999 07 16	704	0.2+	1.2−	1999 09 30	704	0.5+	0.4+
1996 12 16	411	0.1+	0.3−	1999 08 12	699	0.5−	1.4+	1999 09 30	704	0.3+	0.1+
1996 12 16	411	0.4+	0.9−	1999 08 12	699	0.2+	0.5+	1999 12 02	704	1.2−	0.2+
1996 12 29	411	1.4−	0.4−	1999 08 12	699	0.1+	0.5+	1999 12 02	704	1.1−	0.6−
1996 12 29	411	1.8−	0.6−	1999 08 22	703	0.5+	0.6+	1999 12 02	704	0.1+	0.4+
1997 01 13	411	0.3+	0.7+	1999 08 22	703	0.7−	0.1+	1999 12 02	704	0.2−	1.4+
1997 01 15	411	0.7+	1.2+	1999 08 22	703	0.9−	1.6+	1999 12 03	704	0.3+	0.3+
1997 01 15	411	1.3+	0.6−	1999 08 22	703	(0.1+	2.1+)	1999 12 03	704	0.1+	0.2−
1998 04 21	704	0.8+	0.6−	1999 09 08	703	0.1−	0.2+	1999 12 03	704	0.5+	0.4−
1998 04 21	704	1.2−	0.1+	1999 09 08	703	0.4−	0.2+	1999 12 03	704	0.2+	0.3+
1998 04 21	704	0.2−	1.4−	1999 09 08	703	0.6−	0.4+	1999 12 03	704	0.1−	0.4−
1998 04 21	704	0.5−	0.3−	1999 09 08	703	0.3−	0.5+	1999 12 03	704	0.5−	0.2+
1998 04 21	704	0.9−	0.2+	1999 09 14	704	0.2+	0.9−	1999 12 03	704	0.1+	0.6−
1998 05 01	704	1.6+	0.3−	1999 09 14	704	0.1−	0.7−	1999 12 03	704	0.8−	0.1−
1998 05 01	704	0.6+	1.3+	1999 09 14	704	0.5−	0.6−	1999 12 09	699	0.6−	1.0+
1998 05 01	704	0.6−	1.5+	1999 09 14	704	0.3+	0.9−	1999 12 09	699	0.4+	0.9+
1998 05 01	704	0.4+	1.2+	1999 09 14	704	0.3+	1.0−	1999 12 09	699	1.5+	1.6+
1998 05 01	704	0.9+	0.9+	1999 09 30	704	0.2+	0.1−				
1999 07 16	704	0.7+	0.9−	1999 09 30	704	0.6+	0.1−				

1996 YQ₁ = 1999 NR₆₄

Id. G. V. Williams, E. Bowell

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	317.26424		(2000.0)	P	Q		
<i>n</i>	0.24458041	ω	306.13607	+0.35337464	−0.92773035		
<i>a</i>	2.5323376	Ω	122.74259	+0.89763384	+0.30009617		
<i>e</i>	0.2486640	<i>i</i>	8.21456	+0.26340055	+0.22194299		
<i>P</i>	4.03	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 18	327	0.8−	0.3+	1996 12 25	327	0.1+	0.3+	1999 07 14	704	0.4+	0.5+
1996 12 18	327	0.8−	0.5+	1996 12 25	327	1.2+	0.7−	1999 07 14	704	0.2+	0.0
1996 12 18	327	0.2+	0.2+	1997 03 04	704	1.1+	0.3−	1999 07 14	704	0.4+	0.4+
1996 12 21	327	0.5−	0.0	1997 03 04	704	0.8−	0.1−	1999 07 14	704	0.5+	0.0
1996 12 21	327	0.9+	0.2+	1997 03 05	704	0.1−	0.3−	1999 07 14	704	0.8+	0.2+
1996 12 21	327	0.6+	0.3+	1997 03 05	704	0.5−	0.1+	1999 07 20	699	0.6−	0.5+
1996 12 21	327	0.1+	0.2+	1997 03 06	704	0.5+	0.3+	1999 07 20	699	1.4−	1.4−
1996 12 25	327	0.9−	0.8−	1997 03 06	704	0.2−	0.4+	1999 07 20	699	0.4−	0.5+

1997 AQ₁

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	319.31765		(2000.0)	P	Q		
<i>n</i>	0.28664321	ω	178.69752	−0.62491965	−0.77805879		
<i>a</i>	2.2781113	Ω	309.97430	+0.71551063	−0.53800844		
<i>e</i>	0.0949788	<i>i</i>	4.79293	+0.31228189	−0.32430145		
<i>P</i>	3.44	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 01 02	411	0.1−	0.6−	1999 10 13	704	0.1−	0.3−	1999 12 13	703	0.0	0.5−
1997 01 02	411	0.4+	0.7−	1999 11 03	704	0.3−	0.6−	1999 12 13	703	0.7+	0.3+
1997 01 03	411	0.4−	0.3−	1999 11 03	704	0.2+	0.5−	1999 12 13	703	0.1+	0.0
1997 01 03	411	1.6−	0.1−	1999 11 03	704	0.1+	0.4−	1999 12 13	703	0.1−	0.6+
1997 01 09	411	0.1+	0.9+	1999 11 03	704	0.1+	0.5−	1999 12 30	159	0.3−	0.3−
1997 01 14	411	0.4+	0.1+	1999 11 03	704	0.2+	0.3−	1999 12 30	159	0.9−	0.1+
1997 01 14	411	0.0	0.1+	1999 11 09	699	0.6+	0.5−	1999 12 30	159	0.8−	0.1−
1997 01 26	411	0.5+	0.8−	1999 11 09	699	0.1+	0.2+	1999 12 30	159	0.7−	0.1−
1997 01 26	411	0.6+	0.3−	1999 11 09	699	0.3−	0.1−	2000 01 04	704	0.1+	0.1+
1997 02 02	691	0.0	0.0	1999 11 13	703	0.5−	0.4−	2000 01 04	704	0.3+	0.1+
1997 02 02	691	0.1−	0.3+	1999 11 13	703	0.4−	0.2−	2000 01 04	704	0.1−	0.4+
1997 02 02	691	0.2−	0.2+	1999 11 13	703	0.0	0.3−	2000 01 04	704	0.9+	0.1−
1999 10 12	704	0.3+	0.5+	1999 11 13	703	0.4−	0.1−	2000 01 06	704	0.3−	0.3−
1999 10 12	704	0.2+	0.4−	1999 12 07	699	0.1+	0.6+	2000 01 06	704	0.2+	0.5+
1999 10 12	704	0.4+	0.3+	1999 12 07	699	0.3−	1.0+	2000 01 06	704	0.2+	0.4+
1999 10 13	704	0.6+	0.0	1999 12 07	699	1.0+	0.0	2000 01 06	704	0.9+	0.2−
1999 10 13	704	0.0	0.2−	1999 12 08	704	0.8−	0.8+	2000 01 06	704	0.4+	0.3+
1999 10 13	704	0.0	0.4−	1999 12 08	704	(2.3−	0.7+)				
1999 10 13	704	0.0	0.2−	1999 12 08	704	1.7−	1.4+				

1997 AY₃ = 1990 DC₅ = 1999 XN₁₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	355.34847		(2000.0)	P	Q		
<i>n</i>	0.27835656	ω	286.69388	+0.29565803	−0.95393125		
<i>a</i>	2.3231027	Ω	145.97525	+0.90752699	+0.26380188		
<i>e</i>	0.1399670	<i>i</i>	5.22995	+0.29829699	+0.14291163		
<i>P</i>	3.54	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 02 22	033	0.0	0.1−	1999 10 02	704	0.9+	0.5−	1999 12 13	699	0.0	1.1+
1997 01 06	411	1.1−	1.0+	1999 10 02	704	0.5+	0.5−	1999 12 14	699	0.2−	0.2+
1997 01 06	411	0.3−	1.1−	1999 11 05	703	0.6−	0.7−	1999 12 14	699	0.2−	0.3+
1997 01 07	411	0.6+	0.2−	1999 11 05	703	0.5+	0.9−	1999 12 14	699	1.0−	1.3+
1997 01 07	411	0.5+	0.3−	1999 11 05	703	0.1−	0.1−	2000 01 08	704	0.1+	0.0
1997 01 11	411	0.3+	0.1−	1999 11 05	703	0.4+	0.1+	2000 01 08	704	0.4+	0.8−
1997 01 11	411	0.0	0.5−	1999 11 07	704	0.1−	0.4−	2000 01 08	704	0.2+	0.1+
1997 01 27	411	0.3+	0.5−	1999 11 07	704	0.2−	0.5−	2000 01 08	704	1.6+	0.7+
1997 01 27	411	0.6−	0.5+	1999 11 07	704	0.6−	0.2+	2000 01 08	704	0.5+	0.9−

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1999 09 08	699	1.7−	1.3+	1999 11 07	704	0.7−	0.3−	2000 01 10	704	0.4−	0.2+
1999 09 08	699	0.1+	0.1+	1999 11 07	704	0.3+	0.3−	2000 01 10	704	0.3−	0.5−
1999 09 08	699	0.5+	0.5+	1999 12 13	699	0.7+	1.0+	2000 01 10	704	0.3−	0.0
1999 10 02	703	0.3+	0.1+	1999 12 13	699	1.2−	1.9+	2000 01 10	704	0.0	0.1+
1999 10 02	703	0.3+	0.3−	1999 12 13	699	0.8−	0.2+	2000 01 10	704	1.0−	0.1−
1999 10 02	703	0.1+	0.4−	1999 12 13	699	0.6+	0.5−	2000 01 10	704	0.8+	0.7+
1999 10 02	703	0.1+	0.3−	1999 12 13	699	0.1−	1.0+	2000 01 10	704	0.1+	0.7+
1999 10 02	704	1.0+	0.7−	1999 12 13	699	0.0	0.8−	2000 01 10	704	0.4−	0.4−
1999 10 02	704	0.5+	0.2−	1999 12 13	699	1.9−	1.5+	2000 01 10	704	0.7+	1.0−
1999 10 02	704	0.3+	0.8−	1999 12 13	699	0.5−	0.2+				

1997 AY₇ = 1999 XF₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	106.16773	(2000.0)	
<i>n</i>	0.27566657	<i>ω</i>	31.50120
<i>a</i>	2.3381910	<i>Ω</i>	299.04085
<i>e</i>	0.1288351	<i>i</i>	6.38092
<i>P</i>	3.58	<i>H</i>	14.1

Residuals in seconds of arc

1997 01 02	691	0.3−	0.3−	1998 05 22	704	0.3+	0.1+	2000 01 03	704	0.7+	0.0
1997 01 02	691	0.3−	0.2−	1999 12 07	703	0.7−	0.5+	2000 01 03	704	0.1+	0.7−
1997 01 02	691	0.1−	0.2−	1999 12 07	703	0.3−	0.2+	2000 01 03	704	0.1−	0.2−
1997 01 10	691	0.2−	0.3−	1999 12 07	703	0.1+	0.2+	2000 01 03	704	0.1+	0.7−
1997 01 10	691	0.1−	0.4−	1999 12 07	703	0.4−	0.3+	2000 01 03	704	0.0	0.1−
1997 01 10	691	0.1−	0.5−	1999 12 10	704	0.8+	0.0	2000 01 03	704	0.1−	0.8−
1997 03 02	691	0.1+	0.5+	1999 12 10	704	0.3+	0.2+	2000 01 03	704	0.7+	0.4−
1997 03 02	691	0.1+	0.3+	1999 12 10	704	0.4−	0.7+	2000 01 03	704	0.8−	1.4−
1997 03 02	691	0.2+	0.3+	1999 12 10	704	0.0	0.8−	2000 01 03	704	0.6+	0.5−
1997 03 10	691	0.1+	0.4+	1999 12 10	704	0.6+	0.1−	2000 01 04	704	0.0	0.3−
1997 03 10	691	0.2+	0.2+	1999 12 15	704	0.1−	0.4+	2000 01 04	704	0.8+	0.6−
1997 03 10	691	0.4+	0.4+	1999 12 15	704	0.2−	0.1−	2000 01 04	704	0.4+	0.4+
1998 05 22	704	1.0−	0.8−	1999 12 15	704	0.4+	0.8+	2000 01 04	704	1.4−	0.5+
1998 05 22	704	0.6−	0.2+	1999 12 15	704	0.2−	0.6+	2000 01 04	704	0.8−	1.1+
1998 05 22	704	1.2+	0.5+	1999 12 15	704	0.0	0.7+				

1997 AZ₁₀ = 1999 XY₆₁

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	266.00639	(2000.0)	
<i>n</i>	0.29451346	<i>ω</i>	247.56898
<i>a</i>	2.2373433	<i>Ω</i>	303.48179
<i>e</i>	0.1030989	<i>i</i>	1.22171
<i>P</i>	3.35	<i>H</i>	16.0

Residuals in seconds of arc

1997 01 09	817	0.7+	0.1−	1999 11 14	704	0.4−	0.4−	1999 12 03	691	0.2+	0.1−
1997 01 09	817	0.0	0.2−	1999 11 14	704	1.2+	0.2−	1999 12 03	691	0.2+	0.2−
1997 01 11	817	0.0	0.5+	1999 11 14	704	0.0	0.7+	1999 12 07	704	1.2+	0.5−
1997 01 11	817	0.1+	0.1+	1999 11 15	704	0.9−	0.7+	1999 12 07	704	0.5+	0.1+
1997 01 14	817	0.9−	0.3+	1999 11 15	704	0.1+	0.6+	1999 12 07	704	0.5−	0.7−
1997 01 14	817	0.1+	0.5−	1999 11 15	704	0.1+	0.1−	1999 12 08	704	0.2−	0.1−
1999 11 14	704	0.0	0.2−	1999 11 15	704	0.1+	0.1+	1999 12 08	704	1.2−	0.8−
1999 11 14	704	0.5−	0.0	1999 12 03	691	0.1+	0.0	1999 12 08	704	0.2+	0.9+

1997 AZ₁₂ = 2000 AO₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	313.75566	(2000.0)	
<i>n</i>	0.28907980	<i>ω</i>	30.12739
<i>a</i>	2.2652922	<i>Ω</i>	114.09752
<i>e</i>	0.1595736	<i>i</i>	8.88390
<i>P</i>	3.41	<i>H</i>	15.1

M.P.C. 37659

Residuals in seconds of arc

1997 01 10	411	1.0+	1.6+	1997 01 14	411	0.4−	0.6−	2000 01 05	704	0.2−	0.3−
1997 01 10	411	0.4−	0.2−	1997 01 14	411	0.0	0.5−	2000 01 05	704	0.8−	0.6+
1997 01 11	566	0.0	0.1−	1997 01 27	411	0.1−	0.5−	2000 01 08	704	0.8+	0.6−
1997 01 11	566	0.3+	0.2−	1997 01 27	411	0.2−	0.5+	2000 01 08	704	0.3+	0.3−
1997 01 11	566	0.2+	0.2−	1997 02 12	411	0.2+	0.1−	2000 01 08	704	0.1−	0.2−
1997 01 11	411	0.1−	0.2−	1997 02 12	411	0.0	0.3+				
1997 01 11	411	0.5−	0.3+	2000 01 05	704	0.0	0.9+				

1997 AT₁₄ = 1999 XT₇₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	175.05252	(2000.0)	
<i>n</i>	0.30110081	<i>ω</i>	158.63767
<i>a</i>	2.2045914	<i>Ω</i>	123.66723
<i>e</i>	0.1109317	<i>i</i>	1.60848
<i>P</i>	3.27	<i>H</i>	14.9

Residuals in seconds of arc

1997 01 12	566	0.2+	0.5+	1999 11 17	704	0.8−	1.0+	2000 01 04	049	1.1+	0.8+
1997 01 12	566	0.2−	0.1−	1999 11 17	704	0.5−	0.2−	2000 01 04	049	1.2+	0.7+
1997 01 12	566	0.6−	0.3+	1999 11 17	704	0.1+	0.3+	2000 01 04	049	1.3+	0.6+
1997 01 13	566	0.2−	0.1+	1999 11 17	704	0.2+	1.2+	2000 01 05	704	0.7+	0.1−
1997 01 13	566	0.1+	0.1−	1999 11 17	704	1.1−	0.1+	2000 01 05	704	0.2+	0.7−
1997 01 13	566	0.0	0.2−	1999 12 07	704	0.4−	0.4−	2000 01 05	704	0.1−	0.1−
1997 02 11	327	0.2+	0.5+	1999 12 07	704	0.0	0.0	2000 01 05	704	0.1−	0.5−
1997 02 11	327	0.3+	0.1+	1999 12 07	704	0.4−	0.0	2000 01 06	704	0.7+	0.1−
1997 02 11	327	0.3+	0.0	1999 12 07	704	0.5−	0.3+	2000 01 06	704	0.6+	1.4−
1999 11 15	704	0.2−	0.4+	1999 12 08	704	0.6−	0.0	2000 01 06	704	0.6−	0.5−
1999 11 15	704	0.1−	0.3+	1999 12 08	704	0.5−	0.7−	2000 01 06	704	0.4−	0.0
1999 11 15	704	0.1−	0.6+	1999 12 08	704	0.9+	0.3−	2000 01 06	704	0.1−	0.0
1999 11 15	704	0.5+	0.1+	1999 12 08	704	0.1−	0.9−				
1999 11 15	704	0.4−	0.5+	1999 12 08	704	0.3−	1.0−				

1997 AC₁₈

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	204.61603	(2000.0)	
<i>n</i>	0.23569090	<i>ω</i>	106.16055
<i>a</i>	2.5956184	<i>Ω</i>	101.84236
<i>e</i>	0.0966141	<i>i</i>	8.60359
<i>P</i>	4.18	<i>H</i>	13.9

Residuals in seconds of arc

1997 01 15	411	1.1+	0.2−	1999 09 21	699	0.0	0.1+	1999 11 02	703	0.1−	0.1−
1997 01 15	411	0.1−	0.1−	1999 09 21	699	1.1+	0.5+	1999 11 02	703	0.7+	0.1+
1997 01 16	411	0.8+	0.5+	1999 09 21	699	0.2+	1.1+	1999 11 02	703	0.4−	0.2+
1997 01 16	411	0.2−	0.5−	1999 10 05	703	0.7−	0.7+	1999 11 07	704	0.5+	0.3−
1997 01 28	411	0.1−	0.1−	1999 10 05	703	0.4−	0.0	1999 11 07	704	0.3−	0.7−
1997 01 28	411	0.6−	0.4+	1999 10 05	703	0.3+	0.1+	1999 11 07	704	0.1+	0.1+
1997 02 13	411	0.7−	0.0	1999 10 05	703	0.4−	0.4+	1999 11 07	704	1.0+	0.2−
1997 02 13	411	0.2−	0.0	1999 10 08	704	0.9−	0.7−	1999 11 07	704	0.3−	0.2−
1999 09 14	704	1.1+	0.1+	1999 10 08	704	0.4−	0.2+	1999 12 09	699	1.2−	0.5+
1999 09 14	704	0.3+	0.5−	1999 10 08	704	0.4−	0.4+	1999 12 09	699	0.3+	0.3+
1999 09 14	704	0.5+	0.3−	1999 10 08	704	0.5−	0.3−	1999 12 09	699	1.0+	0.8−
1999 09 14	704	0.6+	0.6−	1999 10 08	704	0.2−	0.7−				
1999 09 14	704	0.7−	0.2+	1999 11 02	703	0.3−	0.2+				

1997 BS₄ = 1999 XL₁₉

Id. A. Doppler

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.49508	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26564335	ω	206.83142	+0.94629104	−0.32326020	
<i>a</i>	2.3966434	Ω	172.02176	+0.30386798	+0.88286699	
<i>e</i>	0.1720113	<i>i</i>	2.48151	+0.11044239	+0.34065924	
<i>P</i>	3.71	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1997 01 31	691	0.2+	0.1+	1999 10 04	704	0.8−	1.3−	1999 11 09	691	0.5+	0.1−
1997 01 31	691	0.3+	0.1+	1999 10 07	704	0.1+	0.2+	1999 11 09	691	0.5+	0.2−
1997 01 31	691	0.1−	0.1+	1999 10 07	704	0.3−	0.2−	1999 11 13	691	0.1+	0.2+
1997 02 01	691	0.2−	0.3+	1999 10 07	704	0.2−	0.3−	1999 11 13	691	0.2+	0.1+
1997 02 01	691	0.7−	0.4−	1999 10 07	704	0.3−	0.2+	1999 11 13	691	0.2+	0.1+
1997 02 01	691	0.3−	0.2+	1999 10 07	704	0.4−	0.7+	1999 12 03	704	0.2+	0.5−
1997 02 03	691	0.4+	0.2+	1999 10 09	704	0.6+	0.0	1999 12 03	704	0.2+	0.6+
1997 02 03	691	0.3+	0.2+	1999 10 09	704	0.6+	0.3+	1999 12 03	704	0.6+	0.1−
1997 02 03	691	0.3+	0.2+	1999 10 09	704	0.9+	0.2−	1999 12 03	704	0.3+	1.4−
1999 10 02	703	0.1−	0.3+	1999 10 09	704	0.2+	0.3+	1999 12 07	704	0.7−	0.1−
1999 10 02	703	0.0	0.2+	1999 10 09	704	0.3−	0.2+	1999 12 07	704	0.7−	0.8−
1999 10 02	703	0.4−	0.4+	1999 11 01	703	0.5−	0.4+	1999 12 07	704	0.5−	0.4+
1999 10 02	703	0.5−	0.3−	1999 11 01	703	0.3−	0.5−	1999 12 07	704	0.6+	0.0
1999 10 04	704	0.5+	1.5+	1999 11 01	703	0.5−	0.1−	1999 12 07	704	0.2+	0.2−
1999 10 04	704	0.3+	0.2+	1999 11 01	703	0.2−	0.1−				
1999 10 04	704	0.5−	0.1+	1999 11 09	691	0.4+	0.2−				

1997 BW₅ = 2000 AK₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	17.91216	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.30285532	ω	132.97799	−0.12937372	−0.99131248	
<i>a</i>	2.1960686	Ω	324.43499	+0.89749822	−0.10689808	
<i>e</i>	0.0819621	<i>i</i>	2.33598	+0.42161520	−0.07663135	
<i>P</i>	3.25	<i>H</i>	16.7	<i>G</i>	0.15	<i>U</i> 6

Residuals in seconds of arc

1997 01 31	684	0.3−	0.3+	1997 02 02	684	0.4+	0.1−	2000 01 03	704	1.0+	0.4+
1997 01 31	684	0.3−	0.4+	1997 02 08	566	0.1+	0.2+	2000 01 03	704	0.1+	0.2−
1997 02 01	684	0.2+	0.3−	1997 02 08	566	0.7−	0.4−	2000 01 04	704	0.6−	0.2+
1997 02 02	684	0.2+	0.0	1997 02 08	566	0.3+	0.3+	2000 01 04	704	0.4+	0.6−
1997 02 02	684	0.1+	0.3−	2000 01 03	704	0.4−	0.1+	2000 01 04	704	0.4−	0.1+

1997 BX₆ = 2000 AJ₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	178.91721	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.31452437	ω	337.98940	+0.54183361	+0.83995809	
<i>a</i>	2.1414101	Ω	324.79949	−0.76322479	+0.47687888	
<i>e</i>	0.0305338	<i>i</i>	2.96115	−0.35200035	+0.25895354	
<i>P</i>	3.13	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 01 30	098	0.1−	1.3−	1997 02 07	098	(2.5+	2.3−)	2000 01 03	704	0.8+	0.3+
1997 01 30	098	1.6−	0.4−	1997 02 08	108	(1.0+	2.1+)	2000 01 03	704	1.2−	0.5−
1997 01 31	098	0.0	0.1−	1997 02 14	691	0.6+	0.1+	2000 01 03	704	0.2−	0.4+
1997 01 31	098	0.0	0.3+	1997 02 14	691	0.3+	0.3+	2000 01 03	704	0.2+	1.0+
1997 02 07	098	0.1+	0.7+	1997 02 14	691	0.6+	0.1+	2000 01 04	704	0.2+	0.8−
1997 02 07	098	1.3+	0.6−	1998 06 24	704	0.0	1.1−	2000 01 04	704	0.1−	0.1−
1997 02 07	691	0.0	0.5+	1998 06 24	704	1.0+	0.7+	2000 01 04	704	0.4+	0.2−
1997 02 07	691	0.0	0.1+	1998 06 24	704	0.9−	0.5+	2000 01 04	704	0.3+	0.7−
1997 02 07	691	0.5+	0.9+	1998 06 24	704	0.0	0.4−	2000 01 04	704	0.2+	1.0−
1997 02 07	108	0.5−	0.6+	1999 12 10	704	0.2−	0.3+	2000 01 07	704	0.0	0.7+
1997 02 07	108	1.0+	1.2−	1999 12 10	704	0.0	0.6−	2000 01 07	704	0.2−	0.3+
1997 02 07	108	0.9−	0.3+	1999 12 10	704	0.9−	0.2−	2000 01 07	704	0.0	0.0
1997 02 07	108	(2.7+	0.1−)	1999 12 10	704	0.3+	0.3+	2000 01 07	704	0.6+	0.2+
1997 02 07	098	1.3−	0.6−	2000 01 03	704	0.1−	0.1+	2000 01 07	704	0.1−	0.5+

1997 BO₉ = 2000 AV₆₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	284.53242	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28816334	ω	34.97150	−0.99880651	+0.02248435	
<i>a</i>	2.2700925	Ω	146.23732	−0.03581053	−0.94080311	
<i>e</i>	0.0571620	<i>i</i>	4.47467	+0.03321382	−0.33820697	
<i>P</i>	3.42	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1997 01 30	098	1.3−	1.7+	1997 04 08	104	0.1+	0.1+	1999 12 14	704	0.9+	0.5−
1997 01 31	098	0.4−	0.2−	1998 08 17	704	0.0	0.3−	1999 12 31	104	0.5−	0.5−
1997 02 07	098	0.1−	0.4−	1998 08 17	704	0.5+	0.4+	1999 12 31	104	0.6−	0.2−
1997 02 07	098	0.9−	0.3−	1998 08 17	704	0.5+	1.7−	1999 12 31	104	0.1−	0.6−
1997 02 07	098	0.0	0.8+	1998 08 17	704	0.6−	1.5−	2000 01 01	104	0.8−	0.2+
1997 02 07	098	0.2+	0.5−	1998 08 17	704	(3.3−	1.5+)	2000 01 01	104	1.6−	0.4+
1997 03 03	098	0.0	0.5−	1999 11 04	704	0.2+	1.6−	2000 01 01	104	0.9−	0.5+
1997 03 03	098	0.8+	1.5−	1999 11 04	704	1.3+	0.3−	2000 01 01	104	1.1−	0.4+
1997 03 05	704	0.5+	0.2+	1999 11 04	704	0.2+	0.2−	2000 01 05	704	0.0	0.2+
1997 03 05	704	1.3+	0.1−	1999 11 04	704	0.8+	0.0	2000 01 05	704	0.1+	0.5+
1997 03 06	704	0.8+	0.2+	1999 11 04	704	0.5+	0.0	2000 01 05	704	0.3−	0.6+
1997 03 06	704	1.3+	0.9−	1999 12 06	704	0.3−	0.7−	2000 01 05	704	0.6+	0.4+
1997 03 07	098	0.0	0.3−	1999 12 06	704	1.8+	1.6−	2000 01 06	704	0.9+	0.3+
1997 03 07	098	1.2−	0.8+	1999 12 06	704	0.1+	0.9+	2000 01 06	704	0.5+	0.4−
1997 03 10	098	0.2+	1.1−	1999 12 06	704	0.2−	0.0	2000 01 06	704	0.3+	0.2+
1997 03 10	098	0.5−	0.3+	1999 12 14	704	0.8−	0.9−	2000 01 06	704	0.2+	0.1+
1997 03 12	098	1.0−	0.1−	1999 12 14	704	0.3−	0.5−	2000 01 06	704	0.1+	1.2+
1997 03 12	098	0.7−	1.3−	1999 12 14	704	0.2+	0.1+				
1997 04 08	104	0.3+	0.0	1999 12 14	704	0.9−	0.7+				

1997 CZ = 1999 YW

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	50.08146	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26569300	ω	267.96477	+0.88207006	−0.45841822	
<i>a</i>	2.3963448	Ω	119.30476	+0.46640223	+0.81714990	
<i>e</i>	0.0919284	<i>i</i>	7.15744	+0.06649341	+0.34945496	
<i>P</i>	3.71	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1997 02 01	411	0.3−	0.1+	1999 12 04	699	0.6+	0.2+	1999 12 17	678	0.2+	0.2−
1997 02 01	411	0.2+	0.5+	1999 12 04	699	0.3+	0.8+	2000 01 05	704	0.6−	0.0
1997 02 03	411	0.9+	0.4−	1999 12 04	699	0.1+	0.7+	2000 01 05	704	0.2−	0.2−
1997 02 03	411	0.2−	0.0	1999 12 05	704	0.1−	0.4−	2000 01 05	704	0.4−	0.2−
1997 02 11	411	0.2+	0.2+	1999 12 05	704	0.4−	0.7−	2000 01 05	704	0.2−	0.4+
1997 02 11	411	0.8−	0.2−	1999 12 05	704	0.2−	0.3−	2000 01 05	704	1.2−	0.7+
1997 03 01	411	0.0	0.3−	1999 12 05	704	0.1−	0.6−	2000 01 07	704	0.1+	0.3−
1997 03 01	411	0.0	0.7−	1999 12 14	699	0.2+	0.8+	2000 01 07	704	0.4+	0.2+
1999 11 05	704	0.7+	0.1−	1999 12 14	699	0.1−	0.6+	2000 01 07	704	0.1−	0.5−
1999 11 05	704	0.4+	0.8−	1999 12 14	699	0.2+	0.4+	2000 01 07	704	0.2+	0.3+
1999 11 05	704	1.0+	1.0−	1999 12 16	678	1.3−	0.4+	2000 01 07	704	0.2−	0.5+
1999 11 05	704	0.8+	0.4−	1999 12 16	678	0.7−	0.4+				
1999 11 05	704	0.3+	0.0	1999 12 17	678	0.3−	0.8−				

1997 CB₁ = 2000 AH₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	43.37008	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.29766675	ω	254.53247	+0.50613399	−0.86217293	
<i>a</i>	2.2215146	Ω	165.00060	+0.82035521	+0.47337990	
<i>e</i>	0.1183451	<i>i</i>	4.88749	+0.26616858	+0.18046967	
<i>P</i>	3.31	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 02 01	411	0.2−	0.4+	1997 03 09	104	0.4−	0.2+	1999 12 14	704	0.2+	0.2−
1997 02 01	411	0.2−	0.1+	1997 03 09	104	1.1−	0.4+	1999 12 14	704	0.2−	0.3−
1997 02 03	411	0.1+	0.7+	1997 03 10	104	0.8+	0.7−	1999 12 14	704	0.1−	0.4−
1997 02 03	411	0.5+	0.6+	1997 03 10	104	0.6+	1.0−	1999 12 14	704	0.1+	0.5−

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1997 02 11	411	0.1−	0.1+	1997 03 10	104	0.5+	0.7−	1999 12 14	704	1.6+	1.4−
1997 02 11	411	1.0+	0.1−	1997 03 10	104	0.3−	0.5−	2000 01 05	704	0.8−	0.3+
1997 03 04	411	0.2+	0.3+	1997 03 11	104	0.1−	0.9+	2000 01 05	704	0.1−	0.2+
1997 03 04	411	0.3+	0.2−	1997 03 11	104	0.5+	0.7+	2000 01 05	704	0.0	0.1+
1997 03 04	104	0.1+	0.4−	1997 03 11	104	0.5+	0.2−	2000 01 05	704	0.3+	0.1+
1997 03 04	104	0.1−	0.4+	1997 03 11	104	0.7−	0.6−	2000 01 05	704	0.5+	0.2+
1997 03 04	104	0.1−	0.7+	1999 11 04	704	0.3+	0.7+	2000 01 06	704	0.3−	0.2−
1997 03 04	104	1.0−	0.3+	1999 11 04	704	0.1+	1.1+	2000 01 06	704	0.3−	0.4−
1997 03 04	104	0.6−	1.0+	1999 11 04	704	0.4−	1.0+	2000 01 06	704	0.3−	0.8−
1997 03 09	104	0.2+	0.8−	1999 11 04	704	0.2−	1.1+	2000 01 06	704	0.4−	0.8−
1997 03 09	104	0.0	0.3−	1999 11 04	704	0.4+	0.7+	2000 01 06	704	0.3−	0.6−

1997 CG₄ = 1999 XX₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	77.94134		(2000.0)		P		Q
<i>n</i>	0.28539748	<i>ω</i>	29.02957		+0.98305818		−0.17869526
<i>a</i>	2.2847356	<i>Ω</i>	341.13265		+0.13415649		+0.85314105
<i>e</i>	0.1345838	<i>i</i>	7.24818		+0.12489459		+0.49012075
<i>P</i>	3.45	<i>H</i>	15.4		<i>G</i> 0.15		<i>U</i> 4

Residuals in seconds of arc

1997 01 14	566	0.1−	0.5+	1997 02 09	540	0.8+	0.0	1997 02 15	709	0.2−	0.2+
1997 01 14	566	0.2+	0.0	1997 02 10	709	0.3+	0.0	1997 02 15	709	0.2−	0.0
1997 01 14	566	0.4+	0.3+	1997 02 10	709	0.1+	0.0	1997 02 15	709	0.1−	0.0
1997 02 04	566	0.0	0.2+	1997 02 10	709	0.2+	0.2+	1997 02 15	709	0.2−	0.2+
1997 02 04	566	0.4+	0.2+	1997 02 10	709	0.1+	0.0	1999 12 12	704	0.1+	0.1+
1997 02 04	566	0.7−	0.5+	1997 02 10	709	0.0	0.0	1999 12 12	704	0.1+	0.2+
1997 02 06	566	0.5−	0.1+	1997 02 10	709	0.2+	0.1+	1999 12 12	704	0.8+	1.7+
1997 02 06	566	0.5−	1.1−	1997 02 10	540	0.3−	0.3+	1999 12 12	704	0.4+	0.3+
1997 02 06	566	0.3−	0.9−	1997 02 10	540	0.4+	0.0	1999 12 12	704	0.2+	0.5+
1997 02 08	566	0.3−	0.0	1997 02 10	540	0.1−	0.6+	1999 12 15	704	0.6+	0.6−
1997 02 08	566	1.2−	0.2+	1997 02 10	540	1.8+	0.3+	1999 12 15	704	0.0	0.5+
1997 02 08	566	0.1+	0.3−	1997 02 11	709	0.0	0.2+	1999 12 15	704	0.1+	0.0
1997 02 08	540	0.5−	0.4−	1997 02 11	709	0.3+	0.2+	1999 12 15	704	0.5+	0.6−
1997 02 08	540	0.5−	0.6−	1997 02 11	709	0.0	0.2+	2000 01 02	704	1.1−	0.3−
1997 02 08	540	0.3−	0.5−	1997 02 11	709	0.0	0.2+	2000 01 02	704	0.4−	0.6−
1997 02 09	540	0.9+	0.1−	1997 02 11	709	0.2+	0.1+	2000 01 02	704	(2.3−	1.1+)
1997 02 09	540	0.2−	0.2−	1997 02 15	709	0.2−	0.0	2000 01 02	704	0.6−	1.0−
1997 02 09	540	0.1+	0.2−	1997 02 15	709	0.1−	0.0	2000 01 02	704	0.6−	0.7−

1997 CK₆ = 1999 XM₁₂₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	231.38882		(2000.0)		P		Q
<i>n</i>	0.27997846	<i>ω</i>	244.92283		−0.69795322		+0.71515904
<i>a</i>	2.3141223	<i>Ω</i>	340.65932		−0.60943141		−0.62066126
<i>e</i>	0.0623061	<i>i</i>	6.50757		−0.37610457		−0.32144541
<i>P</i>	3.52	<i>H</i>	15.5		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1997 02 03	566	0.4−	0.6−	1997 03 06	704	0.2+	0.9+	1999 12 13	704	1.9+	0.4+
1997 02 03	566	0.6−	0.4+	1999 12 07	703	0.5−	0.8+	1999 12 13	704	1.1+	0.0
1997 02 03	566	0.7+	0.8+	1999 12 07	703	0.3−	0.2+	1999 12 13	704	0.4−	0.1+
1997 02 08	566	0.9−	0.4−	1999 12 07	703	0.7−	0.7+	1999 12 13	704	0.7+	0.8−
1997 02 08	566	1.8−	0.2−	1999 12 07	703	0.3−	0.9+	1999 12 13	704	0.5+	0.2+
1997 02 08	566	(2.3−	0.4−)	1999 12 12	704	0.8+	0.4−	1999 12 13	704	0.0	1.2−
1997 03 04	704	1.2+	1.2+	1999 12 12	704	0.8−	0.0	1999 12 13	704	0.1−	0.1−
1997 03 04	704	0.4−	0.1−	1999 12 12	704	0.3+	0.9−	2000 01 02	704	0.3−	0.8+
1997 03 05	704	1.1+	0.7−	1999 12 12	704	0.3+	1.0−	2000 01 02	704	0.1+	0.6+
1997 03 05	704	0.3+	0.7−	1999 12 12	704	0.5−	0.3−	2000 01 02	704	1.0−	0.4−
1997 03 06	704	0.7+	0.6−	1999 12 13	704	0.0	0.4+	2000 01 02	704	0.8−	0.2+

1997 CX₆ = 1999 XP₁₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.79835		(2000.0)		P		Q
<i>n</i>	0.28741779	<i>ω</i>	107.18207		+0.42931130		−0.90021007
<i>a</i>	2.2740165	<i>Ω</i>	317.15635		+0.78254731		+0.41106165
<i>e</i>	0.1044368	<i>i</i>	6.15382		+0.45090079		+0.14370160
<i>P</i>	3.43	<i>H</i>	16.0		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1997 01 30	327	0.6−	0.3+	1999 11 08	699	0.7−	0.7+	1999 12 07	703	0.1−	0.2+
1997 01 30	327	0.9−	0.1+	1999 11 08	699	0.1+	0.5+	1999 12 07	703	0.2+	0.1+
1997 01 30	327	1.1−	0.1+	1999 11 08	699	0.2+	0.2+	1999 12 10	704	0.3−	0.5−
1997 02 06	566	0.5−	0.2+	1999 11 13	703	0.0	1.1−	1999 12 10	704	0.3+	0.4−
1997 02 06	566	0.2−	0.1+	1999 11 13	703	0.3−	0.4−	1999 12 10	704	0.5+	0.1+
1997 02 06	566	0.1+	0.1+	1999 11 13	703	0.5+	0.0	1999 12 10	704	0.0	0.3+
1997 02 06	910	1.4+	0.4+	1999 11 13	703	0.1+	0.1+	1999 12 10	704	0.5−	0.5−
1997 02 06	910	1.4+	0.4+	1999 12 05	699	0.2−	1.2+	1999 12 13	703	0.5+	0.5−
1997 02 07	910	1.4+	0.4+	1999 12 05	699	0.3+	1.3+	1999 12 13	703	0.7+	0.0
1997 02 08	566	0.2−	0.7−	1999 12 05	699	0.2−	0.3+	1999 12 13	703	0.6+	0.3−
1997 02 08	566	0.0	0.7−	1999 12 07	703	0.0	0.1+	1999 12 13	703	1.6−	0.5−
1997 02 08	566	0.2−	0.6−	1999 12 07	703	0.2−	0.7−				

1997 CC₂₁ = 1999 XK₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	96.98706		(2000.0)		P		Q
<i>n</i>	0.25779115	<i>ω</i>	243.52251		+0.79471801		+0.60404536
<i>a</i>	2.4450667	<i>Ω</i>	79.25928		−0.53305889		+0.74152492
<i>e</i>	0.2048465	<i>i</i>	3.47801		−0.29029553		+0.29201027
<i>P</i>	3.82	<i>H</i>	15.4		<i>G</i> 0.15		<i>U</i> 5

Residuals in seconds of arc

1997 02 06	691	0.6−	0.1−	1999 11 13	704	0.1+	0.3+	1999 11 30	691	0.4+	0.2−
1997 02 06	691	0.1−	0.1+	1999 11 13	704	0.0	0.4−	1999 12 04	703	0.5−	0.1+
1997 02 06	691	0.1−	0.0	1999 11 13	704	0.8−	0.8−	1999 12 04	703	0.8−	0.0
1997 02 13	691	0.4+	0.1−	1999 11 13	704	0.5−	0.3+	1999 12 04	703	0.9−	0.0
1997 02 13	691	0.0	0.2−	1999 11 15	704	0.6+	0.6−	1999 12 04	703	0.5+	1.5+
1997 02 15	691	0.3+	0.0	1999 11 15	704	0.3+	0.1−	1999 12 05	703	0.2+	0.6+
1997 02 15	691	0.1−	0.0	1999 11 15	704	0.4−	0.3+	1999 12 05	703	(0.5+	2.2−)
1997 02 15	691	0.1+	0.2+	1999 11 15	704	0.6−	0.0	1999 12 05	703	0.4+	0.4+
1999 11 13	704	0.1+	0.2−	1999 11 15	704	0.4+	0.1−	1999 12 05	703	0.7+	0.4+
1999 11 13	704	0.4+	0.1+	1999 11 17	704	1.7−	0.3−	1999 12 07	704	0.4−	0.5−
1999 11 13	704	0.1+	0.6−	1999 11 17	704	0.4−	1.0+	1999 12 07	704	0.2+	0.3+
1999 11 13	704	0.2−	0.6−	1999 11 17	704	0.4−	0.6−	1999 12 07	704	0.3−	0.3−
1999 11 13	704	0.1+	1.2+	1999 11 17	704	0.0	0.5+	1999 12 07	704	0.2+	0.2−
1999 11 13	704	0.2+	0.2+	1999 11 17	704	0.6+	1.3−	1999 12 08	704	1.4+	0.5+
1999 11 13	704	0.2+	0.1−	1999 11 30	691	0.4+	0.2−	1999 12 08	704	0.8+	0.5−
1999 11 13	704	0.1−	0.1−	1999 11 30	691	0.4+	0.2−	1999 12 08	704	0.3−	0.2+

1997 CV₂₁ = 1995 UV₄₆ = 2000 AN₃₃

Id. G. V. Williams, S. Nakano, A. Gnädig, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	156.67126		(2000.0)		P		Q
<i>n</i>	0.29467918	<i>ω</i>	311.35539		+0.89405622		+0.44703119
<i>a</i>	2.2365044	<i>Ω</i>	22.13772		−0.38483773		+0.79934837
<i>e</i>	0.0122549	<i>i</i>	4.37562		−0.22926708		+0.40150381
<i>P</i>	3.34	<i>H</i>	14.9		<i>G</i> 0.15		<i>U</i> 1

Residuals in seconds of arc

1995 10 20	010	0.8−	1.0+	1997 03 01	369	0.2+	0.7−	1998 08 27	699	(2.6+	0.2+)
1995 10 20	010	1.1−	0.9+	1997 03 04	369	0.7+	0.1−	1998 08 27	699	0.0	0.8−
1995 10 20	010	0.8−	1.6+	1997 03 04	369	0.7+	0.2+	1998 08 27	699	0.3+	0.2−
1995 10 23	010	(2.7+	1.3−)	1997 03 04	369	0.7+	0.0	2000 01 03	704	0.4−	0.8−
1995 10 23	010	1.1+	0.4−	1997 03 09	369	0.1+	0.9+	2000 01 03	704	0.0	0.2+
1995 10 23	010	(2.6+	0.2−)	1997 03 09	369	0.5+	0.5+	2000 01 03	704	0.2−	0.6−

1997 02 09	369	0.1−	1.0+	1997 03 09	369	0.3−	0.8+	2000 01 03	704	0.1+	0.3−
1997 02 09	369	0.1+	1.3+	1998 08 17	704	0.3−	0.6−	2000 01 04	704	0.1−	0.0
1997 02 09	369	0.0	1.1+	1998 08 17	704	0.9−	0.6+	2000 01 04	704	0.1−	0.2−
1997 02 13	369	0.0	0.2−	1998 08 17	704	0.8+	0.1+	2000 01 04	704	0.3+	0.0
1997 02 13	369	0.3−	0.8+	1998 08 17	704	0.4+	0.5+	2000 01 04	704	0.2+	0.5−
1997 03 01	369	0.2−	0.8−	1998 08 17	704	0.6−	0.9+	2000 01 04	704	0.3−	0.1−

1997 CC₂₂ = 2000 AR₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	282.51323	(2000.0)	
<i>n</i>	0.29445928	ω	211.33042
<i>a</i>	2.2376177	Ω	358.69844
<i>e</i>	0.1016120	<i>i</i>	4.09790
<i>P</i>	3.35	<i>H</i>	15.1
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	3

1997 02 13	411	0.3−	0.0	1997 04 28	704	1.1−	0.3+	1998 08 17	704	(5.3−	0.0)
1997 02 13	411	0.7+	0.7+	1997 04 28	704	0.2+	0.5−	1999 12 15	704	0.1−	1.4−
1997 02 14	411	0.1+	0.6+	1997 04 28	704	1.9−	0.8−	1999 12 15	704	0.3+	0.4+
1997 02 14	411	0.7+	1.0+	1997 04 28	704	0.1+	1.4−	1999 12 15	704	0.9−	0.2+
1997 02 16	411	0.5+	0.5+	1997 04 29	704	0.7+	0.1−	1999 12 15	704	0.7−	1.1+
1997 02 16	411	0.6+	1.6+	1997 04 29	704	1.0+	0.4−	2000 01 03	704	0.6+	0.6+
1997 02 26	411	0.4+	0.9+	1997 04 29	704	1.5+	0.6−	2000 01 03	704	0.5−	0.6−
1997 02 26	411	0.1+	0.4+	1997 04 29	704	0.7+	0.3+	2000 01 03	704	0.3−	0.3−
1997 03 07	587	1.5−	1.0−	1997 05 04	046	1.3−	0.3−	2000 01 03	704	0.4+	0.1+
1997 03 07	587	1.6−	0.2+	1997 05 04	046	0.5−	0.1+	2000 01 03	704	0.2−	0.4−
1997 03 08	587	1.2+	0.2−	1997 05 04	046	1.3−	0.8−	2000 01 04	704	0.0	0.3−
1997 03 09	411	0.0	0.2−	1997 05 04	046	1.9−	0.1+	2000 01 04	704	0.1−	0.1−
1997 03 09	411	0.8+	0.5−	1997 05 04	046	0.2−	0.4+	2000 01 04	704	0.2+	0.3−
1997 03 09	587	0.3+	0.5+	1998 08 17	704	1.1−	0.1+	2000 01 04	704	0.1+	0.3−
1997 03 09	587	1.4+	1.3+	1998 08 17	704	0.2−	1.2+	2000 01 04	704	0.8+	0.6−
1997 03 10	587	0.4+	0.2+	1998 08 17	704	0.3−	1.7+				
1997 03 10	587	0.9+	0.0	1998 08 17	704	(2.3−	2.1+)				

1997 CE₂₂ = 1997 EW₁₇ = 1999 XX₁₁Id. S. Nakano (d, *MPC* 29577), E. Bowell

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	335.76521	(2000.0)	
<i>n</i>	0.27690075	ω	124.55634
<i>a</i>	2.3312381	Ω	354.09525
<i>e</i>	0.1522453	<i>i</i>	6.98535
<i>P</i>	3.56	<i>H</i>	14.6
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	3

1995 08 19	809	0.5+	1.1+	1997 04 28	704	0.5−	1.0−	1999 12 07	703	0.3−	0.0
1995 08 20	809	0.5+	0.3+	1997 04 28	704	1.6−	0.9−	1999 12 07	703	0.7−	0.2+
1995 08 22	809	0.5+	0.1+	1997 04 28	704	(4.3−	1.5−)	1999 12 07	699	0.1−	0.7+
1995 08 26	809	0.6+	0.2+	1999 10 05	704	1.8+	0.7−	1999 12 07	699	0.3+	1.2+
1995 08 27	809	0.5+	0.1−	1999 10 05	704	0.7+	0.9−	1999 12 07	699	0.1+	1.0+
1995 08 27	809	0.1−	0.8−	1999 10 05	704	1.9+	1.0−	1999 12 10	704	0.4−	0.3−
1995 08 28	809	0.2+	0.2−	1999 10 05	704	1.5+	0.8−	1999 12 10	704	0.2+	0.7−
1995 09 17	809	0.4−	0.1+	1999 10 05	704	1.1+	0.4+	1999 12 10	704	0.2+	0.4−
1995 09 18	809	1.9−	1.4−	1999 10 12	704	0.3−	0.3−	1999 12 10	704	0.8+	1.2−
1995 09 20	809	0.3+	0.1−	1999 10 12	704	0.1−	0.2−	1999 12 10	704	0.8−	1.1−
1995 09 22	809	0.0	0.1+	1999 10 12	704	0.7−	0.3−	1999 12 13	703	0.2−	0.3−
1997 02 13	411	0.0	0.1+	1999 10 12	704	0.4−	0.3−	1999 12 13	703	0.1+	0.1+
1997 02 13	411	0.4+	0.0	1999 10 12	704	0.8−	0.1+	1999 12 13	703	0.6−	0.2+
1997 02 14	411	0.1+	0.0	1999 10 13	704	0.4+	0.7+	1999 12 13	703	0.0	0.2+
1997 02 14	411	0.4−	0.4−	1999 10 13	704	0.2−	0.3+	1999 12 15	704	0.4+	0.2−
1997 02 16	411	0.2+	0.8−	1999 10 13	704	0.8−	0.2+	1999 12 15	704	0.7+	0.5−
1997 02 16	411	0.8+	0.2+	1999 10 13	704	0.6−	0.2+	1999 12 15	704	0.1+	0.2−
1997 02 26	411	0.1+	0.2−	1999 10 13	704	0.5−	0.4+	1999 12 15	704	0.3+	0.4+
1997 02 26	411	0.2+	0.3−	1999 11 08	699	0.1−	0.2+	2000 01 03	704	0.7+	0.9+
1997 03 03	399	(0.4−	2.7+)	1999 11 08	699	0.2−	0.1−	2000 01 03	704	0.9+	0.8−
1997 03 03	399	0.4−	1.5+	1999 11 08	699	0.4−	0.6+	2000 01 03	704	1.5+	0.2+
1997 03 08	399	1.0−	0.9+	1999 12 06	703	0.4−	0.1−	2000 01 03	704	0.4−	1.2−

1997 03 08	399	1.5+	1.0+	1999 12 06	703	0.9+	1.9+	2000 01 03	704	1.4+	1.3−
1997 03 09	411	0.1+	1.1−	1999 12 06	703	1.4−	0.0	2000 01 07	699	0.9−	0.4+
1997 03 09	411	0.1+	0.6−	1999 12 06	703	0.8−	0.1+	2000 01 07	699	0.8−	0.5+
1997 04 28	704	0.4−	0.0	1999 12 07	703	0.8−	0.1+	2000 01 07	699	0.3−	0.4−
1997 04 28	704	0.6−	0.3−	1999 12 07	703	0.8−	0.2+				

1997 CK₂₇ = 2000 AH₁₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	358.53083	(2000.0)	
<i>n</i>	0.28686572	ω	344.80017
<i>a</i>	2.2769332	Ω	107.42308
<i>e</i>	0.0948951	<i>i</i>	5.49023
<i>P</i>	3.44	<i>H</i>	15.5
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	4

1997 02 08	566	0.1+	0.2−	1999 11 05	704	0.6−	1.0+	1999 12 14	704	1.1+	0.6−
1997 02 08	566	0.0	0.2−	1999 11 05	704	0.1−	0.2+	2000 01 05	704	0.2−	0.3−
1997 02 08	566	0.7−	0.2−	1999 11 05	704	0.1−	0.2+	2000 01 05	704	0.4−	0.2+
1997 02 15	691	0.3+	0.4+	1999 11 05	704	0.5−	0.1−	2000 01 05	704	0.1+	0.0
1997 02 15	691	0.3−	0.3+	1999 12 04	703	0.7−	0.1+	2000 01 05	704	0.3−	0.2+
1997 02 15	691	0.2−	0.3+	1999 12 04	703	0.2−	0.4+	2000 01 05	704	1.1+	0.3+
1997 03 04	704	(1.4−	2.2−)	1999 12 04	703	1.1−	0.5+	2000 01 07	704	0.6−	0.6+
1997 03 04	704	0.3+	0.5+	1999 12 04	703	1.1−	0.8−	2000 01 07	704	0.0	0.6−
1997 03 05	704	0.4+	0.8+	1999 12 14	704	0.8+	0.0	2000 01 07	704	0.1+	0.4−
1997 03 05	704	1.1−	1.1+	1999 12 14	704	0.6+	0.3+	2000 01 07	704	0.7+	0.8−
1997 03 06	704	1.7+	1.8−	1999 12 14	704	0.6+	0.5−				
1997 03 06	704	0.4−	0.5−	1999 12 14	704	1.1+	0.3+				

1997 CB₂₈ = 2000 AN₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	87.35128	(2000.0)	
<i>n</i>	0.28178849	ω	234.54621
<i>a</i>	2.3042020	Ω	129.94375
<i>e</i>	0.1129865	<i>i</i>	5.59448
<i>P</i>	3.50	<i>H</i>	14.3
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	5

1997 02 04	566	0.1−	0.3−	1997 02 18	327	0.3+	0.4−	2000 01 05	704	0.1+	0.2+
1997 02 04	566	0.2+	0.3−	1997 02 18	327	0.3−	0.1+	2000 01 05	704	0.4+	0.0
1997 02 04	566	0.2+	0.4−	1999 12 06	704	0.1−	0.6+	2000 01 05	704	0.3+	0.0
1997 02 06	327	0.0	0.7+	1999 12 06	704	0.6−	1.0−	2000 01 05	704	0.2+	0.2−
1997 02 06	327	1.1−	0.7+	1999 12 06	704	1.3−	0.3−	2000 01 05	704	0.2+	0.0
1997 02 06	327	0.5−	0.3+	1999 12 06	704	0.7−	0.6+	2000 01 06	704	0.2+	0.3+
1997 02 17	327	0.4+	0.2−	1999 12 06	704	0.3−	0.7+	2000 01 06	704	0.1+	0.1+
1997 02 17	327	0.6+	0.1+	1999 12 14	704	1.3+	1.8−	2000 01 06	704	0.5+	0.1+
1997 02 17	327	1.1−	0.2+	1999 12 14	704	0.6+	0.3+	2000 01 06	704	0.5+	0.1+
1997 02 18	327	0.3−	0.1+	1999 12 14	704	0.8−	0.1+	2000 01 06	704	0.8+	0.5−
1997 02 18	327	0.7+	0.4−	1999 12 14	704	0.8−	0.3+				
1997 02 18	327	0.8+	0.0	1999 12 14	704	0.3−	0.5+				

1997 CY₂₈ = 1999 XF₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	13.58854	(2000.0)	
<i>n</i>	0.27884356	ω	108.86096
<i>a</i>	2.3203971	Ω	328.35365
<i>e</i>	0.0772983	<i>i</i>	7.36251
<i>P</i>	3.53	<i>H</i>	14.5
Residuals in seconds of arc			
<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc											
1995 08 19	809	0.4+	0.2+	1997 03 10	704	0.5+	0.9+	1999 12 12	704	0.3+	0.2−
1995 08 20	809	0.3−	0.4−	1997 03 11	704	0.6+	1.3−	1999 12 12	704	0.4+	0.0
1995 08 22	809	0.7+	1.3−	1997 03 11	704	0.3+	0.2−	1999 12 12	704	0.9+	0.0
1997 02 07	327	0.9−	0.0	1997 03 12	704	0.9+	0.7−	1999 12 12	704	0.7+	0.3−
1997 02 07	327	1.7−	0.0	1997 03 12	704	0.7+	0.7−	1999 12 15	704	0.3−	0.0
1997 02 07	327	0.2−	0.0	1999 12 07	703	0.4−	0.4+	1999 12 15	704	0.1+	0.3−

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1997 02 18	327	1.3−	0.3−	1999 12 07	703	0.0	0.6+	1999 12 15	704	0.7−	0.6−
1997 02 18	327	0.1+	0.3−	1999 12 07	703	0.3+	0.5+	1999 12 15	704	0.1−	0.7+
1997 02 18	327	0.3−	0.2−	1999 12 07	703	0.0	0.3+	1999 12 15	704	0.9−	0.2−
1997 03 10	704	0.7+	1.4+	1999 12 12	704	0.4−	0.5−				

1997 EE = 2000 AB₁₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	9.81110		(2000.0)	P		Q	
<i>n</i>	0.29148766	ω	60.17498	−0.23273385		−0.97134747	
<i>a</i>	2.2527998	Ω	43.36953	+0.86634055		−0.22956512	
<i>e</i>	0.0956908	<i>i</i>	4.02129	+0.44191516		−0.06151378	
<i>P</i>	3.38	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 01	411	0.1−	1.0+	1997 04 29	704	1.5+	1.3+	1999 12 15	704	0.1+	0.2−
1997 03 01	411	0.2−	0.7−	1997 04 29	704	0.3−	1.5+	1999 12 15	704	0.3−	0.2−
1997 03 02	411	0.9−	0.0	1997 04 29	704	0.1+	0.1+	1999 12 15	704	0.1−	0.5−
1997 03 02	411	0.3+	0.1−	1997 04 29	704	1.4+	0.3−	1999 12 15	704	(1.2+ 2.2+)	
1997 03 07	411	0.6−	1.9−	1997 04 29	704	0.2−	0.2+	1999 12 15	704	0.1+	0.1−
1997 03 07	411	0.1+	0.3+	1999 11 03	704	0.8−	0.1+	2000 01 02	704	0.4+	0.4+
1997 03 12	411	0.4−	0.2−	1999 11 03	704	0.1+	0.3−	2000 01 02	704	0.0	0.1+
1997 03 12	411	0.6−	0.1+	1999 11 03	704	0.2+	0.4−	2000 01 02	704	0.1+	0.1+
1997 04 10	411	1.0+	0.1+	1999 11 03	704	0.4+	0.7−	2000 01 02	704	1.9−	0.9+
1997 04 10	411	1.6+	0.4+	1999 11 03	704	0.1−	0.1+	2000 01 04	704	0.0	0.0
1997 04 28	704	0.7−	0.0	1999 11 14	704	0.4+	0.8−	2000 01 04	704	0.1+	0.1−
1997 04 28	704	0.1−	0.1+	1999 11 14	704	0.5+	0.7−	2000 01 04	704	0.8+	1.1+
1997 04 28	704	1.1−	1.6−	1999 11 14	704	0.9+	0.1−	2000 01 04	704	1.1−	0.8+
1997 04 28	704	0.8−	1.3−	1999 11 14	704	0.0	0.3+				

1997 EG = 1999 XR₁₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	334.65586		(2000.0)	P		Q	
<i>n</i>	0.28843819	ω	133.97120	−0.78426273		−0.62020077	
<i>a</i>	2.2686502	Ω	7.75139	+0.52753923		−0.68086931	
<i>e</i>	0.0894122	<i>i</i>	7.16461	+0.32654913		−0.38957411	
<i>P</i>	3.42	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 01	411	0.1+	0.7+	1997 04 02	704	0.7+	0.6+	1999 12 15	704	0.1−	0.3+
1997 03 01	411	0.3+	0.3+	1997 04 02	704	1.2+	0.4−	1999 12 15	704	0.5+	0.3+
1997 03 02	411	0.6+	0.1+	1997 04 02	704	0.3+	1.7+	1999 12 15	704	0.3+	0.1+
1997 03 02	411	0.5−	0.3+	1997 04 10	411	0.0	0.4−	2000 01 02	704	0.8−	0.5−
1997 03 07	411	1.2−	0.8−	1997 04 10	411	0.5−	0.1−	2000 01 02	704	0.6−	0.0
1997 03 07	411	0.3−	0.2+	1999 12 12	704	0.0	0.4+	2000 01 02	704	0.1−	0.3+
1997 03 12	411	0.6−	0.9−	1999 12 12	704	0.4+	0.3+	2000 01 02	704	0.3−	0.4−
1997 03 12	411	0.6−	0.8−	1999 12 12	704	0.2+	0.5−	2000 01 02	704	0.7+	0.3−
1997 04 02	704	0.7+	0.4−	1999 12 15	704	0.1−	0.1+				

1997 EN = 1999 XX₁₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	285.55618		(2000.0)	P		Q	
<i>n</i>	0.29806673	ω	64.74896	−0.99175506		+0.11319739	
<i>a</i>	2.2195268	Ω	121.69848	−0.12733747		−0.92314600	
<i>e</i>	0.0554557	<i>i</i>	4.04849	+0.01439004		−0.36740687	
<i>P</i>	3.31	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 01	557	0.1+	0.0	1997 04 01	557	0.1−	0.2−	1999 12 14	704	0.2+	0.7−
1997 03 01	557	0.0	0.6+	1997 04 01	557	0.3−	0.3+	1999 12 14	704	0.7−	0.2−
1997 03 01	557	0.8−	0.6−	1999 11 15	704	0.4−	0.0	1999 12 14	704	0.5−	0.3−
1997 03 02	557	0.4−	0.3−	1999 11 15	704	0.2+	0.4−	1999 12 14	704	0.2−	0.1−
1997 03 02	557	0.1−	0.2−	1999 11 15	704	0.0	0.5+	1999 12 31	557	0.1+	0.1+
1997 03 02	557	0.3−	0.0	1999 11 15	704	0.3−	0.8+	1999 12 31	557	0.0	0.6+
1997 03 03	557	0.2−	0.1+	1999 11 17	704	0.6+	0.1−	2000 01 02	557	0.9−	2.0+
1997 03 07	557	0.1−	0.0	1999 11 17	704	0.8−	0.7+	2000 01 02	557	1.2+	1.1+

1997 03 07	557	0.4+	0.1+	1999 11 17	704	0.2+	0.2−	2000 01 05	704	0.3−	0.2−
1997 03 07	557	0.1+	0.2−	1999 11 17	704	0.4+	0.3−	2000 01 05	704	0.6−	1.6−
1997 03 07	557	0.4+	0.3+	1999 11 17	704	0.3+	1.0−	2000 01 05	704	0.0	0.0
1997 03 09	557	0.1+	0.1−	1999 12 08	704	1.0−	0.3+	2000 01 05	704	0.3+	0.0
1997 03 09	557	0.2−	0.7−	1999 12 08	704	0.0	0.2+	2000 01 05	704	0.8+	0.4+
1997 03 09	557	0.0	0.4−	1999 12 08	704	0.2−	0.0	2000 01 06	704	1.2+	1.5−
1997 03 11	557	0.2+	0.3+	1999 12 08	704	0.2+	0.7+	2000 01 06	704	0.6+	1.3−
1997 03 11	557	0.4+	0.2+	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.4−	0.7−
1997 03 11	557	0.3+	0.0	1999 12 08	704	0.2+	0.9+	2000 01 06	704	0.5+	0.8−
1997 03 31	704	0.2+	0.7+	1999 12 08	704	0.3−	0.1−	2000 01 06	704	1.2+	0.8−
1997 03 31	704	0.2+	0.8−	1999 12 08	704	0.3−	0.4+	2000 01 14	557	0.5−	0.3+
1997 04 01	704	(2.4+ 2.4+)		1999 12 08	704	0.3−	0.0	2000 01 14	557	0.0	0.9+
1997 04 01	704	0.4+	1.2+	1999 12 14	704	0.3−	0.4+				

1997 EO₂ = 1999 XX₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	15.15311		(2000.0)	P		Q	
<i>n</i>	0.28779651	ω	65.90911	−0.17790615		−0.98277136	
<i>a</i>	2.2720211	Ω	34.45687	+0.86764059		−0.18067714	
<i>e</i>	0.0896816	<i>i</i>	5.08001	+0.46427278		−0.03893886	
<i>P</i>	3.42	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 04	411	0.1+	0.3−	1999 12 10	411	0.3+	0.8−	1999 12 31	849	0.2+	0.8+
1997 03 04	411	0.4−	0.4+	1999 12 12	704	0.2+	0.3+	1999 12 31	849	0.3−	0.8+
1997 03 05	411	0.1−	0.2−	1999 12 12	704	0.3−	0.1+	2000 01 02	704	0.0	0.3−
1997 03 05	411	0.7−	0.5+	1999 12 12	704	0.2−	0.2−	2000 01 02	704	1.5+	0.7−
1997 03 09	411	0.5+	0.6−	1999 12 12	704	0.1−	0.1−	2000 01 02	704	0.3−	0.8−
1997 03 09	411	0.5+	0.0	1999 12 12	704	0.6−	0.2−	2000 01 02	704	0.4−	0.7−
1999 11 16	704	0.3−	0.7−	1999 12 15	704	0.0	0.0	2000 01 03	411	0.1−	0.1−
1999 11 16	704	0.4−	0.3−	1999 12 15	704	0.5+	0.3+	2000 01 03	411	1.2−	0.8+
1999 11 16	704	0.2−	0.2+	1999 12 15	704	0.2−	0.5−	2000 01 04	704	0.0	0.3−
1999 11 16	704	0.5+	0.0	1999 12 15	704	0.1−	0.3+	2000 01 04	704	0.1−	0.0
1999 11 16	704	0.6+	0.2+	1999 12 15	704	0.1+	0.7+	2000 01 04	704	0.1−	0.1−
1999 12 09	411	0.2+	0.0	1999 12 19	411	1.5+	0.0	2000 01 04	704	0.0	0.1−
1999 12 09	411	0.4−	0.4+	1999 12 19	411	0.2+	0.9+	2000 01 04	704	0.2−	0.2−
1999 12 10	411	0.4−	0.8−	1999 12 31	849	0.2+	0.9+				

1997 EZ₂ = 1999 XB₁₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	241.02381		(2000.0)	P		Q	
<i>n</i>	0.27117357	ω	204.53950	−0.55165493		+0.83163471	
<i>a</i>	2.3639474	Ω	32.08924	−0.74406385		−0.45616274	
<i>e</i>	0.0670591	<i>i</i>	6.88925	−0.37688967		−0.31670059	
<i>P</i>	3.63	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 04	411	0.6−	0.2−	1997 03 12	411	0.6+	0.1+	1999 12 12	704	0.5+	1.0−
1997 03 04	411	0.9−	0.2−	1997 04 07	566	1.2+	0.0	1999 12 12	704	0.4+	1.3−
1997 03 05	411	0.4−	0.6−	1997 04 07	566	0.3+	0.2+	1999 12 12	704	0.7+	0.7−
1997 03 05	411	0.1+	0.0	1997 04 07	566	0.8+	0.0	1999 12 12	704	0.5+	0.5−
1997 03 09	411	0.2+	0.0	1997 04 10	411	0.6−	0.9−	1999 12 15	704	0.9−	1.0+
1997 03 09	411	0.1+	0.2−	1997 04 10	411	1.9−	0.7+	1999 12 15	704	1.7−	0.7+
1997 03 12	411	1.0+	1.0+	1999 12 12	704	0.3+	0.3−	1999 12 15	704	0.1+	2.0+

1997 EN₅ = 1999 VZ₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Residuals in seconds of arc

1997 03 04	691	0.3+	0.3+	1997 04 09	691	0.4+	0.4-	1999 11 04	704	0.0	0.1-
1997 03 04	691	0.1-	0.1+	1997 04 13	691	0.7+	0.7-	1999 11 04	704	0.3+	0.4-
1997 03 04	691	0.3+	0.3+	1997 04 13	691	1.5-	0.6+	1999 11 04	704	0.6+	0.7+
1997 03 07	691	0.3-	0.3+	1997 04 13	691	0.7+	0.4-	1999 11 04	704	0.3-	0.2-
1997 03 07	691	0.2-	0.2+	1999 10 06	704	1.8+	0.1+	1999 11 04	704	1.1+	0.8+
1997 03 07	691	0.0	0.1+	1999 10 06	704	0.1+	0.7-	1999 11 07	704	0.4-	0.4+
1997 03 14	691	0.4-	0.0	1999 10 06	704	0.4+	0.3-	1999 11 07	704	0.4-	1.3+
1997 03 14	691	0.1-	0.2-	1999 10 06	704	0.3+	1.1-	1999 11 07	704	1.5-	0.1+
1997 03 14	691	0.2-	0.2-	1999 10 06	704	0.2-	1.2-	1999 11 07	704	0.5-	0.4-
1997 04 07	691	0.1+	0.3-	1999 10 29	703	0.1+	0.5+	1999 11 11	703	0.2-	0.5+
1997 04 07	691	0.1+	0.3-	1999 10 29	703	0.5-	0.3+	1999 11 11	703	0.6+	1.4-
1997 04 09	691	0.0	0.2-	1999 10 29	703	0.5-	0.9-	1999 11 11	703	0.4+	0.2-
1997 04 09	691	0.3-	0.3-	1999 10 29	703	0.7-	0.3+	1999 11 11	703	0.4-	0.9+

1997 EB₆ = 1998 QO₁₀₁ = 1998 QN₁₀₇ = 1998 SV₁₆₅ = 2000 AT₃₅

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	246.74440	(2000.0)	P	Q	
<i>n</i>	0.28244967	ω	191.09818	-0.50230651	+0.86332088
<i>a</i>	2.3006047	Ω	48.76918	-0.78830355	-0.43409506
<i>e</i>	0.1288615	<i>i</i>	3.70775	-0.35533882	-0.25736850
<i>P</i>	3.49	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1997 03 01	411	0.6+	0.2+	1997 04 29	704	0.7+	0.9+	1999 12 15	704	0.6-	0.1+
1997 03 01	411	0.0	0.4-	1997 04 29	704	0.1+	0.2-	2000 01 03	704	0.4-	0.0
1997 03 07	411	1.2-	0.5-	1998 08 26	809	1.4+	0.4-	2000 01 03	704	0.1-	0.0
1997 03 07	411	0.4+	1.0+	1998 08 26	809	1.5+	0.2+	2000 01 03	704	0.2-	0.7+
1997 03 08	411	0.6-	0.5-	1998 08 26	809	(2.0+	0.8+)	2000 01 04	704	0.3+	0.4+
1997 03 08	411	0.6+	0.7-	1998 08 27	809	0.5-	0.4+	2000 01 04	704	0.1-	0.7+
1997 03 09	411	0.9-	0.7-	1998 08 27	809	0.1+	1.0+	2000 01 04	704	0.4-	0.8+
1997 03 09	411	0.0	0.6-	1998 08 27	809	1.0+	0.9+	2000 01 04	704	0.2+	1.7+
1997 03 12	411	0.6-	0.5+	1998 09 18	704	1.4-	1.7-	2000 01 04	704	0.5+	0.7+
1997 03 12	411	0.6+	0.5-	1998 09 18	704	0.0	0.3+	2000 01 08	704	0.1+	0.4-
1997 04 10	411	0.7+	0.3+	1998 09 18	704	1.7-	0.3+	2000 01 08	704	0.6+	0.1+
1997 04 10	411	0.7-	0.3-	1998 09 18	704	0.6-	0.2-	2000 01 08	704	0.3+	0.4-
1997 04 29	704	0.3+	0.6+	1998 09 18	704	(2.3-	0.8-)	2000 01 08	704	0.6+	0.7-
1997 04 29	704	0.2-	1.2+	1999 12 15	704	0.4-	0.8-				
1997 04 29	704	0.5+	0.8+	1999 12 15	704	0.6-	1.9-				

1997 EC₆ = 1999 XK₅₂

Id. T. Kobayashi

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	259.26294	(2000.0)	P	Q	
<i>n</i>	0.26304389	ω	154.06529	-0.93412638	+0.35440358
<i>a</i>	2.4124069	Ω	46.75999	-0.33679915	-0.83571162
<i>e</i>	0.1145326	<i>i</i>	3.34430	-0.11821267	-0.41950469
<i>P</i>	3.75	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 03 07	411	0.3+	0.3+	1999 11 14	704	0.6-	0.2+	1999 12 07	704	0.1-	0.2-
1997 03 07	411	0.5-	0.0	1999 11 14	704	0.3-	0.0	1999 12 07	704	0.0	0.2-
1997 03 08	411	0.2+	0.4+	1999 11 14	704	0.3+	0.1-	1999 12 07	704	0.2-	0.0
1997 03 08	411	0.2-	0.0	1999 11 14	704	0.0	0.1+	1999 12 07	704	0.8+	0.1+
1997 03 09	411	0.1+	0.4-	1999 11 16	704	0.1+	0.5+	1999 12 08	704	0.9-	0.2+
1997 03 09	411	0.4-	0.5+	1999 11 16	704	0.7+	0.7-	1999 12 08	704	0.3+	0.3-
1997 03 12	411	0.3-	0.1-	1999 11 16	704	0.2-	0.3+	1999 12 08	704	0.1-	0.1-
1997 03 12	411	0.8+	0.7-	1999 11 16	704	0.0	0.1+	1999 12 08	704	0.0	0.1+
1999 11 14	704	0.2-	0.5-	1999 12 07	704	0.3+	0.2-	1999 12 08	704	0.0	0.6+

1997 EJ₁₆ = 1999 XO₁₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	30.96103	(2000.0)	P	Q	
<i>n</i>	0.27768041	ω	67.62550	+0.45130502	-0.89235219
<i>a</i>	2.3268723	Ω	355.53508	+0.78999621	+0.40244140
<i>e</i>	0.2283556	<i>i</i>	4.12504	+0.41500574	+0.20432449
<i>P</i>	3.55	<i>H</i>	16.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 05	691	0.2-	0.2+	1997 04 08	691	0.3+	0.2-	1999 12 15	704	0.5-	0.1-
1997 03 05	691	0.0	0.2+	1997 04 08	691	0.0	0.4-	1999 12 15	704	0.4-	0.6+
1997 03 05	691	0.1-	0.4+	1999 12 12	704	0.3-	0.4-	2000 01 02	704	1.0+	0.2-
1997 03 10	691	0.2-	0.0	1999 12 12	704	(0.8-	2.3-)	2000 01 02	704	0.4+	0.6+
1997 03 10	691	0.1-	0.3+	1999 12 12	704	0.0	0.6-	2000 01 02	704	0.8-	0.2-
1997 03 10	691	0.1-	0.2+	1999 12 12	704	0.2-	0.7-	2000 01 04	704	0.2+	0.2+
1997 04 07	691	0.1+	0.5-	1999 12 12	704	0.6-	0.7-	2000 01 04	704	0.4-	0.1-
1997 04 07	691	0.1+	0.1-	1999 12 15	704	0.1+	0.0	2000 01 04	704	0.4-	0.2-
1997 04 07	691	0.1-	0.2-	1999 12 15	704	1.0+	1.4+	2000 01 04	704	0.7+	0.4-
1997 04 08	691	0.2+	0.0	1999 12 15	704	0.2+	0.7+				

1997 ET₁₇ = 2000 AZ₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	62.21050	(2000.0)	P	Q	
<i>n</i>	0.30408185	ω	163.50840	+0.57163431	-0.82023865
<i>a</i>	2.1901594	Ω	251.62271	+0.75027594	+0.53291385
<i>e</i>	0.1517762	<i>i</i>	1.27052	+0.33214488	+0.20787348
<i>P</i>	3.24	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 03 03	400	0.5+	0.2+	1997 04 07	691	0.2+	0.6+	2000 01 05	120	0.5+	0.1-
1997 03 03	400	0.5-	0.4+	1999 12 05	699	0.0	0.0	2000 01 06	120	0.1+	0.5-
1997 03 04	400	0.1-	1.3+	1999 12 05	699	0.2+	1.1+	2000 01 06	704	0.2+	0.0
1997 03 04	400	0.4-	0.3+	1999 12 05	699	0.1+	0.1-	2000 01 06	704	0.2-	0.3-
1997 03 12	400	0.9+	0.4-	2000 01 02	120	0.5-	0.1-	2000 01 06	704	0.2+	0.1-
1997 03 12	400	0.5-	0.0	2000 01 02	120	0.4-	0.2+	2000 01 06	704	0.6+	0.2+
1997 03 12	400	0.2-	0.1+	2000 01 03	120	0.4-	0.1-	2000 01 06	704	0.2+	0.2+
1997 03 16	400	1.0+	1.4-	2000 01 04	120	0.6-	0.3-	2000 01 06	120	0.6-	0.3+
1997 03 16	400	0.4+	0.9-	2000 01 05	704	0.1-	0.0	2000 01 06	120	0.0	0.1-
1997 03 28	400	0.6-	0.9-	2000 01 05	704	0.0	0.2+	2000 01 10	120	0.0	0.5-
1997 03 28	400	0.6-	0.3+	2000 01 05	704	0.1+	0.1-	2000 01 10	120	0.3+	0.3-
1997 04 07	691	0.1-	0.4+	2000 01 05	704	0.0	0.1+				
1997 04 07	691	0.0	0.3+	2000 01 05	704	0.3+	0.2+				

1997 EQ₂₂ = 1999 VB₁₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	84.38709	(2000.0)	P	Q	
<i>n</i>	0.17952107	ω	143.45400	+0.56097290	+0.82782325
<i>a</i>	3.1121398	Ω	160.66798	-0.76253336	+0.51871544
<i>e</i>	0.1138858	<i>i</i>	0.73605	-0.32226122	+0.21364215
<i>P</i>	5.49	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 05	691	0.1-	0.2+	1997 04 07	691	0.1-	0.1+	1999 11 09	704	0.4-	0.3-
1997 03 05	691	0.0	0.2+	1997 04 07	691	0.4-	0.2+	1999 11 09	704	0.4-	0.4-
1997 03 05	691	0.4-	0.2+	1999 10 01	703	0.3-	0.9+	1999 11 09	704	0.2-	0.3+
1997 03 11	691	0.3+	0.0	1999 10 01	703	0.6+	1.6+	1999 11 09	704	0.2-	0.5+
1997 03 11	691	0.7+	0.0	1999 10 01	703	0.2-	0.5+	1999 11 09	691	0.2+	0.4+
1997 03 11	691	0.6+	0.3+	1999 10 01	703	0.9-	1.1-	1999 11 09	691	0.4+	0.0
1997 04 02	691	0.1+	0.7+	1999 10 04	704	0.2-	0.4+	1999 11 09	691	0.6+	0.0
1997 04 02	691	0.4-	0.7-	1999 10 04	704	0.2+	0.3-	1999 11 13	691	0.1+	0.2-
1997 04 02	691	0.1+	0.4-	1999 10 04	704	0.2-	1.3-	1999 11 13	691	0.1+	0.2-
1997 04 07	691	0.3-	0.3-	1999 11 09	704	0.6+	0.4-	1999 11 13	691	0.1+	0.3-

2000 JAN. 24

M.P.C. 37665

1997 ER₂₅ = 1999 VQ₉₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	202.80552		(2000.0)		P		Q
<i>n</i>	0.24199870	ω	186.39805	−0.66279425			+0.74533398
<i>a</i>	2.5503162	Ω	42.12159	−0.68217159			−0.56142106
<i>e</i>	0.0175497	<i>i</i>	6.15544	−0.30878100			−0.35954791
<i>P</i>	4.07	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 05	385	0.1+	0.1+	1997 03 11	385	1.0+	0.5+	1999 11 12	704	0.2−	0.0
1997 03 05	385	0.4−	0.0	1999 11 09	704	0.2+	0.4+	1999 11 12	704	0.5−	0.1−
1997 03 08	385	0.5−	0.2−	1999 11 09	704	0.3+	0.1−	1999 11 12	704	0.4−	0.4−
1997 03 08	385	0.1−	0.3+	1999 11 09	704	0.5+	0.3+				
1997 03 11	385	0.1−	0.6−	1999 11 12	704	0.0	0.0				

1997 EF₃₂ = 2000 AA₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	109.56984		(2000.0)		P		Q
<i>n</i>	0.26202929	ω	1.84928	+0.99886552			+0.04757140
<i>a</i>	2.4186303	Ω	355.42238	−0.04402965			+0.90538218
<i>e</i>	0.2390388	<i>i</i>	1.54612	−0.01814017			+0.42192425
<i>P</i>	3.76	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 11	691	0.7+	0.1+	1997 04 08	691	0.2−	0.3−	2000 01 04	704	0.9−	0.8−
1997 03 11	691	0.2+	0.1+	1997 04 08	691	0.1+	0.2+	2000 01 06	704	0.3−	0.8+
1997 03 11	691	0.2−	0.0	1997 04 12	691	0.0	0.4−	2000 01 06	704	1.4+	0.1+
1997 03 15	691	0.3−	0.2+	1997 04 12	691	0.1−	0.4+	2000 01 06	704	0.4−	0.9+
1997 03 15	691	0.2−	0.0	1997 04 12	691	0.0	0.1−	2000 01 06	704	0.0	0.1−
1997 03 15	691	0.2−	0.5−	2000 01 04	704	0.1−	0.2−				
1997 04 08	691	0.2+	0.3+	2000 01 04	704	0.2+	0.7−				

1997 EP₄₀ = 1999 XP₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	322.40458		(2000.0)		P		Q
<i>n</i>	0.28180438	ω	104.45277	−0.90263473			−0.42475987
<i>a</i>	2.3041154	Ω	50.46132	+0.35197915			−0.82139940
<i>e</i>	0.0788057	<i>i</i>	5.17015	+0.24771197			−0.38063380
<i>P</i>	3.50	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 13	104	0.4+	1.2−	1997 03 17	104	0.3+	0.0	1997 04 25	104	0.7+	0.7+
1997 03 13	104	0.4−	0.1+	1997 04 03	104	0.2+	0.6−	1997 04 25	104	1.1−	0.5+
1997 03 13	104	1.6+	0.0	1997 04 03	104	0.7+	0.5−	1999 12 10	704	0.7−	0.3−
1997 03 16	104	0.6−	0.1−	1997 04 03	104	0.9+	0.4−	1999 12 10	704	0.0	0.2+
1997 03 16	104	0.3−	0.3+	1997 04 06	104	0.2−	1.0−	1999 12 10	704	0.5−	0.0
1997 03 16	104	1.0−	0.9+	1997 04 06	104	0.8−	0.9−	1999 12 15	704	0.7+	0.1+
1997 03 16	104	0.6+	1.4+	1997 04 06	104	0.1+	0.7−	1999 12 15	704	0.7−	0.2−
1997 03 17	104	0.1−	0.6+	1997 04 13	104	0.7−	0.0	1999 12 15	704	1.2+	0.0
1997 03 17	104	0.3−	0.6+	1997 04 13	104	0.4−	0.0				
1997 03 17	104	0.2+	0.4+	1997 04 13	104	0.2+	0.1−				

1997 EV₄₉ = 1997 GS₂₈ = 1999 VQ₁₀₅Id. A. Doppler (d, *MPC* 34061), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	285.55751		(2000.0)		P		Q
<i>n</i>	0.25896757	ω	254.79175	−0.98751192			−0.15727144
<i>a</i>	2.4376562	Ω	276.15904	+0.14788634			−0.90508890
<i>e</i>	0.1296910	<i>i</i>	0.53410	+0.05431233			−0.39506933
<i>P</i>	3.81	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 05	809	0.2−	0.8+	1997 04 08	691	0.1−	0.3−	1999 11 09	704	0.2+	0.6+
1997 03 05	809	0.6+	0.4+	1997 04 08	691	0.0	0.1−	1999 11 12	704	0.6−	0.3−

1997 03 05	809	0.5+	0.2+	1997 04 15	691	0.1−	0.5−	1999 11 12	704	0.3−	0.0
1997 03 06	809	(2.4+	2.7+)	1997 04 15	691	0.3−	0.2−	1999 11 12	704	0.0	0.1−
1997 03 06	809	(2.8+	2.3+)	1997 04 15	691	0.1−	0.6−	1999 11 12	704	0.2+	0.0
1997 03 06	809	(1.6+	3.0+)	1999 11 09	704	0.6+	0.3−	1999 11 12	704	0.4−	0.2+
1997 04 08	691	0.0	0.2−	1999 11 09	704	0.5+	0.6−				

1997 FR

Id. V. S. Casulli (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	285.67056		(2000.0)		P		Q
<i>n</i>	0.28571230	ω	206.90563	−0.88795934			+0.45992161
<i>a</i>	2.2830570	Ω	0.47751	−0.40886852			−0.78883034
<i>e</i>	0.1076250	<i>i</i>	3.87587	−0.21060564			−0.40769942
<i>P</i>	3.45	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 05	809	1.1+	0.1−	1997 03 31	596	0.4−	0.8−	2000 01 03	704	0.0	0.2−
1997 03 05	809	0.8+	0.6−	1997 03 31	596	0.2−	0.1+	2000 01 03	704	0.3−	1.6−
1997 03 05	809	0.9+	0.2+	1997 04 07	596	1.3−	1.2+	2000 01 03	704	0.1+	1.4−
1997 03 06	809	0.8+	1.7+	1997 04 07	596	0.7−	0.8+	2000 01 03	704	0.2−	0.1−
1997 03 06	809	1.4+	0.9+	1997 04 08	691	0.5−	0.4−	2000 01 03	704	0.6+	0.4−
1997 03 06	809	0.8+	1.2+	1997 04 08	691	0.4−	0.6−	2000 01 04	704	0.4−	0.5−
1997 03 10	691	0.0	0.3−	1997 04 08	691	0.5−	0.6−	2000 01 04	704	0.5+	0.5−
1997 03 10	691	0.1−	0.6−	1997 04 09	691	0.3−	0.2−	2000 01 04	704	0.0	0.7−
1997 03 10	691	0.0	0.5−	1997 04 09	691	0.3−	0.2+	2000 01 04	704	0.2−	0.4−
1997 03 27	596	1.3−	0.4−	1997 04 09	691	0.2−	0.2+	2000 01 04	704	1.1+	0.6−
1997 03 27	596	1.4−	0.3−	1997 04 14	691	0.0	0.1−	2000 01 07	704	0.1−	0.9+
1997 03 27	596	0.7+	1.0−	1997 04 14	691	0.2+	0.9−	2000 01 07	704	0.6−	0.3+
1997 03 27	596	0.1+	0.7−	1997 04 14	691	0.2+	0.5−	2000 01 07	704	0.4+	0.3+
1997 03 29	596	0.2−	0.2+	1999 12 29	596	1.3−	0.1−	2000 01 07	704	0.0	0.6+
1997 03 29	596	1.1−	0.4+	1999 12 29	596	0.5+	0.4−	2000 01 07	704	0.3−	0.6+
1997 03 29	596	0.6+	0.1+	1999 12 29	596	1.0−	0.4+	2000 01 08	704	0.7−	0.3−
1997 03 30	596	0.1−	0.2−	1999 12 30	596	0.8+	0.5−	2000 01 08	704	0.2+	0.1+
1997 03 30	596	0.2+	0.8+	1999 12 30	596	1.2−	0.5+	2000 01 08	704	0.3+	0.8−
1997 03 30	596	0.4+	0.2−	1999 12 30	596	0.2−	2.0+	2000 01 08	704	0.2+	0.4+
1997 03 31	596	1.1+	1.4+	1999 12 30	596	1.5+	1.7+				

1997 FW = 1999 XE₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	31.26245		(2000.0)		P		Q
<i>n</i>	0.26722714	ω	0.97493	+0.44771031			−0.87772960
<i>a</i>	2.3871645	Ω	62.44628	+0.81908407			+0.32597890
<i>e</i>	0.2430636	<i>i</i>	11.10244	+0.35868756			+0.35118159
<i>P</i>	3.69	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 18	327	0.1−	0.1+	1999 11 14	704	0.2+	0.2+	1999 12 12	704	0.1−	0.2−
1997 03 18	327	0.2+	0.5+	1999 11 14	704	0.2+	0.3+	1999 12 12	704	0.0	0.2−
1997 03 18	327	0.3−	0.0	1999 11 14	704	0.2+	0.2+	1999 12 12	704	0.1−	0.2−
1997 03 28	327	0.0	0.5+	1999 11 14	704	0.0	0.1+	1999 12 15	704	0.2−	0.3−
1997 03 28	327	0.1+	0.2−	1999 11 14	704	0.0	0.1−	1999 12 15	704	0.5−	0.4−
1997 03 28	327	0.2+	0.4+	1999 11 16	704	0.6+	0.5+	1999 12 15	704	0.7−	0.3−
1997 04 02	327	0.2−	0.1−	1999 11 16	704	0.3+	1.1−	1999 12 15	704	1.0−	0.3−
1997 04 02	327	0.6+	0.0	1999 11 16	704	0.4−	0.3+	1999 12 15	704	0.2−	0.0
1997 04 02	327	0.4−	0.2−	1999 11 16	704	0.2+	0.0	2000 01 02	704	(2.2−	1.2+)
1997 04 27	658	0.5−	0.0	1999 11 16	704	0.5+	0.1−	2000 01 02	704	0.2+	0.6+
1997 04 27	658	0.2−	0.6−	1999 12 12	704	0.5−	0.2+	2000 01 02	704	1.3+	0.1+
1997 04 27	658	0.5+	0.7−	1999 12 12	704	0.2−	0.2−	2000 01 02	704	0.6+	0.9+

1997 FM₂ = 1999 XS₃₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	2.91156		(2000.0)	P	Q
<i>n</i>	0.25868941	ω	57.35864	+0.13593005	-0.98956098
<i>a</i>	2.4394034	Ω	24.96162	+0.86673163	+0.09537189
<i>e</i>	0.1870070	<i>i</i>	6.51403	+0.47989510	+0.10804286
<i>P</i>	3.81	<i>H</i>	14.8	<i>G</i>	0.15

Residuals in seconds of arc

1997 03 10	809	0.8+	0.0	1999 11 14	703	0.9-	0.5+	1999 12 08	704	0.5-	0.5-
1997 03 10	809	0.5+	0.1+	1999 11 16	704	(2.2-	0.2-)	1999 12 08	704	0.8-	0.1-
1997 03 10	809	0.9+	0.6-	1999 11 16	704	0.0	0.1-	1999 12 09	678	0.5-	1.7+
1997 03 11	809	0.0	0.4+	1999 11 16	704	1.0+	0.4-	1999 12 09	678	1.0-	0.3+
1997 03 11	809	0.2-	0.2+	1999 11 16	704	(0.9+	2.0-)	1999 12 13	678	(2.2-	0.7+)
1997 03 11	809	0.3+	0.1-	1999 11 16	704	0.9+	1.0-	1999 12 13	678	1.3-	0.1-
1997 03 13	688	1.3-	0.3+	1999 12 02	159	0.3+	0.3-	1999 12 13	703	0.4-	0.6+
1997 03 13	688	0.5-	0.2-	1999 12 02	159	0.1+	0.2-	1999 12 13	703	0.3-	0.6+
1997 03 13	688	1.4-	0.3+	1999 12 02	159	0.0	0.5-	1999 12 13	703	0.1+	0.0
1997 03 13	688	1.0-	0.0	1999 12 02	159	0.3+	0.2-	1999 12 13	703	0.0	0.4-
1997 03 31	704	0.7+	0.8+	1999 12 02	159	0.0	0.2-	1999 12 13	159	0.1+	0.2+
1997 03 31	704	1.0+	0.7+	1999 12 02	159	0.1+	0.1-	1999 12 13	159	0.5-	0.1-
1997 04 03	704	0.8+	0.7-	1999 12 05	703	0.5+	1.0+	1999 12 13	159	0.8-	0.1-
1997 04 03	704	0.0	0.2-	1999 12 05	703	0.1-	0.6+	1999 12 13	159	0.4-	0.3-
1999 11 05	704	1.7+	0.2-	1999 12 05	703	0.4+	0.5+	2000 01 04	704	0.4+	0.2-
1999 11 05	704	0.1-	0.7-	1999 12 05	703	0.0	0.6+	2000 01 04	704	0.3+	0.3-
1999 11 05	704	0.4+	0.1-	1999 12 06	159	0.7+	0.7-	2000 01 04	704	0.2+	0.8-
1999 11 05	704	0.9+	0.1-	1999 12 06	159	0.1-	0.2+	2000 01 04	704	0.2-	0.3-
1999 11 14	704	0.6-	0.3-	1999 12 06	159	0.5+	0.0	2000 01 04	704	0.3+	0.7-
1999 11 14	704	0.5-	0.2+	1999 12 06	159	0.6+	0.1-	2000 01 06	704	1.0+	0.2-
1999 11 14	704	0.5-	0.1+	1999 12 07	699	0.4+	1.2+	2000 01 06	704	1.0+	0.6-
1999 11 14	703	0.2-	0.7+	1999 12 07	699	(0.3+	2.4+)	2000 01 06	704	0.5+	0.7-
1999 11 14	704	0.2-	0.0	1999 12 07	699	0.7-	0.7+	2000 01 06	704	0.6+	0.7-
1999 11 14	703	0.6-	0.7+	1999 12 08	704	0.2-	0.1-	2000 01 06	704	0.2-	0.7-
1999 11 14	704	0.4-	0.4+	1999 12 08	704	0.1-	0.3+				
1999 11 14	703	0.4-	0.4+	1999 12 08	704	0.5-	0.2+				

1997 FA₄ = 1991 FF₆ = 1999 XP₁₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	152.70986		(2000.0)	P	Q
<i>n</i>	0.17213675	ω	211.81129	-0.69196761	+0.71855673
<i>a</i>	3.2005183	Ω	14.80652	-0.59191144	-0.50942902
<i>e</i>	0.0374952	<i>i</i>	15.82559	-0.41330580	-0.47345359
<i>P</i>	5.73	<i>H</i>	12.9	<i>G</i>	0.15

Residuals in seconds of arc

1991 03 17	887	0.0	0.8+	1997 04 07	704	0.0	0.4+	1999 09 30	704	0.2-	0.7+
1991 03 17	887	0.6+	0.0	1997 04 07	704	0.6+	0.4-	1999 09 30	704	0.3+	0.9+
1997 03 31	704	0.1+	0.9+	1999 09 14	704	0.3-	0.5-	1999 12 02	704	0.4-	1.0+
1997 03 31	704	0.3+	0.7+	1999 09 14	704	0.0	0.1-	1999 12 02	704	0.2-	1.4+
1997 04 03	704	0.2-	0.1+	1999 09 14	704	0.1+	0.4-	1999 12 02	704	0.0	0.8+
1997 04 03	704	0.6+	0.2+	1999 09 14	704	0.4-	0.2-	1999 12 07	704	0.4-	0.1-
1997 04 05	704	0.1+	0.3-	1999 09 14	704	0.2-	0.4-	1999 12 07	704	0.4+	0.2+
1997 04 05	704	0.4-	0.5-	1999 09 30	704	0.5+	0.4+	1999 12 07	704	0.7-	1.0-
1997 04 06	704	0.0	0.2+	1999 09 30	704	0.3-	0.7+	1999 12 07	704	0.9-	0.7-
1997 04 06	704	0.0	0.0	1999 09 30	704	0.6+	0.3-				

1997 FH₄ = 1979 SK₁₃

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	138.11336		(2000.0)	P	Q
<i>n</i>	0.25712542	ω	325.35013	+0.90489848	+0.42429296
<i>a</i>	2.4492853	Ω	9.72043	-0.33127656	+0.75177719
<i>e</i>	0.0786375	<i>i</i>	11.50581	-0.26723507	+0.50478366
<i>P</i>	3.83	<i>H</i>	13.8	<i>G</i>	0.15

Residuals in seconds of arc

1979 09 20	675	0.1-	0.4+	1997 04 07	704	0.8+	0.5+	1999 12 03	699	0.3+	1.0+
1979 09 21	675	0.3-	0.2+	1997 04 07	704	0.0	0.0	1999 12 03	699	0.3+	0.3+
1997 03 29	327	0.5-	0.1+	1997 04 07	566	0.7+	0.6-	1999 12 13	704	0.0	0.4+
1997 03 29	327	0.9-	0.8+	1997 04 07	566	0.5+	0.8-	1999 12 13	704	0.4-	0.4+
1997 03 29	327	0.9-	0.1-	1997 04 07	566	1.4+	1.0-	1999 12 13	704	0.1+	0.1+
1997 03 29	327	0.8-	0.3+	1998 08 20	699	0.0	0.2+	1999 12 13	704	0.5+	0.1+
1997 03 31	704	0.2+	0.1-	1998 08 20	699	0.3+	0.4+	1999 12 13	704	0.4+	0.4+
1997 03 31	704	0.6+	1.0+	1998 08 20	699	0.2+	0.0	1999 12 16	699	0.8+	0.5+
1997 04 03	704	0.2-	1.2+	1998 09 24	699	0.3-	0.5+	1999 12 16	699	0.5+	0.3+
1997 04 03	704	0.0	0.3+	1998 09 24	699	0.2-	0.7+	1999 12 16	699	0.0	0.9+
1997 04 05	704	0.6-	1.0-	1998 09 24	699	0.2-	0.2+	1999 12 30	704	0.4-	0.1-
1997 04 05	704	0.3+	0.8+	1998 12 08	704	(2.2-	1.3+)	1999 12 30	704	0.8-	0.1+
1997 04 05	704	0.2+	0.1+	1998 12 08	704	0.2+	0.5+	1999 12 30	704	0.0	1.3-
1997 04 05	704	0.1+	0.1-	1998 12 08	704	2.0-	0.3-	1999 12 30	704	0.0	0.8-
1997 04 06	704	0.3-	0.7+	1998 12 08	704	(5.6-	0.5-)	1999 12 30	704	0.3-	1.0-
1997 04 06	704	1.0+	0.7+	1999 12 03	699	0.0	0.3+				

1997 FB₅ = 2000 AT₁₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	87.57772		(2000.0)	P	Q
<i>n</i>	0.23890740	ω	347.37031	+0.99980465	-0.01732044
<i>a</i>	2.5722686	Ω	13.63289	+0.01973630	+0.90094999
<i>e</i>	0.1145832	<i>i</i>	2.31535	-0.00107102	+0.43357713
<i>P</i>	4.13	<i>H</i>	14.8	<i>G</i>	0.15

Residuals in seconds of arc

1997 03 10	809	1.6+	1.5-	1997 04 30	691	0.3-	0.3+	1999 12 15	704	0.6-	0.2-
1997 03 10	809	0.0	1.5-	1997 05 09	691	0.4-	0.1+	1999 12 15	704	0.4-	0.9-
1997 03 10	809	(0.9+	2.3-)	1997 05 09	691	0.4-	0.1-	1999 12 15	704	(0.6-	2.2-)
1997 03 11	809	1.3+	0.1+	1997 05 09	691	0.4-	0.0	1999 12 15	704	0.1+	1.7-
1997 03 11	809	0.1+	1.0-	1998 06 24	704	0.8+	1.6-	2000 01 03	704	0.2+	0.3+
1997 03 11	809	0.3-	1.5-	1998 06 24	704	0.3+	0.9-	2000 01 03	704	0.3-	0.5+
1997 03 31	704	1.0+	0.3-	1998 06 24	704	0.0	1.7-	2000 01 03	704	0.2+	1.0-
1997 03 31	704	0.8+	0.9+	1998 06 24	704	(6.1-	0.7-)	2000 01 03	704	0.5+	1.2-
1997 04 06	566	0.3-	0.3+	1999 11 14	704	0.1+	0.1-	2000 01 03	704	0.7+	0.8-
1997 04 06	566	0.6-	0.2-	1999 11 14	704	0.0	1.0-	2000 01 04	704	0.1+	0.4+
1997 04 06	566	0.6-	0.2+	1999 11 14	704	0.5-	1.1-	2000 01 04	704	0.3-	0.4+
1997 04 28	691	0.4-	0.4+	1999 11 14	704	0.2-	0.1+	2000 01 04	704	0.1-	0.2-
1997 04 28	691	0.4-	0.6+	1999 12 07	704	0.1+	0.7+	2000 01 04	704	0.0	0.3+
1997 04 28	691	0.4-	0.4+	1999 12 07	704	0.3-	0.5+	2000 01 04	704	1.2+	0.1+
1997 04 30	691	0.8-	0.5+	1999 12 07	704	0.8-	0.4-				
1997 04 30	691	0.4-	0.4+	1999 12 07	704	0.6+	1.2+				

1997 GE₁ = 2000 AD₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	81.24479		(2000.0)	P	Q
<i>n</i>	0.27705664	ω	186.88993	+0.89196495	-0.45195664
<i>a</i>	2.3303635	Ω	199.99184	+0.41639517	+0.83120800
<i>e</i>	0.2040584	<i>i</i>	1.93838	+0.17610678	+0.32377223
<i>P</i>	3.56	<i>H</i>	16.0	<i>G</i>	0.15

Residuals in seconds of arc

1997 04 02	691	0.4+	0.0	1997 04 08	691	0.2+	0.4+	2000 01 05	704	0.5+	0.2+
1997 04 02	691	0.8+	0.0	1997 04 12	691	0.5-	0.2+	2000 01 05	704	0.3-	0.2-
1997 04 02	691	1.4-	0.3-	1997 04 12	691	0.1-	0.0	2000 01 05	704	0.7-	0.7-
1997 04 07	691	0.0	0.2+	1997 04 12	691	0.4-	0.0	2000 01 06	704	0.3+	0.3+
1997 04 07	691	0.4-	0.2+	1997 04 16	691	0.7+	0.4-	2000 01 06	704	0.4-	0.0
1997 04 07	691	0.4+	0.3-	1997 04 16	691	0.3-	0.1-	2000 01 06	704	0.5+	0.0
1997 04 08	691	0.3+	0.2+	1997 04 16	691	0.1+	0.0	2000 01 06	704	0.2+	0.5+
1997 04 08	691	0.3+	0.1+	2000 01 05	704	0.0	0.1-				

2000 JAN. 24

M.P.C. 37667

1997 GY₂ = 1999 XQ₁₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	95.90867		(2000.0)			P		Q			
n	0.21432535	ω	186.77921			+0.85549134		+0.51770394			
a	2.7653728	Ω	142.03609			−0.47425780		+0.79174799			
e	0.1450365	i	1.00831			−0.20788002		+0.32421867			
P	4.60	H	16.2			G	0.15	U	4		
Residuals in seconds of arc											
1997 03 15	691	0.3+	0.6+	1997 04 08	691	0.1+	0.3+	1999 11 09	704	0.4−	0.3−
1997 03 15	691	0.3+	0.1+	1997 04 12	691	0.6−	0.3−	1999 11 09	704	0.2+	0.3−
1997 03 15	691	0.2+	0.1+	1997 04 12	691	0.7−	0.1−	1999 12 07	691	0.3+	0.1+
1997 04 07	691	0.3−	0.0	1997 04 12	691	0.5−	0.1−	1999 12 07	691	0.1+	0.0
1997 04 07	691	0.3+	0.4+	1997 04 16	691	0.3+	0.2+	1999 12 07	691	0.3+	0.0
1997 04 07	691	0.2−	0.2+	1997 04 16	691	0.6+	1.1−	1999 12 13	691	0.2−	0.2+
1997 04 08	691	0.1+	0.6−	1997 04 16	691	0.0	0.5−	1999 12 13	691	0.0	0.0
1997 04 08	691	0.2+	0.6+	1999 11 09	704	(3.1−	1.6+)	1999 12 13	691	0.1−	0.1+

1997 GD₇ = 1999 VE₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	163.98466		(2000.0)		P		Q				
<i>n</i>	0.17115634		ω	159.55650	−0.57092904		+0.82030208				
<i>a</i>	3.2127288		Ω	75.61406	−0.75802159		−0.51085847				
<i>e</i>	0.0801564		<i>i</i>	2.00152	−0.31534633		−0.25715387				
<i>P</i>	5.76 <th><i>H</i></th> <td>14.3</td> <th><i>G</i></th> <td>0.15</td> <th><i>U</i></th> <td>4</td> <td colspan="2"></td>		<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1997 04 02	704	0.2+	0.8+	1997 05 01	704	0.0	0.1−	1997 05 07	704	0.0	1.0+
1997 04 02	704	0.8−	1.0+	1997 05 01	704	0.6+	0.3+	1997 05 07	704	1.0−	1.5+
1997 04 06	704	0.2−	0.9−	1997 05 01	704	0.9+	0.2−	1997 05 07	704	0.7−	0.4+
1997 04 06	704	0.2−	0.7−	1997 05 04	327	0.8−	0.2−	1997 05 08	327	0.7−	0.3−
1997 04 08	704	0.4+	0.6−	1997 05 04	327	0.2−	0.9−	1997 05 08	327	0.0	0.2−
1997 04 08	704	0.3−	0.5−	1997 05 04	327	0.3−	0.1−	1997 05 08	327	0.8−	0.1−
1997 04 30	704	0.3+	0.2−	1997 05 04	327	0.2−	0.3−	1999 11 05	704	0.4−	0.7−
1997 04 30	704	0.4+	0.2−	1997 05 05	704	0.3+	0.2+	1999 11 05	704	0.5−	0.1+
1997 04 30	704	0.2+	0.0	1997 05 05	704	0.5+	0.2−	1999 11 05	704	0.1−	0.9+
1997 04 30	704	0.3+	0.1+	1997 05 05	704	0.2+	0.7+	1999 11 09	704	0.7+	0.5−
1997 04 30	704	0.1−	0.4+	1997 05 05	704	0.4−	0.0	1999 11 09	704	0.2+	0.0
1997 05 01	704	1.1+	0.0	1997 05 05	704	0.1−	0.1+	1999 11 09	704	0.2+	0.1−
1997 05 01	704	1.1+	1.3−	1997 05 07	704	0.2+	0.1+				

1997 GG₈ = 2000 AV₁₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.26164		(2000.0)		P		Q				
<i>n</i>	0.26473226	ω	248.04667		−0.28362371		−0.95684308				
<i>a</i>	2.4021390	Ω	218.60848		+0.91299419		−0.24925429				
<i>e</i>	0.0606894	<i>i</i>	5.82374		+0.29325619		−0.14941088				
<i>P</i>	3.72	<i>H</i>	15.3		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1997 04 02	704	0.8+	1.5−	1997 05 01	704	0.4−	0.3−	2000 01 05	704	0.1+	0.5−
1997 04 02	704	0.4−	0.9−	1997 05 01	704	0.3−	0.4−	2000 01 05	704	0.2+	0.9+
1997 04 06	704	0.1+	0.5+	1998 08 17	704	0.6+	0.5−	2000 01 05	704	0.4+	1.3+
1997 04 06	704	0.1+	0.8+	1998 08 17	704	0.6+	0.5−	2000 01 07	704	0.0	0.1+
1997 04 08	704	0.5+	0.7+	1998 08 17	704	(1.5+	2.5+)	2000 01 07	704	0.4−	0.3−
1997 04 08	704	0.6−	0.3+	1998 08 17	704	0.8−	0.3−	2000 01 07	704	0.4−	0.4−
1997 04 30	704	0.1−	0.3−	1998 08 17	704	(5.3−	1.3+)	2000 01 07	704	0.1−	0.4−
1997 04 30	704	0.8+	0.0	1999 12 14	704	0.3−	1.8−	2000 01 07	704	0.3−	0.3+
1997 04 30	704	0.3+	0.2+	1999 12 14	704	0.4+	0.4−	2000 01 11	704	0.5+	0.0
1997 04 30	704	0.3+	0.6+	1999 12 14	704	0.5+	0.8−	2000 01 11	704	0.1+	0.2−
1997 04 30	704	1.9−	0.4−	1999 12 14	704	0.0	0.7−	2000 01 11	704	0.3−	0.9+
1997 05 01	704	0.0	0.2−	1999 12 14	704	0.0	0.7−	2000 01 11	704	0.2−	0.6+
1997 05 01	704	0.4−	0.0	2000 01 05	704	0.0	0.4+	2000 01 11	704	0.1+	0.2+
1997 05 01	704	0.8+	0.5−	2000 01 05	704	0.5−	0.3−				

1997 GB₁₂ = 1999 VS₁₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	317.91020		(2000.0)		P		Q		
<i>n</i>	0.26808373	ω	303.50106		−0.84858126		−0.52891866		
<i>a</i>	2.3820767	Ω	204.57346		+0.49479454		−0.78506522		
<i>e</i>	0.1598712	<i>i</i>	1.71503		+0.18731849		−0.32236262		
<i>P</i>	3.68	<i>H</i>	16.3		<i>G</i>	0.15	<i>U</i>	5	
Residuals in seconds of arc									
1997 03 11	809	0.2−	0.3−	1997 04 05	704	1.3+	0.9−	1999 11 09	704 0.0 0.3+
1997 03 11	809	0.5−	0.1+	1997 04 05	704	1.3+	0.8−	1999 11 09	704 0.0 0.1−
1997 03 11	809	0.1−	0.2+	1997 04 05	704	0.6−	0.6+	1999 11 12	704 0.6+ 0.3−
1997 03 13	809	1.8+	1.3+	1997 04 06	704	0.0	0.0	1999 11 12	704 0.1+ 0.2−
1997 03 13	809	1.4−	0.7+	1997 04 06	704	0.1−	0.2+	1999 11 12	704 0.1− 0.6−
1997 03 13	809	0.4+	1.7−	1997 04 07	704	0.5−	0.1−	1999 11 12	704 0.6− 0.2−
1997 04 03	704	0.1−	0.3−	1997 04 07	704	1.1−	0.7+	1999 11 12	704 0.5+ 0.3−
1997 04 03	704	1.0−	0.0	1999 11 09	704	0.9−	0.0		
1997 04 05	704	0.7+	0.4+	1999 11 09	704	0.4+	1.4+		

1997 GG₁₅ = 1993 DA₃ = 1999 XR₁₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	333.69825		(2000.0)		P		Q				
n	0.26773156	ω	137.77627		−0.68344193		−0.72999987				
a	2.3841651	Ω	355.33455		+0.66056225		−0.61684705				
e	0.1232422	i	1.90584		+0.31074852		−0.29427862				
P	3.68	H	15.8	G	0.15		U	3			
Residuals in seconds of arc											
1993 02 20	010	0.1+	0.7−	1997 04 06	704	0.5+	0.5+	1999 12 13	704	0.4−	0.1+
1993 02 20	010	0.6−	0.1+	1997 04 06	704	0.2−	0.5+	1999 12 13	704	1.0+	1.7−
1993 02 20	010	0.5+	0.4+	1997 04 07	704	0.1−	0.9+	1999 12 13	704	0.7+	0.5+
1997 03 11	809	0.2+	1.5−	1997 04 07	704	0.6+	1.3−	1999 12 14	704	0.2+	0.7+
1997 03 11	809	1.0−	1.2−	1999 11 14	704	0.8−	0.6−	1999 12 14	704	0.2+	0.6+
1997 03 11	809	0.9−	1.0−	1999 11 14	704	0.1+	0.8+	1999 12 14	704	0.6−	0.9−
1997 03 13	809	0.8+	1.2+	1999 11 14	704	0.3−	0.1+	2000 01 04	704	0.5−	0.7−
1997 03 13	809	0.4+	1.3+	1999 11 14	704	0.3+	0.2+	2000 01 04	704	0.4−	0.5+
1997 03 13	809	0.7+	1.6+	1999 11 14	704	0.2−	0.7+	2000 01 04	704	0.4+	0.2+
1997 04 03	704	0.7−	0.2−	1999 12 13	704	0.1+	0.1−				
1997 04 03	704	0.0	0.2−	1999 12 13	704	0.2+	0.1−				

1997 GL₁₅ = 1987 YU₅ = 1999 XX₁₇₃

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	81.79799		(2000.0)		P		Q				
n	0.24487268		ω	5.98150	+0.96791086		−0.25084096				
a	2.5303222		Ω	8.59070	+0.22617102		+0.84342289				
e	0.2201493		i	5.79375	+0.10952276		+0.47509645				
P	4.02 <th>H</th> <td>14.1<th>G</th><td>0.15<th>U</th><td>4<td colspan="2"></td></td></td></td>		H	14.1 <th>G</th> <td>0.15<th>U</th><td>4<td colspan="2"></td></td></td>	G	0.15 <th>U</th> <td>4<td colspan="2"></td></td>	U	4 <td colspan="2"></td>			
Residuals in seconds of arc											
1987 12 24	010	1.6−	0.1+	1997 04 06	704	0.2+	0.6+	1999 12 10	704	0.6−	0.1+
1987 12 24	010	1.2+	0.2+	1997 04 06	704	0.2+	0.0	1999 12 10	704	0.0	0.5+
1987 12 24	010	0.8+	0.9+	1997 04 07	704	0.4−	0.4+	1999 12 10	704	0.5−	0.4+
1997 03 11	809	0.1+	0.5−	1997 04 07	704	0.6−	0.8−	1999 12 15	704	0.4+	0.1−
1997 03 11	809	0.2−	0.8−	1999 11 12	703	0.8−	0.5+	1999 12 15	704	0.3+	0.1−
1997 03 11	809	0.7−	0.1−	1999 11 12	703	0.1−	0.6+	1999 12 15	704	0.1+	0.2−
1997 03 13	809	1.3+	0.6+	1999 11 12	703	0.1−	0.7+	1999 12 15	704	0.1−	1.0−
1997 03 13	809	1.3+	0.4+	1999 11 12	703	0.3+	0.8+	1999 12 15	704	0.0	1.0−
1997 03 13	809	1.8+	1.1+	1999 12 03	699	0.8+	0.1+	2000 01 02	704	0.1+	0.5−
1997 04 03	704	0.9+	0.4+	1999 12 03	699	0.2+	0.8+	2000 01 02	704	0.3−	0.4−
1997 04 03	704	1.6−	0.3−	1999 12 03	699	0.8+	0.6+	2000 01 02	704	0.0	0.5−
1997 04 05	704	1.3−	1.1−	1999 12 10	704	0.2+	0.	2000 01 02	704	0.3−	1.0−
1997 04 05	704	0.6−	0.5+	1999 12 10	704	0.1+	0.1+	2000 01 02	704	0.6−	1.0−

1997 GJ₁₈ = 1999 XC₁₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17592606	ω	292.76309	+0.69084368	+0.70678452		
<i>a</i>	3.1543939	Ω	23.21426	−0.43551824	+0.57493620		
<i>e</i>	0.0587155	<i>i</i>	22.72710	−0.57711253	+0.41219415		
<i>P</i>	5.60	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 03	704	0.9−	0.2+	1999 10 02	704	0.3+	0.2+	1999 12 03	704	0.2+	0.5−
1997 04 03	704	0.4−	0.2−	1999 10 05	703	0.3−	0.1+	1999 12 03	704	1.1+	0.6+
1997 04 07	704	0.4−	0.4+	1999 10 05	703	0.8−	0.2+	1999 12 07	704	0.1−	0.1+
1997 04 07	704	1.0+	0.4+	1999 10 05	703	0.1+	0.4+	1999 12 07	704	1.8−	0.0
1997 04 11	704	0.2+	0.7−	1999 10 05	703	0.3−	0.0	1999 12 07	704	0.4−	0.8+
1997 04 11	704	0.9+	0.1+	1999 11 07	704	1.5+	0.0	1999 12 07	704	1.1+	0.8−
1999 10 02	704	0.5+	0.0	1999 11 07	704	0.7−	0.1−	1999 12 07	704	0.7−	0.3−
1999 10 02	704	0.5+	0.5−	1999 11 07	704	0.2−	0.0				
1999 10 02	704	0.4−	0.3−	1999 12 03	704	0.1−	0.5+				

1997 GN₁₈ = 1999 VX₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22255927	ω	89.77086	−0.84920773	−0.52612632		
<i>a</i>	2.6967391	Ω	58.48472	+0.46098254	−0.78031685		
<i>e</i>	0.0182036	<i>i</i>	3.03501	+0.25756810	−0.33807797		
<i>P</i>	4.43	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 04 03	704	0.8−	0.2−	1997 04 11	704	0.7−	0.1+	1999 11 09	704	0.1+	0.1−
1997 04 03	704	0.2−	0.6+	1997 04 11	704	0.5−	0.3+	1999 11 12	704	0.3−	0.6+
1997 04 07	704	1.4+	0.7−	1999 11 09	704	0.2+	0.3+	1999 11 12	704	0.0	0.5−
1997 04 07	704	0.8+	0.1−	1999 11 09	704	0.5−	0.4−	1999 11 12	704	0.4+	0.0

1997 GO₁₉ = 1997 FS₃ = 1994 NV₄ = 1999 XF₉₈Id. M. E. Sansaturio, A. Gnädig (d, *MPC* 31161; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26452303	ω	199.65708	−0.80466506	−0.59338353		
<i>a</i>	2.4034055	Ω	303.92887	+0.54794957	−0.72905540		
<i>e</i>	0.0669298	<i>i</i>	1.39859	+0.22861630	−0.34113666		
<i>P</i>	3.73	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 07 11	809	0.2−	0.0	1997 04 05	704	0.4+	0.1+	1999 12 10	704	0.0	0.3+
1994 07 11	809	0.6−	0.5−	1997 04 05	704	0.0	0.3−	1999 12 15	703	0.3−	0.1−
1994 07 11	809	1.0+	0.7−	1997 04 06	704	0.0	1.3−	1999 12 15	703	0.5−	0.4+
1994 07 12	809	(0.3−	2.1−)	1997 04 06	704	0.3−	0.7+	1999 12 15	703	0.5−	0.7+
1994 07 12	809	(2.5−	2.6−)	1997 04 07	704	0.1+	0.1−	1999 12 15	703	0.7−	0.3−
1994 07 12	809	(2.5−	3.6−)	1997 04 07	704	0.4+	0.9−	2000 01 03	704	0.4−	0.6+
1997 03 11	809	(3.8−	0.9−)	1998 08 17	704	0.8+	0.5−	2000 01 03	704	0.3−	0.2+
1997 03 11	809	(3.5−	1.1−)	1998 08 17	704	0.9−	0.9−	2000 01 03	704	0.3+	1.5+
1997 03 11	809	(3.5−	1.1−)	1998 08 17	704	0.9+	0.7+	2000 01 03	704	0.7+	0.2−
1997 03 13	809	(0.1−	2.8+)	1998 08 17	704	1.1−	1.3+	2000 01 03	704	0.0	0.6−
1997 03 13	809	(0.2−	2.2+)	1999 12 07	704	0.0	0.4+	2000 01 04	704	0.1+	0.7−
1997 03 13	809	0.5−	2.0+	1999 12 07	704	0.1+	0.3+	2000 01 04	704	0.3−	0.8−
1997 03 31	704	0.7+	0.3−	1999 12 07	704	0.7−	0.5−	2000 01 04	704	0.8+	0.3−
1997 03 31	704	1.2−	0.3−	1999 12 07	704	0.1+	0.1+	2000 01 04	704	0.9+	1.2−
1997 04 03	704	0.5−	0.0	1999 12 10	704	0.5+	0.7+				
1997 04 03	704	0.8+	0.6+	1999 12 10	704	0.4+	1.2−				

1997 GV₂₀ = 1997 EQ₄₉ = 1999 VY₇₈Id. G. V. Williams (d, *MPC* 30432; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24524516	ω	280.18343	−0.88096195	−0.47153617		
<i>a</i>	2.5277595	Ω	231.69394	+0.45145922	−0.81257677		
<i>e</i>	0.1603289	<i>i</i>	2.88479	+0.14174137	−0.34259690		
<i>P</i>	4.02	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	(3.3−	0.8+)	1997 04 05	704	0.3+	0.0	1999 11 04	704	0.4−	0.2−
1997 03 11	809	(4.0−	0.1+)	1997 04 06	704	0.6+	0.1+	1999 11 04	704	0.6+	0.3−
1997 03 11	809	(4.5−	0.0)	1997 04 06	704	0.5+	0.4+	1999 11 04	704	0.2+	0.1−
1997 03 11	809	0.1+	0.1+	1997 04 07	704	1.1+	0.2−	1999 11 04	704	0.3+	1.4−
1997 03 11	809	0.7−	0.0	1997 04 07	704	0.8+	0.6−	1999 11 05	704	0.0	0.6−
1997 03 11	809	0.5−	0.4−	1998 07 29	910	0.1+	0.2−	1999 11 05	704	0.4+	0.5+
1997 03 12	809	1.5−	0.3−	1998 07 29	910	0.1−	0.1−	1999 11 05	704	0.4−	0.4+
1997 03 12	809	0.8−	0.4−	1998 07 29	910	0.0	0.2−	1999 11 05	704	0.3+	0.0
1997 03 12	809	1.3−	0.1+	1999 10 06	704	0.6+	0.1+	1999 11 05	704	0.4+	0.8−
1997 03 13	809	1.2−	0.3+	1999 10 06	704	0.2+	0.1−	1999 12 04	703	0.2+	0.7+
1997 03 13	809	0.2−	0.4+	1999 10 06	704	0.5+	0.1+	1999 12 04	703	0.3−	0.5−
1997 03 13	809	0.5−	0.3−	1999 10 06	704	0.2+	0.2+	1999 12 04	703	0.1+	1.3+
1997 03 31	704	0.7+	0.2+	1999 10 06	704	0.3+	0.4+	1999 12 04	703	0.6+	0.4+
1997 03 31	704	0.2+	0.2+	1999 10 29	703	0.5−	0.4+	1999 12 07	704	0.0	0.1+
1997 04 03	704	0.8+	0.9+	1999 10 29	703	0.4−	0.5+	1999 12 07	704	0.1−	0.2−
1997 04 03	704	(3.6+	1.6+)	1999 10 29	703	0.7−	0.3+	1999 12 07	704	0.2−	0.8−
1997 04 05	704	1.1+	0.4−	1999 10 29	703	0.7−	0.4+	1999 12 07	704	0.8−	0.8−

1997 GO₂₂ = 2000 AC₁₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26114617	ω	12.01627	−0.56951113	+0.82163636		
<i>a</i>	2.4240800	Ω	223.27363	−0.75701207	−0.53559944		
<i>e</i>	0.1394169	<i>i</i>	1.99729	−0.32029643	−0.19505622		
<i>P</i>	3.77	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 06	704	0.4−	0.2+	1997 04 30	704	0.1−	0.3+	1997 05 05	704	0.4+	0.0
1997 04 06	704	0.6+	1.0−	1997 05 01	704	0.1−	0.2−	2000 01 05	704	0.9−	0.2+
1997 04 07	704	0.3+	0.2+	1997 05 01	704	0.0	0.4−	2000 01 05	704	0.3+	0.9−
1997 04 07	704	0.1+	0.1+	1997 05 01	704	0.0	0.3−	2000 01 05	704	1.1+	0.5+
1997 04 08	704	0.5−	0.4+	1997 05 01	704	0.2+	0.2−	2000 01 05	704	0.1+	0.3+
1997 04 08	704	0.1−	0.3+	1997 05 01	704	0.1−	0.0	2000 01 07	704	0.1−	0.1+
1997 04 30	704	0.3−	0.2+	1997 05 05	704	0.1+	0.4−	2000 01 07	704	0.3−	0.9+
1997 04 30	704	0.4−	0.6+	1997 05 05	704	0.1+	0.3−	2000 01 07	704	0.3−	1.1−
1997 04 30	704	0.3−	0.4+	1997 05 05	704	0.6+	0.1−				
1997 04 30	704	0.3−	0.5+	1997 05 05	704	0.1+	0.2−				

1997 GZ₂₂

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21024744	ω	273.83032	−0.28644074	−0.95785607		
<i>a</i>	2.8010159	Ω	192.87686	+0.91291768	−0.26604578		
<i>e</i>	0.0556429	<i>i</i>	5.54340	+0.29074561	−0.10831153		
<i>P</i>	4.69	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 06	704	0.1−	1.0+	1998 08 17	704	0.7−	0.8−	1999 11 13	699	0.1+	0.2+
1997 04 06	704	0.1−	0.0	1998 08 17	704	1.0+	0.4+	1999 11 13	699	0.6+	0.1+
1997 04 07	809	(1.3−	2.2+)	1998 08 17	704	0.7+	0.1+	1999 11 15	704	0.4−	0.5+
1997 04 07	809	1.3−	1.1+	1998 08 17	704	(3.1−	0.6+)	1999 11 15	704	0.0	0.4+
1997 04 07	809	(1.1−	2.1+)	1998 09 19	910	0.5−	0.3+	1999 11 15	704	0.5−	0.0
1997 04 08	809	1.7−	1.2+	1998 09 19	910	0.3−	0.0	1999 11 15	704	0.1+	0.9+
1997 04 08	809	(1.3−	2.3+)	1998 09 19	910	0.4−	0.1−	1999 11 15	704	0.4−	0.7+
1997 04 08	809	(2.8−	3.1+)	1999 10 10	704	0.1−	0.5−	1999 11 17	704	1.3−	0.9+
1997 04 08	704	0.5+	0.1−	1999 10 10	704	0.1+	0.3+	1999 11 17	704	0.3+	0.3−

2000 JAN. 24

1997 04 08	704	0.9+	0.5−	1999 10 10	704	1.9+	0.8−	1999 11 17	704	0.3−	0.1+
1997 04 30	704	0.3−	0.6−	1999 10 11	704	0.1+	0.1+	1999 11 17	704	0.6−	0.8+
1997 04 30	704	0.6+	0.1−	1999 10 11	704	0.7−	0.3−	1999 12 05	704	0.1−	0.3−
1997 04 30	704	0.6−	0.0	1999 10 11	704	0.3−	0.2+	1999 12 05	704	0.3−	0.2−
1997 04 30	704	0.1−	0.0	1999 10 11	704	0.2−	0.5+	1999 12 05	704	0.2+	0.4−
1997 05 05	704	0.1−	0.6+	1999 10 11	704	0.0	0.5−	1999 12 05	704	0.3+	0.7−
1997 05 05	704	1.8+	0.6−	1999 10 30	703	0.6−	0.7+	1999 12 05	704	0.9+	0.4−
1997 05 05	704	1.2+	0.8+	1999 10 30	703	0.3−	0.7+	1999 12 08	699	1.2−	0.3−
1997 05 05	704	1.1+	0.0	1999 10 30	703	0.2+	1.4+	1999 12 08	699	0.3−	0.2+
1997 05 05	704	0.1+	0.4+	1999 10 30	703	0.3+	0.7+	1999 12 08	699	0.6+	0.2+
1997 05 05	704	0.9+	0.8+	1999 11 05	704	0.1+	0.1−	2000 01 05	704	0.5−	0.3+
1997 05 05	704	0.2+	0.7+	1999 11 05	704	0.0	0.5+	2000 01 05	704	0.5+	0.6−
1997 05 05	704	(3.2+ 0.1+)		1999 11 05	704	(2.1+ 1.2+)		2000 01 05	704	0.2+	0.9−
1997 05 05	704	(2.8− 0.2−)		1999 11 05	704	0.8+	0.2+	2000 01 05	704	0.5+	0.5−
1997 05 05	704	1.9−	0.8+	1999 11 05	704	(2.7+ 0.2+)					
1998 08 17	704	(3.9+ 1.2−)		1999 11 13	699	1.0−	0.9+				

1997 GQ₂₄ = 2000 AJ₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	293.63772		(2000.0)	P	Q
<i>n</i>	0.26260750	ω	133.35283	−0.97772709	+0.20600025
<i>a</i>	2.4150788	Ω	58.57326	−0.20359918	−0.88445919
<i>e</i>	0.1174535	<i>i</i>	2.69823	−0.05096179	−0.41868347
<i>P</i>	3.75	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 06	704	0.0	0.0	1997 04 30	704	0.4+	0.0	1999 12 07	704	0.2−	1.2+
1997 04 06	704	0.2−	0.9+	1997 04 30	704	1.9−	1.3+	1999 12 07	704	0.4+	0.1−
1997 04 06	704	0.7+	0.5−	1997 04 30	704	0.4−	0.2+	1999 12 07	704	0.1+	0.2+
1997 04 06	704	0.3+	0.2+	1997 05 01	704	0.1+	0.1+	2000 01 04	704	0.5−	0.1−
1997 04 07	704	0.2+	0.2+	1997 05 01	704	0.3−	0.3+	2000 01 04	704	0.0	0.3−
1997 04 07	704	0.3−	0.3−	1997 05 01	704	0.1−	0.4+	2000 01 04	704	0.1+	0.3−
1997 04 08	704	0.1−	0.5−	1997 05 01	704	1.3+	0.3−	2000 01 04	704	0.2−	0.4−
1997 04 08	704	0.2−	0.1−	1997 05 07	566	0.2−	0.5−	2000 01 06	704	0.2−	0.1−
1997 04 30	704	0.4+	0.1+	1997 05 07	566	0.3−	0.7−	2000 01 06	704	0.4+	0.2−
1997 04 30	704	0.6+	0.2+	1997 05 07	566	0.6−	0.8−	2000 01 06	704	0.3+	0.3+

1997 GZ₂₄ = 1999 RF₁₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	358.93307		(2000.0)	P	Q
<i>n</i>	0.17805236	ω	196.81528	+0.92737273	−0.37332526
<i>a</i>	3.1292305	Ω	185.30374	+0.36658154	+0.91984516
<i>e</i>	0.0175658	<i>i</i>	15.47218	+0.07481838	+0.12047046
<i>P</i>	5.54	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 07	683	(5.6− 0.2+)		1997 04 16	683	1.0+	0.1−	1999 09 09	704	0.2−	0.1−
1997 04 07	683	(6.9− 0.8+)		1997 04 16	683	0.8+	0.1−	1999 09 09	704	0.8−	0.9−
1997 04 07	683	(8.4− 0.7+)		1997 04 27	683	0.5−	0.2−	1999 09 09	704	0.0	0.2+
1997 04 09	683	0.1−	0.1+	1997 04 27	683	0.6−	0.7+	1999 09 14	704	0.2−	0.0
1997 04 09	683	0.1+	0.3+	1997 04 27	683	0.7−	1.2+	1999 09 14	704	0.2−	0.7+
1997 04 09	683	0.1+	0.5−	1997 05 02	683	0.2+	0.5−	1999 09 14	704	0.3+	0.2+
1997 04 13	683	0.8−	0.2+	1997 05 02	683	0.5+	0.2−	1999 09 14	704	0.1−	0.3+
1997 04 13	683	0.0	0.2−	1997 05 02	683	0.0	1.0−	1999 09 14	704	0.4−	0.0
1997 04 13	683	0.4−	0.2+	1999 09 09	704	1.0+	0.3−				
1997 04 16	683	0.6+	0.1+	1999 09 09	704	0.5+	0.1+				

1997 GB₂₆ = 1983 VD₄ = 1999 XT₁₁₇

Id. G. V. Williams, S. Nakano

M.P.C. 37669

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	308.31713		(2000.0)	P	Q
<i>n</i>	0.24553777	ω	105.56180	−0.82324065	−0.54347281
<i>a</i>	2.5257509	Ω	41.89180	+0.37927852	−0.74156316
<i>e</i>	0.1389776	<i>i</i>	14.22222	+0.42240104	−0.39334639
<i>P</i>	4.01	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1983 11 08	381	0.2−	0.5+	1999 11 03	704	0.2−	0.2−	1999 12 05	703	0.8+	0.1+
1997 04 11	809	(2.8+ 0.7−)		1999 11 03	704	0.1+	0.8−	1999 12 05	703	0.1+	0.1+
1997 04 11	809	(3.1+ 0.8−)		1999 11 03	704	0.0	0.3−	1999 12 10	704	0.2−	0.1+
1997 04 11	809	(3.4+ 0.7−)		1999 11 03	704	0.2−	0.4−	1999 12 10	704	0.6−	0.4−
1997 04 11	358	(0.5+ 2.6−)		1999 11 03	704	0.1−	0.5−	1999 12 10	704	0.5−	0.4+
1997 04 11	358	(0.0 3.3−)		1999 11 04	703	0.1+	0.5+	1999 12 10	704	0.4−	0.4+
1997 04 12	809	1.7+	0.6+	1999 11 04	703	0.5−	0.2+	1999 12 10	704	0.0	0.6+
1997 04 12	809	0.4+	0.5+	1999 11 04	703	0.1−	0.3−	1999 12 13	703	0.0	0.1+
1997 04 12	809	1.9+	0.2−	1999 11 04	703	0.2+	0.3+	1999 12 13	703	0.2+ 0.2+	
1997 04 12	358	0.8+	1.1+	1999 11 09	703	0.7−	0.9+	1999 12 13	703	0.2−	0.1−
1997 04 12	358	0.6−	1.3−	1999 11 09	703	0.5−	0.1+	1999 12 13	703	0.0	0.1+
1997 04 12	358	0.2+	0.7−	1999 11 09	703	1.3−	0.2−	1999 12 15	704	1.0+	0.9−
1997 04 16	358	(0.7− 4.2−)		1999 11 09	703	0.4−	0.0	1999 12 15	704	(2.1+ 1.1−)	
1997 04 16	358	(1.6+ 4.6−)		1999 11 11	012	0.6+	0.1+	1999 12 15	704	0.2+	1.0−
1997 05 01	358	1.2−	0.3−	1999 11 11	012	0.2+	0.4+	1999 12 31	699	0.5+	0.1+
1997 05 01	358	0.8+	0.8−	1999 11 14	012	0.3+	0.8−	1999 12 31	699	0.8+	0.3+
1997 05 01	358	1.6−	0.4−	1999 11 15	012	1.6+	0.2−	1999 12 31	699	0.5+	0.3+
1997 05 05	358	1.0−	0.5+	1999 12 05	703	1.0−	0.3−				
1997 05 05	358	1.5−	0.7+	1999 12 05	703	0.4+	0.2+				

1997 GH₂₈

Id. DANEOPS (1993 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	47.57865		(2000.0)	P	Q
<i>n</i>	0.34744599	ω	104.99875	−0.16830219	−0.98566970
<i>a</i>	2.0039083	Ω	354.65119	+0.85097075	−0.13945399
<i>e</i>	0.3714322	<i>i</i>	7.01487	+0.49751698	−0.09490954
<i>P</i>	2.84	<i>H</i>	18.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 10 09	675	0.4−	0.6+	1997 04 14	691	0.1+	0.1+	1997 04 22	658	0.4−	0.2−
1993 10 09	675	0.4+	0.7−	1997 04 14	691	0.3+	0.0	1997 04 22	658	1.4−	0.4+
1997 03 13	675	0.6−	0.4−	1997 04 14	691	0.3+	0.1−	1997 04 22	658	1.2−	0.2−
1997 03 13	675	0.4+	0.7+	1997 04 16	691	0.2+	0.2−	1997 04 24	658	0.9+	0.5+
1997 04 13	691	0.9+	0.5−	1997 04 16	691	0.2−	0.6−	1997 04 24	658	0.1+	0.4+
1997 04 13	691	0.5+	0.1−	1997 04 16	691	0.3−	0.3−	1997 05 02	691	0.2+	0.1−
1997 04 13	691	0.4+	0.3−	1997 04 22	658	0.3−	0.8+				

1997 GO₂₈ = 2000 AW₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	238.36680		(2000.0)	P	Q
<i>n</i>	0.26318722	ω	181.10171	−0.08708800	+0.99442715
<i>a</i>	2.4115310	Ω	83.90415	−0.91353858	−0.05593169
<i>e</i>	0.1868904	<i>i</i>	3.42572	−0.39731970	−0.08936609
<i>P</i>	3.74	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 04 09	809	0.1+	1.0+	1997 04 12	358	1.2+	0.5+	1997 05 27	358	0.9−	1.0−
1997 04 09	809	1.7−	1.1+	1997 04 12	358	1.2−	1.4−	2000 01 03	104	0.3+	0.2+
1997 04 09	809	1.2−	1.4+	1997 04 15	358	1.8+	1.7−	2000 01 03	104	0.5+	0.4−
1997 04 10	809	1.0−	1.2−	1997 04 15	358	1.3+	0.2−	2000 01 03	704	0.8+	0.6−
1997 04 10	809	0.3−	1.0−	1997 05 09	358	(4.1− 1.2−)		2000 01 03	704	0.2−	0.1+
1997 04 10	809	0.8−	1.1−	1997 05 09	358	1.8−	0.6−	2000 01 03	704	0.2+	0.2−
1997 04 11	809	(2.2+ 0.4+)		1997 05 11	358	0.7−	1.1+	2000 01 03	104	0.1+	0.5+
1997 04 11	809	(2.3+ 0.6+)		1997 05 11	358	1.3−	0.3+	2000 01 03	104	0.4+	0.4+
1997 04 11	809	(2.5+ 0.2+)		1997 05 11	358	1.2−	0.4+	2000 01 03	104	0.8+	0.0
1997 04 11	358	0.5−	1.2+	1997 05 12	358	0.9+	1.5−	2000 01 04	704	0.6−	0.5+

1997 04 11	358	1.3+	0.4+	1997 05 12	358	(0.8−	2.1−)	2000 01 04	704	0.3−	0.4+
1997 04 12	809	1.4+	0.1+	1997 05 12	358	0.2+	1.5−	2000 01 04	704	1.1−	0.1−
1997 04 12	809	0.6+	0.7+	1997 05 27	358	1.5+	1.9+	2000 01 04	704	0.5+	1.3−
1997 04 12	809	1.2+	1.5+	1997 05 27	358	(3.8+	1.7+)	2000 01 04	704	1.4−	0.1−

1997 GR₃₅ = 2000 AX₂₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	72.34047	(2000.0)	<i>P</i>
<i>n</i>	0.22765253	<i>ω</i>	173.55324
<i>a</i>	2.6563649	<i>Ω</i>	219.17120
<i>e</i>	0.2878244	<i>i</i>	11.55938
<i>P</i>	4.33	<i>H</i>	13.7

Residuals in seconds of arc

1997 04 06	704	0.1−	0.2+	1997 05 07	704	0.4−	0.3−	2000 01 07	699	1.5+	0.3+
1997 04 06	704	0.3−	0.5−	1997 05 07	704	1.2−	0.6−	2000 01 09	704	0.0	0.1+
1997 04 11	704	0.2+	0.0	1997 05 07	704	0.0	0.6−	2000 01 09	704	0.2−	0.1−
1997 04 11	704	0.3−	0.4+	1999 12 16	704	0.2+	0.1+	2000 01 09	704	0.5−	0.8−
1997 05 01	704	0.5−	0.6+	1999 12 16	704	0.3−	0.8−	2000 01 11	704	0.2−	0.1+
1997 05 01	704	0.9+	1.0+	1999 12 16	704	(2.4−	1.0+)	2000 01 11	704	0.7−	0.1+
1997 05 01	704	1.0+	0.1−	1999 12 16	704	0.7−	0.1−	2000 01 11	704	0.6−	0.3+
1997 05 01	704	0.5+	0.3−	1999 12 16	704	0.8−	0.2−	2000 01 11	704	0.2−	0.6+
1997 05 01	704	0.6+	0.1+	2000 01 07	699	1.3+	0.2+	2000 01 11	704	0.2−	0.1+
1997 05 07	704	0.5−	0.3−	2000 01 07	699	1.0+	0.2−				

1997 GO₄₀ = 1997 HV₉ = 1999 XL₂Id. A. Doppler (d, *MPC* 34061), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	282.29623	(2000.0)	<i>P</i>
<i>n</i>	0.23417222	<i>ω</i>	105.07569
<i>a</i>	2.6068285	<i>Ω</i>	62.07339
<i>e</i>	0.1364057	<i>i</i>	3.92272
<i>P</i>	4.21	<i>H</i>	15.8

Residuals in seconds of arc

1997 04 07	809	(1.6−	3.0+)	1997 04 30	704	0.3+	0.0	1999 11 12	704	0.4−	0.6−
1997 04 07	809	1.4−	1.4+	1997 04 30	704	0.0	0.3+	1999 11 12	704	0.5−	1.0−
1997 04 07	809	1.6−	1.2+	1997 04 30	704	0.5−	0.6+	1999 11 12	704	0.2+	0.4−
1997 04 08	809	(1.7+	2.7+)	1997 05 01	704	0.1+	1.0−	1999 11 12	704	0.3−	0.0
1997 04 08	809	(0.6−	3.7+)	1997 05 01	704	0.0	0.2+	1999 11 12	704	0.6+	0.3+
1997 04 08	809	(0.0	3.0+)	1997 05 01	704	1.1+	0.9−	1999 12 03	691	0.2+	0.2+
1997 04 08	704	0.1−	0.0	1997 05 01	704	0.9+	0.1−	1999 12 03	691	0.0	0.0
1997 04 08	704	0.4+	1.0−	1997 05 01	704	0.8−	0.4−	1999 12 03	691	0.2−	0.1+
1997 04 08	704	1.4+	0.5−	1999 11 09	704	0.6+	0.4−	1999 12 04	691	0.6−	0.3+
1997 04 08	704	0.1+	1.0−	1999 11 09	704	0.5+	0.0	1999 12 04	691	0.4−	0.2+
1997 04 30	704	0.1−	0.2+	1999 11 09	704	0.8+	0.2−	1999 12 04	691	0.1+	0.4+
1997 04 30	704	0.0	0.5+	1999 11 09	704	0.5−	0.7+				

1997 GT₄₀ = 1997 KC₁ = 1999 XQ₅₃Id. A. Doppler (d, *MPC* 33785), M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	106.86024	(2000.0)	<i>P</i>
<i>n</i>	0.20061073	<i>ω</i>	231.03101
<i>a</i>	2.8900140	<i>Ω</i>	97.38145
<i>e</i>	0.0716523	<i>i</i>	3.33613
<i>P</i>	4.91	<i>H</i>	14.6

Residuals in seconds of arc

1997 04 07	809	1.5−	0.4+	1997 05 29	910	(0.3+	3.4−)	1999 12 08	704	0.2+	0.9−
1997 04 07	809	0.9−	0.5−	1999 11 17	704	1.0+	0.8+	1999 12 08	704	0.0	0.0
1997 04 07	809	1.2−	0.9−	1999 11 17	704	0.8−	0.6−	1999 12 08	704	0.0	0.1−
1997 04 08	809	1.2+	0.3+	1999 11 17	704	0.7+	0.1+	1999 12 08	704	0.5−	0.1−
1997 04 08	809	0.8+	0.6+	1999 11 17	704	0.7−	0.9+	1999 12 31	699	0.4+	0.1−
1997 04 08	809	1.6+	0.2+	1999 12 07	704	0.3+	0.3+	1999 12 31	699	0.1+	0.2−
1997 05 27	910	(0.2+	2.8−)	1999 12 07	704	0.2+	0.2−	1999 12 31	699	0.7−	0.6+

1997 05 27	910	(0.2+	3.0−)	1999 12 07	704	0.8−	0.3+	2000 01 11	691	0.1+	0.0
1997 05 27	910	(0.4+	3.0−)	1999 12 07	704	0.4−	0.3−	2000 01 11	691	0.2+	0.0
1997 05 29	910	(0.2+	3.2−)	1999 12 07	704	0.2+	0.7−	2000 01 11	691	0.1+	0.0
1997 05 29	910	(0.3+	3.5−)	1999 12 08	704	0.4+	0.4+				

1997 GE₄₂ = 1996 BH₁₈ = 1998 SZ₉₄ = 2000 AT₂₁₂

Id. G. V. Williams, A. Doppler

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	178.10177	(2000.0)	<i>P</i>
<i>n</i>	0.21653784	<i>ω</i>	185.51452
<i>a</i>	2.7465037	<i>Ω</i>	92.46805
<i>e</i>	0.1673114	<i>i</i>	4.07436
<i>P</i>	4.55	<i>H</i>	14.7

Residuals in seconds of arc

1996 01 25	691	0.1+	0.3−	1997 04 11	809	0.4+	1.0−	1998 09 27	704	0.7+	1.5−
1996 01 25	691	0.1−	0.4−	1997 04 11	809	0.7−	1.5−	2000 01 06	691	0.1+	0.3−
1996 01 25	691	0.4−	0.7−	1998 09 26	704	1.0−	0.5+	2000 01 06	691	0.1−	0.4−
1997 04 09	809	0.7+	0.7−	1998 09 26	704	1.1+	0.8−	2000 01 06	691	0.0	0.8−
1997 04 09	809	0.1+	0.7+	1998 09 26	704	1.4+	0.9−	2000 01 06	046	0.4+	0.2−
1997 04 09	809	0.0	0.4+	1998 09 26	704	0.8−	0.6−	2000 01 06	046	0.3−	0.3+
1997 04 10	809	(0.3−	2.1−)	1998 09 27	704	0.4+	1.4−	2000 01 06	046	0.1+	0.1+
1997 04 10	809	0.5−	1.6−	1998 09 27	704	0.2−	0.4−	2000 01 12	691	0.1−	0.3−
1997 04 10	809	1.6−	1.1−	1998 09 27	704	0.9+	0.6+	2000 01 12	691	0.0	0.5−
1997 04 11	809	0.3−	0.8+	1998 09 27	704	0.2+	1.0−	2000 01 12	691	0.1−	0.3−

1997 GD₄₃ = 1999 VM₁₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	317.26903	(2000.0)	<i>P</i>
<i>n</i>	0.26772712	<i>ω</i>	234.95277
<i>a</i>	2.3841915	<i>Ω</i>	275.65344
<i>e</i>	0.1352890	<i>i</i>	1.25353
<i>P</i>	3.68	<i>H</i>	15.8

Residuals in seconds of arc

1997 03 11	809	0.4+	0.1+	1997 04 03	704	0.6+	0.1−	1999 11 09	704	0.7−	0.0
1997 03 11	809	0.1+	0.0	1997 04 03	704	1.2−	0.4−	1999 11 09	704	0.3−	0.3−
1997 03 11	809	0.6−	1.4+	1997 04 03	704	0.9−	0.1−	1999 11 09	704	0.3−	0.7−
1997 03 13	809	2.6−	0.8+	1997 04 05	704	0.3+	0.0	1999 11 12	704	1.5+	0.2−
1997 03 13	809	1.2−	0.7+	1997 04 05	704	2.1−	0.7+	1999 11 12	704	0.6−	0.4+
1997 03 13	809	1.3−	0.6+	1997 04 05	704	1.1−	0.9+	1999 11 12	704	0.1−	0.3+
1997 04 03	704	1.0−	0.1−	1997 04 05	704	2.8−	0.9+	1999 11 12	704	0.4+	0.2+

1997 HY₉

Id. E. Bowell (1998, 2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	146.33641	(2000.0)	<i>P</i>
<i>n</i>	0.25747094	<i>ω</i>	298.71602
<i>a</i>	2.4470936	<i>Ω</i>	52.06452
<i>e</i>	0.1256171	<i>i</i>	8.42514
<i>P</i>	3.83	<i>H</i>	14.4

Residuals in seconds of arc

1997 04 06	704	0.1−	0.2−	1997 04 30	704	0.0	0.8+	1998 10 18	699	0.1+	0.2+
1997 04 06	704	0.7+	0.7−	1997 05 01	704	0.3−	0.2+	1998 11 15	699	0.7+	1.0+
1997 04 06	704	0.0	0.7+	1997 05 01	704	0.2+	0.1+	1998 11 15	699	0.0	0.6+
1997 04 06	704	0.4+	0.3+	1997 05 01	704	0.3−	0.4+	1998 11 15	699	0.2−	0.6+
1997 04 07	809	(4.5−	1.3+)	1997 05 01	704	0.0	0.2−	1998 12 08	704	1.4−	1.6+
1997 04 07	809	(4.8−	1.1+)	1997 05 01	704	0.3−	0.3−	1998 12 08	704	0.1+	0.2+
1997 04 07	809	(4.1−	1.3+)	1997 05 05	704	1.4+	0.6−	1998 12 08	704	0.2−	1.0−
1997 04 08	809	(1.2−	2.2+)	1997 05 05	704	0.9−	0.2+	1998 12 08	704	0.6−	1.5+
1997 04 08	809	(1.1−	3.4+)	1997 05 05	704	0.3−	0.1+	1998 12 08	704	(6.6−	0.6+)
1997 04 08	809	(1.1−	2.2+)	1997 05 05	704	0.8−	0.5−	1999 12 08	704	0.1−	0.5+
1997 04 08	704	0.8+	0.2+	1997 05 05	704	1.0−	0.0	1999 12 08	704	0.9+	1.5−
1997 04 08	704	0.1+	1.0+	1998 09 21	699	0.3+	0.1+	1999 12 08	704	0.7+	0.4+

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1997 04 30	704	0.5+	0.3+	1998 09 21	699	0.4−	0.4−	1999 12 08	704	0.0	0.2+
1997 04 30	704	0.1+	0.8+	1998 09 21	699	0.6−	0.2−	2000 01 06	699	0.7−	1.2+
1997 04 30	704	0.7+	0.7+	1998 10 18	699	0.3−	0.1+	2000 01 06	699	0.0	0.2+
1997 04 30	704	1.3+	0.3+	1998 10 18	699	0.1+	0.0	2000 01 06	699	0.2−	0.3−

1997 HL₁₀ = 1999 XL₅₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	1.62013		(2000.0)	P	Q		
<i>n</i>	0.22632731	ω	259.00348	+0.04470968	−0.99898408		
<i>a</i>	2.6667241	Ω	188.44010	+0.93092483	+0.04371215		
<i>e</i>	0.0584343	<i>i</i>	2.20372	+0.36246379	+0.01095703		
<i>P</i>	4.35	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 08	704	1.0−	1.0+	1997 05 02	327	1.2−	0.1+	1999 12 07	704	0.3−	0.2+
1997 04 08	704	0.2−	0.5+	1997 05 02	327	1.1−	0.6−	1999 12 07	704	0.0	0.6+
1997 04 30	704	0.6+	0.6−	1997 05 02	327	1.3−	0.1+	1999 12 07	704	0.9−	0.7+
1997 04 30	704	0.1+	0.2+	1999 11 15	704	0.1+	0.1+	1999 12 07	704	0.4+	0.1+
1997 04 30	704	1.0+	0.1+	1999 11 15	704	0.6+	0.1+	1999 12 07	704	0.6−	0.9+
1997 04 30	704	1.0+	0.6−	1999 11 15	704	0.4−	0.0	1999 12 08	704	0.3−	0.0
1997 04 30	704	(2.9−	0.3−)	1999 11 15	704	0.7+	0.9−	1999 12 08	704	0.6−	0.3−
1997 05 01	704	0.8+	0.1−	1999 11 15	704	0.5−	0.1+	1999 12 08	704	0.1−	0.3−
1997 05 01	704	0.5+	0.5−	1999 11 17	704	0.2+	0.2−	1999 12 08	704	1.2−	0.3−
1997 05 01	704	0.3+	0.0	1999 11 17	704	0.1−	0.6−	1999 12 08	704	1.1+	0.0
1997 05 01	704	0.1−	0.4−	1999 11 17	704	1.2+	0.7−				
1997 05 01	704	0.2+	0.1+	1999 11 17	704	0.7+	0.3−				

1997 HR₁₀ = 1999 VX₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	183.41390		(2000.0)	P	Q		
<i>n</i>	0.19925101	ω	29.30964	−0.43715979	+0.89930678		
<i>a</i>	2.9031470	Ω	214.77135	−0.82913654	−0.40805250		
<i>e</i>	0.0259875	<i>i</i>	1.18296	−0.34845934	−0.15729102		
<i>P</i>	4.95	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 06	704	0.1−	1.5−	1997 05 01	704	0.3+	1.1+	1999 11 06	691	0.2−	0.5+
1997 04 06	704	1.4−	0.2+	1997 05 01	704	0.5−	0.0	1999 11 12	704	0.2−	0.3+
1997 04 06	704	1.5+	0.2−	1997 05 01	704	0.2−	0.7+	1999 11 12	704	0.2−	0.4−
1997 04 06	704	0.7−	0.1+	1997 05 01	704	0.2+	0.8+	1999 11 12	704	0.1−	0.0
1997 04 08	704	0.7+	0.8+	1997 05 05	704	0.2+	0.8−	1999 11 12	704	0.6+	0.4−
1997 04 08	704	0.2+	0.1+	1997 05 05	704	0.5+	0.0	1999 11 12	704	0.4+	0.2−
1997 04 30	704	0.5+	0.3−	1997 05 05	704	0.1+	0.6−	1999 11 12	691	0.3−	0.1+
1997 04 30	704	0.0	0.7−	1997 05 05	704	0.3+	0.8+	1999 11 12	691	0.0	0.0
1997 04 30	704	0.3−	0.3+	1997 05 05	704	0.5+	0.9−	1999 11 12	691	0.0	0.1−
1997 04 30	704	0.5−	0.4+	1999 11 06	691	0.1−	0.3+				
1997 05 01	704	1.0−	0.3+	1999 11 06	691	0.1+	0.4+				

1997 JF₁₀ = 1999 XV₂₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	326.97859		(2000.0)	P	Q		
<i>n</i>	0.23537527	ω	285.81476	−0.63191742	−0.77483851		
<i>a</i>	2.5979383	Ω	203.40435	+0.72686431	−0.58466173		
<i>e</i>	0.1404380	<i>i</i>	2.52266	+0.26897705	−0.24040787		
<i>P</i>	4.19	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 04	809	(0.9−	2.4−)	1999 11 09	704	0.2−	0.6−	1999 11 15	704	0.1−	0.0
1997 05 04	809	(0.7−	4.3−)	1999 11 09	704	0.8+	0.0	1999 11 15	704	0.5+	0.4−
1997 05 04	809	(0.7−	4.0−)	1999 11 09	704	0.4−	0.7−	1999 11 15	704	0.2+	0.2−
1997 05 11	684	0.5−	0.2−	1999 11 13	704	0.4−	0.3+	1999 11 15	704	0.6+	0.6+
1997 05 11	684	0.2+	0.1−	1999 11 13	704	(2.1+	0.3−)	1999 11 15	704	0.1+	0.1+
1997 05 13	684	1.4−	0.9+	1999 11 13	704	0.1−	0.4−	1999 11 17	704	0.4−	1.5+

1997 05 13	684	1.0−	0.7+	1999 11 13	704	0.6+	0.4−	1999 11 17	704	0.8−	0.3+
1997 05 14	684	0.4−	0.0	1999 11 13	704	0.0	0.1−	1999 11 17	704	1.0+	0.1−
1997 05 14	684	0.3−	0.0	1999 11 13	704	0.2−	0.2−	1999 11 17	704	1.0−	0.8−
1997 05 14	684	0.3−	0.0	1999 11 13	704	0.1+	0.3+	1999 11 29	691	0.3−	0.4−
1997 06 07	809	0.3+	1.6−	1999 11 13	704	0.0	0.3−	1999 11 29	691	0.2−	0.4−
1997 06 07	809	0.8+	0.5−	1999 11 13	704	0.5−	0.0	1999 11 29	691	0.4−	0.5−
1997 06 07	809	1.0+	1.0−	1999 11 13	704	(0.1−	2.1−)	1999 12 04	703	0.6−	0.2+
1997 06 08	809	0.7+	0.8−	1999 11 13	704	1.0−	0.4−	1999 12 04	703	1.7−	0.1−
1997 06 08	809	0.1+	0.0	1999 11 13	704	0.8+	1.5−	1999 12 04	703	0.4+	0.2−
1997 06 08	809	0.3+	0.0	1999 11 13	704	0.5−	0.2+	1999 12 04	703	0.8−	0.7−
1999 10 30	703	0.3+	0.6+	1999 11 13	704	0.4+	0.8−	1999 12 06	704	0.0	0.4+
1999 10 30	703	0.5+	0.3+	1999 11 13	704	0.0	0.2−	1999 12 06	704	0.5−	0.0
1999 10 30	703	0.3−	0.7+	1999 11 13	704	(2.3−	0.3+)	1999 12 06	704	0.1+	0.6−
1999 10 30	703	1.5+	0.2+	1999 11 13	704	0.1−	0.8−	1999 12 06	704	0.9+	0.6+
1999 11 04	704	0.3+	0.4+	1999 11 13	704	1.1−	0.9+	1999 12 07	704	0.0	0.3−
1999 11 04	704	0.0	0.2+	1999 11 13	704	0.0	0.0	1999 12 07	704	0.1+	0.0
1999 11 04	704	0.4+	0.6+	1999 11 14	704	0.2+	0.2−	1999 12 07	704	0.1+	0.1−
1999 11 04	704	0.8+	0.2+	1999 11 14	704	0.1+	0.2−	1999 12 07	704	0.0	0.3+
1999 11 04	704	0.2−	0.3+	1999 11 14	704	0.0	0.0	1999 12 07	704	0.4+	0.7+
1999 11 09	704	0.6+	0.3−	1999 11 14	704	0.4+	0.6−				
1999 11 09	704	0.2−	0.0	1999 11 14	704	0.3+	0.0				

1997 JN₁₃ = 1993 FV₁₀ = 1999 XJ₇₆

Id. S. Nakano, A. Milani

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	297.98986		(2000.0)	P	Q		
<i>n</i>	0.26011026	ω	37.94602	−0.99720203	+0.07087791		
<i>a</i>	2.4305118	Ω	146.09546	−0.07465593	−0.92801579		
<i>e</i>	0.1487581	<i>i</i>	2.44104	−0.00382164	−0.36573626		
<i>P</i>	3.79	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 03 19	809	(2.4−	0.7−)	1997 05 07	704	0.1−	0.2+	1999 12 08	704	0.1−	0.2−
1993 03 20	809	1.0−	1.5−	1997 05 07	704	0.2−	0.2−	2000 01 05	704	0.4−	0.4+
1993 03 23	809	0.1−	1.5+	1997 05 07	704	0.6+	0.1+	2000 01 05	704	0.4−	0.1+
1993 03 24	691	0.2+	0.0	1997 05 07	704	0.1−	0.4+	2000 01 05	704	0.5−	0.1+
1993 03 24	691	0.3+	0.2−	1999 11 15	704	0.2−	0.9−	2000 01 05	704	0.4−	0.2−
1993 03 24	691	0.5+	0.2−	1999 11 15	704	0.4−	0.8−	2000 01 05	704	0.5−	0.1−
1997 05 03	809	(4.5−	1.6−)	1999 11 15	704	0.4−	1.3−	2000 01 06	704	0.0	0.2+
1997 05 03	809	(3.8−	1.2−)	1999 12 07	704	0.2+	0.6+	2000 01 06	704	0.6−	0.1−
1997 05 03	809	(4.7−	1.3−)	1999 12 07	704	0.6+	0.6+	2000 01 06	704	0.1−	0.1+
1997 05 04	809	(3.4−	0.8−)	1999 12 07	704	0.1+	0.3+	2000 01 06	704	0.1−	0.3−
1997 05 04	809	(3.9−	1.7−)	1999 12 07	704	0.5+	0.2+	2000 01 06	704	0.1−	0.2+
1997 05 04	809	(3.5−	1.0+)	1999 12 08	704	0.6+	0.2+				
1997 05 07	704	0.2−	0.3−	1999 12 08	704	1.9+	0.5+				

1997 JM₁₄ = 2000 AU₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	311.64349		(2000.0)	P	Q		
<i>n</i>	0.25270100	ω	316.05890	−0.97625668	−0.21219017		
<i>a</i>	2.4777914	Ω	211.76659	+0.21447406	−0.91862460		
<i>e</i>	0.0852377	<i>i</i>	4.74710	+0.03039372	−0.33332293		
<i>P</i>	3.90	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 03	809	0.8−	0.8−	1997 06 08	809	0.2−	0.9+	2000 01 05	704	0.1−	0.2−
1997 05 03	809	0.5−	1.4−	1997 06 08	809	0.2−	0.8+	2000 01 05	704	0.3+	0.0
1997 05 03	809	(2.4−	0.3−)	1998 08 17	704	0.0	1.1+	2000 01 05	704	0.5−	0.3−
1997 05 04	809	0.5+	0.8+	1998 08 17	704	0.2−	0.0	2000 01 05	704	0.4−	0.4−
1997 05 04	809	0.4+	0.7+	1998 08 17	704	0.2−	0.0	2000 01 05	704	0.4−	0.0
1997 05 04	809	0.1+	0.7+	1998 08 17	704	0.8+	0.1−	2000 01 06	704	0.0	0.3+
1997 06 07	809	0.6+	0.0	1998 08 17	704	1.2−	0.9+	2000 01 06	704	0.0	0.4+
1997 06 07	809	0.6−	1.2+	1999 12 06	704	(1.4+	2.4+)	2000 01 06	704	0.1+	0.2+
1997 06 07	809	1.3+	0.2−	1999 12 06	704	0.9+	1.4+				
1997 06 08	809	0.0	0.7+	1999 12 06	704	0.6+	2.0+				

1997 JU₁₅ = 1997 LP₂ = 1999 XG₂₂₆Id. A. Doppler (d, *MPC* 34061), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	282.71029		(2000.0)	P		Q	
<i>n</i>	0.26591217	ω	130.63986	−0.80630820	+0.58873074		
<i>a</i>	2.3950279	Ω	85.50278	−0.55851408	−0.72599160		
<i>e</i>	0.1414717	<i>i</i>	3.28489	−0.19475395	−0.35543257		
<i>P</i>	3.71	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 03	809	1.3+	0.6+	1997 06 07	684	0.1+	0.1+	1999 12 14	691	0.3+	0.7+
1997 05 03	809	0.2−	0.2+	1997 06 08	809	1.2−	0.8−	1999 12 14	691	0.4−	0.2−
1997 05 03	809	0.1−	1.0+	1997 06 08	809	0.1−	0.8−	1999 12 17	691	0.9−	0.2−
1997 05 04	809	1.0+	1.4+	1997 06 08	809	0.4−	1.1−	1999 12 17	691	0.5−	0.3−
1997 05 04	809	1.3+	1.1+	1997 06 09	684	1.3−	0.1+	1999 12 17	691	0.3−	0.1−
1997 05 04	809	1.5+	0.4+	1997 06 09	684	1.0−	0.3+	2000 01 04	704	0.5−	0.6−
1997 06 07	809	0.9+	1.9−	1997 06 09	684	1.6−	0.5+	2000 01 04	704	1.1−	0.2+
1997 06 07	809	0.5+	2.0−	1999 12 05	691	1.0+	0.3+	2000 01 04	704	1.5+	1.4−
1997 06 07	809	(0.7+	2.7−)	1999 12 05	691	0.6+	0.3+	2000 01 04	704	0.1−	0.8−
1997 06 07	684	0.7−	0.2+	1999 12 05	691	0.7+	0.1+				
1997 06 07	684	0.7−	0.3−	1999 12 14	691	0.3−	0.1+				

1997 JY₁₇ = 1997 KP₂ = 1999 XC₁₅₇Id. A. Doppler (d, *MPC* 34061), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	280.43683		(2000.0)	P		Q	
<i>n</i>	0.24514815	ω	28.71638	−0.95812817	+0.28606629		
<i>a</i>	2.5284263	Ω	167.88665	−0.27278715	−0.89862691		
<i>e</i>	0.1263758	<i>i</i>	3.41758	−0.08704929	−0.33261952		
<i>P</i>	4.02	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 03	809	1.0+	0.1+	1997 06 08	809	0.0	1.6+	1999 12 14	704	1.4−	0.7+
1997 05 03	809	0.1+	0.1−	1997 06 08	809	0.3−	1.8+	1999 12 14	704	0.1−	0.1−
1997 05 03	809	0.1+	0.9−	1999 11 15	704	0.2−	0.0	1999 12 14	704	0.4−	0.3+
1997 05 04	809	0.7+	1.2−	1999 11 15	704	1.0+	0.9−	2000 01 05	704	0.3+	0.2+
1997 05 04	809	0.9+	1.6−	1999 11 15	704	0.1+	1.9−	2000 01 05	704	0.1+	0.5−
1997 05 04	809	0.3+	1.3−	1999 12 08	704	0.4+	0.8+	2000 01 05	704	0.2−	0.1−
1997 05 29	691	0.3−	0.1+	1999 12 08	704	0.1−	0.6+	2000 01 05	704	1.2+	0.5−
1997 05 29	691	0.4−	0.3+	1999 12 08	704	0.9−	0.3+	2000 01 06	704	0.1−	0.5+
1997 05 29	691	0.4−	0.2−	1999 12 08	704	0.7+	0.1+	2000 01 06	704	0.4+	1.1+
1997 06 05	691	0.5−	0.3+	1999 12 08	704	0.1−	0.1−	2000 01 06	704	0.4−	0.3+
1997 06 05	691	0.8−	0.1+	1999 12 08	704	0.3+	0.0	2000 01 06	704	0.2+	0.6+
1997 06 05	691	0.7−	0.6+	1999 12 08	704	0.7−	0.2−				
1997 06 08	809	0.6+	1.5+	1999 12 14	704	0.1−	0.0				

1997 KQ₃ = 1999 XR₁₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	64.51113		(2000.0)	P		Q	
<i>n</i>	0.22064101	ω	284.10976	+0.78376554	−0.61311912		
<i>a</i>	2.7123468	Ω	113.80061	+0.60335172	+0.71390815		
<i>e</i>	0.0058710	<i>i</i>	6.21026	+0.14723545	+0.33826040		
<i>P</i>	4.47	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 07 12	809	0.0	1.5−	1997 06 09	809	(0.7+	2.1+)	1999 12 08	704	0.1+	1.1+
1993 07 12	809	(0.3−	3.2−)	1997 06 11	691	0.3+	0.5+	1999 12 14	704	1.8−	0.2+
1993 07 12	809	(0.5−	2.8−)	1997 06 11	691	0.3+	0.7+	1999 12 14	704	0.3−	1.4+
1997 05 31	691	0.5+	0.3+	1997 06 11	691	0.3+	0.1+	1999 12 14	704	0.1−	0.1+
1997 05 31	691	0.5+	0.0	1997 06 29	691	0.5−	0.7−	2000 01 05	704	0.0	0.1−
1997 05 31	691	0.3−	1.7+	1997 06 29	691	0.3−	0.1+	2000 01 05	704	1.2+	0.1−
1997 06 07	691	0.2+	0.2+	1997 06 29	691	0.5−	0.4−	2000 01 05	704	0.5+	0.4−
1997 06 07	691	0.3+	0.7+	1998 08 17	704	(3.9−	1.9+)	2000 01 05	704	0.3−	0.2−
1997 06 07	691	0.2+	0.5+	1998 08 17	704	0.7+	1.2+	2000 01 05	704	1.0+	0.4−
1997 06 08	809	(3.5+	2.3+)	1998 08 17	704	1.5−	0.8+	2000 01 06	704	0.2−	0.6+

1997 06 08	809	(3.1+	3.2+)	1998 08 17	704	(6.0−	0.3+)	2000 01 06	704	0.2−	0.2+
1997 06 08	809	(3.6+	2.4+)	1999 12 08	704	1.0−	0.2−	2000 01 06	704	0.2−	0.2−
1997 06 09	809	(0.5+	3.4+)	1999 12 08	704	0.5+	0.2−	2000 01 06	704	0.6+	0.1−
1997 06 09	809	(0.8+	2.4+)	1999 12 08	704	0.2+	1.0+				

1997 LT₄ = 2000 AF₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	71.29399		(2000.0)	P		Q	
<i>n</i>	0.22107739	ω	281.90652	+0.81042107	−0.57687087		
<i>a</i>	2.7087764	Ω	113.40683	+0.57146196	+0.73999917		
<i>e</i>	0.0706694	<i>i</i>	6.39178	+0.12903068	+0.34586302		
<i>P</i>	4.46	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 07	691	0.3+	0.4−	1997 06 11	691	0.2+	0.7−	1999 12 08	704	1.1+	1.1−
1997 06 07	691	0.1+	0.6−	1997 06 29	691	0.5−	0.3−	2000 01 05	704	0.9−	0.6+
1997 06 08	809	(1.7+	3.1+)	1997 06 29	691	0.7−	0.2+	2000 01 05	704	0.6−	0.3−
1997 06 08	809	(1.8+	3.2+)	1997 06 29	691	0.6−	0.5−	2000 01 05	704	0.7−	0.0
1997 06 08	809	(1.6+	2.9+)	1997 07 05	691	0.4−	0.4+	2000 01 05	704	0.4−	0.4−
1997 06 09	809	(2.4+	2.5+)	1997 07 05	691	0.4−	0.6+	2000 01 05	704	0.3−	0.7−
1997 06 09	809	1.9+	1.6+	1997 07 05	691	0.4−	0.3+	2000 01 06	704	0.6−	0.5+
1997 06 09	809	(1.5+	3.0+)	1999 12 08	704	1.6+	0.4+	2000 01 06	704	0.3−	0.5−
1997 06 11	691	0.1+	0.2−	1999 12 08	704	1.5+	1.2+	2000 01 06	704	0.6−	0.3−
1997 06 11	691	0.2+	0.1−	1999 12 08	704	0.3+	0.6+				

1997 LA₆ = 1999 XE₈₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	64.24136		(2000.0)	P		Q	
<i>n</i>	0.21330573	ω	298.11210	+0.72189025	−0.63243190		
<i>a</i>	2.7741783	Ω	102.57216	+0.69161939	+0.64577759		
<i>e</i>	0.1672369	<i>i</i>	16.72628	+0.02317540	+0.42778639		
<i>P</i>	4.62	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 13	691	0.3+	0.0	1999 12 07	704	1.2−	0.4+	1999 12 17	691	0.4−	0.1−
1997 06 13	691	0.7+	0.2−	1999 12 07	704	0.7−	0.5+	1999 12 17	691	0.6−	0.5+
1997 06 13	691	0.4+	0.0	1999 12 07	704	0.1+	1.2+	1999 12 18	699	0.7−	0.9−
1997 06 14	691	0.2+	0.4−	1999 12 07	704	0.0	0.4+	1999 12 18	699	0.4+	0.3−
1997 06 14	691	0.3+	0.3−	1999 12 07	704	0.3−	0.4+	1999 12 18	699	0.2+	0.2+
1997 06 14	691	0.2+	0.0	1999 12 08	704	0.8−	0.3+	2000 01 03	704	0.5+	0.4−
1997 06 28	691	0.8−	0.2+	1999 12 08	704	0.2−	0.6+	2000 01 03	704	0.2+	0.3−
1997 06 28	691	0.6−	0.3+	1999 12 08	704	1.0−	0.3+	2000 01 03	704	1.0+	0.2+
1997 06 28	691	0.8−	0.5+	1999 12 08	704	1.4−	0.1−	2000 01 03	704	0.0	0.0
1999 11 17	704	0.1+	0.5−	1999 12 08	704	(2.2−	0.6−)	2000 01 03	704	0.4+	0.4+
1999 11 17	704	0.8−	0.6+	1999 12 13	691	0.1+	0.3+	2000 01 04	704	0.2+	0.7−
1999 11 17	704	0.4+	0.1+	1999 12 13	691	1.2+	0.2+	2000 01 04	704	0.6+	1.1−
1999 11 17	704	0.4+	0.9−	1999 12 13	691	0.2+	0.4+	2000 01 04	704	0.4+	0.4+
1999 11 17	704	0.8+	0.6−	1999 12 16	691	0.0	0.1−	2000 01 04	704	0.4+	0.0
1999 12 03	691	0.0	0.4−	1999 12 16	691	0.1+	0.0	2000 01 04	704	0.2+	0.8+
1999 12 03	691	0.1−	0.4−	1999 12 16	691	0.0	0.0				
1999 12 03	691	0.1−	0.6−	1999 12 17	691	0.1−	0.5−				

1997 LE₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	312.09600		(2000.0)	P		Q	
<i>n</i>	0.18744095	ω	338.26109	−0.46674415	−0.87516804		
<i>a</i>	3.0238465	Ω	139.26120	+0.83745863	−0.48366888		
<i>e</i>	0.0537434	<i>i</i>	11.25734	+0.28427618	−0.01205478		
<i>P</i>	5.26	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 06 06	358	1.5−	0.1−	1999 09 08	703	0.3+	0.0	1999 12 08	699	0.0

2000 JAN. 24

M.P.C. 37673

1997 06 08	358	(1.6−	4.1+)	1999 10 04	703	0.4+	0.1+	1999 12 14	704	0.8+	0.5−
1997 06 08	358	0.1−	0.8+	1999 10 04	703	0.0	0.7+	1999 12 14	704	0.0	0.8+
1997 06 08	358	0.5+	0.2−	1999 10 04	703	0.3+	0.3+	1999 12 14	704	1.0−	0.5−
1997 06 14	358	(4.4+	2.0−)	1999 10 09	704	0.3−	0.1−	1999 12 16	704	1.6+	0.1−
1997 06 14	358	1.1+	1.1+	1999 10 09	704	0.4+	0.1+	1999 12 16	704	0.1+	0.9−
1997 06 14	358	0.8+	1.3−	1999 10 09	704	0.1+	0.2+	1999 12 16	704	0.0	0.5−
1997 06 29	691	0.9−	1.9+	1999 10 09	704	0.0	0.4+	1999 12 16	704	0.2−	0.6−
1997 06 29	691	0.0	0.1−	1999 10 09	704	0.1+	0.2+	1999 12 16	704	0.4−	0.1−
1997 06 29	691	0.1+	0.0	1999 11 02	703	0.2−	0.4−	1999 12 16	704	0.1+	0.3−
1997 07 11	691	0.0	0.3+	1999 11 02	703	1.0−	0.0	2000 01 08	704	0.2+	0.0
1997 07 11	691	0.0	0.2+	1999 11 02	703	0.1−	0.3+	2000 01 08	704	0.1+	0.1+
1997 07 11	691	0.4−	0.0	1999 11 02	703	0.3−	0.2+	2000 01 08	704	0.2+	0.4+
1998 08 17	704	0.1−	0.2−	1999 11 16	699	0.4−	0.4+	2000 01 08	704	0.1+	1.3+
1998 08 17	704	0.1−	0.2+	1999 11 16	699	0.9−	0.2−	2000 01 11	704	0.4−	0.3−
1998 08 17	704	1.0+	0.6−	1999 11 16	699	0.0	0.0	2000 01 11	699	0.1+	0.2+
1998 08 17	704	0.5+	0.4−	1999 12 03	704	0.3+	0.7−	2000 01 11	704	0.1+	0.2+
1998 08 17	704	0.3−	0.0	1999 12 03	704	0.3−	0.4−	2000 01 11	704	0.0	0.1+
1998 08 27	699	1.2−	0.4+	1999 12 03	704	0.1−	0.3+	2000 01 11	699	0.5+	0.1+
1998 08 27	699	0.9+	0.2+	1999 12 03	704	0.5−	0.5+	2000 01 11	704	0.0	0.1−
1998 08 27	699	0.1+	0.0	1999 12 03	704	0.9−	0.4+	2000 01 11	704	0.2−	0.1−
1999 09 08	703	0.1+	0.7−	1999 12 08	699	0.1−	0.1+	2000 01 11	699	0.2−	1.0+
1999 09 08	703	0.3+	0.0	1999 12 08	699	0.8+	0.8+				

1997 MV₄ = 1999 XT₁₅

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	114.70438		(2000.0)	P	Q
n	0.18672930	ω	241.39319	+0.98187261	+0.10641618
a	3.0315244	Ω	112.12888	−0.04876134	+0.94148305
e	0.0743516	i	9.74840	−0.18316252	+0.31982068
P	5.28	H	13.0	G 0.15	U 3

Residuals in seconds of arc

1997 06 28	704	0.4−	0.2−	1999 12 06	120	1.1+	0.3+	1999 12 09	411	0.1−	0.1+
1997 06 28	704	0.6−	0.1+	1999 12 06	120	0.7−	1.0−	1999 12 09	411	0.5+	0.3+
1997 06 28	704	0.8−	0.2−	1999 12 07	120	0.2−	0.0	1999 12 17	120	0.7−	0.3+
1997 06 29	704	0.1−	0.1+	1999 12 07	704	0.6+	0.3−	1999 12 17	120	0.5−	0.4+
1997 06 29	704	0.5−	0.7+	1999 12 07	704	0.4+	0.1−	2000 01 05	704	0.1+	0.1−
1997 06 29	704	0.0	0.2+	1999 12 07	704	0.5−	0.4−	2000 01 05	704	0.2+	0.0
1997 06 29	704	0.5+	0.6−	1999 12 07	704	0.1+	0.6−	2000 01 05	704	0.1+	0.4−
1997 07 02	704	0.8+	0.0	1999 12 07	704	0.3+	0.7−	2000 01 05	704	0.6−	0.1−
1997 07 02	704	0.2+	0.5−	1999 12 07	411	(0.3−	2.3+)	2000 01 05	704	0.4−	0.1+
1997 07 02	704	0.4+	0.2+	1999 12 07	411	(1.3+	2.8+)	2000 01 06	704	0.5+	0.2+
1997 07 02	704	0.0	0.4+	1999 12 08	120	0.9−	0.1−	2000 01 06	704	0.5+	0.2+
1997 07 02	704	0.5+	0.0	1999 12 08	704	0.1−	0.1−	2000 01 06	704	0.3+	0.4+
1998 10 18	699	0.0	0.3+	1999 12 08	704	0.3+	0.2+	2000 01 07	704	0.0	0.1+
1998 10 18	699	0.3+	0.4+	1999 12 08	704	0.0	0.9−	2000 01 07	704	0.3+	0.2+
1998 10 18	699	0.3−	0.6−	1999 12 08	704	0.7−	0.4−	2000 01 07	704	0.1−	0.8+
1999 12 05	120	0.2−	0.9+	1999 12 08	704	0.2−	0.7+	2000 01 07	704	0.3+	0.2+

1997 MR₉ = 2000 AC₁₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	275.75212		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21728715	ω	46.52995	−0.68965184	+0.72414093
a	2.7401859	Ω	179.86448	−0.71009125	−0.67613670
e	0.1230070	i	12.10736	−0.14195333	−0.13586418
P	4.54	H	14.5	G 0.15	U 5

Residuals in seconds of arc

1997 06 27	691	0.2−	0.2+	1997 07 13	691	0.4+	0.0	2000 01 08	704	0.4+	1.0+
1997 06 27	691	0.2−	0.1+	1997 07 13	691	0.2−	0.1−	2000 01 11	704	0.2+	1.0−
1997 06 27	691	0.0	0.0	1997 07 13	691	0.2−	0.2−	2000 01 11	704	1.3−	1.2−
1997 07 08	691	0.2+	0.0	2000 01 08	704	0.3−	0.4+	2000 01 11	704	0.1−	0.3−
1997 07 08	691	0.1+	0.0	2000 01 08	704	0.2−	0.5+	2000 01 11	704	0.6+	0.2−
1997 07 08	691	0.3+	0.0	2000 01 08	704	0.7+	0.7+				

1997 OA

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	144.22418		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.17210725	ω	186.41744	+0.15106474	+0.90638475
a	3.2008841	Ω	92.79774	−0.88848662	+0.29944313
e	0.0575288	i	23.26541	−0.43332547	−0.29799412
P	5.73	H	12.8	G 0.15	U 3

Residuals in seconds of arc

1997 07 23	824	0.4−	0.2+	1999 10 08	704	0.1+	0.6−	1999 12 16	704	0.7−	0.4−
1997 07 23	824	0.0	0.1−	1999 10 08	704	0.7−	0.5−	1999 12 16	704	0.1+	0.5−
1997 07 23	824	0.0	0.5−	1999 11 05	703	0.9+	0.3+	1999 12 16	704	0.0	0.5−
1997 07 25	824	0.6−	0.2+	1999 11 05	703	0.1+	0.5+	1999 12 16	704	0.4−	0.5−
1997 07 25	824	0.1+	0.3+	1999 11 05	703	0.1−	0.7+	1999 12 16	704	0.3+	0.3−
1997 07 25	824	0.1+	0.2+	1999 11 05	703	0.5+	0.3+	2000 01 08	704	0.0	0.8−
1997 07 26	824	0.2+	0.0	1999 11 07	704	0.1+	0.0	2000 01 08	704	0.4+	0.3+
1997 07 26	824	0.4+	0.3−	1999 11 07	704	0.7−	0.1−	2000 01 08	704	0.3−	0.5−
1997 07 26	824	0.2−	0.3−	1999 11 07	704	0.3−	0.1+	2000 01 08	704	0.6+	1.2+
1997 07 31	824	0.7+	0.4+	1999 11 07	704	0.2−	0.3−	2000 01 08	704	0.4+	0.3+
1997 07 31	824	0.1+	0.0	1999 11 07	704	0.5−	0.2−	2000 01 10	699	1.1+	1.3−
1997 07 31	824	0.5−	0.3−	1999 12 03	704	0.4+	0.4−	2000 01 10	699	0.7+	0.2+
1999 10 07	703	0.7+	0.5+	1999 12 03	704	0.4−	0.8−	2000 01 10	699	0.6−	1.1+
1999 10 07	703	0.6+	0.7+	1999 12 03	704	0.6−	1.0−	2000 01 11	704	0.0	0.1+
1999 10 07	703	0.3−	0.2+	1999 12 03	704	0.3+	0.3−	2000 01 11	704	0.3+	0.7−
1999 10 07	703	0.2−	1.1+	1999 12 03	704	0.3−	0.5+	2000 01 11	704	0.1−	1.0+
1999 10 08	704	0.3−	0.3−	1999 12 08	699	0.5+	0.1+	2000 01 11	704	1.1−	0.4+
1999 10 08	704	0.1−	0.1+	1999 12 08	699	0.6+	0.8+	2000 01 11	704	0.1−	0.1+
1999 10 08	704	0.1+	1.2−	1999 12 08	699	0.2−	0.4+				

1997 OG₁ = 2000 AX₂₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	317.98968		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28759540	ω	288.45224	−0.59340169	+0.73684422
a	2.2730802	Ω	300.73989	−0.51943142	−0.65799429
e	0.2522927	i	22.14125	−0.61487026	−0.15525502
P	3.43	H	16.3	G 0.15	U 4

Residuals in seconds of arc

1997 07 27	426	0.4−	0.2+	1997 08 04	426	1.3+	0.4−	1997 09 03	426	0.9+	0.2−
1997 07 27	426	0.4−	0.0	1997 08 04	426	0.7−	0.6+	1997 09 03	426	0.5−	0.8−
1997 07 27	426	0.9−	0.7+	1997 08 08	426	0.2−	0.4−	2000 01 10	704	0.7−	0.5−
1997 07 29	426	0.4+	0.0	1997 08 08	426	0.2−	0.4−	2000 01 10	704	1.4+	0.2+
1997 07 29	426	0.2−	0.1−	1997 08 14	426	1.4+	0.8−	2000 01 10	704	0.2−	0.2+
1997 08 01	426	0.0	0.2−	1997 08 14	426	0.9+	1.0−	2000 01 10	704	1.1+	0.5+
1997 08 01	426	0.6+	0.1+	1997 09 02	426	1.2−	0.4+	2000 01 11	704	1.5−	0.5−
1997 08 01	426	0.4−	0.0	1997 09 02	426	2.0−	0.9+	2000 01 11	704	0.8+	0.6−
1997 08 04	426	0.8+	0.5+	1997 09 03	426	0.1+	1.5+	2000 01 11	704	0.5−	1.1+

1997 PF₃ = 2000 AQ₂₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	201.56209		(2000.0)	P	Q
n	0.18556006	ω	203.98708	+0.28675174	+0.95740202
a	3.0442458	Ω	82.69066	−0.87331913	+0.27582066
e	0.2457492	i	1.96340	−0.39381103	+0.08546544
P	5.31	H	15.6	G 0.15	U 6

Residuals in seconds of arc

1997 08 11	118	1.0+	0.4−	1997 08 16	557	0.2−	0.0	1997 09 03	118	0.1−	0.3−
1997 08 11	118	0.4+	0.5+	1997 08 16	557	0.6−	0.8−	1997 09 03	118	0.9+	0.5+
1997 08 11	118	0.1+	1.1+	1997 08 22	118	0.9+	0.4+	1997 09 07	118	1.3−	0.2+
1997 08 13	118	0.1+	0.1+	1997 08 22	118	0.4+	0.5+	1997 09 08	118	1.4−	0.2−
1997 08 13	118	0.1−	0.1+	1997 08 22	118	0.3+	0.5+	1997 09 09	118	0.8−	0.3−
1997 08 13	118	0.7−	0.4−	1997 08 24	118	0.0	0.4−	2000 01 08	691	0.1−	0.2−
1997 08 13	557	0.5−	0.0	1997 08 24	118	1.2+	0.7−	2000 01 08	691	0.6−	0.4−

1997 08 14	557	0.2−	0.1−	1997 09 01	118	0.0	0.6−	2000 01 08	691	0.1−	0.2−
1997 08 14	557	0.3−	0.2−	1997 09 01	118	0.0	0.6−	2000 01 11	691	0.6+	0.3+
1997 08 14	557	0.4−	0.7+	1997 09 01	118	0.7+	0.4+	2000 01 11	691	0.1−	0.2+
1997 08 14	118	0.1−	0.2−	1997 09 01	118	0.9+	0.1+	2000 01 11	691	0.3+	0.3+
1997 08 14	118	0.3−	0.2−	1997 09 01	118	0.8+	0.2+				
1997 08 14	118	0.6−	0.6−	1997 09 03	118	0.1+	0.5+				

1997 QE₁ = 1982 YV₃ = 1999 XY₁₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.23069593	ω	2.23397	−0.06525956	−0.95771825				
<i>a</i>	2.6329509	Ω	91.59749	+0.91112495	−0.17170233				
<i>e</i>	0.1372594	<i>i</i>	16.27917	+0.40693061	+0.23085509				
<i>P</i>	4.27	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1982 12 23	095	0.3+	0.8−	1997 09 01	709	0.8−	0.8−	1999 12 14	704	0.2−	0.2−
1997 08 28	709	0.4−	0.2−	1997 09 05	709	0.5−	0.7−	1999 12 14	704	0.0	0.1−
1997 08 28	709	0.4+	0.2−	1997 09 05	709	0.6−	1.2−	1999 12 14	704	0.1−	0.3−
1997 08 28	709	0.2+	0.2−	1997 09 05	709	0.8−	0.6−	1999 12 14	704	0.1−	0.4−
1997 08 28	709	0.3+	0.1−	1997 09 05	709	0.5−	0.6−	1999 12 14	704	0.1−	0.5−
1997 08 29	709	0.3−	0.3−	1997 09 05	709	1.1−	0.9−	2000 01 05	704	0.1−	0.4−
1997 08 29	709	0.0	0.3−	1997 09 05	709	0.9−	0.5−	2000 01 05	704	0.3+	0.0
1997 08 29	709	0.0	0.8−	1997 09 18	709	0.3+	0.3−	2000 01 05	704	0.3−	0.6+
1997 08 29	709	0.0	0.7−	1997 09 18	709	0.9−	0.5−	2000 01 05	704	0.3−	0.2−
1997 08 31	709	0.2−	0.7−	1997 09 18	709	0.7+	0.4+	2000 01 05	704	0.3−	0.3+
1997 08 31	709	0.4−	0.1+	1999 11 04	704	0.8+	0.4−	2000 01 06	704	0.0	0.0
1997 08 31	709	0.6+	0.4−	1999 11 04	704	0.1+	0.9−	2000 01 06	704	0.2−	0.1+
1997 08 31	709	1.5−	0.2−	1999 11 04	704	0.2+	0.4−	2000 01 06	704	0.0	0.2+
1997 08 31	709	0.0	0.1−	1999 11 04	704	0.4+	0.6−	2000 01 06	704	0.0	0.4+
1997 08 31	709	0.9−	0.6−	1999 11 04	704	0.2−	0.3−	2000 01 06	704	0.5+	0.2+
1997 08 31	709	0.1+	0.2−	1999 12 06	704	0.5+	0.7−	2000 01 07	704	0.2−	0.5−
1997 08 31	709	0.4+	0.8−	1999 12 06	704	0.6+	0.4−	2000 01 07	704	0.1+	0.6−
1997 09 01	709	0.1−	0.7−	1999 12 06	704	0.3+	0.3−	2000 01 07	704	0.2−	0.1−
1997 09 01	709	0.2+	0.5−	1999 12 06	704	0.6+	0.3−	2000 01 07	704	0.1−	0.3−
1997 09 01	709	0.0	0.1−	1999 12 06	704	0.4+	0.6−	2000 01 07	704	0.3+	0.5−

1997 QQ₂ = 1994 BR₅ = 1999 XQ₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17372393	ω	173.34332	−0.37002729	−0.89344138				
<i>a</i>	3.1809948	Ω	298.10574	+0.83849560	−0.20316377				
<i>e</i>	0.0874493	<i>i</i>	16.77913	+0.40000616	−0.40060826				
<i>P</i>	5.67	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1994 01 17	033	0.2−	1.0−	1998 11 16	704	0.2+	0.1−	1999 12 07	704	0.2−	1.4−
1994 01 18	033	0.3−	0.5−	1998 11 16	704	0.1−	0.5+	1999 12 08	704	0.4−	0.5+
1994 01 19	033	0.1+	0.2+	1998 11 16	704	1.0−	0.7+	1999 12 08	703	1.2+	1.2+
1997 08 27	596	0.0	0.2−	1998 11 16	704	0.2+	0.3+	1999 12 08	704	0.4+	0.0
1997 08 27	596	0.1−	0.0	1998 11 16	704	1.6+	0.5+	1999 12 08	703	0.5+	0.8+
1997 08 27	596	0.3−	0.1+	1998 11 21	699	1.1+	0.0	1999 12 08	704	0.4+	0.5+
1997 08 27	596	0.3+	0.8+	1998 11 21	699	0.6−	0.6+	1999 12 08	703	0.2+	0.3+
1997 08 28	596	0.2+	0.1−	1998 11 21	699	0.1−	0.6+	1999 12 08	704	0.3+	0.5−
1997 08 28	596	0.3−	0.7−	1999 01 09	699	1.1−	0.4−	1999 12 08	703	0.8+	0.6+
1997 08 31	596	0.1−	0.9−	1999 01 09	699	1.2−	0.1+	1999 12 08	704	0.5+	0.9−
1997 08 31	596	0.4+	0.2+	1999 01 09	699	1.0−	0.2+	1999 12 18	120	0.0	0.0
1997 08 31	596	0.7+	0.6−	1999 11 16	704	0.4−	0.5−	1999 12 18	120	1.8−	0.1−
1998 08 29	704	0.5+	0.8−	1999 11 16	704	0.6−	0.2−	1999 12 18	120	0.6−	1.2−
1998 08 29	704	0.2−	0.9−	1999 11 16	704	0.4−	0.4−	2000 01 04	120	0.2−	0.2−
1998 08 29	704	0.4−	0.9−	1999 11 16	704	0.2−	0.0	2000 01 04	120	0.4−	0.5−
1998 08 29	704	(2.5−	0.9−)	1999 11 16	704	0.4−	0.2−	2000 01 05	704	0.2+	0.2−
1998 08 29	704	1.4−	0.9−	1999 12 05	699	0.3+	0.5+	2000 01 05	704	0.0	0.2+
1998 09 26	699	0.9+	0.5+	1999 12 05	699	0.1+	0.5+	2000 01 05	704	0.2−	0.3−
1998 09 26	699	0.9+	0.1+	1999 12 05	699	0.6−	0.9+	2000 01 05	704	0.1+	0.1−
1998 09 26	699	1.1+	0.5+	1999 12 07	120	0.4+	0.2+	2000 01 05	704	0.0	0.0

1998 11 14	704	0.4+	0.3−	1999 12 07	120	0.0	0.1+	2000 01 06	704	0.0	0.3+
1998 11 14	704	0.2+	0.3+	1999 12 07	704	0.4+	0.3+	2000 01 06	704	0.4−	0.2+
1998 11 14	704	0.3+	0.3−	1999 12 07	704	0.2+	0.6−	2000 01 06	704	0.3−	0.4+
1998 11 14	704	0.6−	0.1+	1999 12 07	704	0.3+	0.3−	2000 01 06	704	0.0	0.0
1998 11 14	704	0.5−	0.1+	1999 12 07	704	0.2+	0.8−				

1997 TV₁₉ = 1999 YE₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.08424147	ω	102.87808	+0.85334986	−0.52079649				
<i>a</i>	5.1536954	Ω	288.51207	+0.46807257	+0.78544250				
<i>e</i>	0.0948219	<i>i</i>	1.43643	+0.22956936	+0.33444148				
<i>P</i>	11.70	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6		

Residuals in seconds of arc

1997 10 02	691	0.1−	0.0	1997 10 11	691	0.3+	0.5−	1999 12 16	691	0.0	0.3+
1997 10 02	691	0.6−	0.4−	1997 11 02	691	0.2+	0.4+	1999 12 16	691	0.4+	0.1+
1997 10 02	691	0.1+	0.4+	1997 11 02	691	0.5−	0.3+	1999 12 17	691	0.0	0.2+
1997 10 11	691	0.4+	0.1+	1997 11 02	691	0.2−	0.2+	1999 12 17	691	0.4−	0.3−
1997 10 11	691	0.5+	0.5−	1999 12 16	691	0.1+	0.2−	1999 12 17	691	0.1−	0.1−

1997 TZ₂₇ = 1996 RY₂₉ = 1998 WQ₁₀ = 2000 AY₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.08290978	ω	9.95586	+0.51522644	−0.85172900				
<i>a</i>	5.2087343	Ω	49.10137	+0.77739792	+0.41757840				
<i>e</i>	0.0610187	<i>i</i>	7.25007	+0.36082431	+0.31652170				
<i>P</i>	11.89	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1996 09 12	809	0.6−	0.4−	1997 10 26	809	0.7−	0.6−	1998 11 24	704	(1.6+	3.0−)
1996 09 16	809	0.6+	0.5+	1997 10 28	809	0.2+	0.4+	1998 11 24	704	(0.6−	3.4−)
1997 10 01	809	1.3+	1.0+	1997 10 28	809	1.3+	0.5+	1998 11 24	704	(0.2+	4.0−)
1997 10 01	809	1.5+	0.0	1998 11 21	704	0.1+	0.5+	2000 01 02	704	0.4+	0.1−
1997 10 05	809	0.5−	0.4−	1998 11 21	704	0.7−	0.6−	2000 01 02	704	0.6−	0.4−
1997 10 05	809	0.6−	0.4−	1998 11 21	704	0.4+	0.8−	2000 01 02	704	0.3−	0.2−
1997 10 06	809	0.8−	0.0	1998 11 21	704	0.2+	0.9+	2000 01 04	704	0.3−	0.3+
1997 10 06	809	1.0−	0.0	1998 11 21	704	(1.6−	3.3+)	2000 01 04	704	0.1+	0.4+
1997 10 26	809	0.9−	0.5−	1998 11 24	704	(2.5+	1.5−)	2000 01 04	704	0.6+	0.1+

1997 TB₂₈ = 1996 RL₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.08414681	ω	47.11751	−0.55695273	−0.82002740				
<i>a</i>	5.1575599	Ω	77.18104	+0.71719182	−0.55485141				
<i>e</i>	0.0751159	<i>i</i>	7.76557	+0.41885505	−0.14033878				
<i>P</i>	11.71	<i>H</i>	11.4	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1996 09 15	809	0.2−	0.0	1997 10 26	809	0.1−	0.2+	1998 11 18	704	1.2+	0.5+
1996 09 17	809	0.2+	0.0	1997 10 28	809	0.2−	0.3+	1998 11 21	704	0.8−	0.3−
1997 10 01	809	0.4−	0.2+	1997 10 28	809	1.0+	0.4−	1998 11 21	704	0.3−	0.2+
1997 10 01	809	1.4+	0.6+	1998 10 20	699	0.4+	0.5−	1998 11 21	704	(0.1−	2.3+)
1997 10 05	809	0.3−	0.4−	1998 10 20	699	0.7−	0.3+	1998 11 23	699	0.6+	1.1+
1997 10 05	809	0.1−	0.3−	1998 10 20	699	0.2−	0.5+	1998 11 23	699	0.1−	1.1−
1997 10 06	809	0.3−	0.1+	1998 11 18	704	1.2+	1.8+	1998 11 23	699	1.9−	1.5+
1997 10 06	809	0.5−	0.1+	1998 11 18	704	1.1+	0.1−				
1997 10 26	809	0.6−	0.4−	1998 11 18	704	0.5−	0.2−				

2000 JAN. 24

M.P.C. 37675

1997 TD₂₈ = 1996 RU₃₂ = 1998 XQ₁ = 2000 AG₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	341.06058		(2000.0)	P	Q
<i>n</i>	0.08168286	ω	53.89682	-0.42104814	-0.89903963
<i>a</i>	5.2607634	Ω	61.42644	+0.78199852	-0.42694154
<i>e</i>	0.0739899	<i>i</i>	7.86628	+0.45956150	-0.09720422
<i>P</i>	12.07	<i>H</i>	11.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1996 09 15	809	0.6-	1.5+	1997 10 28	809	0.6-	0.4-	2000 01 03	704	0.1+	0.4+
1996 09 16	809	0.1-	0.2+	1998 12 07	910	0.2+	0.3-	2000 01 03	704	1.3-	0.2-
1996 09 16	809	0.1-	0.0	1998 12 07	910	0.2+	0.4-	2000 01 04	704	0.2+	0.4-
1997 10 01	809	0.2-	0.0	1998 12 07	910	0.6+	0.1+	2000 01 04	704	0.1+	0.2-
1997 10 01	809	0.0	0.2-	1998 12 08	910	0.3-	0.2+	2000 01 04	704	0.1+	0.1+
1997 10 06	809	0.2+	0.3-	1998 12 08	910	0.4-	0.0	2000 01 04	704	0.3+	0.1+
1997 10 06	809	0.3+	0.3-	1998 12 08	910	0.1-	0.1-	2000 01 04	704	1.0+	0.6+
1997 10 26	809	0.6+	0.2+	2000 01 03	704	0.1+	0.6+				
1997 10 26	809	0.6+	0.4-	2000 01 03	704	0.7-	0.2+				

1997 WD₅₂ = 1999 JZ₈₄

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	166.72638		(2000.0)	P	Q
<i>n</i>	0.23952277	ω	41.13220	-0.18921471	-0.91437774
<i>a</i>	2.5678610	Ω	62.67991	+0.76206780	-0.36661374
<i>e</i>	0.0731068	<i>i</i>	23.75728	+0.61923376	+0.17177811
<i>P</i>	4.11	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 11 29	704	2.0+	0.3+	1997 12 04	704	2.8+	0.9-	1999 05 14	704	0.0	1.3-
1997 11 29	704	0.0	0.1-	1997 12 04	704	3.2-	1.8+	1999 05 14	704	0.0	0.8-
1997 11 29	704	1.1-	0.6-	1997 12 05	704	0.2-	0.7-	1999 05 14	704	2.3-	0.4+
1997 11 29	704	0.4-	0.9-	1997 12 05	704	1.7-	0.4-	1999 05 15	704	0.6-	0.2+
1997 11 29	704	0.2-	1.4+	1997 12 05	704	0.9+	1.1+	1999 05 15	704	0.6-	1.2+
1997 12 04	704	0.9-	1.0+	1997 12 05	704	0.3+	1.4-	1999 05 15	704	1.5+	0.3-
1997 12 04	704	1.1+	0.2-	1997 12 05	704	1.1+	0.7+				
1997 12 04	704	0.6-	1.2-	1999 05 14	704	2.1+	0.7+				

1998 AZ = 1999 LD₃₃

Id. G. V. Williams, E. Bowell

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	44.72723		(2000.0)	P	Q
<i>n</i>	0.18359163	ω	271.96902	-0.50844954	+0.85580235
<i>a</i>	3.0659669	Ω	326.91138	-0.70425952	-0.47696997
<i>e</i>	0.0759101	<i>i</i>	10.05283	-0.49547715	-0.20025478
<i>P</i>	5.37	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 01 05	411	0.1-	0.2-	1998 01 24	411	0.2-	0.2-	1999 06 09	704	0.9+	1.0+
1998 01 05	411	0.1+	0.0	1998 02 04	411	0.7+	0.3-	1999 06 09	704	0.3+	0.2+
1998 01 06	411	0.6-	0.1+	1998 02 04	411	1.3+	0.5-	1999 06 09	704	0.3-	0.4+
1998 01 06	411	1.2-	0.3-	1998 03 01	699	0.0	0.9+	1999 06 09	704	0.4-	0.2-
1998 01 09	411	0.2+	0.7+	1998 03 01	699	0.5-	0.5+	1999 06 13	699	0.6+	0.3-
1998 01 09	411	0.4+	0.4+	1998 03 01	699	0.8-	0.9-	1999 06 13	699	0.3-	0.2+
1998 01 24	411	0.4+	0.3-	1999 06 09	704	0.3+	0.6-	1999 06 13	699	1.0-	0.6-

1998 BE₁₅ = 1999 LL₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	216.14401		(2000.0)	P	Q
<i>n</i>	0.22792584	ω	310.24235	+0.24854033	-0.94970240
<i>a</i>	2.6542409	Ω	124.35808	+0.94394285	+0.19336354
<i>e</i>	0.0614714	<i>i</i>	13.34245	+0.21725471	+0.24632475
<i>P</i>	4.32	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 12 28	566	0.1-	0.4+	1998 01 28	566	0.5+	0.5-	1998 02 22	566	0.3-	0.3+
1997 12 28	566	0.3-	0.3+	1998 01 28	566	0.8+	0.7-	1999 06 10	699	0.4-	0.9+
1997 12 28	566	0.1-	0.4+	1998 01 29	376	0.7-	0.2-	1999 06 10	699	0.2-	0.6+
1998 01 24	566	0.1-	0.8-	1998 01 29	376	0.4+	0.2-	1999 06 10	699	0.8-	1.3+
1998 01 24	566	0.2+	1.0-	1998 01 29	888	0.9+	0.5-	1999 06 12	704	1.3+	0.6-
1998 01 24	566	0.1-	1.2-	1998 01 29	888	0.2+	0.0	1999 06 12	704	0.4+	1.0-
1998 01 26	888	0.6+	0.6+	1998 02 03	691	0.6-	0.7+	1999 06 12	704	0.3-	0.2-
1998 01 26	888	0.5+	0.1+	1998 02 03	691	0.8-	0.5+	1999 06 12	704	0.8-	0.3-
1998 01 26	376	0.3-	0.9+	1998 02 03	691	0.6-	0.3+	1999 06 12	704	0.8+	0.7-
1998 01 26	376	0.4-	0.4+	1998 02 22	566	0.2-	0.7+				
1998 01 28	566	0.6+	0.9-	1998 02 22	566	0.2-	0.5+				

1998 DO₇ = 1986 RA₁₃ = 1992 GT₈ = 1999 WH₁₀

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	88.92076		(2000.0)	P	Q
<i>n</i>	0.30528852	ω	263.19943	+0.59463078	+0.80365874
<i>a</i>	2.1843844	Ω	43.31510	-0.72353632	+0.54757789
<i>e</i>	0.2333070	<i>i</i>	1.95351	-0.35058440	+0.23300447
<i>P</i>	3.23	<i>H</i>	16.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1986 09 09	095	1.1-	2.5+	1998 03 02	691	0.2+	0.1+	1999 11 28	691	0.0	0.2-
1992 04 06	809	0.5-	0.8-	1998 03 02	691	0.4+	0.3+	1999 12 02	691	0.0	0.0
1992 04 06	809	0.5-	0.5+	1998 03 02	691	0.2+	0.3+	1999 12 02	691	0.2-	0.3-
1992 04 06	809	0.5+	0.2-	1999 11 09	704	1.0+	0.4-	1999 12 02	691	0.1+	0.3-
1998 02 22	691	0.6-	0.4+	1999 11 09	704	0.8+	0.3-	1999 12 04	691	0.0	0.6+
1998 02 22	691	0.5-	0.0	1999 11 09	704	0.2-	0.2-	1999 12 04	691	0.4+	0.0
1998 02 22	691	0.3-	0.4+	1999 11 09	704	0.0	0.2+	1999 12 04	691	0.2+	0.7+
1998 02 23	691	0.9+	0.5+	1999 11 09	704	0.6-	0.4-	1999 12 08	691	0.2-	0.1-
1998 02 23	691	0.5+	0.4+	1999 11 28	691	0.0	0.2-	1999 12 08	691	0.3-	0.3-
1998 02 23	691	0.6+	0.3+	1999 11 28	691	0.1-	0.2-	1999 12 08	691	0.3-	0.3-

1998 DQ₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	95.59493		(2000.0)	P	Q
<i>n</i>	0.28077628	ω	139.70833	+0.54975721	+0.83474913
<i>a</i>	2.3097365	Ω	163.56651	-0.79181878	+0.53258552
<i>e</i>	0.1699279	<i>i</i>	6.29070	-0.26606396	+0.13980899
<i>P</i>	3.51	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 02 23	566	1.8-	0.0	1998 04 17	327	0.1+	0.3+	1999 10 09	704	0.5+	1.1-
1998 02 23	566	1.8-	0.1+	1998 04 18	327	0.7+	0.0	1999 11 07	704	0.8+	0.1-
1998 02 23	566	1.0-	0.4+	1998 04 18	327	0.3+	0.6+	1999 11 07	704	0.2-	0.1+
1998 02 24	566	0.8-	0.8-	1998 04 18	327	0.5+	0.2-	1999 11 07	704	0.3+	0.2+
1998 02 24	566	0.6-	1.1-	1998 04 19	704	0.5+	0.2+	1999 11 07	704	0.1-	0.5+
1998 02 24	566	0.5-	0.5-	1998 04 19	704	0.3+	0.8+	1999 11 07	704	0.2-	0.2+
1998 02 24	566	0.4-	0.8-	1998 04 19	704	0.3-	0.2-	1999 12 13	699	0.4-	0.1-
1998 02 24	566	0.1+	0.8-	1998 04 19	704	0.1+	0.6-	1999 12 13	699	0.6-	0.2+
1998 02 24	566	0.1+	1.1-	1998 04 20	327	0.2+	0.8+	1999 12 13	699	0.0	1.3+
1998 02 28	809	0.3-	0.1+	1998 04 20	327	0.6+	0.6+	1999 12 13	699	0.3+	1.2+
1998 02 28	809	0.5+	0.0	1998 04 20	327	0.7+	0.7+	1999 12 13	699	0.3+	0.0
1998 03 20	704	0.4-	0.6-	1999 10 02	703	0.5-	0.1+	1999 12 13	699	0.7-	0.3+
1998 03 20	704	(2.9+	0.2+)	1999 10 02	703	0.5-	0.3-	2000 01 08	704	0.0	0.0
1998 03 20	704	0.4+	0.7+	1999 10 02	703	0.5-	0.0	2000 01 08	704	0.9+	0.2-
1998 03 20	704	1.1+	1.0+	1999 10 02	703	0.3-	0.2-	2000 01 08	704	0.5+	0.4+
1998 03 20	704	0.2-	0.2+	1999 10 06	106	0.1+	0.2+	2000 01 08	704	0.4-	1.1+
1998 03 22	704	0.5-	0.0	1999 10 06	106	0.1-	0.2-	2000 01 08	704	0.8+	0.5-
1998 03 22	704	0.0	0.5-	1999 10 07	106	0.3+	0.2-	2000 01 10	704	0.2+	0.1-
1998 03 22	704	0.4+	0.7-	1999 10 07	704	0.1+	0.1-	2000 01 10	704	0.0	1.4+
1998 03 22	704	0.1+	0.5-	1999 10 07	704	0.5-	0.4+	2000 01 10	704	0.0	0.2+
1998 03 22	704	0.4+	0.4-	1999 10 07	704	0.2-	0.3+	2000 01 10	704	0.1+	0.4-
1998 04 04	699	0.7+	0.7-	1999 10 07	704	0.1-	0.9-	2000 01 10	704	0.5-	0.2+
1998 04 04	699	0.3-	0.5+	1999 10 09	704	0.3+	0.6-	2000 01 10	704	1.1-	0.4+

1998 04 04	699	0.0	0.1+	1999 10 09	704	0.7+	0.8-	2000 01 10	704	0.7-	0.6+
1998 04 17	327	0.3-	0.7+	1999 10 09	704	0.1+	0.8-	2000 01 10	704	1.4+	0.3-
1998 04 17	327	0.8+	0.1+	1999 10 09	704	0.8+	0.9-	2000 01 10	704	0.2-	0.5-

1998 DC₁₄ = 1999 VN₁₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		193.64431		(2000.0)		P		Q	
<i>n</i>		0.29772802	ω	45.00389		-0.76684375		+0.64181805	
<i>a</i>		2.2212098	Ω	174.91759		-0.60223852		-0.71709398	
<i>e</i>		0.1080816	<i>i</i>	2.91213		-0.22194463		-0.27174588	
<i>P</i>		3.31	<i>H</i>	16.1		<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 02 27	910	0.4+	0.1+	1998 04 22	704	0.7+	0.2-	1999 11 01	703	0.6+	0.1+
1998 02 27	910	0.3+	0.6+	1998 04 22	704	0.9+	0.0	1999 11 01	703	0.8+	0.3+
1998 02 27	910	0.0	0.2+	1998 04 22	704	0.7+	0.4-	1999 11 01	703	1.5-	0.5+
1998 02 28	910	0.6-	0.3-	1998 04 22	704	0.6+	0.7-	1999 11 01	703	0.1+	1.3+
1998 02 28	910	0.6-	0.4-	1998 05 16	704	1.4-	1.4-	1999 11 09	691	0.0	0.3-
1998 02 28	910	0.5-	0.1-	1998 05 16	704	1.0-	0.7-	1999 11 09	691	0.2+	0.3-
1998 04 21	704	0.2+	0.4+	1998 05 16	704	0.9-	0.0	1999 11 09	691	0.0	0.2-
1998 04 21	704	0.1+	0.2+	1998 05 16	704	0.9-	0.8+	1999 11 11	691	0.1+	0.3-
1998 04 21	704	0.3+	0.6+	1999 10 02	703	0.1+	0.4+	1999 11 11	691	0.2-	0.1-
1998 04 21	704	0.9+	1.1+	1999 10 02	703	0.5+	0.3+	1999 11 11	691	0.0	0.3-
1998 04 21	704	0.3+	1.5+	1999 10 02	703	1.3-	0.3+				
1998 04 22	704	0.5+	0.0	1999 10 02	703	0.1-	0.1-				

1998 EV₁ = 1999 NM₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		15.10842		(2000.0)		P		Q	
<i>n</i>		0.21964922	ω	320.57494		+0.96322724		+0.26821497	
<i>a</i>		2.7205055	Ω	23.88141		-0.23550200		+0.87132778	
<i>e</i>		0.1270665	<i>i</i>	2.25620		-0.12935262		+0.41091195	
<i>P</i>		4.49	<i>H</i>	14.4		<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 03 02	910	0.2-	0.1+	1998 03 29	704	0.1-	1.3-	1998 04 22	704	1.8-	1.6+
1998 03 02	910	0.0	0.3+	1998 03 29	704	1.6-	1.6+	1998 04 22	704	(3.0-	0.1+)
1998 03 02	910	0.2-	0.0	1998 03 29	704	1.2-	2.2+	1999 07 14	704	0.7+	0.6-
1998 03 03	910	0.1+	0.1+	1998 04 01	704	2.0+	1.5-	1999 07 14	704	0.1+	0.3+
1998 03 03	910	0.1+	0.2+	1998 04 01	704	0.8+	1.1-	1999 07 14	704	0.3-	0.1-
1998 03 03	910	0.2+	0.0	1998 04 01	704	1.8+	0.6+	1999 07 16	704	0.5-	0.3+
1998 03 24	704	(2.3-	2.5+)	1998 04 01	704	(2.4+	0.5-)	1999 07 16	704	0.0	0.2+
1998 03 24	704	(6.3-	2.0+)	1998 04 22	704	0.9+	0.4-	1999 07 16	704	0.2+	0.1-
1998 03 29	704	1.5-	1.1-	1998 04 22	704	0.5+	0.0	1999 07 16	704	0.2-	0.1-
1998 03 29	704	0.0	1.3-	1998 04 22	704	(2.3+	2.7-)				

1998 EU₁₂ = 1999 VR₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		123.50396		(2000.0)		P		Q	
<i>n</i>		0.28370830	ω	253.37141		+0.02917934		+0.99898044	
<i>a</i>		2.2937954	Ω	18.40421		-0.87047536		+0.04233586	
<i>e</i>		0.1728544	<i>i</i>	6.26397		-0.49134633		-0.01567678	
<i>P</i>		3.47	<i>H</i>	14.9		<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 02 23	566	0.4+	0.0	1998 03 22	704	0.2+	0.4+	1998 04 19	704	(0.0	2.2+)
1998 02 23	566	0.4+	0.2+	1998 03 22	704	0.7-	0.1+	1998 04 28	699	0.5+	0.6-
1998 02 23	566	0.6+	0.5-	1998 03 22	704	0.8-	0.5+	1998 04 28	699	0.3-	0.5-
1998 03 01	809	0.1+	0.0	1998 03 22	704	0.6-	0.1-	1998 04 28	699	0.2+	1.5-
1998 03 01	809	0.1+	0.8+	1998 03 22	704	0.0	0.1+	1999 11 07	704	0.3+	1.4+
1998 03 01	809	0.2+	1.1+	1998 03 29	704	0.2-	0.1-	1999 11 07	704	0.7-	0.0
1998 03 02	809	1.9-	0.1-	1998 03 29	704	0.3+	0.4+	1999 11 07	704	1.0-	0.3+
1998 03 02	809	0.4-	0.9-	1998 03 29	704	0.9+	0.5+	1999 11 07	704	0.4+	0.9+
1998 03 02	809	0.3-	1.1-	1998 03 29	704	0.0	0.3+	1999 11 07	704	0.4-	0.3+
1998 03 20	704	0.6+	0.2+	1998 03 29	704	0.2-	0.1-	1999 11 09	704	0.3-	0.5-

1998 03 20	704	1.6+	0.2+	1998 04 19	704	0.0	0.1+	1999 11 09	704	0.3+	0.7-
1998 03 20	704	1.0+	0.5-	1998 04 19	704	0.4-	1.2+	1999 11 09	704	0.4+	0.7-
1998 03 20	704	0.4-	1.2-	1998 04 19	704	0.0	1.3+	1999 11 09	704	0.5+	0.4-
1998 03 20	704	0.3+	0.4-	1998 04 19	704	0.9-	0.5+	1999 11 09	704	0.5+	0.6-

1998 ER₁₄ = 1998 FD₁₂₇ = 2000 AY₉₈Id. G. V. Williams (d, *MPC* 32093; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		102.45409		(2000.0)		P		Q	
<i>n</i>		0.31148913	ω	217.28134		+0.65195571		+0.75383591	
<i>a</i>		2.1552986	Ω	93.56160		-0.67445742		+0.62579761	
<i>e</i>		0.1815266	<i>i</i>	4.69900		-0.34649811		+0.20027174	
<i>P</i>		3.16	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 02 24	566	0.5-	1.7-	1998 03 25	704	0.6-	0.6+	1999 11 14	699	0.2+	0.7+
1998 02 24	566	0.2-	1.1-	1998 03 25	704	0.2+	0.9+	1999 12 04	699	0.1-	0.3+
1998 02 24	566	0.5-	1.3-	1998 03 26	566	0.0	0.0	1999 12 04	699	0.2+	0.6+
1998 03 01	809	(1.7-	2.3-)	1998 03 26	566	0.5+	0.2+	1999 12 04	699	0.4-	0.3+
1998 03 01	809	(1.7-	2.3-)	1998 03 26	566	0.1-	0.4+	1999 12 14	704	0.2+	0.7-
1998 03 01	809	(1.7-	2.7-)	1998 04 19	704	0.3+	0.4-	1999 12 14	704	1.3+	0.4-
1998 03 02	809	(2.3-	1.3-)	1998 04 19	704	0.4+	0.0	1999 12 14	704	0.7+	0.3+
1998 03 02	809	(3.0-	1.2-)	1998 04 19	704	0.2-	0.1-	1999 12 14	704	0.4+	0.2-
1998 03 02	809	1.9-	1.4-	1998 04 19	704	(2.8+	0.2+)	1999 12 14	704	0.1+	0.6+
1998 03 24	704	0.1-	0.0	1998 04 28	699	1.6+	0.8+	2000 01 05	704	0.7-	0.2+
1998 03 24	704	0.2+	0.1+	1998 04 28	699	0.6+	0.2-	2000 01 05	704	0.0	0.1-
1998 03 24	704	0.5+	0.6+	1998 04 28	699	0.5+	0.7+	2000 01 05	704	0.6-	0.3-
1998 03 24	704	0.6-	0.2-	1999 11 05	704	0.5-	0.2-	2000 01 05	704	0.1-	0.3-
1998 03 24	566	0.4+	0.8+	1999 11 05	704	0.6-	0.1-	2000 01 05	704	0.9+	0.0
1998 03 24	566	0.1+	0.5+	1999 11 05	704	0.4-	0.3-	2000 01 07	704	0.1-	0.1-
1998 03 24	566	0.3+	0.6+	1999 11 05	704	0.6-	0.2-	2000 01 07	704	0.2-	0.0
1998 03 25	704	(0.3+	2.4-)	1999 11 05	704	0.1+	0.3-	2000 01 07	704	0.2-	1.6+
1998 03 25	704	0.1+	0.2-	1999 11 14	699	0.3-	1.2+	2000 01 07	704	0.4+	0.2-
1998 03 25	704	0.4-	1.1+	1999 11 14	699	0.5+	0.8-	2000 01 07	704	0.3-	0.1-

1998 FG₄ = 2000 AL₁₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		81.71139		(2000.0)		P		Q	
<i>n</i>		0.27426878	ω	229.68595		+0.95846626		+0.25514039	
<i>a</i>		2.3461285	Ω	115.18602		-0.19968866		+0.91941651	
<i>e</i>		0.1838986	<i>i</i>	8.09701		-0.20363417		+0.29929360	
<i>P</i>		3.59	<i>H</i>	14.8		<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 21	691	0.0	0.1+	1998 05 25	704	0.9-	0.6+	1999 12 14	704	0.5-	0.6+
1998 03 21	691	0.4+	0.1-	1999 11 05	704	0.1+	0.4-	1999 12 14	704	0.2+	0.0
1998 03 21	691	0.2-	0.0	1999 11 05	704	0.7+	0.0	1999 12 14	704	0.9+	0.1+
1998 03 24	691	0.3-	0.1-	1999 11 05	704	0.3+	0.5-	2000 01 05	704	0.4-	0.7-
1998 03 24	691	0.3-	0.1+	1999 11 05	704	0.0	0.1+	2000 01 05	704	0.9+	1.2+
1998 03 24	691	0.0	0.2-	1999 11 05	704	0.3+	0.3-	2000 01 05	704	0.8+	0.5+
1998 05 23	704	1.3+	1.3+	1999 12 05	704	0.6+	0.2+	2000 01 05	704	0.1+	1.2+
1998 05 23	704	0.2+	0.2+	1999 12 05	704	0.4-	0.1-	2000 01 07	704	0.6+	0.3+
1998 05 23	704	1.6+	0.6-	1999 12 05	704	0.2-	0.5-	2000 01 07	704	0.9-	1.2-
1998 05 23	704	1.7-	1.4-	1999 12 05	704	(0.8-	2.2+)	2000 01 07	704	0.2-	0.7-
1998 05 25	704	0.5-	1.9-	1999 12 05	704	0.4-	0.4-	2000 01 07	704	1.3-	0.7-
1998 05 25	704	0.6-	0.4+	1999 12 14	704	1.1-	0.7+	2000 01 07	704	0.1+	1.2-
1998 05 25	704	0.8+	1.3+	1999 12 14	704	0.2-	1.3+				

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1998 FJ₅ = 1999 VE₁₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	323.56947	(2000.0)	P		Q	
<i>n</i>	0.37127696	ω	305.06875	-0.58937862	-0.80781750	
<i>a</i>	1.9172145	Ω	181.14117	+0.80782356	-0.58941532	
<i>e</i>	0.0317307	<i>i</i>	23.63061	-0.00734377	-0.00452390	
<i>P</i>	2.65	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1998 03 24	704	0.1+	0.4-	1998 04 29	566	0.9-	0.2-	1999 11 10	704	0.6+	0.1+
1998 03 24	704	0.3-	0.3-	1998 04 29	566	0.7-	0.1+	1999 11 13	704	0.5+	0.2+
1998 03 24	704	0.2+	0.5-	1998 04 29	566	0.2-	0.2-	1999 11 13	704	0.3+	0.2+
1998 03 24	704	0.2+	0.0	1998 05 16	704	0.8+	0.8-	1999 11 13	704	0.7-	0.8+
1998 03 24	704	0.0	0.1-	1998 05 16	704	0.7-	1.5-	1999 11 13	704	0.2+	1.2-
1998 03 25	704	0.5+	0.5-	1998 05 16	704	1.0+	1.2+	1999 11 13	704	0.5-	0.8+
1998 03 25	704	0.8+	0.6+	1998 05 16	704	0.6+	0.0	1999 12 31	704	0.0	0.0
1998 03 25	704	1.5+	0.8+	1998 05 16	704	(3.6-	2.6+)	1999 12 31	704	0.7-	0.3+
1998 03 25	704	0.1+	0.3+	1999 10 08	704	0.2+	0.2-	1999 12 31	704	0.4-	0.9+
1998 04 24	704	0.5-	0.3-	1999 10 08	704	0.3-	0.1+	1999 12 31	704	0.6-	1.3-
1998 04 24	704	0.2-	0.4+	1999 10 08	704	0.0	0.4-	1999 12 31	704	1.2-	0.2+
1998 04 24	704	0.3+	1.8+	1999 10 08	704	0.2+	0.5+	2000 01 10	704	(2.3-	0.0)
1998 04 24	704	0.1+	0.1-	1999 10 08	704	0.4-	0.2-	2000 01 10	704	0.2+	0.3+
1998 04 24	704	0.3-	0.5+	1999 11 10	704	0.3+	0.2-	2000 01 10	704	0.1-	0.4-
1998 04 26	566	0.8-	0.2-	1999 11 10	704	0.2+	0.3+	2000 01 10	704	0.8+	0.8-
1998 04 26	566	0.8-	0.4-	1999 11 10	704	0.5+	0.3+				
1998 04 26	566	0.5-	0.3-	1999 11 10	704	0.2+	0.5-				

1998 FD₃₀ = 1999 VU₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	123.79077	(2000.0)	P		Q	
<i>n</i>	0.30674386	ω	71.93941	+0.30344603	+0.95196953	
<i>a</i>	2.1774697	Ω	215.80722	-0.89854103	+0.27159566	
<i>e</i>	0.1734501	<i>i</i>	4.01072	-0.31708756	+0.14138531	
<i>P</i>	3.21	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 03 20	704	0.0	1.6+	1998 04 01	704	0.0	0.2-	1999 11 05	704	0.2+	0.5+
1998 03 20	704	0.7-	0.4-	1998 04 01	704	0.7+	0.3-	1999 11 09	704	0.4-	0.8-
1998 03 20	704	0.0	0.3-	1998 04 01	704	0.2-	0.3-	1999 11 09	704	0.0	0.5-
1998 03 20	704	0.1+	0.1-	1998 04 01	704	0.1-	0.4-	1999 11 09	704	0.0	0.9-
1998 03 20	704	1.0-	0.3-	1998 04 01	704	0.4+	0.9-	1999 11 09	704	0.6+	0.9-
1998 03 22	704	0.3+	0.1-	1998 04 18	704	0.5+	0.2-	1999 12 02	699	0.6+	0.3+
1998 03 22	704	0.1-	0.4-	1998 04 18	704	0.1+	0.6+	1999 12 02	699	0.0	0.5-
1998 03 22	704	0.1-	0.1+	1998 04 18	704	0.7+	1.0-	1999 12 02	699	0.2-	1.1+
1998 03 22	704	1.1-	0.2+	1998 04 18	704	0.5+	1.3+	2000 01 04	704	0.4+	0.2-
1998 03 22	704	0.2-	0.3-	1999 11 05	704	0.5-	0.0	2000 01 04	704	0.3+	0.7+
1998 03 26	704	0.7+	0.2-	1999 11 05	704	0.0	0.1+	2000 01 04	704	0.2+	1.0+
1998 03 26	704	0.3+	0.5+	1999 11 05	704	0.2+	0.1-	2000 01 04	704	1.0-	0.2+
1998 03 26	704	0.8-	0.7+	1999 11 05	704	0.2-	0.3+				

1998 FL₅₀ = 1999 XW₁₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	117.05346	(2000.0)	P		Q	
<i>n</i>	0.30784465	ω	294.14389	+0.59020602	+0.80690090	
<i>a</i>	2.1722758	Ω	12.11568	-0.69330623	+0.52179560	
<i>e</i>	0.2311108	<i>i</i>	6.51885	-0.41350131	+0.27683981	
<i>P</i>	3.20	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 02 28	809	0.8+	0.8+	1998 03 28	704	0.1+	0.0	1999 12 07	703	0.7+	0.1-
1998 02 28	809	1.4+	0.1-	1998 03 28	704	0.3+	0.0	1999 12 07	703	0.9-	0.7-
1998 03 02	809	0.7-	1.3+	1998 03 28	704	0.7-	0.6-	1999 12 07	703	0.1-	0.6+
1998 03 02	809	0.1-	0.2+	1998 03 28	704	0.8+	0.2-	1999 12 10	704	0.4-	1.2-
1998 03 20	704	0.1+	0.5-	1998 03 28	704	0.2-	1.9-	1999 12 10	704	0.5+	0.5-
1998 03 20	704	0.2+	0.2-	1998 04 19	704	0.4+	0.8+	1999 12 10	704	0.3-	0.4-

1998 03 20	704	0.3+	0.4-	1998 04 19	704	1.1+	0.1-	1999 12 13	703	0.3-	0.1+
1998 03 20	704	0.4-	0.2-	1998 04 19	704	0.4-	0.4+	1999 12 13	703	0.3-	0.2-
1998 03 20	704	0.2-	0.2-	1998 04 19	704	0.5+	0.2-	1999 12 13	703	0.0	0.3-
1998 03 22	704	0.4-	0.6-	1998 04 19	704	0.2+	0.3-	1999 12 13	703	0.2-	0.1-
1998 03 22	704	1.0-	0.2+	1999 12 05	699	0.1-	1.3+	1999 12 15	704	0.3-	0.2-
1998 03 22	704	1.0-	0.6+	1999 12 05	699	0.3+	0.5+	1999 12 15	704	0.9+	1.0-
1998 03 22	704	0.1-	0.2-	1999 12 05	699	0.1+	0.8+	1999 12 15	704	1.1+	1.0+
1998 03 22	704	0.8-	1.6+	1999 12 07	703	0.6-	0.1+				

1998 FW₅₀ = 1999 TA

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	138.15716	(2000.0)	P		Q	
<i>n</i>	0.28586512	ω	250.58127	-0.12617514	+0.99176088	
<i>a</i>	2.2822433	Ω	12.23328	-0.86644885	-0.09930949	
<i>e</i>	0.1500686	<i>i</i>	5.99770	-0.48305923	-0.08091962	
<i>P</i>	3.45	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 02 23	566	0.3-	0.4+	1998 03 22	704	0.4+	0.4-	1999 10 01	703	0.1-	0.4+
1998 02 23	566	0.0	1.2+	1998 03 22	704	0.5+	1.1-	1999 10 02	703	0.4-	0.5-
1998 02 23	566	0.0	1.0+	1998 03 22	704	(2.9-	2.7+)	1999 10 02	703	0.3-	0.2+
1998 02 28	809	0.1-	0.6+	1998 04 19	704	0.3-	0.1+	1999 10 02	703	0.3-	0.1+
1998 02 28	809	0.8-	1.0+	1998 04 19	704	0.7-	0.1-	1999 10 02	703	0.4-	0.1-
1998 03 02	809	0.8+	1.0+	1998 04 19	704	0.3-	0.3+	1999 10 04	704	0.3+	1.1-
1998 03 02	809	0.4-	1.0+	1998 04 19	704	1.4-	0.7+	1999 10 04	704	0.3+	0.8-
1998 03 20	704	0.1-	1.3-	1998 04 19	704	0.6-	0.2+	1999 10 04	704	0.6+	0.5+
1998 03 20	704	0.6+	1.3-	1998 04 24	699	0.4-	0.7+	1999 10 04	704	0.2-	0.6-
1998 03 20	704	0.9+	1.3-	1998 04 24	699	0.1+	1.0+	1999 10 07	704	0.0	0.3-
1998 03 20	704	0.8+	1.3-	1998 04 24	699	0.1+	0.8+	1999 10 07	704	0.4+	0.5+
1998 03 20	704	0.7+	1.9-	1999 10 01	703	1.0-	0.2+	1999 10 07	704	1.1+	0.3+
1998 03 22	704	0.3+	0.4-	1999 10 01	703	0.4-	0.6+	1999 10 07	704	1.3+	0.4-
1998 03 22	704	0.2-	0.7-	1999 10 01	703	0.3-	0.4+				

1998 FW₅₁ = 1999 UX

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	130.24061	(2000.0)	P		Q	
<i>n</i>	0.29233925	ω	251.59215	+0.10231164	+0.99392737	
<i>a</i>	2.2484227	Ω	24.38900	-0.87164092	+0.10919681	
<i>e</i>	0.1520152	<i>i</i>	5.62939	-0.47934793	+0.01358080	
<i>P</i>	3.37	<i>H</i>	15.8	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 02 28	809	0.7-	1.2-	1998 03 22	704	0.4+	0.6-	1998 04 19	704	(2.7-	0.1+)
1998 02 28	809	0.3-	0.9-	1998 03 22	704	0.4+	0.2-	1999 10 16	120	0.7+	0.2-
1998 03 02	809	1.0-	1.3+	1998 03 22	704	0.0	0.0	1999 10 16	120	1.2-	0.0
1998 03 02	809	0.8+	0.6+	1998 03 22	704	0.7+	0.3-	1999 10 17	120	1.6+	0.6+
1998 03 20	704	0.8+	0.6-	1998 03 22	704	(3.5-	0.9-)	1999 10 17	120	1.4+	0.4+
1998 03 20	704	0.1+	0.1+	1998 04 19	704	0.4+	0.7+	1999 10 20	704	0.4+	0.1-
1998 03 20	704	0.3+	1.3+	1998 04 19	704	0.5-	0.5+	1999 10 20	704	1.5-	0.3+
1998 03 20	704	1.3+	1.0+	1998 04 19	704	0.5-	0.2-	1999 10 20	704	1.5-	1.0-
1998 03 20	704	1.7-	0.7-	1998 04 19	704	0.7-	0.8-				

1998 FD₅₂ = 1996 TO₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	238.19975	(2000.0)	P		Q	
<i>n</i>	0.27943360	ω	117.82567	-0.67914151	-0.73352279	
<i>a</i>	2.3171295	Ω	15.04581	+0.63212291	-0.60295262	
<i>e</i>	0.1060392	<i>i</i>	5.89621	+0.37307834	-0.31367572	
<i>P</i>	3.53	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1996 10 10	566	0.3+	0.9-	1998 02 23	566	0.2+	0.4+	1998 03 22	704	0.3-	0.4-
1996 10 10	566	0.1-	0.6-	1998 02 28	809	0.1-	0.4+	1998 03 22	704	0.2+	0.0
1996 10 10	566	0.4+	0.8-	1998 02 28	809	0.6+	0.6+	1998 03 22	704	0.1+	0.5-
1996 10 10	566	0.0	0.5-	1998 03 02	809	0.3+	0.5+	1998 03 22	704	0.1+	0.2-

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1996 10 10	566	0.6+	0.5−	1998 03 02	809	0.2+	0.2+	1998 04 19	704	0.4+	0.7+
1996 10 10	566	0.0	0.4−	1998 03 20	704	1.4−	1.0−	1998 04 19	704	0.3−	0.8+
1996 10 19	910	0.1−	0.8+	1998 03 20	704	0.7−	1.1−	1998 04 19	704	0.6+	0.7+
1996 10 19	910	0.0	0.8+	1998 03 20	704	0.5−	0.2+	1998 04 19	704	1.3−	0.8−
1996 10 19	910	0.2−	0.6+	1998 03 20	704	0.4+	0.4−	1998 04 19	704	1.0+	1.5−
1998 02 23	566	0.5+	0.0	1998 03 20	704	0.8−	0.3+				
1998 02 23	566	0.4+	0.0	1998 03 22	704	0.0	0.2−				

1998 FO₅₂ = 1972 GT₁ = 1995 UP₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams											
<i>M</i>	77.81798		(2000.0)		P		Q				
<i>n</i>	0.22707572	<i>ω</i>	276.79506		+0.26398049		+0.96409574				
<i>a</i>	2.6608614	<i>Ω</i>	8.67591		−0.79197954		+0.23374539				
<i>e</i>	0.1662681	<i>i</i>	11.03532		−0.58652949		+0.12602577				
<i>P</i>	4.34	<i>H</i>	13.8		<i>G</i>	0.15	<i>U</i>	1			

Residuals in seconds of arc

1972 04 09	805	0.1−	1.1+	1998 03 20	704	0.0	0.0	1998 04 19	704	0.9−	1.2+
1972 04 09	805	0.4+	0.5−	1998 03 20	704	0.5+	0.1+	1999 09 07	699	0.6−	0.1−
1972 04 10	805	0.7+	0.8+	1998 03 20	704	0.6+	0.2−	1999 09 07	699	0.3−	0.4−
1972 04 10	805	0.2−	0.3−	1998 03 20	704	0.3+	0.5−	1999 09 07	699	0.1−	0.4−
1995 10 20	010	1.0−	1.4+	1998 03 22	704	0.0	0.3−	1999 09 13	704	0.4−	0.2+
1995 10 20	010	0.3−	0.9+	1998 03 22	704	0.0	0.5−	1999 09 13	704	0.5−	0.3+
1995 10 20	010	0.9−	1.1+	1998 03 22	704	0.2+	0.2−	1999 09 13	704	0.1−	0.7+
1995 10 23	010	0.5+	0.3+	1998 03 22	704	0.3+	0.8+	1999 09 13	704	0.0	0.4+
1995 10 23	010	0.2−	0.6+	1998 03 22	704	0.6−	0.1+	1999 09 13	704	0.1−	0.8+
1995 10 23	010	0.5−	0.7−	1998 03 24	566	0.4+	1.3−	1999 09 30	704	0.1−	0.2+
1998 02 28	809	1.4+	1.8+	1998 03 24	566	0.3+	1.0−	1999 09 30	704	0.4+	0.4−
1998 02 28	809	0.2−	1.7+	1998 03 24	566	0.5+	1.3−	1999 09 30	704	0.4+	0.9+
1998 03 02	809	0.8+	0.5+	1998 04 19	704	0.6−	1.0+	1999 09 30	704	0.3+	0.5+
1998 03 02	809	0.4+	0.3+	1998 04 19	704	0.5−	1.6+	1999 09 30	704	0.1−	0.1−
1998 03 20	704	0.1−	0.1+	1998 04 19	704	0.5+	1.2+				

1998 FN₅₅ = 1999 NK₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams											
<i>M</i>	317.44583		(2000.0)		P		Q				
<i>n</i>	0.29547055	<i>ω</i>	27.26735		+0.48639259		−0.87265875				
<i>a</i>	2.2325092	<i>Ω</i>	33.68013		+0.78668142		+0.41574146				
<i>e</i>	0.1359765	<i>i</i>	4.49503		+0.38020335		+0.25617520				
<i>P</i>	3.34	<i>H</i>	14.8		<i>G</i>	0.15	<i>U</i>	4			

Residuals in seconds of arc

1998 02 24	566	0.2+	0.5+	1998 03 20	704	0.4−	0.5−	1998 04 04	699	0.4−	1.0+
1998 02 24	566	0.4+	0.4+	1998 03 22	704	0.2+	0.8−	1999 07 14	704	0.3+	1.8+
1998 02 24	566	0.1−	0.4+	1998 03 22	704	1.1−	0.6−	1999 07 14	704	0.3+	0.2+
1998 02 28	809	(1.1− 2.5+)		1998 03 22	704	0.8+	0.1−	1999 07 14	704	1.0−	0.5−
1998 02 28	809	(0.5− 2.7+)		1998 03 22	704	0.3−	0.9−	1999 07 14	704	0.7+	0.9−
1998 03 02	809	0.4+	0.6+	1998 03 22	704	0.7+	0.6−	1999 07 16	704	0.2−	0.1+
1998 03 02	809	0.7+	0.1+	1998 03 24	566	0.7−	0.6−	1999 07 16	704	0.0	0.2−
1998 03 20	704	0.7−	0.4+	1998 03 24	566	0.8−	0.7−	1999 07 16	704	0.3−	0.4−
1998 03 20	704	0.3−	0.2−	1998 03 24	566	1.3−	0.6−	1999 07 16	704	0.1+	0.0
1998 03 20	704	0.2−	0.0	1998 04 04	699	1.4+	0.8+				
1998 03 20	704	0.2−	0.0	1998 04 04	699	1.8+	1.5+				

1998 FM₅₇ = 1999 VS₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams											
<i>M</i>	117.89828		(2000.0)		P		Q				
<i>n</i>	0.27992942	<i>ω</i>	298.29528		+0.31973390		+0.94744849				
<i>a</i>	2.3143925	<i>Ω</i>	350.33384		−0.84579933		+0.28037000				
<i>e</i>	0.2006616	<i>i</i>	3.60695		−0.42707579		+0.15405847				
<i>P</i>	3.52	<i>H</i>	15.1		<i>G</i>	0.15	<i>U</i>	4			

Residuals in seconds of arc

1998 03 20	704	0.6−	0.6+	1998 04 01	704	0.4+	0.3+	1999 10 31	703	0.2+	0.0
1998 03 20	704	0.8−	0.7−	1998 04 01	704	0.6−	0.8−	1999 10 31	703	0.4−	0.1−

1998 03 20	704	0.6−	0.2−	1998 04 01	704	0.3+	1.4−	1999 10 31	703	0.2+	0.7+
1998 03 20	704	0.2−	0.3+	1998 04 01	704	0.6+	0.6+	1999 10 31	703	0.3+	0.0
1998 03 20	704	0.3−	0.0	1998 04 19	704	0.3+	0.0	1999 11 04	704	0.1+	0.0
1998 03 22	704	0.1+	0.7+	1998 04 19	704	0.3−	0.3−	1999 11 04	704	0.0	0.1−
1998 03 22	704	0.4−	0.1−	1998 04 19	704	0.0	0.4+	1999 11 04	704	0.4+	0.2+
1998 03 22	704	0.1−	0.2+	1998 04 19	704	1.2−	0.1+	1999 11 04	704	0.1−	0.4+
1998 03 22	704	0.8+	1.0−	1998 04 19	704	0.8+	1.0−	1999 11 04	704	0.5+	0.2−
1998 03 28	704	1.1+	0.2+	1998 04 20	704	0.2−	0.2−	1999 11 05	704	1.4+	0.2+
1998 03 28	704	0.6+	1.4+	1998 04 20	704	0.6−	0.3+	1999 11 05	704	0.3+	0.3−
1998 03 28	704	0.3+	0.3−	1998 04 20	704	0.0	0.4+	1999 11 05	704	0.5+	0.1+
1998 03 28	704	0.4+	0.2+	1998 04 20	704	0.6−	0.6+	1999 11 05	704	0.2+	0.1−
1998 03 28	704	0.2−	0.2−	1998 04 20	704	0.0	0.3+	1999 11 05	704	0.1+	0.7−
1998 03 29	704	0.1−	0.3+	1999 10 03	704	0.3−	0.0	1999 11 11	703	0.8−	0.4−
1998 03 29	704	0.6+	0.3+	1999 10 03	704	0.3−	0.4−	1999 11 11	703	0.9−	0.9+
1998 03 29	704	0.2−	0.7−	1999 10 03	704	0.1+	0.4+	1999 11 11	703	0.4+	0.4−
1998 03 29	704	0.1+	0.2+	1999 10 03	704	0.0	0.1−	1999 11 11	703	1.6−	0.4+
1998 04 01	704	0.5+	0.7−	1999 10 03	704	0.4−	0.3−				

1998 FL₆₀

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams											
<i>M</i>	100.98153		(2000.0)		P		Q				
<i>n</i>	0.26614539	<i>ω</i>	130.82827		+0.56986511		+0.82164582				
<i>a</i>	2.3936285	<i>Ω</i>	173.87487		−0.78441982		+0.54839260				
<i>e</i>	0.2709593	<i>i</i>	6.63292		−0.24482505		+0.15544678				
<i>P</i>	3.70	<i>H</i>	15.1		<i>G</i>	0.15	<i>U</i>	3			

Residuals in seconds of arc

1995 09 19	809	0.1+	0.1+	1998 04 19	704	2.0+	1.8−	1999 10 10	704	0.1−	0.3−
1995 09 20	809	0.0	0.5−	1998 04 19	704	1.2+	1.0+	1999 10 10	704	0.1+	0.3−
1995 09 23	809	(4.4− 4.4−)		1998 04 19	704	3.2+	0.1−	1999 10 10	704	0.4−	0.8−
1995 09 24	809	(4.2− 3.7−)		1998 04 19	704	0.0	0.3−	1999 11 05	704	0.5+	0.5+
1998 03 20	704	0.6−	0.5−	1998 04 20	704	0.2−	2.0−	1999 11 05	704	0.5+	0.8+
1998 03 20	704	0.3−	1.2−	1998 04 20	704	0.5−	1.3−	1999 11 05	704	0.5+	0.6+
1998 03 20	704	1.4+	1.6+	1998 04 20	704	0.7+	0.7−	1999 11 05	704	0.2−	0.6+
1998 03 20	704	0.6−	0.8+	1998 04 20	704	0.0	0.4−	1999 11 13	699	0.2+	0.4−
1998 03 20	704	0.4+	0.1−	1998 04 22	704	0.7+	0.7+	1999 11 13	699	0.0	0.4−
1998 03 22	704	0.7−	0.9−	1998 04 22	704	0.7−	2.2+	1999 11 13	699	1.1+	0.2+
1998 03 22	704	1.4+	0.5−	1998 04 22	704	1.3−	0.4−	1999 11 16	703	0.4−	0.5−
1998 03 22	704	0.7−	2.2−	1998 04 22	704	0.7+	2.2+	1999 11 16	703	0.7−	0.4−
1998 03 22	704	1.3−	1.9+	1999 10 10	704	0.1+	0.3−	1999 11 16	703	0.2−	0.7+
1998 03 22	704	5.0−	1.0+	1999 10 10	704	0.4+	0.8−	1999 11 16	703	1.2−	0.2+

1998 FP₆₄

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams											
<i>M</i>	65.21508		(2000.0)		P		Q				
<i>n</i>	0.23877601	<i>ω</i>	140.75402		+0.80724595		+0.59007786				
<i>a</i>	2.5732121	<i>Ω</i>	183.16518		−0.58273844		+0.79341178				
<i>e</i>	0.3139475	<i>i</i>	13.33153		−0.09364765		+0.14935150				
<i>P</i>	4.13	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	3			

2000 JAN. 24

M.P.C. 37679

1998 03 29	704	0.4−	0.3+	1998 04 22	704	(2.1+	1.1−)	2000 01 09	704	0.2+	0.5−
1998 03 29	704	0.0	0.3−	1998 04 22	704	1.2−	0.9−	2000 01 09	704	0.0	0.1+
1998 03 29	704	0.1−	0.5+	1998 04 22	704	0.3+	1.1−	2000 01 09	704	0.4+	0.6−
1998 03 29	704	0.8−	0.8+	1998 04 22	704	0.8−	0.6−	2000 01 09	704	0.1−	0.2+
1998 03 29	704	1.2−	0.2+	1999 07 23	704	0.7+	0.7−	2000 01 09	704	0.1+	0.3+
1998 03 31	704	(2.6−	1.1−)	1999 07 23	704	0.2+	0.7−	2000 01 11	704	0.4−	0.5+
1998 03 31	704	0.4−	0.9−	1999 07 23	704	0.2−	0.3+	2000 01 11	704	0.0	0.2+
1998 03 31	704	0.0	1.0+	1999 07 23	704	0.2−	0.0	2000 01 11	704	0.3−	0.8+
1998 03 31	704	0.0	0.9+	1999 07 23	704	0.2−	0.2−	2000 01 11	704	0.2−	0.9+
1998 03 31	704	1.4−	1.4+	1999 10 09	704	0.4+	0.1−	2000 01 11	704	0.5−	0.5−

1998 FV₆₅ = 1999 VC₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		142.36266		(2000.0)		P		Q	
<i>n</i>		0.28484407		ω	58.65672	−0.11271410		+0.99267305	
<i>a</i>		2.2876940		Ω	204.98229	−0.94307280		−0.12067583	
<i>e</i>		0.1366544		<i>i</i>	5.91733	−0.31290449		+0.00612917	
<i>P</i>		3.46		<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 20	704	1.0+	0.5−	1998 04 18	704	0.1+	0.0	1998 04 22	704	0.1+	0.9+
1998 03 20	704	0.2−	0.1+	1998 04 18	704	0.3+	1.2−	1998 04 22	704	0.6−	0.5+
1998 03 20	704	0.4+	0.4−	1998 04 18	704	0.4−	1.3−	1998 04 22	704	0.4+	0.1+
1998 03 20	704	0.9−	0.3−	1998 04 18	704	1.0−	1.3−	1998 04 30	699	0.2−	0.9+
1998 03 20	704	0.5−	0.7+	1998 04 19	704	0.7+	0.1−	1998 04 30	699	0.7+	0.0
1998 03 22	704	1.3+	0.0	1998 04 19	704	0.3+	0.2−	1998 04 30	699	0.2+	0.7+
1998 03 22	704	0.9+	0.3−	1998 04 19	704	0.1+	1.0+	1999 11 05	704	0.0	0.4+
1998 03 22	704	0.5−	0.3−	1998 04 19	704	0.7−	0.4−	1999 11 05	704	0.1−	0.4−
1998 03 22	704	0.9−	0.1+	1998 04 20	704	0.2+	0.8+	1999 11 05	704	0.7+	0.6+
1998 03 22	704	1.0−	0.1−	1998 04 20	704	0.2+	0.8−	1999 11 05	704	0.6+	0.3+
1998 04 01	704	0.5+	0.6+	1998 04 20	704	0.4+	1.1−	1999 11 09	704	1.1−	0.2−
1998 04 01	704	0.6+	0.5+	1998 04 20	704	0.1+	0.0	1999 11 09	704	0.1−	0.7−
1998 04 01	704	0.4+	1.0+	1998 04 20	704	1.0−	0.5−	1999 11 09	704	0.0	0.1−
1998 04 01	704	0.7−	0.8+	1998 04 22	704	0.3+	0.1+				
1998 04 18	704	0.5+	0.3+	1998 04 22	704	1.1−	0.4−				

1998 FB₁₀₆

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		74.23624		(2000.0)		P		Q	
<i>n</i>		0.29681555		ω	86.30721	+0.90009973		+0.42650548	
<i>a</i>		2.2257598		Ω	248.42940	−0.42799089		+0.82737879	
<i>e</i>		0.1724419		<i>i</i>	5.48916	−0.08151240		+0.36542771	
<i>P</i>		3.32		<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 31	704	0.4+	0.3−	1998 04 20	704	0.3+	0.9+	1999 10 03	704	0.2+	0.4+
1998 03 31	704	0.0	0.9−	1998 04 20	704	0.7+	0.7+	1999 10 03	704	0.2−	0.5+
1998 03 31	704	1.4+	0.5+	1998 04 20	704	0.5−	0.7+	1999 10 03	704	0.4+	0.4+
1998 03 31	704	(1.1+	3.5+)	1998 05 03	691	0.3−	0.8+	1999 11 04	703	0.3−	0.4+
1998 04 01	704	(2.9−	0.6−)	1998 05 03	691	0.1+	1.2+	1999 11 04	703	0.1−	0.8+
1998 04 01	704	0.3+	0.4−	1998 05 03	691	0.1+	0.7+	1999 11 04	704	0.4+	0.4−
1998 04 01	704	0.9−	1.5−	1999 07 23	704	0.3−	0.8+	1999 11 04	703	0.1+	0.9+
1998 04 01	704	(2.8−	0.6+)	1999 07 23	704	0.4−	0.2−	1999 11 04	704	0.0	0.2−
1998 04 18	704	0.2+	0.6+	1999 07 23	704	1.1+	0.2+	1999 11 04	703	0.5−	0.1−
1998 04 18	704	1.6+	0.1+	1999 07 23	704	0.7−	0.6+	1999 11 04	704	0.4+	0.3−
1998 04 18	704	1.5−	0.7−	1999 07 23	704	0.3−	0.5+	1999 11 04	704	0.0	0.1−
1998 04 18	704	0.3−	1.1−	1999 09 18	704	0.3−	0.1+	1999 11 04	704	0.2+	0.1−
1998 04 19	704	0.8−	0.9−	1999 09 18	704	0.0	0.8−	1999 12 30	699	0.1+	0.1+
1998 04 19	704	0.8+	1.7+	1999 09 18	704	0.2+	0.9−	1999 12 30	699	0.3−	0.3+
1998 04 19	704	0.2−	1.3−	1999 09 18	704	0.4−	0.4−	1999 12 30	699	1.0−	0.0
1998 04 19	704	1.3−	0.3+	1999 09 18	704	0.5−	0.6−	2000 01 04	704	0.6+	0.0
1998 04 20	704	1.4−	0.7+	1999 10 03	704	1.0+	0.3+	2000 01 04	704	0.5−	0.1+
1998 04 20	704	2.0+	0.7+	1999 10 03	704	0.3−	0.2+	2000 01 04	704	0.0	0.4+

1998 FC₁₁₆ = 1999 XE₁₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		46.11831		(2000.0)		P		Q	
<i>n</i>		0.28633112		ω	151.91739	+0.97065262		−0.05796255	
<i>a</i>		2.2797664		Ω	213.99443	+0.04902386		+0.99783132	
<i>e</i>		0.2178161		<i>i</i>	24.67313	+0.23543611		+0.03119300	
<i>P</i>		3.44		<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 03 31	704	0.0	0.1+	1999 10 05	704	0.0	0.0	1999 12 03	704	0.2+	0.3+
1998 03 31	704	0.6−	0.1+	1999 10 05	704	0.1+	0.1−	1999 12 03	704	0.5+	0.1+
1998 03 31	704	0.6+	0.8+	1999 10 05	704	0.1−	0.1−	1999 12 03	704	0.3+	0.2+
1998 03 31	704	(2.7−	1.1+)	1999 10 05	704	0.1+	0.2+	1999 12 03	704	0.3+	0.3+
1998 04 01	704	0.4+	0.2+	1999 10 30	703	0.3−	0.1+	1999 12 13	699	1.0−	0.2+
1998 04 01	704	0.3+	0.5+	1999 10 30	703	0.2−	0.1−	1999 12 13	699	0.7−	0.3−
1998 04 01	704	2.0−	1.0+	1999 10 30	703	0.1−	0.2−	1999 12 13	699	0.3−	0.3+
1998 04 01	704	(3.2−	1.3+)	1999 10 30	703	0.8+	0.5−	1999 12 13	699	0.8−	0.5−
1998 04 21	704	0.4+	0.1−	1999 11 05	704	0.7+	0.1−	1999 12 13	699	0.7−	0.2+
1998 04 21	704	(2.9−	2.2−)	1999 11 05	704	0.1+	0.0	1999 12 13	699	0.8−	0.2+
1998 04 21	704	0.6+	0.9−	1999 11 05	704	0.4+	0.2+	1999 12 14	678	1.1−	0.5+
1998 04 21	704	1.6−	0.4−	1999 11 05	704	0.2+	0.3+	1999 12 14	678	0.8−	0.8+
1998 04 21	704	0.6+	0.8−	1999 11 14	704	0.0	0.1−	1999 12 16	678	0.1+	1.5−
1998 04 22	704	1.6+	1.5−	1999 11 14	704	0.1−	0.1+	1999 12 16	678	1.9+	1.2−
1998 04 22	704	0.9−	0.7+	1999 11 14	704	0.3−	0.3+	2000 01 09	704	0.0	0.8−
1998 04 22	704	0.5−	0.1−	1999 11 14	704	0.3+	0.4+	2000 01 09	704	0.4+	0.2+
1998 04 22	704	0.1−	0.1−	1999 11 14	704	0.2−	0.5+	2000 01 09	704	0.2+	0.5+
1998 04 22	704	0.5−	0.8+	1999 11 16	704	0.6−	0.1−	2000 01 09	704	0.7+	0.2+
1998 04 25	699	0.1+	0.2+	1999 11 16	704	0.0	0.3+	2000 01 09	704	0.5+	0.0
1998 04 25	699	0.2+	1.2+	1999 11 16	704	0.2−	0.1+	2000 01 11	704	0.2+	0.1−
1998 04 25	699	0.2+	0.0	1999 11 16	704	0.8−	0.2+	2000 01 11	704	0.2+	0.1−
1998 05 16	704	0.3−	0.5−	1999 11 16	704	0.0	0.6+	2000 01 11	704	0.0	0.3−
1998 05 16	704	(0.9−	2.6+)	1999 11 27	699	0.2−	0.4+	2000 01 11	704	0.2−	0.3−
1998 05 16	704	1.3+	1.9+	1999 11 27	699	0.4+	0.3+	2000 01 11	704	0.7+	0.5−
1998 05 16	704	(0.2−	4.2+)	1999 11 27	699	0.3−	0.3+				
1999 10 05	704	0.1+	0.0	1999 12 03	704	0.3+	0.3+				

1998 HG₃ = 2000 AL₁₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		118.73513		(2000.0)		P		Q	
<i>n</i>		0.30205774		ω	164.18841	+0.88600972		+0.46304368	
<i>a</i>		2.1999328		Ω	168.14021	−0.43707224		+0.85136689	
<i>e</i>		0.2279534		<i>i</i>	6.71401	−0.15477287		+0.24650551	
<i>P</i>		3.26		<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	118	0.3+	0.4−	1998 04 24	704	0.3+	0.1+	1998 05 23	704	0.1−	0.4−
1998 04 21	118	0.0	0.6−	1998 04 26	118	0.3+	0.4−	1998 05 23	704	0.6+	0.3−
1998 04 21	118	0.4+	0.4+	1998 04 26	118	0.2−	0.3−	1998 05 28	118	0.6−	0.2+
1998 04 21	118	0.2−	0.6−	1998 05 03	118	0.6−	0.2+	1998 05 28	118	0.7−	0.1−
1998 04 21	118	0.4+	0.4−	1998 05 03	118	0.7−	0.1−	1998 05 28	118	0.5−	0.2−
1998 04 21	118	0.2−	0.3−	1998 05 07	118	0.0	0.1+	1999 12 06	704	0.5+	0.5−
1998 04 23	118	0.1−	0.0	1998 05 07	118	0.3−	0.1−	1999 12 06	704	0.6−	1.0+
1998 04 23	118	0.5−	0.2−	1998 05 16	118	0.1+	1.0+	1999 12 06	704	0.7+	0.5+
1998 04 23	704	0.4−	0.4+	1998 05 16	118	0.4+	1.2−	1999 12 06	704	0.5−	0.6−
1998 04 23	704	0.1−	0.9+	1998 05 22	704	0.4+	0.3−	2000 01 07	704	0.2−	0.4−
1998 04 23	704	0.2+	0.1−	1998 05 22	704	0.2+	0.2+	2000 01 07	704	0.3+	0.2−
1998 04 23	704	2.0+	1.8+	1998 05 22	704	0.5+	0.6−	2000 01 07	704	0.1+	0.0
1998 04 24	118	0.1−	0.2+	1998 05 22	704	0.3+	1.0+	2000 01 11	704	0.2−	0.1−
1998 04 24	118	0.1−	0.2−	1998 05 23	704	0.5−	0.5+	2000 01 11	704	0.0	0.2−
1998 04 24	704	1.0−	1.1−	1998 05 23	704	0.5+	1.2+	2000 01 11	704	0.1−	0.7+
1998 04 24	704	0.6−	0.9+	1998 05 23	704	0.0	0.5+				

1998 HO₃ = 1999 VG₁₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	104.22063		(2000.0)	P		Q	
<i>n</i>	0.23412319	ω	84.61086	+0.09619015		+0.99410918	
<i>a</i>	2.6071925	Ω	191.28063	−0.98405808		+0.08743699	
<i>e</i>	0.1301857	<i>i</i>	14.79245	−0.14958994		+0.06404468	
<i>P</i>	4.21	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 02 27	910	0.2−	0.3−	1998 04 21	704	0.1+	1.1+	1999 09 07	704	0.3+	0.3+
1998 02 27	910	0.4−	0.2−	1998 04 22	691	0.4+	0.5+	1999 09 07	704	0.9+	0.0
1998 02 27	910	0.5−	0.4−	1998 04 22	704	0.2+	0.3+	1999 09 07	704	0.5+	0.0
1998 03 29	704	1.1−	0.8+	1998 04 22	691	0.6+	0.3+	1999 09 07	704	0.5+	0.6+
1998 03 29	704	0.9−	1.0+	1998 04 22	704	0.2+	0.3+	1999 11 07	704	1.0−	0.3−
1998 03 29	704	0.3+	1.0+	1998 04 22	691	0.6+	0.4+	1999 11 07	704	0.9−	1.0−
1998 03 29	704	(0.1−	2.3+)	1998 04 22	704	0.1−	0.7−	1999 11 07	704	0.3+	0.8−
1998 03 29	704	0.8−	1.7+	1998 04 22	704	0.7−	0.6−	1999 11 09	691	0.3−	0.2+
1998 04 17	691	0.2−	0.8+	1998 04 22	704	1.0−	0.2−	1999 11 09	691	0.4−	0.1+
1998 04 17	691	0.6+	0.5+	1998 05 16	704	0.3+	1.6−	1999 11 09	691	0.6−	0.1−
1998 04 21	704	0.2−	0.3−	1998 05 16	704	0.7−	0.2−	1999 11 12	691	0.2−	0.2+
1998 04 21	704	0.9+	1.6−	1998 05 16	704	1.3−	0.9−	1999 11 12	691	0.1−	0.0
1998 04 21	704	0.4+	0.4−	1998 05 16	704	1.1+	0.4−	1999 11 12	691	0.1−	0.0
1998 04 21	704	0.6+	0.8−	1999 09 07	704	0.4+	1.2+				

1998 HO₇ = 1999 YL₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	224.73649		(2000.0)	P		Q	
<i>n</i>	0.39921249	ω	215.34295	−0.14416446		+0.93990143	
<i>a</i>	1.8266975	Ω	48.60093	−0.78614444		+0.08118328	
<i>e</i>	0.0419841	<i>i</i>	24.36982	−0.60099378		−0.33165429	
<i>P</i>	2.47	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 23	704	0.5−	0.3−	1998 04 30	566	0.2+	0.4−	1998 05 27	691	0.5+	0.2−
1998 04 23	704	0.5+	1.3+	1998 04 30	566	0.5−	0.4+	1998 05 27	691	0.6+	0.6+
1998 04 23	704	0.7−	0.5+	1998 04 30	566	0.1+	0.0	1998 05 27	691	1.0+	0.0
1998 04 23	704	0.9+	1.6+	1998 04 30	566	0.9−	0.3−	1999 12 17	704	0.2+	0.1−
1998 04 24	704	0.6+	0.0	1998 05 18	699	1.1+	0.1−	1999 12 17	704	0.2−	0.3+
1998 04 24	704	0.6−	0.9+	1998 05 18	699	1.0−	0.1+	1999 12 17	704	0.4−	0.1−
1998 04 24	704	(3.0−	0.5+)	1998 05 18	699	0.9+	0.3+	1999 12 18	704	0.1+	0.5+
1998 04 24	704	0.1−	0.1−	1998 05 22	704	0.9+	0.1−	1999 12 18	704	0.5+	0.0
1998 04 29	566	0.6−	0.9−	1998 05 22	704	1.0+	1.4−	1999 12 18	704	0.1−	0.7+
1998 04 29	566	0.4−	0.9−	1998 05 22	704	0.3+	0.1−	1999 12 18	704	0.2+	1.1+
1998 04 29	566	0.9−	0.5−	1998 05 22	704	1.2−	0.1+	1999 12 18	704	0.2+	1.4+
1998 04 30	566	0.6−	0.3−	1998 05 22	704	0.5+	0.6+	1999 12 28	704	0.4+	1.0−
1998 04 30	566	0.5−	0.0	1998 05 23	704	0.8+	0.0	1999 12 28	704	0.4+	0.9−
1998 04 30	566	0.1−	0.2−	1998 05 23	704	0.5+	0.8−	1999 12 28	704	0.1−	0.4−
1998 04 30	566	1.0−	0.3−	1998 05 23	704	0.1−	0.3+	1999 12 28	704	0.4−	1.0−
1998 04 30	566	0.1+	0.7+	1998 05 23	704	0.2−	0.5−	1999 12 28	704	0.2−	0.1−

1998 HR₁₀ = 1999 VW₁₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	174.15579		(2000.0)	P		Q	
<i>n</i>	0.29366398	ω	164.53064	−0.58154535		+0.81231313	
<i>a</i>	2.2416558	Ω	69.89051	−0.75128796		−0.51543611	
<i>e</i>	0.1694761	<i>i</i>	2.69701	−0.31204392		−0.27289741	
<i>P</i>	3.36	<i>H</i>	16.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 03 20	704	1.3−	0.9+	1998 04 17	691	0.1+	0.0	1998 04 22	704	0.1+	1.2+
1998 03 20	704	0.1−	0.1+	1998 04 17	691	0.5+	0.1−	1998 04 24	691	0.4−	0.3−
1998 03 20	704	0.4−	0.9+	1998 04 19	704	0.4−	0.4+	1998 04 24	691	0.7−	0.5−
1998 03 20	704	0.1+	0.2+	1998 04 19	704	1.2−	1.1+	1998 04 24	691	0.5−	0.5−
1998 03 24	566	0.4+	0.1−	1998 04 19	704	1.5−	1.2−	1998 05 01	691	0.3−	1.1−
1998 03 24	566	0.1−	0.6−	1998 04 19	704	0.3+	0.4+	1998 05 01	691	0.3−	0.9−

1998 03 24	566	0.5−	0.4+	1998 04 20	704	0.4+	0.4+	1998 05 01	691	0.0	1.0−
1998 03 25	704	0.5−	0.3+	1998 04 20	704	1.1+	0.2−	1999 11 09	691	0.5+	0.3−
1998 03 25	704	0.8+	0.7−	1998 04 20	704	0.5+	0.6−	1999 11 09	691	0.6+	0.2−
1998 03 25	704	0.7+	1.7−	1998 04 20	704	1.7+	0.4+	1999 11 09	691	0.4+	0.3−
1998 03 25	704	0.6+	0.0	1998 04 22	704	1.8+	1.5+	1999 11 13	691	0.2−	0.1−
1998 03 25	704	(3.1−	0.2−)	1998 04 22	704	0.0	0.7−	1999 11 13	691	0.2−	0.5−
1998 04 17	691	0.1+	0.3+	1998 04 22	704	1.7−	0.4+	1999 11 13	691	0.3−	0.3−

1998 HU₃₁ = 1999 VY₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	349.12309		(2000.0)	P		Q	
<i>n</i>	0.36801495	ω	246.55659	−0.27812686		−0.93029483	
<i>a</i>	1.9285271	Ω	222.02512	+0.95876475		−0.25371998	
<i>e</i>	0.0918706	<i>i</i>	20.93100	+0.05844312		−0.26491073	
<i>P</i>	2.68	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 22	704	0.3+	0.2+	1998 05 27	699	0.8+	0.4−	1999 12 03	704	0.6+	0.1+
1998 04 22	704	0.0	1.1+	1998 06 02	699	0.6−	0.2+	1999 12 14	704	0.5−	0.3+
1998 04 22	704	0.8−	0.7−	1998 06 02	699	0.7−	0.8+	1999 12 14	704	0.2+	0.7−
1998 04 22	704	1.6−	0.3+	1998 06 02	699	0.4−	0.3+	1999 12 14	704	0.1+	0.7−
1998 04 22	704	1.1+	0.7−	1999 11 01	703	0.1−	0.9+	1999 12 14	704	0.2+	0.2+
1998 04 25	699	0.7−	1.3−	1999 11 01	703	0.2−	0.5+	1999 12 14	704	0.3−	0.4−
1998 04 25	699	1.5+	1.2+	1999 11 01	703	0.5−	0.4+	2000 01 09	704	0.2+	0.7+
1998 04 25	699	0.6+	0.5+	1999 11 01	703	0.5−	0.8+	2000 01 09	704	0.6+	0.2+
1998 05 01	704	0.2+	0.6+	1999 11 04	704	0.2−	0.1−	2000 01 09	704	0.2−	0.5−
1998 05 01	704	0.1+	0.5−	1999 11 04	704	0.1+	0.4−	2000 01 09	704	1.6−	0.1−
1998 05 01	704	0.5+	0.7−	1999 11 04	704	0.5−	1.0−	2000 01 11	704	0.3−	0.1+
1998 05 01	704	0.1−	0.6−	1999 11 04	704	0.0	1.1−	2000 01 11	699	0.4−	0.9+
1998 05 22	704	0.3−	1.3+	1999 11 05	704	0.3+	0.3+	2000 01 11	704	0.0	0.4−
1998 05 22	704	0.3−	0.2+	1999 11 05	704	0.1−	0.1+	2000 01 11	704	0.1+	0.6−
1998 05 22	704	0.0	0.7−	1999 11 05	704	0.8+	0.6+	2000 01 11	699	0.5+	1.4+
1998 05 22	704	0.3+	0.0	1999 11 05	704	0.3−	0.2+	2000 01 11	704	0.2−	1.0+
1998 05 22	704	0.3+	0.5+	1999 11 05	704	0.2+	0.3+	2000 01 11	704	0.8+	0.1−
1998 05 27	699	0.6−	0.3−	1999 12 03	704	0.5+	0.6−	2000 01 11	699	0.2+	0.3−
1998 05 27	699	0.3+	0.4−	1999 12 03	704	0.7+	0.6−				

1998 HR₃₇ = 1999 LO₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	292.09080		(2000.0)	P		Q	
<i>n</i>	0.25798223	ω	97.76226	+0.30392784		−0.95234605	
<i>a</i>	2.4438593	Ω	334.49801	+0.84877907		+0.28296920	
<i>e</i>	0.1609740	<i>i</i>	3.43346	+0.43266841		+0.11386583	
<i>P</i>	3.82	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 25	704	0.5+	0.7−	1998 04 20	704	1.0−	0.7−	1998 04 25	699	0.7−	1.4−
1998 03 25	704	(2.5+	0.6+)	1998 04 21	704	0.7−	1.1−	1998 05 16	704	0.6+	1.6−
1998 03 25	704	0.3−	0.3+	1998 04 21	704	0.3−	0.1+	1998 05 16	704	0.9−	0.2−
1998 03 25	704	1.4+	1.3−	1998 04 21	704	0.7+	0.4−	1998 05 16	704	0.3−	0.5+
1998 03 25	704	0.2+	0.3+	1998 04 21	704	1.0+	0.6−	1998 05 16	704	0.4+	1.5+
1998 04 01	704	0.7−	0.7+	1998 04 21	704	0.2+	0.2−	1999 06 11	703	1.2−	0.6+
1998 04 01	704	0.1−	1.7+	1998 04 22	704	0.7−	0.5−	1999 06 11	703	1.5−	0.6+
1998 04 01	704	0.4+	1.6+	1998 04 22	704	0.1+	1.1−	1999 06 11	703	0.9−	0.7−
1998 04 01	704	0.7−	1.4+	1998 04 22	704	0.4+	1.6−	1999 06 11	703	0.1−	0.3−
1998 04 01	704	(4.5−	2.2−)	1998 04 22	704	0.3−	0.3−	1999 06 15	704	1.1+	0.6+
1998 04 20	704	0.9+	0.2+	1998 04 22	704	0.5−	0.7+	1999 06 15	704	1.5+	0.5−
1998 04 20	704	0.4−	1.8+	1998 04 25	699	0.4−	1.2+	1999 06 15	704	0.1+	0.3+
1998 04 20	704	0.6+	0.2+	1998 04 25	699	0.5+	0.5−	1999 06 15	704	0.9+	0.3−

2000 JAN. 24

M.P.C. 37681

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	141.92261		(2000.0)	P			Q				
<i>n</i>	0.28195676	ω	20.65430	+0.03363999			+0.99809345				
<i>a</i>	2.3032852	Ω	251.30210	−0.92445744			+0.01139870				
<i>e</i>	0.1842152	<i>i</i>	3.13168	−0.37979835			+0.06065915				
<i>P</i>	3.50	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 03 25	704	0.1+	0.1−	1998 04 20	704	0.0	0.3−	1998 04 30	699	0.4−	0.1−
1998 03 25	704	0.7−	0.1+	1998 04 20	704	0.0	0.1+	1998 04 30	699	0.1+	0.0
1998 03 25	704	0.5+	0.3+	1998 04 20	704	0.9−	0.6+	1998 04 30	699	0.2−	0.3−
1998 03 25	704	1.2+	1.4+	1998 04 21	704	0.4+	0.1−	1999 10 03	704	0.4+	0.8+
1998 03 29	704	0.4−	1.1−	1998 04 21	704	0.1−	0.8+	1999 10 03	704	0.2−	0.8+
1998 03 29	704	0.6+	0.1−	1998 04 21	704	0.3−	0.3+	1999 10 03	704	0.5+	0.1−
1998 03 29	704	0.8−	1.1+	1998 04 21	704	0.4−	0.9+	1999 10 03	704	0.3−	0.7+
1998 03 29	704	1.1+	1.4+	1998 04 21	704	0.7−	1.5+	1999 11 04	704	0.7+	1.3−
1998 03 29	704	1.3−	1.3+	1998 04 22	704	0.8+	0.2+	1999 11 04	704	0.2+	0.4−
1998 04 01	704	0.1−	0.5+	1998 04 22	704	1.4−	0.2−	1999 11 04	704	0.6−	0.0
1998 04 01	704	0.4−	1.0−	1998 04 22	704	0.3+	1.9−	1999 11 04	704	0.1+	0.3−
1998 04 01	704	(2.2+	0.1−)	1998 04 22	704	1.4+	1.0−	1999 11 04	704	0.0	0.0
1998 04 01	704	0.1−	0.2+	1998 04 22	704	0.5−	0.7−	1999 11 07	704	0.2−	0.5+
1998 04 01	704	1.1+	1.5−	1998 04 25	699	0.2−	0.6−	1999 11 07	704	0.3−	0.5−
1998 04 20	704	0.2+	0.2−	1998 04 25	699	0.1+	0.8−	1999 11 07	704	0.2−	0.1−
1998 04 20	704	0.9+	0.8−	1998 04 25	699	0.3−	0.5−	1999 11 07	704	0.3+	1.2−

1998 HY₅₁ = 1999 XX₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	138.12843		(2000.0)	P		Q					
<i>n</i>	0.27270666	ω	225.64656	+0.22729471		+0.97091029					
<i>a</i>	2.3550794	Ω	57.63283	−0.86619408		+0.23690411					
<i>e</i>	0.2419157	<i>i</i>	5.11487	−0.44502240		+0.03477990					
<i>P</i>	3.61	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 04 21	704	1.4+	1.0−	1998 05 01	699	0.2−	0.0	1999 11 09	704	0.3−	0.4−
1998 04 21	704	1.5−	0.2+	1998 05 01	704	1.4−	0.2−	1999 11 09	704	0.1+	0.4+
1998 04 21	704	0.8+	0.4−	1998 05 01	699	0.2+	1.2+	1999 11 09	704	1.2−	0.1+
1998 04 21	704	0.5−	0.4−	1998 05 01	704	0.7−	0.5−	1999 11 16	704	0.1−	0.8+
1998 04 21	704	0.9−	0.2+	1998 05 01	699	0.1+	0.4+	1999 11 16	704	0.3+	0.1−
1998 04 22	704	0.3+	0.1−	1998 05 01	704	0.0	1.1+	1999 11 16	704	1.3+	0.4+
1998 04 22	704	0.4+	0.3−	1998 05 01	704	0.1−	1.2+	1999 12 02	691	0.5−	0.2−
1998 04 22	704	0.0	0.2−	1998 05 16	704	0.4+	0.5+	1999 12 02	691	0.2−	0.8−
1998 04 22	704	1.2+	0.9−	1998 05 16	704	1.1+	0.8+	1999 12 02	691	0.7−	0.4−
1998 04 22	704	1.0+	0.5−	1998 05 16	704	0.8−	1.0−	1999 12 07	691	0.3+	0.2+
1998 04 30	699	0.2+	0.1−	1998 05 16	704	0.5+	1.3−	1999 12 07	691	0.4+	0.2+
1998 04 30	699	0.8−	1.2+	1998 05 16	704	(6.8−	0.1+)	1999 12 07	691	0.4+	0.2+
1998 04 30	699	0.4+	0.5+	1999 11 09	704	0.1−	0.2+				
1998 05 01	704	0.5−	0.0	1999 11 09	704	0.4+	0.1−				

1998 HP₅₃ = 1999 OS₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	59.99287		(2000.0)	P		Q					
<i>n</i>	0.19654101	ω	143.24700	+0.23197122		+0.97221495					
<i>a</i>	2.9297727	Ω	140.13899	−0.90371919		+0.22735345					
<i>e</i>	0.0659780	<i>i</i>	2.81025	−0.35983465		+0.05575398					
<i>P</i>	5.01	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1998 03 22	704	0.7−	0.9+	1998 04 21	704	0.7+	0.3−	1998 04 22	704	0.1−	0.5−
1998 03 22	704	0.9+	0.0	1998 04 21	704	0.2−	1.2−	1999 07 16	704	0.4+	0.8−
1998 03 22	704	1.5−	0.9−	1998 04 21	704	1.5+	1.2−	1999 07 16	704	0.4−	0.5+
1998 03 22	704	1.4+	0.9−	1998 04 21	704	1.0−	1.3+	1999 07 16	704	0.3+	0.5+
1998 03 22	704	(2.0−	4.2+)	1998 04 21	704	(2.2−	0.4+)	1999 07 16	704	0.1+	0.5+
1998 03 25	704	0.0	0.1−	1998 04 22	704	1.4−	1.6+	1999 07 16	704	0.3−	0.2−
1998 03 25	704	0.9+	0.6+	1998 04 22	704	(2.7−	1.1+)	1999 07 20	691	0.1−	0.1−

1998 03 25	704	0.3−	0.7−	1998 04 22	704	0.1−	0.5+	1999 07 20	691	0.1−	0.2−
1998 03 25	704	1.0−	1.1+	1998 04 22	704	0.7+	0.1−	1999 07 20	691	0.1+	0.3−

1998 HL₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	101.92022		(2000.0)	P		Q					
<i>n</i>	0.27385239	ω	136.72331		+0.69522663		+0.71876867				
<i>a</i>	2.3485061	Ω	177.30360		−0.68773950		+0.66744456				
<i>e</i>	0.1355878	<i>i</i>	6.85551		−0.20898398		+0.19465190				
<i>P</i>	3.60 <th><i>H</i></th> <td>14.3<th><i>G</i></th><td>0.15<th><i>U</i></th><td>3<td colspan="2"></td></td></td></td>	<i>H</i>	14.3 <th><i>G</i></th> <td>0.15<th><i>U</i></th><td>3<td colspan="2"></td></td></td>	<i>G</i>	0.15 <th><i>U</i></th> <td>3<td colspan="2"></td></td>	<i>U</i>	3 <td colspan="2"></td>				
Residuals in seconds of arc											
1998 04 21	704	0.7+	0.2+	1998 05 27	699	0.2−	0.2+	1999 11 05	704	0.5+	0.1−
1998 04 21	704	0.1−	0.3−	1998 05 27	699	0.8+	0.0	1999 11 05	704	0.8+	0.3−
1998 04 21	704	0.1−	0.2−	1998 05 27	699	0.2−	0.0	1999 11 05	704	1.3+	0.5−
1998 04 21	704	0.3+	0.4−	1999 10 02	703	0.3−	0.2+	1999 11 13	699	0.3+	0.2+
1998 04 21	704	0.7+	0.0	1999 10 02	703	0.2−	0.1−	1999 11 13	699	0.1−	0.1+
1998 04 22	704	0.0	0.4+	1999 10 02	703	0.1+	0.5−	1999 11 13	699	0.3−	0.4−
1998 04 22	704	0.2−	1.0+	1999 10 02	703	0.0	0.3−	1999 11 14	699	0.3+	0.1−
1998 04 22	704	0.1−	0.3−	1999 10 07	704	0.5−	0.7+	1999 11 14	699	0.6−	0.5−
1998 04 22	704	0.4−	0.2+	1999 10 07	704	0.7+	0.9+	1999 11 14	699	0.1−	0.5+
1998 04 22	704	0.0	0.9+	1999 10 07	704	0.1−	0.1−	1999 12 03	704	0.1−	1.6+
1998 04 25	699	0.1+	0.1+	1999 10 10	704	0.1−	0.3+	1999 12 03	704	0.1−	0.7+
1998 04 25	699	0.6+	0.3+	1999 10 10	704	0.0	0.1+	1999 12 03	704	0.1−	0.2−
1998 04 25	699	0.3+	0.6−	1999 10 10	704	0.8−	0.6+	1999 12 03	704	0.1+	0.4+
1998 05 22	704	0.3−	0.1+	1999 10 10	704	0.2−	0.3−	2000 01 05	704	0.4−	0.1+
1998 05 22	704	0.1−	0.1−	1999 10 10	704	0.1−	0.0	2000 01 05	704	1.0+	0.2−
1998 05 22	704	0.3+	0.1−	1999 10 30	703	0.7−	0.2+	2000 01 05	704	0.6−	0.1+
1998 05 22	704	0.1−	1.0−	1999 10 30	703	0.2−	0.2−	2000 01 05	704	0.1−	0.1−
1998 05 22	704	0.1−	0.8+	1999 10 30	703	0.3−	0.1−	2000 01 05	704	0.2−	0.3+
1998 05 24	704	0.0	0.9+	1999 10 30	703	0.5−	0.3−	2000 01 08	704	0.6−	0.8+
1998 05 24	704	1.1−	0.3−	1999 10 31	143	0.4−	0.1+	2000 01 08	704	0.7+	0.4−
1998 05 24	704	0.9+	0.8+	1999 10 31	143	0.1−	0.4+	2000 01 08	704	0.8+	0.7−
1998 05 24	704	0.6−	0.2−	1999 11 05	704	0.3+	0.2−	2000 01 08	704	0.5+	0.6−
1998 05 24	704	0.8−	0.4−	1999 11 05	704	0.3+	0.0				

1998 HF₉₈ = 1999 XR₃₇

Id. M. E. Sansaturio, S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	135.53262		(2000.0)	P		Q					
<i>n</i>	0.28046727	ω	299.50863	+0.28808238	+0.95747937						
<i>a</i>	2.3114327	Ω	347.20610	−0.85248702	+0.24902845						
<i>e</i>	0.1355004	<i>i</i>	4.02655	−0.43620456	+0.14566426						
<i>P</i>	3.51	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 04 21	704	0.3+	0.9−	1998 05 24	704	1.2−	0.2−	1999 11 16	704	0.0	1.0+
1998 04 21	704	0.8+	0.4+	1998 05 24	704	0.3+	0.7−	1999 11 16	704	0.9+	0.1+
1998 04 21	704	0.7−	1.0+	1998 05 24	704	(3.2+	0.3−)	1999 12 02	159	0.7−	0.2−
1998 04 21	704	0.2+	0.4−	1998 05 24	704	(0.9+	2.5−)	1999 12 02	159	0.3+	0.1−
1998 04 21	704	(1.4−	2.6+)	1999 11 03	704	0.4+	0.3−	1999 12 02	159	0.3−	0.7−
1998 04 22	704	0.9−	1.4−	1999 11 03	704	0.8−	1.0+	1999 12 02	159	0.6−	1.5−
1998 04 22	704	0.8−	0.1+	1999 11 03	704	0.8+	0.5+	1999 12 02	159	1.4+	0.3+
1998 04 22	704	0.9−	0.8+	1999 11 03	704	0.3+	0.1+	1999 12 02	159	0.4+	0.5−
1998 05 01	704	0.8−	0.2−	1999 11 03	704	0.3+	0.9−	1999 12 06	159	0.2+	1.0+
1998 05 01	704	1.3+	0.8+	1999 11 14	703	0.0	0.2−	1999 12 06	159	1.4−	0.3−
1998 05 01	704	0.1−	0.1−	1999 11 14	703	0.9−	0.2+	1999 12 06	159	0.2−	0.2−
1998 05 01	704	0.9+	0.8+	1999 11 14	703	0.2−	1.0+	1999 12 06	159	1.1+	1.0+
1998 05 22	704	0.0	0.6+	1999 11 14	703	0.5−	0.6−	1999 12 13	159	(2.4−	0.0)
1998 05 22	704	0.8+	1.3+	1999 11 16	704	0.4+	1.2−	1999 12 13	159	0.1+	1.0+
1998 05 22	704	(1.3+	2.9−)	1999 11 16	704	0.1+	0.1+	1999 12 13	159	0.9−	0.6−
1998 05 22	704	0.9+	1.2−	1999 11 16	704	0.5−	0.4+				

1998 HJ₉₈ = 1999 XO₂₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	162.35541		(2000.0)	P		Q	
<i>n</i>	0.30216485	ω	270.25756	−0.04022877		+0.99918691	
<i>a</i>	2.1994128	Ω	357.43229	−0.89131461		−0.03709698	
<i>e</i>	0.0943590	<i>i</i>	3.42766	−0.45159707		−0.01579058	
<i>P</i>	3.26	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.1−	0.3+	1998 04 30	566	0.3−	0.0	1998 05 24	704	0.5−	0.7+
1998 04 21	704	0.2+	0.5+	1998 05 01	704	0.8+	1.1−	1998 05 24	704	0.2−	0.4−
1998 04 21	704	0.3+	0.3−	1998 05 01	704	0.1+	1.1−	1998 05 24	704	1.0−	0.4+
1998 04 21	704	0.3−	1.0+	1998 05 01	704	0.1−	0.9−	1999 12 07	699	0.5−	0.5+
1998 04 21	704	0.3+	1.0+	1998 05 01	704	0.9−	1.0−	1999 12 07	699	0.3−	0.8+
1998 04 22	704	0.4−	0.5+	1998 05 22	704	0.1+	0.1+	1999 12 07	699	0.9−	0.6−
1998 04 22	704	0.4+	0.7+	1998 05 22	704	0.6+	0.0	1999 12 08	704	0.3−	0.1+
1998 04 22	704	0.2+	0.0	1998 05 22	704	0.5+	0.5+	1999 12 08	704	0.3+	0.4−
1998 04 22	704	0.0	1.3+	1998 05 22	704	0.4+	0.6−	1999 12 08	704	0.5+	0.3−
1998 04 22	704	0.4−	1.6−	1998 05 22	704	0.1−	1.7+	1999 12 08	704	0.3+	0.2−
1998 04 30	566	0.3−	0.7−	1998 05 24	704	0.3+	0.3+	1999 12 08	704	0.9+	0.0
1998 04 30	566	0.3+	0.4−	1998 05 24	704	0.0	1.1−				

1998 HW₁₀₀ = 1999 VZ₁₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	168.98413		(2000.0)	P		Q	
<i>n</i>	0.29977647	ω	61.22811	−0.09417716		+0.99522075	
<i>a</i>	2.2110795	Ω	203.41028	−0.93456155		−0.09731365	
<i>e</i>	0.1729918	<i>i</i>	3.72511	−0.34311132		−0.00810662	
<i>P</i>	3.29	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.3+	0.6−	1998 05 01	704	0.1−	0.3−	1998 05 24	704	0.2−	0.4+
1998 04 21	704	0.2+	0.1+	1998 05 01	704	0.4−	0.8+	1998 05 28	699	0.0	0.8−
1998 04 21	704	0.4+	0.8−	1998 05 01	704	0.0	0.1−	1998 05 28	699	0.4+	0.2+
1998 04 21	704	0.4+	0.4−	1998 05 01	704	0.1−	0.7+	1998 05 28	699	0.6+	0.4+
1998 04 21	704	0.2−	0.5−	1998 05 01	704	0.1+	0.5+	1999 11 04	704	0.2+	1.2−
1998 04 22	704	0.3−	0.5+	1998 05 18	699	0.1+	0.3+	1999 11 04	704	0.3+	0.2+
1998 04 22	704	0.2−	0.3+	1998 05 18	699	0.2+	0.7−	1999 11 04	704	(2.6+	0.4−)
1998 04 22	704	0.6−	0.5+	1998 05 18	699	0.9+	0.1+	1999 11 04	691	0.1+	0.2+
1998 04 22	704	0.2+	0.9+	1998 05 22	699	0.5−	0.1−	1999 11 04	691	0.1+	0.2+
1998 04 25	699	(0.5+	4.1+)	1998 05 22	699	(1.1−	2.2−)	1999 11 04	691	0.2+	0.3+
1998 04 25	699	0.2+	0.1−	1998 05 22	699	0.0	0.6−	1999 11 09	691	0.1+	0.1−
1998 04 25	699	0.1+	0.3−	1998 05 24	704	0.3+	0.1+	1999 11 09	691	0.3+	0.4−
1998 04 30	566	0.4−	0.3−	1998 05 24	704	0.8−	0.7−	1999 11 09	691	1.1−	0.1+
1998 04 30	566	0.4−	0.4−	1998 05 24	704	0.2+	0.3+				
1998 04 30	566	0.1−	0.0	1998 05 24	704	0.5−	0.2−				

1998 HC₁₀₈

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	107.83747		(2000.0)	P		Q	
<i>n</i>	0.29909923	ω	220.87195	+0.68373140		+0.71865782	
<i>a</i>	2.2144159	Ω	92.67963	−0.63217132		+0.67002908	
<i>e</i>	0.1012088	<i>i</i>	7.28454	−0.36451447		+0.18598918	
<i>P</i>	3.30	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 24	704	0.5+	0.4−	1998 04 24	704	0.6−	0.7+	1999 12 03	704	0.3+	0.4−
1998 03 24	704	0.2−	0.9−	1998 05 23	699	0.7+	0.0	1999 12 03	704	0.5+	1.2−
1998 03 24	704	0.6+	1.0−	1998 05 23	699	0.5+	0.7−	1999 12 03	704	0.5+	0.8−
1998 03 24	704	0.6−	1.0−	1998 05 23	699	1.0+	0.2+	1999 12 03	704	0.1+	1.0−
1998 03 24	704	0.0	0.1+	1998 05 24	699	0.6+	0.7+	1999 12 03	704	0.2−	0.2−
1998 04 21	704	0.1−	0.3+	1998 05 24	699	0.4+	0.2−	1999 12 08	699	0.1+	1.8+
1998 04 21	704	0.2−	0.0	1998 05 24	699	0.8+	0.6+	1999 12 08	699	0.7+	0.6+
1998 04 21	704	0.3+	0.1−	1999 10 03	703	0.0	0.3+	1999 12 08	699	0.1−	1.7+

1998 04 21	704	0.0	0.0	1999 10 03	703	0.0	0.5+	2000 01 05	704	0.0	0.5−
1998 04 21	704	0.1+	0.3+	1999 10 03	703	0.0	0.2−	2000 01 05	704	0.5+	0.7−
1998 04 23	704	0.4−	0.2−	1999 10 03	703	0.0	0.1−	2000 01 05	704	0.2−	0.1+
1998 04 23	704	1.0−	0.1+	1999 10 07	703	0.1+	0.1+	2000 01 05	704	0.8−	0.2+
1998 04 23	704	0.3−	0.3+	1999 10 07	703	0.0	0.5+	2000 01 05	704	0.9−	0.2−
1998 04 23	704	(0.5+	2.8+)	1999 10 07	703	0.3+	0.3+	2000 01 06	699	0.1+	0.3−
1998 04 23	704	0.3−	0.3+	1999 10 07	703	0.5+	0.0	2000 01 06	699	0.3−	0.7+
1998 04 24	704	0.3−	0.2+	1999 10 09	704	0.0	0.2−	2000 01 06	699	0.4−	0.1+
1998 04 24	704	0.2−	0.5+	1999 10 09	704	0.2−	0.8−	2000 01 07	704	0.0	0.4+
1998 04 24	704	0.5−	0.5+	1999 10 09	704	0.7−	0.5−	2000 01 07	704	0.0	0.7+
1998 04 24	704	0.1+	0.1+	1999 10 09	704	0.7−	0.5−	2000 01 07	704	0.3+	1.0+

1998 HX₁₁₀

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	46.90733		(2000.0)	P		Q	
<i>n</i>	0.28899277	ω	246.31495	+0.98602028		−0.14471316	
<i>a</i>	2.2657469	Ω	121.91204	+0.16462408		+0.92266371	
<i>e</i>	0.1692433	<i>i</i>	5.58384	−0.02574711		+0.35742102	
<i>P</i>	3.41	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 04 21	704	1.2+	0.1+	1999 09 21	699	0.4+	0.7+	1999 12 09	699	0.7+	0.9+
1998 04 21	704	0.1+	0.2−	1999 09 21	699	0.7+	1.4+	1999 12 09	699	(1.1+	2.3+)
1998 04 21	704	0.4+	0.2+	1999 09 21	699	0.7+	0.1−	1999 12 09	699	1.1+	1.3+
1998 04 21	704	1.4−	0.5+	1999 10 02	704	0.4+	0.1+	1999 12 13	699	0.6−	0.3+
1998 04 21	704	0.8−	0.9−	1999 10 02	704	0.5−	0.4+	1999 12 13	699	0.0	0.4+
1998 04 23	704	0.4−	1.4−	1999 10 02	704	0.2−	0.2+	1999 12 13	699	0.1+	0.2−
1998 04 23	704	1.2−	1.4+	1999 10 02	704	0.2−	0.2−	1999 12 13	699	0.4−	0.7+
1998 04 23	704	0.1−	0.2+	1999 10 02	704	0.8−	0.2+	1999 12 13	699	0.5−	0.9+
1998 04 23	704	0.1+	1.2−	1999 10 08	704	0.5−	0.6−	1999 12 13	699	0.5+	0.4+
1998 04 23	704	(1.0+	2.4−)	1999 10 08	704	0.1−	0.6−	1999 12 14	699	0.3−	0.4−
1998 04 24	704	0.1+	0.9+	1999 10 08	704	0.1−	0.6−	1999 12 14	699	0.8−	0.3+
1998 04 24	704	1.9+	0.8+	1999 10 08	704	0.5−	0.4−	1999 12 14	699	0.5−	1.8+
1998 04 24	704	0.2+	0.5−	1999 10 08	704	0.2−	0.4−	2000 01 05	704	0.2−	0.6−
1998 04 24	704	0.4−	0.9−	1999 11 07	704	0.1+	0.1−	2000 01 05	704	0.1+	0.1+
1999 09 08	699	0.8+	0.2−	1999 11 07	704	0.5+	0.8−	2000 01 05	704	0.1−	0.6+
1999 09 08	699	0.2−	0.5+	1999 11 07	704	0.1+	0.6−	2000 01 05	704	0.3−	0.1+
1999 09 08	699	0.9+	0.2−	1999 11 07	704	0.1−	0.5−	2000 01 05	704	0.2−	0.3−
1999 09 14	704	0.2−	0.5+	1999 11 07	704	0.7−	0.5−	2000 01 08	704	0.1−	0.4+
1999 09 14	704	0.2−	0.6+	1999 12 02	704	0.5+	1.3−	2000 01 08	704	0.4−	0.4−
1999 09 14	704	0.2−	0.1−	1999 12 02	704	1.1+	1.2−	2000 01 08	704	0.2−	0.2−
1999 09 14	704	0.3−	0.1+	1999 12 02	704	0.7+	0.9−	2000 01 08	704	0.5−	0.1+
1999 09 14	704	0.3−	0.3−	1999 12 02	704	0.7+	1.2−	2000 01 08	704	0.3+	0.2+

1998 HN₁₁₁

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	77.46830		(2000.0)	P		Q	
<i>n</i>	0.25319010	ω	214.44575	+0.78032549		+0.61308152	
<i>a</i>	2.4745994	Ω	107.26132	−0.54076859		+0.76058877	
<i>e</i>	0.1606909	<i>i</i>	7.42344	−0.31410423		+0.21362531	
<i>P</i>	3.89	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	1.0+	0.2−	1998 05 16	704	0.4+	0.0	1999 10 02	704	0.1+	0.2+
1998 04 21	704	1.2+	1.2−	1998 05 16	704	0.3−	0.4−	1999 10 02	704	0.1−	0.1−
1998 04 21	704	1.0+	1.8+	1998 05 16	704	(5.7−	3.0−)	1999 10 08	704	0.3+	0.2−
1998 04 21	704	0.2−	1.1+	1999 09 08	699	1.1+	1.6+	1999 10 08	704	0.1+	0.3+
1998 04 21	704	0.9−	1.0+	1999 09 08	699	1.0+	0.5+	1999 10 08	704	0.0	0.3+
1998 04 23	704	1.2+	0.5+	1999 09 08	699	0.3+	1.1+	1999 10 08	704	0.4+	0.2−
1998 04 23	704	0.9+	0.3−	1999 09 14	704	0.1−	1.1−	1999 10 08	704	0.3−	0.7+
1998 04 23	704	0.4−	0.2−	1999 09 14	704	0.1−	0.1−	1999 11 07	704	0.8−	0.2−
1998 04 23	704	0.1+	0.5−	1999 09 14	704	0.1−	0.6−	1999 11 07	704	0.3+	0.6+
1998 04 23	704	0.2−	0.8−	1999 09 14	704	0.1+	1.1−	1999 11 07	704	0.6+	0.8−
1998 04 24	704	0.4−	0.8−	1999 09 21	699	0.3+	1.1−	1999 11 07	704	1.3+	0.3+

2000 JAN. 24

M.P.C. 37683

1998 04 24	704	(2.9–	0.3+)	1999 09 21	699	1.1–	1.2–	1999 12 02	704	1.0–	1.1–
1998 04 24	704	0.6–	1.7–	1999 09 21	699	0.5–	0.3+	1999 12 02	704	1.0–	0.1–
1998 04 24	704	1.3–	1.1–	1999 10 02	704	0.3–	0.5+	1999 12 02	704	1.2+	0.5–
1998 05 16	704	0.7–	0.9+	1999 10 02	704	0.4–	0.3+				
1998 05 16	704	1.2–	0.5+	1999 10 02	704	0.8–	0.3+				

1998 HB₁₁₄

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
88.55880				(2000.0)			
				P		Q	
<i>n</i>	0.26381141	<i>ω</i>	173.47377	+0.79782198		+0.59905150	
<i>a</i>	2.4077257	<i>Ω</i>	149.39967	–0.55900348		+0.77724477	
<i>e</i>	0.1862255	<i>i</i>	7.67117	–0.22582116		+0.19242625	
<i>P</i>	3.74	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1995 08 24	809	0.9–	1.6+	1998 04 23	704	0.2–	0.2–	1999 11 17	703	0.1+	0.3+
1995 08 25	809	0.4–	0.9+	1998 04 23	704	0.8–	1.1–	1999 11 17	703	0.6–	0.3+
1995 08 25	809	0.1+	1.7+	1998 04 24	704	0.1+	0.1+	1999 11 17	703	0.1–	0.5+
1995 08 26	809	0.0	0.1–	1998 04 24	704	(0.9+	2.6–)	1999 12 03	704	0.2+	0.6–
1995 08 27	809	0.8+	0.6–	1998 04 24	704	0.7+	1.1–	1999 12 03	704	0.2–	0.5–
1995 08 28	809	0.6+	0.2–	1998 04 24	704	0.7+	0.5–	1999 12 03	704	0.2–	0.3–
1995 08 28	809	0.1+	0.8–	1998 04 24	704	0.0	0.4–	1999 12 03	704	0.1–	0.5+
1995 08 29	809	0.2+	0.5–	1998 05 28	704	0.2–	0.6–	1999 12 03	704	1.3–	1.0–
1995 08 30	809	0.5+	0.2–	1998 05 28	704	0.6–	2.0+	1999 12 08	699	0.0	0.6+
1995 08 31	809	0.2–	0.2–	1998 05 28	704	0.8–	1.7+	1999 12 08	699	0.6+	0.1–
1995 08 31	809	0.1+	1.2–	1998 05 28	704	0.2–	0.1+	1999 12 08	699	0.4+	0.7+
1995 09 01	809	0.5–	1.8–	1998 05 28	704	0.1+	1.2+	1999 12 14	704	0.5–	0.9–
1995 09 29	809	(4.4–	4.4+)	1999 09 13	703	0.6–	0.2–	1999 12 14	704	0.2–	0.3+
1998 03 24	704	0.7–	1.0+	1999 09 13	703	0.1+	0.6+	1999 12 14	704	0.5+	0.5+
1998 03 24	704	(0.5+	2.3+)	1999 09 13	703	0.6+	0.6+	1999 12 14	704	0.4–	0.9–
1998 03 24	704	0.3+	1.3+	1999 09 13	703	1.3+	0.8+	1999 12 14	704	0.2–	0.4–
1998 03 24	704	0.8+	0.2+	1999 10 09	704	0.2–	0.5+	2000 01 08	704	0.5–	0.1+
1998 03 24	704	1.6–	0.1–	1999 10 09	704	0.1–	0.1+	2000 01 08	704	0.0	0.1+
1998 04 21	704	0.6+	0.4–	1999 10 09	704	0.5–	0.4+	2000 01 08	704	0.0	0.1+
1998 04 21	704	0.1–	0.8–	1999 10 09	704	0.1+	0.4+	2000 01 08	704	0.8–	0.4–
1998 04 21	704	0.3+	0.3–	1999 10 09	704	0.0	0.1+	2000 01 08	704	0.1+	0.8–
1998 04 21	704	0.2–	0.6–	1999 11 07	704	0.2–	0.1+	2000 01 11	704	1.7+	1.9–
1998 04 23	704	0.4+	0.2–	1999 11 07	704	0.1–	0.6–	2000 01 11	704	0.0	0.4–
1998 04 23	704	0.4+	0.6–	1999 11 07	704	0.7+	0.4–	2000 01 11	704	0.0	1.1+
1998 04 23	704	0.8+	0.7–	1999 11 17	703	0.3–	0.1+	2000 01 11	704	0.9+	1.1+

1998 HN₁₂₃

Id. E. Howell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
110.59110				(2000.0)			
				P		Q	
<i>n</i>	0.27750892	<i>ω</i>	203.08098	+0.67086057		+0.72689791	
<i>a</i>	2.3278308	<i>Ω</i>	109.40189	–0.65380200		+0.67319434	
<i>e</i>	0.1404665	<i>i</i>	8.95703	–0.34998433		+0.13575275	
<i>P</i>	3.55	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 04 18	691	0.8–	0.5+	1999 10 09	703	0.0	0.1+	1999 12 04	699	0.9+	0.5+
1998 04 18	691	1.0–	0.6+	1999 10 09	704	0.1+	0.5+	1999 12 04	699	0.4+	0.8+
1998 04 18	691	0.6–	0.6+	1999 10 09	703	0.6+	1.7+	1999 12 04	699	0.2+	1.3+
1998 04 23	704	0.3+	0.4–	1999 10 09	704	0.6+	0.1–	1999 12 05	704	0.3+	0.3+
1998 04 23	704	0.4–	0.4+	1999 10 09	703	0.6+	0.1–	1999 12 05	704	0.1+	0.4–
1998 04 23	704	0.9+	0.0	1999 10 09	704	0.4–	0.2–	1999 12 05	704	0.9–	0.4+
1998 04 23	704	0.7+	0.0	1999 10 09	703	0.5+	0.2+	1999 12 05	704	1.3–	0.2–
1998 04 23	704	0.5+	0.5–	1999 10 09	704	0.0	0.4–	1999 12 05	704	0.7+	1.0–
1998 04 24	704	0.1–	0.2–	1999 10 09	704	0.2–	0.1+	1999 12 14	704	0.3+	0.3–
1998 04 24	704	0.0	0.4+	1999 10 31	703	0.1–	0.1+	1999 12 14	704	0.9+	1.3–
1998 04 24	704	0.3+	0.3–	1999 10 31	703	0.3–	0.0	1999 12 14	704	0.1+	0.6–
1998 05 23	704	0.6+	0.7+	1999 10 31	703	0.5–	0.1–	1999 12 14	704	0.5+	0.9–
1998 05 23	704	0.2+	0.6–	1999 10 31	703	0.3–	0.0	1999 12 14	704	0.7+	0.3–
1998 05 23	704	0.5–	0.4–	1999 11 05	704	0.4–	0.6–	1999 12 14	699	1.2+	1.1–

1998 05 23	704	0.2+	0.6–	1999 11 05	704	0.2+	0.5–	1999 12 14	699	0.1+	0.2–
1998 05 23	704	1.7–	0.8–	1999 11 05	704	0.1+	0.1–	1999 12 14	699	0.0	0.0
1998 05 27	699	0.6–	0.5+	1999 11 05	704	0.2–	0.6–	2000 01 05	704	1.2–	0.6+
1998 05 27	699	0.1–	0.5+	1999 11 05	704	0.1–	0.7–	2000 01 05	704	1.9–	0.8+
1998 05 27	699	1.6+	0.8–	1999 11 16	703	0.3–	0.3+	2000 01 05	704	1.1–	0.7+
1998 06 02	699	0.7–	0.4–	1999 11 16	703	0.6–	0.2–	2000 01 07	704	0.5–	0.5–
1998 06 02	699	0.6+	0.1+	1999 11 16	703	0.2+	0.1+	2000 01 07	704	0.4+	0.2+
1998 06 02	699	0.0	0.6–	1999 11 16	703	0.1–	0.3+	2000 01 07	704	1.4+	0.0

1998 HD₁₂₄ = 2000 AG₁₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
130.10786				(2000.0)			
				P		Q	
<i>n</i>	0.28118402	<i>ω</i>	209.45110	+0.65027287		+0.74298245	
<i>a</i>	2.3075031	<i>Ω</i>	101.59145	–0.66153491		+0.65636467	
<i>e</i>	0.2809864	<i>i</i>	9.31139	–0.37351943		+0.13100574	
<i>P</i>	3.51	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 23	704	0.3+	0.1–	1998 05 25	704	0.2–	0.1+	1999 12 08	704	0.4–	0.3+
1998 04 23	704	0.8+	0.3–	1998 05 25	704	0.5–	1.1–	1999 12 08	704	0.2–	0.1+
1998 04 23	704	0.3+	0.4–	1998 05 25	704	0.2+	0.2–	1999 12 08	704	0.2–	0.2+
1998 04 23	704	1.0–	0.2+	1998 05 26	704	0.4–	0.1+	1999 12 08	704	0.2–	0.4+
1998 04 24	704	0.1–	0.1–	1998 05 26	704	1.2–	1.6+	1999 12 08	704	0.1+	0.3+
1998 04 24	691	0.4+	0.1–	1998 05 26	704	0.6–	0.5+	2000 01 05	704	0.2–	0.0
1998 04 24	704	0.0	0.7+	1998 05 26	704	0.5+	0.3+	2000 01 05	704	0.2+	0.0
1998 04 24	691	0.5+	0.0	1998 05 26	704	0.8–	0.4+	2000 01 05	704	1.7+	1.0–
1998 04 24	704	0.7–	1.1+	1998 06 02	699	0.4–	0.1+	2000 01 05	704	0.4+	0.5–
1998 04 24	691	0.4+	0.0	1998 06 02	699	0.3–	0.1–	2000 01 05	704	0.9–	0.5–
1998 05 23	704	0.6+	0.6–	1998 06 02	699	0.4–	0.1+	2000 01 06	704	0.3–	0.3+
1998 05 23	704	0.6+	0.4–	1999 11 04	704	0.6+	0.4–	2000 01 06	704	0.2–	0.1+
1998 05 23	704	0.7+	0.1+	1999 11 04	704	0.1+	0.4–	2000 01 06	704	0.0	0.3+
1998 05 23	704	0.8+	0.1–	1999 11 04	704	0.3+	0.1–	2000 01 06	704	0.3–	0.0
1998 05 23	704	0.1+	0.6–	1999 11 04	704	0.2+	0.1+	2000 01 06	704	0.4–	0.0
1998 05 25	704	0.1+	1.4–	1999 11 04	704	0.1+	0.1+				

1998 HJ₁₂₈ = 1989 CB₇ = 1999 NL₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
292.67261				(2000.0)			
				P		Q	
<i>n</i>	0.23464168	<i>ω</i>	247.40971	+0.66499104		–0.74193231	
<i>a</i>	2.6033503	<i>Ω</i>	160.12839	+0.74365132		+0.64718497	
<i>e</i>	0.0945984	<i>i</i>	14.58169	+0.06906255		+0.17518008	
<i>P</i>	4.20	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1998 02 28	809	0.2+	0.5+	1998 04 19	704	0.5+	0.5-	1999 09 07	704	0.0	0.1-
1998 02 28	809	(2.4+	2.7-)	1998 04 19	704	0.2+	0.2-	1999 09 07	704	0.6+	0.2+
1998 03 02	809	0.0	0.5+	1998 04 20	704	0.2-	0.1-	1999 09 14	704	0.2+	0.3-
1998 03 02	809	(2.9+	2.4-)	1998 04 20	704	1.5+	0.1-	1999 09 14	704	0.3+	0.2-
1998 03 24	704	0.2+	0.2+	1998 04 20	704	1.2-	0.2-	1999 09 14	704	0.0	0.6-
1998 03 24	704	0.0	0.3+	1998 04 20	704	0.2-	0.4+	1999 09 14	704	0.3+	0.2-
1998 03 24	704	0.2-	0.8+	1998 04 20	704	1.8-	1.0+	1999 09 14	704	0.5+	0.3-
1998 03 24	704	0.1+	0.7-	1999 08 12	699	0.9-	0.3+	1999 09 30	704	0.2+	0.1+
1998 03 24	704	(4.0-	6.0-)	1999 08 12	699	0.4+	0.6+	1999 09 30	704	0.3+	0.6+
1998 04 19	704	0.7-	0.8-	1999 08 12	699	0.0	0.5+	1999 09 30	704	0.6+	0.0
1998 04 19	704	0.2+	0.3+	1999 09 07	704	0.2-	0.2+	1999 09 30	704	1.4-	0.2+
1998 04 19	704	1.6+	0.7-	1999 09 07	704	0.5-	0.7-	1999 09 30	704	0.7-	0.7+

**1998 HJ₁₃₃ = 1949 QA₁ = 1949 QO₁ = 1949 QJ₂ = 4237 T-1 = 1980 TA₂
= 1999 NU₄₆**

Id. G. V. Williams, K. Reinmuth (d, *MPC* 383; also *MPC* 5126), O. Kippes (d, *MPC* 777)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	15.07896		(2000.0)	P	Q
n	0.25527128	ω	200.54534	+0.99406842	+0.08796560
a	2.4611311	Ω	154.15400	-0.06741498	+0.95983517
e	0.2405575	i	8.43560	-0.08534166	+0.26641791
P	3.86	H	13.8	G 0.15	U 2

Residuals in seconds of arc

1949 08 20	690	(1.7-	3.8-)	1998 03 20	704	0.3-	0.1+	1999 06 14	704	0.1+	0.6+
1949 08 21	024	(3.2-	1.2+)	1998 03 20	704	1.0+	0.3-	1999 06 14	704	0.0	0.2+
1949 08 22	024	(2.9-	6.4+)	1998 03 20	704	0.2-	1.5-	1999 06 14	704	0.4+	0.6+
1949 08 24	690	0.2-	0.6-	1998 03 20	704	0.3-	0.3-	1999 06 14	704	0.3-	0.2-
1949 08 26	690	0.0	1.2-	1998 03 24	566	0.2-	0.0	1999 07 13	704	0.4-	0.3+
1949 08 27	760	(2.6-	4.5+)	1998 03 24	566	0.1-	0.2-	1999 07 13	704	0.5-	0.2-
1949 08 27	760	0.3+	2.0+	1998 03 24	566	0.4-	0.1+	1999 07 13	704	0.5-	0.0
1971 03 24	675	1.7+	1.2-	1998 04 19	704	0.3+	0.5+	1999 07 13	704	0.7-	0.3+
1971 03 26	675	0.0	0.1+	1998 04 19	704	0.0	0.4+	1999 07 13	704	0.3-	0.1-
1971 03 26	675	0.7-	0.1-	1998 04 19	704	1.2+	0.3+	1999 07 19	704	0.0	0.1-
1971 03 27	675	2.0-	1.5-	1998 04 19	704	0.5+	1.3+	1999 07 19	704	0.1-	0.2-
1980 10 05	809	0.1+	1.1-	1998 04 20	704	0.6+	0.9-	1999 07 19	704	0.4+	0.4-
1998 02 28	809	0.6-	0.0	1998 04 20	704	(0.1-	2.2+)	1999 07 19	704	0.3+	0.5-
1998 02 28	809	0.7-	0.0	1998 04 20	704	1.0-	1.2+	1999 09 30	704	0.1-	1.6-
1998 03 02	809	0.1+	0.3-	1998 04 20	704	0.4+	0.3+	1999 09 30	704	0.6+	0.5+
1998 03 02	809	0.0	0.0	1998 04 20	704	0.4-	0.7+	1999 09 30	704	1.0+	0.4+
1998 03 20	704	0.4+	0.6-	1999 06 14	704	0.6+	0.1-				

1998 HK₁₃₃ = 1999 NG₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	118.75882		(2000.0)	P	Q
n	0.22637638	ω	115.17842	-0.65205732	+0.75466580
a	2.6663386	Ω	113.92577	-0.72112899	-0.58768592
e	0.0536519	i	4.56849	-0.23408168	-0.29172724
P	4.35	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1998 02 28	809	0.8-	0.6-	1998 04 19	704	0.3+	0.8-	1999 07 14	704	0.0	0.5-
1998 02 28	809	0.2+	1.1-	1998 04 19	704	0.4+	0.5+	1999 07 14	704	0.1-	0.4-
1998 03 02	809	(3.9+	0.3-)	1998 04 20	704	0.4-	0.0	1999 07 16	704	0.1+	0.7-
1998 03 02	809	(4.5+	0.5-)	1998 04 20	704	1.2+	0.1-	1999 07 16	704	0.2-	0.5-
1998 03 24	566	0.1+	0.4-	1998 04 20	704	0.8-	1.4+	1999 07 16	704	0.1-	0.1+
1998 03 24	566	0.2-	0.5-	1998 04 20	704	1.0+	0.3+	1999 08 12	699	1.2-	0.3+
1998 03 24	566	0.0	0.7-	1998 04 20	704	0.8-	0.3+	1999 08 12	699	1.3+	0.0
1998 04 19	704	0.1+	0.1-	1999 07 14	704	0.0	0.0	1999 08 12	699	0.2+	0.3+
1998 04 19	704	0.6-	1.6+	1999 07 14	704	0.3+	0.8+				

1998 HQ₁₃₄

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

$\dot{M}$	182.47869		(2000.0)		P	Q	
n	0.30544495	ω	113.05017		-0.65670259	+0.75037127	
a	2.1836385	Ω	115.67972		-0.71892571	-0.59269627	
e	0.1175626	i	4.79896		-0.22778834	-0.29266720	
P	3.23	H	15.1	G	0.15	U	4

Residuals in seconds of arc

1998 03 25	704	1.4-	0.9+	1998 05 16	704	0.1-	0.0	1999 10 02	704	0.1+	0.5-
1998 03 25	704	0.3+	1.2+	1998 05 16	704	1.3+	0.3+	1999 10 02	704	0.6-	0.1+
1998 03 25	704	1.3-	0.3-	1998 05 16	704	0.8-	0.8+	1999 10 07	704	0.5-	1.4+
1998 03 25	704	0.3+	1.7+	1998 05 16	704	0.9+	1.0-	1999 10 07	704	0.3+	1.9+
1998 03 25	704	(0.2-	2.3+)	1999 09 08	699	0.8+	0.2+	1999 10 07	704	(1.7+	2.2-)
1998 04 19	704	0.5+	0.6-	1999 09 08	699	1.2-	0.7-	1999 10 08	704	0.1-	0.5-
1998 04 19	704	0.0	0.4-	1999 09 08	699	0.8+	0.7+	1999 10 08	704	0.6+	1.1-
1998 04 19	704	0.1-	0.3-	1999 09 14	704	0.2-	0.3+	1999 10 08	704	0.6+	1.0-
1998 04 19	704	0.1-	0.5-	1999 09 14	704	0.4-	0.1+	1999 10 08	704	0.8-	0.3-
1998 04 24	704	0.0	0.4-	1999 09 14	704	0.2-	0.1+	1999 10 08	704	0.2-	0.9-
1998 04 24	704	0.3+	1.1-	1999 09 14	704	0.2-	0.4+	1999 11 05	703	(2.6+	0.0)
1998 04 24	704	0.1+	0.3-	1999 09 14	704	0.0	0.0	1999 11 05	703	0.6+	1.1+
1998 04 24	704	0.3+	0.5-	1999 09 21	699	1.5+	0.3-	1999 11 05	703	0.5-	0.3+
1998 04 24	704	0.1+	0.8-	1999 09 21	699	1.1-	0.3+	1999 11 05	703	0.6+	0.7-
1998 04 28	566	0.3+	0.2-	1999 09 21	699	0.2+	0.6+	1999 11 07	704	0.1-	0.5-
1998 04 28	566	0.3+	0.1-	1999 10 02	704	0.0	0.3-	1999 11 07	704	0.0	1.4-
1998 04 28	566	0.1-	0.6-	1999 10 02	704	0.7+	0.4+	1999 11 07	704	0.2-	0.4-
1998 05 16	704	0.8-	1.2+	1999 10 02	704	0.5-	0.0	1999 11 07	704	0.5+	0.7-

1998 HN₁₃₉

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	58.56975		(2000.0)	P	Q
n	0.28712684	ω	245.28859	+0.98522424	+0.13743440
a	2.2755525	Ω	106.67976	-0.09100363	+0.92559562
e	0.1900105	i	6.12453	-0.14509147	+0.35268193
P	3.43	H	14.8	G 0.15	U 3

Residuals in seconds of arc

1998 04 21	704	0.8-	0.8-	1999 10 02	704	0.3+	0.4-	1999 12 03	704	1.0+	0.3-
1998 04 21	704	1.3+	0.3+	1999 10 02	704	0.5+	0.3-	1999 12 03	704	1.0+	1.2-
1998 04 21	704	1.2-	0.7+	1999 10 02	704	0.4+	0.4-	1999 12 03	704	0.3+	0.4-
1998 04 21	704	1.3-	0.1+	1999 10 05	703	0.1+	0.1-	1999 12 03	704	1.2+	0.5-
1998 04 24	704	1.2+	0.3+	1999 10 05	703	0.2-	0.1+	1999 12 13	699	(0.1+	2.1+)
1998 04 24	704	0.4-	0.1+	1999 10 05	703	0.0	0.3+	1999 12 13	699	0.5-	1.0+
1998 04 24	704	0.8+	0.2-	1999 10 05	703	0.4+	0.5+	1999 12 13	699	0.7-	1.4+
1998 04 24	704	0.2+	0.3-	1999 10 08	704	0.6-	0.2+	2000 01 05	704	0.7-	0.4+
1998 04 24	704	0.2+	0.6-	1999 10 08	704	0.4-	0.1-	2000 01 05	704	0.4+	0.0
1999 09 08	699	0.6+	0.6-	1999 10 08	704	0.3-	0.2+	2000 01 05	704	0.9-	0.4-
1999 09 08	699	0.5+	0.8+	1999 10 08	704	0.9-	0.0	2000 01 05	704	0.3-	0.6-
1999 09 08	699	0.7+	0.1-	1999 10 08	704	0.6-	0.3-	2000 01 07	704	0.1-	0.2-
1999 09 14	704	0.2-	1.0+	1999 11 02	703	0.1-	0.6+	2000 01 07	704	0.5+	0.2+
1999 09 14	704	0.5-	0.5+	1999 11 02	703	0.2+	0.2+	2000 01 07	704	0.3-	0.2+
1999 09 14	704	0.9-	0.3+	1999 11 02	703	0.3-	0.1+	2000 01 07	704	0.1+	0.2-
1999 09 14	704	0.5-	0.1+	1999 11 02	703	0.4+	0.3-	2000 01 07	704	0.3+	0.6+
1999 09 14	704	0.8-	0.9-	1999 11 07	704	1.4-	0.6-	2000 01 08	704	0.1-	0.6+
1999 09 21	699	0.6+	0.2+	1999 11 07	704	0.3-	0.4-	2000 01 08	704	0.1+	0.6+
1999 09 21	699	0.3+	0.1+	1999 11 07	704	0.4+	0.3-	2000 01 08	704	1.0-	0.4-
1999 09 21	699	0.6+	0.3+	1999 11 07	704	0.4+	0.2-	2000 01 08	704	0.3+	0.5+
1999 10 02	704	0.2+	0.1-	1999 11 07	704	0.1-	0.3-				
1999 10 02	704	0.7+	0.5-	1999 12 03	704	0.4+	0.6-				

2000 JAN. 24

M.P.C. 37685

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	131.81345	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27614303	ω 124.11020	+0.13600262	+0.98900191		
<i>a</i>	2.3355007	Ω 153.52423	−0.94648453	+0.14704129		
<i>e</i>	0.1063725	<i>i</i> 7.49142	−0.29269494	−0.01593967		
<i>P</i>	3.57	<i>H</i> 13.9	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1998 03 24	704	0.3+	0.1+	1998 05 24	699	0.1+	0.5+	1999 11 07	704	0.3−	0.0
1998 03 24	704	0.4−	0.8+	1998 05 28	704	0.1+	0.2−	1999 12 13	699	0.0	0.1+
1998 03 24	704	0.0	0.0	1998 05 28	704	1.2−	0.4−	1999 12 13	699	0.3+	1.6+
1998 03 24	704	1.1+	1.3+	1998 05 28	704	0.1−	0.5−	1999 12 13	699	0.7−	0.5+
1998 04 21	704	0.2−	0.0	1998 05 28	704	0.3+	0.3−	1999 12 14	699	0.6−	0.6−
1998 04 21	704	0.6+	0.1−	1998 05 28	704	1.3−	0.1−	1999 12 14	699	0.7−	0.0
1998 04 21	704	0.6−	0.2−	1999 10 04	703	0.3+	0.1+	1999 12 14	699	1.1−	1.2+
1998 04 21	704	0.1+	0.3−	1999 10 04	703	0.4+	0.0	2000 01 05	704	0.0	0.4−
1998 04 21	704	0.4+	0.4−	1999 10 04	703	0.4+	0.0	2000 01 05	704	0.2+	0.1+
1998 04 23	704	0.7+	0.2−	1999 10 04	703	0.3+	0.1−	2000 01 05	704	0.1+	0.0
1998 04 23	704	1.7+	0.6+	1999 10 09	704	0.2−	0.2−	2000 01 05	704	0.1+	0.6+
1998 04 23	704	0.4−	1.3−	1999 10 09	704	0.2−	0.1−	2000 01 05	704	0.8+	0.4+
1998 04 23	704	(1.3+	9.3−)	1999 10 09	704	0.4−	0.3+	2000 01 07	704	0.5+	0.5−
1998 04 24	704	0.3+	0.4−	1999 10 09	704	0.4−	0.0	2000 01 07	704	0.3+	0.6−
1998 04 24	704	0.8+	0.3+	1999 10 09	704	0.1−	0.2−	2000 01 07	704	0.4−	1.0−
1998 04 24	704	0.2+	0.5+	1999 11 02	703	0.1+	0.9+	2000 01 07	704	0.6+	0.2+
1998 04 24	704	1.1−	0.2+	1999 11 02	703	0.8+	0.3+	2000 01 07	704	0.4−	1.0−
1998 04 24	704	0.4−	0.6−	1999 11 02	703	0.0	0.7+	2000 01 08	704	0.9−	1.0+
1998 05 23	699	0.0	1.0+	1999 11 02	703	0.1−	0.2+	2000 01 08	704	0.5+	0.2−
1998 05 23	699	0.0	0.3−	1999 11 07	704	0.7+	0.1−	2000 01 08	704	0.5−	0.2−
1998 05 23	699	0.3−	0.7+	1999 11 07	704	0.0	0.2+	2000 01 08	704	0.6+	1.0−
1998 05 24	699	0.2−	0.1+	1999 11 07	704	0.4−	0.5−	2000 01 08	704	0.6+	1.5−
1998 05 24	699	0.6−	0.5+	1999 11 07	704	0.3−	0.0				

1998 HW₁₅₀ = 2000 AC₁₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	70.27649	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28269525	ω 205.55788	+0.98934378	−0.14311830		
<i>a</i>	2.2992721	Ω 162.60777	+0.14416123	+0.93713390		
<i>e</i>	0.2384108	<i>i</i> 5.13605	+0.02040653	+0.31827222		
<i>P</i>	3.49	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1998 04 21	691	1.0+	0.6+	1998 05 24	704	0.4−	0.1+	1999 12 14	704	0.7−	0.9+
1998 04 21	691	0.9+	0.6+	1998 05 24	704	0.2−	1.3+	1999 12 14	704	0.6−	1.2+
1998 04 21	691	0.9+	0.3+	1998 05 25	699	0.5+	0.1−	1999 12 14	704	0.6−	0.9+
1998 04 22	704	0.1−	0.5+	1998 05 25	699	1.0+	0.8−	1999 12 14	704	0.8−	0.6+
1998 04 22	704	0.7−	0.7+	1998 05 25	699	0.3+	0.3−	1999 12 14	704	0.9−	0.9+
1998 04 22	704	(3.1+	0.7+)	1999 11 04	704	0.4+	0.9+	2000 01 05	704	0.6+	0.3−
1998 04 22	704	(2.1−	0.1−)	1999 11 04	704	0.1−	0.7+	2000 01 05	704	0.3+	0.3−
1998 04 22	704	0.2−	1.2−	1999 11 04	704	0.2−	0.3−	2000 01 05	704	0.2+	0.3−
1998 05 22	704	0.7−	0.1−	1999 11 04	704	0.0	0.4−	2000 01 05	704	0.5+	0.3−
1998 05 22	704	1.0−	0.3+	1999 11 04	704	0.6−	0.5−	2000 01 05	704	0.4+	0.2−
1998 05 22	704	1.3−	1.3−	1999 12 06	704	0.0	0.1−	2000 01 07	704	0.5+	0.5−
1998 05 22	704	1.1+	0.9+	1999 12 06	704	0.1−	0.2−	2000 01 07	704	0.3+	0.4−
1998 05 24	704	0.5+	0.2−	1999 12 06	704	0.5+	0.3−	2000 01 07	704	0.5+	0.2−
1998 05 24	704	1.2−	0.0	1999 12 06	704	0.1−	0.3−	2000 01 07	704	0.5+	0.9−
1998 05 24	704	0.1−	0.1−	1999 12 06	704	0.1+	0.2−	2000 01 07	704	0.3+	0.0

1998 JF₂

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	43.97413	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.30234443	ω 288.60560	+0.83922459	−0.53788257		
<i>a</i>	2.1985418	Ω 104.00550	+0.52479281	+0.76262851		
<i>e</i>	0.1299669	<i>i</i> 4.72370	+0.14245914	+0.35927718		
<i>P</i>	3.26	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1998 05 01	566	1.5−	0.2−	1998 06 27	699	0.6−	0.0	1999 12 05	704	0.1+	0.0
1998 05 01	566	1.1−	0.3−	1998 06 27	699	1.2+	1.2−	1999 12 05	704	0.7−	0.3−
1998 05 01	566	0.8−	0.2−	1998 06 27	699	0.8+	1.3−	1999 12 05	704	0.1+	0.4+
1998 05 02	566	0.1−	0.0	1999 09 13	703	0.0	1.4+	1999 12 05	704	0.1+	0.3+
1998 05 02	566	0.4−	0.0	1999 09 13	703	0.8−	0.5+	1999 12 05	704	1.1−	0.1+
1998 05 02	566	0.2+	0.5+	1999 09 13	703	0.6−	1.1−	1999 12 08	699	0.1−	0.4−
1998 05 16	691	0.8−	0.5+	1999 09 13	703	1.0+	0.4−	1999 12 08	699	0.1+	0.4+
1998 05 16	691	0.5−	0.5+	1999 09 16	704	0.4−	0.0	1999 12 08	699	0.1−	0.4+
1998 05 19	910	1.3+	0.1+	1999 09 16	704	0.6−	0.1−	1999 12 14	704	0.8+	1.4−
1998 05 20	910	1.3+	0.1−	1999 09 16	704	0.9−	0.8−	1999 12 14	704	0.2+	0.3+
1998 05 20	910	1.1+	0.1−	1999 09 16	704	0.5−	0.2−	1999 12 14	704	0.3+	0.2+
1998 05 22	704	0.0	0.1−	1999 10 08	703	0.1+	0.1+	1999 12 14	704	0.1−	0.6+
1998 05 22	704	0.4+	0.2−	1999 10 08	703	0.0	0.3+	1999 12 14	704	1.1−	0.5+
1998 05 22	704	0.4−	0.7−	1999 10 08	703	0.1−	0.2+	2000 01 05	704	0.5−	0.3+
1998 05 22	704	0.5−	0.5+	1999 10 08	703	0.1+	0.0	2000 01 05	704	0.2−	0.3+
1998 05 22	699	0.4+	0.5+	1999 10 10	704	0.8+	0.4+	2000 01 05	704	0.1+	0.4+
1998 05 22	704	1.0−	1.2+	1999 10 10	704	0.3+	0.5−	2000 01 05	704	0.6+	0.2+
1998 05 22	699	0.2+	0.4+	1999 10 10	704	0.0	0.2−	2000 01 05	704	0.4+	0.1+
1998 05 22	699	0.2+	0.6−	1999 10 10	704	0.3+	0.3−	2000 01 07	704	0.3−	0.2+
1998 05 23	699	0.3−	0.9−	1999 10 10	704	1.0−	0.7−	2000 01 07	704	0.4−	0.0
1998 05 23	699	0.9−	0.2−	1999 11 05	704	0.2+	0.3+	2000 01 07	704	0.0	0.3−
1998 05 23	699	0.2+	1.5+	1999 11 05	704	0.3+	0.5+	2000 01 07	704	0.0	0.4−
1998 05 24	699	0.7+	0.1−	1999 11 05	704	0.4+	0.4+	2000 01 07	704	0.4+	0.9−
1998 05 24	699	0.9+	1.5+	1999 11 05	704	0.5+	0.7+				
1998 05 24	699	1.0+	1.4+	1999 11 05	704	0.4+	0.6+				

1998 JP₂

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	126.98128	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28836532	ω 215.25101	+0.61494949	+0.77335524		
<i>a</i>	2.2690324	Ω 93.20093	−0.68341963	+0.62019025		
<i>e</i>	0.1689131	<i>i</i> 8.88083	−0.39341421	+0.13147521		
<i>P</i>	3.42	<i>H</i> 14.5	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1998 04 23	704	0.7+	0.4−	1998 05 26	704	0.4−	0.2+	1999 12 13	699	0.5+	0.6+
1998 04 23	704	0.7+	0.2−	1998 05 26	704	1.3+	0.8−	1999 12 13	699	0.1−	0.5+
1998 04 23	704	0.5+	0.0	1998 05 26	704	0.2+	0.5−	1999 12 13	699	0.1−	1.0+
1998 04 23	704	0.9+	0.2+	1998 05 26	704	0.5−	0.1−	1999 12 14	704	0.2+	0.5+
1998 04 23	704	0.4−	0.6−	1998 06 02	699	0.2+	0.2+	1999 12 14	704	0.2+	0.2−
1998 04 24	704	0.0	0.4−	1998 06 02	699	0.5−	0.2+	1999 12 14	704	0.0	0.6+
1998 04 24	704	1.1+	0.2−	1998 06 02	699	0.3+	0.1+	1999 12 14	704	0.7−	0.2+
1998 04 24	704	0.4+	0.2+	1998 06 16	704	0.3−	1.9+	1999 12 14	704	(0.5−	2.2−)
1998 04 25	566	0.4−	0.3−	1998 06 16	704	0.9+	0.9−	1999 12 31	704	0.5+	0.6−
1998 04 25	566	0.0	0.6−	1998 06 16	704	1.8−	1.1+	1999 12 31	704	0.7+	0.8−
1998 04 25	566	0.1−	0.3−	1998 06 16	704	(3.5−	0.2−)	1999 12 31	704	0.0	0.5−
1998 05 01	699	0.4+	0.3−	1999 11 04	704	0.0	0.2+	1999 12 31	704	0.1+	0.7−
1998 05 01	699	0.1+	0.3+	1999 11 04	704	0.2+	0.1−	1999 12 31	691	0.4−	0.1−
1998 05 01	699	0.3+	0.3+	1999 11 04	704	0.3−	0.1−	1999 12 31	704	0.1−	1.3−
1998 05 05	699	1.1−	1.1+	1999 11 04	704	0.5−	0.0	1999 12 31	691	0.5−	0.1−
1998 05 05	699	0.4+	1.0+	1999 11 04	704	0.4−	0.8−	1999 12 31	691	0.4−	0.0
1998 05 05	699	0.6−	0.1−	1999 11 17	704	0.0	0.4+	2000 01 04	691	0.5−	0.0
1998 05 23	704	0.0	0.3−	1999 11 17	704	0.7+	0.3+	2000 01 04	691	0.5−	0.3−
1998 05 23	704	0.3−	0.9+	1999 11 17	704	0.2+	0.8+	2000 01 04	691	0.7−	0.2−
1998 05 23	704	1.3+	0.4+	1999 11 17	704	0.4+	0.4+	2000 01 05	704	0.3−	1.5−
1998 05 23	704	1.6−	0.6−	1999 11 17	704	0.0	1.1−	2000 01 05	704	0.4+	0.4−
1998 05 23	704	0.5+	0.8−	1999 12 03	699	1.1−	0.6+	2000 01 05	704	0.0	0.1+

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2000 JAN. 24

1998 05 25	704	(0.9– 2.1+)	1999 12 03	699	0.1+ 0.5–	2000 01 05	704	0.2+ 0.1–
1998 05 25	704	0.1– 0.3–	1999 12 03	699	0.1+ 0.2+	2000 01 05	704	0.0 0.4+
1998 05 25	704	0.6– 0.0	1999 12 06	704	0.6+ 0.0	2000 01 06	704	0.0 0.3+
1998 05 25	704	0.7– 0.1–	1999 12 06	704	0.2+ 0.3+	2000 01 06	704	0.2+ 0.1+
1998 05 25	699	0.1– 0.2–	1999 12 06	704	0.1+ 0.1+	2000 01 06	704	0.3– 0.5+
1998 05 25	699	0.2– 0.5+	1999 12 06	704	0.2+ 0.2+	2000 01 06	704	0.1– 0.5+
1998 05 25	699	0.1– 0.7+	1999 12 06	704	0.8+ 0.8+	2000 01 06	704	0.2– 0.5+

1998 JJ₄ = 1987 SA₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams					
<i>M</i>			(2000.0)			<i>P</i>		
<i>n</i>			<i>Q</i>					
<i>a</i>	0.26003459	ω	116.06654	+0.92812219	+0.35331379			
<i>e</i>	2.4309833	Ω	223.51396	–0.37223641	+0.88533341			
<i>P</i>	0.3300281	<i>i</i>	9.80865	+0.00540933	+0.30224845			
<i>P</i>	3.79	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1987 09 18	071	0.3– 0.7+	1998 05 23	699	1.9+ 1.1+	1998 08 12	426	0.1+ 0.4+
1987 09 18	071	(0.8+ 6.5–)	1998 05 23	699	1.3+ 0.5–	1998 08 23	426	0.1– 0.5+
1998 05 15	426	0.5+ 0.0	1998 05 26	426	0.2+ 0.7–	1998 08 26	426	0.7– 0.6+
1998 05 15	426	0.5+ 0.1–	1998 05 26	426	0.5+ 0.3–	1998 08 26	426	0.7– 0.3+
1998 05 15	426	0.0 0.1–	1998 05 31	426	0.3+ 0.3+	1998 08 26	426	1.1– 0.1+
1998 05 17	426	0.1+ 0.5–	1998 05 31	426	0.2– 0.0	2000 01 11	858	0.8+ 0.4+
1998 05 17	426	0.0 0.3–	1998 05 31	426	0.2– 0.0	2000 01 11	858	0.3+ 0.4–
1998 05 17	426	0.1+ 0.0	1998 06 14	426	0.7+ 1.1+	2000 01 11	858	0.9– 0.2+
1998 05 22	704	0.2+ 1.9+	1998 06 14	426	0.9+ 0.4+	2000 01 11	858	0.3– 1.0–
1998 05 22	704	0.4– 0.5–	1998 06 14	426	0.2+ 0.4–	2000 01 11	704	0.3– 1.2+
1998 05 22	704	1.7– 0.3+	1998 06 17	426	0.4– 0.1–	2000 01 11	704	1.0+ 0.9+
1998 05 22	704	1.6– 0.6–	1998 06 17	426	0.0 0.1–	2000 01 11	704	0.8+ 1.0+
1998 05 22	704	1.7– 1.7–	1998 06 17	426	0.5+ 0.1+	2000 01 12	858	0.8– 0.1–
1998 05 22	699	0.6+ 0.2+	1998 07 22	426	0.3– 0.2+	2000 01 12	858	0.3+ 0.3+
1998 05 22	699	0.5– 0.1+	1998 07 22	426	0.0 0.2+	2000 01 12	858	0.6– 0.4+
1998 05 22	699	0.5– 0.7–	1998 08 12	426	0.7+ 1.0+			
1998 05 23	699	0.3+ 1.2+	1998 08 12	426	0.2+ 0.0			

1998 KU = 2000 AL₁₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams					
<i>M</i>			(2000.0)			<i>P</i>		
<i>n</i>			<i>Q</i>					
<i>a</i>	0.28167009	ω	154.77480	–0.31519443	+0.93875619			
<i>e</i>	2.3048477	Ω	96.60011	–0.89275144	–0.24352099			
<i>P</i>	0.0819240	<i>i</i>	8.05794	–0.32194307	–0.24379159			
<i>P</i>	3.50	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1998 05 19	358	0.4+ 0.8–	1998 05 24	704	0.2+ 0.7+	1998 06 03	704	0.4+ 0.2–
1998 05 19	358	1.1– 1.3–	1998 05 24	704	0.5+ 0.6+	2000 01 05	704	0.1– 0.8+
1998 05 20	358	0.3– 1.6+	1998 05 24	704	0.7+ 0.1–	2000 01 05	704	0.1+ 0.3–
1998 05 20	358	0.8– 0.8+	1998 05 24	704	0.2+ 0.1+	2000 01 05	704	1.0+ 0.6–
1998 05 21	358	1.2+ 0.4+	1998 05 26	358	0.5– 0.6+	2000 01 05	704	1.5+ 0.7–
1998 05 21	358	1.1– 0.4+	1998 05 26	358	(0.9+ 2.2–)	2000 01 05	704	0.3– 0.4–
1998 05 22	704	0.2+ 1.1–	1998 05 31	358	0.6+ 1.1–	2000 01 08	704	1.3– 1.5+
1998 05 22	704	0.2– 0.1–	1998 05 31	358	0.1+ 1.0–	2000 01 08	704	0.6– 0.4+
1998 05 22	704	0.9+ 0.1+	1998 05 31	358	0.2– 0.0	2000 01 08	704	0.5– 0.1–
1998 05 22	704	0.0 1.0–	1998 06 03	704	0.8– 0.9+	2000 01 08	704	0.2+ 0.1–
1998 05 22	704	0.2– 0.6–	1998 06 03	704	1.1– 1.2+	2000 01 08	704	0.2– 0.6–
1998 05 24	704	0.7+ 0.4+	1998 06 03	704	0.3+ 0.3–			

1998 KV₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams					
<i>M</i>			(2000.0)			<i>P</i>		
<i>n</i>			<i>Q</i>					
<i>a</i>	0.48996832	ω	50.34235	–0.43940950	–0.87400431			
<i>e</i>	1.5935195	Ω	66.89357	+0.73954781	–0.48306853			
<i>P</i>	0.3317154	<i>i</i>	13.03489	+0.50989051	–0.05254760			
<i>P</i>	2.01	<i>H</i>	17.4	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1998 05 22	704	1.6+ 1.8+	1998 05 24	426	0.0 0.5–	1998 05 30	402	0.4+ 0.6–
1998 05 22	704	0.1+ 0.3+	1998 05 24	426	0.4+ 0.2–	1998 05 30	402	0.4+ 0.4–
1998 05 22	704	0.3+ 1.1–	1998 05 25	426	0.3+ 0.7–	1998 06 17	696	0.1+ 0.4–
1998 05 22	704	(3.2– 1.6+)	1998 05 25	426	1.4– 0.2+	1998 06 17	696	0.5+ 0.6–
1998 05 23	426	0.9– 0.2+	1998 05 25	426	0.9– 0.2–	1998 06 17	696	0.1+ 0.7–
1998 05 23	426	0.6– 0.2+	1998 05 26	104	0.3+ 0.1–	1998 06 27	711	0.0 0.1+
1998 05 23	426	0.2– 0.9–	1998 05 26	104	0.1– 0.0	1998 06 27	711	0.3+ 0.0
1998 05 24	704	(1.6+ 2.1–)	1998 05 26	104	0.6+ 0.2–	1998 06 28	711	0.3+ 0.9+
1998 05 24	704	0.5+ 0.4+	1998 05 26	046	0.0 0.4+	1998 06 28	711	0.2+ 0.3+
1998 05 24	704	(2.1+ 2.0–)	1998 05 26	046	0.0 0.9+	1998 06 29	711	0.3+ 0.3–
1998 05 24	704	(2.0+ 0.9+)	1998 05 26	046	0.5– 0.0	1998 06 29	711	0.4+ 0.4+
1998 05 24	704	0.1– 1.6–	1998 05 26	046	0.4– 0.8+	2000 01 07	104	0.1– 0.3–
1998 05 24	704	1.0– 1.3+	1998 05 27	118	0.6– 0.1+	2000 01 07	104	0.5– 1.2–
1998 05 24	704	(5.4– 1.5+)	1998 05 27	118	0.2+ 0.2+	2000 01 16	104	1.2+ 0.6+
1998 05 24	704	(4.8– 0.8–)	1998 05 27	118	0.1+ 0.1+	2000 01 16	104	0.2– 0.6+
1998 05 24	426	0.7+ 0.3+	1998 05 30	402	0.7– 0.4–	2000 01 16	104	0.2– 0.5+

1998 KB₄

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams					
<i>M</i>			(2000.0)			<i>P</i>		
<i>n</i>			<i>Q</i>					
<i>a</i>	0.26493591	ω	178.30766	+0.95867450	+0.28423521			
<i>e</i>	2.4009079	Ω	165.16128	–0.26159353	+0.89775863			
<i>P</i>	0.1744262	<i>i</i>	2.77340	–0.11185719	+0.33651120			
<i>P</i>	3.72	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1997 03 03	327	0.4– 0.1+	1998 05 24	699	0.5– 0.8–	1999 11 04	704	0.4+ 0.6–
1997 03 03	327	0.6+ 0.3+	1998 05 24	704	1.5– 0.7+	1999 11 04	704	0.3+ 0.4–
1997 03 03	327	0.2– 0.1–	1998 05 24	699	0.6+ 0.6–	1999 11 04	704	0.2+ 0.3–
1998 05 05	699	0.8– 0.2–	1998 05 24	704	(2.9– 0.3+)	1999 11 04	704	0.8+ 0.4+
1998 05 05	699	0.5– 0.7–	1998 05 25	327	0.4+ 0.4–	1999 11 04	704	0.1+ 0.4–
1998 05 05	699	1.0– 1.1+	1998 05 25	327	0.5+ 0.2–	1999 12 06	704	0.1+ 0.5–
1998 05 22	704	0.2+ 0.1+	1998 05 25	327	0.6+ 0.5–	1999 12 06	704	0.2– 0.1–
1998 05 22	704	1.5+ 1.3–	1998 05 28	327	0.4+ 0.0	1999 12 06	704	0.1+ 0.4–
1998 05 22	704	0.0 0.1+	1998 05 28	327	0.4+ 0.1–	1999 12 06	704	0.1+ 1.2–
1998 05 22	704	0.1– 0.4+	1998 05 28	327	0.2+ 0.4–	1999 12 06	704	0.1+ 0.9–
1998 05 22	699	1.7+ 0.0	1999 10 30	703	0.9– 1.6+	1999 12 13	699	0.9+ 1.0+
1998 05 22	704	(3.5– 0.9–)	1999 10 30	703	0.4– 0.0	1999 12 13	699	0.6+ 0.8+
1998 05 22	699	1.1+ 1.2+	1999 10 30	703	0.6– 0.1+	1999 12 13	699	0.7+ 1.4+
1998 05 22	699	1.7– 0.6+	1999 10 30	703	(2.5– 0.3–)	1999 12 30	699	0.8– 0.3+
1998 05 24	704	0.3– 0.2–	1999 10 30	703	0.2– 1.3+	1999 12 30	699	0.2– 0.8–
1998 05 24	704	0.9+ 0.2+	1999 10 30	703	0.9– 0.0	1999 12 30	699	0.2+ 0.2–
1998 05 24	704	1.9– 0.5+	1999 10 30	703	0.4+ 0.3–			
1998 05 24	699	0.2– 0.4+	1999 10 30	703	0.8– 0.6–			

1998 KP₄ = 1999 VL₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	176.58724	(2000.0)		$\mathbf{P}$	$\mathbf{Q}$
n	0.26723468	ω	24.66613	-0.58223593	$+0.80968603$
a	2.3871195	Ω	209.88628	-0.76829092	-0.57754089
e	0.1584203	i	8.48851	-0.26595184	-0.10418758
P	3.69	H	15.2	G	U
				0.15	4

2000 JAN. 24

M.P.C. 37687

1998 05 22 699 0.1− 0.4− 1998 06 03 704 0.3+ 0.8+ 1999 11 12 704 0.4− 0.2+
 1998 05 22 699 0.2+ 0.3− 1998 06 03 704 0.6− 1.3+ 1999 11 12 704 0.3− 0.0

1998 KQ₄ = 1999 VF₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		P		Q	
<i>M</i>	152.51426						
<i>n</i>	0.29095546	<i>ω</i>	122.77657	+0.32503505	+0.94554251		
<i>a</i>	2.2555461	<i>Ω</i>	166.15898	−0.89013385	+0.31208675		
<i>e</i>	0.1698893	<i>i</i>	4.16289	−0.31939622	+0.09247285		
<i>P</i>	3.39	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 22	699	0.0	1.0+	1998 06 18	704	1.5+	0.8−	1999 11 05	704	0.1−	0.4−
1998 05 22	699	0.1+	0.7+	1998 06 18	704	(2.5+	0.7−)	1999 11 05	704	0.3−	0.0
1998 05 22	699	0.0	0.6+	1998 06 18	704	0.8−	0.1−	1999 11 05	704	0.5−	0.6+
1998 05 24	699	0.6+	0.3−	1998 06 18	704	0.0	0.1−	1999 11 05	704	0.2+	0.4+
1998 05 24	704	0.2+	0.1+	1998 06 19	691	0.0	0.3+	1999 11 05	704	0.1−	0.3+
1998 05 24	699	0.2+	0.5−	1998 06 19	691	0.0	0.1−	1999 12 06	704	0.2−	0.4−
1998 05 24	699	0.4+	0.2−	1998 06 19	691	0.2−	0.0	1999 12 06	704	0.2+	0.0
1998 05 24	704	0.2+	0.5+	1998 06 24	691	0.2+	0.1+	1999 12 06	704	0.0	0.0
1998 05 24	704	1.1−	0.9−	1998 06 24	691	0.0	0.2−	1999 12 06	704	0.0	0.1−
1998 05 24	704	0.5−	0.2−	1998 06 24	691	0.2+	0.1−	1999 12 06	704	0.2+	0.2−
1998 05 24	704	0.7−	0.7+	1998 06 26	699	0.3−	0.1−	1999 12 14	704	0.3−	0.9−
1998 06 03	704	0.1+	0.3+	1998 06 26	699	0.2−	0.0	1999 12 14	704	1.0−	0.3−
1998 06 03	704	0.7−	0.1+	1998 06 26	699	0.2+	0.5−	1999 12 14	704	0.8+	0.8−
1998 06 03	704	0.0	0.2−	1998 07 16	699	0.6−	0.3+	1999 12 14	704	0.3+	0.1−
1998 06 03	704	1.1−	0.5−	1998 07 16	699	0.3−	0.5+	2000 01 06	704	0.1−	0.2+
1998 06 16	704	0.6+	0.4−	1998 07 16	699	0.2−	0.3+	2000 01 06	704	0.1−	0.4+
1998 06 16	704	0.1−	0.2+	1999 11 04	704	0.4+	0.4−	2000 01 06	704	0.1−	0.5+
1998 06 16	704	0.4+	0.2−	1999 11 04	704	0.2+	0.1−	2000 01 06	704	0.1+	0.3+
1998 06 16	704	1.2+	0.9+	1999 11 04	704	0.4+	0.8+	2000 01 06	704	0.1−	0.3+
1998 06 16	704	0.2−	0.1−	1999 11 04	704	0.4−	0.7+				
1998 06 18	704	0.9+	0.1−	1999 11 04	704	0.4+	0.4+				

1998 KB₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		P		Q	
<i>M</i>	76.36584						
<i>n</i>	0.23449681	<i>ω</i>	206.16245	+0.78943335	+0.61112636		
<i>a</i>	2.6044224	<i>Ω</i>	116.04631	−0.55133867	+0.74719016		
<i>e</i>	0.1212851	<i>i</i>	3.67681	−0.26985302	+0.26121147		
<i>P</i>	4.20	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1997 02 03	566	0.4−	1.0−	1998 05 24	699	1.0+	0.0	1999 10 07	704	0.4+	0.9−
1997 02 03	566	1.0−	0.6−	1998 05 24	699	1.4+	0.9+	1999 10 07	704	0.2−	0.4−
1997 02 03	566	0.8+	0.3−	1998 05 24	699	0.1+	0.4+	1999 10 09	704	0.2+	0.0
1998 04 22	910	0.2+	0.2−	1998 05 28	699	0.5+	0.0	1999 10 09	704	0.5+	0.4−
1998 04 22	910	0.4+	0.1−	1998 05 28	699	1.4+	0.3+	1999 10 09	704	0.3+	0.1−
1998 04 22	910	0.2+	0.2−	1998 05 28	699	0.2+	0.3+	1999 10 09	704	0.2−	0.4−
1998 04 22	704	0.1+	1.2−	1999 09 08	699	(0.0	3.0+)	1999 10 09	704	0.1+	0.7−
1998 04 22	704	0.8−	0.0	1999 09 08	699	0.6−	0.2+	1999 11 05	703	0.0	0.1−
1998 04 22	704	0.3+	0.2+	1999 09 08	699	(1.1+	2.2+)	1999 11 05	703	0.2−	0.4−
1998 04 22	704	1.7−	1.8−	1999 09 09	704	0.3+	0.7+	1999 11 05	703	0.1−	0.3+
1998 05 01	704	0.5+	0.0	1999 09 09	704	0.3+	0.8+	1999 11 05	703	0.0	0.0
1998 05 01	704	0.1−	1.2−	1999 09 09	704	0.1−	0.5−	1999 11 15	704	0.7+	0.3−
1998 05 01	704	1.6−	0.7−	1999 09 09	704	0.2+	0.3+	1999 11 15	704	(0.9+	2.1−)
1998 05 01	704	0.4+	0.3+	1999 09 09	704	0.2+	0.4−	1999 11 15	704	0.3−	0.6+
1998 05 16	691	1.2−	0.1−	1999 10 02	703	0.0	0.2+	1999 11 15	704	1.2−	1.2−
1998 05 16	691	1.1−	0.0	1999 10 02	703	0.1−	0.2+	1999 11 27	699	0.4+	0.2+
1998 05 22	704	0.4+	1.4−	1999 10 02	703	0.1−	0.3+	1999 11 27	699	0.1+	0.1−
1998 05 22	704	1.2+	0.5+	1999 10 02	703	0.1−	0.2+	1999 11 27	699	0.7−	1.0+
1998 05 22	704	1.0−	0.2+	1999 10 02	704	0.2−	0.1−	1999 12 13	699	1.2−	0.5−
1998 05 22	704	0.8+	0.4−	1999 10 02	704	0.3+	0.4−	1999 12 13	699	0.2+	0.5+
1998 05 22	704	0.7+	0.3−	1999 10 02	704	0.3−	0.1−	1999 12 13	699	(0.0	2.7+)
1998 05 24	704	0.2−	0.0	1999 10 02	704	0.1−	0.2+	2000 01 08	704	0.7−	0.9+
1998 05 24	704	1.8−	0.8+	1999 10 02	704	0.0	0.0	2000 01 08	704	0.0	1.2+

1998 05 24 704 0.7− 1.4+ 1999 10 07 704 0.6+ 0.3− 2000 01 08 704 1.3− 0.1−
 1998 05 24 704 0.2+ 0.2− 1999 10 07 704 1.2+ 0.9− 2000 01 08 704 0.8+ 0.4−
 1998 05 24 704 0.2− 0.2+ 1999 10 07 704 1.1+ 1.1−

1998 KZ₉ = 2000 AH₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		P		Q	
<i>M</i>	134.34490						
<i>n</i>	0.28743767	<i>ω</i>	263.13963	+0.70696047	+0.70477097		
<i>a</i>	2.2739117	<i>Ω</i>	52.02785	−0.61561729	+0.65441004		
<i>e</i>	0.1763505	<i>i</i>	4.30690	−0.34816985	+0.27394411		
<i>P</i>	3.43	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 22	704	0.9+	0.7+	1998 05 25	327	0.0	0.4−	1999 12 07	704	0.1+	0.2−
1998 05 22	704	0.5+	0.2+	1998 05 25	327	0.0	0.2−	1999 12 07	704	0.0	0.5−
1998 05 22	704	1.1−	0.7+	1998 05 25	327	0.1+	0.1−	2000 01 03	704	1.1−	1.0−
1998 05 22	704	0.3+	0.4+	1998 05 25	327	0.1−	0.1+	2000 01 03	704	0.1+	0.1+
1998 05 22	704	0.0	0.4−	1998 06 03	704	0.3+	0.0	2000 01 03	704	0.4−	0.9−
1998 05 24	704	0.4+	0.2−	1998 06 03	704	0.6+	0.6+	2000 01 03	704	0.5−	0.6+
1998 05 24	704	0.3−	0.5−	1998 06 03	704	0.5−	1.1−	2000 01 03	704	0.4−	0.1+
1998 05 24	704	0.1+	0.0	1998 06 03	704	1.1−	1.7+	2000 01 04	704	0.1−	0.1−
1998 05 24	704	0.5+	0.8+	1999 11 14	704	0.1+	0.0	2000 01 04	704	0.3+	0.4−
1998 05 24	704	0.1−	1.1−	1999 11 14	704	0.3+	0.1+	2000 01 04	704	0.3+	0.2+
1998 05 24	327	0.1−	0.2−	1999 11 14	704	0.6+	0.6+	2000 01 04	704	0.1−	0.3−
1998 05 24	327	0.1−	0.1+	1999 11 14	704	0.5+	0.4+	2000 01 04	704	1.9+	1.6+
1998 05 24	327	0.2−	0.3−	1999 12 07	704	0.0	0.3−				
1998 05 24	327	0.0	0.1−	1999 12 07	704	1.4−	0.5+				

1998 KX₁₀ = 2000 AO₁₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		P		Q	
<i>M</i>	64.01980						
<i>n</i>	0.24030684	<i>ω</i>	200.28961	+0.96813654	+0.23257366		
<i>a</i>	2.5622724	<i>Ω</i>	145.83429	−0.20085062	+0.94259314		
<i>e</i>	0.1941125	<i>i</i>	9.51668	−0.14956825	+0.23964070		
<i>P</i>	4.10	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 22	691	0.6+	0.0	1998 06 02	691	0.8−	0.8−	1999 12 14	704	0.2+	0.3−
1998 05 22	691	1.1+	0.1+	1999 09 08	703	0.7+	0.4+	1999 12 14	704	1.0+	0.1−
1998 05 22	691	1.2+	0.0	1999 09 08	703	0.1+	0.1−	1999 12 14	704	0.9+	0.6−
1998 05 23	704	0.4−	0.5+	1999 09 08	703	1.0+	1.2+	1999 12 14	704	0.5+	0.0
1998 05 23	704	(1.9+	2.2−)	1999 09 08	703	0.1−	0.6+	2000 01 08	704	0.1−	0.5+
1998 05 23	704	1.0−	0.5+	1999 10 03	703	0.2−	0.1−	2000 01 08	704	0.0	0.4−
1998 05 23	704	(2.1+	0.3+)	1999 10 03	703	0.1+	0.6−	2000 01 08	704	0.4−	0.6−
1998 05 23	704	(3.8−	0.5+)	1999 10 03	703	0.2−	0.3−	2000 01 11	704	0.3+	0.3+
1998 05 28	691	0.5−	0.4−	1999 10 03	703	0.0	0.2−	2000 01 11	704	1.0−	0.4−
1998 05 28	691	0.1+	0.3−	1999 11 07	704	0.0	0.2−	2000 01 11	704	0.3+	0.7+
1998 05 28	691	0.1−	0.4−	1999 11 07	704	0.7−	0.3−	2000 01 11	704	0.5−	0.5−
1998 06 02	691	0.1−	0.7−	1999 11 07	704	0.5−	0.4−				
1998 06 02	691	0.5−	0.7−	1999 12 14	704	0.7−	0.2−				

1998 KH₁₇

Id. DANEOPS (1991 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

1998 05 28	704	0.7+	0.4+	1998 06 07	658	0.7-	0.1+	1998 07 23	118	0.1+	0.3-
1998 05 28	704	0.6+	0.3+	1998 06 07	118	0.9-	0.3+	1998 07 25	665	0.0	0.1-
1998 05 28	704	0.2-	0.2-	1998 06 07	118	0.9-	0.3+	1998 07 25	665	0.0	0.1-
1998 05 29	557	0.1-	0.3+	1998 06 08	860	0.4+	1.4+	1998 07 26	665	0.0	0.2-
1998 05 29	046	0.4-	0.4-	1998 06 08	860	(0.1+	2.2+)	1998 07 26	665	0.0	0.2-
1998 05 29	046	0.2-	0.1+	1998 06 08	143	(2.6-	0.3-)	1998 07 30	611	0.2+	0.3+
1998 05 29	046	0.1-	0.1+	1998 06 08	143	1.7+	0.7+	1998 07 30	611	0.1-	0.2+
1998 05 29	046	0.0	0.1+	1998 06 08	143	0.2+	1.8-	1998 08 02	118	0.1-	0.1+
1998 05 29	046	0.1-	0.0	1998 06 09	658	0.4-	0.2-	1998 08 02	118	0.0	0.1-
1998 05 29	557	0.3-	0.1+	1998 06 09	658	0.5-	0.2-	1998 08 03	118	0.2-	0.1-
1998 05 29	557	0.2-	0.1+	1998 06 09	658	0.4-	0.3-	1998 08 03	118	0.3-	0.1-
1998 05 29	704	0.1+	0.1-	1998 06 09	046	0.2+	0.3-	1998 08 03	118	0.0	0.1-
1998 05 29	704	0.0	0.1+	1998 06 09	046	0.2+	0.3-	1998 08 04	954	0.0	0.5-
1998 05 29	704	0.8-	0.5-	1998 06 09	046	0.2+	0.3-	1998 08 04	954	0.2+	0.6-
1998 05 29	704	0.1-	0.9-	1998 06 09	046	0.2+	0.2-	1998 08 05	118	0.5-	0.3-
1998 05 29	704	0.4-	1.0-	1998 06 13	658	0.2-	0.4+	1998 08 05	118	0.4-	0.1-
1998 05 29	711	0.0	0.0	1998 06 13	658	0.3-	0.6+	1998 08 05	954	0.1+	0.4-
1998 05 29	711	0.0	0.1-	1998 06 13	658	0.1-	0.6+	1998 08 05	954	0.0	0.3-
1998 05 29	711	0.0	0.1-	1998 06 16	658	0.6-	0.3+	1998 08 05	954	0.3+	0.4-
1998 05 29	422	0.2+	0.0	1998 06 16	658	0.7-	0.2+	1998 08 05	954	0.0	0.1-
1998 05 29	422	0.1+	0.0	1998 06 16	658	0.7-	0.2+	1998 08 06	046	0.4-	0.1-
1998 05 29	422	0.1-	0.3-	1998 06 17	712	(1.6-	2.7-)	1998 08 06	046	0.1-	0.2+
1998 05 29	422	0.2-	0.1-	1998 06 17	712	0.6-	0.6+	1998 08 06	046	0.3-	0.2+
1998 05 29	046	0.4-	0.1+	1998 06 17	712	1.0-	0.0	1998 08 06	046	0.4-	0.3-
1998 05 29	046	0.6+	0.3-	1998 06 17	402	0.2+	0.2+	1998 08 08	046	0.3+	0.2+
1998 05 29	046	0.3+	0.0	1998 06 17	402	0.2+	0.0	1998 08 08	046	0.2+	0.1+
1998 05 29	046	1.1+	0.9-	1998 06 17	402	0.1+	0.1+	1998 08 08	046	0.1+	0.3+
1998 05 29	557	0.2+	0.2-	1998 06 17	104	0.4+	0.2-	1998 08 10	046	0.0	0.0
1998 05 29	557	0.0	0.1+	1998 06 17	104	0.4+	0.1-	1998 08 10	046	0.1-	0.1+
1998 05 29	557	0.1+	0.0	1998 06 17	104	0.4+	0.5-	1998 08 10	046	0.1-	0.3+
1998 05 30	734	0.3-	0.0	1998 06 17	121	1.8-	0.4+	1998 08 11	118	0.1+	0.0
1998 05 30	734	0.0	0.1+	1998 06 17	121	(2.7-	0.5-)	1998 08 11	118	0.1+	0.1+
1998 05 30	734	0.1+	0.3-	1998 06 17	121	0.1-	1.4-	1998 08 11	402	0.1+	0.2+
1998 05 30	670	0.5-	1.1+	1998 06 17	121	(1.5+	2.1-)	1998 08 11	402	0.0	0.2+
1998 05 30	670	0.2+	1.7-	1998 06 17	121	0.8+	0.2+	1998 08 11	402	0.2+	0.2+
1998 05 30	670	0.2-	0.5-	1998 06 17	121	0.2+	0.7-	1998 08 11	143	0.3-	0.4+
1998 05 30	422	0.8+	0.3-	1998 06 17	121	0.1+	1.0-	1998 08 11	143	0.1-	0.1+
1998 05 30	422	1.1+	0.5+	1998 06 17	121	(2.0+	0.3-)	1998 08 11	143	0.1-	0.2+
1998 05 30	402	0.1-	0.1-	1998 06 17	046	0.1+	0.0	1998 08 11	143	0.0	0.2+
1998 05 30	402	0.1-	0.2+	1998 06 17	046	0.2+	0.3+	1998 08 15	046	0.1-	0.1-
1998 05 30	402	0.3-	0.1-	1998 06 17	046	0.2+	0.2-	1998 08 15	046	0.1-	0.4-
1998 05 30	900	1.4-	0.1+	1998 06 17	046	0.1+	0.0	1998 08 15	046	0.1-	0.5-
1998 05 30	900	1.2+	0.1+	1998 06 18	712	0.1+	0.2-	1998 08 15	118	0.2+	0.8-
1998 05 30	108	(2.3+	3.3-)	1998 06 18	712	0.0	0.3-	1998 08 15	118	0.2+	0.8-
1998 05 30	046	0.0	0.4-	1998 06 20	658	0.4-	0.6-	1998 08 17	118	0.1-	0.2-
1998 05 30	108	(1.3+	2.5-)	1998 06 20	658	0.3-	0.4-	1998 08 17	118	0.1+	0.3-
1998 05 30	046	0.2+	1.1-	1998 06 20	658	0.2-	0.5-	1998 08 20	587	0.1-	0.4+
1998 05 30	046	0.4+	0.4+	1998 06 21	046	0.7+	1.0+	1998 08 20	587	0.0	0.1+
1998 05 31	557	0.4-	0.7-	1998 06 21	046	0.6+	1.3+	1998 08 21	402	0.1-	0.2+
1998 05 31	557	0.1+	0.1-	1998 06 21	046	0.7+	1.2+	1998 08 21	402	0.1+	0.4+
1998 05 31	609	0.2+	0.3+	1998 06 21	046	0.7+	1.1+	1998 08 21	402	0.1+	0.3+
1998 05 31	609	0.1-	0.5-	1998 06 23	712	0.6+	0.8+	1998 08 25	711	0.3+	0.4+
1998 05 31	557	0.0	0.2-	1998 06 23	712	0.8+	0.5+	1998 08 25	711	0.0	0.1+
1998 05 31	609	0.2-	0.2-	1998 06 23	712	0.8+	0.8+	1998 08 26	711	0.1-	0.3+
1998 05 31	784	0.2-	0.4+	1998 06 23	712	1.1+	1.0+	1998 08 26	711	0.0	0.5+
1998 05 31	784	0.1+	0.2-	1998 06 24	712	0.6+	0.3+	1998 08 27	658	0.8-	0.1+
1998 05 31	784	0.5+	0.1-	1998 06 24	712	0.6+	0.5+	1998 08 27	658	0.6-	0.4+
1998 05 31	784	0.4+	0.2+	1998 06 24	712	0.6+	0.5+	1998 08 27	658	0.5-	0.1+
1998 05 31	670	0.6+	0.6+	1998 06 24	712	0.5+	0.5+	1998 09 02	402	0.0	0.1-
1998 05 31	670	0.5-	0.4+	1998 07 02	402	0.4+	0.1-	1998 09 02	402	0.2+	0.3-
1998 05 31	670	1.7+	0.5+	1998 07 02	402	0.4+	0.1-	1998 09 02	402	0.1+	0.0
1998 06 01	540	0.2-	1.0+	1998 07 02	402	0.4+	0.0	1998 09 22	118	0.2+	0.1-
1998 06 01	540	0.3+	0.4+	1998 07 03	118	0.0	0.2-	1998 09 22	118	0.0	0.1-
1998 06 01	540	1.4+	1.2+	1998 07 03	118	0.4+	0.4-	1998 09 22	611	0.4+	0.5+
1998 06 02	046	0.1+	0.2+	1998 07 05	143	0.1+	0.3-	1998 09 22	611	0.1+	0.8+
1998 06 02	046	0.1+	0.3+	1998 07 05	143	0.1-	0.1-	1998 09 22	611	0.7+	0.0
1998 06 02	046	0.1+	0.1+	1998 07 05	143	1.1-	0.3-	1998 09 24	658	0.1+	0.5-
1998 06 02	046	0.1+	0.3+	1998 07 05	143	0.4-	0.6+	1998 09 24	658	0.2+	0.7-

1998 06 02	046	0.0	0.2+	1998 07 05	143	1.0-	1.3+	1998 09 24	658	0.2+	0.9-
1998 06 02	046	0.1-	0.3+	1998 07 08	658	0.5-	0.1-	1998 10 14	422	1.6-	0.0
1998 06 04	046	0.6-	0.1-	1998 07 08	658	0.4-	0.1-	1998 10 14	422	0.5-	0.0
1998 06 04	046	0.5-	0.0	1998 07 08	658	0.4-	0.0	1998 10 15	422	0.5+	0.2-
1998 06 04	046	0.4-	0.2+	1998 07 12	292	0.0	1.5+	1998 10 15	422	0.3+	0.5+
1998 06 04	046	0.6-	0.3-	1998 07 12	292	0.3-	1.2-	1998 10 15	422	0.5+	0.1+
1998 06 04	046	0.9-	0.7-	1998 07 12	292	0.2-	0.5+	1998 10 21	118	0.4+	0.7-
1998 06 04	046	0.9-	0.6-	1998 07 19	118	0.3-	0.2-	1998 10 21	118	0.2+	0.3-
1998 06 06	658	0.2-	0.0	1998 07 19	118	0.1+	0.2-	1998 10 23	118	0.2+	0.6-
1998 06 06	658	0.3-	0.0	1998 07 23	665	0.5-	0.3-	1998 10 23	118	0.7+	1.1-
1998 06 06	658	0.3-	0.0	1998 07 23	665	0.6-	0.0				

1998 KW₂₅ = 1997 EK₄₀ = 1999 XO₈
 Id. G. V. Williams (*MPC* 32277, unpublished), M. E. Sansaturio
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

M	73.99459		(2000.0)		P		Q
n	0.26598631	ω	228.71880		+0.98817792		+0.14428623
a	2.3945828	Ω	122.92408		-0.11560841		+0.92331517
e	0.1903102	i	3.53979		-0.10069302		+0.35590811
P	3.71	H	15.2	G	0.15	U	3
Residuals in seconds of arc							
1997 03 05	704	0.8+	0.3+	1999 10 30	703	0.8-	0.1+
1997 03 05	704	0.4+	0.1+	1999 10 30	703	0.1+	0.2+
1997 03 06	704	0.9-	0.1+	1999 11 04	704	0.8+	0.4+
1997 03 06	704	0.3-	0.2-	1999 11 04	704	0.3+	0.4-
1998 04 22	910	0.4+	0.2+	1999 11 04	704	0.1-	0.2-
1998 04 22	910	0.6+	0.2+	1999 11 04	704	0.2-	0.1+
1998 04 22	910	0.5+	0.2+	1999 11 04	704	0.1+	0.5-
1998 05 16	691	1.3-	0.5+	1999 11 17	704	0.2+	0.3+
1998 05 16	691	1.4-	0.6+	1999 11 17	704	0.0	0.0
1998 05 19	910	0.2+	0.3+	1999 11 17	704	0.5+	0.0
1998 05 20	910	0.3+	0.1-	1999 11 17	704	1.0+	0.4+
1998 05 20	910	0.2+	0.0	1999 11 17	704	0.4+	0.3+
1998 05 22	704	1.6+	0.1+	1999 12 04	681	0.1-	0.2+
1998 05 22	704	1.0+	1.2+	1999 12 04	681	0.3+	0.3+
1998 05 22	704	0.5+	0.8+	1999 12 04	703	0.1-	0.2+
1998 05 22	704	(0.1-	3.4+)	1999 12 04	703	0.6-	0.3-
1998 05 22	704	0.8-	0.2+	1999 12 04	703	0.1+	0.4-
1998 05 24	704	0.1+	0.1+	1999 12 04	703	0.3+	0.4-
1998 05 24	704	0.4-	1.0-	1999 12 05	595	0.4-	0.2-
1998 05 24	704	0.5+	0.5-	1999 12 05	595	0.5-	0.4-
1998 05 24	704	1.4-	0.9-	1999 12 05	595	0.4-	0.2-
1999 10 30	703	0.1-	0.8+	1999 12 06	704	0.3+	0.8-
1999 10 30	703	0.9-	0.9+	1999 12 06	704	0.1+	0.5-
							2.0
							1.3-
							1.4-
							1.5+
							0.2+

199

2000 JAN. 24

M.P.C. 37689

1998 05 24	704	0.2+	0.7-	1998 07 03	620	0.8+	0.0	2000 01 04	704	0.9-	0.3-
1998 05 24	704	0.0	0.7+	1998 07 03	620	0.4+	0.6-	2000 01 04	704	0.3-	0.3+
1998 05 24	704	(3.1-	0.5-)	1998 07 03	620	0.3+	1.0-	2000 01 04	704	0.5+	0.2+
1998 05 28	620	0.1-	0.9-	1998 07 16	620	0.6+	0.5-	2000 01 04	704	0.3-	0.4-
1998 05 29	620	0.3-	0.7+	1998 07 16	620	0.0	0.0	2000 01 04	704	0.2-	0.1+
1998 05 29	620	0.6-	0.0	1998 07 16	620	0.1-	0.2+	2000 01 04	704	0.1-	1.1-
1998 05 29	620	1.3-	1.0+	1998 07 16	620	0.1+	0.3+	2000 01 04	704	1.1-	1.0-
1998 06 01	809	1.9+	0.1-	1999 12 05	703	0.7+	0.3+	2000 01 04	704	0.3-	0.6+
1998 06 01	809	1.8+	0.2+	1999 12 05	703	1.2-	0.7-	2000 01 04	704	0.2+	0.4+
1998 06 01	809	1.5+	0.0	1999 12 05	703	0.9-	0.2-	2000 01 04	704	0.5-	0.1+
1998 06 02	809	(2.2+	0.6+)	1999 12 05	703	0.2+	0.0	2000 01 04	704	0.1-	1.0+
1998 06 02	809	0.8+	0.1+	1999 12 07	704	0.1+	0.7+	2000 01 04	704	0.5-	1.3-
1998 06 02	809	1.5+	0.3+	1999 12 07	704	0.6+	0.8-				

1998 KH₂₇ = 1999 XZ₁₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	94.19723	(2000.0)	
<i>n</i>	0.31172024	ω	190.98436
<i>a</i>	2.1542332	Ω	167.28471
<i>e</i>	0.1567804	<i>i</i>	3.44352
<i>P</i>	3.16	<i>H</i>	14.6

Residuals in seconds of arc

1998 05 01	704	0.6-	0.2-	1998 05 23	699	0.6-	0.4+	1999 12 08	704	0.6+	0.7+
1998 05 01	704	0.2+	0.1+	1998 05 23	699	0.6-	0.4+	1999 12 08	704	0.3-	1.0+
1998 05 01	704	0.7-	0.4+	1998 05 23	699	0.1-	0.7+	1999 12 08	704	0.3+	0.2+
1998 05 01	704	2.0-	1.8+	1998 05 24	704	0.0	0.3-	1999 12 08	704	0.5+	0.3-
1998 05 02	910	1.4+	0.3-	1998 05 24	704	(2.4-	0.3+)	1999 12 08	704	0.5+	0.9+
1998 05 02	910	1.4+	0.2-	1998 05 24	704	0.1+	1.3-	1999 12 14	704	0.3+	0.3-
1998 05 02	910	1.5+	0.1-	1998 05 24	704	1.5-	0.4+	1999 12 14	704	0.4+	0.5+
1998 05 02	566	0.8-	0.2+	1998 05 24	704	0.5-	0.4+	1999 12 14	704	0.0	0.1+
1998 05 02	566	0.7-	0.6+	1998 06 18	704	1.4-	1.7-	1999 12 14	704	0.1-	0.3+
1998 05 02	566	0.8-	0.2-	1998 06 18	704	1.1+	0.3-	1999 12 14	704	0.1+	0.4+
1998 05 05	699	0.0	0.1+	1998 06 18	704	(0.3-	2.2+)	2000 01 05	704	0.4-	0.1-
1998 05 05	699	0.3-	0.5-	1998 06 18	704	(5.6-	0.7+)	2000 01 05	704	0.2-	0.2-
1998 05 05	699	0.1-	0.2-	1999 11 04	704	0.0	1.2+	2000 01 05	704	0.3-	0.3-
1998 05 19	910	1.3+	0.2-	1999 11 04	704	0.0	1.1+	2000 01 05	704	0.6-	0.2-
1998 05 20	910	1.6+	0.2-	1999 11 04	704	0.3-	1.2-	2000 01 05	704	0.5-	0.3-
1998 05 20	910	1.6+	0.2-	1999 11 04	704	0.5+	1.8-	2000 01 06	704	0.2-	0.6+
1998 05 22	704	0.0	0.5+	1999 11 17	704	0.2+	0.0	2000 01 06	704	0.4-	0.1-
1998 05 22	704	0.6-	0.1-	1999 11 17	704	0.2+	0.0	2000 01 06	704	0.2-	0.1+
1998 05 22	704	(2.4-	0.3+)	1999 11 17	704	0.7+	0.5-	2000 01 06	704	0.3-	0.1-
1998 05 22	704	0.6-	1.3-	1999 11 17	704	0.1+	1.6-	2000 01 06	704	0.4-	0.0
1998 05 22	704	1.1+	0.0	1999 11 17	704	0.4-	0.7-				

1998 KL₃₀ = 1992 WB₁₀ = 1999 XP₂₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	142.66483	(2000.0)	
<i>n</i>	0.29196660	ω	8.26748
<i>a</i>	2.2503355	Ω	292.76454
<i>e</i>	0.1598550	<i>i</i>	5.00133
<i>P</i>	3.38	<i>H</i>	14.7

Residuals in seconds of arc

1992 11 24	675	0.5+	0.1+	1998 06 16	704	(0.8+	3.0-)	1999 12 15	704	0.4+	0.6+
1992 11 24	675	0.6-	0.0	1998 06 18	704	0.1-	0.8-	1999 12 15	704	0.5-	0.1-
1998 05 22	704	0.2-	0.2-	1998 06 18	704	0.5+	1.2+	1999 12 15	704	0.7-	0.8+
1998 05 22	704	(1.4-	2.7-)	1998 06 18	704	1.0+	1.4+	1999 12 15	704	0.1+	0.3+
1998 05 22	704	0.9-	0.4-	1998 06 18	704	1.4+	1.6+	1999 12 15	704	0.3-	0.5-
1998 05 22	704	0.3+	0.2+	1998 06 18	704	1.7+	1.7+	1999 12 15	704	0.2-	0.6-
1998 05 22	704	1.4-	0.6-	1998 07 13	699	0.3-	0.7-	1999 12 15	704	0.3+	0.3-
1998 05 24	704	0.7-	0.2-	1998 07 13	699	0.0	1.1-	1999 12 15	704	0.1-	0.1+
1998 05 24	704	0.8-	0.1+	1998 07 13	699	0.4-	0.5-	1999 12 16	704	0.3-	0.5-
1998 05 24	704	0.4-	0.2+	1999 11 16	704	0.6+	0.0	1999 12 16	704	0.1-	0.2+
1998 05 24	704	0.0	0.5-	1999 11 16	704	0.2+	0.1+	1999 12 16	704	0.2-	0.6-
1998 05 24	704	0.1+	0.1+	1999 11 16	704	0.7+	0.1+	1999 12 16	704	0.4-	0.0

1998 06 16	704	0.1+	0.8+	1999 11 16	704	0.3+	1.4+	1999 12 16	704	0.3-	0.5-
1998 06 16	704	0.4-	0.6-	1999 11 16	704	0.4+	0.6+	2000 01 04	704	(1.4+	3.3+)
1998 06 16	704	0.4-	0.5+	1999 12 15	704	0.4-	0.5-	2000 01 04	704	0.0	1.5+
1998 06 16	704	1.5+	0.9-	1999 12 15	704	0.8+	0.6+	2000 01 04	704	0.3-	0.6-

1998 KJ₄₅ = 1999 WU₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	92.43448	(2000.0)	
<i>n</i>	0.23084252	ω	253.59680
<i>a</i>	2.6318361	Ω	75.25573
<i>e</i>	0.2366305	<i>i</i>	13.79153
<i>P</i>	4.27	<i>H</i>	14.3

Residuals in seconds of arc

1998 05 22	704	0.2+	0.1-	1999 11 15	704	0.7+	0.2-	1999 12 07	704	0.1+	0.3-
1998 05 22	704	0.4+	0.3+	1999 11 15	704	0.6+	1.4+	1999 12 07	704	0.1-	0.0
1998 05 22	704	0.3+	1.6-	1999 11 15	704	0.3-	0.2-	1999 12 07	704	0.3-	0.9-
1998 05 22	704	0.1+	1.0+	1999 11 15	704	0.2-	0.1-	1999 12 07	704	0.2-	0.3-
1998 05 22	704	0.5-	1.3+	1999 11 15	704	0.7-	0.4-	1999 12 07	704	0.2+	0.4-
1998 05 24	704	0.4-	1.6-	1999 11 17	704	0.2+	0.1+	1999 12 08	704	0.9+	0.0
1998 05 24	704	0.6-	0.6+	1999 11 17	704	0.5-	0.2-	1999 12 08	704	0.4+	0.3-
1998 05 24	704	1.6-	0.2+	1999 11 17	704	0.4-	0.0	1999 12 08	704	0.4+	0.2-
1998 05 24	704	0.8+	0.2-	1999 11 17	704	0.8-	0.2-	1999 12 08	704	0.2-	1.6-
1998 06 03	704	0.0	0.1+	1999 11 17	704	0.1-	0.6+	1999 12 08	704	0.1-	0.4-
1998 06 03	704	1.3-	1.1+	1999 11 28	120	0.0	0.2+	1999 12 10	704	1.1+	0.0
1998 06 03	704	1.4+	0.1+	1999 11 28	120	0.7+	0.1-	1999 12 10	704	0.1-	0.5+
1998 06 03	704	1.2+	0.8-	1999 11 29	120	0.2-	0.5+	1999 12 10	704	1.0-	0.1-
1999 11 04	704	0.1-	0.0	1999 11 29	120	0.4-	0.6+	1999 12 31	703	0.4-	1.0+
1999 11 04	704	0.1-	0.0	1999 11 30	120	1.3+	0.2+	1999 12 31	703	0.2+	0.5+
1999 11 04	704	0.1+	0.2-	1999 11 30	120	0.3-	0.2+	1999 12 31	703	0.6-	0.7+
1999 11 04	704	0.2+	0.4+	1999 12 06	120	(3.1+	0.7+)	1999 12 31	703	0.6-	0.4+
1999 11 04	704	0.2-	0.3+	1999 12 06	120	0.6+	1.0-				

1998 KY₄₆ = 1991 KF₂ = 1999 VU₁₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	165.24068	(2000.0)	
<i>n</i>	0.28264718	ω	196.38161
<i>a</i>	2.2995328	Ω	73.66854
<i>e</i>	0.1364659	<i>i</i>	2.97902
<i>P</i>	3.49	<i>H</i>	15.3

Residuals in seconds of arc

1991 05 17	809	0.3+	0.7+	1998 06 02	809	1.2+	1.3-	1998 06 26	704	0.8+	0.3+
1991 05 17	809	0.3-	0.8+	1998 06 02	809	0.4+	0.3-	1998 06 26	704	0.0	0.1+
1991 05 17	809	0.5+	0.9+	1998 06 02	809	0.3+	0.5-	1998 06 26	704	0.9-	1.1-
1998 05 22	704	0.7+	0.5+	1998 06 03	704	0.6-	0.1-	1999 11 09	704	0.2-	0.2+
1998 05 22	704	0.1-	1.5+	1998 06 03	704	0.3-	0.4+	1999 11 09	704	0.0	0.6+
1998 05 22	704	0.2+	1.2-	1998 06 03	704	1.0-	0.9+	1999 11 09	704	0.1+	0.5+
1998 05 24	704	0.1-	1.0-	1998 06 03	704	1.3-	1.4+	1999 11 09	704	0.0	0.4+
1998 05 24	704	1.3+	0.0	1998 06 24	704	1.1-	0.4+	1999 11 09	704	0.9-	0.8+
1998 05 24	704	0.3+	1.4+	1998 06 24	704	1.2-	0.1-	1999 11 12	704	0.2+	0.1+
1998 05 24	704	(0.1-	2.6-)	1998 06 24	704	1.2+	1.6-	1999 11 12	704	0.2-	0.8+
1998 06 01	809	0.7+	0.4+	1998 06 24	704	0.3-	0.5+	1999 11 12	704	0.3+	0.3-
1998 06 01	809	1.1+	0.4-	1998 06 24	704	0.6-	1.0-				
1998 06 01	809	0.8-	0.0	1998 06 26	704	0.1+	0.9+				

1998 KY₄₇ = 2000 AX₁₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	174.19513		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29611938	ω	137.86157	+0.01418891	+0.99810680
a	2.2292469	Ω	132.85735	-0.93779995	+0.03404760
e	0.1275021	i	4.68279	-0.34688605	-0.05122082
P	3.33	H	14.8	G 0.15	U 3

Residuals in seconds of arc

1998 05 22	704	0.7+	0.2-	1998 06 24	704	0.0	0.5+	1999 12 06	704	(0.9+	2.6-)
1998 05 22	704	0.3+	1.5+	1998 06 24	704	0.1-	0.5+	1999 12 14	704	0.8+	1.3+
1998 05 22	704	0.1-	1.2+	1998 06 24	704	0.0	0.7+	1999 12 14	704	0.8+	0.0
1998 05 22	704	0.8+	0.1+	1998 06 24	704	0.1-	0.6+	1999 12 14	704	0.6+	0.2+
1998 05 22	704	(2.7+	1.6+)	1998 06 24	704	0.1+	0.9+	1999 12 14	704	0.7+	0.1+
1998 05 24	704	0.4+	0.4-	1998 06 26	704	0.3+	0.5+	2000 01 05	704	0.1+	0.3+
1998 05 24	704	0.1+	0.1-	1998 06 26	704	0.1-	0.1+	2000 01 05	704	0.3-	0.2+
1998 05 24	704	0.1+	0.3-	1998 06 26	704	0.7+	0.4-	2000 01 05	704	0.0	0.1-
1998 05 24	704	0.2+	0.9-	1998 06 26	704	0.1+	0.7+	2000 01 05	704	0.1-	0.1+
1998 05 24	704	0.3-	0.8-	1998 06 26	704	0.5-	0.8-	2000 01 05	704	0.2-	0.1+
1998 06 03	704	1.0-	0.7-	1999 11 04	704	0.1+	1.8-	2000 01 07	704	0.5-	0.6-
1998 06 03	704	0.1+	0.7+	1999 11 04	704	0.5+	0.7-	2000 01 07	704	0.7-	0.6-
1998 06 03	704	1.4-	0.6-	1999 11 04	704	0.7-	0.4-	2000 01 07	704	0.3+	1.3+
1998 06 03	704	0.6-	0.8-	1999 12 06	704	1.5-	0.3+	2000 01 07	704	0.1-	0.5+
1998 06 03	704	0.6+	0.6-	1999 12 06	704	0.1+	0.6+	2000 01 07	704	0.5-	0.9+

1998 KS₄₈ = 1977 QE₃ = 1977 RE₁

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	107.89512	(2000.0)	P	Q	
<i>n</i>	0.23000349	ω 197.24127	+0.67885036	+0.72644682	
<i>a</i>	2.6382327	Ω 115.66002	-0.65892430	+0.66695816	
<i>e</i>	0.2207626	<i>i</i> 6.81396	-0.32400765	+0.16565577	
<i>P</i>	4.29	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1977 08 22	095	0.0	1.5-	1998 06 26	704	0.1+	0.7-	1999 12 06	704	0.1-	0.4+
1977 09 07	095	0.1+	1.3+	1998 06 26	704	0.1+	0.1+	1999 12 13	699	0.1+	1.5+
1998 05 22	704	1.5+	0.4-	1998 06 26	704	0.2-	0.8+	1999 12 13	699	0.4+	0.9+
1998 05 22	704	0.0	0.7-	1998 06 26	704	0.1+	0.7-	1999 12 13	699	0.7-	0.3+
1998 05 22	704	(1.4-	2.5-)	1998 06 26	704	0.1-	1.1-	1999 12 14	704	0.1+	0.2+
1998 05 22	704	0.9+	0.5-	1999 11 04	704	0.6-	0.7-	1999 12 14	704	0.5+	0.7+
1998 05 22	704	0.2+	0.6-	1999 11 04	704	0.4-	0.1-	1999 12 14	704	0.5+	0.0
1998 05 24	704	0.6-	1.1+	1999 11 04	704	0.1-	0.7-	1999 12 14	704	0.4-	0.5+
1998 05 24	704	0.5+	0.7+	1999 11 04	704	0.5-	0.3-	1999 12 30	699	0.6+	1.0+
1998 05 24	704	0.3+	0.6-	1999 11 04	704	0.5-	0.1-	1999 12 30	699	0.1+	1.7+
1998 05 24	704	0.1+	1.5+	1999 12 03	699	0.5-	0.2+	1999 12 30	699	1.1+	1.6+
1998 05 24	704	(0.6+	2.4+)	1999 12 03	699	0.4-	0.3+	2000 01 07	704	0.7+	0.0
1998 06 24	704	0.1-	0.6+	1999 12 03	699	0.4-	0.3-	2000 01 07	704	0.6-	1.5-
1998 06 24	704	0.2-	0.2+	1999 12 06	704	0.0	0.4-	2000 01 07	704	0.1-	0.9-
1998 06 24	704	1.2-	0.7+	1999 12 06	704	0.6+	0.2+	2000 01 07	704	0.5+	1.1-
1998 06 24	704	0.1-	0.5+	1999 12 06	704	0.2+	0.3-	2000 01 07	704	0.1+	1.8-
1998 06 24	704	0.8-	0.6+	1999 12 06	704	0.2-	0.0				

1998 KT₄₈ = 1986 VW₇ = 2000 AM₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	81.71435	(2000.0)	P	Q	
<i>n</i>	0.23034474	ω 243.72127	+0.93940935	+0.25153371	
<i>a</i>	2.6356264	Ω 100.97465	-0.16201873	+0.92451906	
<i>e</i>	0.1972584	<i>i</i> 13.72343	-0.30209272	+0.28634823	
<i>P</i>	4.28	<i>H</i> 13.4	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1986 11 07	033	0.1-	0.4-	1998 06 26	704	0.3+	0.2+	1999 12 14	704	0.6+	0.2-
1986 11 07	033	0.6+	0.7-	1998 06 26	704	(1.2+	2.2+)	1999 12 14	704	0.9+	0.1-
1998 05 22	704	(2.1+	1.9-)	1999 11 02	703	0.5-	0.7+	1999 12 14	704	0.3+	0.3-
1998 05 22	704	1.4+	1.3+	1999 11 02	703	0.1+	0.6+	1999 12 30	699	0.4+	0.2-
1998 05 22	704	0.3+	0.0	1999 11 02	703	0.4-	0.0	1999 12 30	699	0.4-	0.1+
1998 05 22	704	1.6-	1.7+	1999 11 02	703	0.1-	0.6+	1999 12 30	699	0.2+	0.1+
1998 05 24	704	1.1-	0.1-	1999 11 05	704	0.0	0.1+	2000 01 05	704	0.3+	0.7-
1998 05 24	704	0.4-	1.3-	1999 11 05	704	0.3-	0.1+	2000 01 05	704	0.5+	0.9+
1998 05 24	704	1.7-	1.8-	1999 11 05	704	0.3-	0.4-	2000 01 05	704	0.2+	0.0
1998 05 24	704	(2.3-	0.8+)	1999 11 05	704	0.2+	0.5-	2000 01 05	704	0.1+	0.1+
1998 06 24	704	1.2+	0.4+	1999 11 05	704	0.2-	0.4-	2000 01 05	704	0.2+	0.1+
1998 06 24	704	0.0	0.4-	1999 12 05	704	0.5-	0.3+	2000 01 07	704	0.1+	0.5-

1998 06 24	704	1.8+	1.6+	1999 12 05	704	0.6-	0.0	2000 01 07	704	0.2+	0.2+
1998 06 24	704	0.1+	0.1-	1999 12 05	704	0.7-	0.2+	2000 01 07	704	0.0	0.0
1998 06 24	704	0.7-	0.1+	1999 12 05	704	0.6-	0.2+	2000 01 07	704	0.3-	0.2-
1998 06 26	704	0.8+	0.5-	1999 12 05	704	0.6-	0.2-	2000 01 07	704	0.0	0.9+
1998 06 26	704	0.3+	0.1-	1999 12 14	704	0.5+	0.4+				
1998 06 26	704	0.8-	0.4-	1999 12 14	704	0.4+	0.1+				

1998 KS₅₃

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	99.19510	(2000.0)	P	Q	
<i>n</i>	0.21246414	ω 159.59659	+0.40650309	+0.90532452	
<i>a</i>	2.7814993	Ω 134.15653	-0.86024555	+0.42462767	
<i>e</i>	0.1314162	<i>i</i> 9.87626	-0.30778700	+0.00888001	
<i>P</i>	4.64	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1994 08 11	675	0.1-	1.3+	1998 06 19	704	1.1-	0.2+	1999 10 08	704	0.8+	0.5-
1994 08 11	675	0.4-	0.6+	1998 06 19	704	0.0	0.3-	1999 10 08	704	0.3+	0.1+
1998 05 23	704	0.3-	0.2-	1998 06 19	704	0.3-	0.1-	1999 10 08	704	0.4+	0.3-
1998 05 23	704	0.6+	0.0	1999 09 14	704	1.6-	1.0-	1999 10 08	704	0.3+	0.1+
1998 05 23	704	0.4-	0.4+	1999 09 14	704	0.4-	1.1-	1999 11 08	703	0.4-	0.7+
1998 05 23	704	0.5-	0.2+	1999 09 14	704	0.6-	0.0	1999 11 08	703	0.3+	0.2+
1998 05 26	704	0.1-	0.1+	1999 09 14	704	1.0-	0.3+	1999 11 08	703	0.2+	0.2+
1998 05 26	704	0.2-	0.1-	1999 09 14	704	0.4-	0.8-	1999 11 08	703	0.3-	0.4+
1998 05 26	704	1.7+	1.1+	1999 09 21	699	1.8+	0.3+	1999 12 13	699	0.1-	0.5+
1998 05 26	704	0.6-	0.0	1999 09 21	699	0.6+	0.3-	1999 12 13	699	0.7+	0.3+
1998 05 26	704	0.1+	0.2+	1999 09 21	699	0.9+	0.2-	1999 12 13	699	1.0-	0.4+
1998 06 03	704	0.4+	0.3-	1999 10 02	704	0.7-	0.1-	2000 01 09	704	0.1-	0.9-
1998 06 03	704	0.4+	1.9-	1999 10 02	704	0.1-	0.1+	2000 01 09	704	0.2+	0.2+
1998 06 03	704	0.3+	0.2+	1999 10 02	704	0.3+	0.2-	2000 01 09	704	0.0	0.4-
1998 06 03	704	0.9+	0.9-	1999 10 02	704	0.4+	0.4+	2000 01 09	704	1.2-	0.3-
1998 06 03	704	1.4-	0.3+	1999 10 02	704	0.2+	0.6-				
1998 06 19	704	0.1+	0.2-	1999 10 08	704	0.5+	0.1+				

1998 KG₅₆ = 2000 AU₂₀₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	322.32428	(2000.0)	P	Q	
<i>n</i>	0.35616889	ω 19.71585	-0.77734935	-0.52717964	
<i>a</i>	1.9710549	Ω 123.63718	+0.50755481	-0.84794805	
<i>e</i>	0.0545508	<i>i</i> 24.34704	+0.37163974	+0.05536910	
<i>P</i>	2.77	<i>H</i> 14.7	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 05 27	704	0.3+	2.0+	1998 06 23	704	0.3+	0.2+	1999 12 18	704	0.2-	0.3-
1998 05 27	704	0.0	0.1+	1998 06 23	704	0.1+	0.1-	1999 12 18	704	0.3-	0.4+
1998 05 27	704	0.6-	0.6-	1998 06 23	704	0.4+	1.2-	2000 01 09	704	(0.4-	2.4-)
1998 05 27	704	0.5+	0.9-	1998 06 23	704	0.1+	0.0	2000 01 09	704	0.3+	0.6-
1998 06 04	704	0.2-	0.7-	1999 11 10	704	0.4+	0.1+	2000 01 09	704	0.8+	0.2+
1998 06 04	704	0.0	0.8-	1999 11 10	704	0.9-	0.2-	2000 01 09	704	0.3-	0.0
1998 06 04	704	0.4+	0.2+	1999 11 10	704	0.3-	0.2-	2000 01 11	704	0.3+	0.2+
1998 06 04	704	0.0	0.9+	1999 11 10	704	0.4-	0.5+	2000 01 11	704	0.0	0.7+
1998 06 22	699	1.3-	0.3+	1999 12 18	704	0.8-	1.2-	2000 01 11	704	0.2+	0.3+
1998 06 22	699	0.3+	0.4+	1999 12 18	704	0.3+	0.6+	2000 01 11	704	0.5+	0.3+
1998 06 22	699	0.3-	0.6+	1999 12 18	704	0.3+	0.2-				

2000 JAN. 24

M.P.C. 37691

Residuals in seconds of arc

1998 05 27	704	0.2+	0.5-	1998 06 19	699	0.4+	0.1+	1998 06 23	704	0.3-	0.4-
1998 05 27	704	0.1+	0.6+	1998 06 19	699	1.1+	0.6+	1998 06 23	704	0.4-	0.1-
1998 05 27	704	0.3+	1.2+	1998 06 20	699	0.2-	0.1+	1998 12 16	704	1.7+	0.4-
1998 05 27	704	(0.6+	3.2+)	1998 06 20	699	0.2+	0.1+	1998 12 16	704	0.5+	0.2+
1998 05 27	704	1.3-	1.3-	1998 06 20	699	0.2+	0.5-	1998 12 16	704	0.1+	0.5+
1998 06 04	704	0.3+	0.5+	1998 06 21	699	0.4+	0.5-	2000 01 08	704	0.3-	0.2+
1998 06 04	704	0.7+	1.3-	1998 06 21	699	0.2-	0.4+	2000 01 08	704	1.9-	0.2-
1998 06 04	704	0.6+	0.6-	1998 06 21	699	0.1+	0.1+	2000 01 08	704	1.6-	0.9+
1998 06 04	704	1.0-	0.4+	1998 06 22	699	0.1+	0.5+	2000 01 08	704	0.4-	0.6+
1998 06 04	704	0.2-	1.0-	1998 06 22	699	1.3-	0.5+	2000 01 10	704	0.2+	0.2+
1998 06 18	699	0.3+	1.1+	1998 06 22	699	0.2-	0.8+	2000 01 10	704	0.3-	0.2+
1998 06 18	699	0.4-	1.4+	1998 06 23	704	1.3-	0.0	2000 01 10	704	1.3+	0.2-
1998 06 18	699	0.0	0.9+	1998 06 23	704	0.1-	1.5-	2000 01 10	704	0.1+	1.1-
1998 06 19	699	1.9+	0.2-	1998 06 23	704	0.1-	0.7-				

1998 KN₆₃

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	53.97209		(2000.0)	P	Q
n	0.21616687	ω	252.63278	+0.89287907	+0.38633707
a	2.7496450	Ω	84.13386	-0.27118947	+0.87145757
e	0.1173159	i	13.44674	-0.35947634	+0.30216778
P	4.56	H	13.7	G 0.15	U 3

Residuals in seconds of arc

1998 05 22	704	0.9+	0.7-	1998 06 23	691	0.1+	0.0	1999 09 30	704	0.5-	0.1+
1998 05 22	704	0.2+	0.8-	1998 06 29	691	0.6-	0.3-	1999 09 30	704	0.3-	0.2+
1998 05 22	704	0.2-	0.4-	1998 06 29	691	0.3-	0.5-	1999 09 30	704	0.5+	0.6+
1998 05 22	704	0.1-	1.7-	1998 06 29	691	0.7-	0.6-	1999 11 10	704	0.4+	0.8+
1998 05 24	704	0.9+	0.2-	1999 09 11	699	0.3-	0.3-	1999 11 10	704	0.2-	0.5+
1998 05 24	704	0.8-	1.7+	1999 09 11	699	1.1+	0.3-	1999 11 10	704	0.1-	1.0+
1998 05 24	704	0.2+	1.0+	1999 09 11	699	0.1-	0.0	1999 11 10	704	0.4-	1.3+
1998 05 24	704	0.1-	1.1+	1999 09 13	704	0.0	0.3-	1999 11 10	704	0.2-	1.4+
1998 05 24	699	0.1+	0.8+	1999 09 13	704	0.2+	0.4-	1999 12 01	704	0.5+	0.1+
1998 05 24	704	0.4-	1.5+	1999 09 13	704	0.0	1.0-	1999 12 01	704	0.1-	0.2+
1998 05 24	699	0.6+	0.5+	1999 09 13	704	0.3+	0.6-	1999 12 01	704	0.2+	0.0
1998 05 24	699	0.4+	0.5+	1999 09 13	704	0.4-	0.5-	1999 12 01	704	0.6-	0.2-
1998 06 23	691	0.3+	0.5-	1999 09 30	704	0.3-	0.6-				
1998 06 23	691	0.2+	0.5-	1999 09 30	704	0.0	0.2-				

1998 KA₆₅ = 1979 SS₃ = 1999 XX₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	142.96828		(2000.0)	P	Q
n	0.30543939	ω	305.12093	+0.72618578	+0.68737887
a	2.1836651	Ω	11.47487	-0.60793375	+0.65074352
e	0.1944941	i	3.69639	-0.32104637	+0.32255720
P	3.23	H	14.9	G 0.15	U 2

Residuals in seconds of arc

1979 09 24	095	0.0	0.1-	1998 06 16	704	0.6+	1.1-	1999 12 15	704	0.5+	0.8-
1997 01 12	566	0.1+	0.6+	1998 06 16	704	0.4+	0.1+	1999 12 15	704	0.6+	0.6-
1997 01 12	566	0.5+	0.4+	1998 06 16	704	0.3-	0.5-	1999 12 15	704	0.6+	0.5-
1997 01 12	566	0.3+	0.5+	1998 06 16	704	0.7-	0.8-	1999 12 15	704	0.5+	0.7-
1998 05 22	704	1.7-	0.4+	1998 06 16	704	(2.1-	3.1-)	2000 01 02	704	0.3-	0.2+
1998 05 22	704	0.6-	0.5+	1998 06 18	704	0.7+	0.1+	2000 01 02	704	0.3-	0.4+
1998 05 22	704	0.5-	0.2+	1998 06 18	704	0.3-	0.7-	2000 01 02	704	1.0-	0.7+
1998 05 22	704	0.1+	1.3+	1998 06 18	704	0.0	0.3-	2000 01 02	704	0.4+	0.3+
1998 05 24	704	0.2+	0.3+	1998 06 18	704	0.3+	0.7-	2000 01 04	704	0.4-	0.6-
1998 05 24	704	0.3-	0.0	1999 12 10	704	0.7-	0.3-	2000 01 04	704	0.1+	0.6-
1998 05 24	704	0.9+	0.5+	1999 12 10	704	0.4+	0.7-	2000 01 04	704	0.6-	0.8-
1998 05 24	704	(2.5-	0.0)	1999 12 10	704	(2.4+	0.9+)	2000 01 04	704	0.5-	0.0
1998 05 24	704	0.4+	1.5-	1999 12 15	704	0.1-	0.2-				

1998 LA₂ = 1999 WJ₂

Id. G. V. Williams, S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	215.59386		(2000.0)	P	Q		
n	0.29534952	ω	345.28138	-0.76978600	+0.63391153		
a	2.2331190	Ω	234.30529	-0.57593717	-0.74027565		
e	0.0736049	i	5.28015	-0.27518338	-0.22393779		
P	3.34	H	14.4	G	0.15	U	4

Residuals in seconds of arc

1998 05 22	704	0.7-	0.9+	1999 11 04	704	0.2+	0.3-	1999 12 04	703	0.7-	0.8+
1998 05 22	704	1.0-	0.4-	1999 11 04	704	0.6-	0.3-	1999 12 04	703	1.1-	0.1-
1998 05 22	704	1.4-	1.0-	1999 11 04	704	0.3-	0.4-	1999 12 04	703	0.3+	0.1-
1998 05 22	704	1.3-	0.6-	1999 11 04	704	0.6-	0.5-	1999 12 06	704	0.0	0.2+
1998 05 22	704	0.8-	0.3-	1999 11 12	699	1.0+	1.3+	1999 12 06	704	0.4-	0.3+
1998 06 01	809	1.6+	1.6+	1999 11 12	699	0.8+	0.1-	1999 12 06	704	0.5-	0.1+
1998 06 01	809	0.7+	1.8+	1999 11 12	699	1.1-	1.1+	1999 12 06	704	0.2-	0.6+
1998 06 01	809	1.1+	1.0+	1999 11 14	704	1.1+	0.6+	1999 12 07	704	0.5-	0.0
1998 06 02	809	(2.3+	0.5+)	1999 11 14	704	1.2+	0.6+	1999 12 07	704	0.3-	0.1+
1998 06 02	809	1.3+	1.5+	1999 11 14	704	0.8+	0.5+	1999 12 07	704	0.1-	0.2-
1998 06 02	809	1.6+	0.6+	1999 11 14	704	0.6+	0.6+	1999 12 07	704	0.1-	0.1+
1998 06 24	704	0.7-	0.7-	1999 11 14	704	0.9+	0.5+	1999 12 07	704	0.8-	0.7-
1998 06 24	704	0.8+	0.4-	1999 11 16	704	0.6+	0.2-	1999 12 12	703	1.0-	1.2+
1998 06 24	704	0.1-	1.0-	1999 11 16	704	0.7+	0.2-	1999 12 12	703	0.3-	1.1+
1998 06 24	704	0.5-	0.3-	1999 11 16	704	0.1+	0.1+	1999 12 12	703	0.8-	1.0+
1998 06 26	704	0.5-	0.4-	1999 11 16	704	0.5+	0.2-	1999 12 12	703	0.6-	0.6+
1998 06 26	704	0.3-	0.2+	1999 11 16	704	0.2+	0.3+	1999 12 30	699	0.8-	0.5+
1998 06 26	704	1.0+	0.5-	1999 11 26	120	1.5+	0.5-	1999 12 30	699	0.2-	0.4+
1998 06 26	704	0.6-	0.4-	1999 11 26	120	0.8-	1.2-	1999 12 30	699	(0.1-	2.1+)
1998 06 26	704	0.6-	0.5-	1999 11 26	120	0.3+	1.3-	2000 01 04	704	0.1+	0.7-
1999 10 21	704	0.1-	0.2+	1999 11 27	120	0.4+	0.8-	2000 01 04	704	0.2-	0.4-
1999 10 21	704	0.2-	0.4-	1999 11 27	120	0.9-	1.7-	2000 01 04	704	0.7+	0.1+
1999 10 21	704	0.0	0.1+	1999 11 30	120	1.1+	0.7-	2000 01 04	704	0.0	0.1+
1999 10 21	704	0.6+	1.0-	1999 11 30	120	1.0+	0.7-	2000 01 04	704	0.8+	0.8+
1999 10 21	704	0.0	0.8-	1999 11 30	120	0.0	1.2-	2000 01 07	704	1.0+	0.0
1999 10 29	703	0.2+	0.4+	1999 12 04	703	1.2-	0.6+	2000 01 07	704	0.1+	0.1-
1999 10 29	703	0.8-	0.5+	1999 12 04	703	0.0	0.0	2000 01 07	704	0.9-	0.5-
1999 10 29	703	0.5-	0.0	1999 12 04	703	1.2-	0.2+	2000 01 07	704	0.8+	0.2+
1999 10 29	703	0.9-	0.1-	1999 12 04	703	0.6-	1.0+	2000 01 07	704	0.4+	0.9-
1999 11 04	704	0.2+	0.4+	1999 12 04	703	0.1-	0.7+				

1998 LV₂ = 1999 RJ₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	305.42915		(2000.0)	P	Q		
n	0.17750167	ω	217.12807	+0.27650405	-0.94736079		
a	3.1356994	Ω	217.60099	+0.93297102	+0.30489989		
e	0.0971750	i	15.33944	+0.23045733	-0.09769125		
P	5.55	H	13.2	G	0.15	U	5

Residuals in seconds of arc

1998 06 01	809	1.7+	1.0+	1998 06 19	704	0.2+	0.9-	1999 09 08	699	0.8-	0.4-
1998 06 01	809	1.7+	1.1+	1998 06 19	704	0.3+	0.6+	1999 09 08	704	0.4-	0.6-
1998 06 01	809	1.6+	1.2+	1998 06 19	704	0.7-	1.0-	1999 09 08	704	0.5-	0.4-
1998 06 02	809	0.5+	1.0+	1998 06 19	704	1.1-	1.1-	1999 09 08	704	0.2-	0.8-
1998 06 02	809	1.0+	1.2+	1998 06 25	704	1.4+	0.0	1999 09 08	704	1.0-	0.3-
1998 06 02	809	0.1+	0.2+	1998 06 25	704	0.1-	1.2-	1999 09 16	704	0.7+	0.8+
1998 06 03	704	1.6-	1.4-	1998 06 25	704	0.7-	0.6-	1999 09 16	704	1.4+	0.3+
1998 06 03	704	1.4-	0.2+	1998 06 25	704	1.6-	1.0+	1999 09 16	704	0.5+	0.9+

1998 MX = 2000 AU₁₀₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24238567	ω	236.50235	+0.77560898	+0.58172557		
<i>a</i>	2.5476011	Ω	86.72978	-0.46644457	+0.78972214		
<i>e</i>	0.1946910	<i>i</i>	14.20558	-0.42527659	+0.19476730		
<i>P</i>	4.07	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 05	699	0.0	0.4+	1998 06 27	699	0.4-	0.9+	1999 12 14	704	0.9-	0.5-
1998 05 05	699	0.8+	0.0	1998 06 27	699	0.4-	0.4+	1999 12 14	704	1.2+	0.3+
1998 05 05	699	0.1-	0.1+	1999 09 08	703	0.7+	0.4+	1999 12 14	704	0.2-	0.1+
1998 05 23	704	0.6+	0.1-	1999 09 08	703	0.7-	0.1-	1999 12 14	704	1.0-	0.2-
1998 05 23	704	0.1-	0.2+	1999 09 08	703	0.3-	0.1-	1999 12 14	699	0.2-	0.8+
1998 05 23	704	1.6+	0.2-	1999 09 08	703	1.2+	0.3+	1999 12 14	699	0.3+	1.2+
1998 05 23	704	0.1+	0.6-	1999 10 31	703	0.4-	0.2+	1999 12 14	699	0.0	1.4+
1998 05 23	704	0.2-	0.6+	1999 10 31	703	0.6-	0.1-	2000 01 05	704	0.5+	0.1+
1998 05 24	699	0.9+	0.7+	1999 10 31	703	0.5-	0.5-	2000 01 05	704	0.1+	0.2+
1998 05 24	699	0.9+	0.0	1999 10 31	703	0.8-	0.4+	2000 01 05	704	0.1-	0.8+
1998 05 24	699	0.3+	0.6+	1999 11 07	704	0.4+	0.9-	2000 01 05	704	0.1-	0.2+
1998 06 16	704	1.3-	0.0	1999 11 07	704	0.4-	0.0	2000 01 05	704	0.0	0.5+
1998 06 16	704	0.9-	0.7-	1999 11 07	704	0.5-	0.1+	2000 01 06	699	0.5-	0.7-
1998 06 16	704	0.7+	0.4-	1999 11 07	704	0.4-	0.0	2000 01 06	699	0.9-	0.1+
1998 06 16	704	0.2+	1.7-	1999 11 07	704	0.1-	0.6+	2000 01 06	699	0.3-	0.5-
1998 06 16	704	1.2-	0.1-	1999 12 05	704	0.0	0.5-	2000 01 07	704	0.4+	0.5+
1998 06 18	704	0.3+	0.8+	1999 12 05	704	0.2-	0.2-	2000 01 07	704	0.2-	0.0
1998 06 18	704	0.6-	1.6+	1999 12 05	704	0.1-	0.1-	2000 01 07	704	0.6+	0.4+
1998 06 18	704	1.1+	1.0+	1999 12 05	704	0.2+	0.2-	2000 01 07	704	0.8+	0.7+
1998 06 18	704	0.6+	0.0	1999 12 05	704	0.1+	0.4-	2000 01 07	704	0.6+	0.7+
1998 06 27	699	1.2-	1.0+	1999 12 14	704	0.4+	0.5+				

1998 MY₃ = 2000 AB₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29438376	ω	214.77213	-0.81549372	-0.57850054		
<i>a</i>	2.2380004	Ω	289.87330	+0.53514519	-0.74215312		
<i>e</i>	0.0547039	<i>i</i>	1.06774	+0.22043053	-0.33844626		
<i>P</i>	3.35	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 17	691	0.1-	0.4-	1998 06 30	691	0.0	0.0	2000 01 04	704	0.4-	0.9+
1998 06 17	691	0.1+	0.2+	1999 12 07	704	1.1-	0.3-	2000 01 04	704	0.2-	0.3-
1998 06 18	691	0.4-	0.2+	1999 12 07	704	0.1+	0.5+	2000 01 04	704	0.2+	0.5+
1998 06 18	691	0.2+	0.2+	1999 12 07	704	0.5+	0.2+	2000 01 04	704	0.5-	0.1+
1998 06 18	691	0.1-	0.1+	1999 12 07	704	0.3+	0.4+	2000 01 07	691	0.1-	0.1+
1998 06 23	691	0.5+	0.6-	2000 01 03	704	0.2-	1.3-	2000 01 07	691	0.0	0.5-
1998 06 23	691	0.0	0.1-	2000 01 03	704	0.9+	0.2-	2000 01 07	691	0.0	0.3-
1998 06 23	691	0.3-	0.2+	2000 01 03	704	1.0+	0.5+	2000 01 10	691	0.3-	0.1-
1998 06 30	691	0.2+	0.1-	2000 01 03	704	0.1-	1.0-	2000 01 10	691	0.4-	0.1-
1998 06 30	691	0.0	0.1-	2000 01 04	704	0.5+	0.6+	2000 01 10	691	0.2-	0.0

1998 MF₅ = 1999 XH₁₂₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18708608	ω	85.42668	+0.85778276	-0.50599101		
<i>a</i>	3.0276690	Ω	304.94397	+0.41691831	+0.78782279		
<i>e</i>	0.1285902	<i>i</i>	6.33537	+0.30064574	+0.35115288		
<i>P</i>	5.27	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 19	691	1.2-	0.3+	1999 12 07	703	0.1+	0.2+	2000 01 03	704	0.3+	0.4+
1998 06 19	691	0.9-	0.0	1999 12 07	703	0.2+	0.2-	2000 01 03	704	0.1-	0.3-
1998 06 19	691	0.5-	0.2-	1999 12 07	703	0.2+	0.2+	2000 01 03	704	1.6-	0.4+
1998 06 24	691	0.3+	0.2+	1999 12 13	703	0.3-	0.3+	2000 01 03	704	0.0	0.7-

1998 06 24	691	0.3+	0.1+	1999 12 13	703	0.3-	0.1+	2000 01 04	704	1.0+	0.0
1998 06 24	691	0.3+	0.3+	1999 12 13	703	0.4+	0.0	2000 01 04	704	0.4+	0.4-
1998 06 30	691	0.5+	0.3-	1999 12 13	703	0.2-	0.1-	2000 01 04	704	0.2-	0.4-
1998 06 30	691	0.6+	0.1-	1999 12 31	699	0.0	0.9+	2000 01 04	704	0.5+	0.3-
1998 06 30	691	0.6+	0.4-	1999 12 31	699	0.5-	0.5+	2000 01 04	704	0.2+	1.4-
1999 12 07	703	0.2-	0.3+	1999 12 31	699	0.3+	0.2+				

1998 MK₅ = 2000 AC₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23144503	ω	264.63412	+0.89110095	-0.40287499		
<i>a</i>	2.6272666	Ω	118.97587	+0.44922077	+0.84836191		
<i>e</i>	0.1833478	<i>i</i>	13.81384	-0.06434128	+0.34347317		
<i>P</i>	4.26	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 27	699	0.3+	0.0	1998 08 17	704	0.1-	0.2-	1999 12 14	704	0.2-	0.5-
1998 05 27	699	0.0	0.6+	1998 08 17	704	0.2+	0.4+	1999 12 14	704	0.2-	0.1-
1998 05 27	699	0.0	0.3+	1998 08 17	704	0.1-	0.1-	2000 01 04	171	(0.1-	3.0+)
1998 06 20	691	0.2+	0.2+	1998 08 17	704	(1.4+	2.7-)	2000 01 04	171	0.5+	0.7+
1998 06 20	691	0.1+	0.1-	1998 08 23	704	0.4+	0.2-	2000 01 04	171	0.4-	0.4-
1998 06 20	691	0.3+	0.1+	1998 08 23	704	0.3+	0.4+	2000 01 05	704	0.1+	0.0
1998 06 24	691	0.5-	0.3-	1998 08 23	704	0.5-	0.1-	2000 01 05	704	0.1-	0.5-
1998 06 24	691	1.0-	0.1+	1998 08 23	704	0.8+	1.1+	2000 01 05	704	0.4-	0.2+
1998 06 24	691	0.7-	0.3+	1998 08 23	704	0.4+	0.5+	2000 01 05	704	0.3-	0.3+
1998 06 29	704	0.1-	0.5+	1999 11 13	703	0.0	0.3+	2000 01 05	704	0.2-	0.4+
1998 06 29	704	0.6-	0.6-	1999 11 13	703	0.2-	0.2+	2000 01 06	704	0.1-	0.3+
1998 06 29	704	0.0	1.2-	1999 11 13	703	0.1-	0.1-	2000 01 06	704	0.2-	0.1-
1998 06 29	704	(3.7-	3.2+)	1999 11 13	703	0.3-	0.4+	2000 01 06	704	0.0	0.3-
1998 06 29	704	(3.1-	0.9+)	1999 12 06	704	1.3+	0.6-	2000 01 07	171	0.7-	0.4+
1998 07 02	699	0.1-	0.6+	1999 12 06	704	0.4-	0.2+	2000 01 08	171	0.1-	0.3-
1998 07 02	699	0.3+	0.7+	1999 12 06	704	0.8+	0.5-	2000 01 08	171	0.0	0.1-
1998 07 02	699	0.0	0.9+	1999 12 06	704	0.6+	0.5-	2000 01 13	849	0.3+	0.4+
1998 07 24	566	0.4+	1.1-	1999 12 06	704	0.6-	0.3+	2000 01 13	849	0.3+	0.2+
1998 07 24	566	0.1-	1.1-	1999 12 14	704	0.7+	0.2-	2000 01 13	849	0.0	0.4+
1998 07 24	566	0.3+	1.5-	1999 12 14	704	0.1+	0.5+				
1998 08 17	704	0.0	0.6+	1999 12 14	704	0.1-	0.6-				

1998 MO₅ = 1999 XP₁₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27080687	ω	211.59646	+0.76897950	+0.51257565		
<i>a</i>	2.3660810	Ω	112.73255	-0.46537309	+0.85855407		
<i>e</i>	0.2263265	<i>i</i>	24.46842	-0.43829033	-0.01229274		
<i>P</i>	3.64	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 26	704	0.2-	0.3+	1998 07 24	566	0.6-	0.3-	1999 12 14	704	(2.2+	0.1+)
1998 05 26	704	0.6+	0.1+	1998 07 24	566	0.1+	0.5-	1999 12 15	704	0.0	0.4+
1998 05 26	704	0.9+	0.4+	1998 07 24	566	2.0-	0.1+	1999 12 15	704	0.1-	0.7+
1998 05 26	704	0.3+	0.2-	1998 07 25	673	0.9-	0.1-	1999 12 15	704	0.4-	1.0+
1998 05 26	704	0.3+	0.8-	1998 07 25	673	0.6-	0.3-	1999 12 15	704	0.1+	0.7-
1998 06 04	704	0.2+	0.0	1998 07 26	699	0.6-	0.6+	2000 01 07	704	0.3+	0.1-
1998 06 04	704	0.4-	0.4-	1998 07 26	699	0.5-	0.4+	2000 01 07	704	0.2+	0.2-
1998 06 04	704	0.4-	0.4-	1998 07 26	699	0.0	0.4+	2000 01 07	704	0.2+	1.1-
1998 06 04	704	0.3+	0.6+	1998 08 15	704	0.0	0.1-	2000 01 07	704	0.3-	0.7-
1998 06 04	704	0.0	1.0+	1998 08 15	704	0.0	0.3+	2000 01 07	704	0.4+	0.1+
1998 06 19	704	0.4+	1.0-	1998 08 15	704	0.4+	0.5-	2000 01 07	120	0.4+	0.2-
1998 06 19	704	0.3-	0.1-	1998 08 15	704	0.3-	0.3-	2000 01 07	120	0.5+	0.2-
1998 06 19	704	0.5+	0.2+	1998 08 15	704	0.8+	0.4+	2000 01 07	120	0.2+	0.0
1998 06 19	704	0.7+	0.4-	1999 12 05	704	0.6-	0.2-	2000 01 07	120	0.8-	0.2+
1998 06 19	704	0.2+	0.3-	1999 12 05	704	0.7-	0.2-	2000 01 11	704	0.4+	0.1-
1998 06 25	704	0.1-	0.0	1999 12 05	704	0.3-	0.1+	2000 01 11	704	0.1+	0.6-
1998 06 25	704	1.0-	0.6+	1999 12 05	704	0.2-	0.1+	2000 01 11	704	1.4-	0.7-
1998 06 25	704	0.6+	1.0-	1999 12 14	704	0.4+	0.5+	2000 01 11	704	0.1+	0.1+

2000 JAN. 24

M.P.C. 37693

1998 06 25 704 0.3+ 0.1- 1999 12 14 704 1.5+ 0.8- 2000 01 11 704 0.3+ 0.5+
 1998 06 25 704 0.1- 0.6+ 1999 12 14 704 0.5+ 0.2-

1998 MO₇

Id. F. B. Zoltowski (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	57.41412		(2000.0)	P	Q
<i>n</i>	0.26303478	ω	88.68303	+0.76207069	-0.62029023
<i>a</i>	2.4124626	Ω	309.61616	+0.45550592	+0.71742564
<i>e</i>	0.0774634	<i>i</i>	13.95016	+0.46017672	+0.31708119
<i>P</i>	3.75	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 22 426 0.0 0.7-	1998 08 14 426 0.1- 0.2-	1999 12 30 704 0.0 0.0
1998 06 22 426 1.0- 0.0	1998 08 14 426 0.6- 0.3+	1999 12 30 704 0.3- 0.7+
1998 06 22 426 0.1+ 0.4-	1999 11 01 704 0.9+ 0.7-	1999 12 30 704 0.1- 0.2+
1998 06 25 426 0.0 0.3+	1999 11 01 704 0.5+ 0.1-	1999 12 30 704 0.2- 0.3+
1998 06 25 426 0.1- 0.3+	1999 11 01 704 0.2- 0.1+	1999 12 30 704 0.9- 0.3-
1998 07 01 426 0.2- 0.1+	1999 11 01 704 0.6- 0.0	2000 01 12 858 0.2- 0.6+
1998 07 01 426 0.3+ 0.3+	1999 12 13 704 0.2+ 0.3-	2000 01 12 858 0.0 0.4+
1998 07 03 426 0.2- 0.7+	1999 12 13 704 0.3+ 0.1+	2000 01 12 858 0.3- 0.6-
1998 07 03 426 0.2- 0.4+	1999 12 13 704 0.0 0.2-	2000 01 13 858 0.2+ 0.3+
1998 08 10 426 1.4+ 0.4-	1999 12 13 704 0.4+ 0.5+	2000 01 13 858 0.3- 0.2-
1998 08 10 426 0.3+ 0.3-	1999 12 13 704 0.9+ 0.2-	2000 01 13 858 0.5- 0.3-

1998 MP₇ = 1999 XX₁₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	140.90122		(2000.0)	P	Q
<i>n</i>	0.25800196	ω	86.72744	+0.66009848	+0.74844604
<i>a</i>	2.4437347	Ω	224.80224	-0.72023040	+0.60638853
<i>e</i>	0.1691660	<i>i</i>	5.21261	-0.21339674	+0.26855441
<i>P</i>	3.82	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 06 24 721 0.6- 0.3-	1998 06 27 910 0.3+ 0.3-	1999 12 08 704 0.1+ 0.0
1998 06 24 721 0.1- 0.0	1998 06 27 910 0.3+ 0.2-	1999 12 14 704 0.0 0.7+
1998 06 24 704 0.3+ 0.4-	1998 07 19 721 0.3- 0.3-	1999 12 14 704 0.2- 0.0
1998 06 24 704 1.3+ 0.6+	1998 07 19 721 1.0- 0.2-	1999 12 14 704 0.2+ 0.0
1998 06 24 704 0.3+ 1.6-	1998 07 26 704 0.5+ 0.1-	1999 12 14 704 0.0 0.1+
1998 06 24 704 1.6- 0.2+	1998 07 26 704 0.6+ 1.4+	1999 12 14 704 0.2+ 1.9-
1998 06 24 704 0.3- 1.0+	1998 07 26 704 1.4- 0.6+	2000 01 05 704 0.6+ 0.2+
1998 06 26 721 0.1+ 0.6-	1998 07 26 704 (2.7- 0.1-)	2000 01 05 704 1.0+ 0.2-
1998 06 26 721 0.8- 0.3+	1999 11 17 704 0.4- 0.2-	2000 01 05 704 1.2- 1.2-
1998 06 26 704 0.8+ 0.4-	1999 11 17 704 0.6- 0.3-	2000 01 05 704 0.1+ 0.5+
1998 06 26 704 0.3+ 0.4-	1999 11 17 704 0.1- 1.2-	2000 01 05 704 0.1+ 1.0+
1998 06 26 704 0.1+ 0.5-	1999 12 08 704 0.2- 0.1+	2000 01 06 704 0.3+ 0.1-
1998 06 26 704 0.4- 1.1+	1999 12 08 704 0.6- 0.3+	2000 01 06 704 0.2- 0.8+
1998 06 26 704 1.4+ 0.2+	1999 12 08 704 0.3+ 0.2+	2000 01 06 704 0.6- 0.9+
1998 06 27 910 0.3+ 0.3-	1999 12 08 704 1.3+ 0.2-	2000 01 06 704 0.2- 0.1+

1998 MU₇ = 1981 MA = 2000 AC₁₄₂

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	146.64066		(2000.0)	P	Q
<i>n</i>	0.29381653	ω	84.18951	+0.96817807	+0.23567722
<i>a</i>	2.2408798	Ω	262.15755	-0.24974216	+0.88818067
<i>e</i>	0.2045187	<i>i</i>	4.87499	-0.01612713	+0.39445069
<i>P</i>	3.35	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1981 06 24 688 0.7- 0.2-	1998 08 22 566 0.3+ 1.4-	1998 11 17 699 0.2- 0.3-
1981 06 24 688 0.8+ 1.9-	1998 08 22 566 0.2+ 0.9-	1998 11 17 699 0.3- 0.1-
1998 06 02 699 0.1+ 0.1-	1998 08 23 704 2.0+ 0.7+	1998 12 09 704 0.3- 0.1+
1998 06 02 699 0.4+ 0.1-	1998 08 23 704 0.5+ 1.3+	1998 12 09 704 1.3+ 1.0-
1998 06 02 699 0.5- 0.1+	1998 08 23 704 0.6- 1.7+	1998 12 09 704 0.8+ 0.0

1998 06 18 699 0.8- 0.1+	1998 08 23 704 0.0 0.4-	1998 12 09 704 1.6+ 0.2-
1998 06 18 699 0.7- 0.2+	1998 08 23 704 0.6- 0.9-	1998 12 09 704 0.1- 0.4+
1998 06 18 699 0.9- 0.0	1998 08 28 699 0.7+ 0.4+	1998 12 11 699 1.5- 0.3+
1998 06 26 699 0.4- 0.1+	1998 08 28 699 0.5+ 0.6+	1998 12 11 699 0.4- 0.6-
1998 06 26 699 0.6- 0.2+	1998 08 28 699 0.4+ 0.5+	1998 12 11 699 0.6- 0.6-
1998 06 26 699 0.7- 0.1+	1998 09 22 699 0.0 0.6+	2000 01 05 704 0.5- 0.4-
1998 07 16 699 0.0 0.1+	1998 09 22 699 0.4+ 0.1+	2000 01 05 704 0.1- 0.2-
1998 07 16 699 0.1+ 0.1+	1998 09 22 699 0.2+ 1.0+	2000 01 05 704 0.3- 0.6-
1998 07 16 699 0.4+ 0.1-	1998 10 14 699 0.4- 0.6+	2000 01 05 704 0.1- 0.1-
1998 08 17 704 0.2+ 0.8-	1998 10 14 699 0.1- 0.6-	2000 01 05 704 0.2- 0.6+
1998 08 17 704 (0.3+ 2.5-)	1998 10 14 699 0.0 0.3-	2000 01 08 704 0.1- 0.4-
1998 08 17 704 0.1+ 0.2+	1998 10 20 699 0.2- 0.3-	2000 01 08 704 0.1- 0.5-
1998 08 17 704 0.8- 1.0-	1998 10 20 699 0.1- 0.4-	2000 01 08 704 0.3+ 0.9-
1998 08 17 704 0.2+ 0.9+	1998 10 20 699 0.4- 0.4-	2000 01 08 704 0.2- 0.3-
1998 08 22 566 0.1+ 1.4-	1998 11 17 699 0.2- 0.0	2000 01 08 704 0.4+ 0.8+

1998 MQ₈ = 1977 FN₂ = 1985 UN₆

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	168.88052		(2000.0)	P	Q
<i>n</i>	0.28718936	ω	75.27385	+0.01253196	+0.99952340
<i>a</i>	2.2752222	Ω	195.52682	-0.95317640	+0.00341552
<i>e</i>	0.1084134	<i>i</i>	6.04974	-0.30215510	+0.03068089
<i>P</i>	3.43	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1977 03 26 095 0.5+ 0.9+	1998 06 25 704 0.2+ 1.1+	1999 12 03 699 0.5+ 0.6+
1985 10 18 095 0.1- 0.9-	1998 06 25 704 0.8- 1.3+	1999 12 05 703 0.2- 0.3+
1998 05 22 704 0.1+ 0.7+	1999 10 30 703 0.1+ 0.2+	1999 12 05 703 0.0 0.2+
1998 05 22 704 (1.2+ 3.5+)	1999 10 30 703 0.3- 0.6+	1999 12 05 703 0.0 0.6+
1998 05 22 704 0.0 0.6+	1999 10 30 703 0.6- 0.5+	1999 12 05 703 0.1+ 0.5+
1998 05 22 704 0.2- 0.7+	1999 10 30 703 0.2+ 0.3+	1999 12 06 704 0.7+ 1.1+
1998 05 22 704 0.4+ 0.9+	1999 11 04 704 0.2+ 0.2+	1999 12 06 704 0.1+ 0.6+
1998 05 26 704 1.1+ 0.2+	1999 11 04 704 0.2+ 0.5-	1999 12 06 704 0.1- 0.1-
1998 05 26 704 0.4- 0.5+	1999 11 04 704 0.3+ 0.4-	1999 12 06 704 0.7+ 0.9-
1998 05 26 704 0.2+ 0.0	1999 11 04 704 0.0 0.6-	1999 12 13 699 1.0- 0.7+
1998 06 19 704 0.2- 0.3+	1999 11 04 704 0.5- 0.5-	1999 12 13 699 1.1- 1.6+
1998 06 19 704 0.0 0.5-	1999 11 17 704 (2.4- 0.2-)	1999 12 13 699 0.7- 0.8+
1998 06 19 704 0.2- 0.4+	1999 11 17 704 0.3+ 0.0	1999 12 14 704 0.3- 0.6+
1998 06 19 704 0.2- 0.3-	1999 11 17 704 0.1- 0.4+	1999 12 14 704 0.1- 0.7-
1998 06 19 704 0.6+ 1.6-	1999 11 17 704 0.1- 0.9+	1999 12 14 704 0.0 0.4-
1998 06 25 704 0.6- 0.8+	1999 12 03 699 0.6+ 1.0+	1999 12 14 704 0.1+ 0.2-
1998 06 25 704 0.1+ 0.6+	1999 12 03 699 0.0 0.0	1999 12 14 704 0.1- 0.3+

1998 ML₉ = 2000 AN₁₇₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	120.11549		(2000.0)	P	Q
<i>n</i>	0.28272760	ω	174.13998	+0.86923948	+0.49189190
<i>a</i>	2.2990968	Ω	156.19415	-0.45844430	+0.83955626
<i>e</i>	0.1336467	<i>i</i>	7.06558	-0.18507177	+0.23062448
<i>P</i>	3.49	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 06 19 704 0.9- 0.1-	1998 06 29 910 0.5- 0.1-	2000 01 07 704 0.1- 0.1-
1998 06 19 704 1.4+ 0.3-	1998 06 29 910 0.3- 0.0	2000 01 07 704 0.5+ 0.2+
1998 06 19 704 0.8+ 0.9+	1998 06 29 910 0.5- 0.0	2000 01 07 704 0.6+ 0.3-
1998 06 19 704 0.5- 1.9+	1999 12 14 704 0.1- 0.4+	2000 01 07 704 0.3+ 0.4-
1998 06 19 704 1.8+ 1.6-	1999 12 14 704 0.1+ 0.4+	2000 01 11 704 0.2+ 0.6-
1998 06 25 704 0.2- 0.8-	1999 12 14 704 0.1+ 0.3+	2000 01 11 704 0.5- 0.0
1998 06 25 704 0.2+ 0.1+	1999 12 14 704 0.2+ 0.1+	2000 01 11 704 0.1- 0.3+
1998 06 25 704 1.0- 1.0-	1999 12 14 704 0.6- 0.6-	
1998 06 25 704 0.1- 1.2+	2000 01 07 704 0.5- 0.5+	

1998 MV₁₃

Id. F. B. Zoltowski (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	11.97338		(2000.0)	P	Q
<i>n</i>	0.23622566	ω	131.76419	+0.43217064	-0.83466876
<i>a</i>	2.5916996	Ω	289.55544	+0.68185974	+0.55020809
<i>e</i>	0.0901524	<i>i</i>	21.24165	+0.59016594	-0.02447687
<i>P</i>	4.17	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1994 07 08	010	1.2+	0.8-	1998 07 17	426	0.5-	0.2+	1999 10 31	704	0.4-	1.1+
1994 07 08	010	0.9+	1.6-	1998 07 21	704	0.8-	1.0-	1999 10 31	704	0.2-	0.7+
1994 07 08	010	0.8+	1.8-	1998 07 21	704	(2.3+	1.0+)	1999 12 13	704	0.2-	0.3-
1998 06 25	426	0.2+	0.6+	1998 07 21	704	(0.9+	2.9+)	1999 12 13	704	0.7-	0.5-
1998 06 25	426	0.8+	0.4+	1998 07 21	704	0.4-	0.2+	1999 12 13	704	0.4-	1.1-
1998 06 25	426	0.3+	0.1+	1998 07 21	704	(3.0-	2.1+)	1999 12 13	704	0.7-	0.8-
1998 06 26	426	0.9+	0.8+	1998 08 10	426	1.4-	0.1-	1999 12 13	704	0.6-	1.5-
1998 06 26	426	0.7+	0.4+	1998 08 10	426	1.6-	0.4-	2000 01 02	704	0.1-	0.4+
1998 06 26	426	0.2+	0.6+	1998 08 12	426	1.3-	0.4+	2000 01 02	704	0.3+	0.4+
1998 07 01	426	0.4-	0.3-	1998 08 12	426	0.5-	0.1+	2000 01 02	704	0.5+	0.8+
1998 07 01	426	0.6+	0.6+	1999 09 24	704	0.4+	0.8-	2000 01 02	704	0.0	0.5+
1998 07 01	426	0.2+	0.7+	1999 09 24	704	0.3+	0.4-	2000 01 12	858	0.7-	0.9+
1998 07 11	426	0.4-	1.2+	1999 09 24	704	0.4+	0.1+	2000 01 12	858	0.3+	0.1-
1998 07 11	426	0.1-	1.2+	1999 09 24	704	0.6+	0.1+	2000 01 12	858	0.4+	0.5+
1998 07 11	426	0.3-	0.3+	1999 09 24	704	1.1+	0.6-	2000 01 12	858	0.0	0.5+
1998 07 17	426	0.0	0.4+	1999 10 31	704	0.1+	0.6+	2000 01 13	858	0.2+	0.0
1998 07 17	426	0.4+	0.4-	1999 10 31	704	0.5-	0.6+	2000 01 13	858	0.0	0.5+

1998 MW₁₃ = 2000 AF₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	93.12201		(2000.0)	P	Q
<i>n</i>	0.26444970	ω	66.77745	+0.95338770	-0.29429332
<i>a</i>	2.4038498	Ω	310.26876	+0.23493505	+0.86257962
<i>e</i>	0.2356399	<i>i</i>	5.01181	+0.18936052	+0.41151894
<i>P</i>	3.73	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 06 25	426	0.1-	0.2-	1998 07 01	426	0.2+	0.5-	2000 01 04	704	0.2+	0.4+
1998 06 25	426	0.1+	0.3+	1998 07 11	426	0.1-	0.7+	2000 01 04	704	0.2-	0.2+
1998 06 25	426	0.4-	0.1+	1998 07 11	426	0.3+	0.1-	2000 01 04	704	0.9+	1.2+
1998 06 26	426	0.3+	0.1+	1998 07 11	426	0.1-	0.1-	2000 01 06	704	0.3+	0.1-
1998 06 26	426	0.3+	0.5-	1998 08 10	426	0.5-	0.5+	2000 01 06	704	0.4+	0.8-
1998 06 26	426	0.1+	0.2-	1998 08 10	426	0.6+	0.6-	2000 01 06	704	0.6-	0.1-
1998 07 01	426	0.8-	0.7+	2000 01 04	704	0.8-	0.4+	2000 01 06	704	0.3+	0.2-
1998 07 01	426	0.1+	0.2-	2000 01 04	704	0.5-	1.0-				

1998 MZ₁₃ = 1999 XY₁₀

Id. E. Bowell

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	81.79168		(2000.0)	P	Q
<i>n</i>	0.18402290	ω	65.97767	+0.87356424	+0.45367528
<i>a</i>	3.0611748	Ω	266.63139	-0.48546965	+0.78637618
<i>e</i>	0.1250997	<i>i</i>	10.16920	-0.03470929	+0.41927467
<i>P</i>	5.36	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 19	910	0.5+	0.2+	1999 10 13	704	0.1+	0.2-	1999 12 07	699	(0.4+	2.2+)
1998 06 19	910	0.1+	0.2+	1999 10 13	704	0.1+	0.0	1999 12 07	699	0.7-	0.5+
1998 06 19	910	0.4+	0.3+	1999 10 13	704	0.2-	0.1+	1999 12 10	704	1.5+	0.8+
1998 06 24	704	0.8+	0.8+	1999 10 13	704	0.3-	0.8+	1999 12 10	704	1.0+	1.8-
1998 06 24	704	0.8-	0.8-	1999 11 08	699	0.5+	1.0-	1999 12 10	704	0.7+	0.7-
1998 06 24	704	0.7-	0.1-	1999 11 08	699	0.3-	0.4-	1999 12 10	704	0.2+	0.3-
1998 06 24	704	(1.2+	3.0-)	1999 11 08	699	0.2+	0.3+	1999 12 13	703	0.0	0.3-
1998 06 26	910	0.1-	0.2-	1999 12 05	703	0.3+	0.6-	1999 12 13	703	0.3+	0.2-
1998 06 26	910	0.1-	0.1-	1999 12 05	703	0.2-	0.5-	1999 12 13	703	0.6+	0.9+
1998 06 26	910	0.1-	0.2-	1999 12 05	703	0.7-	0.3-	1999 12 13	703	0.8-	0.1+
1999 10 12	704	0.0	0.2-	1999 12 05	703	0.8-	1.0+	2000 01 04	704	0.1-	0.0

1999 10 12	704	0.3-	0.3+	1999 12 07	703	0.6-	0.3+	2000 01 04	704	0.2+	0.7+
1999 10 12	704	0.3+	0.2-	1999 12 07	703	0.5-	0.3+	2000 01 04	704	0.4-	0.0
1999 10 12	704	0.0	0.0	1999 12 07	703	0.0	0.1+	2000 01 04	704	0.0	0.4-
1999 10 12	704	0.1+	0.1-	1999 12 07	703	0.6-	0.0	2000 01 04	704	0.5+	0.3-
1999 10 13	704	0.4+	0.2-	1999 12 07	699	0.4-	1.4+				

1998 MR₁₅

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	62.65939		(2000.0)	P	Q
<i>n</i>	0.23800160	ω	184.62401	+0.99955950	-0.02624019
<i>a</i>	2.5787909	Ω	176.78030	+0.02811597	+0.98682696
<i>e</i>	0.1976135	<i>i</i>	14.29276	-0.00950260	+0.15963713
<i>P</i>	4.14	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 05 23	704	0.5+	0.3+	1998 07 02	691	0.3-	0.1+	1999 12 09	699	0.4-	1.4+
1998 05 23	704	0.9-	1.5-	1999 10 09	704	0.7+	0.1-	1999 12 09	699	(2.6+	1.8+)
1998 05 23	704	0.6-	1.4+	1999 10 09	704	0.6+	0.0	1999 12 16	704	0.1+	0.4-
1998 05 23	704	(4.5-	0.3+)	1999 10 09	704	0.5+	0.2+	1999 12 16	704	1.3-	1.2+
1998 06 21	691	0.4+	0.4-	1999 10 09	704	0.4+	0.0	1999 12 16	704	0.1-	0.1-
1998 06 21	691	0.5+	0.4-	1999 10 09	704	0.8+	0.1+	1999 12 16	704	0.6+	0.2-
1998 06 27	691	0.9+	0.5-	1999 11 01	703	0.0	0.4+	2000 01 09	704	0.3-	0.6-
1998 06 27	691	0.9+	0.0	1999 11 01	703	0.2+	0.8-	2000 01 09	704	0.0	0.7-
1998 06 27	691	0.9-	1.7-	1999 11 01	703	0.5-	0.4-	2000 01 09	704	0.8-	0.8-
1998 07 02	691	0.2-	0.3+	1999 11 01	703	0.4-	0.2+	2000 01 09	704	0.0	1.9-
1998 07 02	691	0.3-	0.2+	1999 12 09	699	0.5+	0.5+	2000 01 09	704	0.4-	0.6-

1998 MP₂₂ = 1999 WY₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	155.76615		(2000.0)	P	Q
<i>n</i>	0.29038829	ω	221.71416	+0.55177689	+0.82270405
<i>a</i>	2.2584821	Ω	82.20943	-0.72398573	+0.55390634
<i>e</i>	0.2303394	<i>i</i>	7.93346	-0.41398904	+0.12785074
<i>P</i>	3.39	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 06 24	704	0.7+	1.0-	1999 11 13	703	0.2-	0.8-	1999 12 10	704	0.5+	0.7+
1998 06 24	704	1.5+	1.5-	1999 11 13	703	0.4+	0.6+	1999 12 10	704	0.4+	0.4+
1998 06 24	704	(1.5+	2.8-)	1999 11 13	703	0.4+	0.3-	2000 01 03	704	1.0-	0.1+
1998 06 24	704	(2.1+	3.2-)	1999 11 13	703	0.5-	0.2+	2000 01 03	704	0.5-	0.4-
1998 06 26	704	0.5-	0.1+	1999 11 30	411	(2.4+	1.8+)	2000 01 03	704	0.1-	0.8-
1998 06 26	704	0.7-	0.8+	1999 11 30	411	0.1+	0.4-	2000 01 03	704	0.5+	0.5-
1998 06 26	704	0.9-	0.6+	1999 12 03	411	1.3-	1.2-	2000 01 04	704	0.1-	0.8+
1998 06 26	704	0.6-	1.3+	1999 12 03	411	0.9-	0.1-	2000 01 04	704	0.5+	0.3+
1998 06 30	704	0.2-	0.1-	1999 12 07	704	1.3-	0.1+	2000 01 04	704	0.0	0.5+
1998 06 30	704	0.0	0.6+	1999 12 07	704	0.4+	0.2-	2000 01 04	704	0.6+	0.3+
1998 06 30	704	0.4+	0.0	1999 12 07	704	0.3+	0.1+	2000 01 04	704	0.6+	0.3-
1998 06 30	704	1.3+	0.2-	1999 12 07	704	0.6+	0.3-				
1998 06 30	704	1.0-	1.2-	1999 12 10	704	0.5+	0.4+				

1998 MP₂₃ = 1982 BA₉ = 1992 JX₃

Id. A. Doppler, G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	313.23880		(2000.0)	P	Q
<i>n</i>	0.21101709	ω	350.39876	-0.44716059	-0.88506065
<i>a</i>	2.7942009	Ω	126.05179	+0.83088971	-0.46453693
<i>e</i>	0.1764034	<i>i</i>	9.20180	+0.33116415	-0.02954817
<i>P</i>	4.67	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 01 19	095	0.0	0.2-	1999 09 21	699	0.4-	0.6-	1999 11 07	704	0.7-	0.9-
1992 05 02	399	0.2+	0.7+	1999 09 21	699	0.4-	0.4+	1999 11 07	704	0.2+	0.1+
1992 05 02	399	(0.1-	2.7+)	1999 09 21	699	0.3+	0.1-	1999 11 07	704	0.3-	0.6-
1998 06 25	691	0.2+	0.8-	1999 10 02	704	0.3-	0.2+	1999 11 07	704	0.2-	0.6-

2000 JAN. 24

M.P.C. 37695

1998 06 25	691	0.7+	1.0+	1999 10 02	704	0.6-	0.2-	1999 11 07	704	0.3+	0.5-
1998 06 25	691	1.0+	0.2-	1999 10 02	704	0.6-	1.0+	1999 11 08	703	0.3-	0.4+
1998 06 30	691	0.6-	0.2-	1999 10 02	704	1.1-	0.1+	1999 11 08	703	0.5+	0.3-
1998 06 30	691	0.5-	0.2-	1999 10 02	704	0.0	0.9+	1999 11 08	703	0.0	0.1-
1998 06 30	691	0.5-	0.3-	1999 10 05	703	0.6+	0.7-	1999 11 08	703	0.4-	0.0
1999 09 08	699	1.5+	0.2+	1999 10 05	703	0.4+	0.5+	1999 12 13	699	0.1+	1.8+
1999 09 08	699	0.6+	0.5+	1999 10 05	703	0.2-	0.4-	1999 12 13	699	0.6+	0.5+
1999 09 08	699	0.4+	0.3+	1999 10 05	703	0.3+	0.4+	1999 12 13	699	1.4+	1.8+
1999 09 14	704	0.1-	0.6-	1999 10 08	704	0.2-	0.2-	2000 01 09	704	0.4+	0.5-
1999 09 14	704	0.5-	0.1-	1999 10 08	704	0.4-	0.0	2000 01 09	704	0.3-	1.6+
1999 09 14	704	0.2-	0.3-	1999 10 08	704	0.3-	0.0	2000 01 09	704	0.8+	1.0-
1999 09 14	704	0.4-	0.2-	1999 10 08	704	0.3-	0.2+	2000 01 09	704	1.0+	1.4-
1999 09 14	704	0.4-	0.5-	1999 10 08	704	0.4-	0.5+	2000 01 09	704	0.5+	1.0-

1998 MH₂₇ = 2000 AZ₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	167.19211		(2000.0)		P	Q	
n	0.27731206	ω	183.44783	+0.24342981		+0.96351634	
a	2.3289324	Ω	100.66368	-0.88715262		+0.26755340	
e	0.1803736	i	6.50054	-0.39204866		-0.00717284	
P	3.55	H	14.4	G	0.15	U	4

Residuals in seconds of arc

1998 06 24	704	0.2+	0.3+	1998 07 05	426	0.4+	0.4+	1999 12 08	704	0.3-	0.2+
1998 06 24	704	1.1+	0.8+	1998 07 05	426	0.1-	0.3-	1999 12 08	704	0.5+	0.5-
1998 06 24	704	(1.4-	2.2-)	1998 07 11	426	0.2-	1.5-	1999 12 08	704	0.2-	0.7-
1998 06 24	704	0.7-	1.2-	1998 07 11	426	0.5-	0.7-	2000 01 05	704	0.3-	0.4-
1998 06 24	704	1.1+	0.6-	1998 07 11	426	0.3-	1.1-	2000 01 05	704	0.1-	0.1-
1998 06 26	704	0.4-	0.2-	1998 07 11	426	0.6-	0.4-	2000 01 05	704	0.3-	0.4-
1998 06 26	704	0.3-	0.4+	1998 07 17	426	0.0	0.0	2000 01 05	704	0.2+	0.0
1998 06 26	704	0.2-	0.3+	1998 07 17	426	0.1-	0.1-	2000 01 06	704	0.5-	0.0
1998 06 26	704	0.8-	0.0	1998 07 21	704	0.5+	0.4+	2000 01 06	704	0.4+	0.4-
1998 07 03	426	0.0	0.2+	1998 07 21	704	0.1+	0.7+	2000 01 06	704	0.2+	0.2+
1998 07 03	426	1.0-	0.0	1998 07 21	704	0.1+	0.9+	2000 01 06	704	0.1+	0.2+
1998 07 03	426	0.2+	0.2+	1998 07 21	704	1.1+	0.7+	2000 01 06	704	0.2-	0.0
1998 07 05	426	0.6+	0.3+	1999 12 08	704	0.6+	1.3+				

1998 MV₂₇ = 1999 XY₁₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	108.74596		(2000.0)		P		Q
n	0.23818608	ω	47.49406		+0.88343852		+0.41875166
a	2.5774592	Ω	286.75041		-0.46780076		+0.76298117
e	0.1853134	i	12.68041		-0.02643553		+0.49244977
P	4.14	H	13.2	G	0.15	U	3

Residuals in seconds of arc

1998 06 24	704	0.2+	0.7-	1998 07 03	426	0.4+	0.0	1999 12 31	849	0.0	0.6+
1998 06 24	704	0.2-	0.3+	1998 07 21	704	1.7-	0.6+	1999 12 31	849	0.3-	0.9+
1998 06 24	704	1.9+	0.6+	1998 07 21	704	0.1-	0.1-	1999 12 31	849	0.3-	0.9+
1998 06 24	704	0.5-	0.8-	1998 07 21	704	0.6-	0.0	2000 01 03	704	0.5+	0.2+
1998 06 26	704	0.1-	0.3-	1998 07 21	704	0.3-	0.5-	2000 01 03	704	0.3-	0.0
1998 06 26	704	0.1-	0.2+	1999 12 12	704	0.2-	0.3+	2000 01 03	704	0.3-	0.2+
1998 06 26	704	1.0+	0.5+	1999 12 12	704	0.7-	0.3-	2000 01 03	704	0.5+	0.1+
1998 06 26	704	0.1+	0.4+	1999 12 12	704	0.7-	0.1-	2000 01 03	704	0.1-	0.3+
1998 06 26	704	0.8-	0.1-	1999 12 12	704	0.7-	0.0	2000 01 04	704	0.4+	0.2+
1998 07 01	426	0.4+	0.1-	1999 12 12	704	0.5-	0.3+	2000 01 04	704	0.6+	0.2-
1998 07 01	426	0.2+	0.3+	1999 12 15	704	0.1-	0.1-	2000 01 04	704	0.5+	0.6-
1998 07 01	426	0.1+	0.2+	1999 12 15	704	0.0	0.2-	2000 01 04	704	0.2+	0.5-
1998 07 03	426	0.3-	0.1-	1999 12 15	704	0.1+	0.1-	2000 01 04	704	0.4+	0.6-
1998 07 03	426	0.6+	0.4-	1999 12 15	704	0.3+	0.2-				
1998 07 03	426	0.1+	0.1+	1999 12 15	704	0.7+	1.1-				

1998 MS₃₁ = 1999 WG₁₁

Id. G. V. Williams, S. Nakano, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	99.42941		(2000.0)		P		Q
n	0.21771825	ω	248.25279		+0.84439224		+0.52941371
a	2.7365675	Ω	79.69568		-0.45557046		+0.79012519
e	0.1167578	i	4.78041		-0.28188172		+0.30890664
P	4.53	H	13.9	G	0.15	U	3

Residuals in seconds of arc

1998 06 24	704	0.5+	0.5-	1999 11 15	704	0.1+	0.2-	1999 12 04	703	0.8-	0.3+
1998 06 24	704	0.9+	0.6-	1999 11 15	704	0.1+	0.4-	1999 12 04	703	0.0	0.1-
1998 06 24	704	0.1-	0.5-	1999 11 15	704	0.0	0.2-	1999 12 04	703	0.2-	0.5+
1998 06 24	704	0.9+	0.1+	1999 11 15	704	0.1-	0.3-	1999 12 04	703	0.2-	0.6+
1998 06 24	704	1.6-	0.4-	1999 11 15	704	0.1+	0.2-	1999 12 05	691	0.3-	0.2-
1998 06 26	704	0.3-	0.2+	1999 11 15	704	0.1+	0.0	1999 12 05	691	0.3-	0.3-
1998 06 26	704	0.6-	0.3-	1999 11 15	704	0.2+	0.1-	1999 12 05	703	0.6-	0.5+
1998 06 26	704	0.0	0.1+	1999 11 15	704	0.0	0.5+	1999 12 05	691	0.2-	0.3-
1998 06 26	704	0.5+	1.3+	1999 11 15	704	0.2+	0.4+	1999 12 05	703	0.0	0.7+
1998 06 28	809	0.8-	0.2-	1999 11 17	704	0.5-	0.3+	1999 12 05	703	0.6+	0.6-
1998 06 28	809	1.5-	0.1+	1999 11 17	704	0.5+	0.0	1999 12 05	703	0.4+	0.5+
1998 06 28	809	0.7-	0.6+	1999 11 17	704	0.2-	0.4-	1999 12 06	691	0.1+	0.1-
1998 07 01	809	0.4+	1.7+	1999 11 30	691	0.1+	0.2-	1999 12 06	691	0.1-	0.2-
1998 07 01	809	1.0+	1.3+	1999 11 30	691	0.1+	0.2-	1999 12 06	691	0.2-	0.1-
1998 07 01	809	(1.3+	2.4+)	1999 11 30	691	0.1+	0.2-	1999 12 07	691	0.0	0.0
1998 07 26	704	1.0-	1.1-	1999 12 02	699	0.3+	0.2+	1999 12 07	691	0.2+	0.2+
1998 07 26	704	1.1+	0.6-	1999 12 02	699	0.7+	0.1-	1999 12 07	691	0.1+	0.1+
1998 07 26	704	1.0+	0.8-	1999 12 02	691	0.4-	0.1+	1999 12 07	704	0.0	0.0
1998 07 26	704	(2.4+	0.4+)	1999 12 02	691	0.5-	0.2+	1999 12 07	704	0.1-	0.1-
1999 10 30	703	0.5-	0.2+	1999 12 02	699	0.4+	0.5+	1999 12 07	704	0.4+	0.0
1999 10 30	703	0.1+	0.3+	1999 12 02	691	0.6-	0.3+	1999 12 07	704	0.8+	0.0
1999 10 30	703	0.0	0.3-	1999 12 03	678	0.4+	0.0	1999 12 07	704	0.1-	0.9-
1999 10 30	703	0.8-	0.0	1999 12 03	678	0.4+	0.3+	1999 12 08	704	0.3+	0.1+
1999 11 04	704	0.4-	0.1+	1999 12 03	691	0.3-	0.2-	1999 12 08	704	(2.7+	0.7+)
1999 11 04	704	0.6-	0.2+	1999 12 03	691	0.2-	0.2+	1999 12 08	704	0.1-	0.4-
1999 11 04	704	0.1+	0.1-	1999 12 03	691	0.4-	0.4-	1999 12 08	704	0.3+	0.4-
1999 11 04	704	0.8+	0.3-	1999 12 04	678	0.5+	0.7+	1999 12 12	691	0.1-	0.1+
1999 11 04	704	0.6+	0.4-	1999 12 04	678	0.8-	0.3+	1999 12 12	691	0.1-	0.1+
1999 11 14	704	0.2+	0.4-	1999 12 04	691	0.2-	0.3-	1999 12 12	691	0.0	0.0
1999 11 14	704	0.6+	0.3-	1999 12 04	691	0.1-	0.3-	1999 12 13	699	0.3-	1.6+
1999 11 14	704	0.0	0.0	1999 12 04	691	0.2-	0.3-	1999 12 13	699	(0.0	2.3+)
1999 11 14	704	0.3+	0.2-	1999 12 04	691	0.2-	0.2-	1999 12 13	699	0.1-	1.4+
1999 11 14	704	0.3+	0.4-	1999 12 04	691	0.3-	0.0				
1999 11 15	704	0.3+	0.2-	1999 12 04	691	0.2-	0.3-				

1998 MB₃₂ = 2000 AX₁₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	244.45240		(2000.0)		P		Q
n	0.23938799	ω	89.04924	-0.95907195		+0.08672000	
a	2.5688247	Ω	95.89018	-0.18325256		-0.91580496	
e	0.0452147	i	15.72301	+0.21586914		-0.39214910	
P	4.12	H	13.1	G	0.15	U	3

Residuals in seconds of arc

1998 06 24	704	0.4+	0.6+	1999 09 14	704	0.2+	0.6-	1999 12 16	704	0.2+	0.0
1998 06 24	704	0.3-	1.1-	1999 09 14	704	0.8-	0.4-	1999 12 16	704	0.2-	0.2-
1998 06 24	704	0.0	0.8+	1999 09 14	704	1.1-	1.9-	1999 12 16	704	0.3-	0.2-
1998 06 24	704	0.1-	0.6+	1999 10 02	704	0.1+	0.3+	2000 01 08	704	0.2+	0.2-
1998 06 26	704	0.6-	0.5+	1999 10 02	704	0.4+	0.2-	2000 01 08	704	0.5+	0.8-
1998 06 26	704	0.8+	1.1+	1999 10 02	704	0.4+	0.7+	2000 01 08	704	0.7+	0.1-
1998 06 26	704	(1.8-	2.9+)	1999 10 02	704	1.2+	0.2+	2000 01 08	704	0.8+	0.1-
1998 06 26	704	0.0	2.0+	1999 10 02	704	0.3-	0.2+	2000 01 08	704	0.4+	0.2-
1998 06 28	809	1.4+	0.9-	1999 11 07	704	0.8-	0.9+	2000 01 11	704	0.0	0.2+
1998 06 28	809	1.5+	1.5-	1999 11 07	704	0.4-	0.5+	2000 01 11	699	0.3+	0.4+
1998 06 28	809	1.5+	1.3-	1999 11 07	704	1.2-	0.1+	2000 01 11	704	0.6-	0.2-
1998 07 01	809	0.5-	0.8+	1999 11 07	704	1.1-	0.4-	2000 01 11	704	0.4+	0.3-
1998 07 01	809	1.0-	0.2+	1999 12 02	704	0.2+	0.2+	2000 01 11	699	0.7+	0.6+
1998 07 01	809	0.7-	0.7+	1999 12 02	704	0.2-	0.6+	2000 01 11	704	0.1-	0.2+

M.P.C. 37696

2000 JAN. 24

1998 08 20	566	0.8−	0.2−	1999 12 02	704	1.0−	0.1−	2000 01 11	704	0.8−	0.3+
1998 08 20	566	0.7−	0.7−	1999 12 02	704	0.0	0.2+	2000 01 11	699	0.4+	0.3+
1998 08 20	566	1.3−	1.3−	1999 12 16	704	0.7+	0.0				
1999 09 14	704	0.8+	0.4+	1999 12 16	704	1.1+	0.0				

1998 MC₃₂ = 1995 WD₄₂Id. G. V. Williams (*MPC* 32287); 1998 MC₃₂ = 1977 PC₁ (*ibid.*) is invalid

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	137.07204		(2000.0)		P		Q
<i>n</i>	0.27978488	ω	36.83999	+0.90267906		+0.41573494	
<i>a</i>	2.3151896	Ω	298.23952	−0.41873427		+0.78915327	
<i>e</i>	0.2117698	<i>i</i>	7.24243	−0.09915709		+0.45210792	
<i>P</i>	3.52	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 11 24	327	0.2−	0.1+	1998 07 21	704	2.2−	0.0	2000 01 01	104	0.5+	1.2−
1995 11 24	327	0.1+	0.0	1998 07 21	704	1.1+	2.0−	2000 01 01	104	0.1+	1.0−
1995 11 24	327	0.2+	0.1−	1998 07 21	704	1.0−	0.0	2000 01 01	104	0.3+	0.5−
1995 11 30	327	0.9+	0.3−	1998 07 26	704	0.8+	0.7+	2000 01 01	104	0.8−	1.0−
1995 11 30	327	0.6−	0.1−	1998 07 26	704	0.4+	0.3+	2000 01 04	704	0.7−	0.8−
1995 11 30	327	0.4−	0.3−	1998 07 26	704	1.3−	0.4−	2000 01 04	704	0.4−	0.7−
1998 06 24	704	0.3−	0.2−	1998 07 26	704	0.7+	0.4+	2000 01 04	704	0.3−	0.1−
1998 06 24	704	0.2+	0.2−	1999 11 11	703	0.8+	0.5+	2000 01 04	704	0.4−	0.3−
1998 06 24	704	0.2+	0.2+	1999 11 11	703	0.3+	1.6+	2000 01 04	704	0.4−	0.2−
1998 06 24	704	0.3−	0.1+	1999 11 11	703	0.9−	0.6+	2000 01 06	704	0.7−	0.8+
1998 06 26	704	0.2−	0.6−	1999 11 11	703	0.2+	1.9+	2000 01 06	704	0.1−	0.5−
1998 06 26	704	0.4−	0.3−	1999 12 07	704	0.6+	0.0	2000 01 06	704	0.4+	0.0
1998 06 26	704	0.2+	1.2−	1999 12 07	704	0.3+	0.7−	2000 01 06	704	0.3+	0.7+
1998 06 26	704	0.6−	1.2−	1999 12 07	704	0.3+	0.3+	2000 01 07	691	0.0	0.8−
1998 06 28	809	0.4−	0.8−	1999 12 07	704	1.1−	0.1−	2000 01 07	691	0.4+	0.2−
1998 06 28	809	1.1−	0.4−	1999 12 07	704	0.1−	0.6−	2000 01 07	691	0.2+	0.1−
1998 06 28	809	0.4−	0.5−	1999 12 08	704	0.5+	0.1−	2000 01 16	691	0.4+	0.9+
1998 07 01	809	0.5+	1.9+	1999 12 08	704	0.1+	0.4−	2000 01 16	691	0.4+	1.0+
1998 07 01	809	1.3+	1.2+	1999 12 08	704	0.5+	0.5−	2000 01 16	691	0.4+	1.0+
1998 07 01	809	1.2+	2.3+	1999 12 08	704	0.3+	0.7+				
1998 07 21	704	1.7+	0.1−	1999 12 08	704	1.5−	0.4+				

1998 MD₃₂ = 1999 XT₁₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	235.22070		(2000.0)		P		Q
<i>n</i>	0.29693876	ω	260.55103	−0.73061160		+0.68205333	
<i>a</i>	2.2251440	Ω	322.44262	−0.60421417		−0.66750632	
<i>e</i>	0.0917422	<i>i</i>	2.98850	−0.31801247		−0.29872824	
<i>P</i>	3.32	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 06 24	704	1.3+	0.0	1998 06 28	809	(2.1−	2.4−)	1999 12 10	704	0.9−	0.2−
1998 06 24	704	0.6−	0.5+	1998 06 28	809	(1.7−	2.6−)	1999 12 10	704	0.9+	0.4−
1998 06 24	704	1.2−	0.0	1998 07 01	809	0.1−	0.1+	1999 12 15	704	0.0	0.1−
1998 06 24	704	0.5−	1.1−	1998 07 01	809	0.3+	0.4+	1999 12 15	704	0.1−	0.1−
1998 06 24	704	(1.3−	2.4+)	1998 07 01	809	0.8+	0.6−	1999 12 15	704	1.2−	0.8−
1998 06 26	704	0.1+	0.7−	1999 12 07	703	0.4+	0.6+	1999 12 15	704	0.8−	0.4+
1998 06 26	704	(1.0−	2.6+)	1999 12 07	703	0.4+	0.5+	1999 12 15	704	0.1−	0.1+
1998 06 26	704	(3.0−	0.2−)	1999 12 07	703	0.5+	0.1+	2000 01 04	704	0.1+	0.7−
1998 06 26	704	0.2−	1.1+	1999 12 07	703	0.4+	0.4+	2000 01 04	704	0.2+	0.7−
1998 06 28	809	(1.5−	2.4−)	1999 12 10	704	0.3−	0.7+	2000 01 04	704	0.8+	0.1−

1998 MQ₃₂ = 2000 AJ₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	109.11823		(2000.0)		P		Q
<i>n</i>	0.23075561	ω	55.10934	+0.88278046		+0.41922338	
<i>a</i>	2.6324969	Ω	279.27047	−0.46964347		+0.77642269	
<i>e</i>	0.2019279	<i>i</i>	12.40502	−0.01156166		+0.47055240	
<i>P</i>	4.27	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 16	691	0.0	0.2−	1998 06 26	704	0.3−	0.3+	1998 07 26	704	1.7−	1.0+
1998 06 16	691	0.7+	0.7−	1998 06 26	704	0.5+	0.6+	1998 07 26	704	0.6−	1.4−
1998 06 16	691	0.1−	0.2−	1998 06 26	704	0.4−	0.5+	1998 07 26	704	0.9−	0.6+
1998 06 24	704	0.7−	0.0	1998 06 27	809	(0.3+	4.8−)	2000 01 03	704	0.2+	0.6+
1998 06 24	704	0.4+	0.1+	1998 06 27	809	(0.5−	4.7−)	2000 01 03	704	0.0	0.1+
1998 06 24	704	0.3−	0.7+	1998 06 27	809	(0.0	4.7−)	2000 01 03	704	0.2−	0.8+
1998 06 24	704	1.0−	0.0	1998 07 17	910	1.9+	0.0	2000 01 03	704	0.0	0.5−
1998 06 24	704	0.4−	0.8−	1998 07 17	910	1.1+	0.3−	2000 01 03	704	0.4+	0.3−
1998 06 26	809	(0.5+	3.6−)	1998 07 17	910	1.2+	0.2−	2000 01 04	704	0.5−	0.4+
1998 06 26	809	(0.1−	4.1−)	1998 07 22	910	0.1+	0.2−	2000 01 04	704	0.2−	0.2−
1998 06 26	809	(0.1+	4.2−)	1998 07 22	910	0.2+	0.2−	2000 01 04	704	0.2−	0.6−
1998 06 26	704	0.4−	0.1−	1998 07 23	910	0.6+	0.6−	2000 01 04	704	0.5+	0.4−
1998 06 26	704	0.6+	0.5+	1998 07 26	704	0.8−	0.9+				

1998 MN₃₃

Id. A. Doppler (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	46.94876		(2000.0)		P		Q
<i>n</i>	0.18874902	ω	83.58231	+0.95683190		−0.25354032	
<i>a</i>	3.0098596	Ω	291.03279	+0.16751325		+0.88059723	
<i>e</i>	0.1301355	<i>i</i>	8.75642	+0.23751217		+0.40033214	
<i>P</i>	5.22	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 24	704	0.5+	1.0−	1999 11 08	699	0.3−	0.5+	1999 12 15	704	0.1−	0.2+
1998 06 24	704	0.2+	0.9−	1999 11 08	699	0.4−	0.7+	1999 12 15	704	0.3+	0.2+
1998 06 24	704	0.2+	0.0	1999 11 08	699	0.2+	0.1−	1999 12 15	704	0.2+	1.3−
1998 06 24	704	1.0−	0.9−	1999 11 13	703	0.0	0.4+	1999 12 15	704	0.3−	0.4−
1998 06 24	704	1.5−	0.0	1999 11 13	703	0.1−	0.8+	1999 12 15	704	0.2+	0.3+
1998 06 26	704	1.4−	0.3−	1999 11 13	703	0.3−	0.5+	2000 01 03	704	0.5−	1.6+
1998 06 26	704	0.7−	0.8−	1999 11 13	703	0.1−	0.5+	2000 01 03	704	0.3−	1.7−
1998 06 26	704	0.2−	0.8−	1999 12 05	699	0.3+	1.1+	2000 01 03	704	0.1−	0.7−
1998 06 26	704	0.4+	0.7−	1999 12 05	699	0.9−	0.6+	2000 01 03	704	0.1+	1.2−
1998 06 28	809	(5.0+	1.9+)	1999 12 05	699	0.6−	0.7+	2000 01 04	704	0.6−	0.4+
1998 06 28	809	(3.5+	2.3+)	1999 12 10	704	0.5+	0.8−	2000 01 04	704	0.1−	0.9+
1998 06 28	809	(3.9+	1.7+)	1999 12 10	704	0.7+	1.1−	2000 01 04	704	0.1−	0.8+
1998 07 01	809	1.0+	1.7+	1999 12 10	704	0.5+	1.0−	2000 01 04	704	0.0	0.3+
1998 07 01	809	1.4+	1.5+	1999 12 10	704	0.6+	1.2−	2000 01 04	704	0.5+	0.1+
1998 07 01	809	1.3+	1.6+	1999 12 10	704	0.9+	1.3−				

1998 ML₃₅ = 1999 XP₁₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	36.19130		(2000.0)		P		Q
<i>n</i>	0.17533983	ω	82.07081	+0.90339311		−0.28291180	
<i>a</i>	3.1614209	Ω	293.88043	+0.08969837		+0.85953004	
<i>e</i>	0.0966432	<i>i</i>	20.63506	+0.41932695		+0.42563955	
<i>P</i>	5.62	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 24	704	1.4+	0.2−	1999 11 01	704	0.4−	0.6−	1999 12 12	704	0.3+	0.6+
1998 06 24	704	1.3−	0.5+	1999 11 01	704	0.3−	0.1+	1999 12 12	704	0.0	1.3+
1998 06 24	704	0.5+	1.3+	1999 11 01	704	0.2+	0.4+	2000 01 02	704	0.2−	0.6+
1998 06 24	704	0.6−	1.2−	1999 11 01	704	0.7+	0.6+	2000 01 02	704	1.7−	0.1−
1998 06 26	704	0.9−	0.8+	1999 12 11	704	0.3+	0.2+	2000 01 02	704	1.6+	1.1−
1998 06 26	704	1.3+	1.6+	1999 12 11	704	0.3+	0.1−	2000 01 02	704	0.1−	0.1+
1998 06 26	704	0.4−	1.6−	1999 12 11	704	0.2+	0.0	2000 01 02	704	0.0	0.1−
1998 06 26	704	1.5+	1.1−	1999 12 11	704	0.4−	0.0	2000 01 04	704	0.1−	1.0+
1998 07 01	809	0.5−	0.4+	1999 12 11	704	0.7−	1.0−	2000 01 04	704	0.8−	0.0
1998 07 01	809	0.1−	0.4−	1999 12 12	704	0.3+	0.2−	2000 01 04	704	1.1+	0.4−
1998 07 01	809	1.1−	0.1+	1999 12 12	704	0.4−	0.5−	2000 01 04	704	0.3−	0.0
1999 11 01	704	0.4−	0.8−	1999 12 12	704	0.3+	0.4+	2000 01 04	704	0.5+	0.4−

2000 JAN. 24

M.P.C. 37697

1998 MQ₃₅ = 1994 CJ₁₃ = 2000 AD₂₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	184.50101		(2000.0)		P		Q				
<i>n</i>	0.28899757	ω	182.60335		+0.06449001		+0.99195538				
<i>a</i>	2.2657218	Ω	91.10974		-0.91359247		+0.10260372				
<i>e</i>	0.2148983	<i>i</i>	6.25477		-0.40148453		-0.07414178				
<i>P</i>	3.41	<i>H</i>	16.0		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1994 02 08	809	0.1+	0.5-	1998 06 26	704	0.6-	0.2-	2000 01 07	691	0.2-	0.6+
1994 02 08	809	0.7+	0.6-	1998 06 26	704	0.1-	0.5-	2000 01 07	691	0.3+	0.3-
1994 02 08	809	0.7-	1.4+	1998 07 03	699	0.7-	1.2+	2000 01 07	691	0.0	0.2+
1998 06 24	704	1.0+	1.2-	1998 07 03	699	0.7+	0.6+	2000 01 12	691	0.0	0.7-
1998 06 24	704	0.1-	0.6+	1998 07 03	699	0.1+	0.7+	2000 01 12	691	0.1-	0.1-
1998 06 24	704	0.1+	0.2+	1998 07 16	699	0.3+	0.0	2000 01 12	691	0.1-	0.0
1998 06 26	704	0.0	1.2-	1998 07 16	699	0.1+	0.2+				
1998 06 26	704	1.0-	0.7-	1998 07 16	699	0.3+	0.2+				

1998 MJ₃₇ = 2000 AM₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	100.59502		(2000.0)		P		Q		
<i>n</i>	0.21814089	ω	227.96981		+0.91389136		+0.31999564		
<i>a</i>	2.7330317	Ω	111.97366		-0.24448194		+0.92508578		
<i>e</i>	0.2182139	<i>i</i>	15.62735		-0.32408512		+0.20449716		
<i>P</i>	4.52	<i>H</i>	13.9		<i>G</i>	0.15	<i>U</i>	3	
Residuals in seconds of arc									
1998 06 23	699	0.2-	0.1+	1998 07 01	809	(3.4+ 0.2+)	1999 12 14	704	0.6- 1.0-
1998 06 23	699	0.6-	0.5+	1998 07 01	809	(3.6+ 0.3-)	1999 12 14	704	0.2- 1.3-
1998 06 23	699	0.7-	0.2+	1998 07 01	809	(3.6+ 0.1-)	1999 12 14	704	0.1- 0.8-
1998 06 24	704	0.4+	1.0-	1998 07 02	699	0.1+ 0.5-	2000 01 05	704	0.7+ 0.6+
1998 06 24	704	0.3+	0.2+	1998 07 02	699	0.2+ 0.1-	2000 01 05	704	0.9+ 0.7+
1998 06 24	704	0.1-	0.3+	1998 07 02	699	0.1+ 0.1-	2000 01 05	704	0.2+ 0.3+
1998 06 24	704	0.1-	0.5+	1998 08 18	566	0.2- 0.6+	2000 01 05	704	0.4+ 0.1-
1998 06 24	704	0.1-	0.4+	1998 08 18	566	0.5+ 0.3-	2000 01 06	704	0.2- 1.3+
1998 06 28	809	(2.5+ 0.3+)		1998 08 18	566	0.3+ 0.1-	2000 01 06	704	0.4- 1.0+
1998 06 28	809	(2.4+ 0.5+)		1999 12 14	704	0.7- 0.3-	2000 01 06	704	0.3- 0.3+
1998 06 28	809	(2.3+ 0.9+)		1999 12 14	704	0.1- 0.1-			

1998 MX₄₀ = 1999 XN₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	98.54146		(2000.0)		P		Q		
<i>n</i>	0.21403990	ω	244.23144		+0.90152435		+0.40485132		
<i>a</i>	2.7678309	Ω	91.56632		−0.32163679		+0.86314518		
<i>e</i>	0.2312168	<i>i</i>	8.79281		−0.28948857		+0.30178767		
<i>P</i>	4.60	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 06 24	704	0.1+	1.0+	1999 12 07	704	0.2−	0.7−	2000 01 12	046 0.0 0.2+
1998 06 24	704	1.5+	0.5+	1999 12 07	704	0.2−	0.1−	2000 01 13	046 0.4+ 0.8+
1998 06 24	704	0.3−	0.5−	1999 12 07	704	0.4−	0.0	2000 01 13	046 0.8+ 0.4+
1998 06 24	704	1.5+	0.1−	1999 12 08	704	0.6−	0.5−	2000 01 13	046 0.1− 0.3−
1998 06 28	809	0.5−	0.5+	1999 12 08	704	1.4+	0.4+	2000 01 14	046 0.3− 0.2+
1998 06 28	809	1.0−	0.5+	1999 12 08	704	0.7−	0.4+	2000 01 14	046 0.4+ 0.0
1998 06 28	809	1.1−	0.5+	1999 12 08	704	0.4−	0.6+	2000 01 14	046 0.4+ 0.2−
1998 07 01	809	0.2−	0.8−	2000 01 12	046	0.3+	0.4−	2000 01 14	046 0.5− 0.3+
1998 07 01	809	0.0	0.4−	2000 01 12	046	0.5−	0.7−	2000 01 14	046 0.3− 0.1−
1998 07 01	809	0.1−	1.0−	2000 01 12	046	0.2−	0.5−		
1999 12 07	704	0.7+	0.1+	2000 01 12	046	0.1−	0.0		

1998 MG₄₆ = 1999 XG₂₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	160.14724		(2000.0)		P		Q				
n	0.28914340	ω	24.81170		+0.68060150		+0.72514174				
a	2.2649600	Ω	288.26906		-0.68925150		+0.58528696				
e	0.2293186	i	6.32696		-0.24842295		+0.36277904				
P	3.41	H	16.6	G	0.15	U	5				
Residuals in seconds of arc											
1998 06 23	699	1.0-	0.6+	1998 06 28	809	0.6+	1.3+	1999 12 04	691	0.9-	0.1+
1998 06 23	699	0.9-	0.7+	1998 06 28	809	1.5+	0.6+	1999 12 13	691	0.3+	0.4-
1998 06 23	699	0.5-	0.0	1998 06 28	809	1.3+	0.9+	1999 12 13	691	0.5+	1.1+
1998 06 24	704	0.4-	0.4+	1998 07 01	809	0.4-	0.5-	1999 12 13	691	0.2+	0.2-
1998 06 24	704	0.8-	0.8-	1998 07 01	809	0.2+	0.1-	1999 12 16	691	0.1+	0.3+
1998 06 24	704	1.0+	0.0	1998 07 01	809	0.1-	0.1-	1999 12 16	691	0.1+	0.3+
1998 06 24	704	1.6-	1.1-	1999 12 04	691	1.3-	0.2+	1999 12 16	691	0.0	0.3+
1998 06 24	704	0.1+	0.9-	1999 12 04	691	1.2-	0.9+				

1998 MA₄₇ = 1978 WG₁₄ = 1982 VA₃ = 2000 AZ₁₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	108.92398		(2000.0) <th></th> <th>P</th> <th></th> <th>Q</th> <th></th> <th></th>		P		Q		
n	0.23795806	ω	233.69748		+0.95473735		+0.29604121		
a	2.5791055	Ω	109.06683		-0.26215793		+0.88340384		
e	0.2169660	i	1.75327		-0.14053402		+0.36325922		
P	4.14	H	15.2		G	0.15	U	3	
Residuals in seconds of arc									
1978 11 29	675	0.2+	0.7-	1998 06 28	809	0.2-	0.3+	2000 01 08	704 0.1+ 0.3+
1978 11 30	675	(5.2-	0.3+)	1998 06 28	809	0.7-	0.5+	2000 01 08	704 0.8- 0.6+
1982 11 14	381	0.4+	1.1+	1998 06 28	809	0.1+	0.1+	2000 01 08	704 0.1- 0.1+
1982 11 14	381	0.5-	1.1-	1998 07 01	809	0.1-	1.1+	2000 01 08	704 0.3- 1.6+
1998 06 24	704	0.1+	0.6-	1998 07 01	809	0.9+	0.7+	2000 01 08	691 0.0 0.3+
1998 06 24	704	0.1-	0.0	1998 07 01	809	0.7+	1.2+	2000 01 08	691 0.0 0.9+
1998 06 24	704	1.6-	0.7+	2000 01 03	704	0.6+	0.0	2000 01 08	691 0.2- 0.5+
1998 06 24	704	0.5+	1.6-	2000 01 03	704	0.7+	0.9-		
1998 06 24	704	(5.6-	0.2-)	2000 01 03	704	0.1+	0.1-		

1998 NN = 2000 AQ₁₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	125.90384		(2000.0)		P		Q				
<i>n</i>	0.22758323	ω	169.96800		+0.72018304		+0.67861398				
<i>a</i>	2.6569041	Ω	145.83106		-0.65301057		+0.73328284				
<i>e</i>	0.1629635	<i>i</i>	14.88677		-0.23433647		+0.04218224				
<i>P</i>	4.33	<i>H</i>	14.2		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1998 07 15	699	0.6+	0.5-	1998 08 23	704	(2.7-	0.7-)	1999 12 03	704	0.2+	0.9-
1998 07 15	699	0.1-	0.0	1998 08 23	704	0.5+	1.0+	2000 01 08	704	1.0-	0.1+
1998 07 15	699	0.2-	0.6+	1998 08 23	704	1.5+	0.0	2000 01 08	704	0.9+	0.3+
1998 07 16	699	0.2-	0.4-	1998 08 23	704	(2.2-	0.0)	2000 01 08	704	0.5+	0.7+
1998 07 16	699	0.0	0.1+	1998 08 25	120	0.3-	0.1+	2000 01 08	704	0.6+	0.4+
1998 07 16	699	0.4-	0.4+	1998 08 26	120	0.0	0.4-	2000 01 08	704	0.2+	0.4+
1998 08 17	704	(0.6+	4.8-)	1998 08 26	120	0.4-	0.1+	2000 01 10	704	0.7-	0.5+
1998 08 17	704	0.9-	0.2-	1998 08 26	120	0.2-	0.5+	2000 01 10	704	0.4-	0.4-
1998 08 17	704	0.0	0.7-	1999 12 03	704	0.6+	0.2+	2000 01 10	704	0.4-	0.8-
1998 08 17	704	0.1+	0.5-	1999 12 03	704	0.1-	0.3-	2000 01 10	704	0.2+	0.0
1998 08 23	704	(1.4-	2.3-)	1999 12 03	704	0.6-	0.1-				

1998 OK

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	191.37233	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26636902	ω 87.14453	+0.06005840	+0.99811403
<i>a</i>	2.3922886	Ω 186.34066	-0.95543747	+0.05379641
<i>e</i>	0.0958857	<i>i</i> 6.60500	-0.28901943	+0.02956907
<i>P</i>	3.70	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 04 28	704	0.3-	0.4+	1998 07 22	104	0.8+	0.5-	1998 08 30	699	0.2-	0.2+
1997 04 28	704	0.9+	0.6-	1998 07 26	699	0.4-	0.7+	1998 09 10	108	0.3-	1.2-
1997 04 28	704	0.3+	1.0+	1998 07 26	699	0.1-	0.3+	1998 09 10	108	0.3+	1.4+
1997 04 28	704	0.7+	0.2-	1998 07 26	699	0.3+	0.6+	1998 09 10	108	0.7-	0.1+
1997 04 28	704	1.3-	0.5-	1998 07 26	104	0.0	0.1-	1998 09 10	108	0.1-	1.4-
1997 04 28	704	0.5+	0.0	1998 07 26	104	0.0	0.0	1998 09 15	699	0.1+	0.1-
1997 04 28	704	0.4-	0.1+	1998 07 26	104	0.2+	0.1-	1998 09 15	699	0.2+	0.7-
1997 04 28	704	0.9+	0.3-	1998 07 26	104	0.2+	0.3-	1998 09 15	699	0.7-	0.1+
1997 04 28	704	(2.9-	0.2-)	1998 07 30	104	0.1+	0.4+	1998 10 12	699	0.4-	0.0
1997 04 28	704	1.1-	0.5+	1998 07 30	104	0.0	0.2+	1998 10 12	699	0.3+	0.1+
1998 06 19	699	0.5+	0.5+	1998 07 30	104	0.2-	0.3+	1998 10 12	699	0.7+	0.3+
1998 06 19	699	0.8-	0.3-	1998 07 30	104	0.2-	0.2+	1999 12 06	108	0.3-	0.4-
1998 06 19	699	0.7-	0.6-	1998 07 30	104	0.2-	0.3+	1999 12 06	108	(2.6+	0.6-)
1998 07 19	104	0.4+	0.6-	1998 08 13	104	0.8-	0.4-	1999 12 07	108	1.0+	0.9-
1998 07 19	104	0.7+	0.3+	1998 08 13	104	0.4-	0.3-	1999 12 14	704	0.5-	0.1-
1998 07 19	104	0.0	0.0	1998 08 13	104	0.4-	0.2-	1999 12 14	704	0.4-	0.1-
1998 07 19	104	1.6-	0.4-	1998 08 13	104	0.0	0.4-	1999 12 14	704	0.0	0.3-
1998 07 19	104	0.3+	0.4+	1998 08 13	104	0.1+	0.2-	1999 12 14	704	0.7-	1.1-
1998 07 19	104	1.5+	0.6+	1998 08 15	108	1.0-	1.6+	1999 12 14	704	0.2+	0.2-
1998 07 20	104	0.1+	0.0	1998 08 15	108	(1.4+	2.4+)	1999 12 30	104	0.9+	0.1+
1998 07 20	104	0.8+	0.2-	1998 08 15	108	1.0+	0.9-	1999 12 30	104	1.4+	1.4+
1998 07 21	104	0.5+	0.3+	1998 08 17	704	0.2-	0.4-	1999 12 30	104	0.1+	1.4+
1998 07 21	104	0.2-	0.3+	1998 08 17	704	0.0	0.5+	2000 01 11	704	0.5-	0.5+
1998 07 21	104	0.1-	0.6+	1998 08 17	704	0.0	0.3+	2000 01 11	704	0.1-	0.1+
1998 07 21	104	0.1-	0.5-	1998 08 17	704	0.0	0.1-	2000 01 11	704	0.4-	0.4+
1998 07 22	104	0.2-	0.2-	1998 08 17	704	0.5+	0.0	2000 01 11	704	0.9-	0.3-
1998 07 22	104	0.6+	0.1-	1998 08 30	699	0.1-	0.1+				
1998 07 22	104	0.8+	0.3-	1998 08 30	699	0.8-	0.5+				

1998 OW = 1999 XP₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	36.01481	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23939282	ω 152.95691	+0.44320160	-0.89017269
<i>a</i>	2.5687902	Ω 270.57195	+0.80215831	+0.44644776
<i>e</i>	0.1642428	<i>i</i> 6.06574	+0.40014297	+0.09097793
<i>P</i>	4.12	<i>H</i> 15.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 20	910	1.2+	0.2-	1999 11 03	704	1.2+	0.4+	2000 01 03	704	0.4+	0.3+
1998 07 20	910	0.4+	0.1-	1999 12 07	704	0.5-	0.2+	2000 01 03	704	0.2+	0.3+
1998 07 20	910	0.1+	0.6-	1999 12 07	704	0.4-	0.1+	2000 01 03	704	0.3+	0.2+
1998 07 21	910	0.6-	0.6+	1999 12 07	704	0.5+	0.1-	2000 01 03	704	0.1+	0.1-
1998 07 21	910	0.5-	0.3+	1999 12 07	704	0.4+	0.2-	2000 01 05	704	0.0	0.4-
1998 07 21	910	0.7-	0.7+	1999 12 10	704	0.9-	0.5-	2000 01 05	704	0.5+	0.9-
1998 07 23	910	0.8+	0.4-	1999 12 10	704	0.7-	0.1-	2000 01 05	704	0.1+	0.9-
1998 07 24	910	0.4+	0.3-	1999 12 10	704	0.0	0.5+	2000 01 05	704	0.1+	0.3+
1998 07 24	910	0.3+	0.1-	1999 12 20	704	0.6+	0.3+	2000 01 05	704	0.0	0.3+
1998 07 26	910	0.3-	0.2-	1999 12 20	704	0.2+	0.2+	2000 01 06	704	0.7-	0.2+
1998 07 27	910	0.4-	0.1-	1999 12 20	704	0.3-	0.4-	2000 01 06	704	0.1-	0.6-
1998 07 27	910	0.4-	0.3-	1999 12 20	704	0.4-	0.3-	2000 01 06	704	0.7-	0.3-
1999 11 03	704	0.2+	0.0	1999 12 20	704	0.1-	0.1+				
1999 11 03	704	0.1-	0.7+	2000 01 03	704	0.3+	0.1+				

1998 OD₁ = 1991 UV₄

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	130.01768	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26748618	ω 84.72190	+0.98098591	+0.16976925
<i>a</i>	2.3856230	Ω 265.47992	-0.19318217	+0.90067659
<i>e</i>	0.1434071	<i>i</i> 5.41342	+0.01863585	+0.39995011
<i>P</i>	3.68	<i>H</i> 15.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1991 10 31	399	0.5+	0.4-	1998 07 31	699	0.4-	0.1-	1998 08 30	699	0.2-	0.2-
1991 10 31	399	0.5-	0.4+	1998 07 31	699	0.4-	0.2+	1998 08 30	699	0.2-	0.5+
1998 06 26	699	0.7-	1.3-	1998 08 11	104	0.2+	0.1-	1998 08 30	699	0.1-	0.2+
1998 06 26	699	0.2-	0.5+	1998 08 11	104	0.0	0.1-	1998 09 15	699	0.1-	0.5+
1998 06 26	699	0.4-	0.0	1998 08 11	104	0.3-	0.1-	1998 09 15	699	0.3-	0.3+
1998 07 20	104	0.1+	0.0	1998 08 11	104	0.3-	0.0	1998 09 15	699	0.2+	0.4+
1998 07 20	104	0.7+	0.3+	1998 08 17	704	0.2-	0.1-	1998 09 19	104	0.0	0.1-
1998 07 20	104	1.1+	0.4+	1998 08 17	704	0.1-	0.5+	1998 09 19	104	0.0	0.1-
1998 07 21	104	0.5-	0.1+	1998 08 17	704	(1.7+	2.6+)	1998 09 19	104	0.3-	0.3-
1998 07 21	104	0.5-	0.4+	1998 08 17	704	0.6-	0.1+	1998 09 22	699	0.5-	0.2-
1998 07 21	104	0.1-	0.2+	1998 08 17	704	0.3-	0.2-	1998 09 22	699	0.1-	0.6-
1998 07 21	104	0.6+	0.3-	1998 08 20	104	0.7-	0.2-	1998 09 22	699	0.0	0.5-
1998 07 21	104	1.1+	0.4+	1998 08 20	104	0.5-	0.1-	1998 09 23	104	0.0	0.3+
1998 07 23	104	0.5+	0.1-	1998 08 20	104	0.3-	0.1-	1998 09 23	104	0.5+	0.2+
1998 07 23	104	0.5+	0.3+	1998 08 21	566	(2.5-	1.8-)	1998 09 23	104	0.6+	0.1+
1998 07 23	104	0.5+	0.3+	1998 08 21	566	(2.2-	1.6-)	1998 09 23	104	0.9+	0.3+
1998 07 26	699	1.6+	0.1-	1998 08 21	566	(2.4-	1.9-)	1998 10 11	699	0.5+	0.8-
1998 07 26	699	(2.0+	0.0)	1998 08 23	704	1.1-	0.0	1998 10 11	699	0.2-	0.1+
1998 07 26	699	1.2+	0.5+	1998 08 23	704	0.3-	0.2-	1998 10 11	699	0.4+	0.3-
1998 07 29	104	0.3-	0.3+	1998 08 23	704	0.4+	1.1-	2000 01 04	104	0.7-	0.2+
1998 07 29	104	0.1+	0.4+	1998 08 23	704	0.1-	0.6-	2000 01 04	104	0.3-	0.2+
1998 07 29	104	0.7+	0.4+	1998 08 23	104	1.1-	0.1-	2000 01 16	104	0.6+	0.2+
1998 07 29	104	0.4+	0.3+	1998 08 23	104	0.4-	0.0	2000 01 16	104	0.7+	0.4+
1998 07 29	104	0.7+	0.4+	1998 08 23	104	0.9-	0.2+				
1998 07 31	699	0.2+	0.2-	1998 08 23	104	0.9-	0.2-				

1998 OE₁

Id. L. Tesi (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	96.88763	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.18989066	ω 41.78671	+0.91893091	+0.31748522
<i>a</i>	2.9977839	Ω 298.26978	-0.39378975	+0.77200039
<i>e</i>	0.2248035	<i>i</i> 15.40982	+0.02226241	+0.55065282
<i>P</i>	5.19	<i>H</i> 14.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 20	104	0.5+	0.1-	1998 07 30	104	0.4-	0.8+	1998 08 27	704	0.3+	0.3-
1998 07 20	104	1.0+	0.7+	1998 07 30	104	0.8-	0.7+	1998 08 27	704	0.1+	0.0
1998 07 20	104	0.2+	0.0	1998 07 31	699	0.6+	0.1+	1998 08 27	704	0.7+	1.3+
1998 07 20	104	0.0	0.2+	1998 07 31	699	0.5-	0.6-	1998 09 17	699	0.3-	0.7-
1998 07 20	104	0.2+	0.0	1998 07 31	699	0.2-	0.2-	1998 09 17	699	0.0	0.6-
1998 07 21	104	0.2-	0.7-	1998 08 11	104	0.1+	0.2-	1998 09 17	699	0.0	1.0-
1998 07 21	104	0.6+	0.3-	1998 08 11	104	0.1-	0.3-	1999 12 07	104	(1.7+	3.1+)
1998 07 21	104	(2.8+	1.2-)	1998 08 11	104	0.0	0.2-	1999 12 07	104	(2.0+	2.9+)
1998 07 26	699	0.6+	0.4+	1998 08 11	104	0.1-	0.2+	1999 12 07	104	(1.9+	2.4+)
1998 07 26	699	0.2-	0.3-	1998 08 24	704	0.3+	0.3+	1999 12 12	704	1.0-	0.7-
1998 07 26	699	1.2+	0.9+	1998 08 24	704	0.8-	0.2-	1999 12 12	704	0.5-	0.2-
1998 07 26	104	0.3+	1.0-	1998 08 24	704	0.2-	0.2-	1999 12 12	704	0.9-	1.0-
1998 07 26	104	0.8-	0.9-	1998 08 24	704	0.4-	0.9+	1999 12 30	104	0.7+	0.3-
1998 07 26	104	1.3-	0.5-	1998 08 27	704	0.6+	0.5+	1999 12 30	104	0.7+	1.0+
1998 07 30	104	0.1-	0.5+	1998 08 27	704	0.7-	0.6+	1999 12 30	104	1.1+	1.4+

2000 JAN. 24

M.P.C. 37699

1998 OJ₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	120.76493	(2000.0)	P	Q
<i>n</i>	0.23657672	ω 92.25947	+0.89321124	+0.40900043
<i>a</i>	2.5891351	Ω 243.64719	-0.44845379	+0.84046892
<i>e</i>	0.1949148	<i>i</i> 12.03202	+0.03260187	+0.35543022
<i>P</i>	4.17	<i>H</i> 14.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 21	595	0.2-	0.4+	1998 08 24	704	0.9+	0.7+	1998 10 22	595	0.5-	0.2-
1998 07 21	595	0.9-	0.1-	1998 08 24	704	0.8+	0.3+	1998 10 22	595	1.0-	0.1-
1998 07 22	595	0.8-	0.3+	1998 08 24	704	0.6+	0.1+	1999 12 14	704	0.9+	1.3-
1998 07 22	595	0.6-	1.0+	1998 08 24	704	0.5-	1.1+	1999 12 14	704	0.6-	0.4+
1998 07 23	595	0.1-	0.9+	1998 08 27	704	1.0+	1.0-	1999 12 14	704	0.3+	0.5-
1998 07 23	595	0.4-	0.5-	1998 08 27	704	0.1-	0.3-	1999 12 31	595	0.2-	0.0
1998 07 30	595	0.4-	0.1+	1998 08 27	704	0.7+	0.1+	1999 12 31	595	1.0+	0.9+
1998 07 30	595	0.6-	0.2-	1998 08 27	704	0.1+	0.4-	2000 01 02	595	0.6+	0.3+
1998 08 03	127	0.0	0.1+	1998 09 09	595	0.3-	0.1-	2000 01 03	595	0.5+	0.4+
1998 08 03	127	0.1-	0.2+	1998 09 09	595	0.9-	0.4+	2000 01 07	704	0.1-	0.4-
1998 08 04	127	1.6+	0.4-	1998 09 09	595	0.6-	0.5-	2000 01 07	704	0.5-	0.2+
1998 08 04	127	1.4+	0.4-	1998 09 10	595	0.6-	0.4-	2000 01 07	704	0.4-	0.7+
1998 08 14	595	0.3+	0.5-	1998 09 10	595	0.8-	0.3+	2000 01 11	704	0.6-	0.0
1998 08 14	595	0.4+	0.4-	1998 09 10	595	0.2-	0.3-	2000 01 11	704	0.2-	0.7-
1998 08 15	595	0.0	0.4+	1998 10 20	595	0.2+	0.4-	2000 01 11	704	0.6-	0.7+
1998 08 15	595	0.1-	0.2-	1998 10 20	595	1.3+	0.6+				

1998 OT₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	150.18299	(2000.0)	P	Q
<i>n</i>	0.28915131	ω 29.13512	+0.88369120	+0.45835398
<i>a</i>	2.2649187	Ω 303.27938	-0.44842225	+0.77091139
<i>e</i>	0.1129635	<i>i</i> 6.51640	-0.13419149	+0.44227509
<i>P</i>	3.41	<i>H</i> 15.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 03	699	0.8-	0.2-	1998 08 18	684	0.0	0.3-	2000 01 04	704	0.5+	0.8+
1998 07 03	699	0.4+	0.0	1998 08 18	684	0.4-	0.5-	2000 01 04	704	0.7-	0.1-
1998 07 03	699	0.3+	0.2-	1998 08 19	684	0.2-	0.2-	2000 01 04	704	0.4+	0.2+
1998 07 24	684	0.4-	0.1-	1998 08 19	684	0.2-	0.5-	2000 01 04	704	0.1+	0.1-
1998 07 24	684	0.2-	0.1-	1998 08 23	704	0.3+	0.8-	2000 01 04	704	0.8+	0.3-
1998 07 25	684	0.0	0.3+	1998 08 23	704	0.4+	0.9-	2000 01 04	704	0.1+	0.3-
1998 07 25	684	0.1+	0.0	1998 08 23	704	0.2+	0.7-	2000 01 04	704	0.2-	0.2-
1998 07 26	684	0.2+	0.2+	1998 08 23	704	1.6+	0.3-	2000 01 06	704	0.6-	0.3-
1998 07 26	684	0.1+	0.2+	1998 08 27	699	0.3+	0.1-	2000 01 06	704	0.1-	0.5-
1998 07 27	684	0.3+	0.1+	1998 08 27	699	0.2-	0.6+	2000 01 06	704	0.2+	0.0
1998 07 27	684	0.1+	0.1+	1998 08 27	699	1.1-	0.2-	2000 01 06	704	0.1+	0.7-
1998 08 01	684	0.3+	0.1+	1998 09 12	684	0.1-	0.2+	2000 01 06	684	0.3+	0.2-
1998 08 01	684	0.3+	0.3+	1998 09 12	684	0.2+	0.0	2000 01 06	684	0.2-	0.3-
1998 08 17	704	0.7+	0.0	1998 09 12	684	0.1+	0.1-	2000 01 06	684	0.2+	0.2-
1998 08 17	704	0.6-	0.9+	1998 09 12	684	0.1+	0.1-	2000 01 07	684	0.4-	0.2-
1998 08 17	704	1.0-	1.1+	2000 01 04	704	0.7-	1.2+	2000 01 07	684	0.2-	0.1-
1998 08 17	704	0.9-	0.4+	2000 01 04	704	0.4-	0.0	2000 01 15	120	0.4+	0.9+
1998 08 17	704	0.2-	0.9+	2000 01 04	704	0.4-	0.0	2000 01 15	120	0.9+	0.8+

1998 OO₃ = 2000 AG₁₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	146.99212	(2000.0)	P	Q
<i>n</i>	0.26922691	ω 91.21734	+0.70641276	+0.70692365
<i>a</i>	2.3753288	Ω 223.79904	-0.66794785	+0.64935495
<i>e</i>	0.1292853	<i>i</i> 2.91627	-0.23415100	+0.28035174
<i>P</i>	3.66	<i>H</i> 16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 07 21	910	0.6+	0.4-	1998 07 29	910	0.3-	0.2+	1998 08 17	704	0.3+	0.6+
1998 07 21	910	0.5+	0.5-	1998 07 29	910	0.2-	0.2+	2000 01 05	704	0.1-	0.0

1998 07 21	910	0.3-	0.4-	1998 07 29	910	0.3-	0.1+	2000 01 05	704	0.2-	0.0
1998 07 23	910	0.3-	0.0	1998 07 30	910	0.4+	0.4+	2000 01 05	704	0.3-	0.1+
1998 07 24	910	0.1-	0.0	1998 07 30	910	0.6+	0.6+	2000 01 09	704	0.4-	0.2-
1998 07 24	910	0.3-	0.3+	1998 07 30	910	0.6+	0.6+	2000 01 09	704	0.0	0.5+
1998 07 26	910	0.1-	0.0	1998 08 17	704	0.8-	0.2-	2000 01 09	704	0.7+	0.6-
1998 07 27	910	0.2-	0.0	1998 08 17	704	(3.0+	0.7-)	2000 01 09	704	0.3+	0.2+
1998 07 27	910	0.2-	0.1-	1998 08 17	704	0.3+	1.5-				

1998 OV₄ = 2000 AQ₁₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	95.76079	(2000.0)	P	Q
<i>n</i>	0.21845712	ω 207.34574	+0.98535459	+0.14942350
<i>a</i>	2.7303935	Ω 143.76535	-0.11967247	+0.94918955
<i>e</i>	0.1780217	<i>i</i> 7.98901	-0.12146949	+0.27696898
<i>P</i>	4.51	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 03	699	0.0	0.5+	1998 08 17	704	0.3-	0.2-	1998 08 26	120	0.4-	0.1-
1998 07 03	699	0.3-	0.2+	1998 08 17	704	0.1-	0.3+	2000 01 05	704	0.3-	0.4+
1998 07 03	699	0.1-	0.4-	1998 08 17	704	0.1+	0.6+	2000 01 05	704	0.2-	0.5+
1998 07 29	120	0.4+	0.2-	1998 08 23	704	1.3+	0.9-	2000 01 05	704	0.5+	0.3-
1998 07 29	120	0.3+	0.2+	1998 08 23	704	0.5-	0.4+	2000 01 05	704	0.3-	0.1-
1998 07 29	120	0.3-	0.4+	1998 08 23	704	0.8+	0.1+	2000 01 05	704	0.1+	0.3-
1998 07 29	120	0.1+	0.1+	1998 08 23	704	1.8-	0.6+	2000 01 07	704	0.1+	0.3+
1998 07 30	120	0.1+	0.1-	1998 08 23	704	0.4-	1.6-	2000 01 07	704	0.1-	0.1-
1998 07 30	120	0.0	0.3-	1998 08 25	120	0.4-	0.1-	2000 01 07	704	0.3-	0.2+
1998 07 30	120	0.2-	0.4-	1998 08 25	120	0.3-	0.5-	2000 01 07	704	0.2+	0.1-
1998 07 30	120	0.3+	0.3-	1998 08 25	120	0.1+	0.1+	2000 01 07	704	0.3+	0.4-
1998 08 17	704	0.3+	0.6+	1998 08 25	120	0.1-	0.2+				
1998 08 17	704	0.7+	0.3-	1998 08 26	120	0.6+	1.1+				

1998 OX₆ = 1999 XP₁₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	143.52413	(2000.0)	P	Q
<i>n</i>	0.20384181	ω 350.22547	+0.46151921	+0.87195710
<i>a</i>	2.8593932	Ω 307.07450	-0.79947277	+0.32898363
<i>e</i>	0.0678292	<i>i</i> 11.81582	-0.38450396	+0.36257493
<i>P</i>	4.84	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 20	327	0.4-	0.0	1998 08 22	327	0.4-	0.1+	1999 09 27	704	0.6-	0.2-
1998 07 20	327	0.4-	0.0	1998 08 23	704	0.6-	0.2-	1999 09 27	704	0.6-	0.3+
1998 07 20	327	0.4-	0.1+	1998 08 23	704	0.6-	0.1+	1999 09 27	704	0.3-	0.3-
1998 07 28	327	0.8+	0.1+	1998 08 23	704	0.7-	0.6+	1999 09 27	704	0.6-	0.1-
1998 07 28	327	0.7+	0.2-	1998 08 23	704	1.5-	0.0	1999 11 01	704	0.5-	0.0
1998 07 28	327	0.7+	0.2-	1998 08 23	704	0.4-	0.1+	1999 11 01	704	0.2-	0.4-
1998 07 28	327	0.5+	0.1-	1998 08 23	327	0.6-	0.0	1999 11 01	704	0.2+	0.1-
1998 07 29	327	0.1-	0.4-	1998 08 23	327	0.6-	0.1+	1999 11 01	704	0.1-	0.1-
1998 07 29	327	0.9+	0.5-	1998 08 23	327	0.6-	0.0	1999 11 01	704	0.1-	0.3+
1998 07 29	327	0.0	0.3+	1998 08 26	699	0.4-	0.1+	1999 12 12	704	0.7+	0.3+
1998 08 02	327	0.9+	0.4+	1998 08 26	699	0.6-	0.3-	1999 12 12	704	0.1+	0.1-
1998 08 02	327	0.8+	0.0	1998 08 26	699	0.0	0.0	1999 12 12	704	0.5+	0.3+
1998 08 02	327	1.1+	0.2+	1998 09 14	704	0.1-	0.1+	1999 12 12	704	0.5+	0.7+
1998 08 04	699	0.4+	0.1-	1998 09 14	704	0.6-	0.4-	1999 12 12	704	0.6+	0.8+
1998 08 04	699	0.7+	0.2-	1998 09 14	704	0.3+	0.7-	1999 12 15	704	0.5+	0.2-
1998 08 04	699	0.8+	0.2+	1998 09 14	704	0.2+	0.6+	1999 12 15	704	0.2+	0.6-
1998 08 17	704	0.2+	0.3-	1998 09 14	704	0.2+	1.5+	1999 12 15	704	0.0	0.4-
1998 08 17	704	0.6-	0.6-	1998 09 18	704	1.0-	0.5+	1999 12 15	704	0.0	0.7-
1998 08 17	704	0.3-	0.8-	1998 09 18	704	1.1+	0.3-	1999 12 15	704	0.0	0.8-
1998 08 17	704	0.2-	0.1-	1998 09 18	704	0.3+	1.3-	2000 01 02	704	0.1-	0.5-
1998 08 17	704	0.6+	0.3+	1998 09 18	704	0.6+	0.9+	2000 01 02	704	0.3-	0.2+
1998 08 22	327	0.6-	0.1+	1998 09 18	704	0.5+	0.8+	2000 01 02	704	0.3-	0.0
1998 08 22	327	0.5-	0.1+	1999 09 27	704	0.7-	0.2+	2000 01 02	704	0.3+	1.0+

1998 OY₆ = 1999 XK₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	265.84947		(2000.0)	P		Q	
<i>n</i>	0.23229469	ω	242.70455	-0.97466404	+0.15191338		
<i>a</i>	2.6208562	Ω	305.58843	-0.05120223	-0.86602179		
<i>e</i>	0.0914952	<i>i</i>	11.64686	-0.21773457	-0.47637021		
<i>P</i>	4.24	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 20	327	0.8-	0.3-	1998 08 23	704	0.9-	1.1+	1999 11 01	704	0.0	0.2-
1998 07 20	327	0.6-	0.2+	1998 08 23	704	(2.3-	0.8+)	1999 11 01	704	0.4-	0.3-
1998 07 20	327	0.9-	0.1-	1998 08 23	704	0.2-	0.7-	1999 12 12	704	0.0	0.6-
1998 07 28	327	0.6+	0.1-	1998 08 23	704	0.5+	0.6+	1999 12 12	704	0.1-	0.4-
1998 07 28	327	0.8+	0.2+	1998 08 23	327	0.7-	0.2-	1999 12 12	704	0.2-	0.3-
1998 07 28	327	0.8+	0.0	1998 08 23	327	0.6-	0.2-	1999 12 12	704	0.4+	0.1+
1998 07 28	327	0.8+	0.3+	1998 08 23	327	0.2-	0.3-	1999 12 12	704	0.4+	0.0
1998 07 29	327	1.0+	0.2+	1998 08 26	699	0.2-	0.7-	1999 12 15	704	0.1+	0.1+
1998 07 29	327	1.2+	0.3+	1998 08 26	699	0.5+	0.1-	1999 12 15	704	0.7-	0.4-
1998 07 29	327	0.8+	0.3+	1998 08 26	699	1.1+	0.2-	1999 12 15	704	0.2-	0.2-
1998 08 17	704	0.8-	0.7-	1998 08 26	327	0.1-	0.3-	1999 12 15	704	0.3-	0.1+
1998 08 17	704	0.2+	0.3+	1998 08 26	327	0.3-	0.3-	1999 12 15	704	0.4-	0.2+
1998 08 17	704	0.4-	0.9-	1998 08 26	327	(1.1+	2.2-)	2000 01 03	704	0.6+	0.2-
1998 08 17	704	0.8-	0.9+	1998 08 30	327	0.2+	0.2+	2000 01 03	704	0.2+	0.6-
1998 08 17	704	0.4+	0.0	1998 08 30	327	0.1+	0.2+	2000 01 03	704	0.8+	0.1-
1998 08 22	327	0.3-	0.0	1998 08 30	327	0.4+	0.0	2000 01 03	704	0.9+	1.0+
1998 08 22	327	0.1-	0.2+	1999 11 01	704	0.6-	1.3+	2000 01 03	704	0.2-	0.1+
1998 08 22	327	0.2-	0.1+	1999 11 01	704	0.2+	0.1+				
1998 08 23	704	1.1-	0.2-	1999 11 01	704	0.2-	0.3+				

1998 OJ₇ = 2000 AD₁₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	143.79227		(2000.0)	P		Q	
<i>n</i>	0.26324382	ω	109.68172	+0.90953067	+0.41034749		
<i>a</i>	2.4111853	Ω	226.15583	-0.40735527	+0.84847711		
<i>e</i>	0.1555365	<i>i</i>	5.25832	-0.08255695	+0.33421779		
<i>P</i>	3.74	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 30	699	1.8-	1.0+	1998 08 23	327	0.0	0.1-	1998 09 14	704	0.8+	0.8-
1998 06 30	699	0.4-	0.7+	1998 08 23	327	0.0	0.1-	1998 09 14	704	0.5+	0.4-
1998 06 30	699	0.6+	0.3-	1998 08 23	327	0.1+	0.0	1998 09 14	704	0.3+	0.3+
1998 07 28	327	0.4+	0.4-	1998 08 24	704	0.1-	0.2+	1998 09 18	704	0.1-	1.0-
1998 07 28	327	0.4+	0.6-	1998 08 24	704	0.4-	0.0	1998 09 18	704	0.2+	0.9-
1998 07 28	327	0.5+	0.6-	1998 08 24	704	0.0	0.6+	1998 09 18	704	0.5+	0.0
1998 07 29	327	0.5+	0.6-	1998 08 24	704	0.8-	0.5+	1998 09 18	704	0.6+	0.0
1998 07 29	327	0.4+	0.2-	1998 08 25	327	0.0	0.1+	1998 09 18	704	0.5+	0.8-
1998 07 29	327	0.5+	0.3-	1998 08 25	327	0.1-	0.2+	1998 10 11	699	0.9+	1.5+
1998 07 29	327	0.2+	0.2-	1998 08 25	327	0.2-	0.1+	1998 10 11	699	0.1-	0.0
1998 07 29	327	0.4+	0.2-	1998 08 26	699	0.1-	0.9+	1998 10 11	699	0.3-	0.1-
1998 07 29	327	0.0	0.3-	1998 08 26	699	0.0	0.8+	1999 12 14	704	0.9-	0.2+
1998 08 02	327	0.0	0.6-	1998 08 26	699	0.3-	0.8+	1999 12 14	704	0.6+	0.2-
1998 08 02	327	0.2+	0.8-	1998 08 27	704	1.0+	0.8+	1999 12 14	704	0.0	0.3-
1998 08 02	327	0.4+	0.3-	1998 08 27	704	1.5-	1.0+	1999 12 14	704	0.3-	1.0+
1998 08 17	704	0.5+	0.3-	1998 08 27	704	0.2+	0.4+	1999 12 31	699	(2.4+	0.8-)
1998 08 17	704	0.2-	0.1+	1998 08 27	704	0.3+	0.9+	1999 12 31	699	0.4+	0.8+
1998 08 17	704	0.5+	0.3+	1998 08 27	704	(0.7-	2.1+)	1999 12 31	699	(2.7+	0.3-)
1998 08 17	704	0.3+	0.4-	1998 08 27	327	0.1-	0.1+	2000 01 05	704	0.7-	0.5-
1998 08 17	704	0.2+	0.9-	1998 08 27	327	0.1+	0.1+	2000 01 05	704	0.0	0.3+
1998 08 18	566	0.1-	0.4-	1998 08 27	327	0.0	0.1+	2000 01 05	704	0.0	0.3-
1998 08 18	566	0.2+	0.6-	1998 09 01	327	0.0	0.1+	2000 01 07	704	0.2+	0.6-
1998 08 18	566	0.4-	0.2-	1998 09 01	327	0.4-	0.2-	2000 01 07	704	0.2-	0.2-
1998 08 22	327	1.4-	0.1-	1998 09 01	327	0.1+	0.3-	2000 01 07	704	0.5+	0.8-
1998 08 22	327	0.0	0.6+	1998 09 14	704	1.9-	2.0+	2000 01 07	704	0.1+	0.1-
1998 08 22	327	0.1-	0.1-	1998 09 14	704	1.1-	1.5-				

1998 OP₈ = 1999 XK₂₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	0.10076		(2000.0)	P		Q	
<i>n</i>	0.28958517	ω	201.04386	-0.61609186	-0.78425806		
<i>a</i>	2.2626559	Ω	287.06095	+0.73318457	-0.53698299		
<i>e</i>	0.0887970	<i>i</i>	4.39628	+0.28787359	-0.31078699		
<i>P</i>	3.40	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 26	809	(4.1+	5.8+)	1998 08 30	699	0.1-	0.6+	2000 01 03	678	0.3-	0.5-
1998 07 26	809	(3.6+	5.4+)	1999 12 07	704	(2.6+	0.4+)	2000 01 03	678	0.4+	0.6-
1998 07 26	809	(3.7+	5.7+)	1999 12 07	704	2.0+	1.5-	2000 01 05	106	0.3-	0.0
1998 07 27	809	(1.2+	3.8+)	1999 12 07	704	0.4-	1.2-	2000 01 05	106	0.1-	0.0
1998 07 27	809	(1.9+	3.9+)	1999 12 07	704	0.9-	0.9-	2000 01 05	106	0.1-	0.3+
1998 07 27	809	(1.9+	4.4+)	1999 12 08	704	0.8+	0.5+	2000 01 05	704	0.3-	0.2-
1998 08 17	704	1.0+	0.5+	1999 12 08	704	0.9-	1.9+	2000 01 05	704	0.3-	0.2-
1998 08 17	704	0.4+	0.5+	1999 12 08	704	1.0-	0.0	2000 01 05	704	0.1-	0.2-
1998 08 17	704	1.2-	0.4+	1999 12 08	704	(2.6-	1.8-)	2000 01 05	704	0.3+	0.1-
1998 08 17	704	0.6+	0.4+	1999 12 13	691	0.2-	0.1+	2000 01 06	106	0.0	0.1+
1998 08 17	704	(2.0-	2.4+)	1999 12 13	691	0.2-	0.2+	2000 01 06	106	0.1-	0.2+
1998 08 23	704	0.8+	1.4-	1999 12 13	691	0.1-	0.1+	2000 01 06	106	0.1-	0.2+
1998 08 23	704	(2.4+	0.6+)	1999 12 16	691	0.1-	0.1+	2000 01 07	691	0.2-	0.0
1998 08 23	704	0.2+	0.9-	1999 12 16	691	0.2-	0.1+	2000 01 07	691	0.2-	0.0
1998 08 23	704	(2.5+	1.9+)	1999 12 16	691	0.2-	0.2+	2000 01 07	691	0.1+	0.3-
1998 08 28	699	0.7+	0.3+	1999 12 30	699	1.3+	0.0	2000 01 09	691	1.1+	1.1+
1998 08 28	699	0.2-	0.1+	1999 12 30	699	0.2+	0.2-	2000 01 09	691	1.1+	1.3+
1998 08 28	699	0.7-	0.2+	1999 12 30	699	0.1+	0.1+	2000 01 09	691	0.7+	0.9+
1998 08 30	699	0.5-	0.3+	2000 01 02	678	0.6-	0.8-				
1998 08 30	699	1.2-	0.5-	2000 01 02	678	1.2-	0.5-				

1998 OF₁₀ = 2000 AJ₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	208.33754		(2000.0)	P		Q	
<i>n</i>	0.29878656	ω	119.59492	+0.00328035	+0.99876095		
<i>a</i>	2.2159605	Ω	150.46810	-0.94879524	+0.01879408		
<i>e</i>	0.1447644	<i>i</i>	5.78194	-0.31587472	-0.04607982		
<i>P</i>	3.30	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 30	699	(3.9-	3.3-)	1998 08 23	704	0.2+	0.9-	1999 12 14	704	1.2-	0.4+
1998 06 30	699	(3.3-	3.6-)	1998 08 23	699	0.2-	0.1-	1999 12 14	704	0.9-	0.5+
1998 06 30	699	(3.7-	3.6-)	1998 08 23	704	0.8-	0.7+	1999 12 14	704	1.3-	0.2+
1998 07 26	809	0.6+	1.8+	1998 08 23	704	1.0-	0.6-	1999 12 14	704	1.5-	1.1-
1998 07 26	809	0.2+	1.4+	1998 08 23	699	0.5+	0.1-	1999 12 14	704	1.0-	0.3-
1998 07 26	809	1.1+	1.6+	1998 08 23	704	1.2-	0.3-	2000 01 05	704	1.0+	0.1+
1998 07 27	809	0.8+	0.4-	1998 08 23	704	0.4+	0.3+	2000 01 05	704	1.0+	0.1+
1998 07 27	809	0.7+	0.4-	1998 08 23	699	0.4+	0.1-	2000 01 05	704	1.0+	0.1+
1998 07 27	809	0.4+	0.0	1998 08 28	699	1.1+	0.2+	2000 01 05	704	1.2+	0.1+
1998 08 17	704	1.1-	0.3-	1998 08 28	699	0.4+	0.1-	2000 01 07	704	1.8+	0.1-
1998 08 17	704	0.7-	0.9-	1998 08 28	699	0.6+	0.2-	2000 01 07	704	0.4+	0.9+
1998 08 17	704	0.5-	0.1-	1998 09 21	699	0.1-	0.9+	2000 01 07	704	0.7-	0.4-
1998 08 17	704	0.9-	1.1-	1998 09 21	699	0.1+	0.4+				
1998 08 17	704	0.9-	1.7-	1998 09 21	699	0.2+	0.5+				

1998 OQ₁₀ = 2000 AQ₅₅

Epoch 2000 Feb. 26.

2000 JAN. 24

M.P.C. 37701

1995 08 22	809	0.2+	0.4+	1998 08 18	133	1.4+	1.9+	1999 12 15	703	0.1-	0.6+
1995 08 24	809	0.3-	0.1-	1998 08 19	133	0.3-	0.3-	1999 12 18	699	0.5+	0.4+
1995 08 25	809	0.8-	0.4-	1998 08 19	133	0.4-	0.4+	1999 12 18	699	0.3+	0.4+
1995 09 17	809	0.0	0.6-	1998 08 19	133	0.4-	0.5+	1999 12 18	699	0.2-	0.6+
1995 09 18	809	0.7+	0.2+	1998 08 21	566	0.3-	0.2+	2000 01 04	704	0.2-	0.1-
1995 09 20	809	1.1+	0.5-	1998 08 21	566	0.1-	0.1+	2000 01 04	704	0.2-	0.3-
1995 09 22	809	0.4+	0.2+	1998 08 21	566	0.0	0.7+	2000 01 04	704	0.5-	0.5-
1998 07 26	809	0.8+	1.0-	1998 08 23	704	0.3+	0.9+	2000 01 04	704	0.2-	0.8-
1998 07 26	809	0.1-	0.9-	1998 08 23	699	0.1-	0.1+	2000 01 04	704	0.2-	0.6-
1998 07 26	809	0.8+	1.4-	1998 08 23	704	0.8-	0.3+	2000 01 06	704	0.0	0.2-
1998 07 27	809	(0.5+ 3.6-)		1998 08 23	704	0.7+	0.1+	2000 01 06	704	0.0	0.3-
1998 07 27	809	(0.5- 2.6-)		1998 08 23	699	0.7+	0.0	2000 01 06	704	0.4-	0.2-
1998 07 27	809	(0.6- 3.3-)		1998 08 23	704	1.9-	1.4-	2000 01 06	704	0.2+	0.2-
1998 08 17	704	1.0+	0.2+	1998 08 23	699	0.3-	0.3-	2000 01 06	704	0.2-	0.3-
1998 08 17	704	0.2-	0.7-	1998 08 28	699	0.0	0.3+	2000 01 15	120	0.2+	0.4-
1998 08 17	704	0.1+	0.1-	1998 08 28	699	0.1+	0.7-	2000 01 16	120	0.0	0.6-
1998 08 17	704	0.9-	1.3-	1998 08 28	699	0.1-	0.1-				
1998 08 17	704	0.4-	0.2-	1999 12 15	703	0.3+	1.0+				

1998 OK₁₁ = 2000 AQ₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	252.63469		(2000.0)	P		Q	
n	0.29802801	ω	95.20144	-0.62639745	+0.77717376		
a	2.2197190	Ω	135.82262	-0.74504335	-0.57419741		
e	0.0608164	i	4.95781	-0.22920873	-0.25748454		
P	3.31	H	14.8	G	0.15	U	4

Residuals in seconds of arc

1998 07 26	809	0.2+	0.4+	1998 08 23	704	0.6-	0.7-	1999 12 14	704	0.1-	0.3+
1998 07 26	809	0.4-	0.4+	1998 08 23	704	0.2+	0.3-	2000 01 05	704	0.0	0.0
1998 07 26	809	0.2+	0.2-	1998 08 23	704	1.9-	1.3+	2000 01 05	704	0.1+	0.1-
1998 07 27	809	0.5+	0.1-	1998 08 23	704	0.5+	1.0-	2000 01 05	704	0.4-	0.2+
1998 07 27	809	0.1+	0.2-	1998 08 27	699	1.7+	0.1-	2000 01 05	704	0.0	0.2-
1998 07 27	809	0.2+	0.1-	1998 08 27	699	1.0+	0.4-	2000 01 05	704	0.1+	0.4+
1998 08 17	704	0.7-	0.1-	1998 08 27	699	0.4-	0.5+	2000 01 06	704	0.9+	0.2-
1998 08 17	704	0.0	0.6+	1999 12 14	704	0.2-	0.3-	2000 01 06	704	0.1+	0.2+
1998 08 17	704	0.1+	0.2+	1999 12 14	704	0.3-	1.5-	2000 01 06	704	0.1-	0.2+
1998 08 17	704	0.8-	0.6-	1999 12 14	704	0.0	0.8+				
1998 08 17	704	0.1+	0.3+	1999 12 14	704	0.0	0.4+				

1998 OL₁₁ = 1999 XY₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	85.51811		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21505646	ω	60.46713	+0.94198781	-0.30131029
a	2.7591017	Ω	316.59288	+0.18109131	+0.82721489
e	0.2110269	i	12.42795	+0.28260380	+0.47426537
P	4.58	H	14.7	G 0.15	U 4

Residuals in seconds of arc

1998 07 26	809	1.4+	0.5+	1998 08 17	704	0.1-	0.5-	1998 08 30	699	1.1+	0.6+
1998 07 26	809	0.0	0.7+	1998 08 17	704	0.1-	0.2+	1999 12 10	704	0.7-	0.3+
1998 07 26	809	0.1+	0.6+	1998 08 17	704	0.5-	0.2+	1999 12 10	704	0.1+	1.4+
1998 07 27	809	0.9+	0.7-	1998 08 17	704	0.5-	0.7-	1999 12 10	704	1.5-	0.8+
1998 07 27	809	0.9+	0.8-	1998 08 17	704	0.6-	1.5-	1999 12 15	704	0.6-	0.6+
1998 07 27	809	0.6+	0.6-	1998 08 23	699	0.0	0.1+	1999 12 15	704	1.5-	0.5-
1998 08 15	046	0.8-	0.1+	1998 08 23	704	0.9+	1.2+	1999 12 15	704	0.9-	0.5+
1998 08 15	046	0.3-	0.1+	1998 08 23	699	0.1+	0.2+	1999 12 15	704	0.5-	0.2+
1998 08 15	046	0.5-	0.1-	1998 08 23	704	1.0-	1.0+	2000 01 03	704	0.4+	0.4+
1998 08 15	046	0.1-	0.3+	1998 08 23	704	0.5-	0.2-	2000 01 03	704	0.9+	0.3-
1998 08 15	046	0.6-	0.2-	1998 08 23	699	0.3-	0.9+	2000 01 03	704	0.8+	0.8-
1998 08 16	046	0.5-	0.5-	1998 08 23	704	0.0	1.5-	2000 01 03	704	0.2+	0.4-
1998 08 16	046	0.7-	0.0	1998 08 28	699	0.7+	1.0+	2000 01 03	704	0.4+	0.1-
1998 08 16	046	0.4-	0.9-	1998 08 28	699	0.6+	0.6+	2000 01 04	704	0.7+	0.1-
1998 08 16	046	0.6-	0.4-	1998 08 28	699	(2.2+ 0.9+)		2000 01 04	704	0.7+	1.0-
1998 08 16	046	0.9-	0.3-	1998 08 30	699	1.3+	0.3-	2000 01 04	704	0.0	0.5-
1998 08 16	046	0.8-	0.4-	1998 08 30	699	1.7+	0.8+	2000 01 04	704	0.9+	0.6-

1998 OZ₁₁ = 2000 AB₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	116.25068		(2000.0)	P	Q
n	0.28568708	ω	36.70100	+0.96442375	-0.26004189
a	2.2831914	Ω	338.22575	+0.20162025	+0.83995932
e	0.1226873	i	7.37130	+0.17098569	+0.47628411
P	3.45	H	15.1	G 0.15	U 4

Residuals in seconds of arc

1998 07 22	428	0.9+	1.0+	1998 08 23	704	1.6+	0.3-	1999 12 04	703	1.4-	0.7+
1998 07 22	428	0.2-	0.3-	1998 08 25	428	0.3+	0.6-	1999 12 04	703	1.1+	0.2-
1998 07 28	428	0.9-	0.5-	1998 08 25	428	0.2+	0.6-	2000 01 04	704	0.4+	0.6+
1998 07 29	428	0.4-	0.1-	1998 09 14	699	0.8+	1.3+	2000 01 04	704	0.1-	0.1-
1998 07 30	428	0.7-	0.8-	1998 09 14	699	1.6+	0.2-	2000 01 04	704	0.5+	1.0+
1998 07 30	428	0.8-	0.3-	1998 09 14	699	1.4+	0.3+	2000 01 04	704	0.8+	0.0
1998 08 12	428	(5.9- 0.5-)		1998 09 15	428	1.0+	0.3+	2000 01 04	704	0.6+	1.3-
1998 08 12	428	1.1-	0.3-	1998 09 15	428	0.3+	0.1-	2000 01 06	704	0.2-	0.2-
1998 08 17	704	1.6-	1.1+	1998 09 26	691	0.7-	0.1+	2000 01 06	704	0.3-	0.7-
1998 08 17	704	1.2-	0.5+	1998 09 26	691	0.5-	0.3+	2000 01 06	699	0.1+	0.0
1998 08 17	704	0.7-	1.0+	1998 09 26	691	0.6-	0.2+	2000 01 06	704	0.3-	0.5-
1998 08 17	704	0.8-	0.6+	1998 10 10	428	0.6+	0.6-	2000 01 06	699	0.5-	0.8+
1998 08 23	704	0.7-	0.3-	1998 10 10	428	0.8+	0.8-	2000 01 06	699	0.2+	0.4+
1998 08 23	704	1.0+	0.0	1999 12 04	703	0.2-	0.7+				
1998 08 23	704	0.4+	0.1+	1999 12 04	703	0.2+	0.8+				

1998 OD₁₂ = 1999 XC₁₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	248.93544		(2000.0)	P	Q
n	0.26621136	ω	219.22390	-0.85149033	+0.52418936
a	2.3932330	Ω	352.35254	-0.45130213	-0.74596245
e	0.0757467	i	5.94114	-0.26700301	-0.41081083
P	3.70	H	14.5	G 0.15	U 3

Residuals in seconds of arc

1997 04 28	704	0.0	0.4-	1998 08 17	704	0.1-	0.6-	1999 12 12	704	0.9-	0.3-
1997 04 28	704	0.1-	0.5-	1998 08 17	704	0.4-	0.2+	1999 12 12	704	0.4-	0.4+
1997 04 28	704	0.9-	0.2-	1998 08 17	704	0.4-	0.9+	1999 12 12	704	0.1+	0.5+
1997 04 28	704	0.1-	1.0-	1998 08 17	704	0.5-	0.1-	1999 12 12	704	0.2+	0.7+
1997 04 28	704	(2.9- 1.5-)		1998 08 19	566	0.7+	0.2-	1999 12 15	704	0.8-	0.5-
1998 07 27	428	0.1+	0.2-	1998 08 19	566	0.5-	0.6-	1999 12 15	704	0.2+	0.0
1998 07 27	428	0.5-	0.1-	1998 08 19	566	1.0+	1.5-	1999 12 15	704	0.3+	0.3-
1998 07 28	428	1.5+	1.2+	1998 08 23	704	1.2-	1.0+	1999 12 15	704	0.3-	0.1+
1998 07 29	428	0.5+	0.6-	1998 08 23	704	0.5-	1.2-	1999 12 15	704	0.2-	0.7-
1998 07 29	428	1.9+	0.3+	1998 08 23	704	1.6-	1.3+	2000 01 02	704	0.1+	0.6+
1998 07 29	428	0.1+	0.4-	1998 08 23	704	0.8+	0.5+	2000 01 02	704	0.6+	0.3+
1998 07 30	428	0.9+	0.7+	1998 08 23	704	0.6-	1.7+	2000 01 02	704	0.5+	0.1+
1998 07 31	428	(2.2+ 0.5+)		1998 08 25	428	0.0	0.3-	2000 01 02	704	1.5+	0.5+
1998 07 31	428	0.1-	0.4+	1998 08 25	428	0.3+	0.2-	2000 01 04	704	0.2-	0.2+
1998 08 11	428	0.9-	0.3-	1998 09 15	428	0.5+	0.2+	2000 01 04	704	0.1-	0.4-
1998 08 11	428	0.5-	0.5-	1998 09 15	428	0.8+	0.1-	2000 01 04	704	0.3-	0.2-
1998 08 11	428	1.2-	0.7-	1998 10 10	428	0.1+	1.7-	2000 01 04	704	0.0	1.2-
1998 08 17	704	0.1-	1.2-	1998 10 10	428	1.1+	0.4-	2000 01 04	704	0.0	1.0-

1998 ON₁₂ = 2000 AD₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	147.88457		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26675772	ω	175.17892	+0.85363320	+0.52044178
a	2.3899642	Ω	153.42548	-0.47946561	+0.80104326
e	0.2115027	i	2.72006	-0.20352663	+0.29575337
P	3.69	H	14.8	G 0.15	U 3

M.P.C. 37702

1998 06 29	704	0.6+	0.5−	1998 08 19	566	0.4+	0.3−	1998 11 10	910	0.4−	0.8−
1998 06 29	704	0.7−	1.3+	1998 08 19	566	0.6+	0.7−	1998 11 10	910	0.4−	1.1−
1998 07 04	699	0.0	0.6−	1998 08 23	704	1.0−	1.4+	1998 11 11	910	0.4+	0.6−
1998 07 04	699	0.4+	0.4+	1998 08 23	704	0.2+	0.4+	1998 11 11	910	0.5+	0.5−
1998 07 04	699	0.0	0.1−	1998 08 23	704	0.0	0.6+	1998 11 11	910	0.5+	0.6−
1998 07 26	809	(2.5+	0.1+)	1998 08 23	704	0.6−	0.6+	1999 12 31	699	0.2−	0.5+
1998 07 26	809	(2.5+	0.0)	1998 08 23	704	(1.2−	3.1+)	1999 12 31	699	0.4+	1.6+
1998 07 26	809	(2.2+	0.3−)	1998 09 21	699	0.2−	0.1+	1999 12 31	699	0.3+	0.8+
1998 07 26	699	1.0+	0.5+	1998 09 21	699	0.2+	0.2+	2000 01 05	704	0.2−	0.1+
1998 07 26	699	0.8+	0.6+	1998 09 21	699	0.7+	0.3+	2000 01 05	704	0.4−	0.7+
1998 07 26	699	0.7+	0.2+	1998 10 12	699	0.7+	1.0+	2000 01 05	704	0.4+	0.6−
1998 07 27	809	(3.5+	1.0+)	1998 10 12	699	0.3−	0.2+	2000 01 05	704	0.0	0.0
1998 07 27	809	(2.9+	1.3+)	1998 10 12	699	0.5+	0.8+	2000 01 05	704	0.1−	0.4+
1998 07 27	809	(3.1+	1.0+)	1998 10 20	910	0.1+	0.2−	2000 01 06	704	0.0	0.4−
1998 08 17	704	0.1−	1.6−	1998 10 20	910	0.3+	0.2−	2000 01 06	704	0.3+	0.6−
1998 08 17	704	0.6−	0.4+	1998 10 20	910	0.3+	0.3−	2000 01 06	704	0.0	0.3+
1998 08 17	704	0.3−	0.3−	1998 10 21	910	0.3−	0.1−				

1998 OR₁₂ = 1989 YC₉ = 2000 AT₆₈

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	38.32653		(2000.0)	P	Q
n	0.19672434	ω	274.92997	+0.69210442	−0.72072211
a	2.9279523	Ω	131.19148	+0.68124724	+0.63421819
e	0.0641972	i	3.00005	+0.23852394	+0.27986949
P	5.01	H	13.3	G 0.15	U 4

Residuals in seconds of arc

1989 12 20	413	2.1+	0.6−	1998 09 14	704	0.9+	0.3+	1999 12 08	704	0.1+	0.5−
1989 12 20	413	2.4−	0.5+	1998 09 14	704	0.7+	0.5−	1999 12 08	704	0.1+	0.1+
1989 12 20	413	0.2+	0.7+	1998 09 14	704	0.3−	1.3−	1999 12 08	704	0.1−	0.1+
1998 07 26	809	0.8+	1.6+	1998 09 14	704	0.6−	0.8+	1999 12 08	704	0.2+	0.2+
1998 07 26	809	0.4+	0.5+	1998 09 14	704	0.8+	0.0	2000 01 05	704	0.1+	0.1−
1998 07 26	809	0.3−	1.2+	1998 09 18	704	1.3+	1.5−	2000 01 05	704	0.2+	0.9+
1998 07 27	809	0.7+	0.1−	1998 09 18	704	0.2+	0.0	2000 01 05	704	0.2+	0.4+
1998 07 27	809	0.2+	0.0	1998 09 18	704	1.1+	1.1+	2000 01 05	704	0.2+	0.5+
1998 07 27	809	0.3+	0.3−	1999 11 04	704	0.8+	0.6−	2000 01 05	704	0.7−	0.0
1998 08 17	704	0.7−	0.1−	1999 11 04	704	0.6−	0.5−	2000 01 06	704	0.4+	0.1+
1998 08 17	704	1.3−	0.3−	1999 11 04	704	0.1−	0.7−	2000 01 06	704	0.2+	0.3+
1998 08 17	704	1.5−	0.4−	1999 11 04	704	0.3−	1.0−	2000 01 06	704	0.0	0.7+
1998 08 17	704	1.1−	0.1−	1999 11 04	704	0.8−	1.2−	2000 01 06	704	0.1+	0.8+
1998 08 17	704	1.6−	0.0	1999 12 08	704	0.2−	0.2−	2000 01 06	704	0.2−	0.8+

1998 OS₁₂ = 2000 AV₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	94.43493		(2000.0)	P	Q
n	0.22795750	ω	57.77407	+0.93796172	−0.31708948
a	2.6539952	Ω	320.21214	+0.19502996	+0.81699833
e	0.2229855	i	12.66356	+0.28668994	+0.48163056
P	4.32	H	14.7	G 0.15	U 4

Residuals in seconds of arc

1998 07 04	699	0.1+	1.1+	1998 08 17	704	0.3+	0.5−	1998 08 23	704	0.3+	0.4+
1998 07 04	699	0.2−	0.2+	1998 08 17	704	0.2−	0.6+	1998 08 23	704	1.2−	0.7+
1998 07 04	699	0.9+	0.1+	1998 08 17	704	0.2+	0.5+	1998 08 23	704	(2.7−	0.3−)
1998 07 26	809	1.1−	0.8−	1998 08 17	704	1.0+	0.8+	2000 01 04	704	0.4−	0.2+
1998 07 26	809	1.0−	1.6−	1998 08 17	704	0.2+	0.1+	2000 01 04	704	0.9+	0.5−
1998 07 26	809	1.7−	1.6−	1998 08 19	566	0.1−	0.1+	2000 01 04	704	0.4−	0.7−
1998 07 26	699	1.0+	0.5−	1998 08 19	566	0.3−	0.3−	2000 01 06	704	0.1+	0.3−
1998 07 26	699	0.5+	1.0−	1998 08 19	566	0.1−	0.4+	2000 01 06	704	0.1−	0.5+
1998 07 26	699	1.1+	0.3−	1998 08 21	566	0.2+	0.5−	2000 01 06	704	0.1−	0.6+
1998 07 27	809	0.1+	0.9+	1998 08 21	566	0.2−	0.6−	2000 01 06	704	0.3−	0.3+
1998 07 27	809	0.6+	1.4+	1998 08 21	566	0.1−	0.6−	2000 01 06	704	0.2+	0.3−
1998 07 27	809	0.0	1.1+	1998 08 23	704	0.3+	0.0				

2000 JAN. 24

1998 OA₁₃ = 2000 AH₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	149.11548		(2000.0)		P		Q
n	0.28842220	ω	24.57578		+0.96040358		+0.26948210
a	2.2687341	Ω	319.58122		−0.27025890		+0.83936912
e	0.1735762	i	6.26383		−0.06771326		+0.47205812
P	3.42	H	14.7	G	0.15	U	3
Residuals in seconds of arc							
1998 07 04	699 0.3−	0.2−	1998 09 15 699	0.1−	0.4+	1999 12 06 704	1.0− 0.2+
1998 07 04	699 0.5−	0.1−	1998 09 15 699	0.3−	0.6+	1999 12 06 704	1.0− 0.3−
1998 07 04	699 0.9−	0.6−	1998 09 17 910	0.6+	0.1−	1999 12 06 704	0.1− 0.3−
1998 07 26	809 0.2−	1.1+	1998 09 17 910	0.5+	0.0	1999 12 06 704	0.0 0.9+
1998 07 26	809 1.0−	0.6+	1998 09 17 910	0.6+	0.2−	1999 12 06 704	0.5− 0.3+
1998 07 26	809 1.0−	0.9+	1998 09 22 910	0.5+	0.0	2000 01 04 704	0.2− 0.5+
1998 07 26	699 0.4+	0.3−	1998 09 22 910	0.4+	0.1−	2000 01 04 704	0.5− 0.8+
1998 07 26	699 0.3+	0.4−	1998 09 22 910	0.5+	0.1−	2000 01 04 704	0.8− 0.5+
1998 07 26	699 0.6+	0.3−	1998 10 12 699	0.8+	0.2−	2000 01 04 704	0.4+ 1.2+
1998 07 27	809 (1.2+	2.6+)	1998 10 12 699	0.2+	0.0	2000 01 04 704	0.1+ 0.5+
1998 07 27	809 (1.3+	3.0+)	1998 10 12 699	0.3+	0.7+	2000 01 07 704	0.2+ 0.0
1998 07 27	809 (1.5+	3.3+)	1998 11 19 699	0.4+	0.0	2000 01 07 704	1.2+ 0.2−
1998 08 17	704 0.6−	0.7+	1998 11 19 699	1.5−	1.5−	2000 01 07 704	1.0+ 0.0
1998 08 17	704 0.6−	0.4+	1998 11 19 699	1.4+	0.2+	2000 01 07 704	0.3+ 0.1−
1998 08 17	704 0.3−	0.1+	1998 12 09 704	0.9+	1.3+	2000 01 07 704	0.6+ 0.2−
1998 08 17	704 0.1−	0.3−	1998 12 09 704	0.9−	0.6−	2000 01 16 120	(1.5− 3.0−)
1998 08 17	704 0.0	0.9−	1998 12 09 704	0.9−	0.3−	2000 01 17 120	0.1+ 0.7−
1998 09 15	699 0.1+	0.4+	1998 12 09 704	0.4−	0.1−	2000 01 17 120	0.9+ 0.5−

Residuals in seconds of arc

1998 07 04	699	0.3−	0.2−	1998 09 15	699	0.1−	0.4+	1999 12 06	704	1.0−	0.2+
1998 07 04	699	0.5−	0.1−	1998 09 15	699	0.3−	0.6+	1999 12 06	704	1.0−	0.3−
1998 07 04	699	0.9−	0.6−	1998 09 17	910	0.6+	0.1−	1999 12 06	704	0.1−	0.3−
1998 07 26	809	0.2−	1.1+	1998 09 17	910	0.5+	0.0	1999 12 06	704	0.0	0.9+
1998 07 26	809	1.0−	0.6+	1998 09 17	910	0.6+	0.2−	1999 12 06	704	0.5−	0.3+
1998 07 26	809	1.0−	0.9+	1998 09 22	910	0.5+	0.0	2000 01 04	704	0.2−	0.5+
1998 07 26	699	0.4+	0.3−	1998 09 22	910	0.4+	0.1−	2000 01 04	704	0.5−	0.8+
1998 07 26	699	0.3+	0.4−	1998 09 22	910	0.5+	0.1−	2000 01 04	704	0.8−	0.5+
1998 07 26	699	0.6+	0.3−	1998 10 12	699	0.8+	0.2−	2000 01 04	704	0.4+	1.2+
1998 07 27	809	(1.2+	2.6+)	1998 10 12	699	0.2+	0.0	2000 01 04	704	0.1+	0.5+
1998 07 27	809	(1.3+	3.0+)	1998 10 12	699	0.3+	0.7+	2000 01 07	704	0.2+	0.0
1998 07 27	809	(1.5+	3.3+)	1998 11 19	699	0.4+	0.0	2000 01 07	704	1.2+	0.2−
1998 08 17	704	0.6−	0.7+	1998 11 19	699	1.5−	1.5−	2000 01 07	704	1.0+	0.0
1998 08 17	704	0.6−	0.4+	1998 11 19	699	1.4+	0.2+	2000 01 07	704	0.3+	0.1−
1998 08 17	704	0.3−	0.1+	1998 12 09	704	0.9+	1.3+	2000 01 07	704	0.6+	0.2−
1998 08 17	704	0.1−	0.3−	1998 12 09	704	0.9−	0.6−	2000 01 16	120	(1.5−	3.0−)
1998 08 17	704	0.0	0.9−	1998 12 09	704	0.9−	0.3−	2000 01 17	120	0.1+	0.7−
1998 09 15	699	0.1+	0.4+	1998 12 09	704	0.4−	0.1−	2000 01 17	120	0.9+	0.5−

1998 OB₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	353.80735		(2000.0)	P	Q
n	0.17327564	ω	292.36245	+0.13813798	−0.98164347
a	3.1864789	Ω	148.78880	+0.97616075	+0.11250003
e	0.0837977	i	14.70123	+0.16741589	+0.15401244
P	5.69	H	13.0	G 0.15	U 3

Residuals in seconds of arc

1998 07 26	809	(2.9+ 3.8+)	1998 09 18	704	1.1− 1.0−	1999 11 07	704	0.2+ 1.2−
1998 07 26	809	(1.6+ 3.9+)	1998 09 18	704	0.1+ 0.5+	1999 11 07	704	0.0 0.1−
1998 07 26	809	(2.1+ 3.7+)	1998 09 18	704	1.3+ 0.8+	1999 12 09	703	1.7+ 1.8−
1998 07 26	691	0.5− 0.2−	1998 09 18	704	(0.2− 2.2+)	1999 12 09	703	0.8− 0.2+
1998 07 26	691	0.3− 0.4−	1998 09 26	327	0.6+ 0.4+	1999 12 09	699	0.0 0.1+
1998 07 26	691	0.4− 0.4−	1998 09 26	327	0.0 0.4−	1999 12 09	703	1.0− 0.4+
1998 07 27	809	(2.8+ 4.5+)	1998 09 26	327	0.3− 0.1+	1999 12 09	699	0.1− 0.1+
1998 07 27	809	(2.7+ 3.9+)	1998 09 26	327	0.0 0.0	1999 12 09	703	0.4− 0.3+
1998 07 27	809	(2.5+ 3.8+)	1999 09 08	703	1.0− 0.8+	1999 12 09	699	0.1− 0.2−
1998 08 17	704	0.2+ 0.4−	1999 09 08	703	0.4+ 0.9+	1999 12 16	704	1.0+ 0.2−
1998 08 17	704	0.6+ 0.5−	1999 09 08	703	0.3+ 0.0	1999 12 16	704	1.1+ 0.2−
1998 08 17	704	0.0 0.7−	1999 09 08	703	(1.3− 2.4−)	1999 12 16	704	0.8+ 0.4+
1998 08 17	704	0.6+ 0.2+	1999 10 07	703	0.2− 0.3+	1999 12 16	704	1.2+ 0.2+
1998 08 17	704	0.4+ 0.1−	1999 10 07	703	0.0 0.8+	1999 12 16	704	0.5+ 0.4+
1998 08 23	704	1.9− 0.7−	1999 10 07	703	0.4+ 0.3+	2000 01 09	704	0.4− 0.4−
1998 08 23	704	0.2+ 0.4+	1999 10 07	703	0.0 0.3+	2000 01 09	704	0.0 0.5−
1998 08 23	704	0.9− 1.6+	1999 10 09	704	0.1+ 0.3+	2000 01 09	704	1.0− 0.4+
1998 08 23	704	(1.7− 3.0+)	1999 10 09	704	0.3+ 0.4−	2000 01 09	704	0.5− 0.9−
1998 08 23	704	(5.6− 1.9+)	1999 10 09	704	0.0 0.1+	2000 01 09	704	0.7− 0.2−
1998 09 13	699	0.5+ 0.5+	1999 10 09	704	0.1− 0.5+	2000 01 10	699	0.3+ 0.4+
1998 09 13	699	0.3− 1.5−	1999 10 09	704	0.1− 0.2−	2000 01 10	699	1.2+ 0.3−
1998 09 13	699	0.5− 0.7+	1999 11 05	703	0.2− 0.4+	2000 01 10	699	1.0+ 0.8+
1998 09 14	704	0.0 0.9+	1999 11 05	703	0.3− 0.8+	2000 01 11	704	0.8− 0.7−
1998 09 14	704	0.0 0.5−	1999 11 05	703	0.2+ 0.3+	2000 01 11	704	0.3+ 0.5−
1998 09 14	704	1.3+ 0.1−	1999 11 05	703	0.3− 0.5+	2000 01 11	704	0.3− 0.6−
1998 09 14	704	0.2+ 0.4−	1999 11 07	704	0.3− 0.6−	2000 01 11	704	1.7− 0.0
1998 09 14	704	0.8+ 0.7+	1999 11 07	704	0.2− 0.2−	2000 01 11	704	0.3− 0.4−
1998 09 18	704	0.7− 0.7−	1999 11 07	704	0.4− 0.3−			

2000 JAN. 24

M.P.C. 37703

1998 OS₁₃ = 2000 AJ₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22573073	ω	83.24586	+0.71621214	−0.68383811		
<i>a</i>	2.6714206	Ω	319.75824	+0.52422746	+0.65893346		
<i>e</i>	0.1988143	<i>i</i>	12.45285	+0.46067965	+0.31332433		
<i>P</i>	4.37	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 26	809	0.9−	1.1−	1998 09 14	704	0.5+	0.2−	1999 12 04	703	0.3−	0.9+
1998 07 26	809	1.5−	0.9−	1998 09 14	704	0.9−	0.7+	1999 12 04	703	(1.6−	2.4+)
1998 07 26	809	0.4−	0.5−	1998 09 14	704	0.7+	0.2−	2000 01 04	704	0.4+	0.0
1998 07 27	809	1.9−	1.5−	1998 09 14	704	0.7+	1.0+	2000 01 04	704	0.3−	0.4−
1998 07 27	809	(2.7−	2.7−)	1998 09 18	704	0.9+	1.1+	2000 01 04	704	0.5+	0.1−
1998 07 27	809	(2.4−	0.9−)	1998 09 18	704	0.5−	0.8−	2000 01 04	704	1.0+	0.4−
1998 08 17	704	1.7+	1.3+	1998 09 18	704	0.7+	0.2+	2000 01 04	704	0.3−	0.8−
1998 08 17	704	0.9+	0.1−	1998 09 18	704	0.2−	0.1+	2000 01 05	704	0.6+	0.0
1998 08 17	704	1.3+	0.0	1998 09 18	704	0.9−	0.6−	2000 01 05	704	0.2+	1.0−
1998 08 17	704	0.9+	0.7+	1999 12 04	703	1.6−	1.2+	2000 01 05	704	0.0	0.3−
1998 09 14	704	1.4−	0.0	1999 12 04	703	1.6−	0.4+	2000 01 05	704	0.4+	0.2+

1998 OC₁₄ = 2000 AX₁₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22172605	ω	283.64630	+0.39354679	−0.90974588		
<i>a</i>	2.7034909	Ω	142.29928	+0.90469821	+0.35772950		
<i>e</i>	0.1396777	<i>i</i>	12.48693	+0.16322397	+0.21069418		
<i>P</i>	4.45	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 15	691	0.0	0.1+	1998 08 23	699	0.4−	0.3+	1999 12 14	704	0.6−	0.5−
1998 07 15	691	0.2−	0.2+	1998 08 23	704	0.4−	0.2−	1999 12 14	704	0.1+	0.6−
1998 07 15	691	0.2−	0.2+	1998 08 23	704	(2.7−	0.3+)	1999 12 14	704	0.3−	0.4−
1998 07 26	809	(3.3+	0.3−)	1998 08 23	699	0.6−	0.0	1999 12 14	704	0.4−	0.7−
1998 07 26	809	(2.9+	0.2−)	1998 08 23	704	0.1+	0.5+	2000 01 07	704	1.1+	0.3+
1998 07 26	809	(2.3+	0.6+)	1998 08 23	704	(3.0−	1.0−)	2000 01 07	704	0.0	0.3+
1998 07 26	699	0.2+	0.9−	1998 08 23	699	0.7−	0.0	2000 01 07	704	0.1+	0.3+
1998 07 26	699	0.9−	0.7−	1998 08 27	699	0.7−	1.3+	2000 01 07	704	0.1+	0.2+
1998 07 26	699	0.1+	0.6+	1998 08 27	699	1.1−	1.0−	2000 01 07	704	0.8+	1.0+
1998 07 27	809	(2.6+	0.3+)	1998 08 27	699	1.1−	0.7+	2000 01 09	704	0.3−	0.1−
1998 07 27	809	1.6+	0.6−	1998 09 24	699	0.9+	0.7−	2000 01 09	704	0.2+	0.5−
1998 07 27	809	1.4+	0.1+	1998 09 24	699	1.0+	0.2−	2000 01 09	704	0.6−	0.6−
1998 08 17	704	0.3+	0.1+	1998 09 24	699	0.6+	0.1+	2000 01 09	704	0.1+	0.1−
1998 08 17	704	0.1−	0.4−	1999 12 05	704	0.4+	0.2−	2000 01 11	704	0.2+	0.2−
1998 08 17	704	0.1+	0.7−	1999 12 05	704	0.3−	0.4+	2000 01 11	704	0.4−	0.3−
1998 08 17	704	0.8+	0.3+	1999 12 05	704	0.8+	0.8+	2000 01 11	704	0.2−	0.2−
1998 08 17	704	1.0+	1.0+	1999 12 05	704	0.7−	0.6+	2000 01 11	704	0.2−	0.1+
1998 08 23	704	1.5−	0.4−	1999 12 05	704	0.0	0.5+	2000 01 11	704	(1.2+	2.5+)

1998 OQ₁₄ = 1999 XN₁₀₃

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30902839	ω	279.34001	−0.35495621	+0.93456476		
<i>a</i>	2.1667250	Ω	329.83341	−0.83756292	−0.32948687		
<i>e</i>	0.0875457	<i>i</i>	2.78182	−0.41532449	−0.13426510		
<i>P</i>	3.19	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 26	809	0.9+	0.4−	1998 08 23	704	0.3+	0.1+	1999 12 31	699	0.2+	0.1+
1998 07 26	809	0.0	0.8−	1998 08 23	704	0.2+	0.1−	1999 12 31	699	0.4+	0.0
1998 07 26	809	0.5+	0.3−	1998 08 23	704	0.2−	0.8+	1999 12 31	699	0.5+	0.1+
1998 07 27	809	0.5−	0.6+	1998 08 23	704	1.3−	1.0+	2000 01 03	704	0.5−	0.2−
1998 07 27	809	0.5−	0.2+	1999 12 07	704	0.4+	0.8−	2000 01 03	704	0.6+	0.1+
1998 07 27	809	0.3−	0.0	1999 12 07	704	0.4−	0.3−	2000 01 03	704	0.4−	0.0

1998 08 17	704	0.1+	0.2+	1999 12 07	704	1.2−	0.1+	2000 01 03	704	0.0	0.6+
1998 08 17	704	0.1+	0.6−	1999 12 10	704	0.9−	0.0	2000 01 03	704	0.7−	0.2−
1998 08 17	704	0.1+	0.8−	1999 12 10	704	0.4+	0.5−	2000 01 04	704	0.6+	0.2+
1998 08 17	704	0.2+	0.1+	1999 12 10	704	0.1+	0.8−	2000 01 04	704	0.2+	1.2+
1998 08 17	704	0.3+	0.2+	1999 12 10	704	0.1−	0.8−	2000 01 04	704	0.4+	1.2+

1998 OU₁₄ = 1998 NH₁Id. G. V. Williams (d, *MPC* 32787)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28049820	ω	257.15087	−0.51221961	+0.85885223		
<i>a</i>	2.3112628	Ω	342.03693	−0.78547224	−0.46938593		
<i>e</i>	0.1047033	<i>i</i>	0.36794	−0.34736786	−0.20506023		
<i>P</i>	3.51	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 15	691	0.8−	0.0	1998 09 14	704	0.9−	0.4+	1999 12 29	732	(2.4−	0.3−)
1998 07 15	691	1.1−	0.3+	1998 09 14	704	0.6−	0.7+	1999 12 29	732	1.1−	0.1+
1998 07 15	691	0.8−	0.0	1998 09 14	704	0.4−	0.9+	1999 12 30	732	0.5+	0.2+
1998 07 26	809	1.6+	1.1−	1998 09 14	704	0.1+	1.2+	1999 12 30	732	(2.8−	1.0+)
1998 07 26	809	1.4+	0.7−	1998 09 14	704	0.5+	0.5−	2000 01 03	704	0.1+	0.7+
1998 07 26	809	1.5+	1.2−	1998 09 18	704	0.1+	0.3−	2000 01 03	704	0.7+	0.3−
1998 07 27	809	0.1+	0.0	1998 09 18	704	0.6+	0.2−	2000 01 03	704	0.6+	0.0
1998 07 27	809	0.2−	1.1−	1998 09 18	704	(1.4−	2.1+)	2000 01 04	704	0.5−	0.1+
1998 07 27	809	0.8−	0.0	1998 09 18	704	0.9+	0.1+	2000 01 04	704	0.4−	0.0
1998 08 17	704	1.1+	0.6−	1998 09 21	699	1.2−	0.1+	2000 01 04	704	0.1−	0.0
1998 08 17	704	(0.2−	2.6−)	1998 09 21	699	1.2−	0.9+	2000 01 04	704	0.0	0.0
1998 08 17	704	0.6+	0.2−	1998 09 21	699	0.7−	0.4+	2000 01 07	691	0.2+	0.7−
1998 08 17	704	0.2+	0.5+	1998 11 09	910	0.4+	0.0	2000 01 07	691	0.1+	0.5−
1998 08 17	704	0.5+	0.1+	1998 11 09	910	0.0	0.1+	2000 01 07	691	0.2+	0.6−
1998 08 23	704	1.1−	1.6−	1998 11 09	910	0.0	0.3+	2000 01 10	691	0.1+	0.3−
1998 08 23	704	0.6−	0.6+	1998 11 11	910	0.3−	0.3+	2000 01 10	691	0.2+	0.2−
1998 08 23	704	1.0+	0.2+	1998 11 11	910	0.4−	0.6+	2000 01 10	691	0.2+	0.2−
1998 08 23	704	0.3−	0.3−	1998 11 11	910	0.7−	0.8+				
1998 08 23	704	1.3+	0.8−	1999 12 29	732	0.7−	0.3−				

1998 OB₁₅ = 2000 AM₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20020414	ω	6.43371	+0.98330949	+0.18169798		
<i>a</i>	2.8939255	Ω	343.08883	−0.16833416	+0.88896097		
<i>e</i>	0.0676872	<i>i</i>	1.85111	−0.06903664	+0.42039771		
<i>P</i>	4.92	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 26	809	0.1+	1.3−	1998 11 09	910	0.6−	0.3+	1999 11 14	704	0.1+	0.3+
1998 07 26	809	0.4−	1.4−	1998 11 09	910	1.0−	0.3+	1999 11 14	704	0.4+	0.3+
1998 07 26	809	0.6−	0.8−	1998 11 09	910	0.7−	0.3+	1999 12 07	704	0.8+	0.2−
1998 07 27	809	1.1−	1.2−	1998 11 10	910	0.6−	0.2+	1999 12 07	704	0.1+	0.2−
1998 07 27	809	1.5−	1.6−	1998 11 10	910	0.7−	1.2+	1999 12 07	704	0.3+	0.6−
1998 07 27	809	0.5−	0.9−	1998 11 10	910	0.5−	0.8+	1999 12 07	704	0.0	0.7−
1998 08 23	699	0.0	0.6+	1998 11 11	910	0.0	0.8+	1999 12 07	704	0.0	0.4−
1998 08 23	704	0.5+	0.4−	1998 11 11	910	0.1−	0.9+	2000 01 03	704	0.4−	0.2−
1998 08 23	704	1.4+	0.1−	1998 11 11	910	0.3−	1.3+	2000 01 03	704	0.7−	0.5+
1998 08 23	699	0.3+	0.6−	1999 11 03	704	0.2+	0.2−	2000 01 03	704	0.7+	1.2+
1998 08 23	704	1.7+	0.9+	1999 11 03	704	0.8+	0.4+	2000 01 03	704	0.1+	1.1−
1998 08 23	704	1.5+	0.5−	1999 11 03	704	0.0	0.5−	2000 01 03	704	0.6−	0.5−
1998 08 23	699	0.7+	0.5+	1999 11 03	704	0.3−	0.4−	2000 01 04	704	0.4−	0.4−
1998 08 23	704	1.3+	0.4−	1999 11 03	704	0.2+	0.2−	2000 01 04	704	0.1−	0.0
1998 09 21	699	0.1−	1.0+	1999 11 14	704	0.5+	0.1+	2000 01 04	704	0.7−	0.6−
1998 09 21	699	0.1−	1.1+	1999 11 14	704	0.0	0.2−	2000 01 04	704	0.2−	0.3+
1998 09 21	699	0.0	0.0	1999 11 14	704	0.6+	0.0	2000 01 04	704	1.0−	0.3−

1998 PC = 2000 AL₁₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27596976	ω	89.82233	+0.76535735	+0.63454919		
<i>a</i>	2.3364781	Ω	230.78939	-0.63182351	+0.70893442		
<i>e</i>	0.1879610	<i>i</i>	7.98164	-0.12258536	+0.30782999		
<i>P</i>	3.57	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 30	704	0.3-	0.7+	1998 08 24	704	0.9+	0.0	1998 10 10	699	0.6-	0.6+
1998 06 30	704	0.4+	0.3-	1998 08 24	704	0.6+	0.2+	2000 01 07	704	0.9+	0.2+
1998 06 30	704	1.0-	0.5+	1998 08 27	704	0.2+	0.4-	2000 01 07	704	0.6+	0.0
1998 06 30	704	(5.7-	1.0+)	1998 08 27	704	1.0+	0.3-	2000 01 07	704	0.5+	0.7+
1998 08 02	699	0.1-	0.2+	1998 08 27	704	0.9+	0.4+	2000 01 07	704	0.6+	0.7+
1998 08 02	699	0.0	0.3+	1998 08 27	704	1.0-	0.5+	2000 01 07	704	0.0	1.2+
1998 08 02	699	0.0	0.1+	1998 08 27	704	(3.3-	3.3+)	2000 01 11	704	0.3+	0.2+
1998 08 03	699	0.5-	0.1+	1998 09 18	699	0.2-	0.4-	2000 01 11	704	0.9-	0.0
1998 08 03	699	0.6-	0.0	1998 09 18	699	0.0	0.1-	2000 01 11	704	0.4-	0.7-
1998 08 03	699	0.5-	0.2+	1998 09 18	699	0.2+	0.0	2000 01 11	704	1.5-	1.4-
1998 08 24	704	(1.2-	5.3-)	1998 10 10	699	0.3+	0.8-				
1998 08 24	704	0.9+	0.8-	1998 10 10	699	1.4-	0.2+				

1998 PJ

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26897325	ω	16.31102	+0.88248450	+0.46984680		
<i>a</i>	2.3768220	Ω	315.64390	-0.43490279	+0.79767337		
<i>e</i>	0.2309014	<i>i</i>	1.76769	-0.17911077	+0.37810208		
<i>P</i>	3.66	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 05	046	0.8-	0.2-	1998 08 14	046	0.3+	0.0	1998 09 23	046	0.9+	0.7+
1998 08 05	046	1.1-	0.6-	1998 08 16	046	0.1+	0.2+	1998 09 23	046	0.7+	0.3+
1998 08 05	046	1.1-	0.3-	1998 08 16	046	0.4+	0.2+	1998 09 24	046	0.9+	0.2+
1998 08 05	046	1.1-	0.3-	1998 08 16	046	0.1-	0.1-	1998 09 24	046	0.9+	0.2+
1998 08 05	046	1.2-	0.4-	1998 08 17	704	0.8+	0.2+	1998 09 24	046	0.6+	0.0
1998 08 05	046	1.3-	0.6-	1998 08 17	704	0.7+	0.1-	1998 10 13	046	0.4+	0.1-
1998 08 06	046	1.4-	0.0	1998 08 17	704	1.5+	0.7-	1998 10 13	046	0.5+	0.1+
1998 08 06	046	1.2-	0.4-	1998 08 17	704	0.4-	1.1+	1998 10 13	046	0.2+	0.4-
1998 08 06	046	1.4-	0.2-	1998 08 17	704	0.6+	1.2+	1998 10 16	046	0.2+	0.1-
1998 08 06	046	0.8-	0.0	1998 08 23	704	0.9+	0.0	1998 10 16	046	0.2+	0.4-
1998 08 06	046	0.3-	0.1+	1998 08 23	704	0.0	0.1-	1998 10 16	046	0.1-	0.4+
1998 08 09	046	0.1+	0.5-	1998 08 23	704	1.5+	0.3-	1999 01 05	910	1.5-	0.5-
1998 08 09	046	1.0-	0.4+	1998 08 23	704	0.7+	0.7+	1999 01 05	910	1.1-	0.2-
1998 08 09	046	0.0	0.4-	1998 08 27	699	0.5+	0.1-	1999 01 05	910	1.1-	0.0
1998 08 10	046	0.7-	0.0	1998 08 27	699	1.1+	0.4-	2000 01 06	046	0.0	0.5+
1998 08 10	046	0.4-	0.0	1998 08 27	699	0.6+	0.1-	2000 01 06	046	0.4-	0.1+
1998 08 10	046	0.2-	0.2-	1998 08 31	046	0.6+	0.1+	2000 01 06	046	0.1+	0.7+
1998 08 11	046	0.2-	0.1-	1998 08 31	046	0.5+	0.1+	2000 01 06	704	0.3+	0.5+
1998 08 11	046	0.2-	0.1-	1998 08 31	046	0.5+	0.2+	2000 01 06	704	0.2-	0.9-
1998 08 11	046	0.6-	0.0	1998 09 09	046	0.4+	0.1+	2000 01 06	704	0.7-	1.0-
1998 08 14	046	0.0	0.4-	1998 09 09	046	0.3+	0.4+	2000 01 06	046	1.0+	0.2+
1998 08 14	046	0.0	0.2-	1998 09 09	046	0.4+	0.3+	2000 01 06	046	0.4+	0.1-
1998 08 14	046	0.2+	0.1-	1998 09 23	046	0.8+	0.7+	2000 01 06	046	0.0	0.0

1998 PV

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21716612	ω	276.17585	+0.77259612	-0.62332010		
<i>a</i>	2.7412039	Ω	122.45156	+0.62427281	+0.71118091		
<i>e</i>	0.1526224	<i>i</i>	8.22321	+0.11566630	+0.32510578		
<i>P</i>	4.54	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 24	704	(1.3+	3.2+)	1998 09 23	426	0.2-	0.1+	1999 12 05	704	0.0	0.3-
1998 06 24	704	0.3+	1.8-	1998 09 23	426	0.7+	0.2+	1999 12 05	704	0.0	0.4-
1998 06 24	704	0.4-	0.0	1999 10 08	703	0.2-	0.2+	1999 12 05	704	0.3-	0.5-
1998 06 24	704	(3.4-	1.8+)	1999 10 08	703	0.0	0.2+	1999 12 05	704	0.6-	0.2-
1998 07 21	704	0.1+	0.1+	1999 10 08	703	0.3-	0.2+	1999 12 05	704	0.6-	0.6-
1998 07 21	704	0.8-	1.5-	1999 10 08	703	0.2-	0.3+	1999 12 14	704	0.2+	0.1-
1998 07 21	704	0.8+	1.1-	1999 11 01	703	0.0	0.0	1999 12 14	704	0.0	0.1+
1998 07 21	704	0.8+	2.0+	1999 11 01	703	0.1+	0.1+	1999 12 14	704	0.1+	0.2-
1998 08 12	426	0.6-	0.1-	1999 11 01	703	0.0	0.3+	1999 12 14	704	0.5+	0.3-
1998 08 12	426	0.1+	0.2-	1999 11 01	703	0.2+	0.3+	1999 12 14	704	0.0	0.2+
1998 08 13	426	0.2-	0.3-	1999 11 05	704	0.3+	0.0	1999 12 14	699	0.2-	0.3+
1998 08 13	426	0.4+	0.5-	1999 11 05	704	0.4+	0.2+	1999 12 14	699	0.4-	0.7+
1998 08 15	426	0.1+	0.0	1999 11 05	704	0.0	0.1-	1999 12 14	699	0.3-	1.1+
1998 08 15	426	0.7-	0.3-	1999 11 05	704	0.1+	0.1+	2000 01 06	699	0.6-	0.8-
1998 08 15	426	0.2+	0.5-	1999 11 05	704	0.1-	0.2-	2000 01 06	699	0.2+	0.2+
1998 08 22	426	0.1+	0.5+	1999 11 13	699	0.4-	0.3+	2000 01 06	699	0.3-	0.2+
1998 08 22	426	0.3+	0.3+	1999 11 13	699	0.1+	0.2+	2000 01 07	704	0.5+	0.6-
1998 08 28	426	1.2-	0.6+	1999 11 13	699	0.2+	0.1+	2000 01 07	704	0.3+	0.6-
1998 08 28	426	0.2-	0.1-	1999 11 17	703	0.2+	0.0	2000 01 07	704	0.3+	1.0-
1998 09 14	426	0.4+	0.0	1999 11 17	703	0.0	0.1-	2000 01 07	704	0.4+	0.6-
1998 09 14	426	0.6-	0.4+	1999 11 17	703	0.1+	0.2+	2000 01 07	704	0.4+	0.8-
1998 09 23	426	0.6+	0.9+	1999 11 17	703	0.1+	0.1-				

1998 PJ₁ = 1999 YZ₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27571094	ω	154.29908	-0.37704612	+0.92448794		
<i>a</i>	2.3379401	Ω	93.50761	-0.85918420	-0.32646255		
<i>e</i>	0.1212072	<i>i</i>	3.22768	-0.34588831	-0.19683559		
<i>P</i>	3.57	<i>H</i>	16.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 13	426	0.0	0.6+	1998 08 17	704	(2.2-	1.1-)	1998 09 20	426	0.0	0.3+
1998 08 13	426	0.3-	0.3-	1998 08 18	426	0.2-	0.2-	1998 09 20	426	0.2-	0.2-
1998 08 13	426	0.3+	0.9-	1998 08 18	426	0.0	0.3-	1999 12 27	691	0.3-	0.2-
1998 08 15	426	0.2+	0.5-	1998 08 18	426	1.2+	0.1-	1999 12 27	691	0.4-	0.2-
1998 08 15	426	0.5-	0.8-	1998 08 28	426	0.8-	1.8+	1999 12 27	691	0.4-	0.0
1998 08 15	426	0.3+	0.7-	1998 08 28	426	0.3-	0.5+	2000 01 02	691	0.4+	0.1-
1998 08 17	704	1.2-	0.6+	1998 08 29	426	0.4-	0.0	2000 01 02	691	0.3+	0.0
1998 08 17	704	1.6+	1.0-	1998 08 29	426	0.3-	0.2+	2000 01 02	691	0.4+	0.0
1998 08 17	704	0.5+	0.1-	1998 08 29	426	0.0	0.0				
1998 08 17	704	(0.2+	2.5+)	1998 09 20	426	0.0	0.9+				

1998 PL₁ = 1987 WW₄ = 2000 AZ₁₄₁

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	76.64912		(2000.0)			P		Q		
n	0.25706919	ω	170.17404			+0.58398047		-0.80838284		
a	2.4496424	Ω	244.05817			+0.73908038		+0.56720373		
e	0.1240111	i	4.72377			+0.33574841		+0.15747101		
P	3.83	H	13.9	G	0.15	U	2			

Residuals in seconds of arc

1987 11 19	054	0.7+	0.1+	1998 08 26	620	0.1-	0.1+	1998 11 06	699	0.4-	0.5-
1987 11 19	054	0.5-	1.2-	1998 08 26	620	0.2-	0.1+	1998 11 06	699	(2.6+	1.2+)
1998 08 14	620	0.3+	0.8-	1998 08 26	620	0.2-	0.2-	1998 11 06	699	0.8-	0.7+
1998 08 15	620	(0.1-	2.3-)	1998 09 01	327	0.1+	0.1-	2000 01 05	704	0.1-	0.3+
1998 08 15	620	0.0	1.0-	1998 09 01	327	0.2+	0.1-	2000 01 05	704	0.4-	0.3+
1998 08 17	704	0.4+	1.0-	1998 09 01	327	0.0	0.0	2000 01 05	704	0.2-	0.8+
1998 08 17	704	0.2-	0.8-	1998 09 14	620	0.6-	0.0	2000 01 05	704	0.1+	0.1+
1998 08 17	704	0.6+	1.1-	1998 09 14	620	0.7-	0.2+	2000 01 05	704	0.7-	0.2-
1998 08 17	704	0.9+	1.9-	1998 09 14	620	0.4-	0.2-	2000 01 08	704	0.2-	0.3-
1998 08 17	704	1.1-	1.6-	1998 09 15	699	0.5-	0.7+	2000 01 08	704	0.3-	0.2-
1998 08 18	620	0.6+	0.7-	1998 09 15	699	0.5-	0.2-	2000 01 08	704	0.2-	0.4+
1998 08 19	620	0.2-	0.0	1998 09 15	699	0.5+	0.3+	2000 01 08	704	0.1+	0.1+

2000 JAN. 24

M.P.C. 37705

1998 08 19	620	0.3−	0.2+	1998 09 21	699	0.1−	1.2+	2000 01 08	704	0.1−	0.5+
1998 08 23	704	0.5−	1.0+	1998 09 21	699	0.0	0.5+	2000 01 11	620	0.1+	0.5−
1998 08 23	704	0.0	0.3+	1998 09 21	699	0.3−	0.7+	2000 01 11	620	0.9+	0.3−
1998 08 23	704	0.4+	0.9+	1998 10 11	699	0.9+	1.9+	2000 01 12	620	1.1+	0.5−
1998 08 23	704	0.3−	0.7+	1998 10 11	699	0.2+	0.1+				
1998 08 23	704	0.8+	1.2+	1998 10 11	699	1.4+	0.1+				

1998 PP₁ = 1999 XY₁₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	32.13757		(2000.0)	P	Q		
<i>n</i>	0.16932205	ω	113.39589	+0.71098007	−0.68585967		
<i>a</i>	3.2358897	Ω	290.31328	+0.56950688	+0.69110176		
<i>e</i>	0.0699699	<i>i</i>	9.52919	+0.41251576	+0.22798000		
<i>P</i>	5.82	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 30	699	0.6−	1.6−	1998 08 25	327	0.0	0.2+	1999 12 07	703	0.4+	0.6+
1998 06 30	699	0.1−	0.2+	1998 08 26	699	0.1+	0.1+	1999 12 10	704	0.0	0.4+
1998 06 30	699	1.5−	0.1−	1998 08 26	699	0.2+	0.2−	1999 12 10	704	0.0	0.3−
1998 08 13	327	0.3+	0.4−	1998 08 26	699	0.1+	0.2+	1999 12 10	704	0.1−	0.1−
1998 08 13	327	0.7+	0.3−	1998 08 27	704	1.1+	0.7−	1999 12 10	704	0.0	0.6+
1998 08 13	327	0.5+	0.3−	1998 08 27	704	1.2+	0.2−	1999 12 10	704	0.5+	0.3+
1998 08 17	704	0.0	0.4−	1998 08 27	704	1.0+	0.4−	1999 12 15	704	0.1+	0.3−
1998 08 17	704	0.1−	0.2+	1998 08 27	704	0.5+	0.3−	1999 12 15	704	0.2−	0.2−
1998 08 17	704	1.2+	0.3+	1998 08 27	704	0.4+	0.6−	1999 12 15	704	0.1−	0.8−
1998 08 17	704	0.4−	0.9+	1998 08 27	327	0.1−	0.2+	1999 12 15	704	0.3−	0.8−
1998 08 17	704	0.2+	0.1−	1998 08 27	327	0.1−	0.0	1999 12 15	704	0.4−	0.6−
1998 08 23	327	0.3+	0.1+	1998 08 27	327	0.1+	0.1+	1999 12 16	723	0.4+	0.5+
1998 08 23	327	0.3+	0.1+	1998 09 01	327	0.0	0.3−	1999 12 16	723	0.0	0.3+
1998 08 23	327	0.1+	0.0	1998 09 01	327	0.3−	0.0	1999 12 16	723	0.4−	0.2+
1998 08 24	704	0.5−	0.1−	1998 09 01	327	0.4−	0.4−	2000 01 03	704	0.1−	0.1+
1998 08 24	704	0.4−	0.1+	1998 11 17	699	0.4−	0.9+	2000 01 03	704	0.0	0.3−
1998 08 24	704	1.6−	1.0+	1998 11 17	699	0.4+	0.4−	2000 01 03	704	0.9−	0.1−
1998 08 24	704	1.5−	1.2+	1998 11 17	699	0.8−	0.5−	2000 01 03	704	0.4+	0.5−
1998 08 24	704	0.7−	0.7+	1999 12 07	703	0.3+	0.6+	2000 01 03	704	0.2−	0.8−
1998 08 25	327	0.1+	0.1+	1999 12 07	703	0.2+	0.4+				
1998 08 25	327	0.1+	0.2+	1999 12 07	703	0.2+	0.4+				

1998 QL = 1999 XL₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	75.64562		(2000.0)	P	Q		
<i>n</i>	0.21061075	ω	359.39580	+0.96783062	−0.25107090		
<i>a</i>	2.7977938	Ω	15.17534	+0.23110208	+0.86140217		
<i>e</i>	0.1075200	<i>i</i>	3.58069	+0.09947720	+0.44153108		
<i>P</i>	4.68	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.3−	0.3+	1998 09 12	426	0.1−	0.4+	1999 12 10	704	0.0	0.3−
1998 08 17	704	0.3−	0.4+	1998 09 12	426	0.1−	0.5+	1999 12 15	704	0.6+	1.4+
1998 08 17	704	0.5+	0.5+	1998 09 12	426	0.5−	0.5+	1999 12 15	704	0.0	0.0
1998 08 17	704	0.9+	1.4−	1998 09 14	699	0.1−	0.7+	1999 12 15	704	0.1−	0.1−
1998 08 17	704	0.3−	0.7−	1998 09 14	699	0.3−	0.9+	1999 12 15	704	0.3+	0.5−
1998 08 17	426	0.2+	0.0	1998 09 14	699	0.0	1.4+	2000 01 03	704	0.0	0.1−
1998 08 17	426	0.0	0.1−	1998 10 09	426	0.0	0.3−	2000 01 03	704	0.1+	0.4−
1998 08 17	426	0.0	0.2+	1998 10 13	426	0.5−	0.3+	2000 01 03	704	0.5+	0.0
1998 08 18	426	0.0	0.2−	1998 10 13	426	0.4+	0.2−	2000 01 03	704	0.3+	0.2−
1998 08 18	426	0.4+	0.2−	1999 11 14	704	0.2+	0.0	2000 01 03	704	0.3+	0.4−
1998 08 23	704	1.7+	1.7−	1999 11 14	704	0.6−	0.6−	2000 01 04	704	0.4−	0.2+
1998 08 23	704	(2.6+	0.5+)	1999 11 14	704	0.1−	0.6−	2000 01 04	704	0.0	0.0
1998 08 23	704	1.0+	0.6+	1999 11 14	704	0.1−	0.1−	2000 01 04	704	0.0	0.1+
1998 08 23	704	0.3−	1.4−	1999 11 14	704	0.6−	0.6−	2000 01 04	704	0.1−	0.2+
1998 09 01	426	0.7−	0.1+	1999 12 10	704	0.5+	0.6+	2000 01 04	704	0.0	0.1−
1998 09 01	426	0.8−	0.3−	1999 12 10	704	0.5−	0.2+				
1998 09 01	426	0.6−	0.2−	1999 12 10	704	0.3−	0.9+				

1998 QM₂ = 2000 AA₅₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	210.65587		(2000.0)	P	Q		
<i>n</i>	0.27405457	ω	65.20624	+0.11823338	+0.99185084		
<i>a</i>	2.3473509	Ω	211.69645	−0.94055521	+0.09653607		
<i>e</i>	0.0859272	<i>i</i>	5.18285	−0.31839719	+0.08314262		
<i>P</i>	3.60	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 30	704	0.7−	0.5+	1998 08 29	120	0.5+	0.5+	1998 09 23	120	0.5−	0.5−
1998 06 30	704	0.4−	1.8+	1998 09 09	120	0.1−	0.4+	1998 09 23	120	0.2−	0.4−
1998 06 30	704	0.2+	0.8+	1998 09 09	120	(2.7+	1.2+)	1999 11 12	703	0.2+	0.1+
1998 08 17	120	0.5+	0.9−	1998 09 09	120	0.4+	1.5−	1999 11 12	703	0.8+	0.3−
1998 08 17	120	0.2+	0.8−	1998 09 09	120	0.0	0.1−	1999 11 12	703	0.1+	0.3+
1998 08 17	704	0.1−	0.3−	1998 09 09	120	0.0	0.7+	1999 11 12	703	1.0+	1.7+
1998 08 17	704	0.2+	0.1−	1998 09 09	120	0.0	0.5−	1999 12 14	704	0.4−	0.3+
1998 08 17	704	0.0	0.1+	1998 09 09	120	1.0+	0.3+	1999 12 14	704	0.2+	0.2+
1998 08 17	704	0.3+	0.4−	1998 09 14	704	0.2−	0.5−	1999 12 14	704	0.1−	1.1+
1998 08 17	704	0.3+	0.0	1998 09 14	704	0.4−	0.4−	1999 12 14	704	0.7−	0.3+
1998 08 21	120	1.7−	1.7−	1998 09 14	704	0.4+	0.6−	1999 12 14	704	0.3−	0.1−
1998 08 23	120	1.7−	1.0−	1998 09 14	704	0.9−	0.6+	2000 01 03	120	1.2−	0.2−
1998 08 23	120	1.0−	0.3−	1998 09 16	699	0.3−	0.0	2000 01 03	120	0.8−	0.6−
1998 08 23	120	0.1+	0.2+	1998 09 16	699	0.4−	0.0	2000 01 05	704	0.4−	0.2−
1998 08 23	120	0.4−	0.7+	1998 09 16	699	0.7−	0.1−	2000 01 05	704	0.3−	0.2−
1998 08 23	120	0.5−	0.2−	1998 09 17	120	0.0	0.6−	2000 01 05	704	0.1−	0.1+
1998 08 23	120	0.5+	0.2−	1998 09 17	120	0.3−	0.3+	2000 01 05	704	0.0	0.5−
1998 08 23	704	0.2−	0.4+	1998 09 17	120	0.2+	0.4−	2000 01 05	704	0.4+	0.4+
1998 08 23	704	0.1+	0.4−	1998 09 18	704	0.3+	0.6−	2000 01 06	120	1.1+	0.4+
1998 08 23	704	0.9+	0.7+	1998 09 18	704	1.2+	0.8+	2000 01 06	120	(1.9+	2.4−)
1998 08 23	704	0.2+	0.2−	1998 09 18	704	0.5−	1.0+	2000 01 07	704	0.1−	0.4−
1998 08 23	704	0.9+	0.4−	1998 09 18	704	0.3+	0.6+	2000 01 07	704	0.2−	0.2−
1998 08 29	120	0.7+	0.4+	1998 09 18	704	0.5−	0.8+	2000 01 07	704	0.3+	0.4−
1998 08 29	120	0.9+	0.7+	1998 09 22	120	0.2−	0.2+	2000 01 07	704	0.0	0.2−
1998 08 29	120	0.1−	0.2+	1998 09 22	120	0.0	0.4+	2000 01 07	704	0.1−	0.4+
1998 08 29	120	0.8+	0.3+	1998 09 22	120	0.7+	0.2+	2000 01 10	120	1.4+	0.9−
1998 08 29	120	0.4+	0.3+	1998 09 23	120	0.5−	0.3−	2000 01 10	120	0.3−	0.2−

1998 QX₃ = 2000 AT₁₇₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	44.86650		(2000.0)	P	Q		
<i>n</i>	0.17553346	ω	257.80609	+0.74083631	−0.66045159		
<i>a</i>	3.1590957	Ω	143.32447	+0.66788383	+0.70497247		
<i>e</i>	0.1586752	<i>i</i>	11.81868	+0.07136350	+0.25849083		
<i>P</i>	5.61	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.0	0.2+	1998 08 23	704	0.1+	0.2+	1998 09 18	704	0.1−	0.5+
1998 08 17	704	0.4+	0.9+	1998 08 23	120	0.5+	1.1−	1998 09 18	704	0.6−	0.6−
1998 08 17	704	0.0	1.4+	1998 08 23	120	0.8−	0.2+	1998 09 21	699	0.0	0.5+
1998 08 17	704	0.3+	0.2−	1998 08 23	120	0.0	1.3−	1998 09 21	699	0.3−	0.2−
1998 08 17	704	0.5−	1.0+	1998 08 23	120	0.6−	0.3+	1998 09 21	699	0.2+	0.4+
1998 08 17	120	0.3−	0.1−	1998 09 14	704	0.0	0.1+	2000 01 07	704	0.2+	0.0
1998 08 18	120	1.8+	0.9−	1998 09 14	704	0.2−	0.2−	2000 01 07	704	0.0	0.2−
1998 08 18	120	0.7−	0.4−	1998 09 14	704	0.1+	1.2−	2000 01 07	704	0.3+	0.1−
1998 08 23	699	0.9−	0.2+	1998 09 14	704	0.9−	0.2−	2000 01 07	704	0.7−	1.0−
1998 08 23	704	0.8+	0.8+	1998 09 14	704	0.2−	0.1−	2000 01 11	704	0.1−	0.6−
1998 08 23	704	0.6−	1.5−	1998 09 17	120	0.9+	0.3+	2000 01 11	704	0.6−	1.4+
1998 08 23	699	0.1−	0.2−	1998 09 17	120	(2.5−	0.6−)	2000 01 11	704	0.7+	0.0
1998 08 23	704	1.0+	0.2+	1998 09 17	120	0.6−	0.4+	2000 01 11	704	0.2+	0.4+
1998 08 23	704	(2.1−	0.1+)	1998 09 18	704	1.3+	0.1−				
1998 08 23	699	0.4−	0.3+	1998 09 18	704	0.6+	0.8+				

1998 QM₄ = 1999 XX₂₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	141.89073		(2000.0)	P		Q	
<i>n</i>	0.23034332	ω	262.07758	+0.62542421	+0.75354600		
<i>a</i>	2.6356373	Ω	48.68866	-0.56644436	+0.61696587		
<i>e</i>	0.1592793	<i>i</i>	15.64134	-0.53664266	+0.22698358		
<i>P</i>	4.28	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 21	426	0.1+	0.3+	1998 09 03	426	0.4-	0.3-	1999 12 13	704	0.4+	0.4+
1998 08 21	426	0.5+	0.1+	1998 09 03	426	0.8-	0.8-	1999 12 13	704	0.3-	0.0
1998 08 21	426	0.0	0.1+	1998 09 03	426	0.2+	0.3-	1999 12 13	704	0.3-	0.4+
1998 08 23	426	0.2+	0.2+	1998 10 20	426	0.2+	0.0	1999 12 13	704	0.5+	0.4+
1998 08 23	426	0.3+	0.4+	1998 10 20	426	0.3-	0.3-	1999 12 15	704	0.2+	0.5-
1998 08 23	426	0.3+	0.1+	1998 10 20	426	0.1+	0.1+	1999 12 15	704	0.9-	0.3+
1998 09 01	426	0.6-	0.3+	1998 10 24	426	0.1+	0.0	1999 12 15	704	0.1+	0.6-
1998 09 01	426	0.4-	0.2-	1998 10 24	426	0.4+	0.1+	1999 12 15	704	0.3+	0.3-
1998 09 01	426	0.1-	0.2+	1998 10 24	426	0.2+	0.0				

1998 QA₅ = 2000 AY₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	53.13242		(2000.0)	P		Q	
<i>n</i>	0.26418286	ω	199.82918	+0.23416402	-0.96807881		
<i>a</i>	2.4054682	Ω	236.72426	+0.90577963	+0.25064415		
<i>e</i>	0.0876170	<i>i</i>	6.13786	+0.35317201	-0.00096025		
<i>P</i>	3.73	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 28	327	0.4+	0.8-	1998 08 27	704	0.0	0.7+	1998 09 18	704	1.1+	1.1-
1998 07 28	327	0.4+	0.8-	1998 08 27	704	0.9+	1.1+	1998 09 18	704	0.6-	0.4-
1998 07 28	327	0.3+	0.6-	1998 08 27	704	1.2+	1.0-	2000 01 05	704	0.7-	0.5-
1998 08 22	327	0.1-	0.3-	1998 08 27	704	1.1-	0.5+	2000 01 05	704	0.6-	0.0
1998 08 22	327	0.0	0.0	1998 08 27	327	0.0	0.2+	2000 01 05	699	1.3+	0.3-
1998 08 22	327	0.0	0.1-	1998 08 27	327	0.1+	0.1-	2000 01 05	704	0.2-	0.3+
1998 08 22	327	0.0	0.2-	1998 08 27	327	0.2+	0.0	2000 01 05	704	0.1+	0.3-
1998 08 23	327	0.2-	0.1+	1998 08 31	327	0.2+	0.1-	2000 01 05	699	0.4+	0.1+
1998 08 23	327	0.1-	0.2+	1998 08 31	327	0.6+	0.3+	2000 01 05	704	0.0	0.5-
1998 08 23	327	0.3-	0.4+	1998 08 31	327	0.3+	0.5+	2000 01 05	699	0.7+	0.9+
1998 08 24	704	0.4-	1.3-	1998 09 14	704	1.1-	1.1-	2000 01 08	704	0.1+	0.2-
1998 08 24	704	1.3-	0.9-	1998 09 14	704	0.8+	0.2-	2000 01 08	704	0.2-	0.2-
1998 08 24	704	0.8-	0.1+	1998 09 14	704	0.6+	1.2-	2000 01 08	704	0.9+	1.2+
1998 08 24	704	0.5-	1.4+	1998 09 14	704	0.4+	0.2+	2000 01 10	704	0.5-	0.4-
1998 08 24	704	0.7+	1.1+	1998 09 14	704	0.7+	1.4+	2000 01 10	704	(2.1-	1.5+)
1998 08 25	327	0.0	0.5+	1998 09 18	704	0.4+	1.7+	2000 01 10	704	0.1+	0.4+
1998 08 25	327	0.7-	0.3+	1998 09 18	704	0.9-	0.8-	2000 01 10	704	0.4-	0.5-
1998 08 25	327	0.3-	0.2-	1998 09 18	704	0.7-	0.0	2000 01 10	704	1.0-	0.1-

1998 QJ₅ = 2000 AS₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	99.54737		(2000.0)	P		Q	
<i>n</i>	0.22064158	ω	112.32592	+0.99806927	-0.01771195		
<i>a</i>	2.7123421	Ω	248.73039	-0.00596371	+0.92672099		
<i>e</i>	0.1152879	<i>i</i>	3.66273	+0.06182371	+0.37533251		
<i>P</i>	4.47	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.8+	0.2-	1998 08 23	327	0.2-	0.2-	1998 09 15	699	0.7+	1.0+
1998 08 17	704	0.3+	0.3+	1998 08 27	327	0.3-	0.1+	1998 09 15	699	0.3+	0.9+
1998 08 17	704	1.0+	0.5+	1998 08 27	327	0.4-	0.1+	1998 09 15	699	0.4+	1.7+
1998 08 17	704	0.5-	0.3+	1998 08 27	327	0.2-	0.2+	1998 09 18	704	0.1-	1.7-
1998 08 17	704	0.9-	0.2-	1998 08 30	327	0.4-	0.1+	1998 09 18	704	0.7-	0.7+
1998 08 22	327	0.1+	0.1+	1998 08 30	327	0.5-	0.2+	1998 09 18	704	0.5-	0.2-
1998 08 22	327	0.1+	0.2+	1998 08 30	327	0.5-	0.3+	1998 09 18	704	0.0	0.1+
1998 08 22	327	0.2+	0.2+	1998 08 31	327	0.6-	0.1+	2000 01 05	704	0.0	0.7+
1998 08 23	704	0.3+	0.9-	1998 08 31	327	0.5-	0.1+	2000 01 05	704	0.1+	0.1-

1998 08 23	704	1.3+	0.0	1998 08 31	327	0.7-	0.3-	2000 01 05	704	0.0	0.5-
1998 08 23	704	1.1+	0.7-	1998 09 14	704	0.3-	0.0	2000 01 06	704	0.0	0.1-
1998 08 23	704	0.5-	1.0-	1998 09 14	704	0.6+	1.4-	2000 01 06	704	0.0	0.2-
1998 08 23	704	0.5-	0.3+	1998 09 14	704	0.2+	0.4-	2000 01 06	704	0.1-	0.0
1998 08 23	327	0.0	0.2-	1998 09 14	704	0.2-	0.4-				
1998 08 23	327	0.0	0.1-	1998 09 14	704	1.0+	0.6+				

1998 QS₅ = 2000 AO₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	83.56233		(2000.0)	P		Q	
<i>n</i>	0.21778901	ω	56.04685	+0.82248629	-0.56715433		
<i>a</i>	2.7359747	Ω	338.40711	+0.47561670	+0.72728711		
<i>e</i>	0.2285164	<i>i</i>	6.71599	+0.31193758	+0.38650929		
<i>P</i>	4.53	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.2-	0.1+	1998 09 14	704	0.3+	0.5-	1998 11 15	699	0.9-	0.2+
1998 08 17	704	0.1-	0.6+	1998 09 14	704	0.2-	1.0+	1998 11 15	699	1.4+	0.8+
1998 08 17	704	0.1-	0.7+	1998 09 14	684	0.4-	0.1+	1998 12 09	704	0.5-	0.1+
1998 08 17	704	0.6-	0.7+	1998 09 14	684	0.5-	0.1+	1998 12 09	704	0.0	1.1-
1998 08 17	704	0.4-	0.0	1998 09 14	699	0.7-	0.3+	1998 12 09	704	0.4+	1.3-
1998 08 23	684	0.2+	0.1-	1998 09 14	699	0.0	0.5+	1999 12 04	703	0.1-	0.4-
1998 08 23	684	0.3+	0.2-	1998 09 14	699	0.2-	0.0	1999 12 04	703	0.0	0.1+
1998 08 23	704	0.1-	0.5+	1998 09 15	684	0.4-	0.1-	1999 12 04	703	0.5-	0.1+
1998 08 23	704	1.4-	1.4+	1998 09 15	684	0.4-	0.1-	1999 12 04	703	0.1-	0.6+
1998 08 23	704	(0.7-	2.1-)	1998 09 18	704	0.1-	0.8+	2000 01 05	704	0.4+	0.0
1998 08 23	704	0.3+	0.6-	1998 09 18	704	1.7+	0.9-	2000 01 05	704	0.6-	0.2-
1998 08 23	704	0.1-	0.2-	1998 09 18	699	0.2-	0.0	2000 01 05	704	1.6+	0.2-
1998 08 24	684	0.1+	0.2-	1998 09 18	704	0.2+	1.1-	2000 01 05	704	0.4-	1.4-
1998 08 24	684	0.2+	0.2+	1998 09 18	699	0.2-	0.3-	2000 01 05	704	0.5+	0.4-
1998 08 26	684	0.1-	0.3-	1998 09 18	704	0.1-	0.4-	2000 01 06	704	0.4+	0.8+
1998 08 26	684	0.1-	0.3-	1998 09 18	704	0.6-	0.4+	2000 01 06	704	0.1-	1.2+
1998 08 27	684	0.2+	0.3-	1998 09 18	699	0.1-	0.2+	2000 01 06	704	0.5-	0.7+
1998 08 27	684	0.3+	0.0	1998 10 21	684	0.8+	0.4+	2000 01 06	704	0.2+	0.2+
1998 09 14	704	0.1-	0.6-	1998 10 21	684	0.7+	0.3+	2000 01 06	704	0.2-	0.1+
1998 09 14	704	0.3+	0.5-	1998 10 22	684	1.2+	0.1+	2000 01 06	704	0.1+	0.3+
1998 09 14	704	0.3+	0.6-	1998 11 15	699	0.2+	1.2+				

1998 QX₆ = 1999 XG₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	146.35751		(2000.0)	P		Q	
<i>n</i>	0.27482085	ω	11.01030	+0.78637028	+0.59324281		
<i>a</i>	2.3429855	Ω	311.19279	-0.58275187	+0.61982829		
<i>e</i>	0.1529150	<i>i</i>	13.23591	-0.20499275	+0.51368849		
<i>P</i>	3.59	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 16	699	0.1-	0.5+	1998 08 23	704	0.7-	0.2-	1998 09 24	747	0.2+	0.8+
1998 07 16	699	0.2-	0.0	1998 08 27	699	0.2-	0.3-	1998 09 24	747	0.2+	0.1-
1998 07 16	699	0.3-	0.5+	1998 08 27	699	0.4+	0.7+	1998 09 27	747	0.7-	0.4+
1998 07 24	566	0.1+	0.1+	1998 08 27	699	0.6-	0.4+	1998 09 27	747	0.1+	0.2+
1998 07 24	566	0.2-	0.3+	1998 08 29	747	0.8+	0.0	1999 12 12	704	0.8-	0.3-
1998 07 24	566	0.6+	0.3+	1998 08 29	747	0.2+	0.4-	1999 12 12	704	0.6-	0.2+
1998 08 17	704	1.0-	0.0	1998 08 29	747	0.7-	0.3+	1999 12 12	704	0.1+	0.1+
1998 08 17	704	1.0+	0.6-	1998 08 29	747	0.1+	0.1+	1999 12 12	704	0.0	0.4+
1998 08 17	704	0.0	0.7-	1998 08 30	747	0.5-	0.5+	1999 12 12	704	0.5+	0.8+
1998 08 17	704	0.3-	1.0+	1998 08 30	747	0.4+	0.4+	1999 12 15	704	0.3+	0.2-
1998 08 17	704	0.7+	0.8+	1998 08 30	735	0.1+	0.3-	1999 12 15	704	0.2-	1.4-
1998 08 21	566	0.1-	0.0	1998 08 30	747	0.2+	0.1+	1999 12 15	704	0.3+	0.6+
1998 08 21	566	0.1-	1.4-	1998 08 30	735	0.1+	0.4-	1999 12 15	704	0.2+	0.6-
1998 08 21	566	0.2+	1.4-	1998 08 30	735	0.4-	0.0	1999 12 15	704	0.5+	0.1+
1998 08 23	704	0.6+	1.1-	1998 09 17	747	0.0	0.1-	2000 01 04	704	0.2-	0.1+
1998 08 23	704	0.8-	0.6+	1998 09 17	747	0.7+	0.0	2000 01 04	704	0.1+	0.2-
1998 08 23	704	1.6-	0.0	1998 09 17	747	0.3+	0.0	2000 01 04	704	0.3+	0.3+
1998 08 23	704	0.9+	0.3-	1998 09 24	747	0.6+	0.0	2000 01 04	704	0.4-	0.4+

2000 JAN. 24

M.P.C. 37707

1998 QC₇ = 2000 AN₁₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	146.54518		(2000.0)	P	Q
<i>n</i>	0.19071478	ω	121.00047	-0.07327368	+0.99106480
<i>a</i>	2.9891416	Ω	144.26873	-0.96769376	-0.04361976
<i>e</i>	0.0732315	<i>i</i>	11.00224	-0.24124623	-0.12604712
<i>P</i>	5.17	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 27	699	0.4-	0.3+	1998 08 23	704	(1.2-	3.8-)	1999 11 07	704	0.9-	0.2-
1998 06 27	699	0.6-	0.8+	1998 08 23	704	0.6-	1.6-	1999 11 07	704	0.5-	0.6-
1998 06 27	699	0.5-	0.1-	1998 08 27	699	0.5-	0.3-	1999 12 03	704	0.7+	0.9-
1998 07 14	699	0.1-	0.5+	1998 08 27	699	0.5-	0.3+	1999 12 03	704	0.4+	0.4-
1998 07 14	699	0.3-	0.2+	1998 08 27	699	0.1-	0.3+	1999 12 03	704	0.3+	0.0
1998 07 14	699	0.4-	0.3-	1999 10 02	704	0.9-	0.2-	1999 12 03	704	0.2+	0.5-
1998 07 29	910	0.9+	0.1+	1999 10 02	704	0.7+	0.2-	2000 01 09	704	0.8+	0.3-
1998 07 29	910	1.0+	0.2+	1999 10 02	704	0.6+	0.0	2000 01 09	704	0.2+	0.7-
1998 07 29	910	0.9+	0.2+	1999 10 02	704	0.2-	0.5+	2000 01 09	704	0.5+	0.5-
1998 08 17	704	0.2+	0.4+	1999 10 02	704	0.9+	0.3-	2000 01 09	704	0.5+	0.8+
1998 08 17	704	0.0	0.4-	1999 11 02	703	0.3+	0.3-	2000 01 09	704	1.1+	1.2+
1998 08 17	704	0.6-	0.3+	1999 11 02	703	0.2-	0.0	2000 01 11	704	1.2-	1.1+
1998 08 17	704	0.9+	0.5-	1999 11 02	703	0.3-	0.7+	2000 01 11	704	0.1-	0.8+
1998 08 17	704	0.3+	0.3-	1999 11 02	703	1.0-	0.2+	2000 01 11	704	0.8-	1.4+
1998 08 23	704	0.8-	0.6+	1999 11 07	704	0.5+	0.8-	2000 01 11	704	0.2+	0.6+
1998 08 23	704	1.3+	0.2-	1999 11 07	704	0.1-	0.1-				
1998 08 23	704	(2.5-	0.7-)	1999 11 07	704	0.1-	0.5-				

1998 QQ₇ = 1999 XJ₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	219.84138		(2000.0)	P	Q
<i>n</i>	0.30799286	ω	263.07811	-0.30051088	+0.95371797
<i>a</i>	2.1715789	Ω	349.41487	-0.85037848	-0.27301209
<i>e</i>	0.1473646	<i>i</i>	3.35016	-0.43191394	-0.12604137
<i>P</i>	3.20	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 07 02	699	0.1+	0.3+	1998 08 23	704	1.0+	0.7-	1999 12 15	704	0.1+	0.4+
1998 07 02	699	0.2-	0.1+	1998 08 29	699	0.4+	0.2+	1999 12 15	704	0.1+	0.5+
1998 07 02	699	0.3-	0.0	1998 08 29	699	0.3-	0.8-	1999 12 15	704	0.1-	0.8+
1998 08 17	704	1.0-	0.0	1998 08 29	699	0.3-	1.0-	2000 01 03	704	0.1-	0.3-
1998 08 17	704	0.3-	0.2-	1999 11 14	704	0.2+	0.9+	2000 01 03	704	0.3+	0.1-
1998 08 17	704	0.0	0.0	1999 11 14	704	0.1+	0.2+	2000 01 03	704	0.7+	0.7-
1998 08 17	704	1.1+	0.4+	1999 11 14	704	0.4+	0.5+	2000 01 03	704	0.1-	0.5-
1998 08 17	704	(2.4-	1.0+)	1999 11 14	704	0.3+	0.9+	2000 01 04	704	0.6-	0.3-
1998 08 23	704	0.6+	0.0	1999 12 10	704	2.0-	1.5-	2000 01 04	704	0.3+	0.5-
1998 08 23	704	1.4-	0.7+	1999 12 10	704	(0.5-	2.4-)	2000 01 04	704	0.3-	0.2+
1998 08 23	704	0.8+	0.2-	1999 12 10	704	1.8+	1.3-	2000 01 04	704	0.2-	0.5+
1998 08 23	704	0.3-	0.8+	1999 12 15	704	0.1-	0.1+	2000 01 04	704	0.7-	0.3+

1998 QU₇

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	62.95258		(2000.0)	P	Q
<i>n</i>	0.18593032	ω	228.80819	+0.98753373	-0.03909773
<i>a</i>	3.0402029	Ω	132.82749	+0.07816457	+0.96259653
<i>e</i>	0.0957404	<i>i</i>	11.99931	-0.13662881	+0.26810312
<i>P</i>	5.30	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704	0.7+	0.5-	1998 09 14	699	1.0-	0.3+	1999 11 13	699	1.1-	0.9+
1998 08 17	704	0.6+	0.3-	1998 09 14	699	0.3-	1.1+	1999 12 03	704	0.1-	0.2-
1998 08 17	704	0.8-	1.6+	1999 10 07	703	0.2-	0.5+	1999 12 03	704	0.0	0.0
1998 08 17	704	0.6-	0.6-	1999 10 07	703	0.2-	0.3+	1999 12 03	704	0.1-	0.8-
1998 08 19	566	0.2-	0.2-	1999 10 07	703	0.4+	0.2+	1999 12 03	704	0.6+	0.5+
1998 08 19	566	0.1+	0.1+	1999 10 07	703	0.3-	0.2-	1999 12 08	699	(0.5+	2.6+)

1998 08 19	566	0.2-	0.4-	1999 10 09	704	0.9+	0.9-	1999 12 08	699	(0.4-	2.2+)
1998 08 23	704	0.5-	1.1-	1999 10 09	704	0.6+	0.5-	1999 12 08	699	(1.1+	2.6+)
1998 08 23	704	1.3+	0.7-	1999 10 09	704	0.6+	0.3-	2000 01 08	704	0.1+	0.2-
1998 08 23	704	0.2+	0.1+	1999 10 09	704	1.7+	1.9-	2000 01 08	704	0.5+	0.3+
1998 08 23	704	0.6+	1.1+	1999 10 31	703	0.1-	0.0	2000 01 08	704	1.1-	0.3+
1998 08 23	704	(2.5-	2.5-)	1999 10 31	703	0.1-	0.0	2000 01 08	704	0.3+	0.4+
1998 08 27	699	0.0	0.2-	1999 10 31	703	0.3-	0.2-	2000 01 11	704	0.5+	0.1-
1998 08 27	699	0.1+	0.1-	1999 10 31	703	0.7-	0.8+	2000 01 11	704	0.5-	0.1-
1998 08 27	699	0.1-	0.6+	1999 11 13	699	0.7-	0.8+	2000 01 11	704	0.6+	0.3-
1998 09 14	699	(1.8-	2.3-)	1999 11 13	699	0.6-	0.3+	2000 01 11	704	0.1-	0.5+

1998 QN₈ = 1999 XC₁₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	117.38171		(2000.0)	P	Q
<i>n</i>	0.22566208	ω	9.46719	+0.81718495	+0.57481464
<i>a</i>	2.6719623	Ω	315.35772	-0.53268283	+0.72510344
<i>e</i>	0.1063410	<i>i</i>	3.45853	-0.22013125	+0.37922702
<i>P</i>	4.37	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.4+	0.5-	1998 08 26	120	0.4+	0.8-	1999 12 15	704	0.8-	0.2-
1998 08 17	704	0.6-	0.7+	1998 08 26	120	0.8+	0.1-	1999 12 15	704	0.6-	0.3+
1998 08 17	704	1.3-	1.4+	1999 11 14	704	0.5+	0.5+	1999 12 15	704	0.7-	0.2-
1998 08 17	704	1.0-	0.9+	1999 11 14	704	0.5+	0.3+	2000 01 03	704	0.3+	0.8-
1998 08 17	704	0.0	0.3+	1999 11 14	704	0.7+	0.4+	2000 01 03	704	0.2+	0.0
1998 08 23	704	0.5+	0.4-	1999 11 14	704	0.6+	0.2-	2000 01 03	704	0.5+	0.1+
1998 08 23	704	1.1-	0.4-	1999 11 14	704	0.2+	0.1-	2000 01 03	704	0.1+	0.4-
1998 08 23	704	1.8+	0.1-	1999 12 10	704	0.3-	0.1-	2000 01 03	704	0.1-	0.2+
1998 08 23	704	0.0	1.0-	1999 12 10	704	0.1-	0.4-	2000 01 04	704	0.9+	0.4+
1998 08 25	120	0.0	0.1+	1999 12 10	704	0.3-	0.3+	2000 01 04	704	0.5+	0.2-
1998 08 25	120	0.2-	0.3-	1999 12 10	704	0.6-	0.4+	2000 01 04	704	0.1-	0.0
1998 08 25	120	0.4+	0.2-	1999 12 15	704	0.6-	0.6-	2000 01 04	704	0.2+	0.6+
1998 08 25	120	0.0	0.1+	1999 12 15	704	0.5-	0.0	2000 01 04	704	0.1-	0.3-

1998 QO₈ = 2000 AA₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	127.35066		(2000.0)	P	Q
<i>n</i>	0.27303439	ω	217.75204	+0.97786935	+0.18985754
<i>a</i>	2.3531944	Ω	131.06619	-0.15204488	+0.93348146
<i>e</i>	0.1442467	<i>i</i>	6.69477	-0.14371459	+0.30424741
<i>P</i>	3.61	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1998 08 17	704	0.0	1.8+	1998 08 23	704	0.6+	1.5-	2000 01 05	704	1.6-	0.2-
1998 08 17	704	0.4-	0.9-	1998 08 23	704	(3.7-	0.5-)	2000 01 05	704	1.3-	0.4+
1998 08 17	704	(2.6-	0.4-)	1998 08 29	699	0.2+	0.2-	2000 01 05	704	1.3-	0.4+
1998 08 17	704	0.6-	0.3-	1998 08 29	699	0.7-	0.7-	2000 01 06	704	0.9-	0.6+
1998 08 17	704	0.3+	0.8-	1998 08 29	699	0.2+	1.0+	2000 01 06	704	1.5-	0.3+
1998 08 23	704	0.4+	0.4+	2000 01 05	704	1.6-	0.3+	2000 01 06	704	1.1-	0.2+
1998 08 23	704	1.7-	0.9+	2000 01 05	704	1.4-	0.6-				

1998 QU₉ = 2000 AZ₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	81.73516		(2000.0)	P	Q
<i>n</i>	0.30380320	ω	74.52255	+0.65751811	-0.75188104
<i>a</i>	2.1914984	Ω	334.16848	+0.64164358	+0.59248572
<i>e</i>	0.0371185	<i>i</i>	6.38063	+0.39492209	+0.28919816
<i>P</i>	3.24	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1992 09 30	675	0.5-	0.6-	1998 08 23	704	0.5-	1.4+	2000 01 03	704	0.0	0.5+
1992 09 30	675	1.3+	1.4-	1998 08 23	704	0.0	0.6+	2000 01 03	704	0.4-	0.1-
1997 03 18	599	0.4+	0.5-	1998 08 23	704	0.3-	0.8-	2000 01 03	704	0.4+	0.1+
1997 03 18	599	0.3+	0.1-	1998 08 23	704	0.3+	0.6-	2000 01 03	704	0.2+	0.3+
1997 04 28	704	0.3-	0.1-	1998 08 29	699	0.1-	0.1+	2000 01 03	704	0.0	0.3+

1997 04 28	704	0.4−	0.4+	1998 08 29	699	0.4−	0.1−	2000 01 04	704	0.1+	0.4+
1997 04 28	704	0.4−	0.2−	1998 08 29	699	0.9−	0.4+	2000 01 04	704	0.2−	0.5+
1997 04 28	704	0.5−	0.0	1998 09 14	699	0.5+	0.4−	2000 01 04	704	0.2−	0.3+
1997 04 28	704	(2.8−	0.5−)	1998 09 14	699	0.9+	0.6−	2000 01 04	704	1.1+	0.6−
1998 08 17	704	0.5−	0.4+	1998 09 14	699	0.1+	0.0	2000 01 04	704	0.9−	1.1−
1998 08 17	704	0.0	1.4+	1999 11 11	703	0.4+	1.2+	2000 01 06	699	0.4+	0.5+
1998 08 17	704	0.7−	0.8+	1999 11 11	703	0.1−	0.4+	2000 01 06	699	0.4+	0.9+
1998 08 17	704	0.2−	0.7+	1999 11 11	703	0.6+	0.3−	2000 01 06	699	0.2+	0.4+
1998 08 23	704	0.5+	0.2−	1999 11 11	703	0.2−	0.5+				

1998 QH₁₀ = 1999 XQ₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
				P		Q	
<i>M</i>	99.41997		(2000.0)				
<i>n</i>	0.24433145	ω	65.51590	+0.99233471		−0.01869877	
<i>a</i>	2.5340575	Ω	295.35853	−0.03821758		+0.89359498	
<i>e</i>	0.0593649	<i>i</i>	7.76913	+0.11752127		+0.44848451	
<i>P</i>	4.03	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.4−	0.6+	1998 08 28	699	0.0	0.1+	1999 12 10	704	0.3−	0.4+
1998 08 17	704	0.2−	0.9+	1998 09 14	699	0.1−	0.2−	1999 12 15	704	0.3−	0.4+
1998 08 17	704	0.2+	0.0	1998 09 14	699	0.2−	0.1+	1999 12 15	704	0.2+	0.1+
1998 08 17	704	0.7−	0.8−	1998 09 14	699	0.3+	0.2+	1999 12 15	704	0.1+	0.0
1998 08 23	704	1.0+	1.1−	1999 11 16	704	0.1+	0.3+	1999 12 15	704	0.8+	0.3−
1998 08 23	704	1.2+	0.2−	1999 11 16	704	0.3−	0.1+	1999 12 15	704	1.9+	2.0−
1998 08 23	704	0.9−	0.6+	1999 11 16	704	0.1−	0.0	2000 01 04	704	0.6−	0.7+
1998 08 23	704	(0.4+	3.0−)	1999 11 16	704	0.2−	0.5+	2000 01 04	704	0.3−	0.5+
1998 08 23	704	1.2−	0.6−	1999 11 16	704	0.5−	0.1+	2000 01 04	704	0.1−	0.1+
1998 08 28	699	0.4+	0.3+	1999 12 10	704	0.6−	1.1−	2000 01 04	704	0.3−	0.6+
1998 08 28	699	0.5+	0.4+	1999 12 10	704	0.4+	0.2−				

1998 QX₁₀

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
				P		Q	
<i>M</i>	21.66742		(2000.0)				
<i>n</i>	0.18669397	ω	284.92263	+0.60359347		−0.78328213	
<i>a</i>	3.0319068	Ω	126.97249	+0.78421152		+0.54958817	
<i>e</i>	0.1055065	<i>i</i>	10.73468	+0.14383050		+0.29055456	
<i>P</i>	5.28	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 15	699	1.4−	0.3−	1998 09 24	699	1.1−	0.0	1999 12 03	704	0.2−	0.0
1998 07 15	699	1.1−	1.5−	1998 09 24	699	0.7−	0.1−	1999 12 08	699	0.3−	0.6+
1998 07 15	699	1.0−	1.0−	1999 10 09	704	0.4+	1.2+	1999 12 08	699	0.4−	0.8+
1998 08 17	704	0.1+	0.3−	1999 10 09	704	0.4+	0.6+	1999 12 08	699	0.4−	0.4+
1998 08 17	704	0.3+	0.2−	1999 10 09	704	1.5+	1.1−	1999 12 14	704	0.5−	0.3+
1998 08 17	704	0.5+	0.6+	1999 10 09	704	0.8+	0.7−	1999 12 14	704	1.2−	0.5+
1998 08 17	704	0.3−	0.5+	1999 10 09	704	1.4+	1.8−	1999 12 14	704	1.2−	0.5+
1998 08 17	704	0.5+	0.2−	1999 10 09	704	1.0+	0.7−	1999 12 14	704	0.4−	0.6+
1998 08 23	704	0.9+	0.0	1999 10 09	704	(2.6+	2.7−)	1999 12 14	704	1.6−	0.1−
1998 08 23	704	1.3+	0.2−	1999 10 09	704	0.9+	0.9−	2000 01 06	699	0.3−	0.3+
1998 08 23	704	0.0	0.5−	1999 10 09	704	0.1+	1.6−	2000 01 06	699	0.5−	0.4+
1998 08 23	704	1.6+	0.7−	1999 11 01	703	0.1−	0.1+	2000 01 06	699	0.4−	0.4+
1998 08 23	704	0.5+	0.5−	1999 11 01	703	0.1−	0.3+	2000 01 08	704	0.1−	0.9−
1998 08 27	699	0.3+	0.6+	1999 11 01	703	0.1+	0.2+	2000 01 08	704	0.4+	0.4+
1998 08 27	699	0.8+	0.1+	1999 11 01	703	0.1+	0.1+	2000 01 08	704	1.2+	0.6−
1998 08 27	699	0.7+	0.2+	1999 11 17	703	0.5−	0.2+	2000 01 08	704	0.3+	0.7−
1998 08 29	699	0.4−	0.7+	1999 11 17	703	0.2−	0.2+	2000 01 08	704	0.4+	0.0
1998 08 29	699	0.2+	0.9+	1999 11 17	703	0.2−	0.3+	2000 01 11	704	0.2+	0.5−
1998 08 29	699	0.3−	1.0+	1999 11 17	703	0.4−	0.2+	2000 01 11	704	0.4+	0.1−
1998 08 30	699	0.4−	0.9+	1999 12 03	704	0.3−	0.1−	2000 01 11	704	0.0	0.0
1998 08 30	699	0.1−	0.7+	1999 12 03	704	0.1+	0.0	2000 01 11	704	0.9+	0.5−
1998 08 30	699	0.5−	0.1+	1999 12 03	704	0.1−	0.2+	2000 01 11	704	0.2−	0.1+
1998 09 24	699	0.9−	0.1+	1999 12 03	704	0.1+	0.4+				

1998 QA₁₁ = 1981 KB = 2000 AP₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
				P		Q	
<i>M</i>	239.08963		(2000.0)				
<i>n</i>	0.35378559	ω	279.74899	−0.00637465		+0.99982616	
<i>a</i>	1.9798971	Ω	349.83652	−0.87413113		−0.01408135	
<i>e</i>	0.0952671	<i>i</i>	5.69875	−0.48564815		+0.01222162	
<i>P</i>	2.79	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 05 28	809	0.1+	0.3+	1998 08 23	704	0.1+	0.1−	1999 12 08	704	0.4+	0.2−
1981 05 29	805	(4.4−	1.4+)	1998 08 23	704	0.4−	0.6+	1999 12 08	704	0.1+	0.8−
1981 05 29	805	(10.0+	1.8−)	1998 08 23	704	0.1−	0.1−	2000 01 04	704	0.3+	0.5−
1998 07 31	699	0.0	0.3−	1998 08 29	699	0.1−	0.2+	2000 01 04	704	0.0	0.3−
1998 07 31	699	0.4−	0.3−	1998 08 29	699	0.1+	0.3+	2000 01 04	704	0.2−	0.3+
1998 07 31	699	0.1+	0.4−	1998 08 29	699	0.1−	0.1−	2000 01 04	704	0.1−	0.0
1998 08 17	704	0.3+	0.2−	1998 08 30	699	0.2−	0.6+	2000 01 04	704	0.4+	0.0
1998 08 17	704	0.2+	0.1−	1998 08 30	699	0.1+	0.4+	2000 01 06	704	0.4+	0.8+
1998 08 17	704	0.2+	0.3+	1998 08 30	699	0.3+	0.3+	2000 01 06	704	0.3+	0.1−
1998 08 17	704	0.4−	0.4+	1999 12 08	704	1.1−	0.3−	2000 01 06	704	0.5−	1.0+
1998 08 17	704	0.3−	0.0	1999 12 08	704	0.2+	0.1+	2000 01 06	704	0.1+	0.7+
1998 08 23	704	0.4+	0.7−	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.1+	0.0

1998 QR₁₁ = 2000 AP₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
				P		Q	
<i>M</i>	156.46165		(2000.0)				
<i>n</i>	0.26396604	ω	27.05309	+0.60735567		+0.79208406	
<i>a</i>	2.4067853	Ω	280.40760	−0.73963743		+0.53577025	
<i>e</i>	0.2001105	<i>i</i>	3.55623	−0.28992336		+0.29249459	
<i>P</i>	3.73	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 17	704	0.0	0.1+	1998 08 23	704	(0.2+	2.7+)	2000 01 03	704	0.3−	0.3−
1998 08 17	704	0.1+	0.1−	1998 08 23	704	(0.1−	2.5+)	2000 01 03	704	0.5+	0.9+
1998 08 17	704	0.2−	0.2+	1998 08 23	704	0.7−	0.3+	2000 01 03	704	0.1+	0.6+
1998 08 17	704	0.6−	0.2+	1998 08 28	699	0.1+	0.1+	2000 01 05	704	0.2+	0.5−
1998 08 17	704	0.1+	0.6+	1998 08 28	699	0.8+	0.2−	2000 01 05	704	0.6−	0.1+
1998 08 19	566	0.3−	0.5−	1998 08 28	699	0.0	0.3+	2000 01 05	704	0.6+	0.6+
1998 08 19	566	0.5−	0.4−	1998 09 14	699	0.2−	0.1+	2000 01 05	704	0.1+	0.3−
1998 08 19	566	0.1+	0.5−	1998 09 14	699	0.6+	0.6−	2000 01 05	704	0.3−	0.3−
1998 08 23	704	0.6+	0.0	1998 09 14	699	0.4−	0.8−				
1998 08 23	704	0.5+	1.1+	2000 01 03	704	0.3−	0.5−				

1998 QT₁₁ = 1999 VO₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
				P		Q	
<i>M</i>	92.66866		(2000.0)				
<i>n</i>	0.17663574	ω	169.15497	+0.85104144		+0.52087661	
<i>a</i>	3.1459392	Ω	159.04253	−0.49460495		+0.83767309	
<i>e</i>	0.1304043	<i>i</i>	10.70731	−0.17633608		+0.16429042	
<i>P</i>	5.58	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.7+	0.3−	1998 08 23	704	1.0−	0.8+	1999 11 07	704	0.1+	0.0
1998 08 17	704	1.5−	0.3+	1998 08 28	699	0.4+	0.6−	1999 11 07	704	0.5−	0.0
1998 08 17	704	0.7−	0.9−	1998 08 28	699	0.2+	1.5+	1999 11 07	704	1.2+	0.6+
1998 08 17	704	0.9−	0.7−	1998 08 28	699	0.3−	1.1−	1999 11 07	704	0.0	0.7+
1998 08 17	704	1.2+	0.2−	1999 11 05	704	0.3+	1.1−	1999 12 14	704	0.1−	0.1+
1998 08 23	704	0.4+	1.5+	1999 11 05	704	1.5−	1.1−	1999 12 14	704	0.0	0.4+
1998 08 23	704	1.7+	0.3−	1999 11 05	704	0.7+	0.3+	1999 12 14	704	0.6−	0.1+
1998 08 23	704	0.1−	0.0	1999 11 05	704	0.2+	0.1+				

2000 JAN. 24

M.P.C. 37709

1998 QV₁₁ = 1999 XE₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	158.34284		(2000.0)	P	Q
<i>n</i>	0.27568595	ω	49.97251	+0.71100260	+0.70122330
<i>a</i>	2.3380814	Ω	265.43058	-0.66015625	+0.63988511
<i>e</i>	0.1726308	<i>i</i>	3.02172	-0.24221689	+0.31437705
<i>P</i>	3.58	<i>H</i>	16.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 08 17	704	0.2+	0.2-	1998 08 23	704	0.9+	0.9-	1999 12 08	691	0.3+	0.3-
1998 08 17	704	0.5-	0.3-	1998 08 23	704	0.8+	1.1+	1999 12 08	691	0.1-	0.0
1998 08 17	704	0.1+	0.0	1998 08 28	699	0.4-	0.3-	1999 12 08	691	0.2-	0.2-
1998 08 17	704	0.7-	0.2-	1998 08 28	699	1.0-	0.2+	1999 12 15	691	0.2-	0.3+
1998 08 17	704	0.1+	0.3+	1998 08 28	699	0.6-	0.2-	1999 12 15	691	0.4-	0.0
1998 08 23	704	0.6+	0.8+	1999 12 02	691	0.2+	0.1-	1999 12 15	691	0.3-	0.2+
1998 08 23	704	0.2-	1.4-	1999 12 02	691	0.3+	0.1+				
1998 08 23	704	0.8+	1.0+	1999 12 02	691	0.5+	0.0				

1998 QC₁₂ = 1999 XD₁₆₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	156.52466		(2000.0)	P	Q
<i>n</i>	0.24518850	ω	11.27890	+0.50350708	+0.85326322
<i>a</i>	2.5281489	Ω	289.08056	-0.80345081	+0.40464216
<i>e</i>	0.0721579	<i>i</i>	8.25737	-0.31772224	+0.32894771
<i>P</i>	4.02	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 29	704	0.0	1.4-	1998 08 23	704	0.4-	0.5-	1999 12 10	704	0.3-	0.5+
1998 06 29	704	0.8-	0.2-	1998 08 23	704	0.4+	0.4-	1999 12 10	704	0.0	0.4+
1998 06 29	704	2.0+	1.3+	1998 08 30	699	0.6+	0.1-	1999 12 10	704	0.3-	0.0
1998 06 29	704	(1.4+	2.0+)	1998 08 30	699	0.3+	0.0	1999 12 15	704	0.4-	0.1+
1998 06 29	704	(2.1-	3.3+)	1998 08 30	699	0.6+	0.0	1999 12 15	704	0.1-	0.0
1998 07 26	699	0.4+	0.5-	1998 09 22	699	0.2-	0.3+	1999 12 15	704	0.0	0.2-
1998 07 26	699	0.3+	0.3-	1998 09 22	699	0.4+	0.5+	1999 12 15	704	0.0	0.2-
1998 07 26	699	0.6+	0.5-	1998 09 22	699	0.2-	0.6+	1999 12 15	704	0.1+	0.3-
1998 08 17	704	0.5-	0.7-	1999 10 05	704	0.2+	0.3+	2000 01 03	704	0.2+	0.1-
1998 08 17	704	0.4-	0.2+	1999 10 05	704	0.3-	0.3-	2000 01 03	704	0.0	0.2-
1998 08 17	704	1.1-	1.5+	1999 10 05	704	0.0	0.6-	2000 01 03	704	0.1+	0.1-
1998 08 17	704	0.8-	0.3-	1999 10 05	704	0.2-	0.2-	2000 01 03	704	0.4+	0.5-
1998 08 17	704	0.4-	0.4+	1999 11 16	704	0.5+	0.4+	2000 01 03	704	0.7+	0.3-
1998 08 20	566	(2.7-	2.8-)	1999 11 16	704	0.7-	0.7+	2000 01 04	704	0.2-	0.5-
1998 08 20	566	(2.0-	2.8-)	1999 11 16	704	0.2+	0.0	2000 01 04	704	0.2-	0.0
1998 08 20	566	(2.1-	2.1-)	1999 11 16	704	0.2-	0.1+	2000 01 04	704	0.2+	0.0
1998 08 23	704	0.5+	0.2-	1999 11 16	704	0.7-	0.4+	2000 01 04	704	0.3+	0.1-
1998 08 23	704	0.1-	0.2-	1999 12 10	704	0.3+	0.4-	2000 01 04	704	0.3+	0.0
1998 08 23	704	0.8-	0.5+	1999 12 10	704	0.0	0.3+				

1998 QG₁₂ = 2000 AP₁₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	246.58475		(2000.0)	P	Q
<i>n</i>	0.27343307	ω	12.57609	-0.76206477	+0.64562589
<i>a</i>	2.3509065	Ω	207.82749	-0.60283219	-0.73519358
<i>e</i>	0.0733996	<i>i</i>	6.05481	-0.23632738	-0.20653718
<i>P</i>	3.60	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 04 28	704	0.8-	0.9-	1998 08 23	704	(0.6+	2.3-)	1999 12 14	704	0.3+	0.0
1997 04 28	704	0.7+	0.6-	1998 08 30	699	1.9+	0.7-	1999 12 14	704	0.1-	0.1+
1997 04 28	704	1.1+	0.5+	1998 08 30	699	0.0	0.7-	1999 12 14	704	0.3+	0.4-
1997 04 28	704	1.2-	0.6+	1998 08 30	699	0.4+	0.2-	1999 12 14	704	0.1-	0.4-
1997 04 28	704	(3.1-	1.0+)	1998 09 15	699	0.4-	1.9+	2000 01 05	704	0.1-	0.6+
1998 07 31	699	0.5+	0.3+	1998 09 15	699	0.0	0.6+	2000 01 05	704	0.4-	0.5+
1998 07 31	699	0.6-	0.6+	1998 09 15	699	0.6+	0.3-	2000 01 05	704	0.0	0.2-
1998 07 31	699	0.1+	0.3+	1998 09 22	699	0.4-	0.2+	2000 01 05	704	0.1+	0.3+
1998 08 17	704	0.1+	0.2-	1998 09 22	699	0.1-	0.0	2000 01 05	704	0.2+	0.3+

1998 08 17	704	0.9-	0.4+	1998 09 22	699	0.3-	0.5-	2000 01 07	704	0.3-	0.0
1998 08 17	704	0.7-	0.6+	1999 12 06	704	0.3-	0.6+	2000 01 07	704	0.0	0.3+
1998 08 17	704	0.5-	0.1-	1999 12 06	704	0.3+	0.1-	2000 01 07	704	0.0	0.8-
1998 08 17	704	0.6-	0.1-	1999 12 06	704	0.1+	0.2-	2000 01 07	704	0.4-	0.3-
1998 08 23	704	0.3-	1.2-	1999 12 06	704	0.3+	0.3-	2000 01 07	704	0.1+	0.6+
1998 08 23	704	0.9+	0.7-	1999 12 06	704	0.5-	0.2-				
1998 08 23	704	0.3+	0.3-	1999 12 14	704	0.6+	0.4-				

1998 QN₁₂ = 2000 AW₁₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	101.86645		(2000.0)	P	Q
<i>n</i>	0.22429891	ω	163.55499	+0.99951008	-0.01922075
<i>a</i>	2.6827772	Ω	197.60189	+0.01015289	+0.94565512
<i>e</i>	0.2396069	<i>i</i>	4.68539	+0.02960604	+0.32460278
<i>P</i>	4.39	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 07 26	699	0.2+	1.1+	1998 08 23	699	0.2-	0.3-	2000 01 05	704	0.1+	0.1-
1998 07 26	699	0.2+	0.4+	1998 08 23	704	0.1+	0.3-	2000 01 05	704	0.8+	0.6-
1998 07 26	699	0.1+	0.3+	1998 08 23	704	0.4+	0.0	2000 01 05	704	0.1-	0.5+
1998 08 17	704	0.4-	0.6-	1998 08 23	699	0.2+	0.0	2000 01 05	704	0.1+	0.5-
1998 08 17	704	0.4-	0.5-	1998 09 15	699	0.7+	0.2-	2000 01 07	704	0.0	0.5-
1998 08 17	704	0.2-	0.1-	1998 09 15	699	1.0+	0.3+	2000 01 07	704	0.1-	0.2+
1998 08 17	704	0.6-	0.3-	1998 09 15	699	0.4+	0.1-	2000 01 07	704	0.0	0.3+
1998 08 17	704	0.3+	0.4-	1998 09 22	699	0.3-	0.5+	2000 01 07	704	0.1+	0.5+
1998 08 23	699	0.3-	0.2-	1998 09 22	699	0.2-	0.4+	2000 01 07	704	1.0-	0.2+
1998 08 23	704	0.3-	0.6-	1998 09 22	699	0.4-	0.9+				
1998 08 23	704	0.0	0.1+	2000 01 05	704	0.2+	0.3-				

1998 QB₁₃ = 2000 AQ₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	356.58167		(2000.0)	P	Q
<i>n</i>	0.27625332	ω	333.06150	-0.51649284	-0.85391828
<i>a</i>	2.3348790	Ω	147.91961	+0.80566474	-0.50981219
<i>e</i>	0.0698650	<i>i</i>	6.88939	+0.29006806	-0.10447540
<i>P</i>	3.57	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.8-	0.1-	1998 09 20	691	0.4-	0.3-	2000 01 05	704	0.0	0.1-
1998 08 17	704	0.3-	1.8-	1999 12 06	704	0.6-	0.4+	2000 01 05	704	0.2+	0.1+
1998 08 17	704	1.4-	0.2+	1999 12 06	704	0.5+	0.2-	2000 01 07	704	0.2-	0.3+
1998 08 17	704	0.4-	1.6+	1999 12 06	704	0.2-	0.9-	2000 01 07	704	0.4+	0.0
1998 08 17	704	0.1+	0.9+	1999 12 06	704	0.0	0.1+	2000 01 07	704	0.2+	0.1-
1998 08 23	704	1.7+	0.4+	1999 12 06	704	0.1-	0.1-	2000 01 07	704	0.0	0.2+
1998 08 23	704	1.9+	1.0+	1999 12 14	704	0.1-	0.1+	2000 01 07	704	0.4+	0.0
1998 08 23	704	(1.8-	2.5+)	1999 12 14	704	0.1+	0.0	2000 01 07	704	0.1+	0.3-
1998 08 23	704	(2.7+	1.0-)	1999 12 14	704	0.2+	0.1-	2000 01 07	704	0.0	0.1+
1998 09 15	691	0.2+	0.5-	1999 12 14	704	0.2-	0.2-	2000 01 07	704	0.2-	0.2+
1998 09 15	691	0.1+	0.4-	1999 12 14	704	0.4+	0.1-	2000 01 07	704	0.2+	0.1+
1998 09 15	691	0.1-	0.5-	2000 01 05	704	0.2-	0.3+	2000 01 07	704	0.0	0.4+
1998 09 20	691	0.7-	0.3-	2000 01 05	704	0.5-	0.0				
1998 09 20	691	0.3-	0.0	2000 01 05	704	0.4-	0.2+				

1998 QA₁₄

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	300.29789		(2000.0)	P	Q
<i>n</i>	0.22433926	ω	349.89986	-0.84072122	-0.53378533
<i>a</i>	2.6824555	Ω	157.11714	+0.51166713	-0.83809745
<i>e</i>	0.1179387	<i>i</i>	13.51750	+0.17715694	-0.11254283
<i>P</i>	4.39	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 26	699	1.7-	0.8-	1999 10 09	704	0.2-	0.2+	1999 11 07	704	0.2+	1.4-
1998 07 26	699	1.1+	0.9+	1999 10 09	703	0.0	0.3+	1999 11 07	704	0.1+	1.1-

1998 07 26	699	(2.6− 0.0)	1999 10 09	704	0.4+	0.3+	1999 12 16	704	0.3−	0.8−	
1998 08 17	704	0.4+	0.1+	1999 10 09	703	1.1−	0.6−	1999 12 16	704	0.2+	0.1−
1998 08 17	704	0.3−	0.2+	1999 10 09	704	0.1−	0.3+	1999 12 16	704	0.3−	0.6+
1998 08 17	704	0.9+	0.5+	1999 10 09	703	0.1−	0.4+	1999 12 16	704	0.3−	1.9+
1998 08 17	704	0.1+	0.7−	1999 10 09	703	0.1+	0.3+	2000 01 09	704	0.1+	0.3+
1998 08 17	704	(2.3+ 1.2−)	1999 10 09	704	0.3+	0.4+	2000 01 09	704	0.2+	0.5+	
1998 08 23	704	(0.5+ 2.5−)	1999 11 05	703	0.3−	0.1+	2000 01 09	704	0.2−	0.5+	
1998 08 23	704	0.2−	0.4−	1999 11 05	703	0.1−	0.0	2000 01 09	704	0.1+	0.1+
1998 08 23	704	0.8−	0.2+	1999 11 05	703	0.6−	0.3+	2000 01 09	704	0.4+	1.4+
1998 08 23	704	1.0−	1.8+	1999 11 05	703	0.6+	0.2−	2000 01 11	704	0.7−	1.5+
1998 08 28	699	1.6+	0.8−	1999 11 07	704	0.3+	0.7−	2000 01 11	699	0.2−	0.3+
1998 08 28	699	0.0	0.2−	1999 11 07	704	0.3−	0.7−	2000 01 11	704	0.1−	0.4+
1998 08 28	699	0.0	0.2+	1999 11 07	704	0.2−	0.6−	2000 01 11	704	0.0	0.5+
1999 09 08	703	0.7+	0.3+	1999 11 07	704	0.3+	1.0−	2000 01 11	699	0.1−	0.6−
1999 09 08	703	0.1+	0.4+	1999 11 07	704	0.4−	0.3−	2000 01 11	704	0.1+	0.3+
1999 09 08	703	0.0	0.5−	1999 11 07	704	0.1+	0.7−	2000 01 11	704	0.0	0.9+
1999 09 08	703	0.4+	0.3+	1999 11 07	704	0.1+	0.4−	2000 01 11	699	0.3+	0.8−
1999 10 09	704	0.2+	0.1+	1999 11 07	704	0.2+	1.1−				

1998 QB₁₅ = 2000 AR₁₇₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	111.28541		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21379524	ω	180.69189	+0.86868661	+0.48756490
a	2.7699422	Ω	149.62515	−0.45365015	+0.85399909
e	0.1652185	i	9.96990	−0.19896008	+0.18156549
P	4.61	H	13.9	G 0.15	U 3

Residuals in seconds of arc

1998 07 03	699	0.0	0.3−	1998 08 27	699	0.3+	0.7+	1999 12 14	704	1.0+	0.2+
1998 07 03	699	1.3−	0.2+	1998 09 15	691	0.2−	0.9+	1999 12 14	704	0.8+	0.3−
1998 07 03	699	1.2−	0.7−	1998 09 15	691	0.6−	0.2−	1999 12 14	704	1.0+	0.2−
1998 08 17	704	0.3+	0.5−	1998 09 24	699	0.6+	0.1+	1999 12 14	704	0.7+	0.2+
1998 08 17	704	0.7+	0.2+	1998 09 24	699	0.4−	0.2+	2000 01 07	704	1.0−	0.4+
1998 08 17	704	0.5+	0.1+	1998 09 24	699	(2.4− 1.9+)		2000 01 07	704	0.3−	0.4+
1998 08 17	704	0.8+	0.3+	1998 09 28	691	0.3−	0.1−	2000 01 07	704	0.6−	0.1+
1998 08 23	704	0.4+	0.3+	1998 09 28	691	0.2−	0.4−	2000 01 07	704	0.6−	0.1+
1998 08 23	704	0.8+	0.9−	1998 09 28	691	0.2−	0.3−	2000 01 11	704	0.1+	0.1−
1998 08 23	704	0.6−	0.4−	1999 12 05	704	0.6−	0.0	2000 01 11	704	0.4−	0.1+
1998 08 23	704	0.4+	0.3+	1999 12 05	704	0.4−	0.4+	2000 01 11	704	0.6−	0.5−
1998 08 23	704	0.6−	0.1−	1999 12 05	704	0.9+	0.9−	2000 01 11	704	0.5−	0.0
1998 08 27	699	0.2+	0.2+	1999 12 05	704	0.1+	0.1+				
1998 08 27	699	0.2+	0.1−	1999 12 05	704	0.4+	0.1−				

1998 QE₁₇ = 1943 TK = 1943 VC = 2000 AB₁₃₇Id. G. V. Williams, M. E. Sansaturio, O. Kippes (d, *MPC* 1749)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	77.41579		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.23159058	ω	72.09398	+0.62893911	−0.77449455
a	2.6261657	Ω	338.48961	+0.62483957	+0.55542778
e	0.3043015	i	10.65216	+0.46261334	+0.30275101
P	4.26	H	13.4	G 0.15	U 2

Residuals in seconds of arc

1943 10 05	062	(0.9− 2.2−)	1998 08 23	704	0.8+	1.7−	2000 01 04	704	0.3+	0.2+
1943 10 06	062	0.1+ 1.0−	1998 08 23	704	0.2−	1.7−	2000 01 04	704	0.6+	0.8−
1943 11 03	062	0.3+ 0.5+	1998 08 27	699	0.4+	1.0+	2000 01 06	699	0.1−	0.0
1943 11 03	062	0.0 0.3−	1998 08 27	699	0.3+	0.9+	2000 01 06	699	0.1−	0.1+
1998 07 31	699	0.5+ 0.5−	1998 08 27	699	0.3+	0.7+	2000 01 06	699	0.6−	0.5+
1998 07 31	699	1.2+ 0.5+	1998 09 21	699	0.2−	0.7+	2000 01 08	704	0.3+	1.0+
1998 07 31	699	0.7− 0.3−	1998 09 21	699	0.4−	0.6+	2000 01 08	704	1.6+	1.0+
1998 08 17	704	0.2− 0.4+	1998 09 21	699	0.6−	0.9+	2000 01 08	704	0.1+	0.3−
1998 08 17	704	0.2− 0.6+	1998 11 20	704	1.2−	0.4+	2000 01 08	704	0.7+	1.0−
1998 08 17	704	0.0 0.1+	1998 11 20	704	1.0+	0.9+	2000 01 13	120	0.8−	0.5−
1998 08 17	704	0.9− 0.1−	1998 11 20	704	0.5+	0.6−	2000 01 13	120	0.5−	0.5+
1998 08 17	704	(0.7− 3.9+)	1998 11 20	704	1.5−	0.2+	2000 01 13	120	0.1−	0.5−

1998 08 23	704	0.1+	0.7−	2000 01 04	704	0.2−	0.6+
1998 08 23	704	0.2−	0.2−	2000 01 04	704	0.4−	0.4+

1998 QR₁₇ = 1999 XO₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	143.83199		(2000.0)	P	Q
n	0.21613881	ω	357.14303	+0.51870392	+0.85285908
a	2.7498830	Ω	304.09510	−0.78296592	+0.44576568
e	0.0400838	i	4.14202	−0.34338116	+0.27189031
P	4.56	H	13.4	G 0.15	U 4

Residuals in seconds of arc

1998 08 17	704	0.4+	0.2−	1998 09 21	699	0.5−	0.1−	1999 12 10	704	0.7+	0.0
1998 08 17	704	0.5+	0.2+	1999 11 14	704	0.2−	0.3−	1999 12 15	704	0.9+	0.7−
1998 08 17	704	0.0	0.2−	1999 11 14	704	0.7−	0.9+	1999 12 15	704	0.6+	0.7−
1998 08 17	704	1.2+	0.2−	1999 11 14	704	0.3−	0.2−	1999 12 15	704	0.1+	0.2−
1998 08 17	704	0.1+	0.0	1999 11 14	704	0.1−	0.2−	1999 12 15	704	0.6+	0.3−
1998 08 23	699	0.2−	0.5+	1999 11 14	704	0.1+	0.2−	1999 12 15	704	0.7+	0.2−
1998 08 23	704	0.1+	0.8−	1999 11 16	704	0.4−	0.1−	1999 12 31	703	0.0	0.4+
1998 08 23	704	0.5+	0.4−	1999 11 16	704	0.4−	0.6−	1999 12 31	703	0.4−	0.4+
1998 08 23	699	0.0	0.7+	1999 11 16	704	0.3−	0.3+	1999 12 31	703	0.0	0.6+
1998 08 23	704	0.7+	1.2+	1999 11 16	704	0.2−	0.3+	1999 12 31	703	1.9−	0.4−
1998 08 23	699	0.1−	0.7+	1999 11 16	704	0.3−	0.2+	2000 01 03	704	0.2+	0.0
1998 08 23	704	1.6−	0.8−	1999 11 17	704	0.6−	0.6+	2000 01 03	704	1.2−	0.1−
1998 08 30	699	0.0	0.1−	1999 11 17	704	0.3+	0.2−	2000 01 03	704	0.1−	0.2−
1998 08 30	699	0.4−	0.1+	1999 11 17	704	0.5−	0.5+	2000 01 03	704	0.1−	0.2+
1998 08 30	699	0.2−	0.2+	1999 11 17	704	0.3−	0.5−	2000 01 03	704	0.2−	0.0
1998 09 13	699	0.9−	0.6+	1999 11 17	704	0.1+	0.1+	2000 01 04	704	0.4−	0.4+
1998 09 13	699	0.5+	0.1+	1999 12 10	704	1.0+	0.7−	2000 01 04	704	0.3−	0.4−
1998 09 13	699	0.3−	0.3−	1999 12 10	704	0.2+	0.4−	2000 01 04	704	0.0	0.5+
1998 09 21	699	0.2+	0.0	1999 12 10	704	0.8+	0.2−	2000 01 04	704	0.5+	0.5+
1998 09 21	699	0.1−	1.2−	1999 12 10	704	1.2+	0.3+	2000 01 04	704	0.4+	0.8+

1998 QZ₁₇ = 2000 AU₁₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	349.86502		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.27504624	ω	274.50173	−0.68210766	−0.72926570
a	2.3417053	Ω	218.68868	+0.70043279	−0.63042868
e	0.0683705	i	4.94276	+0.21005486	−0.26595340
P	3.58	H	14.3	G 0.15	U 4

Residuals in seconds of arc

1997 04 01	809	0.7+	1.0+	1998 08 23	704	0.2−	0.8−	1999 12 14	704	0.5+	0.0
1997 04 01	809	0.0	0.3+	1998 08 23	704	1.5+	0.7−	1999 12 14	704	0.2+	0.8+
1997 04 01	809	0.2−	0.3+	1998 08 23	704	1.3−	0.9−	1999 12 14	704	0.2+	0.5+
1998 07 26	699	1.3−	0.3+	1998 08 23	704	(2.8−	1.1+)	2000 01 05	704	0.5−	0.5−
1998 07 26	699	0.8+	0.1+	1998 08 30	699	0.2+	0.1+	2000 01 05	704	0.1+	0.8+
1998 07 26	699	0.1−	0.6+	1998 08 30	699	0.4−	1.0+	2000 01 05	704	0.4−	0.6−
1998 08 17	704	0.1−	0.2−	1998 08 30	699	0.3−	0.2−	2000 01 05	704	0.2−	0.7−
1998 08 17	704	0.0	1.6+	1999 12 06	704	0.3−	0.9+	2000 01 05	704	1.1+	0.7−
1998 08 17	704	0.7+	0.5+	1999 12 06	704	0.1−	1.0+	2000 01 07	704	0.1−	0.3−
1998 08 17	704	1.0+	0.3+	1999 12 06	704	0.4−	0.1+	2000 01 07	704	0.2−	0.1−
1998 08 17	704	0.8+	0.7+	1999 12 06	704	0.5−	0.6+	2000 01 07	704	0.0	0.4−
1998 08 23	699	1.2−	0.1−	1999 12 06	704	0.4−	0.6+	2000 01 07	704	0.0	0.4−
1998 08 23	699	0.1−	0.0	1999 12 14	704	0.4+	0.8+	2000 01 07	704	0.0	0.4−
1998 08 23	699	0.5−	0.5−	1999 12 14	704	0.8+	0.2−				

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M.P.C. 37711

Residuals in seconds of arc

1998 08 17	704	0.0	0.4−	1998 09 14	704	1.2−	0.7+	2000 01 03	704	0.1+	0.4+
1998 08 17	704	(0.1+	2.4+)	1998 09 18	704	0.3+	0.3−	2000 01 04	704	0.3+	0.6+
1998 08 17	704	0.5−	0.5+	1998 09 18	704	0.1−	0.4+	2000 01 04	704	0.5−	0.9−
1998 08 17	704	0.4−	0.9−	1998 09 18	704	0.3−	1.7−	2000 01 04	704	0.6+	0.3+
1998 08 17	704	0.6−	0.2−	1998 09 18	704	1.6+	0.7+	2000 01 04	704	0.1−	0.2+
1998 08 23	704	(0.8+	2.2+)	1999 12 10	704	0.3+	0.1−	2000 01 04	704	0.3−	0.6+
1998 08 23	704	0.4−	0.6−	1999 12 10	704	0.4+	0.4−	2000 01 08	704	0.1−	0.4+
1998 08 23	704	1.7+	1.7+	1999 12 10	704	0.6+	0.3−	2000 01 08	704	0.4+	0.2−
1998 08 23	704	1.6+	0.9−	1999 12 10	704	1.1−	0.6+	2000 01 08	704	0.1+	0.1−
1998 09 14	704	0.0	1.6+	1999 12 10	704	0.2−	0.0	2000 01 08	704	0.4+	0.6−
1998 09 14	704	0.3−	1.1−	2000 01 03	704	0.2−	0.5−	2000 01 08	704	0.3−	0.3−
1998 09 14	704	0.6−	1.4−	2000 01 03	704	0.9−	0.5+				
1998 09 14	704	0.7−	1.9+	2000 01 03	704	0.2+	0.3−				

1998 QW₁₈ = 2000 AG₁₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	24.22309		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21755181	ω	260.93454	+0.27409735	−0.96134224
<i>a</i>	2.7379630	Ω	172.98849	+0.94511321	+0.26421094
<i>e</i>	0.0618526	<i>i</i>	12.44245	+0.17785291	+0.07754785
<i>P</i>	4.53	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	1.2+	0.9−	1998 09 14	704	1.8+	0.7+	1999 12 03	704	0.2+	1.2+
1998 08 17	704	0.6−	0.3+	1998 09 14	704	0.3−	1.3−	1999 12 03	704	0.3+	0.6−
1998 08 17	704	0.2+	0.4−	1998 09 14	704	0.6−	0.8+	2000 01 08	704	0.4+	0.3+
1998 08 17	704	0.9−	0.7−	1998 09 14	704	0.3+	0.1−	2000 01 08	704	0.1+	0.2−
1998 08 17	704	0.6−	1.2−	1998 09 18	704	0.3+	0.0	2000 01 08	704	0.2−	0.2+
1998 08 23	704	0.8+	0.7+	1998 09 18	704	0.5−	0.1−	2000 01 08	704	0.8−	0.5+
1998 08 23	704	(0.2+	2.6+)	1998 09 18	704	1.4−	0.6−	2000 01 08	704	0.2−	1.2−
1998 08 23	704	0.0	1.8+	1998 09 18	704	0.2−	1.2+	2000 01 11	704	0.1+	0.2+
1998 08 23	704	1.4−	0.4−	1999 11 05	704	0.4+	0.7−	2000 01 11	704	0.1+	0.0
1998 08 31	327	0.6+	0.6+	1999 11 05	704	1.0+	0.1+	2000 01 11	704	0.1+	0.4+
1998 08 31	327	1.0+	0.0	1999 11 05	704	0.6−	0.0	2000 01 11	704	0.1+	0.2−
1998 08 31	327	0.8+	0.6+	1999 12 03	704	0.3−	0.5−				
1998 09 14	704	0.8−	1.1−	1999 12 03	704	0.8−	0.2+				

1998 QB₁₉ = 1999 XU₁₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	69.26584		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.19024638	ω	242.98566	+0.96821910	−0.19958705
<i>a</i>	2.9940459	Ω	128.14028	+0.23559795	+0.93009211
<i>e</i>	0.1158934	<i>i</i>	11.04819	−0.08393673	+0.30837263
<i>P</i>	5.18	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.5+	0.1−	1998 09 14	699	1.0−	1.2+	1999 12 15	704	1.2−	1.4+
1998 08 17	704	0.3+	0.5+	1999 12 05	704	0.7+	0.5−	2000 01 04	699	0.8+	0.8+
1998 08 17	704	0.2−	0.6+	1999 12 05	704	0.3+	0.2+	2000 01 04	699	0.2+	0.1+
1998 08 17	704	1.2+	1.3−	1999 12 05	704	0.5+	0.4−	2000 01 04	699	0.3−	0.3+
1998 08 17	704	0.2+	0.2−	1999 12 05	704	0.2+	0.5−	2000 01 07	704	0.1+	0.4−
1998 08 23	704	0.2−	0.9+	1999 12 05	704	0.0	1.0−	2000 01 07	704	0.1+	0.1−
1998 08 23	704	0.9+	1.5−	1999 12 06	704	0.1+	0.4+	2000 01 07	704	0.1+	0.1+
1998 08 23	704	0.0	1.0−	1999 12 06	704	0.0	0.4−	2000 01 07	704	0.3−	0.7−
1998 08 23	704	0.9−	0.4+	1999 12 06	704	0.1−	0.0	2000 01 07	704	0.2+	0.3−
1998 08 23	704	0.6−	1.7−	1999 12 06	704	0.0	0.4+	2000 01 11	704	0.1+	0.8−
1998 08 27	699	0.4−	0.9+	1999 12 06	704	0.0	0.4+	2000 01 11	704	0.0	0.5−
1998 08 27	699	0.2−	0.7+	1999 12 15	704	0.2−	0.1+	2000 01 11	704	0.3+	0.4−
1998 08 27	699	0.4−	0.2+	1999 12 15	704	0.5−	0.3+	2000 01 11	704	0.2−	0.0
1998 09 14	699	0.4+	0.1−	1999 12 15	704	0.1+	0.3+	2000 01 11	704	0.2−	0.5−
1998 09 14	699	0.4+	0.4+	1999 12 15	704	0.5−	1.3+				

1998 QD₂₀ = 2000 AC₁₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	43.45445		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.19564711	ω	220.94132	+0.68163240	−0.73140401
<i>a</i>	2.9386899	Ω	186.18944	+0.71125677	+0.66894559
<i>e</i>	0.0934038	<i>i</i>	11.02925	+0.17172969	+0.13251403
<i>P</i>	5.04	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.0	0.2−	1998 08 27	327	0.6−	0.3−	1998 09 18	704	1.6+	1.4+
1998 08 17	704	0.9+	1.0+	1998 08 27	327	0.4−	0.4−	1999 12 05	704	1.1−	0.1−
1998 08 17	704	0.5−	0.8−	1998 08 31	327	0.7−	0.1−	1999 12 05	704	0.4−	0.4−
1998 08 17	704	0.6+	0.0	1998 08 31	327	0.5−	0.2−	1999 12 05	704	0.7+	0.1−
1998 08 17	704	0.5+	0.8+	1998 08 31	327	0.4−	0.3−	1999 12 05	704	0.9+	0.6−
1998 08 23	704	(2.2+	2.0−)	1998 09 14	704	0.2−	0.8−	1999 12 05	704	0.9+	0.5−
1998 08 23	704	0.8−	1.3−	1998 09 14	704	1.5+	0.1−	2000 01 08	704	0.2+	0.4−
1998 08 23	704	0.6+	0.4−	1998 09 14	704	0.3−	1.2+	2000 01 08	704	0.5+	0.1+
1998 08 23	704	0.0	0.6+	1998 09 14	704	0.7−	0.2+	2000 01 08	704	0.5−	1.5+
1998 08 23	704	1.7+	1.0+	1998 09 14	704	0.4+	0.0	2000 01 08	704	0.2+	0.8+
1998 08 26	699	0.2+	0.1+	1998 09 17	699	0.2+	1.7+	2000 01 08	704	0.9−	0.9+
1998 08 26	699	0.2−	0.1−	1998 09 17	699	0.4−	0.7−	2000 01 11	704	0.7+	0.3−
1998 08 26	699	1.0−	0.7−	1998 09 17	699	0.8+	1.3+	2000 01 11	704	0.6−	0.0
1998 08 26	327	0.4−	0.3−	1998 09 18	704	0.2+	0.0	2000 01 11	704	0.1−	0.5−
1998 08 26	327	0.5−	0.5−	1998 09 18	704	(1.5+	2.4−)	2000 01 11	704	0.1−	0.3−
1998 08 26	327	0.1−	0.1−	1998 09 18	704	1.2−	1.5−	2000 01 11	704	0.6−	0.1−
1998 08 27	327	0.3−	0.2−	1998 09 18	704	0.4+	0.1−				

1998 QW₂₀ = 1999 XA₂₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.68319		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21675012	ω	285.11587	+0.08303367	−0.99516210
<i>a</i>	2.7447102	Ω	159.89713	+0.96291612	+0.06654561
<i>e</i>	0.1323231	<i>i</i>	8.78861	+0.25670597	+0.07227771
<i>P</i>	4.55	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	2.0+	1998 10 20	910	0.0	0.0	1999 12 15	704	0.2+	0.0
1998 08 17	704	1.4+	1.2−	1998 10 21	910	0.2+	0.1−	1999 12 15	704	0.5+	0.3+
1998 08 17	704	1.3+	0.2−	1998 10 21	910	0.2−	0.0	2000 01 07	704	0.8−	0.2−
1998 08 17	704	(1.6−	2.5+)	1998 10 21	910	0.1−	0.1+	2000 01 07	704	0.3−	0.2+
1998 08 17	704	(1.0−	2.5+)	1999 12 14	704	0.4−	0.3−	2000 01 07	704	0.4+	0.8−
1998 08 23	704	0.2−	1.1+	1999 12 14	704	0.3+	0.6+	2000 01 07	704	0.1−	0.4+
1998 08 23	704	0.4−	0.6+	1999 12 14	704	0.8−	0.4+	2000 01 07	704	0.1+	0.1−
1998 08 23	704	0.6−	1.2−	1999 12 14	704	0.4+	0.1+	2000 01 11	704	0.3+	0.4+
1998 08 23	704	0.6−	0.2−	1999 12 14	704	0.3−	0.2−	2000 01 11	704	1.4+	1.3−
1998 08 23	704	1.1−	1.1−	1999 12 15	704	0.0	0.2+	2000 01 11	704	0.7−	0.7+
1998 10 20	910	0.1+	0.1−	1999 12 15	704	0.1−	0.2+	2000 01 11	704	0.2+	0.6−
1998 10 20	910	0.1+	0.2+	1999 12 15	704	0.4−	0.0				

1998 QA₂₂ = 1987 SA₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	116.84691		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17362835	ω	148.02464	+0.63684792	+0.76607419
<i>a</i>	3.1821620	Ω	161.06738	−0.75172160	+0.64202034
<i>e</i>	0.0643523	<i>i</i>	15.53900	−0.17128737	+0.03066310
<i>P</i>	5.68	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1987 09 21	071	(1.4−	3.6−)	1998 10 12	699	0.3−	0.3−	1999 12 09	699	0.4+	1.4+
1987 09 21	071	0.2−	1.1+	1998 10 12	699	0.4−	0.7−	1999 12 09	699	0.5−	0.7+
1998 07 29	327	0.6−	0.5−	1998 10 12	699	1.1−	0.2−	1999 12 09	699	0.1−	0.3+

1998 08 04	699	0.4−	0.7+	1999 10 09	704	0.0	0.4−	1999 12 16	704	0.4+	0.3−
1998 08 17	704	0.6+	0.5−	1999 10 09	704	0.5+	0.5−	2000 01 09	704	0.8−	0.8−
1998 08 17	704	0.2−	1.0−	1999 10 09	704	0.1+	0.7−	2000 01 09	704	0.2+	0.2−
1998 08 17	704	0.9+	0.1−	1999 10 09	704	0.5+	0.0	2000 01 09	704	(2.1−	0.0)
1998 08 17	704	0.6+	0.0	1999 10 09	704	0.0	0.7−	2000 01 09	704	0.8−	0.8+
1998 08 17	704	0.7+	0.1−	1999 11 02	703	0.3+	0.1+	2000 01 09	704	0.4−	0.9+
1998 08 23	704	0.4+	0.8−	1999 11 02	703	0.2−	0.7+	2000 01 10	699	0.0	0.4−
1998 08 23	704	0.3+	1.0−	1999 11 02	703	0.5−	0.1+	2000 01 10	699	0.6+	0.6−
1998 08 23	704	0.8+	0.6+	1999 11 02	703	1.3−	0.3+	2000 01 10	699	0.5+	0.4+
1998 08 23	704	0.4+	0.2+	1999 12 03	704	0.2+	0.5−	2000 01 11	704	0.2−	0.7−
1998 08 23	704	0.3−	0.6+	1999 12 03	704	0.9+	0.5−	2000 01 11	704	0.3+	0.3−
1998 08 26	699	0.8+	0.1+	1999 12 03	704	0.0	0.0	2000 01 11	704	0.3−	0.0
1998 08 26	699	0.3+	0.0	1999 12 03	704	0.1+	0.4−	2000 01 11	704	0.6+	0.1+
1998 08 26	699	0.3+	0.1−	1999 12 03	704	0.2−	1.0−	2000 01 11	704	0.0	0.4+

1998 QO₂₂ = 2000 AH₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	135.90410		(2000.0)	P	Q
<i>n</i>	0.26503357	ω	310.96124	+0.96262508	+0.26844671
<i>a</i>	2.4003181	Ω	33.51247	−0.22483362	+0.86598070
<i>e</i>	0.2060145	<i>i</i>	3.72888	−0.15100597	+0.42191681
<i>P</i>	3.72	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 07 31	699	0.1+	0.6+	1998 08 27	699	0.4+	0.7−	1998 09 18	704	1.7−	0.4−
1998 07 31	699	0.1+	0.7−	1998 08 27	699	0.4+	0.3−	1998 09 18	704	0.5+	0.3+
1998 07 31	699	0.5−	0.0	1998 08 27	699	0.3+	0.1−	1998 09 18	704	1.6−	0.1−
1998 08 17	704	0.5+	0.1+	1998 09 14	704	0.4−	0.0	1998 09 24	699	1.1+	0.8−
1998 08 17	704	0.4−	0.8+	1998 09 14	704	0.1+	0.2+	1998 09 24	699	0.3+	0.1−
1998 08 17	704	0.0	1.0−	1998 09 14	704	1.5−	1.0+	1998 09 24	699	0.6+	0.5−
1998 08 17	704	(0.6−	2.8+)	1998 09 14	704	0.4−	1.0+	2000 01 04	704	1.1−	0.2+
1998 08 17	704	0.2−	0.8−	1998 09 14	704	1.3−	0.9+	2000 01 04	704	0.0	0.6+
1998 08 23	704	0.7+	0.8−	1998 09 14	699	0.2+	0.5−	2000 01 04	704	0.2−	0.7+
1998 08 23	704	0.8+	0.2+	1998 09 14	699	0.3+	0.2−	2000 01 04	704	0.4−	0.8+
1998 08 23	704	0.8+	0.9+	1998 09 14	699	0.1+	0.0	2000 01 06	704	0.0	0.4−
1998 08 23	704	0.5−	1.3+	1998 09 18	704	1.8+	0.8−	2000 01 06	704	0.3−	1.5−
1998 08 23	704	0.9−	0.0	1998 09 18	704	0.6+	0.4+	2000 01 06	704	2.0+	0.4−

1998 QQ₂₂ = 2000 AF₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	84.46666		(2000.0)	P	Q
<i>n</i>	0.23673738	ω	323.18587	+0.81451359	−0.57602284
<i>a</i>	2.5879636	Ω	72.12621	+0.54806477	+0.72498794
<i>e</i>	0.2107189	<i>i</i>	4.15942	+0.19024355	+0.37761113
<i>P</i>	4.16	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	1.2−	0.3−	1998 09 14	704	(0.6+	2.4−)	1998 09 24	699	0.1+	0.0
1998 08 17	704	1.4+	1.9+	1998 09 14	704	0.9−	0.2+	1998 09 24	699	0.4−	1.0+
1998 08 17	704	0.4−	0.8−	1998 09 14	704	0.0	0.1+	2000 01 04	704	0.2+	1.1+
1998 08 17	704	0.2−	0.5−	1998 09 14	704	0.7−	0.4−	2000 01 04	704	0.2−	0.8−
1998 08 23	704	0.0	1.0−	1998 09 14	699	0.5+	0.8+	2000 01 04	704	0.2+	0.7+
1998 08 23	704	0.8+	0.1−	1998 09 14	699	0.3+	0.2−	2000 01 04	704	0.8+	1.1+
1998 08 23	704	0.2−	0.4+	1998 09 14	699	0.4+	1.1+	2000 01 04	704	0.4+	1.2−
1998 08 23	704	0.3−	0.5+	1998 09 18	704	1.4+	1.2−	2000 01 06	704	0.2+	0.4+
1998 08 23	704	1.0−	0.2+	1998 09 18	704	1.1−	0.2+	2000 01 06	704	0.9−	1.5−
1998 08 27	699	0.8+	0.4−	1998 09 18	704	(2.5+	0.6−)	2000 01 06	704	0.1−	1.1+
1998 08 27	699	0.2+	0.3−	1998 09 18	704	0.2−	0.2−	2000 01 06	704	0.7−	1.0−
1998 08 27	699	0.6+	0.2−	1998 09 24	699	0.1−	0.9−				

1998 QY₂₂ = 1999 XD₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	72.64023		(2000.0)	P	Q
<i>n</i>	0.17855772	ω	346.27879	+0.99582277	−0.08635613
<i>a</i>	3.1233235	Ω	18.75183	+0.09003594	+0.87469706
<i>e</i>	0.1667961	<i>i</i>	5.29359	+0.01518349	+0.47691473
<i>P</i>	5.52	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1995 02 20	587	0.3+	1.1−	1998 08 23	704	(1.4−	2.4+)	1999 12 10	704	0.2−	0.0
1995 02 20	587	0.9−	0.2−	1998 08 23	704	0.0	1.1+	1999 12 10	704	0.3−	1.1+
1995 02 27	587	0.4−	0.3−	1998 08 27	699	0.4+	1.0+	1999 12 10	704	0.5−	1.7+
1995 02 27	587	0.8+	1.0+	1998 08 27	699	0.7+	0.4+	1999 12 15	704	0.1−	0.2+
1998 07 31	699	0.8−	0.4+	1998 08 27	699	0.2−	0.3+	1999 12 15	704	0.1−	0.4−
1998 07 31	699	0.9+	0.4−	1998 09 14	704	1.0+	1.0−	1999 12 15	704	0.1+	0.2−
1998 07 31	699	0.3+	0.0	1998 09 14	704	0.4+	0.6−	1999 12 15	704	0.6+	0.0
1998 08 17	704	0.6−	0.3−	1998 09 14	704	0.5−	0.4−	2000 01 02	704	0.2+	0.2+
1998 08 17	704	0.0	0.4−	1998 09 14	704	0.7−	1.0−	2000 01 02	704	0.3−	0.5+
1998 08 17	704	0.3−	0.3−	1998 09 14	704	0.4+	0.8+	2000 01 02	704	0.1−	0.2−
1998 08 17	704	0.1−	1.3+	1998 09 14	699	0.1+	0.8−	2000 01 02	704	0.5+	0.4+
1998 08 17	704	0.6−	1.5+	1998 09 14	699	0.3+	0.1−	2000 01 02	704	0.3+	0.7+
1998 08 19	566	0.3−	0.7−	1998 09 14	699	0.4+	1.2−	2000 01 04	704	0.7−	0.7−
1998 08 19	566	0.6−	0.5−	1998 09 18	704	0.1−	0.1+	2000 01 04	704	0.1+	0.0
1998 08 19	566	1.0−	0.6−	1998 09 18	704	(0.9−	3.0−)	2000 01 04	704	0.2+	0.4−
1998 08 23	704	0.2+	0.2+	1998 09 18	704	0.9+	0.8+	2000 01 04	704	0.1+	0.9−
1998 08 23	704	0.1−	0.3−	1998 09 18	704	(2.3−	1.0+)	2000 01 04	704	0.2+	1.6−
1998 08 23	704	0.2+	0.3+	1999 12 10	704	0.2+	0.2+				

1998 QF₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	87.98852		(2000.0)	P	Q
<i>n</i>	0.22808374	ω	28.44420	+0.95481471	−0.29499957
<i>a</i>	2.6530158	Ω	348.53892	+0.22642105	+0.80073800
<i>e</i>	0.1161027	<i>i</i>	10.47132	+0.19251594	+0.52133857
<i>P</i>	4.32	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.0	0.3+	1998 09 14	704	0.8−	0.5+	1999 12 12	704	0.1+	0.5−
1998 08 17	704	0.8+	0.9−	1998 09 18	704	1.2+	1.0−	1999 12 12	704	0.2+	0.1−
1998 08 17	704	0.2+	0.1−	1998 09 18	704	0.6+	2.0−	1999 12 12	704	0.4+	0.2+
1998 08 17	704	0.3+	1.0+	1998 09 18	704	0.0	1.7−	1999 12 12	704	0.1−	0.9+
1998 08 17	704	0.1−	0.4+	1998 09 18	704	1.3−	1.0+	1999 12 12	704	0.3−	0.6+
1998 08 23	704	1.4−	0.3+	1998 10 12	910	0.5+	0.1+	1999 12 13	699	0.6+	1.1+
1998 08 23	704	0.1−	0.1−	1998 10 12	910	1.0+	0.6−	1999 12 13	699	0.5+	0.8+
1998 08 23	704	0.9−	0.7+	1998 10 12	910	0.5+	0.1−	1999 12 13	699	0.4−	1.0+
1998 08 23	704	0.1−	0.3−	1998 10 14	910	0.2+	0.0	1999 12 15	704	0.0	0.1+
1998 08 23	704	1.4+	0.5−	1998 10 14	910	0.3−	0.1−	1999 12 15	704	0.1−	0.6−
1998 08 27	699	0.4+	0.6+	1998 10 14	910	0.2+	0.1−	1999 12 15	704	0.1+	0.4−
1998 08 27	699	0.8−	0.0	1998 10 20	910	0.1+	0.2+	1999 12 15	704	0.3+	0.5−
1998 08 27	699	0.6−	0.4+	1998 10 20	910	0.2−	0.4+	1999 12 15	704	0.5+	0.7−
1998 09 14	704	0.0	0.0	1998 10 20	910	0.1−	0.4+	2000 01 02	704	0.1+	0.7−
1998 09 14	704	0.1−	0.6+	1998 10 21	910	0.0	0.1+	2000 01 02	704	0.1−	0.3−
1998 09 14	704	0.4−	0.3+	1998 10 21	910	0.0	0.1+	2000 01 02	704	1.3−	0.3−
1998 09 14	704	0.0	0.0	1998 10 21	910	0.0	0.1+	2000 01 02	704	0.3−	0.1−

1998 QM₂₃ = 1999 XL₁₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	58.92826		(2000.0)	P	Q
<i>n</i>	0.21647888	ω	67.82191	+0.67581425	−0.73346318
<i>a</i>	2.7470024	Ω	339.11676	+0.57830428	+0.58892363
<i>e</i>	0.1452937	<i>i</i>	11.79222	+0.45698935	+0.33941231
<i>P</i>	4.55	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

2000 JAN. 24

M.P.C. 37713

Residuals in seconds of arc

1998 08 17	704	0.1+	1.4+	1998 09 18	704	1.6-	0.5-	1999 12 14	704	0.5+	0.6+
1998 08 17	704	0.2-	1.7-	1998 09 18	704	(1.9-	2.9+)	1999 12 14	704	0.5-	0.4+
1998 08 17	704	1.5-	0.6-	1998 09 18	704	(3.9-	0.5+)	1999 12 14	704	1.0-	0.2+
1998 08 17	704	0.1+	0.6+	1998 09 21	699	0.2+	0.1+	1999 12 31	699	0.1+	1.1+
1998 08 17	704	(2.4-	1.8+)	1998 09 21	699	0.1+	1.7-	1999 12 31	699	0.3-	0.3-
1998 08 23	704	1.0+	1.2+	1998 09 21	699	0.2+	0.7+	1999 12 31	699	0.0	0.7+
1998 08 23	704	(2.3+	0.8-)	1999 12 12	704	0.1+	0.0	2000 01 02	704	0.4+	0.3+
1998 08 23	704	1.4+	0.4-	1999 12 12	704	0.1-	0.5-	2000 01 02	704	0.1+	0.6+
1998 08 23	704	0.6+	1.3-	1999 12 12	704	0.5-	0.5-	2000 01 02	704	0.5-	0.2-
1998 09 14	704	1.2+	1.1+	1999 12 12	704	1.1-	0.2-	2000 01 02	704	2.0+	0.1-
1998 09 14	704	0.7-	0.2+	1999 12 12	704	0.9-	0.5+	2000 01 02	704	0.7+	1.7-
1998 09 14	704	0.3-	0.4-	1999 12 14	704	0.0	0.2-				
1998 09 18	704	0.8-	1.5+	1999 12 14	704	0.8+	0.4-				

1998 QT₂₃ = 2000 AF₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	16.58149		(2000.0)		P		Q
<i>n</i>	0.18843205	ω	279.70845	+0.31651708		-0.94444091	
<i>a</i>	3.0132341	Ω	151.34696	+0.92656144		+0.28780813	
<i>e</i>	0.0992663	<i>i</i>	10.64683	+0.20322607		+0.15873831	
<i>P</i>	5.23	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 26	699	0.9-	0.5+	1998 09 18	704	0.8+	1.3-	1999 11 05	704	0.4-	0.9-
1998 07 26	699	0.9+	0.9+	1998 09 18	704	0.1-	1.0-	1999 12 05	704	(2.3-	0.5-)
1998 07 26	699	0.4-	0.2-	1998 09 18	704	0.8+	0.5-	1999 12 05	704	1.1-	0.2-
1998 08 17	704	0.5+	0.0	1998 09 18	704	0.9-	0.2+	1999 12 05	704	0.9-	0.4-
1998 08 17	704	0.5+	0.6-	1998 12 08	704	(2.4-	0.2-)	1999 12 05	704	1.0-	0.1-
1998 08 17	704	0.1-	0.4-	1998 12 08	704	0.0	1.2+	1999 12 05	704	1.0-	0.4-
1998 08 17	704	0.2-	0.3-	1998 12 08	704	(2.5+	0.2+)	2000 01 08	704	0.2+	0.1-
1998 08 17	704	0.7+	0.3-	1998 12 08	704	(1.9-	3.2+)	2000 01 08	704	0.6+	0.2+
1998 08 23	704	(2.5+	0.4+)	1999 10 31	703	0.1-	0.4+	2000 01 08	704	0.0	0.1-
1998 08 23	704	0.8+	0.3-	1999 10 31	703	0.0	0.7+	2000 01 08	704	0.5+	0.3-
1998 09 14	704	0.1-	1.0+	1999 10 31	703	0.2+	0.8+	2000 01 08	704	0.8-	0.1-
1998 09 14	704	0.1+	0.5+	1999 10 31	703	0.5+	0.7+	2000 01 11	704	0.4+	0.2-
1998 09 14	704	0.4-	0.7-	1999 11 05	704	0.7+	0.2-	2000 01 11	704	0.4+	0.5-
1998 09 14	704	0.9-	1.1+	1999 11 05	704	0.2+	0.0	2000 01 11	704	1.6+	0.7+
1998 09 14	704	1.0-	1.0+	1999 11 05	704	0.4+	0.5-	2000 01 11	704	0.4+	0.7+
1998 09 18	704	0.2-	0.2-	1999 11 05	704	0.4+	0.5-	2000 01 11	704	0.5-	0.2+

1998 QB₂₄ = 2000 AF₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	93.12148		(2000.0)		P		Q
<i>n</i>	0.26633752	ω	127.34226	+0.76059666		-0.64158471	
<i>a</i>	2.3924772	Ω	272.79243	+0.55977828		+0.72556737	
<i>e</i>	0.1160480	<i>i</i>	5.70603	+0.32884798		+0.24883941	
<i>P</i>	3.70	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.7-	0.4-	1998 09 14	704	0.3+	0.6-	1998 09 25	327	0.8-	0.2+
1998 08 17	704	0.2-	0.7-	1998 09 14	704	0.7+	0.9-	1998 09 25	327	0.4-	0.3+
1998 08 17	704	0.3+	0.7+	1998 09 14	704	0.4-	0.9+	1998 10 11	699	0.1-	0.3-
1998 08 17	704	0.4-	0.7+	1998 09 17	699	0.1-	0.6+	1998 10 11	699	0.2-	1.5+
1998 08 17	704	0.4-	0.1+	1998 09 17	699	0.8+	0.2+	1998 10 11	699	1.4+	0.9+
1998 08 23	704	0.5-	0.3+	1998 09 17	699	0.4+	0.6+	2000 01 05	704	0.3+	1.5+
1998 08 23	704	1.1+	0.8-	1998 09 18	704	1.1+	1.8-	2000 01 05	704	0.3+	0.6+
1998 08 23	704	0.9+	0.7-	1998 09 18	704	0.4+	1.0-	2000 01 05	704	0.1+	1.2-
1998 08 23	704	0.2-	0.7+	1998 09 18	704	0.3-	0.2-	2000 01 05	704	0.2-	0.1-
1998 08 26	699	0.5+	0.5+	1998 09 18	704	1.2-	0.8-	2000 01 05	704	0.3+	0.5-
1998 08 26	699	0.1-	0.5+	1998 09 22	327	0.5-	0.8+	2000 01 08	704	0.7-	0.1-
1998 08 26	699	0.1+	0.2+	1998 09 22	327	0.3-	0.3-	2000 01 08	704	0.6-	0.1+
1998 09 14	704	0.8+	1.1-	1998 09 22	327	1.2-	0.0	2000 01 08	704	0.0	0.5-
1998 09 14	704	0.3+	0.7-	1998 09 25	327	0.9-	0.2+	2000 01 08	704	0.3+	0.2-

1998 QC₂₄ = 1999 XS₁₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	100.81809		(2000.0)		P		Q
<i>n</i>	0.19540617	ω	41.12720	+0.95317780		+0.25716337	
<i>a</i>	2.9411051	Ω	303.28730	-0.30236276		+0.81977769	
<i>e</i>	0.0673997	<i>i</i>	10.97325	+0.00537007		+0.51169478	
<i>P</i>	5.04	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	0.1+	1998 08 23	704	0.0	0.2-	1999 12 12	704	0.6+	0.0
1998 08 17	704	0.1-	0.6+	1998 08 26	699	0.4+	0.3-	1999 12 12	704	0.8+	0.3+
1998 08 17	704	0.6+	0.0	1998 08 26	699	0.6+	0.2+	1999 12 12	704	0.7+	0.6-
1998 08 17	704	0.0	0.0	1998 08 26	699	0.7+	0.6+	1999 12 15	704	0.8-	0.1+
1998 08 17	704	1.1-	0.5-	1998 09 18	699	0.2-	0.3+	1999 12 15	704	0.5-	0.1-
1998 08 23	704	0.8+	0.2-	1998 09 18	699	0.6+	0.2-	1999 12 15	704	0.9-	0.6+
1998 08 23	704	0.5-	0.8-	1998 09 18	699	0.4-	0.0	1999 12 15	704	0.6-	0.2+
1998 08 23	704	1.4-	0.7+	1999 12 12	704	0.9+	0.0	1999 12 15	704	0.7-	0.5-
1998 08 23	704	0.4-	0.4-	1999 12 12	704	0.5+	0.0				

1998 QE₂₄ = 2000 AN₁₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	201.72338		(2000.0)		P		Q
<i>n</i>	0.25303795	ω	327.88772	-0.16390980		+0.98244419	
<i>a</i>	2.4755912	Ω	292.54537	-0.88345299		-0.18637425	
<i>e</i>	0.1158892	<i>i</i>	5.53546	-0.43891273		+0.00824914	
<i>P</i>	3.90	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.5-	0.2+	1998 09 14	704	1.1-	0.0	1999 11 14	704	0.2-	0.7+
1998 08 17	704	0.6-	0.3+	1998 09 14	704	1.2-	0.7+	1999 11 14	704	0.3-	0.0
1998 08 17	704	0.5-	0.3+	1998 09 14	704	1.1-	0.3+	1999 11 14	704	0.2-	0.4+
1998 08 17	704	1.7+	1.8-	1998 09 15	699	1.2-	0.1-	1999 12 15	704	0.5+	2.0+
1998 08 17	704	0.4+	0.9-	1998 09 15	699	0.1+	0.2+	1999 12 15	704	1.2-	0.3+
1998 08 23	704	(2.4+	0.1+)	1998 09 15	699	0.9-	0.8-	1999 12 15	704	1.1-	1.0+
1998 08 23	704	1.4+	1.1-	1998 09 18	704	0.1-	0.2-	1999 12 15	704	0.9+	0.7+
1998 08 23	704	1.1+	0.2+	1998 09 18	704	0.6+	0.4-	2000 01 03	704	0.9-	0.5-
1998 08 23	704	1.4+	0.7-	1998 09 18	704	0.1-	0.1-	2000 01 03	704	0.1+	1.3-
1998 08 26	699	0.1+	0.2+	1998 09 18	704	0.1+	0.5-	2000 01 03	704	(2.8+	0.5+)
1998 08 26	699	0.8+	0.9+	1998 09 21	699	0.1-	0.1+	2000 01 04	704	0.2-	0.3-
1998 08 26	699	0.2+	0.2+	1998 09 21	699	1.0+	0.1+	2000 01 04	704	1.0+	1.0-
1998 09 12	691	0.4-	0.4+	1998 09 21	699	0.3-	0.5+	2000 01 04	704	0.4+	0.4-
1998 09 12	691	0.4-	0.3+	1998 10 11	699	0.3+	0.6-	2000 01 04	704	0.8+	1.2-
1998 09 14	704	1.3-	0.2+	1998 10 11	699	0.2+	0.0	2000 01 04	704	0.6+	0.9-
1998 09 14	704	0.2-	1.2+	1998 10 11	699	0.8+	0.5+				

1998 QF₂₄ = 1999 XE₁₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	74.53390		(2000.0)		P		Q
<i>n</i>	0.21629523	ω	94.22355	+0.84305573		-0.52770352	
<i>a</i>	2.7485570	Ω	297.65723	+0.43512772		+0.78273025	
<i>e</i>	0.1427530	<i>i</i>	6.73360	+0.31610268		+0.32994295	
<i>P</i>	4.56	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.6+	0.8-	1998 09 18	704	0.7+	1.0-	1999 12 14	691	0.0	0.5-
1998 08 17	704	0.0	0.2-	1998 09 18	704	0.8-	0.6+	1999 12 17	691	0.3+	0.0
1998 08 17	704	0.4-	0.9+	1999 11 16	704	0.5-	0.3-	1999 12 17	691	0.2+	0.0
1998 08 17	704	0.1-	0.5+	1999 11 16	704	0.8-	1.5-	1999 12 17	691	0.3+	0.1+
1998 08 17	704	0.0	0.5-	1999 11 16	704	1.3-	0.3-	2000 01 03	704	1.5+	0.6+
1998 08 23	704	0.1-	1.4+	1999 11 16	704	0.7-	0.3-	2000 01 03	704	1.0+	0.3-
1998 08 23	704	0.6+	0.8-	1999 12 06	703	(2.4+	0.2-)	2000 01 03	704	0.2+	0.5+
1998 08 23	704	(2.8+	0.8+)	1999 12 06	703	0.3-	0.7-	2000 01 03	704	1.5+	0.8+
1998 09 14	704	0.3+	1.2-	1999 12 06	703	(2.2-	0.5-)	2000 01 04	704	0.1-	0.1-
1998 09 14	704	1.1-	1.1+	1999 12 06	691	0.0	0.1+	2000 01 04	704	0.7+	0.6+
1998 09 14	704	1.2-	0.7-	1999 12 06	703	1.0-	0.3-	2000 01 04	704	0.3+	0.6+

1998 09 14	704	1.1+	0.2+	1999 12 06	691	0.3-	0.0	2000 01 04	704	0.5-	0.9+
1998 09 14	704	(2.6-	0.1+)	1999 12 06	691	0.1-	0.1+	2000 01 12	649	1.0-	0.0
1998 09 17	699	0.5-	0.1-	1999 12 07	691	0.4-	0.5-	2000 01 12	649	0.1-	0.1+
1998 09 17	699	0.3+	1.0+	1999 12 07	691	0.1+	0.1-	2000 01 12	649	0.1-	0.5+
1998 09 17	699	0.5-	0.3-	1999 12 07	691	0.2+	0.1-	2000 01 13	649	0.5-	0.2+
1998 09 18	704	0.3-	0.5+	1999 12 14	691	0.0	0.7-	2000 01 13	649	0.3+	0.7+
1998 09 18	704	0.9+	0.6+	1999 12 14	691	0.2-	0.7-	2000 01 13	649	0.5+	1.0+

1998 QN₂₄ = 2000 AD₁₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	97.41128	(2000.0)	<i>P</i>
<i>n</i>	0.24567716	ω	194.51961
<i>a</i>	2.5247954	Ω	182.62947
<i>e</i>	0.0713694	<i>i</i>	5.95108
<i>P</i>	4.01	<i>H</i>	14.6

Residuals in seconds of arc

1997 04 02	704	0.1+	0.7+	1998 09 14	704	0.6-	0.1+	1999 12 14	704	0.1-	0.1-
1997 04 02	704	0.4+	1.3+	1998 09 14	704	(4.0-	1.8+)	2000 01 05	704	0.2+	0.1+
1998 08 17	704	0.9+	0.4+	1998 09 14	704	(3.2-	1.5+)	2000 01 05	704	0.2-	0.0
1998 08 17	704	0.4+	0.2-	1998 09 18	704	1.6-	0.1+	2000 01 05	704	0.5-	0.1+
1998 08 17	704	0.3+	0.9+	1998 09 18	704	0.8+	0.4+	2000 01 05	704	0.5-	0.1+
1998 08 17	704	0.6+	1.5+	1998 09 18	704	1.2-	0.1+	2000 01 05	704	0.3+	1.0-
1998 08 17	704	0.5+	0.7-	1998 09 18	704	0.4-	0.3-	2000 01 07	704	0.4-	0.6+
1998 08 23	704	(2.4+	1.7-)	1999 12 14	704	0.6+	0.4-	2000 01 07	704	0.2+	0.6+
1998 08 23	704	(2.8+	0.9-)	1999 12 14	704	0.3+	0.7+	2000 01 07	704	0.7-	0.2+
1998 08 23	704	(3.4+	2.7-)	1999 12 14	704	0.3+	0.1+	2000 01 07	704	0.3+	0.5+
1998 09 14	704	0.6-	0.2-	1999 12 14	704	0.5+	0.6+				

1998 QT₂₄ = 1999 XV₁₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	311.79602	(2000.0)	<i>P</i>
<i>n</i>	0.29208383	ω	231.59607
<i>a</i>	2.2497333	Ω	307.76168
<i>e</i>	0.0768559	<i>i</i>	5.06797
<i>P</i>	3.37	<i>H</i>	14.9

Residuals in seconds of arc

1998 08 17	704	0.1+	0.4-	1998 09 18	704	0.6+	1.2-	1999 12 15	704	0.3+	0.2+
1998 08 17	704	(2.2-	0.1-)	1998 09 18	704	0.6+	1.0+	1999 12 15	704	0.7-	0.3-
1998 08 17	704	0.6+	0.5-	1998 09 18	704	0.5+	0.5-	1999 12 15	704	0.3+	0.2-
1998 08 17	704	0.9-	0.3-	1998 09 26	327	1.5-	0.3+	1999 12 31	699	0.7+	0.6+
1998 08 17	704	0.4-	1.3-	1998 09 26	327	0.6-	0.5+	1999 12 31	699	0.8+	0.3+
1998 08 23	704	(2.1+	0.2-)	1998 09 26	327	0.9-	0.4+	1999 12 31	699	0.6+	0.3+
1998 08 23	704	0.7+	1.8+	1999 11 16	704	0.2-	0.6+	2000 01 03	704	0.3-	0.6+
1998 08 23	704	0.6-	0.6+	1999 11 16	704	0.2+	1.4-	2000 01 03	704	0.2+	0.1+
1998 08 26	699	1.2+	0.0	1999 11 16	704	0.1-	0.9-	2000 01 03	704	0.2-	0.1-
1998 08 26	699	1.1-	0.5+	1999 11 16	704	0.6-	0.3+	2000 01 03	704	0.3+	0.2-
1998 08 26	699	0.7+	0.4+	1999 11 16	704	0.1+	0.3-	2000 01 03	704	0.2+	0.0
1998 09 14	704	0.9-	0.1-	1999 12 10	704	0.3+	0.5-	2000 01 04	704	0.3-	0.3+
1998 09 14	704	(2.4+	0.0)	1999 12 10	704	0.3-	0.4-	2000 01 04	704	0.5-	0.2+
1998 09 14	704	0.4+	0.5+	1999 12 10	704	1.2-	0.8+	2000 01 04	704	0.8+	0.8+
1998 09 14	704	0.7+	1.2-	1999 12 10	704	0.0	0.5-	2000 01 04	704	0.1-	0.1+
1998 09 14	704	0.2-	0.4-	1999 12 15	704	0.4-	0.7-	2000 01 04	704	0.4-	0.1+
1998 09 18	704	0.6+	0.6+	1999 12 15	704	0.1-	0.0				

1998 QZ₂₄ = 2000 AG₁₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	300.00369	(2000.0)	<i>P</i>
<i>n</i>	0.17429986	ω	340.34373
<i>a</i>	3.1739836	Ω	154.93000
<i>e</i>	0.1457752	<i>i</i>	7.07459
<i>P</i>	5.65	<i>H</i>	12.8

Residuals in seconds of arc

1998 08 17	704	0.0	0.5+	1998 09 13	699	0.2-	0.4-	1998 11 19	910	0.0	0.2+
1998 08 17	704	0.4-	0.7+	1998 09 13	699	0.7+	0.1+	1998 11 19	910	0.3-	0.0
1998 08 17	704	0.4-	0.8+	1998 09 14	704	0.4+	0.3+	2000 01 05	704	0.1+	0.3+
1998 08 17	704	1.9-	0.1-	1998 09 14	704	0.2-	0.5+	2000 01 05	704	0.5+	0.4-
1998 08 17	704	0.3+	0.1+	1998 09 14	704	0.2-	0.3-	2000 01 05	704	0.2+	0.3-
1998 08 23	699	0.1-	0.2-	1998 09 14	704	1.3+	0.6-	2000 01 05	704	0.2+	0.0
1998 08 23	704	0.0	0.2+	1998 09 14	704	0.9-	0.9-	2000 01 05	704	0.4+	0.1+
1998 08 23	704	0.5+	0.3-	1998 09 18	704	0.7-	0.6+	2000 01 08	704	0.9-	0.1-
1998 08 23	699	1.6+	0.3-	1998 09 18	704	0.8+	1.4-	2000 01 08	704	0.2-	0.4+
1998 08 23	704	(2.2+	0.7-)	1998 09 18	704	(0.8+	2.2+)	2000 01 08	704	0.6-	0.1-
1998 08 23	699	0.1+	0.0	1998 09 18	704	(2.8-	0.9+)	2000 01 08	704	0.4+	0.2-
1998 09 13	699	0.4-	0.3+	1998 11 19	910	0.1-	0.2+	2000 01 08	704	0.0	0.3+

1998 QC₂₆

Id. M. Tichý (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	135.06843	(2000.0)	<i>P</i>
<i>n</i>	0.22170842	ω	345.74887
<i>a</i>	2.7036342	Ω	341.12767
<i>e</i>	0.1483142	<i>i</i>	3.53219
<i>P</i>	4.45	<i>H</i>	14.2

Residuals in seconds of arc

1998 08 23	704	0.7-	0.9-	1998 08 30	120	(2.2+	0.5-)	1998 09 24	120	0.5+	0.1-
1998 08 23	704	(2.3+	0.6+)	1998 08 30	120	1.2-	0.6-	1998 09 24	120	0.0	0.3-
1998 08 23	704	1.0+	0.4-	1998 08 30	120	0.7+	0.4+	1998 10 20	120	0.0	0.8-
1998 08 23	704	0.1-	0.6-	1998 09 10	120	0.2-	0.1+	1998 10 20	120	0.7-	0.1-
1998 08 25	120	(1.0+	2.2+)	1998 09 10	120	0.1-	0.3-	1998 10 20	120	0.9+	0.6+
1998 08 25	120	(1.1+	3.0+)	1998 09 10	120	0.3+	0.3+	1998 10 20	120	0.8+	0.2-
1998 08 26	120	0.6-	0.3+	1998 09 14	704	0.0	0.2-	2000 01 06	046	0.1+	0.5+
1998 08 26	699	0.1+	1.2+	1998 09 14	704	0.6-	1.6-	2000 01 06	046	0.6+	0.5+
1998 08 26	699	0.1-	0.5+	1998 09 14	704	0.4-	0.1+	2000 01 06	046	0.5+	0.6+
1998 08 26	699	0.2-	0.1-	1998 09 14	704	0.2-	0.2+	2000 01 06	046	0.4+	0.5+
1998 08 27	120	0.6-	0.3-	1998 09 18	704	0.6-	0.0	2000 01 06	046	0.6+	0.1-
1998 08 27	120	0.8-	0.4-	1998 09 18	704	0.2-	0.7+	2000 01 06	046	0.5+	0.2-
1998 08 27	120	1.3+	0.9+	1998 09 18	704	0.4-	0.1-	2000 01 10	704	1.7-	1.5-
1998 08 30	120	0.6+	0.6+	1998 09 18	704	0.5+	0.8+	2000 01 10	704	0.4-	0.4-
1998 08 30	120	1.1+	0.3+	1998 09 18	704	0.5+	0.4+	2000 01 10	704	0.2-	0.1+
1998 08 30	120	0.4-	0.3+	1998 09 24	120	0.0	0.8-	2000 01 10	704	0.4-	0.4+

1998 QE₂₆ = 1999 XR₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	115.28278	(2000.0)	<i>P</i>
<i>n</i>	0.21658969	ω	7.03960
<i>a</i>	2.7460654	Ω	343.14163
<i>e</i>	0.1225373	<i>i</i>	11.55179
<i>P</i>	4.55	<i>H</i>	14.4

Residuals in seconds of arc

1998 08 23	704	1.2+	1.9-	1998 08 27	120	0.3-	1.4+	1998 09 18	704	0.8-	0.8+
1998 08 23	704	0.9+	1.7+	1998 08 27	120	0.4-	1.1-	1998 09 25	699	0.2-	0.3-
1998 08 23	704	1.2+	0.6+	1998 08 27	120	1.0-	0.4-	1998 09 25	699	0.8+	0.1-
1998 08 23	704	0.9-	0.1+	1998 09 14	704	0.0	0.3-	1998 09 25	699	0.4+	0.6-
1998 08 23	704	(5.1-	1.1-)	1998 09 14	704	0.4-	0.1-	1999 12 12	704	0.0	1.2+
1998 08 25	120	(3.2-	1.0+)	1998 09 14	704	0.5+	0.1+	1999 12 12	704	0.3-	0.4-
1998 08 25	120	(2.2+	0.3+)	1998 09 14	704	1.2+	0.2-	1999 12 12	704	0.2-	1.2-
1998 08 26	120	0.8-	0.3+	1998 09 18	704	0.5-	0.2-	1999 12 12	704	0.0	0.1-
1998 08 26	699	0.1-	0.1-	1998 09 18	704	0.1+	0.2+	1999 12 15	704	0.2-	0.0
1998 08 26	699	0.5-	0.2-	1998 09 18	704	0.1+	0.0	1999 12 15	704	0.1+	0.3+
1998 08 26	699	0.4+	0.7-	1998 09 18	704	0.9-	1.0+	1999 12 15	704	0.6+	0.2+

2000 JAN. 24

M.P.C. 37715

1998 QN₂₆ = 2000 AB₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	84.44428	ω	49.70316	+0.94074640	−0.32802799				
<i>a</i>	2.6275774	Ω	329.16130	+0.23724683	+0.81782865				
<i>e</i>	0.2479754	<i>i</i>	9.65646	+0.24230178	+0.47281490				
<i>P</i>	4.26	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc									
1998 08 17	704	0.6+	0.8−	1998 09 13	428	0.2+	0.1−	2000 01 03	704
1998 08 17	704	0.9−	0.3−	1998 10 10	428	0.5+	0.2−	2000 01 03	704
1998 08 17	704	1.0−	0.7+	1998 10 10	428	0.1−	0.3−	2000 01 03	704
1998 08 17	704	0.7−	0.8+	1999 11 11	703	0.2−	0.9+	2000 01 03	704
1998 08 24	428	0.1+	0.2−	1999 11 11	703	0.6−	0.5−	2000 01 04	704
1998 08 24	428	0.2+	0.3+	1999 11 11	703	0.3+	0.3+	2000 01 04	704
1998 08 25	428	0.3+	0.6+	1999 11 11	703	1.2+	0.0	2000 01 04	704
1998 08 25	428	0.3+	0.1−	1999 12 15	703	0.1+	0.5+	2000 01 04	704
1998 08 28	428	0.4+	0.2−	1999 12 15	703	0.0	0.2+	2000 01 04	704
1998 08 28	428	0.1−	0.1−	1999 12 15	703	0.8−	0.5−	2000 01 06	699
1998 08 29	428	0.1−	0.1+	1999 12 15	703	0.5−	0.4+	2000 01 06	699
1998 09 13	428	0.4+	0.1−	2000 01 03	704	0.2+	0.6−	2000 01 06	699

1998 QQ₂₆ = 2000 AY₂₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	173.26742	ω	205.07780	+0.50640046	+0.85971486				
<i>a</i>	2.3534106	Ω	95.40958	−0.77941841	+0.48944549				
<i>e</i>	0.1725232	<i>i</i>	3.84162	−0.36887060	+0.14605981				
<i>P</i>	3.61	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc									
1998 08 17	704	0.2+	1.3−	1998 08 25	428	0.0	0.3+	2000 01 12	691
1998 08 17	704	1.7+	1.2−	1998 08 25	428	0.7−	0.4−	2000 01 12	691
1998 08 17	704	(3.0+	1.1−)	1998 08 27	428	0.6−	0.5+	2000 01 15	691
1998 08 17	704	0.2+	0.1−	1998 08 27	428	0.1−	0.4+	2000 01 15	691
1998 08 17	704	0.2−	1.2−	1998 08 30	428	0.3+	0.7+	2000 01 15	691
1998 08 24	428	0.2+	0.6+	1998 08 30	428	0.0	1.2+		
1998 08 24	428	0.9−	0.2+	2000 01 12	691	0.1−	0.3−		

1998 QJ₂₈ = 2000 AW₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	253.13998	ω	312.76976	−0.66743144	+0.50087168				
<i>a</i>	2.7601931	Ω	265.09304	−0.41123702	−0.86483770				
<i>e</i>	0.1798747	<i>i</i>	33.57879	−0.62082154	+0.03439921				
<i>P</i>	4.59	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 08 25	704	(2.5+	0.4+)	1998 09 28	704	(2.6+	0.9−)	2000 01 03	704
1998 08 25	704	0.6−	1.2−	1998 09 28	704	1.1−	0.5+	2000 01 03	704
1998 08 25	704	(0.4−	2.9−)	1998 09 28	704	(0.0	2.4−)	2000 01 03	704
1998 08 25	704	0.2+	0.4−	1998 09 28	704	0.3+	1.2−	2000 01 03	704
1998 08 25	704	(3.9−	1.9−)	1998 09 28	704	(0.0	3.7−)	2000 01 04	704
1998 08 26	711	0.2+	0.3+	1998 10 19	703	0.2−	0.3−	2000 01 04	704
1998 08 26	711	0.4+	0.2+	1998 10 19	703	0.3+	0.0	2000 01 04	704
1998 08 26	711	0.2+	0.2+	1998 10 19	703	0.3+	0.1−	2000 01 04	704
1998 08 26	587	0.1+	0.7+	1998 10 25	704	0.7+	0.9−	2000 01 04	704
1998 08 26	587	0.3+	0.8+	1998 10 25	704	0.9+	0.1−	2000 01 07	106
1998 08 27	658	0.3−	0.3+	1998 10 25	704	0.9−	1.2+	2000 01 07	106
1998 08 27	658	0.1+	0.2+	1998 10 25	704	(0.7−	2.7−)	2000 01 07	106
1998 08 27	658	0.7−	0.4−	1999 12 15	704	0.3+	0.5+	2000 01 08	106
1998 08 27	557	0.3+	0.0	1999 12 15	704	0.1−	0.5−	2000 01 08	106
1998 08 27	557	0.1+	0.3+	1999 12 15	704	0.5−	0.3+	2000 01 08	106
1998 08 27	557	0.4−	0.1+	2000 01 03	704	1.2+	0.7−		

1998 QM₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	155.59042	ω	264.09318	+0.84682439	+0.53185213				
<i>a</i>	2.6465946	Ω	63.77605	−0.48590268	+0.77717072				
<i>e</i>	0.0813843	<i>i</i>	0.29799	−0.21630312	+0.33636138				
<i>P</i>	4.31	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 08 26	684	0.1+	0.0	1998 09 27	704	0.0	1.0+	1998 10 29	704
1998 08 26	684	0.2−	0.0	1998 09 27	704	0.2−	1.2+	1998 10 29	704
1998 08 27	684	0.1−	0.2+	1998 09 27	691	0.2+	0.3−	1998 10 29	704
1998 08 27	684	0.2−	0.0	1998 09 27	704	0.7−	1.7+	1998 10 29	704
1998 09 14	684	0.4−	0.2+	1998 09 27	691	0.5+	0.1−	1998 11 11	699
1998 09 14	684	0.2−	0.1+	1998 09 27	704	1.1−	0.5+	1998 11 11	699
1998 09 15	684	0.0	0.1−	1998 09 27	691	0.6+	0.0	1998 11 11	699
1998 09 15	684	0.2−	0.2−	1998 10 14	699	0.7−	1.5+	2000 01 04	704
1998 09 15	699	(1.0+	2.1+)	1998 10 14	699	0.8+	0.2−	2000 01 04	704
1998 09 15	699	0.4−	0.4+	1998 10 18	684	1.0−	0.2−	2000 01 04	704
1998 09 15	699	0.9+	0.0	1998 10 18	684	0.7−	0.4−	2000 01 04	704
1998 09 20	691	0.3+	0.1−	1998 10 19	699	0.4+	1.0+	2000 01 06	704
1998 09 20	691	0.1+	0.3−	1998 10 19	699	0.4+	0.8+	2000 01 06	704
1998 09 20	691	0.6+	0.3−	1998 10 19	699	0.2−	0.1+	2000 01 06	704
1998 09 21	691	0.1+	0.0	1998 10 19	684	0.5−	0.4+	2000 01 06	684
1998 09 21	691	0.1+	0.4−	1998 10 19	684	0.5−	0.3+	2000 01 06	684
1998 09 21	691	0.0	0.3−	1998 10 28	704	0.0	0.1−	2000 01 07	684
1998 09 26	704	(0.4−	3.7−)	1998 10 28	704	1.3+	1.0−	2000 01 07	684
1998 09 26	704	0.2+	0.8−	1998 10 28	704	0.2+	2.0−	2000 01 16	691
1998 09 26	704	0.2−	1.0−	1998 10 28	704	0.2−	0.9−	2000 01 16	691
1998 09 27	704	0.5−	0.8+	1998 10 28	704	0.5−	1.2−	2000 01 16	691

1998 QO₂₈

Id. P. G. Comba (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Marsden	
<i>n</i>	142.43730	ω	71.05832	+0.95316713	+0.29405516				
<i>a</i>	2.7665104	Ω	271.79201	−0.29723246	+0.86752709				
<i>e</i>	0.0477403	<i>i</i>	4.05842	−0.05590431	+0.40115872				
<i>P</i>	4.60	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 08 26	684	0.3+	0.1+	1998 09 18	684	0.4−	0.1−	1998 09 27	704
1998 08 26	684	0.3+	0.1+	1998 09 26	704	1.3+	0.7−	1998 10 19	684
1998 08 27	684	0.0	0.1−	1998 09 26	704	(0.2−	2.8−)	1998 10 19	684
1998 08 27	684	0.1−	0.2−	1998 09 26	704	1.2+	0.5+	1998 10 20	684
1998 08 27	684	0.1+	0.2−	1998 09 26	704	0.2+	0.5−	1998 10 20	684
1998 09 17	684	0.4−	0.1+	1998 09 27	704	0.0	0.2+	2000 01 07	684
1998 09 17	684	0.6−	0.4+	1998 09 27	704	(2.2−	0.6−)	2000 01 07	684
1998 09 17	684	0.6−	0.3+	1998 09 27	704	0.1+	1.3−	2000 01 08	684
1998 09 18	684	0.6−	0.3+	1998 09 27	704	0.1+	0.3+	2000 01 08	684

1998 QG₂₉ = 1999 XU₁₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	241.56536	ω	15.91321	−0.74090894	+0.67003962				
<i>a</i>	2.4318727	Ω	206.33339	−0.62690664	−0.71446671				
<i>e</i>	0.1067616	<i>i</i>	5.93076	−0.24091910	−0.20145528				
<i>P</i>	3.79	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2		
Residuals in seconds of arc									
1997 04 07	566	0.6−	0.2+	1998 08 27	327	0.3+	0.2−	1999 12 14	704
1997 04 07	566	0.3−	0.2+	1998 08 30	327	0.2+	0.5−	1999 12 14	704
1997 04 07	566	1.1+	0.0	1998 08 30	327	0.1−	0.6−	1999 12 14	704
1998 08 17	704	0.5−	0.1−	1998 08 30	327	0.4+	0.5−	1999 12 14	704
1998 08 17	704	0.6+	0.5+	1998 12 15	910	0.7−	0.5−	2000 01 05	704

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1998 08 17	704	0.3-	0.5-	1998 12 15	910	0.1+	0.1-	2000 01 05	704	0.7-	1.0+
1998 08 17	704	0.0	0.4+	1998 12 15	910	0.4+	0.7-	2000 01 05	704	0.1+	0.1+
1998 08 17	704	1.6-	1.1+	1999 11 17	704	0.4+	0.1-	2000 01 05	704	0.1+	0.1+
1998 08 22	327	0.1+	0.1-	1999 11 17	704	0.5-	0.3-	2000 01 05	704	0.3-	0.4+
1998 08 22	327	0.3-	0.0	1999 11 17	704	0.1+	0.7+	2000 01 06	704	0.1+	0.6+
1998 08 22	327	0.0	0.1+	1999 11 17	704	0.6-	0.2+	2000 01 06	704	0.4+	0.9+
1998 08 26	699	0.4-	0.3+	1999 12 07	704	1.2+	0.0	2000 01 06	704	0.4-	0.4+
1998 08 26	699	0.2+	1.3+	1999 12 07	704	0.2-	0.4-	2000 01 06	704	0.3+	0.1-
1998 08 26	699	0.7+	0.8+	1999 12 07	704	1.1+	0.9+	2000 01 06	704	0.3-	0.1+
1998 08 27	327	0.3+	0.4-	1999 12 07	704	0.2-	0.6-				
1998 08 27	327	0.2+	0.4-	1999 12 07	704	0.4+	0.2-				

1998 QZ₃₀ = 1999 VA₁₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	109.96634		(2000.0)	P	Q
<i>n</i>	0.18210813	ω	82.48127	+0.77615639	+0.63053288
<i>a</i>	3.0825952	Ω	238.42923	-0.57993047	+0.71192629
<i>e</i>	0.1505377	<i>i</i>	0.20781	-0.24751144	+0.30917510
<i>P</i>	5.41	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 08 17	704	0.2+	0.4-	1998 08 23	704	0.4-	1.8-	1999 11 09	704	0.5+	0.3-
1998 08 17	704	0.6-	0.5-	1998 08 23	699	0.7+	0.6+	1999 11 09	704	0.2-	1.1-
1998 08 17	704	0.4-	0.2+	1998 08 23	704	0.1-	0.3-	1999 11 09	704	0.0	0.2-
1998 08 17	704	1.0+	0.9-	1998 10 20	910	0.1-	0.8+	1999 11 09	704	0.1+	0.3-
1998 08 17	704	1.2+	1.2-	1998 10 20	910	0.3-	1.0+	1999 11 09	704	0.9+	0.1+
1998 08 23	699	0.7+	0.1-	1998 10 20	910	0.0	0.7+	1999 11 12	704	0.4-	0.1+
1998 08 23	704	1.0-	0.5-	1998 10 21	910	0.5-	1.0+	1999 11 12	704	0.3+	0.5+
1998 08 23	704	(2.6+	1.8-)	1998 10 21	910	0.7-	1.0+	1999 11 12	704	1.1-	0.3-
1998 08 23	699	0.4+	0.6+	1998 10 21	910	0.3-	0.9+				

1998 QA₃₁ = 1999 XV₁₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	8.42783		(2000.0)	P	Q
<i>n</i>	0.18808337	ω	110.17240	+0.16996517	-0.98229594
<i>a</i>	3.0169570	Ω	329.70384	+0.83576464	+0.18604390
<i>e</i>	0.0890213	<i>i</i>	8.98449	+0.52212001	+0.02196273
<i>P</i>	5.24	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	1.2-	0.1-	1998 09 14	704	1.2+	0.5-	1999 12 12	704	0.4+	0.2-
1998 08 17	704	0.7-	0.7-	1998 09 14	704	0.5+	0.3+	1999 12 12	704	0.4+	0.3-
1998 08 17	704	0.2-	0.2-	1998 09 14	704	1.0-	0.6-	1999 12 12	704	0.6+	0.4-
1998 08 17	704	0.5-	0.5-	1998 09 15	699	0.5+	0.5+	1999 12 12	704	0.7+	0.4-
1998 08 17	704	0.2+	0.5-	1998 09 15	699	0.1+	0.3+	1999 12 12	704	0.8+	0.5-
1998 08 23	699	0.3+	0.7+	1998 09 15	699	1.7-	1.0-	1999 12 15	704	0.2+	0.0
1998 08 23	704	0.1+	0.0	1998 09 18	704	1.3-	0.7-	1999 12 15	704	0.5-	0.5+
1998 08 23	704	0.5+	0.1-	1998 09 18	704	1.6-	0.3-	1999 12 15	704	0.4+	0.1-
1998 08 23	699	0.1+	0.7+	1998 09 18	704	1.2+	0.5-	1999 12 15	704	0.4+	0.6-
1998 08 23	704	1.0+	1.2-	1998 09 18	704	0.3-	0.8+	1999 12 15	704	0.1+	0.1-
1998 08 23	704	0.2-	0.4+	1999 11 01	704	0.2-	0.0	2000 01 02	704	0.7-	0.2+
1998 08 23	699	1.1+	0.7+	1999 11 01	704	0.3-	0.2+	2000 01 02	704	0.6-	0.4+
1998 08 23	704	1.6+	1.8+	1999 11 01	704	0.3-	0.0	2000 01 02	704	0.5-	0.5+
1998 09 14	704	0.0	0.4-	1999 11 01	704	0.4-	0.2+	2000 01 02	704	0.2-	0.9+
1998 09 14	704	0.1-	1.4+	1999 11 01	704	0.7-	0.1+				

1998 QL₃₁ = 2000 AH₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	199.91504		(2000.0)	P	Q
<i>n</i>	0.25101217	ω	228.42268	-0.17629042	+0.98346035
<i>a</i>	2.4888928	Ω	31.49566	-0.87778806	-0.13796062
<i>e</i>	0.0951768	<i>i</i>	4.56299	-0.44543215	-0.11735671
<i>P</i>	3.93	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 07 31	699	0.3-	0.4+	1998 09 14	704	0.7+	0.9-	1999 11 14	704	0.5+	0.9-
1998 07 31	699	0.2-	0.0	1998 09 14	704	0.1-	1.0+	1999 11 14	704	0.4-	0.2+
1998 07 31	699	0.2-	0.6-	1998 09 14	704	1.3+	1.3-	1999 12 15	704	0.5+	0.6+
1998 08 17	704	0.1-	0.4+	1998 09 14	704	0.4+	1.2-	1999 12 15	704	0.8+	0.2+
1998 08 17	704	1.2-	0.4+	1998 09 14	704	1.1+	0.4-	1999 12 15	704	0.3+	0.2+
1998 08 17	704	0.0	0.3+	1998 09 18	704	0.3-	0.8+	2000 01 03	704	0.1-	0.1-
1998 08 17	704	0.0	0.4-	1998 09 18	704	(2.5+	1.3+)	2000 01 03	704	0.1-	0.6-
1998 08 17	704	(2.5-	2.5-)	1998 09 18	704	1.4+	1.8+	2000 01 03	704	0.9-	1.2+
1998 08 21	566	1.0-	0.0	1998 09 18	704	0.2-	1.1-	2000 01 03	704	1.0-	0.2-
1998 08 21	566	0.9-	0.2-	1998 09 18	704	1.8-	0.3-	2000 01 03	704	0.4-	0.7-
1998 08 21	566	0.7-	0.2+	1998 09 24	699	0.9+	1.4+	2000 01 04	704	0.0	0.9+
1998 08 23	704	0.7+	0.3-	1998 09 24	699	0.0	0.4+	2000 01 04	704	0.1-	0.2+
1998 08 23	704	(2.5+	1.5-)	1998 09 24	699	0.3-	0.3-	2000 01 04	704	0.4-	0.4-
1998 08 23	704	(4.4+	1.8+)	1999 11 14	704	0.0	0.1+				
1998 08 23	704	0.8+	0.3+	1999 11 14	704	1.0+	0.8-				

1998 QP₃₁

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	350.88238		(2000.0)	P	Q
<i>n</i>	0.28136046	ω	31.22623	-0.75030075	-0.65226709
<i>a</i>	2.3065383	Ω	107.66525	+0.58085204	-0.72820815
<i>e</i>	0.0799272	<i>i</i>	6.48920	+0.31568924	-0.21038187
<i>P</i>	3.50	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.6-	0.0	1999 11 17	704	0.6-	0.4-	1999 12 16	691	0.1-	0.3-
1998 08 17	704	0.3+	0.4+	1999 11 17	704	0.0	0.0	1999 12 17	691	0.3-	0.0
1998 08 17	704	0.4+	0.0	1999 11 17	704	0.1-	1.0-	1999 12 17	691	0.3-	0.2-
1998 08 17	704	0.8-	0.2-	1999 11 17	704	0.0	0.5-	1999 12 17	691	0.3-	0.0
1998 08 17	704	0.5-	0.9-	1999 11 17	704	0.8-	0.3-	1999 12 18	699	0.1+	0.9+
1998 08 23	704	0.2+	0.5+	1999 12 03	049	0.1+	0.2-	1999 12 18	699	0.3-	1.0+
1998 08 23	704	1.1-	1.0+	1999 12 03	049	0.2+	0.4-	1999 12 18	699	0.8+	0.2+
1998 08 23	704	0.0	0.6-	1999 12 03	049	0.4+	0.4-	1999 12 30	699	0.4+	0.8+
1998 08 23	704	1.3+	0.0	1999 12 05	699	0.5+	0.7+	1999 12 30	699	0.5+	0.0
1998 08 23	704	0.9+	0.8-	1999 12 05	699	0.1+	0.1-	1999 12 30	699	0.6+	0.5+
1998 09 14	704	0.4+	0.4+	1999 12 05	699	0.6+	0.8+	2000 01 02	691	0.8-	1.3+
1998 09 14	704	0.4+	0.7-	1999 12 07	704	0.5+	1.3-	2000 01 02	691	0.2-	0.1+
1998 09 14	704	0.2-	0.1+	1999 12 07	704	0.1+	0.2+	2000 01 02	691	0.1-	0.2-
1998 09 14	704	1.0+	0.1-	1999 12 07	704	0.1-	0.9+	2000 01 04	704	0.4-	0.2-
1998 09 14	704	1.4-	0.5-	1999 12 07	704	0.4-	1.7+	2000 01 04	704	0.2-	0.7-
1998 09 18	704	0.4+	0.6-	1999 12 08	704	0.0	1.4-	2000 01 04	704	0.2-	0.6-
1998 09 18	704	(0.5-	2.2-)	1999 12 08	704	1.5+	0.3+	2000 01 04	704	0.0	0.4-
1998 09 18	704	(0.6-	3.5+)	1999 12 08	704	1.0-	1.9+	2000 01 06	704	0.2+	0.4-
1998 09 18	704	0.9-	1.8+	1999 12 15	691	0.1+	0.4-	2000 01 06	704	0.1-	0.7-
1999 11 12	703	0.6-	0.4-	1999 12 15	691	0.1+	0.5-	2000 01 06	704	0.4+	0.3-
1999 11 12	703	0.4+	0.3+	1999 12 15	691	0.2+	0.5-	2000 01 06	691	0.2-	0.0
1999 11 12	703	0.1+	0.8+	1999 12 16	691	0.2-	0.2-	2000 01 06	691	0.3-	0.0
1999 11 12	703	0.2+	0.5-	1999 12 16	691	0.1-	0.3-	2000 01 06	691	0.3-	0.0

1998 QQ₃₁ = 1999 XX₁₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	250.43776		(2000.0)	P	Q
<i>n</i>	0.27422622	ω	220.72690	-0.69499780	+0.71891950
<i>a</i>	2.3463712	Ω	5.28369	-0.62293278	-0.59404578
<i>e</i>	0.0617230	<i>i</i>	7.18934	-0.35907215	-0.36092156
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	1.0+	0.0	1998 09 14	704	(0.9–	2.8+)	1999 12 12	704	0.2+ 0.4+
1998 08 17	704	0.2+ 0.3+		1998 09 14	704	(2.1–	3.3+)	1999 12 15	704	0.3– 0.3–
1998 08 17	704	0.3+ 0.1+		1998 09 18	704	1.4+ 0.6+		1999 12 15	704	0.1– 0.4+
1998 08 17	704	1.1+ 0.6–		1998 09 18	704	(2.4+ 0.1+)		1999 12 15	704	0.1+ 0.3–
1998 08 17	704	0.3– 1.2–		1998 09 18	704	(2.3+ 0.2–)		1999 12 15	704	(1.7– 2.5–)
1998 08 23	704	0.8+ 0.7+		1998 11 17	910	0.2– 0.6+		1999 12 15	704	0.5– 1.4–

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1998 08 23	704	1.1−	1.2−	1998 11 17	910	0.9−	0.1−	2000 01 02	704	0.6+	0.3−
1998 08 23	704	0.4−	0.1−	1998 11 17	910	0.9−	0.6+	2000 01 02	704	0.1+	0.2−
1998 08 23	704	0.9−	0.6−	1999 12 12	704	0.0	0.4−	2000 01 02	704	0.3−	0.1−
1998 09 14	704	0.6+	0.5−	1999 12 12	704	0.2+	0.1+	2000 01 02	704	0.1+	1.2+
1998 09 14	704	0.3−	0.1+	1999 12 12	704	0.2−	0.3+	2000 01 02	704	0.2+	0.4−
1998 09 14	704	0.8−	1.4+	1999 12 12	704	0.2−	0.2+				

1998 QB₃₂ = 1999 XK₂₀₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	39.62998		(2000.0)	P	Q
<i>n</i>	0.12435566	ω	37.87259	+0.91053136	−0.41096003
<i>a</i>	3.9752003	Ω	346.17852	+0.31781564	+0.76568648
<i>e</i>	0.2866169	<i>i</i>	10.91021	+0.26443500	+0.49480912
<i>P</i>	7.93	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 07 31	699	0.3+	0.7−	1998 09 21	699	0.4+	0.3+	1999 09 27	704	0.3−	0.4+
1998 07 31	699	0.3+	0.2−	1998 10 12	699	0.4+	0.2−	1999 09 27	704	0.5+	0.7+
1998 07 31	699	0.5−	0.2+	1998 10 12	699	0.7−	0.0	1999 09 27	704	0.8−	0.7+
1998 08 17	704	0.0	0.3−	1998 10 12	699	0.0	0.2−	1999 09 27	704	0.9+	1.0+
1998 08 17	704	0.5+	0.5+	1998 10 26	910	0.1−	1.0−	1999 09 27	704	0.7+	0.9+
1998 08 17	704	0.3−	0.3+	1998 10 26	910	0.2−	0.6−	1999 11 01	704	0.2+	0.3−
1998 08 17	704	0.4−	0.1−	1998 10 26	910	0.4−	0.3+	1999 11 01	704	0.0	0.5−
1998 08 17	704	0.2+	0.6+	1998 11 08	910	1.1−	0.7−	1999 11 01	704	0.4−	0.4−
1998 08 23	704	0.9+	0.8+	1998 11 08	910	0.7−	0.3−	1999 11 01	704	0.3−	0.6−
1998 08 23	704	0.2−	0.9+	1998 11 08	910	0.8−	0.4−	1999 11 01	704	1.2−	0.5−
1998 08 23	704	0.1+	1.2+	1998 11 12	910	0.4−	0.2−	1999 12 13	704	0.0	0.5+
1998 08 23	704	0.7+	0.5+	1998 11 12	910	0.1+	0.4−	1999 12 13	704	0.0	0.2+
1998 08 23	704	0.8−	0.7+	1998 11 12	910	0.3−	0.2−	1999 12 13	704	0.0	0.1+
1998 09 14	704	0.0	0.7−	1998 12 09	704	(2.7+	0.8−)	1999 12 13	704	0.0	0.2−
1998 09 14	704	0.5−	0.3+	1998 12 09	699	1.1+	0.1+	1999 12 13	704	0.2+	0.4−
1998 09 14	704	0.4−	0.5+	1998 12 09	704	1.0+	0.7−	1999 12 15	704	0.0	0.5+
1998 09 14	704	0.6−	1.1+	1998 12 09	704	1.7+	0.7−	1999 12 15	704	0.1−	0.5+
1998 09 18	704	0.3+	0.7−	1998 12 09	699	(2.3+	0.8−)	1999 12 15	704	0.3−	0.1+
1998 09 18	704	(0.8+	2.3−)	1998 12 09	704	(0.9+	2.2+)	1999 12 15	704	0.2+	0.0
1998 09 18	704	0.2−	0.7−	1998 12 09	704	0.4+	1.7+	2000 01 02	704	0.0	0.1+
1998 09 18	704	0.1+	0.1+	1998 12 09	699	1.6+	1.9−	2000 01 02	704	0.0	0.1−
1998 09 18	704	0.6−	0.4−	1999 01 10	699	0.3−	0.7−	2000 01 02	704	0.4+	0.1−
1998 09 21	699	0.5−	0.2+	1999 01 10	699	0.5−	0.4+	2000 01 02	704	0.5+	0.0
1998 09 21	699	0.6+	0.2−	1999 01 10	699	0.9+	0.3−	2000 01 02	704	0.1−	0.3−

1998 QD₃₂ = 2000 AU₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	76.94497		(2000.0)	P	Q
<i>n</i>	0.18266973	ω	230.93050	+0.94676268	−0.26704391
<i>a</i>	3.0762739	Ω	143.51738	+0.29548556	+0.94251158
<i>e</i>	0.2676691	<i>i</i>	17.60172	−0.12778384	+0.20089666
<i>P</i>	5.40	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 30	699	1.2−	0.5+	1998 08 23	704	0.2+	1.6+	1999 12 14	703	0.6+	2.0+
1998 06 30	699	0.9−	0.6+	1998 08 23	704	0.4−	1.0+	1999 12 14	704	0.0	0.1−
1998 06 30	699	0.7−	0.4+	1998 08 28	699	0.5+	0.2−	1999 12 14	703	0.2−	0.8+
1998 07 24	566	0.3−	0.0	1998 08 28	699	0.1+	0.4+	1999 12 14	704	0.4−	0.0
1998 07 24	566	0.3−	0.3−	1998 08 28	699	0.2+	0.3+	1999 12 14	703	1.5+	1.1+
1998 07 24	566	0.3−	0.3−	1998 09 22	699	0.8−	1.4−	2000 01 07	704	0.6−	0.6−
1998 08 01	699	0.9+	0.2−	1998 09 22	699	0.0	0.3+	2000 01 07	704	0.7−	0.5−
1998 08 01	699	0.8+	0.0	1998 09 22	699	0.4+	0.1+	2000 01 07	704	0.0	0.6−
1998 08 01	699	0.9+	0.3+	1998 12 08	704	0.6−	0.2−	2000 01 07	704	0.5−	0.6−
1998 08 17	704	0.0	0.1−	1998 12 08	704	0.2−	0.8−	2000 01 07	704	0.8−	0.3−
1998 08 17	704	0.1−	0.2−	1998 12 08	704	0.2−	0.8−	2000 01 11	704	0.6+	0.2+
1998 08 17	704	0.4+	0.5−	1998 12 08	704	0.3−	0.5−	2000 01 11	704	0.3+	0.1−
1998 08 17	704	0.3−	0.5−	1998 12 08	704	1.2−	0.1+	2000 01 11	704	0.1−	0.5−
1998 08 17	704	0.2+	0.6−	1999 12 14	704	0.2+	0.5+	2000 01 11	704	0.4−	0.9−
1998 08 23	704	0.4+	0.7+	1999 12 14	704	0.1−	0.1+	2000 01 11	704	0.4−	0.5−
1998 08 23	704	0.8+	0.3+	1999 12 14	703	0.9+	1.8+				

1998 QS₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	186.06612		(2000.0)	P	Q
<i>n</i>	0.28130536	ω	322.32437	+0.33663838	+0.93966201
<i>a</i>	2.3068395	Ω	327.22006	−0.83427527	+0.26763772
<i>e</i>	0.1850464	<i>i</i>	6.45944	−0.43664559	+0.21308532
<i>P</i>	3.50	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.2−	0.3−	1998 09 14	704	0.1+	1.0−	1999 12 10	704	0.3+	0.0
1998 08 17	704	0.6−	0.1+	1998 09 14	704	0.2−	0.7−	1999 12 10	704	1.1+	0.3+
1998 08 17	704	0.1+	0.4+	1998 09 14	704	0.2−	0.5−	1999 12 10	704	0.4+	0.2+
1998 08 17	704	0.1−	0.5−	1998 09 18	704	0.5+	0.8+	2000 01 04	704	0.2+	0.2−
1998 08 17	704	0.6+	1.0+	1998 09 18	704	0.9+	0.6+	2000 01 04	704	0.2−	0.2−
1998 08 23	704	0.5−	0.1−	1998 09 18	704	0.1+	0.3−	2000 01 04	704	0.4−	0.3−
1998 08 23	704	1.1+	1.2−	1998 09 18	704	0.8+	0.9+	2000 01 04	704	0.8−	0.0
1998 08 23	704	0.7−	0.7+	1998 10 11	699	0.2−	0.0	2000 01 04	704	0.5−	0.2+
1998 08 23	704	0.8−	0.3+	1998 10 11	699	0.1−	0.1−				
1998 09 14	704	0.2−	0.6−	1998 10 11	699	0.4−	0.5+				

1998 QG₃₃ = 1999 XO₁₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	142.05303		(2000.0)	P	Q
<i>n</i>	0.19159337	ω	50.91792	+0.12387641	+0.99140412
<i>a</i>	2.9799963	Ω	226.25299	−0.92746377	+0.10059378
<i>e</i>	0.2451888	<i>i</i>	3.34107	−0.35279682	+0.08365862
<i>P</i>	5.14	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 08 17	704	0.5+	0.7−	1998 08 26	699	1.2+	0.2−	1999 11 29	691	0.1−	0.1+
1998 08 17	704	0.9+	0.2+	1998 08 26	699	0.6+	1.0+	1999 11 29	691	0.0	0.2+
1998 08 17	704	0.5+	0.2+	1998 09 15	699	0.2+	1.4−	1999 11 29	691	0.0	0.1−
1998 08 17	704	1.2−	0.5−	1998 09 15	699	0.2+	0.7+	1999 12 07	691	0.1−	0.0
1998 08 17	704	1.3−	0.7−	1998 09 15	699	0.3+	0.5+	1999 12 07	691	0.1−	0.1+
1998 08 23	704	1.6−	0.9−	1999 11 09	704	0.1−	0.2−	1999 12 07	691	0.1+	0.2+
1998 08 23	704	0.7−	0.1−	1999 11 09	704	0.9+	0.2+	1999 12 13	691	0.5−	0.0
1998 08 23	704	0.3+	1.7+	1999 11 09	704	0.7+	0.1+	1999 12 13	691	0.3−	0.2+
1998 08 23	704	(3.7−	0.6−)	1999 11 09	704	0.8+	0.5−	1999 12 13	691	0.3−	0.1−
1998 08 26	699	0.0	0.2+	1999 11 09	704	1.0−	0.2−				

1998 QN₃₅ = 2000 AC₁₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	74.45223		(2000.0)	P	Q
<i>n</i>	0.19740634	ω	307.41396	+0.95495270	−0.29237704
<i>a</i>	2.9212047	Ω	69.63651	+0.28651212	+0.86377425
<i>e</i>	0.1020853	<i>i</i>	3.10640	+0.07730554	+0.41037753
<i>P</i>	4.99	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.2−	0.5−	1998 09 14	704	0.6−	0.5+	1999 12 07	704	0.4+	0.0
1998 08 17	704	0.2−	0.2+	1998 09 14	704	(4.2−	0.9+)	2000 01 03	704	0.8−	0.8−
1998 08 17	704	0.2−	0.0	1998 09 18	704	0.7+	0.6+	2000 01 03	704	0.4+	0.3+
1998 08 17	704	0.5−	1.0−	1998 09 18	704	0.5−	0.2−	2000 01 03	704	0.5−	1.1+
1998 08 23	704	1.2+	0.7−	1998 09 18	704	1.6−	1.3−	2000 01 03	704	0.2−	0.4+
1998 08 23	704	0.0	1.7−	1998 09 18	704	1.5+	0.1−	2000 01 03	704	0.8+	0.7+
1998 08 23	704	0.4+	1.6+	1998 09 18	704	0.3+	0.8+	2000 01 04	704	0.3−	0.2−
1998 08 23	704	0.3−	1.1+	1999 12 07	704	0.4−	0.1−	2000 01 04	704	0.1−	0.0
1998 09 14	704	0.1+	0.3−	1999 12 07	704	0.2+	0.0	2000 01 04	704	0.2+	0.9−
1998 09 14	704	0.1−	1.0+	1999 12 07	704	0.3+	0.7−				

1998 QR₃₆ = 2000 AN₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	154.12681		(2000.0)	P		Q	
<i>n</i>	0.23799122	ω	131.61067	+0.58312440	+0.81204653		
<i>a</i>	2.5788659	Ω	173.92228	-0.79545751	+0.57658170		
<i>e</i>	0.1559988	<i>i</i>	12.75417	-0.16496448	+0.09018852		
<i>P</i>	4.14	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.0	0.3+	1998 09 14	704	0.4-	0.6-	1998 10 14	699	0.6-	0.5-
1998 08 17	704	(2.6+	0.9-)	1998 09 14	704	0.6+	0.8-	1998 10 20	699	1.3-	0.3+
1998 08 17	704	(0.1-	2.6-)	1998 09 14	704	0.4+	0.5-	1998 10 20	699	0.8-	0.7-
1998 08 17	704	0.0	0.7-	1998 09 14	704	0.3+	0.1-	1998 10 20	699	0.7-	0.3-
1998 08 17	704	0.3+	0.8+	1998 09 14	699	0.5+	1.0+	2000 01 08	704	0.5+	0.3+
1998 08 23	704	0.6-	0.2+	1998 09 14	699	0.1+	1.1+	2000 01 08	704	0.1+	0.4+
1998 08 23	704	0.0	0.3+	1998 09 14	699	0.5+	0.7+	2000 01 08	704	0.4+	0.4-
1998 08 23	704	1.0-	1.4-	1998 09 18	704	0.7+	0.3+	2000 01 08	704	0.5-	0.0
1998 08 23	704	0.9-	0.9+	1998 09 18	704	0.6+	0.3-	2000 01 08	704	0.3-	0.8-
1998 08 23	704	0.6-	0.2+	1998 09 18	704	1.3+	0.3-	2000 01 11	704	0.2+	0.5+
1998 08 26	699	0.1+	0.1-	1998 09 18	704	0.4+	0.7+	2000 01 11	704	0.3-	0.5+
1998 08 26	699	0.3-	0.5+	1998 09 18	704	0.7+	0.7-	2000 01 11	704	0.1-	0.1+
1998 08 26	699	0.2-	0.6+	1998 10 14	699	0.2+	0.1+	2000 01 11	704	0.0	0.1+
1998 09 14	704	0.3+	0.8-	1998 10 14	699	0.2-	0.4-				

1998 QS₃₆ = 2000 AT₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	84.14574		(2000.0)	P		Q	
<i>n</i>	0.23153709	ω	77.25080	+0.79422482	-0.58566398		
<i>a</i>	2.6265701	Ω	318.28786	+0.41883111	+0.72067934		
<i>e</i>	0.1488788	<i>i</i>	14.08045	+0.44021294	+0.37097034		
<i>P</i>	4.26	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	0.7-	1998 09 18	699	0.0	0.2-	2000 01 04	704	0.1+	0.0
1998 08 17	704	0.1-	0.5-	1998 09 18	699	1.0-	0.3-	2000 01 04	704	0.5+	0.3-
1998 08 17	704	0.4-	0.5-	1998 09 19	704	1.0+	0.4-	2000 01 04	704	0.0	0.4-
1998 08 17	704	1.1-	0.9-	1998 09 19	704	0.5+	0.1+	2000 01 04	704	0.2+	0.2+
1998 08 17	704	1.0+	0.2-	1998 09 19	704	0.2-	0.8+	2000 01 04	704	0.5-	0.5+
1998 08 23	704	0.4+	0.9+	1998 09 19	704	1.2-	0.6-	2000 01 06	704	0.3-	0.2-
1998 08 23	704	1.3-	0.4+	1998 09 23	704	0.3+	0.2-	2000 01 06	704	0.3-	0.6+
1998 08 23	704	0.1+	1.8+	1998 09 23	704	0.5-	0.2+	2000 01 06	704	0.2+	0.1+
1998 08 23	704	1.1+	0.2+	1998 09 23	704	0.2-	0.1-	2000 01 06	704	0.1+	0.4-
1998 09 18	699	1.2+	0.0	1998 09 23	704	(0.2-	2.5+)				

1998 QM₃₇

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	350.04428		(2000.0)	P		Q	
<i>n</i>	0.26780474	ω	200.14560	-0.75848546	-0.64595922		
<i>a</i>	2.3837308	Ω	299.31487	+0.61064562	-0.65824668		
<i>e</i>	0.0651167	<i>i</i>	5.67583	+0.22762191	-0.38658504		
<i>P</i>	3.68	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.4+	0.2+	1998 09 14	704	0.2-	0.3+	1999 12 30	699	0.2+	0.5+
1998 08 17	704	0.2-	1.1+	1998 09 15	699	0.2+	0.9+	1999 12 31	691	0.8-	1.0-
1998 08 17	704	1.0+	0.1+	1998 09 15	699	0.5+	0.5+	1999 12 31	691	0.6-	0.8-
1998 08 17	704	0.6+	0.0	1998 09 15	699	0.2+	0.0	1999 12 31	691	0.6-	0.9-
1998 08 17	704	0.0	0.1-	1998 09 18	704	0.5+	0.2-	2000 01 04	704	0.1-	0.3+
1998 08 23	704	0.3-	0.1+	1998 09 18	704	0.4+	1.2-	2000 01 04	704	0.1+	0.1+
1998 08 23	704	0.6-	0.0	1998 09 18	704	0.3-	0.2-	2000 01 04	704	0.1+	0.1-
1998 08 23	704	0.3+	1.4-	1998 09 18	704	0.0	0.7-	2000 01 04	704	0.1+	0.2-
1998 08 23	704	0.4-	0.4+	1998 09 18	704	1.4+	0.9-	2000 01 04	704	0.2+	0.3-
1998 08 23	704	0.1-	1.8-	1998 10 11	699	0.3-	0.4-	2000 01 06	691	0.1-	0.0
1998 08 26	699	0.6-	0.3+	1998 10 11	699	0.0	0.7+	2000 01 06	691	0.1-	0.1+

1998 08 26	699	0.7-	0.2-	1998 10 11	699	0.0	0.5+	2000 01 06	691	0.1-	0.1+
1998 08 26	699	0.1-	0.2+	1999 12 18	699	0.4+	0.7+	2000 01 11	691	0.2-	0.2-
1998 09 14	704	0.4-	0.2+	1999 12 18	699	0.9+	0.2+	2000 01 11	691	0.1-	0.2-
1998 09 14	704	0.3-	0.8+	1999 12 18	699	0.4+	0.7+	2000 01 11	691	0.2-	0.2-
1998 09 14	704	0.2-	0.4-	1999 12 30	699	0.4+	0.7+	2000 01 16	120	0.2-	0.1+
1998 09 14	704	0.6-	1.1+	1999 12 30	699	0.4+	0.5+	2000 01 16	120	0.1+	0.3-

1998 QP₃₇ = 2000 AV₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	278.90309		(2000.0)	P		Q	
<i>n</i>	0.28492715	ω	278.02200	-0.88769589	+0.45709507		
<i>a</i>	2.2872493	Ω	289.19239	-0.39600005	-0.81924195		
<i>e</i>	0.1051940	<i>i</i>	3.35795	-0.23490416	-0.34627551		
<i>P</i>	3.46	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	0.5-	1998 09 14	704	1.1-	0.4+	1999 12 07	704	0.9+	0.1+
1998 08 17	704	0.9+	1.4-	1998 09 14	704	0.3-	0.9+	1999 12 07	704	0.3+	1.0+
1998 08 17	704	0.6-	0.1+	1998 09 15	699	0.0	0.0	1999 12 07	704	0.3+	0.7+
1998 08 17	704	1.4-	0.4-	1998 09 15	699	0.1-	0.8+	2000 01 03	704	0.6-	0.6-
1998 08 17	704	0.0	0.5-	1998 09 15	699	0.5+	0.3+	2000 01 03	704	0.2-	0.3+
1998 08 23	704	1.0-	1.2+	1998 09 18	704	1.5+	0.0	2000 01 03	704	0.3-	0.2-
1998 08 23	704	0.2+	1.1-	1998 09 18	704	2.0+	0.7-	2000 01 03	704	0.1-	0.2+
1998 08 23	704	1.5+	1.4-	1998 09 18	704	1.8+	1.3-	2000 01 03	704	0.1+	0.0
1998 08 23	704	0.2-	0.4+	1998 09 18	704	0.6-	0.5-	2000 01 04	704	0.4-	0.2-
1998 08 26	699	0.7+	1.0+	1998 09 18	704	0.1+	1.5+	2000 01 04	704	0.6-	0.5-
1998 08 26	699	0.8-	0.4-	1998 09 21	699	0.4+	0.9+	2000 01 04	704	0.4-	0.5-
1998 08 26	699	0.8-	1.3+	1998 09 21	699	0.4+	0.6+	2000 01 04	704	0.3-	0.6-
1998 09 14	704	0.9-	1.4-	1998 09 21	699	0.7-	0.5-	2000 01 04	704	0.1+	0.8-
1998 09 14	704	1.0-	1.0+	1999 12 07	704	0.6+	0.9+				
1998 09 14	704	0.5-	0.5-	1999 12 07	704	0.8+	0.1-				

1998 QQ₃₇ = 2000 AV₂₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	195.64240		(2000.0)	P		Q	
<i>n</i>	0.29940193	ω	344.55702	+0.38945915	+0.91848687		
<i>a</i>	2.2129231	Ω	308.31410	-0.83551312	+0.32097647		
<i>e</i>	0.1893027	<i>i</i>	5.01445	-0.38760726	+0.23098913		
<i>P</i>	3.29	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 17	704	0.4+	0.7+	1998 08 23	704	(3.2-	0.8-)	1998 09 18	704	0.0	1.0+
1998 08 17	704	0.3+	0.4+	1998 09 14	704	0.1+	0.2+	1998 09 18	704	0.0	0.9-
1998 08 17	704	0.4+	0.2+	1998 09 14	704	0.7+	0.6+	2000 01 08	691	0.3-	0.2+
1998 08 17	704	0.4+	0.1-	1998 09 14	704	0.2+	0.3+	2000 01 08	691	0.3-	0.2+
1998 08 17	704	0.9+	0.3-	1998 09 14	704	0.5+	0.4+	2000 01 08	691	0.2-	0.1-
1998 08 23	704	0.3-	0.3+	1998 09 14	704	0.3-	0.1+	2000 01 13	691	0.2+	0.1-
1998 08 23	704	1.7-	1.5-	1998 09 18	704	(2.9+	0.8-)	2000 01 13	691	0.3+	0.1-
1998 08 23	704	0.3+	0.6-	1998 09 18	704	0.2-	0.3-	2000 01 13	691	0.3+	0.2-
1998 08 23	704	1.2-	0.4+	1998 09 18	704	0.5-	0.8-				

1998 QU₃₇ = 2000 AE₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	110.66397		(2000.0)	P		Q	
<i>n</i>	0.22613457	ω	79.05414	+0.99938468	+0.01765358		
<i>a</i>	2.6682391	Ω	279.92926	-0.02836835	+0.91499939		
<i>e</i>	0.2214532	<i>i</i>	1.76324	+0.02062750	+0.40306880		
<i>P</i>	4.36	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 17	704	0.1-	0.4+	1998 09 14	704	0.1+	0.8-	1998 09 18	699	0.4+	0.2+
1998 08 17	704	0.5-	0.2-	1998 09 14	704	0.2-	0.2-	2000 01 05	704	0.3+	0.1-
1998 08 17	704	0.2+	0.7+	1998 09 14	704	0.8-	0.1+	2000 01 05	704	0.4+	0.0
1998 08 17	704	0.2+	0.2+	1998 09 14	699	0.3-	0.5+	2000 01 05	704	0.4-	0.9-
1998 08 17	704	0.1-	0.4-	1998 09 14	699	0.1-	0.8+	2000 01 05	704	0.1-	0.3+

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1998 08 23	704	0.4+	1.4-	1998 09 14	699	0.2+	0.3+	2000 01 05	704	0.7-	1.3+
1998 08 23	704	0.9+	1.1-	1998 09 18	704	1.1+	0.2+	2000 01 06	704	0.3-	0.6-
1998 08 23	704	0.6+	1.1-	1998 09 18	699	0.4+	0.1+	2000 01 06	704	0.2-	0.2-
1998 08 23	704	0.1-	0.8+	1998 09 18	704	1.0+	0.3+	2000 01 06	704	0.9+	0.3-
1998 08 23	704	0.7-	0.7+	1998 09 18	699	0.5-	0.0	2000 01 06	704	0.1-	0.0
1998 09 14	704	0.1+	1.0-	1998 09 18	704	0.2-	0.8+				
1998 09 14	704	0.4-	1.1-	1998 09 18	704	1.5-	0.9+				

1998 QV₃₇ = 1999 XP₇₁

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	74.97948		(2000.0)	P	Q
<i>n</i>	0.19839418	ω	182.01122	+0.96606305	-0.25824712
<i>a</i>	2.9114998	Ω	192.95891	+0.23733454	+0.89587871
<i>e</i>	0.0386323	<i>i</i>	1.41367	+0.10195342	+0.36153805
<i>P</i>	4.97	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1996 02 15	566	0.0	0.1+	1998 09 18	704	0.7-	0.3-	1999 11 17	704	0.5-	0.3-
1996 02 15	566	0.2+	0.5+	1998 09 18	704	0.9-	0.1+	1999 11 17	704	0.1-	0.7+
1996 02 15	566	0.0	0.1+	1998 09 18	699	0.1+	1.4+	1999 11 17	704	0.4-	1.0+
1998 08 17	704	0.4-	0.7-	1998 09 18	704	0.4+	0.8-	1999 11 17	704	0.3-	0.8+
1998 08 17	704	0.0	0.3+	1998 09 18	699	0.3-	0.8+	1999 11 17	704	0.2-	1.0+
1998 08 17	704	0.0	0.7+	1998 09 18	704	0.0	1.0+	1999 12 07	704	0.8-	0.7-
1998 08 17	704	0.7+	1.3+	1998 09 18	699	1.2-	0.7+	1999 12 07	704	0.3-	0.2+
1998 08 17	704	0.8-	0.8-	1998 09 23	691	0.3-	0.3+	1999 12 07	704	0.2-	0.3-
1998 08 23	704	0.7+	0.3-	1998 09 23	691	0.3-	0.2+	1999 12 07	704	0.1-	0.2+
1998 08 23	704	0.8+	1.3-	1998 09 23	691	(2.4-	0.7+)	1999 12 07	704	1.0+	0.6-
1998 08 23	704	(1.0-	2.1-)	1998 09 29	691	0.1-	0.2-	1999 12 08	704	0.4-	0.1-
1998 08 23	704	0.1+	1.6+	1998 09 29	691	0.1-	0.4-	1999 12 08	704	0.7-	0.1+
1998 08 23	704	(2.0-	1.0+)	1998 09 29	691	0.2-	0.2-	1999 12 08	704	0.0	0.0
1998 08 26	699	0.4+	0.2+	1998 10 14	699	0.2-	0.2-	1999 12 08	704	0.5-	1.4-
1998 08 26	699	0.3+	0.1+	1998 10 14	699	0.7-	0.9-	1999 12 08	704	0.4-	0.3-
1998 08 26	699	0.1+	0.2-	1998 10 14	699	0.8-	0.6-	2000 01 05	704	0.9-	0.3-
1998 09 14	704	1.5+	1.5-	1998 12 08	704	(2.2-	2.0+)	2000 01 05	704	0.6+	0.7-
1998 09 14	704	0.8-	0.6+	1998 12 08	704	1.0-	0.1+	2000 01 05	704	0.3+	0.4-
1998 09 14	704	0.4+	1.8-	1998 12 08	704	0.9+	1.2+	2000 01 05	704	0.7+	0.3+
1998 09 14	704	1.3+	0.8-	1998 12 08	704	(4.3-	0.5+)	2000 01 05	704	1.2+	0.1-
1998 09 14	704	0.5+	1.9-	1999 11 15	704	0.0	0.4+	2000 01 06	704	0.9+	0.4-
1998 09 14	699	0.3+	0.8+	1999 11 15	704	0.1+	0.6+	2000 01 06	704	0.3+	0.2+
1998 09 14	699	0.1-	0.6+	1999 11 15	704	0.2-	0.6+	2000 01 06	704	0.6+	0.3+
1998 09 14	699	0.2-	0.6+	1999 11 15	704	0.5-	0.3+	2000 01 06	704	0.8+	0.6-
1998 09 18	704	0.4+	0.4+	1999 11 15	704	0.3-	0.2+	2000 01 06	704	0.8+	0.3-

1998 QC₃₈

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	311.04636		(2000.0)	P	Q
<i>n</i>	0.27852485	ω	191.35708	-0.99797275	-0.05605277
<i>a</i>	2.3221668	Ω	345.32838	+0.06361008	-0.86335386
<i>e</i>	0.0499279	<i>i</i>	6.83457	+0.00203624	-0.50147602
<i>P</i>	3.54	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 03 11	809	(4.2+	1.0+)	1998 09 14	704	0.2+	1.3+	1999 12 12	704	0.4-	0.6-
1997 03 11	809	(3.8+	2.1+)	1998 09 14	704	0.4-	0.2-	1999 12 12	704	0.3-	0.5-
1997 03 11	809	(3.9+	2.5+)	1998 09 14	704	0.3-	1.8-	1999 12 12	704	0.9-	0.9-
1997 03 12	809	0.3+	0.5+	1998 09 14	704	1.3-	0.1-	1999 12 13	699	0.7+	0.3+
1997 03 12	809	0.3+	0.8+	1998 09 14	704	0.3-	0.7+	1999 12 13	699	0.2+	0.0
1997 03 12	809	(0.5+	3.3+)	1998 09 18	704	0.4-	0.5-	1999 12 13	699	0.2-	0.2+
1998 08 17	704	0.4-	0.5-	1998 09 18	704	0.9-	0.5-	1999 12 15	704	0.1-	0.3-
1998 08 17	704	0.6-	0.9+	1998 09 18	704	1.9+	0.5-	1999 12 15	704	0.3-	0.2-
1998 08 17	704	0.8+	0.4+	1998 09 18	704	0.8+	0.5+	1999 12 15	704	0.2+	0.1-
1998 08 17	704	0.7+	0.3-	1999 11 16	703	0.2-	1.4+	1999 12 15	704	0.5-	0.7-
1998 08 17	704	0.0	1.0+	1999 11 16	703	0.2+	0.9+	1999 12 15	704	0.6-	0.1+
1998 08 23	704	0.8-	0.4+	1999 11 16	703	0.6+	0.7+	2000 01 02	704	0.1-	0.4-

1998 08 23	704	0.7+	1.0-	1999 11 16	703	1.2+	0.2+	2000 01 02	704	0.2-	0.4+
1998 08 23	704	1.1-	0.3+	1999 12 03	699	0.5+	0.6+	2000 01 02	704	0.0	0.1-
1998 08 23	704	0.7-	0.5+	1999 12 03	699	0.0	0.3+	2000 01 02	704	0.7+	0.4+
1998 08 30	699	0.6+	0.2-	1999 12 03	699	0.2-	0.3+	2000 01 02	704	0.6+	0.4+
1998 08 30	699	0.2-	0.2+	1999 12 12	704	0.1-	0.3-				
1998 08 30	699	0.9+	0.7+	1999 12 12	704	0.3-	0.5-				

1998 QR₃₈ = 1982 UJ₉ = 1987 SC₂₃ = 1999 XV₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	73.42107		(2000.0)	P	Q
<i>n</i>	0.17805558	ω	51.97370	+0.97661303	-0.18795524
<i>a</i>	3.1291928	Ω	318.56213	+0.11154732	+0.85805274
<i>e</i>	0.0996934	<i>i</i>	9.07651	+0.18380477	+0.47793129
<i>P</i>	5.54	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1982 10 21	095	0.5-	1.5+	1998 08 23	704	1.8-	0.0	1999 12 12	704	0.0	0.1-
1987 09 23	095	0.3-	0.6+	1998 09 14	704	0.7-	0.8-	1999 12 12	704	0.0	0.1+
1998 08 03	699	1.7+	0.1+	1998 09 14	704	1.3-	0.2-	1999 12 12	704	0.3-	0.2-
1998 08 03	699	1.2+	0.0	1998 09 14	704	1.3-	0.0	1999 12 12	704	0.1-	0.0
1998 08 03	699	1.0+	0.0	1998 09 14	704	1.6-	0.1-	1999 12 12	704	0.4-	0.0
1998 08 17	704	0.2+	0.2+	1998 09 14	704	0.6-	0.7-	1999 12 15	704	0.2+	0.2-
1998 08 17	704	0.1+	0.5+	1998 09 18	704	0.1+	0.3-	1999 12 15	704	0.1+	0.1+
1998 08 17	704	0.9+	1.0+	1998 09 18	704	1.0+	0.9-	1999 12 15	704	0.2+	0.5+
1998 08 17	704	0.2+	1.2+	1998 09 18	704	1.0+	0.0	1999 12 15	704	0.4-	1.2+
1998 08 17	704	0.0	0.7+	1998 09 18	704	0.6-	0.6+	1999 12 15	704	0.1+	1.3+
1998 08 21	566	0.1+	0.7-	1998 09 18	704	0.7+	0.1+	2000 01 02	704	0.0	0.6-
1998 08 21	566	0.7+	0.9-	1998 10 14	699	0.8+	0.1-	2000 01 02	704	0.1+	1.3-
1998 08 21	566	0.3-	0.7-	1998 10 14	699	1.2+	0.4+	2000 01 02	704	0.1-	0.0
1998 08 23	704	0.3+	0.9-	1998 10 14	699	1.2+	0.3+	2000 01 02	704	0.8+	0.8-
1998 08 23	704	(0.3-	2.3-)	1998 11 15	699	0.0	0.0	2000 01 02	704	0.1-	1.5-
1998 08 23	704	0.4-	1.3-	1998 11 15	699	0.3-	0.3+				
1998 08 23	704	1.5-	0.4+	1998 11 15	699	0.1-	0.0				

1998 QS₃₈ = 1999 XT₁₂₈

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	162.57035		(2000.0)	P	Q
<i>n</i>	0.17288234	ω	289.17931	-0.30706624	+0.94092907
<i>a</i>	3.1913098	Ω	321.98260	-0.76271483	-0.33298909
<i>e</i>	0.2031895	<i>i</i>	13.39661	-0.56918925	-0.06140635
<i>P</i>	5.70	<i>H</i>	13.2	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1992 07 30	809	0.7+	0.4+	1998 09 14	704	(0.6-	2.0+)	1999 11 04	704	0.2-	0.5-
1992 07 30	809	0.5-	0.0	1998 09 14	704	0.2-	0.3+	1999 11 04	704	0.1+	0.1-
1992 07 30	809	0.3-	0.4-	1998 09 14	704	0.5+	0.1+	1999 11 04	704	1.4-	1.0-
1998 08 17	704	0.1-	0.7-	1998 09 14	704	0.4+	0.1-	1999 12 12	704	0.6+	0.9+
1998 08 17	704	1.0+	0.1+	1998 09 14	704	0.6+	0.4-	1999 12 12	704	0.3-	0.5+
1998 08 17	704	0.8+	1.2-	1998 09 18	699	0.7-	0.0	1999 12 12	704	0.2+	0.2-
1998 08 17	704	0.1-	1.8+	1998 09 18	699	0.2-	0.1+	1999 12 12	704	0.2+	0.0
1998 08 17	704	0.2-	1.2+	1998 09 18	704	0.1+	0.8+	1999 12 12	704	0.5+	0.2+
1998 08 23	704	1.3-	1.2-	1998 09 18	699	0.2-	0.7+	1999 12 13	704	0.3+	0.3-
1998 08 23	704	0.3+	0.5-	1998 09 18	704	0.1+	0.2-	1999 12 13	704	0.9+	0.1-
1998 08 23	704	0.9-	0.0	1998 09 18	704	0.1+	0.4-	1999 12 13	704	0.5-	0.5-
1998 08 23	704	0.2-	0.6+	1998 09 18	704	0.1+	1.4-	1999 12 13	704	0.9-	1.0+
1998 08 23	704	0.3+	1.2+	1998 09 18	704	0.0	0.7-	1999 12 13	704	0.4+	0.4+

1998 QN₄₀ = 2000 AR₁₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	56.01102		(2000.0)	P	Q	Williams			
<i>n</i>	0.26909846	ω	186.54888	+0.21684585	-0.97369653				
<i>a</i>	2.3760847	Ω	250.94463	+0.89897525	+0.22711030				
<i>e</i>	0.0343790	<i>i</i>	4.24404	+0.38055405	+0.01832989				
<i>P</i>	3.66	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 08 17	704	0.1+	0.2+	1998 09 14	704	0.4-	0.9-	1999 12 31	699	0.3+	0.5+
1998 08 17	704	0.4-	0.6+	1998 09 18	704	1.2-	0.2-	1999 12 31	699	0.1-	0.6+
1998 08 17	704	0.1+	0.5-	1998 09 18	704	0.0	0.0	2000 01 05	704	0.2+	1.1-
1998 08 17	704	0.5-	0.7+	1998 09 18	704	1.3-	0.7-	2000 01 05	704	0.3-	0.3-
1998 08 17	704	0.5-	1.0+	1998 09 18	704	0.3-	0.6+	2000 01 05	704	0.8-	0.5-
1998 08 23	704	0.7+	0.5-	1998 09 18	704	0.3+	0.1-	2000 01 05	704	0.1+	0.3-
1998 08 23	704	0.5+	1.2-	1998 10 14	699	(2.5+ 1.2+)		2000 01 05	704	0.1-	0.1-
1998 08 23	704	0.9+	0.4-	1998 10 14	699	1.2+	1.6+	2000 01 07	704	0.1-	0.4-
1998 08 23	704	0.4-	0.5+	1998 10 14	699	0.4+	0.4+	2000 01 07	704	0.2-	0.0
1998 08 23	704	(0.2+ 2.8-)		1999 12 07	704	(2.7+ 4.0+)		2000 01 07	704	0.2-	0.1-
1998 09 14	704	0.3+	0.2-	1999 12 07	704	(0.1+ 2.9+)		2000 01 07	704	0.1+	0.6-
1998 09 14	704	0.4+	0.5-	1999 12 07	704	0.7+	1.8+	2000 01 07	704	0.2+	0.7+
1998 09 14	704	0.3+	0.4-	1999 12 31	699	0.2+	0.2-				

1998 QO₄₀ = 2000 AX₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	252.68012		(2000.0)	P	Q	Williams			
<i>n</i>	0.28556278	ω	35.76678	-0.55078701	+0.83353267				
<i>a</i>	2.2838539	Ω	200.91686	-0.79109496	-0.53781097				
<i>e</i>	0.0799025	<i>i</i>	6.93266	-0.26608726	-0.12642252				
<i>P</i>	3.45	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 08 17	704	0.1+	0.2-	1998 09 14	704	0.1+	0.8-	1999 12 14	704	0.9-	0.9-
1998 08 17	704	0.5-	1.2+	1998 09 14	704	0.5-	0.3-	1999 12 14	704	0.5-	1.0-
1998 08 17	704	0.7+	0.1+	1998 09 14	704	0.8+	0.9-	1999 12 14	704	0.1-	0.3+
1998 08 17	704	0.4-	1.0+	1998 09 14	704	(2.5+ 0.7-)		2000 01 07	704	0.3-	0.4+
1998 08 17	704	1.4+	0.2+	1998 09 15	699	0.7-	1.3+	2000 01 07	704	0.1-	0.4+
1998 08 23	704	1.8+	0.5+	1998 09 15	699	0.2+	0.5+	2000 01 07	704	0.2-	0.5+
1998 08 23	704	1.0+	0.4-	1998 09 15	699	0.3-	1.6+	2000 01 07	704	0.2-	0.5+
1998 08 23	704	(1.5- 2.1-)		1998 09 18	704	0.2-	0.5-	2000 01 07	704	0.9+	0.5+
1998 08 23	704	1.2-	1.2-	1998 09 18	704	0.1-	1.0-	2000 01 11	704	0.0	0.2+
1998 08 23	704	1.1-	0.4-	1998 09 18	704	1.1+	0.1-	2000 01 11	704	0.0	0.3-
1998 08 23	888	0.1+	0.1+	1998 09 18	704	0.9-	0.3+	2000 01 11	704	0.5+	0.8-
1998 08 23	888	0.2+	0.3-	1998 09 18	704	1.4-	0.2+	2000 01 11	704	1.6+	1.0+
1998 08 23	888	0.0	0.3-	1999 12 14	704	1.1-	0.5-	2000 01 11	704	0.3+	0.2-

1998 QT₄₀ = 1999 XR₁₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	22.49273		(2000.0)	P	Q	Williams			
<i>n</i>	0.21048177	ω	215.01051	+0.17837176	-0.98245749				
<i>a</i>	2.7989366	Ω	224.78486	+0.91948036	+0.18611697				
<i>e</i>	0.0420414	<i>i</i>	4.43007	+0.35034180	+0.01173648				
<i>P</i>	4.68	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 08 17	704	0.4+	0.6+	1998 09 18	704	0.2-	0.6-	1999 12 08	704	1.2-	0.5-
1998 08 17	704	1.1+	0.6+	1998 09 18	704	0.6-	0.6-	1999 12 08	704	0.7-	0.1+
1998 08 17	704	0.7+	0.5+	1998 09 18	704	1.1+	0.4-	1999 12 08	704	0.1-	0.3-
1998 08 17	704	0.2-	0.9+	1998 09 18	704	1.6-	0.3-	1999 12 14	704	0.1-	0.3-
1998 08 17	704	0.7+	1.4+	1998 09 18	704	(2.4- 0.2-)		1999 12 14	704	0.0	0.0
1998 08 23	704	0.4+	1.0-	1998 09 30	691	0.1+	0.0	1999 12 14	704	0.3-	0.8-
1998 08 23	704	0.2+	0.2-	1998 09 30	691	0.2+	0.1-	1999 12 14	704	0.1+	0.4+
1998 08 23	704	0.2-	0.1+	1998 09 30	691	0.3+	0.3-	1999 12 14	704	0.0	0.0
1998 08 26	699	1.4+	0.8+	1999 11 15	704	0.2-	0.4-	2000 01 05	704	0.5+	0.6+
1998 08 26	699	0.2+	0.7-	1999 11 15	704	0.2+	0.2-	2000 01 05	704	0.9+	0.1+

1998 08 26	699	0.6+	0.5-	1999 11 15	704	0.1+	0.5-	2000 01 05	704	0.5-	0.0
1998 09 14	704	1.0-	0.0	1999 11 15	704	0.7+	0.1+	2000 01 05	704	0.3+	0.2+
1998 09 14	704	1.5-	0.7+	1999 11 17	704	0.5-	0.9+	2000 01 05	704	0.9+	0.1+
1998 09 14	704	1.2-	0.6-	1999 11 17	704	1.7-	0.5-	2000 01 06	704	0.6+	0.1+
1998 09 14	704	(2.2- 1.2-)		1999 11 17	704	0.0	0.9+	2000 01 06	704	0.8+	0.0
1998 09 14	704	0.2+	0.2+	1999 11 17	704	0.2-	0.8+	2000 01 06	704	0.3+	0.3+
1998 09 15	699	0.6-	0.3-	1999 11 17	704	0.9-	1.2-	2000 01 06	704	0.6+	0.7+
1998 09 15	699	0.1-	0.2-	1999 12 08	704	0.1-	0.1-	2000 01 06	704	0.1-	0.2+
1998 09 15	699	0.5-	0.3+	1999 12 08	704	0.5+	0.4-				

1998 QZ₄₀ = 2000 AL₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	288.78130		(2000.0)	P	Q	Williams			
<i>n</i>	0.28027281	ω	240.52938	-0.95418073	+0.29432034				
<i>a</i>	2.3125018	Ω	316.52485	-0.24011555	-0.86077270				
<i>e</i>	0.1165220	<i>i</i>	4.50039	-0.17855994	-0.41526606				
<i>P</i>	3.52	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 08 17	704	0.6-	0.3-	1998 09 14	704	1.0-	0.3+	2000 01 03	704	0.4+	0.1+
1998 08 17	704	0.9+	1.6+	1998 09 14	704	1.0-	0.4+	2000 01 03	704	0.4+	0.5-
1998 08 17	704	0.7-	1.2+	1998 09 18	704	0.5+	0.2-	2000 01 03	704	0.1-	0.0
1998 08 17	704	(2.5- 0.7+)		1998 09 18	704	0.5+	1.6-	2000 01 03	704	0.0	0.1-
1998 08 17	704	0.2+	1.5+	1998 09 18	704	0.9-	0.2+	2000 01 03	704	0.1+	0.7+
1998 08 23	704	0.6-	1.0-	1998 09 18	704	0.0	0.1-	2000 01 04	704	0.6+	1.1+
1998 08 23	704	0.6+	1.3-	1998 09 18	704	0.1-	0.4-	2000 01 04	704	0.4+	0.1+
1998 08 23	704	0.9+	0.2-	1999 12 15	704	0.3-	0.5-	2000 01 04	704	0.2-	0.5+
1998 08 23	704	0.3+	0.2+	1999 12 15	704	0.4-	0.7-	2000 01 04	704	0.5+	0.5+
1998 09 14	704	0.1-	0.0	1999 12 15	704	0.4-	0.7-	2000 01 04	704	0.3+	0.7+
1998 09 14	704	0.7+	0.1+	1999 12 15	704	0.9-	0.6-				
1998 09 14	704	(3.1- 1.5+)		1999 12 15	704	0.4-	0.2-				

1998 QC₄₁ = 1999 XW₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	173.76736		(2000.0)	P	Q	Williams			
<i>n</i>	0.22311738	ω	309.82980	+0.15291127	+0.98443011				
<i>a</i>	2.6922400	Ω	328.64224	-0.84817262	+0.08571235				
<i>e</i>	0.1224472	<i>i</i>	9.58982	-0.50716994	+0.15346253				
<i>P</i>	4.42	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1998 08 03	699	0.3+	0.1+	1998 08 26	699	0.5+	0.5+	1999 11 01	704	1.0-	0.2-
1998 08 03	699	0.1+	0.3+	1998 08 26	699	0.3+	0.5+	1999 11 01	704	0.5-	0.4-
1998 08 03	699	0.0	1.0+	1998 09 14	704	(2.9- 0.5-)		1999 11 01	704	0.3-	0.1-
1998 08 17	704	0.3-	0.5+	1998 09 14	704	0.3-	0.5-	1999 11 01	704	0.4-	0.0
1998 08 17	704	0.2+	0.2-	1998 09 14	704	1.3-	1.5-	1999 11 01	704	0.7-	0.1+
1998 08 17	704	0.2-	0.4-	1998 09 14	704	0.3+	0.7-	1999 12 12	704	0.4-	0.1+
1998 08 17	704	0.1-	0.4+	1998 09 18	704	0.7-	0.3+	1999 12 12	704	0.1+	0.2-
1998 08 17	704	0.4-	0.4-	1998 09 18	704	0.3-	0.2-	1999 12 12	704	0.1+	0.3+
1998 08 23	704	0.6-	0.7-	1998 09 18	704	1.1-	0.8-	1999 12 12	704	0.5+	0.7+
1998 08 23	704	0.1+	0.2+	1998 09 18	704	0.6+	0.7+	1999 12 12	704	0.6+	0.7+
1998 08 23	704	1.1+	0.5-	1998 09 18	704	0.2+	0.6+	1999 12 15	704	0.1+	0.2-
1998 08 23	704	0.8-	0.2-	1998 12 15	327	0.5+	0.2-	1999 12 15	704	0.2-	0.1-
1998 08 23	704	1.1+	0.4+	1998 12 15	327	0.1-	0.5+	1999 12 15	704	1.4+	0.2+
1998 08 26	699	0.7+	0.6+	1998 12 15	327	0.2+	0.1-	1999 12 15	704	0.2+	0.5-

1998 QJ₄₁ = 2000 AZ₂₂₃

Epoch 2000 Feb. 26.0 TT = JDT 24

2000 JAN. 24

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Residuals in seconds of arc

1998 08 17	704	0.7−	0.5+	1998 08 23	704	0.7+	1.3+	1998 09 18	704	1.6−	1.3+
1998 08 17	704	1.2−	0.0	1998 09 14	704	0.3+	0.2−	2000 01 09	691	0.2+	0.1−
1998 08 17	704	0.3+	0.7−	1998 09 14	704	0.3−	0.2−	2000 01 09	691	0.1+	0.2+
1998 08 17	704	0.2−	0.2−	1998 09 14	704	1.1−	1.1−	2000 01 09	691	0.3+	0.3−
1998 08 17	704	0.3−	0.4+	1998 09 14	704	0.4−	0.1+	2000 01 12	691	0.3−	0.2+
1998 08 23	704	0.4+	0.3+	1998 09 18	704	0.9+	0.4−	2000 01 12	691	0.3−	0.2+
1998 08 23	704	0.4+	0.6−	1998 09 18	704	0.3−	1.1−	2000 01 12	691	0.0	0.1−
1998 08 23	704	0.5+	0.5+	1998 09 18	704	0.5+	0.4+				
1998 08 23	704	0.8+	0.9−	1998 09 18	704	1.3+	0.7+				

1998 QY₄₁ = 2000 AF₁₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	91.04787	(2000.0)	P	Q	
<i>n</i>	0.19013910	ω 216.38070	+0.99021089	+0.06651901	
<i>a</i>	2.9951719	Ω 139.26684	−0.03261752	+0.96507290	
<i>e</i>	0.1168803	<i>i</i> 10.83899	−0.13571473	+0.25339597	
<i>P</i>	5.18	<i>H</i> 13.7	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1998 08 17	704	0.1+	0.9−	1998 09 16	699	0.5+	1.7+	1999 12 14	704	0.1+	0.5−
1998 08 17	704	0.9+	0.5+	1998 09 16	699	0.5+	1.2+	1999 12 14	704	0.2+	0.3+
1998 08 17	704	0.2−	0.5−	1998 09 18	704	0.5−	1.0−	1999 12 14	704	0.2−	0.6−
1998 08 17	704	0.2+	0.3+	1998 09 18	704	0.8+	1.3−	1999 12 14	704	0.4−	0.0
1998 08 17	704	1.7−	1.0+	1998 09 18	704	0.7+	0.4+	2000 01 07	704	0.6+	0.4+
1998 08 23	704	0.0	0.2−	1998 09 18	704	0.2+	1.4−	2000 01 07	704	0.4+	0.2+
1998 08 23	704	(2.2−	2.5−)	1998 09 18	704	1.3−	1.8−	2000 01 07	704	0.4−	0.1−
1998 08 23	704	0.5+	0.5−	1998 09 22	699	0.5−	1.0+	2000 01 07	704	0.2+	0.4−
1998 08 23	704	(1.2−	2.6−)	1998 09 22	699	0.3−	0.2−	2000 01 07	704	0.5−	0.8−
1998 08 23	704	0.2+	0.3−	1998 09 22	699	0.1−	1.1+	2000 01 11	704	0.4−	0.1−
1998 09 14	704	0.3+	0.2−	1999 12 05	704	0.5+	0.1−	2000 01 11	704	0.2+	0.1−
1998 09 14	704	(0.1−	2.2+)	1999 12 05	704	0.2−	0.3+	2000 01 11	704	0.2−	0.5+
1998 09 14	704	0.0	0.4+	1999 12 05	704	0.6+	0.5+	2000 01 11	704	0.2+	0.1+
1998 09 14	704	0.0	0.6+	1999 12 05	704	0.3+	0.2−				
1998 09 16	699	0.2−	0.1−	1999 12 05	704	1.0−	0.7+				

1998 QU₄₂ = 1999 XB₁₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	8.24681	(2000.0)	P	Q	
<i>n</i>	0.18948261	ω 110.96237	+0.03797057	−0.99701932	
<i>a</i>	3.0020861	Ω 336.55581	+0.84263657	+0.06807359	
<i>e</i>	0.0775723	<i>i</i> 9.71860	+0.53714229	−0.03631050	
<i>P</i>	5.20	<i>H</i> 13.4	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 08 17	704	0.4+	0.2+	1998 09 14	704	0.1+	0.3−	1999 11 01	704	0.6−	0.2−
1998 08 17	704	0.2+	0.0	1998 09 14	704	0.1+	1.3−	1999 11 01	704	0.3−	0.5+
1998 08 17	704	1.0+	1.2−	1998 09 14	704	0.2+	0.1−	1999 12 12	704	0.0	0.0
1998 08 17	704	0.0	0.2+	1998 09 14	704	0.3−	0.6−	1999 12 12	704	0.1+	0.3+
1998 08 17	704	0.9+	1.0+	1998 09 14	704	0.1−	0.3+	1999 12 12	704	0.3+	0.0
1998 08 23	704	0.9+	0.1−	1998 09 18	704	0.5+	0.5−	1999 12 12	704	0.3+	0.1+
1998 08 23	704	0.2−	0.7−	1998 09 18	704	0.8−	0.4−	1999 12 12	704	0.6+	0.5−
1998 08 23	704	1.4+	0.7+	1998 09 18	704	1.2−	0.7+	1999 12 15	704	0.1+	0.1−
1998 08 23	704	1.0+	0.2+	1998 09 18	704	1.1−	1.0+	1999 12 15	704	0.0	0.1−
1998 08 28	958	0.4+	0.8−	1998 09 18	704	0.6−	0.9+	1999 12 15	704	0.1−	0.5+
1998 08 28	958	(0.3−	2.5−)	1998 10 14	699	1.0+	1.2−	1999 12 15	704	0.1+	0.4+
1998 08 28	958	0.5−	0.8+	1998 10 14	699	0.7+	0.3−	2000 01 02	704	0.2−	0.0
1998 08 28	958	0.9−	0.2−	1998 10 14	699	0.6−	1.9+	2000 01 02	704	0.2−	0.0
1998 08 28	958	0.6−	0.2−	1999 11 01	704	0.5−	0.6−	2000 01 02	704	0.3+	0.2−
1998 08 28	958	0.1+	0.1+	1999 11 01	704	0.4−	0.2+	2000 01 02	704	0.3+	0.0
1998 08 29	958	1.8−	0.3−	1999 11 01	704	0.4−	0.3+	2000 01 02	704	0.2+	0.7−

1998 QD₄₃ = 2000 AG₁₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	65.17248	(2000.0)	P	Q	
<i>n</i>	0.18045076	ω 232.14992	+0.93474822	−0.34060637	
<i>a</i>	3.1014414	Ω 147.40595	+0.35522935	+0.90195399	
<i>e</i>	0.0724723	<i>i</i> 10.82376	−0.00760706	+0.26545488	
<i>P</i>	5.46	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1998 08 17	704	0.4−	0.6−	1998 09 14	704	0.1−	1.0−	1999 12 05	704	0.3−	0.2−
1998 08 17	704	0.3−	0.3+	1998 09 14	704	1.1−	1.3−	1999 12 14	704	0.8+	0.2−
1998 08 17	704	0.1−	0.4−	1998 09 18	704	0.7−	0.9+	1999 12 14	704	1.1+	0.4−
1998 08 17	704	0.1−	0.0	1998 09 18	704	1.6+	0.3−	1999 12 14	704	0.4+	1.4−
1998 08 17	704	1.8−	0.1+	1998 09 18	704	0.0	0.2−	1999 12 14	704	0.8+	0.2+
1998 08 23	704	0.1−	0.2+	1998 09 18	704	1.4−	0.6+	2000 01 07	704	0.3+	0.3+
1998 08 23	704	0.3+	0.9−	1998 09 18	704	1.0+	0.4−	2000 01 07	704	0.6−	0.4+
1998 08 23	704	1.2−	1.5−	1999 11 05	704	0.2+	0.3+	2000 01 07	704	0.3+	0.8−
1998 08 23	704	0.5−	0.2+	1999 11 05	704	0.2−	0.0	2000 01 07	704	1.0−	1.7+
1998 08 30	699	0.4−	0.5+	1999 11 05	704	0.4+	0.5−	2000 01 07	704	0.3−	0.5−
1998 08 30	699	0.2+	0.5+	1999 11 05	704	0.3+	0.6+	2000 01 11	704	0.3−	0.6−
1998 08 30	699	0.4+	0.8+	1999 12 05	704	0.1−	0.3+	2000 01 11	704	1.2−	0.2−
1998 09 14	704	1.7+	1.4+	1999 12 05	704	0.1+	0.2+	2000 01 11	704	0.6−	0.0
1998 09 14	704	1.6+	1.8+	1999 12 05	704	0.1−	0.3+	2000 01 11	704	0.4−	0.2+
1998 09 14	704	1.2+	0.7−	1999 12 05	704	0.1+	0.0				

1998 QL₄₃ = 1999 XS₁₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	82.15392	(2000.0)	P	Q	
<i>n</i>	0.18808104	ω 353.29992	+0.99959565	−0.01860661	
<i>a</i>	3.0169819	Ω 7.86299	+0.02723270	+0.84398239	
<i>e</i>	0.0368768	<i>i</i> 9.04273	−0.00817992	+0.53604806	
<i>P</i>	5.24	<i>H</i> 13.4	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 07 31	699	0.5−	0.2+	1998 09 14	704	1.4−	0.6+	1998 09 22	428	0.2−	0.2+
1998 07 31	699	1.0−	0.2−	1998 09 14	704	0.4−	1.1−	1998 09 22	428	1.4+	0.7+
1998 07 31	699	0.3−	1.2+	1998 09 14	704	1.2−	0.6−	1999 12 12	704	0.2+	0.0
1998 08 17	704	1.1+	0.1−	1998 09 16	699	1.5+	0.1−	1999 12 12	704	0.4+	0.6+
1998 08 17	704	0.9+	0.1−	1998 09 16	699	0.6+	1.3+	1999 12 12	704	0.2+	0.5+
1998 08 17	704	0.2+	0.8−	1998 09 16	699	1.1+	1.4+	1999 12 15	704	0.3−	0.3−
1998 08 17	704	0.1−	0.8−	1998 09 18	704	0.1−	0.4+	1999 12 15	704	1.1+	0.2−
1998 08 17	704	1.2−	0.9−	1998 09 18	704	0.1−	0.8+	1999 12 15	704	0.2+	0.5−
1998 08 23	704	0.3+	0.7+	1998 09 18	704	0.1+	1.0−	1999 12 15	704	0.4+	0.7−
1998 08 23	704	1.0−	1.1−	1998 09 18	704	0.1+	0.3+	1999 12 15	704	0.2+	1.2−
1998 08 23	704	1.3+	0.9+	1998 09 18	704	0.0	0.7−	2000 01 02	704	1.6−	0.5+
1998 08 23	704	(2.2−	1.2−)	1998 09 20	428	0.1+	0.1−	2000 01 02	704	0.1−	0.6+
1998 09 14	704	0.2−	0.4+	1998 09 20	428	1.1−	1.4−	2000 01 02	704	1.0−	0.8+

1998 QY₄₃ = 2000 AB₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	229.66588	(2000.0)	P	Q	
<i>n</i>	0.29854739	ω 252.27125	−0.02386660	+0.99952816	
<i>a</i>	2.2171438	Ω 16.39736	−0.88931503	−0.01239220	
<i>e</i>	0.0371131	<i>i</i> 3.92736	−0.45667184	−0.02810500	
<i>P</i>	3.30	<i>H</i> 15.5	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1997 04 02	704	0.2−	0.0	1998 08 30	699	0.3+	0.5−	2000 01 03	704	0.7−	0.4+
1997 04 02	704	0.1+	0.9+	1998 08 30	699	0.1+	0.5−	2000 01 03	704	0.3−	0.7+
1997 04 02	704	0.8−	0.2−	1998 08 30	699	0.6−	0.6−	2000 01 03	704	0.2+	0.3+
1997 04 02	704	0.8+	0.6−	1998 09 14	704	0.7+	0.3+	2000 01 03	704	0.5+	0.5−
1998 08 17	704	1.0−	0.7−	1998 09 14	704	0.8−	0.2−	2000 01 03	704	0.2−	0.5+
1998 08 17	704	1.3−	0.2+	1998 09 14	704	0.1−	0.1+	2000 01 04	704	0.6−	0.3−
1998 08 17	704	0.9+	1.0+	1998 09 14	704	1.1+	0.9−	2000 01 04	704	0.4+	0.1+
1998 08 17	704	1.6+	1.3+	1998 09 14	704	0.0	0.4+	2000 01 04	704	0.5−	0.5−

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1998 08 17	704	0.7−	1.1+	1998 09 18	704	0.1+	1.4+	2000 01 04	704	0.5+	0.3+
1998 08 23	704	0.8+	0.4−	1998 09 18	704	1.4−	0.6+	2000 01 04	704	0.4+	0.2+
1998 08 23	704	0.3+	1.5−	1998 09 18	704	1.2−	1.3−	2000 01 04	704	0.2−	1.5−
1998 08 23	704	(0.1−	3.5−)	1998 09 18	704	0.2+	0.1−	2000 01 04	704	0.6+	0.2+
1998 08 23	704	0.7−	0.2−	1998 09 18	704	1.6+	0.6+				

1998 QZ₄₃ = 1999 YH₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	81.87397		(2000.0)	P	Q		
<i>n</i>	0.20389619	ω	272.06401	+0.96583597	−0.25243033		
<i>a</i>	2.8588847	Ω	102.56112	+0.25518447	+0.88690641		
<i>e</i>	0.0779307	<i>i</i>	3.44487	+0.04518602	+0.38687977		
<i>P</i>	4.83	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.3−	0.4+	1998 09 14	704	1.2+	0.2−	1999 12 17	704	0.0	1.7−
1998 08 17	704	0.1−	0.6+	1998 09 16	699	0.5+	0.7+	1999 12 19	704	0.2−	0.1+
1998 08 17	704	0.3+	0.8+	1998 09 16	699	0.9−	0.6+	1999 12 19	704	0.5−	0.3+
1998 08 17	704	0.3−	1.2+	1998 09 16	699	0.2+	0.1−	1999 12 19	704	0.5+	0.3+
1998 08 17	704	0.9−	1.4+	1998 09 18	704	0.3+	0.6+	1999 12 19	704	0.2−	0.3+
1998 08 23	704	0.4−	0.3−	1998 09 18	704	0.6−	0.5−	2000 01 03	704	0.1+	0.3−
1998 08 23	704	0.7+	0.6−	1998 09 18	704	1.3−	1.6−	2000 01 03	704	1.2+	0.1−
1998 08 23	704	0.2−	0.7−	1998 09 18	704	0.3−	0.1+	2000 01 03	704	0.2+	0.1+
1998 08 23	704	0.9−	0.7−	1998 09 18	704	0.1+	1.2−	2000 01 03	704	0.0	0.3+
1998 08 23	704	0.8−	0.9−	1999 12 07	704	0.1−	0.1−	2000 01 03	704	0.3+	1.1+
1998 08 30	699	1.4+	0.8−	1999 12 07	704	0.0	0.4+	2000 01 05	704	1.4−	0.4+
1998 08 30	699	0.7+	0.4+	1999 12 07	704	0.6−	0.2+	2000 01 05	704	0.3−	0.4−
1998 08 30	699	1.0+	0.3−	1999 12 07	704	0.4−	0.1+	2000 01 05	704	0.0	0.3−
1998 09 14	704	0.4+	0.2+	1999 12 17	704	1.1+	0.5−	2000 01 05	704	0.1−	0.1−
1998 09 14	704	0.6−	1.0+	1999 12 17	704	0.2−	0.8+				
1998 09 14	704	0.5+	0.1+	1999 12 17	704	0.6+	0.8−				

1998 QC₄₄ = 1999 XE₁₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	233.73903		(2000.0)	P	Q		
<i>n</i>	0.26391813	ω	230.51703	−0.52996803	+0.84787165		
<i>a</i>	2.4070765	Ω	7.52910	−0.73651532	−0.45100911		
<i>e</i>	0.1078111	<i>i</i>	6.89663	−0.42033209	−0.27875517		
<i>P</i>	3.73	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	1.0+	0.1+	1998 09 14	704	0.9+	0.1−	1999 12 12	704	0.4−	0.2+
1998 08 17	704	(1.1+	2.5−)	1998 09 14	704	0.6+	0.8−	1999 12 12	704	0.1−	0.2−
1998 08 17	704	1.4+	0.7−	1998 09 16	699	0.2+	0.7−	1999 12 12	704	0.7−	0.6−
1998 08 17	704	0.2−	1.3+	1998 09 16	699	0.0	0.5−	1999 12 15	704	0.2−	0.3+
1998 08 23	704	1.3−	1.8−	1998 09 16	699	0.2−	0.3−	1999 12 15	704	0.1−	0.1+
1998 08 23	704	0.1+	0.8+	1998 09 18	704	0.5+	0.3+	1999 12 15	704	0.1+	0.2+
1998 08 23	704	1.3−	0.4+	1998 09 18	704	1.7−	1.7+	1999 12 15	704	0.3−	0.3+
1998 08 23	704	0.4−	0.8+	1998 09 18	704	0.2−	1.5−	2000 01 02	704	1.1+	1.4−
1998 08 23	704	1.0+	0.0	1998 09 18	704	0.7−	0.2−	2000 01 02	704	0.0	0.1+
1998 09 14	704	0.1+	0.1−	1998 09 18	704	0.2−	1.1+	2000 01 02	704	0.4+	0.9+
1998 09 14	704	0.7+	0.3+	1999 12 12	704	0.5+	0.2+				

1998 QF₄₄ = 2000 AL₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	82.62759		(2000.0)	P	Q		
<i>n</i>	0.23673021	ω	40.89208	+0.74411402	−0.66805170		
<i>a</i>	2.5880158	Ω	1.02684	+0.59548246	+0.66251970		
<i>e</i>	0.1528621	<i>i</i>	3.58685	+0.30281177	+0.33878397		
<i>P</i>	4.16	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 02 20	566	0.6−	0.5−	1998 09 14	704	0.0	1.3+	1998 10 14	699	0.5−	0.2−
1996 02 20	566	0.3−	0.8−	1998 09 14	704	0.4−	0.2−	1998 10 14	699	0.4+	1.0−
1996 02 20	566	0.1−	0.7−	1998 09 14	704	0.6−	0.2−	2000 01 04	704	0.7+	0.2+

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1998 08 17	704	1.0−	0.5−	1998 09 14	699	0.5+	1.1+	2000 01 04	704	0.1+	0.2−
1998 08 17	704	0.6+	1.2−	1998 09 14	699	0.4+	0.2+	2000 01 04	704	0.3+	0.0
1998 08 17	704	0.5+	1.8−	1998 09 14	699	0.7+	0.2+	2000 01 04	704	0.6−	0.3−
1998 08 17	704	0.8−	1.0+	1998 09 18	704	0.9+	0.6−	2000 01 04	704	0.6−	0.1+
1998 08 17	704	1.3+	0.1−	1998 09 18	704	0.6−	0.3−	2000 01 06	704	0.9−	0.4−
1998 08 23	704	0.6−	0.3+	1998 09 18	704	0.0	0.1−	2000 01 06	704	0.4−	0.2−
1998 08 23	704	0.8+	0.1+	1998 09 18	704	0.2+	0.2−	2000 01 06	704	0.4−	0.1−
1998 08 23	704	0.7−	0.1+	1998 09 18	704	0.3−	1.0+	2000 01 06	704	0.8+	0.1+
1998 08 23	704	0.4−	1.1+	1998 09 30	691	0.3+	0.4−	2000 01 06	699	0.3−	0.8+
1998 08 23	704	0.5−	0.7−	1998 09 30	691	0.3+	0.0	2000 01 06	704	0.3+	0.0
1998 09 14	704	0.4+	0.5−	1998 09 30	691	0.0	0.0	2000 01 06	699	0.2+	0.4+
1998 09 14	704	0.4+	0.0	1998 10 14	699	0.7−	0.1+	2000 01 06	699	0.3+	0.3+

1998 QN₄₄ = 1999 XF₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	191.47330		(2000.0)	P	Q		
<i>n</i>	0.27289103	ω	299.46914	+0.31537118	+0.94870409		
<i>a</i>	2.3540185	Ω	348.84572	−0.82564474	+0.26267644		
<i>e</i>	0.1177623	<i>i</i>	6.64793	−0.46781597	+0.17595916		
<i>P</i>	3.61	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 05	566	0.1+	0.6−	1998 09 14	704	0.2−	0.4+	1999 12 12	704	0.0	0.9−
1997 04 05	566	0.4−	0.6−	1998 09 14	704	0.4+	0.3−	1999 12 12	704	0.2+	1.1−
1997 04 05	566	0.4−	0.0	1998 09 14	704	0.6+	0.3+	1999 12 12	704	0.2−	0.1−
1998 08 17	704	0.2−	0.1−	1998 09 14	704	0.9+	0.3+	1999 12 13	699	0.5−	0.7+
1998 08 17	704	0.0	0.3−	1998 09 18	704	0.0	0.5−	1999 12 13	699	(0.6+	2.2+)
1998 08 17	704	0.0	0.1−	1998 09 18	704	0.2+	0.3+	1999 12 13	699	0.3+	1.4+
1998 08 17	704	0.4+	0.6+	1998 09 18	699	0.2+	0.4−	1999 12 15	704	0.3−	0.2+
1998 08 17	704	0.9−	0.1−	1998 09 18	704	0.1+	1.2+	1999 12 15	704	0.1+	0.7+
1998 08 23	704	0.2+	1.5−	1998 09 18	699	0.7−	0.4+	1999 12 15	704	0.3−	0.7−
1998 08 23	704	0.1−	1.2+	1998 09 18	704	(2.0+	2.0−)	1999 12 15	704	0.4−	0.8+
1998 08 23	704	0.9−	0.0	1998 09 18	704	0.6+	0.9−	1999 12 15	704	0.2+	0.3+
1998 08 23	704	(2.2−	0.6+)	1998 09 18	699	1.1−	0.3−	2000 01 04	704	0.0	0.2−
1998 08 23	704	0.1+	0.6−	1998 10 14	699	1.3+	0.3+	2000 01 04	704	0.2+	0.3−
1998 08 30	699	0.1−	0.4+	1998 10 14	699	0.1+	1.0−	2000 01 04	704	0.3+	0.0
1998 08 30	699	1.2−	0.1−	1998 10 14	699	0.7+	1.1−	2000 01 04	704	0.1+	0.4−
1998 08 30	699	0.3−	0.1+	1999 12 12	704	0.0	0.0	2000 01 04	704	0.5+	0.3+
1998 09 14	704	0.5+	0.8+	1999 12 12	704	0.2−	0.5−				

1998 QU₄₄ = 2000 AR₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	115.44673		(2000.0)	P	Q		
<i>n</i>	0.25969104	ω	81.38593	+0.96230989	−0.26903382		
<i>a</i>	2.4331268	Ω	294.21313	+0.22921737	+0.88103784		
<i>e</i>	0.1131209	<i>i</i>	2.49832	+0.14635258	+0.38909271		
<i>P</i>	3.80	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.3−	0.2+	1998 08 26	699	0.3−	0.3+	1998 10 14	699	0.3−	0.7−
1998 08 17	704	0.8+	0.6−	1998 08 26	699	1.1+	0.6−	1998 10 14	699	0.3+	0.2+
1998 08 17	704	0.2+	0.1−	1998 09 14	704	0.4−	0.1+	1998 10 14	699	0.3−	0.3+
1998 08 17	704	0.0	0.7−	1998 09 14	704	0.4+	0.6+	2000 01 05	704	0.8−	0.0
1998 08 17	704	0.6−	0.5−	1998 09 14	704	0.2−	0.7+	2000 01 05	704	0.2−	0.4−
1998 08 23	704	0.5+	0.5+	1998 09 14	704	1.0−	0.8+	2000 01 05	704	0.2+	0.3+
1998 08 23	704	0.9−	1.7−	1998 09 18	704	0.4+	0.5+	2000 01 07	704	0.1−	0.7−
1998 08 23	704	0.7+	0.8+	1998 09 18	704	0.8−	0.1−	2000 01 07	704	0.5−	0.0
1998 08 23	704	1.0+	1.4−	1998 09 18	704	0.7+	0.6−	2000 01 07	704	0.3−	0.5−
1998 08 23	704	0.7−	0.5+	1998 09 18	704	0.6−	0.2+	2000 01 07	704	0.8+	0.4+
1998 08 26	699	0.1−	0.4+	1998 09 18	704	0.7+	0.1+	2000 01 07	704	0.4+	0.1−

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M.P.C. 37723

1998 QM₄₅ = 2000 AK₁₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	122.41719		(2000.0)	P	Q
<i>n</i>	0.23636380	ω	153.16007	+0.99255718	+0.11333676
<i>a</i>	2.5906897	Ω	200.47878	-0.12136405	+0.95078799
<i>e</i>	0.1244498	<i>i</i>	7.31630	+0.01005052	+0.28836950
<i>P</i>	4.17	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 04 06	704	0.5+	0.3-	1998 08 30	699	(3.2+	1.2-)	1998 09 25	699	0.3+	0.7-
1997 04 06	704	0.3-	1.0+	1998 09 14	704	0.4-	0.3-	1998 09 25	699	0.3+	0.2-
1998 08 17	704	0.6+	0.1-	1998 09 14	704	0.5-	0.7-	1998 09 25	699	0.5+	0.3-
1998 08 17	704	0.4+	1.0-	1998 09 14	704	0.2-	0.4-	2000 01 07	704	0.2-	0.7-
1998 08 17	704	0.1-	0.2-	1998 09 14	704	0.7-	0.1-	2000 01 07	704	0.3+	0.1-
1998 08 17	704	0.2-	0.4+	1998 09 16	699	1.7-	0.3+	2000 01 07	704	0.7+	0.2+
1998 08 17	704	0.4+	1.1+	1998 09 16	699	(2.3-	1.5+)	2000 01 07	704	0.1+	0.5+
1998 08 23	704	0.7+	1.5+	1998 09 16	699	1.3-	1.4+	2000 01 11	704	0.2-	0.0
1998 08 23	704	1.1-	0.4+	1998 09 18	704	0.3+	0.5-	2000 01 11	704	0.2-	0.0
1998 08 23	704	0.3+	1.3-	1998 09 18	704	1.8+	0.4+	2000 01 11	704	0.2-	0.0
1998 08 23	704	(2.1-	0.7+)	1998 09 18	704	0.8-	0.2+	2000 01 11	704	0.1-	0.7+
1998 08 30	699	1.1+	0.1+	1998 09 18	704	1.3+	0.3+				
1998 08 30	699	0.4+	0.4+	1998 09 18	704	1.3-	0.2+				

1998 QN₄₅ = 1999 YS₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	315.35043		(2000.0)	P	Q
<i>n</i>	0.26919912	ω	346.68879	-0.99589532	-0.08495398
<i>a</i>	2.3754923	Ω	188.62186	+0.08950404	-0.97568346
<i>e</i>	0.1085952	<i>i</i>	12.02411	-0.01347352	-0.20205102
<i>P</i>	3.66	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.5-	0.7-	1998 09 14	704	(1.4+	2.5-)	1999 12 20	704	0.3-	0.0
1998 08 17	704	(0.3-	2.2-)	1998 09 14	704	0.3+	1.6-	1999 12 20	704	0.2+	0.3-
1998 08 17	704	0.7-	0.1-	1998 09 14	704	0.8-	0.8-	1999 12 20	704	0.4-	0.6-
1998 08 17	704	0.5-	1.5-	1998 09 18	704	1.3+	0.2+	1999 12 20	704	0.7-	0.6-
1998 08 17	704	1.3+	1.5+	1998 09 18	704	1.5-	0.6-	2000 01 08	704	0.3+	0.3-
1998 08 23	704	0.0	1.4+	1998 09 18	704	1.6-	0.7-	2000 01 08	704	0.5-	0.4-
1998 08 23	704	(2.1-	0.9+)	1998 09 18	704	1.4-	1.7+	2000 01 08	704	0.4+	0.4-
1998 08 23	704	1.5+	0.4+	1998 09 18	704	1.0-	1.1+	2000 01 08	704	0.1+	0.4-
1998 08 23	704	0.1+	1.3+	1999 12 19	704	0.7-	0.2-	2000 01 12	704	0.3+	0.2+
1998 08 30	699	0.8+	1.1+	1999 12 19	704	0.1-	0.2-	2000 01 12	704	0.4+	0.4+
1998 08 30	699	0.6+	1.5-	1999 12 19	704	0.8-	0.8+	2000 01 12	704	0.2+	0.7+
1998 08 30	699	1.3+	0.0	1999 12 19	704	0.6-	0.6+	2000 01 12	704	1.5+	0.1-
1998 09 14	704	0.9+	0.8-	1999 12 20	704	0.5-	0.1-	2000 01 12	704	1.3+	1.0+

1998 QO₄₅ = 2000 AV₁₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	166.06725		(2000.0)	P	Q
<i>n</i>	0.25956307	ω	133.94955	+0.73028723	+0.68304465
<i>a</i>	2.4339265	Ω	183.03630	-0.67213605	+0.71543285
<i>e</i>	0.0737232	<i>i</i>	12.45843	-0.12212162	+0.14698929
<i>P</i>	3.80	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704	0.1-	0.4-	1998 09 14	704	0.1+	0.1-	1998 10 15	120	1.1-	0.2+
1998 08 17	704	0.2+	0.6-	1998 09 14	704	(2.4+	0.7-)	1998 10 15	120	0.1+	0.5+
1998 08 17	704	0.0	0.5-	1998 09 18	704	0.0	0.4-	2000 01 08	704	0.1-	0.3-
1998 08 17	704	0.2+	0.9-	1998 09 18	704	1.0-	0.6+	2000 01 08	704	0.1-	0.3-
1998 08 17	704	0.0	0.4+	1998 09 18	704	0.4+	0.1-	2000 01 08	704	0.3+	0.5-
1998 08 23	704	0.4-	0.1+	1998 09 18	704	0.3-	0.1-	2000 01 08	704	0.3-	0.1-
1998 08 23	704	0.6+	1.2+	1998 09 18	704	0.3+	0.2+	2000 01 08	704	0.1+	0.5-
1998 08 23	704	0.0	0.5+	1998 10 11	120	0.4+	0.8-	2000 01 11	704	0.0	0.2+
1998 08 23	704	0.3+	0.3-	1998 10 11	120	1.3+	0.9-	2000 01 11	704	0.0	0.5+
1998 08 23	704	0.4-	0.4+	1998 10 11	120	0.6-	0.2+	2000 01 11	704	0.5-	0.5+

1998 09 14	704	0.1+	0.3-	1998 10 13	120	0.2-	0.2+	2000 01 11	704	0.6+	0.5+
1998 09 14	704	0.2-	0.9+	1998 10 13	120	0.4+	0.1-				

1998 QP₄₅ = 2000 AO₁₈₈

Id. G. V. Williams, E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	303.30024		(2000.0)	P	Q
<i>n</i>	0.23671068	ω	340.04211	-0.98794743	-0.14872848
<i>a</i>	2.5881582	Ω	191.65539	+0.15431767	-0.96799180
<i>e</i>	0.1712586	<i>i</i>	12.25779	-0.01208063	-0.20216755
<i>P</i>	4.16	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704	0.9+	0.2-	1998 09 18	704	0.3+	0.4-	1999 12 05	704	0.2+	0.5-
1998 08 17	704	1.2+	0.3-	1998 09 18	704	0.4-	0.1+	2000 01 07	699	0.1+	0.2+
1998 08 17	704	0.5+	0.6-	1998 09 18	704	0.4-	0.3+	2000 01 07	699	0.1-	0.4+
1998 08 17	704	0.8+	0.7-	1998 09 18	704	0.7+	0.1+	2000 01 07	699	0.1+	0.2-
1998 08 17	704	0.2-	0.4-	1998 09 18	704	0.2+	1.1+	2000 01 08	704	0.6-	0.1-
1998 08 23	704	0.4+	0.3+	1998 09 25	699	1.4+	0.1-	2000 01 08	704	0.6-	0.1+
1998 08 23	704	1.8-	0.3+	1998 09 25	699	0.3+	1.0+	2000 01 08	704	0.2-	0.2-
1998 08 23	704	(2.8-	0.5+)	1998 09 25	699	0.1-	0.1+	2000 01 08	699	0.3+	0.5-
1998 08 23	704	0.4+	1.0-	1999 11 05	704	0.1-	0.0	2000 01 08	704	0.6+	0.6+
1998 08 23	704	1.2-	0.9+	1999 11 05	704	0.2-	0.5-	2000 01 08	704	0.4-	1.2+
1998 09 14	704	0.4-	0.3+	1999 11 05	704	0.3-	0.1-	2000 01 08	699	0.2-	0.1+
1998 09 14	704	0.5-	0.2-	1999 11 05	704	0.4+	0.1-	2000 01 08	699	0.1+	0.4+
1998 09 14	704	0.3+	0.9-	1999 11 05	704	0.0	0.1+	2000 01 11	704	0.8+	0.2+
1998 09 14	704	0.4-	0.3-	1999 12 05	704	0.5+	0.5-	2000 01 11	704	0.4-	0.3-
1998 09 16	699	1.2-	1.1+	1999 12 05	704	0.3+	0.5-	2000 01 11	704	0.1-	0.3+
1998 09 16	699	0.1-	0.3-	1999 12 05	704	0.2+	0.3-	2000 01 11	704	0.3+	0.2-
1998 09 16	699	0.6-	0.1+	1999 12 05	704	0.2+	0.5-	2000 01 11	704	0.9-	0.6+

1998 QY₄₅ = 1999 XE₁₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	120.01745		(2000.0)	P	Q
<i>n</i>	0.18984919	ω	351.55694	+0.80148251	+0.59336727
<i>a</i>	2.9982204	Ω	331.63251	-0.53911467	+0.66304912
<i>e</i>	0.1268666	<i>i</i>	9.01373	-0.25880719	+0.45637829
<i>P</i>	5.19	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.8+	0.3+	1998 09 14	704	0.7-	0.3-	1999 12 12	704	0.0	0.8-
1998 08 17	704	0.1-	0.2+	1998 09 14	704	0.4-	0.6-	1999 12 12	704	0.3-	1.0-
1998 08 17	704	0.1+	0.9+	1998 09 14	704	0.6-	0.3-	1999 12 15	704	0.2-	0.2+
1998 08 17	704	0.3+	0.7-	1998 09 18	704	0.5-	0.1+	1999 12 15	704	0.6-	0.1-
1998 08 17	704	0.8-	0.7+	1998 09 18	704	0.4-	0.4+	1999 12 15	704	0.4-	0.3+
1998 08 23	704	0.6+	0.3-	1998 09 18	704	0.2-	0.6+	1999 12 15	704	0.2+	0.6+
1998 08 23	704	0.3+	0.0	1998 09 18	704	0.8+	0.2+	2000 01 02	704	0.1+	1.3+
1998 08 23	704	0.1+	0.7+	1998 09 18	704	0.9+	1.3-	2000 01 02	704	0.4+	0.9+
1998 08 23	704	0.2+	0.3-	1999 12 12	704	0.2-	0.7-	2000 01 02	704	0.2+	0.4+
1998 08 23	704	0.3-	0.3-	1999 12 12	704	0.3-	0.5-	2000 01 02	704	0.4+	0.6+
1998 09 14	704	0.3-	0.4+	1999 12 12	704	0.1-	0.4-	2000 01 02	704	0.7+	0.7-

1998 QZ₄₅ = 1999 XS₁₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	162.47621		(2000.0)	P	Q
<i>n</i>	0.21114565	ω	317.05757	+0.28108613	+0.95735192
<i>a</i>	2.7930666	Ω	329.08992	-0.84146547	+0.21237277
<i>e</i>	0.1189791	<i>i</i>	7.47659	-0.46143954	+0.19589565
<i>P</i>	4.67	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.0	0.0	1998 09 14	704	0.1-	0.2+	1999 12 15	704	0.3+	0.5+
1998 08 17	704	0.1+	0.1-	1998 09 18	704	1.0-	0.0	1999 12 15	704	0.5+	0.7+
1998 08 17	704	0.7+	0.4-	1998 09 18	704	0.2+	0.1-	1999 12 15	704	0.6+	1.2+
1998 08 17	704	0.3+	1.1-	1998 09 18	704	0.1-	0.5+	2000 01 02	704	0.6+	0.5+

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1998 08 17	704	1.2−	0.6+	1998 09 18	704	0.8+	0.5−	2000 01 02	704	0.2+	1.5−
1998 08 23	704	1.1+	0.6−	1998 09 18	704	1.0−	0.8+	2000 01 02	704	0.4−	0.7−
1998 08 23	704	0.9+	1.0+	1999 12 12	704	0.1+	0.3−	2000 01 02	704	0.5+	0.0
1998 08 23	704	0.7−	0.5−	1999 12 12	704	0.3−	0.0	2000 01 02	704	0.3−	0.5+
1998 08 23	704	1.2−	0.8+	1999 12 12	704	0.1−	0.6+	2000 01 04	704	0.8+	0.5−
1998 09 14	704	0.2+	0.0	1999 12 12	704	0.5−	0.2−	2000 01 04	704	0.5−	0.8−
1998 09 14	704	0.6+	0.2−	1999 12 12	704	0.6−	0.2−	2000 01 04	704	0.3+	0.6−
1998 09 14	704	0.5+	0.3−	1999 12 15	704	0.0	0.4+	2000 01 04	704	0.9−	0.4+

1998 QA₄₆ = 2000 AY₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	205.92688						
<i>n</i>	0.29814323	ω	326.82251	+0.37341150	+0.92545230		
<i>a</i>	2.2191470	Ω	324.98253	−0.82497451	+0.29970956		
<i>e</i>	0.0957086	<i>i</i>	6.40826	−0.42424157	+0.23175895		
<i>P</i>	3.31	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 28	704	0.6−	0.5−	1998 09 14	704	0.0	0.4−	1998 10 27	595	0.7−	0.3+
1997 04 28	704	0.0	0.5−	1998 09 14	704	0.1+	1.3−	2000 01 04	704	0.8−	0.6−
1997 04 28	704	0.5+	0.8+	1998 09 14	704	0.5−	0.8−	2000 01 04	704	0.4−	0.6−
1997 04 28	704	0.3−	0.6−	1998 09 15	699	0.5+	0.2−	2000 01 04	704	0.2−	0.6−
1998 08 17	704	0.2+	0.3−	1998 09 15	699	0.3+	0.4+	2000 01 04	704	0.3+	1.1+
1998 08 17	704	0.6+	1.1−	1998 09 15	699	0.6+	0.2−	2000 01 05	699	0.2+	0.1+
1998 08 17	704	1.0+	0.4−	1998 09 18	704	0.2−	0.2+	2000 01 05	699	0.7+	0.0
1998 08 17	704	0.1+	1.1−	1998 09 18	704	0.2+	0.1−	2000 01 05	699	0.6+	0.3+
1998 08 17	704	0.2+	0.4−	1998 09 18	704	0.0	0.3+	2000 01 06	704	0.0	0.5+
1998 08 23	704	0.2+	0.3+	1998 09 18	704	0.6−	1.0+	2000 01 06	704	0.6−	0.6−
1998 08 23	704	0.1+	1.1+	1998 09 18	704	0.4−	1.6+	2000 01 06	704	0.3+	0.1−
1998 08 23	704	0.1−	0.6+	1998 10 24	595	0.8−	0.6−	2000 01 06	704	0.6−	0.1+
1998 08 23	704	1.2−	0.1+	1998 10 24	595	0.1−	0.7−	2000 01 06	704	0.0	0.3−
1998 08 23	704	(0.2+ 2.4+)		1998 10 26	595	1.0+	0.9+				
1998 09 14	704	0.1+	0.3−	1998 10 26	595	0.0	0.2+				

1998 QG₄₆ = 2000 AW₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	83.68469						
<i>n</i>	0.17543426	ω	205.52870	+0.99927715	−0.03376583		
<i>a</i>	3.1602864	Ω	156.38660	+0.03779429	+0.93189890		
<i>e</i>	0.2107450	<i>i</i>	2.49905	−0.00409543	+0.36114306		
<i>P</i>	5.62	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.3−	0.1+	1998 09 14	704	(2.6−	0.8+)	1998 09 29	327	0.6−	0.1−
1998 08 17	704	0.3+	0.4+	1998 09 14	610	1.8+	0.2+	1998 10 10	699	0.9+	0.3−
1998 08 17	704	0.2−	0.2+	1998 09 14	610	1.5+	0.1+	1998 10 10	699	(2.8+	0.8−)
1998 08 17	704	0.9−	0.4−	1998 09 14	610	1.1+	0.1+	1998 10 10	699	0.9+	0.6+
1998 08 17	704	0.0	1.0+	1998 09 14	610	1.0+	0.0	1999 12 08	704	1.1−	0.4+
1998 08 23	704	0.5−	1.0+	1998 09 14	610	0.6+	0.0	1999 12 08	704	1.4−	0.0
1998 08 23	704	0.7+	1.3+	1998 09 18	704	0.1+	0.7−	1999 12 08	704	(2.3−	1.0+)
1998 08 23	704	(1.5−	2.3+)	1998 09 18	704	0.9+	0.2+	2000 01 05	704	0.1+	0.4+
1998 08 23	704	1.0+	0.5−	1998 09 18	704	0.0	0.5+	2000 01 05	704	0.5+	0.2−
1998 08 30	699	0.1+	0.1−	1998 09 18	704	1.2+	0.6+	2000 01 05	704	0.1+	0.8−
1998 08 30	699	1.7+	0.7+	1998 09 18	704	0.7−	0.5+	2000 01 05	704	0.2−	0.6−
1998 08 30	699	1.5−	0.3−	1998 09 26	327	0.6−	0.1−	2000 01 05	704	0.9+	0.5−
1998 09 10	610	(2.4−	1.7+)	1998 09 26	327	0.2+	0.3−	2000 01 07	704	0.2+	0.3+
1998 09 10	610	1.6−	1.2+	1998 09 26	327	0.3−	0.4−	2000 01 07	704	0.5+	0.0
1998 09 10	610	0.9−	0.6+	1998 09 29	327	0.2−	0.3−	2000 01 07	704	0.3+	0.3+
1998 09 14	704	0.6−	0.6−	1998 09 29	327	1.9−	0.2−	2000 01 07	704	0.2+	0.9+
1998 09 14	704	0.4−	0.7−	1998 09 29	327	0.8−	1.0−	2000 01 07	704	0.3−	0.4+
1998 09 14	704	0.4−	1.2−	1998 09 29	327	0.7−	0.2+				
1998 09 14	704	0.3−	1.8−	1998 09 29	327	0.4−	0.0				

1998 QJ₄₆ = 1986 WF₆ = 2000 AJ₄₀

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	128.80381						
<i>n</i>	0.23768184	ω	358.91184	+0.95718555	+0.28728947		
<i>a</i>	2.5811032	Ω	344.25286	−0.26459016	+0.81854240		
<i>e</i>	0.2011244	<i>i</i>	7.51724	−0.11742179	+0.49744658		
<i>P</i>	4.15	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 11 27	010	0.2+	1.0−	1998 08 30	699	0.1+	0.1−	1998 10 14	699	(0.1− 2.9+)
1986 11 28	010	(0.0 3.6−)		1998 09 14	704	0.6+	0.3−	1998 10 14	699	0.4− 0.9+
1998 08 17	704	0.1+	0.5−	1998 09 14	704	0.1+	0.3−	2000 01 03	704	0.1− 0.9−
1998 08 17	704	0.5−	0.4−	1998 09 14	704	1.0+	1.5−	2000 01 03	704	0.0 0.0
1998 08 17	704	0.3−	0.4+	1998 09 14	704	0.4+	0.5−	2000 01 03	704	0.3+ 0.0
1998 08 17	704	1.2−	0.3−	1998 09 14	704	1.0+	0.3−	2000 01 04	704	0.6− 0.5−
1998 08 17	704	0.2−	1.2+	1998 09 18	704	1.0−	0.3+	2000 01 04	704	0.7− 0.3−
1998 08 23	704	0.1+	0.9+	1998 09 18	699	0.3+	0.8+	2000 01 04	704	0.7− 0.0
1998 08 23	704	0.5+	1.1+	1998 09 18	704	0.8−	0.1−	2000 01 04	704	0.3+ 0.3+
1998 08 23	704	0.6−	1.1−	1998 09 18	699	0.2+	1.0+	2000 01 04	704	0.5− 1.4+
1998 08 23	704	1.4−	0.4−	1998 09 18	704	0.1+	0.2+	2000 01 08	704	0.8+ 0.2−
1998 08 23	704	1.0+	0.2−	1998 09 18	704	0.8−	0.2−	2000 01 08	704	0.3− 0.1+
1998 08 30	699	0.2−	0.2+	1998 09 18	699	0.3+	0.4+	2000 01 08	704	0.7+ 0.8+
1998 08 30	699	0.4+	0.3+	1998 10 14	699	0.5+	0.3−	2000 01 08	704	1.5+ 0.8+

1998 QP₄₆ = 1999 XW₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	104.17423						
<i>n</i>	0.19324011	ω	11.86938	+0.97219874	+0.22496273		
<i>a</i>	2.9630424	Ω	334.84236	−0.22539459	+0.82387472		
<i>e</i>	0.1520002	<i>i</i>	8.79131	−0.06345773	+0.52021363		
<i>P</i>	5.10	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.1+	0.1−	1998 08 26	699	0.4+	0.3+	1999 12 12	704	0.2+	1.1+
1998 08 17	704	0.9−	0.1+	1998 08 26	699	0.5−	0.2+	1999 12 12	704	0.1−	0.1−
1998 08 17	704	0.3+	0.7−	1998 09 14	704	0.7−	0.3+	1999 12 12	704	0.2+	0.4+
1998 08 17	704	0.5−	1.4−	1998 09 14	704	0.3−	0.7+	1999 12 12	704	0.7−	0.4−
1998 08 17	704	0.2−	0.5+	1998 09 14	704	0.6+	1.0−	1999 12 12	704	1.1−	0.4−
1998 08 23	704	1.0−	0.2+	1998 09 14	704	0.3+	0.3+	1999 12 15	704	1.6+	1.5+
1998 08 23	704	0.0	0.2+	1998 09 18	704	0.5−	1.3−	1999 12 15	704	0.8+	0.4−
1998 08 23	704	1.2+	0.3+	1998 09 18	704	0.9−	0.2−	1999 12 15	704	0.6−	0.9−
1998 08 23	704	0.9+	0.4+	1998 09 18	704	0.1−	0.1−	1999 12 15	704	0.4−	0.7−
1998 08 23	704	0.3+	0.5+	1998 09 18	704	0.1−	0.9+				
1998 08 26	699	0.3+	0.1−	1998 09 18	704	1.2+	0.0				

1998 QT₄₆ = 1999 XB₁₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	95.91062		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.18057574	ω	141.79325	+0.98106049	+0.19010874
a	3.1000101	Ω	207.31662	-0.19159130	+0.92415163
e	0.0632673	i	4.64143	-0.02851469	+0.33136450
P	5.46	H	13.4	G	0.15
				U	3

2000 JAN. 24

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1998 08 23	704	0.2−	1.4+	1999 11 15	704	0.1−	0.4+	2000 01 06	704	0.4+	0.2+
1998 09 14	704	0.1+	0.2−	1999 11 15	704	0.1−	0.9+	2000 01 06	704	0.3−	0.5+
1998 09 14	704	0.5−	0.1−	1999 11 17	704	0.3+	0.4+	2000 01 06	704	0.7−	0.4+
1998 09 14	704	0.6+	0.9+	1999 11 17	704	0.4+	0.5−	2000 01 06	704	0.2+	0.4+
1998 09 14	704	0.3−	1.0+	1999 11 17	704	0.3+	0.6−	2000 01 06	704	0.7−	0.5+
1998 09 18	704	0.7+	0.0	1999 11 17	704	0.7+	0.1−				
1998 09 18	704	0.5−	0.8−	1999 11 17	704	0.3+	0.4−				

1998 QS₄₇ = 2000 AO₂₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	130.76309		(2000.0)	P	Q
<i>n</i>	0.26461769	ω	207.39699	+0.99756850	−0.06411088
<i>a</i>	2.4028323	Ω	156.23153	+0.06958704	+0.93787404
<i>e</i>	0.2109687	<i>i</i>	3.88806	−0.00383835	+0.34100159
<i>P</i>	3.72	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.1+	0.2−	1998 08 26	699	0.4+	0.1−	1998 10 12	699	0.4−	0.5+
1998 08 17	704	0.3+	0.3−	1998 08 26	699	0.4−	0.5+	1998 10 12	699	0.2+	0.0
1998 08 17	704	0.1+	0.2+	1998 09 14	704	0.1−	0.4−	1998 10 12	699	0.7+	0.1+
1998 08 17	704	0.5−	0.5−	1998 09 14	704	1.2−	0.0	2000 01 03	691	0.2−	0.5−
1998 08 17	704	(2.3−	0.5−)	1998 09 14	704	1.0−	0.2−	2000 01 03	691	0.0	0.3−
1998 08 23	704	1.2−	0.1−	1998 09 14	704	0.3−	1.4−	2000 01 03	691	0.4−	0.1−
1998 08 23	704	1.7+	0.8+	1998 09 18	704	(3.0−	0.3+)	2000 01 08	691	0.0	0.1+
1998 08 23	704	0.4−	1.6−	1998 09 18	704	(2.4−	1.8+)	2000 01 08	691	0.0	0.0
1998 08 23	704	1.2+	0.1+	1998 09 18	704	0.7+	1.0+	2000 01 08	691	0.3+	0.1−
1998 08 23	704	0.2−	0.0	1998 09 18	704	1.0+	0.3−				
1998 08 26	699	0.0	0.6+	1998 09 18	704	0.1−	0.8+				

1998 QT₄₇ = 2000 AM₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	59.49341		(2000.0)	P	Q
<i>n</i>	0.22966870	ω	267.48990	+0.35194712	−0.93329514
<i>a</i>	2.6407959	Ω	161.40808	+0.92286662	+0.33325403
<i>e</i>	0.1685709	<i>i</i>	12.93507	+0.15636632	+0.13379809
<i>P</i>	4.29	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704	0.1−	0.9−	1998 08 30	699	0.0	0.8+	1998 10 12	699	0.5+	0.0
1998 08 17	704	0.2+	0.4−	1998 08 30	699	0.1−	0.6+	1998 10 12	699	0.3+	0.1+
1998 08 17	704	0.4−	0.9−	1998 09 14	704	0.5−	0.4−	1998 10 12	699	0.3+	0.2+
1998 08 17	704	0.7−	0.5−	1998 09 14	704	0.6−	1.3−	2000 01 05	704	0.4+	0.2−
1998 08 17	704	0.9−	0.6+	1998 09 14	704	0.3−	0.5−	2000 01 05	704	0.4−	0.6+
1998 08 23	704	0.0	0.2−	1998 09 14	704	(2.0−	0.5+)	2000 01 05	704	0.5−	0.3−
1998 08 23	704	0.1+	0.5+	1998 09 18	699	(2.7+	0.4+)	2000 01 05	704	0.2+	1.7−
1998 08 23	704	0.7+	0.6−	1998 09 18	699	0.4+	0.2−	2000 01 05	704	0.7−	0.1+
1998 08 23	704	0.7+	0.1−	1998 09 18	704	0.6−	0.1+	2000 01 08	704	0.9+	0.0
1998 08 23	704	0.6+	0.1+	1998 09 18	699	0.4+	0.6−	2000 01 08	704	0.1+	0.5+
1998 08 26	699	0.4+	0.5+	1998 09 18	704	0.3−	0.2−	2000 01 08	704	0.2−	0.4+
1998 08 26	699	0.3+	0.2+	1998 09 18	704	0.5−	0.5+	2000 01 08	704	0.0	0.1−
1998 08 26	699	0.6+	1.0+	1998 09 18	704	0.0	0.3+	2000 01 08	704	0.2+	0.7+
1998 08 30	699	0.0	0.7+	1998 09 18	704	0.5−	0.6+				

1998 QB₄₈ = 1980 FJ₆ = 2000 AY₁₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	212.31243		(2000.0)	P	Q
<i>n</i>	0.23909182	ω	76.75226	−0.11844739	+0.99279425
<i>a</i>	2.5709457	Ω	186.52723	−0.96163754	−0.11924912
<i>e</i>	0.0102472	<i>i</i>	9.19254	−0.24743373	−0.01179894
<i>P</i>	4.12	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 03 23	809	0.1−	0.1−	1998 08 30	699	0.5+	0.5+	1999 12 05	704	0.4−	0.4+
1994 11 01	033	0.3+	0.1+	1998 08 30	699	0.3+	0.4+	1999 12 14	704	0.2−	0.8−
1994 11 01	033	0.3−	0.4+	1998 09 14	704	0.6+	0.3−	1999 12 14	704	0.2−	0.6−

1998 08 17	704	0.4−	0.0	1998 09 14	704	0.4+	0.6−	1999 12 14	704	0.1+	0.3−
1998 08 17	704	0.1+	0.8−	1998 09 14	704	1.2+	0.3−	1999 12 14	704	0.5+	0.0
1998 08 17	704	0.5−	0.6−	1998 09 14	704	0.6+	1.0−	1999 12 14	704	0.4−	0.3−
1998 08 17	704	0.0	0.8−	1998 09 18	704	0.2−	0.2+	2000 01 07	704	0.4+	0.4+
1998 08 17	704	0.2+	0.0	1998 09 18	704	0.5−	1.2+	2000 01 07	704	0.9+	0.2−
1998 08 23	704	0.0	0.6−	1998 09 18	704	0.2−	0.2+	2000 01 07	704	0.5+	0.6−
1998 08 23	704	0.6−	0.3+	1998 09 18	704	0.7−	1.1+	2000 01 11	704	0.4−	0.3−
1998 08 23	704	0.8+	1.0−	1998 09 18	704	0.3−	0.3+	2000 01 11	704	0.4−	0.6−
1998 08 23	704	0.8−	1.2+	1999 12 05	704	1.0+	1.2+	2000 01 11	704	0.3−	0.4−
1998 08 23	704	0.8−	0.6−	1999 12 05	704	0.2−	0.4+	2000 01 11	704	0.3−	0.2+
1998 08 30	699	0.1+	0.2+	1999 12 05	704	0.2−	0.5+	2000 01 11	704	0.5−	0.3+

1998 QJ₄₈ = 1999 XU₅₅

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	205.10490		(2000.0)	P	Q
<i>n</i>	0.19004430	ω	334.90369	−0.49211177	+0.86836667
<i>a</i>	2.9961679	Ω	265.56406	−0.78795457	−0.47428810
<i>e</i>	0.0593057	<i>i</i>	3.52860	−0.37007242	−0.14487970
<i>P</i>	5.19	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	1.5+	0.9−	1999 11 03	704	0.1−	0.8+	1999 12 07	704	1.2+	0.1−
1998 08 17	704	0.5+	1.2−	1999 11 03	704	0.3+	1.0+	1999 12 07	704	0.7+	0.5−
1998 08 17	704	1.3+	0.4−	1999 11 03	704	0.5+	1.8+	1999 12 07	704	0.5+	0.3−
1998 08 17	704	(2.7+	1.5−)	1999 11 12	704	0.3−	0.1−	1999 12 07	704	0.7+	0.0
1998 08 17	704	0.8−	0.8+	1999 11 12	704	0.4−	0.0	1999 12 08	704	0.5+	0.2−
1998 08 23	704	0.1−	1.0+	1999 11 12	704	0.4−	0.0	1999 12 08	704	0.4+	0.1−
1998 08 23	704	(1.1+	2.6−)	1999 11 12	704	0.2−	0.2+	1999 12 08	704	0.2+	0.0
1998 08 23	704	1.1+	0.6−	1999 11 12	704	0.0	0.1+	1999 12 08	704	0.4+	0.2−
1998 08 23	704	1.0−	0.9−	1999 11 14	704	0.3+	0.1−	1999 12 08	704	0.8+	0.0
1998 08 30	699	0.2+	0.2+	1999 11 14	704	0.2−	0.3−	1999 12 31	703	0.4−	0.4+
1998 08 30	699	0.6+	0.2+	1999 11 14	704	0.1−	0.6−	1999 12 31	703	0.4−	0.0
1998 08 30	699	0.4+	0.1+	1999 11 14	704	0.4−	0.6−	1999 12 31	703	0.2+	0.5+
1998 09 14	704	0.5+	0.2−	1999 11 14	704	0.1+	0.9−	1999 12 31	703	0.7−	0.1−
1998 09 14	704	1.0−	0.1+	1999 11 16	704	0.3+	0.5+	2000 01 04	704	0.2−	0.3+
1998 09 14	704	1.3+	0.9+	1999 11 16	704	0.3−	0.8−	2000 01 04	704	0.3−	0.3+
1998 09 14	704	1.3−	1.1−	1999 11 16	704	0.7−	0.2−	2000 01 04	704	0.1−	0.3−
1998 09 18	704	0.9−	0.4+	1999 11 16	704	0.7−	0.1−	2000 01 04	704	0.2+	1.1+
1998 09 18	704	1.1+	0.2−	1999 11 16	704	0.5−	0.4−	2000 01 06	704	0.2+	0.1−
1998 09 18	704	0.6−	0.3+	1999 12 05	703	0.2−	0.3+	2000 01 06	704	0.0	0.8−
1998 09 18	704	1.3−	0.2+	1999 12 05	703	0.1−	1.5+	2000 01 06	704	0.9+	0.8−
1998 09 18	704	1.1−	1.2+	1999 12 05	703	0.5−	0.6+	2000 01 06	704	0.2+	1.3−
1999 11 03	704	1.0−	0.9+	1999 12 05	703	0.4−	0.1+	2000 01 06	704	0.2+	1.2−

1998 QK₄₈ = 1999 XA₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	32.71375		(2000.0)	P	Q
<i>n</i>	0.19285347	ω	105.68435	+0.33251673	−0.93866601
<i>a</i>	2.9670013	Ω	324.47121	+0.79388896	+0.33086126
<i>e</i>	0.0791778	<i>i</i>	9.04101	+0.50909032	+0.09714395
<i>P</i>	5.11	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.6+	0.4−	1998 09 14	704	1.1−	0.7+	1999 12 12	704	0.3+	0.1+
1998 08 17	704	1.5−	1.3−	1998 09 14	704	0.3+	0.5+	1999 12 12	704	0.0	0.2−
1998 08 17	704	0.4+	1.6−	1998 09 14	704	1.0−	0.7+	1999 12 12	704	0.1−	0.3−
1998 08 17	704	(2.4+	1.8−)	1998 09 18	704	0.7−	0.4+	1999 12 15	704	0.2+	0.6+
1998 08 17	704	0.7−	0.7+	1998 09 18	704	0.4+	0.6+	1999 12 15	704	(2.7+	0.6+)
1998 08 23	704	1.8+	1.9+	1998 09 18	704	1.6−	0.4+	1999 12 15	704	0.1−	0.4−
1998 08 23	704	0.3−	0.8+	1998 09 18	704	(1.9+	2.4+)	1999 12 15	704	0.8−	0.8+
1998 08 23	704	0.2+	0.1−	1998 09 18	704	1.0+	0.5+	1999 12 15	704	0.2−	0.9+
1998 08 23	704	0.2−	1.3−	1998 09 25	699	0.8+	1.6−	2000 01 02	704	0.2−	0.6−
1998 08 30	699	0.7+	0.2+	1998 09 25	699	0.6−	0.6+	2000 01 02	704	0.1−	0.6−
1998 08 30	699	0.3+	0.1−	1998 09 25	699	1.6+	1.5−	2000 01 02	704	0.1+	0.8−

1998 08 30 699 0.4− 0.7+ 1999 12 12 704 0.4+ 0.0
 1998 09 14 704 0.0 1.1− 1999 12 12 704 0.6+ 0.5+

1998 QU₄₈ = 2000 AN₁₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	68.51678		(2000.0)	P	Q
<i>n</i>	0.28281705	ω	259.85218	+0.26866120	−0.96320683
<i>a</i>	2.2986119	Ω	174.54661	+0.91120968	+0.25167532
<i>e</i>	0.0255475	<i>i</i>	4.42506	+0.31227885	+0.09429815
<i>P</i>	3.48	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704 0.2− 1.4+	1998 08 30	120 1.2+ 0.6+	1998 09 18	704 0.4− 0.2+
1998 08 17	704 0.8− 0.0	1998 08 30	120 (3.1+ 1.4−)	2000 01 05	704 0.4− 0.7+
1998 08 17	704 (0.6+ 2.3−)	1998 08 30	120 (2.6+ 0.6−)	2000 01 05	704 0.5+ 1.0+
1998 08 17	704 0.0 1.1−	1998 09 14	704 1.1− 0.6−	2000 01 05	704 0.2+ 0.8−
1998 08 23	704 1.1+ 0.3−	1998 09 14	704 0.5− 0.1+	2000 01 05	704 0.4+ 0.2−
1998 08 23	704 0.4+ 1.3−	1998 09 14	704 0.6− 0.7+	2000 01 07	704 0.2+ 0.4−
1998 08 23	704 1.4− 0.7+	1998 09 14	704 0.6− 0.7+	2000 01 07	704 0.2+ 0.2−
1998 08 23	704 0.2− 0.6−	1998 09 18	704 0.7+ 0.2−	2000 01 07	704 0.1+ 0.1−
1998 08 26	699 0.5+ 0.3−	1998 09 18	704 1.5+ 0.1+	2000 01 07	704 0.2− 0.2−
1998 08 26	699 0.1+ 0.4+	1998 09 18	704 0.7− 1.0−	2000 01 07	704 1.0− 0.2+
1998 08 26	699 0.4+ 0.4+	1998 09 18	704 0.5+ 0.3+		

1998 QH₄₉ = 2000 AP₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	82.55763		(2000.0)	P	Q
<i>n</i>	0.19204879	ω	223.19516	+0.95784977	−0.26386430
<i>a</i>	2.9752833	Ω	151.51105	+0.28187004	+0.93956673
<i>e</i>	0.1648885	<i>i</i>	13.77500	−0.05543560	+0.21815131
<i>P</i>	5.13	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704 0.2− 0.8+	1998 08 30	699 0.1+ 0.1+	1998 11 20	561 0.0 1.1+
1998 08 17	704 0.0 0.1−	1998 08 30	699 0.2− 0.2+	2000 01 07	704 0.0 0.1−
1998 08 17	704 0.3+ 0.6−	1998 09 14	704 0.2− 0.1+	2000 01 07	704 0.7+ 0.5−
1998 08 17	704 1.1− 0.2+	1998 09 14	704 0.4− 0.3+	2000 01 07	704 1.3+ 0.9+
1998 08 17	704 0.8− 0.2+	1998 09 14	704 0.0 0.2+	2000 01 07	704 0.7+ 0.6−
1998 08 23	704 0.7+ 0.6−	1998 09 14	704 0.0 0.6+	2000 01 07	704 0.1+ 0.0
1998 08 23	704 (1.5− 2.6+)	1998 09 18	704 0.3+ 0.6−	2000 01 11	704 0.9− 0.2−
1998 08 23	704 0.1− 0.9−	1998 09 18	704 0.1+ 0.9−	2000 01 11	704 0.5− 0.2−
1998 08 23	704 1.3+ 0.6+	1998 09 18	704 0.1+ 0.2−	2000 01 11	704 0.9− 0.4−
1998 08 23	704 0.1− 0.9−	1998 09 18	704 0.5+ 1.1−	2000 01 11	704 0.5− 0.5+
1998 08 30	699 0.4− 0.7+	1998 11 20	561 0.1+ 1.1+		

1998 QN₄₉ = 1999 XQ₂₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	153.61630		(2000.0)	P	Q
<i>n</i>	0.17362459	ω	187.74615	−0.06395022	+0.99644870
<i>a</i>	3.1822080	Ω	78.59912	−0.91258213	−0.03617883
<i>e</i>	0.1674544	<i>i</i>	3.20324	−0.40386164	−0.07603338
<i>P</i>	5.68	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704 0.3+ 0.9−	1998 09 18	704 0.8− 1.8−	1999 11 15	704 0.2+ 0.1−
1998 08 17	704 0.8+ 0.9−	1998 09 18	704 (2.1+ 0.6+)	1999 11 15	704 0.3− 0.1−
1998 08 17	704 1.1+ 1.5−	1998 09 18	704 0.5− 0.2−	1999 11 15	704 0.2− 0.2−
1998 08 17	704 0.8− 1.2−	1999 11 01	703 0.7− 0.7−	1999 11 15	704 0.5− 0.1−
1998 08 17	704 0.6+ 1.6−	1999 11 01	703 0.1+ 0.2+	1999 11 17	704 0.5− 0.2+
1998 08 23	704 0.4− 0.7+	1999 11 01	703 0.0 0.2+	1999 11 17	704 0.4+ 0.1−
1998 08 23	704 0.2+ 1.3+	1999 11 01	703 0.9− 0.0	1999 11 17	704 0.8− 0.5+
1998 08 23	704 (1.1+ 2.3−)	1999 11 05	691 0.0 0.2−	1999 11 17	704 0.5− 0.0
1998 08 23	704 0.1− 1.6+	1999 11 05	691 0.0 0.3−	1999 11 17	704 0.2− 0.7+
1998 08 23	704 1.9− 0.7+	1999 11 05	691 0.0 0.3−	1999 12 03	691 0.2+ 0.1−

1998 08 30	699 0.2+ 1.3+	1999 11 09	691 0.1+ 0.4−	1999 12 03	691 0.3+ 0.2−
1998 08 30	699 0.7+ 1.0+	1999 11 09	691 0.3+ 0.4−	1999 12 03	691 0.3+ 0.2−
1998 08 30	699 0.4+ 0.7+	1999 11 09	691 0.0 0.8−	1999 12 06	704 0.3− 1.1−
1998 09 14	704 0.7+ 0.0	1999 11 09	704 1.2+ 0.5−	1999 12 06	704 0.6− 0.7+
1998 09 14	704 0.4− 0.1+	1999 11 09	704 0.5+ 1.4+	1999 12 06	704 0.9− 0.8+
1998 09 14	704 1.0+ 0.0	1999 11 09	704 0.5+ 0.1−	1999 12 06	704 0.2− 0.2+
1998 09 14	704 0.1+ 0.1+	1999 11 12	704 0.8+ 0.1+	1999 12 07	704 0.0 0.6+
1998 09 18	699 0.2+ 0.3+	1999 11 12	704 0.6+ 0.8−	1999 12 07	704 1.2+ 0.7+
1998 09 18	699 0.2− 0.2+	1999 11 12	704 0.7− 0.0	1999 12 07	704 0.4+ 0.8+
1998 09 18	704 0.1− 1.0−	1999 11 12	704 0.2+ 0.1−	1999 12 07	704 0.3+ 0.6+
1998 09 18	699 1.4− 0.3+	1999 11 12	704 0.1− 0.4−	1999 12 07	704 0.1− 1.1−
1998 09 18	704 0.2+ 0.5+	1999 11 15	704 0.3− 0.2+		

1998 QO₄₉ = 2000 AK₁₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	93.45938		(2000.0)	P	Q
<i>n</i>	0.23626803	ω	238.05051	+0.87469955	−0.46378157
<i>a</i>	2.5913898	Ω	148.91382	+0.48277393	+0.85937297
<i>e</i>	0.1255656	<i>i</i>	15.81764	−0.04277883	+0.21537119
<i>P</i>	4.17	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704 0.4− 0.2+	1998 09 14	704 0.2+ 0.3−	2000 01 05	699 0.9+ 0.2−
1998 08 17	704 0.0 0.8−	1998 09 14	704 0.3− 0.5−	2000 01 08	704 0.9− 0.1−
1998 08 17	704 1.2+ 0.7−	1998 09 18	704 0.8− 0.2+	2000 01 08	704 0.8− 0.1−
1998 08 17	704 0.6+ 0.6−	1998 09 18	704 0.0 0.7+	2000 01 08	704 0.4− 0.4+
1998 08 17	704 0.0 0.4+	1998 09 18	704 0.3+ 0.5+	2000 01 08	704 0.8− 0.9+
1998 08 23	704 0.4− 0.1−	1998 09 18	704 0.6− 0.0	2000 01 08	704 0.9− 1.1+
1998 08 23	704 0.4− 1.2+	1998 09 18	704 (2.8− 0.2+)	2000 01 11	704 0.4− 0.1−
1998 08 23	704 0.6+ 0.5−	1999 12 16	699 0.2+ 0.6−	2000 01 11	704 0.2+ 1.8−
1998 08 23	704 0.8− 0.1+	1999 12 16	699 1.1+ 0.9+	2000 01 11	704 1.4− 0.4−
1998 08 23	704 0.5− 0.7+	1999 12 16	699 0.1− 0.5−	2000 01 11	704 0.1+ 0.3−
1998 09 14	704 0.8+ 0.6−	2000 01 05	699 1.3+ 0.2+	2000 01 11	704 0.7+ 0.1−
1998 09 14	704 0.6+ 0.0	2000 01 05	699 1.4+ 0.4+		

1998 QX₄₉ = 2000 AN₁₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	214.53367		(2000.0)	P	Q
<i>n</i>	0.28554024	ω	224.41235	+0.01094561	+0.99803771
<i>a</i>	2.2839741	Ω	46.32037	−0.89206259	+0.03760246
<i>e</i>	0.1028148	<i>i</i>	4.89023	−0.45177930	−0.05006785
<i>P</i>	3.45	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704 0.7+ 1.0−	1998 09 14	704 0.4+ 0.6−	1998 09 22	699 0.8− 0.8+
1998 08 17	704 1.0− 0.4−	1998 09 14	704 1.4− 0.2+	1998 09 22	699 0.6− 0.4+
1998 08 17	704 (0.8+ 2.5−)	1998 09 14	704 0.8+ 1.0−	1998 09 22	699 1.2− 0.4−
1998 08 17	704 0.3+ 0.1−	1998 09 14	704 0.1+ 1.4−	2000 01 03	704 0.2− 0.7−
1998 08 17	704 0.3+ 0.6+	1998 09 16	699 0.5+ 1.2−	2000 01 03	704 0.2− 0.7−
1998 08 19	699 0.9+ 1.2−	1998 09 16	699 0.2+ 1.5+	2000 01 03	704 0.4− 0.7−
1998 08 19	699 0.7+ 0.5−	1998 09 16	699 0.8+ 1.6−	2000 01 04	704 0.5− 1.3+
1998 08 19	699 0.2+ 0.2+	1998 09 18	704 0.5− 1.2+	2000 01 04	704 0.2+ 0.7−
1998 08 23	704 1.3− 1.5+	1998 09 18	704 1.7+ 1.0−	2000 01 04	704 0.1− 0.1−
1998 08 23	704 0.5− 1.2+	1998 09 18	704 0.4− 1.0+	2000 01 04	704 0.5+ 1.2+
1998 08 23	704 0.5+ 0.0	1998 09 18	704 1.2+ 1.3+	2000 01 04	704 0.6+ 0.4+
1998 08 23	704 1.5− 0.6+	1998 09 18	704 (2.2− 0.2+)		

1998 QR₅₀ = 1999 YN₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	68.19045		(2000.0)	P	Q
<i>n</i>	0.18219330	ω	344.40638	+0.90196146	−0.43062126
<i>a</i>	3.0816344	Ω	41.14855	+0.40121851	+0.80823951
<i>e</i>	0.1466567	<i>i</i>	2.79679	+0.15965346	+0.40163943
<i>P</i>	5.41	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.3−	0.7−	1998 09 14	704	0.7−	0.8−	1999 12 27	557	0.0	0.1+
1998 08 17	704	0.3+	0.5−	1998 09 14	704	0.8+	1.2−	1999 12 27	557	0.2+	0.6−
1998 08 17	704	0.0	0.5−	1998 09 18	699	0.1−	0.1−	1999 12 27	557	0.0	0.1+
1998 08 17	704	0.3−	0.5−	1998 09 18	704	0.3+	0.2+	1999 12 27	557	0.1−	0.6+
1998 08 17	704	0.2−	1.5+	1998 09 18	699	0.6+	0.5+	1999 12 31	557	0.2+	0.2+
1998 08 23	704	0.0	0.9−	1998 09 18	704	0.9+	1.1−	1999 12 31	557	0.1+	0.3+
1998 08 23	704	1.9−	1.6+	1998 09 18	699	0.4−	0.3+	1999 12 31	557	0.2+	0.2+
1998 08 23	704	0.5−	0.3+	1998 09 18	704	0.3+	1.2+	2000 01 03	704	0.7−	1.5+
1998 08 23	704	0.5−	1.0+	1998 09 18	704	0.3−	0.0	2000 01 03	704	0.9−	0.3−
1998 08 23	704	(2.5−	1.8+)	1998 09 18	704	0.5+	1.1+	2000 01 03	704	0.2−	0.8−
1998 08 30	699	0.0	0.2+	1999 12 07	704	0.3−	1.4−	2000 01 04	704	0.8+	0.2+
1998 08 30	699	1.8+	0.4−	1999 12 07	704	0.8+	0.5−	2000 01 04	704	0.2−	0.3+
1998 08 30	699	1.0+	0.1−	1999 12 07	704	0.5−	0.4+	2000 01 04	704	0.5−	0.2−
1998 09 14	704	0.1+	0.1−	1999 12 07	704	1.3+	0.6−	2000 01 04	704	0.3+	0.4+
1998 09 14	704	1.3−	0.7−	1999 12 27	557	0.4−	0.3+				

1998 QT₅₀ = 1987 RP₂ = 1987 SE₁₆ = 1999 XE₂₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	130.35266	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.18066477	ω	138.67350	+0.26732368	+0.95860534
<i>a</i>	3.0989916	Ω	146.48727	−0.92416786	+0.28386470
<i>e</i>	0.3116396	<i>i</i>	10.22929	−0.27285859	−0.02228525
<i>P</i>	5.46	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1987 09 01	095	1.0+	1.7−	1998 08 30	699	0.0	0.1+	1998 12 23	327	0.4+	0.6+
1987 09 25	095	1.0−	1.6+	1998 09 14	704	0.5−	0.7−	1999 11 16	703	0.4−	1.3+
1998 06 29	704	0.1+	1.6+	1998 09 14	704	0.3+	0.6−	1999 11 16	703	0.5+	0.7+
1998 06 29	704	0.1+	1.1+	1998 09 14	704	0.0	0.4+	1999 11 16	703	0.2+	0.6+
1998 06 29	704	0.8+	0.3−	1998 09 14	704	0.9−	0.4−	1999 11 16	703	0.3−	0.5+
1998 06 29	704	0.8−	0.3+	1998 09 18	704	0.7−	0.2+	1999 12 14	704	0.1+	1.1−
1998 08 17	704	0.2+	0.0	1998 09 18	704	0.1+	0.7+	1999 12 14	704	0.7−	0.6−
1998 08 17	704	0.2−	0.9−	1998 09 18	704	0.3−	0.4+	1999 12 14	704	1.4+	0.0
1998 08 17	704	0.9+	0.6−	1998 09 18	704	0.0	1.7+	1999 12 15	704	0.5+	0.4+
1998 08 17	704	0.7+	0.6−	1998 09 18	704	0.8−	0.1−	1999 12 15	704	0.3−	0.0
1998 08 17	704	0.6+	0.3−	1998 09 27	699	0.8+	0.9+	1999 12 15	704	1.2−	0.3−
1998 08 23	704	0.4+	1.1−	1998 09 27	699	1.2+	0.4+	1999 12 15	704	1.1−	0.3−
1998 08 23	704	0.5−	0.2−	1998 09 27	699	(2.2+	0.1+)	2000 01 07	704	0.1−	0.6+
1998 08 23	704	0.4−	0.5−	1998 11 23	699	0.7−	0.2−	2000 01 07	704	0.2+	0.2+
1998 08 23	704	1.0−	1.7−	1998 11 23	699	0.2−	0.4−	2000 01 07	704	0.9+	1.5−
1998 08 23	704	0.3−	0.8−	1998 11 23	699	0.5−	1.2+	2000 01 07	704	0.6+	1.4−
1998 08 30	699	0.2+	0.4+	1998 12 23	327	0.6+	0.6+				
1998 08 30	699	0.4+	0.4+	1998 12 23	327	0.2+	0.0				

1998 QW₅₀ = 1995 EG₇

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	34.25604	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17558281	ω	78.07711	+0.33636362	−0.94098929
<i>a</i>	3.1585037	Ω	351.96381	+0.72586009	−0.28435642
<i>e</i>	0.2084911	<i>i</i>	15.51673	+0.59998888	+0.18352270
<i>P</i>	5.61	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1995 03 02	691	0.1+	0.6+	1998 09 14	704	1.0+	0.5−	1999 12 03	699	0.5−	0.0
1995 03 02	691	0.2+	0.3+	1998 09 14	704	1.8−	0.0	1999 12 03	699	0.4+	0.1−
1995 03 02	691	0.2+	0.4+	1998 09 14	704	0.9+	0.8−	1999 12 13	704	0.3−	0.1−
1995 03 09	691	0.6+	0.3+	1998 09 14	704	0.8+	0.1+	1999 12 13	704	0.2−	0.2−
1995 03 09	691	0.5+	0.1+	1998 09 18	704	0.5−	0.1−	1999 12 13	704	0.3−	0.7−
1995 03 09	691	0.1+	0.3+	1998 09 18	704	0.2+	0.3+	1999 12 13	704	0.1+	0.6−
1998 08 17	704	0.7+	1.0−	1998 09 18	704	0.8−	0.8+	1999 12 13	704	0.1+	1.3−
1998 08 17	704	(2.1+	0.7−)	1998 09 18	704	0.3−	1.2+	1999 12 16	699	1.0+	1.6+
1998 08 17	704	1.3+	0.2+	1998 09 18	704	(2.9−	1.7+)	1999 12 16	699	0.3−	1.7+
1998 08 17	704	0.3+	0.0	1999 11 01	704	0.9+	0.8−	1999 12 16	699	0.2−	0.6+
1998 08 23	704	0.5−	1.9+	1999 11 01	704	0.1−	1.1−	1999 12 30	704	0.5+	0.3+

1998 08 23	704	1.1−	1.1+	1999 11 01	704	0.2−	1.1−	1999 12 30	704	0.3−	0.7+
1998 08 23	704	1.2−	1.8−	1999 11 01	704	0.6+	0.4−	1999 12 30	704	0.3−	0.3+
1998 08 23	704	1.2−	1.2+	1999 11 01	704	0.1+	1.1−	1999 12 30	704	0.2+	0.7+
1998 08 23	704	(3.4−	0.4+)	1999 12 03	699	0.6−	0.5+	1999 12 30	704	0.2−	0.6+

1998 QK₅₁ = 2000 AO₁₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	340.44001	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.28816253	ω	347.46554	−0.96036327	−0.27868100
<i>a</i>	2.2700968	Ω	176.33502	+0.26346815	−0.91482249
<i>e</i>	0.0392026	<i>i</i>	5.62727	+0.09103251	−0.29229559
<i>P</i>	3.42	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.1+	0.7+	1998 09 16	120	0.9+	0.5+	1998 09 29	120	0.5+	0.1−
1998 08 17	704	0.3−	0.6−	1998 09 18	704	0.5−	0.3+	2000 01 05	704	0.1−	0.0
1998 08 17	704	0.5+	0.6−	1998 09 18	704	0.6−	0.3−	2000 01 05	704	0.2−	0.3−
1998 08 17	704	0.4+	1.0−	1998 09 18	704	1.4−	0.2+	2000 01 05	704	0.5−	0.1+
1998 08 17	704	0.7−	0.6+	1998 09 18	704	0.1+	0.9+	2000 01 05	699	0.8+	0.3+
1998 08 23	704	1.2+	0.9−	1998 09 18	704	1.0+	0.3−	2000 01 05	704	0.1+	0.0
1998 08 23	704	0.7+	0.4−	1998 09 22	120	0.1+	0.3−	2000 01 05	699	0.2−	0.2+
1998 08 23	704	0.4−	0.3+	1998 09 22	120	0.6+	0.6−	2000 01 05	704	0.1−	0.2−
1998 08 23	704	1.7−	1.1+	1998 09 22	120	(3.9−	0.5−)	2000 01 05	699	1.0+	0.1+
1998 09 14	704	1.1−	0.8+	1998 09 23	120	0.3−	0.5−	2000 01 08	704	0.0	0.1+
1998 09 14	704	1.2+	0.5−	1998 09 29	120	0.2+	0.5−	2000 01 08	704	0.5−	0.5−
1998 09 14	704	0.2−	0.6+	1998 09 29	120	(5.8−	0.6+)	2000 01 08	704	0.1−	0.0
1998 09 14	704	0.8+	0.3+	1998 09 29	120	0.2−	0.1−	2000 01 08	704	0.1−	0.2−
1998 09 15	120	0.6+	0.2+	1998 09 29	120	1.4−	0.1−	2000 01 08	704	0.1−	0.5+

1998 QU₅₁ = 2000 AZ₁₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	94.96479	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.18402599	ω	102.79292	+0.99683911	+0.03950980
<i>a</i>	3.0611406	Ω	254.97402	−0.06284082	+0.92293686
<i>e</i>	0.1770066	<i>i</i>	4.09244	+0.04860879	+0.38291844
<i>P</i>	5.36	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 08 17	704	0.4+	1.4−	1998 09 14	704	0.1+	0.8+	1998 09 27	699	0.8−	1.5−
1998 08 17	704	1.3−	0.6−	1998 09 14	704	0.1+	0.2+	1998 09 27	699	0.2+	0.9−
1998 08 17	704	1.1+	0.1+	1998 09 14	704	0.1+	0.6+	1998 09 27	699	0.0	0.9−
1998 08 17	704	0.5−	0.9+	1998 09 14	704	0.2−	0.4−	2000 01 05	704	0.4+	0.5+
1998 08 17	704	(2.7−	1.8+)	1998 09 18	704	0.5−	0.2−	2000 01 05	704	0.9−	0.1+
1998 08 23	704	1.6+	0.9−	1998 09 18	704	0.3−	0.4+	2000 01 05	704	1.1+	0.3−
1998 08 23	704	0.2−	0.1+	1998 09 18	704	0.1+	0.7+	2000 01 07	704	0.4−	0.7+
1998 08 23	704	1.6+	1.8−	1998 09 18	704	0.5−	0.9+	2000 01 07	704	0.0	0.6−
1998 08 23	704	2.0−	0.3−	1998 09 18	704	0.2−	1.2+	2000 01 07	704	0.4−	0.8−
1998 08 30	699	0.3−	1.2+	1998 09 25	699	0.9+	1.7+	2000 01 07	704	0.2+	0.6+
1998 08 30	699	0.1+	0.3−	1998 09 25	699	0.6−	0.1−	2000 01 07	704	0.1−	0.6−
1998 08 30	699	0.5+	0.1−	1998 09 25	699	0.6+	0.2+				

1998 QG₅₂ = 2000 AN₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

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1998 08 23	704	1.4−	1.8−	1998 09 18	704	1.4+	0.3+	2000 01 06	704	0.7+	1.3+
1998 08 23	704	0.3−	0.3+	1998 09 25	699	0.4−	0.6+	2000 01 06	704	0.4−	0.6−
1998 08 23	704	1.6+	0.6+	1998 09 25	699	0.4−	0.4−	2000 01 06	704	0.2−	0.4+
1998 08 23	704	0.0	0.1+	1998 09 25	699	0.3−	0.5−	2000 01 06	704	0.2−	0.8−
1998 09 14	704	0.2−	0.7+	1998 09 27	699	0.3+	0.0	2000 01 08	704	0.1+	0.5−
1998 09 14	704	0.8−	0.7+	1998 09 27	699	0.3−	0.9−	2000 01 08	704	0.2+	0.7−
1998 09 14	704	0.9−	0.3−	1998 09 27	699	0.4+	0.6+	2000 01 08	704	0.6+	0.3+
1998 09 14	704	0.7−	0.4−	1999 12 31	699	0.0	0.3+	2000 01 08	704	0.1+	0.0
1998 09 16	699	0.3−	0.2+	1999 12 31	699	0.6+	0.9−	2000 01 08	704	0.0	0.3+
1998 09 16	699	0.4−	0.6+	1999 12 31	699	0.8+	0.2+				

1998 QF₅₃ = 2000 AS₁₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	137.35923			<i>P</i>		<i>Q</i>	
<i>n</i>	0.17441009	<i>ω</i>	35.77617		+0.61532412		+0.78194586
<i>a</i>	3.1726462	<i>Ω</i>	272.41145		−0.74444668		+0.53486810
<i>e</i>	0.1280796	<i>i</i>	5.72606		−0.25918211		+0.32011996
<i>P</i>	5.65	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 20	699	0.4−	0.3−	1998 09 27	704	0.5+	1.2+	2000 01 03	704	0.4+	0.7−
1998 08 20	699	0.2+	0.9−	1998 09 27	704	1.1−	0.5+	2000 01 03	704	0.4−	0.4+
1998 08 20	699	0.7+	0.4−	1998 09 27	704	1.3−	0.9+	2000 01 03	704	0.6+	0.5−
1998 08 27	699	0.0	0.9−	1998 09 27	704	1.2−	0.6+	2000 01 04	704	0.1−	0.6+
1998 08 27	699	0.2−	0.7−	1999 12 07	704	0.8−	0.0	2000 01 04	704	0.2−	0.4+
1998 08 27	699	0.8+	0.6−	1999 12 07	704	0.6+	0.4+	2000 01 04	704	0.6−	0.4+
1998 09 26	704	0.9+	0.1−	1999 12 07	704	0.3−	0.3+	2000 01 04	704	0.2−	1.4−
1998 09 26	704	0.0	0.0	1999 12 07	704	0.7+	0.3−	2000 01 04	704	0.3+	0.1+
1998 09 26	704	1.0+	0.5−	2000 01 03	704	0.0	0.2+				
1998 09 27	704	0.2+	0.8+	2000 01 03	704	0.2−	0.4−				

1998 QL₅₃ = 2000 AD₁₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	248.67165			<i>P</i>		<i>Q</i>	
<i>n</i>	0.23228562	<i>ω</i>	32.39532		−0.61839399		+0.78171668
<i>a</i>	2.6209245	<i>Ω</i>	199.78571		−0.76222862		−0.62161212
<i>e</i>	0.0997151	<i>i</i>	13.78733		−0.19130188		−0.05017384
<i>P</i>	4.24	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 20	699	0.2−	1.0−	1998 09 26	704	0.2+	0.2−	1998 10 29	704	0.8−	0.3−
1998 08 20	699	(2.9−	0.2+)	1998 09 26	704	0.4−	1.1−	2000 01 08	704	1.5−	1.1−
1998 08 20	699	1.0−	0.7+	1998 09 26	704	0.4−	0.0	2000 01 08	704	0.5−	0.8+
1998 08 27	699	0.7−	0.7−	1998 09 26	704	1.2−	0.5−	2000 01 08	704	0.2+	0.3+
1998 08 27	699	0.0	0.0	1998 09 27	704	0.2−	1.5−	2000 01 08	704	0.4+	1.3+
1998 08 27	699	0.3+	0.5−	1998 09 27	704	0.4−	1.3−	2000 01 09	704	0.4+	0.6−
1998 08 28	699	0.2−	0.2−	1998 09 27	704	(1.5−	2.5−)	2000 01 09	704	0.6+	0.4+
1998 08 28	699	0.3+	0.1−	1998 09 27	704	0.4−	0.8−	2000 01 09	704	0.0	0.1−
1998 08 28	699	0.6−	0.4−	1998 09 27	704	0.5−	0.8−	2000 01 09	704	0.2−	0.1+
1998 09 14	704	0.0	0.5+	1998 10 14	699	0.1+	0.1+	2000 01 09	704	2.0+	0.1−
1998 09 14	704	0.4−	0.6+	1998 10 14	699	0.6+	0.2−	2000 01 09	704	0.0	0.9−
1998 09 14	704	1.1+	0.6+	1998 10 14	699	0.3+	0.1+	2000 01 09	704	0.6+	0.4−
1998 09 15	699	0.4+	0.1+	1998 10 28	704	1.0−	1.1+	2000 01 09	704	0.1+	0.2+
1998 09 15	699	1.2+	1.0+	1998 10 28	704	1.6+	0.2−	2000 01 09	704	0.5−	0.1+
1998 09 15	699	0.8+	0.3+	1998 10 28	704	0.4−	0.3+	2000 01 09	704	0.3−	0.3+
1998 09 18	704	0.4+	0.1−	1998 10 28	704	0.2+	0.8−	2000 01 10	704	0.3−	0.6−
1998 09 18	704	0.9+	0.7+	1998 10 28	704	0.7−	0.5−	2000 01 10	704	0.3−	0.2−
1998 09 18	704	0.9+	1.3+	1998 10 29	704	0.2+	0.2+	2000 01 10	704	0.3−	0.8+
1998 09 18	704	0.2+	1.6+	1998 10 29	704	0.0	0.9+	2000 01 10	704	0.0	0.1−
1998 09 18	704	0.3−	1.7+	1998 10 29	704	0.3−	1.3+	2000 01 10	704	0.4−	0.3−
1998 09 26	704	0.2−	0.8−	1998 10 29	704	0.3+	0.8−				

2000 JAN. 24

1998 QM₅₃ = 1999 XD₁₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	63.72583			<i>P</i>		<i>Q</i>	
<i>n</i>	0.18793744	<i>ω</i>	67.04389		+0.63921500		−0.76756835
<i>a</i>	3.0185185	<i>Ω</i>	342.95803		+0.63304522		+0.56015456
<i>e</i>	0.0858786	<i>i</i>	9.29979		+0.43664394		+0.31155370
<i>P</i>	5.24	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 20	699	1.0−	0.1−	1998 09 25	699	0.0	0.1−	1999 12 08	703	0.1−	1.0+
1998 08 20	699	0.6−	0.4−	1998 09 26	704	0.4+	0.4+	1999 12 08	703	0.6+	1.2+
1998 08 20	699	0.2−	0.3+	1998 09 26	704	0.6−	0.8−	1999 12 08	703	0.1−	0.8+
1998 08 27	699	0.9+	0.0	1998 09 26	704	0.2−	0.1+	1999 12 10	704	0.2−	0.4−
1998 08 27	699	0.4+	0.8−	1998 09 26	704	0.1−	0.6−	1999 12 10	704	0.8+	0.2−
1998 08 27	699	0.5−	0.2+	1998 09 26	704	0.0	1.1−	1999 12 10	704	0.2−	0.1+
1998 09 14	704	0.1+	0.1+	1998 09 27	704	0.6+	0.6−	1999 12 10	704	0.2+	0.5+
1998 09 14	704	0.1−	1.2−	1998 09 27	704	0.9+	0.9+	1999 12 10	704	0.0	0.6−
1998 09 14	704	(0.1+	2.2−)	1998 09 27	704	0.5+	0.2+	1999 12 15	704	0.3−	0.2−
1998 09 17	699	0.7−	0.5+	1998 09 27	704	0.6−	0.6−	1999 12 15	704	0.2−	0.2−
1998 09 17	699	0.4−	1.3+	1998 09 27	704	0.5+	0.7+	1999 12 15	704	0.2+	0.6+
1998 09 17	699	0.8+	0.2+	1998 10 28	704	0.2+	0.0	1999 12 15	704	0.3−	0.2+
1998 09 18	704	0.1−	1.1+	1998 10 28	704	0.6+	0.4−	1999 12 15	704	1.0−	0.4−
1998 09 18	704	0.2−	1.6+	1998 10 28	704	(2.3+	2.2−)	2000 01 02	704	0.2−	0.1−
1998 09 18	704	0.1+	0.2−	1998 10 28	704	0.4−	0.3+	2000 01 02	704	0.9−	0.3−
1998 09 18	704	0.4+	0.1−	1998 10 29	704	1.4−	0.7−	2000 01 02	704	1.1+	0.7−
1998 09 18	704	0.6+	0.9−	1998 10 29	704	0.3+	1.5+	2000 01 02	704	0.5+	1.2−
1998 09 25	699	0.3−	0.4−	1998 10 29	704	1.0−	1.0−	2000 01 02	704	0.4−	0.8−
1998 09 25	699	1.0+	0.3+	1999 12 08	703	0.5+	0.8+				

1998 QN₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	195.91830			<i>P</i>		<i>Q</i>	
<i>n</i>	0.17954393	<i>ω</i>	29.52593		−0.41264725		+0.90343512
<i>a</i>	3.1118757	<i>Ω</i>	216.45860		−0.86939519		−0.42872476
<i>e</i>	0.2046362	<i>i</i>	11.28695		−0.27179818		−0.00025303
<i>P</i>	5.49	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 23	699	0.1+	0.8−	1998 09 26	704	1.3+	1.2−	1999 11 04	704	1.2+	1.5−
1998 08 23	699	0.8−	0.4−	1998 09 27	704	0.1−	0.2+	1999 11 04	704	0.9+	1.4−
1998 08 23	699	0.1−	0.2−	1998 09 27	704	0.0	0.1−	1999 12 03	699	0.4+	1.1+
1998 08 27	699	0.1−	0.9+	1998 09 27	704	0.3−	0.2−	1999 12 03	699	0.4+	0.7+
1998 08 27	699	0.2+	0.7+	1998 09 27	704	0.4+	0.1−	1999 12 03	699	0.4−	0.4+
1998 08 27	699	0.1−	0.4+	1998 09 27	704	0.5−	0.8−	1999 12 06	704	0.4−	0.4+
1998 08 28	699	0.2−	0.1−	1998 10 14	699	0.1−	0.8+	1999 12 06	704	0.2+	0.2−
1998 08 28	699	0.4−	0.5−	1998 10 14	699	0.5−	0.5+	1999 12 06	704	1.1+	0.2−
1998 08 28	699	0.3+	0.3+	1998 10 14	699	0.8−	0.2−	1999 12 06	704	0.2+	0.7−
1998 08 31	704	1.1+	1.0+	1998 10 28	704	0.5+	0.6+	1999 12 13	699	0.4+	0.1+
1998 08 31	704	0.1−	1.2−	1998 10 28	704	0.2+	0.8−	1999 12 13	699	0.2+	0.9+
1998 08 31	704	1.1−	0.2−	1998 10 28	704	0.1−	0.9+	1999 12 13	699	0.4−	0.9+
1998 08 31	704	(2.3+	3.0−)	1998 10 28	704	0.3+	1.1−	1999 12 14	704	0.3−	0.5+
1998 08 31	704	(5.4−	1.2+)	1998 10 28	704	0.3−	0.7−	1999 12 14	704	0.5−	0.2+
1998 09 14	704	0.0	0.0	1998 10 29	704	1.2+	1.2+	1999 12 14	704	0.3−	0.5+
1998 09 14	704	0.3+	0.2+	1998 10 29	704	0.5+	0.3−	1999 12 14	704	0.5−	1.3−
1998 09 14	704	0.4−	1.5−	1998 10 29	704	0.8+	0.5+	1999 12 14	704	1.1−	0.2−
1998 09 17	699	0.3+	1.2+	1998 10 29	704	0.9+	0.6−	1999 12 30	699	0.2−	1.1+
1998 09 17	699	0.4+	1.4+	1998 10 29	704	0.5−	0.1−	1999 12 30	699	0.4+	0.8+
1998 09 17	699	0.4−	1.4+	1999 10 10	704	0.6+	0.4+	1999 12 30	699	0.5−	1.0+
1998 09 18	704	0.8−	0.3+	1999 10 10	704	0.0	0.0	2000 01 05	704	0.5+	0.1+
1998 09 18	704	1.0−	0.2+	1999 10 10	704	0.7+	0.3−	2000 01 05	704	0.6+	0.1−
1998 09 18	704	0.5+	0.4+	1999 10 10	704	1.5−	1.4+	2000 01 05	704	0.4+	0.5−
1998 09 18	704	1.6−	0.6+	1999 10 10	704	0.4+	0.3−	2000 01 05	704	1.0−	0.8−
1998 09 18	704	0.3−	0.8+	1999 10 30	703	1.4+	0.4−	2000 01 07	704	0.8+	0.5−
1998 09 25	699	0.5+	0.3−	1999 10 30	703	0.8−	0.1+	2000 01 07	704	0.3−	0.6−
1998 09 25	699	0.2+	0.0	1999 10 30	703	0.5−	0.8−	2000 01 07	704	0.0	0.3+
1998 09 25	699	0.5+	0.1−	1999 10 30	703	0.0	0.5−	2000 01 07	704	1.7−	0.2−

2000 JAN. 24

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1998 09 26	704	0.1+	1.2-	1999 11 04	704	0.0	0.4+	2000 01 07	704	0.6-	0.8-
1998 09 26	704	0.2-	0.3-	1999 11 04	704	0.0	0.2-				
1998 09 26	704	0.5+	1.4-	1999 11 04	704	0.2-	0.1+				

1998 QO₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	144.84046		(2000.0)		P		Q
<i>n</i>	0.21812506	ω	111.53956	+0.68405754		+0.70977145	
<i>a</i>	2.7331639	Ω	204.30722	-0.72239308		+0.69115152	
<i>e</i>	0.26699812	<i>i</i>	24.11752	+0.10106199		+0.13613987	
<i>P</i>	4.52	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1997 04 01	809	0.7+	1.1-	1998 09 15	596	0.1-	1.3-	1998 10 28	704	1.3+	1.5+
1997 04 01	809	0.5-	0.3-	1998 10 02	704	0.5+	0.1+	1998 10 28	704	0.2-	0.5-
1997 04 01	809	0.2-	0.5-	1998 10 02	704	0.2+	0.7+	1998 10 28	704	0.6+	0.2-
1998 08 27	596	0.6-	0.1+	1998 10 02	704	0.1+	0.5+	1998 10 28	704	0.5-	0.6-
1998 08 27	596	0.3-	0.7+	1998 10 02	704	0.1-	0.2+	1998 10 28	704	0.2+	0.7-
1998 08 27	596	0.9-	0.6-	1998 10 02	704	0.6+	0.7-	1998 11 11	699	0.1+	0.1+
1998 08 28	596	0.1+	0.6-	1998 10 11	699	0.8+	0.1-	1998 11 11	699	0.1+	0.6-
1998 08 28	596	0.1-	1.1-	1998 10 11	699	0.6+	0.1+	1998 11 11	699	0.1-	0.3-
1998 08 28	596	0.3-	0.1+	1998 10 11	699	0.3+	0.5+	1998 11 25	699	0.6-	0.6-
1998 08 28	595	0.0	0.3+	1998 10 13	596	0.3-	0.1-	1998 11 25	699	0.8+	0.2+
1998 08 29	595	0.1-	0.3+	1998 10 13	596	0.1-	0.1+	1998 11 25	699	0.6-	0.4+
1998 08 30	595	0.5-	0.5+	1998 10 13	596	0.0	1.0-	1998 12 08	704	1.1-	1.5-
1998 08 30	595	0.6-	0.1-	1998 10 14	699	0.1-	0.6+	1998 12 08	704	(0.4+	2.1+)
1998 09 02	596	(3.1-	4.6-)	1998 10 14	699	0.0	0.6+	1998 12 08	704	0.2+	0.6+
1998 09 02	596	(2.8-	5.0-)	1998 10 14	699	0.6-	0.9+	2000 01 07	104	0.3+	0.8+
1998 09 02	596	(3.1-	5.3-)	1998 10 15	704	0.9-	0.7+	2000 01 07	104	0.5+	0.1+
1998 09 15	596	0.2+	0.4+	1998 10 15	704	0.4+	0.1-	2000 01 07	104	0.8-	1.1-
1998 09 15	596	0.1-	0.6-	1998 10 15	704	0.6+	0.1+				
1998 09 15	596	0.6-	0.4-	1998 10 15	704	0.7+	0.8-				

1998 QR₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.09658		(2000.0)		P		Q
<i>n</i>	0.21643676	ω	75.08494	+0.63309860		-0.77168750	
<i>a</i>	2.7473587	Ω	335.31800	+0.64253189		+0.56762719	
<i>e</i>	0.1424944	<i>i</i>	8.35827	+0.43166994		+0.28687590	
<i>P</i>	4.55	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.3+	1.0-	1998 09 17	958	(0.4+	3.4+)	1998 11 08	958	0.1-	1.0+
1998 08 17	704	0.6+	1.2-	1998 09 17	958	1.4+	0.9+	1998 11 08	958	1.1-	0.1+
1998 08 17	704	0.4+	0.5-	1998 09 17	958	0.1-	1.0+	1998 11 20	958	0.8-	0.5-
1998 08 17	704	0.1+	0.7-	1998 09 17	958	1.1+	1.2+	1998 11 20	958	1.8-	1.3-
1998 08 17	704	0.3+	0.1+	1998 09 18	958	(1.4+	2.7+)	1998 11 23	958	1.1-	1.0-
1998 08 23	704	(1.0+	2.2-)	1998 09 18	704	0.3-	0.0	1998 11 23	958	0.5-	0.2-
1998 08 23	704	0.9+	1.4-	1998 09 18	704	1.2-	0.1-	1999 12 16	958	0.7-	1.4+
1998 08 23	704	0.2+	0.5-	1998 09 18	704	1.4+	1.8-	1999 12 16	958	1.4+	0.2-
1998 08 23	704	1.6+	0.0	1998 09 18	704	1.7-	0.4+	1999 12 16	958	0.4+	0.1+
1998 08 23	704	(4.5-	1.0-)	1998 09 24	958	1.1-	1.8+	1999 12 16	958	0.1-	0.4+
1998 08 28	958	1.1+	0.3+	1998 09 24	958	(2.7-	2.0+)	1999 12 17	958	0.4+	0.8-
1998 08 28	958	1.6-	0.5+	1998 09 28	958	(3.3-	1.0-)	1999 12 17	958	1.5-	0.9-
1998 08 28	958	(4.4+	0.6-)	1998 09 28	958	(3.5-	3.5-)	2000 01 03	704	1.3-	1.2+
1998 08 28	958	1.5+	0.5-	1998 09 28	958	(2.6-	0.3+)	2000 01 03	704	0.3+	1.0+
1998 08 28	958	0.7+	0.5+	1998 10 01	958	(2.8-	1.2+)	2000 01 03	704	0.8+	1.1+
1998 08 28	958	0.5-	0.4-	1998 10 01	958	(2.4+	0.8-)	2000 01 04	704	0.3-	0.5-
1998 08 29	958	1.4-	0.4-	1998 10 14	958	1.0+	0.5+	2000 01 04	704	0.5-	1.1-
1998 09 14	704	0.4-	0.3-	1998 10 14	958	1.6+	0.6+	2000 01 04	704	0.3-	1.1-
1998 09 14	704	0.2-	1.0-	1998 10 25	958	0.4+	0.1-	2000 01 04	704	0.2-	1.2-
1998 09 14	704	0.1-	0.0	1998 10 25	958	0.2+	1.0+	2000 01 04	704	1.2-	1.3-
1998 09 14	704	0.1-	0.1+	1998 10 25	958	1.0+	0.5+	2000 01 06	699	0.7+	0.4-
1998 09 14	704	0.1-	0.4-	1998 11 07	958	0.5+	0.7+	2000 01 06	699	0.8+	0.4+
1998 09 16	958	0.3-	0.5-	1998 11 07	958	0.9+	1.6+	2000 01 06	699	0.6+	0.0
1998 09 16	958	1.8-	0.0	1998 11 08	958	1.0-	0.1+				

1998 QS₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	97.73728		(2000.0)		P		Q
<i>n</i>	0.18793960	ω	144.67166	+0.98006540		+0.18611480	
<i>a</i>	3.0184954	Ω	204.87728	-0.19782208		+0.94655511	
<i>e</i>	0.1112078	<i>i</i>	9.51228	+0.01839141		+0.26342876	
<i>P</i>	5.24	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 19	704	1.1+	1.0-	1998 08 30	595	0.3+	0.6-	1998 10 24	595	0.5-	1.4+
1998 08 19	704	1.4-	1.1+	1998 08 30	595	0.5+	0.3-	1998 10 24	595	0.9-	0.7-
1998 08 19	704	0.7+	0.1+	1998 08 30	595	0.0	0.4+	1999 12 06	704	1.3-	0.2+
1998 08 19	704	1.6-	0.9-	1998 09 14	704	0.3+	0.6-	1999 12 06	704	0.2+	0.5-
1998 08 19	704	0.0	0.8-	1998 09 14	704	0.3+	0.6-	1999 12 06	704	0.9+	0.8+
1998 08 24	704	0.6+	0.7-	1998 09 14	704	1.4+	0.0	2000 01 02	595	0.0	0.5+
1998 08 24	704	0.4-	0.2+	1998 09 14	704	0.9+	0.7-	2000 01 02	595	0.1+	0.5+
1998 08 24	704	1.4-	0.9+	1998 09 14	704	0.2+	0.3-	2000 01 03	595	0.0	0.9+
1998 08 24	704	1.6-	0.6-	1998 09 16	699	0.2-	1.0-	2000 01 03	595	0.3-	0.4-
1998 08 24	704	1.3-	1.4+	1998 09 16	699	0.3+	0.0	2000 01 03	595	0.2-	0.2+
1998 08 26	595	0.3-	0.5+	1998 09 16	699	0.0	0.5-	2000 01 07	704	0.1-	0.5-
1998 08 26	595	0.4+	1.2+	1998 09 18	704	0.0	0.7+	2000 01 07	704	0.3-	0.7-
1998 08 28	595	0.4+	0.1+	1998 09 18	704	0.6+	0.1+	2000 01 07	704	0.1+	0.3+
1998 08 28	595	0.6+	0.1+	1998 09 18	704	0.7+	0.7-	2000 01 07	704	0.0	0.5-
1998 08 30	699	0.1+	1.0+	1998 09 18	704	0.3+	1.1+	2000 01 07	704	1.0+	0.5-
1998 08 30	699	0.6+	1.5+	1998 10 20	595	0.8-	0.9-				
1998 08 30	699	(1.1+	2.4+)	1998 10 20	595	0.2-	1.2-				

1998 QK₅₄ = 2000 AM₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	95.89506		(2000.0)		P		Q
<i>n</i>	0.21234127	ω	107.99858	+0.93427093		-0.35172259	
<i>a</i>	2.7825722	Ω	272.62663	+0.30094089		+0.86590307	
<i>e</i>	0.0809384	<i>i</i>	3.36059	+0.19123916		+0.35567274	
<i>P</i>	4.64	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 27	699	0.2-	0.1-	1998 09 26	704	0.3+	0.5-	1999 12 18	699	0.5+	0.3+
1998 08 27	699	0.0	0.1+	1998 09 27	704	0.2+	0.3+	1999 12 18	699	0.3+	1.0+
1998 08 27	699	0.2+	0.0	1998 09 27	704	0.6+	1.1+	1999 12 18	699	0.9+	0.8-
1998 08 28	704	0.6+	1.1-	1998 09 27	704	0.7+	1.6+	2000 01 05	704	0.3+	0.2-
1998 08 28	704	0.2-	1.0-	1998 09 27	704	0.6+	1.3+	2000 01 05	704	0.1-	0.1-
1998 08 28	704	0.9-	0.2-	1998 09 27	704	0.6+	0.5+	2000 01 05	704	0.2+	0.0
1998 08 28	704	(2.3-	1.2+)	1998 10 15	699	0.4+	0.2-	2000 01 05	704	0.1-	0.2+
1998 08 28	699	0.3-	0.3-	1998 10 15	699	0.1+	0.2+	2000 01 05	704	0.1-	0.0
1998 08 28	699	0.3+	0.6+	1998 10 15	699	0.7-	0.2+	2000 01 06	704	0.1+	0.0
1998 08 28	699	0.2+	0.4-	1998 12 09	704	0.2+	1.3-	2000 01 06	704	0.2+	0.3-
1998 09 14	704	0.0	0.3+	1998 12 09	704	1.3-	0.4+	2000 01 06	704	0.1+	0.2-
1998 09 14	704	0.7-	0.6+	1998 12 09	704	1.6+	0.1-	2000 01 08	732	0.6-	0.5+
1998 09 14	704	0.9-	0.3+	1998 12 09	704	0.0	0.6-	2000 01 08	732	0.9-	0.2+
1998 09 18	704	0.0	0.4-	1998 12 09	704	1.7-	1.3+	2000 01 08	732	0.4+	0.2+
1998 09 18	704	0.4-	0.5-	1999 11 11	703	0.3+	0.3+	2000 01 09	704	0.1+	0.1+
1998 09 18	704	0.8-	0.6-	1999 11 11	703	0.4+	0.1-	2000 01 09	704	0.9-	0.4-
1998 09 18	704	0.7+	0.7-	1999 11 11	703	(2.5+	1.2-)	2000 01 09	704	0.1-	0.1-
1998 09 18	704	0.1-	0.1-	1999 11 11	703	1.4+	1.8+	2000 01 10	732	0.4-	

1998 QV₅₄ = 2000 AN₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	221.02198		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.29819729	ω	311.51038	+0.07998258	+0.99518243		
<i>a</i>	2.2188788	Ω	322.96208	-0.88421477	+0.04457459		
<i>e</i>	0.2138618	<i>i</i>	5.40124	-0.46018152	+0.08732150		
<i>P</i>	3.31	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 06	704	1.1+	0.9+	1998 09 18	704	0.0	0.1+	1998 09 29	704	0.1+	1.7-
1997 03 06	704	0.2-	1.2+	1998 09 18	704	0.9-	0.2-	1998 10 15	699	0.6-	0.7+
1998 08 27	699	0.2+	0.7+	1998 09 18	699	1.1-	0.3+	1998 10 15	699	0.3-	0.5+
1998 08 27	699	0.3+	0.2+	1998 09 18	704	1.6-	0.7-	1998 10 15	699	0.6+	1.6+
1998 08 27	699	0.3+	1.8+	1998 09 18	704	0.8-	0.2-	2000 01 03	704	0.5+	0.1+
1998 08 28	704	1.9+	1.9-	1998 09 18	699	0.6+	0.9+	2000 01 03	704	0.3+	1.5-
1998 08 28	704	0.8+	0.6+	1998 09 18	704	0.6-	1.1-	2000 01 03	704	1.4-	0.9+
1998 08 28	704	(1.5+	3.0+)	1998 09 18	699	0.6-	0.9+	2000 01 03	704	0.9-	0.8-
1998 08 28	704	1.1-	0.9+	1998 09 27	704	0.5-	1.4-	2000 01 03	704	0.6-	0.2-
1998 08 28	704	0.6-	0.4+	1998 09 27	704	0.9+	0.9-	2000 01 04	704	0.2+	0.4-
1998 08 28	699	0.1-	1.2+	1998 09 27	704	1.6+	0.1-	2000 01 04	704	1.0+	0.1+
1998 08 28	699	0.5-	0.6+	1998 09 27	704	(3.9-	1.0-)	2000 01 04	704	0.1-	0.2+
1998 08 28	699	0.1+	0.6+	1998 09 29	704	0.6+	0.6-	2000 01 04	688	0.2-	0.4+
1998 09 14	704	0.6-	0.1-	1998 09 29	704	1.0+	0.8-	2000 01 04	704	0.8+	0.4+
1998 09 14	704	0.7-	0.7-	1998 09 29	704	0.9+	0.3+	2000 01 04	688	0.2+	0.2+
1998 09 14	704	(0.3-	2.3+)	1998 09 29	704	0.2+	0.2+				

1998 QB₅₅ = 1988 VJ₉

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	74.26737		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19090536	ω	53.79233	+0.78865554	-0.61331387		
<i>a</i>	2.9871518	Ω	343.89214	+0.50217702	+0.68311794		
<i>e</i>	0.0781803	<i>i</i>	8.96328	+0.35474030	+0.39647948		
<i>P</i>	5.16	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 11 13	054	0.1+	0.3-	1998 09 27	704	0.8+	0.2-	1999 12 13	699	0.3-	1.1+
1998 08 27	699	0.7-	0.0	1999 11 16	703	0.6+	0.1+	1999 12 15	704	0.1+	0.1-
1998 08 27	699	1.0+	0.3+	1999 11 16	703	0.0	1.2+	1999 12 15	704	0.4-	0.7-
1998 08 27	699	0.8-	0.3-	1999 11 16	703	0.1-	0.9+	1999 12 15	704	0.4-	0.7-
1998 08 28	699	0.7-	0.1-	1999 11 16	703	0.6+	0.4+	1999 12 15	704	0.5-	0.5-
1998 08 28	699	0.3+	0.1-	1999 12 03	699	0.8+	0.0	1999 12 15	704	0.4-	0.7-
1998 08 28	699	0.6-	0.3+	1999 12 03	699	0.2+	0.3+	1999 12 31	699	0.4-	1.1+
1998 09 26	704	0.3+	0.7-	1999 12 03	699	0.3+	0.3+	1999 12 31	699	0.1-	0.7+
1998 09 26	704	1.0-	0.5-	1999 12 12	704	0.3-	0.1-	1999 12 31	699	0.0	0.3-
1998 09 26	704	0.0	0.4-	1999 12 12	704	0.4-	0.4-	2000 01 02	704	0.3+	1.4-
1998 09 26	704	1.0-	0.7+	1999 12 12	704	0.2-	0.2-	2000 01 02	704	1.9+	0.0
1998 09 26	704	0.0	0.1-	1999 12 12	704	0.2-	0.1-	2000 01 02	704	0.1-	1.0-
1998 09 27	704	0.5+	0.5+	1999 12 12	704	0.0	1.1+	2000 01 02	704	0.1-	0.8-
1998 09 27	704	0.8+	0.1+	1999 12 13	699	0.2-	0.1+				
1998 09 27	704	1.0+	0.5+	1999 12 13	699	0.4-	0.7+				

1998 QZ₅₅ = 2000 AT₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	101.75995		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21404933	ω	72.28884	+0.97957229	-0.19682457		
<i>a</i>	2.7677496	Ω	299.04522	+0.16197853	+0.89373453		
<i>e</i>	0.1322492	<i>i</i>	2.70179	+0.11916831	+0.40311124		
<i>P</i>	4.60	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 23	704	1.1+	0.8+	1998 09 18	120	0.1-	0.6-	1998 09 27	704	0.5-	0.3-
1998 08 23	704	(0.8+	2.6+)	1998 09 18	120	0.1-	0.1-	1998 09 27	704	0.1+	1.5-
1998 08 23	704	0.3-	0.9-	1998 09 21	120	0.2-	0.2+	2000 01 02	120	0.7-	0.0
1998 08 23	704	0.2-	0.1-	1998 09 21	120	0.4+	0.0	2000 01 02	120	1.5-	0.1-

1998 08 29	120	0.5+	0.7+	1998 09 21	120	0.0	0.5-	2000 01 03	120	1.6+	0.1+
1998 08 29	120	0.2-	0.2+	1998 09 25	699	0.1+	0.3-	2000 01 04	120	0.4+	0.5-
1998 08 29	120	0.1-	0.2+	1998 09 25	699	0.3+	0.1-	2000 01 06	704	0.0	1.3-
1998 08 31	120	0.1-	0.6+	1998 09 25	699	0.1+	0.2+	2000 01 06	704	0.3+	0.3+
1998 08 31	120	0.4-	0.5-	1998 09 26	704	0.0	0.9+	2000 01 06	704	0.6+	1.1+
1998 09 14	704	(2.6-	0.4+)	1998 09 26	704	1.1-	0.7+	2000 01 12	104	1.0+	0.4-
1998 09 14	704	0.4-	0.2-	1998 09 26	704	0.9-	1.1+	2000 01 12	104	0.5+	0.5-
1998 09 14	704	0.9-	0.2-	1998 09 26	704	1.1-	1.7+	2000 01 12	104	0.5-	0.2-
1998 09 14	704	0.2-	0.2-	1998 09 26	704	(1.4-	2.2+)	2000 01 12	104	0.0	0.0
1998 09 18	704	0.4-	0.5-	1998 09 27	699	0.9+	0.3+	2000 01 13	104	0.1-	0.1+
1998 09 18	704	0.4+	0.2+	1998 09 27	699	1.8+	0.3-	2000 01 13	104	0.2-	0.0
1998 09 18	704	0.2-	0.2+	1998 09 27	704	0.0	0.6-	2000 01 13	104	0.0	0.1+
1998 09 18	704	0.2-	0.1-	1998 09 27	704	0.6+	0.2-	2000 01 15	104	0.0	0.6+
1998 09 18	704	0.1-	0.4-	1998 09 27	699	1.2+	0.2+	2000 01 15	104	0.5-	0.4+
1998 09 18	120	0.5+	0.1-	1998 09 27	704	0.5-	0.4-	2000 01 15	104	0.9-	0.3+

1998 QP₆₀ = 2000 AG₁₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	112.08702		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.25918766	ω	127.09286	+0.96014551	-0.26399282		
<i>a</i>	2.4362761	Ω	248.37712	+0.21470721	+0.90693703		
<i>e</i>	0.1216170	<i>i</i>	5.66753	+0.17894529	+0.32828800		
<i>P</i>	3.80	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 19	704	0.5-	0.0	1998 08 27	557	0.1-	0.5-	1998 10 13	557	0.0	0.3-
1998 08 19	704	0.2+	0.3-	1998 08 27	557	0.0	0.5-	1998 10 13	557	0.2-	0.1-
1998 08 19	704	0.6+	0.4-	1998 08 31	557	0.6-	0.1+	1998 10 13	557	0.0	0.3-
1998 08 19	704	0.4-	0.2+	1998 08 31	557	0.3-	0.2+	1998 10 23	557	0.5-	0.4-
1998 08 19	704	1.4-	0.3+	1998 08 31	557	0.2-	0.2-	1998 10 23	557	0.2-	0.4+
1998 08 24	704	0.2+	0.5-	1998 08 31	557	0.5-	0.3-	1998 11 24	557	0.6-	0.7+
1998 08 24	704	0.2-	0.9-	1998 09 13	557	0.4-	0.1+	1998 11 24	557	0.8+	0.7-
1998 08 24	704	0.5+	0.1+	1998 09 13	557	0.2-	0.3+	2000 01 05	704	0.8-	0.1+
1998 08 24	704	0.3+	0.6+	1998 09 15	699	0.5+	1.7+	2000 01 05	704	0.6+	0.2-
1998 08 24	704	0.7+	0.2-	1998 09 15	699	0.2+	1.3+	2000 01 05	704	0.0	0.3+
1998 08 27	704	0.4+	0.0	1998 09 15	699	0.2+	0.9+	2000 01 05	704	0.6+	0.5-
1998 08 27	704	0.4-	0.0	1998 09 26	557	0.5-	0.1-	2000 01 07	704	0.1-	0.2+
1998 08 27	704	0.4+	0.4+	1998 09 26	557	0.1-	0.4-	2000 01 07	704	0.7+	0.0
1998 08 27	704	0.2+	0.7+	1998 10 11	699	0.0	0.9-	2000 01 07	704	0.7-	0.2-
1998 08 27	704	1.1+	0.6-	1998 10 11	699	0.5+	0.1+	2000 01 07	704	0.3-	0.3+
1998 08 27	557	0.1-	0.4-	1998 10 11	699	0.2+	0.4-				

1998 QQ₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	69.44721		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19194825	ω	74.47798	+0.83803065	-0.50947983		
<i>a</i>	2.9763222	Ω	315.65649	+0.32834696	+0.75675087		
<i>e</i>	0.1896996	<i>i</i>	16.22377	+0.43576702	+0.40958323		
<i>P</i>	5.13	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	1.3+	0.5+	1998 08 31	557	0.3-	0.5+	1999 12 17	684	0.6-	0.3+
1998 08 24	704	1.7-	1.8-	1998 09 14	557	0.3+	0.1-	1999 12 17	684	0.3+	0.3-
1998 08 24	704	1.0+	0.8-	1998 09 14	557	0.0	0.3+	1999 12 18	684	0.5+	0.3-
1998 08 27	704	0.6-	0.1+	1998 09 22	557	0.4+	0.1+	1999 12 18	684	0.3-	0.1-
1998 08 27	704	1.4+	1.3-	1998 09 22	557	0.6+	0.4+	2000 01 12	557	0.1-	0.2+
1998 08 27	704	0.2+	1.2+	1998 09 22	557	0.2+	0.5+	2000 01 12	557	0.3-	0.2+
1998 08 27	557	0.5-	0.7+	1998 10 12	557	0.5-	0.7-	2000 01 12	557	0.4+	0.1-
1998 08 27	557	0.4-	0.3+	1998 10 23	557	0.4-	0.5+				
1998 08 31	557	0.8-	0.0	1998 10 23	557	0.3-	0.5-				

2000 JAN. 24

M.P.C. 37731

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	341.32256		(2000.0)		P		Q				
<i>n</i>	0.23210624	ω	313.01567		−0.47357839		−0.87830357				
<i>a</i>	2.6222746	Ω	164.85355		+0.86336024		−0.47767008				
<i>e</i>	0.0368249	<i>i</i>	14.54568		+0.17416258		−0.02035014				
<i>P</i>	4.25	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 08 17	704	0.9−	0.8−	1998 08 23	699	0.6+	0.0	2000 01 07	699	0.5−	1.0+
1998 08 17	704	0.0	1.5+	1998 08 30	699	1.0−	0.0	2000 01 07	699	0.1+	0.6+
1998 08 17	704	0.4+	0.2+	1998 08 30	699	0.6−	1.3−	2000 01 07	699	0.4+	0.5−
1998 08 17	704	0.5−	0.4−	1998 08 30	699	0.3−	0.6−	2000 01 08	699	0.3−	0.3−
1998 08 17	704	0.1−	0.1−	1998 09 10	910	0.1+	0.4+	2000 01 08	699	0.3+	0.2+
1998 08 23	699	0.9+	0.1+	1998 09 11	910	0.0	0.4+	2000 01 08	699	0.0	1.1−
1998 08 23	699	1.0+	0.4+	1998 09 11	910	0.3+	0.2+				

1998 QK₆₁ = 2000 AD₁₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	4.01334		(2000.0)			P		Q			
<i>n</i>	0.28535967	ω	339.92574			−0.74438259		−0.66628330			
<i>a</i>	2.2849375	Ω	158.10271			+0.62772173		−0.72083358			
<i>e</i>	0.0353388	<i>i</i>	6.81957			+0.22772788		−0.19095945			
<i>P</i>	3.45	<i>H</i>	14.5			<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc											
1998 08 03	699	1.0−	0.5−	1998 08 30	699	0.5+	1.2+	1999 12 05	704	0.4−	0.0
1998 08 03	699	0.6−	0.6−	1998 08 30	699	0.7+	0.6+	1999 12 05	704	0.0	0.1−
1998 08 03	699	0.0	0.2+	1998 09 14	704	0.3−	0.2+	2000 01 05	704	0.1−	0.4+
1998 08 17	704	0.4−	0.5+	1998 09 14	704	0.7−	0.7+	2000 01 05	699	0.7+	0.2+
1998 08 17	704	0.4−	0.8−	1998 09 14	704	0.5+	1.1−	2000 01 05	704	0.1−	0.1+
1998 08 17	704	0.4−	0.4−	1998 09 14	704	0.2+	0.4+	2000 01 05	704	0.2+	0.7+
1998 08 17	704	0.5−	1.0−	1998 09 18	699	0.3−	0.1−	2000 01 05	699	0.2+	0.6+
1998 08 17	704	0.4−	0.0	1998 09 18	699	0.4+	0.8−	2000 01 05	704	0.6+	0.1+
1998 08 23	704	0.7+	0.3+	1998 09 18	704	0.0	1.8−	2000 01 05	699	0.4+	0.3+
1998 08 23	704	0.5−	1.0+	1998 09 18	699	0.3+	0.6−	2000 01 05	704	0.1+	0.2+
1998 08 23	704	(1.2−	2.2+)	1998 09 18	704	0.3−	0.1−	2000 01 07	704	0.4−	0.3+
1998 08 23	704	1.1−	0.8+	1998 09 18	704	1.1−	0.3+	2000 01 07	704	0.4−	0.1+
1998 08 23	704	(5.4−	0.5+)	1998 09 18	704	0.6+	0.1+	2000 01 07	704	0.0	0.3−
1998 08 26	699	0.9+	0.3+	1998 09 18	704	0.2+	0.4−	2000 01 07	704	0.3+	0.6−
1998 08 26	699	1.2+	0.6+	1999 12 05	704	0.3−	0.1+	2000 01 07	704	0.0	0.7−
1998 08 26	699	0.6+	0.4+	1999 12 05	704	0.3−	0.6−				
1998 08 30	699	0.5+	0.8+	1999 12 05	704	0.6−	0.2−				

1998 QZ₆₈ = 2000 AJ₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	167.22246		(2000.0)			P		Q			
<i>n</i>	0.26627473	ω	65.87774			+0.57431586		+0.81440112			
<i>a</i>	2.3928533	Ω	239.43140			−0.78177193		+0.51548739			
<i>e</i>	0.1467187	<i>i</i>	5.54104			−0.24288668		+0.26650248			
<i>P</i>	3.70	<i>H</i>	14.5			<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc											
1998 08 04	699	0.6+	0.8+	1998 08 27	704	0.1−	0.8+	1998 09 18	704	0.8−	0.1+
1998 08 04	699	0.1+	0.3−	1998 08 27	704	0.5+	0.2−	1999 12 14	704	(0.8−	2.4+
1998 08 04	699	0.2+	0.1+	1998 08 27	704	0.2−	0.5+	1999 12 14	704	(0.8−	2.5+
1998 08 24	704	0.0	0.3−	1998 08 27	704	0.3−	0.8−	1999 12 14	704	0.3−	0.3+
1998 08 24	704	0.4−	0.6−	1998 09 14	704	0.1+	0.3−	2000 01 05	704	0.2−	0.3−
1998 08 24	704	0.2−	0.3−	1998 09 14	704	0.7−	0.8+	2000 01 05	704	0.1+	0.3−
1998 08 24	704	0.3−	0.7−	1998 09 14	704	0.7+	1.1−	2000 01 05	704	0.3+	0.1−
1998 08 24	704	0.7−	0.9−	1998 09 14	704	0.5−	0.2+	2000 01 05	704	0.1+	0.0
1998 08 26	699	0.1−	0.7+	1998 09 18	704	0.2+	0.8+	2000 01 05	704	0.1−	0.0
1998 08 26	699	0.2+	0.7+	1998 09 18	704	0.0	0.1+	2000 01 06	704	0.4−	0.1+
1998 08 26	699	0.4+	0.2−	1998 09 18	704	1.4+	0.2−	2000 01 06	704	0.4+	0.0
1998 08 27	704	0.2−	0.4+	1998 09 18	704	0.4+	0.1+	2000 01 06	704	0.1−	0.2+

1998 QN₆₉ = 1999 XR₁₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	82.11573		(2000.0)		P		Q		
n	0.23402627	ω	118.17933		+0.79956848		−0.55130083		
a	2.6079122	Ω	276.22164		+0.43177725		+0.80340307		
e	0.1131832	i	13.86589		+0.41744298		+0.22496868		
P	4.21	H	14.5		G	0.15	U	4	
Residuals in seconds of arc									
1998 08 24	704	0.4+	0.2+	1998 09 20	683	(3.8+ 0.8+)	1999 12 14	704	0.7− 0.6−
1998 08 24	704	0.6−	0.6+	1998 09 20	683	(3.8+ 0.3+)	1999 12 14	704	0.1− 0.9−
1998 08 24	704	0.0	0.2−	1998 09 21	683	0.4− 0.1+	1999 12 14	704	0.2+ 0.0
1998 08 24	704	0.5+	0.0	1998 09 21	683	0.2− 0.5+	1999 12 14	704	0.8+ 1.3+
1998 08 24	704	0.8+	0.2−	1998 09 21	683	0.1+ 0.1−	2000 01 05	704	0.1− 0.4+
1998 08 27	704	1.1+	1.1−	1999 12 07	704	0.6− 0.5−	2000 01 05	704	0.0 0.1+
1998 08 27	704	(2.5+ 0.1−)		1999 12 07	704	0.1+ 0.4+	2000 01 05	704	0.2+ 0.3+
1998 08 27	704	0.4−	0.3+	1999 12 07	704	0.3− 0.4−	2000 01 05	704	0.0 0.5−
1998 08 27	704	1.5−	0.2−	1999 12 07	704	0.3+ 0.5+	2000 01 05	704	0.0 0.2−

1998 QV₆₉ = 2000 AP₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	84.87519		(2000.0)		P		Q				
n	0.18587492	ω	90.50899		+0.99075002		−0.00915182				
a	3.0408070	Ω	270.02006		−0.04538450		+0.91792140				
e	0.1607283	i	7.78122		+0.12788532		+0.39665672				
P	5.30	H	14.4		G	0.15	U	4			
Residuals in seconds of arc											
1998 08 19	704	0.9−	0.6+	1998 09 15	699	0.6−	0.3+	1999 12 07	704	0.3−	0.1+
1998 08 19	704	0.3+	0.5+	1998 09 15	699	0.6−	1.1+	1999 12 07	704	0.4−	0.2−
1998 08 19	704	0.0	1.4−	1998 09 15	699	0.4−	1.4+	1999 12 07	704	0.2−	0.3+
1998 08 19	704	0.1−	0.1−	1998 09 19	704	0.3−	0.7+	1999 12 07	704	0.4+	0.1−
1998 08 19	704	0.5−	1.1+	1998 09 19	704	0.1−	0.3−	2000 01 03	704	0.3+	0.4−
1998 08 24	704	0.4+	0.7−	1998 09 19	704	0.5+	0.6−	2000 01 03	704	0.6+	0.9−
1998 08 24	704	1.2+	0.8−	1998 09 19	704	0.6−	0.5+	2000 01 03	704	0.6+	0.6+
1998 08 24	704	1.1+	0.1+	1998 09 19	704	1.0−	0.2−	2000 01 03	704	1.1−	0.5+
1998 08 24	704	1.0+	0.2−	1998 09 23	704	0.3−	1.0−	2000 01 05	704	0.4−	0.9−
1998 08 24	704	0.4+	1.1−	1998 09 23	704	0.0	0.6+	2000 01 05	704	0.0	0.1−
1998 08 27	704	0.4+	0.6−	1998 09 23	704	0.3+	0.8+	2000 01 05	704	0.3+	0.2−
1998 08 27	704	0.3+	0.4−	1998 09 23	704	0.6−	0.7+	2000 01 05	704	0.4+	1.0+
1998 08 27	704	0.2+	0.2+	1998 10 10	699	0.2−	0.2+	2000 01 05	704	0.2−	0.2−
1998 08 27	704	0.6−	0.5−	1998 10 10	699	0.0	0.4−				
1998 08 27	704	0.3−	0.5−	1998 10 10	699	0.9+	0.0				

1998 QJ₇₀ = 1999 XY₁₆₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	71.54856		(2000.0)			P		Q		
<i>n</i>	0.17254085	ω	87.12095			+0.91796433		−0.28525073		
<i>a</i>	3.1955192	Ω	289.32936			+0.13054520		+0.87342439		
<i>e</i>	0.2074776	<i>i</i>	16.98361			+0.37456568		+0.39466678		
<i>P</i>	5.71	<i>H</i>	12.6		<i>G</i>	0.15		<i>U</i>	3	
Residuals in seconds of arc										
1998 06 30	704	0.3−	0.8+	1998 09 19	704	0.0	0.1−	1999 09 18	703	0.2− 0.6+
1998 06 30	704	1.7+	1.1−	1998 09 19	704	0.0	0.3+	1999 12 10	704	0.5− 0.1−
1998 06 30	704	0.4+	1.5−	1998 09 19	704	1.9−	0.3+	1999 12 10	704	0.6− 0.5+
1998 06 30	704	0.9+	0.1−	1998 09 19	704	0.4−	0.1+	1999 12 10	704	0.3− 0.0
1998 08 19	704	0.4+	0.2−	1998 09 19	704	0.2−	0.6−	1999 12 10	704	0.7− 0.5+
1998 08 19	704	0.6+	0.2+	1998 09 23	704	0.2+	0.9+	1999 12 10	704	0.7− 0.7+
1998 08 19	704	0.4+	0.0	1998 09 23	704	(0.6+	3.3+)	1999 12 15	704	0.4− 0.3+
1998 08 19	704	0.1+	0.4+	1998 09 23	704	0.6−	0.1−	1999 12 15	704	0.0 0.9−
1998 08 19	704	0.6+	0.5−	1998 09 23	704	0.5+	0.2−	1999 12 15	704	(0.3+ 3.5+)
1998 08 21	566	0.7+	1.0−	1998 11 21	704	0.6+	0.4−	1999 12 15	704	0.5− 1.6−
1998 08 21	566	0.1+	0.4−	1998 11 21	704	1.5−	0.5−	1999 12 15	704	0.6− 0.7+
1998 08 21	566	0.5+	0.8−	1998 11 21	704	1.8−	1.8+	2000 01 03	704	0.3+ 0.8−

1998 08 24	704	0.7+	0.7−	1998 11 21	704	0.5+	1.6+	2000 01 03	704	0.3+	0.5−
1998 08 24	704	0.0	0.1+	1998 11 21	704	0.4+	1.7+	2000 01 03	704	0.5+	0.5−
1998 08 24	704	0.0	0.8−	1998 12 09	704	0.1+	0.1−	2000 01 03	704	0.4+	0.7−
1998 08 24	704	0.6−	0.1−	1998 12 09	704	0.2−	0.1−	2000 01 03	704	0.2+	0.4−
1998 08 24	704	0.7−	0.1+	1998 12 09	704	0.0	1.1−	2000 01 04	704	0.4+	0.9−
1998 08 27	704	0.0	0.1−	1998 12 09	704	0.5+	0.2+	2000 01 04	704	0.4+	0.7−
1998 08 27	704	0.1+	0.1−	1998 12 09	704	0.8+	0.5+	2000 01 04	704	0.8+	1.6+
1998 08 27	704	0.5+	0.3−	1999 09 18	703	0.1−	0.4+	2000 01 04	704	0.1+	0.1−
1998 08 27	704	1.5−	0.8+	1999 09 18	703	0.4−	0.4+	2000 01 04	704	0.2+	0.4−
1998 08 27	704	0.5−	0.5+	1999 09 18	703	0.0	0.8+				

1998 QM₇₀ = 2000 AK₁₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23473612	<i>ω</i>	57.71962	+0.72571759		+0.65560392	
<i>a</i>	2.6026520	<i>Ω</i>	260.40411	−0.68066476		+0.64004993	
<i>e</i>	0.1806079	<i>i</i>	12.21430	−0.10014719		+0.40064897	
<i>P</i>	4.20	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.8+	0.3+	1998 08 27	704	0.5+	1.6+	1998 10 18	699	0.5+	0.3+
1998 08 19	704	0.1+	0.9+	1998 08 27	704	0.4−	0.2−	1998 10 18	699	0.4−	0.2−
1998 08 19	704	0.0	0.2+	1998 08 27	704	(1.1−	2.1+)	1998 10 18	699	0.2−	0.1−
1998 08 19	704	0.2−	0.5−	1998 09 19	704	0.1+	0.3−	2000 01 05	704	0.9−	0.0
1998 08 19	704	0.4−	0.6+	1998 09 19	704	0.4−	0.6−	2000 01 05	704	0.1+	0.6−
1998 08 24	704	0.4+	0.1+	1998 09 19	704	0.1+	0.6+	2000 01 05	704	0.1+	0.5+
1998 08 24	704	0.4+	0.9−	1998 09 19	704	0.0	1.2−	2000 01 05	704	0.9+	0.1+
1998 08 24	704	1.7−	1.9−	1998 09 19	704	0.0	0.3−	2000 01 05	704	0.8+	0.2+
1998 08 24	704	(3.2−	0.7−)	1998 09 23	704	0.3−	0.4+	2000 01 06	704	0.3−	0.7+
1998 08 24	704	0.5+	0.7−	1998 09 23	704	0.9+	0.2+	2000 01 06	704	0.6−	0.8−
1998 08 27	704	0.2+	0.1+	1998 09 23	704	0.8−	0.5+	2000 01 06	704	0.1+	0.1−
1998 08 27	704	0.3−	0.9+	1998 09 23	704	0.8+	0.3+				

1998 QX₇₀ = 2000 AL₁₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19098248	<i>ω</i>	129.13471	+0.83048523		−0.53216654	
<i>a</i>	2.9863476	<i>Ω</i>	263.60543	+0.44619254		+0.81241518	
<i>e</i>	0.1267906	<i>i</i>	9.53384	+0.33347638		+0.23828629	
<i>P</i>	5.16	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 19	704	1.1+	1.1−	1998 08 27	704	0.2+	0.1−	1999 12 08	704	0.2−	0.2+
1998 08 19	704	0.2−	0.7−	1998 09 19	704	0.0	0.2+	1999 12 08	704	0.5+	1.0+
1998 08 19	704	1.0−	0.0	1998 09 19	704	(1.1−	2.2+)	2000 01 05	704	0.2−	0.4−
1998 08 19	704	1.7−	0.6−	1998 09 19	704	0.5−	0.6+	2000 01 05	704	0.1+	0.1−
1998 08 19	704	1.1+	1.1−	1998 09 19	704	0.4+	0.1+	2000 01 05	704	0.2−	0.1−
1998 08 24	704	0.7−	1.2+	1998 09 19	704	0.4+	0.2−	2000 01 05	704	0.0	0.2−
1998 08 24	704	0.5+	0.9−	1998 09 23	704	0.5+	0.9−	2000 01 05	704	0.2+	0.1−
1998 08 24	704	(2.9+	1.2+)	1998 09 23	704	0.3+	0.6+	2000 01 09	704	0.5−	0.3−
1998 08 24	704	0.4+	0.9+	1998 09 23	704	0.2−	0.6−	2000 01 09	704	0.2−	0.3+
1998 08 24	704	0.9+	1.0+	1998 09 23	704	0.1−	0.7+	2000 01 09	704	0.2+	0.1−
1998 08 27	704	0.4−	0.5+	1998 09 23	704	1.3−	1.8−	2000 01 09	704	0.3+	0.8+
1998 08 27	704	0.7+	1.0+	1999 12 08	704	1.0−	0.7−	2000 01 09	704	0.8+	0.0
1998 08 27	704	0.5−	1.2+	1999 12 08	704	0.0	0.1−				

1998 QE₇₁ = 1999 XF₁₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26581844	<i>ω</i>	24.59139	−0.34666947		+0.93353331	
<i>a</i>	2.3955909	<i>Ω</i>	225.27454	−0.88045854		−0.35742628	
<i>e</i>	0.2337831	<i>i</i>	7.38319	−0.32343938		−0.02760479	
<i>P</i>	3.71	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1998 08 24	704	0.2+	0.5+	1998 09 19	704	0.2+	1.1+	2000 01 05	704	0.4−	0.3+
1998 08 24	704	0.7−	0.1−	1998 09 19	704	0.3−	0.4−	2000 01 05	704	0.4+	0.1−
1998 08 24	704	1.0+	1.4−	1998 09 19	704	0.3+	0.9−	2000 01 05	704	0.4+	0.4−
1998 08 24	704	0.0	0.0	1998 09 19	704	0.5+	1.0−	2000 01 08	704	0.3−	0.2−
1998 08 24	704	0.5+	1.1+	1998 09 23	704	0.9−	1.1+	2000 01 08	704	0.4−	0.6−
1998 08 27	704	0.2−	0.6−	1998 09 23	704	0.1−	0.2+	2000 01 08	704	0.3−	0.8−
1998 08 27	704	0.9−	0.3+	1998 09 23	704	0.4+	0.5+	2000 01 08	704	0.3−	0.3+
1998 08 27	704	0.2+	0.2+	1998 09 23	704	0.0	0.4−	2000 01 08	704	0.8−	1.1+
1998 08 27	704	0.2−	0.1+	2000 01 05	704	0.0	0.2−				
1998 09 19	704	0.2−	0.3−	2000 01 05	704	1.7+	0.5+				

1998 QU₇₁ = 2000 AK₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23397170	<i>ω</i>	145.54050	+0.48862209		−0.85664910	
<i>a</i>	2.6083177	<i>Ω</i>	274.69379	+0.75846005		+0.51082138	
<i>e</i>	0.1737217	<i>i</i>	9.56049	+0.43126188		+0.07220685	
<i>P</i>	4.21	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.2+	0.5+	1998 09 19	704	0.2+	1.1+	2000 01 05	704	0.4−	0.3+
1998 08 24	704	0.7−	0.1−	1998 09 19	704	0.3−	0.4−	2000 01 05	704	0.4+	0.1−
1998 08 24	704	1.0+	1.4−	1998 09 19	704	0.3+	0.9−	2000 01 05	704	0.4+	0.4−
1998 08 24	704	0.0	0.0	1998 09 19	704	0.5+	1.0−	2000 01 08	704	0.3−	0.2−
1998 08 24	704	0.5+	1.1+	1998 09 23	704	0.9−	1.1+	2000 01 08	704	0.4−	0.6−
1998 08 27	704	0.2−	0.6−	1998 09 23	704	0.1−	0.2+	2000 01 08	704	0.3−	0.8−
1998 08 27	704	0.9−	0.3+	1998 09 23	704	0.4+	0.5+	2000 01 08	704	0.3−	0.3+
1998 08 27	704	0.2+	0.2+	1998 09 23	704	0.0	0.4−	2000 01 08	704	0.8−	1.1+
1998 08 27	704	0.2−	0.1+	2000 01 05	704	0.0	0.2−				
1998 09 19	704	0.2−	0.3−	2000 01 05	704	1.7+	0.5+				

1998 QD₇₂ = 2000 AD₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22463892	<i>ω</i>	71.93662	+0.63013345		+0.76093681	
<i>a</i>	2.6800694	<i>Ω</i>	238.12630	−0.76334006		+0.57057192	
<i>e</i>	0.2630659	<i>i</i>	10.49052	−0.14228066		+0.30890589	
<i>P</i>	4.39	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 23	699	0.3+	0.2−	1998 08 24	704	0.4−	0.1−	1998 09 23	704	0.2+	0.5+
1998 06 23	699	0.3−	0.5+	1998 08 24	704	0.3−	0.3−	1998 11 19	699	0.4−	0.3+
1998 06 23	699	0.9−	0.3−	1998 08 24	704	0.2−	1.2−	1998 11 19	699	0.6−	0.9−
1998 07 20	566	0.0	0.5+	1998 08 27	704	0.4+	0.4−	1998 11 19	699	0.7+	0.9+
1998 07 20	566	1.2+	0.0	1998 08 27	704	0.8−	0.1−	1999 12 14	704	0.4+	0.6+
1998 07 20	566	0.4−	0.4−	1998 08 27	704	1.2+	0.0	1999 12 14	704	1.0+	0.9−
1998 08 18	566	0.3−	0.4−	1998 08 27	704	0.3+	0.2−	1999 12 14	704	0.3+	1.3−
1998 08 18	566	0.1+	0.2−	1998 08 27	704	0.3+	0.2+	2000 01 05	704	1.0+	1.0+
1998 08 18	566	0.2−	0.3−	1998 09 19	704	0.4+	0.1+	2000 01 05	704	0.0	0.3+
1998 08 19	704	0.0	0.3−	1998 09 19	704	0.0	0.7−	2000 01 05	704	0.4−	0.1+

2000 JAN. 24

1998 08 19	704	0.1−	0.4+	1998 09 19	704	0.1+	0.9−	2000 01 05	704	0.1+	0.9+
1998 08 19	704	0.3+	0.6+	1998 09 19	704	0.5−	0.0	2000 01 05	704	0.7−	0.4+
1998 08 19	704	0.8−	1.9+	1998 09 23	704	0.3−	0.2+	2000 01 07	704	0.9−	0.1−
1998 08 19	704	(2.8−	1.1−)	1998 09 23	704	0.4+	0.1+	2000 01 07	704	1.4−	0.6−
1998 08 24	704	0.1−	0.5−	1998 09 23	704	0.2−	1.1+	2000 01 07	704	0.4+	0.1−
1998 08 24	704	0.7+	0.1−	1998 09 23	704	0.1−	0.6+	2000 01 07	704	0.1+	0.6−

1998 QR₇₂ = 2000 AR₁₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	193.12536		(2000.0)		P		Q
<i>n</i>	0.27360095	ω	44.99299	+0.28363068		+0.95439166	
<i>a</i>	2.3499448	Ω	241.69321	−0.90689735		+0.23538069	
<i>e</i>	0.1140492	<i>i</i>	6.07802	−0.31159403		+0.18366408	
<i>P</i>	3.60	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.1+	0.5−	1998 08 27	704	0.3+	0.0	1999 12 14	704	0.5−	0.3−
1998 08 19	704	0.7+	0.3−	1998 09 18	699	0.7−	0.4−	1999 12 14	704	0.1+	0.2+
1998 08 19	704	0.9−	0.6+	1998 09 18	699	0.0	0.4−	1999 12 14	704	1.4−	0.3−
1998 08 19	704	0.8−	0.8−	1998 09 18	699	0.3−	0.4+	2000 01 05	704	0.2−	0.1+
1998 08 19	704	0.3+	0.1+	1998 09 19	704	0.2−	0.4−	2000 01 05	704	0.1+	0.0
1998 08 24	704	0.2+	0.6−	1998 09 19	704	0.2−	0.4−	2000 01 05	704	0.2+	0.0
1998 08 24	704	0.3+	0.5+	1998 09 19	704	0.1−	0.1+	2000 01 05	704	0.8+	0.5−
1998 08 24	704	0.0	0.3+	1998 09 19	704	0.8−	0.3−	2000 01 07	704	0.7−	0.3+
1998 08 24	704	0.5−	0.7−	1998 09 19	704	0.6+	0.1−	2000 01 07	704	0.5−	0.4−
1998 08 24	704	1.6+	0.4+	1998 09 23	704	0.3+	0.4+	2000 01 07	704	0.1−	0.0
1998 08 27	704	0.2+	0.3+	1998 09 23	704	1.0+	0.0	2000 01 09	704	0.2+	1.0+
1998 08 27	704	0.3+	0.3+	1998 09 23	704	0.6−	0.3+	2000 01 09	704	0.3+	0.7+
1998 08 27	704	0.5+	0.5+	1998 09 23	704	1.2−	1.0+	2000 01 09	704	0.1+	0.8+
1998 08 27	704	0.4−	0.1−	1999 12 14	704	0.4+	2.0−	2000 01 09	704	1.0+	0.3+

1998 QD₇₃ = 1980 RL₁ = 2000 AE₂₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	148.33760		(2000.0)		P		Q
<i>n</i>	0.21886214	ω	109.95563	+0.56042028		+0.82653377	
<i>a</i>	2.7270240	Ω	194.49408	−0.81653992		+0.54077587	
<i>e</i>	0.1284414	<i>i</i>	12.14152	−0.13853396		+0.15621585	
<i>P</i>	4.50	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 09 12	801	0.2+	1.1−	1998 08 27	704	1.1+	0.3+	1998 09 18	704	0.3−	1.6+
1998 08 19	704	0.3+	0.0	1998 08 27	704	0.1−	1.5−	2000 01 08	704	0.4−	0.5−
1998 08 19	704	0.4−	0.2+	1998 09 14	704	0.3+	0.5+	2000 01 08	704	0.2−	0.3−
1998 08 19	704	0.8+	0.9+	1998 09 14	704	0.1+	0.3+	2000 01 08	704	0.4−	0.3−
1998 08 19	704	0.1+	0.2+	1998 09 14	704	0.2+	1.2−	2000 01 08	704	0.3−	0.3−
1998 08 19	704	0.5−	0.1−	1998 09 14	704	0.2+	0.1+	2000 01 08	704	0.1+	0.1+
1998 08 24	704	0.0	0.2−	1998 09 14	704	0.5+	0.1−	2000 01 10	704	0.1−	0.5+
1998 08 24	704	0.4−	0.2−	1998 09 18	699	0.2−	0.2−	2000 01 10	704	0.1+	0.6−
1998 08 24	704	1.0−	0.6+	1998 09 18	699	0.4−	0.3−	2000 01 10	704	0.1+	1.1+
1998 08 24	704	0.8−	0.8−	1998 09 18	699	0.6−	0.2+	2000 01 11	704	0.8+	0.5−
1998 08 24	704	1.2+	0.6+	1998 09 18	704	0.4−	0.5+	2000 01 11	704	0.2+	0.5+
1998 08 27	704	0.0	0.1−	1998 09 18	704	0.8−	0.3−	2000 01 11	704	0.1+	0.4+
1998 08 27	704	0.5+	0.3+	1998 09 18	704	0.7−	1.2−				
1998 08 27	704	0.4+	0.5+	1998 09 18	704	0.5+	0.7+				

1998 QJ₇₃ = 2000 AZ₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	353.98997		(2000.0)		P		Q
<i>n</i>	0.23239883	ω	279.43079	−0.55215823		−0.82940072	
<i>a</i>	2.6200732	Ω	204.67846	+0.82228088		−0.52490228	
<i>e</i>	0.1031918	<i>i</i>	11.73877	+0.13775138		−0.19123821	
<i>P</i>	4.24	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

M.P.C. 37733

Residuals in seconds of arc

1998 08 19	704	(0.2+	3.9+)	1998 08 27	704	1.1+	0.5−	1998 10 15	327	0.6−	0.1+
1998 08 19	704	0.7+	0.7+	1998 08 27	704	0.4−	0.2+	1998 10 15	327	0.2+	0.4+
1998 08 19	704	0.7−	0.0	1998 08 27	704	(3.6−	1.4−)	2000 01 08	704	0.3+	0.2−
1998 08 19	704	0.1+	0.7+	1998 09 19	704	(3.5+	0.4−)	2000 01 08	704	0.0	0.2−
1998 08 19	704	(5.9−	1.6−)	1998 09 19	704	0.1+	0.2+	2000 01 08	704	0.0	0.4−
1998 08 24	704	1.7+	0.9−	1998 09 19	704	1.6+	0.5−	2000 01 08	704	0.2−	0.2+
1998 08 24	704	0.9−	0.5+	1998 09 19	704	0.6−	0.3−	2000 01 08	704	0.1+	0.2−
1998 08 24	704	0.8+	1.7+	1998 09 23	704	0.9+	1.3−	2000 01 11	704	0.1+	0.0
1998 08 24	704	1.0−	1.5−	1998 09 23	704	1.0+	0.7+	2000 01 11	704	0.1−	0.1+
1998 08 24	704	0.7−	0.3−	1998 09 23	704	1.0−	1.5+	2000 01 11	704	0.2−	0.1+
1998 08 27	704	0.3−	0.4+	1998 09 23	704	1.0−	0.2−	2000 01 11	704	0.1+	0.2+
1998 08 27	704	0.9−	0.7−	1998 10 15	327	0.1−	0.5−	2000 01 11	704	0.0	0.4+

1998 QF₇₄ = 2000 AC₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	176.88424		(2000.0)		P		Q
<i>n</i>	0.19063114	ω	45.75647	−0.09943027		+0.98948389	
<i>a</i>	2.9900158	Ω	218.90205	−0.95395826		−0.12481545	
<i>e</i>	0.0667595	<i>i</i>	9.62957	−0.28297925		+0.07309396	
<i>P</i>	5.17	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.6+	0.1+	1998 08 30	699	0.8+	1.0−	1999 11 04	704	1.3−	0.2+
1998 08 19	704	0.5+	0.6+	1998 08 30	699	0.2+	0.2−	1999 11 04	704	1.0−	0.8+
1998 08 19	704	0.7+	1.0+	1998 09 16	699	1.1−	0.2−	1999 12 14	704	0.9−	0.6+
1998 08 19	704	1.3−	0.7−	1998 09 16	699	0.6−	0.7−	1999 12 14	704	0.7−	1.1−
1998 08 19	704	(0.3+	2.4−)	1998 09 16	699	0.5−	0.4+	1999 12 14	704	0.1+	0.5+
1998 08 24	704	0.6−	1.2+	1998 09 19	704	0.3+	0.2−	2000 01 05	704	0.7+	0.7−
1998 08 24	704	0.2+	1.4+	1998 09 19	704	(0.0	2.4−)	2000 01 05	704	1.0+	0.9−
1998 08 24	704	1.0+	1.1+	1998 09 19	704	1.5−	1.0−	2000 01 05	704	0.1+	1.0−
1998 08 24	704	(2.5−	1.1+)	1998 09 19	704	0.1−	1.3−	2000 01 05	704	0.4+	1.1−
1998 08 27	704	0.7+	0.4−	1998 09 23	704	0.5+	0.9+	2000 01 07	704	0.2−	1.8+
1998 08 27	704	0.7−	0.1−	1998 09 23	704	1.8−	0.4+	2000 01 07	704	0.8+	0.1+
1998 08 27	704	0.3+	1.5−	1998 09 23	704	1.2+	0.1+	2000 01 07	704	0.0	0.5+
1998 08 27	704	1.2+	0.7−	1998 09 23	704	0.9+	0.3−	2000 01 07	704	0.3−	0.1+
1998 08 27	704	0.8−	0.0	1998 09 23	704	1.1+	0.2−				
1998 08 30	699	0.9−	1.2+	1999 11 04	704	1.4+	0.2+				

1998 QS₇₄ = 1999 XY₁₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	130.28380		(2000.0)		P		Q
<i>n</i>	0.20293837	ω	21.00068	+0.79665038		+0.55689925	
<i>a</i>	2.8678731	Ω	302.96679	−0.58678876		+0.61929603	
<i>e</i>	0.0881190	<i>i</i>	16.26411	−0.14500729		+0.55347598	
<i>P</i>	4.86	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.2−	1.1−	1998 08 27	704	0.1+	1.0+	1998 09 23	704	0.5+	0.2+
1998 08 19	704	0.4−	0.2+	1998 08 27	704	0.3−	1.6+	1999 12 12	704	0.2−	0.2+
1998 08 19	704	0.3−	0.2+	1998 09 19	704	0.4+	0.1−	1999 12 12	704	1.9+	0.9−
1998 08 19	704	0.1−	0.3−	1998 09 19	704	0.2+	0.3−	1999 12 12	704	0.3−	0.3−
1998 08 19	704	(5.0−	0.1+)	1998 09 19	704	1.3−	1.2−	1999 12 15	704	0.1+	0.1−
1998 08 24	704	0.2−	0.8−	1998 09 19	704	0.1+	0.5−	1999 12 15	704	0.1−	0.1−
1998 08 24	704	0.5−	0.1+	1998 09 19	704	1.2+	0.3+	1999 12 15	704	0.4−	0.1+
1998 08 24	704	(0.3+	2.3+)	1998 09 19	699	0.1−	0.0	1999 12 15	704	0.5+	0.4+
1998 08 24	704	0.2−	0.0	1998 09 19	699	0.5−	1.0+	2000 01 02	704	1.0−	0.3+
1998 08 24	704	1.2+	1.7−	1998 09 19	699	0.3−	0.2−	2000 01 02	704	0.4−	0.5+
1998 08 27	704	0.0	0.6−	1998 09 23	704	0.1−	0.2+	2000 01 02	704	0.5+	0.3+
1998 08 27	704	0.6−	1.7+	1998 09 23	704	0.3+	0.5−	2000 01 02	704	0.6−	0.4−
1998 08 27	704	0.6+	0.3+	1998 09 23	704	0.3+	0.4+				

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24265755	ω	103.64744	+0.76318652	−0.61988733		
<i>a</i>	2.5456978	Ω	294.98077	+0.48724399	+0.73751048		
<i>e</i>	0.1785049	<i>i</i>	11.61146	+0.42442859	+0.26798879		
<i>P</i>	4.06	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1986 09 07	675	0.2+	1.8+	1998 09 19	704	0.4+	0.1+
1986 09 07	675	0.7−	0.3−	1998 09 19	704	0.8+	0.6−
1998 08 24	704	0.1−	0.3−	1998 09 19	704	1.2+	0.3−
1998 08 24	704	0.2+	0.0	1998 09 19	699	0.1+	0.1+
1998 08 24	704	0.1+	0.6−	1998 09 19	699	0.0	0.0
1998 08 24	704	(1.6+	2.7−)	1998 09 19	699	0.1−	0.1−
1998 08 24	704	0.3−	0.7−	1998 09 21	699	0.1−	0.1+
1998 08 27	704	0.6−	0.3+	1998 09 21	699	0.0	0.3+
1998 08 27	704	0.4−	0.5+	1998 09 21	699	0.1−	0.2+
1998 08 27	704	1.0−	0.4+	1998 09 23	704	0.8−	0.2+
1998 08 27	704	0.3−	0.6−	1998 09 23	704	0.4−	0.5+
1998 08 27	704	1.1−	0.2+	1998 09 23	704	0.3+	0.0
1998 09 19	704	0.5+	0.4−	1998 09 23	704	0.2+	0.8−
1998 09 19	704	1.1+	1.3−	1998 09 23	704	0.5+	0.2+

1998 QK₇₆ = 2000 AO₁₇₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22303296	ω	74.14472	+0.44003967	+0.88447007		
<i>a</i>	2.6929194	Ω	223.06348	−0.88604955	+0.39959047		
<i>e</i>	0.1969634	<i>i</i>	13.13539	−0.14588105	+0.24091521		
<i>P</i>	4.42	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 08 19	704	(2.4+	0.1+)	1998 08 27	704	0.4+	0.3+
1998 08 19	704	0.9−	0.7+	1998 08 27	704	0.4−	0.3+
1998 08 19	704	1.0−	1.2+	1998 08 27	704	0.5−	0.2−
1998 08 19	704	0.9−	0.1+	1998 09 19	704	0.3+	0.3−
1998 08 19	704	1.0−	1.1−	1998 09 19	704	0.3−	0.9+
1998 08 24	704	0.2+	0.6+	1998 09 19	704	0.8+	0.1+
1998 08 24	704	0.5+	0.3+	1998 09 23	704	0.8+	0.6−
1998 08 24	704	0.1+	0.3−	1998 09 23	704	0.4+	0.8−
1998 08 24	704	0.6+	0.2+	1998 09 23	704	0.6−	0.8−
1998 08 24	704	0.5+	0.0	1998 11 14	699	0.4−	0.4+
1998 08 27	704	0.5+	0.4−	1998 11 14	699	0.3+	1.0+
1998 08 27	704	0.5+	0.8−	1998 11 14	699	0.1+	0.9−

1998 QB₇₇ = 1999 XW₂₀₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22981283	ω	279.61309	−0.57834819	+0.80050374		
<i>a</i>	2.6396917	Ω	313.84281	−0.63656962	−0.56333444		
<i>e</i>	0.1352235	<i>i</i>	12.58786	−0.51018868	−0.20456802		
<i>P</i>	4.29	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 08 19	704	1.5+	0.8−	1998 08 27	704	0.4−	1.2−
1998 08 19	704	0.4−	1.8+	1998 08 27	704	0.5+	0.8−
1998 08 19	704	0.4+	1.0+	1998 08 27	704	0.2+	0.1+
1998 08 19	704	0.5−	0.3−	1998 08 27	704	1.3−	0.8−
1998 08 19	704	(2.8−	1.5−)	1998 10 15	327	0.1−	0.3−
1998 08 24	704	0.6−	0.1+	1998 10 15	327	0.1−	0.0
1998 08 24	704	0.9+	0.6+	1998 10 15	327	0.1−	0.0
1998 08 24	704	0.3−	0.1+	1998 10 17	327	0.2+	0.1+
1998 08 24	704	0.9+	0.7−	1998 10 17	327	0.1−	0.5+
1998 08 24	704	1.0−	0.7+	1998 10 17	327	0.2+	0.1−

1998 QD₇₉ = 1998 RW₂₀Id. A. Doppler (d, *MPC* 33785), E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18710903	ω	188.20621	+0.99612219	−0.08724048		
<i>a</i>	3.0274214	Ω	176.73324	+0.08770673	+0.97446431		
<i>e</i>	0.1502781	<i>i</i>	11.52743	+0.00693612	+0.20690193		
<i>P</i>	5.27	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 08 24	704	0.0	0.5−	1999 10 10	704	0.4+	0.8−
1998 08 24	704	0.1−	0.2−	1999 10 10	704	0.6+	0.4−
1998 08 24	704	0.0	0.5−	1999 10 31	703	1.4+	0.4+
1998 08 24	704	1.2+	0.4+	1999 10 31	703	0.6−	0.6+
1998 08 27	704	0.3+	0.6−	1999 10 31	703	0.6−	0.6+
1998 08 27	704	0.8−	0.1−	1999 10 31	703	0.4+	0.8−
1998 08 27	704	0.7+	0.6+	1999 11 05	704	0.5+	0.0
1998 09 15	699	0.4−	0.1+	1999 11 05	704	0.6+	0.5−
1998 09 15	699	0.1−	0.0	1999 11 05	704	0.5−	0.3−
1998 09 15	699	0.7+	0.2+	1999 11 05	704	0.7+	0.8−
1998 09 22	699	0.0	0.2+	1999 11 17	699	0.2+	1.3+
1998 09 22	699	0.5−	0.0	1999 11 17	699	0.1−	1.2+
1998 09 22	699	0.8−	0.4−	1999 11 17	699	0.2−	0.8+
1998 10 14	699	0.5+	1.2−	1999 12 05	704	0.9−	0.8−
1998 10 14	699	0.5+	0.7+	1999 12 05	704	0.3−	0.4−
1998 10 14	699	1.2−	1.8+	1999 12 05	704	1.1−	0.5−
1999 10 10	704	0.1+	0.2−	1999 12 05	704	0.8−	0.4−
1999 10 10	704	0.1+	0.3−	1999 12 05	704	0.1+	0.1+

1998 QF₈₀ = 1955 QW = 1955 SD = 2000 AT₁₂₅Id. G. V. Williams, S. Kanda (d, *MPC* 1453)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27463925	ω	41.19053	+0.89431098	+0.40724245		
<i>a</i>	2.3440182	Ω	293.87826	−0.44492936	+0.76550167		
<i>e</i>	0.2654798	<i>i</i>	11.69604	−0.04738909	+0.49815738		
<i>P</i>	3.59	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1955 08 24	760	1.9+	0.8+	1998 10 26	327	0.2−	0.6−
1955 09 16	760	(2.2−	2.6+)	1998 10 26	327	0.2−	0.6−
1955 09 16	760	2.3−	0.3+	1998 10 26	327	0.2−	0.5−
1998 06 29	704	1.1−	1.3+	1998 11 02	327	0.4−	0.0
1998 06 29	704	0.6−	0.7+	1998 11 02	327	0.3−	0.1−
1998 06 29	704	1.1−	1.7+	1998 11 02	327	0.3−	0.2−
1998 06 29	704	0.5−	1.2+	1998 11 03	327	0.3−	0.2+
1998 06 29	704	(1.6−	2.4+)	1998 11 03	327	0.4−	0.3+
1998 08 24	704	0.7−	0.2+	1998 11 03	327	0.2−	0.2+
1998 08 24	704	0.6−	0.1−	1998 11 21	704	0.2+	0.6+
1998 08 24	704	0.6−	1.6−	1998 11 21	704	1.4+	0.7−
1998 08 24	704	(2.4−	1.2−)	1998 11 21	704	0.4+	0.2+
1998 08 24	704	0.4+	0.7−	1998 11 21	704	0.8+	0.7−
1998 08 27	704	0.9+	0.2−	1998 11 21	704	0.6+	0.6+
1998 08 27	704	1.3+	0.1−	1998 12 09	704	0.0	0.1−
1998 08 27	704	0.2+	0.2+	1998 12 09	704	0.2−	0.4+
1998 08 27	704	0.4+	0.2+	1998 12 09	704	0.0	0.2+
1998 08 27	704	0.0	0.4+	1998 12 09	704	0.2+	1.3+
1998 10 16	699	(3.4+	0.3−)	1998 12 09	704	0.3−	0.3+
1998 10 16	699	0.1+	0.1−	1999 11 05	703	0.7+	0.1+
1998 10 16	699	0.4−	0.1+	1999 11 05	703	0.3−	0.0

2000 JAN. 24

M.P.C. 37735

1998 QC₈₄ = 2000 AZ₁₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	97.52658		(2000.0)	P	Q
<i>n</i>	0.18487137	ω	64.12693	+0.95295682	+0.21523770
<i>a</i>	3.0518014	Ω	282.83754	-0.28973133	+0.85368707
<i>e</i>	0.2866679	<i>i</i>	12.64364	+0.08904526	+0.47422686
<i>P</i>	5.33	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 23	699	0.4-	0.2-	1998 09 19	704	0.1+	0.3+	1998 12 09	704	0.6-	0.4-
1998 06 23	699	0.2-	0.2+	1998 09 19	704	0.2-	0.5+	1998 12 08	704	0.8-	0.1+
1998 06 23	699	1.4-	0.4+	1998 09 19	704	0.3+	1.3+	1998 12 08	704	0.1+	0.9-
1998 08 19	704	0.5+	0.2+	1998 09 19	704	0.1-	0.8+	1998 12 08	704	0.2-	0.2+
1998 08 19	704	0.1+	0.2-	1998 09 19	704	(0.5-	2.6+)	1998 12 08	704	0.2-	0.4-
1998 08 19	704	0.1-	2.0+	1998 09 23	704	0.4-	0.6-	1998 12 08	704	0.1+	0.6+
1998 08 19	704	0.2-	0.3+	1998 09 23	704	0.5+	0.2-	2000 01 05	704	0.1-	0.5-
1998 08 19	704	0.8-	0.4-	1998 09 23	704	0.2-	0.5+	2000 01 05	704	0.1+	0.4+
1998 08 24	704	0.9+	0.8-	1998 09 23	704	0.4+	0.7-	2000 01 05	704	0.4-	0.3+
1998 08 24	704	0.9+	0.0	1998 10 16	699	0.6-	0.2-	2000 01 05	704	0.2+	0.1+
1998 08 24	704	0.4-	1.2-	1998 10 16	699	0.6-	0.1+	2000 01 05	704	0.1+	0.2+
1998 08 24	704	0.1-	0.6+	1998 10 16	699	0.3-	0.1-	2000 01 07	704	0.2+	1.0+
1998 08 24	704	0.9-	0.6+	1998 10 18	699	0.4-	0.3-	2000 01 07	704	0.1-	0.4-
1998 08 27	704	0.3+	0.4-	1998 10 18	699	0.0	0.4-	2000 01 07	704	0.4-	0.2+
1998 08 27	704	0.9+	0.3+	1998 10 18	699	0.5+	0.4-	2000 01 07	704	0.2+	0.4+
1998 08 27	704	0.1-	0.1-	1998 12 09	704	0.1+	0.5-	2000 01 07	704	1.5+	0.0
1998 08 27	704	0.5+	0.2-	1998 12 09	704	0.6-	0.3+				
1998 08 27	704	0.3+	0.7-	1998 12 09	704	1.1+	0.5-				

1998 QE₈₄ = 1999 XE₁₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	32.28028		(2000.0)	P	Q
<i>n</i>	0.17459768	ω	116.06167	+0.63660407	-0.73529426
<i>a</i>	3.1703733	Ω	292.38611	+0.58664110	+0.65745405
<i>e</i>	0.0305750	<i>i</i>	14.56625	+0.50058713	+0.16461022
<i>P</i>	5.65	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 19	704	0.2-	0.0	1998 09 18	699	0.8+	0.6-	1999 11 01	704	0.5+	0.6+
1998 08 19	704	0.6-	0.0	1998 09 18	699	0.3-	0.3-	1999 11 01	704	0.5-	1.0-
1998 08 19	704	1.2-	0.1-	1998 09 19	704	1.1+	0.6-	1999 12 12	704	0.3-	0.3+
1998 08 19	704	0.1-	0.2-	1998 09 19	704	0.4+	1.4+	1999 12 12	704	0.3-	0.2-
1998 08 19	704	(2.2+	0.2-)	1998 09 19	704	0.0	0.5+	1999 12 12	704	0.1-	0.0
1998 08 24	704	0.6-	0.1-	1998 09 19	704	0.5-	0.0	1999 12 12	704	1.1-	0.1+
1998 08 24	704	(2.2+	3.1-)	1998 09 19	704	1.8-	1.3-	1999 12 12	704	1.1-	0.5+
1998 08 24	704	0.2+	0.3+	1998 09 23	704	1.1+	0.8+	1999 12 15	704	0.2+	0.1+
1998 08 24	704	0.5+	0.2-	1998 09 23	704	0.7+	1.8+	1999 12 15	704	0.2-	0.4+
1998 08 27	704	0.3-	0.7-	1998 09 23	704	0.9+	1.6-	1999 12 15	704	0.1+	0.3-
1998 08 27	704	0.0	0.5+	1998 09 23	704	0.7+	0.7-	1999 12 15	704	0.2+	0.1-
1998 08 27	704	1.1-	1.1+	1999 11 01	704	0.8+	0.1+	1999 12 15	704	0.2+	0.1+
1998 08 27	704	0.2+	0.2-	1999 11 01	704	1.2+	0.3+				
1998 09 18	699	0.2+	0.3+	1999 11 01	704	0.5+	1.0-				

1998 QL₈₄ = 2000 AC₁₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	77.54528		(2000.0)	P	Q
<i>n</i>	0.22579348	ω	108.99330	+0.69757462	-0.69169178
<i>a</i>	2.6709255	Ω	295.27750	+0.55468144	+0.68648256
<i>e</i>	0.1763902	<i>i</i>	11.93204	+0.45356162	+0.22428593
<i>P</i>	4.37	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1996 04 20	566	0.0	0.4+	1998 09 19	704	0.4-	0.2-	1999 11 05	703	1.0-	0.4-
1996 04 20	566	0.6+	0.2+	1998 09 19	704	0.1+	0.2-	1999 11 05	703	0.4-	0.4+
1996 04 20	566	0.1-	0.1+	1998 09 21	699	0.2-	0.5+	1999 11 05	703	0.5-	0.4+
1998 08 19	704	0.3-	0.2-	1998 09 21	699	0.5+	0.8+	1999 11 05	703	0.5-	1.0-

1998 08 19	704	0.9+	0.1-	1998 09 21	699	0.2+	0.9+	1999 12 07	704	1.0-	0.8+
1998 08 19	704	0.6+	0.3+	1998 09 23	704	0.9-	0.2+	1999 12 07	704	0.1+	0.3+
1998 08 19	704	0.0	0.3-	1998 09 23	704	0.3+	1.5-	1999 12 07	704	0.1-	0.3-
1998 08 19	704	0.3-	0.6+	1998 09 23	704	0.5-	0.3+	1999 12 07	704	0.4+	0.4-
1998 08 24	704	0.2-	0.1-	1998 09 23	704	0.1-	0.1+	1999 12 07	704	0.1+	0.8-
1998 08 24	704	0.3+	0.1+	1998 10 16	699	0.0	0.4+	1999 12 09	699	0.8-	0.7+
1998 08 24	704	0.4+	0.1+	1998 10 16	699	0.2-	0.3-	1999 12 09	699	1.0+	0.4+
1998 08 24	704	0.3-	0.4+	1998 10 16	699	0.1-	0.2+	1999 12 09	699	0.0	0.2+
1998 08 24	704	1.1-	0.6+	1998 10 18	699	0.1+	0.2+	2000 01 05	704	0.3+	0.5+
1998 08 27	704	0.2+	0.0	1998 10 18	699	0.4+	0.1+	2000 01 05	704	0.4-	0.3-
1998 08 27	704	0.3+	1.0-	1998 10 18	699	0.0	0.0	2000 01 05	704	0.0	0.3+
1998 08 27	704	0.1+	0.4-	1998 11 19	699	0.9-	0.5-	2000 01 05	704	0.4+	0.3-
1998 08 27	704	0.2+	0.7+	1998 11 19	699	0.3-	0.2-	2000 01 05	704	0.4+	0.3-
1998 09 18	699	0.8-	0.4+	1998 11 19	699	0.1-	0.7-	2000 01 07	704	0.5+	0.6+
1998 09 18	699	0.2+	0.1+	1998 12 09	704	0.1+	0.0	2000 01 07	704	0.3+	0.2+
1998 09 18	699	0.1-	0.2+	1998 12 09	704	0.2+	1.1-	2000 01 07	704	0.4+	0.3+
1998 09 19	704	0.4+	0.5+	1998 12 09	704	0.6+	0.5+	2000 01 07	704	0.3+	0.4+
1998 09 19	704	0.6-	0.5-	1998 12 09	704	0.1+	0.0	2000 01 07	704	0.2+	0.1-
1998 09 19	704	0.5-	0.4+	1998 12 09	704	1.0+	0.3-				

1998 QT₈₄ = 2000 AE₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	66.44394		(2000.0)	P	Q
<i>n</i>	0.18488522	ω	139.82636	+0.81350394	-0.53535340
<i>a</i>	3.0516490	Ω	253.96450	+0.45424784	+0.82884952
<i>e</i>	0.2067416	<i>i</i>	13.67246	+0.36313941	+0.16249680
<i>P</i>	5.33	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 19	704	(2.3+	1.3-)	1998 08 27	704	0.6-	0.4-	1999 12 14	704	0.0	0.5+
1998 08 19	704	1.1+	0.2+	1998 09 19	704	0.1+	0.2+	1999 12 14	704	0.1-	0.2-
1998 08 19	704	0.2-	0.3+	1998 09 19	704	0.7-	0.4+	1999 12 14	704	0.3-	0.1+
1998 08 19	704	1.3-	0.3+	1998 09 19	704	0.1-	0.6+	1999 12 14	704	0.2+	0.4+
1998 08 19	704	1.9+	0.6-	1998 09 19	704	0.5-	0.9+	2000 01 07	704	0.4-	0.0
1998 08 24	704	1.3-	1.1-	1998 09 23	704	0.5+	0.7-	2000 01 07	704	0.5-	0.6+
1998 08 24	704	0.0	0.0	1998 09 23	704	0.3-	0.3+	2000 01 07	704	0.8-	0.0
1998 08 24	704	1.5+	0.7+	1998 09 23	704	1.4-	0.2-	2000 01 11	704	0.1+	1.0-
1998 08 24	704	0.0	0.4+	1998 09 23	704	0.8-	0.2-	2000 01 11	704	0.3-	0.6-
1998 08 24	704	0.2-	0.7-	1998 09 23	704	0.7+	0.8-	2000 01 11	704	1.1+	0.5+
1998 08 27	704	0.1+	0.3-	1998 10 18	699	1.0+	0.2+	2000 01 11	704	0.5+	0.4-
1998 08 27	704	0.4-	0.5+	1998 10 18	699	0.3+	0.5+	2000 01 11	704	0.1-	0.3-
1998 08 27	704	0.5+	0.3+	1998 10 18	699	0.8+	0.0				
1998 08 27	704	0.4-	1.2-	1999 12 14	704	0.4+	0.3+				

1998 QJ₈₅ = 2000 AX₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	21.83903		(2000.0)	P	Q
<i>n</i>	0.19724182	ω	153.73672	+0.21788999	-0.94068083
<i>a</i>	2.9228288	Ω	282.75901	+0.84193154	+0.31595299
<i>e</i>	0.0359821	<i>i</i>	15.46611	+0.49363472	-0.12366605
<i>P</i>	5.00	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 19	704	0.5+	0.8-	1998 08 27	704	1.3+	0.3-	1999 12 12	704	1.5-	0.4-
1998 08 19	704	(0.7-	2.1+)	1998 09 19	704	0.3-	0.2+	1999 12 12	704	0.1-	0.2-
1998 08 19	704	1.0-	1.7+	1998 09 19	704	0.6-	0.4-	1999 12 15	704	(0.7-	2.6-)
1998 08 19	704	(0.5-	2.3-)	1998 09 19	704	1.1-	0.8+	1999 12 15	704	0.4-	0.1+
1998 08 19	704	0.8+	0.3-	1998 09 19	704	0.5-	0.2-	1999 12 15	704	0.1-	1.1+
1998 08 24	704	0.8+	1.7+	1998 09 19	704	0.3+	1.0+	1999 12 15	704	0.9-	0.3+
1998 08 24	704	1.2-	0.5+	1998 09 23	704	0.8+	1.0-	2000 01 03	704	0.3+	0.0
1998 08 24	704	0.9-	2.0-	1998 09 23	704	0.4+	0.4-	2000 01 03	704	0.3+	0.1+
1998 08 24	704	0.3+	0.2-	1998 09 23	704	0.7-	0.5-	2000 01 03	704	0.4+	0.7-
1998 08 27	704	0.2+	0.3-	1998 09 23	704	(0.9-	2.2-)	2000 01 04	704	0.6+	0.2-
1998 08 27	704	0.0	0.1+	1999 12 12	704	1.1+	0.2+	2000 01 04	704	0.4-	0.4+
1998 08 27	704	1.0+	0.5+	1999 12 12	704	0.1-	0.4-	2000 01 04	704	0.8+	0.0
1998 08 27	704	(3.3+	0.8+)	1999 12 12	704	0.1-	0.2-				

1998 QL₈₅ = 2000 AO₁₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17995984	ω	123.06913	+0.91777004	-0.29647695		
<i>a</i>	3.1070792	Ω	255.38455	+0.20677635	+0.92476605		
<i>e</i>	0.2377013	<i>i</i>	15.84471	+0.33903053	+0.23855644		
<i>P</i>	5.48	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.7-	0.2+	1998 09 19	704	0.4-	1.4+	1999 12 14	704	0.1+	0.7-
1998 08 19	704	0.5-	0.6+	1998 09 19	704	0.5-	0.6+	1999 12 14	704	0.6+	0.8-
1998 08 19	704	0.3+	0.7+	1998 09 19	704	0.5-	0.3+	2000 01 08	704	0.4-	0.6+
1998 08 19	704	1.2-	1.3-	1998 09 19	704	0.7-	0.4+	2000 01 08	704	0.3-	0.4+
1998 08 24	704	0.4-	0.0	1998 09 19	704	(1.5+	2.3+)	2000 01 08	704	0.3-	0.1+
1998 08 24	704	0.6+	0.1-	1998 09 23	704	0.4-	0.9+	2000 01 08	704	0.1+	0.3+
1998 08 24	704	1.5+	0.2-	1998 09 23	704	0.1+	0.6+	2000 01 08	704	0.0	0.7+
1998 08 24	704	0.7-	1.5-	1998 09 23	704	0.6-	0.4+	2000 01 10	704	1.3-	0.8-
1998 08 24	704	0.2+	1.0+	1998 09 23	704	(1.3+	3.1-)	2000 01 10	704	0.0	0.1-
1998 08 27	704	0.8+	0.7-	1998 09 23	704	0.3-	0.5-	2000 01 10	704	0.1-	0.7+
1998 08 27	704	1.0+	0.8-	1999 12 14	704	0.5+	0.6-	2000 01 10	704	0.4-	0.2+
1998 08 27	704	0.7+	0.9-	1999 12 14	704	0.9+	0.3-				
1998 08 27	704	1.7+	1.5-	1999 12 14	704	0.4+	0.7-				

1998 QN₈₅ = 1999 XA₉₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22310317	ω	232.43568	-0.75649100	-0.62207405		
<i>a</i>	2.6923544	Ω	268.17178	+0.64546181	-0.66043692		
<i>e</i>	0.1134221	<i>i</i>	11.65144	+0.10535854	-0.42053175		
<i>P</i>	4.42	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 19	704	0.3+	1.0+	1998 09 19	704	1.0+	1.1-	1999 12 07	704	0.1+	0.6+
1998 08 19	704	0.7+	1.4+	1998 09 19	704	0.4-	0.5-	1999 12 10	704	0.5-	0.6+
1998 08 19	704	0.5+	0.4+	1998 09 23	704	0.2-	0.3+	1999 12 10	704	0.2+	1.0+
1998 08 19	704	1.5-	0.0	1998 09 23	704	0.8+	0.3-	1999 12 10	704	0.0	0.6+
1998 08 19	704	0.2+	0.0	1998 09 23	704	0.8-	0.5-	2000 01 03	704	0.0	0.4-
1998 08 20	327	(2.1-	0.7+)	1998 09 23	704	0.8-	0.5+	2000 01 03	704	0.6-	0.6-
1998 08 20	327	0.2+	0.1+	1999 11 03	704	0.0	0.3+	2000 01 03	704	1.0-	0.0
1998 08 20	327	0.5-	0.2+	1999 11 03	704	0.4+	1.5-	2000 01 03	704	0.5-	1.1+
1998 08 24	704	0.7+	0.1+	1999 11 03	704	0.1+	1.3-	2000 01 03	704	1.6-	0.2-
1998 08 24	704	0.4+	0.9+	1999 11 03	704	0.3-	1.6-	2000 01 05	704	0.5+	0.2-
1998 08 24	704	(0.1-	2.3+)	1999 11 14	704	0.3-	0.0	2000 01 05	704	0.1+	0.4-
1998 08 24	704	0.2-	0.2+	1999 11 14	704	0.3-	0.1+	2000 01 05	704	0.3+	0.5-
1998 08 24	704	0.1-	1.8+	1999 11 14	704	0.3-	0.2+	2000 01 05	704	0.2-	0.6-
1998 08 27	704	0.4-	0.4-	1999 11 14	704	0.7-	0.2+	2000 01 05	704	0.0	0.7-
1998 08 27	704	0.1+	0.6+	1999 11 16	704	0.2-	0.8-	2000 01 06	704	0.7+	0.1-
1998 08 27	704	0.2+	0.4-	1999 11 16	704	0.1-	0.3+	2000 01 06	704	1.0+	0.2+
1998 08 27	704	0.2+	0.4-	1999 11 16	704	0.3-	0.2+	2000 01 06	704	0.8+	0.1+
1998 08 27	704	0.2-	0.9-	1999 11 16	704	0.3+	1.6+	2000 01 06	704	0.9+	0.4+
1998 09 19	704	0.2-	0.4-	1999 12 07	704	0.0	0.1+	2000 01 06	704	0.9+	0.2+
1998 09 19	704	0.2+	0.8-	1999 12 07	704	0.1+	0.4+				
1998 09 19	704	0.1+	1.4-	1999 12 07	704	0.2+	0.9+				

1998 QO₈₅ = 1999 XB₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22318792	ω	330.71658	+0.07240424	+0.98056540		
<i>a</i>	2.6916727	Ω	302.87280	-0.86763094	-0.02824513		
<i>e</i>	0.1539938	<i>i</i>	12.53918	-0.49190870	+0.19414870		
<i>P</i>	4.42	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	1.0+	0.7-	1998 08 27	704	1.5-	0.5+	1998 10 18	699	0.5-	0.0
1998 08 19	704	(0.8+	2.3-)	1998 08 27	704	0.9-	0.4-	1998 10 18	699	0.0	0.6+
1998 08 19	704	1.1+	0.7+	1998 08 27	704	0.3-	0.8-	1999 12 12	704	0.1-	0.7+
1998 08 19	704	(1.9-	4.0-)	1998 08 27	704	1.6-	1.2-	1999 12 12	704	0.1+	0.4+
1998 08 19	704	0.5+	1.2+	1998 09 19	704	0.2-	0.6+	1999 12 12	704	0.3+	1.0+
1998 08 19	704	(1.5-	4.8-)	1998 09 19	704	0.5+	0.5+	1999 12 12	704	0.5+	1.2+
1998 08 19	704	0.3-	0.3+	1998 09 19	704	0.2-	0.4-	1999 12 15	704	0.3-	0.6+
1998 08 19	704	(0.8-	6.1-)	1998 09 19	704	0.1-	0.3-	1999 12 15	704	0.4-	0.3-
1998 08 19	704	1.0+	0.9-	1998 09 19	704	0.3-	0.0	1999 12 15	704	0.6-	0.0
1998 08 24	704	0.0	0.4-	1998 09 23	704	0.3+	0.2-	1999 12 15	704	0.2-	0.5-
1998 08 24	704	0.3+	0.0	1998 09 23	704	0.3+	0.1+	1999 12 15	704	0.1+	0.8-
1998 08 24	704	0.9+	0.2+	1998 09 23	704	0.0	0.0	2000 01 02	704	0.2-	1.0-
1998 08 24	704	0.4+	0.3-	1998 09 23	704	0.6+	0.3+	2000 01 02	704	0.8+	0.2-
1998 08 24	704	1.4-	0.0	1998 09 23	704	0.2-	0.3+	2000 01 02	704	0.1+	1.4-
1998 08 27	704	0.5+	0.4+	1998 10 18	699	0.4+	0.0	2000 01 02	704	(2.2+	0.9-)

1998 QS₈₅ = 2000 AX₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27539550	ω	13.62497	+0.76836320	+0.62351434		
<i>a</i>	2.3397250	Ω	306.85999	-0.60281440	+0.62925363		
<i>e</i>	0.0667714	<i>i</i>	10.39664	-0.21501811	+0.46397170		
<i>P</i>	3.58	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.7-	1.0+	1998 09 04	402	0.1+	0.3-	1998 09 21	699	1.6+	0.3-
1998 08 19	704	0.1-	1.4+	1998 09 04	402	0.7-	0.1+	1998 09 21	699	1.3+	0.8+
1998 08 19	704	0.7+	0.3-	1998 09 08	402	0.1-	0.1+	1998 09 21	699	0.3+	0.4+
1998 08 19	704	0.2+	0.6-	1998 09 08	402	0.2+	0.1+	1998 09 23	704	0.1-	0.3+
1998 08 19	704	1.4+	1.6-	1998 09 08	402	1.1-	0.3-	1998 09 23	704	0.0	0.7-
1998 08 24	704	0.3-	0.7+	1998 09 08	402	0.4-	0.2-	1998 09 23	704	0.9-	0.9+
1998 08 24	704	0.9-	0.4-	1998 09 09	402	0.1-	0.0	1998 09 23	704	1.3-	0.8-
1998 08 24	704	(0.4-	2.6+)	1998 09 09	402	0.3-	0.3+	2000 01 04	704	0.5+	0.5-
1998 08 24	704	0.2+	0.2+	1998 09 09	402	0.3-	0.1+	2000 01 04	704	1.0-	0.8-
1998 08 24	704	0.6+	0.1+	1998 09 09	402	0.4-	0.1+	2000 01 04	704	0.4+	0.4-
1998 08 27	704	1.1-	0.3+	1998 09 16	699	1.3+	0.4+	2000 01 04	704	0.6-	1.0+
1998 08 27	704	0.4+	0.3-	1998 09 16	699	0.6+	0.5+	2000 01 04	704	0.3+	0.4+
1998 08 27	704	0.3+	0.7-	1998 09 16	699	1.2-	1.5+	2000 01 06	704	1.1+	0.6-
1998 08 27	704	1.1+	0.2-	1998 09 19	704	0.1-	1.8-	2000 01 06	704	0.5-	0.8+
1998 08 27	704	(0.4-	2.0-)	1998 09 19	704	0.4+	1.0-	2000 01 06	704	0.2-	0.1+
1998 09 04	402	0.5-	0.1-	1998 09 19	704	(0.7+	3.2-)				
1998 09 04	402	1.6-	0.2+	1998 09 19	704	1.6+	0.1-				

1998 QB₈₆ = 2000 AT₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18491298	ω	72.99366	+0.96607476	+0.02785970		
<i>a</i>	3.0513436	Ω	284.82774	-0.14397202	+0.88345224		
<i>e</i>	0.1957596	<i>i</i>	15.40261	+0.21440992	+0.46769219		
<i>P</i>	5.33	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	1.5+	0.4+	1998 08 27	704	0.1-	0.6-	1999 12 07	704	0.5-	0.6-
1998 08 19	704	0.2+	1.3+	1998 09 19	704	0.4+	1.5-	1999 12 07	704	0.2-	0.1-
1998 08 19	704	(1.1-	2.2+)	1998 09 19	704	0.1+	1.6-	1999 12 07	704	0.4+	0.6-
1998 08 19	704	0.3-	1.4-	1998 09 19	704	(1.4+	3.6-)	2000 01 03	704	0.1-	0.2-
1998 08 19	704	0.4-	0.1+	1998 09 19	704	0.3-	0.2-	2000 01 03	704	0.1+	1.0+
1998 08 24	704	0.8-	0.0	1998 09 20	699	0.3+	0.4+	2000 01 03	704	0.8+	0.3-
1998 08 24	704	1.6-	1.0+	1998 09 20	699	0.2-	0.2+	2000 01 04	704	0.5-	0.3+
1998 08 24	704	0.5+	1.3+	1998 09 20	699	0.1-	0.5-	2000 01 04	704	0.3+	0.7+
1998 08 24	704	0.1-	0.2-	1998 09 23	704	0.3+	0.8+	2000 01 04	704	0.1+	0.1-
1998 08 27	704	0.5-	0.7-	1998 09 23	704	0.9+	0.8+	2000 01 04	704	0.2+	0.1-
1998 08 27	704	0.4+	0.2+	1998 09 23	704	0.9-	1.0+	2000 01 04	704	0.3-	0.0
1998 08 27	704	0.6+	0.2+	1998 09 23	704	0.4-	0.9-				
1998 08 27	704	0.4+	0.3+	1999 12 07	704	0.1-	0.1+				

2000 JAN. 24

M.P.C. 37737

1998 QR₈₆ = 2000 AR₁₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.16883		(2000.0)	P		Q					
<i>n</i>	0.22001191	ω	61.21169	+0.99268458		-0.02256292					
<i>a</i>	2.7175148	Ω	299.85629	-0.03433730		+0.88905812					
<i>e</i>	0.2663896	<i>i</i>	7.86046	+0.11575093		+0.45723799					
<i>P</i>	4.48	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1998 06 29	704	0.0	0.6+	1998 08 27	704	0.3+	0.2+	1998 11 14	699	1.1-	1.2-
1998 06 29	704	0.5+	1.3+	1998 08 27	704	0.9-	1.0-	1998 11 14	699	0.2+	0.4-
1998 06 29	704	0.4-	0.5-	1998 08 27	704	(1.4+	2.0-)	1998 11 14	699	0.3+	0.4-
1998 06 29	704	0.2-	0.7-	1998 08 30	699	0.3+	0.3+	1998 12 09	704	0.9+	1.6+
1998 06 29	704	1.1+	0.1+	1998 08 30	699	0.7+	0.6+	1998 12 09	704	0.5-	0.4+
1998 08 17	704	0.9+	0.5+	1998 08 30	699	0.3+	0.6+	1998 12 09	704	0.8+	1.3+
1998 08 17	704	0.1-	0.0	1998 09 16	699	0.4+	0.7+	1998 12 09	704	0.2+	0.6+
1998 08 17	704	0.9+	0.4+	1998 09 16	699	0.1+	0.7+	2000 01 05	704	0.2-	0.0
1998 08 17	704	(2.7+	2.6+)	1998 09 16	699	0.0	0.6+	2000 01 05	704	0.2-	0.1+
1998 08 17	704	(1.1+	5.7+)	1998 09 19	704	0.2-	0.3-	2000 01 05	704	0.5-	0.4-
1998 08 24	704	0.0	0.4+	1998 09 19	704	0.3+	0.1-	2000 01 05	704	0.1-	0.8+
1998 08 24	704	0.0	0.0	1998 09 19	704	0.4+	0.6+	2000 01 05	704	0.1+	0.1-
1998 08 24	704	1.2-	0.8-	1998 09 23	704	0.5+	0.6-	2000 01 07	704	0.5+	0.0
1998 08 24	704	0.8-	0.2-	1998 09 23	704	1.3-	1.6-	2000 01 07	704	0.2+	0.0
1998 08 24	704	1.0-	0.6+	1998 09 23	704	0.5-	0.1+	2000 01 07	704	0.8+	0.5+
1998 08 27	704	0.7+	0.7-	1998 09 23	704	0.2-	0.8-	2000 01 07	704	0.4-	0.5-
1998 08 27	704	0.0	0.3+	1998 09 23	704	0.4-	1.8-	2000 01 07	704	0.3-	0.8-

1998 QU₈₆ = 2000 AT₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	208.96868		(2000.0)	P		Q					
<i>n</i>	0.23924981	ω	29.33651	-0.32417638		+0.93545117					
<i>a</i>	2.5698137	Ω	222.19048	-0.90367380		-0.35025975					
<i>e</i>	0.1531136	<i>i</i>	12.10681	-0.27979159		+0.04742595					
<i>P</i>	4.12	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 08 19	704	1.8+	0.4-	1998 08 27	704	0.6+	1.1-	1999 12 14	704	0.2-	0.3+
1998 08 19	704	0.1+	1.2+	1998 08 27	704	0.8+	0.7-	1999 12 14	704	0.5-	0.0
1998 08 19	704	0.1+	0.1+	1998 09 19	704	0.3+	0.3-	1999 12 14	704	0.2-	0.5+
1998 08 19	704	(1.6-	2.1+)	1998 09 19	699	0.3+	0.4+	1999 12 14	704	0.5+	0.7-
1998 08 19	704	1.5-	0.4+	1998 09 19	704	1.3+	1.0-	1999 12 14	704	0.5+	0.1-
1998 08 24	704	0.7-	0.6-	1998 09 19	699	0.5+	0.2+	2000 01 07	704	0.6+	0.7-
1998 08 24	704	1.8-	0.3-	1998 09 19	699	0.3+	0.2+	2000 01 07	704	0.2-	0.3+
1998 08 24	704	1.1-	0.5-	1998 09 19	704	0.9+	0.2-	2000 01 07	704	0.5-	0.2+
1998 08 24	704	(0.4+	2.3-)	1998 09 23	704	0.8-	0.7-	2000 01 07	704	0.7-	0.5-
1998 08 24	704	1.4-	0.3-	1998 09 23	704	1.2-	0.5-	2000 01 07	704	0.5-	0.1+
1998 08 27	704	0.0	0.6+	1998 09 23	704	0.4-	1.0+	2000 01 11	704	0.6+	0.5+
1998 08 27	704	0.4+	1.0+	1998 09 23	704	0.6+	0.2+	2000 01 11	704	0.4-	0.1+
1998 08 27	704	1.0+	1.2+	1999 12 14	704	1.3+	0.8+	2000 01 11	704	0.4-	0.6-

1998 QA₈₇ = 2000 AB₁₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.52580		(2000.0)	P		Q					
<i>n</i>	0.21438215	ω	182.44107	+0.06321937	−0.97793479						
<i>a</i>	2.7648843	Ω	263.98355	+0.91900546	+0.13484017						
<i>e</i>	0.1335633	<i>i</i>	11.54971	+0.38914300	−0.15956713						
<i>P</i>	4.60	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 08 19	704	0.2+	0.2+	1998 09 19	704	0.5−	0.8−	1999 12 14	704	0.4−	0.3+
1998 08 19	704	0.3−	0.3+	1998 09 20	699	0.3+	0.4+	1999 12 14	704	0.3−	0.1−
1998 08 19	704	0.3−	0.5−	1998 09 20	699	0.1−	0.0	2000 01 04	699	0.2−	0.8+
1998 08 19	704	1.2−	1.7+	1998 09 20	699	1.2+	1.0−	2000 01 04	699	0.6+	1.1+
1998 08 19	704	1.2−	0.4+	1998 09 23	704	(0.7−	3.5+)	2000 01 04	699	0.2+	0.2+
1998 08 24	704	0.5+	0.3−	1998 09 23	704	(0.6+	3.6+)	2000 01 07	704	0.3−	0.4+

1998 08 24	704	0.6-	0.1-	1998 09 23	704	(1.8+	3.2+)	2000 01 07	704	0.5-	0.4+
1998 08 24	704	0.1+	1.8-	1998 09 23	704	(0.4+	2.9+)	2000 01 07	704	0.2-	0.5+
1998 08 24	704	0.8+	0.3+	1999 12 05	704	0.3+	0.9-	2000 01 07	704	0.7-	0.1-
1998 08 24	704	1.2+	0.5+	1999 12 05	704	0.3+	0.6+	2000 01 07	704	0.8-	0.3+
1998 08 27	704	0.4-	0.7+	1999 12 05	704	0.9+	0.5+	2000 01 11	704	0.1-	0.1-
1998 08 27	704	0.1-	0.0	1999 12 05	704	0.3+	0.1-	2000 01 11	704	0.3+	0.6-
1998 08 27	704	0.0	0.2+	1999 12 05	704	0.4+	0.2+	2000 01 11	704	0.2+	1.6-
1998 08 27	704	0.2+	0.3+	1999 12 14	704	0.1-	0.3-	2000 01 11	704	0.5+	1.4-
1998 09 19	704	0.3-	0.1-	1999 12 14	704	0.2+	0.2-				
1998 09 19	704	0.5+	0.5-	1999 12 14	704	0.1-	0.4+				

1998 QQ₈₇ = 2000 AN₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	98.44233		(2000.0)	P		Q					
<i>n</i>	0.23060362	ω	136.28438	+0.88579805		-0.41222575					
<i>a</i>	2.6336535	Ω	249.18478	+0.33779197		+0.88766976					
<i>e</i>	0.1130679	<i>i</i>	13.18115	+0.31821124		+0.20521289					
<i>P</i>	4.27	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1998 08 19	704	1.2+	0.2+	1998 08 27	704	1.0-	1.1-	1999 12 13	703	0.7+	0.2-
1998 08 19	704	0.2+	0.5+	1998 09 19	704	1.0-	0.0	1999 12 13	703	0.8+	0.3+
1998 08 19	704	1.7-	1.1-	1998 09 19	704	0.4+	1.1-	2000 01 07	699	0.3+	1.6+
1998 08 19	704	1.1-	1.7+	1998 09 19	704	1.2-	0.8-	2000 01 07	699	0.3+	0.7+
1998 08 19	704	0.8-	0.2+	1998 09 23	704	0.6-	0.8-	2000 01 07	699	1.7+	0.3-
1998 08 24	704	0.3+	0.0	1998 09 23	704	0.1-	0.5-	2000 01 08	704	0.9-	0.0
1998 08 24	704	0.9+	0.7-	1998 09 23	704	0.2+	0.9+	2000 01 08	704	0.2-	0.1-
1998 08 24	704	1.4+	0.6+	1998 09 23	704	0.4-	1.4+	2000 01 08	704	0.8-	1.1-
1998 08 24	704	0.7+	1.1-	1998 12 09	704	0.7+	0.5+	2000 01 08	704	1.0-	0.0
1998 08 24	704	0.1-	1.0+	1998 12 09	704	(2.3+	3.3-)	2000 01 11	704	1.0-	0.5-
1998 08 27	704	0.7+	0.1+	1998 12 09	704	0.1-	1.3+	2000 01 11	704	0.2+	0.4-
1998 08 27	704	1.3+	0.7-	1998 12 09	704	0.8+	0.5+	2000 01 11	704	0.7-	1.1-
1998 08 27	704	0.2+	0.5-	1999 12 13	703	0.4+	1.0+	2000 01 11	704	0.2-	1.4-
1998 08 27	704	0.0	0.3-	1999 12 13	703	0.4+	0.5+				

1998 QA₈₈ = 1999 XO₉₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	135.84739		(2000.0)	P		Q					
<i>n</i>	0.19118190	ω	36.92843	+0.68203453		+0.71168020					
<i>a</i>	2.9842706	Ω	276.75475	-0.70494816		+0.57852464					
<i>e</i>	0.0949954	<i>i</i>	9.76004	-0.19462014		+0.39852293					
<i>P</i>	5.16	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 08 24	704	0.4+	0.3-	1998 09 20	699	0.3+	0.7+	1999 12 10	704	0.4-	0.6-
1998 08 24	704	0.3+	0.7-	1998 09 20	699	0.1+	0.2+	1999 12 10	704	0.5-	0.0
1998 08 24	704	0.5-	0.3-	1998 09 20	699	1.3+	0.0	1999 12 10	704	0.1+	0.1-
1998 08 24	704	0.6-	0.4-	1999 11 14	704	0.6+	0.1+	2000 01 03	704	0.3-	0.6+
1998 08 24	704	0.5-	0.3+	1999 11 14	704	0.6+	0.5+	2000 01 03	704	0.2-	0.9+
1998 08 27	704	0.0	0.2-	1999 11 14	704	0.3+	0.1+	2000 01 03	704	0.7+	0.7-
1998 08 27	704	0.7+	0.3-	1999 11 14	704	0.4+	0.5+	2000 01 03	704	1.0+	1.6-
1998 08 27	704	0.4+	0.6+	1999 12 07	704	0.3+	0.1+	2000 01 03	704	0.3+	0.5-
1998 08 27	704	0.4-	0.7+	1999 12 07	704	0.5-	0.1-	2000 01 04	704	0.4-	0.5+
1998 08 27	704	0.3-	0.3-	1999 12 07	704	0.4-	0.0	2000 01 04	704	0.0	0.4+
1998 09 18	699	0.6-	0.2+	1999 12 07	704	0.4-	0.7+	2000 01 04	704	0.4-	0.4+
1998 09 18	699	0.0	0.1+	1999 12 10	704	0.0	1.0-	2000 01 04	704	0.3-	0.2+
1998 09 18	699	0.6-	0.4-	1999 12 10	704	0.0	0.3-	2000 01 04	704	0.3-	0.1-

Residuals in seconds of arc

1998 08 24	704	0.5+	1.5-	1998 09 19	704	0.3-	1.2+	2000 01 05	704	0.8+	0.1-
1998 08 24	704	1.0-	0.8-	1998 09 19	704	0.4+	0.3+	2000 01 05	704	0.6-	0.4+
1998 08 24	704	0.8+	0.3-	1998 09 19	699	0.4-	0.1+	2000 01 05	704	0.3+	0.2-
1998 08 24	704	(0.3-	2.2-)	1998 09 19	699	0.1-	0.3+	2000 01 05	704	0.4-	0.2+
1998 08 24	704	0.9-	1.0-	1998 09 19	699	0.2-	0.8+	2000 01 05	704	0.8+	0.9+
1998 08 27	704	0.3-	0.6-	1998 09 23	704	0.7+	0.4-	2000 01 07	704	0.4-	1.0-
1998 08 27	704	0.7+	0.5+	1998 09 23	704	0.4+	0.2-	2000 01 07	704	0.7-	0.2-
1998 08 27	704	0.1-	0.9+	1998 09 23	704	0.1+	0.5+	2000 01 07	704	0.0	0.8-
1998 08 27	704	0.0	0.8+	1998 10 10	699	0.6-	0.7-	2000 01 07	704	0.2+	0.6+
1998 08 27	704	0.2+	0.3-	1998 10 10	699	0.1+	0.4-				
1998 09 19	704	0.6+	0.4+	1998 10 10	699	0.5-	0.3-				

1998 QF₈₉ = 1990 VU₁₂ = 2000 AW₁₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	139.42653	(2000.0)	P	Q	
<i>n</i>	0.23552428	ω 89.15059	+0.88692826	+0.42050354	
<i>a</i>	2.5968424	Ω 245.96409	-0.46104561	+0.83118412	
<i>e</i>	0.1932375	<i>i</i> 12.08067	+0.02819928	+0.36374405	
<i>P</i>	4.18	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1990 11 11	877	(1.5+	4.2-)	1998 09 19	704	0.7+	0.2+	1999 12 05	704	0.3-	0.7+
1990 11 11	877	0.0	0.2-	1998 09 19	704	0.2-	1.0+	1999 12 05	704	0.1+	0.5+
1998 06 30	704	0.3-	0.7+	1998 09 19	704	0.8-	0.2-	1999 12 05	704	0.7-	0.7+
1998 06 30	704	0.5-	0.6+	1998 09 19	699	0.0	0.6+	1999 12 05	704	0.3-	0.4+
1998 06 30	704	0.9-	0.5+	1998 09 19	699	0.2-	0.2+	1999 12 14	704	0.2-	0.3+
1998 06 30	704	0.2+	0.6+	1998 09 19	699	0.7-	0.3+	1999 12 14	704	0.1-	0.7-
1998 06 30	704	1.8-	0.8+	1998 09 20	699	0.2+	1.2+	1999 12 14	704	0.3+	0.7+
1998 08 24	704	0.9+	1.3-	1998 09 20	699	0.1+	1.1+	2000 01 08	704	0.1+	0.0
1998 08 24	704	1.1+	1.5-	1998 09 20	699	0.3+	0.1-	2000 01 08	704	0.4-	0.2-
1998 08 24	704	1.2-	0.6-	1998 09 23	704	0.3-	0.1-	2000 01 08	704	1.1-	0.9-
1998 08 24	704	0.7+	0.5-	1998 09 23	704	0.2-	0.9+	2000 01 08	704	0.5+	0.2+
1998 08 24	704	1.0-	0.3-	1998 09 23	704	0.3+	1.0+	2000 01 08	704	0.4+	0.2+
1998 08 27	704	1.6+	0.4+	1998 12 09	704	0.8-	0.8-	2000 01 11	704	0.5+	0.1+
1998 08 27	704	1.1+	0.9-	1998 12 09	704	0.7+	0.2+	2000 01 11	704	0.0	0.2-
1998 08 27	704	1.0+	0.5-	1998 12 09	704	0.4-	0.7-	2000 01 11	704	0.7+	0.3-
1998 08 27	704	0.4+	0.3-	1998 12 09	704	0.6-	1.5-	2000 01 11	704	0.6+	0.2-
1998 08 27	704	1.3-	0.6-	1999 12 05	704	0.1+	0.7+				

1998 QV₈₉ = 1987 RY₁ = 2000 AC₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	136.52719	(2000.0)	P	Q	
<i>n</i>	0.18362032	ω 13.18278	+0.67481412	+0.72344144	
<i>a</i>	3.0656476	Ω 299.47503	-0.69137618	+0.55063051	
<i>e</i>	0.0790923	<i>i</i> 9.64130	-0.25811795	+0.41645951	
<i>P</i>	5.37	<i>H</i> 12.7	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1987 09 01	095	1.1-	2.0+	1998 09 19	704	0.0	0.1+	1999 12 12	704	(0.1-	2.3+)
1998 06 30	704	0.4+	0.2+	1998 09 19	704	0.4-	0.1+	1999 12 12	704	(0.5-	4.4+)
1998 06 30	704	0.6-	1.0-	1998 09 19	704	0.3+	0.4-	1999 12 15	704	0.1-	0.2-
1998 06 30	704	1.3-	1.5+	1998 09 23	704	0.2+	0.3+	1999 12 15	704	0.9-	1.7+
1998 06 30	704	1.0+	0.3+	1998 09 23	704	0.9+	0.6+	1999 12 15	704	0.2-	0.1+
1998 08 20	699	0.7+	0.1-	1998 09 23	704	0.1+	0.5-	1999 12 15	704	0.3+	0.0
1998 08 20	699	0.8+	0.0	1998 10 15	699	0.3+	0.5+	1999 12 15	704	0.3+	0.1-
1998 08 20	699	0.6+	0.4-	1998 10 15	699	0.5+	0.4+	1999 12 29	723	0.9-	1.5-
1998 08 24	704	0.1-	0.3-	1998 10 15	699	0.8+	0.6+	1999 12 29	723	0.6-	0.3+
1998 08 24	704	0.4-	0.5-	1998 12 09	704	0.9+	0.6+	1999 12 29	723	0.6-	1.9-
1998 08 24	704	0.8+	0.0	1998 12 09	704	0.6+	0.1-	2000 01 02	704	0.5+	0.1-
1998 08 24	704	0.1-	0.2+	1998 12 09	704	0.1-	0.8+	2000 01 02	704	0.3+	0.1+
1998 08 24	704	1.9-	0.9-	1998 12 09	704	(2.2+	1.5+)	2000 01 02	704	0.3+	0.1-
1998 08 27	704	(2.3-	0.6-)	1998 12 09	704	0.5+	0.0	2000 01 02	704	0.1+	0.1-
1998 08 27	704	1.4-	1.2-	1998 12 28	327	1.4-	0.1+	2000 01 02	704	0.0	1.1+
1998 08 27	704	0.4-	0.9-	1998 12 28	327	0.1+	0.0	2000 01 04	704	0.9+	0.5+
1998 08 27	704	1.7-	1.7-	1998 12 28	327	0.0	0.2-	2000 01 04	704	0.3+	0.1-

1998 09 18	699	0.7+	0.2+	1999 12 12	704	0.3-	0.0	2000 01 04	704	0.5+	0.1+
1998 09 18	699	0.7+	0.0	1999 12 12	704	0.5-	0.2+	2000 01 04	704	1.0+	0.2-
1998 09 18	699	0.3-	0.1+	1999 12 12	704	0.7-	0.9+	2000 01 04	704	0.6+	0.1+

1998 QE₉₀ = 2000 AP₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	148.76623	(2000.0)	P	Q	
<i>n</i>	0.22341291	ω 10.55199	+0.71658410	+0.67107253	
<i>a</i>	2.6898654	Ω 305.56133	-0.65576748	+0.55528334	
<i>e</i>	0.1961380	<i>i</i> 13.51991	-0.23764730	+0.49124542	
<i>P</i>	4.41	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 3	

Residuals in seconds of arc

1998 08 23	699	0.2+	0.9-	1998 09 23	704	0.1-	1.2+	2000 01 03	704	0.5+	0.4+
1998 08 23	699	0.0	0.0	1998 09 23	704	(0.2+	2.8-)	2000 01 03	704	0.4-	0.6-
1998 08 23	699	0.5+	0.5-	1998 10 10	699	0.3-	1.0+	2000 01 03	704	0.0	0.1+
1998 08 24	704	0.8+	0.1+	1998 10 10	699	0.2+	1.2+	2000 01 04	704	0.1-	0.6-
1998 08 24	704	0.2+	0.0	1998 10 10	699	0.4-	0.9+	2000 01 04	704	0.7-	0.4-
1998 08 24	704	0.1+	0.2-	1998 10 21	699	0.4+	1.1-	2000 01 04	704	0.2+	0.6-
1998 08 24	704	0.2-	0.5-	1998 10 21	699	0.5-	0.2+	2000 01 04	704	0.4+	1.8-
1998 08 24	704	0.2+	1.3-	1998 10 21	699	0.1+	0.4-	2000 01 07	704	0.2-	0.3-
1998 08 27	704	0.2+	0.1-	1998 12 09	704	1.7+	0.6+	2000 01 07	704	0.1-	0.3+
1998 08 27	704	0.4-	0.9-	1998 12 09	704	1.2-	1.1+	2000 01 07	704	0.5+	0.1-
1998 08 27	704	(1.5-	2.2-)	1998 12 09	704	0.1-	0.9-	2000 01 07	704	0.2+	0.5-
1998 08 27	704	0.1-	1.0+	1998 12 09	704	1.9-	0.2+	2000 01 07	704	0.8+	0.5+
1998 08 27	704	0.4+	0.2+	1999 12 15	704	1.2-	0.8+	2000 01 08	704	0.9-	0.5+
1998 09 19	704	0.2+	0.7-	1999 12 15	704	0.7+	0.0	2000 01 08	704	0.5-	0.3+
1998 09 19	704	0.5-	0.3-	1999 12 15	704	0.1-	0.1-	2000 01 08	704	0.7-	0.0
1998 09 19	704	(2.4-	0.4-)	1999 12 15	704	0.1+	0.2+	2000 01 08	704	0.2+	0.0
1998 09 23	704	0.2+	0.1-	2000 01 03	704	0.3-	0.6+	2000 01 08	704	0.8+	0.2-

1998 QG₉₀ = 1999 XY₁₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	154.66985	(2000.0)	P	Q	
<i>n</i>	0.17811755	ω 340.72881	+0.22575660	+0.94483863	
<i>a</i>	3.1284669	Ω 301.66428	-0.85319717	+0.07418998	
<i>e</i>	0.1815054	<i>i</i> 16.18917	-0.47020053	+0.31902320	
<i>P</i>	5.53	<i>H</i> 13.3	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 08 24	704	1.8-	0.3+	1998 09 20	699	0.6+	1.6+	1998 10 10	699	0.0	0.9+
1998 08 24	704	0.4+	0.2+	1998 09 20	699	1.1+	1.4+	1998 10 21	699	0.7-	0.7-
1998 08 24	704	0.5+	0.0	1998 09 23	704	0.0	0.6+	1998 10 21	699	0.1-	0.1+
1998 08 24	704	(0.6+	2.4+)	1998 09 23	704	0.4+	0.1+	1998 10 21	699	0.3+	0.3+
1998 08 27	704	0.4-	0.2-	1998 09 23	704	0.8-	0.1+	1999 12 13	704	0.1+	0.5+
1998 08 27	704	0.7+	0.7-	1998 09 29	327	0.7-	0.3-	1999 12 13	704	0.6-	0.1-
1998 08 27	704	0.1-	0.7-	1998 09 29	327	0.9-	0.5-	1999 12 13	704	0.1+	0.1-
1998 08 27	704	0.5+	0.1-	1998 09 29	327	0.1-	0.5-	1999 12 13	704	0.6-	0.0
1998 08 27	704	0.8-	0.6+	1998 10 01	327	0.4+	1.7-	1999 12 14	704	0.6+	0.5-
1998 09 19	704	0.6+	0.6-	1998 10 01	327	0.5+	0.5-	1999 12 14	704	0.3-	0.2+
1998 09 19	704	1.1+	0.4+	1998 10 01	327	0.2+	0.7-	1999 12 14	704	0.6+	0.0
1998 09 19	704	1.2-	1.4-	1998 10 10	699	0.6-	0.7+				
1998 09 20	699	1.0+	0.6+	1998 10 10	699	0.2-	0.9+				

1998 QV₉₀ = 2000 AM

2000 JAN. 24

M.P.C. 37739

1998 08 28	704	0.0	1.1-	1998 09 18	704	1.1-	0.0	1998 09 27	704	0.8-	0.1+
1998 08 28	704	0.5-	1.1-	1998 09 18	704	0.0	0.4-	2000 01 03	704	0.9-	0.3-
1998 08 28	704	0.5-	0.3-	1998 09 18	704	0.7-	0.8-	2000 01 03	704	0.6+	0.3-
1998 08 31	704	1.0+	0.1-	1998 09 24	699	1.6+	0.3+	2000 01 03	704	0.0	0.1+
1998 08 31	704	(1.1-	2.7+)	1998 09 24	699	0.9+	0.9-	2000 01 03	704	0.1-	0.1+
1998 08 31	704	0.2+	0.0	1998 09 24	699	1.2+	0.3+	2000 01 03	704	0.4-	0.3-
1998 08 31	704	1.5+	0.5-	1998 09 26	704	0.5+	0.5+	2000 01 04	704	0.3+	0.2+
1998 09 14	704	0.0	0.7+	1998 09 26	704	0.7+	0.5-	2000 01 04	704	0.4+	0.1+
1998 09 14	704	0.2-	0.8+	1998 09 26	704	(2.9+	0.3-)	2000 01 04	704	0.0	0.1-
1998 09 14	704	0.4-	0.4+	1998 09 26	704	0.3-	1.0-	2000 01 04	704	0.0	0.2-
1998 09 17	699	0.0	0.4+	1998 09 26	704	0.5+	0.4-	2000 01 04	704	0.1+	0.6+
1998 09 17	699	0.2+	0.4+	1998 09 27	704	0.3-	0.2+				
1998 09 17	699	0.3+	0.3+	1998 09 27	704	0.7-	0.4+				

1998 QW₉₀ = 2000 AT₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	206.77783		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.27046883	ω	206.33417	+0.07391119	+0.99605618
a	2.3680520	Ω	67.93765	-0.90537320	+0.08765577
e	0.1990300	i	3.03591	-0.41813456	-0.01373119
P	3.64	H	14.8	G 0.15	U 4

Residuals in seconds of arc

1997 04 06	566	0.2+	0.6+	1998 09 18	704	0.1-	0.2+	1998 09 27	704	1.2+	0.9+
1997 04 06	566	0.1-	0.1-	1998 09 18	704	0.4+	0.1+	1998 09 27	704	1.8+	0.1+
1997 04 06	566	0.3+	0.7+	1998 09 18	704	0.8-	0.3+	1998 10 17	699	0.7-	0.7-
1998 08 28	704	0.1+	0.7-	1998 09 18	704	1.2-	0.5+	1998 10 17	699	0.6+	0.1+
1998 08 28	704	0.1-	1.5+	1998 09 18	704	0.4+	0.7+	1998 10 17	699	0.4-	0.9+
1998 08 28	704	0.2-	0.6-	1998 09 25	699	0.1+	0.5+	2000 01 03	704	0.3-	0.3+
1998 08 28	704	0.2-	1.7+	1998 09 25	699	1.0+	1.2+	2000 01 03	704	0.2+	0.1+
1998 08 28	704	1.0-	0.4-	1998 09 25	699	0.3-	1.4+	2000 01 03	704	0.4+	1.3-
1998 08 31	704	1.2+	0.6-	1998 09 26	704	0.0	0.3-	2000 01 03	704	0.0	0.6-
1998 08 31	704	0.5-	1.3-	1998 09 26	704	1.2+	1.1-	2000 01 03	704	0.3+	0.6+
1998 08 31	704	0.2+	1.0-	1998 09 26	704	1.3+	1.2-	2000 01 04	704	0.6-	0.2-
1998 08 31	704	1.3-	0.4+	1998 09 26	704	0.7-	0.4-	2000 01 04	704	0.4-	0.1-
1998 08 31	704	1.1-	0.2-	1998 09 26	704	0.9-	1.0-	2000 01 04	704	0.6+	1.0+
1998 09 14	704	0.7-	0.2+	1998 09 27	704	0.8+	0.1-	2000 01 04	704	0.1-	0.1+
1998 09 14	704	0.8-	0.2-	1998 09 27	704	0.1+	0.2-				
1998 09 14	704	0.6-	0.0	1998 09 27	704	1.0+	0.1+				

1998 QY₉₀ = 2000 AJ₁₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	143.67481		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.24603724	ω	173.93185	+0.96875885	+0.24618366		
a	2.5223315	Ω	171.63255	-0.23532798	+0.95066878		
e	0.1268358	i	11.89651	-0.07827539	+0.18873919		
P	4.01	H	14.2	G	0.15	U	3

Residuals in seconds of arc

1990 09 28	675	0.1+	0.3-	1998 09 18	704	0.4+	0.7+	1998 12 08	704	1.9-	0.3+
1998 08 28	704	0.6+	0.2-	1998 09 18	704	0.3-	0.0	1998 12 08	704	0.5+	0.3-
1998 08 28	704	(2.8-	0.7-)	1998 09 18	704	1.1-	0.7+	1998 12 08	704	1.1+	1.3+
1998 08 28	704	0.2+	0.5-	1998 09 25	699	0.7+	0.5+	1998 12 08	704	1.5+	0.6+
1998 08 28	704	0.1-	0.3-	1998 09 25	699	0.4+	0.6-	2000 01 05	699	0.2-	0.1+
1998 08 28	704	0.4-	0.9-	1998 09 25	699	0.0	0.1+	2000 01 05	699	0.4-	1.4+
1998 08 31	704	0.3+	0.0	1998 09 26	704	0.2+	0.0	2000 01 05	699	1.5+	0.5+
1998 08 31	704	0.6+	1.8-	1998 09 26	704	0.0	0.2-	2000 01 08	704	0.5+	0.2+
1998 08 31	704	0.5-	1.2-	1998 09 26	704	0.7-	0.2+	2000 01 08	704	0.2+	0.1-
1998 08 31	704	0.4+	0.5-	1998 09 26	704	0.2-	0.6+	2000 01 08	704	0.1+	0.3-
1998 08 31	704	1.4-	0.2-	1998 09 26	704	0.4-	0.1-	2000 01 08	704	0.1+	1.2-
1998 09 14	704	0.1+	0.1-	1998 09 27	704	0.5-	1.0-	2000 01 08	704	0.3+	0.7-
1998 09 14	704	0.1+	0.2-	1998 09 27	704	0.6+	0.2-	2000 01 11	704	0.1-	0.7+
1998 09 14	704	0.7-	1.2+	1998 09 27	704	0.3+	0.3+	2000 01 11	704	0.2-	0.4-
1998 09 17	699	0.3-	0.5+	1998 09 27	704	0.1+	0.8+	2000 01 11	704	0.4-	0.3-
1998 09 17	699	0.0	0.7+	1998 09 27	704	0.2+	0.5-	2000 01 11	704	0.6-	0.7-
1998 09 17	699	0.2+	0.8+	1998 10 17	699	0.1+	0.1-	2000 01 11	704	0.9-	0.3-

1998 09 18	704	0.2-	0.2-	1998 10 17	699	0.6+	0.5-
1998 09 18	704	0.1+	0.6+	1998 10 17	699	0.1+	0.2-

1998 QA₉₁ = 2000 AA₁₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	151.80295		(2000.0)	P	Q
n	0.23501649	ω	154.44125	+0.78345354	+0.61908399
a	2.6005816	Ω	166.87646	-0.60324327	+0.77855346
e	0.2019062	i	13.80559	-0.14932551	+0.10290543
P	4.19	H	13.3	G 0.15	U 3

Residuals in seconds of arc

1998 08 02	699	0.2+	0.0	1998 09 18	704	1.2-	0.1-	1998 12 13	683	0.5-	0.1+
1998 08 02	699	0.8+	0.4-	1998 09 18	704	0.5-	1.0+	1998 12 13	683	0.5-	0.2-
1998 08 02	699	0.1+	0.1-	1998 09 18	704	0.9+	1.9+	1998 12 13	683	0.5-	0.3+
1998 08 28	704	0.3-	1.4+	1998 09 24	910	0.8+	0.6+	1999 01 07	704	1.6+	0.5+
1998 08 28	704	0.3+	0.9-	1998 09 24	910	0.7+	0.6+	1999 01 07	704	0.3-	0.2+
1998 08 28	704	1.0+	0.4+	1998 09 24	910	0.7+	0.6+	1999 01 07	704	0.9+	0.7-
1998 08 28	704	(2.1-	2.1+)	1998 09 26	704	0.2-	0.5-	1999 01 07	704	0.9+	0.1-
1998 08 28	704	0.6+	0.9-	1998 09 26	704	0.6-	0.8-	1999 01 20	910	0.4-	1.3-
1998 08 31	704	0.5+	0.4+	1998 09 26	704	0.1+	0.6-	1999 01 20	910	0.2-	1.4-
1998 08 31	704	(2.2-	1.3+)	1998 09 26	704	0.5-	0.6-	1999 01 20	910	0.2-	1.5-
1998 08 31	704	1.1-	0.7-	1998 09 26	704	0.7-	1.0-	2000 01 08	704	0.2+	0.7+
1998 08 31	704	1.4+	1.4-	1998 09 27	704	0.6-	0.3+	2000 01 08	704	0.4+	0.4+
1998 08 31	704	(1.7-	2.4-)	1998 09 27	704	0.3-	0.1+	2000 01 08	704	0.1-	0.8+
1998 09 14	704	0.2-	0.5+	1998 09 27	704	0.2+	0.8+	2000 01 08	704	0.1-	0.7+
1998 09 14	704	0.0	1.1+	1998 09 27	704	0.4+	0.5-	2000 01 08	704	0.7+	0.6+
1998 09 14	704	0.8-	0.7+	1998 12 08	704	0.2-	0.8-	2000 01 11	704	0.5+	0.2+
1998 09 17	699	0.0	0.8+	1998 12 08	704	1.4-	0.3+	2000 01 11	704	0.1+	0.2-
1998 09 17	699	0.2-	0.2+	1998 12 08	704	1.2+	0.1-	2000 01 11	704	0.0	0.5-
1998 09 17	699	0.0	1.1+	1998 12 08	704	0.2-	0.3-	2000 01 11	704	1.6-	0.1+
1998 09 18	704	0.1-	0.4-	1998 12 12	683	0.3+	1.3-				
1998 09 18	704	1.7-	1.1+	1998 12 12	683	0.6+	1.3-				

1998 QC₉₁ = 1976 JJ₉ = 1993 TP₄₈ = 1999 XL₁₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	189.93231		(2000.0)	P	Q
n	0.19214327	ω	229.50564	-0.06370021	+0.99130253
a	2.9743079	Ω	37.32387	-0.84852459	+0.00694097
e	0.0646809	i	10.94876	-0.52530782	-0.13141963
P	5.13	H	13.1	G 0.15	U 2

Residuals in seconds of arc

1976 05 02	809	0.0	0.1+	1998 09 17	699	0.3+	0.4+	1998 10 17	699	0.3+	0.2-
1993 10 15	675	0.3+	0.4-	1998 09 17	699	0.2-	1.2+	1999 12 12	704	0.9-	1.2+
1998 08 28	704	(0.5-	2.2-)	1998 09 26	704	0.5-	0.0	1999 12 12	704	1.1-	0.2-
1998 08 28	704	1.1-	0.9-	1998 09 26	704	0.2-	0.6-	1999 12 12	704	0.7-	0.4+
1998 08 28	704	1.6-	0.7+	1998 09 26	704	0.3+	0.1-	1999 12 12	704	0.2-	0.0
1998 08 28	704	0.9-	1.0-	1998 09 26	704	0.2-	0.4-	1999 12 15	704	0.1+	0.1+
1998 08 31	704	1.0+	1.6+	1998 09 26	704	0.6+	1.0-	1999 12 15	704	0.2+	0.2-
1998 08 31	704	0.8+	1.4-	1998 09 27	704	0.3-	0.3-	1999 12 15	704	0.2+	0.1-
1998 08 31	704	(0.4+	2.6-)	1998 09 27	704	0.3+	0.3+	1999 12 15	704	0.4-	0.6-
1998 08 31	704	0.6-	0.9-	1998 09 27	704	0.6-	0.8+	2000 01 02	704	0.6+	0.1-
1998 09 15	910	0.2+	0.2+	1998 09 27	704	0.2-	0.6+	2000 01 02	704	0.7+	0.2+
1998 09 15	910	0.5+	0.1+	1998 09 27	704	0.0	0.5+	2000 01 02	704	0.4+	0.3-
1998 09 16	910	0.5+	0.3+	1998 10 17	699	0.3+	0.1-	2000 01 02	704	0.7+	0.4+
1998 09 17	699	0.2-	0.9+	1998 10 17	699	1.0+	0.5-	2000 01 02	704	0.5+	0.4-

Residuals in seconds of arc

1998 08 28	704	0.3+	0.6+	1998 09 18	704	0.8+	1.0-	1998 10 21	589	0.6+	0.0
1998 08 28	704	0.6+	0.6-	1998 09 25	704	1.7-	0.9+	1998 10 21	589	0.0	0.4-
1998 08 28	704	1.6-	0.4+	1998 09 25	704	0.4-	0.0	1998 10 21	589	0.6+	0.6+
1998 08 28	704	0.4-	0.2+	1998 09 25	704	0.6-	0.1-	1998 10 21	589	0.1-	0.1+
1998 08 28	704	0.9-	1.3+	1998 09 25	704	0.5-	0.2+	1998 10 21	589	0.3+	0.2+
1998 08 31	704	0.6-	0.3+	1998 09 25	704	0.1-	0.2-	1998 10 22	589	0.8+	0.0
1998 08 31	704	1.5+	1.3+	1998 09 26	704	0.4-	0.1+	1998 10 22	589	0.3-	0.2+
1998 08 31	704	(0.4+	2.4+)	1998 09 26	704	1.2-	0.8-	1998 10 22	589	0.2+	0.2+
1998 08 31	704	1.2+	0.2-	1998 09 26	704	1.1-	0.3+	1998 10 22	589	0.0	0.2-
1998 08 31	704	0.6-	0.2-	1998 09 26	704	0.6-	0.4+	1998 10 23	589	0.3+	0.6+
1998 09 14	704	0.7+	0.2-	1998 09 26	704	0.1-	0.3-	1998 10 23	589	0.7-	0.1-
1998 09 14	704	0.2+	0.5-	1998 09 27	704	0.3-	0.6-	1998 10 23	589	0.1+	0.5+
1998 09 14	704	0.1+	0.3-	1998 09 27	704	0.6-	0.0	1998 10 23	589	0.2+	0.2+
1998 09 17	699	0.3-	0.0	1998 09 27	704	0.1-	0.5+	1998 10 23	589	0.3-	0.4-
1998 09 17	699	0.1+	0.2-	1998 09 27	704	0.6+	0.0	1999 12 31	461	0.4-	0.2+
1998 09 17	699	0.2+	0.1-	1998 09 27	704	0.3+	0.1+	1999 12 31	461	0.3+	0.1-
1998 09 18	704	1.7+	0.5-	1998 09 30	691	0.7-	0.2-	1999 12 31	461	0.2+	0.3+
1998 09 18	704	1.2+	0.5-	1998 09 30	691	0.5-	0.1-	2000 01 01	461	0.1+	0.1+
1998 09 18	704	0.0	0.8-	1998 09 30	691	0.4-	0.5-	2000 01 01	461	0.1-	0.2+
1998 09 18	704	2.0+	0.4-	1998 10 21	589	0.3+	0.4+	2000 01 01	461	0.0	0.7-

1998 QO₉₁ = 2000 AK₁₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	157.50241		(2000.0)		Williams		
		P		Q			
<i>n</i>	0.24255591	ω	165.44944	+0.88089507	+0.46971651		
<i>a</i>	2.5464089	Ω	166.08424	-0.45484932	+0.87412779		
<i>e</i>	0.1756142	<i>i</i>	14.01108	-0.13090445	+0.12355976		
<i>P</i>	4.06	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 28	704	0.1+	1.1+	1998 09 22	699	0.1-	0.5+	2000 01 08	704	0.1+	1.1+
1998 08 28	704	1.7+	0.9+	1998 09 22	699	0.4+	0.1+	2000 01 08	704	0.7-	0.3-
1998 08 28	704	0.2-	1.2+	1998 09 24	699	0.2-	0.1+	2000 01 08	704	0.3-	0.4-
1998 08 28	704	1.1-	1.0-	1998 09 24	699	0.1-	0.3+	2000 01 08	704	0.3-	0.0
1998 08 28	704	1.1-	1.2-	1998 09 24	699	0.2+	0.3+	2000 01 08	704	0.6+	0.2+
1998 08 31	704	0.4+	1.3+	1998 12 18	699	0.2-	0.7-	2000 01 11	704	0.0	0.1+
1998 08 31	704	0.2+	1.2-	1998 12 18	699	0.1+	0.7-	2000 01 11	704	0.2-	0.1-
1998 08 31	704	1.6-	1.3-	1998 12 18	699	0.2-	0.6-	2000 01 11	704	0.4+	0.5-
1998 08 31	704	0.2+	0.5-	2000 01 05	699	0.5+	0.6+	2000 01 11	704	0.8-	0.1-
1998 08 31	704	1.0+	0.0	2000 01 05	699	0.9+	0.1+	2000 01 11	704	0.7-	0.6-
1998 09 22	699	0.1+	1.0+	2000 01 05	699	0.6+	0.5+				

1998 QP₉₃ = 2000 AZ₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	146.61055		(2000.0)		Williams		
		P		Q			
<i>n</i>	0.26298199	ω	269.27896	+0.94329637	-0.31151923		
<i>a</i>	2.4127855	Ω	108.86656	+0.33174311	+0.87243345		
<i>e</i>	0.1206376	<i>i</i>	6.95984	+0.01176675	+0.37658417		
<i>P</i>	3.75	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 28	704	(2.6+	0.9+)	1998 10 19	809	0.9-	1.9-	1999 01 11	704	1.5-	0.8+
1998 08 28	704	(3.1+	0.7+)	1998 11 14	699	0.1-	1.1+	1999 02 04	704	0.4+	0.3-
1998 08 28	704	0.4+	0.4+	1998 11 14	699	0.3+	1.2+	1999 02 04	704	0.3-	1.3-
1998 08 28	704	1.6+	0.2+	1998 11 14	699	0.7+	0.9+	1999 02 04	704	0.7-	1.9+
1998 08 31	704	0.1+	0.3+	1998 11 19	699	0.8-	0.9+	1999 02 04	704	0.4+	1.3+
1998 08 31	704	(2.4+	0.3+)	1998 11 19	699	0.4+	0.3+	1999 02 04	704	1.8+	0.4+
1998 08 31	704	0.1-	0.3+	1998 11 19	699	0.5+	0.5+	2000 01 04	704	0.5-	0.7-
1998 08 31	704	1.3-	0.2+	1999 01 07	699	0.2-	0.4-	2000 01 04	704	0.7+	0.2+
1998 08 31	704	0.3+	0.9+	1999 01 07	699	0.5-	0.4-	2000 01 04	704	0.8-	0.4+
1998 10 18	809	(1.3-	3.2-)	1999 01 07	699	0.8-	0.6-	2000 01 04	704	0.3-	0.6-
1998 10 18	809	(1.6-	3.5-)	1999 01 11	704	0.4+	1.4-	2000 01 08	704	0.1-	0.4-
1998 10 18	809	(1.4-	2.9-)	1999 01 11	704	(0.0	2.4+)	2000 01 08	704	0.1-	0.4+
1998 10 19	809	0.2-	2.0-	1999 01 11	704	0.3-	0.2-	2000 01 08	704	1.0+	0.4+
1998 10 19	809	0.4-	2.0-	1999 01 11	704	1.3+	0.5-				

1998 QX₉₄ = 2000 AL₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	135.45251		(2000.0)		Williams		
		P		Q			
<i>n</i>	0.23078914	ω	26.22175	+0.82054320	+0.53448682		
<i>a</i>	2.6322419	Ω	299.99607	-0.55688387	+0.66769558		
<i>e</i>	0.1328763	<i>i</i>	13.52638	-0.12879913	+0.51817609		
<i>P</i>	4.27	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 04	699	0.4+	0.8+	1998 08 27	704	0.3-	0.6+	2000 01 04	704	0.3-	0.7+
1998 08 04	699	0.8+	0.3+	1998 08 19	704	0.4+	0.4+	2000 01 04	704	0.3-	0.0
1998 08 04	699	0.2+	0.0	1998 08 19	704	0.0	0.5-	2000 01 04	704	0.5-	0.2+
1998 08 19	704	0.0	0.4-	1998 08 19	704	0.3-	0.2+	2000 01 04	704	0.1-	0.5+
1998 08 19	704	0.0	0.2+	1998 08 19	704	0.1-	0.2+	2000 01 06	704	0.3+	0.0
1998 08 19	704	0.0	0.3-	1998 08 19	704	0.7+	0.7-	2000 01 06	704	0.1+	0.6-
1998 08 19	704	0.3-	1.4-	1998 09 23	704	0.0	0.4+	2000 01 06	704	0.0	0.4-
1998 08 19	704	1.0-	0.2-	1998 09 23	704	0.7+	0.8+	2000 01 08	704	0.2-	0.7-
1998 08 27	704	0.7-	0.6-	1998 09 23	704	0.2+	0.5+	2000 01 08	704	0.2+	0.2+
1998 08 27	704	0.1-	0.0	1998 09 23	704	0.8+	0.7-	2000 01 08	704	0.9+	0.4+
1998 08 27	704	0.2+	0.6+	1998 09 23	704	1.8-	0.0	2000 01 08	704	0.0	0.2-

1998 QH₉₅ = 2000 AP₁₉₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	63.71799		(2000.0)		Williams		
		P		Q			
<i>n</i>	0.23812012	ω	151.13492	+0.42175741	-0.87872705		
<i>a</i>	2.5779351	Ω	273.14406	+0.78297377	+0.47727689		
<i>e</i>	0.1498268	<i>i</i>	12.93544	+0.45724476	-0.00674832		
<i>P</i>	4.14	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.2+	0.3-	1998 09 19	704	1.9-	0.1-	2000 01 08	704	0.3-	0.4+
1998 08 19	704	0.5+	0.8-	1998 09 19	704	0.0	1.5-	2000 01 08	704	0.4-	0.2+
1998 08 19	704	0.2+	1.4+	1998 09 19	704	0.2+	0.4+	2000 01 08	704	0.2+	0.7+
1998 08 19	704	0.2-	0.4+	1998 09 19	704	1.2+	0.7-	2000 01 11	704	0.6-	0.9-
1998 08 27	704	0.2-	0.6-	1998 09 23	704	0.4-	1.1+	2000 01 11	704	0.3-	0.7-
1998 08 27	704	1.1-	0.2+	1998 09 23	704	0.6+	0.6+	2000 01 11	704	0.0	0.1-
1998 08 27	704	0.7-	0.1+	1998 09 23	704	0.8+	0.2+	2000 01 11	704	1.2+	0.2-
1998 08 27	704	0.5-	0.8+	1998 09 23	704	0.0	0.1-	2000 01 11	704	0.5+	0.6+
1998 08 27	704	0.7+	0.0	2000 01 08	704	0.1+	0.0				
1998 09 19	704	0.7+	0.8-	2000 01 08	704	0.1-	0.2+				

1998 QM₉₅ = 2000 AX₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	57.96493		(2000.0)		Williams		
		P		Q			
<i>n</i>	0.19148764	ω	114.90306	+0.74010722	-0.65432948		
<i>a</i>	2.9810932	Ω	286.37026	+0.54375926	+0.71808577		
<i>e</i>	0.1491241	<i>i</i>	9.31033	+0.39568570	+0.23707753		
<i>P</i>	5.15	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 19	704	(2.4+	0.5-)	1998 09 23	704	1.5-	0.3+	2000 01 08	704	0.2+	0.3-
1998 08 19	704	1.2+	0.0	1998 09 23	704	1.2-	1.6+	2000 01 08	704	0.1+	0.2+
1998 08 19	704	1.3+	1.9-	1998 09 23	704	0.2-	1.0+	2000 01 08	704	0.1+	0.3+
1998 08 19	704	1.6+	1.6-	1999 12 10	704	0.3-	0.1+	2000 01 08	704	0.2-	0.0
1998 08 19	704	1.1+	1.0-	1999 12 10	704	0.4-	0.1+	2000 01 08	704	0.5+	0.1-
1998 08 24	704	0.4-	0.1+	1999 12 10	704	0.7-	0.6+	2000 01 08	704	0.1-	0.6-
1998 08 24	704	0.3-	0.1+	1999 12 10	704	0.9-	0.6+	2000 01 08	704	0.0	0.1-
1998 08 24	704	(3.1-	1.2-)	2000 01 03	704	0.6+	0.3-	2000 01 08	704	0.1+	1.0-
1998 08 24	704	0.2-	0.1-	2000 01 03	704	0.0	0.0	2000 01 08	704	0.3-	0.4-
1998 08 24	704	1.7-	1.2+	2000 01 03	704	0.0	0.4-	2000 01 08	704	0.1+	0.5+
1998 09 19	704	0.1-	0.9-	2000 01 03	704	0.1-	0.2+	2000 01 09	691	0.4+	0.5-
1998 09 19	704	0.1-	0.4-	2000 01 03	704	0.2-	0.0	2000 01 09	691	0.2+	0.2-
1998 09 19	704	0.2-	0.2+	2000 01 04	704	0.5+	0.1+	2000 01 09	691	0.3+	0.0
1998 09 19	704	0.1-	0.7+	2000 01 04	704	0.4-	0.2-	2000 01 15	691	0.1-	0.4+

2000 JAN. 24

M.P.C. 37741

1998 09 19 704 0.6− 1.2+ 2000 01 04 704 0.5+ 0.6− 2000 01 15 691 0.0 0.4+
 1998 09 23 704 1.6+ 1.0− 2000 01 04 704 0.0 0.4+ 2000 01 15 691 0.3− 0.4+

1998 QX₉₅ = 2000 AT₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	272.24806		(2000.0)	P	Q
<i>n</i>	0.26630382	ω	301.64599	−0.89442463	+0.42650651
<i>a</i>	2.3926791	Ω	263.90429	−0.35066227	−0.85552399
<i>e</i>	0.1268133	<i>i</i>	7.77535	−0.27756181	−0.29354881
<i>P</i>	3.70	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 19	704 0.5+ 0.8+	1998 09 19	704 1.6− 1.0−	2000 01 05	704 0.4− 0.4−
1998 08 19	704 (0.6+ 2.4+)	1998 09 19	704 0.4− 1.0−	2000 01 05	704 0.2− 0.0
1998 08 19	704 1.0+ 0.1−	1998 09 19	704 1.5+ 1.6+	2000 01 05	704 0.3− 0.3−
1998 08 19	704 0.1+ 0.3+	1998 09 23	704 1.4+ 0.5−	2000 01 05	704 1.1+ 1.3+
1998 08 27	704 0.5− 0.7+	1998 09 23	704 0.4+ 0.4−	2000 01 06	704 0.7− 0.3−
1998 08 27	704 0.7− 0.4+	1998 09 23	704 1.8+ 1.0−	2000 01 06	704 0.1+ 0.3−
1998 08 27	704 0.7− 0.1+	1998 09 23	704 (0.5− 2.0−)	2000 01 06	704 0.2− 0.8+
1998 08 27	704 1.8− 0.2−	1999 12 07	704 (3.6− 1.8+)	2000 01 06	704 0.2− 0.2−
1998 08 27	704 0.9− 0.4−	1999 12 07	704 0.4+ 0.3+	2000 01 06	704 0.0 0.2−
1998 09 19	704 0.5− 0.8+	1999 12 07	704 0.7+ 0.1−		
1998 09 19	704 0.5+ 0.1−	2000 01 05	704 0.2− 0.4−		

1998 QM₉₆ = 1999 XY₁₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	197.78945		(2000.0)	P	Q
<i>n</i>	0.22085520	ω	306.50878	−0.22838348	+0.96127151
<i>a</i>	2.7105929	Ω	309.55073	−0.81699864	−0.27540941
<i>e</i>	0.1272580	<i>i</i>	11.54106	−0.52948486	+0.01033188
<i>P</i>	4.46	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 19	704 0.9+ 0.1−	1998 09 16	699 0.2− 0.9+	1999 11 01	704 0.9− 0.4−
1998 08 19	704 1.7+ 1.5+	1998 09 16	699 0.8+ 0.4−	1999 12 12	704 0.1− 0.3+
1998 08 19	704 0.6− 0.8+	1998 09 16	699 0.4− 0.4+	1999 12 12	704 0.2− 0.3−
1998 08 19	704 0.7+ 0.0	1998 09 19	704 0.3+ 0.3+	1999 12 12	704 0.3− 0.3+
1998 08 19	704 0.1− 0.7−	1998 09 19	704 0.3+ 0.1+	1999 12 12	704 0.4− 0.6+
1998 08 24	704 0.4+ 0.7−	1998 09 19	704 0.0 0.3−	1999 12 12	704 0.1− 0.1+
1998 08 24	704 (0.9− 2.2+)	1998 09 23	704 0.3+ 0.6−	1999 12 15	704 0.5− 0.5−
1998 08 24	704 0.8− 0.7−	1998 09 23	704 0.4− 0.1+	1999 12 15	704 1.5+ 0.5+
1998 08 24	704 (6.4− 2.4−)	1998 09 23	704 1.6+ 0.3+	1999 12 15	704 0.9+ 0.6−
1998 08 24	704 (3.8− 0.8+)	1998 09 23	704 1.0− 0.5−	1999 12 15	704 0.1− 0.4−
1998 08 27	704 0.1− 0.2+	1998 09 23	704 1.5− 0.6−	1999 12 15	704 0.3− 0.7−
1998 08 27	704 0.6− 0.6+	1999 11 01	704 0.3− 0.0	2000 01 02	704 0.1+ 0.5+
1998 08 27	704 0.5+ 1.2+	1999 11 01	704 0.1+ 0.0	2000 01 02	704 0.4+ 0.2−
1998 08 27	704 0.3− 0.8−	1999 11 01	704 0.4+ 0.5+	2000 01 02	704 (2.3− 0.9+)
1998 08 27	704 1.3− 1.0−	1999 11 01	704 0.2− 0.4+		

1998 QQ₉₇ = 2000 AY₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	39.90934		(2000.0)	P	Q
<i>n</i>	0.18927726	ω	136.97943	+0.44628970	−0.87638209
<i>a</i>	3.0042571	Ω	285.76158	+0.76150033	+0.47818289
<i>e</i>	0.1118424	<i>i</i>	10.84343	+0.47004548	+0.05740692
<i>P</i>	5.21	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704 (0.5− 2.2−)	1998 09 19	704 (2.4− 1.1−)	2000 01 03	704 0.5− 0.9+
1998 08 24	704 0.1+ 0.0	1998 09 23	704 1.6+ 1.0−	2000 01 03	704 0.5− 1.1−
1998 08 24	704 0.2− 1.0−	1998 09 23	704 0.1− 0.6+	2000 01 03	704 0.4− 0.0
1998 08 24	704 1.1+ 0.5−	1998 09 23	704 0.3− 1.0+	2000 01 04	704 0.2+ 0.0
1998 08 27	704 0.3+ 0.4+	1998 09 23	704 0.6− 0.7+	2000 01 04	704 0.1− 0.0
1998 08 27	704 (2.3+ 1.3−)	1999 12 07	704 0.6+ 0.3−	2000 01 04	704 0.2− 0.3−
1998 08 27	704 0.7− 0.5+	1999 12 07	704 0.3− 0.4−	2000 01 04	704 0.6+ 1.1+

1998 09 19 704 0.9− 0.3− 1999 12 07 704 0.4+ 1.3+ 2000 01 04 704 0.5− 0.1−
 1998 09 19 704 (0.1+ 2.4−) 1999 12 07 704 0.0 0.1− 2000 01 12 715 1.7+ 1.4−
 1998 09 19 704 0.0 0.2+ 2000 01 03 704 0.6− 0.2+ 2000 01 12 715 0.4+ 1.2+
 1998 09 19 704 0.3− 0.5− 2000 01 03 704 0.3− 1.0−

1998 QQ₉₉ = 1999 XO₇₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	211.07020		(2000.0)	P	Q
<i>n</i>	0.21841809	ω	132.89876	−0.26753005	+0.96208792
<i>a</i>	2.7307188	Ω	121.51191	−0.90118261	−0.23034756
<i>e</i>	0.0349124	<i>i</i>	3.56775	−0.34102432	−0.14603712
<i>P</i>	4.51	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809 (2.7+ 0.3+)	1998 09 27	704 0.3− 0.8+	1999 12 16	704 0.4− 0.7+
1998 08 26	809 1.6+ 0.7+	1999 12 07	704 1.0− 1.5−	1999 12 16	704 0.1− 0.3+
1998 08 26	809 (2.7+ 1.1+)	1999 12 07	704 0.5− 0.8−	2000 01 05	704 0.6+ 0.6+
1998 08 27	809 0.1− 1.1+	1999 12 07	704 0.4− 1.0−	2000 01 05	704 1.0+ 0.4+
1998 08 27	809 0.6+ 0.1−	1999 12 07	704 0.2− 0.1−	2000 01 05	704 0.1− 0.0
1998 08 27	809 1.0+ 0.5+	1999 12 08	704 0.7− 0.4−	2000 01 05	704 0.5+ 0.3+
1998 09 26	704 0.5− 0.8+	1999 12 08	704 0.4− 0.6−	2000 01 05	704 0.1− 0.1+
1998 09 26	704 1.7− 0.2−	1999 12 08	704 0.2− 0.6−	2000 01 06	704 0.2+ 0.8+
1998 09 26	704 0.3− 0.2+	1999 12 08	704 0.1+ 0.0	2000 01 06	704 0.8+ 0.2+
1998 09 27	704 1.5+ 1.4−	1999 12 08	704 0.0 0.1+	2000 01 06	704 0.4− 0.5+
1998 09 27	704 0.4− 1.6−	1999 12 16	704 0.5− 0.2+	2000 01 06	704 0.3+ 0.7+
1998 09 27	704 1.5− 0.4−	1999 12 16	704 0.0 0.2+	2000 01 06	704 1.5+ 0.0

1998 QW₉₉ = 2000 AP₁₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	118.03179		(2000.0)	P	Q
<i>n</i>	0.18365605	ω	172.98745	+0.81932669	+0.56410986
<i>a</i>	3.0652499	Ω	151.89284	−0.53600799	+0.81706055
<i>e</i>	0.1663206	<i>i</i>	12.55247	−0.20346793	+0.11913069
<i>P</i>	5.37	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809 1.1+ 0.5+	1998 09 14	704 0.9− 0.9−	1998 09 24	699 0.1+ 0.6+
1998 08 26	809 0.6+ 0.6+	1998 09 18	704 1.4+ 0.5−	2000 01 07	704 1.0− 1.0+
1998 08 26	809 0.5+ 0.9+	1998 09 18	704 0.1+ 0.8−	2000 01 07	704 0.3− 0.2+
1998 08 27	809 1.2− 0.7−	1998 09 18	704 0.1− 0.8+	2000 01 07	704 0.5+ 1.4−
1998 08 27	809 0.5− 0.8−	1998 09 18	704 1.9− 0.0	2000 01 11	704 0.6+ 0.4+
1998 08 27	809 0.1− 0.4−	1998 09 18	704 0.9+ 1.8+	2000 01 11	704 0.1+ 0.4−
1998 09 14	704 0.2− 0.2+	1998 09 24	699 0.1+ 0.8−	2000 01 11	704 0.4− 0.0
1998 09 14	704 0.4− 0.3−	1998 09 24	699 0.5+ 0.1−	2000 01 11	704 0.5+ 0.2+

1998 QF₁₀₀ = 2000 AW₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	45.15315		(2000.0)	P	Q
<i>n</i>	0.23026554	ω	294.39601	+0.00521412	−0.99590624
<i>a</i>	2.6362307	Ω	154.80047	+0.97699580	−0.01416614
<i>e</i>	0.1580807	<i>i</i>	12.23657	+0.21319480	+0.08927531
<i>P</i>	4.28	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809 0.3+ 0.3+	1998 09 18	704 1.0− 1.8+	1998 09 27	699 0.3+ 0.6+
1998 08 26	809 0.9+ 0.6+	1998 09 18	704 0.9− 0.7+	1998 09 27	699 1.1+ 0.4+
1998 08 26	809 0.1+ 0.8+	1998 09 18	704 0.7+ 0.1−	2000 01 05	704 0.1− 0.4+
1998 08 27	809 0.3− 0.3+	1998 09 26	704 0.2+ 0.6+	2000 01 05	704 1.1− 1.1−
1998 08 27	809 0.4− 0.6−	1998 09 26	704 (2.4+ 1.4−)	2000 01 05	704 0.6+ 0.0
1998 08 27	809 0.8+ 0.4−	1998 09 26	704 1.0− 0.3−	2000 01 05	704 0.2− 0.5−
1998 09 14	704 0.9− 1.1−	1998 09 26	704 1.5+ 0.7−	2000 01 08	704 0.0 0.5+
1998 09 14	704 1.3− 1.1−	1998 09 27	704 0.2+ 0.3+	2000 01 08	704 0.4− 0.3−
1998 09 14	704 1.3− 1.0−	1998 09 27	704 0.0 0.1−	2000 01 08	704 0.1+ 0.3+
1998 09 14	704 0.4− 1.0−	1998 09 27	704 0.1+ 0.3−	2000 01 08	704 0.6+ 0.4+

1998 09 18 704 0.9+ 0.3- 1998 09 27 699 1.9+ 1.3+ 2000 01 08 704 0.6+ 0.3+
 1998 09 18 704 0.0 1.0+ 1998 09 27 704 1.5- 1.6-

1998 QO₁₀₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	57.66794		(2000.0)	P	Q
<i>n</i>	0.22000468	ω	294.41365	+0.50936721	-0.85673356
<i>a</i>	2.7175744	Ω	124.72210	+0.82091230	+0.45553157
<i>e</i>	0.0590556	<i>i</i>	5.65203	+0.25816283	+0.24186483
<i>P</i>	4.48	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809	0.5+	1.4-	1998 09 26	704	(2.4-	0.8+)	1999 12 05	699	0.2+	0.5+
1998 08 26	809	0.5-	1.4-	1998 09 26	704	0.0	0.2-	1999 12 08	704	1.4+	0.4-
1998 08 26	809	0.6-	0.3-	1998 09 26	704	1.3-	0.1-	1999 12 08	704	0.2+	0.7-
1998 08 27	809	0.6-	0.7-	1998 09 26	704	1.7-	1.2+	1999 12 08	704	0.5+	0.4+
1998 08 27	809	0.0	0.7-	1998 09 26	704	(2.9-	2.0+)	1999 12 08	704	0.1-	1.2+
1998 08 27	809	1.0+	0.4-	1998 09 27	704	0.2-	0.6+	1999 12 08	704	0.7-	0.5-
1998 09 14	704	0.1+	0.3+	1998 09 27	704	0.3+	0.8-	1999 12 30	699	0.3+	0.4-
1998 09 14	704	0.6+	1.2+	1998 09 27	704	0.6-	0.9-	1999 12 30	699	0.6+	0.0
1998 09 14	704	1.1-	1.0+	1998 09 27	699	0.7-	0.2+	1999 12 30	699	0.0	0.5+
1998 09 18	704	0.7+	0.7-	1998 09 27	704	0.1-	1.5-	2000 01 05	704	0.5-	0.2-
1998 09 18	704	1.1+	0.0	1998 09 27	699	1.0+	0.5+	2000 01 05	704	0.7+	0.9-
1998 09 18	704	0.3+	0.1-	1998 09 27	699	0.7+	0.1-	2000 01 05	704	(0.8+	2.4-)
1998 09 18	704	(2.2+	0.4-)	1998 11 07	910	0.5-	0.9+	2000 01 05	704	1.0-	0.5-
1998 09 18	704	1.1+	0.7-	1998 11 07	910	0.5-	0.8+	2000 01 05	704	1.3-	0.3+
1998 09 24	699	0.1+	1.3+	1998 11 07	910	0.6-	1.4+	2000 01 05	704	0.1+	0.8-
1998 09 24	699	0.9+	0.3+	1999 12 05	699	0.4-	0.1+	2000 01 05	704	0.6-	0.1-
1998 09 24	699	0.7+	0.1+	1999 12 05	699	0.6+	1.4+	2000 01 05	704	0.3+	0.9-

1998 QD₁₀₂ = 2000 AV₁₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	323.53560		(2000.0)	P	Q
<i>n</i>	0.20359913	ω	349.56563	-0.82297038	-0.56066652
<i>a</i>	2.8616649	Ω	155.63041	+0.53587880	-0.81964117
<i>e</i>	0.1365617	<i>i</i>	12.81246	+0.18855680	-0.11764951
<i>P</i>	4.84	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809	1.0+	0.2-	1998 09 24	699	0.6+	1.2+	1999 11 05	704	0.4-	0.0
1998 08 26	809	0.0	0.4+	1998 09 26	704	1.1-	1.0-	1999 12 03	704	0.6+	0.2+
1998 08 26	809	0.2-	1.0-	1998 09 26	704	0.5-	1.1+	1999 12 03	704	0.3+	0.0
1998 08 27	809	0.5+	1.8+	1998 09 26	704	1.1-	0.0	1999 12 03	704	0.2-	0.0
1998 08 27	809	0.8+	0.9+	1998 09 26	704	1.3-	0.5+	1999 12 03	704	0.8-	0.2-
1998 08 27	809	1.3+	1.5+	1998 09 27	704	0.9-	0.3+	2000 01 08	704	0.1+	0.1-
1998 09 14	704	0.4-	0.5-	1998 09 27	704	0.9+	0.1+	2000 01 08	704	0.7+	0.2+
1998 09 14	704	0.7+	1.6-	1998 09 27	704	1.7-	0.8+	2000 01 08	704	1.7+	0.0
1998 09 14	704	(3.4-	0.2+)	1998 09 27	704	0.4+	1.7-	2000 01 08	704	0.1+	0.4+
1998 09 14	704	0.0	1.8-	1998 09 27	699	0.5-	1.2+	2000 01 08	704	0.2-	0.6+
1998 09 18	704	1.3+	1.7-	1998 09 27	704	1.0-	0.5+	2000 01 11	704	0.3+	0.3-
1998 09 18	704	0.4+	0.1-	1998 09 27	699	0.5-	0.4+	2000 01 11	704	0.3+	0.4-
1998 09 18	704	0.1-	1.1+	1998 09 27	699	0.6+	0.2-	2000 01 11	704	0.3-	0.0
1998 09 18	704	0.8-	1.2-	1999 11 05	704	0.8-	0.3-	2000 01 11	704	0.2-	0.3-
1998 09 18	704	0.4-	0.4+	1999 11 05	704	0.1-	0.5+	2000 01 11	704	0.3-	0.6-
1998 09 24	699	1.3+	0.7-	1999 11 05	704	0.4-	0.2+				
1998 09 24	699	0.9+	0.6-	1999 11 05	704	0.4-	0.3+				

1998 QG₁₀₂ = 2000 AP₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	34.17645		(2000.0)	P	Q
<i>n</i>	0.20626825	ω	293.53950	+0.24199838	-0.96825080
<i>a</i>	2.8369246	Ω	142.28170	+0.92338727	+0.20998754
<i>e</i>	0.0700087	<i>i</i>	5.87936	+0.29798109	+0.13563045
<i>P</i>	4.78	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809	1.0+	1.1+	1998 09 20	428	0.1+	0.4-	1999 12 06	704	0.3-	0.0
1998 08 26	809	0.5+	0.5+	1998 09 24	699	0.4-	0.5-	1999 12 06	704	0.7-	0.3+
1998 08 26	809	0.4+	1.3+	1998 09 24	699	0.3-	0.1-	1999 12 06	704	0.3-	0.4+
1998 08 27	809	(2.3+	3.4+)	1998 09 24	699	0.2-	1.2+	1999 12 06	704	0.5-	0.0
1998 08 27	809	(2.5+	4.1+)	1998 09 26	704	0.3+	0.7+	1999 12 06	704	0.6-	0.1-
1998 08 27	809	(2.9+	4.4+)	1998 09 26	704	0.6-	0.3-	1999 12 14	704	0.2-	0.3-
1998 09 14	704	0.3+	1.4+	1998 09 26	704	0.5+	1.6-	1999 12 14	704	0.2+	0.2+
1998 09 14	704	0.7-	0.7-	1998 09 26	704	0.3-	1.3-	1999 12 14	704	0.3+	0.4-
1998 09 14	704	1.4-	0.4-	1998 09 26	704	0.6+	0.6-	1999 12 14	704	0.2+	0.0
1998 09 14	704	0.6-	0.6-	1998 09 27	704	0.1+	1.1-	1999 12 14	704	0.5-	0.4-
1998 09 16	428	0.5+	0.6-	1998 09 27	704	1.1+	0.3-	2000 01 05	704	0.3+	0.2-
1998 09 16	428	1.7+	0.2-	1998 09 27	704	0.6+	0.4-	2000 01 05	704	0.9+	0.5-
1998 09 18	704	0.9-	0.6+	1998 09 27	704	1.0-	0.1+	2000 01 05	704	0.5+	0.2-
1998 09 18	704	0.3+	0.3-	1998 09 27	699	0.3-	0.3+	2000 01 05	704	0.3+	0.0
1998 09 18	704	0.4+	0.0	1998 09 27	704	0.2+	0.0	2000 01 05	704	0.9+	1.0+
1998 09 18	704	0.5-	0.4+	1998 09 27	699	0.2+	0.4+	2000 01 06	704	0.5+	0.3-
1998 09 18	704	0.7-	0.2+	1998 09 27	699	0.6+	0.5+	2000 01 06	704	1.2-	1.4+
1998 09 19	428	0.2-	0.2-	1998 10 12	699	0.1-	0.2+	2000 01 06	704	0.2-	0.5-
1998 09 19	428	0.6-	0.6-	1998 10 12	699	0.6+	0.8+				
1998 09 20	428	1.2-	0.1+	1998 10 12	699	0.1+	0.6+				

1998 QP₁₀₂

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	203.73231		(2000.0)	P	Q
<i>n</i>	0.18574539	ω	89.69112	-0.43516149	+0.89703916
<i>a</i>	3.0422205	Ω	154.07565	-0.88023981	-0.40585975
<i>e</i>	0.0421455	<i>i</i>	10.16690	-0.18924152	-0.17492456
<i>P</i>	5.31	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 23	704	0.7-	0.1+	1998 09 27	704	1.1+	0.1-	1999 12 05	704	0.2-	0.2-
1998 08 23	704	0.9+	1.0-	1998 09 27	704	0.1-	0.5+	1999 12 05	704	0.4-	0.2-
1998 08 23	704	1.0+	0.6-	1998 09 27	699	0.3-	0.7-	1999 12 05	704	0.3-	0.1-
1998 08 23	704	(2.1+	0.2+)	1998 09 27	704	0.6-	1.0-	1999 12 05	704	0.6-	0.1+
1998 08 23	704	(4.2-	0.5+)	1998 09 27	699	0.4+	0.3-	1999 12 05	704	0.9-	0.4-
1998 08 26	809	(1.9+	2.7+)	1998 09 27	699	0.0	0.0	1999 12 14	704	0.3-	0.6-
1998 08 26	809	(2.1+	2.1+)	1998 10 10	699	0.7-	0.6+	1999 12 14	704	1.1-	0.3-
1998 08 26	809	1.7+	1.6+	1998 10 10	699	1.0-	1.3+	1999 12 14	704	0.2-	0.4-
1998 08 27	809	(2.7+	3.0+)	1998 10 10	699	1.2-	1.6+	1999 12 14	704	0.6-	0.2+
1998 08 27	809	(2.6+	2.8+)	1998 11 23	699	0.6-	1.1+	1999 12 14	704	0.8-	0.5-
1998 08 27	809	(3.8+	3.3+)	1998 11 23	699	0.1-	0.8-	1999 12 14	699	0.4-	0.6-
1998 09 19	428	0.1-	0.1+	1998 11 23	699	0.0	1.5+	1999 12 14	699	0.2-	1.0+
1998 09 19	428	0.6-	0.2+	1999 10 10	704	0.2+	0.6+	1999 12 14	699	(0.9-	2.8+)
1998 09 20	428	0.1+	0.8+	1999 10 10	704	1.1+	0.4+	2000 01 04	699	(1.1-	2.8+)
1998 09 20	428	0.5-	0.2-	1999 10 10	704	0.1+	0.2-	2000 01 04	699	0.5-	0.0
1998 09 22	428	0.4-	0.7-	1999 10 10	704	0.6-	0.4+	2000 01 04	699	0.3-	0.8+
1998 09 24	699	0.2+	0.4+	1999 10 10	704	0.9+	0.2-	2000 01 07	704	0.6+	0.6-
1998 09 24	699	0.2-	0.2+	1999 11 05	704	0.2-	0.1+	2000 01 07	704	0.6+	0.1-
1998 09 24	699	0.7+	0.1-	1999 11 05	704	0.1+	0.1-	2000 01 07	704	0.1+	0.6+
1998 09 26	704	0.0	0.4-	1999 11 05	704	0.1-	0.1+	2000 01 11	704	1.6+	0.9-
1998 09 26	704	0.5+	1.0-	1999 11 05	704	0.0	0.5-	2000 01 11	704	1.4+	0.0
1998 09 26	704	0.5+	1.4-	1999 11 05	704	0.7-	0.4-	2000 01 11	704	0.7+	0.3-
1998 09 26	704	0.4-	1.3-	1999 12 02	699	0.1-	0.5+	2000 01 11	704	0.9+	0.1+
1998 09 26	704	(0.0	2.1-)	1999 12 02	699	0.1+	0.7+	2000 01 11	704	0.4+	0.1+
1998 09 27	704	0.2+	0.2-	1999 12 02	699	0.7+	0.8+				

2000 JAN. 24

M.P.C. 37743

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	68.32619		(2000.0)	P	Q
<i>n</i>	0.21217316	ω	303.11675	+0.63561798	-0.76754083
<i>a</i>	2.7840418	Ω	107.19310	+0.73406205	+0.56763878
<i>e</i>	0.0970598	<i>i</i>	4.97770	+0.23904538	+0.29777053
<i>P</i>	4.65	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1980 12 10	095	0.3+	1.5-	1998 09 26	704	0.3-	0.8-	1999 12 15	703	0.4-	0.6-
1998 08 26	809	(0.1+	2.6+)	1998 09 26	704	0.6+	0.4+	1999 12 15	703	0.4+	0.2+
1998 08 26	809	0.3-	1.4+	1998 09 26	704	0.3+	0.6-	1999 12 15	703	0.1-	0.1+
1998 08 26	809	0.7-	1.3+	1998 09 26	704	0.5-	0.0	1999 12 18	699	0.1-	0.1-
1998 08 27	809	0.7-	0.4+	1998 09 26	704	0.1+	0.2-	1999 12 18	699	0.6+	1.4+
1998 08 27	809	0.7-	0.0	1998 09 27	704	0.3+	0.0	1999 12 18	699	0.9-	0.3-
1998 08 27	809	1.0-	0.4+	1998 09 27	704	0.3+	0.3+	1999 12 30	699	0.5+	1.3+
1998 09 14	704	0.5+	0.2+	1998 09 27	704	0.8+	1.5+	1999 12 30	699	0.1-	1.3+
1998 09 14	704	0.3+	0.1-	1998 09 27	704	0.2+	0.8-	1999 12 30	699	0.4-	0.1+
1998 09 14	704	0.5+	0.2-	1998 09 27	704	0.8-	0.4+	2000 01 04	704	0.1-	0.7-
1998 09 17	699	0.9+	0.3-	1998 12 13	704	0.8-	0.8-	2000 01 04	704	0.1+	0.1+
1998 09 17	699	0.4+	0.6-	1998 12 13	704	0.5-	0.7+	2000 01 04	704	0.2+	0.1+
1998 09 17	699	0.6+	0.2-	1998 12 13	704	(0.2-	2.3+)	2000 01 04	704	0.4-	0.2-
1998 09 18	704	0.3-	0.7-	1998 12 13	704	0.0	0.2+	2000 01 04	704	0.0	0.3-
1998 09 18	704	0.0	1.1-	1998 12 13	704	0.4-	1.6+	2000 01 06	704	0.2+	0.3+
1998 09 18	704	0.2-	1.1-	1998 12 13	704	(2.7+	0.5-)	2000 01 06	704	0.2-	0.2-
1998 09 18	704	0.8-	0.1-	1999 11 11	703	0.0	0.7-	2000 01 06	704	0.3+	0.9-
1998 09 18	704	0.2+	0.1+	1999 11 11	703	0.7+	0.4+	2000 01 06	704	0.2-	0.6-
1998 09 24	699	0.2+	0.2+	1999 11 11	703	0.5-	0.3-	2000 01 06	704	0.3-	0.1-
1998 09 24	699	0.7+	0.0	1999 11 11	703	0.6+	1.5+				
1998 09 24	699	0.0	0.0	1999 12 15	703	0.6+	0.3-				

1998 QJ₁₀₄ = 1999 XE₂₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	129.31798		(2000.0)	P	Q
<i>n</i>	0.18433720	ω	293.78626	+0.55331885	+0.83220348
<i>a</i>	3.0576943	Ω	10.04175	-0.67007839	+0.47017593
<i>e</i>	0.2781007	<i>i</i>	11.81974	-0.49480623	+0.29389109
<i>P</i>	5.35	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809	0.0	0.9-	1998 09 17	699	0.4-	1.0+	1998 09 27	704	0.4+	0.2-
1998 08 26	809	1.3+	1.3-	1998 09 17	699	0.4-	0.6+	1998 09 27	704	0.5+	0.3+
1998 08 26	809	0.5+	1.5-	1998 09 17	699	0.2-	0.7+	1998 09 27	704	0.0	0.2+
1998 08 27	809	(3.0-	3.1-)	1998 09 18	704	0.2-	0.1+	1998 09 27	704	0.6+	0.3-
1998 08 27	809	(2.9-	3.7-)	1998 09 18	704	0.6+	0.2+	1998 10 17	699	1.6-	0.4-
1998 08 27	809	(3.1-	3.4-)	1998 09 18	704	0.8-	0.4+	1998 10 17	699	1.0-	0.4-
1998 08 28	704	1.5-	0.1+	1998 09 18	704	0.7+	0.6+	1998 10 17	699	(2.6-	0.8+)
1998 08 28	704	0.7-	1.0-	1998 09 18	704	0.7+	1.4+	1999 12 13	704	0.4-	0.8+
1998 08 28	704	0.4-	1.6+	1998 09 26	704	0.2+	0.8+	1999 12 13	704	0.6+	0.0
1998 08 28	704	0.5-	1.3+	1998 09 26	704	0.4+	0.5-	1999 12 13	704	0.8+	0.2-
1998 08 28	704	(4.9-	0.3+)	1998 09 26	704	0.3+	1.0-	1999 12 15	704	1.2-	0.3-
1998 09 14	704	0.1-	0.3-	1998 09 26	704	0.2+	0.9-	1999 12 15	704	0.5-	0.5-
1998 09 14	704	0.0	0.6-	1998 09 26	704	0.2+	0.1-	1999 12 15	704	0.7+	0.2+
1998 09 14	704	0.0	0.1+	1998 09 27	704	0.8+	0.0				

1998 QK₁₀₄ = 1999 YF₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	178.22462		(2000.0)	P	Q
<i>n</i>	0.27862529	ω	183.82797	+0.71305638	+0.69699954
<i>a</i>	2.3216087	Ω	131.67719	-0.64052854	+0.69157835
<i>e</i>	0.1616552	<i>i</i>	5.82300	-0.28508559	+0.18950203
<i>P</i>	3.54	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	809	0.1+	0.0	1998 09 17	699	0.5+	0.4+	1998 09 27	704	0.3-	0.2+
1998 08 26	809	0.5+	0.2-	1998 09 17	699	0.3+	0.3+	1998 09 27	704	0.6-	0.6+

1998 08 26	809	0.4-	0.5-	1998 09 18	704	0.8-	0.4-	1998 09 27	704	0.6+	0.6+
1998 08 27	809	0.0	0.0	1998 09 18	704	1.3-	0.5+	1998 09 27	704	0.5-	0.3-
1998 08 27	809	0.1-	0.3-	1998 09 18	704	1.3-	1.0+	1998 09 27	704	0.1-	0.0
1998 08 27	809	0.3+	0.6-	1998 09 18	704	0.3+	0.8+	1999 12 31	691	0.3-	0.0
1998 08 28	704	1.6+	0.5+	1998 09 18	704	0.6+	1.1+	1999 12 31	691	0.4-	0.1-
1998 08 28	704	0.2+	0.4+	1998 09 24	699	0.4-	0.1+	1999 12 31	691	0.5-	0.2+
1998 08 28	704	1.2-	0.3+	1998 09 24	699	0.4+	0.3-	2000 01 06	691	0.5+	0.4+
1998 08 28	704	1.7-	0.3+	1998 09 24	699	(2.5-	0.8-)	2000 01 06	691	0.4+	0.2+
1998 08 28	704	0.5+	0.1+	1998 09 26	704	0.7+	0.7-	2000 01 06	691	0.4+	0.3+
1998 09 14	704	0.3+	0.3+	1998 09 26	704	0.1+	0.1-	2000 01 09	691	0.1+	0.2-
1998 09 14	704	0.4+	1.1-	1998 09 26	704	0.1+	1.2-	2000 01 09	691	0.2-	0.2-
1998 09 14	704	0.0	0.4-	1998 09 26	704	0.2+	0.8-	2000 01 09	691	0.0	0.5-
1998 09 17	699	0.8+	0.2+	1998 09 26	704	0.1+	0.8-				

1998 RF = 1999 XN₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	215.53459		(2000.0)	P	Q
<i>n</i>	0.21765778	ω	197.77574	-0.39053916	+0.91395577
<i>a</i>	2.7370743	Ω	49.38917	-0.82599778	-0.29499206
<i>e</i>	0.0544497	<i>i</i>	8.35361	-0.40645644	-0.27868356
<i>P</i>	4.53	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 01	426	0.2+	0.2+	1998 10 13	426	0.2+	0.2-	1999 12 15	704	0.5-	0.7-
1998 09 01	426	0.0	0.0	1998 10 13	426	0.8-	0.1-	1999 12 15	704	0.3-	0.1-
1998 09 01	426	1.0-	0.1+	1998 10 19	426	0.6-	0.0	1999 12 15	704	0.8+	0.2+
1998 09 03	426	0.8+	0.6-	1998 10 19	426	0.6+	0.2-	2000 01 02	704	0.7+	0.8+
1998 09 03	426	0.3+	0.0	1998 10 19	426	0.0	0.4-	2000 01 02	704	0.1-	0.6-
1998 09 12	426	0.3-	0.2+	1999 11 16	704	0.4-	0.1+	2000 01 02	704	1.2+	0.0
1998 09 12	426	0.8+	0.5-	1999 11 16	704	0.9-	0.8-	2000 01 04	704	0.3-	0.2+
1998 09 12	426	0.2+	0.3+	1999 11 16	704	0.2+	0.6-	2000 01 04	704	0.6-	0.3-
1998 09 15	426	0.2+	0.3+	1999 11 16	704	0.1+	0.6+	2000 01 04	704	0.3-	0.7-
1998 09 15	426	0.1-	0.1+	1999 12 12	704	0.0	0.0	2000 01 04	704	0.2+	0.4-
1998 09 15	426	0.1+	0.2-	1999 12 12	704	0.3+	1.0+				
1998 10 13	426	0.7-	0.8+	1999 12 12	704	0.1-	1.1+				

1998 RG = 2000 AC₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	29.03983		(2000.0)	P	Q
<i>n</i>	0.21444148	ω	326.93845	-0.06138654	-0.98806275
<i>a</i>	2.7643743	Ω	126.19069	+0.94954079	-0.10143399
<i>e</i>	0.1238351	<i>i</i>	10.08285	+0.30757760	+0.11594458
<i>P</i>	4.60	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 01	426	0.0	0.2-	1998 10 13	426	0.7+	0.2-	1999 12 31	699	0.3+	0.0
1998 09 01	426	0.3+	0.7-	1998 10 19	426	0.3-	0.7-	1999 12 31	699	0.3+	0.1+
1998 09 03	426	1.2+	0.5+	1998 10 19	426	0.3+	0.4-	2000 01 05	704	0.1+	0.2-
1998 09 03	426	0.2+	0.9+	1998 11 14	426	0.2+	0.9-	2000 01 05	704	0.2-	0.5+
1998 09 16	426	0.6-	0.4+	1998 11 14	426	0.7+	0.1-	2000 01 05	704	0.1-	0.3+
1998 09 16	426	0.5-	0.8+	1998 11 15	426	0.5-	1.2-	2000 01 05	704	0.4-	0.1-
1998 09 16	426	0.4-	0.5+	1999 12 14	704	0.0	0.1-	2000 01 05	704	0.1-	0.2+
1998 09 17	426	0.5-	0.0	1999 12 14	704	0.2+	0.2-	2000 01 06	704	0.5-	0.7-
1998 09 17	426	0.2-	1.1+	1999 12 14	704	0.2-	0.3-	2000 01 06	704	0.3-	0.7+
1998 09 17	426	1.1-	1.1+	1999 12 14	704	0.2-	1.5-	2000 01 06	704	0.1+	0.1-
1998 10 13	426	0.1+	0.3-	1999 12 14	704	0.1+	1.1+	2000 01 06	704	0.4+	0.2+
1998 10 13	426	0.3+	0.8-	1999 12 31	699	0.2+	0.5+	2000 01 06	704	0.2+	0.2+

1998 RH = 2000 AH₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	304.78531		(2000.0)	P	Q
n	0.27384562	ω	89.95486	-0.94697470	+0.29674274
a	2.3485448	Ω	107.30683	-0.32130524	-0.87619678
e	0.0574409	i	7.41534	+0.00136595	-0.37976697
P	3.60	H	14.3	G 0.15	U 4

Residuals in seconds of arc

1998 09 01	426	0.3+	0.6-	1998 10 25	426	0.5+	0.2-	1999 12 09	699	1.0+	0.8+
1998 09 01	426	0.2-	0.1-	1998 10 25	426	0.1+	0.3+	2000 01 04	704	0.2-	0.0
1998 09 01	426	0.2+	0.2+	1998 10 25	426	0.2-	0.5+	2000 01 04	704	0.2-	0.2-
1998 09 03	426	0.8+	0.0	1998 11 14	426	0.4-	0.7+	2000 01 04	704	0.1+	0.1+
1998 09 03	426	0.6+	0.7-	1998 11 14	426	0.1+	0.3+	2000 01 04	704	0.1+	0.5-
1998 09 12	426	0.2+	0.5-	1998 11 15	426	0.3-	0.1+	2000 01 04	704	0.7-	0.2+
1998 09 12	426	0.4-	0.2-	1998 11 15	426	0.1+	0.8+	2000 01 05	699	0.6+	0.6+
1998 09 12	426	0.0	0.4-	1999 12 07	704	1.0-	0.4-	2000 01 05	699	1.0+	0.6+
1998 09 15	426	0.6-	0.3-	1999 12 07	704	0.3-	0.4-	2000 01 05	699	0.0	0.4+
1998 09 15	426	0.1-	0.6-	1999 12 07	704	1.0-	0.1-	2000 01 06	704	0.4-	0.0
1998 09 15	426	0.8-	0.1+	1999 12 07	704	0.3+	0.6-	2000 01 06	704	0.0	0.4-
1998 10 20	426	0.2+	0.1+	1999 12 07	704	0.3-	0.2-	2000 01 06	704	0.1+	0.8-
1998 10 20	426	0.1+	0.1+	1999 12 09	699	0.1+	0.3+	2000 01 06	704	0.4+	0.7-
1998 10 20	426	0.4+	0.4+	1999 12 09	699	0.2+	1.4+	2000 01 06	704	0.1-	0.8-

1998 RS = 2000 AF₁₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	81.59413		(2000.0)	P	Q
n	0.18340088	ω	193.59523	+0.94302864	-0.33148148
a	3.0680924	Ω	185.99887	+0.32507684	+0.93628109
e	0.1064918	i	15.87274	+0.07086624	+0.11617982
P	5.37	H	13.5	G 0.15	U 3

Residuals in seconds of arc

1998 09 11	727	0.1+	0.1-	1998 09 18	704	0.5+	0.7+	1998 10 09	727	0.8+	0.2-
1998 09 11	727	0.2+	0.2-	1998 09 18	704	0.1+	0.7+	1998 10 09	727	0.9+	0.6-
1998 09 11	727	0.8-	0.1+	1998 09 18	704	0.4-	1.5+	1998 10 09	727	0.0	0.0
1998 09 12	727	0.4-	0.8-	1998 09 24	727	0.6-	0.4+	1998 10 20	727	0.6+	0.2+
1998 09 12	727	0.7-	0.6-	1998 09 24	727	0.6-	0.1+	1998 10 20	727	0.7+	0.4-
1998 09 12	727	0.5-	0.4-	1998 09 25	699	0.0	0.5+	1998 10 20	727	0.5+	0.4-
1998 09 14	704	0.5-	0.1-	1998 09 25	699	0.2+	0.3+	1998 10 27	727	0.7+	0.6-
1998 09 14	704	0.7-	0.2-	1998 09 25	699	0.2+	0.0	1998 10 27	727	0.3-	0.1-
1998 09 14	704	0.5-	0.8-	1998 09 26	704	0.5+	0.0	1998 10 27	727	0.6+	0.8-
1998 09 15	727	0.4-	0.1-	1998 09 26	704	0.5+	0.5-	1998 10 30	727	0.5-	0.3-
1998 09 15	727	0.4-	0.2-	1998 09 26	704	0.1+	0.5-	1998 10 30	727	1.0-	0.3-
1998 09 15	727	0.5-	0.3-	1998 09 26	704	0.1+	0.7-	1998 10 30	727	1.1-	0.3-
1998 09 16	699	0.1+	0.2+	1998 09 26	704	0.7+	0.0	1998 11 10	699	1.0-	0.3+
1998 09 16	699	0.1+	0.6+	1998 09 27	704	0.7+	0.3+	1998 11 10	699	1.1-	0.7+
1998 09 16	699	0.3+	0.4+	1998 09 27	704	0.4+	0.3+	1998 11 10	699	0.3-	0.3-
1998 09 18	727	0.0	0.4-	1998 09 27	704	0.1+	1.4+	2000 01 10	727	0.4-	0.4+
1998 09 18	727	0.1+	0.1-	1998 09 27	704	0.7+	0.9+	2000 01 10	727	0.3-	0.1-
1998 09 18	727	0.3-	0.2-	1998 09 27	704	0.2-	0.3+	2000 01 10	727	0.7-	0.1-
1998 09 18	704	0.6+	0.3+	1998 09 29	727	0.6+	0.2-	2000 01 11	727	0.4+	0.1+
1998 09 18	704	0.2-	0.7+	1998 09 29	727	0.9+	0.3-	2000 01 11	727	1.0+	0.0

1998 RC₁ = 2000 AL₁₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	160.62922		(2000.0)	P	Q
n	0.19254813	ω	97.57700	+0.50804056	+0.85880837
a	2.9701372	Ω	203.32131	-0.84125799	+0.47832277
e	0.0937214	i	9.58233	-0.18487774	+0.18345437
P	5.12	H	13.3	G 0.15	U 3

Residuals in seconds of arc

1996 03 24	566	0.2-	0.7-	1998 09 18	704	0.4-	1.2-	1998 10 28	704	0.7-	1.2-
1996 03 24	566	0.2-	0.6-	1998 09 26	704	0.2+	0.1-	1998 10 29	704	0.5-	0.2+
1996 03 24	566	0.1-	0.6-	1998 09 26	704	0.5+	0.4-	1998 10 29	704	0.6+	0.4+
1998 09 12	411	0.1-	0.1+	1998 09 26	704	0.2+	0.5-	1998 10 29	704	1.5-	0.3-
1998 09 12	411	0.3-	0.2+	1998 09 26	704	0.6+	0.0	1998 10 29	704	0.2-	1.3-
1998 09 14	704	0.1-	0.6-	1998 09 26	704	0.2-	1.1-	1998 11 25	699	1.3+	0.5-
1998 09 14	704	(0.2+	2.1-)	1998 09 27	704	0.1+	0.5+	1998 11 25	699	0.5-	0.6-
1998 09 14	704	0.9-	0.7-	1998 09 27	704	0.9+	0.6+	1998 11 25	699	0.2-	0.3+
1998 09 14	411	0.2-	0.3+	1998 09 27	704	0.3-	0.4+	1998 12 14	704	0.6+	0.3-
1998 09 14	411	0.3-	0.1-	1998 09 27	704	0.0	0.9+	1998 12 14	704	0.3+	0.4+
1998 09 15	699	1.3-	0.0	1998 09 27	704	0.0	0.5+	1998 12 14	704	0.7+	0.3-

1998 09 15	699	0.8-	0.8+	1998 10 02	411	0.2+	0.6-	2000 01 07	704	0.3-	0.2-
1998 09 15	699	0.3+	1.1+	1998 10 02	411	0.2-	0.2+	2000 01 07	704	0.7-	0.0
1998 09 16	411	0.1-	0.7-	1998 10 14	699	0.5+	0.3+	2000 01 07	704	0.2-	0.1+
1998 09 16	411	0.7-	0.2-	1998 10 14	699	0.1-	0.6+	2000 01 07	704	0.9-	0.4-
1998 09 18	704	0.2+	0.3+	1998 10 14	699	0.2+	0.7+	2000 01 11	704	0.5+	0.1+
1998 09 18	704	1.3+	0.9+	1998 10 28	704	0.5-	0.3+	2000 01 11	704	0.1-	0.4+
1998 09 18	704	1.2+	0.2+	1998 10 28	704	0.2+	1.7-	2000 01 11	704	0.1-	0.7+
1998 09 18	704	1.9+	0.1+	1998 10 28	704	0.2+	0.2+	2000 01 11	704	0.2+	0.5+

1998 RE₁ = 1999 XV₁₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	119.77526		(2000.0)	P	Q		
n	0.18649311	ω	313.89502	+0.64777756	+0.76159647		
a	3.0340834	Ω	356.32587	-0.58709976	+0.48329160		
e	0.1691388	i	17.10020	-0.48548749	+0.43174072		
P	5.28	H	14.3	G	0.15	U	4

Residuals in seconds of arc

1998 09 13	428	0.6-	0.1+	1998 09 30	428	0.2+	1.1-	1998 11 15	428	(2.9-	0.1+)
1998 09 13	428	0.7+	0.3-	1998 09 30	428	0.3-	0.1+	1998 12 17	910	0.8-	0.5+
1998 09 15	428	0.0	0.9-	1998 09 30	428	0.5+	0.3+	1998 12 17	910	0.6-	1.1+
1998 09 15	428	0.0	0.6-	1998 10 10	428	0.1+	0.1+	1998 12 17	910	0.7-	0.7+
1998 09 16	699	0.9-	0.2+	1998 10 10	428	0.3+	0.1-	1999 12 13	704	0.2+	0.7-
1998 09 16	699	0.2-	0.0	1998 10 17	699	1.1-	0.2+	1999 12 13	704	0.3-	0.3-
1998 09 16	699	0.3-	0.1+	1998 10 17	699	0.6+	0.1+	1999 12 13	704	0.3+	0.1+
1998 09 16	428	0.7+	0.5+	1998 10 17	699	1.3+	0.4-	1999 12 13	704	0.3+	0.1-
1998 09 16	428	0.7+	0.2-	1998 10 21	428	0.8-	0.5+	1999 12 13	704	0.5+	0.3+
1998 09 16	428	0.4+	0.1+	1998 10 21	428	0.0	0.2+	1999 12 14	704	0.6-	0.2-
1998 09 22	699	0.0	0.5+	1998 11 09	910	0.1-	0.2-	1999 12 14	704	0.7+	0.1+
1998 09 22	699	0.3+	0.5-	1998 11 09	910	0.2-	0.5-	1999 12 14	704	0.9-	0.0
1998 09 22	699	0.1+	0.4+	1998 11 09	910	0.2-	0.3-				

1998 RU₁ = 1999 XJ₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	224.41287		(2000.0)		P	Q	
n	0.23247805	ω	290.82148		-0.33918660	+0.92997022	
a	2.6194780	Ω	318.47528		-0.76384857	-0.36024979	
e	0.1294423	i	12.35087		-0.54907906	-0.07331758	
P	4.24	H	14.4	G	0.15	U	5

Residuals in seconds of arc

1998 09 14	703	0.5-	0.0	1998 09 19	699	0.2-	0.9+	1999 12 15	704	0.2+	0.9+
1998 09 14	703	0.5+	0.1+	1998 09 25	699	0.0	0.6-	1999 12 15	704	0.4+	0.7-
1998 09 14	703	0.5+	0.6-	1998 09 25	699	0.1-	0.3+	1999 12 15	704	0.0	0.3+
1998 09 15	703	0.5-	0.4-	1998 09 25	699	0.7-	0.7+	1999 12 15	704	0.1-	0.5+
1998 09 15	703	0.2+	0.1+	1999 12 12	704	1.7-	0.8-	2000 01 02	704	0.1-	0.4-
1998 09 19	699	0.8+	1.2-	1999 12 12	704	0.8+	0.1+	2000 01 02	704	1.0+	0.6-
1998 09 19	699	0.1+	0.6+	1999 12 12	704	0.3+	0.7+	2000 01 02	704	0.8-	0.0

1998 RB₂ = 1981 GL₁ = 1999 XR₁₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	235.29957		(2000.0)	P	Q		
n	0.24346308	ω	86.55609	-0.78334373	+0.61482580		
a	2.5400795	Ω	131.35878	-0.60764899	-0.72646405		
e	0.2096815	i	6.99766	-0.13090187	-0.30698406		
P	4.05	H	14.6	G	0.15	U	3

Residuals in seconds of arc

1981 04 07	801	0.2-	0.6-	1998 09 12	426	0.1+	0.2+	1999 11 05	704	1.3-	0.3+
1998 08 17	704	0.5-	0.4+	1998 09 12	426	0.3+	0.2+	1999 12 04	699	0.1-	0.6+
1998 08 17	704	0.6-	0.1+	1998 09 15	426	0.3+	0.0	1999 12 04	699	0.5+	0.7+
1998 08 17	704	1.7+	0.9+	1998 09 15	426	1.0+	0.1-	1999 12 04	699	0.4-	0.6-
1998 08 17	704	0.2-	1.6+	1998 10 19	426	0.8-	0.7-	1999 12 07	704	0.2+	0.8-
1998 08 30	699	0.9+	0.3-	1998 10 19	426	0.1+	0.8-	1999 12 07	704	0.5+	0.3+
1998 08 30	699	0.3+	0.4-	1998 10 20	426	0.3-	0.5-	1999 12 07	704	0.6+	0.4-

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1998 08 30	699	0.1+	0.6+	1998 10 20	426	1.0-	0.0	1999 12 07	704	0.6+	0.1-
1998 09 01	426	0.6-	0.1-	1998 10 20	426	1.0-	0.9-	1999 12 14	704	0.0	0.7-
1998 09 01	426	0.1+	0.3-	1999 11 05	704	0.8-	0.8+	1999 12 14	704	0.7-	0.3-
1998 09 01	426	0.3-	0.6-	1999 11 05	704	0.1-	0.0	1999 12 14	704	0.8+	0.1+

1998 RC₂ = 1999 YN₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17496777	ω	28.11999	+0.86443066	-0.50268619		
<i>a</i>	3.1659011	Ω	2.11110	+0.40984781	+0.69522412		
<i>e</i>	0.1478257	<i>i</i>	12.76285	+0.29117761	+0.51378012		
<i>P</i>	5.63	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 17	704	0.9+	0.8+	1998 09 15	426	0.1-	0.1-	1999 11 01	704	0.6+	0.4+
1998 08 17	704	0.5+	0.1-	1998 09 16	699	0.5+	1.6-	1999 11 01	704	0.2+	1.0+
1998 08 17	704	0.9+	1.7+	1998 09 16	699	0.5-	0.6+	1999 11 01	704	0.5+	1.9+
1998 08 17	704	0.9+	0.0	1998 09 16	699	0.1+	1.7+	1999 11 01	704	0.0	0.8+
1998 08 17	704	0.5-	1.1+	1998 09 18	704	1.2-	0.8-	1999 12 13	704	0.6-	0.1-
1998 08 23	704	1.0-	1.7+	1998 09 18	704	1.7-	0.7-	1999 12 13	704	1.8+	0.4-
1998 08 23	704	(3.3+	2.8+)	1998 09 18	704	1.0-	0.4+	1999 12 13	704	1.9-	0.6+
1998 08 23	704	0.7-	0.4-	1998 09 18	704	0.4-	1.5+	1999 12 13	704	0.6+	0.9-
1998 08 23	704	0.3-	0.1-	1998 09 18	704	0.0	1.2+	1999 12 30	704	0.9-	0.0
1998 08 23	704	(4.1-	1.0+)	1998 10 20	426	0.5+	0.1+	1999 12 30	704	0.4+	0.5-
1998 09 03	426	0.6+	0.5-	1998 10 20	426	0.1-	0.1-	1999 12 30	704	0.7+	1.3+
1998 09 03	426	0.5+	1.1-	1998 10 20	426	0.1+	0.4+	1999 12 30	704	0.2+	0.1-
1998 09 12	426	0.4-	0.3-	1998 10 24	426	0.6+	0.0	1999 12 30	704	0.4+	0.1+
1998 09 12	426	0.0	0.3-	1998 10 24	426	0.8+	0.4-	1999 12 31	704	0.1-	1.2-
1998 09 12	426	0.3+	0.2-	1998 10 24	426	0.4+	0.5+	1999 12 31	704	0.1-	0.4-
1998 09 14	704	0.4+	0.2+	1998 11 14	426	1.1+	0.9-	1999 12 31	704	0.7-	0.5-
1998 09 14	704	0.8+	1.6-	1998 11 14	426	0.5+	0.3-	1999 12 31	704	0.3-	0.1-
1998 09 14	704	0.1+	1.1-	1998 11 20	426	0.0	0.6-	1999 12 31	704	0.5-	0.3-
1998 09 14	704	0.5-	0.8-	1998 11 20	426	0.5+	0.4-				
1998 09 15	426	1.2-	0.4-	1999 11 01	704	0.2+	0.6-				

1998 RL₂ = 2000 AG₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30557177	ω	146.45280	+0.03561406	+0.99624508		
<i>a</i>	2.1830343	Ω	125.46676	-0.93688189	+0.06076634		
<i>e</i>	0.1221880	<i>i</i>	5.56022	-0.34782748	-0.06167009		
<i>P</i>	3.23	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	1.0-	1.1-	1998 09 18	704	0.4-	1.8-	1998 09 27	704	1.7-	0.7-
1998 09 14	704	1.7-	0.6-	1998 09 18	704	0.1-	0.4+	2000 01 04	704	0.4+	0.1-
1998 09 14	704	1.2-	0.3-	1998 09 18	704	1.6-	0.0	2000 01 04	704	0.0	0.3+
1998 09 15	910	1.2+	0.3+	1998 09 18	704	0.0	0.9+	2000 01 04	704	0.5-	0.6+
1998 09 15	910	0.9+	0.3+	1998 09 18	704	(2.6-	1.0-)	2000 01 06	704	0.1-	0.4-
1998 09 15	910	1.0+	0.2+	1998 09 24	699	1.1+	0.1-	2000 01 06	704	1.4-	0.1+
1998 09 16	910	0.2+	0.4+	1998 09 24	699	0.0	0.8-	2000 01 06	704	0.1+	0.6+
1998 09 16	910	1.2+	0.6+	1998 09 24	699	(3.7+	0.0)	2000 01 09	691	0.3+	0.1+
1998 09 16	910	1.3+	0.3+	1998 09 26	704	0.5+	0.1-	2000 01 09	691	0.5+	0.1-
1998 09 17	699	1.0-	0.2-	1998 09 26	704	0.8+	0.3-	2000 01 09	691	0.8+	0.2+
1998 09 17	699	0.2+	0.2-	1998 09 26	704	0.6-	0.8-	2000 01 12	691	0.0	0.4-
1998 09 17	699	0.4-	0.2-	1998 09 26	704	0.8+	0.5-	2000 01 12	691	0.0	0.3-
1998 09 17	910	0.5+	0.7+	1998 09 26	704	0.2+	0.7+	2000 01 12	691	0.1-	0.4-
1998 09 18	910	0.4+	0.8+	1998 09 27	704	1.6-	0.0				
1998 09 18	910	0.6+	0.8+	1998 09 27	704	0.3+	1.2+				

1998 RA₅ = 1999 XE₁₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18529637	ω	12.74630	+0.83160333	+0.55044129		
<i>a</i>	3.0471332	Ω	313.60347	-0.51807156	+0.72097457		
<i>e</i>	0.0235087	<i>i</i>	5.85156	-0.20009440	+0.42096326		
<i>P</i>	5.32	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	1.2+	1.2+	1998 09 17	120	0.7-	1.1-	1998 10 11	699	0.2+	1.1-
1998 08 17	704	0.1+	0.2+	1998 09 17	120	1.1-	0.8-	1998 10 11	699	0.6+	1.2+
1998 08 17	704	1.5-	0.3-	1998 09 17	120	0.2-	0.9-	1999 12 13	704	0.4+	0.2+
1998 08 17	704	0.1-	1.4-	1998 09 18	704	0.4+	0.2+	1999 12 13	704	0.1+	0.3+
1998 08 17	704	1.9-	0.2-	1998 09 18	704	0.5+	0.2+	1999 12 13	704	0.1+	0.3+
1998 08 23	704	0.6+	1.2-	1998 09 18	704	1.3-	1.6+	1999 12 13	704	0.1+	0.7+
1998 08 23	704	0.2+	1.4-	1998 09 18	704	0.3+	0.5+	1999 12 14	704	1.3+	0.1-
1998 08 23	704	0.0	1.3-	1998 09 18	704	0.1+	0.9+	1999 12 14	704	0.3+	0.3-
1998 08 23	704	(4.3-	0.5-)	1998 09 23	120	1.4+	1.9+	1999 12 14	704	0.6-	0.0
1998 08 29	120	1.2-	0.9+	1998 09 23	120	0.0	0.6+	1999 12 14	704	1.1+	0.6+
1998 08 29	120	0.1+	0.0	1998 09 23	120	0.7-	0.7-	1999 12 14	704	1.1+	1.4-
1998 08 29	120	0.1+	0.1-	1998 09 24	120	1.3+	0.0	2000 01 03	704	0.1+	0.1+
1998 08 29	120	0.9-	0.1-	1998 09 24	120	0.8+	0.5+	2000 01 03	704	1.0-	0.1-
1998 09 10	120	0.6+	0.2-	1998 09 24	120	1.3-	1.1+	2000 01 03	704	0.7-	0.1-
1998 09 10	120	0.6+	0.1+	1998 09 24	120	1.0-	0.2-	2000 01 03	704	0.2-	0.3-
1998 09 10	120	0.9+	0.2-	1998 09 24	120	0.1-	0.4+	2000 01 03	704	0.5-	0.1-
1998 09 10	120	0.3+	0.2+	1998 10 08	120	(1.6-	2.3-)	2000 01 04	704	0.5-	0.1-
1998 09 14	704	0.3+	0.1+	1998 10 08	120	0.3+	1.6-	2000 01 04	704	0.3-	0.1-
1998 09 14	704	0.1+	0.1+	1998 10 08	120	(0.1-	2.3-)	2000 01 04	704	0.5-	0.1+
1998 09 14	704	0.5+	0.2+	1998 10 08	120	0.9-	0.9-	2000 01 04	704	0.2+	0.1-
1998 09 14	704	1.3+	0.8+	1998 10 11	699	0.3-	0.9+	2000 01 04	704	0.8-	0.1+

1998 RF₆ = 2000 AL₁₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21912639	ω	192.89927	+0.99964366	+0.00784060		
<i>a</i>	2.7248311	Ω	166.57295	+0.00010012	+0.95478237		
<i>e</i>	0.0455463	<i>i</i>	6.30874	-0.02669358	+0.29720221		
<i>P</i>	4.50	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.3+	1.1-	1998 09 14	704	1.0-	0.2-	1998 09 25	691	0.1-	0.2+
1998 08 17	704	0.5+	0.4+	1998 09 14	699	0.7-	0.2-	1998 09 25	691	0.0	0.1-
1998 08 17	704	1.2+	0.3+	1998 09 14	699	0.5-	0.1+	1998 09 25	691	0.2-	0.3+
1998 08 17	704	0.0	0.4+	1998 09 14	699	0.2+	0.3-	1999 12 14	704	1.5-	0.1+
1998 08 17	704	0.2+	0.5+	1998 09 18	704	1.9+	0.3+	1999 12 14	704	0.4-	0.2-
1998 08 23	704	0.6+	0.6-	1998 09 18	704	0.8+	0.8-	1999 12 14	704	0.9-	0.0
1998 08 23	704	0.8-	0.1+	1998 09 18	704	0.0	0.1-	2000 01 05	704	0.6+	0.0
1998 08 23	704	1.2-	0.8+	1998 09 18	699	0.1-	0.5+	2000 01 05	704	0.0	0.1-
1998 08 23	704	0.6+	0.5-	1998 09 18	704	1.1+	0.8+	2000 01 05	704	1.2+	0.3-
1998 08 23	704	(4.4-	0.5+)	1998 09 18	699	0.2+	0.3-	2000 01 05	704	0.8+	0.4-
1998 08 24	910	0.3+	0.1+	1998 09 18	699	0.2-	0.5-	2000 01 05	704	0.0	0.0
1998 08 24	910	0.2+	0.3+	1998 09 20	691	0.2-	0.1+	2000 01 07	704	0.0	0.0
1998 08 24	910	0.2+	0.5+	1998 09 20	691	0.1-	0.1+	2000 01 07	704	0.2+	0.5+
1998 09 14	704	0.0	0.6-	1998 09 20	691	0.2-	0.5-	2000 01 07	704	0.1+	0.3+
1998 09 14	704	0.3-	0.4-	1998 09 21	691	0.5-	0.2-	2000 01 07	704	0.0	0.3+
1998 09 14	704	0.0	0.2+	1998 09 21	691	0.3-	0.0				
1998 09 14	704	1.8-	0.7+	1998 09 21	691	0.0	0.2-				

1998 RJ₆ = 1999 XF₁₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	275.64561	ω	223.97066	−0.86524888	+0.50096496		
<i>a</i>	2.3126399	Ω	346.05574	−0.43479282	−0.76914753		
<i>e</i>	0.0824193	<i>i</i>	4.63068	−0.24959885	−0.39679489		
<i>P</i>	3.52	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.8−	1.0+	1998 09 14	699	0.2+	0.0	1999 12 10	704	0.2+	0.1+
1998 08 17	704	1.3+	0.3−	1998 09 14	699	0.6+	0.0	1999 12 10	704	0.5+	0.0
1998 08 17	704	0.4+	0.0	1998 09 18	704	1.2−	0.7+	1999 12 10	704	0.3+	0.3+
1998 08 17	704	0.0	0.1−	1998 09 18	704	0.2−	1.3−	1999 12 15	704	0.3+	0.6−
1998 08 17	704	(4.2−	0.8−)	1998 09 18	704	1.3+	0.8−	1999 12 15	704	0.5−	0.0
1998 08 21	566	0.7−	0.3+	1998 09 18	699	0.1−	0.1+	1999 12 15	704	0.1+	0.2−
1998 08 21	566	1.4−	0.2+	1998 09 18	704	0.7+	0.7−	1999 12 15	704	0.4+	0.8−
1998 08 21	566	0.2−	0.1−	1998 09 18	699	0.2+	0.0	1999 12 15	704	0.0	1.0−
1998 08 23	704	0.1+	0.8−	1998 09 18	704	0.4−	0.5+	2000 01 02	704	0.4−	0.3−
1998 08 23	704	1.5−	0.2−	1998 09 18	699	0.9+	1.0+	2000 01 02	704	0.2+	0.2+
1998 08 23	704	0.5+	0.3+	1998 09 20	691	0.0	0.2+	2000 01 02	704	0.0	0.9+
1998 08 23	704	0.1−	0.9−	1998 09 20	691	0.1+	0.1+	2000 01 02	704	0.6+	1.7+
1998 08 23	704	(4.2−	0.2−)	1998 09 20	691	0.0	0.3+	2000 01 04	704	0.0	0.6+
1998 09 14	704	0.3+	0.5−	1998 09 26	691	0.4−	0.1+	2000 01 04	704	0.0	0.2+
1998 09 14	704	0.2−	0.0	1998 09 26	691	(2.2−	0.7+)	2000 01 04	704	0.0	0.3+
1998 09 14	704	0.7+	0.5−	1998 09 26	691	0.5−	0.1+	2000 01 04	704	1.3−	0.7−
1998 09 14	704	0.9+	0.4+	1998 09 29	691	0.8−	0.4+	2000 01 06	704	0.2−	0.1−
1998 09 14	704	0.2+	0.5−	1998 09 29	691	0.6−	0.1+	2000 01 06	704	0.2−	0.6−
1998 09 14	699	1.3+	0.9+	1998 09 29	691	0.7−	0.2+	2000 01 06	704	0.1−	0.1−

1998 RL₆ = 2000 AH₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	235.96776	ω	264.50293	+0.09958659	+0.99498807		
<i>a</i>	2.2955753	Ω	11.22441	−0.89360464	+0.09341677		
<i>e</i>	0.1026601	<i>i</i>	2.65432	−0.43766798	+0.03566587		
<i>P</i>	3.48	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 01	809	0.4−	0.2+	1998 09 27	704	0.3+	0.7+	1998 11 23	699	0.3+	1.7−
1997 04 01	809	0.2+	0.1+	1998 10 11	699	0.4+	0.6−	1998 11 23	699	0.1−	0.3−
1997 04 01	809	0.1+	0.3−	1998 10 11	699	0.1−	0.2−	1999 12 06	704	0.2+	0.1+
1998 09 14	699	1.0−	0.0	1998 10 11	699	0.2−	0.5−	1999 12 06	704	0.0	0.1+
1998 09 14	699	0.0	0.5+	1998 10 17	699	0.3−	0.4+	1999 12 06	704	0.7+	0.8+
1998 09 14	699	0.7−	0.2+	1998 10 17	699	0.7−	0.3+	1999 12 06	704	0.4+	0.2+
1998 09 18	699	0.4+	0.7+	1998 10 17	699	0.5−	0.2−	1999 12 06	704	0.5+	0.4−
1998 09 18	699	0.1−	0.8+	1998 10 28	704	1.5−	0.7−	2000 01 04	704	0.4+	0.2−
1998 09 18	699	1.0−	0.0	1998 10 28	704	0.7−	1.0−	2000 01 04	704	0.0	0.4−
1998 09 26	704	0.3−	0.1−	1998 10 28	704	0.2−	0.6−	2000 01 04	704	0.5−	0.5−
1998 09 26	704	0.4+	0.7−	1998 10 28	704	0.4+	0.1−	2000 01 04	704	0.7−	0.0
1998 09 26	704	0.6+	0.9−	1998 10 28	704	0.1−	0.4+	2000 01 04	704	0.1+	0.0
1998 09 26	704	0.6+	0.0	1998 10 29	704	1.4+	1.2+	2000 01 06	704	0.5−	0.4+
1998 09 26	704	0.1−	0.0	1998 10 29	704	0.9+	1.0−	2000 01 06	704	0.0	0.4+
1998 09 27	704	0.1+	0.4+	1998 10 29	704	0.9−	1.0−	2000 01 06	704	0.1+	0.2+
1998 09 27	704	0.2+	1.0+	1998 10 29	704	0.1+	0.5+	2000 01 06	704	0.1+	0.4+
1998 09 27	704	0.3+	1.3+	1998 10 29	704	0.5+	0.3+	2000 01 06	704	0.0	0.1+
1998 09 27	704	1.1+	1.0+	1998 11 23	699	0.8+	0.0				

1998 RN₇ = 1999 XS₁₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	80.93675	ω	20.08592	+0.99612049	−0.07469975		
<i>a</i>	3.0413401	Ω	343.98493	+0.03776240	+0.84031914		
<i>e</i>	0.1084804	<i>i</i>	9.70703	+0.07948567	+0.53692056		
<i>P</i>	5.30	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 30	699	0.5+	0.4−	1998 09 19	691	0.1−	0.1+	1999 12 12	704	0.3+	0.1+
1998 08 30	699	0.8−	0.6+	1998 09 19	691	0.2−	0.1+	1999 12 12	704	0.3−	0.1−
1998 08 30	699	0.3+	0.2+	1998 09 19	691	0.1+	0.4−	1999 12 12	704	0.3+	0.1−
1998 09 12	691	0.0	0.2−	1998 09 25	691	0.1+	0.1+	1999 12 15	704	0.6−	0.5−
1998 09 12	691	0.1−	0.3−	1998 09 25	691	0.2+	0.2+	1999 12 15	704	0.4−	0.3+
1998 09 12	691	0.0	0.1−	1998 09 25	691	0.0	0.2+	1999 12 15	704	0.7+	0.2+

1998 RV₁₂ = 2000 AH₁₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	87.04537	ω	206.43688	+0.83662362	−0.54764331		
<i>a</i>	2.7906313	Ω	186.80692	+0.51898834	+0.79955617		
<i>e</i>	0.0263346	<i>i</i>	5.88576	+0.17524847	+0.24656994		
<i>P</i>	4.66	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	(0.7−	3.7+)	1998 09 19	691	0.3−	0.0	1998 10 14	699	0.2+	1.0−
1998 09 14	704	1.4+	1.7+	1998 09 26	704	0.0	1.0+	1998 10 19	699	0.2+	0.1+
1998 09 14	691	0.1+	0.0	1998 09 26	704	1.0−	0.8−	1998 10 19	699	0.1−	0.2+
1998 09 14	704	(0.0	2.8+)	1998 09 26	704	0.1−	1.2−	1998 10 19	699	0.6+	0.7+
1998 09 14	691	0.0	0.1+	1998 09 26	704	0.3−	0.2−	2000 01 05	704	0.2+	0.1+
1998 09 14	691	0.1+	0.3+	1998 09 26	704	0.1−	0.8−	2000 01 05	704	0.5+	0.4+
1998 09 18	704	0.3+	0.0	1998 09 27	704	0.7+	0.5+	2000 01 05	704	0.4−	0.3+
1998 09 18	704	1.0−	0.2+	1998 09 27	704	0.2+	0.2−	2000 01 05	704	0.0	0.3−
1998 09 18	704	0.3+	1.3−	1998 09 27	704	0.4+	0.7+	2000 01 05	704	0.5+	0.0
1998 09 18	704	0.4−	0.6−	1998 09 27	704	0.5−	0.7+	2000 01 07	704	0.2−	0.3−
1998 09 18	704	0.2+	0.2−	1998 09 27	704	0.4+	0.1+	2000 01 07	704	0.0	0.1+
1998 09 19	691	0.5−	0.0	1998 10 14	699	0.1−	0.3+	2000 01 07	704	0.5−	0.3−
1998 09 19	691	0.1−	0.0	1998 10 14	699	0.7−	0.1−	2000 01 07	704	0.0	0.0

1998 RT₁₅ = 2000 AF₁₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	167.32556	ω	340.76786	+0.56589106	+0.81974624		
<i>a</i>	2.5747457	Ω	323.54570	−0.73565884	+0.45371556		
<i>e</i>	0.1196599	<i>i</i>	8.53880	−0.37225445	+0.34951150		
<i>P</i>	4.13	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 01	327	0.1−	0.2−	1998 09 16	699	0.1+	0.6+	1998 10 15	699	0.5−	0.3−
1998 09 01	327	0.1+	0.1+	1998 09 18	704	0.8+	0.4−	1998 10 15	699	0.1−	0.9+
1998 09 01	327	0.1−	0.0	1998 09 18	704	1.0−	0.0	1998 10 15	699	0.9+	1.0−
1998 09 02	327	0.3+	0.1−	1998 09 18	704	0.2+	0.6−	2000 01 04	704	0.1+	0.9−
1998 09 02	327	0.5+	0.9+	1998 09 18	704	0.5+	0.8+	2000 01 04	704	0.5−	0.1−
1998 09 02	327	0.0	0.4−	1998 09 18	704	1.0−	0.3+	2000 01 04	704	0.6−	0.8−
1998 09 14	704	0.2−	1.7+	1998 09 29	327	0.0	0.0	2000 01 04	704	0.5−	0.1+
1998 09 14	704	0.3−	1.7−	1998 09 29	327	0.0	0.6−	2000 01 08	704	0.3+	0.5−
1998 09 14	704	1.3−	0.4+	1998 09 29	327	0.6−	0.0	2000 01 08	704	0.3−	1.1+
1998 09 14	704	0.1+	1.2−	1998 10 01	327	0.2+	0.3+	2000 01 08	704	0.0	1.2+
1998 09 16	699	0.3+	0.0	1998 10 01	327	0.2+	0.3+	2000 01 08	704	0.8+	0.4−
1998 09 16	699	0.8+	0.3+	1998 10 01	327	0.1+	0.0	2000 01 08	704	0.8+	0.5+

1998 RX₁₅ = 2000 AD₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	105.93059	(2000.0)		$\mathbf{P}$	$\mathbf{Q}$
n	0.20336405	ω	61.46136	+0.99989263	+0.00008531
a	2.8638697	Ω	298.53041	-0.00601378	+0.91428328
e	0.0822341	i	0.95568	+0.01336294	+0.40507539
P	4.85	H	14.5	G 0.15	U 6

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1998 09 14	327	1.1−	0.3−	1998 09 25	327	2.0+	1.1−	2000 01 03	704	0.5−	0.7−
1998 09 14	327	1.0−	0.0	1998 09 25	327	1.6+	0.1−	2000 01 03	704	0.2−	0.7−
1998 09 14	327	0.9−	0.1+	1998 09 25	327	1.1+	0.9−	2000 01 03	704	0.6+	1.1−
1998 09 16	699	0.7+	0.6+	1998 09 26	704	0.3−	0.3−	2000 01 04	704	0.4−	0.1−
1998 09 16	699	0.1−	0.1−	1998 09 26	704	0.6+	0.3+	2000 01 04	704	0.1−	0.1−
1998 09 16	699	0.1+	0.0	1998 09 26	704	0.6−	0.3+	2000 01 04	704	0.1+	0.1−
1998 09 17	327	1.2+	0.2−	1998 09 26	704	0.2−	1.4+	2000 01 04	704	0.9+	0.2−
1998 09 17	327	1.4+	0.2−	1998 09 26	704	(1.9−	1.2+)	2000 01 08	704	0.0	0.2+
1998 09 17	327	1.5+	0.3+	1998 09 27	704	0.2+	0.9−	2000 01 08	704	0.3+	0.5+
1998 09 18	703	(2.2−	0.2−)	1998 09 27	704	0.5−	0.2−	2000 01 08	704	0.1+	0.5+
1998 09 18	703	(2.0−	0.7−)	1998 09 27	704	0.7+	0.5−	2000 01 08	704	0.2−	0.6+
1998 09 18	703	0.8−	1.0−	1998 09 27	704	(0.0	2.1−)	2000 01 08	704	0.6+	0.5+
1998 09 18	703	(2.3−	1.4−)	1998 09 27	704	0.9−	1.4−	2000 01 08	691	1.1−	0.7+
1998 09 18	704	0.2−	0.6+	1998 09 28	691	0.5−	0.3+	2000 01 08	691	0.1+	0.4−
1998 09 18	704	0.7−	0.0	1998 09 28	691	0.5−	0.3+	2000 01 08	691	0.1+	0.3−
1998 09 18	704	0.5−	0.5−	1998 09 28	691	0.5−	0.4+	2000 01 15	691	0.2+	0.2+
1998 09 18	704	0.3+	0.1+	1998 10 01	691	0.5−	0.2+	2000 01 15	691	0.3+	0.1+
1998 09 18	704	0.4+	0.4−	1998 10 01	691	1.1−	1.0+	2000 01 15	691	0.7+	0.0

1998 RE₁₆ = 1999 XT₁₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	153.39983		(2000.0)	P	Q
n	0.18657343	ω	163.92486	+0.47098002	+0.87934106
a	3.0332126	Ω	134.11111	−0.81974819	+0.46570009
e	0.1687140	i	5.61611	−0.32586918	+0.09941188
P	5.28	H	13.4	G 0.15	U 4

Residuals in seconds of arc

1998 09 14	327	1.2−	0.2−	1998 09 26	704	0.5−	0.4+	1998 10 29	704	0.1+	0.7+
1998 09 14	327	1.1−	0.2−	1998 09 26	327	1.6+	0.4−	1999 12 08	704	0.3−	0.3+
1998 09 14	327	1.2−	0.3−	1998 09 26	327	1.3+	0.2−	1999 12 08	704	0.0	0.5+
1998 09 17	327	1.6+	0.3−	1998 09 26	327	1.6+	0.4−	1999 12 08	704	0.0	0.4−
1998 09 17	327	1.5+	0.4−	1998 09 27	704	0.9−	0.3+	1999 12 08	704	0.3+	0.0
1998 09 17	327	(3.4+	1.0+)	1998 09 27	704	0.7+	0.8−	1999 12 14	704	0.3+	0.3−
1998 09 23	327	1.5−	0.6−	1998 09 27	704	0.6+	0.2−	1999 12 14	704	0.9−	0.8−
1998 09 23	327	1.0−	1.1−	1998 09 27	704	0.8−	0.3−	1999 12 14	704	0.4+	0.4+
1998 09 23	327	(2.2−	1.0−)	1998 10 17	699	0.8−	0.4+	1999 12 14	704	0.9−	0.6+
1998 09 24	699	0.8+	0.1−	1998 10 17	699	0.4+	0.1+	1999 12 14	704	0.2−	1.2+
1998 09 24	699	0.7−	1.3+	1998 10 17	699	0.8+	0.3+	2000 01 05	704	0.2+	0.3−
1998 09 24	699	0.1−	0.0	1998 10 28	704	0.9+	0.5+	2000 01 05	704	0.5+	0.2−
1998 09 25	327	0.4+	0.1−	1998 10 28	704	1.0+	0.9−	2000 01 05	704	0.4−	0.0
1998 09 25	327	0.6+	0.1+	1998 10 28	704	1.1−	0.1−	2000 01 05	704	0.8+	0.3−
1998 09 25	327	0.4+	0.1−	1998 10 28	704	1.3−	0.7+	2000 01 05	704	0.8+	0.8−
1998 09 26	704	0.3+	0.5−	1998 10 29	704	0.9+	0.6−	2000 01 06	704	0.1−	0.9−
1998 09 26	704	0.0	0.0	1998 10 29	704	0.0	0.1+	2000 01 06	704	0.2−	0.1−
1998 09 26	704	0.0	0.4+	1998 10 29	704	1.7−	0.1+	2000 01 06	704	0.0	1.0+
1998 09 26	704	0.0	0.8+	1998 10 29	704	1.9−	1.6+	2000 01 06	704	0.2−	0.3−

1998 RH₁₆ = 1982 VY₄ = 1999 VY₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	109.03870		(2000.0)	P	Q
n	0.17028483	ω	63.40388	+0.39032300	+0.91870732
a	3.2236811	Ω	229.70323	−0.87029657	+0.34683825
e	0.1039872	i	4.52753	−0.30038613	+0.18889175
P	5.79	H	14.2	G 0.15	U 2

Residuals in seconds of arc

1982 11 14	381	1.2−	0.7−	1998 09 19	910	1.0−	0.0	1999 11 04	704	0.4+	0.1+
1982 11 14	381	1.2+	0.2−	1998 09 22	910	0.8−	0.2−	1999 11 04	704	(2.8+	1.1−)
1993 10 22	809	(0.0	2.2+)	1998 09 22	910	0.8−	0.0	1999 11 04	704	0.5+	0.3+
1993 10 22	809	0.5−	1.3+	1998 09 22	910	0.9−	0.1−	1999 11 04	703	0.5−	1.6−
1993 10 22	809	0.2+	1.2+	1999 10 02	703	0.2−	1.0+	1999 11 04	704	0.7−	0.3+
1998 08 17	704	0.8+	0.5+	1999 10 02	703	0.7−	0.8+	1999 11 04	703	0.7+	0.1−
1998 08 17	704	1.2+	0.1−	1999 10 02	703	(1.2−	4.2+)	1999 11 04	704	0.5+	0.8−
1998 08 17	704	1.7+	0.5+	1999 10 02	703	0.3−	0.4+	1999 11 04	703	0.1+	0.0
1998 08 17	704	1.2−	1.6−	1999 10 03	704	0.1+	1.2−	1999 11 04	703	0.0	0.0

1998 09 09	910	0.5+	0.1−	1999 10 03	704	0.8−	0.2+	1999 11 06	691	0.5+	0.1−
1998 09 09	910	0.6+	0.2−	1999 10 03	704	0.0	0.6−	1999 11 06	691	0.3+	0.3−
1998 09 09	910	0.6+	0.0	1999 11 03	691	0.1+	0.0	1999 11 06	691	0.1+	0.3−
1998 09 19	910	0.6−	0.1+	1999 11 03	691	0.1−	0.0				
1998 09 19	910	0.7−	0.1+	1999 11 03	691	0.1+	0.1+				

1998 RD₁₇ = 2000 AA₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	75.72206		(2000.0)	P	Q
n	0.20422629	ω	214.43232	+0.95795364	−0.27733813
a	2.8558032	Ω	161.25016	+0.28642970	+0.93938424
e	0.1052038	i	13.22587	−0.01681816	+0.20159565
P	4.83	H	13.4	G 0.15	U 3

Residuals in seconds of arc

1998 08 17	704	(0.0	3.8−)	1998 09 18	704	0.2+	0.1+	1999 11 05	704	1.2+	0.6−
1998 08 17	704	0.6−	0.5+	1998 09 18	704	0.4+	0.6−	1999 11 05	704	0.2+	0.6−
1998 08 17	704	0.7−	0.7−	1998 09 18	704	1.0+	0.1−	1999 11 05	704	0.0	0.2+
1998 08 17	704	0.4−	0.7−	1998 09 18	704	0.1−	1.2+	1999 12 03	704	0.0	0.6+
1998 08 17	704	0.4−	0.9−	1998 09 18	704	1.5−	0.6−	1999 12 03	704	0.7−	0.1+
1998 08 23	704	0.3+	0.1−	1998 09 21	699	0.2−	0.8+	1999 12 03	704	0.7−	0.9+
1998 08 23	704	0.3+	0.1+	1998 09 21	699	0.3−	0.5+	1999 12 03	704	0.3+	0.3+
1998 08 23	704	1.1−	0.0	1998 09 21	699	0.2+	0.2+	2000 01 08	704	0.2+	0.1−
1998 08 23	704	0.1−	0.2+	1998 10 20	910	0.3−	0.1−	2000 01 08	704	0.2−	0.1−
1998 08 26	699	0.3+	0.1+	1998 10 20	910	0.2−	0.0	2000 01 08	704	0.2−	0.5−
1998 08 26	699	0.3+	0.2+	1998 10 20	910	0.3−	0.0	2000 01 08	704	0.0	0.0
1998 08 26	699	0.5+	0.4+	1998 12 08	704	0.3−	1.2+	2000 01 08	704	0.2+	0.5−
1998 09 14	704	0.2+	0.2−	1998 12 08	704	(2.2+	1.9−)	2000 01 11	704	0.3−	0.0
1998 09 14	704	0.4+	0.1−	1998 12 08	704	0.2+	1.1+	2000 01 11	704	0.4−	0.5−
1998 09 14	704	0.8+	0.6−	1998 12 08	704	(2.6−	0.4−)	2000 01 11	704	0.0	0.3+
1998 09 14	704	0.8+	0.6−	1999 11 05	704	1.1+	0.7−	2000 01 11	704	0.0	0.1−
1998 09 14	704	0.3+	0.4−	1999 11 05	704	0.1+	0.0	2000 01 11	704	0.3−	0.3+

1998 RK₁₇ = 2000 AB₁₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	338.94095		(2000.0)	P	Q
n	0.22838396	ω	307.17866	−0.54315239	−0.83958343
a	2.6506903	Ω	175.68893	+0.80400963	−0.52324307
e	0.0592746	i	7.05108	+0.24197931	−0.14600122
P	4.32	H	14.5	G 0.15	U 4

Residuals in seconds of arc

1998 07 20	327	0.7−	0.1−	1998 09 14	704	0.3+	0.4−	1999 12 06	704	0.6+	0.5+
1998 07 20	327	0.7−	0.1+	1998 09 14	704	0.3−	0.4−	1999 12 06	704	0.1−	0.2+
1998 07 20	327	0.5−	0.4−	1998 09 14	704	0.9−	0.6−	1999 12 14	704	0.2+	0.4+
1998 07 28	327	0.0	0.0	1998 09 14	704	1.5−	0.7−	1999 12 14	704	0.4+	0.0
1998 07 28	327	0.3−	0.1−	1998 09 17	910	0.9+	0.3+	1999 12 14	704	0.3+	0.1−
1998 07 28	327	0.2−	0.1−	1998 09 17	910	1.3+	0.7+	1999 12 14	704	0.5+	0.4+
1998 07 28	327	0.5−	0.0	1998 09 17	910	0.8+	0.5+	1999 12 14	704	0.1−	0.1−
1998 08 17	704	(1.2+	3.1−)	1998 09 18	704	1.4−	1.7+	2000 01 07	704	0.1+	0.4+
1998 08 17	704	(2.4+	0.4+)	1998 09 18	704	1.5−	0.3−	2000 01 07	704	0.1−	0.0
1998 08 17	704	1.3+	0.5−	1998 09 18	704	(2.9+	2.1−)	2000 01 07	704	1.4−	0.2+
1998 08 17	704	(3.3−	0.2+)	1998 09 18	704	(3.0+	2.1−)	2000 01 07	704	0.3−	0.5−
1998 08 25	910	1.9+	0.5+	1999 11 04	704	0.3−	0.2+	2000 01 07	704	0.2−	0.9−
1998 08 25	910	0.9+	0.7+	1999 11 04	704	1.0+	0.0	2000 01 11	704	0.6−	0.5+
1998 08 26	910	1.0+	0.6+	1999 11 04	704	0.2+	0.3−	2000 01 11	704	0.4−	0.1−
1998 08 26	699	0.4+	1.7−	1999 11 04	704	0.8−	0.2−	2000 01 11	704	0.4+	0.6−
1998 08 26	699	1.4−	0.3+	1999 12 06	704	0.2+	0.4−	2000 01 11	704	0.4+	0.0
1998 08 26	699	0.2+	0.0	1999 12 06	704	0.3−	0.2+				
1998 09 14	704	0.8+	0.2−	1999 12 06	704	0.3+	0.0				

1998 RM₁₉ = 2000 AY₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	49.61736		(2000.0)	P	Q
<i>n</i>	0.21608740	ω	70.70062	+0.45558118	-0.89007457
<i>a</i>	2.7503191	Ω	352.14952	+0.77136007	+0.40289600
<i>e</i>	0.1512297	<i>i</i>	6.13442	+0.44435283	+0.21317145
<i>P</i>	4.56	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.9-	0.6+	1998 09 18	704	1.8-	0.2-	2000 01 04	704	0.0	0.2-
1998 08 17	704	0.3+	0.2-	1998 10 20	910	0.1+	0.3+	2000 01 04	704	0.2-	0.1+
1998 08 17	704	(3.0+	2.6+)	1998 10 20	910	0.1+	0.2+	2000 01 04	704	0.2+	0.1+
1998 08 17	704	0.3-	1.8+	1998 10 20	910	0.1+	0.0	2000 01 04	704	0.3+	0.4+
1998 09 14	704	1.1+	0.9+	1998 10 21	910	0.2+	0.0	2000 01 04	704	0.4+	0.4-
1998 09 14	704	0.8+	0.5-	1998 10 21	910	0.4+	0.1+	2000 01 08	704	1.3-	0.7-
1998 09 14	704	0.3-	1.6-	1998 10 21	910	0.2+	0.1-	2000 01 08	704	0.4-	0.3-
1998 09 14	704	1.2-	0.5-	2000 01 03	704	0.6+	0.4+	2000 01 08	704	0.1+	0.3+
1998 09 14	704	1.4+	0.2-	2000 01 03	704	0.6+	0.3+	2000 01 08	704	0.3-	0.7+
1998 09 18	704	1.7+	1.7-	2000 01 03	704	0.0	0.2-	2000 01 08	704	0.8-	0.3+
1998 09 18	704	(2.4-	0.0)	2000 01 03	704	0.3+	0.2-				
1998 09 18	704	1.8-	1.3+	2000 01 03	704	0.4+	0.2-				

1998 RL₂₀ = 2000 AH

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	25.32474		(2000.0)	P	Q
<i>n</i>	0.21465793	ω	319.93873	+0.46003213	-0.87881542
<i>a</i>	2.7625157	Ω	102.32887	+0.84422999	+0.38872544
<i>e</i>	0.0568744	<i>i</i>	7.45197	+0.27503848	+0.27672368
<i>P</i>	4.59	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704	1.3-	0.1+	1999 11 04	704	0.2+	0.6-	2000 01 03	678	0.0	1.0+
1998 08 17	704	0.1+	0.5-	1999 11 04	704	0.4+	0.6-	2000 01 03	678	1.2-	0.9+
1998 08 17	704	0.6-	2.0+	1999 11 04	704	0.3+	0.1-	2000 01 05	704	0.1+	0.5-
1998 08 17	704	1.4-	1.4+	1999 11 04	704	0.2+	0.2+	2000 01 05	704	0.2+	0.0
1998 09 15	428	0.3+	0.5-	1999 11 04	704	0.6-	0.8-	2000 01 05	704	0.4-	0.5+
1998 09 15	428	0.6+	0.5+	1999 12 06	704	(2.4+	1.5-)	2000 01 05	704	0.7+	0.1+
1998 09 16	428	0.3+	0.1-	1999 12 06	704	0.4+	0.5-	2000 01 05	704	0.4+	0.1-
1998 09 16	428	0.3-	1.3-	1999 12 06	704	0.3+	0.6-	2000 01 06	704	0.1+	0.2+
1998 09 19	428	0.2-	0.4-	1999 12 30	699	0.4+	0.1+	2000 01 06	704	0.1-	0.1-
1998 09 20	428	0.7+	1.1-	1999 12 30	699	0.0	0.5+	2000 01 06	704	0.3-	0.6-
1998 09 20	428	1.0+	0.1-	1999 12 30	699	0.1+	0.7+	2000 01 06	704	0.2-	0.5+
1998 10 10	428	0.7+	0.4+	2000 01 02	678	0.3-	0.5-	2000 01 06	704	0.3-	1.0+
1998 10 10	428	0.3+	0.1+	2000 01 02	678	0.9-	0.1-				

1998 RU₂₂ = 1998 VP₁ = 2000 AT₁₈Id. S. Nakano (d, *MPC* 36125), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	48.58047		(2000.0)	P	Q
<i>n</i>	0.12373783	ω	343.35622	+0.98772214	-0.15459483
<i>a</i>	3.9884214	Ω	25.56964	+0.14860924	+0.88544365
<i>e</i>	0.2381233	<i>i</i>	2.98576	+0.04816920	+0.43828070
<i>P</i>	7.97	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 17	704	1.1+	0.1+	1998 09 18	704	0.7-	0.9+	1999 11 14	704	0.4-	0.4+
1998 08 17	704	0.2-	0.9+	1998 09 18	704	0.2-	1.7-	1999 11 14	704	0.3-	0.2+
1998 08 17	704	1.2-	0.8+	1998 09 18	704	0.4-	0.1+	1999 12 07	704	0.5+	0.3+
1998 08 17	704	1.4+	0.2+	1998 11 09	910	0.4+	0.2+	1999 12 07	704	0.3-	0.1+
1998 08 17	704	0.1-	0.3+	1998 11 09	910	0.4-	0.1+	1999 12 07	704	0.0	0.2-
1998 08 23	704	0.5+	1.1-	1998 11 09	910	0.3-	0.2+	1999 12 07	704	0.2+	0.6-
1998 08 23	704	(0.5+	3.1-)	1998 11 10	910	0.3+	0.7-	1999 12 07	704	0.3+	0.2-
1998 08 23	704	1.0+	0.5-	1998 11 10	910	0.9+	0.3-	2000 01 03	704	0.1+	0.5-
1998 08 23	704	(2.1-	0.7+)	1998 11 10	910	0.0	0.2+	2000 01 03	704	0.0	0.7+
1998 08 23	704	(2.6-	0.4+)	1999 11 03	704	0.2+	0.9+	2000 01 03	704	0.0	1.4-

1998 09 14	704	1.0+	1.4-	1999 11 03	704	0.1+	0.5+	2000 01 03	704	0.3-	0.3-
1998 09 14	704	0.2+	1.1+	1999 11 03	704	0.4-	1.1+	2000 01 04	704	0.2+	0.4-
1998 09 14	704	1.0-	0.1+	1999 11 03	704	0.5-	0.8+	2000 01 04	704	0.2+	0.2+
1998 09 14	704	0.8-	0.9-	1999 11 14	704	0.2-	0.1+	2000 01 04	704	0.6+	0.5+
1998 09 18	704	0.2-	1.7+	1999 11 14	704	0.5-	0.2-	2000 01 04	704	0.8+	0.8-
1998 09 18	704	0.3-	0.9-	1999 11 14	704	0.3-	0.2+	2000 01 04	704	0.5+	1.4-

1998 RE₂₄ = 1999 XN₁₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	69.29958		(2000.0)	P	Q
<i>n</i>	0.21094987	ω	31.97247	+0.83299780	-0.55327280
<i>a</i>	2.7947944	Ω	1.62336	+0.49185876	+0.73889502
<i>e</i>	0.1102371	<i>i</i>	3.98516	+0.25335672	+0.38460805
<i>P</i>	4.67	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.4+	0.4+	1998 09 18	704	1.0-	0.9-	1999 12 15	704	0.9+	0.3+
1998 08 17	704	1.5-	0.5+	1998 10 20	910	0.7+	0.6-	1999 12 15	704	0.4+	0.7-
1998 08 17	704	0.7-	0.4+	1998 10 20	910	0.6+	0.8-	1999 12 15	704	0.6+	0.3+
1998 08 17	704	1.8+	0.1+	1998 10 20	910	0.9+	0.2-	1999 12 15	704	0.2-	0.4-
1998 09 14	704	0.1+	1.0+	1998 10 21	910	0.5+	0.6-	1999 12 15	704	0.0	0.5-
1998 09 14	704	0.1+	0.3+	1998 10 21	910	0.7+	0.6-	2000 01 03	704	0.6-	0.7+
1998 09 14	704	(0.8+	2.6+)	1998 10 21	910	0.7+	0.7-	2000 01 03	704	0.1-	0.4+
1998 09 14	704	1.4-	1.9+	1999 12 10	704	0.4-	0.3-	2000 01 03	704	0.2+	1.4+
1998 09 18	704	1.5-	1.2+	1999 12 10	704	0.8-	0.7-				
1998 09 18	704	0.2-	1.4-	1999 12 10	704	0.1+	0.5+				

1998 RU₃₆ = 1999 XW₆₈

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	115.51668		(2000.0)	P	Q
<i>n</i>	0.17424057	ω	79.73227	+0.77878613	+0.62183947
<i>a</i>	3.1747036	Ω	241.76663	-0.60593866	+0.71171783
<i>e</i>	0.1262893	<i>i</i>	5.37371	-0.16226674	+0.32676201
<i>P</i>	5.66	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.1+	0.5-	1998 09 25	699	0.6-	1.7+	1999 12 08	704	0.1-	0.6-
1998 09 14	704	(2.9-	1.6-)	1998 09 25	699	0.9+	1.6+	1999 12 08	704	1.1+	0.1+
1998 09 14	704	0.5+	0.5+	1998 09 25	699	0.8-	1.4+	1999 12 08	704	0.2+	0.1-
1998 09 14	704	0.3-	0.9-	1999 11 15	704	0.2+	0.1-	1999 12 08	704	0.4+	0.5-
1998 09 16	699	1.1-	0.7+	1999 11 15	704	0.0	0.3+	1999 12 08	704	0.3+	0.6-
1998 09 16	699	0.6-	0.7+	1999 11 15	704	0.4-	0.7+	2000 01 05	704	0.9-	1.1+
1998 09 16	699	1.1-	0.4+	1999 11 15	704	0.3-	1.2+	2000 01 05	704	0.5-	0.4-
1998 09 18	704	0.5+	1.4-	1999 12 07	704	0.4+	0.1+	2000 01 05	704	1.0-	0.1+
1998 09 18	704	0.7+	0.9-	1999 12 07	704	0.1+	0.9-	2000 01 06	704	0.1+	0.8+
1998 09 18	704	0.4-	0.2-	1999 12 07	704	0.2+	0.9-	2000 01 06	704	0.5+	0.4-
1998 09 18	704	0.8+	1.6-	1999 12 07	704	0.5-	0.9-	2000 01 06	704	0.8+	1.4+
1998 09 18	704	1.4+	1.4-	1999 12 07	704	0.0	0.8-	2000 01 06	704	0.5-	0.4+

1998 RE₃₇ = 2000 AM₁₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	65.60232		(2000.0)	P	Q
<i>n</i>	0.18654964	ω	115.29540	+0.70648745	-0.70271016
<i>a</i>	3.0334705	Ω	289.47895	+0.61301052	+0.66699208
<i>e</i>	0.2192230	<i>i</i>	5.11832	+0.35368570	+0.24762876
<i>P</i>	5.28	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.1-	1.2+	1998 09 16	699	0.0	0.8+	1998 10 11	699	0.2-	0.1-
1998 08 17	704	1.2+	0.4+	1998 09 18	704	1.3-	0.5-	2000 01 05	704	0.9-	0.1-
1998 08 17	704	0.1-	0.4-	1998 09 18	704	0.1+	0.6-	2000 01 05	704	0.1-	0.1-
1998 08 17	704	1.3-	0.9-	1998 09 18	704	1.7-	1.1-	2000 01 05	704	0.6+	0.6-
1998 08 17	704	(0.1-	2.6+)	1998 09 18	704	1.0-	0.3+	2000 01 05	704	0.4-	0.2-
1998 09 14	704	0.2+	0.8-	1998 09 18	704	0.8-	0.6-	2000 01 05	704	0.7+	0.4+

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1998 09 14	704	1.6+	0.5−	1998 09 25	699	0.7+	0.1−	2000 01 07	704	0.5+	0.5−
1998 09 14	704	1.6+	0.0	1998 09 25	699	0.0	1.3+	2000 01 07	704	0.6−	0.6−
1998 09 14	704	0.6+	0.5+	1998 09 25	699	0.5−	0.4−	2000 01 07	704	0.1+	0.3+
1998 09 16	699	0.7+	0.3−	1998 10 11	699	0.3−	0.1+	2000 01 07	704	0.6+	1.4+
1998 09 16	699	0.4+	0.7+	1998 10 11	699	0.1+	1.3+	2000 01 07	704	0.6−	0.2−

1998 RP₃₇ = 1999 XX₄₃

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		242.38564		(2000.0)		P		Q	
<i>n</i>		0.16997278		ω	282.13296	−0.95671648		+0.28122453	
<i>a</i>		3.2276255		Ω	274.23567	−0.22917603		−0.88661240	
<i>e</i>		0.0828224		<i>i</i>	4.30585	−0.17936535		−0.36719371	
<i>P</i>		5.80		<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.5−	0.3+	1999 11 12	699	0.5−	0.1+	1999 12 07	704	0.3+	0.8−
1998 09 14	704	1.3−	1.7+	1999 11 14	704	0.5+	0.5+	1999 12 07	704	0.1+	0.2−
1998 09 14	704	0.6−	0.3−	1999 11 14	704	0.4+	0.4−	1999 12 07	106	0.8−	1.1+
1998 09 14	704	0.4−	0.1−	1999 11 14	704	1.1+	0.3−	1999 12 07	106	0.7−	0.3−
1998 09 18	704	0.8+	0.6−	1999 11 14	704	0.5+	0.5−	1999 12 07	106	0.4+	0.1−
1998 09 18	704	1.0−	1.5−	1999 11 14	704	1.2+	0.1−	1999 12 08	704	0.1−	0.9−
1998 09 18	704	1.2+	1.3−	1999 11 16	704	0.4+	0.4−	1999 12 08	704	0.0	0.2+
1998 09 18	704	0.9+	1.2+	1999 11 16	704	0.2−	0.0	1999 12 08	704	0.2+	0.6−
1998 09 18	704	0.2+	0.3+	1999 11 16	704	0.1+	0.0	1999 12 08	704	0.0	0.0
1998 09 25	699	1.0−	0.4+	1999 11 16	704	0.2+	0.4−	1999 12 08	704	0.3−	0.3−
1998 09 25	699	0.3+	0.6−	1999 11 16	704	0.5+	0.6−	1999 12 13	703	0.3−	0.1−
1998 09 25	699	1.5+	0.7+	1999 12 05	703	0.6−	0.4+	1999 12 13	703	0.2−	0.9+
1999 11 09	703	0.0	0.5−	1999 12 05	703	0.9−	0.2+	1999 12 13	703	0.2−	0.7+
1999 11 09	703	0.2+	0.0	1999 12 05	703	0.4+	0.8+	1999 12 13	703	0.1+	0.7+
1999 11 09	703	0.3−	0.9+	1999 12 05	703	(0.7−	2.5+)	1999 12 13	106	0.2−	0.2+
1999 11 09	703	1.2−	0.2+	1999 12 07	704	0.0	0.3−	1999 12 13	106	0.5+	0.2+
1999 11 12	699	0.6−	0.2+	1999 12 07	704	0.5+	0.3−	1999 12 13	106	0.5−	0.8+
1999 11 12	699	0.8−	0.1−	1999 12 07	704	0.8+	0.6−				

1998 RP₄₄ = 2000 AF₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		28.15964		(2000.0)		P		Q	
<i>n</i>		0.26767599		ω	332.26263	−0.39476622		−0.91428906	
<i>a</i>		2.3844951		Ω	140.79883	+0.86731414		−0.40342382	
<i>e</i>		0.0625780		<i>i</i>	8.25493	+0.30319269		−0.03639684	
<i>P</i>		3.68		<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.5+	0.7−	1998 09 27	704	0.1−	0.7+	1999 12 07	704	0.5+	0.5−
1998 09 14	704	0.2+	1.9−	1998 09 27	704	0.1+	0.2−	2000 01 05	704	0.1−	0.4−
1998 09 14	704	0.8+	0.2−	1998 09 27	704	1.9−	0.5+	2000 01 05	704	0.2−	0.3+
1998 09 14	704	0.1−	0.6−	1998 09 27	704	0.1+	0.5−	2000 01 05	704	0.4−	0.2+
1998 09 18	704	0.8+	0.3+	1998 09 27	704	0.3+	1.2+	2000 01 05	704	0.4−	1.5+
1998 09 18	704	0.5+	0.1+	1998 10 12	699	0.3−	1.5−	2000 01 07	704	0.3+	0.7−
1998 09 18	704	1.1+	0.1−	1998 10 12	699	1.5+	1.0−	2000 01 07	704	0.3−	0.2+
1998 09 18	704	0.3+	0.4+	1998 10 12	699	0.3+	0.2+	2000 01 07	704	0.3+	0.5−
1998 09 18	704	0.8−	1.9+	1999 12 07	704	0.6−	0.4−	2000 01 07	704	0.7+	0.9+
1998 09 26	704	1.8−	0.7+	1999 12 07	704	0.0	0.1−	2000 01 07	704	0.2+	0.0
1998 09 26	704	1.8−	1.1+	1999 12 07	704	0.1+	0.7−				

1998 RT₄₄ = 1992 ES₃ = 2000 AW₁₈₈

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		272.73596		(2000.0)		P		Q	
<i>n</i>		0.22362263		ω	38.19258	−0.95640886		+0.27747457	
<i>a</i>		2.6881833		Ω	157.40466	−0.29005127		−0.93881777	
<i>e</i>		0.1044382		<i>i</i>	13.70786	+0.03394637		−0.20403199	
<i>P</i>		4.41		<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 03 08	399	1.5+	1.1−	1998 09 26	704	0.4−	0.8+	2000 01 08	704	0.2+	0.3−
1992 03 08	399	1.9−	0.8−	1998 09 26	704	0.9+	0.0	2000 01 08	704	0.3+	0.4−
1998 09 14	704	0.5−	0.8−	1998 09 26	704	0.8−	0.6−	2000 01 08	704	0.9−	0.3−
1998 09 14	704	0.2−	0.8−	1998 09 26	704	0.5+	0.5+	2000 01 08	699	0.2+	0.1+
1998 09 14	704	1.3−	0.8−	1998 09 27	704	0.7+	0.6−	2000 01 08	704	0.3+	0.3−
1998 09 14	704	0.2+	1.1−	1998 09 27	704	1.2+	0.9+	2000 01 08	704	0.1−	0.3+
1998 09 17	699	0.1−	0.5−	1998 09 27	704	0.9−	1.6+	2000 01 08	699	0.2−	0.6+
1998 09 17	699	0.0	0.4+	1998 09 27	704	0.4−	0.3−	2000 01 08	699	0.6−	0.7+
1998 09 17	699	0.2+	0.2−	1998 09 27	704	0.2+	0.3−	2000 01 11	704	0.2−	0.2−
1998 09 18	704	0.5+	0.3+	1998 10 12	699	0.7−	0.8+	2000 01 11	704	0.0	0.4−
1998 09 18	704	0.6+	1.6−	1998 10 12	699	1.2−	0.5+	2000 01 11	704	0.4+	0.0
1998 09 18	704	0.1−	0.9+	1998 10 12	699	1.4−	1.1+	2000 01 11	704	0.0	0.2−
1998 09 18	704	0.3−	1.0−	2000 01 07	699	0.4+	0.4+	2000 01 11	704	0.4−	0.4−
1998 09 18	704	1.9+	0.0	2000 01 07	699	0.5+	0.2+				
1998 09 26	704	1.5+	1.2−	2000 01 07	699	0.1+	0.1−				

1998 RJ₄₅ = 2000 AB₁₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		50.88167		(2000.0)		P		Q	
<i>n</i>		0.17916484		ω	113.84470	+0.69340305		−0.72000378	
<i>a</i>		3.1162636		Ω	292.22428	+0.64957848		+0.64147840	
<i>e</i>		0.0883967		<i>i</i>	1.73634	+0.31183330		+0.26476408	
<i>P</i>		5.50		<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 23	704	1.2+	0.6+	1998 09 18	704	1.0−	1.1−	1999 12 07	704	0.3+	0.1−
1998 08 23	704	(1.3−	2.6+)	1998 09 18	704	1.2−	1.4+	1999 12 07	704	0.8−	0.7+
1998 08 23	704	0.4+	0.0	1998 09 26	704	1.3+	0.3−	1999 12 07	704	0.1+	0.4−
1998 08 23	704	0.4−	0.2−	1998 09 26	704	0.9−	0.0	1999 12 07	704	0.1+	0.2−
1998 08 23	704	1.7−	0.6−	1998 09 26	704	1.1+	0.3−	2000 01 03	704	0.3+	1.2−
1998 09 14	704	0.4+	0.2−	1998 09 26	704	0.2−	1.1−	2000 01 03	704	0.7−	0.3−
1998 09 14	704	0.7+	0.7+	1998 09 26	704	0.5+	1.3−	2000 01 03	704	0.2+	0.1+
1998 09 14	704	1.1+	0.7+	1998 09 27	704	0.8+	1.3−	2000 01 03	704	1.0+	0.8+
1998 09 14	704	1.2+	0.8+	1998 09 27	704	1.1−	0.6+	2000 01 04	704	0.3−	0.1−
1998 09 18	704	0.9−	0.7+	1998 09 27	704	0.4−	0.4+	2000 01 04	704	0.1−	0.1+
1998 09 18	704	0.3+	0.4+	1998 09 27	704	0.3+	0.5+	2000 01 04	704	0.1−	0.7+
1998 09 18	704	0.5−	0.3−	1998 09 27	704	0.9−	0.0				

1998 RF₄₆ = 1999 YQ₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		205.02085		(2000.0)		P		Q	
<i>n</i>		0.22942380		ω	327.55957	−0.06454633		+0.99687238	
<i>a</i>		2.6426748		Ω	298.70310	−0.90411852		−0.07775884	
<i>e</i>		0.0540071		<i>i</i>	2.97996	−0.42237834		+0.01410763	
<i>P</i>		4.30		<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.3+	0.7−	1998 09 26	704	0.6+	0.2−	1998 09 27	704	0.3−	0.7−
1998 09 14	704	0.0	0.3−	1998 09 26	704	0.8−	0.1+	1998 10 14	699	0.3−	0.3+
1998 09 14	704	0.5−	0.0	1998 09 26	704	0.6−	1.2−	1998 10 14	699	0.8−	0.8+
1998 09 14	704	0.2−	0.6+	1998 09 26	704	0.1+	0.8−	1998 10 14	699	0.7+	0.5+
1998 09 18	704	0.1−	0.4+	1998 09 26	704	0.5+	0.6−	1999 12 30	104	0.6+	0.0
1998 09 18	704	0.3+	0.7+	1998 09 27	699	1.1+	0.1−	1999 12 30	104	0.9+	0.2+
1998 09 18	704	0.2+	0.3+	1998 09 27	699	0.5+	0.2+	1999 12 31	104	0.8−	0.0
1998 09 18	704	0.5−	0.2−	1998 09 27	704	0.2−	0.2−	1999 12 31	104	0.2+	0.0
1998 09 18	704	0.5+	0.2−	1998 09 27	704	1.1+	0.3−	2000 01 06	104	0.2+	0.1+
1998 09 25	699	0.5−	0.1−	1998 09 27	699	0.2−	0.3+	2000 01 06	104	0.3−	0.2−
1998 09 25	699	0.2+	0.9+	1998 09 27	704	0.4−	0.5−	2000 01 06	104	0.9−	0.2−
1998 09 25	699	0.1−	0.7+	1998 09 27	704	0.4−	0.5+				

1998 RJ₄₆ = 2000 AK₁₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	17.44949		(2000.0)	P		Q	
<i>n</i>	0.21464189	ω	269.11912	−0.36734996		−0.92885214	
<i>a</i>	2.7626534	Ω	202.61720	+0.89513877		−0.33911675	
<i>e</i>	0.1804688	<i>i</i>	7.14449	+0.25254819		−0.14910914	
<i>P</i>	4.59	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.8+	0.5−	1998 09 27	704	0.6+	0.9−	2000 01 06	704	0.4+	0.3+
1998 09 14	704	0.2+	0.3−	1998 09 27	704	0.7−	0.0	2000 01 06	704	0.3−	0.2+
1998 09 14	704	0.0	1.8+	1998 09 27	704	0.3+	1.2−	2000 01 08	704	0.1+	0.0
1998 09 14	704	0.2−	0.3−	1999 12 14	704	0.2−	0.3+	2000 01 08	704	0.4−	0.1+
1998 09 18	704	0.3+	0.6+	1999 12 14	704	0.1−	0.8−	2000 01 08	704	0.3+	0.2+
1998 09 18	704	0.8−	0.2+	1999 12 14	704	0.5−	0.1+	2000 01 08	704	0.1−	0.6−
1998 09 18	704	(2.4+ 1.2+)		1999 12 14	704	0.5−	1.2−	2000 01 08	704	1.1−	1.0−
1998 09 18	704	(0.2+ 2.1+)		2000 01 04	699	0.5+	0.6+	2000 01 11	704	0.1+	0.1+
1998 09 26	704	1.1+	0.3−	2000 01 04	699	0.4+	0.4+	2000 01 11	704	0.2+	0.5+
1998 09 26	704	(0.0 2.1−)		2000 01 04	699	0.9+	0.3+	2000 01 11	704	0.5+	0.2+
1998 09 26	704	1.6−	1.1+	2000 01 06	704	0.0	0.3−	2000 01 11	704	0.1+	0.3+
1998 09 27	704	(3.2+ 1.0−)		2000 01 06	704	0.2−	0.2+	2000 01 11	704	0.2−	0.1+

1998 RT₄₆ = 2000 AO₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	155.50384		(2000.0)	P		Q	
<i>n</i>	0.26098961	ω	21.07523	+0.88536528		+0.45911255	
<i>a</i>	2.4250493	Ω	311.37989	−0.43925649		+0.77463084	
<i>e</i>	0.1472648	<i>i</i>	5.59093	−0.15225654		+0.43492840	
<i>P</i>	3.78	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 29	704	1.4−	1.4+	1998 09 16	699	0.0	0.2−	1998 11 14	699	0.6+	0.5+
1998 06 29	704	0.3−	1.1−	1998 09 16	699	0.1+	0.1+	1998 11 14	699	1.2−	0.8+
1998 06 29	704	0.9+	0.8+	1998 09 18	704	0.9−	0.1+	1998 11 14	699	0.4−	1.0+
1998 06 29	704	(5.4− 0.2+)		1998 09 18	704	0.3+	0.4−	1998 12 09	704	0.3−	1.7−
1998 08 23	704	1.0+	0.0	1998 09 18	704	1.4−	0.2+	1998 12 09	704	0.0	1.1−
1998 08 23	704	1.8+	0.2−	1998 09 18	704	0.5+	0.2+	1998 12 09	704	(2.3− 0.2+)	
1998 08 23	704	0.5+	0.7−	1998 09 18	704	0.8−	0.1+	1998 12 09	704	1.1+	1.4−
1998 08 23	704	0.8−	0.3−	1998 09 26	704	0.3+	0.9+	1998 12 09	704	0.9+	0.2−
1998 08 23	704	(1.7+ 2.3+)		1998 09 26	704	0.2+	0.3−	2000 01 04	704	0.5+	0.4+
1998 08 23	704	1.2+	0.6+	1998 09 26	704	0.6+	1.2+	2000 01 04	704	0.1+	0.2−
1998 08 23	704	0.2+	0.8−	1998 09 26	704	0.2−	0.5+	2000 01 04	704	0.5−	0.3+
1998 08 23	704	1.4−	0.1−	1998 09 26	704	0.6+	0.8+	2000 01 04	704	0.9−	0.3+
1998 08 23	704	1.4−	0.5−	1998 09 27	704	0.6−	0.9+	2000 01 04	704	0.6+	0.1−
1998 08 23	704	0.1+	0.2+	1998 09 27	704	0.6−	0.2−	2000 01 06	704	0.2+	0.6+
1998 09 14	704	0.1−	0.4−	1998 09 27	704	0.1−	0.9−	2000 01 06	704	0.3−	0.2+
1998 09 14	704	0.7−	0.6−	1998 09 27	704	1.3+	0.8+	2000 01 06	704	0.4+	0.5−
1998 09 14	704	0.3+	0.4−	1998 10 15	699	(1.9− 2.2+)		2000 01 06	704	0.4+	0.1+
1998 09 14	704	0.2−	0.1+	1998 10 15	699	(3.5+ 1.4−)					
1998 09 16	699	0.2+	0.0	1998 10 15	699	(3.7+ 3.4−)					

1998 RM₄₇ = 1999 XO₂₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	161.28451		(2000.0)	P		Q	
<i>n</i>	0.24483691	ω	34.66504	+0.67825676		+0.73205110	
<i>a</i>	2.5305686	Ω	278.13384	−0.68792823		+0.60205851	
<i>e</i>	0.1681797	<i>i</i>	3.69450	−0.25830703		+0.31878947	
<i>P</i>	4.03	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 23	704	0.8−	1.6−	1998 09 18	704	0.6+	0.6+	1998 09 27	704	0.4−	0.2+
1998 08 23	704	0.2+	1.1−	1998 09 18	704	0.3−	1.1+	1998 10 14	699	0.1−	0.2−
1998 08 23	704	1.4+	0.2+	1998 09 26	704	0.3−	0.5−	1998 10 14	699	0.0	1.4+
1998 08 23	704	1.1−	0.2+	1998 09 26	704	1.1−	0.8−	1998 10 14	699	0.1+	0.7+
1998 09 14	704	0.6+	0.2−	1998 09 26	704	1.1−	0.6−	1999 12 15	691	0.3+	0.1+

1998 09 14	704	0.2+	0.2−	1998 09 26	704	1.2−	0.3−	1999 12 15	691	0.5+	0.2+
1998 09 14	704	0.7+	0.3−	1998 09 26	704	1.7−	0.4−	1999 12 15	691	0.3+	0.0
1998 09 14	704	1.3+	0.3+	1998 09 27	699	0.4+	0.4+	1999 12 17	691	0.3−	0.2−
1998 09 16	699	0.0	0.7+	1998 09 27	699	1.0+	0.3+	1999 12 17	691	0.3−	0.1−
1998 09 16	699	0.5+	0.3+	1998 09 27	704	0.4−	0.1+	1999 12 17	691	0.4−	0.0
1998 09 16	699	1.5+	0.4+	1998 09 27	699	0.4+	0.5+	2000 01 05	704	0.1−	0.1+
1998 09 18	704	0.7+	0.7−	1998 09 27	704	0.0	0.3+	2000 01 05	704	0.1+	0.5−
1998 09 18	704	0.4−	0.5−	1998 09 27	704	0.1−	0.1−	2000 01 05	704	0.0	0.7−
1998 09 18	704	0.3−	0.1−	1998 09 27	704	0.0	0.2−	2000 01 05	704	0.2−	0.2+

1998 RQ₄₇ = 2000 AK₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	214.22957		(2000.0)	P		Q	
<i>n</i>	0.26812746	ω	322.46680	+0.01869527		+0.99763797	
<i>a</i>	2.3818177	Ω	308.50679	−0.89563675		−0.01267337	
<i>e</i>	0.1221893	<i>i</i>	4.84536	−0.44439318		+0.06751195	
<i>P</i>	3.68	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 23	704	(2.8+ 0.2−)		1998 09 26	704	0.1+	1.1−	1999 12 10	704	0.1+	0.0
1998 08 23	704	0.8+	0.1+	1998 09 26	704	0.3−	0.8−	1999 12 10	704	0.0	0.1−
1998 08 23	704	1.2−	0.5+	1998 09 26	704	0.7−	0.2−	1999 12 10	704	0.1−	0.1+
1998 08 23	704	0.9+	0.2+	1998 09 26	704	1.3−	0.0	1999 12 10	704	0.7−	0.1+
1998 08 23	704	1.1−	0.6−	1998 09 27	699	1.5+	0.1−	2000 01 03	704	0.3−	0.2−
1998 09 14	704	1.1+	0.3+	1998 09 27	699	0.9+	0.4+	2000 01 03	704	0.4−	0.0
1998 09 14	704	0.9+	0.2+	1998 09 27	704	0.7−	0.6−	2000 01 03	704	0.4+	0.5−
1998 09 14	704	0.6+	0.3+	1998 09 27	699	0.6+	0.1+	2000 01 03	704	0.2+	0.7−
1998 09 14	704	0.1+	0.0	1998 09 27	704	0.0	0.0	2000 01 03	704	0.4−	0.3+
1998 09 18	704	0.1−	0.2−	1998 09 27	704	0.2+	0.6−	2000 01 04	704	0.8+	0.2−
1998 09 18	704	0.1+	0.1−	1998 09 27	704	0.5−	0.0	2000 01 04	704	0.1+	0.2+
1998 09 18	704	0.4−	0.4+	1998 09 27	704	0.9−	0.2−	2000 01 04	704	0.1−	0.0
1998 09 18	704	0.3+	0.4+	1998 10 14	699	0.6−	1.0+	2000 01 04	704	0.0	0.3+
1998 09 18	704	0.2−	0.2+	1998 10 14	699	0.2−	0.6+	2000 01 04	704	0.3+	1.0+
1998 09 26	704	0.4−	0.3−	1998 10 14	699	0.5+	0.2+				

1998 RU₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	327.00218		(2000.0)	P		Q	
<i>n</i>	0.19155282	ω	297.91257	−0.71637415		−0.69440535	
<i>a</i>	2.9804169	Ω	198.38257	+0.69156016		−0.69378621	
<i>e</i>	0.0519231	<i>i</i>	12.43214	+0.09248041		−0.19094999	
<i>P</i>	5.15	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 03 17	566	0.5−	0.8−	1998 09 18	704	1.6−	0.2+	1999 12 13	106	0.2+	0.1+
1996 03 17	566	0.9−	1.0−	1998 09 18	704	0.9+	0.3−	1999 12 13	106	0.9+	0.5+
1996 03 17	566	0.6−	0.7−	1998 09 18	704	0.3−	0.8+	1999 12 13	106	0.1−	0.1+
1996 04 20	566	0.7+	0.3+	1998 09 26	704	(0.3+ 2.1−)		1999 12 29	106	0.0	0.4−
1996 04 20	566	0.4+	0.0	1998 09 26	704	(0.5+ 2.4−)		1999 12 29	106	0.1−	0.3−
1996 04 20	566	0.6+	0.1+	1998 09 26	704	(0.2− 2.4−)		1999 12 29	106	0.3−	0.0
1998 08 23	704	0.0	0.6−	1998 09 26	704	0.1+	2.0−	1999 12 30	106	0.2−	0.9+
1998 08 23	704	(2.8+ 1.5−)		1998 09 27	699	0.5−	0.1+	1999 12 30	106	0.3+	0.6+
1998 08 23	704	0.8−	1.7+	1998 09 27	699	0.2−	1.1−	1999 12 30	106	0.0	0.1−
1998 08 23	704	0.3−	0.6+	1998 09 27	704	0.3+	0.3−	1999 12 31	106	0.6+	0.3+
1998 08 23	704	(4.7− 1.5+)		1998 09 27	699	0.2−	0.5−	1999 12 31	106	0.8−	0.7+
1998 08 27	699	0.2+	0.1+	1998 09 27	704	0.8+	1.1+	1999 12 31	106	0.4−	1.5+
1998 08 27	699	0.3+	0.1−	1998 09 27	704	0.7+	1.0+	2000 01 08	704	0.1+	0.4−
1998 08 27	699	0.5−	0.1+	1998 09 27	704	0.2−	0.9+	2000 01 08	704	0.5+	0.0
1998 09 14	704	0.5+	0.1−	1998 09 27	704	0.3+	0.2+	2000 01 08	704	0.4+	0.2−
1998 09 14	704	1.1+	0.2+	1998 10 14	699	0.4+	1.5−	2000 01 08	704	1.7−	1.1+
1998 09 14	704	0.4−	0.2+	1998 10 14	699	1.2−	0.3−	2000 01 08	704	0.8+	0.6−
1998 09 14	704	0.8+	0.1−	1998 10 14	699	0.3−	0.6−	2000 01 11	704	0.1+	0.1−
1998 09 16	699	0.3+	1.0−	1999 12 05	704	0.2−	1.2−	2000 01 11	704	0.6+	0.0
1998 09 16	699	0.9+	0.3−	1999 12 05	704	0.2−	0.6−	2000 01 11	704	0.6+	0.2+
1998 09 16	699	0.5−	0.3−	1999 12 05	704	0.1+	0.4−	2000 01 11	704	0.6+	0.2−

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M.P.C. 37751

1998 09 18 704 0.3- 0.3- 1999 12 05 704 0.7- 1.4-
 1998 09 18 704 0.4+ 0.5+ 1999 12 05 704 1.0- 0.1+

1998 RY₄₇ = 1997 ER₄₈ = 2000 AV₇₈

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	224.06618		(2000.0)	P	Q
<i>n</i>	0.26045934	ω	23.21943	-0.23241186	+0.97087895
<i>a</i>	2.4283396	Ω	233.39039	-0.90333078	-0.23762260
<i>e</i>	0.1266436	<i>i</i>	4.15261	-0.36052493	-0.03048882
<i>P</i>	3.78	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 03 11	809 (2.3- 3.9-)	1998 09 18	704 1.3+ 0.5+	1998 10 14	699 1.6- 0.2+
1997 03 11	809 (2.9- 4.5-)	1998 09 18	704 0.8- 0.2-	1998 10 14	699 1.2- 0.3-
1997 03 11	809 (2.9- 4.4-)	1998 09 18	704 0.5+ 0.8+	1998 10 14	699 1.6- 0.3+
1997 03 12	809 0.6+ 0.5+	1998 09 18	704 1.9- 0.7+	1999 12 08	704 0.5+ 0.3+
1997 03 12	809 0.5+ 1.1+	1998 09 26	704 0.5+ 0.1-	1999 12 08	704 0.9+ 0.4+
1997 03 12	809 0.5- 0.1+	1998 09 26	704 0.1+ 0.5-	1999 12 08	704 0.3+ 0.2+
1998 09 14	704 0.5- 0.0	1998 09 26	704 1.0- 0.8+	2000 01 05	704 0.7- 0.1-
1998 09 14	704 0.5+ 0.4+	1998 09 26	704 0.5+ 0.6-	2000 01 05	704 0.1- 0.3-
1998 09 14	704 0.2- 0.2+	1998 09 26	704 0.9- 1.0+	2000 01 05	704 0.3- 0.3-
1998 09 14	704 1.2- 0.2-	1998 09 27	704 0.8+ 0.7+	2000 01 05	704 0.1+ 0.2+
1998 09 16	699 0.6+ 0.3+	1998 09 27	704 1.5+ 1.0-	2000 01 05	704 0.4- 0.3-
1998 09 16	699 0.5+ 0.0	1998 09 27	704 0.4- 0.2+	2000 01 06	704 0.6+ 0.6+
1998 09 16	699 1.0+ 0.5-	1998 09 27	704 1.3+ 1.1-	2000 01 06	704 0.5- 0.1-
1998 09 18	704 0.1- 0.1-	1998 09 27	704 1.4+ 0.1+	2000 01 06	704 0.3- 0.2-

1998 RJ₄₈ = 1999 XH₂₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	305.91650		(2000.0)	P	Q
<i>n</i>	0.21342296	ω	181.32623	-0.97175854	-0.23055463
<i>a</i>	2.7731623	Ω	345.05238	+0.21826073	-0.79711706
<i>e</i>	0.0597256	<i>i</i>	11.24485	+0.08970834	-0.55807612
<i>P</i>	4.62	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 23	566 0.4+ 0.3+	1998 09 19	703 1.4- 0.5+	1999 12 13	704 1.6+ 0.4-
1996 03 23	566 0.1- 0.2-	1998 09 19	703 0.9- 0.3+	1999 12 13	704 0.2- 0.6-
1996 03 23	566 0.0 0.3+	1998 09 26	704 1.5- 1.7+	1999 12 13	704 0.0 0.1+
1998 09 14	704 0.8+ 0.4-	1998 09 26	704 1.1- 0.1-	1999 12 13	704 0.4+ 0.3-
1998 09 14	704 1.1- 1.5+	1998 09 26	704 1.6- 2.0-	1999 12 13	704 0.4+ 0.3-
1998 09 14	704 0.5+ 0.0	1998 09 26	704 0.7+ 1.3-	1999 12 15	704 0.6- 0.2+
1998 09 14	704 1.4+ 0.2+	1998 09 27	699 0.5+ 0.4-	1999 12 15	704 0.5- 0.7+
1998 09 14	704 (2.8- 0.6+)	1998 09 27	699 0.2- 0.5+	1999 12 15	704 0.6- 0.9+
1998 09 18	703 0.3- 0.7-	1998 09 27	704 0.3- 0.2+	1999 12 15	704 0.2- 0.1-
1998 09 18	703 0.0 0.3-	1998 09 27	704 0.1- 1.3+	1999 12 15	704 0.1+ 0.4+
1998 09 18	703 0.2+ 0.5+	1998 09 27	699 0.4+ 0.6+	1999 12 30	704 0.2- 0.0
1998 09 18	703 0.5+ 1.1+	1998 09 27	704 0.0 1.4-	1999 12 30	704 0.6+ 0.5-
1998 09 18	704 1.0+ 0.0	1998 09 27	704 0.1- 0.4+	1999 12 30	704 0.6- 0.9-
1998 09 18	704 0.2+ 0.5-	1998 09 27	704 0.6- 0.2-	1999 12 30	704 0.6+ 0.9+
1998 09 18	704 1.2+ 0.6-	1999 11 01	704 0.1- 0.8-	2000 01 21	704 1.3- 0.4+
1998 09 18	704 0.2- 1.2+	1999 11 01	704 0.3- 0.4-	2000 01 21	704 0.8+ 0.3+
1998 09 18	704 1.9+ 1.3-	1999 11 01	704 0.3- 0.9+	2000 01 21	704 0.2- 0.1+
1998 09 19	703 0.3- 0.8-	1999 11 01	704 0.6+ 0.3-	2000 01 21	704 0.2- 0.2+
1998 09 19	703 0.1+ 0.4+	1999 11 01	704 0.0 0.8-		

1998 RR₄₈ = 1999 XF₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Nakano

<i>M</i>	151.57024		(2000.0)	P	Q
<i>n</i>	0.18505706	ω	42.95292	+0.27907187	+0.95985693
<i>a</i>	3.0497596	Ω	243.26997	-0.88935894	+0.24728879
<i>e</i>	0.1579986	<i>i</i>	1.80745	-0.36215958	+0.13237417
<i>P</i>	5.33	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1998 09 14	704 0.3+ 0.8-	1998 09 26	704 0.2- 0.8-	1999 12 02	691 0.4- 0.6-
1998 09 14	704 0.9+ 1.4+	1998 09 26	704 0.3- 1.2-	1999 12 02	691 0.6- 0.9-
1998 09 14	704 0.3+ 0.7-	1998 09 26	704 0.8+ 0.4-	1999 12 02	691 0.1- 0.4-
1998 09 14	704 1.1+ 1.6+	1998 09 26	704 0.1+ 0.5+	1999 12 05	691 0.2+ 0.9+
1998 09 14	704 1.8- 0.5-	1998 09 26	704 0.5- 1.2+	1999 12 05	691 0.3+ 1.1+
1998 09 18	704 0.9+ 0.4-	1998 09 27	704 0.3- 0.2+	1999 12 05	691 0.3+ 1.1+
1998 09 18	704 1.1- 0.8-	1998 09 27	704 0.3+ 0.6+	1999 12 07	704 1.0+ 0.2+
1998 09 18	704 0.7+ 1.2-	1998 09 27	704 0.9- 2.0+	1999 12 07	704 0.4- 1.1-
1998 09 18	704 0.0 1.4-	1998 09 27	704 1.0- 0.5+	1999 12 07	704 0.4- 0.3-
1998 09 18	704 (2.5- 0.4+)	1998 09 27	704 0.7+ 0.1+		

1998 RJ₄₉ = 2000 AW₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	31.69746		(2000.0)	P	Q
<i>n</i>	0.24614475	ω	121.69452	-0.23606147	-0.97169877
<i>a</i>	2.5215969	Ω	341.95349	+0.88172550	-0.21040348
<i>e</i>	0.0876848	<i>i</i>	1.61765	+0.40845456	-0.10738657
<i>P</i>	4.00	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704 0.5- 0.9-	1998 09 26	704 (0.3- 2.5-)	2000 01 04	704 0.1- 0.5+
1998 09 14	704 1.5+ 1.0+	1998 09 27	704 0.8+ 0.6+	2000 01 04	704 0.4- 0.2-
1998 09 14	704 0.6+ 0.9-	1998 09 27	704 1.4+ 1.5+	2000 01 05	704 0.4+ 0.1-
1998 09 14	704 0.1- 0.4+	1998 09 27	704 (2.7- 1.6-)	2000 01 05	704 0.1- 0.5+
1998 09 14	704 0.2- 0.4-	1998 09 27	704 0.1+ 1.1-	2000 01 05	704 0.2+ 1.2-
1998 09 18	704 0.1+ 0.9+	1998 09 27	704 1.8- 0.3-	2000 01 05	704 0.0 0.7+
1998 09 18	704 1.1- 0.7+	1999 12 06	704 0.0 0.5-	2000 01 05	704 (2.3- 0.1+)
1998 09 18	704 0.7- 0.1-	1999 12 06	704 0.2- 0.1+	2000 01 06	704 0.1- 0.6+
1998 09 18	704 0.6+ 0.0	1999 12 06	704 0.9- 0.8-	2000 01 06	704 0.1+ 0.0
1998 09 18	704 1.2- 0.3-	1999 12 06	704 0.8+ 0.1-	2000 01 06	704 0.5+ 0.3-
1998 09 26	704 0.2+ 1.1-	1999 12 06	704 0.2- 0.4+	2000 01 06	704 0.6- 0.1+
1998 09 26	704 0.1+ 0.4-	2000 01 04	704 0.4+ 0.0	2000 01 06	704 0.3- 0.4+
1998 09 26	704 0.1- 0.3+	2000 01 04	704 0.2+ 0.2+		
1998 09 26	704 0.0 0.2+	2000 01 04	704 0.2+ 0.3-		

1998 RQ₄₉ = 2000 AS₁₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	218.30164		(2000.0)	P	Q
<i>n</i>	0.28556691	ω	116.58036	-0.02257495	+0.99881718
<i>a</i>	2.2838319	Ω	152.02454	-0.94680835	-0.00752853
<i>e</i>	0.1652431	<i>i</i>	5.26748	-0.32100518	-0.04803715
<i>P</i>	3.45	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704 0.1- 0.3+	1998 09 26	704 0.7+ 1.7+	1998 10 12	699 0.2+ 0.7-
1998 09 14	704 0.3- 0.9-	1998 09 26	704 1.4+ 0.1+	1998 10 12	699 0.2- 0.1-
1998 09 14	704 0.7- 0.2-	1998 09 26	704 1.0+ 0.4-	1999 12 14	704 0.8- 0.9+
1998 09 14	704 1.1- 0.7+	1998 09 26	704 0.7+ 0.6+	1999 12 14	704 0.2- 0.5+
1998 09 14	704 0.1- 0.2+	1998 09 27	704 0.3- 0.1-	1999 12 14	704 1.2+ 0.2-
1998 09 17	699 0.4+ 0.0	1998 09 27	704 0.3- 1.2+	2000 01 05	704 0.4+ 0.1-
1998 09 17	699 0.3+ 0.4+	1998 09 27	704 0.5- 0.6-	2000 01 05	704 0.6- 0.3-
1998 09 17	699 0.3- 0.1-	1998 09 27	704 0.2- 0.2-	2000 01 05	704 0.1+ 0.3-
1998 09 18	704 0.3- 0.2+	1998 09 27	704 0.3- 0.4-	2000 01 05	704 0.9+ 0.2-
1998 09 18	704 0.1+ 1.2-	1998 10 10	699 0.8+ 0.1-	2000 01 07	704 0.1- 0.1-
1998 09 18	704 0.0 0.4+	1998 10 10	699 0.1+ 0.5-	2000 01 07	704 0.3- 0.2+
1998 09 18	704 0.5+ 0.3-	1998 10 10	699 1.3- 0.5+	2000 01 07	704 0.4- 0.2+
1998 09 18	704 0.4+ 0.1-	1998 10 12	699 0.5- 0.7-	2000 01 07	704 0.2- 0.5-

1998 RS₅₀ = 2000 AA₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	196.04078		(2000.0)	P		Q	
<i>n</i>	0.29136804	ω	126.29241	+0.45470675	+0.89061089		
<i>a</i>	2.2534163	Ω	170.74495	-0.83109907	+0.42726019		
<i>e</i>	0.1804733	<i>i</i>	2.61912	-0.32018137	+0.15575932		
<i>P</i>	3.38	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.0	0.0	1998 09 18	704	0.6-	0.2+	1998 09 27	704	0.1+	0.3+
1998 09 14	704	0.7+	0.5-	1998 09 26	704	0.1+	0.5-	1998 09 27	704	0.1+	0.4+
1998 09 14	704	0.4+	0.3-	1998 09 26	704	0.0	0.4-	2000 01 07	684	0.0	0.1+
1998 09 14	704	0.1-	0.3+	1998 09 26	704	0.5+	0.0	2000 01 07	684	0.4+	0.2+
1998 09 14	704	0.4-	0.2+	1998 09 26	704	0.2+	1.0-	2000 01 08	684	0.1+	0.0
1998 09 18	704	0.8-	0.3-	1998 09 26	704	0.5+	0.6-	2000 01 08	684	0.0	0.2+
1998 09 18	704	0.4+	0.3+	1998 09 27	704	0.5-	0.0	2000 01 09	684	0.2+	0.2+
1998 09 18	704	0.0	0.0	1998 09 27	704	0.1-	1.1+	2000 01 09	684	0.7-	0.7-
1998 09 18	704	0.1-	0.3+	1998 09 27	704	0.4-	0.4+				

1998 RY₅₀ = 1999 XG₂₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	48.19484		(2000.0)	P		Q	
<i>n</i>	0.18227930	ω	72.21649	+0.57378828	-0.81743762		
<i>a</i>	3.0806650	Ω	342.48257	+0.67321068	+0.50594675		
<i>e</i>	0.0856066	<i>i</i>	9.68244	+0.46642726	+0.27534275		
<i>P</i>	5.41	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	1.1+	0.1+	1998 09 26	704	0.2-	0.7-	1998 10 22	327	0.8-	0.1-
1998 09 14	704	0.1+	0.9-	1998 09 26	704	0.9+	1.4-	1998 10 22	327	0.0	0.7+
1998 09 14	704	0.5-	0.1+	1998 09 26	704	0.1+	0.9-	1998 10 22	327	0.4+	0.6+
1998 09 14	704	1.0-	1.1+	1998 09 26	704	(0.6+	2.4-)	1999 12 12	704	0.8-	1.2+
1998 09 14	704	2.0-	1.1-	1998 09 26	704	1.1-	0.1+	1999 12 12	704	0.4+	0.7+
1998 09 14	704	0.4+	1.0-	1998 09 27	704	1.6+	0.3+	1999 12 12	704	(0.3+	2.3+)
1998 09 14	704	0.8-	0.4+	1998 09 27	704	1.7+	0.2+	1999 12 15	704	0.6-	0.1-
1998 09 14	704	1.5-	1.4+	1998 09 27	704	1.3+	0.8+	1999 12 15	704	0.6+	0.4-
1998 09 14	704	1.3+	0.2-	1998 09 27	704	0.1-	0.2+	1999 12 15	704	0.7+	0.7-
1998 09 18	704	(3.4-	0.4-)	1998 09 27	704	0.1-	1.0-	1999 12 15	704	0.1+	0.1-
1998 09 18	704	0.1-	1.3+	1998 10 19	327	0.7-	0.0	1999 12 15	704	0.3-	0.6-
1998 09 18	704	0.1+	0.3+	1998 10 19	327	0.5-	0.3+				
1998 09 18	704	(3.7-	1.7+)	1998 10 19	327	0.7-	0.4-				

1998 RJ₅₁ = 2000 AD₁₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	125.62205		(2000.0)	P		Q	
<i>n</i>	0.23505164	ω	86.57998	+0.99589206	+0.05448044		
<i>a</i>	2.6003224	Ω	270.28801	-0.07885855	+0.91439465		
<i>e</i>	0.0492110	<i>i</i>	4.14759	+0.04450102	+0.40114126		
<i>P</i>	4.19	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 09 14	704	1.1-	0.9+	1998 09 26	704	1.7+	0.5-	2000 01 05	704	0.2-	0.8-
1998 09 14	704	1.4+	1.0-	1998 09 26	704	0.1+	0.1-	2000 01 07	704	0.1-	0.1-
1998 09 14	704	0.8+	0.1-	1998 09 27	704	0.0	1.8+	2000 01 07	704	1.2-	0.2+
1998 09 14	704	0.3-	1.7+	1998 09 27	704	0.9-	1.0+	2000 01 07	704	0.6+	0.1-
1998 09 14	704	1.7-	0.9+	1998 09 27	704	0.2+	0.3+	2000 01 07	704	0.3-	0.7+
1998 09 18	704	1.4+	0.4-	1998 09 27	704	0.7+	1.4-	2000 01 08	704	0.2-	0.5+
1998 09 18	704	0.1+	0.7-	1998 09 27	704	0.9-	0.2+	2000 01 08	704	0.4+	0.5+
1998 09 18	704	0.0	0.4-	2000 01 05	704	0.3-	0.6-	2000 01 08	704	0.5+	0.2-
1998 09 18	704	0.1+	1.3-	2000 01 05	704	0.2-	0.3+	2000 01 08	704	0.6+	0.4-
1998 09 26	704	0.4-	1.0-	2000 01 05	704	0.1-	0.0	2000 01 08	704	0.7+	0.1-
1998 09 26	704	1.2-	0.3+	2000 01 05	704	0.2-	0.0				

1998 RY₅₁ = 2000 AS₁₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	13.81585		(2000.0)	P		Q	
<i>n</i>	0.23169799	ω	250.29234	-0.41250898	-0.91018161		
<i>a</i>	2.6253540	Ω	224.13003	+0.85465327	-0.37244123		
<i>e</i>	0.0908856	<i>i</i>	3.08676	+0.31528421	-0.18126492		
<i>P</i>	4.25	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.1+	0.5-	1998 09 26	704	(1.6+	2.4-)	1999 12 14	704	0.9-	0.3-
1998 09 14	704	0.1+	0.7+	1998 09 26	704	0.2-	1.7-	2000 01 05	704	0.5-	0.4+
1998 09 14	704	0.2-	0.4-	1998 09 26	704	0.8+	0.7-	2000 01 05	704	0.1+	0.1-
1998 09 14	704	1.7-	0.3+	1998 09 26	704	0.4+	0.9-	2000 01 05	704	0.1-	0.3+
1998 09 16	699	0.6+	0.5-	1998 09 27	704	0.7-	0.4+	2000 01 05	704	0.1-	0.0
1998 09 16	699	0.3-	0.3+	1998 09 27	704	0.5+	0.8+	2000 01 05	704	0.2+	0.2-
1998 09 16	699	0.5+	0.1-	1998 09 27	704	0.8-	0.2-	2000 01 07	704	0.1+	0.2-
1998 09 18	704	0.6+	0.5-	1998 09 27	704	0.2+	0.1-	2000 01 07	704	0.1-	0.1+
1998 09 18	704	1.4+	1.0+	1998 09 27	704	0.3-	0.0	2000 01 07	704	0.3+	0.3+
1998 09 18	704	0.0	1.6+	1999 12 14	704	0.3+	0.8+	2000 01 07	704	0.1+	0.2+
1998 09 18	704	0.9-	0.4+	1999 12 14	704	0.7-	0.6+	2000 01 07	704	0.7+	0.1-
1998 09 18	704	0.3-	0.3+	1999 12 14	704	0.7+	1.7-				

1998 RD₅₃ = 1999 XC₂₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	325.21554		(2000.0)	P		Q	
<i>n</i>	0.19058477	ω	138.59725	-0.72172623	-0.69214081		
<i>a</i>	2.9905008	Ω	357.56596	+0.58177396	-0.60091196		
<i>e</i>	0.0477410	<i>i</i>	9.80902	+0.37503373	-0.39980735		
<i>P</i>	5.17	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 27	691	0.1-	0.1+	1998 09 26	704	0.0	0.4+	1999 11 01	704	0.4+	0.1-
1998 08 27	691	0.1+	0.2+	1998 09 26	704	0.2+	0.2+	1999 11 01	704	0.4+	0.3+
1998 08 27	691	0.1-	0.2+	1998 09 26	704	0.6-	1.2+	1999 11 01	704	0.2+	0.2-
1998 09 14	704	0.6+	0.4+	1998 09 26	704	1.0-	1.0+	1999 12 13	704	0.3+	0.0
1998 09 14	691	0.5-	0.2+	1998 09 27	704	0.3+	0.0	1999 12 13	704	0.1+	0.0
1998 09 14	704	0.8+	0.0	1998 09 27	704	1.0+	0.8+	1999 12 13	704	0.6-	0.0
1998 09 14	691	0.4-	0.3+	1998 09 27	704	0.4-	0.4+	1999 12 13	704	0.1-	0.3-
1998 09 14	704	0.5+	0.3-	1998 09 27	704	0.4-	0.6-	1999 12 13	704	0.4-	0.1+
1998 09 14	691	0.6-	0.2+	1998 09 27	704	0.0	0.8-	1999 12 15	704	0.2-	0.0
1998 09 14	704	0.0	0.98	1998 11 16	725	0.2-	0.2-	1999 12 15	704	0.5-	0.1+
1998 09 14	704	0.2-	0.2-	1998 11 16	725	0.0	0.0	1999 12 15	704	0.9-	0.0
1998 09 18	704	0.5+	1.1-	1998 11 16	725	0.8-	0.7+	1999 12 15	704	0.8-	0.1+
1998 09 18	704	0.8-	1.1-	1998 11 22	725	0.1-	0.3-	2000 01 02	704	0.4+	0.1+
1998 09 18	704	1.6+	0.9-	1998 11 22	725	0.6-	0.3-	2000 01 02	704	0.5+	0.1-
1998 09 18	704	0.9+	1.3-	1998 11 22	725	0.4-	0.1+	2000 01 02	704	0.7+	0.2-
1998 09 18	704	0.8-	0.8+	1999 11 01	704	0.8-	0.5+	2000 01 02	704	0.8+	0.1-
1998 09 26	704	1.3+	0.3-	1999 11 01	704	0.4+	0.4+	2000 01 02	704	0.3+	0.7-

1998 RG₅₃ = 2000 AO₁₀₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	128.97514		(2000.0)	P		Q	
<i>n</i>	0.21927400	ω	166.24977	+0.95582919	+0.29386572		
<i>a</i>	2.7236081	Ω	176.64400	-0.27815233	+0.91073166		
<i>e</i>	0.0357093	<i>i</i>	5.67332	-0.09498332	+0.29019093		
<i>P</i>	4.49	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.5+	0.6+	1998 09 26	704	(2.4-	0.3-)	1999 12 06	704	0.1+	0.6+
1998 09 14	704	1.6+	0.5+	1998 09 26	704	1.0-	1.1+	1999 12 06	704	0.8-	0.1+
1998 09 14	704	1.4+	1.4+	1998 09 27	704	0.1+	0.1-	1999 12 06	704	0.1-	0.2+
1998 09 14	704	0.6+	0.2+	1998 09 27	704	0.5-	0.4-	2000 01 05	704	0.3+	0.4+
1998 09 14	704	0.4+	0.4-	1998 09 27	704	1.6-	0.9+	2000 01 05	704	0.1-	0.5-
1998 09 18	704	0.8-	0.5-	1998 09 27	704	1.0-	0.1+	2000 01 05	704	0.1-	0.4-
1998 09 18	704	0.0	0.5-	1998 09 27	704	0.2-	0.3-	2000 01 05	704	0.0	0.3-

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1998 09 18	704	0.3+	1.5−	1998 10 12	910	0.6+	0.1+	2000 01 05	704	0.6+	0.5−
1998 09 18	704	0.3+	0.8−	1998 10 12	910	0.6+	0.3+	2000 01 07	704	0.2−	0.2+
1998 09 18	704	0.0	0.6+	1998 10 12	910	0.3+	0.1+	2000 01 07	704	0.0	0.1−
1998 09 26	704	0.9−	0.7−	1998 10 17	699	0.1+	0.4+	2000 01 07	704	0.1−	0.0
1998 09 26	704	0.2−	1.1−	1998 10 17	699	0.7+	0.6+	2000 01 07	704	0.3+	0.3+
1998 09 26	704	1.6−	0.1−	1998 10 17	699	0.2+	0.4−				

1998 RC₅₄ = 1999 XC₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
65.99083				(2000.0)			
				P		Q	
<i>n</i>	0.18176080	<i>ω</i>	73.07801	+0.77346566		−0.62904943	
<i>a</i>	3.0865210	<i>Ω</i>	325.78619	+0.51608992		+0.69624860	
<i>e</i>	0.1263361	<i>i</i>	7.94981	+0.36797020		+0.34573791	
<i>P</i>	5.42	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.2+	0.3−	1998 09 26	704	0.5−	0.3−	1999 12 15	704	0.1+	0.3+
1998 09 14	704	0.1−	0.5+	1998 09 26	704	0.6−	1.3+	1999 12 15	704	0.6−	0.8+
1998 09 14	704	1.0+	0.8−	1998 09 27	704	0.8−	0.0	2000 01 03	704	0.2−	0.1−
1998 09 14	704	0.8−	1.9+	1998 09 27	704	0.3+	1.1+	2000 01 03	704	0.6+	0.1−
1998 09 14	704	1.5+	0.1−	1998 09 27	704	0.5+	0.1+	2000 01 03	704	0.1−	0.9+
1998 09 18	704	0.4−	0.2−	1998 09 27	704	0.3+	1.1−	2000 01 03	704	0.4+	0.1+
1998 09 18	704	1.1+	1.1−	1999 12 10	704	0.1−	0.8−	2000 01 03	704	0.1+	0.2+
1998 09 18	704	1.3+	0.7+	1999 12 10	704	0.2+	0.3−	2000 01 08	704	0.1+	0.5−
1998 09 18	704	1.0−	1.9−	1999 12 10	704	0.2−	0.2−	2000 01 08	704	0.8+	0.5−
1998 09 26	704	0.3−	0.8−	1999 12 10	704	0.2−	0.0	2000 01 08	704	0.1−	0.2+
1998 09 26	704	1.1−	0.6+	1999 12 15	704	0.7−	0.1+	2000 01 08	704	0.1+	0.1+
1998 09 26	704	0.6−	0.4+	1999 12 15	704	0.4−	0.1−	2000 01 08	704	0.1−	0.2−

1998 RG₅₄ = 2000 AH₃₅

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<i>M</i>				Williams			
265.58448				(2000.0)			
				P		Q	
<i>n</i>	0.27524201	<i>ω</i>	284.02991	−0.69794934		+0.71386679	
<i>a</i>	2.3405948	<i>Ω</i>	301.55850	−0.62847664		−0.64878530	
<i>e</i>	0.1654552	<i>i</i>	3.84260	−0.34334214		−0.26357513	
<i>P</i>	3.58	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 28	704	0.2−	0.3−	1998 09 26	704	1.4+	1.2−	2000 01 03	704	0.4−	0.6−
1998 08 28	704	0.7+	0.8+	1998 09 26	704	0.9−	0.0	2000 01 03	704	1.0+	0.5+
1998 08 28	704	0.3+	0.4+	1998 09 26	704	0.7−	1.2+	2000 01 03	704	0.6+	0.4−
1998 08 28	704	0.9−	0.4−	1998 09 26	704	0.1+	0.3+	2000 01 04	704	0.7−	0.2+
1998 09 14	704	0.3−	0.1+	1998 09 26	704	0.7+	0.8−	2000 01 04	704	0.6−	0.1−
1998 09 14	704	0.6+	0.4−	1998 09 27	704	1.1+	1.9−	2000 01 04	704	0.2−	0.3−
1998 09 14	704	0.3−	0.7+	1998 09 27	704	(3.0+	0.3−)	2000 01 04	704	0.1+	0.8+
1998 09 14	704	1.9−	0.8−	1998 09 27	704	0.4+	0.7−	2000 01 04	704	0.3+	0.3+
1998 09 14	704	0.9+	1.1+	1998 09 27	704	0.7+	0.3−	2000 01 08	704	1.1−	0.7−
1998 09 18	704	(0.4−	2.2−)	1998 09 27	704	0.2−	0.8−	2000 01 08	704	0.5−	0.5+
1998 09 18	704	0.2−	0.5−	1999 12 07	704	0.5+	0.7−	2000 01 08	704	1.8+	0.5+
1998 09 18	704	0.1+	1.5+	1999 12 07	704	0.2−	0.6−	2000 01 08	704	0.1−	0.4+
1998 09 18	704	1.8−	1.2+	1999 12 07	704	0.1−	0.2+				
1998 09 18	704	0.4+	0.8+	2000 01 03	704	0.4−	0.1+				

1998 RL₅₄ = 1982 VT₆ = 1987 RO₄ = 2000 AN₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
56.00741				(2000.0)			
				P		Q	
<i>n</i>	0.18176278	<i>ω</i>	116.36314	+0.56516527		−0.82157040	
<i>a</i>	3.0864985	<i>Ω</i>	299.02286	+0.72309037		+0.53702789	
<i>e</i>	0.1690317	<i>i</i>	4.91388	+0.39715052		+0.19137169	
<i>P</i>	5.42	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1982 11 09	095	0.4+	0.8−	1998 09 18	699	0.2−	0.1+	1999 12 15	703	1.0−	0.3−
1987 09 02	095	0.2−	0.2+	1998 09 26	704	0.3+	0.2+	1999 12 15	703	0.3−	0.5+
1998 08 27	699	0.5+	0.0	1998 09 26	704	0.2−	0.1−	1999 12 15	703	0.0	0.7+

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1998 08 27	699	0.1+	0.1+	1998 09 26	704	0.2−	0.4−	1999 12 15	703	0.5−	0.1+
1998 08 27	699	0.2+	0.6+	1998 09 26	704	0.3+	0.1−	1999 12 30	699	0.2+	0.7+
1998 09 14	704	0.8−	0.2+	1998 09 26	704	0.9−	0.5−	1999 12 30	699	0.8−	1.1+
1998 09 14	704	0.2−	0.5+	1998 09 27	699	0.1+	0.4+	1999 12 30	699	1.3+	0.1+
1998 09 14	704	1.1+	0.6+	1998 09 27	699	0.2+	1.1−	2000 01 04	704	0.1−	0.2−
1998 09 14	704	0.5−	0.3−	1998 09 27	704	0.1+	0.1+	2000 01 04	704	0.2+	0.1+
1998 09 14	704	0.7+	0.2+	1998 09 27	699	0.7−	0.2+	2000 01 04	704	0.2−	0.7−
1998 09 18	704	0.4−	0.7−	1998 09 27	704	0.2+	0.3−	2000 01 04	704	0.7+	0.2+
1998 09 18	704	0.3+	0.8+	1998 09 27	704	0.9+	0.6+	2000 01 04	704	0.4−	0.4+
1998 09 18	699	0.0	0.6+	1998 09 27	704	0.1−	0.9−	2000 01 06	704	0.2+	0.0
1998 09 18	704	1.4+	0.0	1998 09 27	704	0.1−	0.1+	2000 01 06	704	0.3+	1.5−
1998 09 18	704	0.1+	0.3−	1998 10 15	699	1.0−	0.0	2000 01 06	704	0.8+	0.8−
1998 09 18	699	0.4+	0.1−	1998 10 15	699	0.8−	0.1+	2000 01 06	704	0.3−	0.3+
1998 09 18	704	0.0	0.2−	1998 10 15	699	0.9−	0.4+				

1998 RK₅₅ = 2000 AQ₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
232.26128				(2000.0)			
				P		Q	
<i>n</i>	0.29727594	<i>ω</i>	305.48654	−0.02412079		+0.99831448	
<i>a</i>	2.2234611	<i>Ω</i>	323.02301	−0.88644483		−0.04577044	
<i>e</i>	0.1544772	<i>i</i>	5.03467	−0.46220531		+0.03568291	
<i>P</i>	3.32	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.7−	0.6−	1998 09 18	699	0.3+	1.5+	1998 09 27	704	0.2−	0.2+
1998 09 14	704	0.8+	0.5−	1998 09 26	704	0.2+	0.2−	2000 01 03	704	0.6+	0.5+
1998 09 14	704	0.4+	1.2−	1998 09 26	704	0.1+	1.0−	2000 01 03	704	1.0+	0.0
1998 09 18	704	0.6+	0.2−	1998 09 26	704	0.5−	0.2+	2000 01 03	704	0.3−	0.5−
1998 09 18	704	0.7−	0.6+	1998 09 26	704	0.5+	1.2−	2000 01 03	704	0.2−	0.2+
1998 09 18	699	1.9−	1.1+	1998 09 26	704	1.6+	0.9+	2000 01 03	704	0.7−	1.3+
1998 09 18	704	0.9−	0.3−	1998 09 27	704	0.1+	0.1−	2000 01 04	704	0.6−	0.0
1998 09 18	704	0.4−	1.0−	1998 09 27	704	0.5−	0.6+	2000 01 04	704	0.7+	0.5−
1998 09 18	699	0.5+	0.5+	1998 09 27	704	0.8−	0.4−	2000 01 04	704	0.6−	0.2−
1998 09 18	704	1.6+	1.2+	1998 09 27	704	0.0	0.1−	2000 01 04	704	0.1+	0.7−

1998 RP₅₅ = 2000 AL₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
176.04070				(2000.0)			
				P		Q	
<i>n</i>	0.24114073	<i>ω</i>	15.18132	+0.66868611		+0.73993666	
<i>a</i>	2.5563619	<i>Ω</i>	296.84508	−0.69044609		+0.58140399	
<i>e</i>	0.0060728	<i>i</i>	4.70345	−0.27594037		+0.33832403	
<i>P</i>	4.09	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 28	704	0.7+	1.0−	1998 09 18	704	0.8−	0.4+	1998 09 27	704	0.1+	0.4+
1998 08 28	704	0.8+	1.5+	1998 09 18	704	0.4−	0.8−	1998 09 27	704	0.6+	1.0+
1998 08 28	704	1.3−	0.0	1998 09 26	704	0.0	1.5−	2000 01 04	704	0.9+	0.1+
1998 08 28	704	(3.5−	0.3+)	1998 09 26	704	0.3−	1.1−	2000 01 04	704	0.0	0.7−
1998 09 14	704	(2.2+	0.6−)	1998 09 26	704	0.4−	0.3−	2000 01 04	704	0.2+	0.3−
1998 09 14	704	1.2+	0.6−	1998 09 26	704	1.4+	0.0	2000 01 04	704	0.3−	0.1+
1998 09 14	704	0.0	0.4−	1998 09 26	704	0.6−	0.5+	2000 01 06	704	0.1+	0.3+
1998 09 18	704	0.1+	0.8−	1998 09 27	704	0.1−	1.6+	2000 01 06	704	0.2+	0.1+
1998 09 18	704	0.1−	1.9−	1998 09 27	704	0.2−	1.5+	2000 01 06	704	1.1−	0.3+
1998 09 18	704	0.5−	1.5+	1998 09 27	704	0.2−	0.1+				

Residuals in seconds of arc

1973 11 02	033	0.0	0.1+	1998 09 27	704	0.1+	0.6-	2000 01 08	704	0.8+	0.2+
1998 09 14	704	0.3-	0.9+	1998 09 27	704	1.4+	0.3-	2000 01 08	704	0.3-	0.3-
1998 09 14	704	0.7-	0.4-	1998 09 27	704	1.2+	1.4-	2000 01 08	704	0.2-	0.2+
1998 09 14	704	0.8-	0.3+	1998 09 27	704	0.6+	1.1-	2000 01 08	704	0.6-	0.0
1998 09 18	704	1.5+	0.5+	1998 09 27	704	0.9+	0.5+	2000 01 08	704	1.6-	0.7-
1998 09 18	704	1.6-	0.9+	1998 09 27	704	0.4-	0.3+	2000 01 10	704	0.9+	1.0+
1998 09 18	704	0.8-	0.5+	1998 09 27	704	0.7+	0.7+	2000 01 10	704	0.1-	0.2-
1998 09 18	704	0.3+	0.3+	1998 09 27	704	0.1+	0.6+	2000 01 10	704	0.5-	0.2-
1998 09 18	704	0.8+	0.7+	1998 09 27	704	1.0+	0.0	2000 01 10	704	0.7-	0.1-
1998 09 26	704	0.2-	0.6-	1998 10 17	327	0.0	1.4-	2000 01 10	704	0.7-	0.8+
1998 09 26	704	1.0-	0.4-	1998 10 17	327	0.1-	0.5-	2000 01 11	704	1.7+	0.4-
1998 09 26	704	0.8-	0.3-	1998 10 17	327	0.1-	0.9-	2000 01 11	704	0.4+	0.2+
1998 09 26	704	1.4-	1.0+	1998 10 19	327	0.4-	0.4+	2000 01 11	704	1.0+	0.1+
1998 09 26	704	0.1-	1.2+	1998 10 19	327	0.9-	0.4-	2000 01 11	704	0.1-	0.2-
1998 09 27	704	1.4+	0.2-	1998 10 19	327	0.5-	0.2-	2000 01 11	704	0.1+	0.0

1998 RJ₅₇ = 1999 XH₉₂

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	95.12700	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.18325553	ω 201.20080	+0.99991132	+0.00089985	
<i>a</i>	3.0697145	Ω 158.73464	+0.00402849	+0.93053242	
<i>e</i>	0.1104012	<i>i</i> 2.09946	-0.01269334	+0.36620842	
<i>P</i>	5.38	<i>H</i> 14.1	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 09 14	704	0.0	0.2-	1998 09 18	704	1.3+	1.4+	1999 12 08	704	0.4-	0.4-
1998 09 14	704	0.1-	0.7-	1998 10 14	910	0.3-	0.1-	1999 12 08	704	0.9+	0.6+
1998 09 14	704	2.0-	1.0+	1998 10 14	910	0.2-	0.0	1999 12 08	704	0.4-	0.4+
1998 09 16	699	0.9+	0.4-	1998 10 14	910	0.3-	0.2-	1999 12 08	704	0.4-	0.9+
1998 09 16	699	0.8+	0.4-	1998 10 22	910	0.1+	0.0	1999 12 08	704	0.4+	0.1-
1998 09 16	699	0.3+	0.4-	1998 10 22	910	0.3+	0.0	2000 01 05	704	0.3-	0.1+
1998 09 18	704	(1.2- 2.4-)	1998 10 22	910	0.0	0.2-	0.0	2000 01 05	704	0.5-	0.4-
1998 09 18	704	1.5-	0.0	1999 12 07	704	0.7-	0.6-	2000 01 05	704	0.5+	0.3-
1998 09 18	704	1.8+	0.6-	1999 12 07	704	0.3+	0.5-	2000 01 05	704	0.0	0.0
1998 09 18	704	1.1-	0.7+	1999 12 07	704	0.2+	0.3+	2000 01 05	704	0.5+	0.0

1998 RN₅₈ = 2000 AZ₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	94.78891	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.22630140	ω 114.64037	+0.86299407	-0.50481802	
<i>a</i>	2.6669276	Ω 275.68446	+0.45595480	+0.79529010	
<i>e</i>	0.1296348	<i>i</i> 1.15166	+0.21759240	+0.33566714	
<i>P</i>	4.36	<i>H</i> 13.9	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 09 14	704	0.3-	0.7+	1998 09 27	704	0.1-	0.4+	1998 12 09	704	1.4-	0.4+
1998 09 14	704	0.3+	0.5+	1998 09 27	704	0.3-	0.2-	1998 12 09	704	1.2-	0.8+
1998 09 14	704	0.1+	1.1+	1998 10 14	699	0.1-	0.7+	1998 12 09	704	0.4-	1.0-
1998 09 16	699	0.4+	0.3+	1998 10 14	699	0.1+	0.6+	1999 12 07	704	0.0	0.2+
1998 09 16	699	0.2+	0.3+	1998 10 14	699	0.2+	0.5+	1999 12 07	704	0.1-	1.1-
1998 09 16	699	0.5+	0.5+	1998 10 17	327	0.2+	0.8-	1999 12 07	704	0.3+	0.1-
1998 09 18	704	0.6+	0.2-	1998 10 17	327	0.1+	0.6-	1999 12 07	704	0.7+	0.4-
1998 09 18	704	0.1-	0.4-	1998 10 17	327	0.3+	0.7-	1999 12 07	704	0.8+	1.1-
1998 09 18	704	0.7+	1.0-	1998 10 18	327	0.2+	0.6-	2000 01 04	704	0.6+	0.5+
1998 09 18	704	1.5+	1.2-	1998 10 18	327	0.0	0.4-	2000 01 04	704	0.6+	0.6+
1998 09 18	704	0.4-	0.4-	1998 10 18	327	0.1+	0.4-	2000 01 04	704	0.4+	0.6+
1998 09 26	704	0.4-	0.7-	1998 10 20	327	0.4+	0.7-	2000 01 04	704	0.2+	0.1+
1998 09 26	704	0.5-	0.6-	1998 10 20	327	0.3+	0.2-	2000 01 04	704	0.6-	0.7+
1998 09 26	704	1.1-	1.1-	1998 10 20	327	0.3+	0.4-	2000 01 07	704	0.4-	0.5-
1998 09 26	704	0.2-	0.2-	1998 12 08	699	0.6+	0.4+	2000 01 07	704	0.8-	0.8-
1998 09 26	704	0.8-	0.3+	1998 12 08	699	0.1-	1.2+	2000 01 07	704	0.6-	0.3-
1998 09 27	704	0.3+	0.2+	1998 12 08	699	0.1+	0.3+	2000 01 07	704	0.5-	0.9-
1998 09 27	704	0.0	0.3+	1998 12 09	704	0.9-	1.9+	2000 01 12	120	0.8-	0.6+
1998 09 27	704	0.4-	0.2+	1998 12 09	704	0.4+	1.0+	2000 01 12	120	(2.9- 0.4-)	

1998 RQ₅₈ = 2000 AP₁₆₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	180.12623	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17155629	ω 81.48060	-0.05025493	+0.99858714	
<i>a</i>	3.2077336	Ω 185.72424	-0.97086192	-0.05290116	
<i>e</i>	0.0277165	<i>i</i> 9.96933	-0.23431086	+0.00501809	
<i>P</i>	5.75	<i>H</i> 13.0	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 09 14	704	0.7+	0.4-	1998 09 27	704	0.0	0.1-	1999 12 05	704	0.1-	1.9+
1998 09 14	704	0.7+	0.7-	1998 09 27	704	1.2+	0.8-	1999 12 05	704	(2.6+ 3.0-)	
1998 09 14	704	0.7+	0.6-	1998 09 27	704	0.4+	0.9-	1999 12 14	704	0.8+	0.2-
1998 09 18	704	0.4+	0.3-	1998 09 29	327	0.7+	0.0	1999 12 14	704	1.0-	0.7-
1998 09 18	704	0.3+	0.0	1998 09 29	327	1.2+	0.0	1999 12 14	704	0.3-	0.2-
1998 09 18	704	0.8-	0.5+	1998 09 29	327	0.9+	0.1-	1999 12 14	704	0.9-	1.2-
1998 09 18	704	0.5+	0.2+	1998 10 12	691	1.2-	0.4+	2000 01 07	704	0.3+	0.3-
1998 09 18	704	1.0-	0.3+	1998 10 12	691	1.0-	0.2+	2000 01 07	704	0.2+	0.5+
1998 09 25	699	0.2+	1.2+	1998 10 12	691	1.2-	0.1+	2000 01 07	704	0.5+	0.1+
1998 09 25	699	0.2-	0.6+	1998 10 15	691	0.6-	0.2+	2000 01 07	704	0.6-	0.0
1998 09 25	699	0.1+	1.5+	1998 10 15	691	0.7-	0.1-	2000 01 07	704	0.2-	0.1+
1998 09 26	704	0.5-	0.3+	1998 10 15	691	0.8-	0.1-	2000 01 11	704	0.5+	0.0
1998 09 26	704	0.2-	0.1-	1999 11 05	704	0.4-	0.9+	2000 01 11	704	0.5+	0.4+
1998 09 26	704	0.2+	0.7-	1999 11 05	704	0.2+	0.1+	2000 01 11	704	0.3-	0.2+
1998 09 26	704	0.3-	0.2+	1999 11 05	704	0.3+	0.7-	2000 01 11	704	0.6+	0.7+
1998 09 26	704	0.1+	0.4-	1999 11 05	704	0.3-	1.3-	2000 01 11	704	0.5+	0.6+
1998 09 27	704	0.4+	0.3-	1999 11 05	704	0.2-	1.1-				
1998 09 27	704	0.1-	0.3+	1999 12 05	704	(1.4- 3.4+)					

1998 RV₅₈ = 1999 XE₁₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	115.66196	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.21567903	ω 100.78629	+0.99934484	+0.03280992	
<i>a</i>	2.7537897	Ω 257.33479	-0.03617624	+0.91814980	
<i>e</i>	0.0952071	<i>i</i> 0.89719	+0.00108081	+0.39487270	
<i>P</i>	4.57	<i>H</i> 15.3	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 09 14	704	0.0	1.3-	1998 09 26	704	1.4+	0.6+	1998 10 28	691	0.0	0.5-
1998 09 14	704	0.1-	0.4+	1998 09 26	704	0.3+	0.9+	1999 12 08	691	0.0	0.5+
1998 09 14	704	1.0-	0.4-	1998 09 26	704	0.3+	0.2-	1999 12 08	691	0.4+	0.5+
1998 09 16	699	0.4+	0.5+	1998 09 26	704	1.3+	0.1+	1999 12 08	691	0.2-	0.4+
1998 09 16	699	0.4+	1.0+	1998 09 27	704	0.4-	0.9-	1999 12 15	691	0.0	0.3+
1998 09 16	699	0.4+	1.0+	1998 09 27	704	1.3+	0.2-	1999 12 15	691	0.4+	0.2+
1998 09 18	704	0.3-	1.8-	1998 09 27	704	1.6-	0.1+	1999 12 15	691	0.4+	0.1+
1998 09 18	704	1.4-	2.0-	1998 10 13	691	0.1-	0.1+	2000 01 16	691	0.7-	0.3-
1998 09 18	704	0.8+	1.7+	1998 10 13	691	0.0	0.1+	2000 01 16	691	0.1-	0.7-
1998 09 18	704	0.4-	1.4+	1998 10 13	691	0.0	0.1+	2000 01 16	691	0.0	0.7-
1998 09 18	704	1.4-	0.9+	1998 10 28	691	0.3+	0.1-				
1998 09 26	704	0.1-	1.2-	1998 10 28	691	0.1-	0.5-				

1998 RN₆₀ = 1991 HY₃ = 2000 AV₁₇₆

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	129.00302		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.18359054	ω	110.96242	+0.79255263	+0.60448501
a	3.0659790	Ω	212.00332	-0.60051668	+0.75076369
e	0.1206790	i	8.72182	-0.10601909	+0.26636770
P	5.37	H	13.6	G 0.15	U 4

2000 JAN. 24

M.P.C. 37755

1998 08 27	699	0.2−	0.2+	1998 09 26	704	0.7+	1.1−	2000 01 07	704	0.0	0.6−
1998 09 14	704	0.6−	0.3+	1998 09 26	704	0.1−	1.4−	2000 01 07	704	0.5+	0.6+
1998 09 14	704	1.1−	0.6+	1998 09 27	704	0.4+	0.5+	2000 01 07	704	1.2+	1.5+
1998 09 14	704	1.8−	0.8+	1998 09 27	704	0.1+	0.1+	2000 01 11	704	0.6−	0.4−
1998 09 18	704	0.3+	0.9−	1998 09 27	704	1.0+	0.6+	2000 01 11	704	0.7−	0.6−
1998 09 18	704	0.4−	0.8−	1998 09 27	704	0.4+	1.2+	2000 01 11	704	0.1+	0.8−
1998 09 18	699	0.6−	0.1−	1998 09 27	704	0.1+	0.4+	2000 01 11	704	0.5−	0.8−
1998 09 18	704	1.1+	0.3−	1998 10 14	699	1.9+	0.3−				
1998 09 18	704	0.3−	0.7−	1998 10 14	699	0.9+	0.2+				

1998 RO₆₀ = 2000 AK₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	196.16577		(2000.0)	$\mathbf{P}$		$\mathbf{Q}$	
n	0.30151327	ω	59.43413	+0.67568158		+0.73461863	
a	2.2025804	Ω	253.20572	−0.69647605		+0.60876243	
e	0.1497224	i	3.68693	−0.24161027		+0.29957265	
P	3.27	H	14.9	G	0.15	U	3

Residuals in seconds of arc

1995 12 22	566	0.2+	0.1+	1998 09 18	699	0.4+	1.5+	1998 10 14	699	0.4+	0.3+
1995 12 22	566	0.2−	0.0	1998 09 26	704	0.1−	0.2+	1998 10 14	699	0.3+	0.6+
1995 12 22	566	0.7−	0.0	1998 09 26	704	0.2+	0.4+	1998 10 14	699	0.1+	0.8+
1995 12 24	566	0.7+	0.5+	1998 09 26	704	0.9+	0.5−	1998 12 09	704	0.7−	0.2+
1995 12 24	566	0.5−	0.6+	1998 09 26	704	0.5+	0.1−	1998 12 09	704	0.2+	1.1−
1995 12 24	566	0.1+	0.5+	1998 09 26	704	0.6+	0.5−	1998 12 09	704	0.2+	0.7+
1998 09 14	704	0.1−	0.3+	1998 09 27	704	0.6−	0.4−	1998 12 09	704	0.7+	1.2−
1998 09 14	704	0.2−	0.8+	1998 09 27	704	0.3−	0.4−	2000 01 05	704	0.9+	0.2+
1998 09 14	704	0.3−	0.7+	1998 09 27	704	0.4+	0.2+	2000 01 05	704	1.4+	0.1−
1998 09 18	704	0.0	1.3+	1998 09 27	704	0.1−	1.8−	2000 01 05	704	0.0	0.0
1998 09 18	704	0.2−	1.1+	1998 09 27	704	0.4−	1.7−	2000 01 05	704	0.3−	0.5−
1998 09 18	699	0.0	1.4+	1998 09 29	704	0.1−	0.6−	2000 01 07	704	0.2−	0.5+
1998 09 18	704	1.3+	0.4−	1998 09 29	704	0.6−	0.8−	2000 01 07	704	1.8−	0.7+
1998 09 18	704	1.3−	0.4−	1998 09 29	704	0.5−	0.9−	2000 01 07	704	0.1−	0.1−
1998 09 18	699	0.1+	1.9+	1998 09 29	704	0.4−	1.2−	2000 01 07	704	0.1−	1.3−
1998 09 18	704	0.5+	0.1−	1998 09 29	704	0.4−	1.6−				

1998 RW₆₀ = 2000 AZ₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	193.60353		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.27713895	ω	349.54832	+0.52754206	+0.84673209
a	2.3299021	Ω	312.25193	−0.77255899	+0.44444319
e	0.1484363	i	5.33929	−0.35334400	+0.29242951
P	3.56	H	14.9	G 0.15	U 5

Residuals in seconds of arc

1998 08 28	699	0.5−	1.2+	1998 09 26	704	0.0	0.0	1998 09 29	704	0.5−	0.2+
1998 08 28	699	0.6+	0.7−	1998 09 26	704	0.8+	0.2+	1998 09 29	704	0.0	0.2−
1998 08 28	699	0.2+	0.1−	1998 09 26	704	0.1−	0.2−	1998 09 29	704	1.3−	0.2+
1998 09 14	704	0.7+	0.3−	1998 09 27	704	0.9+	1.2+	1998 09 29	704	0.5+	0.2−
1998 09 14	704	1.0+	0.4−	1998 09 27	704	1.3+	0.9+	1998 09 29	704	1.6−	1.0−
1998 09 14	704	0.5−	0.2−	1998 09 27	704	0.3−	0.8+	2000 01 04	704	0.6−	0.2+
1998 09 18	704	0.1−	0.4−	1998 09 27	704	0.2−	0.0	2000 01 04	704	0.6+	0.3−
1998 09 18	704	0.6−	0.5+	1998 09 27	704	1.3+	0.8−	2000 01 04	704	0.4−	0.3+
1998 09 18	704	0.8−	0.5−	1998 09 29	704	0.2+	0.2−	2000 01 04	704	0.1−	0.0
1998 09 18	704	0.3−	0.5+	1998 09 29	704	0.2+	0.9−	2000 01 06	704	0.1+	0.2+
1998 09 18	704	0.8−	1.6−	1998 09 29	704	0.1−	1.3+	2000 01 06	704	0.8+	0.5−
1998 09 26	704	0.2+	1.2+	1998 09 29	704	0.7−	1.3−	2000 01 06	704	0.4−	0.1+
1998 09 26	704	0.0	0.1−	1998 09 29	704	0.6+	0.9+				

1998 RX₆₂ = 1999 XG₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	201.32065		(2000.0)	P	Q
n	0.28440240	ω	167.03259	+0.26570523	+0.96311683
a	2.2900618	Ω	118.36257	−0.88875821	+0.26179658
e	0.1968259	i	2.76867	−0.37350980	+0.06219735
P	3.47	H	15.4	G 0.15	U 5

Residuals in seconds of arc

1998 09 14	704	0.7−	0.3+	1998 09 26	704	0.5+	0.0	1999 12 08	691	0.6−	0.6−
1998 09 14	704	0.7−	0.2+	1998 09 26	704	1.4+	0.7−	1999 12 08	691	0.2−	0.0
1998 09 14	704	0.2−	0.6−	1998 09 27	704	0.7−	0.0	1999 12 15	691	1.7+	0.4−
1998 09 17	699	0.6+	0.6−	1998 09 27	704	1.1−	0.0	1999 12 15	691	0.2−	0.4−
1998 09 17	699	0.2−	0.7+	1998 09 27	704	1.3−	0.2+	1999 12 15	691	0.3−	0.4−
1998 09 17	699	0.3−	0.2−	1998 09 27	704	1.0−	0.3−	2000 01 04	704	1.1−	0.2−
1998 09 18	704	0.4+	0.3−	1998 09 27	704	0.4−	0.8−	2000 01 04	704	0.9−	0.7+
1998 09 18	704	0.8−	0.0	1998 10 17	699	0.3+	0.5+	2000 01 04	704	1.4+	0.0
1998 09 18	704	0.2+	0.1+	1998 10 17	699	0.1−	0.1−	2000 01 04	704	0.4−	0.9+
1998 09 18	704	1.2+	0.7+	1998 10 17	699	0.4+	0.7+	2000 01 04	704	0.2+	0.7+
1998 09 18	704	1.1+	0.9+	1999 12 02	691	0.1+	0.5−	2000 01 04	704	(0.1+	2.3+)
1998 09 26	704	0.3−	0.3+	1999 12 02	691	0.2+	0.2−	2000 01 04	704	0.7+	1.0+
1998 09 26	704	1.1+	0.2−	1999 12 02	691	0.2−	0.3−				
1998 09 26	704	0.6+	0.5−	1999 12 08	691	0.7−	0.4−				

1998 RY₆₂ = 1999 XP₂₀₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	60.39742		(2000.0)	P	Q
n	0.17495494	ω	17.08741	+0.82753217	−0.55941302
a	3.1660559	Ω	17.18119	+0.49451271	+0.68633058
e	0.0894209	i	9.23547	+0.26579632	+0.46476596
P	5.63	H	13.9	G 0.15	U 4

Residuals in seconds of arc

1998 09 14	704	1.1+	1.3−	1998 09 24	699	0.6−	0.7+	1998 09 27	704	0.7−	0.4−
1998 09 14	704	0.6−	0.4−	1998 09 26	704	0.0	0.5−	1999 12 12	704	0.5−	0.1+
1998 09 14	704	1.0−	1.0+	1998 09 26	704	0.9+	0.0	1999 12 12	704	0.0	0.3+
1998 09 18	704	1.5−	1.2+	1998 09 26	704	0.4+	0.8−	1999 12 12	704	0.4−	0.0
1998 09 18	704	0.7+	1.3−	1998 09 26	704	0.9−	0.6−	1999 12 12	704	0.0	0.6+
1998 09 18	704	0.4+	0.6+	1998 09 26	704	0.4−	1.0−	1999 12 15	704	0.5−	0.2−
1998 09 18	704	1.5+	0.5+	1998 09 27	704	0.4−	0.1+	1999 12 15	704	0.2+	0.2+
1998 09 24	699	0.5+	0.5+	1998 09 27	704	0.5−	1.9+	1999 12 15	704	1.1+	0.1−
1998 09 24	699	0.0	0.3+	1998 09 27	704	1.1+	0.5−	1999 12 15	704	0.0	0.9−

1998 RG₆₃ = 1990 UX₉ = 2000 AY₂₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	135.92802		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.24105528	ω	204.56049	+0.94366792	+0.32372664
a	2.5569660	Ω	136.36325	−0.28480884	+0.90002648
e	0.2665728	i	5.69655	−0.16844814	+0.29181055
P	4.09	H	15.6	G 0.15	U 4

Residuals in seconds of arc

1990 10 24	809	0.6+	1.0+	1998 09 26	704	1.0+	1.6−	1998 09 27	704	0.3+	0.7+
1990 10 24	809	1.2−	1.0+	1998 09 26	704	0.1−	0.2+	1998 09 27	704	1.1−	0.1−
1990 10 24	809	(2.9−	1.1+)	1998 09 26	704	0.9+	1.4−	1998 09 27	704	0.9−	0.1+
1998 09 14	704	1.1+	0.2+	1998 09 26	704	0.9−	0.2+	1998 09 27	704	0.1−	0.3−
1998 09 14	704	1.3+	0.7−	1998 09 26	704	0.7+	1.1−	1998 09 27	704	0.8−	0.4−
1998 09 14	704	0.2+	0.4−	1998 09 26	704	0.5−	0.0	2000 01 13	691	0.3+	0.0
1998 09 18	704	0.3−	0.7+	1998 09 26	704	1.0+	0.8−	2000 01 13	691	0.4+	0.2−
1998 09 18	704	0.5+	0.4+	1998 09 26	704	0.9−	0.5+	2000 01 13	691	0.3+	0.2−
1998 09 18	704	0.5−	0.8+	1998 09 27	704	0.3−	0.1−	2000 01 16	691	1.0−	0.0
1998 09 18	704	0.1−	0.2+	1998 09 27	704	0.2+	0.4+	2000 01 16	691	0.2+	1.2−
1998 09 18	704	0.6−	0.5−	1998 09 27	704	0.1−	0.6+	2000 01 16	691	0.6−	0.5−
1998 09 26	704	0.8+	0.3−	1998 09 27	704	0.6−	0.7+				
1998 09 26	704	0.3+	0.5+	1998 09 27	704	0.2+	0.6−				

1998 RZ₆₃ = 1999 XX₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.97242		(2000.0)		P		Q				
<i>n</i>	0.19635398	ω	290.83636		+0.70609514		−0.70625227				
<i>a</i>	2.9316329	Ω	114.13609		+0.66881115		+0.64131880				
<i>e</i>	0.0965032	<i>i</i>	3.22604		+0.23263985		+0.29986319				
<i>P</i>	5.02	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 09 14	704	0.1+	0.3−	1998 09 27	704	0.7+	0.5−	1999 12 17	691	0.4−	0.2−
1998 09 14	704	0.8−	1.4−	1998 09 27	704	0.1+	0.3+	2000 01 04	704	0.2+	0.5+
1998 09 14	704	0.2−	0.6−	1998 09 27	704	1.1+	0.3+	2000 01 04	704	0.0	0.1−
1998 09 17	699	1.0+	0.1+	1998 09 27	704	0.3+	0.1+	2000 01 04	704	0.0	0.1−
1998 09 17	699	0.5+	0.4−	1998 09 27	704	0.8+	1.6−	2000 01 04	704	0.0	0.1−
1998 09 17	699	0.2−	0.2−	1999 12 02	691	0.1+	0.0	2000 01 04	704	1.1+	0.5+
1998 09 18	704	0.8−	0.4−	1999 12 02	691	0.0	0.2+	2000 01 04	704	0.0	0.5−
1998 09 18	704	1.5−	1.8+	1999 12 02	691	0.2−	0.1−	2000 01 04	704	0.5−	0.8+
1998 09 18	704	0.7−	0.5−	1999 12 08	691	0.1+	0.4−	2000 01 04	704	0.1−	0.2−
1998 09 18	704	1.0−	0.7+	1999 12 08	691	0.3+	0.5−	2000 01 04	704	0.0	0.4+
1998 09 18	704	1.3+	0.9+	1999 12 08	691	0.2+	0.4−	2000 01 04	704	0.1−	0.2−
1998 09 26	704	0.2+	0.7+	1999 12 15	691	0.4+	0.2−	2000 01 11	120	1.1−	0.8+
1998 09 26	704	0.0	1.2−	1999 12 15	691	0.4+	0.1−	2000 01 11	120	0.1−	0.3+
1998 09 26	704	1.2−	0.4−	1999 12 15	691	0.3+	0.2−	2000 01 11	120	0.0	0.1+
1998 09 26	704	1.1+	1.5+	1999 12 17	691	0.2−	0.3−				
1998 09 26	704	0.9−	1.4+	1999 12 17	691	0.1−	0.2−				

1998 RE₆₄ = 1999 XE₇₅

Id. M. E. Sansaturio, S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	284.90439		(2000.0)		P		Q				
<i>n</i>	0.22326662	ω	70.80411		-0.98059841		+0.18988118				
<i>a</i>	2.6910402	Ω	120.11541		-0.19425948		-0.90799390				
<i>e</i>	0.1314106	<i>i</i>	3.22757		-0.02626804		-0.37348657				
<i>P</i>	4.41	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 09 14	704	0.4-	1.7+	1998 09 27	704	0.0	0.2-	1999 12 15	703	0.1+	0.5+
1998 09 14	704	1.6+	0.5+	1998 09 27	704	1.6-	0.8-	1999 12 15	703	0.6+	0.8+
1998 09 14	704	(2.6-	0.7+)	1999 11 15	704	0.6+	0.7-	1999 12 15	703	0.4+	0.7+
1998 09 18	704	1.1-	0.1+	1999 11 15	704	0.6-	0.4+	1999 12 15	703	0.4+	0.9+
1998 09 18	704	1.0-	0.2+	1999 11 15	704	0.3-	0.8-	2000 01 05	704	0.1+	0.3+
1998 09 18	704	0.4-	0.5+	1999 12 07	704	0.3-	0.2+	2000 01 05	704	0.3-	0.4-
1998 09 18	704	0.5+	0.8+	1999 12 07	704	0.2-	0.2-	2000 01 05	704	0.3+	0.1+
1998 09 26	704	(3.3+	0.4+)	1999 12 07	704	0.4+	1.2-	2000 01 05	704	0.2-	0.4-
1998 09 26	704	(1.9+	2.6-)	1999 12 07	704	0.3-	0.5-	2000 01 05	704	0.1+	0.2+
1998 09 26	704	0.8+	1.5-	1999 12 08	704	0.9-	0.3-	2000 01 06	704	0.2-	0.5+
1998 09 26	704	1.0+	0.2-	1999 12 08	704	0.1+	0.2+	2000 01 06	704	0.3-	0.4-
1998 09 27	704	(0.0	2.2-)	1999 12 08	704	0.1-	0.0	2000 01 06	704	0.3-	0.1+
1998 09 27	704	0.5+	1.2-	1999 12 08	704	0.2+	0.0	2000 01 06	704	0.2+	0.1+
1998 09 27	704	0.1+	0.4+	1999 12 08	704	0.2-	0.1+	2000 01 06	704	0.5+	0.1

1998 RD₆₅ = 2000 AF₁₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	97.24400		(2000.0)		P		Q				
<i>n</i>	0.18990650	<i>ω</i>	71.62972		+0.99482917		−0.10036745				
<i>a</i>	2.9976172	<i>Ω</i>	294.12821		+0.08557001		+0.91070212				
<i>e</i>	0.0797645	<i>i</i>	0.97528		+0.05470560		+0.40068444				
<i>P</i>	5.19	<i>H</i>	14.1		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1998 09 14	704	0.4+	0.1+	1998 09 26	704	0.7−	0.1+	2000 01 08	704	0.2−	0.6+
1998 09 14	704	0.4−	0.6+	1998 09 26	704	0.9−	0.6+	2000 01 08	704	0.7+	0.2+
1998 09 14	704	1.9−	0.5−	1998 09 27	704	0.1+	0.5−	2000 01 08	704	0.5−	0.1−
1998 09 18	704	0.9−	0.8+	1998 09 27	704	0.6+	0.3+	2000 01 08	704	0.5−	0.2−
1998 09 18	704	0.9+	0.3−	1998 09 27	704	0.1+	0.8+	2000 01 08	704	0.3−	0.5+

1998 09 18	704	0.7+	0.3-	1998 09 27	704	0.7-	0.1-
1998 09 18	704	1.0+	1.0-	1998 09 27	704	1.2+	1.2-
1998 09 18	704	0.4+	1.9+	2000 01 04	704	0.3+	0.1-
1998 09 26	704	1.0+	0.9-	2000 01 04	704	0.2+	1.0-
1998 09 26	704	1.0-	0.3-	2000 01 04	704	0.2-	0.5-

1998 RE₆₅ = 2000 AT₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	89.63822		(2000.0)		P		Q		
n	0.22260688	ω	128.17254		+0.81867777		-0.57400627		
a	2.6963545	Ω	266.86367		+0.52145331		+0.75536573		
e	0.0912594	i	0.96622		+0.24052682		+0.31613198		
P	4.43	H	14.7	G	0.15	U	5		
Residuals in seconds of arc									
1998 09 14	704	0.5-	0.2+	1998 09 27	704	0.8-	0.1-	2000 01 06	704 0.1+ 0.7+
1998 09 14	704	0.3+	0.3-	1998 09 27	704	0.1-	0.7+	2000 01 06	704 1.2- 0.3+
1998 09 14	704	0.7+	0.5-	1998 09 27	704	(1.4+	2.1+)	2000 01 06	704 0.2- 0.5+
1998 09 18	704	0.0	0.1-	1998 09 27	704	1.4-	0.3-	2000 01 06	704 0.5+ 0.3-
1998 09 18	704	1.5+	1.0-	1998 09 27	704	0.3+	0.2+	2000 01 09	691 0.1+ 0.1-
1998 09 18	704	0.0	1.3+	1998 10 14	699	0.7+	0.4+	2000 01 09	691 0.2+ 0.3-
1998 09 18	704	0.8-	0.5+	1998 10 14	699	0.1+	1.0-	2000 01 09	691 0.1+ 0.5-
1998 09 18	704	0.1-	1.6+	1998 10 14	699	0.5+	0.1-	2000 01 12	691 0.2+ 0.1-
1998 09 26	704	0.7+	0.1-	2000 01 05	704	0.7-	0.4+	2000 01 12	691 0.1+ 0.0
1998 09 26	704	0.3-	0.0	2000 01 05	704	0.5-	0.2-	2000 01 12	691 0.5+ 0.2-
1998 09 26	704	0.8-	0.0	2000 01 05	704	0.5+	0.8+		
1998 09 26	704	0.1-	1.4-	2000 01 05	704	0.2+	0.8-		

1998 RK₆₅ = 2000 AA₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	178.76046		(2000.0)		P		Q				
n	0.22547635	ω	304.59170		+0.45399125		+0.89098689				
a	2.6734294	Ω	352.40147		-0.80229062		+0.40591964				
e	0.0613352	i	2.53906		-0.38758445		+0.20340013				
P	4.37	H	13.4	G	0.15	U	4				
Residuals in seconds of arc											
1998 08 31	704	0.6+	0.9+	1998 09 26	704	0.1+	0.2-	1999 12 10	704	0.2+	0.6+
1998 08 31	704	(0.2+	2.4-)	1998 09 26	704	0.6+	0.6-	1999 12 10	704	0.5-	0.6+
1998 08 31	704	0.1+	1.3-	1998 09 26	704	0.2+	0.9-	1999 12 10	704	0.0	0.4+
1998 08 31	704	0.2+	0.2-	1998 09 26	704	0.4-	0.7+	1999 12 10	704	0.1+	0.0
1998 08 31	704	0.2-	1.5-	1998 09 26	704	0.6+	0.6-	1999 12 10	704	0.2+	0.3+
1998 09 14	704	0.1+	0.4+	1998 09 27	704	0.4-	0.1-	2000 01 03	704	0.5+	0.1-
1998 09 14	704	0.2-	0.0	1998 09 27	704	0.6+	0.3-	2000 01 03	704	0.1-	0.1-
1998 09 14	704	0.5+	0.2+	1998 09 27	704	0.1+	0.1-	2000 01 03	704	0.4-	0.9-
1998 09 18	704	0.3-	0.1-	1998 09 27	704	0.0	0.1+	2000 01 03	704	0.1-	0.0
1998 09 18	704	0.2-	0.2-	1998 09 27	704	0.3+	0.7-	2000 01 03	704	0.5+	0.6-
1998 09 18	704	0.3-	0.0	1998 10 14	699	0.2-	0.5+	2000 01 04	704	0.0	0.0
1998 09 18	704	0.3-	0.5+	1998 10 14	699	0.5+	0.2+	2000 01 04	704	0.2-	0.7-
1998 09 18	704	0.1+	0.5-	1998 10 14	699	0.1-	0.4+	2000 01 04	704	0.2-	0.7+
1998 09 25	699	0.1-	1.0+	1998 11 10	699	0.2-	0.1+	2000 01 04	704	0.4-	0.5-
1998 09 25	699	0.8-	0.8+	1998 11 10	699	0.1+	0.4-	2000 01 04	704	0.2+	0.1+
1998 09 25	699	0.2-	1.4+	1998 11 10	699	0.5-	0.0				

1998 RO₆₆ = 2000 AM₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	39.22728		(2000.0)		P		Q		
n	0.18154152	ω	103.01691		+0.11062538		-0.99300851		
a	3.0890059	Ω	340.48853		+0.85737583		+0.11630941		
e	0.1882379	i	7.08300		+0.50266163		+0.02015485		
P	5.43	H	13.8	G	0.15		U	4	
Residuals in seconds of arc									
1998 09 14	704	1.0-	0.5-	1998 09 26	704	0.7-	0.0	2000 01 04 704 0.1+	0.0
1998 09 14	704	1.0+	1.3+	1998 09 26	704	0.6-	0.3+	2000 01 06 704 0.1+	0.1-

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1998 09 14	704	0.1−	1.2−	1998 09 27	704	0.5−	0.3−	2000 01 06	704	0.0	0.3−
1998 09 18	704	0.6+	1.2−	1998 09 27	704	0.5+	0.5+	2000 01 06	704	0.2+	0.4−
1998 09 18	704	0.3+	0.2+	1998 09 27	704	1.2+	0.1+	2000 01 06	699	0.4+	0.0
1998 09 18	704	0.5+	0.7+	1998 09 27	704	0.5+	0.7+	2000 01 06	704	0.4+	0.1−
1998 09 18	704	1.2−	0.6+	1998 09 27	704	0.0	0.1−	2000 01 06	704	0.3−	0.1−
1998 09 18	704	0.3+	0.0	2000 01 04	704	0.2−	0.5+	2000 01 06	699	0.7+	0.8+
1998 09 26	704	0.8−	1.3−	2000 01 04	704	0.1−	0.4+	2000 01 06	699	0.2−	0.2−
1998 09 26	704	0.9+	0.9+	2000 01 04	704	0.6−	0.0				
1998 09 26	704	1.1−	0.8−	2000 01 04	704	0.4−	0.5−				

1998 RQ₆₆ = 2000 AJ₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 106.80038 (2000.0)				<i>P</i> Williams <i>Q</i>			
<i>n</i>	0.25624962	<i>ω</i>	163.04942	+0.81808004	−0.57350737		
<i>a</i>	2.4548628	<i>Ω</i>	232.02368	+0.52114667	+0.77076121		
<i>e</i>	0.0297376	<i>i</i>	3.11461	+0.24321019	+0.27751839		
<i>P</i>	3.85	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.6+	1.3+	1998 09 26	704	0.3−	1.4−	2000 01 05	704	0.6+	0.6−
1998 09 14	704	0.7+	0.7−	1998 09 26	704	0.3−	1.0−	2000 01 05	704	0.2+	0.6+
1998 09 14	704	0.9−	0.7+	1998 09 26	704	0.5−	1.4−	2000 01 05	704	0.4−	0.3−
1998 09 18	704	0.2−	0.3−	1998 09 26	704	0.4−	0.2+	2000 01 05	704	0.1+	0.6+
1998 09 18	704	1.2+	0.6−	1998 09 27	704	0.4+	0.2−	2000 01 07	704	0.2−	0.5−
1998 09 18	704	0.5+	0.3−	1998 09 27	704	1.0+	0.4+	2000 01 07	704	0.1+	0.4−
1998 09 18	704	1.2−	0.9+	1998 09 27	704	0.6+	0.6+	2000 01 07	704	0.4−	0.7−
1998 09 18	704	0.9−	1.1−	1998 09 27	704	0.2−	0.5+	2000 01 07	704	0.2+	0.8+
1998 09 26	704	0.8+	1.3+	1998 09 27	704	0.9−	1.3+	2000 01 07	704	0.0	0.4+

1998 RZ₆₆ = 2000 AJ₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 237.76246 (2000.0)				<i>P</i> Williams <i>Q</i>			
<i>n</i>	0.17418183	<i>ω</i>	289.89432	−0.76580564	+0.63646603		
<i>a</i>	3.1754174	<i>Ω</i>	289.74836	−0.54741982	−0.72022308		
<i>e</i>	0.0457147	<i>i</i>	5.60581	−0.33745111	−0.27602482		
<i>P</i>	5.66	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.9−	0.4+	1998 09 27	704	0.2−	0.1−	1999 12 15	704	0.2−	0.5+
1998 09 14	704	0.6−	1.0+	1998 09 27	704	1.8−	1.1−	1999 12 15	704	0.3−	0.1+
1998 09 14	704	1.8+	0.0	1998 09 27	704	0.8−	0.8+	1999 12 15	704	1.1−	0.4+
1998 09 18	704	1.4−	1.2−	1998 10 14	699	0.8+	0.3−	2000 01 03	704	0.9−	0.9−
1998 09 18	704	1.9+	1.2+	1998 10 14	699	0.6+	0.3−	2000 01 03	704	0.2+	0.0
1998 09 18	704	1.3+	0.6−	1998 10 14	699	0.2+	1.5+	2000 01 03	704	0.3+	0.7−
1998 09 18	704	0.2−	0.0	1999 11 14	704	0.3+	0.5−	2000 01 03	704	0.3+	0.3−
1998 09 25	699	0.8+	1.0−	1999 11 14	704	0.4+	0.8−	2000 01 04	704	0.0	0.6+
1998 09 25	699	0.4+	0.3+	1999 11 14	704	0.1−	0.8−	2000 01 04	704	0.3−	0.5−
1998 09 25	699	0.6+	1.4−	1999 12 05	703	0.6−	0.2+	2000 01 04	704	0.5+	0.1+
1998 09 26	704	1.7−	1.7+	1999 12 05	703	0.1+	0.6+	2000 01 04	704	0.6+	0.4+
1998 09 26	704	0.0	1.1−	1999 12 05	703	1.0+	0.2+	2000 01 04	704	0.1−	0.6−
1998 09 26	704	0.2−	0.3+	1999 12 05	703	0.6−	0.5+				
1998 09 26	704	0.7−	0.2−	1999 12 15	704	0.4+	1.2+				

1998 RG₆₇ = 2000 AD₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 94.52233 (2000.0)				<i>P</i> Williams <i>Q</i>			
<i>n</i>	0.17538632	<i>ω</i>	70.67408	+0.99523519	−0.07832219		
<i>a</i>	3.1608623	<i>Ω</i>	293.78297	+0.04677365	+0.90610632		
<i>e</i>	0.1534075	<i>i</i>	3.63861	+0.08555199	+0.41573665		
<i>P</i>	5.62	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 27	699	0.2−	0.5−	1998 09 27	704	0.8−	0.5−	1998 10 29	704	0.6+	0.2−
1998 08 27	699	1.1+	0.4−	1998 09 27	704	0.3−	0.2−	1998 10 29	704	1.6−	0.1−
1998 08 27	699	1.2−	1.2+	1998 09 27	704	0.0	0.4+	2000 01 03	704	0.4+	0.9+

1998 09 14	704	0.8−	0.0	1998 09 27	704	0.2+	0.4+	2000 01 03	704	0.3−	0.4+
1998 09 14	704	0.2+	0.2−	1998 09 27	704	1.3−	1.2+	2000 01 03	704	0.3−	0.2+
1998 09 14	704	0.0	0.7−	1998 10 14	699	0.2+	1.0−	2000 01 03	704	0.2+	0.3+
1998 09 18	704	0.1+	0.4−	1998 10 14	699	1.1+	0.5−	2000 01 03	704	0.0	0.1−
1998 09 18	704	1.8+	0.0	1998 10 14	699	0.1+	0.1−	2000 01 04	704	0.2−	0.6−
1998 09 18	704	1.5+	0.2−	1998 10 28	704	1.3+	0.8−	2000 01 04	704	0.2+	0.3−
1998 09 18	704	0.7+	1.1+	1998 10 28	704	0.9+	0.2+	2000 01 04	704	0.0	0.5+
1998 09 18	704	0.4+	0.0	1998 10 28	704	0.6−	0.7+	2000 01 04	704	0.3−	0.4+
1998 09 26	704	0.0	0.1−	1998 10 28	704	1.3+	0.3−	2000 01 14	691	0.2+	0.5−
1998 09 26	704	0.6−	0.5−	1998 10 28	704	0.8−	0.2−	2000 01 14	691	0.0	0.7−
1998 09 26	704	0.2−	0.3+	1998 10 29	704	(0.6+ 2.4+)		2000 01 14	691	0.0	0.4−
1998 09 26	704	1.0−	0.3+	1998 10 29	704	0.0	0.5−				
1998 09 26	704	1.4−	0.1−	1998 10 29	704	0.6−	1.4+				

1998 RG₆₉ = 2000 AZ₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 115.43045 (2000.0)				<i>P</i> Williams <i>Q</i>			
<i>n</i>	0.21838078	<i>ω</i>	199.53348	+0.99857947	−0.05109527		
<i>a</i>	2.7310298	<i>Ω</i>	163.37375	+0.05314720	+0.93494234		
<i>e</i>	0.1063060	<i>i</i>	3.02714	+0.00379698	+0.35110125		
<i>P</i>	4.51	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.1+	0.5+	1998 09 26	704	0.5+	0.0	1999 12 31	699	0.6−	0.5+
1998 09 14	704	1.0−	0.0	1998 09 26	704	0.3+	0.0	1999 12 31	699	0.3+	0.9−
1998 09 14	704	0.3−	0.9+	1998 09 26	704	0.1+	1.1−	1999 12 31	699	0.2−	1.0−
1998 09 18	704	0.1+	0.1−	1998 09 27	704	0.5+	0.2+	2000 01 05	704	0.3−	0.8+
1998 09 18	704	0.3+	0.1+	1998 09 27	704	0.3−	0.5+	2000 01 05	704	0.0	0.1−
1998 09 18	704	0.3+	0.0	1998 09 27	704	0.3−	0.2+	2000 01 05	704	0.4−	0.2+
1998 09 18	704	0.2−	0.0	1998 09 27	704	0.6+	1.3−	2000 01 05	704	0.0	0.3+
1998 09 18	704	0.2+	0.4−	1998 10 14	699	0.1+	0.3−	2000 01 05	704	0.0	0.1−
1998 09 25	699	0.1−	0.1−	1998 10 14	699	0.1−	0.1+	2000 01 06	704	0.1+	0.3−
1998 09 25	699	0.0	0.3−	1998 10 14	699	0.5−	0.0	2000 01 06	704	0.3+	0.1−
1998 09 25	699	0.2−	0.3+	1998 10 19	699	0.0	0.7+	2000 01 06	704	0.7+	0.7+
1998 09 26	704	0.0	0.0	1998 10 19	699	0.1−	0.6+				
1998 09 26	704	0.1−	0.0	1998 10 19	699	0.1+	0.5−				

1998 RT₇₀ = 2000 AU₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 100.61711 (2000.0)				<i>P</i> Williams <i>Q</i>			
<i>n</i>	0.21847425	<i>ω</i>	257.10197	+0.95756891	−0.27398049		
<i>a</i>	2.7302508	<i>Ω</i>	118.73851	+0.28773761	+0.89118292		
<i>e</i>	0.0172628	<i>i</i>	5.85350	+0.01639648	+0.36156285		
<i>P</i>	4.51	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 09 14	704	0.9−	0.4−	1998 09 26	704	1.3+	1.8−	2000 01 05	704	0.7+	0.6+
1998 09 14	704	0.2+	0.5−	1998 09 26	704	0.1−	0.3−	2000 01 05	704	0.4−	0.3−
1998 09 14	704	0.6+	0.4−	1998 09 26	704	1.3−	0.7+	2000 01 05	704	0.4+	0.3+
1998 09 18	704	0.7+	1.2+	1998 09 27	704	1.0+	1.3+	2000 01 05	704	0.2−	0.5−
1998 09 18	704	0.6+	1.9+	1998 09 27	704	1.1+	1.1−	2000 01 06	704	0.5−	0.0
1998 09 18	704	0.5−	0.1−	1998 09 27	704	1.8−	1.3−	2000 01 06	704	0.2−	0.1+
1998 09 18	704	0.9−	0.7−	1998 09 27	704	0.4−	0.4+	2000 01 06	704	0.1−	0.3+
1998 09 18	704	0.1+	0.0	1998 09 27	704	0.9−	0.4+				
1998 09 26	704	1.5+	0.6+	2000 01 05	704	0.2+	0.5−				

1998 RE₇₁ = 2000 AW₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	39.04394		(2000.0)	P	Q
n	0.18445145	ω	302.76355	+0.18934643	-0.97956549
a	3.0564315	Ω	136.15845	+0.93046286	+0.15693359
e	0.1673545	i	5.61881	+0.31366669	+0.12579069
P	5.34	H	14.0	G 0.15	U 4

Residuals in seconds of arc

1998 09 14	704	0.1−	0.1+	1998 09 27	704	0.8−	0.2−	2000 01 05	704	0.0	0.1−
1998 09 14	704	0.9+	0.6−	1998 09 27	704	0.6+	1.0+	2000 01 05	704	0.3−	0.9−
1998 09 14	704	0.1−	0.7−	1998 09 27	704	0.2+	0.5+	2000 01 05	704	0.3+	0.0
1998 09 18	704	0.7−	0.2+	1998 09 27	704	1.3−	0.5−	2000 01 06	704	0.0	0.5+
1998 09 18	704	1.1+	0.6+	1999 12 31	699	0.9+	0.8+	2000 01 06	704	0.1+	0.3−
1998 09 18	704	0.4+	1.4+	1999 12 31	699	0.1−	0.4−	2000 01 06	704	0.4−	0.1−
1998 09 18	704	0.4−	1.0−	1999 12 31	699	0.6+	1.1+	2000 01 06	704	0.6−	0.5+
1998 09 18	704	1.0−	1.8−	2000 01 02	120	1.5−	0.2−	2000 01 07	704	0.2+	0.2+
1998 09 26	704	0.4−	0.8+	2000 01 02	120	0.7+	1.3−	2000 01 07	704	0.1+	0.5+
1998 09 26	704	0.1−	1.5−	2000 01 04	120	0.5+	0.0	2000 01 07	704	0.3−	0.1−
1998 09 26	704	1.3+	0.3+	2000 01 04	120	0.9+	0.5−	2000 01 07	704	0.1−	0.4+
1998 09 26	704	(0.2+	2.3+)	2000 01 05	704	0.2−	0.1+	2000 01 07	704	0.5−	0.1−
1998 09 27	704	0.4+	1.3+	2000 01 05	704	0.3−	0.2−				

1998 RG₇₁ = 2000 AH₁₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
108.36081							
<i>n</i>	0.18435987	<i>ω</i>	309.17617	+0.96609620	+0.25130619		
<i>a</i>	3.0574436	<i>Ω</i>	36.37969	−0.19522343	+0.86107732		
<i>e</i>	0.1686302	<i>i</i>	5.72710	−0.16895546	+0.44203059		
<i>P</i>	5.35	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.7+	0.2−	1998 09 26	704	0.1+	0.5−	2000 01 04	704	0.0	0.2−
1998 09 14	704	1.4+	0.6−	1998 09 27	704	0.0	0.4−	2000 01 04	704	0.5+	0.3+
1998 09 14	704	1.1+	0.7−	1998 09 27	704	0.6−	0.2+	2000 01 04	704	0.2+	0.1−
1998 09 18	704	0.6−	0.0	1998 09 27	704	0.1+	0.4+	2000 01 04	704	1.0+	0.3+
1998 09 18	704	0.3−	0.7+	1998 09 27	704	0.0	0.6+	2000 01 04	704	0.3+	0.4+
1998 09 18	704	0.2−	0.4+	1998 09 27	704	0.2+	0.1−	2000 01 04	704	0.3+	0.6−
1998 09 18	704	1.2−	0.1+	1998 10 17	699	0.6+	0.3+	2000 01 04	704	0.8−	0.8−
1998 09 18	704	1.7−	0.5+	1998 10 17	699	0.8−	0.2−	2000 01 08	704	0.4−	0.2+
1998 09 26	704	0.1−	0.5+	1998 10 17	699	0.8+	0.4−	2000 01 08	704	0.6−	0.2+
1998 09 26	704	0.6+	0.2−	2000 01 04	704	0.6−	0.6+	2000 01 08	704	0.2−	0.0
1998 09 26	704	0.0	0.1+	2000 01 04	704	0.1+	0.8−	2000 01 08	704	0.1+	0.2+
1998 09 26	704	0.1−	0.6−	2000 01 04	704	0.0	0.2+				

1998 RK₇₁ = 2000 AN₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
39.03080							
<i>n</i>	0.29608391	<i>ω</i>	95.47703	−0.55879324	−0.82774041		
<i>a</i>	2.2294249	<i>Ω</i>	28.68207	+0.71263758	−0.51069511		
<i>e</i>	0.0590007	<i>i</i>	6.09388	+0.42414360	−0.23245715		
<i>P</i>	3.33	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.4+	0.2+	1998 09 26	704	0.2−	0.9−	1998 10 22	910	0.2+	0.0
1998 09 14	704	0.1+	0.6+	1998 09 26	704	0.9+	0.5−	2000 01 04	704	0.3+	0.9+
1998 09 14	704	0.6−	0.6−	1998 09 26	704	0.4−	1.2−	2000 01 04	704	0.5−	0.1+
1998 09 18	704	1.3−	0.4−	1998 09 27	704	0.8+	0.4+	2000 01 04	704	0.6+	0.2+
1998 09 18	704	0.3+	0.0	1998 09 27	704	0.2+	0.7+	2000 01 08	704	0.0	0.1−
1998 09 18	704	1.0+	1.3+	1998 09 27	704	0.1−	0.9+	2000 01 08	704	0.6−	0.3+
1998 09 18	704	(2.5+	0.1+)	1998 09 27	704	0.9−	0.5−	2000 01 08	704	0.7−	0.5−
1998 09 18	704	0.0	0.0	1998 09 27	704	1.1−	0.0	2000 01 08	704	0.6+	0.4−
1998 09 26	704	0.4+	0.8−	1998 10 22	910	0.1−	0.1+	2000 01 08	704	0.3+	0.5−
1998 09 26	704	0.6+	0.5+	1998 10 22	910	0.1−	0.2+				

1998 RA₇₂ = 1999 YK₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
59.28274							
<i>n</i>	0.17965170	<i>ω</i>	323.62231	+0.57112109	−0.82056837		
<i>a</i>	3.1106310	<i>Ω</i>	91.53914	+0.75824859	+0.51705191		
<i>e</i>	0.1960504	<i>i</i>	1.26660	+0.31445155	+0.24356698		
<i>P</i>	5.49	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 04 20	809	1.0+	0.3−	1998 09 26	704	0.9+	1.0−	2000 01 01	104	0.7−	0.8+
1996 04 20	809	1.2−	1.2−	1998 09 27	704	0.1+	0.3+	2000 01 04	704	0.3+	0.2−
1996 04 20	809	0.7−	1.8−	1998 09 27	704	0.2−	0.2−	2000 01 04	704	0.3−	0.1−
1998 09 14	704	0.6−	0.1+	1998 09 27	704	0.8+	0.1−	2000 01 04	704	0.3−	0.3−
1998 09 14	704	0.0	0.2+	1998 09 27	704	0.2−	0.5−	2000 01 04	704	0.2+	0.5−
1998 09 14	704	0.1+	0.9−	1998 09 27	704	0.6+	0.3+	2000 01 04	704	0.6−	0.9−
1998 09 17	699	0.1−	0.3−	1998 10 14	699	0.6+	0.3+	2000 01 06	704	0.0	0.5−
1998 09 17	699	0.2−	0.3+	1998 10 14	699	0.4+	0.3−	2000 01 06	704	0.0	0.7−
1998 09 17	699	0.8+	0.6−	1998 10 14	699	0.1−	0.5−	2000 01 06	704	0.1−	0.3−
1998 09 18	704	0.7−	0.6−	1998 10 19	699	0.4−	0.3+	2000 01 06	704	0.0	0.9−
1998 09 18	704	0.4−	0.9+	1998 10 19	699	0.1+	0.9+	2000 01 07	120	0.6+	0.5−
1998 09 18	704	0.5+	1.0+	1998 10 19	699	0.6+	0.2+	2000 01 07	120	0.5+	0.2−
1998 09 18	704	0.4−	0.3+	1998 10 27	691	0.4−	0.6−	2000 01 09	704	0.7−	0.3+
1998 09 18	704	0.1+	0.3−	1998 10 27	691	1.4−	0.9−	2000 01 09	704	0.2−	0.2+
1998 09 26	704	0.9+	0.2−	1998 10 27	691	0.7−	0.3−	2000 01 09	704	0.5−	0.4−
1998 09 26	704	0.4−	0.4+	1999 12 31	104	1.9+	0.8+	2000 01 11	120	0.7−	0.6+
1998 09 26	704	0.3+	1.0−	1999 12 31	104	0.0	0.5+	2000 01 11	120	0.3−	0.4−
1998 09 26	704	0.5+	0.4−	2000 01 01	104	0.3+	0.5+				

1998 RR₇₂ = 2000 AR₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
92.75596							
<i>n</i>	0.20071485	<i>ω</i>	234.91921	+0.92768319	−0.37252035		
<i>a</i>	2.8890145	<i>Ω</i>	146.93135	+0.35580980	+0.86163560		
<i>e</i>	0.1104941	<i>i</i>	2.64177	+0.11315160	+0.34469216		
<i>P</i>	4.91	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.3+	0.4−	1998 09 26	704	0.4+	0.3−	1998 10 19	699	0.0	0.2+
1998 09 14	704	0.2−	0.3+	1998 09 26	704	1.3+	0.2+	1998 10 19	699	0.0	0.2+
1998 09 14	704	0.1−	0.1−	1998 09 26	704	1.2+	0.5−	1998 10 19	699	0.4+	0.1+
1998 09 17	699	0.4−	0.6+	1998 09 26	704	0.5+	0.4−	2000 01 05	704	0.3+	0.6+
1998 09 17	699	0.3+	1.5+	1998 09 27	704	0.4+	0.0	2000 01 05	704	0.1+	0.0
1998 09 17	699	0.0	0.8+	1998 09 27	704	0.2+	0.2−	2000 01 05	704	0.2+	0.3+
1998 09 18	704	0.1−	0.2−	1998 09 27	704	0.1−	0.2+	2000 01 05	704	0.2−	0.1−
1998 09 18	704	0.9+	0.3−	1998 09 27	704	0.5−	0.6−	2000 01 05	704	0.0	0.2−
1998 09 18	704	1.4−	0.1−	1998 09 27	704	0.3−	0.3−	2000 01 06	704	0.5+	0.2−
1998 09 18	704	2.0−	0.3−	1998 10 17	699	0.8−	0.2+	2000 01 06	704	0.0	0.0
1998 09 18	704	0.6−	0.3−	1998 10 17	699	0.5−	0.2+	2000 01 06	704	0.7−	0.4−
1998 09 26	704	1.3+	0.2−	1998 10 17	699	0.4−	0.3−	2000 01 06	704	0.3−	0.0

1998 RX₇₂ = 2000 AL₁₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
79.84240							
<i>n</i>	0.18425496	<i>ω</i>	211.55217	+0.82437240	−0.56599487		
<i>a</i>	3.0586040	<i>Ω</i>	182.95390	+0.54558123	+0.79813657		
<i>e</i>	0.2481355	<i>i</i>	8.64242	+0.15083524	+0.20646509		
<i>P</i>	5.35	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 02	699	0.5+	0.6+	1998 09 26	704	0.2−	0.4−	1998 10 29	704	(0.8−	3.1−)
1998 08 02	699	0.8−	0.6+	1998 09 26	704	0.1−	0.9−	1998 12 08	704	0.0	0.4+
1998 08 02	699	0.8−	0.3+	1998 09 27	704	0.4+	0.1−	1998 12 08	704	0.7+	0.2+
1998 09 02	691	0.0	0.1−	1998 09 27	704	0.2+	0.0	1998 12 08	704	(2.1−	2.5+)
1998 09 02	691	0.2+	0.1−	1998 09 27	704	0.5+	0.5+	1998 12 08	704	0.3−	0.7+
1998 09 02	691	0.1+	0.1−	1998 09 27	704	0.1−	0.2+	1998 12 08	704	0.1−	0.0
1998 09 12	691	0.1−	0.2−	1998 09 27	704	0.2+	0.2−	1999 01 07	704	0.4+	1.5+
1998 09 12	691	0.3−	0.3−	1998 09 30	691	0.2−	0.8−	1999 01 07	704	1.2−	1.3+
1998 09 12	691	0.2−	0.4−	1998 09 30	691	0.1+	0.5−	1999 01 07	704	0.7+	1.5+
1998 09 14	704	0.4+	0.8−	1998 09 30	691	0.1+	0.6−	1999 01 07	704	1.2−	0.2−
1998 09 14	704	0.5+	0.0	1998 10 17	699	0.0	0.3+	2000 01 05	704	0.3+	1.2−
1998 09 14	704	0.4−	0.6+	1998 10 17	699	0.1−	0.0	2000 01 05	704	0.0	0.4−
1998 09 15	699	0.0	0.3+	1998 10 17	699	0.2+	0.5+	2000 01 05	704	0.2+	1.1−
1998 09 15	699	0.0	0.2+	1998 10 19	699	1.0+	0.9−	2000 01 05	704	0.1+	0.1+
1998 09 15	699	0.3+	0.3+	1998 10 19	699	0.4+	0.5−	2000 01 07	704	0.0	0.3−

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1998 09 18	704	0.1−	0.0	1998 10 19	699	1.1+	0.6−	2000 01 07	704	0.2−	0.2−
1998 09 18	704	0.8−	0.1+	1998 10 28	704	0.4+	0.3−	2000 01 07	704	0.2+	0.8−
1998 09 18	704	0.7−	0.0	1998 10 28	704	0.2+	0.3+	2000 01 07	704	0.3−	0.3−
1998 09 18	704	0.2−	0.5−	1998 10 28	704	0.0	0.1−	2000 01 07	704	0.5−	0.5−
1998 09 18	704	0.5+	0.4−	1998 10 28	704	0.3−	0.1+	2000 01 08	704	0.2−	0.5+
1998 09 25	699	0.2+	0.3+	1998 10 28	704	1.4−	0.3+	2000 01 08	704	0.0	0.1−
1998 09 25	699	0.2+	0.3+	1998 10 29	704	(0.1+	3.1−)	2000 01 08	704	0.2+	0.6+
1998 09 25	699	0.2−	0.0	1998 10 29	704	(0.1+	3.2−)	2000 01 08	704	0.4+	0.1+
1998 09 26	704	0.3−	0.2−	1998 10 29	704	(0.0	2.5−)	2000 01 08	704	0.6−	1.6+
1998 09 26	704	0.2−	0.6−	1998 10 29	704	(0.1−	3.1−)				

1998 RL₇₃

Id. J. Roe (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	192.66513		(2000.0)	P	Q	Williams
<i>n</i>	0.24284573	ω	0.64039	+0.39631776	+0.91743873	
<i>a</i>	2.5443825	Ω	292.70827	−0.84252209	+0.34818998	
<i>e</i>	0.0851185	<i>i</i>	2.18626	−0.36481332	+0.19253549	
<i>P</i>	4.06	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 28	699	0.5+	1.8+	1998 09 27	704	0.9+	1.1+	2000 01 07	691	0.1−	0.7−
1998 08 28	699	0.5−	0.2+	1998 09 27	704	0.9+	0.0	2000 01 07	691	0.2+	0.2−
1998 08 28	699	1.0+	0.1−	1998 09 27	704	0.2−	0.3−	2000 01 07	691	0.2+	0.3−
1998 09 14	704	0.4−	0.2+	1998 10 14	699	0.2+	0.4+	2000 01 10	732	0.0	0.1+
1998 09 14	704	0.0	0.5−	1998 10 14	699	0.5+	0.2+	2000 01 10	732	0.2+	0.1+
1998 09 14	704	0.2−	1.2−	1998 10 14	699	0.1+	0.2−	2000 01 10	732	0.4−	0.0
1998 09 18	704	0.1−	0.7+	1999 12 07	704	0.6+	0.1−	2000 01 11	732	0.3+	0.3+
1998 09 18	704	(2.1−	2.9−)	1999 12 07	704	0.0	1.3−	2000 01 11	732	0.6−	0.4+
1998 09 18	704	1.2−	0.5+	1999 12 07	704	0.6−	0.8−	2000 01 11	732	0.4+	0.7+
1998 09 18	704	(2.3−	1.6+)	1999 12 07	704	0.4−	0.4−	2000 01 11	732	0.1+	1.2+
1998 09 18	704	1.4−	0.3+	1999 12 30	699	0.6+	1.8+	2000 01 12	732	0.1−	0.4+
1998 09 26	704	0.5+	0.5−	1999 12 30	699	0.2−	0.0	2000 01 12	732	0.2+	0.1+
1998 09 26	704	0.4−	0.4−	1999 12 30	699	0.4+	0.5+	2000 01 12	732	0.0	0.5+
1998 09 26	704	1.0−	0.7−	2000 01 04	704	0.2+	0.6−	2000 01 13	732	0.8−	0.6+
1998 09 26	704	0.0	1.5−	2000 01 04	704	0.3−	0.7−	2000 01 13	732	1.5−	0.2−
1998 09 26	704	0.3−	0.8−	2000 01 04	704	0.5+	0.8−	2000 01 13	732	0.9−	0.3−
1998 09 27	704	0.1−	0.6+	2000 01 04	704	0.2+	0.0	2000 01 16	120	0.7+	0.4−
1998 09 27	704	1.0+	0.7+	2000 01 04	704	0.0	0.0	2000 01 16	120	1.3+	0.1+

1998 RN₇₃ = 2000 AT₁₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	146.18785		(2000.0)	P	Q	Williams
<i>n</i>	0.24685988	ω	88.62628	+0.94958115	+0.31027948	
<i>a</i>	2.5167247	Ω	253.29611	−0.30307900	+0.87175174	
<i>e</i>	0.1819726	<i>i</i>	2.69108	−0.08024184	+0.37917745	
<i>P</i>	3.99	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.1+	0.1+	1998 09 26	704	1.0+	0.6−	1998 12 13	704	0.7+	1.2−
1998 09 14	704	0.0	0.1+	1998 09 26	704	0.3−	1.4−	1998 12 13	704	0.6+	0.9+
1998 09 14	704	0.1−	1.0+	1998 09 27	704	0.1+	0.3−	1998 12 13	704	1.0+	0.4+
1998 09 15	699	0.4−	0.1+	1998 09 27	704	0.5+	0.0	1998 12 13	704	0.5+	1.0−
1998 09 15	699	0.1+	0.3+	1998 09 27	704	0.8+	0.1+	1998 12 13	704	0.2+	0.0
1998 09 15	699	0.1−	0.8+	1998 09 27	704	0.1−	0.7−	1998 12 13	704	0.7−	0.6+
1998 09 18	704	1.2−	0.6+	1998 09 27	704	0.1−	0.0	2000 01 05	704	0.7−	0.8−
1998 09 18	704	0.5+	0.5−	1998 10 28	704	0.5+	0.1−	2000 01 05	704	0.8+	0.0
1998 09 18	704	0.4+	0.6−	1998 10 28	704	0.1+	0.3+	2000 01 05	704	0.5+	0.7−
1998 09 18	704	0.5−	0.2+	1998 10 28	704	0.2−	0.6+	2000 01 07	704	0.5−	0.2−
1998 09 18	704	1.4−	1.1+	1998 10 28	704	0.6−	0.9+	2000 01 07	704	1.0−	0.4+
1998 09 26	704	0.4+	0.3−	1998 10 28	704	1.1−	1.0−	2000 01 07	704	0.9+	0.1+
1998 09 26	704	0.6+	0.5−	1998 12 13	704	1.6−	1.3+	2000 01 07	704	0.2−	0.6+
1998 09 26	704	0.8+	1.1−	1998 12 13	704	0.9−	0.3+				

1998 RQ₇₃ = 2000 AQ₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	92.36103		(2000.0)	P	Q	Williams
<i>n</i>	0.18956965	ω	139.59987	+0.95171235	−0.30336665	
<i>a</i>	3.0011671	Ω	238.11976	+0.26544639	+0.89016663	
<i>e</i>	0.1530191	<i>i</i>	3.17526	+0.15421355	+0.33995890	
<i>P</i>	5.20	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 27	699	0.3+	0.6+	1998 10 11	120	0.2+	1.7+	1998 10 28	704	0.8−	0.3+
1998 08 27	699	0.3+	0.0	1998 10 11	120	0.8+	0.2+	1998 10 29	704	0.7+	1.0+
1998 08 27	699	0.4+	0.7+	1998 10 13	120	0.0	0.0	1998 10 29	704	0.3+	1.9−
1998 09 14	704	0.7−	0.4+	1998 10 13	120	0.6−	0.2+	1998 10 29	704	(0.0	2.7−)
1998 09 14	704	0.1+	0.2+	1998 10 14	699	0.4+	0.6+	1998 10 29	704	1.3−	0.1−
1998 09 14	704	0.1+	0.3+	1998 10 14	699	0.3−	0.3−	2000 01 05	704	0.8−	0.1−
1998 09 18	704	0.3+	0.3−	1998 10 14	699	0.1−	0.4+	2000 01 05	704	0.3+	1.1−
1998 09 18	704	0.6−	0.9−	1998 10 15	120	0.1−	0.5+	2000 01 05	704	0.8−	0.8+
1998 09 18	704	0.3−	1.5−	1998 10 15	120	0.8+	0.8+	2000 01 06	704	0.2+	0.3+
1998 09 18	704	0.2+	0.6−	1998 10 28	704	1.4+	0.2−	2000 01 06	704	1.7+	0.0
1998 09 18	704	1.0−	0.2+	1998 10 28	704	0.0	1.4−	2000 01 06	704	0.5−	0.4+
1998 10 11	120	0.8−	0.4+	1998 10 28	704	0.4+	1.1−				

1998 RR₇₃ = 2000 AZ₁₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	219.73631		(2000.0)	P	Q	Williams
<i>n</i>	0.22532895	ω	50.60300	−0.32637574	+0.94173865	
<i>a</i>	2.6745952	Ω	200.78932	−0.92230154	−0.33610542	
<i>e</i>	0.1460460	<i>i</i>	13.23903	−0.20697521	+0.01270636	
<i>P</i>	4.37	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 27	699	0.5+	0.7+	1998 09 27	704	0.9+	0.4−	1998 10 29	704	0.1−	0.8+
1998 08 27	699	0.9−	0.8+	1998 09 27	704	0.5+	0.5−	1998 11 11	699	0.1+	0.4+
1998 08 27	699	0.0	0.7+	1998 09 27	704	0.4+	0.2−	1998 11 11	699	0.2−	0.2−
1998 09 14	704	0.1+	0.1+	1998 09 27	704	0.2+	0.7+	1998 11 11	699	0.2−	0.4+
1998 09 14	704	0.1+	0.1−	1998 09 27	704	1.0+	0.4+	1999 12 05	704	0.3+	0.9−
1998 09 14	704	0.4−	0.6−	1998 10 14	699	0.1−	0.8+	1999 12 05	704	1.0−	1.2+
1998 09 15	699	0.2+	0.7+	1998 10 14	699	0.1−	0.8+	1999 12 05	704	0.6+	0.0
1998 09 15	699	0.1+	0.8+	1998 10 14	699	0.6+	0.7+	2000 01 08	704	0.1−	0.5+
1998 09 15	699	0.3−	0.3+	1998 10 15	120	0.7−	0.5−	2000 01 08	704	0.4+	0.4+
1998 09 18	704	0.6−	0.2+	1998 10 15	120	0.2−	0.2−	2000 01 08	704	0.3−	0.1−
1998 09 18	704	0.0	0.3+	1998 10 28	704	1.2+	0.2−	2000 01 08	704	0.0	0.1+
1998 09 18	704	0.4+	0.8−	1998 10 28	704	0.3−	0.8−	2000 01 08	704	0.3−	0.5−
1998 09 18	704	0.9−	0.1+	1998 10 28	704	1.0−	0.1+	2000 01 11	704	0.5+	0.1−
1998 09 18	704	0.8−	0.8−	1998 10 28	704	0.2+	0.1−	2000 01 11	704	0.1−	0.2+
1998 09 26	704	0.5+	0.3−	1998 10 28	704	0.3+	0.5−	2000 01 11	704	0.0	0.1+
1998 09 26	704	0.1+	1.0−	1998 10 29	704	0.2+	0.7−	2000 01 11	704	0.3+	0.7−
1998 09 26	704	0.3+	0.7−	1998 10 29	704	0.1+	0.0	2000 01 11	704	0.3−	0.1−
1998 09 26	704	0.0	1.4−	1998 10 29	704	0.1+	0.9+				
1998 09 26	704	0.2−	0.9−	1998 10 29	704	1.0−	0.5+				

1998 RC₇₄ = 2000 AW₁₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	124.38271		(2000.0)	P	Q	Williams
<i>n</i>	0.21886586	ω	123.61570	+0.99516033	+0.03697162	
<i>a</i>	2.7269931	Ω	234.42774	−0.06560980	+0.93973981	
<i>e</i>	0.0936166	<i>i</i>	6.42674	+0.07315242	+0.33988555	
<i>P</i>	4.50	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 14	704	0.4−	0.2−	1998 09 27	704	(3.2+	2.7−)	1999 11 08	703	0.1−	1.5+
1998 09 14	704	0.5−	0.1−	1998 10 28	704	1.7−	0.7+	1999 11 08	703	0.0	0.2−
1998 09 14	704	0.2+	0.2−	1998 10 28	704	0.7+	0.8−	1999 11 08	703	0.4+	0.3−
1998 09 18	704	1.1−	0.6−	1998 10 28	704	0.2−	1.0−	1999 11 08	703	0.6−	0.5+
1998 09 18	704	0.8+	0.7−	1998 10 28	704	0.7−	0.5−	2000 01 04	699	0.4+	0.0

1998 09 18	704	1.8+	0.5-	1998 10 28	704	0.2-	1.0-	2000 01 04	699	0.5+	0.6-
1998 09 18	704	0.2+	0.2+	1998 10 29	704	0.5-	0.6+	2000 01 04	699	0.9+	0.2+
1998 09 18	704	0.0	1.1-	1998 10 29	704	0.2-	0.6+	2000 01 05	704	0.1+	0.7-
1998 09 25	699	0.6+	1.1+	1998 10 29	704	0.1+	0.8+	2000 01 05	704	0.0	0.5-
1998 09 25	699	0.7+	0.1+	1998 10 29	704	0.5-	0.4+	2000 01 05	704	0.1+	0.2+
1998 09 25	699	0.1+	0.1-	1998 10 29	704	0.4-	0.6-	2000 01 05	704	0.6+	0.2-
1998 09 26	704	0.1-	0.7+	1998 11 10	699	0.5+	0.1-	2000 01 05	704	0.0	0.2-
1998 09 26	704	0.9-	0.1+	1998 11 10	699	0.4+	0.4+	2000 01 07	704	0.6-	0.4-
1998 09 26	704	0.3-	0.6+	1998 11 10	699	0.2+	0.1-	2000 01 07	704	0.4-	0.2-
1998 09 26	704	0.8-	0.4+	1998 12 09	704	(2.6-	0.9+)	2000 01 07	704	0.4-	0.2+
1998 09 26	704	0.7-	0.4+	1998 12 09	704	1.5+	0.9+	2000 01 07	704	0.5-	0.0
1998 09 27	704	1.7+	1.4-	1998 12 09	704	0.1+	0.4-	2000 01 07	704	0.8-	0.6+
1998 09 27	704	(2.3+	1.1-)	1998 12 09	704	1.2-	0.3+				
1998 09 27	704	(2.0+	2.5-)	1998 12 09	704	1.2+	1.2+				

1998 RF₇₄ = 1999 XN₁₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	159.76890	(2000.0)	
<i>n</i>	0.22544774	ω	353.29219
<i>a</i>	2.6736555	Ω	332.33601
<i>e</i>	0.0335824	<i>i</i>	5.99626
<i>P</i>	4.37	<i>H</i>	13.7
		<i>G</i>	0.15
		<i>U</i>	3

Residuals in seconds of arc

1996 03 15	566	0.4+	0.2+	1998 09 27	704	0.1+	0.9+	1999 12 10	704	0.0	1.2-
1996 03 15	566	0.2-	0.3+	1998 09 27	704	0.8+	1.9+	1999 12 10	704	0.2+	0.3-
1996 03 15	566	0.1+	0.1+	1998 09 27	704	0.1-	0.4-	1999 12 10	704	0.4+	0.5+
1998 09 14	704	0.0	0.4+	1998 10 14	699	0.1-	0.6+	1999 12 10	704	0.6-	0.3-
1998 09 14	704	0.5-	1.0-	1998 10 14	699	0.8+	0.0	1999 12 15	704	0.0	0.0
1998 09 14	704	0.1-	0.8+	1998 10 14	699	0.3+	0.3+	1999 12 15	704	0.2+	0.5+
1998 09 18	704	0.4+	0.2-	1998 10 28	704	0.0	0.6-	1999 12 15	704	0.2+	0.0
1998 09 18	704	0.4+	0.1+	1998 10 28	704	0.0	0.9-	1999 12 15	704	0.6+	0.5+
1998 09 18	704	0.2+	0.8+	1998 10 28	704	1.0-	0.1+	1999 12 15	704	0.3+	0.5+
1998 09 18	704	0.1+	0.4-	1998 10 28	704	1.3-	0.2+	2000 01 03	704	0.1-	0.4-
1998 09 18	704	0.4+	0.6-	1998 10 29	704	1.2+	1.1-	2000 01 03	704	0.1+	0.0
1998 09 25	699	0.6+	0.6-	1998 10 29	704	0.1-	0.3-	2000 01 03	704	0.2+	0.3+
1998 09 25	699	0.4-	0.5+	1998 10 29	704	1.7-	0.0	2000 01 03	704	0.5-	0.7+
1998 09 25	699	(1.1+	2.2+)	1998 10 29	704	0.2-	0.2+	2000 01 03	704	0.1+	0.4-
1998 09 26	704	0.2+	0.3-	1998 10 29	704	(2.7-	0.3-)	2000 01 04	704	0.1-	0.0
1998 09 26	704	0.0	0.6-	1999 11 16	704	0.1+	0.4+	2000 01 04	704	0.4-	0.5-
1998 09 26	704	0.3+	0.6-	1999 11 16	704	0.5-	0.4+	2000 01 04	704	0.1-	0.0
1998 09 26	704	1.0+	1.9+	1999 11 16	704	0.2+	0.5+	2000 01 04	704	0.0	0.2-
1998 09 26	704	0.9-	0.1-	1999 11 16	704	0.4+	0.2+	2000 01 04	704	1.3-	1.7-
1998 09 27	704	0.1-	0.9-	1999 11 16	704	0.5+	0.5+				
1998 09 27	704	0.4-	0.1-	1999 12 10	704	0.2+	0.1-				

1998 RG₇₅ = 1999 XH₂₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	42.53242	(2000.0)	
<i>n</i>	0.23257940	ω	279.47180
<i>a</i>	2.6187169	Ω	182.37298
<i>e</i>	0.1291188	<i>i</i>	13.04251
<i>P</i>	4.24	<i>H</i>	13.6
		<i>G</i>	0.15
		<i>U</i>	2

Residuals in seconds of arc

1996 03 17	566	0.0	0.5-	1998 09 26	704	0.5+	0.5-	1998 10 29	704	0.0	0.7+
1996 03 17	566	0.1+	0.3-	1998 09 26	704	0.5+	0.6-	1998 10 29	704	1.0-	0.7+
1996 03 17	566	0.3-	0.5-	1998 09 26	704	0.5+	1.2-	1998 10 29	704	1.0-	0.9+
1998 09 14	704	0.4-	0.2+	1998 09 27	704	0.0	0.2-	1998 10 29	704	1.3+	0.1+
1998 09 14	704	0.7-	0.3-	1998 09 27	704	0.7-	0.3+	1998 11 15	699	0.3+	0.4+
1998 09 14	704	0.3-	1.3+	1998 09 27	704	0.4-	0.4-	1998 11 15	699	0.6+	0.5+
1998 09 17	699	0.4+	0.1+	1998 09 27	704	0.5-	0.4+	1998 11 15	699	0.0	0.1+
1998 09 17	699	0.3+	0.4+	1998 09 27	704	0.0	0.6-	1999 12 14	704	0.2+	0.3-
1998 09 17	699	0.2+	0.0	1998 10 17	699	0.2+	0.2+	1999 12 14	704	0.3-	0.0
1998 09 18	704	0.0	0.2-	1998 10 17	699	0.3+	0.6+	1999 12 14	704	0.0	0.2-
1998 09 18	704	0.5-	0.5+	1998 10 17	699	0.4+	0.4+	1999 12 14	704	0.3+	0.2+

1998 09 18	704	0.2-	0.8-	1998 10 28	704	0.0	1.0-	1999 12 14	704	0.3+	0.3+
1998 09 18	704	0.3-	0.7-	1998 10 28	704	0.3+	0.1-	1999 12 16	704	0.8-	0.5+
1998 09 18	704	0.2-	0.4+	1998 10 28	704	0.7+	1.0-	1999 12 16	704	0.4-	0.2-
1998 09 26	704	0.1-	0.4-	1998 10 28	704	0.1+	0.3-	1999 12 16	704	0.9+	0.1-
1998 09 26	704	0.6+	0.6-	1998 10 28	704	0.6-	0.3-	1999 12 16	704	0.2-	0.2-

1998 RH₇₅ = 2000 AM₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	285.94229	(2000.0)	
<i>n</i>	0.25386623	ω	27.68939
<i>a</i>	2.4702036	Ω	181.66063
<i>e</i>	0.1299461	<i>i</i>	12.36993
<i>P</i>	3.88	<i>H</i>	14.1
		<i>G</i>	0.15
		<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.0	0.5-	1998 09 26	704	0.2+	0.1-	1998 10 17	699	0.7+	0.5-
1998 09 14	704	1.3+	0.2-	1998 09 26	704	1.2+	0.3+	1998 10 17	699	1.5-	0.8+
1998 09 14	704	0.6+	1.2+	1998 09 26	704	0.8+	0.1+	2000 01 08	704	0.8-	0.1-
1998 09 17	699	0.3+	0.0	1998 09 26	704	1.5+	0.6-	2000 01 08	704	0.5-	0.0
1998 09 17	699	0.2-	1.0+	1998 09 26	704	0.5+	1.3-	2000 01 08	704	0.5-	0.1+
1998 09 17	699	0.6-	0.4-	1998 09 27	704	0.1+	0.5+	2000 01 08	704	0.3-	0.3-
1998 09 18	704	0.1+	0.7-	1998 09 27	704	0.3+	0.3+	2000 01 08	704	0.1-	0.1-
1998 09 18	704	0.4-	0.1+	1998 09 27	704	0.4-	1.0-	2000 01 12	704	0.5+	0.1-
1998 09 18	704	0.9-	0.2+	1998 09 27	704	0.8-	0.2+	2000 01 12	704	0.4+	0.2-
1998 09 18	704	1.5-	1.1-	1998 09 27	704	0.1-	0.0	2000 01 12	704	0.9+	0.3+
1998 09 18	704	1.0-	1.5+	1998 10 17	699	0.2-	0.3+	2000 01 12	704	0.4+	0.4+

1998 RK₇₅ = 1970 GJ₁ = 1985 ST₆

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	328.92453	(2000.0)	
<i>n</i>	0.22650522	ω	150.33025
<i>a</i>	2.6653275	Ω	13.84808
<i>e</i>	0.1061106	<i>i</i>	11.48739
<i>P</i>	4.35	<i>H</i>	13.1
		<i>G</i>	0.15
		<i>U</i>	3

Residuals in seconds of arc

1970 04 11	805	(6.6+	1.4+)	1998 09 26	704	0.1-	0.3-	1998 10 28	704	0.0	0.0
1970 04 11	805	(7.4+	0.3+)	1998 09 26	704	0.7+	1.2-	1998 10 29	704	0.3+	0.5-
1970 04 11	805	(7.3+	0.2+)	1998 09 26	704	0.4-	0.1-	1998 10 29	704	0.4+	1.0+
1998 09 22	095	1.6+	2.4-	1998 09 26	704	0.5-	0.7-	1998 10 29	704	0.6-	1.0+
1998 09 14	704	0.1+	0.1-	1998 09 27	704	1.1+	0.1-	1998 10 29	704	0.4+	0.5+
1998 09 14	704	0.1+	0.2-	1998 09 27	704	(0.1+	2.1-)	1998 10 29	704	0.3+	0.3-
1998 09 14	704	0.5-	0.3+	1998 09 27	704	0.7-	0.3+	1998 11 11	699	0.6+	0.6+
1998 09 18	704	1.1-	0.2-	1998 09 27	704	0.4-	0.5+	1998 11 11	699	0.5-	0.1+
1998 09 18	704	0.4-	0.1+	1998 09 27	704	0.7-	0.4+	1998 11 11	699	0.2-	0.6+
1998 09 18	704	0.4-	0.4+	1998 10 14	699	0.6+	0.5+	1998 12 15	699	1.0-	0.3-
1998 09 18	704	0.3+	0.4+	1998 10 14	699	1.1+	0.4+	1998 12 15	699	0.8-	0.4-
1998 09 18	704	0.3-	0.2-	1998 10 14	699	0.6+	0.1-	1998 12 15	699	0.8-	1.5+
1998 09 25	699	0.1+	0.2-	1998 10 28	704	0.4-	0.1+	2000 01 10	699	0.3+	0.0
1998 09 25	699	0.5+	0.4+	1998 10 28	704	0.1-	0.3-	2000 01 10	699	0.8-	0.1+
1998 09 25	699	0.2-	0.0	1998 10 28	704	0.8+	0.5-	2000 01 10	699	0.4+	0.3-
1998 09 26	704	0.0	0.2+	1998 10 28	704	0.1+	1.0-				

1998 RZ₇₅ = 2000 AR₁₇₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	157.57714	(2000.0)	
<i>n</i>	0.19090965	ω	131.49877
<i>a</i>	2.9871071	Ω	170.22832
<i>e</i>	0.0644426	<i>i</i>	9.82096
<i>P</i>	5.16	<i>H</i>	13.4
		<i>G</i>	0.15

2000 JAN. 24

M.P.C. 37761

1996 03 17	566	0.2−	0.3+	1998 09 27	704	0.8−	0.9+	1998 10 28	704	1.3−	1.9−
1998 09 14	704	0.1−	0.1−	1998 09 27	704	1.3−	1.2+	1998 10 28	704	(4.5−	2.0−)
1998 09 14	704	0.5−	0.3−	1998 10 13	610	(2.1+	2.2+)	1998 10 29	704	0.1+	0.8−
1998 09 14	704	0.5+	0.5+	1998 10 13	610	1.4+	1.5+	1998 10 29	704	0.5+	0.3−
1998 09 17	699	0.0	0.2−	1998 10 13	610	0.9+	1.0+	1998 10 29	704	0.3+	0.5+
1998 09 17	699	0.3+	0.1−	1998 10 14	610	(4.8+	1.7+)	1999 12 14	704	1.4+	0.8+
1998 09 17	699	0.5+	0.2−	1998 10 14	610	1.6+	0.7+	1999 12 14	704	1.1+	0.4−
1998 09 18	704	0.4+	0.5−	1998 10 14	610	0.2−	0.2+	1999 12 14	704	(4.3+	0.0)
1998 09 18	704	0.5−	1.4−	1998 10 15	610	1.4+	1.4+	2000 01 07	704	0.6−	0.2+
1998 09 18	704	1.0−	0.1+	1998 10 15	610	1.2+	1.0+	2000 01 07	704	1.0−	0.5−
1998 09 18	704	1.0−	0.6−	1998 10 15	610	1.0+	0.7+	2000 01 07	704	0.1−	0.1+
1998 09 18	704	0.1+	0.7−	1998 10 15	610	0.8+	0.3+	2000 01 07	704	0.0	0.7+
1998 09 26	704	0.2−	0.2+	1998 10 15	610	0.5+	0.0	2000 01 07	704	1.1−	0.1−
1998 09 26	704	0.1−	0.8−	1998 10 17	699	1.0−	0.1+	2000 01 11	704	0.3+	0.1+
1998 09 26	704	0.8−	0.2+	1998 10 17	699	1.2−	0.5−	2000 01 11	704	0.3+	0.4−
1998 09 26	704	0.1+	0.4−	1998 10 17	699	0.4−	1.0+	2000 01 11	704	0.4−	0.1−
1998 09 26	704	0.2−	0.4+	1998 10 28	704	1.2+	1.1−	2000 01 11	704	0.1+	0.3−

1998 RL₇₆ = 1992 LC₂ = 2000 AE₁₅₈

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	118.26281	(2000.0)	
<i>n</i>	0.20140313	ω	252.81716
<i>a</i>	2.8824287	Ω	95.26313
<i>e</i>	0.0906672	<i>i</i>	3.28786
<i>P</i>	4.89	<i>H</i>	13.6

Residuals in seconds of arc

1992 06 03	809	0.2+	0.5−	1998 09 18	704	0.5−	0.6−	2000 01 03	704	0.4−	0.5+
1992 06 03	809	0.1−	0.9−	1998 09 26	704	0.1+	0.3+	2000 01 03	704	0.6−	1.0+
1992 06 03	809	0.8−	1.6−	1998 09 26	704	0.8−	0.1+	2000 01 03	704	1.1−	1.1+
1998 08 31	704	(3.0+	3.3−)	1998 09 26	704	0.0	0.5−	2000 01 04	704	0.3+	0.1+
1998 08 31	704	0.2−	0.3−	1998 09 26	704	0.7+	0.9−	2000 01 04	704	0.9+	0.8−
1998 08 31	704	1.2+	0.2+	1998 09 26	704	0.5+	0.5−	2000 01 04	704	(0.4+	2.3−)
1998 08 31	704	(0.2+	2.4−)	1998 09 27	704	0.9−	0.2−	2000 01 04	704	0.2+	0.7−
1998 08 31	704	(2.2−	1.6−)	1998 09 27	704	1.1−	0.9−	2000 01 04	704	0.3+	0.9−
1998 09 14	704	0.1+	0.4+	1998 09 27	704	0.1−	0.5−	2000 01 09	691	0.3+	0.1−
1998 09 14	704	0.3−	0.1+	1998 09 27	704	0.3−	0.4−	2000 01 09	691	0.4+	0.2−
1998 09 14	704	0.4+	0.3+	1998 09 27	704	0.2+	1.7−	2000 01 09	691	0.5+	0.0
1998 09 17	699	0.4+	0.8+	1999 12 08	704	0.2−	0.9−	2000 01 12	691	0.1−	0.1−
1998 09 17	699	1.0+	1.7+	1999 12 08	704	0.4−	0.6−	2000 01 12	691	0.3−	0.3−
1998 09 17	699	0.5+	1.3+	1999 12 08	704	0.3−	0.6−	2000 01 12	691	0.0	0.4−
1998 09 18	704	0.2−	0.2+	1999 12 08	704	0.1−	0.5−	2000 01 15	691	0.1+	0.1−
1998 09 18	704	0.1−	0.3−	1999 12 08	704	1.0−	0.3−	2000 01 15	691	0.1−	0.2−
1998 09 18	704	0.1+	0.5+	2000 01 03	704	0.1+	0.2+	2000 01 15	691	0.1+	0.1−
1998 09 18	704	0.0	0.4−	2000 01 03	704	1.1+	1.1+				

1998 RM₇₆ = 1999 XF₂₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	69.28065	(2000.0)	
<i>n</i>	0.18362495	ω	10.89478
<i>a</i>	3.0655960	Ω	23.01639
<i>e</i>	0.0632785	<i>i</i>	11.20323
<i>P</i>	5.37	<i>H</i>	13.6

Residuals in seconds of arc

1998 09 14	704	1.0−	1.7−	1998 09 26	704	0.7+	0.5−	1999 12 15	704	0.6+	0.7−
1998 09 14	704	0.0	0.1−	1998 09 26	704	0.4+	0.4−	1999 12 15	704	0.1+	0.5−
1998 09 14	704	(2.7−	0.6−)	1998 09 27	704	0.5−	0.7+	1999 12 30	704	0.5+	0.9+
1998 09 17	699	0.3−	0.8+	1998 09 27	704	1.5−	0.6+	1999 12 30	704	0.8−	1.4+
1998 09 17	699	0.3+	0.1+	1998 09 27	704	0.8+	0.5+	1999 12 30	704	0.5−	0.6+
1998 09 17	699	0.0	0.1+	1998 09 27	704	1.1−	1.2+	1999 12 31	704	0.5−	0.1−
1998 09 18	704	0.6−	1.0+	1998 09 27	704	0.1+	1.2−	1999 12 31	704	0.4+	0.2−
1998 09 18	704	0.9+	1.0−	1999 12 13	704	0.7−	0.4+	1999 12 31	704	0.1−	0.7+
1998 09 18	704	0.2+	0.6+	1999 12 13	704	0.0	0.2−	1999 12 31	704	0.2−	0.3+
1998 09 18	704	1.4+	0.5−	1999 12 13	704	0.3+	0.1−	1999 12 31	704	0.0	0.6+

1998 09 18	704	0.6−	0.6−	1999 12 13	704	0.0	0.3−	2000 01 21	704	0.8+	1.3−
1998 09 26	704	0.2−	0.0	1999 12 13	704	0.2+	0.9−	2000 01 21	704	0.6−	0.1+
1998 09 26	704	0.5+	0.2+	1999 12 15	704	0.4−	0.0	2000 01 21	704	0.5+	0.1−
1998 09 26	704	0.1+	0.2+	1999 12 15	704	0.1+	0.6−				

1998 RF₇₇ = 1999 XP₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	129.36104	(2000.0)	
<i>n</i>	0.17460862	ω	282.69053
<i>a</i>	3.1702409	Ω	33.68379
<i>e</i>	0.1289465	<i>i</i>	7.16917
<i>P</i>	5.64	<i>H</i>	13.1

Residuals in seconds of arc

1998 08 31	704	0.5−	0.8+	1998 09 26	704	0.1−	0.1−	1999 12 12	704	0.3+	0.4+
1998 08 31	704	1.1−	1.7+	1998 09 26	704	0.2−	0.7−	1999 12 12	704	0.2−	0.0
1998 08 31	704	0.6+	1.4−	1998 09 26	704	0.7−	0.1+	1999 12 12	704	0.8+	0.6−
1998 08 31	704	(2.1+	0.2−)	1998 09 26	704	0.3−	0.7+	1999 12 12	704	0.9−	0.3+
1998 08 31	704	(3.6−	3.5−)	1998 09 26	704	1.3−	0.7−	1999 12 15	704	0.1−	0.3+
1998 09 14	704	0.6+	0.5−	1998 09 27	704	(0.1−	2.4−)	1999 12 15	704	0.2−	0.1+
1998 09 14	704	0.1−	0.5+	1998 09 27	704	0.9−	0.4−	1999 12 15	704	0.6+	0.3−
1998 09 14	704	0.1+	0.6+	1998 09 27	704	0.9−	0.6−	1999 12 15	704	0.1−	0.9−
1998 09 17	699	1.0+	0.1−	1998 09 27	704	0.9−	0.2+	2000 01 02	704	0.9−	0.6+
1998 09 17	699	0.6+	0.0	1998 09 27	704	0.2−	0.8−	2000 01 02	704	0.2−	0.1−
1998 09 17	699	1.1+	0.2+	1998 10 17	699	0.2+	0.2−	2000 01 02	704	0.0	0.1+
1998 09 18	704	0.1+	0.3+	1998 10 17	699	0.5+	0.2−	2000 01 04	704	0.1−	0.0
1998 09 18	704	0.3+	1.1+	1998 10 17	699	0.3−	0.2+	2000 01 04	704	0.4−	0.4−
1998 09 18	704	0.4+	0.1+	1998 12 08	699	0.2+	0.5−	2000 01 04	704	0.0	0.3+
1998 09 18	704	0.0	0.6+	1998 12 08	699	1.6+	0.2+	2000 01 04	704	0.4+	0.6+
1998 09 18	704	0.7+	0.7−	1998 12 08	699	0.1−	0.6−	2000 01 04	704	0.8+	0.2+

1998 RH₇₇ = 2000 AV₁₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	26.59578	(2000.0)	
<i>n</i>	0.19057928	ω	287.47717
<i>a</i>	2.9905583	Ω	160.41398
<i>e</i>	0.0761893	<i>i</i>	9.84822
<i>P</i>	5.17	<i>H</i>	13.8

Residuals in seconds of arc

1998 09 14	704	0.7+	0.6−	1998 09 27	704	0.2+	0.9−	2000 01 07	704	0.2−	0.1−
1998 09 14	704	0.9+	1.7+	1998 09 27	704	1.5−	0.6−	2000 01 07	704	0.1−	0.1+
1998 09 14	704	0.6−	1.5+	1998 09 27	704	1.0−	0.7−	2000 01 07	704	0.0	0.0
1998 09 17	699	0.5−	0.3−	1998 09 27	704	0.6−	1.6−	2000 01 07	704	0.4−	0.1−
1998 09 17	699	0.3−	0.1−	1998 10 17	699	0.1+	0.3+	2000 01 09	704	0.3+	0.3−
1998 09 17	699	0.7+	0.0	1998 10 17	699	0.7+	0.6+	2000 01 09	704	0.0	0.1+
1998 09 18	704	0.1+	0.1−	1998 10 17	699	0.6−	0.1+	2000 01 09	704	0.1+	0.5−
1998 09 18	704	1.6−	1.5+	1999 12 05	704	0.6−	0.4+	2000 01 09	704	0.3+	0.6+
1998 09 18	704	0.5+	0.7+	1999 12 05	704	0.5−	0.8−	2000 01 11	704	0.2−	0.7+
1998 09 18	704	(1.8−	2.2+)	1999 12 05	704	0.3−	0.0	2000 01 11	704	0.9+	0.6+
1998 09 26	704	0.5+	0.2−	1999 12 05	704	1.1−	0.9−	2000 01 11	704	0.0	0.0
1998 09 26	704	1.7+	0.6−	1999 12 14	704	0.7+	1.2+	2000 01 11	704	0.4+	0.6−
1998 09 26	704	0.8−	0.8+	1999 12 14	704	0.5+	0.1+	2000 01 11	704	0.2−	0.1−
1998 09 26	704	0.8+	0.3−	1999 12 14	704	1.1+	0.7−				
1998 09 26	704	0.7+	1.0−	2000 01 07	704	0.9−	0.4+				

1998 RA₇₈ = 2000 AC₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	9.40695		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.19635230	ω	17.02038	-0.29670160	-0.95325730
a	2.9316496	Ω	90.26795	+0.86937664	-0.29439697
e	0.0551867	i	3.27756	+0.39516126	-0.06805100
P	5.02	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1996 04 23	608	0.2−	0.5−	1998 09 27	704	0.5−	0.1+	2000 01 06	704	0.5+	0.1+
1996 04 23	608	0.0	0.1+	1998 09 27	704	0.6+	0.8+	2000 01 06	704	0.3−	0.0
1998 09 14	704	1.0+	0.4−	1998 09 27	704	1.5+	0.0	2000 01 06	704	0.5+	0.2+
1998 09 14	704	0.7+	0.3−	1999 12 07	704	0.4+	1.1−	2000 01 06	704	0.2−	0.3−
1998 09 14	704	0.4−	1.4+	1999 12 07	704	0.7−	0.1+	2000 01 06	704	0.4−	0.2−
1998 09 17	699	1.9+	0.7+	1999 12 07	704	0.3−	0.8+	2000 01 06	704	0.3+	0.1−
1998 09 17	699	0.6−	0.0	1999 12 07	704	0.7−	0.1−	2000 01 06	704	0.2+	0.0
1998 09 17	699	0.4−	0.2+	1999 12 07	704	1.0−	0.6+	2000 01 06	704	0.0	0.1+
1998 09 18	704	0.7−	0.4+	2000 01 03	704	0.2+	0.5+	2000 01 06	704	0.4+	0.3+
1998 09 18	704	(2.9+	1.4+)	2000 01 03	704	0.1−	1.6−	2000 01 06	704	0.2−	0.3+
1998 09 18	704	1.9−	0.8+	2000 01 03	704	0.2+	0.2+	2000 01 08	704	0.2+	0.2+
1998 09 18	704	1.4+	0.4+	2000 01 03	704	0.1−	0.1−	2000 01 08	704	0.0	0.1+
1998 09 18	704	0.0	0.3−	2000 01 03	704	0.1−	0.9+	2000 01 08	704	0.2−	0.5+
1998 09 26	704	(0.7−	2.2−)	2000 01 04	704	0.5−	0.1+	2000 01 08	704	0.0	0.1−
1998 09 26	704	1.2−	1.2−	2000 01 04	704	0.1−	0.0	2000 01 08	704	0.0	0.4+
1998 09 26	704	1.2−	1.1−	2000 01 04	704	1.1+	2.0−	2000 01 12	691	0.4+	0.4+
1998 09 26	704	0.2−	0.7−	2000 01 04	704	0.0	0.0	2000 01 12	691	0.0	0.0
1998 09 27	704	0.2+	1.0−	2000 01 04	704	0.2+	0.1−	2000 01 12	691	0.1+	0.1+

1998 RC₇₈ = 2000 AP₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	94.63011	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.21060897	ω	252.76594	+0.89392693	−0.44465688
<i>a</i>	2.7978095	Ω	133.59385	+0.43509415	+0.83068629
<i>e</i>	0.1059853	<i>i</i>	4.46212	+0.10764632	+0.33502320
<i>P</i>	4.68	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.1−	0.6+	1998 09 26	704	0.9+	0.8−	1998 10 17	699	0.3+	1.0+
1998 09 14	704	0.3+	0.4−	1998 09 26	704	0.9+	0.6−	2000 01 05	704	0.5+	0.0
1998 09 14	704	0.0	0.7+	1998 09 26	704	0.1+	0.4+	2000 01 05	704	0.1+	0.1+
1998 09 17	699	0.5+	0.6−	1998 09 26	704	0.5−	0.2−	2000 01 05	704	0.1−	0.3+
1998 09 17	699	0.2−	0.2+	1998 09 27	704	0.7−	0.2−	2000 01 05	704	0.1+	0.5−
1998 09 17	699	0.3+	0.2−	1998 09 27	704	0.4−	0.4+	2000 01 05	704	0.1−	0.6+
1998 09 18	704	1.0+	0.2+	1998 09 27	704	0.2+	0.3−	2000 01 06	704	0.3+	0.0
1998 09 18	704	0.3−	0.4+	1998 09 27	704	0.3−	0.9+	2000 01 06	704	1.2−	0.0
1998 09 18	704	1.2−	0.1+	1998 09 27	704	0.2−	0.7−	2000 01 06	704	0.4−	0.8−
1998 09 18	704	1.4−	0.6−	1998 10 17	699	0.2+	0.3−	2000 01 06	704	0.8+	0.3+
1998 09 18	704	0.9+	0.0	1998 10 17	699	0.5−	0.1+				

1998 RE₇₈ = 2000 AP₂₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	198.52028	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.26359649	ω	175.76593	+0.21169881	+0.97561059
<i>a</i>	2.4090342	Ω	106.44839	−0.89845492	+0.21763881
<i>e</i>	0.2046055	<i>i</i>	3.46892	−0.38465878	+0.02858882
<i>P</i>	3.74	<i>H</i>	15.4	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1998 09 14	704	0.4+	0.4+	1998 09 18	704	0.9+	0.1+	2000 01 08	691	0.5+	0.0
1998 09 14	704	0.4−	0.0	1998 09 26	704	0.2+	0.0	2000 01 08	691	0.4+	0.4−
1998 09 14	704	0.7+	1.1+	1998 09 26	704	1.1+	0.9−	2000 01 08	691	0.6+	0.1+
1998 09 17	699	0.5+	1.3+	1998 09 26	704	1.9+	1.4−	2000 01 08	691	0.2+	1.2+
1998 09 17	699	0.3+	0.1−	1998 09 26	704	1.7+	0.9−	2000 01 08	691	0.1+	0.2−
1998 09 17	699	1.4+	0.9+	1998 09 26	704	0.2+	0.8−	2000 01 08	691	0.8−	0.1−
1998 09 18	704	1.3+	1.4+	1998 09 27	704	1.8+	0.1+	2000 01 14	691	0.0	0.1+
1998 09 18	704	0.8+	2.1+	1998 09 27	704	0.3−	1.1+	2000 01 14	691	0.4+	0.1−
1998 09 18	704	0.2−	0.5+	1998 09 27	704	0.6+	1.0+	2000 01 14	691	0.4+	0.3−
1998 09 18	704	1.2+	0.2+	1998 09 27	704	0.4+	0.3+				

1998 RU₇₈ = 2000 AR₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	88.83676	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.17746105	ω	246.39767	+0.97483752	−0.20587954
<i>a</i>	3.1361778	Ω	125.37803	+0.22276879	+0.91369639
<i>e</i>	0.1841760	<i>i</i>	6.01728	−0.00811651	+0.35038911
<i>P</i>	5.55	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.0	0.3−	1998 09 26	704	0.0	1.2−	1999 12 08	704	0.6+	0.0
1998 09 14	704	0.4+	0.4−	1998 09 27	704	0.5−	0.3+	1999 12 08	704	0.4−	0.3+
1998 09 14	704	0.0	0.7−	1998 09 27	704	1.7−	0.3+	2000 01 05	704	0.1+	0.1+
1998 09 18	704	0.1−	0.0	1998 09 27	704	0.5−	0.3+	2000 01 05	704	0.1+	0.1+
1998 09 18	704	0.3−	0.2+	1998 09 27	704	0.2+	0.3+	2000 01 05	704	0.1+	0.1−
1998 09 18	704	1.0+	0.3+	1998 09 27	704	1.0−	0.6−	2000 01 05	704	0.2+	0.2+
1998 09 18	704	0.1−	0.1−	1998 10 17	699	0.4+	0.6−	2000 01 05	704	0.3−	0.9+
1998 09 18	704	0.2−	0.6−	1998 10 17	699	0.1+	0.5+	2000 01 06	704	0.0	0.3−
1998 09 24	910	0.9+	0.8+	1998 10 17	699	0.4+	0.3−	2000 01 06	704	0.0	0.8−
1998 09 24	910	0.9+	0.8+	1999 12 06	703	0.2+	0.1+	2000 01 06	704	0.2+	0.2−
1998 09 24	910	0.9+	0.9+	1999 12 06	703	0.8−	0.5−	2000 01 07	691	0.2−	0.1−
1998 09 26	704	0.1−	0.4+	1999 12 06	703	0.3+	0.8+	2000 01 07	691	0.3−	0.0
1998 09 26	704	0.4−	0.2−	1999 12 06	703	0.0	0.0	2000 01 07	691	0.1−	0.1−
1998 09 26	704	0.2−	0.8+	1999 12 08	704	0.4+	1.2−				
1998 09 26	704	0.1+	1.0−	1999 12 08	704	0.1−	0.6+				

1998 RV₇₈ = 1999 XL₂₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	97.34542	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.21393706	ω	345.22399	+0.93153130	−0.34695698
<i>a</i>	2.7687179	Ω	35.68487	+0.34972605	+0.77254717
<i>e</i>	0.0666304	<i>i</i>	10.76464	+0.09970522	+0.53178165
<i>P</i>	4.61	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.7−	0.1−	1998 09 26	704	0.3−	0.2−	1999 12 15	704	0.3+	0.2−
1998 09 14	704	1.9−	0.8+	1998 09 26	704	0.0	1.9−	1999 12 15	704	0.7+	0.6+
1998 09 14	704	0.7−	0.3+	1998 09 26	704	0.4+	1.5−	1999 12 15	704	0.6+	0.3−
1998 09 17	910	0.8+	0.6+	1998 09 27	704	0.6−	1.0−	2000 01 02	704	0.3+	0.2+
1998 09 17	910	1.2+	0.5+	1998 09 27	704	0.1−	0.1+	2000 01 02	704	0.4+	0.2+
1998 09 17	910	0.9+	0.8+	1998 09 27	704	0.2−	0.1−	2000 01 02	704	0.1−	0.8−
1998 09 18	704	1.3+	1.3+	1998 09 27	704	0.2−	0.8+	2000 01 02	704	1.0−	0.4−
1998 09 18	704	1.2−	1.2−	1998 09 27	704	0.6−	0.1−	2000 01 02	704	0.1+	0.1+
1998 09 18	704	0.7−	0.8+	1999 12 12	704	0.3−	0.6+	2000 01 03	704	0.0	0.4+
1998 09 18	704	(0.8+	2.6+)	1999 12 12	704	0.3+	0.4+	2000 01 03	704	0.7−	0.5−
1998 09 18	704	1.7+	0.3+	1999 12 12	704	0.1+	0.6−	2000 01 03	704	0.6−	0.1+
1998 09 26	704	0.6+	0.1−	1999 12 12	704	0.2−	1.0+	2000 01 03	704	0.3+	1.1−
1998 09 26	704	0.4+	0.2−	1999 12 15	704	0.1+	0.5+				

1998 RX₇₈ = 2000 AU₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	74.92262	(2000.0)	<i>P</i>	<i>Q</i>	
<i>n</i>	0.22142094	ω	279.47789	+0.62382031	−0.77669862
<i>a</i>	2.7059738	Ω	131.55767	+0.75496637	+0.57000422
<i>e</i>	0.0506350	<i>i</i>	6.68479	+0.20217320	+0.26801948
<i>P</i>	4.45	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	1.6+	0.6−	1998 09 24	910	0.6+	0.9+	2000 01 05	704	0.7+	0.4+
1998 09 14	704	0.5+	0.1−	1998 09 26	704	0.6+	0.9+	2000 01 05	704	0.3+	0.6−
1998 09 14	704	1.1−	0.5+	1998 09 26	704	1.1−	0.3−	2000 01 05	704	0.2+	0.1+
1998 09 18	704	0.5−	1.2−	1998 09 26	704	1.6+	1.0−	2000 01 05	704	0.7−	1.6+

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1998 09 24	910	0.7+	1.0+	1998 09 27	704	0.8-	1.2-	2000 01 06	704	0.6-	0.1-
1998 09 24	910	0.7+	0.9+	1998 09 27	704	0.4+	0.8+	2000 01 06	704	0.3-	0.3-

1998 RY₇₈ = 1999 XC₁

Id. T. Kobayashi, S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	13.16652		(2000.0)	P	Q
<i>n</i>	0.17587420	ω	343.43532	-0.08495835	-0.99114235
<i>a</i>	3.1550141	Ω	111.34634	+0.92614360	-0.11633603
<i>e</i>	0.0781273	<i>i</i>	6.29177	+0.36747804	+0.06405295
<i>P</i>	5.60	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.1+	1.1-	1998 09 27	704	1.1+	0.7+	1999 12 07	704	1.0+	0.2+
1998 09 14	704	0.7-	1.2+	1998 09 27	704	0.7+	0.6-	1999 12 07	704	0.7-	0.2-
1998 09 14	704	0.4+	0.2-	1998 09 27	704	0.4+	1.3-	1999 12 07	704	0.1-	0.9+
1998 09 18	704	1.1-	1.0-	1998 10 17	699	0.6-	0.1+	1999 12 07	704	0.4+	0.4+
1998 09 18	704	0.8-	1.1-	1998 10 17	699	0.5+	0.8+	1999 12 07	704	0.3-	0.5+
1998 09 18	704	0.4+	1.0-	1998 10 17	699	0.7+	1.0+	1999 12 08	704	0.3-	0.2-
1998 09 18	704	1.5+	1.1-	1998 10 28	704	0.0	0.7+	1999 12 08	704	0.2-	0.8+
1998 09 21	699	0.4-	0.0	1998 10 28	704	1.2-	1.0-	1999 12 08	704	0.0	0.8+
1998 09 21	699	1.0-	0.1+	1998 10 28	704	0.3+	0.0	2000 01 05	704	0.3+	0.1-
1998 09 21	699	0.1+	0.9+	1998 10 28	704	(1.1+	2.6-)	2000 01 05	704	0.1+	0.4-
1998 09 24	910	0.7+	0.8+	1998 10 28	704	0.1-	0.2+	2000 01 05	704	0.2+	0.3-
1998 09 24	910	0.7+	0.8+	1998 10 29	704	0.6-	0.8+	2000 01 05	704	0.6+	0.1-
1998 09 24	910	0.7+	0.9+	1998 10 29	704	0.1+	1.5-	2000 01 06	704	0.1+	0.2-
1998 09 26	704	0.2-	0.6-	1998 10 29	704	0.7-	0.7-	2000 01 06	704	0.4+	0.3-
1998 09 26	704	1.2-	0.2-	1998 10 29	704	0.3+	0.8+	2000 01 06	704	0.0	0.1+
1998 09 26	704	0.6-	0.5-	1999 12 02	411	0.4+	1.5-	2000 01 13	849	0.3-	0.1-
1998 09 26	704	0.8-	0.5+	1999 12 02	411	1.5+	0.6+	2000 01 13	849	0.7-	0.0
1998 09 27	704	0.9+	0.4+	1999 12 03	411	1.3-	1.4-	2000 01 13	849	(3.8-	2.8-)
1998 09 27	704	0.3+	1.2+	1999 12 03	411	1.1-	0.3+				

1998 RK₇₉ = 1999 XS₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	213.70989		(2000.0)	P	Q
<i>n</i>	0.17106375	ω	155.37782	-0.51806858	+0.84910712
<i>a</i>	3.2138879	Ω	83.26962	-0.80095387	-0.43931333
<i>e</i>	0.0714848	<i>i</i>	5.95680	-0.30012972	-0.29329319
<i>P</i>	5.76	<i>H</i>	12.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.6+	0.3-	1998 09 26	704	0.0	1.8-	1999 12 08	704	0.1+	0.1+
1998 09 14	704	0.4+	1.2-	1998 09 27	704	0.5-	0.1-	1999 12 08	704	0.2+	0.0
1998 09 14	704	1.3+	0.2+	1998 09 27	704	(2.1+	0.2+)	1999 12 08	704	0.3+	0.1+
1998 09 17	699	0.5-	0.4+	1998 09 27	704	1.7-	0.7+	1999 12 08	704	0.3+	0.6+
1998 09 17	699	0.8+	0.7-	1998 09 27	704	0.0	0.2-	2000 01 05	704	0.4+	0.1-
1998 09 17	699	0.2+	0.5+	1999 11 03	704	0.2+	0.3-	2000 01 05	704	0.2+	0.4+
1998 09 18	704	0.4+	1.8+	1999 11 03	704	0.8-	0.0	2000 01 05	704	0.2+	0.1+
1998 09 18	704	0.1-	1.1+	1999 11 03	704	0.9-	0.3+	2000 01 05	704	0.0	0.2+
1998 09 18	704	1.5-	0.3+	1999 12 07	704	0.4-	0.2-	2000 01 06	704	0.6-	0.5+
1998 09 18	704	0.7+	0.6-	1999 12 07	704	0.5-	0.7-	2000 01 06	704	0.2-	0.1+
1998 09 18	704	(1.1-	3.0+)	1999 12 07	704	0.1+	0.2-	2000 01 06	704	0.4-	0.2+
1998 09 26	704	1.1-	0.9+	1999 12 07	704	0.3+	0.4+	2000 01 06	704	0.0	0.1-
1998 09 26	704	0.2-	1.1-	1999 12 07	704	1.2+	0.7-	2000 01 06	704	0.1+	0.5-
1998 09 26	704	1.4+	0.0	1999 12 08	704	0.1-	0.0				

1998 RT₇₉ = 2000 AC₃

Id. B. G. Marsden

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Williams

<i>M</i>	216.09338		(2000.0)	P	Q
<i>n</i>	0.27229098	ω	207.89005	+0.00850023	+0.99888966
<i>a</i>	2.3574756	Ω	62.62941	-0.90746656	+0.02717070
<i>e</i>	0.2018903	<i>i</i>	2.99100	-0.42003832	-0.03848628
<i>P</i>	3.62	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 14	704	0.6+	0.7-	1998 09 25	699	(1.0+	2.2+)	1998 09 27	704	1.2-	0.0
1998 09 14	704	0.6+	1.0+	1998 09 26	704	0.4-	0.0	2000 01 03	684	0.5+	0.6+
1998 09 14	704	0.1+	0.6+	1998 09 26	704	0.0	0.6+	2000 01 03	684	0.2-	0.1+
1998 09 18	704	0.6+	0.2+	1998 09 26	704	0.2-	0.3-	2000 01 04	704	0.1-	0.7+
1998 09 18	704	0.7-	0.1-	1998 09 26	704	0.8+	1.5-	2000 01 04	704	0.4-	0.0
1998 09 18	704	1.1-	0.2-	1998 09 26	704	0.6-	0.2-	2000 01 04	684	0.2-	0.4-
1998 09 18	704	1.3-	0.4-	1998 09 27	704	0.2+	0.6+	2000 01 04	684	0.3-	0.4-
1998 09 18	704	0.3+	0.7-	1998 09 27	704	0.1-	1.1+	2000 01 04	704	0.3+	0.3-
1998 09 25	699	1.2+	0.3+	1998 09 27	704	0.7+	0.0	2000 01 04	704	0.2-	0.0
1998 09 25	699	1.5+	0.6-	1998 09 27	704	0.7-	0.3+	2000 01 04	704	0.5+	0.3-

1998 RX₇₉ = 1999 VH₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	91.32535		(2000.0)	P	Q
<i>n</i>	0.23869587	ω	77.80931	+0.51485887	-0.85598659
<i>a</i>	2.5737881	Ω	340.98001	+0.71978541	+0.46140427
<i>e</i>	0.1887458	<i>i</i>	8.28873	+0.46564934	+0.23322318
<i>P</i>	4.13	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1994 11 07	675	0.2-	0.4+	1998 09 27	704	1.7+	1.1-	1999 01 08	704	0.5-	1.2+
1994 11 07	675	0.1+	0.2-	1998 09 27	704	(3.4+	2.3-)	1999 01 08	704	0.0	0.4-
1998 08 20	699	0.3-	0.2-	1998 09 27	704	(2.9+	3.0-)	1999 01 08	704	0.1-	0.8-
1998 08 20	699	0.2-	0.3-	1998 09 27	704	(4.8+	2.8-)	1999 11 05	703	0.8+	1.3+
1998 08 20	699	0.3-	0.1+	1998 09 27	704	(3.3+	2.7-)	1999 11 05	703	0.7-	0.2-
1998 09 14	704	0.0	0.8+	1998 10 12	699	0.1-	0.2+	1999 11 05	703	0.4-	0.4-
1998 09 14	704	0.7-	0.7-	1998 10 12	699	0.0	0.2+	1999 11 05	703	1.4+	0.6+
1998 09 14	704	1.3-	1.3+	1998 10 12	699	0.2-	0.5+	1999 11 10	703	0.6+	0.1+
1998 09 18	704	0.5-	1.8+	1998 12 09	704	1.0-	0.8-	1999 11 10	703	0.3+	1.2+
1998 09 18	704	0.4-	0.4+	1998 12 09	704	1.0+	1.0-	1999 11 10	703	0.4+	0.7-
1998 09 18	704	(0.0	2.5+)	1998 12 09	704	0.9+	1.7+	1999 11 10	703	0.6+	1.1+
1998 09 18	704	0.3-	1.6+	1998 12 09	704	0.2-	1.0+	1999 12 09	703	0.0	1.0+
1998 09 18	704	0.9-	1.0+	1998 12 09	704	(2.1+	0.2+)	1999 12 09	703	0.1-	0.6-
1998 09 25	699	0.4+	0.1-	1999 01 02	699	0.2+	1.1-	1999 12 09	703	0.3+	0.8+
1998 09 25	699	0.2+	0.0	1999 01 02	699	0.1+	0.6-	1999 12 09	703	1.1+	0.4+
1998 09 25	699	0.8+	0.2-	1999 01 02	699	0.0	1.1-	2000 01 05	704	0.8-	0.1-
1998 09 26	704	0.9+	1.0-	1999 01 05	699	0.6+	0.0	2000 01 05	704	0.7-	0.5-
1998 09 26	704	0.0	1.2-	1999 01 05	699	0.2+	0.0	2000 01 05	704	0.5-	0.4-
1998 09 26	704	0.7+	0.6-	1999 01 05	699	0.3+	0.1-	2000 01 05	704	0.3-	1.3-
1998 09 26	704	0.4-	0.9-	1999 01 08	704	0.8+	0.3-				
1998 09 26	704	0.2-	0.2-	1999 01 08	704	1.2-	0.5+				

1998 RY₇₉ = 2000 AS₁₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	95.69276		(2000.0)	P	Q
<i>n</i>	0.19091215	ω	160.27420	+0.94766371	-0.29855460
<i>a</i>	2.9870810	Ω	217.69418	+0.26242609	+0.93021323
<i>e</i>	0.1261822	<i>i</i>	10.66242	+0.18184070	+0.21346780
<i>P</i>	5.16	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.2+	0.3+	1998 09 27	704	1.5-	1.1+	1999 12 14	704	0.6+	0.3-
1998 09 14	704	0.0	1.1-	1998 10 11	699	0.5+	0.6+	1999 12 14	704	1.1+	1.3+
1998 09 18	704	1.0+	0.5+	1998 10 11	699	0.5+	1.2+	1999 12 14	704	0.5-	0.1+
1998 09 18	704	0.5-	1.8-	1998 10 11	699	0.5+	0.6+	1999 12 14	704	0.0	0.1+
1998 09 18	704	(0.4+	2.6-)	1998 10 28	704	0.6-	0.0	1999 12 14	704	0.0	0.4+
1998 09 18	704	1.7+	1.6-	1998 10 28	704	1.7-	0.8-	2000 01 08	704	1.0-	0.3-

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1998 09 18	704	(1.1− 2.2−)	1998 10 28	704	1.1+ 0.3+	2000 01 08	704	1.0+ 0.3−
1998 09 26	704	0.5− 0.9+	1998 10 28	704	0.3+ 0.1+	2000 01 08	704	0.2− 0.3+
1998 09 26	704	0.3− 0.2+	1998 10 28	704	1.2− 1.7+	2000 01 08	704	0.2+ 0.3−
1998 09 26	704	0.2− 0.1+	1998 10 29	704	0.6+ 0.9−	2000 01 08	704	0.4+ 0.9−
1998 09 26	704	0.3+ 0.0	1998 10 29	704	0.2+ 1.9−	2000 01 11	704	0.8+ 0.4+
1998 09 26	704	0.6− 0.6−	1998 10 29	704	1.0+ 1.2−	2000 01 11	704	0.1− 0.3+
1998 09 27	704	0.1+ 0.6−	1999 12 13	703	0.8− 0.4−	2000 01 11	704	0.3− 0.0
1998 09 27	704	0.2− 0.7+	1999 12 13	703	0.3+ 0.4−	2000 01 11	704	0.1− 0.1+
1998 09 27	704	0.1− 0.5+	1999 12 13	703	1.3− 1.5−	2000 01 11	704	0.3+ 0.7+
1998 09 27	704	0.6− 1.5+	1999 12 13	703	0.3− 0.8+			

1998 RM₈₀ = 1999 XC₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	100.24048	(2000.0)	P	Q	
<i>n</i>	0.17432314	ω	343.99805	+0.99889001	−0.00749658
<i>a</i>	3.1737011	Ω	16.64083	+0.03125336	+0.84411803
<i>e</i>	0.1342070	<i>i</i>	9.34553	−0.03524173	+0.53610498
<i>P</i>	5.65	<i>H</i>	13.3	<i>G</i>	0.15 <i>U</i> 3

Residuals in seconds of arc

1998 09 14	704	0.2− 0.1+	1998 10 14	691	0.6− 0.1+	1998 12 09	699	0.2+ 0.2+
1998 09 14	704	0.6+ 0.7−	1998 10 14	691	0.4− 0.3+	1998 12 09	699	0.3+ 0.4−
1998 09 14	704	(2.3− 0.6−)	1998 10 28	704	0.6− 0.9−	1999 12 12	704	0.4+ 0.3+
1998 09 18	704	0.1− 0.4+	1998 10 28	704	0.7+ 0.3−	1999 12 12	704	0.2− 0.3+
1998 09 18	704	1.1− 0.6+	1998 10 28	704	0.3+ 0.1−	1999 12 12	704	0.1+ 0.0
1998 09 18	704	0.5+ 0.2+	1998 10 28	704	0.3− 0.5−	1999 12 12	704	0.3− 0.0
1998 09 18	704	1.0+ 0.8+	1998 10 28	704	0.1+ 0.6−	1999 12 12	704	0.1− 0.3−
1998 09 18	704	0.3+ 0.5+	1998 10 29	704	0.1+ 0.9−	1999 12 13	699	0.5+ 1.3+
1998 09 26	704	0.8− 0.0	1998 10 29	704	0.2+ 0.3−	1999 12 13	699	0.6+ 1.0+
1998 09 26	704	0.1+ 0.6−	1998 10 29	704	0.2− 0.0	1999 12 13	699	0.3− 0.8+
1998 09 26	704	0.1− 0.4+	1998 10 29	704	0.3− 0.0	1999 12 15	704	0.4+ 1.3−
1998 09 26	704	0.5+ 0.4−	1998 10 29	691	0.1− 0.1−	1999 12 15	704	0.4+ 0.7−
1998 09 26	704	0.6+ 0.7−	1998 10 29	704	0.2− 0.1−	1999 12 15	704	0.6− 0.6−
1998 09 27	704	0.3− 0.1+	1998 10 29	691	0.2+ 0.1−	1999 12 15	704	0.5− 1.0−
1998 09 27	704	0.7− 0.1−	1998 10 29	691	0.1+ 0.1−	2000 01 02	704	1.2+ 0.4+
1998 09 27	704	0.5+ 0.2+	1998 11 10	699	0.2+ 1.3+	2000 01 02	704	0.1− 0.0
1998 09 27	704	0.0 0.2+	1998 11 10	699	0.5+ 1.7+	2000 01 02	704	1.5− 0.0
1998 09 27	704	0.2− 0.5−	1998 11 10	699	0.3+ 1.3+			
1998 10 14	691	0.7− 0.0	1998 12 09	699	0.0 1.1−			

1998 RP₈₀ = 2000 AH₁₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	137.62068	(2000.0)	P	Q	
<i>n</i>	0.17542058	ω	121.62966	+0.76603233	+0.64090091
<i>a</i>	3.1604507	Ω	198.66132	−0.62958570	+0.73255909
<i>e</i>	0.0890213	<i>i</i>	8.88153	−0.12967775	+0.22935387
<i>P</i>	5.62	<i>H</i>	12.9	<i>G</i>	0.15 <i>U</i> 3

Residuals in seconds of arc

1998 09 14	704	0.3− 0.7+	1998 10 14	691	0.3+ 0.0	1998 12 08	699	0.6− 0.6+
1998 09 14	704	0.2+ 0.5−	1998 10 14	327	0.7+ 0.0	1998 12 08	699	1.3+ 0.6−
1998 09 14	704	1.6− 0.3+	1998 10 14	327	0.6+ 0.0	1998 12 15	699	0.1− 1.1−
1998 09 15	699	0.7+ 0.3+	1998 10 14	327	0.6+ 0.0	1998 12 15	699	0.1− 0.6−
1998 09 15	699	0.1− 0.8+	1998 10 15	327	0.0 0.1+	1998 12 15	699	0.8+ 0.4−
1998 09 15	699	0.5+ 0.5+	1998 10 15	327	0.1+ 0.0	1999 12 14	704	0.5+ 0.2+
1998 09 18	704	0.8+ 0.9+	1998 10 15	327	0.1− 0.3+	1999 12 14	704	0.8− 0.2+
1998 09 18	704	0.2+ 0.5−	1998 10 19	691	0.2− 0.3−	1999 12 14	704	0.5− 0.0
1998 09 18	704	1.3+ 0.7−	1998 10 19	691	0.2− 0.3−	1999 12 14	704	0.1+ 0.2+
1998 09 18	704	1.3− 0.1−	1998 10 19	691	0.1− 0.2−	2000 01 07	704	0.4+ 0.1+
1998 09 18	704	1.2− 0.8−	1998 10 28	704	1.3− 0.9−	2000 01 07	704	0.2− 0.3−
1998 09 26	704	0.5− 0.5+	1998 10 28	704	0.1+ 0.6−	2000 01 07	704	0.4− 0.0
1998 09 26	704	0.5− 0.5−	1998 10 28	704	0.0 0.6−	2000 01 07	704	0.2− 0.2−
1998 09 26	704	0.2− 0.6−	1998 10 28	704	0.2− 0.6−	2000 01 07	704	0.1+ 0.7−
1998 09 26	704	0.0 0.9−	1998 10 29	704	0.1+ 1.3+	2000 01 09	704	0.2+ 0.3−
1998 09 26	704	0.2+ 1.0−	1998 10 29	704	0.9+ 1.2+	2000 01 09	704	0.3− 0.3+
1998 09 27	704	0.4+ 0.0	1998 10 29	704	0.6− 1.3+	2000 01 09	704	0.0 0.5+

1998 09 27	704	0.1+ 0.2+	1998 10 29	704	0.5− 1.3+	2000 01 09	704	0.1+ 0.0
1998 09 27	704	0.1− 0.5+	1998 10 29	704	0.6+ 0.7+	2000 01 09	704	1.0+ 0.0
1998 09 27	704	0.3+ 0.1−	1998 11 11	699	0.1+ 0.2−	2000 01 11	704	0.0 0.1−
1998 09 27	704	1.1− 0.8−	1998 11 11	699	0.6− 0.4−	2000 01 11	704	0.1+ 0.2+
1998 10 10	699	0.9+ 1.2+	1998 11 11	699	0.3+ 0.1+	2000 01 11	704	0.3+ 0.0
1998 10 10	699	0.4+ 0.9+	1998 11 25	699	(1.9+ 2.5−)	2000 01 11	704	0.0 0.4+
1998 10 10	699	0.3+ 0.9+	1998 11 25	699	(1.0− 2.1−)	2000 01 11	704	0.4− 0.2+
1998 10 14	691	0.2+ 0.1−	1998 11 25	699	0.6− 1.4−			
1998 10 14	691	0.2+ 0.2−	1998 12 08	699	1.3− 0.4−			

1998 SC = 1999 XL₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	241.54343	(2000.0)	P	Q	
<i>n</i>	0.21752145	ω	174.74729	−0.75049987	+0.64869916
<i>a</i>	2.7382178	Ω	46.53111	−0.61249576	−0.61100935
<i>e</i>	0.2155757	<i>i</i>	10.01814	−0.24819123	−0.45371463
<i>P</i>	4.53	<i>H</i>	13.1	<i>G</i>	0.15 <i>U</i> 3

Residuals in seconds of arc

1998 08 31	704	(0.8+ 2.4−)	1998 09 26	426	0.7+ 0.4−	1999 11 16	704	1.4− 0.7+
1998 08 31	704	0.8+ 0.5−	1998 09 26	426	0.4− 0.7−	1999 11 17	704	0.2+ 0.7−
1998 08 31	704	(0.8+ 2.7−)	1998 10 13	426	0.6− 0.6−	1999 11 17	704	0.4+ 0.2−
1998 08 31	704	(6.0− 0.6−)	1998 10 13	426	0.7− 0.1−	1999 11 17	704	0.5− 0.1+
1998 09 14	704	0.9+ 0.6+	1998 10 13	426	0.2− 0.4−	1999 11 17	704	0.5− 0.7+
1998 09 14	704	0.8− 0.1−	1998 10 17	699	0.8− 0.4+	1999 11 17	704	0.3− 0.3+
1998 09 14	704	0.2− 0.1−	1998 10 17	699	0.8− 0.2+	1999 12 10	704	1.1+ 0.3+
1998 09 16	426	0.5− 0.3+	1998 10 17	699	0.1+ 0.3−	1999 12 10	704	0.3− 0.3−
1998 09 16	426	0.7− 0.2+	1998 10 19	426	0.8− 0.4−	1999 12 10	704	1.0+ 0.0
1998 09 16	426	0.3− 0.2−	1998 10 19	426	0.2− 0.7−	1999 12 10	704	0.2+ 0.4+
1998 09 17	910	0.9+ 0.3+	1998 11 14	426	0.7+ 0.4−	1999 12 15	704	0.6+ 0.1+
1998 09 17	910	0.9+ 0.5+	1998 11 14	426	1.3+ 0.1−	1999 12 15	704	0.6+ 0.0
1998 09 17	910	0.5+ 0.5+	1998 11 16	426	0.1− 0.2−	1999 12 15	704	0.9+ 0.8−
1998 09 17	426	0.8− 0.1+	1998 11 16	426	0.6+ 0.4+	1999 12 15	704	0.9+ 1.0−
1998 09 17	426	0.3− 0.4−	1998 11 16	426	0.4− 0.5−	2000 01 03	704	(2.8+ 0.5−)
1998 09 17	426	0.5− 0.3+	1999 11 14	704	0.3− 0.4−	2000 01 03	704	0.0 0.1−
1998 09 18	704	0.1− 0.1−	1999 11 14	704	0.3− 0.2−	2000 01 03	704	0.4− 0.3+
1998 09 18	704	1.0− 1.3−	1999 11 14	704	0.4− 0.1−	2000 01 03	704	0.2+ 0.2−
1998 09 18	704	0.6− 1.6+	1999 11 14	704	0.1− 0.2+	2000 01 03	704	0.6− 0.4−
1998 09 18	704	1.1+ 0.2+	1999 11 14	704	0.0 0.1−	2000 01 04	704	0.1+ 0.4+
1998 09 18	704	1.5− 0.1−	1999 11 16	704	0.2+ 0.4−	2000 01 04	704	0.2− 0.1−
1998 09 22	910	1.4+ 0.5+	1999 11 16	704	0.7− 0.3+	2000 01 04	704	0.3− 0.6+
1998 09 23	910	1.3+ 0.7+	1999 11 16	704	0.4+ 0.2−	2000 01 04	704	0.6− 0.8+
1998 09 23	910	1.3+ 0.6+	1999 11 16	704	0.2+ 0.0	2000 01 04	704	0.5− 0.5+

1998 SP = 2000 AC₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	123.80929	(2000.0)	P	Q	
<i>n</i>	0.17539051	ω	318.27442	+0.92406141	+0.38115428
<i>a</i>	3.1608120	Ω	19.37847	−0.32364778	+0.82032460
<i>e</i>	0.1480872	<i>i</i>	4.98689	−0.20337806	+0.42636716
<i>P</i>	5.62	<i>H</i>	13.6	<i>G</i>	0.15 <i>U</i> 4

Residuals in seconds of arc

1998 09 14	699	1.5−	0.5+	1998 09 26	704	1.0+	0.8−	1998 11 11	704	0.7−	0.7+
1998 09 14	699	0.5+	0.3+	1998 09 26	704	(0.0	2.3−)	1998 11 11	704	0.1+	1.0−
1998 09 14	699	1.4+	1.2−	1998 09 26	704	1.2−	0.9−	1998 11 11	704	0.2−	0.7−
1998 09 16	910	0.3+	0.1−	1998 09 27	704	0.3+	0.0	1998 11 11	704	1.2+	0.1+
1998 09 18	910	0.6+	0.1+	1998 09 27	704	1.2+	0.7−	1998 11 11	704	0.6+	1.6−
1998 09 18	910	0.5+	0.1−	1998 09 27	704	0.1−	0.3+	1998 11 14	699	1.6+	0.9−
1998 09 18	910	0.5+	0.0	1998 09 27	704	0.8−	0.0	1998 11 14	699	0.4−	0.7−
1998 09 18	809	0.7+	0.5−	1998 10 28	704	1.2−	0.5+	1998 11 14	699	0.3+	0.1+
1998 09 18	809	0.0	0.3+	1998 10 28	704	0.5−	1.4+	2000 01 03	704	0.3−	0.4+
1998 09 18	809	0.1−	0.2−	1998 10 28	704	0.1−	0.3+	2000 01 03	704	0.0	0.3+
1998 09 20	910	0.4+	0.4+	1998 10 28	704	0.3−	1.7+	2000 01 03	704	0.1−	0.3−
1998 09 20	910	0.1−	0.1+	1998 10 29	704	0.4+	0.1−	2000 01 03	704	0.2+	0.6−
1998 09 20	910	0.0	0.0	1998 10 29	704	0.4−	1.0+	2000 01 03	704	0.0	0.2−

2000 JAN. 24

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1998 09 20	809	1.6−	0.7+	1998 10 29	704	0.5−	0.6+	2000 01 07	704	0.1+	0.2−
1998 09 20	809	1.6−	0.1+	1998 11 10	704	0.4−	0.1+	2000 01 07	704	0.2−	0.0
1998 09 20	809	1.4−	1.1+	1998 11 10	704	0.5+	0.4−	2000 01 07	704	0.3+	0.6+
1998 09 26	704	1.1+	0.4−	1998 11 10	704	0.2+	0.6+				
1998 09 26	704	0.5+	0.4−	1998 11 10	704	0.8−	0.5−				

1998 SN₁ = 2000 AE₁₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	262.36392		(2000.0)	P	Q
<i>n</i>	0.24497819	ω	49.20086	−0.48729194	+0.87288344
<i>a</i>	2.5295956	Ω	191.71263	−0.83359740	−0.47348233
<i>e</i>	0.1035909	<i>i</i>	7.05153	−0.26011909	−0.11785152
<i>P</i>	4.02	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 16	910	0.0	0.2−	1998 10 28	704	0.8−	0.7−	2000 01 04	699	0.6+	1.0−
1998 09 16	910	0.4+	0.1−	1998 10 28	704	0.4+	0.7−	2000 01 04	699	0.7+	0.5−
1998 09 16	910	0.2−	0.3−	1998 10 28	704	0.7−	0.6−	2000 01 07	704	0.1−	0.4+
1998 09 18	910	0.2−	0.6−	1998 10 28	704	0.5+	0.7−	2000 01 07	704	0.6+	0.7+
1998 09 18	910	0.4−	0.6−	1998 10 29	704	0.6+	0.9+	2000 01 07	704	0.1+	0.4+
1998 09 18	910	0.3−	0.6−	1998 10 29	704	1.9+	1.0−	2000 01 07	704	0.2−	0.1−
1998 09 20	809	0.9+	1.1+	1998 10 29	704	0.3+	0.6−	2000 01 07	704	0.1+	0.1+
1998 09 20	809	0.2−	0.7+	1998 10 29	704	0.0	0.6−	2000 01 11	704	0.6−	0.4+
1998 09 20	809	0.7−	0.6+	1998 10 29	704	0.1+	1.2−	2000 01 11	704	0.5−	0.3−
1998 10 10	699	0.0	1.9+	1998 11 23	699	1.7−	0.5+	2000 01 11	704	0.3+	0.7−
1998 10 10	699	0.3+	0.0	1998 11 23	699	0.7+	1.9+	2000 01 11	704	0.6−	0.4+
1998 10 10	699	0.6−	0.8+	1998 11 23	699	0.5−	0.4+	2000 01 11	704	0.3−	0.0

1998 SV₁ = 2000 AV₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	63.31209		(2000.0)	P	Q
<i>n</i>	0.21494593	ω	338.49514	+0.47597100	−0.87225297
<i>a</i>	2.7600476	Ω	82.92974	+0.82250111	+0.39626147
<i>e</i>	0.0718330	<i>i</i>	6.50143	+0.31135758	+0.28662100
<i>P</i>	4.59	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 16	910	0.2+	0.1−	1998 09 23	910	0.6+	0.5+	1999 12 15	704	0.1−	0.9−
1998 09 16	910	0.7+	0.1−	1998 10 17	699	0.4−	0.2+	1999 12 15	704	0.2+	0.1+
1998 09 17	910	0.5+	0.0	1998 10 17	699	0.2−	0.1−	1999 12 15	704	0.1+	0.8+
1998 09 17	910	0.4−	0.1−	1998 10 17	699	0.2−	0.7−	2000 01 03	704	0.7+	0.2+
1998 09 17	910	0.2−	0.0	1998 10 28	704	1.1−	0.4+	2000 01 03	704	0.9−	0.0
1998 09 17	910	0.0	0.3−	1998 10 28	704	0.0	0.6−	2000 01 03	704	0.3+	0.0
1998 09 17	910	0.1−	0.2−	1998 10 28	704	0.2−	0.5−	2000 01 03	704	0.1+	0.3−
1998 09 18	910	0.1−	0.1−	1998 10 28	704	1.3+	0.9+	2000 01 03	704	0.2+	1.1−
1998 09 18	910	0.2−	0.1−	1999 12 15	703	0.6−	1.0+	2000 01 04	704	0.3+	0.1−
1998 09 21	699	0.3−	0.1−	1999 12 15	703	1.3−	0.1+	2000 01 04	704	0.1+	0.5−
1998 09 21	699	0.7−	0.0	1999 12 15	704	0.0	0.1−	2000 01 04	704	0.0	0.4−
1998 09 21	699	0.3−	0.2−	1999 12 15	703	0.5+	0.9+	2000 01 04	704	0.2+	0.2−
1998 09 22	910	0.6+	0.6+	1999 12 15	704	0.5+	0.2−	2000 01 04	704	0.0	0.5−
1998 09 23	910	0.5+	0.5+	1999 12 15	703	0.3−	1.2+				

1998 ST₂ = 2000 AQ₁₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	131.31539		(2000.0)	P	Q
<i>n</i>	0.24152907	ω	71.10316	+0.97242428	−0.12412119
<i>a</i>	2.5536210	Ω	295.61780	+0.01586111	+0.87984991
<i>e</i>	0.0783862	<i>i</i>	12.64862	+0.23267884	+0.45875708
<i>P</i>	4.08	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 18	596	0.3−	0.4−	1998 09 29	596	0.0	0.9−	1998 11 18	595	1.0+	0.7+
1998 09 18	596	0.5−	1.1−	1998 09 29	596	0.5+	1.1−	1998 11 18	595	0.8+	0.8+
1998 09 18	596	0.1+	0.6+	1998 10 13	596	1.2+	0.6−	1998 11 21	699	0.6−	0.4+
1998 09 19	596	1.3+	1.2+	1998 10 13	596	0.4−	0.4+	1998 11 21	699	1.1−	0.9−

1998 09 19	596	0.3−	1.0−	1998 10 13	596	0.2+	0.9+	1998 11 21	699	0.1+	0.2+
1998 09 19	596	0.2−	0.2+	1998 10 26	596	0.4−	0.5+	2000 01 05	704	1.0−	0.6+
1998 09 20	596	1.6−	0.4+	1998 10 26	596	0.9−	0.9−	2000 01 05	704	1.0−	0.0
1998 09 20	596	(2.6+	0.9+)	1998 10 26	596	1.1−	0.4−	2000 01 05	704	0.5−	0.1−
1998 09 20	596	1.4+	1.2+	1998 11 16	566	0.1+	0.2−	2000 01 08	704	0.1+	0.5+
1998 09 23	596	0.3−	0.3−	1998 11 16	566	0.1−	0.3−	2000 01 08	704	0.8+	0.9−
1998 09 23	596	0.8+	0.5+	1998 11 16	566	0.4+	0.3−	2000 01 08	704	1.6+	0.1−
1998 09 23	596	0.1+	0.5+	1998 11 17	595	0.1+	0.2+				
1998 09 29	596	0.4−	0.6−	1998 11 17	595	0.4+	0.2+				

1998 SU₂ = 1985 VP₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	123.42618		(2000.0)	P	Q
<i>n</i>	0.22494111	ω	6.99635	+0.99849031	−0.05489219
<i>a</i>	2.6776686	Ω	356.14865	+0.04885239	+0.90401254
<i>e</i>	0.0409951	<i>i</i>	1.69662	+0.02511079	+0.42396718
<i>P</i>	4.38	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1985 11 07	688	0.3+	0.7−	1998 09 26	704	0.4−	0.4−	1998 10 25	557	1.3+	0.1+
1985 11 07	688	(2.1+	8.1+)	1998 09 26	704	1.2+	1.3−	1998 10 25	557	0.4−	0.7−
1998 09 16	557	0.4−	0.4−	1998 09 27	704	0.2−	0.3+	1998 11 24	557	0.6−	0.7+
1998 09 16	557	0.1−	1.0−	1998 09 27	704	0.0	0.5+	1998 11 24	557	0.0	0.2+
1998 09 19	557	0.5+	0.7+	1998 09 27	704	0.9−	0.3+	1998 12 11	557	0.7+	0.2−
1998 09 19	557	0.1−	0.1−	1998 09 27	704	0.6+	1.0+	1998 12 11	557	0.1+	1.0−
1998 09 21	557	0.4−	0.2−	1998 09 27	704	0.9−	0.7+	2000 01 04	704	0.2−	0.1+
1998 09 22	557	0.0	0.6−	1998 09 27	470	(1.6−	4.3−)	2000 01 04	704	0.7+	1.0−
1998 09 25	557	0.6−	0.5−	1998 09 27	470	(2.3−	5.2−)	2000 01 04	704	0.5−	0.1−
1998 09 25	557	0.3−	0.1−	1998 09 28	470	0.1+	1.1+	2000 01 06	557	0.3−	0.5+
1998 09 26	704	0.4−	0.8−	1998 09 28	470	(2.1+	0.4+)	2000 01 06	557	0.4−	0.5+
1998 09 26	704	1.1+	0.8+	1998 10 13	557	0.1+	0.2+	2000 01 06	557	0.8+	0.0
1998 09 26	704	0.3+	1.4+	1998 10 13	557	0.3−	0.1−	2000 01 06	557	0.1+	0.5+

1998 SN₃ = 2000 AN₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	18.50100		(2000.0)	P	Q
<i>n</i>	0.21869409	ω	22.84001	−0.39696612	−0.91191302
<i>a</i>	2.7284208	Ω	90.68032	+0.82520820	−0.40424608
<i>e</i>	0.1151612	<i>i</i>	5.97456	+0.40180758	−0.07070896
<i>P</i>	4.51	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 17	910	0.1−	0.6+	1998 09 27	704	0.9+	0.5−	2000 01 05	704	0.3−	0.5−
1998 09 18	910	0.1+	0.6+	1999 12 07	704	1.0−	0.1+	2000 01 05	704	0.6−	0.9−
1998 09 18	910	0.1+	0.5+	1999 12 07	704	0.4+	0.2−	2000 01 06	704	0.7−	0.2−
1998 09 19	910	0.2+	0.2+	1999 12 07	704	0.1−	0.5+	2000 01 06	704	0.5−	0.2−
1998 09 19	910	0.1+	0.1+	1999 12 07	704	0.4−	0.6+	2000 01 06	704	0.7−	0.7−
1998 09 20	910	0.0	0.3+	1999 12 07	704	0.2−	0.6+	2000 01 06	704	0.5−	0.6−
1998 09 22	910	0.3+	0.3+	1999 12 08	703	0.3+	0.9+	2000 01 06	704	0.3+	0.5−
1998 09 23	910	0.4+	0.2−	1999 12 08	703	1.0+	0.4+	2000 01 06	704	0.8+	0.2+
1998 09 23	910	0.4+	0.1+	1999 12 08	703	0.4+	0.2−	2000 01 06	704	0.4+	0.4−
1998 09 26	704	0.7+	1.0−	1999 12 08	703	0.7−	0.9+	2000 01 06	704	0.8+	0.2−
1998 09 26	704	0.3−	1.0−	2000 01 05	699	0.2+	0.4+	2000 01 08	704	0.2−	0.7+
1998 09 26	704	1.3−	0.1−	2000 01 05	699	0.0	0.3−	2000 01 08	704	0.4+	0.5+
1998 09 26	704	0.1−	1.4−	2000 01 05	699	0.4−	0.2+	2000 01 08	704	0.1+	0.0
1998 09 27	704	0.9−	0.0	2000 01 05	704	0.1+	0.8−	2000 01 08	704	0.3+	0.2+
1998 09 27	704	0.8−	1.4+	2000 01 05	704	0.2−	0.7+	2000 01 08	704	1.0+	0.3−
1998 09 27	704	0.3+	0.3−	2000 01 05	704	0.1−	0.4−				

1998 SE₄ = 1999 XH₂₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	96.64737		(2000.0)	P	Q
<i>n</i>	0.19178956	ω	9.19259	+0.96360379	-0.26652040
<i>a</i>	2.9779637	Ω	6.38053	+0.23180790	+0.79415995
<i>e</i>	0.1137201	<i>i</i>	10.81222	+0.13316466	+0.54614728
<i>P</i>	5.14	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 30	327	0.3-	0.2+	1998 09 27	704	0.3-	0.2-	1998 10 29	704	1.0-	1.0+
1998 08 30	327	0.4-	0.2+	1998 09 27	704	1.0+	0.5+	1998 11 10	684	0.2+	0.1+
1998 08 30	327	0.4-	0.5+	1998 09 27	704	0.8-	0.9+	1998 11 10	684	0.0	0.1-
1998 09 15	699	0.7+	0.6-	1998 09 27	704	0.7+	0.2+	1998 11 10	699	(0.7-	2.5+)
1998 09 15	699	0.9+	0.4-	1998 09 27	704	0.1+	0.2+	1998 11 10	699	0.3+	0.1-
1998 09 15	699	0.5+	0.2-	1998 10 21	684	0.9-	0.8-	1998 11 10	699	0.3+	1.3+
1998 09 19	684	0.1-	0.2+	1998 10 21	684	0.9-	0.6-	1999 12 12	704	0.1-	0.1-
1998 09 19	684	0.2+	0.2+	1998 10 22	684	0.6-	0.3-	1999 12 12	704	0.4+	0.1-
1998 09 20	684	0.5-	0.5+	1998 10 22	684	0.9-	0.2-	1999 12 12	704	0.9+	0.3+
1998 09 20	684	0.4-	0.5+	1998 10 22	684	0.3-	0.2-	1999 12 12	704	0.1+	0.0
1998 09 22	684	0.5-	0.0	1998 10 28	704	0.2-	1.1-	1999 12 12	704	0.5+	0.0
1998 09 22	684	0.4-	0.0	1998 10 28	704	0.2+	0.5-	1999 12 15	704	0.2+	0.4+
1998 09 24	684	0.2-	0.1-	1998 10 28	704	0.0	0.1+	1999 12 15	704	0.1-	0.4+
1998 09 24	684	0.3-	0.2-	1998 10 28	704	0.2-	0.7-	1999 12 15	704	0.6-	0.1+
1998 09 26	704	0.4+	0.2+	1998 10 28	704	0.5+	0.2-	1999 12 15	704	0.6-	0.1+
1998 09 26	704	0.3-	0.7-	1998 10 29	704	0.3+	0.3+	2000 01 02	704	0.1-	0.6-
1998 09 26	704	0.2+	0.7+	1998 10 29	704	1.6+	1.1+	2000 01 02	704	0.2+	0.4-
1998 09 26	704	0.5+	0.8-	1998 10 29	704	0.5+	0.7-	2000 01 02	704	(3.0-	0.3+)
1998 09 26	704	0.4+	0.4-	1998 10 29	704	0.0	0.2+	2000 01 02	704	0.7-	0.0

1998 SG₄ = 2000 AV₁₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	288.47035		(2000.0)	P	Q
<i>n</i>	0.31003378	ω	291.24455	-0.71271778	+0.69987690
<i>a</i>	2.1620383	Ω	293.20749	-0.62313850	-0.66246892
<i>e</i>	0.0899762	<i>i</i>	2.92907	-0.32207419	-0.26703419
<i>P</i>	3.18	<i>H</i>	15.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 18	704	0.2-	0.5-	1998 09 19	426	0.0	0.1-	1998 09 20	557	0.2+	0.2+
1998 09 18	704	1.3+	0.4-	1998 09 19	426	0.6-	0.1-	1998 09 26	704	0.2-	0.7-
1998 09 18	704	0.1-	0.1+	1998 09 19	557	0.5-	0.0	1998 09 26	704	0.4-	1.1+
1998 09 19	611	(0.4+	2.5+)	1998 09 19	557	0.3+	0.4+	1998 09 26	704	1.2-	1.2-
1998 09 19	611	0.7-	0.5+	1998 09 19	557	0.3+	0.7+	1998 09 26	704	1.0-	0.2+
1998 09 19	611	0.9-	0.9-	1998 09 19	046	0.1+	0.2-	1998 09 27	704	0.1-	0.9+
1998 09 19	734	0.4-	0.2-	1998 09 19	046	0.1+	0.4-	1998 09 27	704	0.3+	0.2-
1998 09 19	734	0.4+	2.0+	1998 09 19	046	0.2+	0.7-	1998 09 27	704	1.5+	0.9+
1998 09 19	711	0.3+	0.2+	1998 09 19	046	0.2+	0.7+	2000 01 05	704	0.6-	0.3-
1998 09 19	711	0.4+	0.2+	1998 09 19	108	(2.9+	2.0+)	2000 01 05	704	0.4-	0.5+
1998 09 19	711	0.5+	0.3+	1998 09 19	108	1.4-	0.5-	2000 01 05	704	0.6+	0.8-
1998 09 19	422	0.4-	1.2-	1998 09 19	108	(0.7-	2.8-)	2000 01 07	704	0.8-	0.7+
1998 09 19	402	0.1+	0.3-	1998 09 20	711	0.5+	0.1+	2000 01 07	704	0.3+	0.0
1998 09 19	402	0.2+	0.2-	1998 09 20	711	0.2+	0.1+	2000 01 07	704	0.6+	0.1+
1998 09 19	402	0.1+	0.2-	1998 09 20	711	0.5+	0.2+	2000 01 07	704	0.3+	0.3-
1998 09 19	402	0.4+	0.4-	1998 09 20	557	0.3+	0.1+				
1998 09 19	426	0.3-	0.6-	1998 09 20	557	0.4+	0.0				

1998 SA₉ = 2000 AN₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	68.41995		(2000.0)	P	Q
<i>n</i>	0.18418770	ω	346.70917	+0.65777607	-0.75306944
<i>a</i>	3.0593486	Ω	62.15820	+0.69257466	+0.59701552
<i>e</i>	0.1518973	<i>i</i>	0.95470	+0.29609287	+0.27651201
<i>P</i>	5.35	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1998 09 20	691	1.0-	0.3-	1998 09 23	691	(2.7+	1.4+)	2000 01 04	704	0.3+	1.3-
1998 09 20	691	1.1-	0.5-	1998 09 23	691	(2.5+	1.6+)	2000 01 04	704	0.1-	1.1-
1998 09 20	691	0.9-	0.3-	1998 09 27	691	0.2-	0.2-	2000 01 04	704	0.5-	1.2-
1998 09 21	691	0.8+	0.5+	1998 09 27	691	0.2+	0.1-	2000 01 06	704	0.7+	1.6+
1998 09 21	691	1.2+	0.3+	1998 09 27	691	0.3-	0.0	2000 01 06	704	0.8-	1.9+
1998 09 21	691	1.2+	0.4+	2000 01 04	704	0.2-	1.1-	2000 01 06	704	0.8+	1.4+
1998 09 23	691	(2.8+	1.0+)	2000 01 04	704	0.8-	1.0-	2000 01 06	704	0.6+	0.8+

1998 SO₉ = 2000 AK₁₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	91.59257		(2000.0)	P	Q
<i>n</i>	0.20965384	ω	193.14084	+0.81459991	-0.57893525
<i>a</i>	2.8063005	Ω	202.34864	+0.54024963	+0.77959770
<i>e</i>	0.1016919	<i>i</i>	5.35853	+0.21108605	+0.23887529
<i>P</i>	4.70	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 17	327	0.6-	0.9+	1998 09 27	704	0.4+	0.6-	1998 10 29	704	0.2+	0.1+
1998 09 17	327	0.8-	0.6+	1998 10 01	327	0.1-	0.2+	1998 10 29	704	1.8-	1.0-
1998 09 17	327	0.9-	0.5+	1998 10 01	327	0.3-	0.1+	1998 10 29	704	0.6+	1.9-
1998 09 20	327	0.4-	0.2+	1998 10 01	327	0.4-	0.1+	1998 11 10	699	0.2+	0.3-
1998 09 20	327	1.2-	0.4-	1998 10 11	699	0.0	0.4+	1998 11 10	699	0.6+	0.6-
1998 09 20	327	0.9-	0.2-	1998 10 11	699	0.0	0.4+	1998 11 10	699	(2.6+	0.4-)
1998 09 25	327	0.6-	0.2+	1998 10 11	699	0.0	0.4+	1999 01 09	910	0.5-	0.4-
1998 09 25	327	0.3-	0.2+	1998 10 15	327	0.5+	0.7+	1999 01 09	910	0.1-	0.0
1998 09 25	327	0.3-	0.4+	1998 10 15	327	0.5+	0.9+	1999 01 09	910	0.7-	0.2-
1998 09 26	704	0.5+	0.4-	1998 10 15	327	0.5+	0.8+	2000 01 05	704	0.8-	0.6+
1998 09 26	704	0.5-	0.1-	1998 10 20	691	0.3+	0.3+	2000 01 05	704	0.0	0.7+
1998 09 26	704	0.4-	0.3+	1998 10 20	691	0.2+	0.0	2000 01 05	704	0.1-	0.2+
1998 09 26	704	0.3+	0.7+	1998 10 20	691	0.0	0.2+	2000 01 05	704	0.1-	1.4-
1998 09 26	704	0.4+	0.2+	1998 10 28	704	1.0-	0.8-	2000 01 07	704	0.1+	0.2+
1998 09 27	704	0.1+	0.0	1998 10 28	704	1.4+	1.3-	2000 01 07	704	0.3+	0.7+
1998 09 27	704	2.0+	0.4+	1998 10 28	704	0.3+	1.1-	2000 01 07	704	1.0+	0.1+
1998 09 27	704	0.0+	1.0+	1998 10 28	704	1.3+	1.2-	2000 01 07	704	0.1-	0.2+
1998 09 27	704	0.9+	0.4+	1998 10 29	704	(2.2-	2.9-)				

1998 SR₉ = 2000 AG₂₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	143.64992		(2000.0)	P	Q
<i>n</i>	0.21601744	ω	239.18255	+0.88779870	+0.45409976
<i>a</i>	2.7509129	Ω	93.71770	-0.39246120	+0.83196143
<i>e</i>	0.1062014	<i>i</i>	4.30335	-0.24039066	+0.31880022
<i>P</i>	4.56	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1998 09 14	327	0.7+	0.6-	1998 09 26	704	(2.5+	1.7-)	1998 09 27	704	1.3-	0.9+
1998 09 14	327	0.7+	0.2-	1998 09 26	704	0.6+	0.9-	1998 09 27	704	0.2-	0.9-
1998 09 14	327	1.4+	0.8+	1998 09 26	704	1.2+	0.3-	1998 09 27	704	0.3+	0.2-
1998 09 17	327	1.0-	0.3-	1998 09 26	704	(0.4-	3.2-)	2000 01 06	691	0.2-	0.2+
1998 09 17	327	1.4-	0.5-	1998 09 26	327	0.5-	0.5-	2000 01 06	691	0.1-	0.2+
1998 09 17	327	0.6-	0.3-	1998 09 26	327	0.0	0.2+	2000 01 06	691	0.4-	0.0
1998 09 20	327	(3.5-	1.3+)	1998 09 26	327	0.6-	0.1+	2000 01 08	691	0.4+	0.2-
1998 09 20	327	(3.5-	1.5+)	1998 09 27	704	0.6+	0.8+	2000 01 08	691	0.0	0.2-
1998 09 20	327	(3.4-	1.5+)	1998 09 27	704	0.1+	1.8+	2000 01 08	691	0.3+	0.2-

1998 SX₁₂ = 2000 AY₁₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	119.72556		(2000.0)	P	Q
<i>n</i>	0.22836108	ω	241.04791	+0.81187496	-0.53395989
<i>a</i>	2.6508673	Ω	149.34344	+0.54682781	+0.83714566
<i>e</i>	0.0245391	<i>i</i>	27.58418	-0.20454434	+0.11863380
<i>P</i>	4.32	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 3

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Residuals in seconds of arc

1998 09 23	703	0.1+	0.0	1998 10 27	703	0.2+	0.1+	2000 01 08	704	0.4+	0.5-
1998 09 23	703	0.0	0.2-	1998 10 28	703	0.2+	0.3-	2000 01 08	704	0.1+	0.2-
1998 09 23	703	0.3-	0.5-	1998 10 28	703	0.3+	0.0	2000 01 08	704	0.0	0.1+
1998 09 24	703	0.4+	0.4+	2000 01 05	704	0.7-	0.7+	2000 01 08	704	0.6+	0.6+
1998 09 24	703	0.3-	0.3+	2000 01 05	704	0.6+	0.4-	2000 01 08	704	0.1+	0.1+
1998 10 27	703	0.3+	0.0	2000 01 05	704	0.7-	0.1+				
1998 10 27	703	0.9-	0.1+	2000 01 05	704	0.4-	0.6-				

1998 SG₁₇ = 2000 AO₂₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	135.94838		(2000.0)	P	Q
<i>n</i>	0.17504376	ω	215.25508	+0.58170579	+0.81242262
<i>a</i>	3.1649848	Ω	90.34783	-0.73683137	+0.54706536
<i>e</i>	0.2017447	<i>i</i>	2.28377	-0.34452563	+0.20171510
<i>P</i>	5.63	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 09 17	699	1.2+	0.0	1998 09 26	704	0.7-	0.7+	1998 10 28	704	1.2+	0.2-
1998 09 17	699	0.1-	0.9+	1998 09 26	704	0.8-	0.5+	1998 10 28	704	(4.3-	1.0+)
1998 09 17	699	0.1+	0.6+	1998 09 26	704	0.4-	0.2+	1998 10 29	704	0.9+	1.4+
1998 09 17	691	0.0	0.5-	1998 09 26	704	0.8-	0.4-	1998 10 29	704	(2.2-	2.1+)
1998 09 17	691	0.1-	0.4-	1998 09 26	704	0.3-	0.1-	1998 10 29	704	0.4-	0.9-
1998 09 17	691	0.1+	0.5-	1998 09 27	704	0.3+	0.8+	2000 01 09	691	0.3+	0.3-
1998 09 24	691	0.7-	0.9-	1998 09 27	704	0.6+	0.1-	2000 01 09	691	0.3+	0.1-
1998 09 24	691	0.5+	0.5-	1998 09 27	704	0.6-	0.2+	2000 01 09	691	0.5+	0.3+
1998 09 24	691	0.5-	0.8-	1998 09 27	704	0.2-	1.3+	2000 01 13	691	0.1-	0.5-
1998 09 25	699	0.9+	0.0	1998 09 27	704	1.0+	1.0+	2000 01 13	691	0.1+	0.2-
1998 09 25	699	0.5-	0.9-	1998 10 28	704	1.3-	0.6-	2000 01 13	691	1.0-	0.8+
1998 09 25	699	0.7+	0.7-	1998 10 28	704	(2.1+	2.5-)				

1998 SA₂₀ = 1999 XX₁₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	203.12596		(2000.0)	P	Q
<i>n</i>	0.29170724	ω	299.43581	+0.23552898	+0.97185142
<i>a</i>	2.2516692	Ω	344.18408	-0.88445446	+0.21196992
<i>e</i>	0.1393145	<i>i</i>	1.16896	-0.40282306	+0.10282785
<i>P</i>	3.38	<i>H</i>	16.8	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1998 09 20	691	0.1+	0.3+	1998 09 27	691	0.5-	0.0	1999 12 05	691	0.0	0.0
1998 09 20	691	0.1+	0.0	1998 09 27	691	0.5-	0.0	1999 12 05	691	0.1-	0.3-
1998 09 20	691	0.2-	0.2+	1998 09 27	691	0.4-	0.1-	1999 12 05	691	0.1+	0.2-
1998 09 23	691	0.1+	0.5+	1998 09 29	691	0.4+	0.1-	1999 12 07	691	0.1-	0.0
1998 09 23	691	0.1+	0.1+	1998 09 29	691	0.6+	0.4-	1999 12 07	691	0.0	0.1+
1998 09 23	691	0.2-	0.2-	1998 09 29	691	0.5+	0.2-	1999 12 07	691	0.0	0.3+

1998 SP₂₂ = 1999 XY₁₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	243.92310		(2000.0)	P	Q
<i>n</i>	0.21846387	ω	231.44327	-0.59202995	+0.80590240
<i>a</i>	2.7303373	Ω	2.27093	-0.69784426	-0.50972907
<i>e</i>	0.0686195	<i>i</i>	6.77693	-0.40313017	-0.30116041
<i>P</i>	4.51	<i>H</i>	12.9	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1996 03 21	566	0.3+	0.5+	1998 09 27	704	1.2-	0.3+	1999 09 18	703	0.2-	0.4+
1996 03 21	566	0.0	0.3+	1998 09 27	704	0.0	0.1+	1999 09 18	703	0.0	1.0-
1996 03 21	566	0.2+	0.3+	1998 10 02	120	(2.9+	1.9-)	1999 09 18	703	0.0	0.4+
1998 09 14	704	0.6-	0.5+	1998 10 02	120	(2.2+	0.7-)	1999 09 18	703	0.3+	0.5+
1998 09 14	704	0.2+	0.1+	1998 10 02	120	0.1-	1.2+	1999 12 12	704	0.3-	0.1+
1998 09 14	704	1.0-	1.7-	1998 10 11	120	0.2-	0.2-	1999 12 12	704	0.3-	0.1-
1998 09 18	704	0.1+	0.2+	1998 10 11	120	0.5-	0.3+	1999 12 12	704	0.2+	0.1+
1998 09 18	704	1.2+	0.6+	1998 10 14	699	0.4-	0.4+	1999 12 12	704	0.2-	0.3+
1998 09 18	704	0.3+	0.4+	1998 10 14	699	0.2-	0.0	1999 12 12	704	0.2+	0.1+

1998 09 18	704	1.4-	0.8+	1998 10 14	699	0.2-	0.7+	1999 12 15	704	0.2-	0.0
1998 09 23	120	1.1+	0.3+	1998 10 15	120	0.4+	0.2+	1999 12 15	704	0.3+	0.0
1998 09 23	120	0.1-	0.5+	1998 10 15	120	0.2-	0.1-	1999 12 15	704	0.3+	0.2-
1998 09 23	120	0.1+	0.2+	1998 10 28	704	0.2+	1.3+	1999 12 15	704	1.1+	0.7-
1998 09 24	120	0.4+	0.1+	1998 10 28	704	1.3+	0.2-	1999 12 15	704	0.2+	0.6-
1998 09 24	120	0.2-	0.0	1998 10 28	704	0.7+	0.9-	2000 01 02	704	0.7-	0.2-
1998 09 24	120	0.3+	0.1-	1998 10 28	704	0.1-	0.2-	2000 01 02	704	0.2-	0.3-
1998 09 26	704	0.0	0.6-	1998 10 28	704	0.5+	0.8-	2000 01 02	704	1.1-	0.0
1998 09 26	704	0.2-	0.3-	1998 10 29	704	0.9+	1.5-	2000 01 02	120	0.3+	0.1+
1998 09 26	704	0.3-	0.1-	1998 10 29	704	0.0	1.8-	2000 01 02	120	0.1+	0.2+
1998 09 26	704	0.1+	0.2-	1998 10 29	704	(1.0+	2.6-)	2000 01 07	106	0.1-	0.5+
1998 09 26	704	0.3-	0.2+	1998 10 29	704	(0.0	2.6-)	2000 01 07	106	0.4+	0.5+
1998 09 27	704	0.5-	0.5-	1998 11 11	699	0.4-	0.4+	2000 01 07	106	0.2-	0.4-
1998 09 27	704	0.6-	0.1-	1998 11 11	699	0.4+	0.5+				
1998 09 27	704	0.3+	0.2+	1998 11 11	699	0.4-	0.6+				

1998 SY₂₂ = 2000 AQ₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	134.60456		(2000.0)	P	Q
<i>n</i>	0.19243804	ω	133.26970	+0.93839204	+0.33574402
<i>a</i>	2.9712699	Ω	207.41780	-0.34546197	+0.90542144
<i>e</i>	0.1130686	<i>i</i>	10.23640	-0.00874125	+0.25978445
<i>P</i>	5.12	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 09 23	426	0.2-	0.2-	1998 10 20	426	0.2+	0.4+	1998 11 19	426	0.2+	0.4-
1998 09 23	426	0.4-	0.4-	1998 10 20	426	0.7+	0.1-	1998 11 19	426	0.2-	0.4+
1998 09 24	426	0.5-	0.5+	1998 11 10	704	0.5-	0.4-	2000 01 08	704	0.7+	0.6+
1998 09 24	426	0.1+	0.2-	1998 11 10	704	(2.5-	1.1+)	2000 01 08	704	0.2+	0.4-
1998 09 30	691	0.3-	0.3+	1998 11 10	704	1.1-	0.0	2000 01 08	704	1.1-	0.1+
1998 09 30	691	0.0	0.1+	1998 11 10	704	(5.7-	0.1+)	2000 01 10	704	0.3+	0.0
1998 09 30	691	0.0	0.1-	1998 11 16	426	0.4+	0.2+	2000 01 10	704	0.2-	0.3+
1998 10 19	426	1.0+	0.3+	1998 11 16	426	0.6-	0.1-	2000 01 10	704	0.1+	0.7-
1998 10 19	426	1.0+	0.1+	1998 11 16	426	0.0	0.2+				
1998 10 20	426	0.4-	0.5-	1998 11 19	426	0.2+	0.1-				

1998 SM₂₄ = 2000 AX₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	76.29881		(2000.0)	P	Q
<i>n</i>	0.22725915	ω	3.98065	+0.66031309	-0.74974262
<i>a</i>	2.6594294	Ω	44.70265	+0.68731036	+0.58009673
<i>e</i>	0.1054549	<i>i</i>	3.52698	+0.30264020	+0.31839250
<i>P</i>	4.34	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.9+	0.4-	1998 09 18	704	0.7-	0.9-	1998 09 27	704	0.8+	0.0
1998 09 14	704	0.7+	1.0-	1998 09 18	704	0.1+	1.4-	2000 01 04	704	0.7-	0.2-
1998 09 14	704	0.0	0.6-	1998 09 18	704	1.6-	0.5+	2000 01 04	704	0.4+	0.1-
1998 09 14	704	0.3+	0.3+	1998 09 24	699	0.5+	0.1+	2000 01 04	704	0.6+	0.5+
1998 09 14	704	0.5+	0.6+	1998 09 24	699	0.6+	0.5+	2000 01 04	704	0.5-	0.7+
1998 09 14	704	1.4+	0.1-	1998 09 24	699	0.1+	0.8+	2000 01 04	704	1.2-	1.0-
1998 09 14	704	1.7-	1.2+	1998 09 26	704	0.1-	0.2-	2000 01 05	699	1.0+	0.6-
1998 09 14	704	0.8+	1.1+	1998 09 26	704	0.2+	0.5-	2000 01 05	699	0.3+	0.4-
1998 09 14	704	0.6-	0.5+	1998 09 26	704	0.5-	0.7-	2000 01 05	699	0.4+	0.4+
1998 09 14	704	(0.7-	3.0+)	1998 09 26	704	1.0-	0.9-	2000 01 06	704	0.3-	0.0
1998 09 17	699	0.2-	0.3-	1998 09 26	704	1.4-	0.5-	2000 01 06	704	0.2-	0.5+
1998 09 17	699	0.9-	0.1-	1998 09 27	704	0.2-	0.6+	2000 01 06	704	0.3+	0.3-
1998 09 17	699	0.3+	0.0	1998 09 27	704	1.4+	0.5+	2000 01 06	704	0.3-	0.5+
1998 09 18	704	0.8-	0.3+	1998 09 27	704	0.5+	1.2+				
1998 09 18	704	0.6+	0.3-	1998 09 27	704	0.3+	0.1-				

1998 SN₂₄ = 2000 AP₂₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	114.27983		(2000.0)	P		Q	
<i>n</i>	0.20985473	ω	255.98504	+0.98549991		+0.15641482	
<i>a</i>	2.8045092	Ω	94.98557	-0.11868385		+0.91242930	
<i>e</i>	0.1198771	<i>i</i>	3.78481	-0.12126037		+0.37816291	
<i>P</i>	4.70	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 09 17	699	0.0	0.0	1998 09 26	704	0.4+	0.4-	1998 09 27	704	0.3-	0.3+
1998 09 17	699	0.4-	0.7+	1998 09 26	704	0.8+	0.1+	2000 01 12	691	0.2+	0.4+
1998 09 17	699	0.1-	0.6-	1998 09 26	704	0.8+	0.4+	2000 01 12	691	0.1+	0.4+
1998 09 24	699	1.2+	0.1+	1998 09 27	704	0.8+	1.4-	2000 01 12	691	0.2+	0.3+
1998 09 24	699	1.1-	0.8+	1998 09 27	704	0.3-	0.9-	2000 01 15	691	0.2-	0.2-
1998 09 24	699	0.2+	0.8+	1998 09 27	704	(3.1+	0.6-)	2000 01 15	691	0.0	0.2-
1998 09 26	704	0.4-	1.1-	1998 09 27	704	1.5-	1.2+	2000 01 15	691	0.3-	0.6-

1998 SJ₂₆ = 1999 XZ₂₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	43.48220		(2000.0)	P		Q	
<i>n</i>	0.17771327	ω	38.82560	+0.09954678		-0.97736321	
<i>a</i>	3.1332098	Ω	46.34515	+0.83643018		-0.01942910	
<i>e</i>	0.1894325	<i>i</i>	14.95305	+0.53895731		+0.21067429	
<i>P</i>	5.55	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 22	699	0.5-	0.2-	1998 10 29	704	0.1+	0.6+	1998 11 14	699	0.5-	0.4+
1998 09 22	699	0.8+	0.6+	1998 10 29	704	0.8-	0.3-	1998 11 25	699	(0.7-	2.2+)
1998 09 22	699	0.3-	0.1+	1998 10 29	704	0.2-	0.7-	1998 11 25	699	0.2-	0.3-
1998 09 24	699	0.1+	0.1-	1998 11 10	704	0.1-	0.5+	1998 11 25	699	0.2+	0.5+
1998 09 24	699	0.0	0.3+	1998 11 10	704	0.5-	0.3+	1999 12 07	703	0.9+	0.5+
1998 09 24	699	0.2+	0.7+	1998 11 10	704	0.1-	0.5+	1999 12 07	703	0.4-	0.0
1998 10 20	699	0.8-	0.1+	1998 11 10	704	0.3-	1.0+	1999 12 07	703	0.1-	0.7+
1998 10 20	699	0.7-	0.2-	1998 11 10	704	0.8-	0.7+	1999 12 07	703	0.1-	0.3-
1998 10 20	699	0.8-	0.5+	1998 11 11	704	0.8+	0.1-	1999 12 10	704	0.1-	0.3-
1998 10 28	704	0.7+	0.9-	1998 11 11	704	(0.0	2.3-)	1999 12 10	704	0.7+	0.1+
1998 10 28	704	0.8+	1.2-	1998 11 11	704	1.1+	1.3-	1999 12 10	704	0.1+	0.6-
1998 10 28	704	0.3+	0.8-	1998 11 11	704	1.6+	1.9-	1999 12 10	704	0.4-	0.1+
1998 10 28	704	0.3-	0.0	1998 11 11	704	(0.4+	3.2-)	1999 12 10	704	0.4-	0.2-
1998 10 29	704	0.8+	0.3-	1998 11 14	699	0.2-	1.3+				
1998 10 29	704	0.3+	0.6-	1998 11 14	699	0.9-	0.9+				

1998 SN₂₆ = 2000 AY₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	142.67228		(2000.0)	P		Q	
<i>n</i>	0.17895490	ω	342.05192	+0.53081331		+0.84555136	
<i>a</i>	3.1187004	Ω	319.95530	-0.76623687		+0.44995099	
<i>e</i>	0.0498936	<i>i</i>	5.10707	-0.36210260		+0.28737955	
<i>P</i>	5.51	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	(2.2+	1.8+)	1998 09 18	704	0.4+	0.7-	1999 12 15	704	1.4+	0.0
1998 08 17	704	0.5-	1.0-	1998 09 18	704	0.9-	1.3-	1999 12 15	704	0.3+	0.5-
1998 08 17	704	0.4-	0.3+	1998 09 24	046	0.2+	0.6+	2000 01 03	704	0.4-	1.2-
1998 08 17	704	0.1-	1.1+	1998 09 24	046	0.3+	0.4+	2000 01 03	704	0.4+	0.5-
1998 08 17	704	(0.5-	2.0-)	1998 09 24	046	0.3+	0.3+	2000 01 03	704	0.5+	0.0
1998 08 23	704	1.0-	0.1-	1998 09 24	046	0.1-	0.2-	2000 01 03	704	0.2+	0.7-
1998 08 23	704	(2.4+	0.3+)	1998 09 25	046	0.3+	0.0	2000 01 04	704	0.5-	0.7-
1998 08 23	704	0.4+	0.8-	1998 09 25	046	0.1+	0.0	2000 01 04	704	0.2-	0.7-
1998 08 23	704	(4.7-	0.3+)	1998 09 25	046	0.6+	0.1+	2000 01 04	704	0.8-	0.1+
1998 09 14	704	0.6+	0.3-	1998 09 25	046	0.6+	0.2+	2000 01 04	704	0.1+	0.4+
1998 09 14	704	1.3-	0.5-	1998 09 29	046	0.5-	0.2-	2000 01 04	704	0.5-	0.7+
1998 09 14	704	0.3-	0.1-	1998 09 29	046	0.6-	0.3+	2000 01 12	046	0.1+	0.6+
1998 09 14	704	0.1+	0.2+	1998 09 29	046	0.5-	0.1+	2000 01 12	046	0.7-	0.3+
1998 09 16	699	0.3+	0.2+	1998 10 13	046	0.1-	0.2+	2000 01 12	046	0.6-	0.2+

1998 09 16	699	0.2+	0.7+	1998 10 13	046	0.0	0.3+	2000 01 13	046	0.5-	0.6+
1998 09 16	699	0.6+	0.0	1998 10 13	046	0.3+	0.5+	2000 01 13	046	0.0	0.4+
1998 09 18	704	0.9+	0.8-	1999 12 15	704	0.3-	0.1+	2000 01 13	046	0.4-	0.2+
1998 09 18	704	(0.8-	2.3-)	1999 12 15	704	0.5+	0.6+				
1998 09 18	704	0.0	0.8+	1999 12 15	704	1.2+	0.0				

1998 SS₂₇

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	200.09547		(2000.0)	P		Q	
<i>n</i>	0.23384483	ω	351.81180	+0.46643711		+0.79907659	
<i>a</i>	2.6092611	Ω	305.13400	-0.78301596		+0.17348800	
<i>e</i>	0.0493152	<i>i</i>	27.63727	-0.41148807		+0.57565486	
<i>P</i>	4.21	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 25	703	0.8-	0.1-	1999 11 16	704	0.5-	0.3+	2000 01 04	704	1.0-	0.2+
1998 09 25	703	0.6-	0.2-	1999 11 16	704	0.9-	0.2+	2000 01 04	704	0.5-	0.1+
1998 09 25	703	0.3-	0.1-	1999 11 16	704	0.8-	0.5+	2000 01 04	704	0.7-	0.6+
1998 09 26	703	1.1+	0.4-	1999 11 16	704	0.9-	0.5+	2000 01 05	691	0.1+	0.3-
1998 09 26	703	0.8+	0.4+	1999 11 16	704	0.7-	0.1+	2000 01 05	691	0.2+	0.2-
1998 10 14	703	0.5-	0.1+	1999 12 08	704	1.3+	0.3-	2000 01 05	691	0.7+	0.3-
1998 10 19	703	0.2+	1.4-	1999 12 08	704	1.8+	0.8-	2000 01 06	704	0.7-	0.2+
1998 10 19	703	0.2-	0.0	1999 12 08	704	1.7+	1.7-	2000 01 06	704	0.3-	0.0
1998 10 19	703	0.5-	0.0	1999 12 08	704	0.7+	1.3-	2000 01 06	704	0.1-	0.0
1998 10 25	704	0.6+	0.0	1999 12 08	704	(0.7+	2.7-)	2000 01 06	704	0.2+	0.0
1998 10 25	704	0.0	0.4+	1999 12 09	699	0.6-	1.5+	2000 01 06	704	0.1+	0.2-
1998 10 25	704	0.9+	1.0+	1999 12 09	699	0.7+	0.4+	2000 01 08	106	0.3+	0.3+
1998 10 25	704	0.0	0.2+	1999 12 09	699	0.3+	1.4+	2000 01 08	106	0.0	0.3+
1998 10 25	704	0.1+	0.2+	1999 12 15	704	0.1-	0.4-	2000 01 08	106	0.3+	0.3+
1998 10 25	704	0.6-	0.3+	1999 12 15	704	0.1+	0.1-	2000 01 10	120	0.1-	0.4+
1998 10 25	704	0.1+	0.1-	1999 12 15	704	0.3-	0.2-	2000 01 11	120	0.4+	0.1+
1998 10 25	704	0.5-	0.1-	1999 12 15	704	0.3-	0.6-	2000 01 12	691	0.4+	0.1+
1999 11 08	699	1.0-	1.3-	1999 12 15	704	0.5-	1.1-	2000 01 12	691	0.2+	0.0
1999 11 08	699	1.0+	0.3+	2000 01 04	704	0.6-	0.2+	2000 01 12	691	0.2+	0.0
1999 11 08	699	0.1-	0.5+	2000 01 04	704	0.6-	0.0				

1998 SK₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	146.63125		(2000.0)	P		Q	
<i>n</i>	0.22570815	ω	312.19779	+0.72806487		+0.68544875	
<i>a</i>	2.6715987	Ω	4.55851	-0.59069484		+0.63399622	
<i>e</i>	0.1161056	<i>i</i>	6.52482	-0.34785220		+0.35806258	
<i>P</i>	4.37	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 23	704	1.5+	1.6+	1998 09 27	747	0.5+	0.8-	1998 11 18	747	0.3-	0.2-
1998 08 23	704	1.1+	0.9-	1998 09 27	747	0.1+	0.8-	1998 11 18	747	0.7-	0.6+
1998 08 23	704	0.0	1.4+	1998 09 27	747	0.5-	0.6-	1998 11 19	747	0.6+	0.4+
1998 08 23	704	(2.1+	1.3-)	1998 09 28	670	1.7+	0.7+	1998 11 19	747	1.2+	0.9+
1998 08 23	704	(4.3-	1.2-)	1998 09 28	670	0.4-	1.4-	1998 11 19	747	0.8-	0.6-
1998 08 30	699	0.5-	0.4+	1998 09 28	670	0.7+	0.8-	1998 11 19	747	0.7+	0.5-
1998 08 30	699	0.0	0.4+	1998 10 09	747	0.0	0.2-	1999 12 11	747	0.1+	0.3+
1998 08 30	699	1.0-	0.2+	1998 10 09	747	0.0	0.2+	1999 12 11	747	0.1-	0.0
1998 09 14	704	0.2-	0.5-	1998 10 09	747	0.0	0.1-	1999 12 11	747	0.5+	0.4+
1998 09 14	704	0.3-	0.2+	1998 10 11	747	0.6-	0.4+	1999 12 12	704	0.3-	0.4-
1998 09 14	704	0.7-	0.0	1998 10 24	747	0.7-	0.3-	1999 12 12	704	0.0	0.3+
1998 09 14	704	0.2-	0.5+	1998 10 24	747	0.5+	0.2+	1999 12 12	704	0.1+	0.0
1998 09 18	704	0.3-	0.2-	1998 10 24	747	0.6+	0.1+	1999 12 12	704	0.2-	0.3+
1998 09 18	704	1.2-	0.6-	1998 10 26	747	0.8+	0.7+	1999 12 17	747	0.2-	0.1-
1998 09 18	704	0.8-	1.0+	1998 10 26	747	0.8+	0.7-	1999 12 17	747	0.1+	0.1+
1998 09 18	704	0.7-	0.2+	1998 10 26	747	0.9+	0.4-				
1998 09 18	704	1.0-	0.1+	1998 11 18	747	0.1-	0.5-				

2000 JAN. 24

M.P.C. 37769

1998 SG₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	21.46889		(2000.0)		P		Q				
<i>n</i>	0.46680202	ω	29.55608		−0.81167961		+0.58203863				
<i>a</i>	1.6458146	Ω	186.70343		−0.58347900		−0.81182850				
<i>e</i>	0.3376898	<i>i</i>	24.85456		−0.02699011		+0.04653515				
<i>P</i>	2.11	<i>H</i>	16.2	<i>G</i>	0.15		<i>U</i>	5			
Residuals in seconds of arc											
1998 09 18	699	0.5−	0.8+	1998 09 29	422	0.9+	0.1+	1998 10 13	046	0.3−	0.3+
1998 09 18	699	0.6+	0.3−	1998 09 29	426	0.6−	1.9+	1998 10 13	046	0.1+	0.1+
1998 09 18	699	1.7−	0.5+	1998 09 29	426	0.2−	0.8+	1998 10 13	046	0.5−	0.1+
1998 09 24	699	1.1+	0.8+	1998 09 29	426	0.4−	1.3+	1998 10 16	704	0.3+	0.3−
1998 09 24	699	0.6−	1.8+	1998 09 30	046	0.1−	0.9−	1998 10 16	704	0.4+	0.2+
1998 09 24	699	0.6+	0.5+	1998 09 30	046	0.2−	0.5−	1998 10 16	704	0.9+	0.7+
1998 09 26	704	0.6+	1.5−	1998 09 30	046	0.7−	0.9−	1998 10 16	704	0.3+	0.8−
1998 09 26	704	1.6+	1.1−	1998 09 30	046	0.6−	0.7−	1998 10 16	704	0.4+	0.4−
1998 09 26	704	0.9+	0.9−	1998 09 30	557	0.2+	0.1−	1998 10 16	422	0.6−	0.6−
1998 09 26	704	1.5+	1.8−	1998 09 30	557	0.2+	0.1+	1998 10 16	422	0.4−	0.1−
1998 09 26	704	0.4−	0.1−	1998 09 30	557	0.1+	0.1+	1998 10 16	422	0.7−	0.2−
1998 09 27	704	0.3+	0.3+	1998 09 30	557	0.3+	0.0	1998 10 16	422	0.3+	0.0
1998 09 27	704	0.0	0.5−	1998 09 30	658	0.6−	0.0	1998 10 16	422	0.3−	0.1+
1998 09 27	704	0.5−	0.1−	1998 09 30	658	0.1−	0.2−	1998 10 21	402	0.0	0.0
1998 09 27	704	0.8−	1.2+	1998 09 30	658	0.5−	0.1−	1998 10 21	402	0.0	0.7−
1998 09 27	704	1.3−	0.9−	1998 09 30	422	0.6+	0.1−	1998 10 21	402	0.3−	0.8−
1998 09 29	704	0.5−	1.4−	1998 09 30	422	0.2+	0.4+	1998 11 15	711	1.2−	0.7+
1998 09 29	704	1.3+	0.1+	1998 09 30	422	0.0	0.2+	1998 11 17	711	0.5−	0.9+
1998 09 29	704	(2.4+	0.9+)	1998 09 30	422	0.2−	0.1+	1998 11 17	711	0.6−	0.7+
1998 09 29	704	1.6+	0.2−	1998 10 02	402	0.6+	0.0	2000 01 06	104	0.3−	0.8+
1998 09 29	704	1.5+	1.0+	1998 10 02	402	0.2+	0.3−	2000 01 06	104	0.8−	0.9+
1998 09 29	658	0.4−	0.2+	1998 10 02	402	0.1+	0.5−	2000 01 06	104	0.2+	0.2+
1998 09 29	658	0.6−	0.1−	1998 10 13	422	0.4−	0.5+	2000 01 06	104	1.5+	0.3−
1998 09 29	658	0.5−	0.1−	1998 10 13	422	0.6−	0.6+	2000 01 07	104	0.9−	0.0
1998 09 29	422	0.0	0.5+	1998 10 13	557	0.0	0.1−	2000 01 07	104	(2.4−	0.3+)
1998 09 29	422	0.2+	0.6+	1998 10 13	557	0.2+	0.0				
1998 09 29	422	0.2+	0.5+	1998 10 13	046	0.1−	0.2−				

1998 SR₃₇ = 2000 AA₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	148.85494		(2000.0)		P		Q				
<i>n</i>	0.23176814	ω	132.75956		+0.97985241		+0.19192712				
<i>a</i>	2.6248243	Ω	216.27764		−0.19937934		+0.92376410				
<i>e</i>	0.0841535	<i>i</i>	5.35840		−0.01171035		+0.33139685				
<i>P</i>	4.25	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1998 09 14	699	1.0−	1.2+	1998 10 28	704	0.8−	0.4+	1999 01 07	691	0.1−	0.2−
1998 09 14	699	1.2−	1.4+	1998 10 28	704	0.2−	0.0	1999 01 07	691	0.4−	0.3−
1998 09 14	699	1.9−	0.4+	1998 10 28	704	0.1−	0.2−	1999 01 07	691	0.2−	0.4−
1998 09 21	691	1.1+	0.7+	1998 10 28	704	0.6−	0.1+	1999 01 15	691	0.3−	0.4−
1998 09 21	691	1.1+	0.8+	1998 10 29	704	0.1+	0.8−	1999 01 15	691	0.5−	0.1−
1998 09 21	691	1.0+	0.2+	1998 10 29	704	0.2−	0.5−	1999 01 15	691	0.4+	0.9−
1998 09 27	691	0.6−	0.1+	1998 10 29	704	0.1+	0.0	2000 01 05	704	0.4−	1.3+
1998 09 27	691	0.6−	0.0	1998 10 29	704	0.6+	0.2−	2000 01 05	704	0.2+	0.3−
1998 09 27	691	0.3−	0.9−	1998 10 29	704	0.3+	0.8−	2000 01 05	704	0.4+	0.5−
1998 09 30	691	0.4−	0.0	1998 11 10	704	0.9+	0.4−	2000 01 05	704	0.3+	0.4−
1998 09 30	691	0.0	0.2−	1998 11 10	704	0.3+	0.4−	2000 01 05	704	0.3−	0.3−
1998 09 30	691	0.3−	0.1+	1998 11 10	704	0.6+	0.7−	2000 01 06	704	0.5+	0.6−
1998 10 10	699	1.2+	0.5+	1998 11 10	704	0.6+	0.3−	2000 01 06	704	0.3−	0.0
1998 10 10	699	0.5+	0.1+	1998 11 11	704	0.2−	1.4−	2000 01 06	704	1.7−	0.2−
1998 10 10	699	0.8+	0.3−	1998 11 11	704	(1.0−	2.1−)	2000 01 06	704	0.1+	1.8+
1998 10 13	691	0.4+	0.4−	1998 11 11	704	0.1+	1.1+	2000 01 08	704	0.1−	0.5−
1998 10 13	691	0.3+	0.4−	1998 11 11	704	1.1−	0.1−	2000 01 08	704	0.3+	0.3+
1998 10 13	691	0.5+	0.3−	1998 11 11	704	0.8−	0.2+	2000 01 08	704	0.1+	0.6+
1998 10 15	691	0.3−	0.0	1998 11 14	699	1.3+	1.3+	2000 01 08	704	1.1+	0.4−

1998 10 15	691	0.8−	0.3+	1998 11 14	699	0.1−	0.8+	2000 01 08	704	0.0	0.3+
1998 10 15	691	0.0	0.2−	1998 11 14	699	0.3+	1.0+				

1998 SE₄₃ = 2000 AP₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	325.04788		(2000.0)		P		Q				
<i>n</i>	0.28529229	ω	187.87021		−0.95991240		+0.27972570				
<i>a</i>	2.2852972	Ω	8.43868		−0.25005428		−0.82566354				
<i>e</i>	0.0411338	<i>i</i>	7.02052		−0.12665325		−0.48993188				
<i>P</i>	3.45	<i>H</i>	14.3		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1998 09 15	699	0.8+	1.0+	1998 10 01	327	0.3+	0.6−	1998 10 28	704	0.6+	0.7−
1998 09 15	699	1.8+	0.3−	1998 10 01	327	0.5+	0.1−	1998 10 28	704	0.4−	0.4−
1998 09 15	699	0.2+	0.1+	1998 10 01	327	0.5−	0.0	1998 10 29	704	0.8−	0.9+
1998 09 23	327	0.3−	0.1+	1998 10 15	120	0.3+	0.7+	1998 10 29	704	0.7+	0.3−
1998 09 23	327	0.5−	0.6+	1998 10 15	120	0.0	0.6+	1998 10 29	704	0.7−	0.2−
1998 09 23	327	1.4−	0.4−	1998 10 18	327	0.0	0.2+	1998 10 29	704	1.5+	0.1+
1998 09 25	327	0.0	0.3+	1998 10 18	327	0.2−	0.1+	1998 10 29	704	0.0	0.0
1998 09 25	327	0.2−	0.2+	1998 10 18	327	0.3−	0.0	2000 01 04	704	0.4−	0.5−
1998 09 25	327	0.1+	0.4+	1998 10 19	327	0.1−	0.1+	2000 01 04	704	0.3+	0.4+
1998 09 26	704	1.2−	0.6−	1998 10 19	327	0.2−	0.3+	2000 01 04	704	0.2+	0.3−
1998 09 26	704	0.6−	0.5−	1998 10 19	327	0.4−	0.2+	2000 01 04	704	0.0	0.2−
1998 09 26	704	0.2−	0.7+	1998 10 20	327	0.3+	0.1+	2000 01 07	704	0.2−	0.2−
1998 09 26	704	1.6+	1.3+	1998 10 20	327	0.1+	0.4+	2000 01 07	704	0.5−	0.1+
1998 09 26	704	1.0−	0.4−	1998 10 20	327	0.0	0.1+	2000 01 07	704	0.2−	0.1−
1998 09 27	704	0.0	0.1−	1998 10 20	120	0.9+	0.1−	2000 01 07	704	0.3−	1.0−
1998 09 27	704	1.1+	1.5−	1998 10 20	120	(2.6+	0.9−)	2000 01 07	704	0.4+	1.3−
1998 09 27	704	1.1−	0.5−	1998 10 28	704	0.1−	0.7−	2000 01 10	699	0.1+	0.0
1998 09 27	704	0.2−	0.9−	1998 10 28	704	(2.4−	2.3−)	2000 01 10	699	0.3+	1.6+
1998 09 27	704	(1.4−	2.1−)	1998 10 28	704	0.5−	0.1+	2000 01 10	699	0.4+	1.5+

1998 SE₄₄ = 2000 AB₁₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	27.52339		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.17523349	ω	263.69290		+0.25530252		−0.96668430				
a	3.1626998	Ω	171.44757		+0.92896948		+0.23994935				
e	0.1239644	i	7.14434		+0.26802300		+0.08913905				
P	5.62	H	12.7	G	0.15	U	3				
Residuals in seconds of arc											
1998 09 14	704	0.9+	0.3−	1998 09 26	704	1.0−	1.0−	1999 12 06	704	0.2−	0.2+
1998 09 14	704	1.0+	0.4−	1998 09 26	704	0.5−	0.5−	1999 12 06	704	0.1+	0.3+
1998 09 14	704	0.4+	0.3−	1998 09 26	704	0.2−	0.7−	1999 12 06	704	0.1+	0.2−
1998 09 14	704	0.4+	0.6+	1998 09 26	704	0.5−	0.1+	1999 12 06	704	0.2−	0.3+
1998 09 14	704	(0.3+	3.1+)	1998 09 27	704	0.3−	0.0	1999 12 06	704	0.0	0.4−
1998 09 17	699	0.6+	0.7−	1998 09 27	704	0.4−	0.7+	1999 12 14	704	0.2+	0.8−
1998 09 17	699	0.2+	0.1−	1998 09 27	704	0.2+	0.3−	1999 12 14	704	0.1−	0.0
1998 09 17	699	0.4+	0.5−	1998 09 27	704	0.5+	0.6−	1999 12 14	704	0.6+	0.4+
1998 09 18	704	0.2+	0.4−	1998 09 27	704	0.3−	0.5−	1999 12 14	704	0.1−	0.6+
1998 09 18	704	0.1+	0.1−	1998 09 30	691	0.4−	0.2+	1999 12 14	704	0.1−	0.1−
1998 09 18	704	0.4−	0.1+	1998 09 30	691	0.3−	0.1+	2000 01 07	704	0.5+	1.8−
1998 09 18	704	0.3+	0.7−	1998 09 30	691	0.5−	0.3+	2000 01 07	704	0.1−	0.4−
1998 09 18	704	0.3−	0.6−	1998 10 17	699	0.5+	0.6+	2000 01 07	704	0.2+	0.4−
1998 09 23	691	0.5−	0.9+	1998 10 17	699	0.3+	1.1+	2000 01 07	704	0.1+	0.4−
1998 09 23	691	0.5−	1.1+	1998 10 17	699	0.2+	0.1+	2000 01 07	704	0.1+	0.6−
1998 09 23	691	0.3−	0.7+	1998 12 08	704	0.9+	1.0+	2000 01 11	704	0.2−	0.2+
1998 09 25	699	0.2+	0.3+	1998 12 08	704	0.0	0.9−	2000 01 11	704	0.4+	1.4+
1998 09 25	699	0.2−	0.4−	1998 12 08	704	1.5−	1.6+	2000 01 11	704	0.1−	0.2+
1998 09 25	699	0.0	0.2−	1998 12 08	704	0.5−	1.7−	2000 01 11	704	0.5−	0.5+
1998 09 26	704	0.4+	0.1+	1998 12 08	704	1.3+	1.8+	2000 01 11	704	0.1+	0.7+

1998 SY₄₅ = 2000 AR₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17164136	ω	205.91162	+0.58367695	−0.80749231		
<i>a</i>	3.2066735	Ω	208.61461	+0.77251402	+0.58458828		
<i>e</i>	0.0713583	<i>i</i>	10.26065	+0.25008659	+0.07882073		
<i>P</i>	5.74	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 25	691	0.5+	0.0	1998 10 28	704	0.1−	1.2+	1998 11 10	704	(2.3+	0.6−)
1998 09 25	691	0.7+	0.1−	1998 10 28	704	0.9+	0.6−	1998 11 10	704	1.4−	0.5+
1998 09 25	691	0.6+	0.0	1998 10 28	704	1.7+	0.1+	1998 11 10	704	1.5−	1.1−
1998 09 30	691	1.1−	0.2+	1998 10 28	704	0.7+	0.4−	1998 11 10	704	(4.1−	1.8+)
1998 09 30	691	1.2−	0.2+	1998 10 29	704	0.7−	0.4+	2000 01 08	704	0.2+	0.0
1998 09 30	691	1.1−	0.2−	1998 10 29	704	0.0	0.1+	2000 01 08	704	0.3+	0.7+
1998 10 17	327	0.1−	0.1−	1998 10 29	704	1.5+	0.2−	2000 01 08	704	0.1+	0.0
1998 10 17	327	0.3−	0.2+	1998 10 29	704	0.7+	0.4−	2000 01 08	704	0.3+	0.9+
1998 10 17	327	0.4+	0.2+	1998 10 29	704	0.3−	0.7−	2000 01 10	704	0.8−	1.0−
1998 10 18	327	0.2+	0.1+	1998 10 29	327	0.1+	0.3+	2000 01 10	704	0.2−	0.8−
1998 10 18	327	0.0	0.1+	1998 10 29	327	0.1+	0.2+	2000 01 10	704	0.6−	0.9−
1998 10 18	327	0.1−	0.1+	1998 10 29	327	0.1−	0.0	2000 01 10	704	0.8+	1.1+

1998 SF₄₉ = 2000 AH₁₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.16178532	ω	109.58525	−0.63209969	−0.77476033		
<i>a</i>	3.3356206	Ω	19.64032	+0.69440491	−0.57438129		
<i>e</i>	0.0707638	<i>i</i>	2.38967	+0.34387760	−0.26425852		
<i>P</i>	6.09	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	699	0.8+	0.5+	1998 10 13	691	0.7−	0.1+	1998 11 10	704	0.4−	0.1−
1998 09 14	699	0.2−	0.8+	1998 10 13	691	0.8−	0.2−	1998 11 10	704	1.0+	0.9−
1998 09 14	699	0.7+	0.6−	1998 10 13	691	0.8−	0.2−	1998 11 11	704	1.1−	0.6−
1998 09 20	809	0.2+	0.9+	1998 10 15	120	0.6−	0.4−	1998 11 11	704	(2.2−	0.6+)
1998 09 20	809	0.5−	1.9+	1998 10 15	120	0.0	0.2−	1998 11 11	704	0.2+	1.9+
1998 09 20	809	0.9−	0.8+	1998 10 16	120	(4.7−	0.7+)	1998 11 11	704	0.4+	0.8+
1998 09 21	809	(3.6+	3.5+)	1998 10 16	120	(2.3−	1.4+)	1998 11 17	699	0.2+	0.9+
1998 09 21	809	(2.8+	4.2+)	1998 10 23	120	0.7+	0.8−	1998 11 17	699	0.6+	1.2+
1998 09 21	809	(2.9+	4.0+)	1998 10 23	120	0.2−	0.5−	1998 11 17	699	0.1−	1.0+
1998 09 24	120	1.4+	0.4+	1998 10 24	120	0.6−	0.5−	1999 12 03	699	0.1−	0.8+
1998 09 25	120	(0.1+	2.6−)	1998 10 24	120	0.4+	0.6−	1999 12 03	699	0.3+	0.2+
1998 09 25	120	1.6+	0.4−	1998 10 27	120	0.4+	0.2−	1999 12 03	699	0.3−	0.7−
1998 09 30	120	0.2+	0.7−	1998 10 27	120	0.6+	0.3−	1999 12 10	704	0.1−	0.2+
1998 09 30	120	0.0	0.2−	1998 10 27	120	0.1+	0.8−	1999 12 10	704	0.5−	0.0
1998 09 30	691	0.3+	0.6−	1998 10 28	704	0.0	0.3−	1999 12 10	704	0.5+	1.2+
1998 09 30	691	0.6+	0.7−	1998 10 28	704	0.4−	0.5+	1999 12 10	704	0.5−	0.5+
1998 09 30	691	0.5+	0.5−	1998 10 28	704	0.7−	0.4+	2000 01 03	704	0.3−	0.4−
1998 10 01	691	0.9−	0.5−	1998 10 28	704	0.4−	0.4−	2000 01 03	704	0.0	1.1−
1998 10 01	691	0.9−	0.2−	1998 10 28	120	0.3+	0.7−	2000 01 03	704	0.0	0.2−
1998 10 01	691	0.8−	0.1+	1998 10 28	120	0.4−	1.1−	2000 01 03	704	0.6+	0.3+
1998 10 09	120	0.1+	0.6+	1998 10 29	704	1.0+	1.0+	2000 01 03	704	0.2−	0.4−
1998 10 09	120	0.7−	0.0	1998 10 29	704	0.2+	0.1+	2000 01 04	704	0.5−	0.2−
1998 10 10	699	0.1+	0.9+	1998 10 29	704	0.6−	0.2−	2000 01 04	704	0.1−	0.4−
1998 10 10	699	0.6−	0.9−	1998 10 29	704	0.4−	0.4−	2000 01 04	704	0.2+	0.2−
1998 10 10	699	0.2+	0.8+	1998 10 29	704	0.5−	0.7−	2000 01 04	704	0.2+	0.3−
1998 10 12	691	0.4+	0.1−	1998 11 10	704	0.0	0.7+	2000 01 04	704	0.8+	0.4−
1998 10 12	691	0.5+	0.1−	1998 11 10	704	0.8−	0.1+				
1998 10 12	691	0.7+	0.2−	1998 11 10	704	0.5+	0.1−				

1998 SX₅₃ = 2000 AY₁₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21469288	ω	174.92245	+0.97193903	−0.23005553		
<i>a</i>	2.7622159	Ω	198.60076	+0.21004291	+0.94269698		
<i>e</i>	0.0856378	<i>i</i>	8.85147	+0.10590799	+0.24165443		
<i>P</i>	4.59	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 16	704	0.4+	1.7+	1998 09 14	704	0.3−	0.4+	1998 09 27	699	0.6−	1.0+
1997 04 16	704	0.3−	1.4+	1998 09 14	704	0.5−	0.7+	1998 09 27	699	0.1+	0.5−
1998 08 17	704	1.4+	0.8−	1998 09 14	704	1.1−	0.1+	1998 09 27	699	0.4+	1.0+
1998 08 17	704	0.4+	1.4−	1998 09 14	704	0.6−	0.7+	1998 10 11	699	0.8−	1.1−
1998 08 17	704	0.2+	1.5−	1998 09 16	699	0.2−	0.7+	1998 10 11	699	1.4−	0.6−
1998 08 17	704	0.4+	1.3+	1998 09 16	699	0.2+	1.0+	1998 10 11	699	0.3+	0.1−
1998 08 17	704	0.2−	1.5+	1998 09 16	699	0.1+	0.8+	2000 01 07	704	0.0	0.3−
1998 08 23	704	1.4+	2.0−	1998 09 18	704	0.4−	0.4−	2000 01 07	704	0.4+	0.8−
1998 08 23	704	0.4−	1.6+	1998 09 18	704	0.6+	0.3−	2000 01 07	704	0.3−	0.3+
1998 08 23	704	0.8−	0.1−	1998 09 18	704	0.7+	0.1−	2000 01 07	704	0.6−	0.5+
1998 08 23	704	1.0−	1.3−	1998 09 18	704	1.2+	0.3−	2000 01 07	704	0.2+	0.6+
1998 08 23	704	(4.7−	2.2−)	1998 09 18	704	0.3+	0.5+	2000 01 11	704	0.4+	0.9+
1998 08 30	699	0.7+	0.2−	1998 09 25	699	0.2+	0.3+	2000 01 11	704	0.5−	0.1+
1998 08 30	699	0.3+	0.1−	1998 09 25	699	1.0−	0.5+	2000 01 11	704	0.3+	0.8+
1998 08 30	699	0.1+	0.3−	1998 09 25	699	0.3−	0.5+	2000 01 11	704	0.6+	0.3+

1998 SL₅₅ = 2000 AY₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22977331	ω	219.15769	+0.89531849	−0.44540290		
<i>a</i>	2.6399944	Ω	167.28905	+0.41373188	+0.82774964		
<i>e</i>	0.0328674	<i>i</i>	1.19531	+0.16501740	+0.34124301		
<i>P</i>	4.29	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.3−	0.3−	1998 09 25	699	0.2+	0.3−	2000 01 05	704	0.0	0.6−
1998 09 14	704	0.1−	0.8−	1998 09 25	699	0.4−	0.4−	2000 01 05	704	0.5+	0.3−
1998 09 14	704	0.5+	0.9+	1998 09 25	699	0.0	0.4−	2000 01 05	704	0.3−	0.2−
1998 09 16	699	0.1+	0.5+	1998 09 26	704	0.8+	0.4−	2000 01 05	704	0.2−	0.6+
1998 09 16	699	0.2+	0.2−	1998 09 26	704	0.3−	0.3+	2000 01 05	704	0.4+	0.0
1998 09 16	699	0.0	0.2+	1998 09 26	704	0.8−	0.5−	2000 01 06	704	0.1−	0.5+
1998 09 18	704	0.1−	1.0−	1998 09 26	704	0.4−	0.4−	2000 01 06	704	0.1+	0.3−
1998 09 18	704	0.4−	0.3−	1998 09 27	704	0.8+	0.8+	2000 01 06	704	0.1+	0.5+
1998 09 18	704	0.3−	0.0	1998 09 27	704	0.6+	0.1+	2000 01 16	691	0.2−	0.0
1998 09 18	704	0.3−	0.3+	1998 09 27	704	1.3−	0.5+	2000 01 16	691	0.2−	0.1−
1998 09 18	704	0.6+	0.0	1998 09 27	704	1.0+	1.3+	2000 01 16	691	0.1−	0.1−

1998 SR₅₅ = 2000 AE₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	142.98596			(2000.0)		P		Q			
n	0.22142845	ω		297.10146		+0.83939007		+0.54307536			
a	2.7059126	Ω		30.02064		−0.48163593		+0.76212538			
e	0.0938817	i		2.54480		−0.25189510		+0.35246852			
P	4.45	H		15.2	G	0.15		U	5		
Residuals in seconds of arc											
1998 09 14	704	0.8+	0.9+	1998 09 25	699	0.0	0.2+	1998 10 22	910	0.4+	0.0
1998 09 14	704	0.1−	0.1+	1998 09 25	699	0.9+	1.0+	1998 10 22	910	0.5+	0.2+
1998 09 14	704	0.1+	0.8+	1998 09 26	704	2.0−	1.7−	1998 10 22	910	0.4+	0.1−
1998 09 16	699	0.7−	0.4+	1998 09 26	704	1.4−	1.8−	2000 01 03	704	0.8+	1.0−
1998 09 16	699	0.5−	0.7+	1998 09 26	704	1.1−	0.4−	2000 01 03	704	1.4−	0.8−
1998 09 16	699	0.1−	0.6+	1998 09 27	704	0.1+	0.0	2000 01 03	704	0.5+	0.5+
1998 09 18	704	0.5+	0.9+	1998 09 27	704	0.3−	0.5+	2000 01 04	704	0.7−	0.8+
1998 09 18	704	0.7−	0.0	1998 09 27	704	0.4+	0.2−	2000 01 04	704	0.3+	0.1−
1998 09 18	704	1.6+	0.9−	1998 09 27	704	0.2+	0.6−	2000 01 04	704	0.3+	0.1+
1998 09 18	704	0.3−	1.7−	1998 10 14	910	0.2+	0.1−	2000 01 04	704	0.7+	0.6+

2000 JAN. 24

M.P.C. 37771

1998 09 18 704 0.7+ 1.8+ 1998 10 14 910 0.1+ 0.1- 2000 01 04 704 0.4- 0.2+
 1998 09 25 699 0.3+ 0.1- 1998 10 14 910 0.2+ 0.2-

1998 SU₅₅ = 1999 XJ₂₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	143.43127		(2000.0)		P		Q
<i>n</i>	0.18152418	ω	295.79027		+0.45065780		+0.89269560
<i>a</i>	3.0892026	Ω	0.99914		-0.78621322		+0.39767408
<i>e</i>	0.1577187	<i>i</i>	4.79034		-0.42281949		+0.21201392
<i>P</i>	5.43	<i>H</i>	13.8		<i>G</i> 0.15		<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.8-	0.5-	1998 09 25	699	0.4+	1.1+	1998 10 12	691	0.2-	0.0
1998 09 14	704	0.2+	0.7+	1998 09 26	704	1.5+	0.4-	1998 10 15	691	0.5-	0.4+
1998 09 14	704	0.4-	0.1+	1998 09 26	704	0.2+	0.5-	1998 10 15	691	0.5-	0.4+
1998 09 16	699	0.4-	0.4-	1998 09 26	704	(0.2-	2.2-)	1998 10 15	691	0.6-	0.3+
1998 09 16	699	0.1-	0.1+	1998 09 26	704	0.1-	0.3-	1999 12 15	704	0.7+	0.4-
1998 09 16	699	0.2-	0.5-	1998 09 26	704	1.1+	1.0-	1999 12 15	704	0.4+	0.6+
1998 09 18	704	1.0+	0.8-	1998 09 27	704	0.7+	0.3-	1999 12 15	704	0.6+	0.4+
1998 09 18	704	(1.5+	2.5-)	1998 09 27	704	0.2-	0.6-	1999 12 15	704	0.9-	0.2+
1998 09 18	704	0.4+	0.3+	1998 09 27	704	0.2-	0.6+	1999 12 16	704	0.2-	0.6-
1998 09 18	704	1.3-	0.2-	1998 09 27	704	0.3+	1.3-	1999 12 16	704	0.1+	0.4-
1998 09 18	704	1.1-	1.4+	1998 09 27	704	0.6+	1.5-	1999 12 16	704	0.4+	0.6-
1998 09 25	699	0.2-	1.2+	1998 10 12	691	0.3-	0.2+	1999 12 16	704	0.2-	0.7+
1998 09 25	699	0.7+	1.4+	1998 10 12	691	0.2-	0.3+				

1998 SV₅₅ = 1998 SS₈₁ = 1999 XL₈₄

Id. S. Nakano (d, MPC 33590), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	39.98035		(2000.0)		P		Q
<i>n</i>	0.17350659	ω	249.35325		+0.43296703		-0.90140700
<i>a</i>	3.1836506	Ω	174.98905		+0.83624006		+0.40073980
<i>e</i>	0.1293292	<i>i</i>	1.46297		+0.33651464		+0.16392999
<i>P</i>	5.68	<i>H</i>	13.5		<i>G</i> 0.15		<i>U</i> 4

Residuals in seconds of arc

1998 09 16	699	0.6+	0.5+	1998 09 27	704	0.6-	0.9-	1999 12 31	732	0.9-	0.3+
1998 09 16	699	0.4+	0.3+	1999 12 07	704	0.5+	0.1-	1999 12 31	732	0.6-	0.3+
1998 09 16	699	0.6-	0.1+	1999 12 07	704	0.3-	0.5-	2000 01 05	704	1.2+	0.8-
1998 09 25	699	0.4+	1.2+	1999 12 07	704	0.2+	0.1+	2000 01 05	704	1.6-	0.7-
1998 09 25	699	0.6-	1.8+	1999 12 07	704	0.4+	0.7+	2000 01 05	704	0.1+	0.6-
1998 09 25	699	0.4+	0.7+	1999 12 07	704	0.4+	0.0	2000 01 05	704	0.8+	0.7-
1998 09 26	704	0.5-	0.6+	1999 12 08	704	0.5+	0.2-	2000 01 05	704	0.3+	0.8-
1998 09 26	704	0.9+	1.2-	1999 12 08	704	0.1+	0.4+	2000 01 06	704	0.3+	0.3-
1998 09 26	704	0.4+	1.1-	1999 12 08	704	0.1-	0.0	2000 01 06	704	0.1+	0.2-
1998 09 26	704	0.7+	1.6-	1999 12 08	704	0.6-	0.8+	2000 01 06	704	0.6+	0.5-
1998 09 26	704	0.3+	1.1-	1999 12 08	704	0.9-	0.7+	2000 01 07	704	0.3+	1.3-
1998 09 27	704	0.3+	0.1+	1999 12 30	732	0.2+	0.6+	2000 01 07	704	0.1-	0.0
1998 09 27	704	1.3-	0.5+	1999 12 30	732	0.4+	1.5+	2000 01 07	704	0.0	0.1-
1998 09 27	704	0.8-	0.6+	1999 12 30	732	0.8-	0.4+	2000 01 07	704	0.1+	0.3+
1998 09 27	704	0.1+	0.7-	1999 12 31	732	0.0	0.6+	2000 01 07	704	0.4-	0.3+

1998 SV₅₆ = 2000 AE₁₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	104.98573		(2000.0)		P		Q
<i>n</i>	0.19157651	ω	222.43178		+0.99136343		+0.12995896
<i>a</i>	2.9801712	Ω	130.09238		-0.11330804		+0.91631666
<i>e</i>	0.0766974	<i>i</i>	1.31714		-0.06602910		+0.37878021
<i>P</i>	5.14	<i>H</i>	14.1		<i>G</i> 0.15		<i>U</i> 6

Residuals in seconds of arc

1998 09 14	704	0.8-	1.2-	1998 09 25	699	0.4+	1.1+	2000 01 05	704	0.6-	0.1+
1998 09 14	704	0.9+	1.4+	1998 09 25	699	0.0	0.6+	2000 01 05	704	0.5+	0.4-
1998 09 14	704	0.6+	0.6-	1998 09 26	704	1.7+	1.1-	2000 01 05	704	0.1-	0.4-
1998 09 17	699	0.6-	0.2+	1998 09 26	704	(0.5-	2.0-)	2000 01 07	704	0.7-	0.6+

1998 09 17	699	0.1-	0.8+	1998 09 26	704	0.8-	1.1-	2000 01 07	704	0.3-	0.3+
1998 09 17	699	0.2+	0.1+	1998 09 26	704	0.4-	0.4-	2000 01 07	704	0.2+	0.0
1998 09 18	704	0.6-	0.0	1998 09 27	704	0.4-	0.1-	2000 01 07	704	0.4-	0.1-
1998 09 18	704	2.1+	0.4-	1998 09 27	704	0.0	0.8+	2000 01 07	704	0.4-	0.5-
1998 09 18	704	0.7-	0.7-	1998 09 27	704	1.4-	0.8+	2000 01 10	704	0.2+	0.3+
1998 09 18	704	0.0	0.1+	1998 09 27	704	0.4+	0.6+	2000 01 10	704	0.9+	0.1-
1998 09 18	704	0.7-	0.1+	1998 09 27	704	0.4-	1.0-	2000 01 10	704	0.6+	0.3-
1998 09 25	699	0.6+	0.0	2000 01 05	704	0.1+	0.5+				

1998 SZ₅₆ = 2000 AL₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	60.25486		(2000.0)		P		Q
<i>n</i>	0.19608086	ω	283.00163		+0.68399815		-0.72813536
<i>a</i>	2.9343545	Ω	123.75092		+0.68825437		+0.62400485
<i>e</i>	0.0759855	<i>i</i>	3.05644		+0.24176942		+0.28361390
<i>P</i>	5.03	<i>H</i>	14.4		<i>G</i> 0.15		<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.4+	1.0-	1998 09 18	704	0.2-	0.9+	1999 12 07	704	1.7-	0.0
1998 09 14	704	0.3+	1.5+	1998 09 18	704	0.3+	1.4+	1999 12 07	704	0.5+	0.7+
1998 09 14	704	1.5-	0.2+	1998 09 25	699	0.8-	0.0	1999 12 07	704	0.6+	0.1+
1998 09 17	699	0.5-	0.7+	1998 09 25	699	0.4-	0.1+	1999 12 07	704	0.2+	0.4-
1998 09 17	699	1.9+	0.8-	1998 09 25	699	0.2-	0.7-	2000 01 05	704	0.2+	0.3-
1998 09 17	699	0.0	0.3+	1998 09 26	704	0.8+	0.3-	2000 01 05	704	0.0	0.2+
1998 09 18	704	0.3-	1.2+	1998 09 26	704	1.3-	0.6-	2000 01 05	704	0.3+	0.3+
1998 09 18	704	0.2+	1.1+	1998 09 26	704	0.2-	1.6-	2000 01 05	704	0.1-	0.3-
1998 09 18	704	0.4-	0.2-	1998 09 26	704	1.7+	0.8-	2000 01 05	704	0.1-	0.1+
1998 09 18	704	0.7+	0.6-	1998 09 27	704	1.2-	0.0	2000 01 06	704	0.0	0.6+
1998 09 18	704	0.3-	0.0	1998 09 27	704	1.8+	1.1+	2000 01 06	704	0.1-	0.5-
1998 09 18	704	(0.2+	2.5+)	1998 09 27	704	0.3+	0.6+	2000 01 06	704	0.2+	0.1+
1998 09 18	704	0.2-	1.7-	1998 09 27	704	1.0-	1.0-				
1998 09 18	704	(3.3+	2.7+)	1998 09 27	704	(2.5-	0.1+)				

1998 SG₅₇ = 1999 XE₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	60.28845		(2000.0)		P		Q
<i>n</i>	0.20351386	ω	11.27633		+0.63639382		-0.77086406
<i>a</i>	2.8624642	Ω	39.20910		+0.70425139		+0.56595666
<i>e</i>	0.0623733	<i>i</i>	2.51831		+0.31469490		+0.29233825
<i>P</i>	4.84	<i>H</i>	14.1		<i>G</i> 0.15		<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.1-	0.9-	1998 09 26	704	0.7+	1.5-	1999 12 10	704	0.2-	0.2-
1998 09 14	704	0.4-	0.7+	1998 09 26	704	0.3-	1.2-	1999 12 10	704	0.3-	0.1-
1998 09 14	704	0.4-	0.5-	1998 09 26	704	(0.7-	2.1-)	1999 12 10	704	0.3+	0.1-
1998 09 17	699	0.4-	0.8+	1998 09 26	704	1.2-	0.4+	2000 01 03	704	0.8+	0.9-
1998 09 17	699	0.3+	0.7+	1998 09 26	704	0.1+	0.3+	2000 01 03	704	0.1+	0.5-
1998 09 17	699	1.0+	0.9+	1998 09 27	704	0.4-	1.2-	2000 01 03	704	(2.4+	1.1+)
1998 09 18	704	0.5+	0.9-	1998 09 27	704	0.5+	0.2-	2000 01 03	704	0.1+	1.2+
1998 09 18	704	0.5+	1.5-	1998 09 27	704	1.6-	0.5+	2000 01 04	704	0.8+	0.4-
1998 09 18	704	1.7+	1.5-	1998 09 27	704	0.1-	0.6+	2000 01 04	704	0.4-	0.5-
1998 09 18	704	0.5+	1.3+	1998 09 27	704	1.7-	0.9-	2000 01 04	704	0.1+	0.5-
1998 09 18	704	0.7+	0.4+	1999 12 07	704	0.1-	1.5+	2000 01 04	704	0.1+	0.7-
1998 09 25	699	0.5-	0.7+	1999 12 07	704	0.3+	0.5+	2000 01 04	704	0.6-	0.3-
1998 09 25	699	0.2+	1.6+	1999 12 07	704	0.5-	0.2+				
1998 09 25	699	0.4+	1.3+	1999 12 07	704	0.4-	0.9+				

1998 SK₅₇ = 2000 AP₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	271.30072		(2000.0)		P		Q
<i>n</i>	0.29801162	ω	219.65456		-0.59088217		+0.80642011
<i>a</i>	2.2198004	Ω	14.17632		-0.71388522		-0.50916426
<i>e</i>	0.1014548	<i>i</i>	5.46920				

Residuals in seconds of arc

1998 08 28	704	0.6+	1.5+	1998 09 25	699	0.7−	0.0	1998 10 18	910	0.2+	0.4+
1998 08 28	704	(2.6−	2.8+)	1998 09 25	699	0.7−	0.6−	1998 10 18	910	0.2+	0.5+
1998 08 28	704	1.2−	0.1+	1998 09 25	699	0.3+	0.3−	1998 10 18	910	0.2+	0.5+
1998 08 28	704	0.3+	1.7+	1998 09 26	704	0.5+	1.3−	1998 10 22	910	0.3+	0.3+
1998 08 28	704	(3.0−	3.3+)	1998 09 26	704	0.5−	0.8−	1998 10 22	910	0.1+	0.4+
1998 09 14	704	0.6+	0.6+	1998 09 26	704	0.5−	1.5−	1998 10 22	910	0.3+	0.3+
1998 09 14	704	0.0	0.4+	1998 09 26	704	0.2−	0.8−	2000 01 03	704	0.7+	0.3+
1998 09 14	704	1.2−	0.2+	1998 09 26	704	0.1+	1.2+	2000 01 03	704	0.5−	0.2−
1998 09 17	699	1.0+	0.0	1998 09 27	704	0.1+	0.3−	2000 01 03	704	0.9−	0.7+
1998 09 17	699	0.2+	0.5+	1998 09 27	704	1.0−	0.9−	2000 01 03	704	0.3−	0.2−
1998 09 17	699	0.7+	0.0	1998 09 27	704	1.0−	0.8−	2000 01 03	704	0.4+	0.3−
1998 09 18	704	0.4−	0.5−	1998 09 27	704	0.2+	0.5+	2000 01 04	704	0.1−	0.1+
1998 09 18	704	0.1+	0.8−	1998 09 27	704	1.4−	1.1−	2000 01 04	704	0.1+	0.2−
1998 09 18	704	1.6+	0.9−	1998 10 12	910	0.3+	0.3+	2000 01 04	704	0.5+	0.2+
1998 09 18	704	0.9−	0.9+	1998 10 12	910	0.2+	0.3+	2000 01 04	704	0.2−	0.3+
1998 09 18	704	1.0+	0.2+	1998 10 12	910	0.7+	0.7+	2000 01 04	704	0.4+	0.4−

1998 SL₅₇ = 1999 XA₁₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	337.08989	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.28128390	ω	147.37819	−0.98625102	−0.16232852
<i>a</i>	2.3069568	Ω	23.33898	+0.12985212	−0.87711759
<i>e</i>	0.0834458	<i>i</i>	4.48178	+0.10221224	−0.45201127
<i>P</i>	3.50	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 28	704	(1.0−	2.6+)	1998 09 26	704	0.3+	0.2−	1999 12 08	704	0.3+	1.1−
1998 08 28	704	(0.3−	3.3+)	1998 09 26	704	0.4−	0.3−	1999 12 08	704	0.2+	0.2−
1998 08 28	704	1.4−	1.7+	1998 09 26	704	0.0	1.2−	1999 12 08	704	0.5+	0.3+
1998 08 28	704	(0.4−	3.7+)	1998 09 26	704	0.9−	0.5−	1999 12 15	704	0.0	0.6+
1998 08 28	704	(4.0−	3.4+)	1998 09 26	704	0.5+	1.2−	1999 12 15	704	0.4−	0.3−
1998 09 14	704	1.1+	0.2+	1998 09 26	704	1.0−	0.3+	1999 12 15	704	0.1−	0.8−
1998 09 14	704	0.0	0.0	1998 09 26	704	0.4+	1.0−	1999 12 15	704	0.4+	0.6−
1998 09 14	704	0.4−	0.5−	1998 09 26	704	1.6−	0.8+	2000 01 04	704	0.4+	0.5−
1998 09 17	699	1.0+	1.0+	1998 09 27	704	0.4+	0.9−	2000 01 04	704	0.1−	0.5−
1998 09 17	699	0.8+	1.0+	1998 09 27	704	1.1−	0.6−	2000 01 04	704	0.2−	0.2+
1998 09 17	699	0.9+	0.6+	1998 09 27	704	1.3−	1.6−	2000 01 04	704	0.1−	0.3−
1998 09 18	704	1.0+	0.1−	1998 12 08	704	(2.2−	0.4+)	2000 01 04	704	0.8−	0.2−
1998 09 18	704	0.3−	0.6+	1998 12 08	704	(3.0−	3.9+)	2000 01 06	704	0.0	0.8−
1998 09 18	704	0.8+	0.4−	1998 12 08	704	0.7−	0.7−	2000 01 06	704	0.1−	0.5+
1998 09 18	704	0.2+	1.6+	1998 12 08	704	(4.5−	1.2+)	2000 01 06	704	0.1+	0.1+
1998 09 18	704	0.9−	0.8+	1999 12 04	703	0.0	1.1+	2000 01 06	704	0.1+	0.1+
1998 09 25	699	0.3+	1.0+	1999 12 04	703	0.8+	0.1+	2000 01 06	699	0.7−	0.6+
1998 09 25	699	0.4+	0.1+	1999 12 04	703	0.3−	0.5+	2000 01 06	704	0.5−	0.2+
1998 09 25	699	1.0+	0.3+	1999 12 04	703	0.0	0.6+	2000 01 06	699	0.6+	0.4+
1998 09 26	704	0.0	1.0−	1999 12 08	704	0.2+	0.1+	2000 01 06	699	0.3−	0.4+
1998 09 26	704	0.3+	0.1+	1999 12 08	704	0.5+	0.1−				

1998 SQ₅₇ = 1999 XO₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	25.32187	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.18164652	ω	0.62529	+0.07590033	−0.99547524
<i>a</i>	3.0878154	Ω	85.02278	+0.91458622	+0.04666471
<i>e</i>	0.1424963	<i>i</i>	3.28970	+0.39720422	+0.08277354
<i>P</i>	5.43	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 17	699	0.7+	0.8+	1998 09 27	704	1.6−	1.3−	2000 01 03	704	0.4+	0.1−
1998 09 17	699	0.3−	0.0	1999 12 07	704	0.7−	0.2+	2000 01 04	704	0.4+	0.0
1998 09 17	699	0.0	0.5−	1999 12 07	704	0.4+	0.5+	2000 01 04	704	0.1+	0.3−
1998 09 25	699	0.0	1.1+	1999 12 07	704	0.1−	0.5+	2000 01 04	704	0.1+	0.1−
1998 09 25	699	1.1+	0.3−	1999 12 07	704	0.1+	0.4+	2000 01 04	704	0.3+	0.3+
1998 09 25	699	0.8+	1.4+	1999 12 07	704	0.2+	0.1−	2000 01 04	704	0.3+	0.1+
1998 09 26	704	1.5+	0.4−	1999 12 08	704	0.7+	0.2−	2000 01 05	120	0.0	0.6−
1998 09 26	704	0.6−	0.8−	1999 12 08	704	0.6−	0.2+	2000 01 05	120	0.4−	0.1−

1998 09 26	704	0.7+	1.0+	1999 12 08	704	0.0	0.3+	2000 01 06	120	0.3−	0.0
1998 09 26	704	0.8−	1.5+	1999 12 08	704	0.6−	0.6−	2000 01 06	120	0.1−	0.0
1998 09 27	704	0.2−	0.0	2000 01 03	704	0.1+	0.2+	2000 01 10	120	1.1−	0.6−
1998 09 27	704	0.8−	0.7−	2000 01 03	704	0.3+	0.1−	2000 01 10	120	0.5+	0.0
1998 09 27	704	0.2+	0.6−	2000 01 03	704	0.1−	0.4−				
1998 09 27	704	0.7−	1.2−	2000 01 03	704	0.1+	0.7+				

1998 SX₅₇ = 1999 XF₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	99.20395	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.20974559	ω	256.83119	+0.96753901	−0.24612346
<i>a</i>	2.8054820	Ω	117.39206	+0.24959410	+0.89501201
<i>e</i>	0.0700599	<i>i</i>	3.70483	+0.03963634	+0.37199024
<i>P</i>	4.70	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 17	699	0.5−	0.2−	1998 09 26	704	1.7−	1.2−	1999 12 08	691	0.1−	0.4−
1998 09 17	699	0.9−	0.4+	1998 09 27	704	0.5−	1.5−	1999 12 08	691	0.3−	0.4−
1998 09 17	699	0.5+	0.3+	1998 09 27	704	0.3−	0.3−	2000 01 04	704	0.0	0.2−
1998 09 25	699	0.4+	1.3+	1998 09 27	704	1.4+	0.3+	2000 01 04	704	0.5+	1.0+
1998 09 25	699	1.6+	1.0+	1998 09 27	704	1.2+	0.4+	2000 01 04	704	0.3+	1.0−
1998 09 25	699	1.5−	0.2+	1998 09 27	704	0.6+	0.3+	2000 01 05	704	0.0	0.1−
1998 09 26	704	0.8+	0.8−	1999 12 02	691	0.4+	0.2+	2000 01 05	704	0.5−	0.3+
1998 09 26	704	0.3−	0.4−	1999 12 02	691	0.0	0.3−	2000 01 05	704	0.2+	0.4+
1998 09 26	704	0.8−	0.3+	1999 12 02	691	0.1+	0.2−	2000 01 05	704	0.2+	0.5+
1998 09 26	704	(0.1−	2.5−)	1999 12 08	691	0.2−	0.1−	2000 01 05	704	0.7−	0.2+

1998 SE₆₀ = 2000 AP₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	126.04310	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.23052016	ω	320.67789	+0.99849787	+0.00708836
<i>a</i>	2.6342891	Ω	39.02007	+0.01860002	+0.88885799
<i>e</i>	0.1133058	<i>i</i>	4.95045	−0.05153687	+0.45812796
<i>P</i>	4.28	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.3+	0.1+	1998 09 25	699	0.7+	0.2+	1998 10 17	699	0.3+	0.8−
1998 09 14	704	1.7+	0.5−	1998 09 26	704	0.2+	0.1−	1998 10 19	699	0.1+	0.1−
1998 09 14	704	1.1−	0.6+	1998 09 26	704	0.4−	0.3+	1998 10 19	699	0.6−	0.6−
1998 09 17	699	0.4−	0.2−	1998 09 26	704	0.4−	1.0+	1998 10 19	699	0.4−	1.5+
1998 09 17	699	0.1+	0.0	1998 09 26	704	0.3+	0.0	2000 01 03	704	0.6+	1.1+
1998 09 17	699	0.6+	0.4+	1998 09 26	704	0.7−	1.0+	2000 01 03	704	0.3+	0.4−
1998 09 18	704	0.7−	0.9−	1998 09 27	704	0.4+	0.0	2000 01 03	704	0.3+	0.2−
1998 09 18	704	1.5−	0.5+	1998 09 27	704	0.1+	0.3−	2000 01 04	704	0.4−	0.5−
1998 09 18	704	0.9−	1.3−	1998 09 27	704	1.0+	0.3−	2000 01 04	704	0.4−	0.1+
1998 09 18	704	0.2−	1.3+	1998 09 27	704	0.3+	1.0−	2000 01 04	704	0.0	0.0
1998 09 18	704	0.1+	0.6−	1998 09 27	704	0.4−	0.6−	2000 01 04	704	0.5−	0.1−
1998 09 25	699	0.8+	0.6+	1998 10 17	699	0.3−	0.8−				
1998 09 25	699	0.8+	0.4−	1998 10 17	699	0.2+	0.6+				

1998 ST₆₀ = 2000 AN₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	126.50690	(2000.0)	<i>P</i>	Williams	<i>Q</i>
<i>n</i>	0.20217441	ω	270.05824	+0.94843565	+0.31287432
<i>a</i>	2.8750931	Ω	71.70930	−0.26536554	+0.87139782
<i>e</i>	0.0740380	<i>i</i>	3.06628	−0.17335209	+0.37785646
<i>P</i>	4.88	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	5

2000 JAN. 24

M.P.C. 37773

1998 09 18	704	0.2−	1.3−	1998 09 27	704	0.0	1.1+	2000 01 04	704	0.6−	0.3−
1998 09 18	704	0.4−	0.2−	1998 09 27	704	0.8−	0.4+	2000 01 04	704	0.1−	0.0
1998 09 18	704	0.3−	0.8+	1998 09 27	704	0.4−	0.1−	2000 01 08	704	0.0	0.3−
1998 09 18	704	0.5+	0.9+	1999 12 10	704	0.0	0.3+	2000 01 08	704	0.0	0.2−
1998 09 18	704	1.0−	0.3+	1999 12 10	704	0.3+	0.5−	2000 01 08	704	0.7−	0.2+
1998 09 25	699	0.4−	0.0	1999 12 10	704	0.0	0.1+	2000 01 08	704	0.0	0.0
1998 09 25	699	0.1−	0.2+	1999 12 10	704	0.5−	0.4+	2000 01 08	704	0.2+	0.0
1998 09 25	699	0.1+	0.6+	1999 12 10	704	0.0	0.2+				
1998 09 26	704	0.1−	0.2+	2000 01 03	704	0.1−	0.8−				

1998 SR₆₁ = 1999 XY₁₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	28.12660		(2000.0)	P	Q
<i>n</i>	0.21220271	ω	119.50470	−0.12207597	−0.98963157
<i>a</i>	2.7837833	Ω	337.13358	+0.82982411	−0.05993842
<i>e</i>	0.0407904	<i>i</i>	11.22997	+0.54450840	−0.13052487
<i>P</i>	4.64	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 27	699	0.5+	0.3−	1998 09 18	704	1.0−	1.9−	1999 12 10	704	0.4−	0.3+
1998 08 27	699	0.5+	0.4−	1998 09 18	704	1.5−	0.6−	1999 12 15	704	0.2+	0.4−
1998 08 27	699	0.5+	1.2+	1998 09 18	704	0.6−	1.2−	1999 12 15	704	0.5−	0.0
1998 08 28	704	(2.2+)	1.9−	1998 09 18	704	0.7+	0.8−	1999 12 15	704	0.0	0.9−
1998 08 28	704	1.3+	0.6+	1998 09 18	704	0.6−	0.4−	1999 12 15	704	1.1+	0.5−
1998 08 28	704	0.4+	0.9−	1998 09 25	699	0.3−	0.5−	2000 01 02	704	0.3+	0.8−
1998 08 28	704	(0.5−	2.5−)	1998 09 25	699	0.3−	0.6+	2000 01 02	704	0.6−	0.1+
1998 08 28	704	1.7−	0.4+	1998 09 25	699	1.0+	0.9+	2000 01 02	704	0.6+	0.4+
1998 09 14	704	0.5+	0.0	1998 10 18	699	0.1+	0.2+	2000 01 02	704	1.0−	0.1+
1998 09 14	704	0.3−	0.1−	1998 10 18	699	0.3+	0.7−	2000 01 02	704	0.1−	0.7+
1998 09 14	704	0.1+	0.2−	1998 10 18	699	1.6+	0.1−	2000 01 08	106	0.5−	0.2+
1998 09 17	699	0.5−	1.9+	1999 12 10	704	1.2+	0.4−	2000 01 08	106	0.4−	0.5+
1998 09 17	699	0.3−	1.0+	1999 12 10	704	1.2+	0.5+	2000 01 08	106	0.1+	0.1+
1998 09 17	699	0.2−	1.4+	1999 12 10	704	0.8−	0.1+				

1998 SU₆₁ = 1999 XW₁₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	113.14931		(2000.0)	P	Q
<i>n</i>	0.18260915	ω	6.74940	+0.97342556	+0.22065498
<i>a</i>	3.0769542	Ω	340.17730	−0.21764823	+0.80822342
<i>e</i>	0.1087339	<i>i</i>	10.40935	−0.07121748	+0.54597279
<i>P</i>	5.40	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.4−	0.1+	1998 09 25	699	0.2−	0.8+	1998 10 18	699	0.3+	0.5+
1998 09 14	704	0.9+	0.1−	1998 09 25	699	0.0	0.3+	1998 10 18	699	0.5+	0.4+
1998 09 14	704	(2.4−	0.4−)	1998 09 26	704	0.6+	0.1+	1999 12 12	704	0.2−	0.5+
1998 09 17	699	(1.7+)	2.6+)	1998 09 26	704	0.1+	0.7−	1999 12 12	704	0.7+	0.7+
1998 09 17	699	0.9+	1.6+	1998 09 26	704	0.1+	0.4−	1999 12 12	704	0.5+	1.8−
1998 09 17	699	(1.2+)	2.4+)	1998 09 26	704	0.6+	1.9−	1999 12 15	704	0.3+	0.2−
1998 09 18	704	0.2−	0.1−	1998 09 26	704	0.2−	1.8−	1999 12 15	704	0.0	0.1−
1998 09 18	704	0.1−	0.1+	1998 09 27	704	0.4−	0.4+	1999 12 15	704	1.1−	0.3+
1998 09 18	704	0.7+	0.5+	1998 09 27	704	1.6−	0.3+	1999 12 15	704	0.2+	0.3+
1998 09 18	704	1.8−	0.6−	1998 09 27	704	0.5+	1.1−	1999 12 15	704	0.3−	0.2+
1998 09 18	704	0.1+	1.2+	1998 09 27	704	(2.5−	1.3−)				
1998 09 25	699	0.3+	0.1+	1998 10 18	699	0.6−	0.3+				

1998 SP₆₂ = 2000 AJ₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	83.94418		(2000.0)	P	Q
<i>n</i>	0.21585335	ω	22.01709	+0.72487237	−0.68786542
<i>a</i>	2.7523069	Ω	21.58418	+0.61589438	+0.62277095
<i>e</i>	0.0588928	<i>i</i>	5.84029	+0.30860032	+0.37282370
<i>P</i>	4.57	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 20	327	1.1+	0.6+	1998 09 26	704	1.8−	0.5−	1998 10 19	327	0.3−	0.6+
1998 09 20	327	0.6+	0.2+	1998 09 26	704	0.2+	0.3−	2000 01 03	704	0.9−	0.4+
1998 09 20	327	1.8+	0.0	1998 09 27	704	0.2−	0.6−	2000 01 03	704	0.9+	0.2−
1998 09 20	327	1.4+	0.3+	1998 09 27	704	1.0−	0.3−	2000 01 03	704	1.2−	0.1−
1998 09 24	327	0.6+	0.2+	1998 09 27	704	1.4−	1.0−	2000 01 03	704	0.5+	0.4+
1998 09 24	327	0.8−	0.2−	1998 10 15	327	0.1−	0.1−	2000 01 03	704	0.2+	0.8−
1998 09 24	327	0.9−	1.0+	1998 10 15	327	0.3−	0.3−	2000 01 04	704	0.2−	0.3+
1998 09 25	327	0.5+	0.7+	1998 10 15	327	0.3−	0.1+	2000 01 04	704	0.5−	0.5−
1998 09 25	327	1.3+	0.6+	1998 10 19	699	1.2+	0.0	2000 01 04	704	0.4+	0.5−
1998 09 25	327	1.7−	2.0−	1998 10 19	699	0.4+	0.4−	2000 01 04	704	0.3+	0.9+
1998 09 26	704	0.4+	0.0	1998 10 19	699	0.7+	0.1−	2000 01 04	704	0.4+	0.0
1998 09 26	704	0.1−	0.0	1998 10 19	327	0.1−	0.3+				
1998 09 26	704	1.0−	0.7+	1998 10 19	327	0.1−	0.4+				

1998 SO₆₃ = 2000 AQ₁₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	104.34555		(2000.0)	P	Q
<i>n</i>	0.19333956	ω	166.80600	+0.99814343	+0.05127310
<i>a</i>	2.9620262	Ω	190.42321	−0.05742089	+0.97215665
<i>e</i>	0.0987701	<i>i</i>	10.46954	+0.02031104	+0.22865373
<i>P</i>	5.10	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.3−	0.2−	1998 09 26	704	0.4+	1.1−	1998 09 30	327	1.5−	0.2−
1998 09 14	704	0.8−	0.5−	1998 09 26	704	0.2−	0.2−	1998 10 16	691	0.4−	0.4−
1998 09 14	704	0.6−	0.3−	1998 09 26	704	0.2+	0.8+	1998 10 16	691	0.2+	0.3−
1998 09 16	699	0.7+	0.9+	1998 09 27	704	0.1+	0.3−	1998 10 16	691	0.4+	0.3−
1998 09 16	699	0.8+	0.4+	1998 09 27	704	0.8−	0.0	2000 01 07	704	0.3+	0.5−
1998 09 16	699	0.5+	0.3−	1998 09 27	704	1.1+	0.5+	2000 01 07	704	0.7+	0.4−
1998 09 18	704	0.3+	0.2−	1998 09 27	704	0.7−	0.3+	2000 01 07	704	0.9+	0.1+
1998 09 18	704	0.3−	0.9−	1998 09 27	704	0.6+	0.1+	2000 01 11	704	0.2−	0.7+
1998 09 18	704	0.9−	0.3+	1998 09 29	327	1.1+	0.3+	2000 01 11	704	0.5+	0.1+
1998 09 18	704	1.1−	0.7−	1998 09 29	327	1.3+	0.4+	2000 01 11	704	0.9−	0.1+
1998 09 18	704	0.8+	0.1+	1998 09 29	327	1.6+	0.6+	2000 01 11	704	1.3−	0.2−
1998 09 26	704	0.3+	0.8+	1998 09 30	327	1.6−	0.6+				
1998 09 26	704	0.4+	0.3−	1998 09 30	327	1.5−	0.2+				

1998 SY₆₃ = 1979 HF₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	325.97684		(2000.0)	P	Q
<i>n</i>	0.27980142	ω	145.78527	−0.93690526	+0.33545268
<i>a</i>	2.3150983	Ω	54.11665	−0.34171967	−0.81945206
<i>e</i>	0.0938310	<i>i</i>	6.97486	−0.07373059	−0.46472554
<i>P</i>	3.52	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1979 04 20	095	0.5+	0.9+	1998 10 28	704	0.2+	0.6+	1999 01 11	704	0.1−	0.2−
1998 09 18	699	0.1+	0.9+	1998 10 29	704	0.2−	0.1−	1999 01 11	704	0.9+	0.4−
1998 09 18	699	0.3−	0.8+	1998 10 29	704	0.1−	0.8−	1999 01 11	704	0.2−	0.3−
1998 09 18	699	0.0	0.4+	1998 10 29	704	0.3+	0.3+	1999 01 11	704	0.4−	0.6−
1998 09 20	809	0.1+	1.8+	1998 10 29	704	0.3+	1.1+	1999 11 09	699	1.0+	1.8+
1998 09 20	809	0.6−	1.4+	1998 10 29	704	1.6+	0.0	1999 11 09	699	0.6+	0.6+
1998 09 20	809	0.7−	1.1+	1998 11 10	704	0.3−	0.6−	1999 11 09	699	0.7+	0.0
1998 09 21	809	0.5−	0.0	1998 11 10	704	0.1−	1.0−	1999 12 17	699	0.0	0.2+
1998 09 21	809	0.5−	0.7−	1998 11 10	704	0.9−	0.8−	1999 12 17	699	0.4−	1.0+
1998 09 21	809	1.1−	0.5−	1998 11 10	704	0.3−	0.2−	1999 12 17	699	0.5−	0.8+
1998 09 21	809	(0.4+	2.4+)	1998 11 11	704	0.4+	0.4−	2000 01 07	704	0.5−	0.5−
1998 09 21	809	(0.4+	2.9+)	1998 11 11	704	0.8−	0.2+	2000 01 07	704	0.1−	0.6−
1998 09 21	809	(0.0	2.6+)	1998 11 11	704	0.9−	0.1−	2000 01 07	704	0.0	0.7−
1998 09 23	809	1.7+	0.1−	1998 11 11	704	0.5−	0.6+	2000 01 07	704	0.3+	0.7−
1998 09 23	809	1.7+	0.5−	1998 11 11	704	0.9−	0.3+	2000 01 07	704	0.9+	0.3−
1998 09 23	809	1.3+	0.1−	1998 11 14	699	0.2−	0.1−	2000 01 10	699	0.4−	0.0
1998 10 28	704	0.0	0.9−	1998 11 14	699	0.3−	0.0	2000 01 10	699	0.5−	0.0
1998 10 28	704	0.7+	0.4−	1998 11 14	699	0.5−	0.2−	2000 01 10	699	0.4−	0.1−
1998 10 28	704	0.1+	0.2−	1999 01 11	704	0.7+	0.1−				

1998 SM₆₄ = 2000 AA₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.17558525	ω	280.40889	−0.31245959	−0.94840797				
<i>a</i>	3.1584744	Ω	188.40755	+0.94976913	−0.31086032				
<i>e</i>	0.2781695	<i>i</i>	21.57735	+0.01753871	−0.06235524				
<i>P</i>	5.61	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 09 18	699	(1.4− 2.7−)	1998 10 17	699	0.4− 0.5+	2000 01 10	704	0.9+ 0.3−	
1998 09 18	699	1.5− 1.7−	1998 10 17	699	0.4− 0.1+	2000 01 10	704	0.1+ 1.0+	
1998 09 18	699	1.1− 1.1−	1998 10 20	699	0.1− 0.4−	2000 01 10	704	0.2− 0.1+	
1998 09 20	809	0.2+ 0.1+	1998 10 20	699	1.0− 0.5+	2000 01 10	704	0.1− 0.1−	
1998 09 20	809	0.4+ 0.3−	1998 10 20	699	0.2− 0.6+	2000 01 11	704	0.9− 0.8−	
1998 09 20	809	0.2+ 0.6−	1998 11 13	704	(2.5+ 1.4−)	2000 01 11	704	0.2− 0.4−	
1998 09 21	809	1.5+ 0.0	1998 11 13	704	(3.0+ 1.2−)	2000 01 11	704	0.0 0.8−	
1998 09 21	809	1.3+ 1.5+	1998 11 13	704	0.9+ 0.5+	2000 01 11	704	0.1− 0.9+	
1998 09 21	809	0.5+ 1.5+	1998 11 13	704	0.1− 0.8−	2000 01 11	704	0.6+ 0.4+	
1998 10 17	699	0.1− 0.2+	1998 11 13	704	0.2+ 0.7−				

1998 SB₆₅ = 1999 XF₁₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.24007805	ω	151.08441	−0.82656052	+0.54692993				
<i>a</i>	2.5639000	Ω	62.67329	−0.54089452	−0.70654959				
<i>e</i>	0.1457106	<i>i</i>	8.60413	−0.15566252	−0.44906049				
<i>P</i>	4.11	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 09 18	699	1.1− 1.3+	1998 10 29	704	0.4+ 0.1−	1999 12 10	704	1.1+ 0.7+	
1998 09 18	699	0.4+ 0.7+	1998 10 29	704	0.6− 1.3+	1999 12 10	704	0.2− 0.3+	
1998 09 18	699	0.2− 0.6+	1998 11 10	704	0.2− 1.0−	1999 12 15	704	0.0 0.3+	
1998 09 20	809	(0.8+ 3.4+)	1998 11 10	704	0.2− 1.0+	1999 12 15	704	0.0 0.2−	
1998 09 20	809	(0.7+ 3.7+)	1998 11 10	704	0.3− 0.9−	1999 12 15	704	0.5− 0.1−	
1998 09 20	809	(0.3+ 2.4+)	1998 11 10	704	0.2− 0.9−	1999 12 15	704	0.4− 0.1−	
1998 09 21	809	(2.4+ 3.3+)	1998 11 11	704	0.3− 1.2−	1999 12 15	704	0.2− 0.6+	
1998 09 21	809	(1.5+ 2.9+)	1998 11 11	704	1.5+ 0.3+	2000 01 02	704	0.2− 0.1−	
1998 09 21	809	(0.5+ 2.4+)	1998 11 11	704	1.3− 1.0−	2000 01 02	704	0.1+ 0.8−	
1998 10 28	704	1.4+ 1.6+	1998 11 11	704	0.3+ 1.4−	2000 01 02	704	0.5+ 0.2+	
1998 10 28	704	0.6+ 0.3−	1999 01 09	910	0.1− 0.7+	2000 01 02	704	0.7+ 0.4+	
1998 10 28	704	0.9+ 0.5−	1999 01 09	910	0.3− 0.6+	2000 01 08	106	0.1+ 0.7−	
1998 10 28	704	0.6+ 0.2+	1999 01 09	910	0.1+ 0.6+	2000 01 08	106	0.0 0.1−	
1998 10 29	704	0.2− 0.5+	1999 12 10	704	0.5− 0.3−	2000 01 08	106	0.3− 0.3+	
1998 10 29	704	0.3+ 0.9−	1999 12 10	704	0.1+ 0.2−				
1998 10 29	704	1.8− 0.5−	1999 12 10	704	0.3− 0.1+				

1998 SU₆₅ = 2000 AM₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.29663734	ω	119.82554	−0.93256493	+0.35194810				
<i>a</i>	2.2266511	Ω	80.88069	−0.35289939	−0.84187932				
<i>e</i>	0.1494932	<i>i</i>	4.66747	−0.07605701	−0.40911093				
<i>P</i>	3.32	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 09 20	809	0.3+ 1.9+	1998 10 29	704	0.9+ 0.0	1999 01 05	910	0.1+ 0.1−	
1998 09 20	809	0.1+ 1.3+	1998 10 29	704	1.1− 0.4−	2000 01 04	704	0.1− 0.1+	
1998 09 20	809	1.1− 0.9+	1998 10 29	704	0.1+ 0.8−	2000 01 04	704	0.2+ 0.4−	
1998 09 21	809	(0.4− 2.6+)	1998 10 29	704	0.6+ 0.6+	2000 01 04	704	0.9+ 0.1+	
1998 09 21	809	(0.0 2.5+)	1998 11 10	704	0.5− 0.5−	2000 01 04	704	0.5− 0.1+	
1998 09 21	809	(1.0− 2.4+)	1998 11 10	704	0.1+ 0.4−	2000 01 04	704	0.5+ 0.1+	
1998 10 11	699	1.2+ 1.1−	1998 11 10	704	0.8+ 0.5+	2000 01 08	704	0.2− 0.3+	
1998 10 11	699	1.0− 0.3−	1998 11 10	704	0.1− 0.1+	2000 01 08	704	0.4+ 0.2−	
1998 10 11	699	0.0 0.4−	1998 11 11	704	0.1+ 0.2+	2000 01 08	704	0.2+ 0.3−	
1998 10 28	704	0.6− 0.1+	1998 11 11	704	0.6+ 0.4−	2000 01 08	704	0.3+ 0.4+	

1998 10 28	704	0.4− 0.4−	1998 11 11	704	0.2+ 0.8+	2000 01 08	704	0.3+ 0.1−	
1998 10 28	704	0.8+ 0.9−	1998 11 11	704	1.5− 0.3−	2000 01 10	699	0.4− 0.1+	
1998 10 28	704	(2.2− 1.1−)	1999 01 05	910	0.2+ 0.4−	2000 01 10	699	0.9− 0.3−	
1998 10 29	704	0.2+ 0.6+	1999 01 05	910	0.0 0.0	2000 01 10	699	0.4− 0.7+	

1998 SA₆₆ = 2000 AB₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.27941990	ω	173.13516	+0.60496329	+0.79452022				
<i>a</i>	2.3172052	Ω	134.07452	−0.73397911	+0.58200121				
<i>e</i>	0.2349045	<i>i</i>	4.19125	−0.30869741	+0.17324030				
<i>P</i>	3.53	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc									
1998 09 18	699	1.5− 1.5+	1998 10 20	699	0.7− 0.6−	1998 11 11	704	(2.5+ 1.4+)	
1998 09 18	699	1.2+ 0.0	1998 10 20	699	1.3− 0.3+	1998 11 11	704	0.2+ 0.5−	
1998 09 18	699	0.0 0.5−	1998 10 28	704	0.9+ 0.1+	2000 01 02	691	0.0 0.3+	
1998 09 20	809	1.4+ 0.3+	1998 10 28	704	0.7+ 0.2+	2000 01 02	691	0.2− 0.3+	
1998 09 20	809	0.5+ 0.4−	1998 10 28	704	1.6+ 0.3+	2000 01 02	691	0.1− 0.4+	
1998 09 20	809	0.6+ 0.6+	1998 10 28	704	0.9− 0.5+	2000 01 03	691	0.2− 1.0−	
1998 09 21	809	0.0 0.3−	1998 10 29	704	0.5+ 0.5+	2000 01 03	691	0.4− 1.3−	
1998 09 21	809	0.6− 0.2+	1998 10 29	704	0.4− 0.2−	2000 01 03	691	0.1+ 0.2+	
1998 09 21	809	1.1− 1.2−	1998 10 29	704	0.1+ 0.7−	2000 01 16	691	0.4+ 0.5+	
1998 10 11	699	0.3+ 0.8+	1998 10 29	704	0.6+ 0.1−	2000 01 16	691	0.2+ 0.4+	
1998 10 11	699	0.3+ 0.1−	1998 10 29	704	0.9− 0.4−	2000 01 16	691	0.1+ 0.3+	
1998 10 11	699	0.0 0.6−	1998 11 11	704	0.2− 0.8+				
1998 10 20	699	1.7− 0.4−	1998 11 11	704	0.4+ 0.0				

1998 SE₆₆ = 1999 XJ₁₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.26567125	ω	258.51151	+0.48601772	+0.86457073				
<i>a</i>	2.3964756	Ω	41.37079	−0.70748318	+0.47499731				
<i>e</i>	0.1409229	<i>i</i>	11.13928	−0.51308316	+0.16399698				
<i>P</i>	3.71	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4		
Residuals in seconds of arc									
1998 09 20	809	1.3+ 0.3−	1998 10 29	704	0.4− 0.5−	1999 01 08	704	(1.1+ 3.1−)	
1998 09 20	809	0.4+ 0.1+	1998 10 29	704	0.5− 0.3−	1999 01 08	704	(2.5+ 3.7−)	
1998 09 20	809	0.1+ 0.1−	1998 11 10	704	0.4+ 0.5+	1999 12 10	704	1.6− 0.1−	
1998 09 21	809	0.4+ 0.8−	1998 11 10	704	1.2− 0.7+	1999 12 10	704	0.1− 0.2+	
1998 09 21	809	0.2+ 0.5−	1998 11 10	704	0.0 0.9+	1999 12 10	704	0.3− 0.4+	
1998 09 21	809	0.1− 0.0	1998 11 10	704	0.3− 1.1+	1999 12 10	704	0.7− 0.2+	
1998 10 11	699	1.3− 0.0	1998 11 11	704	1.3+ 1.0+	1999 12 15	704	0.1− 1.1−	
1998 10 11	699	0.9− 0.2−	1998 11 11	704	0.4− 0.2−	1999 12 15	704	0.9+ 0.5−	
1998 10 11	699	1.0− 0.1−	1998 11 11	704	1.5+ 0.2+	1999 12 15	704	0.1+ 0.5−	
1998 10 28	704	0.0 0.1−	1998 11 11	704	1.4− 0.9+	1999 12 15	704	0.2+ 0.1+	
1998 10 28	704	0.1− 0.6−	1998 11 11	704	1.2+ 0.3−	2000 01 02	704	0.1+ 0.1+	
1998 10 28	704	0.0 0.1−	1998 11 16	566	0.6+ 0.1−	2000 01 02	704	0.2+ 0.5+	
1998 10 28	704	0.2+ 0.6−	1998 11 16	566	0.4+ 0.0	2000 01 02	704	0.5+ 0.1+	
1998 10 29	704	0.0 0.3+	1998 11 16	566	0.8+ 0.1−	2000 01 02	704	0.7+ 0.4+	
1998 10 29	704	0.2+ 0.1+	1999 01 08	704	0.1− 0.2−	2000 01 02	704	0.5− 0.3−	
1998 10 29	704	0.7− 0.1−	1999 01 08	704	0.5− 0.8−				

1998 SJ₆₆ = 2000 AG₄₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	

2000 JAN. 24

M.P.C. 37775

1998 09 20	809	0.2+	0.3-	1998 10 29	704	0.0	0.4+	2000 01 05	143	0.3+	0.1+
1998 09 21	809	0.5+	1.0-	1998 11 11	704	0.4+	0.1+	2000 01 05	143	0.7+	0.1+
1998 09 21	809	0.7-	0.4-	1998 11 11	704	1.5+	0.6-	2000 01 05	143	0.5+	0.7-
1998 09 21	809	1.0-	0.7-	1998 11 11	704	0.7+	1.1+	2000 01 05	143	1.0+	0.4-
1998 10 20	699	0.4+	1.0-	1998 11 11	704	1.9-	1.5+	2000 01 05	143	0.9+	0.1-
1998 10 20	699	0.4-	0.1+	2000 01 03	143	0.8-	0.3+	2000 01 06	704	0.6-	0.1+
1998 10 20	699	0.2+	0.2-	2000 01 04	143	0.0	0.3-	2000 01 06	704	0.6+	0.7+
1998 10 28	704	0.5-	0.2-	2000 01 05	704	0.2-	0.3+	2000 01 06	704	0.3-	0.5-
1998 10 28	704	0.5+	0.0	2000 01 05	704	0.3+	0.2-	2000 01 07	691	1.3-	0.2+
1998 10 28	704	1.0-	0.0	2000 01 05	704	0.4-	0.0	2000 01 07	691	1.0-	0.0
1998 10 28	704	0.8+	0.1+	2000 01 05	704	0.5-	0.4-	2000 01 07	691	0.9-	0.1+

1998 SE₆₇ = 2000 AF₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	179.58180	(2000.0)		P		Q	
<i>n</i>	0.26661869	ω	207.48483	+0.78632972		+0.61285821	
<i>a</i>	2.3907949	Ω	114.50273	-0.54991771		+0.75188406	
<i>e</i>	0.1881345	<i>i</i>	4.92000	-0.28156008		+0.24305386	
<i>P</i>	3.70	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 20	809	1.2+	0.1-	1998 10 28	704	0.0	0.6+	1998 11 11	704	0.9-	0.3-
1998 09 20	809	0.4+	1.1-	1998 10 29	704	0.1+	0.9+	1998 11 11	704	0.2-	0.3+
1998 09 20	809	0.4-	0.3-	1998 10 29	704	0.3-	0.6+	1998 11 11	704	0.5-	0.1-
1998 09 21	809	0.4+	0.6-	1998 10 29	704	0.2-	0.8+	2000 01 04	704	0.8-	0.6-
1998 09 21	809	0.6-	0.5-	1998 10 29	704	0.3-	0.2+	2000 01 04	704	0.0	1.3-
1998 09 21	809	1.2-	0.0	1998 10 29	704	0.6-	0.6+	2000 01 04	704	0.6+	0.8+
1998 10 20	699	0.7+	0.3+	1998 11 10	704	1.1+	0.6+	2000 01 06	704	0.6-	0.2+
1998 10 20	699	0.4+	0.5+	1998 11 10	704	0.1+	1.0-	2000 01 06	704	1.0+	0.4-
1998 10 20	699	0.7+	0.1+	1998 11 10	704	0.2+	0.2-	2000 01 06	704	0.2-	0.5+
1998 10 28	704	0.1+	0.1-	1998 11 10	704	0.3-	0.3-	2000 01 06	704	0.2-	0.1+
1998 10 28	704	1.2+	1.0-	1998 11 11	704	0.8+	0.9+				
1998 10 28	704	0.4-	0.4-	1998 11 11	704	1.7-	0.7-				

1998 SB₇₁ = 1998 SE₁₆₂ = 1999 XT₁₉₇Id. G. V. Williams (d, *MPC* 33385; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	200.11586	(2000.0)		P		Q	
<i>n</i>	0.19094772	ω	238.84402	+0.04424977		+0.99355935	
<i>a</i>	2.9867100	Ω	34.17183	-0.84168964		+0.09332447	
<i>e</i>	0.0541360	<i>i</i>	10.70323	-0.53814543		-0.06426788	
<i>P</i>	5.16	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 18	699	0.4-	0.8-	1998 10 28	704	0.1-	0.1+	1998 11 11	704	0.7+	0.1+
1998 09 18	699	0.2+	0.8+	1998 10 28	704	0.6-	1.0+	1998 11 11	704	0.0	0.6+
1998 09 18	699	0.2+	0.3-	1998 10 28	704	0.0	0.4-	1998 11 11	704	0.1+	1.8-
1998 09 21	809	1.0+	1.7+	1998 10 28	704	1.0-	0.3+	1998 11 23	699	0.6-	0.2+
1998 09 21	809	0.5+	1.8+	1998 10 28	704	0.4-	1.7+	1998 11 23	699	0.6+	0.8+
1998 09 21	809	0.4+	1.4+	1998 10 29	704	0.5+	0.2-	1998 11 23	699	0.7+	1.1-
1998 09 23	809	(2.2-	3.0+)	1998 10 29	704	0.4-	0.9+	1999 12 12	704	0.1+	0.0
1998 09 23	809	(2.6-	3.0+)	1998 10 29	704	0.0	0.5+	1999 12 12	704	0.7-	1.2-
1998 09 23	809	(3.3-	3.7+)	1998 10 29	704	0.6-	0.5+	1999 12 12	704	0.7+	0.5-
1998 09 26	704	0.6+	0.8-	1998 10 29	704	0.2+	0.1-	1999 12 12	704	1.4-	0.3-
1998 09 26	704	0.9-	1.9-	1998 11 10	704	0.5+	0.4+	1999 12 12	704	0.0	0.1-
1998 09 26	704	0.2-	1.1-	1998 11 10	704	0.2+	1.1+	1999 12 15	704	0.6-	0.5-
1998 09 26	704	0.2-	0.9-	1998 11 10	704	1.6-	1.2-	1999 12 15	704	0.2-	0.2-
1998 09 27	704	0.4-	1.4-	1998 11 10	704	1.0-	0.5-	1999 12 15	704	0.3-	0.4-
1998 09 27	704	0.0	0.0	1998 11 10	704	1.2-	0.0	1999 12 15	704	0.2+	0.3+
1998 09 27	704	0.4+	0.2-	1998 11 10	699	0.6-	0.2+	1999 12 15	704	0.2+	0.1+
1998 09 27	704	0.6-	0.5-	1998 11 10	699	1.2+	0.0	2000 01 02	704	0.6+	0.8+
1998 10 11	699	0.4+	0.2+	1998 11 10	699	0.0	0.6+	2000 01 02	704	0.5+	0.5+
1998 10 11	699	0.2+	0.1-	1998 11 11	704	0.8+	1.2-	2000 01 02	704	0.8+	1.4+
1998 10 11	699	0.2+	0.2+	1998 11 11	704	1.1+	0.5-				

1998 SB₇₂ = 1998 SQ₁₄₁ = 1999 XK₁₅₁Id. G. V. Williams (d, *MPC* 33385; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	123.05652	(2000.0)		P		Q	
<i>n</i>	0.18025286	ω	254.77644	+0.93374781		+0.35506003	
<i>a</i>	3.1037110	Ω	84.40987	-0.30846990		+0.86238099	
<i>e</i>	0.1689275	<i>i</i>	2.60581	-0.18155258		+0.36087589	
<i>P</i>	5.47	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 21	809	(2.8+	5.8+)	1998 10 28	704	0.4+	0.6+	1999 12 07	691	1.0-	0.0
1998 09 21	809	(2.2+	5.7+)	1998 10 28	704	0.3-	0.6+	1999 12 07	691	0.8-	0.3-
1998 09 21	809	(1.9+	5.7+)	1998 10 28	704	0.1+	0.0	1999 12 14	691	0.3-	0.6+
1998 09 23	809	(2.3-	3.5+)	1998 10 28	704	0.2-	0.5-	1999 12 14	691	0.3-	0.2+
1998 09 23	809	(3.5-	3.3+)	1998 10 29	704	0.0	0.8+	1999 12 14	691	0.4-	0.2+
1998 09 23	809	(3.6-	3.8+)	1998 10 29	704	0.0	0.2+	1999 12 17	691	1.1+	0.5+
1998 09 26	704	0.8-	0.7-	1998 10 29	704	0.9+	0.7+	1999 12 17	691	1.0+	0.5+
1998 09 26	704	0.7+	1.9-	1998 10 29	704	0.5+	0.7-	1999 12 17	691	1.4+	0.3+
1998 09 26	704	0.0	0.7-	1998 10 29	704	0.3+	0.3-	1999 12 18	691	(2.2-	0.0)
1998 09 26	704	0.6+	0.6-	1998 11 10	704	1.1-	0.0	1999 12 18	691	(2.7-	0.5+)
1998 09 26	704	0.4-	1.2-	1998 11 10	704	1.4+	0.3+	1999 12 18	691	(2.3-	0.2+)
1998 09 27	704	1.2+	0.7-	1998 11 10	704	0.7-	1.7-	2000 01 03	704	(2.9-	0.5-)
1998 09 27	704	0.6+	0.7+	1998 11 10	704	0.4+	0.8+	2000 01 03	704	0.2-	0.6-
1998 09 27	704	0.7-	0.6+	1998 11 11	704	1.4-	1.3+	2000 01 03	704	0.8+	0.0
1998 09 27	704	0.9+	0.1+	1998 11 11	704	0.4-	0.6-	2000 01 08	704	1.0+	0.2-
1998 09 27	704	0.3-	1.1+	1998 11 11	704	0.6+	0.7+	2000 01 08	704	0.6-	0.3+
1998 10 11	699	0.6-	0.2+	1998 11 11	704	0.3-	0.3+	2000 01 08	704	0.5-	0.3-
1998 10 11	699	0.4-	0.1-	1998 11 11	704	0.7-	0.4-	2000 01 08	704	0.2-	0.7-
1998 10 11	699	0.2-	1.0+	1999 12 07	691	1.1-	0.1-	2000 01 08	704	0.2-	0.6-

1998 SB₇₄ = 2000 AF₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	52.61257	(2000.0)		P		Q	
<i>n</i>	0.18082494	ω	304.60196	+0.26045705		-0.96432068	
<i>a</i>	3.0971614	Ω	130.22887	+0.90490545		+0.22669963	
<i>e</i>	0.1547627	<i>i</i>	3.56028	+0.33661292		+0.13672199	
<i>P</i>	5.45	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 21	809	0.1-	0.3+	1998 11 10	704	(3.2+	2.9-)	2000 01 04	704	0.0	0.1+
1998 09 21	809	0.7-	0.1-	1998 11 10	704	1.4+	1.2-	2000 01 04	704	0.3+	0.1-
1998 09 21	809	0.3-	0.6+	1998 11 10	704	(0.4+	2.6-)	2000 01 04	704	0.2+	0.6+
1998 09 23	809	0.4+	0.4-	1998 11 10	704	0.7-	0.6+	2000 01 07	704	0.6+	0.2-
1998 09 23	809	0.2+	0.3+	1998 11 11	704	0.3-	0.8+	2000 01 07	704	0.9-	0.7-
1998 09 23	809	1.0-	0.4+	1998 11 11	704	0.4-	0.2-	2000 01 07	704	0.3+	0.6+
1998 10 20	699	0.9+	0.1-	1998 11 11	704	(0.6+	2.5-)	2000 01 07	704	0.3-	0.1+
1998 10 20	699	1.4+	0.0	1998 11 11	704	1.5-	0.7-	2000 01 07	704	0.2+	0.5+
1998 10 20	699	0.6+	0.2-	2000 01 04	704	0.4-	0.6-				

1998 SN₇₄ = 2000 AF₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	349.46422	(2000.0)		P		Q	
<i>n</i>	0.21841057	ω	50.66794	-0.83632680		-0.54190916	
<i>a</i>	2.7307814	Ω	96.36815	+0.47378583		-0.79061447	
<i>e</i>	0.0348203	<i>i</i>	4.79168	+0.27583414		-0.28506705	
<i>P</i>	4.51	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	1

1996 04 20	121	0.1−	0.3−	1998 09 23	809	0.4−	1.4−	1998 11 14	699	1.5+	0.7+
1996 04 20	121	0.4−	0.2−	1998 09 26	704	0.1+	0.4−	1998 11 14	699	0.0	0.6+
1996 04 20	121	0.1−	0.2+	1998 09 26	704	0.1+	0.1−	1998 11 14	699	0.2+	0.7+
1996 04 20	121	0.3−	0.0	1998 09 26	704	0.4+	0.1+	1999 12 28	652	0.8−	0.2+
1996 04 20	121	0.1+	0.0	1998 09 26	704	0.7+	0.2−	1999 12 28	652	0.0	0.5+
1996 04 20	121	0.1+	0.4+	1998 09 26	704	0.9+	0.6−	1999 12 28	652	0.8+	0.8+
1996 04 20	121	0.1−	0.4−	1998 09 27	704	0.4+	0.3+	2000 01 04	704	0.3−	1.0−
1996 04 20	121	0.1−	0.0	1998 09 27	704	0.5−	0.2+	2000 01 04	704	0.8−	0.3−
1996 04 20	121	0.4+	0.4−	1998 09 27	704	0.3+	0.2+	2000 01 04	704	0.2+	0.4−
1996 04 20	121	0.2−	0.4−	1998 09 27	704	1.3−	1.2−	2000 01 05	699	0.1+	0.2+
1996 04 20	121	0.4−	0.3−	1998 10 11	699	0.2−	0.2+	2000 01 05	699	0.8+	0.8+
1996 04 20	121	0.2−	0.2−	1998 10 11	699	0.0	1.0+	2000 01 05	699	0.2+	0.2+
1996 04 20	121	0.1−	0.4−	1998 10 11	699	0.4−	0.3−	2000 01 06	704	0.0	0.2−
1996 04 20	121	0.0	0.4+	1998 10 20	699	0.2−	0.1+	2000 01 06	704	0.5+	0.2−
1996 04 20	121	0.3−	0.0	1998 10 20	699	0.4+	0.3+	2000 01 06	704	0.1−	0.3−
1996 04 20	121	0.0	0.3−	1998 10 20	699	0.2+	0.1+	2000 01 06	704	0.1−	0.4+
1996 04 20	121	0.5−	0.3−	1998 11 10	704	1.2−	0.5−				
1998 09 18	699	0.1−	0.3−	1998 11 10	704	0.5−	0.1−				

1998 SU₇₄ = 1970 GB₁ = 2000 AW₁₅₉

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	287.88054		(2000.0)	P	Q
n	0.25823170	ω	155.17625	−0.76382872	+0.63900473
a	2.4422850	Ω	64.85052	−0.60764474	−0.66457207
e	0.1441297	i	5.75487	−0.21756276	−0.38732017
P	3.82	H	14.0	G 0.15	U 3

Residuals in seconds of arc

1970 04 10	805	0.2−	0.8−	1998 09 27	704	0.1+	1.2+	1998 11 11	704	1.1−	0.5−
1970 04 10	805	0.6−	0.5−	1998 09 27	704	0.5−	0.8+	1999 01 05	910	0.7−	0.4−
1970 04 10	805	0.1+	0.1−	1998 09 27	704	0.7−	0.0	1999 01 05	910	0.7−	0.6−
1998 09 18	699	0.1−	0.0	1998 09 27	704	0.1+	0.8−	1999 01 05	910	1.1−	0.2−
1998 09 18	699	0.0	1.1−	1998 10 11	699	0.8+	0.2+	1999 12 10	704	0.1+	1.8−
1998 09 18	699	0.4+	0.1+	1998 10 11	699	1.3+	0.5+	1999 12 10	704	0.7+	0.1−
1998 09 21	809	(2.6+	1.0+)	1998 10 11	699	0.5+	1.1+	1999 12 10	704	0.9+	1.0−
1998 09 21	809	(2.2+	0.2−)	1998 10 20	699	0.7+	0.5+	1999 12 10	704	0.1+	0.7−
1998 09 21	809	(2.5+	0.1−)	1998 10 20	699	0.3+	0.5+	2000 01 03	704	0.9+	0.5+
1998 09 23	809	(3.1+	1.0−)	1998 10 20	699	0.0	0.7+	2000 01 03	704	0.7−	0.4+
1998 09 23	809	1.9+	2.0−	1998 11 10	704	0.4−	1.6+	2000 01 03	704	1.4+	0.8+
1998 09 23	809	1.8+	1.6−	1998 11 10	704	0.3+	0.3+	2000 01 04	704	0.3−	1.0−
1998 09 26	704	0.4−	0.2−	1998 11 10	704	0.4−	1.2+	2000 01 04	704	1.4−	0.4+
1998 09 26	704	0.2+	0.1+	1998 11 10	704	1.3−	1.3−	2000 01 04	704	1.1−	0.2+
1998 09 26	704	0.2+	0.8−	1998 11 10	704	(2.3−	0.8−)	2000 01 04	704	0.1−	0.7+
1998 09 26	704	0.8+	0.5−	1998 11 11	704	1.1−	0.7+	2000 01 04	704	0.6−	0.3+
1998 09 26	704	0.4−	0.3+	1998 11 11	704	1.0−	0.6−				
1998 09 27	704	0.0	0.0	1998 11 11	704	0.5+	1.3−				

1998 SU₇₉ = 1983 VB₇ = 2000 AV₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	81.27071		(2000.0)	P	Q
n	0.19197140	ω	1.72690	+0.92539006	−0.37879042
a	2.9760829	Ω	20.54697	+0.34729229	+0.83360976
e	0.1132431	i	2.13554	+0.15179359	+0.40201069
P	5.13	H	14.8	G 0.15	U 4

Residuals in seconds of arc

1983 11 09	033	0.9+	0.2−	1998 10 18	910	0.2+	0.4+	2000 01 04	704	0.1+	0.4−
1983 11 10	033	0.6−	0.8−	1998 10 18	910	0.0	0.2+	2000 01 04	704	0.4−	0.2+
1998 09 26	704	0.3+	0.7−	1998 10 18	910	0.1+	0.5+	2000 01 04	704	0.5+	0.4−
1998 09 26	704	1.2−	0.7−	1998 10 22	910	0.3−	0.4+	2000 01 04	704	0.1−	0.0
1998 09 26	704	1.3+	0.4−	1998 10 22	910	0.6−	0.3+	2000 01 07	704	1.1−	0.1+
1998 09 26	704	0.1+	1.5−	1998 10 22	910	0.2−	0.0	2000 01 07	704	0.9−	0.5+
1998 09 26	704	1.4−	1.5+	2000 01 03	704	1.4+	0.5−	2000 01 07	704	0.6−	0.4+
1998 09 27	704	0.1−	0.5−	2000 01 03	704	0.7+	0.2+	2000 01 07	704	0.3+	0.0
1998 09 27	704	(2.6+	1.2+)	2000 01 03	704	0.4+	0.4+	2000 01 07	704	0.5+	0.4+

1998 09 27	704	1.3+	0.8+	2000 01 03	704	0.1−	0.2+
1998 09 27	704	0.0	0.3+	2000 01 04	704	0.7−	0.6−

1998 SQ₈₁ = 2000 AH₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	58.94353		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.20334640	ω	249.40684	+0.60361545	−0.79719306
a	2.8640355	Ω	163.44834	+0.74566294	+0.55938810
e	0.0581485	i	2.30793	+0.28219703	+0.22708628
P	4.85	H	14.1	G 0.15	U 4

Residuals in seconds of arc

1998 09 25	699	0.5−	0.9+	1998 10 10	610	(2.1−	1.9−)	1998 10 17	699	(2.6−	0.6−)
1998 09 25	699	0.5−	0.8+	1998 10 10	610	1.2−	1.9−	1998 10 20	610	0.5+	0.4+
1998 09 25	699	0.2−	0.1+	1998 10 10	610	0.6−	1.8−	1998 10 20	610	0.9−	0.6−
1998 09 26	704	0.2+	0.1−	1998 10 10	610	0.0	1.7−	1998 10 20	610	1.1−	0.6−
1998 09 26	704	0.5+	0.7−	1998 10 13	610	0.3+	1.0+	1998 10 20	610	1.6−	1.0−
1998 09 26	704	0.5−	0.4−	1998 10 13	610	0.5+	0.8+	1999 12 08	704	0.1−	1.1−
1998 09 26	704	1.0−	0.3−	1998 10 13	610	0.9+	0.7+	1999 12 08	704	0.3−	0.7−
1998 09 26	704	0.0	0.3−	1998 10 13	610	0.9+	0.6+	1999 12 08	704	0.3+	0.4−
1998 09 27	704	0.6−	0.7−	1998 10 13	610	1.2+	0.5+	1999 12 08	704	0.2+	0.0
1998 09 27	704	0.2−	0.6−	1998 10 13	610	1.4+	0.4+	1999 12 08	704	0.1+	0.6−
1998 09 27	704	0.6−	0.2+	1998 10 14	610	(2.9+	0.6−)	2000 01 05	704	0.0	0.3+
1998 09 27	704	0.2+	0.0	1998 10 14	610	1.6+	0.0	2000 01 05	704	0.2−	0.8+
1998 09 27	704	0.1−	0.3−	1998 10 14	610	0.2+	0.7+	2000 01 05	704	0.2+	0.1+
1998 09 28	610	0.4+	0.9+	1998 10 14	610	1.0−	1.3+	2000 01 05	704	0.3+	0.2+
1998 09 28	610	0.4+	0.8+	1998 10 15	610	(3.2−	0.6+)	2000 01 05	704	0.2−	0.0
1998 09 28	610	0.5+	0.6+	1998 10 15	610	0.1−	0.1−	2000 01 06	704	0.0	0.5+
1998 09 28	610	0.4+	0.4+	1998 10 15	610	(3.1+	1.0−)	2000 01 06	704	0.0	0.3+
1998 09 28	610	0.4+	0.2+	1998 10 17	699	(4.6−	1.0−)	2000 01 06	704	0.4−	0.6+
1998 10 10	610	(3.2−	2.1−)	1998 10 17	699	(3.1−	1.2+)				

1998 SA₁₀₁ = 1991 OW₁ = 1999 XB₂₂₃

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	256.65035		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.30166495	ω	268.52517	-0.33989305	$+0.93985476$		
a	2.2018420	Ω	341.49420	-0.81489089	-0.31228639		
e	0.2031986	i	6.12187	-0.46949501	-0.13838436		
P	3.27	H	14.5	G	0.15	U	3

Residuals in seconds of arc

1991 07 17	675	0.1+	1.0+	1998 09 27	704	1.0−	0.2+	1999 12 15	704	0.7+	1.1+
1991 07 17	675	0.2−	0.7−	1998 10 11	699	0.9+	0.2−	1999 12 15	704	0.3+	0.4−
1998 09 17	699	0.1−	0.1+	1998 10 11	699	0.5+	0.3+	1999 12 15	704	0.2−	0.2+
1998 09 17	699	0.6−	0.2−	1998 10 11	699	0.4−	0.3+	1999 12 16	704	0.1+	0.2−
1998 09 17	699	1.1−	0.7−	1998 10 14	699	1.0+	1.2+	1999 12 16	704	0.3+	0.5−
1998 09 25	699	0.1−	0.6+	1998 10 14	699	0.9+	0.9+	1999 12 16	704	0.7+	0.5−
1998 09 25	699	0.4+	0.3+	1998 10 14	699	0.7+	1.0+	2000 01 03	704	1.2−	0.5−
1998 09 25	699	0.2−	0.8−	1998 10 28	704	0.6−	1.2+	2000 01 03	704	0.4+	0.3−
1998 09 26	704	0.1+	0.2−	1998 10 28	704	0.2−	0.5−	2000 01 03	704	1.1−	0.0
1998 09 26	704	0.1+	0.6−	1998 10 28	704	0.3+	0.3+	2000 01 03	704	0.5−	0.9+
1998 09 26	704	0.4−	0.6−	1998 10 28	704	0.7−	0.3−	2000 01 03	704	0.4−	0.2+
1998 09 26	704	0.0	1.1−	1998 10 29	704	0.9+	0.1+	2000 01 03	704	0.5−	0.1−
1998 09 26	704	0.2+	0.5−	1998 10 29	704	0.6+	1.1−	2000 01 04	704	0.3−	0.2+
1998 09 27	704	0.2−	0.1−	1998 10 29	704	(0.9+	2.2−)	2000 01 04	704	0.5+	0.2−
1998 09 27	704	0.2−	0.4−	1998 10 29	704	0.5−	0.5−	2000 01 04	704	0.2+	0.1−
1998 09 27	704	0.9+	0.7+	1999 12 15	704	0.1+	0.2+	2000 01 04	704	0.5+	0.2−
1998 09 27	704	1.2−	0.4+	1999 12 15	704	0.7+	0.3+	2000 01 04	704	0.0	0.1+

2000 JAN. 24

M.P.C. 37777

1998 SH₁₀₅ = 2000 AW₁₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	335.56550		(2000.0)	P		Q	
<i>n</i>	0.30878141	ω	53.62937	-0.97854398	+0.19822955		
<i>a</i>	2.1678802	Ω	137.72262	-0.20543375	-0.91782719		
<i>e</i>	0.0701301	<i>i</i>	4.79085	-0.01576896	-0.34394519		
<i>P</i>	3.19	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 26	704	0.9-	0.6+	1998 10 28	704	0.6+	1.4-
1998 09 26	704	0.2-	0.5+	1998 10 28	704	0.6+	1.5-
1998 09 26	704	1.1+	0.2-	1998 10 29	704	0.5+	1.7+
1998 09 26	704	2.0+	0.7-	1998 10 29	704	1.7-	1.1+
1998 09 26	704	0.6+	1.5-	1998 10 29	704	0.6+	0.3+
1998 09 27	704	0.3-	0.5+	1998 10 29	704	1.7-	0.1-
1998 09 27	704	0.2+	1.2+	1998 12 09	327	0.7-	0.4-
1998 09 27	704	0.4-	0.7+	1999 12 09	327	0.5-	0.5-
1998 09 27	704	0.1-	0.2+	1999 12 09	327	0.3+	0.1-
1998 09 27	704	1.5-	1.7-	1999 12 15	327	(2.9-	0.1+)
1998 10 28	704	0.1-	1.9-	1999 12 15	327	(3.2-	0.1-)
1998 10 28	704	0.2+	1.2+	1999 12 15	327	(2.7-	0.0)
1998 10 28	704	0.3+	0.9+	2000 01 04	704	0.6+	0.8-
						2000 01 13	120
						2000 01 13	120

1998 SH₁₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	107.91254		(2000.0)	P		Q	
<i>n</i>	0.17301301	ω	320.33833	+0.95141588	+0.29814585		
<i>a</i>	3.1897027	Ω	22.67330	-0.20653857	+0.80323374		
<i>e</i>	0.1975505	<i>i</i>	11.51058	-0.22836298	+0.51567878		
<i>P</i>	5.70	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1996 03 26	566	0.1+	0.2+	1998 10 19	699	0.2+	0.3+
1996 03 26	566	0.1+	0.2+	1998 10 19	699	0.0	0.1+
1996 03 26	566	0.6+	0.2+	1998 10 28	704	0.6+	1.0+
1998 09 17	699	0.0	0.2-	1998 10 28	704	(2.6-	0.1+)
1998 09 17	699	0.2+	0.0	1998 10 28	704	0.3+	0.3+
1998 09 17	699	0.1+	0.2-	1998 10 28	704	0.5-	0.2+
1998 09 26	704	0.2+	0.1-	1998 10 28	704	0.5-	0.1-
1998 09 26	704	1.3-	0.7-	1998 10 29	704	0.3+	0.2-
1998 09 26	704	0.4+	0.6+	1998 10 29	704	0.5+	0.2-
1998 09 26	704	0.5+	0.6-	1998 10 29	704	0.6+	0.1-
1998 09 26	704	1.1+	0.7-	1998 10 29	704	0.3-	0.4-
1998 09 27	704	0.6-	0.6+	1998 10 29	704	0.0	0.5-
1998 09 27	704	0.0	0.8+	1998 12 24	699	0.8-	0.5-
1998 09 27	704	0.6-	0.6+	1998 12 24	699	0.0	0.3+
1998 09 27	704	0.8-	0.0	1998 12 24	699	0.6-	0.8+
1998 09 27	704	0.0	0.4-	1999 12 03	699	0.3-	0.8+
1998 10 14	699	0.2+	0.2-	1999 12 03	699	0.7+	0.6+
1998 10 14	699	0.0	0.2-	1999 12 03	699	0.5-	1.5+
1998 10 14	699	0.2-	0.1-	1999 12 12	704	0.1+	0.5+
1998 10 19	699	0.1+	0.2+	1999 12 12	704	0.3+	0.1+

1998 SR₁₀₇ = 2000 AL₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	344.09408		(2000.0)	P		Q	
<i>n</i>	0.28716906	ω	187.68139	-0.99985291	-0.01370907		
<i>a</i>	2.2753294	Ω	351.51265	+0.01691425	-0.88766860		
<i>e</i>	0.0878259	<i>i</i>	4.00421	-0.00284000	-0.46027874		
<i>P</i>	3.43	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 15	699	0.8-	0.1+	1998 10 11	699	0.3+	0.5+
1998 09 15	699	0.1+	0.8+	1998 10 11	699	0.5+	0.5+
1998 09 15	699	0.2+	0.8+	1998 10 28	704	0.3+	0.1-
						2000 01 04	704
						2000 01 04	704

1998 09 26	704	0.0	0.5-	1998 10 28	704	2.0-	0.8-	2000 01 04	704	0.4-	0.3+
1998 09 26	704	0.2-	0.3-	1998 10 28	704	0.2+	1.4-	2000 01 04	704	0.2-	0.4-
1998 09 26	704	0.4-	0.0	1998 10 28	704	1.7-	0.4+	2000 01 07	704	0.1+	0.1+
1998 09 26	704	0.6-	0.5-	1998 10 28	704	(4.1-	0.2-)	2000 01 07	704	0.5+	0.6+
1998 09 26	704	0.4-	1.3-	1998 10 29	704	(3.6-	2.7+)	2000 01 07	704	0.0	0.3+
1998 09 27	704	0.7+	0.2-	1998 10 29	704	(4.2-	2.8+)	2000 01 07	704	0.1+	0.7+
1998 09 27	704	0.0	0.6+	1998 10 29	704	(5.3-	2.5+)	2000 01 07	704	0.4+	0.3-
1998 09 27	704	1.4+	0.8+	1998 10 29	704	(4.1-	0.2+)	2000 01 10	699	0.3-	0.1-
1998 09 27	704	0.1-	0.0	1998 10 29	704	(6.4-	2.0+)	2000 01 10	699	0.1-	0.1+
1998 09 27	704	0.2-	1.1-	1998 11 10	699	1.5+	1.0+	2000 01 10	699	0.8+	0.7-
1998 10 11	699	0.5+	0.5+	1998 11 10	699	(2.0+	0.7+)				

1998 SX₁₀₇ = 2000 AJ₁₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	88.15335		(2000.0)	P		Q	
<i>n</i>	0.21144685	ω	44.19532	+0.79530477	-0.60607236		
<i>a</i>	2.7904135	Ω	353.07495	+0.52227050	+0.69583709		
<i>e</i>	0.0703742	<i>i</i>	6.14555	+0.30777239	+0.38534016		
<i>P</i>	4.66	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 15	699	0.0	0.1-	1998 09 27	704	0.2+	0.7-
1998 09 15	699	0.6-	1.5+	1998 09 27	704	0.3+	0.6-
1998 09 15	699	0.3-	1.0+	1998 10 28	704	0.2+	0.8-
1998 09 26	704	0.2-	0.0	1998 10 28	704	0.3+	1.7-
1998 09 26	704	0.2-	0.8-	1998 10 28	704	0.4-	0.2-
1998 09 26	704	0.8-	0.3-	1998 10 28	704	0.0	0.2-
1998 09 26	704	0.6-	0.6-	1998 10 29	704	0.5+	0.5-
1998 09 26	704	0.2+	0.3-	1998 10 29	704	0.3-	1.5+
1998 09 27	704	0.2+	0.1+	1998 10 29	704	1.5-	1.4+
1998 09 27	704	0.6+	0.9+	1998 10 29	704	0.1+	1.4+
1998 09 27	704	1.6+	0.9-	1998 10 29	704	0.4+	0.0

1998 SQ₁₀₈ = 1999 XO₁₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	150.95831		(2000.0)	P		Q	
<i>n</i>	0.17610423	ω	328.37222	+0.47351676	+0.87986566		
<i>a</i>	3.1522660	Ω	329.83560	-0.79048604	+0.40438360		
<i>e</i>	0.1557649	<i>i</i>	4.59193	-0.38847612	+0.24962034		
<i>P</i>	5.60	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1996 03 26	566	0.6-	0.5-	1998 10 28	704	0.6+	0.3+
1996 03 26	566	0.1+	0.4-	1998 10 28	704	0.6+	0.0
1996 03 26	566	0.3-	0.6-	1998 10 28	704	0.2-	0.1+
1998 09 17	699	0.4+	0.0	1998 10 28	704	0.3+	0.1-
1998 09 17	699	0.1+	0.5+	1998 10 29	704	0.4+	0.1+
1998 09 17	699	0.0	0.1+	1998 10 29	704	0.1-	0.1-
1998 09 26	704	0.6+	0.1-	1998 10 29	704	0.8-	0.1-
1998 09 26	704	0.8-	1.1-	1998 10 29	704	0.3-	0.5-
1998 09 26	704	0.6-	0.2-	1998 10 29	704	0.7-	0.8-
1998 09 26	704	0.5-	1.2-	1998 11 10	699	0.5+	0.4+
1998 09 26	704	0.3+	0.4-	1998 11 10	699	0.7+	0.5+
1998 09 27	704	0.3-	0.6-	1998 11 10	699	1.1+	1.7+
1998 09 27	704	0.8-	0.2-	1999 11 14	704	0.6+	0.1+
1998 09 27	704	0.2+	0.0	1999 11 14	704	0.1-	0.2+
1998 09 27	704	0.6-	0.5-	1999 11 14	704	0.0	0.4-
1998 09 27	704	0.6-	0.0	1999 11 14	704	0.0	0.1+
1998 10 11	699	0.0	0.0	1999 11 14	704	0.0	0.2+
1998 10 11	699	0.3+	0.4+	1999 11 16	704	0.2-	0.0
1998 10 11	699	0.1-	0.3+	1999 11 16	704	0.2+	0.2+
1998 10 28	704	0.9+	0.2+	1999 11 16	704	0.2-	0.4-

1998 SQ₁₁₀ = 2000 AO₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	232.32231		(2000.0)	P		Q	
<i>n</i>	0.30651231	ω	286.67714	+0.17636224	+0.98426461		
<i>a</i>	2.1785662	Ω	353.45152	-0.86263117	+0.14919889		
<i>e</i>	0.1670838	<i>i</i>	5.50134	-0.47409263	+0.09467242		
<i>P</i>	3.22	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.2-	1.1-	1998 09 27	704	0.5+	0.3+	2000 01 04	704	0.1+	0.8-
1998 09 26	704	0.5-	0.6-	1998 10 28	704	1.3+	0.0	2000 01 04	704	0.5+	0.1+
1998 09 26	704	1.3+	0.6-	1998 10 28	704	0.4-	0.4-	2000 01 04	704	0.5-	0.2-
1998 09 26	704	1.7-	0.6-	1998 10 28	704	0.1-	0.2+	2000 01 04	704	0.3-	0.5+
1998 09 26	704	0.4-	0.0	1998 10 28	704	0.7+	0.2+	2000 01 06	704	0.5+	0.6-
1998 09 27	704	0.6+	0.2-	1998 10 29	704	0.9-	0.5-	2000 01 06	704	0.3-	0.9+
1998 09 27	704	1.0+	0.8+	1998 10 29	704	0.7-	0.4+	2000 01 06	704	0.5+	0.5-
1998 09 27	704	0.2-	1.3+	1998 10 29	704	(0.9+	3.1+)	2000 01 06	704	0.1-	0.6+
1998 09 27	704	0.3-	0.8+	2000 01 04	704	0.3-	0.0				

1998 SF₁₁₁ = 2000 AC₂₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	152.49981		(2000.0)	P		Q	
<i>n</i>	0.26853312	ω	112.30396	+0.97786359	+0.20861435		
<i>a</i>	2.3794184	Ω	235.65842	-0.19847819	+0.90023374		
<i>e</i>	0.2401441	<i>i</i>	1.12507	-0.06625102	+0.38217700		
<i>P</i>	3.67	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 15	699	0.5+	0.6+	1998 10 10	699	0.4+	0.1+	1999 01 15	691	0.4+	0.0
1998 09 15	699	0.4+	0.1+	1998 10 15	327	0.2-	0.2+	1999 01 15	691	0.5+	0.0
1998 09 15	699	0.1+	0.4+	1998 10 15	327	0.2-	0.2+	1999 01 15	691	0.1-	0.3-
1998 09 26	704	0.0	1.0-	1998 10 15	327	0.1-	0.1+	1999 01 19	691	0.2+	0.1+
1998 09 26	704	0.3-	0.6-	1998 10 18	327	0.2-	0.2-	1999 01 19	691	0.2+	0.4-
1998 09 26	704	0.1-	0.2-	1998 10 18	327	0.0	0.0	1999 01 19	691	0.2+	0.0
1998 09 27	704	0.3+	0.2-	1998 10 18	327	0.0	0.1+	2000 01 08	691	0.3-	0.4-
1998 09 27	704	0.5-	0.3-	1998 11 10	699	0.3+	0.9+	2000 01 08	691	0.4-	0.3-
1998 09 27	704	0.1-	0.9-	1998 11 10	699	0.0	0.5+	2000 01 08	691	0.5-	0.0
1998 09 27	704	0.5+	0.9-	1998 11 10	699	(2.3-	1.2+)	2000 01 10	691	0.2-	0.0
1998 09 27	704	0.6-	0.7-	1998 11 23	699	1.3-	0.8+	2000 01 10	691	0.4+	0.1-
1998 10 10	699	0.8+	0.6+	1998 11 23	699	1.0-	0.3-	2000 01 10	691	0.5+	0.3-
1998 10 10	699	0.8+	1.0+	1998 11 23	699	0.6-	0.1-				

1998 SA₁₁₂ = 2000 AN₁₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	37.99988		(2000.0)	P		Q	
<i>n</i>	0.17465230	ω	281.75052	+0.21019046	-0.97673617		
<i>a</i>	3.1697123	Ω	155.98824	+0.93274186	+0.18731774		
<i>e</i>	0.1368267	<i>i</i>	5.99531	+0.29293786	+0.10439595		
<i>P</i>	5.64	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 17	699	0.1-	0.9-	1998 10 17	699	0.1-	0.3-	1999 12 14	703	0.1+	0.2-
1998 09 17	699	0.2-	1.5-	1998 10 19	699	0.5-	0.3+	1999 12 31	699	0.4-	0.3+
1998 09 17	699	0.3-	1.1-	1998 10 19	699	0.1-	0.1+	1999 12 31	699	0.1+	0.2+
1998 09 26	704	0.9-	0.1-	1998 10 19	699	0.9-	0.2+	1999 12 31	699	0.1-	0.3-
1998 09 26	704	0.0	1.8+	1998 10 19	327	0.4+	0.1-	2000 01 05	704	1.2-	0.5+
1998 09 26	704	0.2-	0.9-	1998 10 19	327	0.2-	0.3-	2000 01 05	704	0.1-	0.0
1998 09 26	704	1.0+	0.5+	1998 10 19	327	0.1+	0.1+	2000 01 05	704	0.4-	0.0
1998 09 26	704	(2.4-	0.9-)	1999 12 14	704	0.9+	1.0-	2000 01 05	704	0.1-	0.2+
1998 09 27	704	0.2-	0.1-	1999 12 14	704	0.2+	0.1-	2000 01 05	704	0.0	0.1+
1998 09 27	704	0.5+	0.3-	1999 12 14	704	1.1+	0.7-	2000 01 07	704	0.2-	0.1-
1998 09 27	704	0.0	0.4+	1999 12 14	703	0.1-	1.3+	2000 01 07	704	0.4+	0.1-
1998 09 27	704	0.9+	0.5-	1999 12 14	704	0.6+	0.8-	2000 01 07	704	0.0	0.1+
1998 09 27	704	0.2+	0.7+	1999 12 14	703	0.1-	0.5+	2000 01 07	704	0.2+	0.1+

1998 10 17	699	0.2+	0.6+	1999 12 14	704	0.6+	0.8-	2000 01 07	704	0.0	0.2-
1998 10 17	699	0.3+	1.2+	1999 12 14	703	1.3-	0.7+				

1998 SC₁₁₂ = 1999 XH₁₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	315.47230		(2000.0)	P		Q	
<i>n</i>	0.26343817	ω	153.85175	-0.97746057	+0.19725530		
<i>a</i>	2.4099993	Ω	37.76824	-0.20875505	-0.84988185		
<i>e</i>	0.0680622	<i>i</i>	7.05652	-0.03149851	-0.48866265		
<i>P</i>	3.74	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 17	699	(2.3-	0.9+)	1998 10 17	699	(2.3+	0.2-)	1999 12 09	703	0.2+	0.6+
1998 09 17	699	1.7-	0.6-	1998 10 19	699	1.1+	0.3+	1999 12 09	703	0.0	1.1+
1998 09 17	699	0.2+	1.0+	1998 10 19	699	1.9+	0.4+	1999 12 10	704	0.4+	0.2-
1998 09 26	704	0.8-	0.2+	1998 10 19	699	1.1+	0.8+	1999 12 10	704	0.3-	1.0-
1998 09 26	704	0.3-	0.1+	1998 10 28	704	1.1-	0.8+	1999 12 10	704	0.3-	0.5-
1998 09 26	704	0.3+	0.2-	1998 10 28	704	0.9+	0.5-	1999 12 15	704	0.1-	0.0
1998 09 26	704	0.3+	0.2+	1998 10 28	704	0.1-	0.9-	1999 12 15	704	0.2-	0.5-
1998 09 26	704	0.1+	0.9-	1998 10 28	704	1.2-	1.7-	1999 12 15	704	0.2-	0.7-
1998 09 27	704	0.4-	0.2-	1998 10 28	704	1.6-	1.4+	1999 12 15	704	0.2+	0.8-
1998 09 27	704	0.3+	0.8+	1998 10 29	704	1.0-	0.7-	2000 01 03	704	0.6+	0.4+
1998 09 27	704	0.0	0.8+	1998 10 29	704	1.2-	0.2+	2000 01 03	704	0.0	0.3+
1998 09 27	704	0.7+	0.5-	1998 10 29	704	(0.8-	2.6-)	2000 01 03	704	0.1-	0.3+
1998 09 27	704	0.1+	0.4+	1998 10 29	704	0.5-	0.3+	2000 01 03	704	0.6-	0.3-
1998 10 17	699	0.7+	0.0	1999 12 09	703	0.4+	1.0+	2000 01 03	704	0.5-	0.2-
1998 10 17	699	1.8+	1.5-	1999 12 09	703	0.6+	0.7+				

1998 SR₁₁₄ = 2000 AA₂₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	219.25264		(2000.0)	P		Q	
<i>n</i>	0.29175539	ω	170.18875	+0.30811838	+0.95021375		
<i>a</i>	2.2514214	Ω	117.74461	-0.87636310	+0.30249082		
<i>e</i>	0.1348613	<i>i</i>	3.00800	-0.37020370	+0.07478728		
<i>P</i>	3.38	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.4-	0.4+	1998 09 27	704	0.7-	0.4+	1998 10 17	699	0.2+	0.1-
1998 09 26	704	0.1-	0.7-	1998 09 27	704	(2.4-	0.1-)	2000 01 09	691	0.3+	0.3+
1998 09 26	704	0.4-	0.1-	1998 10 02	327	0.2+	0.2+	2000 01 09	691	0.2+	0.1+
1998 09 26	704	1.0+	0.6-	1998 10 02	327	0.1+	0.2+	2000 01 09	691	0.5-	0.8-
1998 09 26	704	0.4+	0.3+	1998 10 02	327	0.1+	0.3+	2000 01 12	691	0.2+	0.2+
1998 09 27	704	0.3-	0.8-	1998 10 17	699	0.5-	0.8+	2000 01 12	691	0.2-	0.1+
1998 09 27	704	0.3-	0.3-	1998 10 17	699	0.2-	0.5-	2000 01 12	691	0.0	0.0

1998 SV₁₁₄ = 2000 AO₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	87.02777		(2000.0)	P		Q	
<i>n</i>	0.17502157	ω	256.82271	+0.94880614	-0.31457585		
<i>a</i>	3.1652524	Ω	121.50597	+0.30117896	+0.87390074		
<i>e</i>	0.1861023	<i>i</i>	1.91173	+0.09517429	+0.37059350		
<i>P</i>	5.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 15	699	0.3+	0.3+	1998 09 27	704	(0.3-	2.0-)	1998 10 29	704	0.6+	0.4-
1998 09 15	699	1.2-	0.0	1998 10 10	699	0.5-	0.4+	1998 10 29	704	(2.4+	0.5+)
1998 09 15	699	0.0	0.4-	1998 10 10	699	0.1-	0.3+	1998 10 29	704	1.1+	1.1+
1998 09 26	704	0.9+	0.7+	1998 10 10	699	0.6+	0.5+	1998 10 29	704	(0.3-	2.2+)
1998 09 26	704	0.4+	0.2-	1998 10 19	699	0.0	0.2-	2000 01 05	704	0.1-	0.2-
1998 09 26	704	0.5+	0.8-	1998 10 19	699	0.0	0.4+	2000 01 05	704	0.8-	0.3+
1998 09 26	704	1.1+	0.4-	1998 10 19	699	0.1-	0.4+	2000 01 05	704	1.0+	0.1-
1998 09 26	704	0.5-	0.1-	1998 10 28	704	0.7-	0.1-	2000 01 05	704	0.4-	0.0
1998 09 27	704	0.5+	1.0-	1998 10 28	704	1.1-	0.8+	2000 01 05	704	0.0	0.1+
1998 09 27	704	0.8-	0.5-	1998 10 28	704	1.3-	0.6+	2000 01 06	704	0.1+	0.0

2000 JAN. 24

M.P.C. 37779

1998 09 27 704 0.1− 0.3− 1998 10 28 704 (1.9− 2.5+) 2000 01 06 704 0.1− 0.6−
 1998 09 27 704 0.2+ 1.3− 1998 10 29 704 0.1− 0.2+ 2000 01 06 704 0.3+ 0.0

1998 SJ₁₁₅ = 2000 AK₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams	
<i>M</i>	65.55568	(2000.0)	
<i>n</i>	0.19500634	ω 102.91867	+0.53375057 −0.84554956
<i>a</i>	2.9451238	Ω 314.81483	+0.76886908 +0.49139465
<i>e</i>	0.1023939	<i>i</i> 1.00972	+0.35206629 +0.20875161
<i>P</i>	5.05	<i>H</i> 13.9	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1998 09 26	704	0.2+	0.0	1998 10 11	699	0.7+	0.7+	1998 10 28	704	0.8−	0.2−
1998 09 26	704	0.0	0.0	1998 10 15	327	0.4+	0.1+	1998 10 29	704	0.8−	0.0
1998 09 26	704	1.3+	0.2−	1998 10 15	327	0.1+	0.1−	1998 10 29	704	0.7+	0.6+
1998 09 26	704	1.0+	1.3−	1998 10 15	327	0.5+	0.1−	1998 10 29	704	0.4−	1.1+
1998 09 26	704	0.4+	0.9−	1998 10 20	327	0.2−	0.1+	1998 10 29	704	(2.1− 1.8+)	
1998 09 27	704	0.1−	1.0+	1998 10 20	327	0.1−	0.1−	1998 10 29	704	(0.7− 2.4+)	
1998 09 27	704	0.0	0.7+	1998 10 20	327	0.1−	0.4−	2000 01 04	704	0.1+	0.0
1998 09 27	704	0.6+	0.3−	1998 10 26	327	0.1−	0.6−	2000 01 04	704	0.6−	0.4−
1998 09 27	704	1.0−	1.5−	1998 10 26	327	0.3−	0.3−	2000 01 04	704	0.7−	0.7−
1998 10 01	327	0.5−	0.2−	1998 10 26	327	0.3−	0.2−	2000 01 04	704	0.3−	1.2+
1998 10 01	327	0.8−	0.1−	1998 10 28	704	0.8+	1.2+	2000 01 04	704	0.3+	0.1+
1998 10 01	327	0.8−	0.2−	1998 10 28	704	1.6+	0.8+	2000 01 06	704	0.3+	1.0+
1998 10 11	699	0.0	0.7+	1998 10 28	704	(2.3+ 0.4+)		2000 01 06	704	0.3+	0.6−
1998 10 11	699	0.7−	0.8+	1998 10 28	704	1.3−	1.2−	2000 01 06	704	0.5+	0.9−

1998 SB₁₁₆ = 1987 SP₁₈ = 2000 AH₁₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams	
<i>M</i>	85.76174	(2000.0)	
<i>n</i>	0.18145943	ω 170.29606	+0.88243095 −0.46689029
<i>a</i>	3.0899375	Ω 217.71089	+0.42505095 +0.84383091
<i>e</i>	0.2316502	<i>i</i> 5.41263	+0.20161178 +0.26450494
<i>P</i>	5.43	<i>H</i> 14.1	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1987 09 16	095	0.1−	0.2+	1998 10 22	327	0.3−	0.6−	1998 11 23	699	0.5−	0.3−
1998 09 17	699	0.4−	0.2−	1998 10 22	327	0.4−	0.4−	1998 11 23	699	1.4−	0.1+
1998 09 17	699	0.0	0.1+	1998 10 26	327	0.3−	0.1+	1998 11 23	699	0.6+	0.8+
1998 09 17	699	0.1−	0.1+	1998 10 26	327	0.1−	0.1+	1998 12 09	699	0.8+	1.5−
1998 09 26	704	0.3−	0.4+	1998 10 26	327	0.3−	0.1−	1998 12 09	699	0.5+	0.6+
1998 09 26	704	1.0+	0.9−	1998 10 28	704	0.9+	0.0	1998 12 09	699	0.4−	0.3−
1998 09 26	704	0.1+	0.1−	1998 10 28	704	1.2+	1.5+	1998 12 17	327	0.2−	0.5+
1998 09 26	704	0.1+	0.2−	1998 10 28	704	0.3−	1.5+	1998 12 17	327	0.1+	0.3+
1998 09 26	704	0.0	0.0	1998 10 28	704	0.2−	1.6+	1998 12 17	327	0.5−	0.7+
1998 09 27	704	0.4+	0.1+	1998 10 28	704	(0.3− 2.2+)		2000 01 05	704	0.2−	0.5−
1998 09 27	704	1.0−	0.0	1998 10 29	704	0.6+	0.7−	2000 01 05	704	0.7+	0.4+
1998 09 27	704	0.1+	0.7+	1998 10 29	704	0.2−	1.0−	2000 01 05	704	0.2−	0.1+
1998 09 27	704	0.3+	0.8+	1998 10 29	704	0.2−	0.3−	2000 01 08	704	0.1+	0.1+
1998 09 27	704	0.7+	1.2+	1998 10 29	704	0.1−	1.3−	2000 01 08	704	0.1−	0.1−
1998 10 20	327	0.4−	0.7−	1998 10 29	704	0.3+	1.0−	2000 01 08	704	0.1−	0.6+
1998 10 20	327	0.2−	0.7−	1998 11 10	699	0.5+	0.1+	2000 01 08	704	0.1−	0.5−
1998 10 20	327	0.4−	0.6−	1998 11 10	699	0.4−	0.4−				
1998 10 22	327	0.3−	0.3−	1998 11 10	699	0.7+	0.4+				

1998 SH₁₁₆ = 2000 AU₁₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams	
<i>M</i>	90.24565	(2000.0)	
<i>n</i>	0.21232976	ω 156.44085	+0.78559560 −0.61381928
<i>a</i>	2.7826728	Ω 241.65538	+0.55268583 +0.75273506
<i>e</i>	0.0625355	<i>i</i> 5.07676	+0.27816888 +0.23794078
<i>P</i>	4.64	<i>H</i> 13.7	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1992 05 03	809	0.6+	0.6−	1998 10 11	699	0.6−	0.2+	1998 12 11	704	1.0+	1.3+
1992 05 03	809	0.7−	1.2−	1998 10 11	699	0.0	1.0+	1999 11 08	703	0.3+	0.1+
1992 05 03	809	(0.0 2.6−)		1998 10 28	704	0.2−	1.0+	1999 11 08	703	0.1−	0.1+
1998 09 17	699	0.0	0.1−	1998 10 28	704	0.8−	0.4−	1999 11 08	703	0.5+	1.1+
1998 09 17	699	0.5+	0.1−	1998 10 28	704	0.2−	0.1+	1999 11 08	703	0.9+	0.6+
1998 09 17	699	0.5+	0.3+	1998 10 28	704	0.4−	0.2−	2000 01 05	704	0.3+	0.0
1998 09 26	704	0.5+	0.6−	1998 10 28	704	0.2−	0.5+	2000 01 05	704	0.1+	0.8−
1998 09 26	704	1.0+	1.1−	1998 11 23	699	0.3+	0.4+	2000 01 05	704	0.5−	0.1−
1998 09 26	704	0.4−	1.0−	1998 11 23	699	0.5−	0.3+	2000 01 05	704	0.2−	0.2−
1998 09 26	704	0.6−	0.9−	1998 11 23	699	0.4−	0.4+	2000 01 05	704	0.5−	0.4−
1998 09 26	704	0.0	0.8−	1998 12 09	699	0.5+	0.1+	2000 01 07	704	0.1−	0.3−
1998 09 27	704	0.2+	0.1−	1998 12 09	699	0.3−	0.2−	2000 01 07	704	0.5−	0.5−
1998 09 27	704	1.1+	0.0	1998 12 09	699	1.3+	0.6−	2000 01 07	704	0.1−	0.6−
1998 09 27	704	0.3−	0.8−	1998 12 11	704	0.8−	0.1−	2000 01 07	704	0.3+	0.2−
1998 09 27	704	0.2+	0.8−	1998 12 11	704	(2.2+ 1.3+)		2000 01 07	704	0.5−	0.6−
1998 09 27	704	0.7−	1.4−	1998 12 11	704	0.3−	0.6+				
1998 10 11	699	0.0	0.5+	1998 12 11	704	0.6+	0.9+				

1998 SM₁₁₆ = 2000 AD₉₂

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		Williams	
<i>M</i>	70.31903	(2000.0)	
<i>n</i>	0.21064889	ω 193.70661	+0.45008625 −0.89007936
<i>a</i>	2.7974560	Ω 229.59599	+0.82794932 +0.44614692
<i>e</i>	0.1046406	<i>i</i> 5.42396	+0.33454789 +0.09333625
<i>P</i>	4.68	<i>H</i> 13.2	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1998 09 17	699	0.2−	0.2−	1998 12 09	699	0.3−	0.3−	2000 01 05	704	0.1+	0.3+
1998 09 17	699	0.2−	0.3+	1998 12 09	699	0.3+	1.4−	2000 01 05	704	0.0	0.2−
1998 09 17	699	0.6−	0.0	1999 01 08	704	0.3+	0.5+	2000 01 05	704	0.3+	0.1+
1998 09 26	704	0.1+	0.0	1999 01 08	704	0.8−	0.6+	2000 01 05	704	0.1−	0.6−
1998 09 26	704	0.4+	0.3−	1999 01 08	704	(2.4+ 1.4+)		2000 01 06	704	0.2+	0.1+
1998 09 26	704	0.4+	0.5−	1999 01 08	704	(2.1+ 0.6−)		2000 01 06	704	0.1−	0.6−
1998 09 26	704	0.2+	0.5−	1999 01 10	699	0.3−	0.6+	2000 01 06	704	0.1−	0.0
1998 09 26	704	0.5−	0.7−	1999 01 10	699	0.6+	0.1+	2000 01 06	704	0.5+	0.6−
1998 09 27	704	0.5+	0.1+	1999 01 10	699	0.1+	0.2−	2000 01 07	704	0.2+	0.3+
1998 09 27	704	0.7+	0.5+	1999 01 11	704	0.2−	1.7+	2000 01 07	704	0.4−	0.1+
1998 09 27	704	0.1+	0.5+	1999 01 11	704	0.4−	0.8−	2000 01 07	704	0.4−	0.1−
1998 09 27	704	0.1+	0.8−	1999 01 11	704	1.2−	0.7+	2000 01 07	704	0.2−	0.1−
1998 09 27	704	0.7+	0.1−	1999 01 20	691	0.0	0.3−	2000 01 07	704	0.4−	0.0
1998 10 11	699	0.1−	0.0	1999 01 20	691	0.2+	0.3−	2000 01 08	704	0.2+	0.2−
1998 10 11	699	0.2+	0.2−	1999 01 20	691	0.1+	0.3−	2000 01 08	704	0.2−	0.0
1998 10 11	699	0.2−	0.3+	1999 11 06	703	0.3−	2.0+	2000 01 08	704	0.4−	0.1+
1998 10 28	704	0.1+	0.5+	1999 11 06	703	0.8+	0.6+	2000 01 08	704	0.1−	0.5−
1998 10 28	704	0.2−	0.1+	1999 11 06	703	0.9+	0.6+	2000 01 08	704	0.1+	0.2−
1998 10 28	704	0.6−	0.2−	1999 11 06	703	1.1+	0.6+	2000 01 08	704	0.1+	0.1−
1998 10 28	704	0.2+	0.0	1999 12 05	704	0.0	0.4−	2000 01 08	704	0.2−	0.3+
1998 10 28	704	0.1−	0.4+	1999 12 05	704	0.5−	0.6−	2000 01 08	704	0.0	0.2−
1998 10 29	704	0.1+	0.6−	1999 12 05	704	0.1−	0.5−	2000 01 08	704	0.4−	0.4−
1998 10 29	704	0.6−	0.9−	1999 12 05	704	0.2+	0.7−	2000 01 08	704	0.5−	0.0
1998 10 29	704	0.4+	0.2+	1999 12 05	704	0.2−	0.2−	2000 01 10	704	0.0	0.7+
1998 10 29	704	0.3+	0.8+	1999 12 14	704	0.4−	0.4+	2000 01 10	704	0.0	0.7+
1998 10 29	704	0.0	0.6+	1999 12 14	704	0.2+	0.3−	2000 01 10	704	0.4−	0.3+
1998 11 23	699	0.6+	0.2+	1999 12 14	704	0.1−	0.9−	2000 01 10	704	0.4−	0.0
1998 11 23	699	0.1−	0.1+	1999 12 14	704	0.9+	0.0	2000 01 10	704	0.2−	0.7+
1998 11 23	699	0									

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	37.88789	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23971036	ω 180.72649	-0.40536777	-0.91232605
<i>a</i>	2.5665212	Ω 293.18913	+0.83903630	-0.34622433
<i>e</i>	0.0960438	<i>i</i> 3.60369	+0.36289813	-0.21860900
<i>P</i>	4.11	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1993 07 12	809	0.4-	1.2+	1998 10 28	704	0.3-	0.3+	1999 12 05	704	0.3-	0.5-
1993 07 12	809	0.4-	0.6+	1998 10 28	704	0.5-	1.0+	1999 12 05	704	1.1-	0.5-
1993 07 12	809	0.5-	1.3+	1998 10 28	704	0.5-	0.2-	1999 12 05	699	0.2-	1.7+
1993 07 23	809	0.7-	0.7-	1998 10 28	704	0.0	0.7-	1999 12 05	699	0.8-	0.4+
1993 07 23	809	1.1+	0.8-	1998 10 28	704	0.5+	0.5+	1999 12 05	699	0.4+	1.8+
1993 07 23	809	0.6+	0.5-	1998 10 29	704	0.4-	0.9+	2000 01 05	704	0.1+	0.2-
1998 09 14	699	0.4-	0.5+	1998 10 29	704	(3.3+	0.2-)	2000 01 05	704	0.6+	0.9-
1998 09 14	699	0.6+	0.1-	1998 10 29	704	0.0	1.3+	2000 01 05	704	0.5-	0.4+
1998 09 14	699	1.0+	0.1-	1998 10 29	704	0.1-	0.3+	2000 01 05	704	0.8+	0.5-
1998 09 26	704	0.8-	0.8-	1998 10 29	704	0.9+	0.1+	2000 01 06	699	0.2-	0.3-
1998 09 26	704	0.4-	0.9-	1998 11 23	699	0.1+	0.4+	2000 01 06	699	0.3+	0.6+
1998 09 26	704	0.7-	0.1-	1998 11 23	699	0.0	0.9+	2000 01 06	699	0.2-	0.3+
1998 09 26	704	0.2-	1.1-	1998 11 23	699	0.4-	1.4+	2000 01 08	704	0.4-	0.9+
1998 09 26	704	(0.2+	2.3-)	1999 12 05	704	0.3+	0.3-	2000 01 08	704	0.4-	0.5-
1998 09 27	704	0.2+	0.0	1999 12 05	704	1.3+	0.2+	2000 01 08	704	0.3-	0.4-
1998 09 27	704	1.2+	0.9-	1999 12 05	704	0.8-	0.6+	2000 01 08	704	1.0-	0.0
1998 09 27	704	0.5-	0.2-	1999 12 05	704	0.7+	0.2-	2000 01 08	704	1.2+	0.3-
1998 09 27	704	0.1-	0.5-	1999 12 05	704	0.2-	0.3-				
1998 09 27	704	0.7+	1.7-	1999 12 05	704	0.7+	1.9-				

1998 SE₁₁₇ = 1985 FD₂ = 2000 AS₁₃₀

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	20.41334	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.26534241	ω 276.65998	-0.84850534	-0.52025164
<i>a</i>	2.3984551	Ω 232.03732	+0.52096825	-0.78909878
<i>e</i>	0.1568215	<i>i</i> 7.05501	+0.09290192	-0.32659048
<i>P</i>	3.71	<i>H</i> 13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1985 03 24	688	0.3+	1.3-	1998 10 28	704	0.8-	0.9-	2000 01 05	704	0.0	0.1-
1985 03 24	688	1.0-	0.8-	1998 10 28	704	0.2+	0.3-	2000 01 05	704	0.2-	1.1+
1998 09 14	699	0.4+	0.6+	1998 10 28	704	1.3-	0.2-	2000 01 07	704	0.1-	0.4+
1998 09 14	699	1.1+	1.0+	1998 10 28	704	0.8-	0.6+	2000 01 07	704	0.5-	0.2-
1998 09 14	699	1.1+	0.6+	1998 10 29	704	0.5-	0.1-	2000 01 07	704	0.1+	0.3-
1998 09 26	704	0.3-	0.5+	1998 10 29	704	0.4+	0.7+	2000 01 07	704	0.2-	0.2-
1998 09 26	704	0.1-	0.6+	1998 10 29	704	0.4+	0.3-	2000 01 07	704	0.0	0.0
1998 09 26	704	0.0	0.3+	1998 10 29	704	1.1+	0.9-	2000 01 10	704	0.4+	0.6-
1998 09 26	704	0.5-	0.2+	1998 10 29	704	0.4+	1.1-	2000 01 10	704	0.3+	0.1+
1998 09 26	704	0.7-	0.3+	1998 11 15	327	0.3-	0.1+	2000 01 10	704	0.5+	0.0
1998 09 27	704	0.1-	0.7-	1998 11 15	327	0.1+	0.6+	2000 01 10	704	1.0+	0.9+
1998 09 27	704	0.1-	0.5+	1998 11 15	327	0.2+	0.8+	2000 01 10	704	0.3+	0.7+
1998 09 27	704	0.0	0.3-	1998 11 23	699	1.3+	0.8-	2000 01 11	704	0.6-	0.6+
1998 09 27	704	0.3+	0.7-	1998 11 23	699	0.7+	0.5-	2000 01 11	704	0.2-	0.2+
1998 09 27	704	0.9-	1.7-	1998 11 23	699	0.4+	0.1+	2000 01 11	704	0.0	0.3-
1998 10 28	704	0.7-	0.9+	2000 01 05	704	0.1-	0.9+	2000 01 11	704	0.2+	0.2-

1998 SZ₁₁₇ = 2000 AU₉

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Williams

<i>M</i>	168.11355	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.21749915	ω 307.96783	+0.67070500	+0.74167553
<i>a</i>	2.7384049	Ω 4.18391	-0.63876081	+0.58338545
<i>e</i>	0.0846871	<i>i</i> 6.68835	-0.37701383	+0.33102692
<i>P</i>	4.53	<i>H</i> 14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	699	0.4-	0.3-	1998 09 27	704	0.6+	0.5+	1998 10 29	704	1.6+	0.5+
1998 09 14	699	0.0	0.1+	1998 09 27	704	0.7+	0.7-	1998 10 29	704	0.3-	0.2-
1998 09 14	699	0.4+	0.2+	1998 09 27	704	0.4+	0.5-	2000 01 02	704	0.1-	0.4-
1998 09 26	704	0.2-	0.6-	1998 10 28	704	0.5-	0.7-	2000 01 02	704	0.6+	0.3+
1998 09 26	704	0.2+	1.1+	1998 10 28	704	0.5+	0.1+	2000 01 02	704	0.0	0.9+
1998 09 26	704	0.0	0.7-	1998 10 28	704	0.3-	0.8+	2000 01 02	704	0.3-	0.2+
1998 09 26	704	0.6-	0.4+	1998 10 28	704	0.3-	0.3-	2000 01 02	704	0.4-	0.0
1998 09 26	704	0.1-	0.4+	1998 10 29	704	0.4+	0.3+	2000 01 04	704	0.2-	0.1-
1998 09 27	704	0.3-	0.3-	1998 10 29	704	0.5+	0.5-	2000 01 04	704	0.2-	0.2-
1998 09 27	704	0.7-	0.3+	1998 10 29	704	1.6-	0.0	2000 01 04	704	0.6+	0.7-

1998 SK₁₁₈ = 1991 UW₄

Id. T. Kobayashi (2000 observations), S. Nakano

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Nakano

<i>M</i>	246.21295	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.27511729	ω 250.25639	-0.15703847	+0.98733006
<i>a</i>	2.3413021	Ω 10.78447	-0.85443538	-0.12426897
<i>e</i>	0.1025563	<i>i</i> 6.98829	-0.49525659	-0.09867411
<i>P</i>	3.58	<i>H</i> 13.8	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1991 10 31	399	(1.2+	4.1+)	1998 10 22	327	0.0	0.7-	1998 10 28	704	0.3-	0.2+
1991 10 31	399	0.3-	0.6+	1998 10 22	327	0.1-	0.9-	1998 10 28	704	0.0	0.8+
1998 09 26	704	0.8-	0.2+	1998 10 22	327	0.5-	0.7-	1998 10 29	704	0.2-	0.4+
1998 09 26	704	0.1+	0.3-	1998 10 26	327	0.5+	0.3-	1998 10 29	704	0.5+	1.4+
1998 09 26	704	0.0	0.0	1998 10 26	327	0.4+	0.3-	1998 10 29	704	0.5+	1.1+
1998 09 26	704	0.2-	0.5-	1998 10 26	327	0.5+	0.3-	1998 10 29	704	0.5+	0.8+
1998 09 26	704	0.4+	0.5-	1998 10 26	327	0.4+	0.1+	1998 10 29	704	0.6+	0.2+
1998 09 27	704	0.5-	0.0	1998 10 26	327	0.5+	0.3-	2000 01 03	411	0.7-	0.2+
1998 09 27	704	1.1-	0.3+	1998 10 26	327	0.3+	0.1+	2000 01 03	411	0.1+	0.3+
1998 09 27	704	0.6-	0.2+	1998 10 28	704	1.3+	0.2+	2000 01 04	411	0.1+	0.1+
1998 09 27	704	0.7-	0.4-	1998 10 28	704	0.0	0.9-	2000 01 04	411	0.3+	0.6-
1998 09 27	704	1.1-	0.5-	1998 10 28	704	0.0	0.0				

1998 SQ₁₁₈ = 2000 AJ₁₈₂

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Williams

<i>M</i>	162.16345	(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.24007557	ω 122.58883	+0.72861849	+0.68417372
<i>a</i>	2.5639177	Ω 194.32814	-0.66370314	+0.69375515
<i>e</i>	0.2235374	<i>i</i> 7.42003	-0.16915445	+0.22496690
<i>P</i>	4.11	<i>H</i> 14.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 04 01	809	0.9+	1.9+	1998 10 10	699	0.4+	1.3+	1998 11 10	704	0.3-	0.8+
1997 04 01	809	0.6+	2.5+	1998 10 10	699	0.5+	1.7+	1998 11 10	704	0.6+	0.6+
1997 04 01	809	0.2+	2.5+	1998 10 28	704	0.0	0.1+	1998 11 11	699	0.2+	0.9+
1998 09 26	704	0.2-	0.5+	1998 10 28	704	0.9-	0.2+	1998 11 11	699	0.0	0.6+
1998 09 26	704	0.1-	0.5-	1998 10 28	704	0.5-	0.4+	1998 11 11	699	0.3+	0.9+
1998 09 26	704	0.3+	0.1+	1998 10 28	704	0.1+	0.9+	2000 01 07	704	0.2-	0.7+
1998 09 26	704	0.0	0.5-	1998 10 28	704	0.1-	0.8+	2000 01 07	704	0.0	0.2-
1998 09 26	704	0.0	1.1-	1998 10 29	704	0.1+	2.1-	2000 01 07	704	0.2-	0.5+
1998 09 27	704	0.2+	0.6+	1998 10 29	704	0.3+	1.6-	2000 01 07	704	1.2+	0.6-
1998 09 27	704	1.1-	0.8+	1998 10 29	704	1.2-	0.4-	2000 01 11	704	1.0+	0.4+
1998 09 27	704	0.1+	0.6+	1998 10 29	704	0.3+	1.8-	2000 01 11	704	0.2-	0.0
1998 09 27	704	0.7+	0.2+	1998 10 29	704	1.3-	0.9-	2000 01 11	704	0.1+	1.0-
1998 09 27	704	0.6-	0.5+	1998 11 10	704	0.4+	0.1+	2000 01 11	704	0.1-	0.6+
1998 10 10	699	0.0	1.4+	1998 11 10	704	0.4+	1.3+	2000 01 11	704	1.7-	0.7-

2000 JAN. 24

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1998 ST₁₁₉ = 2000 AA₉₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23538086	ω	41.35648	−0.13856101	−0.98784379		
<i>a</i>	2.5978972	Ω	56.72185	+0.88504082	−0.15544192		
<i>e</i>	0.1290683	<i>i</i>	4.83509	+0.44441376	+0.00156567		
<i>P</i>	4.19	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1997 06 29	704	0.3−	1.1+	1998 09 27	704	0.9−	0.3−	1998 10 29	704	0.6+	0.8+
1997 06 29	704	0.3−	0.4+	1998 09 27	704	0.7−	0.4−	1998 10 29	704	1.6+	0.9−
1997 06 29	704	0.2−	1.6+	1998 09 27	704	0.4+	0.3−	1998 10 29	704	0.1−	1.6+
1997 06 29	704	0.6+	1.1+	1998 09 27	704	0.2−	0.5−	1999 01 14	910	0.2−	0.3+
1998 09 22	699	0.5−	0.0	1998 10 17	699	0.0	0.1+	1999 01 14	910	0.7−	0.3+
1998 09 22	699	(2.1−	0.9+)	1998 10 17	699	0.5+	0.2+	1999 01 14	910	0.2−	0.8+
1998 09 22	699	0.7−	0.7+	1998 10 17	699	0.4−	0.2+	2000 01 04	704	0.3−	1.4+
1998 09 24	699	1.7−	0.4−	1998 10 19	699	1.1−	1.8+	2000 01 04	704	0.0	0.2+
1998 09 24	699	0.1+	0.4−	1998 10 19	699	(1.0−	2.2+)	2000 01 04	704	0.4+	0.6+
1998 09 24	699	0.1+	0.1−	1998 10 19	699	0.3−	0.4+	2000 01 04	704	0.4+	0.3+
1998 09 26	704	0.1+	0.3−	1998 10 28	704	0.8−	1.0+	2000 01 04	704	0.7+	0.4+
1998 09 26	704	0.0	0.3+	1998 10 28	704	0.8+	0.1−	2000 01 07	704	0.5−	0.8+
1998 09 26	704	1.0+	1.1−	1998 10 28	704	0.1+	1.0+	2000 01 07	704	0.5+	0.8+
1998 09 26	704	0.6+	0.5−	1998 10 28	704	1.0−	0.3−	2000 01 07	704	0.7+	0.1−
1998 09 26	704	0.7+	0.7−	1998 10 29	704	0.6−	0.1−	2000 01 07	704	0.5+	0.3+
1998 09 27	704	1.5+	0.5+	1998 10 29	704	(0.3+	2.5+)				

1998 SN₁₂₁ = 1999 YE₁₇

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<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17720657	ω	113.65838	+0.72830335	−0.68257056		
<i>a</i>	3.1391797	Ω	289.44781	+0.60297241	+0.68035378		
<i>e</i>	0.1498378	<i>i</i>	3.68440	+0.32557411	+0.26686357		
<i>P</i>	5.56	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.9+	0.7−	1998 10 28	704	0.4−	0.6+	2000 01 06	704	1.9−	1.1+
1998 09 26	704	0.1−	0.3−	1998 10 29	704	0.6+	1.0−	2000 01 06	704	0.2−	0.1+
1998 09 26	704	0.3−	1.3−	1998 10 29	704	0.3−	0.1−	2000 01 06	704	0.3+	0.9+
1998 09 26	704	0.6+	0.2−	1998 10 29	704	1.1−	1.6+	2000 01 06	691	0.2−	0.5−
1998 09 26	704	0.3+	0.1+	1998 10 29	704	(2.3+	2.1+)	2000 01 06	691	0.1+	0.6−
1998 09 27	704	0.4−	0.4+	1998 10 29	704	0.9+	0.3+	2000 01 06	691	0.0	0.4−
1998 09 27	704	0.2+	1.0+	1998 11 11	704	0.6−	0.1−	2000 01 07	540	0.9+	0.1+
1998 09 27	704	0.7−	0.8−	1998 11 11	704	0.0	1.7+	2000 01 07	540	0.0	0.5+
1998 09 27	704	0.1−	1.7+	1998 11 11	704	0.6+	0.9+	2000 01 07	540	0.2−	0.2+
1998 09 27	704	0.0	0.8−	1998 11 11	704	(0.8+	2.2+)	2000 01 07	540	0.4+	0.4+
1998 10 12	699	0.2+	0.6−	1999 12 31	691	0.0	0.8−	2000 01 07	540	0.1+	0.6+
1998 10 12	699	0.3+	0.4−	1999 12 31	691	0.2+	0.9−	2000 01 07	540	0.0	0.8+
1998 10 12	699	0.9+	0.2−	1999 12 31	691	0.3+	0.8−	2000 01 13	691	0.2+	0.3−
1998 10 28	704	0.1−	0.8−	2000 01 05	704	0.1+	0.6−	2000 01 13	691	0.0	0.1−
1998 10 28	704	0.9+	0.1+	2000 01 05	704	0.4−	0.0	2000 01 13	691	0.2+	0.2−
1998 10 28	704	1.0−	0.7−	2000 01 05	704	0.3+	0.0				
1998 10 28	704	1.4−	0.3−	2000 01 06	704	0.3−	0.2+				

1998 SJ₁₂₂ = 2000 AL₁₁₉

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<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17486725	ω	181.94904	+0.77706924	−0.62656833		
<i>a</i>	3.1671143	Ω	217.06715	+0.57881089	+0.74868356		
<i>e</i>	0.1375448	<i>i</i>	5.69337	+0.24726777	+0.21652956		
<i>P</i>	5.64	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 14	699	0.0	0.7+	1998 10 28	704	0.6−	1.0−	1999 11 08	703	0.1−	0.0
1998 09 14	699	0.7−	0.6+	1998 10 28	704	1.1−	0.3+	1999 11 08	703	(0.4+	2.1+)
1998 09 14	699	0.3+	0.4+	1998 10 29	704	0.8+	0.3−	1999 12 14	704	1.3−	1.7+

1998 09 26	704	0.0	0.2+	1998 10 29	704	0.2+	0.9−	1999 12 14	704	0.2−	0.0
1998 09 26	704	0.2−	0.8−	1998 10 29	704	0.0	0.1−	1999 12 14	704	0.5−	0.4−
1998 09 26	704	0.0	0.1+	1998 10 29	704	0.8+	1.4−	2000 01 04	699	0.8+	0.6+
1998 09 26	704	0.1−	0.1+	1998 10 29	704	(0.6+	2.5−)	2000 01 04	699	0.0	0.4+
1998 09 26	704	0.2+	1.0+	1998 11 10	704	0.0	0.0	2000 01 04	699	0.9+	0.4+
1998 09 27	704	0.3−	0.1−	1998 11 10	704	0.4−	0.7−	2000 01 05	704	0.3+	0.1+
1998 09 27	704	0.3+	0.0	1998 11 10	704	0.4+	0.2−	2000 01 05	704	0.3−	0.7−
1998 09 27	704	0.1+	1.1+	1998 11 10	704	1.1+	0.6−	2000 01 05	704	0.0	0.0
1998 09 27	704	0.6+	1.6+	1998 11 10	699	0.1+	0.4+	2000 01 05	704	0.2+	0.3+
1998 09 27	704	0.3−	1.0+	1998 11 10	699	1.5+	0.0	2000 01 05	704	0.4+	0.0
1998 10 11	699	0.3−	0.4−	1998 11 10	699	0.1+	0.0	2000 01 07	704	0.5+	0.5−
1998 10 11	699	0.2−	0.5−	1998 11 23	699	0.0	0.4+	2000 01 07	704	0.5+	0.0
1998 10 11	699	0.1−	0.5−	1998 11 23	699	0.5−	0.2+	2000 01 07	704	0.1−	0.1+
1998 10 28	704	1.2−	1.1−	1998 11 23	699	0.3+	0.9+	2000 01 07	704	0.0	0.2−
1998 10 28	704	(2.1−	0.5−)	1999 11 08	703	1.1−	0.3+	2000 01 07	704	0.1+	0.0
1998 10 28	704	0.4−	0.0	1999 11 08	703	0.7−	1.4−				

1998 SE₁₂₃ = 1992 GX₆ = 2000 AS₁₈₂

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21823286	ω	134.07363	+0.91149733	+0.40902689		
<i>a</i>	2.7322637	Ω	201.89246	−0.40268347	+0.86603131		
<i>e</i>	0.0919073	<i>i</i>	6.65924	−0.08377732	+0.28755309		
<i>P</i>	4.52	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 04 04	809	0.8+	0.4+	1998 10 28	704	1.0−	0.3−	1999 01 09	910	0.1−	0.3−
1992 04 04	809	0.5+	1.6+	1998 10 28	704	1.2−	0.3+	1999 01 14	910	0.1+	1.0−
1992 04 04	809	0.6−	0.6+	1998 10 29	704	1.8−	0.5−	1999 01 14	910	0.1+	0.2+
1998 09 14	699	0.5−	0.6+	1998 10 29	704	1.4+	0.1+	1999 01 14	910	0.3−	0.3−
1998 09 14	699	0.2−	0.9+	1998 10 29	704	0.3+	0.8−	2000 01 04	699	0.4+	0.7+
1998 09 14	699	0.6+	0.4+	1998 10 29	704	(2.6+	1.0+)	2000 01 04	699	0.3−	0.5+
1998 09 26	704	0.7+	0.9+	1998 10 29	704	0.8+	0.5+	2000 01 04	699	0.2+	0.3+
1998 09 26	704	1.1+	0.2+	1998 11 10	704	0.7−	0.2−	2000 01 05	704	0.7−	0.8−
1998 09 26	704	0.8+	0.7+	1998 11 10	704	1.6−	0.6−	2000 01 05	704	0.2+	0.7+
1998 09 26	704	0.8+	0.7+	1998 11 10	704	0.3−	0.2−	2000 01 05	704	0.2+	0.5−
1998 09 26	704	0.1+	1.0+	1998 11 10	704	1.1−	1.1−	2000 01 05	704	0.2−	0.7+
1998 09 27	704	0.6+	0.6+	1998 11 10	699	0.4−	0.1−	2000 01 05	704	0.2+	1.7+
1998 09 27	704	0.1+	1.2+	1998 11 10	699	0.1+	0.1+	2000 01 07	704	0.3+	0.2+
1998 09 27	704	0.6+	0.9+	1998 11 10	699	0.9−	0.1+	2000 01 07	704	0.8+	0.4−
1998 09 27	704	0.5+	0.4+	1998 11 25	699	0.5+	0.8−	2000 01 07	704	0.3+	0.1+
1998 09 27	704	0.9+	0.2+	1998 11 25	699	0.2−	0.4−	2000 01 07	704	0.4+	0.1+
1998 10 11	699	0.4−	0.2+	1998 11 25	699	0.2−	1.3−	2000 01 07	704	1.2+	0.6−
1998 10 11	699	0.3−	0.1−	1999 01 05	910	0.0	0.3−	2000 01 11	704	1.0−	0.1−
1998 10 11	699	0.1+	0.0	1999 01 05	910	0.2−	0.4−	2000 01 11	704	0.5−	0.2+
1998 10 28	704	0.3+	0.3+	1999 01 05	910	0.1+	0.4−	2000 01 11	704	0.6−	0.3+
1998 10 28	704	0.4−	0.1−	1999 01 09	910	0.0	0.1−	2000 01 11	704	0.5−	0.9−
1998 10 28	704	0.1−	0.1+	1999 01 09	910	0.2+	0.1−				

1998 SS₁₂₃ = 2000 AK₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	107.13215		(2000.0)	P	Q
n	0.19024196	ω	175.22558	+0.99399558	−0.10579749
a	2.9940922	Ω	190.96586	+0.09490343	+0.96059425
e	0.0910395	i	8.44091	+0.05446223	+0.25703226
P	5.18	H	13.4	G 0.15	U 3

1998 09 27	704	0.8−	0.9+	1998 10 28	704	0.9−	0.1−	2000 01 07	704	0.6+	0.1+
1998 09 27	704	0.0	0.1−	1998 10 29	704	0.5+	0.8+	2000 01 07	704	1.0−	0.1+
1998 09 27	704	0.5−	0.9+	1998 10 29	704	(1.5+	2.3+)	2000 01 07	704	0.0	0.2−
1998 10 10	699	0.3+	0.3−	1998 10 29	704	0.3−	1.8+	2000 01 07	704	0.2+	0.1−
1998 10 10	699	0.3+	0.0	1998 10 29	704	1.3+	1.5+	2000 01 07	704	0.0	0.8−
1998 10 10	699	0.1−	0.1+	1998 10 29	704	0.5+	0.9+	2000 01 11	704	0.2−	0.2+
1998 10 18	888	0.4+	0.4−	1998 11 10	704	0.2−	0.5−	2000 01 11	704	0.5+	0.2+
1998 10 18	888	0.1+	0.5−	1998 11 10	704	1.0−	0.1−	2000 01 11	704	0.1+	0.4+
1998 10 18	888	0.1+	0.4−	1998 11 10	704	0.9−	1.1−	2000 01 11	704	0.3−	0.2+

1998 SD₁₂₄ = 2000 AA₁₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	269.33122		(2000.0)	P	Q		
<i>n</i>	0.28100124	ω	68.38817	−0.49194058	+0.87055141		
<i>a</i>	2.3085036	Ω	172.11353	−0.82680289	−0.46295933		
<i>e</i>	0.1266364	<i>i</i>	4.85236	−0.27274795	−0.16676000		
<i>P</i>	3.51	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.1+	1.7−	1998 10 10	699	0.7+	0.6+	2000 01 05	704	0.3+	0.9−
1998 09 26	704	0.0	1.1−	1998 10 10	699	(0.1−	2.4+)	2000 01 05	704	0.3−	0.5−
1998 09 26	704	1.0+	0.6−	1998 10 28	704	0.5+	0.5−	2000 01 05	704	0.9+	0.1+
1998 09 26	704	(0.1−	2.1−)	1998 10 28	704	1.0+	1.7−	2000 01 05	704	0.5−	0.3+
1998 09 26	704	1.6−	0.6+	1998 10 28	704	0.4−	0.6−	2000 01 05	704	0.8−	0.1−
1998 09 27	704	0.3+	0.1+	1998 10 28	704	0.2−	1.0+	2000 01 07	704	0.4+	0.1+
1998 09 27	704	(0.7+	2.8+)	1998 10 29	704	0.8−	0.1+	2000 01 07	704	0.2−	0.8+
1998 09 27	704	0.2+	1.4+	1998 10 29	704	0.7−	0.8+	2000 01 07	704	0.3+	0.6−
1998 09 27	704	0.3−	0.1+	1998 10 29	704	0.8−	1.1−	2000 01 07	704	0.1−	1.0+
1998 09 27	704	0.8−	0.8+	1998 10 29	704	0.1+	1.3+				
1998 10 10	699	1.0+	1.1+	1998 10 29	704	0.7+	0.6−				

1998 SU₁₂₄ = 2000 AV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	59.48846		(2000.0)	P	Q		
<i>n</i>	0.20673069	ω	285.05216	+0.39467704	−0.91831779		
<i>a</i>	2.8326924	Ω	141.65720	+0.86069053	+0.35793480		
<i>e</i>	0.0478135	<i>i</i>	2.80625	+0.32162377	+0.16904177		
<i>P</i>	4.77	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 03 23	566	0.2+	0.3+	1998 10 10	699	0.5−	0.0	1999 12 31	699	0.1+	0.5−
1996 03 23	566	0.1−	0.5+	1998 10 19	699	0.8+	0.4−	2000 01 02	120	0.5−	0.0
1996 03 23	566	0.1+	0.1−	1998 10 19	699	1.3+	0.0	2000 01 02	120	0.7−	1.2+
1998 09 18	699	0.1−	0.7−	1998 10 19	699	0.8+	0.2−	2000 01 03	120	0.6+	0.8−
1998 09 18	699	0.7−	0.3−	1998 10 28	704	0.3+	0.7−	2000 01 04	120	1.2−	0.1−
1998 09 18	699	0.5−	0.2+	1998 10 28	704	0.5−	2.0−	2000 01 05	704	0.1−	0.3+
1998 09 26	704	0.1−	0.4−	1998 10 28	704	0.4+	0.4−	2000 01 05	704	0.2−	0.1+
1998 09 26	704	0.1−	0.5+	1998 10 28	704	0.4−	1.2+	2000 01 05	704	0.1−	0.1−
1998 09 26	704	0.9+	0.3−	1998 10 29	704	1.3−	0.4+	2000 01 05	704	0.1−	0.3+
1998 09 26	704	0.4−	0.0	1998 10 29	704	0.9−	0.1+	2000 01 05	704	0.0	0.3+
1998 09 26	704	0.8−	0.3+	1998 10 29	704	0.2+	0.6+	2000 01 06	704	0.5−	0.3−
1998 09 27	704	0.8+	0.1−	1998 10 29	704	0.5+	0.6−	2000 01 06	704	0.4−	0.1−
1998 09 27	704	0.5+	0.4+	1998 10 29	704	0.8−	0.3−	2000 01 06	704	0.3+	0.2−
1998 09 27	704	0.1+	0.5+	1998 11 11	699	1.1+	0.6+	2000 01 06	704	0.2−	0.0
1998 09 27	704	1.1+	0.5+	1998 11 11	699	0.8−	0.6+	2000 01 06	120	1.1+	0.3−
1998 09 27	704	0.3−	0.2+	1998 11 11	699	0.3+	1.0+	2000 01 06	120	0.3−	0.2+
1998 10 10	699	0.9−	0.4−	1999 12 31	699	1.4+	1.0+	2000 01 07	120	0.9+	0.3−
1998 10 10	699	0.4−	0.3+	1999 12 31	699	0.1+	1.0−				

1998 SC₁₂₅ = 1999 XQ₂₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	76.97668		(2000.0)	P	Q		
<i>n</i>	0.12371421	ω	309.42439	+0.98993692	+0.11781570		
<i>a</i>	3.9889292	Ω	43.97217	−0.06755655	+0.88019513		
<i>e</i>	0.2544725	<i>i</i>	6.48238	−0.12434228	+0.45975645		
<i>P</i>	7.97	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 09 28	675	0.2+	0.3−	1998 10 19	699	0.2+	0.2+	1998 11 25	699	0.6+	0.3+
1998 09 24	699	0.2−	0.9+	1998 10 19	699	0.1+	0.1−	1998 11 25	699	0.5+	0.3−
1998 09 24	699	0.4−	1.0+	1998 10 19	699	0.1−	0.1+	1999 11 16	704	0.0	0.2+
1998 09 24	699	0.1+	0.8+	1998 10 28	704	1.5+	0.3+	1999 11 16	704	0.1+	0.5−
1998 09 26	704	0.2−	0.1−	1998 10 28	704	1.4+	1.4+	1999 11 16	704	1.0−	0.9+
1998 09 26	704	0.1+	1.1−	1998 10 28	704	1.0+	0.2+	1999 11 16	704	0.2+	0.4+
1998 09 26	704	0.1−	0.4−	1998 10 28	704	0.1+	0.4−	1999 12 15	704	0.1−	0.4−
1998 09 26	704	0.4−	0.6−	1998 10 28	704	0.8−	0.2+	1999 12 15	704	0.7−	0.2−
1998 09 26	704	0.5+	0.3−	1998 10 29	704	0.1−	0.3+	1999 12 15	704	0.1+	1.1−
1998 09 27	704	1.5−	0.0	1998 10 29	704	1.7−	1.3−	1999 12 16	704	0.2+	0.2+
1998 09 27	704	0.1−	0.1−	1998 10 29	704	0.4−	0.1+	1999 12 16	704	0.2+	0.1−
1998 09 27	704	0.4−	0.2−	1998 10 29	704	0.6−	0.2+	1999 12 16	704	0.2+	0.0
1998 09 27	704	1.4−	0.5−	1998 11 10	704	(2.4+	0.8+)	1999 12 16	704	0.4−	0.2+
1998 09 27	704	1.7−	1.1−	1998 11 10	704	1.3+	0.7−	1999 12 16	704	0.3−	0.6+
1998 10 10	699	1.2+	0.7−	1998 11 10	704	0.2+	1.1+	2000 01 04	704	0.6+	0.2+
1998 10 10	699	0.4−	0.5+	1998 11 10	704	1.0+	1.1+	2000 01 04	704	0.9+	0.1−
1998 10 10	699	0.1−	0.4−	1998 11 25	699	1.3+	0.2+	2000 01 04	704	0.1−	0.2−

1998 SX₁₂₆ = 1992 GG₆ = 1999 XY₁₇₁

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	193.43383		(2000.0)	P	Q		
<i>n</i>	0.21961250	ω	224.19078	+0.21275983	+0.96928925		
<i>a</i>	2.7208087	Ω	58.46030	−0.85156143	+0.24583725		
<i>e</i>	0.0849031	<i>i</i>	8.32064	−0.47914130	−0.00651104		
<i>P</i>	4.49	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 04 05	372	(1.9−	2.9+)	1998 10 28	704	0.4−	0.1+	1999 12 15	704	0.2+	0.8−
1992 04 05	372	0.2+	0.3+	1998 10 28	704	0.9−	0.9+	1999 12 15	704	0.1+	0.8−
1998 09 26	704	0.3+	0.1−	1998 10 29	704	0.8−	1.2+	2000 01 02	704	0.1−	0.3+
1998 09 26	704	0.6+	0.2−	1998 10 29	704	1.5−	1.9+	2000 01 02	704	0.2−	0.4−
1998 09 26	704	1.1+	0.8−	1998 10 29	704	1.7−	1.1+	2000 01 02	704	0.1+	0.2+
1998 09 26	704	0.1−	0.1−	1999 11 16	704	0.4−	1.1−	2000 01 02	704	0.1−	0.4−
1998 09 26	704	0.2−	0.4−	1999 11 16	704	0.4+	0.7+	2000 01 02	704	0.3−	0.7+
1998 09 27	704	0.2+	0.4−	1999 11 16	704	0.8−	0.2−	2000 01 04	704	0.2+	0.3+
1998 09 27	704	0.3+	0.1−	1999 11 16	704	0.4+	0.0	2000 01 04	704	0.2−	0.1+
1998 09 27	704	0.2+	0.1+	1999 11 16	704	0.6−	0.1+	2000 01 04	704	0.3+	0.1+
1998 09 27	704	0.7+	0.2−	1999 12 10	704	0.3+	0.2−	2000 01 04	704	0.1+	0.5+
1998 09 27	704	0.1−	1.2−	1999 12 10	704	0.0	0.2−	2000 01 04	704	0.4+	0.3+
1998 10 17	699	0.1+	0.9−	1999 12 10	704	0.0	0.3−	2000 01 08	704	0.5−	0.4+
1998 10 17	699	0.8+	0.5+	1999 12 10	704	0.7+	0.1−	2000 01 08	704	0.3−	0.0
1998 10 17	699	0.1+	0.3−	1999 12 10	704	0.2+	0.0	2000 01 08	704	0.3−	0.3+
1998 10 28	704	1.2+	1.1+	1999 12 15	704	0.1+	0.1−	2000 01 08	704	0.2+	0.2+
1998 10 28	704	0.5−	0.8−	1999 12 15	704	0.3+	0.0	2000 01 08	704	0.3−	0.7+
1998 10 28	704	0.0	0.7−	1999 12 15	704	0.1−	0.9−				

1998 SC₁₂₇ = 2000 AT₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	79.93070		(2000.0)	P	Q		
<i>n</i>	0.17394162	ω	260.49675	+0.87996390	−0.46723217		
<i>a</i>	3.1783401	Ω	127.30841	+0.46708459	+0.81809571		
<i>e</i>	0.1630540	<i>i</i>	6.19099	+0.08657669	+0.33528124		
<i>P</i>	5.67	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

2000 JAN. 24

M.P.C. 37783

Residuals in seconds of arc

1998 09 26	704	0.6−	0.5+	1998 09 27	704	0.2−	0.2−	1998 10 21	046	0.5−	0.4+
1998 09 26	704	0.2−	1.4−	1998 10 16	046	0.4−	0.1−	2000 01 05	704	1.3−	0.2−
1998 09 26	704	1.2+	0.1+	1998 10 16	046	0.2+	0.1−	2000 01 05	704	0.8+	0.5−
1998 09 26	704	0.4+	1.5+	1998 10 16	046	0.0	0.1−	2000 01 05	704	0.3−	0.4+
1998 09 26	704	0.2−	0.5−	1998 10 16	046	0.2+	0.1−	2000 01 05	704	0.2−	0.6+
1998 09 27	704	1.3+	0.9−	1998 10 16	046	0.4+	0.2−	2000 01 06	704	0.2+	0.4−
1998 09 27	704	0.5+	0.8+	1998 10 21	046	0.1+	0.3+	2000 01 06	704	0.8+	0.4+
1998 09 27	704	1.5−	0.6+	1998 10 21	046	0.4+	0.1+	2000 01 06	704	0.1+	0.2−
1998 09 27	704	0.7−	0.3−	1998 10 21	046	0.4−	0.2−				

1998 SR₁₂₇ = 2000 AH₁₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.18145682	<i>ω</i>	271.28827	+0.12723385	−0.99145121		
<i>a</i>	3.0899671	<i>Ω</i>	171.24192	+0.96871815	+0.11794882		
<i>e</i>	0.0717686	<i>i</i>	10.94687	+0.21306500	+0.05579047		
<i>P</i>	5.43	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 24	699	0.6+	0.4+	1998 10 28	704	0.7−	0.1−	1999 12 14	704	0.2+	0.1−
1998 09 24	699	0.3−	1.0+	1998 10 29	704	0.5−	0.4−	1999 12 14	704	0.2−	0.1−
1998 09 24	699	0.7+	0.2−	1998 10 29	704	1.3+	0.6−	1999 12 14	704	0.1+	0.5−
1998 09 26	704	0.7−	0.0	1998 10 29	704	0.1+	0.1−	2000 01 08	704	0.6−	0.0
1998 09 26	704	0.2−	0.6+	1998 10 29	704	0.6+	0.4−	2000 01 08	704	0.1+	0.1−
1998 09 26	704	0.4+	0.8−	1998 10 29	704	0.1−	0.3−	2000 01 08	704	0.0	0.3+
1998 09 26	704	0.6+	0.5+	1998 11 10	704	0.4−	0.5+	2000 01 08	704	0.2+	0.1+
1998 09 27	704	0.5−	0.2+	1998 11 10	704	0.5−	0.3+	2000 01 08	704	0.7−	0.1−
1998 09 27	704	0.3+	0.1−	1998 11 10	704	0.7+	0.4+	2000 01 10	704	0.2+	0.2−
1998 09 27	704	0.9−	0.4−	1998 11 10	704	0.2−	1.0−	2000 01 10	704	0.5+	0.0
1998 09 27	704	0.1+	0.0	1998 11 11	704	0.6+	0.8−	2000 01 10	704	0.3+	0.6+
1998 09 27	704	0.0	0.9−	1998 11 11	704	(2.4−	0.5−)	2000 01 10	704	0.0	0.1+
1998 10 28	704	0.4−	0.4−	1998 11 11	704	0.3+	1.2+	2000 01 10	704	0.5+	0.4+
1998 10 28	704	0.1−	0.6+	1998 11 11	704	0.9−	0.6−				
1998 10 28	704	0.1+	1.5+	1999 12 14	704	0.5−	0.3−				

1998 SV₁₂₈ = 1999 XN₁₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17472644	<i>ω</i>	315.30820	+0.98034803	+0.17492529		
<i>a</i>	3.1688156	<i>Ω</i>	34.91989	−0.10438731	+0.85228158		
<i>e</i>	0.0167965	<i>i</i>	9.16827	−0.16739485	+0.49296780		
<i>P</i>	5.64	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 03 23	566	0.3−	0.8−	1998 10 10	699	0.2−	0.4+	1999 12 12	704	0.2+	0.6+
1996 03 23	566	0.3−	0.9−	1998 10 10	699	0.4+	0.6+	1999 12 12	704	0.0	0.1+
1996 03 23	566	0.5−	0.6−	1998 10 28	704	0.3−	1.7−	1999 12 12	704	(2.3−	0.0)
1998 09 18	699	0.4−	0.2+	1998 10 28	704	1.6+	0.4−	1999 12 15	704	0.2+	0.0
1998 09 18	699	0.2+	0.9+	1998 10 28	704	1.5+	1.2+	1999 12 15	704	0.4+	0.9−
1998 09 18	699	(2.1+	0.8−)	1998 10 28	704	0.0	0.2−	1999 12 15	704	1.2−	2.0−
1998 09 26	704	0.0	0.6+	1998 10 28	704	0.4+	1.4−	1999 12 15	704	0.4−	0.5−
1998 09 26	704	0.4−	0.7+	1998 10 29	704	0.2+	0.2−	1999 12 15	704	0.3+	0.7−
1998 09 26	704	0.3+	0.1−	1998 10 29	704	0.4+	1.6+	2000 01 02	704	0.0	0.4+
1998 09 26	704	0.4+	0.5−	1998 10 29	704	1.0−	0.8−	2000 01 02	704	1.1+	0.4+
1998 09 26	704	0.3+	0.5+	1998 10 29	704	0.6+	0.4+	2000 01 02	704	0.4+	0.2+
1998 09 27	704	0.8−	0.8−	1998 10 29	704	0.6+	0.1−	2000 01 02	704	0.6−	0.5+
1998 09 27	704	0.2+	0.6−	1998 11 10	704	1.4−	0.7−	2000 01 08	106	0.2−	0.3+
1998 09 27	704	1.1−	0.3−	1998 11 10	704	1.2−	0.2−	2000 01 08	106	0.2−	0.6+
1998 09 27	704	0.4+	0.4−	1998 11 10	704	(0.7−	2.6−)	2000 01 08	106	0.3−	0.6+
1998 09 27	704	0.9+	0.4−	1998 11 10	704	1.0−	0.8−				
1998 10 10	699	0.1+	0.6+	1999 12 12	704	0.0	0.2−				

1998 SB₁₂₉ = 2000 AA₁₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.25951530	<i>ω</i>	76.99292	−0.44303236	+0.89611554		
<i>a</i>	2.4342251	<i>Ω</i>	166.61517	−0.86043742	−0.41674086		
<i>e</i>	0.1006195	<i>i</i>	6.55935	−0.25173355	−0.15265646		
<i>P</i>	3.80	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 18	699	1.5−	0.4+	1998 10 20	699	0.3−	0.1−	1998 11 11	704	0.7−	0.7−
1998 09 18	699	0.7−	0.5−	1998 10 28	704	0.1−	0.6+	2000 01 05	704	0.3−	0.1+
1998 09 18	699	0.3−	1.1+	1998 10 28	704	1.6−	0.2−	2000 01 05	704	0.3−	0.0
1998 09 26	704	0.7−	0.5+	1998 10 28	704	0.7−	1.4−	2000 01 05	704	0.7−	0.3−
1998 09 26	704	0.1−	0.0	1998 10 28	704	0.9−	0.1−	2000 01 05	704	0.1−	0.2+
1998 09 26	704	0.2−	0.7−	1998 10 28	704	0.3+	0.4+	2000 01 05	704	0.1−	0.0
1998 09 26	704	0.1−	0.9−	1998 10 29	704	0.9−	0.2+	2000 01 07	704	0.2−	0.1+
1998 09 26	704	0.4−	1.1−	1998 10 29	704	0.3−	0.7−	2000 01 07	704	0.1−	0.3−
1998 09 27	704	0.8+	0.3+	1998 10 29	704	1.0+	1.0+	2000 01 07	704	0.3+	0.1−
1998 09 27	704	1.2+	0.0	1998 10 29	704	0.1+	0.5−	2000 01 07	704	0.3+	0.2+
1998 09 27	704	1.5+	0.9+	1998 10 29	704	0.8+	1.5−	2000 01 07	704	0.2−	0.5+
1998 09 27	704	1.3+	0.4−	1998 11 10	704	1.0+	1.2+	2000 01 10	732	0.3+	0.7−
1998 09 27	704	0.5+	0.8−	1998 11 10	704	1.3+	0.9+	2000 01 10	732	0.2+	0.2−
1998 10 11	699	0.2+	0.4−	1998 11 10	704	0.6−	0.6+	2000 01 10	732	0.1−	0.5−
1998 10 11	699	0.7−	1.0+	1998 11 10	704	0.8−	0.4+	2000 01 11	732	0.0	0.3+
1998 10 11	699	0.0	0.8+	1998 11 11	704	1.3−	0.3+	2000 01 11	732	0.1+	0.3+
1998 10 20	699	0.7+	0.6+	1998 11 11	704	0.8+	0.3−	2000 01 11	732	0.6+	0.3+
1998 10 20	699	0.2+	0.2+	1998 11 11	704	1.1+	0.9−				

1998 SN₁₂₉ = 2000 AA₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22924737	<i>ω</i>	174.31373	+0.87395528	+0.48586100		
<i>a</i>	2.6440306	<i>Ω</i>	156.60577	−0.44707355	+0.81329494		
<i>e</i>	0.1109990	<i>i</i>	1.71532	−0.19059750	+0.32014127		
<i>P</i>	4.30	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1996 02 24	552	0.0	0.2−	1998 09 27	704	0.2−	0.1−	1998 10 29	704	1.0−	0.9+
1996 02 24	552	0.2−	0.7−	1998 09 27	704	1.0+	0.3+	1998 10 29	704	0.0	1.4+
1997 06 04	566	0.3−	0.2−	1998 10 10	699	0.1−	0.4+	1998 10 29	704	0.9−	0.1−
1997 06 04	566	0.0	0.5−	1998 10 10	699	0.5+	0.2+	2000 01 05	704	0.5+	0.3−
1997 06 04	566	0.1+	0.4−	1998 10 10	699	0.5+	0.2+	2000 01 05	704	0.4−	0.5−
1998 09 26	704	0.5−	1.1+	1998 10 28	704	0.7+	1.2−	2000 01 05	704	0.0	0.3+
1998 09 26	704	0.8+	0.3−	1998 10 28	704	0.5+	1.1−	2000 01 05	704	0.1+	0.1−
1998 09 26	704	1.7+	0.8−	1998 10 28	704	0.1−	1.1−	2000 01 06	704	0.5−	0.2−
1998 09 26	704	0.4+	0.4+	1998 10 28	704	1.1−	1.0−	2000 01 06	704	0.8+	0.2−
1998 09 27	704	0.3−	0.1−	1998 10 28	704	0.9−	0.1+	2000 01 06	704	0.6−	0.8+
1998 09 27	704	1.1+	0.4+	1998 10 29	704	1.8−	1.2−				
1998 09 27	704	0.9+	0.5+	1998 10 29	704	0.6−	0.3−				

1998 SB₁₃₁ = 2000 AY₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.21823544	<i>ω</i>	79.88956	+0.98907781	−0.14459852		
<i>a</i>	2.7322422	<i>Ω</i>	288.42010	+0.12067489	+0.90572389		
<i>e</i>	0.0539114	<i>i</i>	1.72570	+0.08463244	+0.39844134		
<i>P</i>	4.52	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 14	699	0.4−	1.9+	1998 10 29	704	0.1+	0.6−	2000 01 05	704	0.0	0.8+

1998 09 26	704	0.0	0.6+	1998 11 10	699	1.7−	0.8+	2000 01 06	704	0.0	0.7+
1998 09 26	704	0.2+	0.0	1998 11 10	704	0.6−	0.4−	2000 01 06	704	0.0	0.6+
1998 09 27	704	0.1−	0.1−	1998 11 10	699	0.6+	0.2−	2000 01 06	704	0.1−	0.1+
1998 09 27	704	0.5+	0.6+	1998 11 10	699	0.3+	0.4+	2000 01 06	704	0.4−	0.0
1998 09 27	704	0.8−	0.5−	1998 11 11	704	1.1+	1.9+	2000 01 09	691	0.0	1.1−
1998 09 27	704	0.3−	0.0	1998 11 11	704	0.1−	0.2+	2000 01 09	691	0.4−	0.0
1998 09 27	704	0.2−	0.0	1998 11 11	704	0.1+	0.1−	2000 01 09	691	0.9−	0.1−
1998 10 28	704	0.6+	0.3−	1998 11 11	704	0.0	0.1+	2000 01 11	120	0.1−	0.1+
1998 10 28	704	1.4+	1.5−	1998 11 11	704	0.3+	0.7+	2000 01 11	120	0.6+	1.0+
1998 10 28	704	0.3+	1.1−	1998 11 23	699	1.0−	0.3−	2000 01 12	120	1.4+	1.5−
1998 10 28	704	0.2−	0.5−	1998 11 23	699	0.2+	0.2+	2000 01 12	120	0.4+	0.1−
1998 10 28	704	1.0−	1.0−	1998 11 23	699	0.6−	0.9−	2000 01 16	691	0.1−	0.1−
1998 10 29	704	0.1−	0.5+	1999 01 18	691	0.7+	0.1−	2000 01 16	691	0.0	0.1−
1998 10 29	704	1.2+	0.8−	1999 01 18	691	0.2−	0.4−	2000 01 16	691	0.0	0.0

1998 SJ₁₃₂ = 2000 AL₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	44.90249	(2000.0)	
<i>n</i>	0.21806328	ω	138.37767
<i>a</i>	2.7336801	Ω	316.60485
<i>e</i>	0.0483894	<i>i</i>	4.44638
<i>P</i>	4.52	<i>H</i>	14.2
		<i>G</i>	0.15
		<i>U</i>	3

Residuals in seconds of arc

1993 08 16	010	(0.3+	2.1+)	1998 10 28	704	0.1−	1.4+	1999 12 07	704	0.0	0.7+
1993 08 17	010	(2.4−	0.0)	1998 10 28	704	1.7−	0.2+	1999 12 07	704	0.2−	1.0−
1993 08 17	010	0.9−	1.8+	1998 10 29	704	0.7+	1.1−	1999 12 07	704	0.3+	1.5−
1998 09 26	704	0.5+	0.3−	1998 10 29	704	0.4−	0.5+	1999 12 07	704	0.6−	0.1−
1998 09 26	704	0.9+	1.3−	1998 10 29	704	1.2−	0.9+	2000 01 04	704	(2.5+	0.6−)
1998 09 26	704	1.5+	0.0	1998 10 29	704	0.3+	0.9−	2000 01 04	704	0.7+	0.6+
1998 09 26	704	0.5+	0.2−	1998 11 10	704	0.2−	1.5−	2000 01 04	704	0.2+	1.3+
1998 09 27	704	1.0−	1.0+	1998 11 10	704	1.8+	1.2−	2000 01 04	704	1.0+	1.3+
1998 09 27	704	0.1+	1.5−	1998 11 10	704	0.5−	0.1−	2000 01 07	704	0.5+	0.2−
1998 09 27	704	0.7+	0.2+	1998 11 11	704	0.6+	0.7−	2000 01 07	704	1.5−	0.3+
1998 09 27	704	1.1−	0.4+	1998 11 11	704	0.3+	1.0+	2000 01 07	704	0.1−	0.2−
1998 10 28	704	1.1−	1.0+	1998 11 11	704	0.4+	0.4+	2000 01 07	704	0.2+	0.2−
1998 10 28	704	0.4+	1.2+	1998 11 11	704	1.1−	0.1−	2000 01 07	704	0.1+	0.2+

1998 SV₁₃₂ = 2000 AU₁₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	107.48370	(2000.0)	
<i>n</i>	0.18979581	ω	136.38057
<i>a</i>	2.9987825	Ω	234.50947
<i>e</i>	0.0670935	<i>i</i>	6.47139
<i>P</i>	5.19	<i>H</i>	13.2
		<i>G</i>	0.15
		<i>U</i>	3

Residuals in seconds of arc

1998 09 26	704	0.1−	0.3+	1998 10 29	704	0.2−	0.6−	1999 01 14	691	0.0	0.1−
1998 09 26	704	1.0+	1.1−	1998 10 29	704	0.0	0.0	1999 01 14	691	0.1−	0.1−
1998 09 26	704	0.3+	0.1+	1998 10 29	704	0.7−	0.3+	1999 01 18	691	0.6+	0.0
1998 09 26	704	0.0	0.4−	1998 10 29	704	0.5−	0.4−	1999 01 18	691	0.3−	0.1+
1998 09 26	704	0.9+	0.9−	1998 10 29	704	0.7−	0.1−	1999 12 14	704	0.6+	0.1−
1998 09 27	704	0.0	0.3+	1998 11 10	704	0.9+	0.1−	1999 12 14	704	0.5+	0.4−
1998 09 27	704	0.5−	0.2+	1998 11 10	704	0.3+	0.2+	1999 12 14	704	(0.6+	2.1+)
1998 09 27	704	0.3−	0.8+	1998 11 10	704	0.0	0.1−	2000 01 05	704	0.0	0.2+
1998 09 27	704	0.8+	0.3+	1998 11 10	704	0.1−	1.0−	2000 01 05	704	0.1−	0.2+
1998 09 27	704	0.7−	0.0	1998 11 11	704	0.5+	0.0	2000 01 05	704	0.0	0.3+
1998 10 11	699	0.2−	0.6+	1998 11 11	704	0.1−	0.5−	2000 01 05	704	0.2+	0.5−
1998 10 11	699	0.5−	0.4+	1998 11 11	704	1.0+	1.3−	2000 01 07	704	0.1+	0.3+
1998 10 11	699	0.0	0.5+	1998 11 11	704	0.0	0.6−	2000 01 07	704	0.1+	0.1+
1998 10 16	832	0.1+	0.2−	1998 11 11	704	0.4+	1.3−	2000 01 07	704	0.3+	0.4−
1998 10 16	832	0.3−	0.3−	1998 11 17	699	0.5−	0.6+	2000 01 07	704	0.2+	0.2−
1998 10 17	832	0.3−	0.3−	1998 11 17	699	0.3+	0.4+	2000 01 07	704	0.1+	0.2−
1998 10 17	832	0.4−	0.3−	1998 11 17	699	0.2+	0.2+	2000 01 09	704	0.3−	0.2+
1998 10 28	704	0.7−	0.4−	1999 01 11	704	1.3+	0.4+	2000 01 09	704	0.4−	0.0
1998 10 28	704	0.3+	0.0	1999 01 11	704	1.5−	2.0+	2000 01 09	704	0.6−	0.0

1998 10 28	704	0.5+	0.1−	1999 01 11	704	0.0	1.4+	2000 01 09	704	0.7−	0.4−
1998 10 28	704	0.0	0.4+	1999 01 11	704	1.0−	0.6+				
1998 10 28	704	0.1−	1.1+	1999 01 14	691	0.1+	0.7+				

1998 SH₁₃₃ = 2000 AP₁₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	303.80486	(2000.0)	
<i>n</i>	0.17661602	ω	325.88476
<i>a</i>	3.1461734	Ω	209.50957
<i>e</i>	0.0990070	<i>i</i>	13.49966
<i>P</i>	5.58	<i>H</i>	12.8
		<i>G</i>	0.15
		<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.3+	0.3−	1998 10 28	704	0.3+	0.2−	1998 11 11	704	(3.0−	0.2−)
1998 09 26	704	0.6−	1.2−	1998 10 28	704	0.2−	0.2+	1999 12 05	704	0.1−	0.5−
1998 09 26	704	0.4+	1.1−	1998 10 29	704	0.3+	1.9+	1999 12 05	704	0.4−	0.2+
1998 09 26	704	0.2+	1.1−	1998 10 29	704	0.0	0.0	1999 12 05	704	0.6−	0.2−
1998 09 26	704	0.4+	0.1−	1998 10 29	704	0.6−	0.5+	2000 01 08	704	0.6+	0.2+
1998 09 27	704	0.6+	0.2−	1998 10 29	704	0.4−	0.7+	2000 01 08	704	0.4+	0.3+
1998 09 27	704	0.2−	0.4−	1998 10 29	704	1.0−	0.7−	2000 01 08	704	0.6+	0.1−
1998 09 27	704	0.4+	0.7+	1998 11 10	704	0.2+	0.7+	2000 01 08	704	0.5+	0.2+
1998 09 27	704	0.1+	1.4+	1998 11 10	704	1.0−	0.6−	2000 01 08	704	0.5+	1.1−
1998 09 27	704	0.5−	0.8+	1998 11 10	704	0.6+	1.1−	2000 01 11	704	0.2−	0.2+
1998 10 17	699	0.4+	0.3+	1998 11 10	704	0.7+	0.1−	2000 01 11	704	0.1−	0.3−
1998 10 17	699	0.2−	0.3+	1998 11 10	704	1.2−	1.6−	2000 01 11	704	0.3−	0.1−
1998 10 17	699	0.7+	1.0+	1998 11 11	704	(2.3+	0.3+)	2000 01 11	704	0.5−	0.6+
1998 10 28	704	0.5+	0.3−	1998 11 11	704	0.6+	0.7+	2000 01 11	704	0.4−	0.6+
1998 10 28	704	1.0−	1.0−	1998 11 11	704	0.0	0.6+				

1998 SH₁₃₄ = 1981 WO₈

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	38.57510	(2000.0)	
<i>n</i>	0.16922675	ω	286.97106
<i>a</i>	3.2371044	Ω	154.18212
<i>e</i>	0.1214487	<i>i</i>	0.91168
<i>P</i>	5.82	<i>H</i>	13.4
		<i>G</i>	0.15
		<i>U</i>	3

Residuals in seconds of arc

1981 11 25	095	0.2−	1.0+	1998 10 28	704	0.0	1.3+	1999 12 15	703	0.2−	0.6+
1998 09 18	809	(2.4+	1.6−)	1998 10 28	704	0.0	1.0+	1999 12 18	699	0.4+	1.0+
1998 09 18	809	0.4+	1.7−	1998 10 28	704	1.5−	0.7+	1999 12 18	699	0.6+	0.2+
1998 09 18	809	0.3+	1.6−	1998 10 28	704	0.9−	0.4+	1999 12 18	699	0.6−	0.4−
1998 09 18	699	0.5−	1.2+	1998 10 29	704	0.4−	0.5+	1999 12 30	699	0.1+	1.0+
1998 09 18	699	0.1−	0.4−	1998 10 29	704	1.5−	1.7+	1999 12 30	699	1.3−	0.4+
1998 09 18	699	(0.2−	2.1+)	1998 10 29	704	0.3+	0.6−	1999 12 30	699	0.0	0.1+
1998 09 20	809	(2.5+	1.0+)	1998 10 29	704	0.6−	0.2+	2000 01 02	120	0.6+	0.7−
1998 09 20	809	1.4+	0.6+	1998 10 29	704	0.5−	0.2+	2000 01 02	120	0.2−	0.4−
1998 09 20	809	1.4+	0.9+	1998 11 10	704	1.3+	0.9−	2000 01 02	120	1.0+	0.0
1998 09 26	704	0.2+	0.2+	1998 11 10	704	(2.1−	1.0+)	2000 01 02	120	0.4−	0.9−
1998 09 26	704	0.5−	1.0−	1998 11 10	704	0.6+	0.7−	2000 01 05	704	0.2−	0.8−
1998 09 26	704	0.6−	1.8−	1998 11 10	704	0.3+	0.7+	2000 01 05	704	0.6−	0.0
1998 09 26	704	0.2−	1.7−	1998 11 10	704	0.1−	0.5+	2000 01 05	704	0.1−	0.8−
1998 09 26	704	(2.2−	0.3+)	1998 11 11	704	1.1+	1.4+	2000 01 05	704	0.0	0.8−
1998 09 27	704	0.0	0.2−	1998 11 11	704	0.1+	0.8+	2000 01 06	704	0.2−	0.1+
1998 09 27	704	0.8+	1.1−	1998 11 11	704	0.2+	1.1+	2000 01 06	704	0.2+	0.1−
1998 09 27	704	1.0−	1.1−	1998 11 11	704	1.4+	0.8+	2000 01 06	704	0.4+	0.5−
1998 09 27	704	1.1−	0.7−	1998 11 23	699	0.6+	0.2+	2000 01 06	704	0.0	0.2−
1998 09 27	704	1.3−	0.3−	1998 11 23	699	0.8−	0.0	2000 01 08	106	0.0	0.3−
1998 10 17	699	0.7+	0.8−	1998 11 23	699	0.4−	0.7−	2000 01 08	106	0.1−	0.4+
1998 10 17	699	0.6+	0.1−	1999 12 15	703	0.1+	0.7+	2000 01 08	106	0.0	0.5−
1998 10 17	699	1.5+	0.3+	1999 12 15	703	0.4+	0.1−				
1998 10 28	704	0.8−	0.5−	1999 12 15	703	0.1−	0.6+				

2000 JAN. 24

M.P.C. 37785

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27538042	ω	244.40899	+0.01192858	+0.99785076		
<i>a</i>	2.3398105	Ω	26.51604	−0.85783407	+0.04332166		
<i>e</i>	0.2202070	<i>i</i>	8.29806	−0.51378830	−0.04916393		
<i>P</i>	3.58	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 18	699	1.2+	0.3−	1998 09 27	704	0.0	0.7+
1998 09 18	699	0.1+	0.3−	1998 09 27	704	0.1−	0.6−
1998 09 18	699	0.3−	0.8+	1998 10 28	704	0.8−	1.2+
1998 09 26	704	1.1−	0.1−	1998 10 28	704	0.4−	0.4−
1998 09 26	704	1.3−	1.2−	1998 10 28	704	0.1−	0.1−
1998 09 26	704	0.1−	0.0	1998 10 28	704	0.4−	0.6−
1998 09 26	704	0.9+	0.6+	1998 10 29	704	0.4−	0.2+
1998 09 26	704	0.3−	0.7+	1998 10 29	704	1.2−	0.4+
1998 09 27	704	0.5+	0.5+	1998 10 29	704	0.5+	0.7+
1998 09 27	704	0.3+	0.7−	1998 10 29	704	1.8+	1.3−

1998 SR₁₃₅ = 1999 XB₂₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18057829	ω	252.81551	+0.98013597	+0.18611361		
<i>a</i>	3.0999809	Ω	96.41767	−0.14542648	+0.90936187		
<i>e</i>	0.1632914	<i>i</i>	3.95389	−0.13485036	+0.37205202		
<i>P</i>	5.46	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 18	699	0.5+	0.4+	1998 10 11	699	0.1+	0.1−
1998 09 18	699	0.6−	0.2−	1998 10 20	699	0.1+	0.5−
1998 09 18	699	0.4−	0.1+	1998 10 20	699	0.9+	0.5+
1998 09 26	704	0.2−	0.6−	1998 10 20	699	0.7+	0.5−
1998 09 26	704	1.0+	1.0−	1998 11 10	704	0.2+	0.8+
1998 09 26	704	0.2−	0.8−	1998 11 10	704	0.1+	0.3+
1998 09 26	704	0.2−	0.2−	1998 11 10	704	0.7+	0.2−
1998 09 26	704	0.3−	0.6+	1998 11 10	704	0.6−	0.1−
1998 09 27	704	0.3−	0.4−	1998 11 11	704	1.5−	0.3−
1998 09 27	704	0.5−	0.5−	1998 11 11	704	0.5−	0.9+
1998 09 27	704	0.4+	0.5−	1998 11 11	704	0.3+	0.1−
1998 09 27	704	1.0−	1.2+	1998 11 11	704	1.0+	1.1−
1998 09 27	704	0.2+	1.6+	1998 11 11	704	0.6−	0.1+
1998 10 11	699	0.8+	0.3+	1999 12 04	691	0.2+	0.3−
1998 10 11	699	0.0	0.2+	1999 12 04	691	0.2+	0.2−

1998 SK₁₃₇ = 1999 XH₂₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23072503	ω	156.68132	−0.32090933	+0.94192242		
<i>a</i>	2.6327295	Ω	94.48273	−0.88384261	−0.26027213		
<i>e</i>	0.0821799	<i>i</i>	5.69860	−0.34035194	−0.21222765		
<i>P</i>	4.27	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 26	704	(1.9−	2.4−)	1998 10 17	699	0.7−	0.1+
1998 09 26	704	0.0	0.8−	1998 10 17	699	0.3+	0.3−
1998 09 26	704	0.3+	1.2−	1998 10 20	699	0.8+	0.1+
1998 09 26	704	0.3+	0.6−	1998 10 20	699	1.5+	0.8−
1998 09 27	704	0.4+	0.9+	1998 10 20	699	0.2+	0.4−
1998 09 27	704	0.2+	0.7+	1999 12 05	691	0.0	0.1+
1998 09 27	704	0.8−	0.4+	1999 12 05	691	0.1−	0.1+
1998 09 27	704	0.2+	0.5+	1999 12 05	691	0.1+	0.1+
1998 09 27	704	1.3−	1.2+	1999 12 14	691	0.2+	0.2−
1998 10 17	699	1.4−	0.4+	1999 12 14	691	0.1+	0.2−

1998 SQ₁₃₇ = 1999 XQ₁₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21091087	ω	215.92513	+0.44220898	+0.89190369		
<i>a</i>	2.7951390	Ω	80.49054	−0.79887905	+0.43964958		
<i>e</i>	0.0465443	<i>i</i>	5.50721	−0.40772966	+0.10590590		
<i>P</i>	4.67	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 26	704	0.2+	0.2+	1998 11 10	704	0.6−	1.3−
1998 09 26	704	1.3+	0.1−	1998 11 10	704	1.0−	0.2−
1998 09 26	704	0.0	0.0	1998 11 10	704	0.3+	0.9+
1998 09 26	704	0.7−	0.6−	1998 11 11	704	0.6+	1.7+
1998 09 26	704	0.3+	0.8−	1998 11 11	704	1.0−	1.6−
1998 09 27	704	0.9−	0.8−	1998 11 11	704	0.1+	0.8+
1998 09 27	704	0.5+	0.3+	1998 11 11	704	1.8−	0.6−
1998 09 27	704	1.0−	1.3−	1999 12 08	703	0.5+	0.2+
1998 09 27	704	(3.3−	1.2−)	1999 12 08	703	0.0	0.1+
1998 10 11	699	0.4+	0.5+	1999 12 08	703	0.3−	0.5−
1998 10 11	699	0.7+	1.1+	1999 12 08	703	0.5−	0.4−
1998 10 11	699	0.7+	1.0+	1999 12 10	704	1.0+	0.2+
1998 11 10	704	1.8+	0.5+	1999 12 10	704	0.2−	0.4−

1998 SR₁₃₇ = 2000 AO₁₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18395785	ω	272.45658	+0.95071572	+0.29281950		
<i>a</i>	3.0618965	Ω	70.53079	−0.22366876	+0.87541259		
<i>e</i>	0.1288479	<i>i</i>	6.20847	−0.21473683	+0.38459010		
<i>P</i>	5.36	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 26	704	0.2+	0.8−	1998 10 11	699	1.3+	1.1+
1998 09 26	704	1.0−	0.4−	1998 10 11	699	0.8+	0.2+
1998 09 26	704	0.1+	1.1−	1998 10 28	704	0.8−	0.9−
1998 09 26	704	0.1+	0.3−	1998 10 28	704	0.0	0.3+
1998 09 26	704	0.3−	0.6−	1998 10 28	704	1.2+	1.4−
1998 09 27	704	0.3−	0.0	1998 10 28	704	1.0−	0.3+
1998 09 27	704	0.6+	0.8+	1998 10 29	704	0.5−	0.2+
1998 09 27	704	0.6−	0.8+	1998 10 29	704	0.3+	0.4−
1998 09 27	704	0.7−	0.8+	1998 10 29	704	0.0	0.4+
1998 09 27	704	0.2+	0.6+	1998 10 29	704	0.4+	0.6−
1998 10 11	699	0.7+	0.2−	1998 10 29	704	0.0	0.0

1998 SX₁₃₇ = 2000 AP₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20342489	ω	17.45131	+0.06346599	−0.99663917		
<i>a</i>	2.8632987	Ω	68.93468	+0.90888423	+0.03628723		
<i>e</i>	0.0206951	<i>i</i>	3.18163	+0.41219113	+0.07344118		
<i>P</i>	4.85	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1993 10 15	010	0.7+	0.3+	1998 10 28	704	1.0+	0.4+
1993 10 15	010	0.2−	0.4−	1998 10 28	704	0.0	0.7−
1993 10 15	010	0.4+	1.7−	1998 10 28	704	0.6+	0.1+
1998 09 21	809	0.3−	1.8+	1998 10 28	704	0.4−	0.2+
1998 09 21	809	0.5−	1.2+	1998 10 28	704	(2.9−	0.7+)
1998 09 21	809	1.2−	1.5+	1998 10 29	704	0.0	0.2+
1998 09 26	704	0.2−	0.5−	1998 10 29	704	0.1−	0.4+
1998 09 26	704	0.1+	0.1+	1998 10 29	704	1.2+	0.3+
1998 09 26	704	0.4+	1.1−	1998 10 29	704	0.2−	0.2+
1998 09 26	704	0.3+	1.3−	1998 10 29	704	0.8−	0.4−
1998 09 26	704	0.4−	0.9−	1998 11 10	704	0.4+	0.6+
1998 09 27	704	0.1+	0.6−	1998 11 10	704	1.8−	0.1+

1998 09 27	704	0.8+	0.1-	1998 11 10	704	0.9+	0.8-	2000 01 05	120	0.2-	0.2-
1998 09 27	704	0.3+	0.2-	1998 11 10	704	1.1-	0.9-	2000 01 05	120	0.3-	0.4-
1998 09 27	704	1.0-	0.7-	1998 11 10	704	1.7-	0.1+	2000 01 06	120	0.3-	0.2-
1998 10 11	699	1.1+	0.4+	1998 11 11	704	1.3+	1.0+	2000 01 06	120	0.5+	0.1-
1998 10 11	699	0.8+	0.0	1998 11 11	704	0.2-	0.2-				
1998 10 11	699	0.9+	1.0+	1998 11 11	704	1.1-	0.6+				

1998 SE₁₃₈ = 2000 AX₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	174.61746	ω	293.21986	+0.62691092	+0.77863991				
<i>a</i>	2.7418860	Ω	15.69078	-0.67418075	+0.55923003				
<i>e</i>	0.0851565	<i>i</i>	5.62459	-0.39046514	+0.28457275				
<i>P</i>	4.54	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 09 14	699	0.5+	0.7-	1998 09 27	704	0.4+	0.9-	1998 11 10	704	0.6-	1.1-
1998 09 14	699	0.0	0.6-	1998 09 27	704	0.4-	1.0+	1998 11 11	704	0.6-	0.1-
1998 09 14	699	0.5-	0.1+	1998 09 27	704	0.3+	0.5-	1998 11 11	704	1.2-	1.3+
1998 09 16	411	0.5-	0.4-	1998 09 27	704	0.2+	0.5+	1998 11 11	704	1.0-	0.3-
1998 09 16	411	1.1-	0.7-	1998 10 28	704	0.7-	0.9-	1998 11 11	704	(3.9-	2.5+)
1998 09 18	809	(2.0+	3.6+)	1998 10 28	704	0.5+	0.2-	2000 01 03	704	0.3-	0.3-
1998 09 18	809	(0.2+	3.1+)	1998 10 28	704	0.8+	0.6-	2000 01 03	704	0.5+	1.1-
1998 09 18	809	(0.3+	3.3+)	1998 10 28	704	0.1+	0.0	2000 01 03	704	0.0	0.8-
1998 09 20	809	(0.2-	2.7+)	1998 10 28	704	0.5+	0.2+	2000 01 03	704	0.1-	1.1+
1998 09 20	809	(0.7-	2.9+)	1998 10 29	704	1.8+	1.7-	2000 01 03	704	0.2+	0.0
1998 09 20	809	(0.8-	3.8+)	1998 10 29	704	0.7-	0.0	2000 01 04	704	0.1-	0.0
1998 09 26	704	1.2-	0.2+	1998 10 29	704	0.1+	0.0	2000 01 04	704	0.6+	0.4+
1998 09 26	704	0.5+	1.7+	1998 10 29	704	0.3-	0.5+	2000 01 04	704	0.7+	0.7+
1998 09 26	704	1.1+	0.6+	1998 10 29	704	0.3+	0.3-	2000 01 04	704	1.8-	0.0
1998 09 26	704	0.3-	0.5+	1998 11 10	704	1.7+	1.7+	2000 01 04	704	0.2+	0.0
1998 09 26	704	0.9+	1.3+	1998 11 10	704	0.1-	0.1+				
1998 09 27	704	0.1-	0.9-	1998 11 10	704	0.6-	0.3+				

1998 SH₁₃₈ = 1999 XS₂₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	118.21526	ω	167.03656	+0.94339058	+0.33168134				
<i>a</i>	3.0760241	Ω	173.59213	-0.30534847	+0.87001663				
<i>e</i>	0.2430706	<i>i</i>	0.67033	-0.12952424	+0.36477192				
<i>P</i>	5.39	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1998 09 18	809	1.4+	0.9+	1998 10 28	704	0.0	0.7-	1999 12 08	691	1.0-	0.1-
1998 09 18	809	0.3-	0.2+	1998 10 28	704	0.2-	0.1-	1999 12 15	691	0.1+	0.1-
1998 09 18	809	1.1-	0.6+	1998 10 28	704	0.7-	0.6-	1999 12 15	691	0.0	0.0
1998 09 20	809	1.5+	1.7+	1998 10 29	704	0.8+	1.3+	1999 12 15	691	0.6+	0.0
1998 09 20	809	0.5+	0.6+	1998 10 29	704	0.2-	0.1-	1999 12 16	691	0.0	0.0
1998 09 20	809	0.6-	1.9+	1998 10 29	704	0.9+	0.8-	1999 12 16	691	0.1-	0.1-
1998 09 26	704	0.2-	1.2-	1998 10 29	704	0.6+	0.6-	1999 12 16	691	0.3+	0.2+
1998 09 26	704	0.4+	0.1+	1998 11 10	704	0.7-	0.5-	1999 12 17	691	0.1-	0.1-
1998 09 26	704	0.1-	1.3-	1998 11 10	704	(0.4-	2.2-)	1999 12 17	691	0.1+	0.3-
1998 09 26	704	0.6-	1.0-	1998 11 10	704	0.6-	1.2+	1999 12 17	691	0.1-	0.1+
1998 09 26	704	1.0-	0.2+	1998 11 10	704	0.8-	0.4+	1999 12 17	691	0.1-	0.0
1998 09 27	704	0.1-	0.3-	1999 01 07	691	0.2-	0.2-	1999 12 17	691	0.1+	0.1-
1998 09 27	704	0.9-	0.6+	1999 01 07	691	0.0	0.2-	1999 12 17	691	0.1+	0.4+
1998 09 27	704	1.7-	0.1+	1999 01 07	691	0.5-	0.4-	1999 12 18	691	0.2-	0.1-
1998 09 27	704	0.2+	0.5-	1999 01 15	691	0.0	0.3-	1999 12 18	691	0.1-	0.2+
1998 10 17	699	0.8+	0.8-	1999 01 15	691	0.5+	0.2-	1999 12 18	691	0.1-	0.0
1998 10 17	699	1.8+	0.5+	1999 01 15	691	0.6+	0.3+	2000 01 07	691	0.1+	0.1-
1998 10 17	699	0.3+	0.4-	1999 12 08	691	0.1+	0.3+	2000 01 07	691	0.2+	0.3+
1998 10 28	704	0.5+	0.6-	1999 12 08	691	0.1+	0.2+	2000 01 07	691	0.2+	0.2+

1998 SY₁₃₈ = 1999 XS₂₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	274.69099	ω	229.99915	-0.51621115	+0.85623251				
<i>a</i>	2.3919505	Ω	8.98693	-0.74210532	-0.43562687				
<i>e</i>	0.0782225	<i>i</i>	7.28101	-0.42755788	-0.27766007				
<i>P</i>	3.70	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 09 18	809	(2.2+	0.2-)	1998 09 27	704	1.8-	1.0-	1998 10 28	704	0.1+	0.7+
1998 09 18	809	1.3+	0.1-	1998 09 27	704	1.5-	1.3-	1998 10 28	704	0.3+	0.7+
1998 09 18	809	1.2+	0.7+	1998 10 11	699	0.4-	0.3-	1998 10 29	704	0.7-	0.7+
1998 09 20	809	0.2+	0.8+	1998 10 11	699	0.5-	0.2+	1998 10 29	704	0.6-	1.7-
1998 09 20	809	0.8-	1.0+	1998 10 11	699	1.8-	0.2-	1998 10 29	704	0.9-	0.4-
1998 09 20	809	1.1-	0.7+	1998 10 20	910	0.8+	0.3+	1998 10 29	704	0.9-	0.2-
1998 09 26	704	0.8+	1.3+	1998 10 20	910	0.7+	0.1+	1998 10 29	704	1.2-	1.2-
1998 09 26	704	1.1-	1.0-	1998 10 20	910	0.7+	0.2+	1999 12 08	704	0.1-	0.8+
1998 09 26	704	1.5+	1.9-	1998 10 21	910	0.5+	0.8+	1999 12 08	704	0.2-	0.6-
1998 09 26	704	0.9+	1.0-	1998 10 21	910	0.4+	0.8+	1999 12 08	704	0.6+	0.8-
1998 09 26	704	0.2+	0.6-	1998 10 22	910	0.6+	0.8+	1999 12 09	703	0.3-	1.0+
1998 09 27	704	0.7+	0.5-	1998 10 28	704	1.6+	0.8+	1999 12 09	703	1.0-	0.3+
1998 09 27	704	0.5+	0.1+	1998 10 28	704	0.1-	0.2-	1999 12 09	703	0.0	0.0
1998 09 27	704	0.7-	1.3+	1998 10 28	704	1.1+	0.3-	1999 12 09	703	1.0+	0.8-

1998 SZ₁₃₈ = 1999 YD₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	226.66685	ω	53.39020	+0.20477766	+0.97662582				
<i>a</i>	2.1174896	Ω	228.56033	-0.92356930	+0.17068492				
<i>e</i>	0.3032309	<i>i</i>	4.99956	-0.32416948	+0.13064709				
<i>P</i>	3.08	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1992 10 05	675	1.6-	0.7+	1998 10 24	747	0.1-	0.2+	1998 10 25	557	0.3+	0.4-
1992 10 05	675	1.5+	0.0	1998 10 24	747	0.6+	0.1-	1998 10 28	704	0.7-	1.4-
1998 09 26	704	1.9-	1.0+	1998 10 24	747	0.0	0.6+	1998 10 28	704	0.3+	1.5-
1998 09 26	704	(0.5-	2.5+)	1998 10 24	691	0.3-	0.3-	1998 10 28	704	0.6-	1.4-
1998 09 26	704	0.8-	0.9+	1998 10 24	691	0.3-	0.3-	1998 10 28	704	0.2-	1.0-
1998 09 26	704	0.5-	1.4+	1998 10 24	402	0.2+	0.4-	1998 10 28	704	0.6+	0.5+
1998 09 26	704	1.7-	0.9+	1998 10 24	402	0.2+	0.4-	1998 10 29	704	(0.6+	3.1-)
1998 09 27	704	0.5-	0.1+	1998 10 24	402	0.1+	0.4-	1998 10 29	704	0.7-	0.9-
1998 09 27	704	0.5+	0.1-	1998 10 24	402	0.3+	0.3-	1998 10 29	704	0.8-	1.2+
1998 09 27	704	0.4-	0.5+	1998 10 24	046	1.2+	0.3+	1998 10 29	704	0.3-	0.6-
1998 09 27	704	0.1+	0.0	1998 10 24	046	0.4+	0.5-	1998 10 29	704	0.3-	0.5-
1998 09 27	704	0.1+	0.7-	1998 10 24	046	0.7+	0.2+	1998 11 10	704	(0.8-	2.6-)
1998 10 11	699	0.4+	0.7+	1998 10 24	046	0.7-	0.6-	1998 11 10	704	1.2+	0.3+
1998 10 11	699	0.2-	0.0	1998 10 24	540	1.8+	0.4+	1998 11 10	704	0.8-	0.3+
1998 10 11	699	0.5+	0.6-	1998 10 24	540	0.6-	0.9-	1998 11 10	704	0.3+	1.2-
1998 10 12	910	1.1+	0.3+	1998 10 24	540	0.4-	0.2-	1998 11 11	704	0.4+	1.1+
1998 10 12	910	1.6+	0.2+	1998 10 24	540	0.2-	0.4-	1998 11 11	704	(2.1+	1.3+)
1998 10 12	910	1.0+	0.6+	1998 10 24	106	0.1-	0.5-	1998 11 11	704	0.6-	1.4+
1998 10 15	704	0.8-	0.5+	1998 10 24	118	0.2+	0.3-	1999 01 07	691	1.0-	0.4-
1998 10 15	704	0.6+	1.1+	1998 10 24	106	0.1-	0.6-	1999 01 07	691	0.4-	0.3-
1998 10 15	704	0.5+	1.2+	1998 10 24	118	0.5-	0.1-	1999 01 07	691	0.1-	0.6-
1998 10 15	704	0.0	0.7+	1998 10 24	106	0.9+	0.2+	1999 01 15	691	0.3+	0.4-
1998 10 17	699	0.5-	1.2+	1998 10 24	118	0.2+	0.2-	1999 01 15	691	0.1-	0.6-
1998 10 17	699	0.1-	1.8+	1998 10 24	106	0.8-	0.0	1999 01 15	691	0.3-	0.4-
1998 10 17	699	0.2-	1.3+	1998 10 25	734	0.4-	0.2-	1999 12 31	461	0.5+	0.3+
1998 10 23	691	0.7+	0.1-	1998 10 25	734	0.3-	0.1+	2000 01 01	461	0.1-	0.2+
1998 10 23	691	0.7+	0.2-	1998 10 25	402	0.1+	0.3-	2000 01 01	461	0.5+	0.6+
1998 10 23	691	0.6+	0.3-	1998 10 25	402	0.1+	0.2-	2000 01 02	461	0.3-	0.1+
1998 10 24	658	0.3-	0.5-	1998 10 25	402	0.2+	0.3-	2000 01 02	461	0.3+	0.2-
1998 10 24	658	0.4-	0.1-	1998 10 25	402	0.0	0.4-	2000 01 02	461	0.5-	0.9+
1998 10 24	658	0.0	0.5-	1998 10 25	557	0.1+	0.4-	2000 01 02	461	0.1+	0.0

2000 JAN. 24

M.P.C. 37787

1998 SB₁₃₉ = 2000 AB₁₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	120.78729	(2000.0)	P		Q	
<i>n</i>	0.21210980	ω	116.11476	+0.98806628	-0.14371949	
<i>a</i>	2.7845962	Ω	252.18949	+0.11215348	+0.91784220	
<i>e</i>	0.0861689	<i>i</i>	3.33617	+0.10557756	+0.37001407	
<i>P</i>	4.65	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 23	566	0.1-	0.1-	1998 10 11	699	0.5+	0.1-	1998 11 10	704	0.3-	0.4-
1996 03 23	566	0.1-	0.3-	1998 10 11	699	0.1-	0.1-	1998 11 10	704	0.4-	0.2-
1996 03 23	566	0.0	0.1-	1998 10 21	910	0.6+	0.2+	1998 11 11	704	(2.1+	1.4-)
1998 09 14	699	0.1-	0.5+	1998 10 21	910	0.6+	0.3+	1998 11 11	704	0.8+	0.2-
1998 09 14	699	0.3+	0.7+	1998 10 22	910	0.6+	0.2+	1998 11 11	704	0.7-	0.9-
1998 09 14	699	1.1+	1.7+	1998 10 28	704	0.8+	0.0	1998 11 11	704	0.2+	0.5-
1998 09 26	704	0.6-	0.8+	1998 10 28	704	0.7+	0.4-	1998 11 11	704	0.6-	0.9-
1998 09 26	704	0.3+	1.4+	1998 10 28	704	0.8-	0.2+	2000 01 05	704	0.2-	0.0
1998 09 26	704	0.2-	0.2-	1998 10 28	704	0.5-	0.8-	2000 01 05	704	0.6-	0.8+
1998 09 26	704	0.2-	0.1-	1998 10 28	704	0.6-	0.4+	2000 01 05	704	0.3+	0.5+
1998 09 26	704	1.7-	0.2+	1998 10 29	704	0.2-	0.1+	2000 01 05	704	0.1-	0.3+
1998 09 27	704	0.7-	0.6+	1998 10 29	704	0.6+	0.0	2000 01 05	704	0.0	0.2+
1998 09 27	704	(0.5+	2.6+)	1998 10 29	704	0.2+	0.4+	2000 01 07	704	0.0	0.3+
1998 09 27	704	0.9+	1.4-	1998 10 29	704	1.0+	0.2-	2000 01 07	704	0.0	0.5-
1998 09 27	704	(2.9-	1.5-)	1998 10 29	704	0.6+	1.5-	2000 01 07	704	0.2+	0.1-
1998 09 27	704	1.0-	0.2+	1998 11 10	704	0.7+	0.2-	2000 01 07	704	0.2+	0.3-
1998 10 11	699	0.6-	0.1+	1998 11 10	704	0.9-	0.3+	2000 01 07	704	0.6+	0.1-

1998 SC₁₃₉ = 2000 AB₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	225.94370	(2000.0)	P		Q	
<i>n</i>	0.27861211	ω	48.57792	+0.25164166	+0.96594386	
<i>a</i>	2.3216819	Ω	236.09396	-0.90820247	+0.21417423	
<i>e</i>	0.1216597	<i>i</i>	4.16236	-0.33443197	+0.14519591	
<i>P</i>	3.54	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 26	704	0.4+	0.1+	1998 10 15	910	1.1+	0.1+	1998 11 11	704	(2.9+	2.8-)
1998 09 26	704	0.9+	1.0+	1998 10 17	699	0.6-	1.1+	1998 11 11	704	1.7+	0.7-
1998 09 26	704	0.2-	0.5-	1998 10 17	699	0.6-	0.6-	1998 11 11	704	0.4+	0.1+
1998 09 26	704	0.6-	0.5-	1998 10 17	699	0.5-	0.2-	1999 01 13	691	0.8+	0.1-
1998 09 26	704	1.5-	1.2-	1998 10 20	910	0.5+	0.2+	1999 01 13	691	0.2-	0.4-
1998 09 27	704	0.6-	0.0	1998 10 20	910	0.5+	0.1+	1999 01 13	691	0.4+	0.0
1998 09 27	704	0.5+	0.6+	1998 10 20	910	0.4+	0.2+	1999 01 18	691	0.0	0.2-
1998 09 27	704	0.9-	0.3+	1998 10 28	704	0.4+	0.6-	1999 01 18	691	1.5-	0.1-
1998 09 27	704	1.1+	0.8+	1998 10 28	704	0.1-	0.3+	2000 01 05	704	1.2-	0.2-
1998 09 27	704	1.1-	0.9+	1998 10 28	704	0.6-	0.7-	2000 01 05	704	0.1+	0.2-
1998 10 11	699	0.9-	0.1+	1998 10 28	704	1.0-	0.7+	2000 01 05	704	0.3+	0.3-
1998 10 11	699	0.2-	0.3+	1998 10 29	704	1.2+	0.6+	2000 01 05	704	0.5+	1.9+
1998 10 11	699	0.1+	0.3+	1998 10 29	704	0.7-	0.3+	2000 01 07	704	0.1+	0.4-
1998 10 12	910	0.3+	0.2-	1998 10 29	704	1.2-	1.1+	2000 01 07	704	0.3+	0.7-
1998 10 12	910	0.4+	0.0	1998 10 29	704	0.7-	0.5-	2000 01 07	704	0.1+	0.6+
1998 10 12	910	0.2+	0.4+	1998 10 29	704	1.1-	0.2+	2000 01 07	704	0.5+	0.4+
1998 10 14	910	0.9+	0.2+	1998 11 11	704	0.8+	1.8-	2000 01 07	704	0.3-	0.1-
1998 10 15	910	1.0+	0.1+	1998 11 11	704	0.6+	1.9-				

1998 SQ₁₃₉ = 2000 AH₁₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	66.08517	(2000.0)	P		Q	
<i>n</i>	0.18285699	ω	168.07395	+0.52243672	-0.84157233	
<i>a</i>	3.0741733	Ω	250.29059	+0.76985173	+0.53470823	
<i>e</i>	0.0784726	<i>i</i>	8.37824	+0.36658994	+0.07644026	
<i>P</i>	5.39	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 26	704	0.2+	0.4-	1998 11 11	704	0.7+	0.5-	2000 01 04	699	0.5+	0.8+
1998 09 26	704	0.3-	0.0	1998 11 11	704	0.8-	0.0	2000 01 04	699	0.8+	0.8+
1998 09 26	704	0.9-	0.8-	1998 11 11	704	1.2+	0.8-	2000 01 04	699	0.1+	0.4+
1998 09 26	704	0.5+	0.5+	1998 11 11	704	1.5+	0.6-	2000 01 07	704	0.5-	0.1-
1998 09 26	704	1.3-	0.7-	1998 11 11	704	0.5-	0.3-	2000 01 07	704	0.1+	0.2+
1998 09 27	704	1.7+	0.6+	1998 11 14	327	0.1-	0.2+	2000 01 07	704	0.1+	0.1+
1998 09 27	704	0.5+	0.7+	1998 11 14	327	0.4-	0.0	2000 01 07	704	0.3+	0.3+
1998 09 27	704	0.9-	0.5+	1998 11 14	327	0.1-	0.0	2000 01 07	704	0.3-	0.5+
1998 09 27	704	(2.4-	0.7+)	1999 12 14	704	0.6-	0.2+	2000 01 11	704	0.5-	1.3-
1998 11 10	704	0.2+	0.2+	1999 12 14	704	0.8+	0.5+	2000 01 11	704	0.2-	0.2-
1998 11 10	704	0.1+	0.4-	1999 12 14	704	0.5-	0.3+	2000 01 11	704	0.2+	0.6-
1998 11 10	704	0.1-	0.4+	1999 12 14	704	0.5+	0.5-	2000 01 11	704	0.1+	0.3-
1998 11 10	704	1.1-	1.2+	1999 12 14	704	0.1-	0.1+	2000 01 11	704	0.6-	0.9-

1998 SY₁₃₉ = 2000 AK₁₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	198.21818	(2000.0)	P		Q	
<i>n</i>	0.18086006	ω	41.54913	+0.14013450	+0.97900718	
<i>a</i>	3.0967604	Ω	237.01200	-0.94861524	+0.08991658	
<i>e</i>	0.0221219	<i>i</i>	10.16357	-0.28371015	+0.18292063	
<i>P</i>	5.45	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1996 05 21	566	0.4+	1.1+	1998 10 29	704	0.4+	0.5-	1999 01 08	704	0.8-	1.4+
1996 05 21	566	0.1+	0.7+	1998 10 29	704	0.6-	0.8-	1999 01 08	704	(2.1+	0.2-)
1996 05 21	566	0.1-	0.9+	1998 10 29	704	1.0-	0.6-	1999 01 08	704	(3.3-	0.3-)
1998 09 26	704	0.5-	0.3+	1998 10 29	704	0.6-	1.6-	1999 11 13	703	0.3-	0.9+
1998 09 26	704	0.5-	0.1+	1998 11 10	704	0.5+	0.3+	1999 11 13	703	0.2+	0.3+
1998 09 26	704	0.2-	0.2-	1998 11 10	704	0.8+	1.2+	1999 11 13	703	0.3+	0.6+
1998 09 26	704	0.8-	0.1-	1998 11 10	704	0.6+	0.5+	1999 11 13	703	0.6-	0.2+
1998 09 26	704	0.3-	0.4+	1998 11 10	704	0.6-	0.1+	1999 12 06	704	0.2+	0.1+
1998 09 27	704	0.1+	1.0+	1998 11 11	704	0.6+	0.5+	1999 12 06	704	0.3-	0.2-
1998 09 27	704	0.0	0.3+	1998 11 11	704	(1.8-	3.4+)	1999 12 06	704	0.2-	0.5+
1998 09 27	704	0.7-	0.6+	1998 11 11	704	0.0	1.9+	1999 12 06	704	0.1-	0.1+
1998 09 27	704	1.6+	1.6+	1998 11 11	704	0.1+	1.6+	1999 12 14	704	0.4-	0.1+
1998 09 27	704	0.1-	1.0+	1998 11 14	327	0.2-	0.1+	1999 12 14	704	0.1-	0.1+
1998 10 15	327	0.1-	0.1+	1998 11 14	327	0.6-	0.0	1999 12 14	704	0.4-	0.1-
1998 10 15	327	0.1+	0.1+	1998 11 14	327	0.3-	0.2-	1999 12 14	704	0.3-	0.6-
1998 10 15	327	0.1+	0.1+	1998 11 17	699	0.0	0.1-	2000 01 07	704	0.4+	0.3-
1998 10 17	327	0.3-	0.1+	1998 11 17	699	0.1+	0.2+	2000 01 07	704	0.2+	0.6-
1998 10 17	327	0.3-	0.1+	1998 11 17	699	0.1-	0.5+	2000 01 07	704	0.6+	1.2-
1998 10 17	327	0.3-	0.1+	1998 11 20	704	0.6-	0.6-	2000 01 07	704	0.5+	0.8-
1998 10 28	704	0.7+	0.2-	1998 11 20	704	1.5+	1.1-	2000 01 07	704	0.1-	1.2-
1998 10 28	704	1.2+	0.6-	1998 11 20	704	1.1+	1.5-	2000 01 11	704	0.2-	0.8+
1998 10 28	704	0.2-	0.6-	1998 11 20	704	0.7+	1.8-	2000 01 11	704	0.3-	0.6+
1998 10 28	704	0.4-	0.5-	1998 11 20	704	(4.1-	2.3-)	2000 01 11	704	0.3+	0.1+
1998 10 29	704	0.1+	1.0-	1999 01 08	704	1.1-	1.3+	2000 01 11	704	0.6+	1.9+

1998 SB₁₄₀ = 2000 AW₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	261.90187	(2000.0)	P		Q	
<i>n</i>	0.26535037	ω	264.95655	-0.33920719	+0.94032080	
<i>a</i>	2.3984072	Ω	345.12770	-0.81580691	-0.30839863	
<i>e</i>	0.0941796	<i>i</i>	6.06446	-0.46839894	-0.14383006	
<i>P</i>	3.71	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 26	704	0.0	0.7+	1998 10 28	704	0.0	0.4+	1998 11 11	704	(0.1+	2.4-)
1998 09 26	704	1.4+	0.8-	1998 10 28	704	0.3+	0.2+	2000 01 04	704	0.2+	0.4+
1998 09 26	704	0.4-	0.8+	1998 10 28	704	0.1-	0.2+	2000 01 04	704	0.5+	0.1-
1998 09 26	704	1.2+	1.3-	1998 10 29	704	0.0	1.1-	2000 01 04	704	0.4-	0.2-
1998 09 27	704	0.6-	1.1+	1998 10 29	704	0.7-	0.0	2000 01 04	704	0.1-	0.0
1998 09 27	704	0.6+	0.3-	1998 10 29	704	0.4+	0.5+	2000 01 04	704	0.6-	0.6+
1998 09 27	704	1.2-	0.3-	1998 10 29	704	0.3+	0.0	2000 01 06	704	0.3+	0.1+
1998 09 27	704	0.5-	0.5+	1998 11 11	704	0.2+	0.8-	2000 01 06	704	0.3+	0.2-

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1998 09 27	704	0.5−	0.8−	1998 11 11	704	0.3+	0.5−	2000 01 06	704	0.1+	0.2−
1998 10 28	704	0.2−	0.5+	1998 11 11	704	0.6−	0.9+	2000 01 06	704	0.3−	0.2−

1998 SW₁₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	148.55968	(2000.0)	P		Q	
<i>n</i>	0.19538312	ω	68.20533	+0.88219414	+0.47060227	
<i>a</i>	2.9413363	Ω	263.71804	−0.43787387	+0.80708896	
<i>e</i>	0.0441807	<i>i</i>	0.94192	−0.17320498	+0.35656825	
<i>P</i>	5.04	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 18	809	1.9+	0.5+	1998 10 28	704	0.8−	0.3−	2000 01 05	132	(4.1−	1.1+)
1998 09 18	809	0.3+	0.2−	1998 10 28	704	0.8+	0.9+	2000 01 05	132	0.9−	0.6−
1998 09 18	809	0.3+	0.3−	1998 10 29	704	(1.5+	2.4+)	2000 01 05	132	0.7−	0.3+
1998 09 20	809	0.2−	0.4−	1998 10 29	704	0.1+	0.2−	2000 01 05	132	0.5+	1.3−
1998 09 20	809	1.5−	0.9−	1998 10 29	704	0.4+	0.6+	2000 01 06	046	0.2−	0.6+
1998 09 20	809	0.7−	0.6−	1998 10 29	704	0.8−	0.8+	2000 01 06	046	0.1−	0.4+
1998 09 26	704	0.7+	0.7+	1998 10 29	704	0.0	0.2+	2000 01 06	046	0.0	0.6+
1998 09 26	704	1.4+	0.4−	1998 11 11	704	0.2−	0.9+	2000 01 06	046	0.1−	0.1+
1998 09 26	704	0.7+	0.9−	1998 11 11	704	(1.9+	2.8+)	2000 01 07	691	0.1−	0.4+
1998 09 26	704	0.1+	0.1−	1998 11 11	704	0.7+	0.4−	2000 01 07	691	0.1−	0.4+
1998 09 26	704	0.5+	0.5−	1998 11 11	704	1.1−	0.1+	2000 01 07	691	0.0	0.3+
1998 09 27	704	0.4−	1.3−	1999 01 13	691	0.7+	0.0	2000 01 07	504	0.0	0.7−
1998 09 27	704	0.3−	0.7+	1999 01 13	691	0.6+	0.3+	2000 01 07	504	0.7+	1.1+
1998 09 27	704	0.4−	0.6+	1999 01 13	691	0.3+	0.1−	2000 01 08	046	0.1−	0.4+
1998 09 27	704	0.6−	0.6−	1999 01 18	691	0.0	0.2+	2000 01 08	046	0.3−	0.1+
1998 09 27	704	0.7−	0.2−	1999 01 18	691	1.5−	0.0	2000 01 08	046	0.5−	0.7+
1998 10 10	699	0.9+	0.3+	2000 01 03	504	0.1+	1.4−	2000 01 16	691	0.3−	0.7−
1998 10 10	699	0.5−	0.5+	2000 01 03	504	1.8+	0.6−	2000 01 16	691	0.2−	0.7−
1998 10 10	699	0.8−	0.2+	2000 01 03	504	1.5+	0.5−	2000 01 16	691	0.3−	0.8−
1998 10 28	704	0.1+	0.3−	2000 01 05	504	(4.4−	4.3+)				
1998 10 28	704	0.1−	0.3−	2000 01 05	504	0.7−	1.3+				

1998 SX₁₄₀ = 1989 ES₆ = 1999 YH₄

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	247.98777	(2000.0)	P		Q	
<i>n</i>	0.26479568	ω	271.24774	−0.27226130	+0.96217732	
<i>a</i>	2.4017555	Ω	342.94440	−0.86957070	−0.25022119	
<i>e</i>	0.1784491	<i>i</i>	1.83887	−0.41197157	−0.10772257	
<i>P</i>	3.72	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1989 03 05	033	0.0	0.5+	1998 10 28	704	0.9−	1.5+	1999 12 27	734	0.1−	0.5−
1989 03 05	033	0.4+	0.8+	1998 10 29	704	0.2−	0.0	1999 12 27	734	0.8−	0.1−
1998 09 20	809	(0.2+	2.8−)	1998 10 29	704	0.9+	0.6−	2000 01 03	704	0.9+	1.4−
1998 09 20	809	(0.8−	3.9−)	1998 10 29	704	0.7+	0.5+	2000 01 03	704	1.3+	0.5+
1998 09 20	809	0.4+	1.9−	1998 10 29	704	0.1+	1.0−	2000 01 03	704	0.0	0.3+
1998 09 26	704	0.0	0.4+	1998 10 29	704	0.7+	0.2+	2000 01 03	704	0.5+	1.0+
1998 09 26	704	0.2−	1.3−	1998 11 10	704	(2.4+	1.1−)	2000 01 04	704	0.3+	0.7−
1998 09 26	704	0.7−	0.2−	1998 11 10	704	0.6+	0.1−	2000 01 04	704	0.1−	0.2−
1998 09 26	704	0.3+	0.1−	1998 11 10	704	0.2−	0.4−	2000 01 04	704	0.1+	0.7−
1998 09 27	704	0.0	0.9+	1998 11 11	704	0.1+	0.0	2000 01 04	704	0.3+	0.7−
1998 09 27	704	0.5+	0.3−	1998 11 11	704	(2.6+	0.1−)	2000 01 08	734	1.0−	0.1−
1998 09 27	704	0.0	1.2−	1998 11 11	704	0.1+	1.1+	2000 01 08	734	0.5−	0.4−
1998 09 27	704	1.1−	1.1−	1998 11 11	704	0.6+	1.1−	2000 01 08	734	0.2−	0.2+
1998 10 10	699	0.7−	0.7+	1999 12 26	734	1.4−	0.7+	2000 01 08	691	0.5+	0.0
1998 10 10	699	0.3−	0.5+	1999 12 26	734	(2.3−	0.8−)	2000 01 08	691	0.4+	0.1+
1998 10 10	699	0.3+	0.4+	1999 12 26	734	0.2+	0.7+	2000 01 08	691	0.4+	0.1+
1998 10 28	704	0.4−	0.8+	1999 12 26	734	0.9−	1.5+	2000 01 13	691	0.2+	0.1−
1998 10 28	704	0.6−	0.8+	1999 12 26	734	0.2−	0.2−	2000 01 13	691	0.0	0.1−
1998 10 28	704	0.3−	1.8+	1999 12 27	734	0.5−	1.5−	2000 01 13	691	0.1+	0.1−

1998 SA₁₄₁ = 1998 UB₂₂ = 1999 XQ₁₅₁

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	143.16985	(2000.0)	P		Q	
<i>n</i>	0.19296336	ω	325.41751	+0.87628778	+0.48178004	
<i>a</i>	2.9658748	Ω	5.78283	−0.43557570	+0.79468595	
<i>e</i>	0.0929114	<i>i</i>	1.57945	−0.20589689	+0.36927257	
<i>P</i>	5.11	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 26	704	1.3+	0.8−	1998 10 28	704	1.6+	1.2+	1999 12 07	691	0.2+	0.0
1998 09 26	704	1.1+	0.5+	1998 10 28	704	0.2−	0.8−	1999 12 07	691	0.2+	0.2+
1998 09 26	704	0.7+	0.3−	1998 10 28	704	1.4−	0.4−	1999 12 07	691	0.3+	0.2+
1998 09 26	704	0.1+	0.1+	1998 10 28	704	(0.2+	2.6+)	1999 12 14	691	0.2−	0.1−
1998 09 27	704	(2.5+	0.9−)	1998 10 29	704	0.4−	1.3+	1999 12 14	691	0.3−	0.2−
1998 09 27	704	1.2−	0.3+	1998 10 29	704	(1.3+	2.5+)	1999 12 14	691	0.2−	0.1+
1998 09 27	704	0.7−	1.3+	1998 10 29	704	1.0+	1.0−				
1998 09 27	704	1.6−	0.6−	1998 10 29	704	0.2−	0.8−				

1998 SD₁₄₁ = 1999 XD₂₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	158.64771	(2000.0)	P		Q	
<i>n</i>	0.18743955	ω	288.50540	+0.62841007	+0.77514183	
<i>a</i>	3.0238615	Ω	20.84995	−0.62650900	+0.55404990	
<i>e</i>	0.1121368	<i>i</i>	10.56154	−0.46107185	+0.30361794	
<i>P</i>	5.26	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 14	699	0.5+	0.0	1998 10 10	699	0.4−	0.1+	1998 11 16	566	0.1−	0.1−
1998 09 14	699	0.6−	0.0	1998 10 28	704	0.5+	0.5+	1999 09 24	557	0.1+	0.3+
1998 09 14	699	0.4+	0.1−	1998 10 28	704	0.4−	0.6+	1999 09 24	557	1.0+	0.7−
1998 09 18	809	(2.1+	0.5+)	1998 10 28	704	0.3−	0.3+	1999 09 24	557	0.5−	0.2+
1998 09 18	809	0.4+	0.4−	1998 10 28	704	0.7−	0.3+	1999 12 03	699	1.8−	0.9+
1998 09 18	809	0.7+	0.2−	1998 10 29	704	0.5+	0.1+	1999 12 03	699	0.2+	0.0
1998 09 20	809	(2.2+	0.3+)	1998 10 29	704	0.1−	0.7+	1999 12 03	699	0.3−	0.4+
1998 09 20	809	1.6+	0.1+	1998 10 29	704	0.1−	0.6+	1999 12 12	704	0.0	0.3−
1998 09 20	809	1.8+	0.5+	1998 10 29	704	0.0	0.0	1999 12 12	704	0.1+	0.1−
1998 09 26	704	0.4−	0.6−	1998 10 29	704	0.2−	0.6+	1999 12 12	704	0.2−	0.1+
1998 09 26	704	0.1−	0.3−	1998 11 10	704	0.4+	0.5−	1999 12 12	704	0.4+	0.7−
1998 09 26	704	0.0	1.0−	1998 11 10	704	0.1+	0.8−	1999 12 15	704	0.1+	0.4−
1998 09 26	704	0.4−	0.1−	1998 11 10	704	0.1+	1.1−	1999 12 15	704	0.3+	0.3+
1998 09 26	704	0.4−	0.3−	1998 11 10	704	0.2−	0.6−	1999 12 15	704	0.6+	0.2+
1998 09 27	704	0.1+	0.2−	1998 11 11	704	0.2−	0.5+	1999 12 15	704	0.7+	0.3−
1998 09 27	704	0.3+	0.1+	1998 11 11	704	0.7+	0.2+	1999 12 15	704	1.0+	0.3+
1998 09 27	704	0.9−	0.6+	1998 11 11	704	0.7+	0.3−	2000 01 02	704	0.6−	1.0−
1998 09 27	704	1.3−	0.8+	1998 11 11	704	0.2+	0.6−	2000 01 02	704	0.2−	0.2+
1998 09 27	704	1.0−	0.7+	1998 11 11	704	0.3+	0.5−	2000 01 02	704	0.1−	0.1+
1998 10 10	699	0.9−	0.5+	1998 11 16	566	0.2+	0.0	2000 01 02	704	0.4−	0.5+
1998 10 10	699	1.0−	0.1−	1998 11 16	566	0.6+	0.3−				

1998 SL₁₄₂ = 1999 XG₁₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	259.34115	(2000.0)	P		Q	
<i>n</i>	0.18568021	ω	168.23518	−0.79709840	+0.58541207	
<i>a</i>	3.0429324	Ω	48.62451	−0.56879444	−0.64556399	
<i>e</i>	0.0443775	<i>i</i>	11.38102	−0.20274869	−0.49044862	
<i>P</i>	5.31	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 05 13	566	0.6+	0.8+	1998 09 27	704	0.2+	0.7+	1998 11 11	704

2000 JAN. 24

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1998 09 21	809	(3.2− 0.8+)	1998 10 29	704	0.1+ 0.1−	1999 12 15	704	0.4− 0.1−
1998 09 26	704	0.3− 0.0	1998 10 29	704	0.4− 1.5+	1999 12 15	704	0.2+ 0.1+
1998 09 26	704	0.5+ 0.8−	1998 10 29	704	0.4+ 1.0−	1999 12 15	704	0.3+ 0.3+
1998 09 26	704	0.4+ 0.4−	1998 10 29	704	0.8− 0.3+	1999 12 15	704	0.0 0.3+
1998 09 26	704	1.6+ 0.3+	1998 10 29	704	0.0 0.4+	1999 12 15	704	0.1+ 0.1+
1998 09 26	704	0.6− 0.2−	1998 11 10	704	0.9+ 0.2+	2000 01 02	704	0.4+ 0.1+
1998 09 27	704	0.1− 0.2+	1998 11 10	704	0.8+ 1.5−	2000 01 02	704	0.9+ 0.0
1998 09 27	704	0.5− 0.8−	1998 11 10	704	0.4− 1.1−	2000 01 02	704	1.0+ 0.5+
1998 09 27	704	0.9− 0.7+	1998 11 10	704	0.3− 0.7−			
1998 09 27	704	0.5+ 0.7+	1998 11 11	704	1.3+ 0.2+			

1998 SA₁₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	115.45491		(2000.0)	P	Q
<i>n</i>	0.17506879	ω	322.86246	+0.95518309	+0.28002713
<i>a</i>	3.1646831	Ω	21.48369	−0.16661957	+0.77657571
<i>e</i>	0.2239308	<i>i</i>	15.19123	−0.24466954	+0.56437131
<i>P</i>	5.63	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 14	699	0.4− 0.3+	1998 10 28	704	0.4+ 0.5+	1998 11 17	699	0.7+ 0.0
1998 09 14	699	0.9− 0.3+	1998 10 28	704	0.6− 0.5+	1999 01 14	699	1.0− 1.0+
1998 09 14	699	0.1− 0.2−	1998 10 28	704	0.1− 0.3+	1999 01 14	699	0.7+ 0.4−
1998 09 20	809	(2.3+ 1.8+)	1998 10 29	704	1.4+ 1.5+	1999 01 14	699	0.6+ 0.4+
1998 09 20	809	1.1+ 0.9+	1998 10 29	704	0.4+ 0.3+	1999 12 03	699	1.1+ 1.1−
1998 09 20	809	(1.1+ 2.3+)	1998 10 29	704	0.2− 0.0	1999 12 03	699	0.5− 0.7−
1998 09 21	809	0.9− 0.2+	1998 10 29	704	0.0 0.3+	1999 12 03	699	1.2+ 1.1−
1998 09 21	809	1.0− 0.0	1998 10 29	704	0.7− 0.1+	1999 12 13	704	0.6− 0.1+
1998 09 21	809	1.7− 0.4+	1998 11 10	704	0.8− 1.1−	1999 12 13	704	0.1+ 0.0
1998 09 25	691	0.1− 0.5−	1998 11 10	704	0.1− 1.0−	1999 12 13	704	0.1+ 0.0
1998 09 25	691	0.1+ 0.4−	1998 11 10	704	1.1− 1.1−	1999 12 13	704	0.2+ 1.7+
1998 09 25	691	0.2− 0.5−	1998 11 10	704	0.8− 0.0	1999 12 13	704	0.6− 0.3+
1998 10 11	699	0.5+ 0.2+	1998 11 11	704	1.0− 0.2+	1999 12 16	699	0.8− 0.2−
1998 10 11	699	0.7+ 0.2+	1998 11 11	704	0.1+ 0.1+	1999 12 16	699	1.1− 0.5+
1998 10 11	699	1.8+ 0.2−	1998 11 11	704	0.6− 0.8−	1999 12 16	699	0.2− 0.1−
1998 10 12	910	1.3+ 0.4−	1998 11 11	704	0.3− 1.0−	2000 01 11	699	0.2− 0.4+
1998 10 12	910	1.3+ 0.3−	1998 11 11	704	1.1− 1.6−	2000 01 11	699	0.6+ 0.3+
1998 10 13	910	1.4+ 0.2−	1998 11 17	699	0.1− 0.8+	2000 01 11	699	0.8+ 0.1−
1998 10 28	704	0.3+ 0.5+	1998 11 17	699	0.9+ 0.9+			

1998 SS₁₄₆ = 2000 AE₁₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	205.80950		(2000.0)	P	Q
<i>n</i>	0.19067677	ω	85.43643	+0.10422702	+0.99406717
<i>a</i>	2.9895388	Ω	190.69691	−0.96596281	+0.09373739
<i>e</i>	0.0259015	<i>i</i>	9.64548	−0.23675425	+0.05517039
<i>P</i>	5.17	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 20	809	1.1+ 0.5+	1998 10 28	704	0.5− 0.1+	1998 11 11	704	1.4− 0.5+
1998 09 20	809	0.7+ 0.3−	1998 10 28	704	0.4− 0.3−	1998 11 11	704	1.4+ 0.9+
1998 09 20	809	0.1+ 0.3+	1998 10 28	704	1.6− 0.6−	1998 11 11	704	0.7− 0.3−
1998 09 21	809	0.8+ 0.3−	1998 10 28	704	0.8− 1.4−	1999 12 14	704	1.7− 1.3−
1998 09 21	809	0.2− 0.7−	1998 10 29	704	0.4− 0.0	1999 12 14	704	0.9− 1.1−
1998 09 21	809	0.7− 0.8−	1998 10 29	704	0.0 0.7−	1999 12 14	704	1.1− 0.8−
1998 10 14	699	0.6− 0.7+	1998 10 29	704	0.4− 0.4−	2000 01 07	704	0.6+ 0.1+
1998 10 14	699	0.7− 0.7+	1998 10 29	704	0.6− 1.2−	2000 01 07	704	0.1+ 0.3−
1998 10 14	699	0.0 0.6+	1998 10 29	704	0.2+ 0.3−	2000 01 07	704	0.3+ 0.2−
1998 10 22	910	0.5+ 0.7+	1998 11 10	704	0.3+ 0.4−	2000 01 07	704	0.1+ 0.3−
1998 10 22	910	0.6+ 0.8+	1998 11 10	704	0.7+ 0.1−	2000 01 07	704	0.1− 0.6−
1998 10 22	910	0.5+ 0.7+	1998 11 10	704	0.0 0.1+	2000 01 11	704	0.4+ 0.5+
1998 10 22	910	1.0+ 0.7+	1998 11 10	704	0.6− 0.1+	2000 01 11	704	0.7+ 1.2+
1998 10 23	910	1.0+ 0.8+	1998 11 10	704	(3.2− 1.8+)	2000 01 11	704	1.3+ 1.0+
1998 10 23	910	1.0+ 0.8+	1998 11 11	704	0.5− 1.0−	2000 01 11	704	0.1+ 1.7+

1998 SU₁₄₆ = 2000 AF₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	66.90713		(2000.0)	P	Q
<i>n</i>	0.18204712	ω	220.61071	+0.55415669	−0.83083151
<i>a</i>	3.0832838	Ω	195.95258	+0.80385873	+0.55012734
<i>e</i>	0.0551188	<i>i</i>	10.75268	+0.21615159	+0.08413625
<i>P</i>	5.41	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 18	910	1.0− 1.4+	1998 10 26	910	0.7+ 0.1−	2000 01 04	699	0.4+ 1.0+
1998 09 18	910	1.2− 1.6+	1998 10 26	910	1.0+ 0.1−	2000 01 08	704	0.6+ 0.2−
1998 09 18	910	0.9− 1.5+	1998 10 28	704	(0.5+ 3.3−)	2000 01 08	704	0.3− 0.1+
1998 09 20	809	0.8+ 1.6−	1998 10 28	704	0.7− 0.8−	2000 01 08	704	0.5+ 0.4+
1998 09 20	809	0.3+ 1.3−	1998 10 28	704	(0.9+ 2.9−)	2000 01 08	704	0.3− 0.1−
1998 09 20	809	0.8+ 1.4−	1998 10 28	704	0.8+ 0.4−	2000 01 08	704	0.2+ 0.8−
1998 09 21	809	0.8+ 0.2+	1998 10 29	704	1.9− 0.6+	2000 01 10	704	0.5− 0.1−
1998 09 21	809	0.6+ 1.3−	1998 10 29	704	0.9+ 0.3+	2000 01 10	704	0.3− 0.3+
1998 09 21	809	0.2+ 0.2+	1998 10 29	704	1.3− 0.2+	2000 01 10	704	0.8+ 0.1−
1998 10 14	699	0.0 0.3+	1998 10 29	704	(0.7− 2.4−)	2000 01 10	704	0.7− 0.1−
1998 10 14	699	0.9− 0.2+	1998 10 29	704	(2.6− 1.3−)	2000 01 10	704	1.2− 0.2+
1998 10 14	699	0.5− 0.9+	2000 01 04	699	0.0 0.3−			
1998 10 26	910	1.5+ 0.1−	2000 01 04	699	0.8+ 0.1−			

1998 SU₁₄₇ = 1994 XV₅ = 2000 AN₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	169.67915		(2000.0)	P	Q
<i>n</i>	0.22634230	ω	256.52010	+0.84528113	+0.53133246
<i>a</i>	2.6666063	Ω	71.35785	−0.46429989	+0.78267604
<i>e</i>	0.0481023	<i>i</i>	3.41494	−0.26443416	+0.32419752
<i>P</i>	4.35	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1994 12 04	098	(2.9− 1.2−)	1998 10 14	699	0.6− 0.4+	1998 12 17	327	0.0 0.5+
1994 12 04	098	0.0 0.2+	1998 10 14	699	0.0 0.4+	1998 12 17	327	1.0− 0.9+
1994 12 04	098	(8.8+ 8.3−)	1998 10 14	699	0.2− 0.8+	1998 12 17	327	0.1+ 1.0+
1998 09 18	699	0.1− 1.2+	1998 10 28	704	0.3+ 0.2+	2000 01 04	704	0.5− 0.9+
1998 09 18	699	1.5− 0.7+	1998 10 28	704	0.8+ 0.8−	2000 01 04	704	0.5+ 0.3+
1998 09 18	699	0.5− 0.6+	1998 10 28	704	0.7− 1.7−	2000 01 04	704	0.2− 0.3−
1998 09 20	809	1.1+ 1.3+	1998 10 28	704	0.1+ 0.1−	2000 01 04	704	0.0 0.9+
1998 09 20	809	0.7− 0.3+	1998 10 29	704	1.0+ 1.2−	2000 01 04	704	0.9+ 1.2+
1998 09 20	809	0.2+ 0.7+	1998 10 29	704	0.6+ 1.5−	2000 01 06	704	0.0 1.0−
1998 09 21	809	1.4+ 0.3−	1998 10 29	704	0.2− 0.1−	2000 01 06	704	0.1− 0.3−
1998 09 21	809	0.3+ 0.3−	1998 10 29	704	1.0− 1.6−	2000 01 06	704	0.2− 1.3−
1998 09 21	809	0.1− 0.1+	1998 10 29	704	0.5+ 0.6−	2000 01 06	704	0.4− 0.2−

1998 SQ₁₅₄ = 1987 DB₃ = 1999 XP₂₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	316.34498		(2000.0)	P	Q
<i>n</i>	0.22421656	ω	233.79659	−0.99792181	−0.04689122
<i>a</i>	2.6834340	Ω	303.47606	+0.06123745	−0.90357411
<i>e</i>	0.1014895	<i>i</i>	3.03725	−0.02005082	−0.42585800
<i>P</i>	4.40	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1987 02 23	010	0.2+ 0.6−	1999 12 07	704	2.0+ 0.1−	1999 12 31	691	0.4− 0.6−
1987 02 23	010	0.9− 0.2−	1999 12 07	704	0.7+ 1.2−	1999 12 31	691	0.5− 0.6−
1987 02 23	010	0.5+ 0.3+	1999 12 07	704	0.9+ 1.7+	2000 01 02	678	0.1+ 0.4+
1998 09 26	704	0.5− 1.5−	1999 12 07	704	0.5− 0.8+	2000 01 02	678	0.9− 0.1−
1998 09 26	704	0.4− 0.4−	1999 12 13	691	0.1+ 0.4+	2000 01 03	678	0.9− 0.2−
1998 09 26	704	0.3− 0.2+	1999 12 13	691	0.1− 0.2+	2000 01 03	678	0.8− 0.2−
1998 09 26	704	0.7− 0.2−	1999 12 13	691	0.0 0.3+	2000 01 04	704	0.1− 0.1−
1998 09 27	704	0.5+ 1.2+	1999 12 17	691	0.8− 0.1+	2000 01 04	704	0.0 0.0
1998 09 27	704	0.4+ 1.2+	1999 12 17	691	0.8− 0.1+	2000 01 04	704	0.0 0.2−
1998 09 27	704	0.4− 0.8+	1999 12 17	691	0.8− 0.2+	2000 01 04	704	0.4+ 0.5−
1998 09 27	704	1.2− 0.2−	1999 12 17	691	0.1− 0.0	2000 01 04	704	0.3+ 1.7−

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1998 10 28	704	1.1+	1.1-	1999 12 17	691	0.0	0.0	2000 01 06	704	0.3+	0.2-
1998 10 28	704	1.2+	0.1-	1999 12 17	691	0.1+	0.1-	2000 01 06	704	0.1-	0.3-
1998 10 28	704	1.2+	0.3-	1999 12 30	699	0.2-	0.8+	2000 01 06	704	0.1+	0.1+
1998 10 29	704	0.6-	0.1+	1999 12 30	699	0.1-	1.0+	2000 01 11	691	0.8+	0.3+
1998 10 29	704	0.1+	0.1-	1999 12 30	699	0.1+	1.1+	2000 01 11	691	1.5+	0.0
1998 10 29	704	(0.5+	2.4-)	1999 12 31	691	0.3-	0.5-	2000 01 11	691	0.3+	0.0

1998 SW₁₅₆ = 2000 AA₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	161.51523	ω	350.58875	+0.84386841	+0.53482062		
<i>a</i>	2.5732780	Ω	336.92077	-0.48485679	+0.72575012		
<i>e</i>	0.1457753	<i>i</i>	6.30445	-0.22978248	+0.43272817		
<i>P</i>	4.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	699	1.1+	0.6+	1998 10 12	699	0.2+	0.0	2000 01 04	704	0.3-	0.4+
1998 09 14	699	0.1-	0.5+	1998 10 12	699	0.4-	0.2-	2000 01 04	704	0.4-	0.6-
1998 09 14	699	0.6-	0.5-	1998 10 12	699	0.2+	0.5-	2000 01 04	704	0.1-	0.4-
1998 09 26	704	1.1+	0.3-	1998 10 28	704	0.5+	1.3-	2000 01 05	704	0.3-	0.4+
1998 09 26	704	0.6-	1.7-	1998 10 28	704	0.9+	0.7-	2000 01 05	704	0.3+	0.4+
1998 09 26	704	1.9-	0.7+	1998 10 28	704	0.6+	1.2-	2000 01 05	704	0.6-	0.3-
1998 09 26	704	1.1+	0.6+	1998 10 29	704	0.6+	0.0	2000 01 05	704	0.8+	0.4+
1998 09 26	704	0.4-	0.3-	1998 10 29	704	0.5-	0.7+	2000 01 08	704	0.4+	0.3+
1998 09 27	704	(2.7-	2.9+)	1998 10 29	704	0.1-	1.3+	2000 01 08	704	0.3+	0.2+
1998 09 27	704	0.8+	0.3+	1998 10 29	704	1.4-	0.2+	2000 01 08	704	0.8+	0.2-
1998 09 27	704	0.0	0.3+	1998 10 29	704	0.8-	1.9+	2000 01 08	704	0.0	0.3+
1998 09 27	704	0.5-	0.2-	2000 01 04	704	1.0-	0.8-				

1998 SE₁₆₁ = 2000 AG₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	67.58632	ω	190.80095	+0.57656249	-0.80769277		
<i>a</i>	0.18431976	Ω	224.13444	+0.76221416	+0.58606664		
<i>e</i>	3.0578871	<i>i</i>	10.20076	+0.29428771	+0.06448473		
<i>P</i>	5.35	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 26	704	0.1-	1.2-	1998 10 29	704	0.4+	0.9+	1999 11 08	703	1.1+	1.2+
1998 09 26	704	0.2+	0.2-	1998 10 29	704	0.0	0.5-	1999 11 08	703	0.9+	0.9+
1998 09 26	704	1.2+	0.9-	1998 11 10	704	0.3+	1.1+	1999 11 08	703	1.1-	0.7-
1998 09 26	704	0.3-	0.2-	1998 11 10	704	(2.2+	0.9+)	1999 11 08	703	0.8+	0.9-
1998 09 26	704	0.8-	0.3-	1998 11 10	704	0.2+	0.3-	1999 12 13	703	0.5+	0.2+
1998 09 27	704	0.3-	0.8-	1998 11 10	704	1.2+	0.1-	1999 12 13	703	0.2-	0.7-
1998 09 27	704	0.7+	0.2+	1998 11 11	704	0.0	0.2-	1999 12 13	703	0.4-	0.4-
1998 09 27	704	0.3+	1.0+	1998 11 11	704	0.5+	0.2+	1999 12 13	703	1.6+	0.3-
1998 10 11	699	1.0-	0.9+	1998 11 11	704	0.9+	0.0	2000 01 08	704	0.0	0.1-
1998 10 11	699	0.0	0.2+	1998 11 11	704	(1.3+	2.1-)	2000 01 08	704	0.4-	0.3+
1998 10 11	699	0.4+	0.4+	1998 11 23	699	0.4-	0.4+	2000 01 08	704	0.7-	0.2-
1998 10 28	704	1.1-	0.9-	1998 11 23	699	0.1+	0.1+	2000 01 08	704	0.6-	0.3-
1998 10 28	704	(2.9-	1.6-)	1998 11 23	699	0.1+	0.9+	2000 01 11	704	0.3-	0.4+
1998 10 28	704	1.4-	0.7-	1999 01 07	691	0.9-	0.2-	2000 01 11	704	0.4-	0.0
1998 10 28	704	1.6-	0.3+	1999 01 07	691	0.8-	0.1-	2000 01 11	704	0.2+	0.0
1998 10 28	704	(2.4-	2.1+)	1999 01 07	691	0.7-	0.3-	2000 01 11	704	0.3-	0.2+
1998 10 29	704	0.3+	0.4+	1999 01 15	691	0.3+	0.7-	2000 01 11	704	0.1+	0.5+
1998 10 29	704	0.4+	0.5+	1999 01 15	691	0.3+	0.8-				
1998 10 29	704	0.8+	0.2+	1999 01 15	691	0.3+	0.5-				

1998 SA₁₆₃ = 2000 AH₁₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	330.27763	ω	336.53629	-0.99509354	-0.09388485		
<i>a</i>	0.22551297	Ω	198.15931	+0.09893690	-0.94607922		
<i>e</i>	2.6731399	<i>i</i>	5.74851	-0.00057394	-0.31003183		
<i>P</i>	4.37	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 03 21	566	0.2+	0.6+	1998 10 28	704	1.0-	1.5-	2000 01 05	699	0.5-	0.6+
1996 03 21	566	0.0	0.7+	1998 10 28	704	0.7+	0.1+	2000 01 05	704	0.0	0.8-
1996 03 21	566	0.3+	0.2+	1998 10 29	704	1.1-	1.7+	2000 01 05	704	0.1+	0.7+
1998 09 20	910	0.0	0.3+	1998 10 29	704	0.1+	0.4+	2000 01 05	699	0.2+	0.9+
1998 09 20	910	0.5+	0.2+	1998 10 29	704	0.2+	0.6-	2000 01 05	704	0.6-	1.2-
1998 09 20	910	0.3+	0.4+	1998 10 29	704	(0.2-	2.3+)	2000 01 05	704	0.3+	0.2+
1998 09 26	704	1.2+	1.2+	1998 10 29	704	0.8-	0.3+	2000 01 05	704	0.3-	1.5-
1998 09 26	704	0.6+	1.2-	1999 12 05	704	0.1+	0.2+	2000 01 05	704	0.1-	0.9+
1998 09 26	704	0.5+	1.0-	1999 12 05	704	0.4+	0.3+	2000 01 05	699	0.3-	0.1-
1998 09 26	704	0.1+	0.4-	1999 12 05	704	0.2-	0.2+	2000 01 07	704	0.2+	0.1-
1998 09 26	704	0.2-	0.2+	1999 12 05	704	0.0	0.5+	2000 01 07	704	0.6+	0.3-
1998 09 27	704	0.2-	1.6+	1999 12 05	704	0.3+	0.6-	2000 01 07	704	0.1-	0.4-
1998 09 27	704	0.8-	0.2-	2000 01 05	704	0.2+	0.6-	2000 01 07	704	0.3-	0.1-
1998 09 27	704	0.9-	1.2-	2000 01 05	704	0.0	1.0+	2000 01 07	704	0.1-	0.1-
1998 10 28	704	0.3-	0.3-	2000 01 05	704	0.2+	0.9-				
1998 10 28	704	0.8+	1.3+	2000 01 05	704	0.1-	0.5+				

1998 SU₁₆₃ = 1998 TQ₃₄ = 1999 XP₁₇₆Id. G. V. Williams (d, *MPC* 33385; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		<i>P</i>	<i>Q</i>		
<i>n</i>	221.30164	ω	223.84243	+0.08731867	+0.98746623		
<i>a</i>	0.24148500	Ω	51.60954	-0.86152123	+0.14111848		
<i>e</i>	2.5539317	<i>i</i>	9.65657	-0.50015660	-0.07068251		
<i>P</i>	0.1467652	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 08 01	566	0.0	0.6+	1998 11 10	704	1.4-	0.4+	1999 12 07	703	0.4+	0.1+
1997 08 01	566	0.9+	0.7+	1998 11 10	704	0.8-	0.8-	1999 12 07	703	0.3+	0.5+
1997 08 01	566	0.3-	0.5+	1998 11 11	704	0.8+	0.3-	1999 12 07	703	0.1+	0.5+
1998 09 18	809	0.2-	1.2+	1998 11 11	704	0.4+	0.6-	1999 12 07	703	0.1+	0.6+
1998 09 18	809	1.6-	0.8-	1998 11 11	704	0.4+	0.2-	1999 12 10	704	0.4+	0.3+
1998 09 18	809	(2.8-	0.4+)	1998 11 11	704	1.0+	0.5-	1999 12 10	704	0.1-	0.0
1998 09 19	809	0.9-	0.4-	1998 11 11	704	1.1+	0.2+	1999 12 10	704	0.1-	0.0
1998 09 19	809	1.7-	0.2+	1998 11 14	699	0.7+	0.4-	1999 12 10	704	0.2+	0.2-
1998 09 19	809	1.7-	1.5-	1998 11 14	699	0.5+	0.3+	1999 12 10	704	0.8-	0.3+
1998 10 14	699	0.2-	1.1+	1998 11 14	699	1.2+	0.5-	1999 12 15	704	0.6+	0.2-
1998 10 14	699	0.2+	0.8+	1999 11 01	704	1.0+	1.1-	1999 12 15	704	0.7+	0.2-
1998 10 14	699	0.7+	0.3+	1999 11 01	704	1.0-	0.1-	1999 12 15	704	0.0	0.0
1998 10 20	699	0.5+	0.6+	1999 11 01	704	0.5-	0.2+	1999 12 15	704	0.9+	0.0
1998 10 20	699	0.4+	1.1+	1999 11 01	704	1.6-	0.4+	2000 01 02	704	0.6+	1.0+
1998 10 20	699	0.2-	0.9+	1999 11 17	703	(3.9-	9.0+)	2000 01 02	704	1.2+	0.2-
1998 11 10	704	0.3+	0.6+	1999 11 17	703	1.3-	0.6+	2000 01 02	704	(2.3+	0.6+)
1998 11 10	704	0.3-	0.3-	1999 11 17	703	1.0-	0.5-				
1998 11 10	704	0.1+	0.5-	1999 11 17	703	0.6-	0.1-				

1998 SG₁₆₄ = 1974 OK₁ = 2000 AF₈₀

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	259.92877	(2000.0)		P	Q
n	0.17590243	ω	81.27417	-0.73192030	+0.67673592
a	3.1546765	Ω	141.25510	-0.66440385	-0.68290854
e	0.0908853	i	7.29832	-0.15119588	-0.27507165
P	5.60	H	12.5	G 0.15	U 2

2000 JAN. 24

M.P.C. 37791

1998 09 19	809	0.8−	0.0	1998 11 19	699	0.9+	1.1+	2000 01 05	704	0.4−	0.3+
1998 10 12	699	0.8+	0.7+	1998 11 19	699	0.3−	1.2+	2000 01 06	704	0.1−	0.1−
1998 10 12	699	0.3+	0.1+	1999 12 06	704	0.0	0.1−	2000 01 06	704	0.1+	0.4−
1998 10 12	699	0.2+	1.0+	1999 12 06	704	0.8−	0.4−	2000 01 06	704	0.1+	0.3−
1998 11 10	704	0.4−	0.3+	1999 12 06	704	0.0	0.2−				
1998 11 10	704	0.2+	0.5+	1999 12 06	704	0.2+	0.2+				

1998 SV₁₆₄ = 1990 HP₂

Id. E. Bowell (1999 observations), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	228.81184	(2000.0)		P		Q	
<i>n</i>	0.26338599	ω	168.56944	−0.05011044		+0.98930763	
<i>a</i>	2.4103176	Ω	98.44990	−0.92689910		+0.00500597	
<i>e</i>	0.0712594	<i>i</i>	7.95920	−0.37195028		−0.14575784	
<i>P</i>	3.74	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 04 27	413	0.0	0.1−	1999 12 05	699	0.4+	0.3+	2000 01 03	704	0.2+	0.7−
1990 04 30	413	0.8+	0.3−	1999 12 05	699	0.1+	0.0	2000 01 03	704	0.6−	0.4+
1990 04 30	413	0.8−	0.2−	1999 12 07	704	(0.5+	2.4−)	2000 01 03	704	0.5+	0.3−
1998 09 21	699	0.7−	0.2+	1999 12 07	704	1.4+	1.2−	2000 01 03	704	0.2−	0.1+
1998 09 21	699	1.1−	0.2+	1999 12 07	704	0.1−	1.2+	2000 01 04	704	0.0	0.3+
1998 09 21	699	0.2+	0.6−	1999 12 08	703	0.1+	0.2+	2000 01 04	704	0.6+	1.5−
1998 09 27	699	0.6−	0.0	1999 12 08	703	0.4+	0.2+	2000 01 04	704	(2.5−	1.4+)
1998 09 27	699	0.1−	0.0	1999 12 08	703	0.7+	0.3−	2000 01 04	704	0.2−	0.1−
1998 09 27	699	0.3−	0.1−	1999 12 08	703	0.4+	0.9+	2000 01 04	704	0.2−	0.3+
1998 09 28	910	0.9+	0.1+	1999 12 15	704	0.0	1.2−	2000 01 08	106	0.1−	0.0
1998 09 28	910	0.9+	0.1+	1999 12 15	704	0.2+	0.5−	2000 01 08	106	0.6−	0.7+
1998 09 29	910	0.9+	0.1+	1999 12 15	704	0.0	0.2−	2000 01 08	106	0.0	0.2+
1999 11 16	704	0.7−	1.7−	1999 12 15	704	0.3+	0.9+	2000 01 16	120	0.7−	0.1−
1999 11 16	704	0.2+	1.0−	1999 12 15	704	0.1+	0.8+	2000 01 16	120	0.2−	0.4−
1999 11 16	704	1.2−	1.0+	1999 12 18	699	0.2+	0.3+	2000 01 16	120	0.8−	0.1−
1999 11 16	704	0.8−	0.5−	1999 12 18	699	0.4−	0.3+				
1999 12 05	699	0.6+	0.8+	1999 12 18	699	0.6+	0.2+				

1998 TF = 2000 AS₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	20.59492	(2000.0)		P		Q	
<i>n</i>	0.22009395	ω	122.79578	−0.76035140		−0.64828048	
<i>a</i>	2.7168395	Ω	16.90458	+0.54043561		−0.66560190	
<i>e</i>	0.1776923	<i>i</i>	7.90223	+0.36027087		−0.36973847	
<i>P</i>	4.48	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 10 10	411	0.4−	0.9+	1998 10 28	704	0.1+	0.2−	1998 11 11	120	0.6+	0.1+
1998 10 10	411	0.4−	0.1−	1998 10 28	704	0.2+	0.1−	1998 11 11	120	0.6+	0.2+
1998 10 11	699	0.1−	0.1−	1998 10 28	704	0.2+	0.4−	1998 11 12	120	0.1+	0.3+
1998 10 11	699	0.0	0.2+	1998 10 28	120	0.3+	0.4−	1998 11 12	120	0.4+	0.9−
1998 10 11	699	0.3−	0.3+	1998 10 28	120	0.0	0.9−	1998 11 13	120	0.4−	0.5+
1998 10 11	411	0.3−	0.3−	1998 10 29	704	0.2−	1.0−	1998 11 13	120	1.1−	1.0−
1998 10 11	411	0.4−	0.1−	1998 10 29	704	0.6−	0.3−	1998 11 13	120	0.1−	0.5+
1998 10 13	120	0.5+	1.7−	1998 10 29	704	0.5−	0.3−	1998 11 13	120	0.3−	1.6−
1998 10 13	120	0.1+	0.7+	1998 10 29	704	0.5−	0.0	1998 11 13	120	0.0	0.1+
1998 10 13	120	0.5+	0.6−	1998 11 06	120	0.1+	0.1+	1998 11 13	120	0.0	0.4−
1998 10 15	120	0.6−	0.5−	1998 11 06	120	0.4−	0.3+	1998 11 15	120	0.6+	0.2−
1998 10 15	120	0.2−	0.0	1998 11 07	411	0.4−	0.1+	1998 11 15	120	0.2+	0.3−
1998 10 16	120	0.2+	0.3+	1998 11 07	411	0.8−	0.5+	1998 11 15	120	0.0	0.1+
1998 10 16	120	0.2+	0.1−	1998 11 09	120	1.0−	0.0	1998 11 15	120	0.3+	0.3−
1998 10 21	120	0.0	1.2+	1998 11 09	120	0.1−	0.4+	2000 01 04	704	0.3+	0.1+
1998 10 21	120	0.5+	0.5+	1998 11 10	704	0.3+	0.4+	2000 01 04	704	0.0	0.0
1998 10 21	120	0.2−	0.7+	1998 11 10	704	0.0	0.4−	2000 01 04	704	0.4+	0.3−
1998 10 23	120	1.0+	0.7+	1998 11 10	704	0.4−	0.3−	2000 01 04	704	0.0	0.6−
1998 10 23	120	1.0+	0.5+	1998 11 10	704	0.7−	0.0	2000 01 08	704	0.0	0.1+
1998 10 24	120	0.0	0.2+	1998 11 11	704	0.1+	0.1+	2000 01 08	704	0.1−	0.0
1998 10 24	120	0.2+	0.1+	1998 11 11	704	0.5−	1.1+	2000 01 08	704	0.1−	0.0
1998 10 27	120	0.2−	0.2+	1998 11 11	704	1.1+	1.2+	2000 01 08	704	0.3−	0.0

1998 10 27	120	0.1−	0.0	1998 11 11	704	0.1−	0.3+	2000 01 08	704	0.0	0.8+
1998 10 27	120	0.1+	0.4+	1998 11 11	704	0.2−	0.2−				
1998 10 28	704	0.6+	0.2−	1998 11 11	120	1.0+	0.4−				

1998 TK = 2000 AF₁₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	281.44212	(2000.0)		P		Q	
<i>n</i>	0.18548225	ω	343.20202	−0.90934846		+0.39988906	
<i>a</i>	3.0450972	Ω	220.97646	−0.35875157		−0.89341178	
<i>e</i>	0.0671451	<i>i</i>	10.08066	−0.21067200		−0.20470502	
<i>P</i>	5.31	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 03 25	566	0.4−	0.0	1998 10 28	704	0.2+	0.4+	1999 12 05	704	0.3+	1.0−
1996 03 25	566	0.3−	0.1+	1998 10 28	704	1.5+	1.6−	1999 12 05	704	0.6−	0.4−
1996 03 25	566	0.7−	0.0	1998 10 28	704	0.3+	0.2−	1999 12 05	704	0.3+	0.5+
1996 05 21	566	0.3+	0.3−	1998 10 28	704	0.0	0.0	1999 12 05	704	0.2−	0.1−
1996 05 21	566	0.4+	0.3−	1998 10 29	704	0.9+	1.0−	1999 12 05	704	0.1−	0.2+
1996 05 21	566	0.4+	0.3−	1998 10 29	704	0.2+	0.1+	1999 12 14	704	0.2+	0.7+
1998 10 10	411	0.8−	0.4+	1998 10 29	704	0.4+	0.1−	1999 12 14	704	0.5+	0.2+
1998 10 10	411	1.5−	0.3−	1998 10 29	704	0.5+	0.7−	1999 12 14	704	0.6−	0.6+
1998 10 11	699	0.1+	0.1+	1998 10 29	704	0.8+	0.5−	1999 12 14	704	0.1−	0.4+
1998 10 11	699	0.7+	1.1+	1998 11 07	411	(2.1−	0.3+)	2000 01 07	704	1.2−	0.5+
1998 10 11	699	0.3−	0.5+	1998 11 07	411	0.7−	0.1+	2000 01 07	704	0.2+	0.0
1998 10 11	411	0.1−	0.2+	1998 11 11	704	1.5−	1.0+	2000 01 07	704	0.2+	0.0
1998 10 11	411	1.0−	0.0	1998 11 11	704	0.5−	0.3+	2000 01 07	704	0.0	0.3−
1998 10 19	699	0.7+	0.5−	1998 11 11	704	0.1−	0.2+	2000 01 07	704	0.3+	0.5−
1998 10 19	699	0.8+	0.9−	1998 11 11	704	0.1+	0.6−	2000 01 11	704	0.4+	0.5+
1998 10 19	699	0.4+	0.3+	1998 11 11	704	0.6+	1.3−	2000 01 11	704	0.1+	0.3−
1998 10 24	411	0.7−	1.0+	1998 11 14	699	0.7−	0.8+	2000 01 11	704	0.2+	0.8−
1998 10 24	411	0.1−	0.5+	1998 11 14	699	0.2+	0.7−	2000 01 11	704	0.2+	0.4−
1998 10 24	411	0.2−	0.2+	1998 11 14	699	0.4−	0.6+				

1998 TO = 2000 AD₂₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	127.27094	(2000.0)		P		Q	
<i>n</i>	0.22944600	ω	224.40369	+0.97986834		+0.06905981	
<i>a</i>	2.6425044	Ω	130.67165	−0.02298259		+0.97104774	
<i>e</i>	0.1597610	<i>i</i>	14.29859	−0.19831750		+0.22868545	
<i>P</i>	4.30	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 10 10	683	0.2+	0.9+	1998 10 17	683	0.2−	0.9−	2000 01 13	691	0.0	0.0
1998 10 10	683	0.1+	0.0	1998 10 17	683	0.4+	0.8−	2000 01 13	691	0.3+	0.1+
1998 10 10	683	0.0	0.7−	1998 10 17	683	0.6−	0.7−	2000 01 13	691	0.1+	0.1+
1998 10 11	683	0.2−	0.8−	1998 10 18	683	0.2+	1.1+	2000 01 16	691	0.0	0.2−
1998 10 11	683	0.1−	0.7+	1998 10 18	683	0.3+	0.1+	2000 01 16	691	0.2−	0.1+
1998 10 11	683	0.1+	0.8+	1998 10 18	683	0.0	0.4+	2000 01 16	691	0.3−	0.0

1998 TY₁ = 2000 AC₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	113.44831		(2000.0)		P		Q
n	0.21818984	ω	288.69858		+0.98655981		−0.10903575
a	2.7326228	Ω	77.70178		+0.15064940		+0.89539159
e	0.0747730	i	7.15526		−0.06328106		+0.43172341
P	4.52	H	15.0	G	0.15	U	4

1998 TC₂ = 2000 AZ₁₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17154760	<i>ω</i>	105.72808	−0.09260278	−0.99560281		
<i>a</i>	3.2078418	<i>Ω</i>	349.55472	+0.88109246	−0.07532369		
<i>e</i>	0.1221963	<i>i</i>	4.47126	+0.46378962	−0.05569001		
<i>P</i>	5.75	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 12	910	0.5−	0.3+	1998 10 28	704	0.2−	1.0+	2000 01 03	704	1.8−	0.4−
1998 10 12	910	0.3−	0.3+	1998 10 29	704	1.8+	0.9−	2000 01 03	704	0.6+	0.2−
1998 10 12	910	0.4−	0.6+	1998 10 29	704	1.2+	1.0−	2000 01 04	704	0.0	0.2+
1998 10 14	910	0.1+	0.0	1998 10 29	704	0.3−	0.7−	2000 01 04	704	0.2−	0.1−
1998 10 15	910	0.0	0.0	1998 10 29	704	0.6+	0.9−	2000 01 04	704	0.1+	1.0−
1998 10 15	910	0.0	0.0	1998 11 11	704	0.1−	0.9+	2000 01 04	704	0.2−	0.2−
1998 10 21	910	0.3+	0.2+	1998 11 11	704	1.4−	0.8+	2000 01 04	704	0.0	0.8−
1998 10 21	910	0.4+	0.1+	1998 11 11	704	1.0+	1.1+	2000 01 05	699	0.7+	0.5+
1998 10 22	910	0.1+	0.0	1998 11 11	704	1.5−	0.5+	2000 01 05	699	0.5−	2.0+
1998 10 28	704	1.4−	0.6−	2000 01 03	704	0.5−	1.0−	2000 01 05	699	1.0+	0.3+
1998 10 28	704	0.6+	1.6−	2000 01 03	704	0.4+	0.5+				
1998 10 28	704	(2.5+	2.0+)	2000 01 03	704	0.4+	0.3+				

1998 TP₂ = 1982 BR₁₀ = 2000 AX₂₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22378305	<i>ω</i>	82.05351	+0.99458430	−0.09951051		
<i>a</i>	2.6868985	<i>Ω</i>	283.65379	+0.07897754	+0.91122227		
<i>e</i>	0.2339286	<i>i</i>	1.76888	+0.06756196	+0.39971444		
<i>P</i>	4.40	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 01 19	095	0.1+	0.4+	1998 10 28	704	1.0−	0.7−	1999 01 08	704	0.1+	0.7+
1998 10 11	699	0.2+	0.3−	1998 10 28	704	1.4−	0.4−	1999 01 08	704	0.8+	0.3+
1998 10 11	699	0.4+	0.2−	1998 10 29	704	0.3−	0.7+	1999 01 08	704	0.2−	0.7+
1998 10 11	699	0.4+	0.3−	1998 10 29	704	0.4−	0.4−	1999 01 11	704	0.4−	1.0+
1998 10 13	910	0.5+	0.2−	1998 10 29	704	0.6−	0.1−	1999 01 11	704	0.9+	1.5−
1998 10 13	910	0.6+	0.1−	1998 10 29	704	1.1−	0.7−	1999 01 11	704	0.2+	0.5+
1998 10 13	910	0.4+	0.1−	1998 10 29	704	1.4−	0.5−	1999 01 11	704	0.7−	0.4−
1998 10 15	910	0.2+	0.0	1998 11 06	132	0.3+	0.7−	1999 01 11	704	1.4+	0.1−
1998 10 15	910	0.3+	0.1+	1998 11 06	132	0.3+	0.0	1999 02 17	910	1.4−	0.1+
1998 10 15	910	0.2+	0.1+	1998 11 06	132	0.5+	0.3−	1999 02 17	910	1.3−	0.2−
1998 10 20	910	0.2−	0.2+	1998 11 16	627	0.3−	0.2−	1999 02 17	910	1.5−	0.1+
1998 10 20	910	0.2−	0.1+	1998 11 16	627	0.5−	0.1+	2000 01 07	691	0.1−	0.4−
1998 10 20	910	0.2−	0.1+	1998 11 17	627	0.3+	0.2−	2000 01 07	691	0.3−	0.4−
1998 10 21	910	0.9+	0.3+	1999 01 06	699	0.6+	0.7−	2000 01 07	691	0.2−	0.1−
1998 10 21	910	0.8+	0.5+	1999 01 06	699	0.6+	0.2+	2000 01 08	691	0.1+	0.1−
1998 10 21	910	0.7+	0.4+	1999 01 06	699	0.6+	0.5+	2000 01 08	691	0.0	0.1−
1998 10 28	704	0.4−	0.6+	1999 01 08	704	0.7+	0.7+	2000 01 08	691	0.2+	0.1−
1998 10 28	704	0.7−	0.1+	1999 01 08	704	1.4+	0.7+				

1998 TN₅ = 2000 AT₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17903516	<i>ω</i>	315.68987	−0.97050206	−0.20670164		
<i>a</i>	3.1177683	<i>Ω</i>	212.98100	+0.22942253	−0.94999183		
<i>e</i>	0.0937692	<i>i</i>	13.17753	−0.07410163	−0.23407255		
<i>P</i>	5.51	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 10	699	0.2+	0.5−	1998 10 29	691	0.4−	0.4−	1998 11 14	699	0.2+	0.2+
1998 10 10	699	0.3−	0.5−	1998 11 10	704	0.7+	0.1+	1998 11 14	699	0.1+	0.4−
1998 10 10	699	0.3−	0.0	1998 11 10	704	1.0+	0.0	1998 11 14	699	0.1+	0.1+
1998 10 13	120	0.7−	0.0	1998 11 10	704	0.7+	0.6+	1998 11 15	120	0.6−	0.5−
1998 10 13	120	0.7−	0.1+	1998 11 10	704	(2.5+	0.7+)	1998 11 15	120	0.4−	0.4−
1998 10 13	120	0.2−	0.2+	1998 11 10	704	0.2+	0.3+	1999 12 13	703	1.0+	0.6+

1998 10 15	120	0.3−	0.3+	1998 11 11	704	0.2+	0.3−	1999 12 13	703	0.6+	0.9+
1998 10 15	120	0.2−	0.3+	1998 11 11	704	0.0	0.1+	1999 12 13	703	0.8+	0.8+
1998 10 20	120	0.3+	0.2+	1998 11 11	704	0.6+	0.7−	1999 12 13	703	1.1+	0.5+
1998 10 20	120	0.1+	0.4+	1998 11 11	704	1.5+	0.6−	2000 01 09	704	0.6−	0.0
1998 10 21	120	0.4+	0.1+	1998 11 11	704	0.4+	0.5−	2000 01 09	704	1.2−	0.1+
1998 10 21	120	0.3−	0.3−	1998 11 11	699	0.4−	1.0+	2000 01 09	704	0.9−	0.0
1998 10 23	120	0.3+	0.1+	1998 11 11	699	1.3+	0.2+	2000 01 12	704	0.5−	0.1−
1998 10 23	120	0.3−	0.2+	1998 11 11	699	1.2+	0.9+	2000 01 12	704	0.1+	0.9−
1998 10 28	120	0.5−	0.3+	1998 11 11	120	1.0−	0.4−	2000 01 12	704	0.4−	0.0
1998 10 28	120	0.5−	0.0	1998 11 11	120	1.3−	0.2+	2000 01 12	704	0.6+	0.5−
1998 10 29	691	0.4−	0.3−	1998 11 11	120	0.6−	0.4−	2000 01 12	704	0.2−	0.9−

1998 TJ₆

Id. M. Tichý (1999-2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17508449	<i>ω</i>	179.04945	+0.20943810	+0.97688676		
<i>a</i>	3.1644939	<i>Ω</i>	103.03906	−0.89742341	+0.20939645		
<i>e</i>	0.1894659	<i>i</i>	2.51529	−0.38828714	+0.04295799		
<i>P</i>	5.63	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 14	046	0.0	0.3+	1998 10 24	046	0.8+	0.2−	1998 12 09	046	0.5+	0.2+
1998 10 14	046	0.4+	0.0	1998 10 24	046	0.7−	0.4−	1998 12 10	046	0.3−	0.3+
1998 10 14	046	0.2−	0.2+	1998 10 24	046	0.9−	0.7+	1998 12 10	046	0.2−	0.1−
1998 10 14	046	0.9−	0.1+	1998 11 12	046	0.4+	0.8−	1998 12 10	046	0.2+	0.4−
1998 10 14	046	0.2−	0.3−	1998 11 12	046	0.3−	0.7−	1999 11 30	046	0.4+	0.2+
1998 10 17	046	0.2−	0.2−	1998 11 12	046	0.3+	0.2−	1999 11 30	046	0.4+	0.6+
1998 10 17	046	0.0	0.2+	1998 11 13	046	1.1−	0.4−	1999 11 30	046	0.1+	0.9+
1998 10 17	046	0.2−	0.0	1998 11 13	046	0.9−	0.7−	1999 11 30	046	0.8−	0.0
1998 10 17	046	0.4+	0.3+	1998 11 13	046	1.1−	1.1+	2000 01 05	046	0.5−	0.0
1998 10 17	046	0.3−	0.5+	1998 11 24	046	0.2+	0.1−	2000 01 05	046	0.4+	0.4−
1998 10 17	046	0.6+	0.0	1998 11 24	046	0.6+	0.0	2000 01 05	046	0.1+	0.2−
1998 10 21	046	0.1−	0.5+	1998 11 24	046	0.5+	0.0	2000 01 05	046	0.2+	0.3−
1998 10 21	046	0.4+	0.5+	1998 11 25	046	1.0+	1.3−	2000 01 06	046	0.5+	0.1−
1998 10 21	046	0.0	0.2+	1998 11 25	046	0.8+	0.1+	2000 01 06	046	0.2−	0.1−
1998 10 23	046	0.4+	0.3+	1998 11 25	046	0.1+	0.4−	2000 01 06	046	0.3−	0.1−
1998 10 23	046	0.0	0.6+	1998 12 09	046	0.3−	0.6−	2000 01 06	046	0.4−	0.1−
1998 10 23	046	0.3+	0.3+	1998 12 09	046	0.3+	0.1−				

1998 TQ₆ = 2000 AQ₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	170.36795		(2000.0)		P		Q				
n	0.27372730	ω	242.43896		+0.98959096		+0.07296966				
a	2.3492215	Ω	113.15303		−0.02586819		+0.93807100				
e	0.1424875	i	7.75297		−0.14156474		+0.33867128				
P	3.60	H	14.2	G	0.15	U	3				
Residuals in seconds of arc											
1998 10 15	428	1.0+	0.2+	1998 11 14	699	0.7+	0.5+	1999 01 13	428	0.5+	1.1+
1998 10 15	428	0.3−	0.0	1998 11 14	699	0.7+	0.4+	1999 01 13	428	0.2+	0.3−
1998 10 17	428	0.3−	0.3−	1998 11 26	428	0.1+	0.4−	1999 02 13	428	0.8−	0.7−
1998 10 17	428	0.9−	0.3−	1998 11 26	428	0.5−	0.1−	1999 02 13	428	0.1−	0.1+
1998 10 18	428	0.3+	0.0	1998 11 27	428	0.0	0.2−	2000 01 04	704	0.0	0.3+
1998 10 18	428	0.2+	0.2−	1998 11 27	428	0.1+	0.3−	2000 01 04	704	0.1+	0.0
1998 10 22	428	0.6−	0.6−	1998 11 30	428	0.8−	0.4+	2000 01 04	704	1.1−	0.3−
1998 10 22	428	0.7−	0.9−	1998 12 04	428	0.1+	0.4+	2000 01 04	704	0.5+	0.9+
1998 10 29	699	0.4+	0.1+	1998 12 04	428	0.4−	0.3+	2000 01 08	704	0.4+	0.3−
1998 10 29	699	0.2−	0.3+	1998 12 07	428	0.4−	0.5−	2000 01 08	704	0.3+	0.2−
1998 10 29	699	0.5+	0.1+	1998 12 07	428	0.2−	0.4−	2000 01 08	704	0.1+	0.3−
1998 11 02	428	0.7−	0.3−	1998 12 14	699	0.2−	0.3−	2000 01 08	704	0.2−	1.0−
1998 11 02	428	0.4+	0.2+	1998 12 14	699	0.2−	0.7+	2000 01 08	704	0.0	0.5−
1998 11 10	428	0.5+	0.0	1998 12 14	699	0.4+	0.3+	2000 01 10	699	0.4−	0.5+
1998 11 10	428	0.3−	0.2−	1998 12 24	428	0.2+	0.0	2000 01 10	699	0.3−	0.3−
1998 11 14	699	0.6+	0.3+	1998 12 24	428	0.3+	0.5+	2000 01 10	699	0.2+	0.8+

2000 JAN. 24

M.P.C. 37793

1998 TC₁₀ = 2000 AC₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	55.39741		(2000.0)			P		Q			
<i>n</i>	0.16934245	ω	9.07740			+0.31711467		−0.94808894			
<i>a</i>	3.2356298	Ω	62.43712			+0.86843592		+0.28021188			
<i>e</i>	0.1434997	<i>i</i>	1.53734			+0.38112641		+0.15036180			
<i>P</i>	5.82	<i>H</i>	13.5			<i>G</i>	0.15	<i>U</i>	3		
Residuals in seconds of arc											
1998 10 12	691	0.6+	1.8+	1998 11 10	704	0.4+	0.3+	1999 12 06	704	0.7−	0.4+
1998 10 12	691	0.8−	0.4−	1998 11 10	704	0.4+	0.7−	1999 12 06	704	0.6+	0.3−
1998 10 12	691	0.6−	0.3−	1998 11 10	704	1.2+	0.0	2000 01 04	704	0.1−	0.2−
1998 10 14	699	0.3+	0.5+	1998 11 11	704	0.7−	1.6−	2000 01 04	704	0.1−	0.8+
1998 10 14	699	0.0	0.1+	1998 11 11	704	0.3+	1.1−	2000 01 04	704	0.1+	0.8+
1998 10 14	699	0.6+	0.3+	1998 11 11	704	0.6−	0.6+	2000 01 04	704	0.3−	1.3+
1998 10 18	691	0.2−	0.4−	1998 11 11	704	(0.2+	2.4+)	2000 01 04	704	0.4−	0.2+
1998 10 18	691	0.0	0.5−	1998 11 11	704	0.0	1.2+	2000 01 06	704	0.9−	0.2−
1998 10 18	691	0.3−	0.5−	1998 11 14	699	0.1+	0.3+	2000 01 06	704	0.8+	0.9−
1998 10 20	699	0.2+	0.1−	1998 11 14	699	0.2+	0.6+	2000 01 06	704	0.1−	0.8−
1998 10 20	699	0.2−	0.3+	1998 11 14	699	0.7−	0.0	2000 01 06	704	0.8+	0.9−
1998 10 20	699	0.1+	0.1−	1999 12 06	704	0.2+	0.1+				
1998 11 10	704	0.3−	0.4−	1999 12 06	704	0.0	0.2−				

1998 TV₂₆ = 2000 AS₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	269.14989		(2000.0)		P		Q				
<i>n</i>	0.26135111	ω	217.70124		−0.35733672		+0.93318039				
<i>a</i>	2.4228126	Ω	31.41554		−0.83791819		−0.30208809				
<i>e</i>	0.1693558	<i>i</i>	4.23954		−0.41255737		−0.19472326				
<i>P</i>	3.77	<i>H</i>	15.2		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1998 10 14	691	0.0	0.1+	1998 11 16	691	0.2+	0.1−	2000 01 04	704	0.5−	1.1+
1998 10 14	691	0.5+	0.1+	1998 11 16	691	0.1+	0.0	2000 01 04	704	0.1−	0.2−
1998 10 14	691	0.1+	0.0	1998 11 19	691	0.1+	0.2+	2000 01 06	704	0.2−	0.2−
1998 10 19	691	0.3−	0.0	1998 11 19	691	0.1−	0.0	2000 01 06	704	0.2+	0.2−
1998 10 19	691	0.3−	0.2−	1998 11 19	691	0.1−	0.0	2000 01 06	704	0.0	0.7−
1998 10 19	691	0.0	0.1−	2000 01 04	704	0.7+	0.3+				

1998 TV₃₀ = 1986 XR₃ = 2000 AJ₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	173.79382		(2000.0)			P		Q			
<i>n</i>	0.24219933	ω	345.87322			+0.87386197		+0.48607928			
<i>a</i>	2.5489076	Ω	345.03222			−0.44236897		+0.78677740			
<i>e</i>	0.1371631	<i>i</i>	2.13060			−0.20168033		+0.38040538			
<i>P</i>	4.07	<i>H</i>	14.7			<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc											
1986 12 04	010	0.2−	1.0+	1998 11 10	704	1.1+	0.3+	1998 11 20	699	0.1−	0.2+
1998 10 10	699	0.7+	0.2+	1998 11 10	704	0.2−	1.5−	1998 11 20	699	0.3+	0.1−
1998 10 10	699	0.1+	0.2−	1998 11 11	704	0.2−	1.0−	2000 01 04	704	0.1+	0.6−
1998 10 10	699	0.9−	0.8+	1998 11 11	704	0.5−	0.1−	2000 01 04	704	0.3−	0.7−
1998 10 18	699	0.5+	0.7+	1998 11 11	704	(2.2+	1.0+)	2000 01 04	704	1.6+	0.0
1998 10 18	699	0.5−	0.1−	1998 11 11	704	0.9−	1.1−	2000 01 04	704	0.3+	0.8−
1998 10 18	699	0.3−	0.7+	1998 11 15	699	1.3+	0.4+	2000 01 07	704	1.1−	1.9+
1998 11 10	704	0.6+	1.3+	1998 11 15	699	1.5−	0.1−	2000 01 07	704	0.7−	0.3−
1998 11 10	704	0.7+	0.5−	1998 11 15	699	0.5+	0.0	2000 01 07	704	0.1+	0.3+
1998 11 10	704	1.1−	0.8−	1998 11 20	699	0.6+	0.1+				

1998 TQ₃₁ = 2000 AW₁₉₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	253.24199		(2000.0)		P		Q				
<i>n</i>	0.28553994	ω	61.32009		−0.15121726		+0.98758351				
<i>a</i>	2.2839757	Ω	200.11689		−0.94463609		−0.15705917				
<i>e</i>	0.0984973	<i>i</i>	7.10979		−0.29119752		−0.00335140				
<i>P</i>	3.45	<i>H</i>	14.5		<i>G</i>	0.15	<i>U</i>	5			
Residuals in seconds of arc											
1998 10 11	699	0.0	0.2+	1998 10 28	704	0.7−	0.8−	2000 01 08	704	0.7+	0.1+
1998 10 11	699	0.0	0.3+	1998 10 28	704	0.9+	0.1−	2000 01 08	704	0.7−	0.5−
1998 10 11	699	0.2−	0.5−	1998 10 29	704	0.4−	2.0+	2000 01 08	704	0.1+	0.1+
1998 10 17	699	0.4+	0.4+	1998 10 29	704	0.3−	0.1+	2000 01 08	704	0.5+	0.5+
1998 10 17	699	0.1−	0.1−	1998 10 29	704	0.7+	0.8−	2000 01 11	704	0.7−	0.3+
1998 10 17	699	0.1+	0.2−	1998 10 29	704	0.8−	0.1+	2000 01 11	704	0.5+	1.0+
1998 10 28	704	0.5−	1.4−	2000 01 08	704	0.8−	0.4+	2000 01 11	704	0.7−	1.1−
1998 10 28	704	0.8+	0.8+	2000 01 08	704	0.1−	0.8−	2000 01 11	704	1.2+	0.0
1998 10 28	704	0.2+	0.0	2000 01 08	704	0.1−	0.1−				

1998 TA₃₂ = 2000 AU₁₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	220.21832		(2000.0)			P		Q		
n	0.23281857	ω	1.98549			+0.20384578		+0.97775443		
a	2.6169231	Ω	279.77897			−0.89890753		+0.16692880		
e	0.0556414	i	2.87501			−0.38783005		+0.12700809		
P	4.23	H	13.9		G	0.15		U	5	
Residuals in seconds of arc										
1998 10 11	699	1.5+	0.8−	1998 10 29	704	0.2+	0.6+	2000 01 05	704	0.1− 0.8+
1998 10 11	699	0.5−	0.3−	1998 10 29	704	0.4−	0.4−	2000 01 05	704	1.1+ 0.4+
1998 10 11	699	0.7−	1.0+	1998 10 29	704	0.1+	0.3−	2000 01 07	704	0.1+ 0.2+
1998 10 19	699	0.5−	0.6+	1998 10 29	704	0.3+	0.5−	2000 01 07	704	0.8− 0.2+
1998 10 19	699	1.3+	0.5+	1998 11 10	704	0.9+	0.0	2000 01 07	704	0.8+ 0.5+
1998 10 19	699	0.0	1.1+	1998 11 10	704	0.5+	0.1+	2000 01 07	704	0.2− 0.2+
1998 10 28	704 (0.1−	2.3−)		1998 11 10	704	0.3−	0.8+	2000 01 07	704	0.9− 0.5−
1998 10 28	704	0.2+	0.8−	1998 11 10	704	(3.8−	0.1−)	2000 01 11	120	0.7− 0.1+
1998 10 28	704	1.7−	0.9−	2000 01 05	704	0.2+	0.2+	2000 01 12	120	0.8+ 0.1−
1998 10 28	704	1.4−	0.2−	2000 01 05	704	1.1−	1.2−	2000 01 12	120 (2.3−	0.2−)
1998 10 29	704	0.5+	0.4−	2000 01 05	704	0.1−	0.1+	2000 01 12	120	0.9+ 0.7−

1998 TM₃₂ = 2000 AN₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	226.94303		(2000.0)		P		Q				
n	0.26315569	ω	342.91693		+0.18854006		+0.98185870				
a	2.4117236	Ω	297.94673		−0.89834073		+0.16413885				
e	0.1134012	i	1.30723		−0.39678278		+0.09493124				
P	3.75	H	14.5		G	0.15	U	5			
Residuals in seconds of arc											
1998 10 11	699	0.5−	0.0	1998 10 29	704	(0.2+	2.2−)	1998 11 17	699	0.6−	0.3−
1998 10 11	699	0.6−	0.5+	1998 10 29	704	1.1−	0.9−	2000 01 04	704	0.0	0.2+
1998 10 11	699	0.1−	0.3+	1998 11 10	704	0.2+	1.2−	2000 01 04	704	0.2−	1.2+
1998 10 19	699	0.7+	0.2−	1998 11 10	704	0.0	0.3−	2000 01 04	704	0.2−	1.6+
1998 10 19	699	0.7+	0.2+	1998 11 10	704	0.2−	0.1+	2000 01 04	704	0.7−	0.6+
1998 10 19	699	0.7+	0.1+	1998 11 10	704	0.2−	0.1+	2000 01 04	704	0.5−	1.9+
1998 10 26	910	0.6+	0.0	1998 11 11	704	0.5+	0.6−	2000 01 05	704	0.3+	0.5−
1998 10 26	910	0.5+	0.1−	1998 11 11	704	0.3−	1.3+	2000 01 05	704	1.2+	0.5+
1998 10 26	910	0.7+	0.2+	1998 11 11	704	0.4+	0.7+	2000 01 05	704	0.3+	1.9−
1998 10 28	704	0.0	0.3−	1998 11 11	704	0.6−	0.0	2000 01 05	704	0.6+	1.3−
1998 10 28	704	0.0	1.0+	1998 11 14	327	0.0	0.1−	2000 01 07	704	0.6−	0.0
1998 10 28	704	0.6+	0.5−	1998 11 14	327	0.4−	0.5−	2000 01 07	704	0.6+	0.0
1998 10 28	704	0.4−	0.4−	1998 11 14	327	0.1−	0.2+	2000 01 07	704	0.5+	0.1+
1998 10 29	704	0.3−	0.3−	1998 11 17	699	0.4+	0.7+	2000 01 07	704	0.0	1.1−
1998 10 29	704	1.4−	0.3−	1998 11 17	699	1.2+	0.6+	2000 01 07	704	1.2−	1.3−

1998 TW₃₂ = 2000 AT₂₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	130.96811		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23779816	ω	168.80296	+0.96285670	-0.24493486		
<i>a</i>	2.5802615	Ω	206.23784	+0.22360778	+0.95922546		
<i>e</i>	0.0861874	<i>i</i>	14.89482	+0.15134908	+0.14104410		
<i>P</i>	4.14	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 10 30	675	0.2-	1.8-	1998 11 10	704	0.8+	0.9-	1999 12 16	704	0.1-	0.5-
1994 11 01	675	0.2+	0.9-	1998 11 11	704	0.6-	0.1+	1999 12 16	704	0.8+	0.6-
1994 11 01	675	(0.1+	2.3-)	1998 11 11	704	0.0	0.6-	1999 12 16	704	1.1+	0.3+
1998 10 14	699	0.4-	0.6+	1998 11 11	704	1.9+	0.3-	2000 01 10	704	1.0+	0.1+
1998 10 14	699	0.0	0.6+	1998 11 11	704	0.8-	0.2-	2000 01 10	704	0.3-	0.8+
1998 10 14	699	0.2+	0.8+	1998 12 11	699	0.7-	0.9+	2000 01 10	704	1.1-	0.2+
1998 10 20	699	0.3+	0.8+	1998 12 11	699	0.9-	1.0+	2000 01 10	704	0.6-	0.6-
1998 10 20	699	0.4+	0.7+	1998 12 11	699	0.5-	0.4+	2000 01 10	704	0.7-	0.1+
1998 10 20	699	0.4+	0.6+	1999 01 11	704	0.4-	0.0	2000 01 11	704	0.2+	0.5+
1998 11 10	704	0.1+	0.1-	1999 01 11	704	0.4-	0.7+	2000 01 11	704	0.3-	0.3+
1998 11 10	704	0.1-	0.7-	1999 01 11	704	(2.9-	1.8+)	2000 01 11	704	0.3+	0.4+
1998 11 10	704	0.1-	0.4-	1999 01 11	704	(4.2-	1.0+)	2000 01 11	704	0.1-	0.5-
1998 11 10	704	0.0	1.1-	1999 12 16	704	0.7+	0.3+	2000 01 11	704	0.4-	0.4-

1998 TJ₃₄ = 2000 AP₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	96.11220		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18115878	ω	212.86193	+0.89655195	-0.44277708		
<i>a</i>	3.0933552	Ω	173.38585	+0.42549956	+0.85343728		
<i>e</i>	0.1618177	<i>i</i>	5.96031	+0.12306391	+0.27494228		
<i>P</i>	5.44	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 14	699	0.6+	0.2+	1998 11 10	704	0.0	0.4-	1998 11 19	699	0.4-	0.9+
1998 10 14	699	0.0	0.2+	1998 11 10	704	0.2-	1.4-	2000 01 05	704	0.3+	0.2+
1998 10 14	699	0.5+	0.4+	1998 11 11	704	0.6-	0.8+	2000 01 05	704	0.2+	0.1+
1998 10 20	699	0.5-	0.3-	1998 11 11	704	0.3+	0.1-	2000 01 05	704	0.1+	0.2-
1998 10 20	699	0.4-	0.6-	1998 11 11	704	0.8+	0.1-	2000 01 07	704	0.0	0.1-
1998 10 20	699	0.5-	0.2-	1998 11 11	704	0.1-	0.0	2000 01 07	704	0.2+	0.6+
1998 11 10	704	0.5+	0.2+	1998 11 11	704	0.2-	0.3+	2000 01 07	704	0.7-	0.0
1998 11 10	704	0.2-	0.3+	1998 11 19	699	0.5-	0.1-	2000 01 07	704	0.1+	0.7-
1998 11 10	704	0.2+	0.0	1998 11 19	699	0.8+	0.3-				

1998 UH

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.73681		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17720473	ω	30.25735	+0.96435810	+0.06102361		
<i>a</i>	3.1392014	Ω	323.34412	-0.22494940	+0.70142824		
<i>e</i>	0.3462893	<i>i</i>	25.54777	+0.13932413	+0.71012290		
<i>P</i>	5.56	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 10 17	703	0.4-	0.0	1998 11 19	704	0.7+	0.7-	1999 01 09	704	0.8-	0.3-
1998 10 17	703	0.3-	0.7+	1998 11 19	704	(0.2+	2.3-)	1999 01 09	704	1.5-	1.0+
1998 10 17	703	0.0	0.3+	1998 11 19	704	(1.0+	2.1-)	1999 01 09	704	(0.7+	2.3+)
1998 10 18	703	1.1-	0.6+	1998 11 19	704	0.0	0.4-	2000 01 01	461	0.3-	0.3+
1998 10 18	703	0.2-	0.2+	1998 11 24	561	0.6+	0.1+	2000 01 01	461	0.2+	0.4+
1998 10 20	703	0.7+	0.1+	1998 11 24	561	0.6+	0.0	2000 01 01	461	0.5+	0.4-
1998 10 20	703	0.9-	0.6+	1998 11 24	561	0.6+	0.2+	2000 01 02	461	0.1+	0.2+
1998 10 25	703	0.1-	0.4-	1998 11 24	561	0.8+	0.1+	2000 01 02	461	0.2+	0.2-
1998 10 25	703	0.1-	0.3-	1999 01 09	704	1.6+	1.5-	2000 01 02	461	0.2-	0.1+

1998 UX₁ = 2000 AE₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	142.93553		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18841103	ω	209.02619	+0.98474431	+0.12956442		
<i>a</i>	3.0134581	Ω	142.95785	-0.09739499	+0.96356622		
<i>e</i>	0.1269761	<i>i</i>	11.11726	-0.14419728	+0.23399401		
<i>P</i>	5.23	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 16	120	0.4+	0.3+	1998 11 13	704	0.3+	1.5-	1999 01 13	699	0.3-	0.4+
1998 10 16	120	0.4+	0.5-	1998 11 13	704	0.3-	1.2-	1999 01 13	699	0.1+	0.0
1998 10 16	120	0.8-	0.3+	1998 11 13	704	0.9-	0.3-	1999 01 13	699	0.2+	0.1-
1998 10 20	120	0.7+	0.6-	1998 11 21	699	0.4-	0.8+	2000 01 05	704	0.4-	0.9-
1998 10 21	120	0.2-	0.3+	1998 11 21	699	0.2-	1.6+	2000 01 05	704	0.1+	0.4-
1998 10 21	120	0.3-	0.1-	1998 11 21	699	0.3-	1.1+	2000 01 05	704	0.3-	0.3-
1998 10 29	120	0.1-	0.1-	1998 12 07	120	0.7+	0.1-	2000 01 05	704	0.4-	0.2-
1998 10 29	120	0.2+	0.4+	1998 12 07	120	0.5-	0.4-	2000 01 07	704	0.6+	0.0
1998 11 12	120	0.2+	0.7+	1998 12 07	120	1.1+	0.1-	2000 01 07	704	0.3-	0.4+
1998 11 12	120	0.6+	0.3+	1998 12 17	699	0.1+	0.5+	2000 01 07	704	0.4+	0.4+
1998 11 13	704	1.0+	0.6-	1998 12 17	699	0.2-	0.5-	2000 01 07	704	0.5+	0.3+
1998 11 13	704	1.0-	0.5-	1998 12 17	699	0.2-	0.2+	2000 01 07	704	0.1-	0.6+

1998 UC₃ = 2000 AH₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.41731		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.20366597	ω	55.10057	+0.92264115	-0.38547429		
<i>a</i>	2.8610387	Ω	327.56788	+0.34616647	+0.84142429		
<i>e</i>	0.0679910	<i>i</i>	1.27717	+0.17000614	+0.37870138		
<i>P</i>	4.84	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 10 12	809	0.1+	0.2-	1998 10 20	691	1.1-	0.0	1998 11 17	627	0.3-	0.2+
1993 10 12	809	0.5-	0.3-	1998 10 20	691	1.8-	0.2-	1998 11 17	627	0.8+	0.8+
1993 10 12	809	0.2+	0.9+	1998 10 20	691	0.8-	0.1-	1998 11 20	699	0.0	0.1-
1993 10 22	809	(3.2+	3.7+)	1998 10 21	910	1.4+	0.7+	1998 11 20	699	0.9-	0.5-
1993 10 22	809	(1.9+	3.3+)	1998 10 21	910	1.4+	0.7+	1998 11 20	699	0.1-	0.6+
1993 10 22	809	(0.1-	4.8+)	1998 10 21	910	1.4+	0.6+	2000 01 04	704	0.2+	0.3+
1998 10 10	699	0.5-	1.9+	1998 10 29	691	0.6-	0.3-	2000 01 04	704	0.3+	0.0
1998 10 10	699	0.4+	0.5+	1998 10 29	691	1.1-	0.1+	2000 01 04	704	0.4+	0.9-
1998 10 10	699	0.7-	0.4+	1998 10 29	691	1.1-	0.2-	2000 01 04	704	0.8+	0.2-
1998 10 15	691	0.1-	0.0	1998 11 10	704	0.8+	0.5-	2000 01 07	704	0.2-	0.2-
1998 10 15	691	0.1-	0.2-	1998 11 10	704	0.6+	0.6+	2000 01 07	704	0.2-	0.5-
1998 10 15	691	0.1-	0.3-	1998 11 10	704	0.1+	0.6-	2000 01 07	704	0.7-	0.4+
1998 10 19	699	1.0+	0.2-	1998 11 10	704	0.6-	1.5-	2000 01 07	704	0.1-	0.1+
1998 10 19	699	0.2-	0.5-	1998 11 11	704	0.7-	0.8-	2000 01 07	704	0.2-	0.4-
1998 10 19	699	0.2+	0.5+	1998 11 11	704	1.1-	0.0	2000 01 16	120	0.6-	1.5+
1998 10 20	910	1.7+	0.2+	1998 11 11	704	0.3-	0.1-	2000 01 17	120	0.7+	0.5+
1998 10 20	910	1.7+	0.3+	1998 11 11	704	1.3-	1.6-				
1998 10 20	910	1.5+	0.2+	1998 11 16	627	0.8+	1.0-				

1998 UG₄ = 1999 XH₁₉₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	75.89740		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17254901	ω	323.24864	+0.98391481	-0.10200859		
<i>a</i>	3.1954185	Ω	43.33820	+0.16532242	+0.83097438		
<i>e</i>	0.1545897	<i>i</i>	12.33806	-0.06767674	+0.54687825		
<i>P</i>	5.71	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 28	699	0.1-	1.0+	1998 11 26	428	0.1-	0.6+	1999 12 12	704	0.1+	1.1+
1998 09 28	699	0.5-	0.7+	1998 11 26	428	0.7+	0.2+	1999 12 12	704	0.2-	1.0-
1998 09 28	699	0.1-	0.7+	1998 12 08	704	0.3-	0.4-	1999 12 15	704	0.2+	0.3+
1998 10 21	428	1.2+	1.2-	1998 12 08	704	1.5+	0.5-	1999 12 15	704	0.1-	0.0
1998 10 21	428	0.0	0.4-	1998 12 08	704	0.1-	1.4+	1999 12 15	704	0.3-	0.1-
1998 10 22	428	0.0	1.3-	1998 12 08	704	0.9+	1.7+	1999 12 15	704	1.2+	0.4-

2000 JAN. 24

1998 10 22	428	1.0−	0.9−	1998 12 22	428	0.4−	0.7−	2000 01 02	704	0.6−	0.6+
1998 10 27	428	0.0	0.6−	1998 12 22	428	0.8−	0.0	2000 01 02	704	0.2+	0.6+
1998 10 27	428	0.9+	0.5−	1998 12 22	428	0.6−	0.2−	2000 01 02	704	0.7+	0.4−
1998 11 06	428	0.3−	0.2+	1999 12 12	704	0.4+	0.1−	2000 01 02	704	0.3−	1.3+
1998 11 14	428	1.0−	0.6+	1999 12 12	704	0.2−	0.1+				
1998 11 14	428	(2.4−	0.2−)	1999 12 12	704	1.2−	1.9−				

1998 UO₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	129.46567		(2000.0)	P	Q
<i>n</i>	0.20543196	ω	225.89559	+0.99760597	−0.06116524
<i>a</i>	2.8446186	Ω	137.58026	+0.06873120	+0.92849710
<i>e</i>	0.0876763	<i>i</i>	2.74174	−0.00763900	+0.36626759
<i>P</i>	4.80	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 09 26	327	0.8−	0.3−	1998 10 24	046	0.1−	0.4+	1998 11 12	046	0.7−	0.6+
1998 09 26	327	0.1−	0.3+	1998 10 24	046	0.7−	0.6+	1998 11 24	046	0.3−	0.4−
1998 09 26	327	0.5−	0.2+	1998 10 24	046	0.3+	0.4−	1998 11 24	046	0.4−	0.4−
1998 10 21	046	0.4+	0.3+	1998 11 11	704	0.0	0.2−	1998 11 24	046	0.0	0.3−
1998 10 21	046	0.3+	0.0	1998 11 11	704	0.5−	0.2+	1998 11 25	046	0.5+	0.7−
1998 10 21	046	0.2+	0.4+	1998 11 11	704	1.3+	0.6+	1998 11 25	046	0.2+	0.5−
1998 10 21	046	0.4+	0.3+	1998 11 11	704	0.4−	1.1+	1998 11 25	046	0.3+	1.4−
1998 10 23	046	0.3+	0.8−	1998 11 11	704	(5.1−	1.4−)	2000 01 14	046	0.0	0.3+
1998 10 23	046	0.6+	0.3−	1998 11 11	046	0.3−	0.9+	2000 01 14	046	0.1−	0.4+
1998 10 23	046	0.7+	0.6−	1998 11 11	046	0.5+	0.2+	2000 01 14	046	0.2+	0.6+
1998 10 23	046	0.3+	0.2−	1998 11 11	046	0.4+	0.3−	2000 01 15	046	0.1−	0.5−
1998 10 23	046	0.2+	0.4−	1998 11 12	046	0.5−	0.5+	2000 01 15	046	0.2−	0.4−
1998 10 24	046	0.4−	0.4−	1998 11 12	046	1.0−	0.7+	2000 01 15	046	0.2+	0.2−

1998 UG₇ = 2000 AR₆₀

Id. G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	2.22975		(2000.0)	P	Q
<i>n</i>	0.19333635	ω	109.16085	−0.69609958	−0.71784394
<i>a</i>	2.9620590	Ω	24.96705	+0.64750047	−0.63496640
<i>e</i>	0.0093138	<i>i</i>	1.63730	+0.31014272	−0.28551314
<i>P</i>	5.10	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 10 20	684	0.1−	0.8+	1998 11 21	684	0.4−	0.2+	2000 01 04	704	0.1−	0.2−
1998 10 20	684	0.7−	0.4+	1998 11 21	684	0.4−	0.0	2000 01 06	704	0.1+	0.0
1998 10 24	684	0.3−	0.4+	1998 12 08	684	0.0	0.9+	2000 01 06	704	0.4+	0.3+
1998 10 24	684	0.3+	0.3+	1998 12 08	684	0.9+	0.5+	2000 01 06	704	0.0	0.6−
1998 11 10	704	1.7+	0.3−	1998 12 09	684	0.8−	0.1−	2000 01 06	704	(2.2−	0.1−)
1998 11 10	704	0.2+	0.7−	1998 12 09	684	0.8−	0.2+	2000 01 08	684	0.1−	0.0
1998 11 10	704	1.2−	1.0−	1998 12 12	691	0.0	0.0	2000 01 08	684	0.3−	0.2+
1998 11 10	704	0.3−	0.4−	1998 12 12	691	0.5+	0.3−	2000 01 09	684	0.1−	0.1+
1998 11 11	704	1.0+	0.6−	2000 01 04	704	0.4+	0.1+	2000 01 09	684	0.5−	0.1−
1998 11 11	704	0.8−	0.5−	2000 01 04	704	0.9+	0.6−	2000 01 10	684	0.1−	0.4+
1998 11 11	704	0.9+	0.2−	2000 01 04	704	0.6−	0.2+	2000 01 10	684	0.2−	0.2+
1998 11 11	704	0.2+	0.7+	2000 01 04	704	0.3+	0.1+				

1998 UX₇ = 2000 AD₁₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	124.84233		(2000.0)	P	Q
<i>n</i>	0.17130569	ω	150.61745	+0.98869780	+0.12967215
<i>a</i>	3.2108612	Ω	202.31097	−0.14337100	+0.96452880
<i>e</i>	0.1211660	<i>i</i>	11.43196	+0.04383396	+0.22993333
<i>P</i>	5.75	<i>H</i>	12.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 10 23	120	0.8+	0.3+	1998 11 10	704	(5.5−	0.4−)	1998 12 11	699	0.4+	0.5−
1998 10 23	120	0.3−	0.3−	1998 11 14	699	0.0	0.2+	2000 01 08	704	0.4+	0.1−
1998 10 24	120	0.3+	0.4−	1998 11 14	699	0.0	0.0	2000 01 08	704	0.0	0.2+

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1998 10 24	120	0.1−	0.8−	1998 11 14	699	0.1+	0.8+	2000 01 08	704	0.5+	0.4+
1998 10 29	120	0.2+	0.1−	1998 11 15	120	0.2−	0.1−	2000 01 08	704	0.5+	0.3+
1998 10 29	120	0.6+	0.0	1998 11 15	120	1.9−	0.2−	2000 01 08	704	0.7+	0.2−
1998 10 30	120	0.1+	0.1−	1998 11 26	120	0.4−	0.4+	2000 01 11	704	0.3−	0.2−
1998 10 30	120	1.1+	0.7−	1998 11 26	120	0.1+	0.6+	2000 01 11	704	0.5−	0.1−
1998 11 10	704	0.5−	0.7+	1998 11 26	120	1.7−	0.7−	2000 01 11	704	1.1−	0.6−
1998 11 10	704	0.4+	0.1+	1998 12 11	699	1.4+	0.4+	2000 01 11	704	0.0	0.2+
1998 11 10	704	1.4−	0.2+	1998 12 11	699	1.2+	0.1+	2000 01 11	704	0.1−	0.1+

1998 UZ₈ = 1999 XO₁₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	10.22135		(2000.0)	P	Q
<i>n</i>	0.08182788	ω	49.55964	+0.26131705	−0.96328723
<i>a</i>	5.2545458	Ω	25.49204	+0.83663920	+0.19422362
<i>e</i>	0.0979132	<i>i</i>	8.22509	+0.48140238	+0.18535073
<i>P</i>	12.04	<i>H</i>	11.5	<i>G</i>	0.15
				<i>U</i>	0

Residuals in seconds of arc

1979 05 19	675	0.0	1.5+	1998 10 15	327	0.1+	1.1+	1998 11 25	688	0.5+	0.4+
1979 05 19	675	2.2+	1.3+	1998 10 15	327	0.1+	0.5+	1999 12 12	704	1.2+	0.7−
1986 09 30	675	0.9−	0.5+	1998 10 17	327	0.2+	0.1+	1999 12 12	704	0.3+	0.7−
1986 09 30	675	0.2+	0.4+	1998 10 17	327	0.0	0.2−	1999 12 12	704	1.1+	1.4−
1989 12 08	675	0.2−	0.2+	1998 10 17	327	0.1−	0.4−	1999 12 12	704	0.7+	1.8−
1991 04 17	675	0.0	0.1+	1998 10 18	327	0.0	0.4+	1999 12 15	704	0.4−	0.1+
1997 09 25	809	0.4−	0.9−	1998 10 18	327	0.1−	0.2+	1999 12 15	704	0.1+	0.3+
1997 09 25	809	0.8+	0.2+	1998 10 18	327	0.4−	0.6+	1999 12 15	704	0.0	0.1−
1997 09 29	809	0.5+	0.0	1998 11 11	704	1.0−	0.3+	2000 01 02	704	0.3−	0.5−
1997 09 29	809	0.2+	0.2−	1998 11 11	704	0.1+	0.6−	2000 01 02	704	0.6−	1.2+
1997 09 30	809	0.0	0.1−	1998 11 11	704	1.8+	0.5−	2000 01 02	704	0.1−	0.4+
1997 09 30	809	0.1−	0.4−	1998 11 11	704	1.1−	1.0−	2000 01 02	704	0.3−	1.1+
1997 10 01	809	0.7−	0.6+	1998 11 18	695	0.3−	0.8+	2000 01 04	704	1.2−	0.4−
1997 10 01	809	0.3−	0.4+	1998 11 18	695	0.5−	0.7+	2000 01 04	704	0.3+	0.2−
1997 10 05	809	0.0	0.2−	1998 11 18	695	0.5−	0.7+	2000 01 04	704	0.9−	0.2−
1997 10 05	809	0.0	0.2−	1998 11 25	688	0.2+	0.4+	2000 01 04	704	0.3+	0.1+
1998 10 15	327	0.0	0.5+	1998 11 25	688	0.1−	0.5+				

1998 UF₁₄ = 2000 AD₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	133.17867		(2000.0)	P	Q
<i>n</i>	0.19595059	ω	283.94826	+0.99205018	+0.11551046
<i>a</i>	2.9356549	Ω	69.43720	−0.08464869	+0.90615038
<i>e</i>	0.0938993	<i>i</i>	3.05737	−0.09311839	+0.40687692
<i>P</i>	5.03	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1996 03 26	566	0.4+	1.3+	1998 11 10	704	0.1+	0.0	1998 12 08	699	0.4+	0.2+
1996 03 26	566	0.6+	1.2+	1998 11 10	704	0.5-	0.1+	1999 01 06	699	0.1+	0.3-
1996 03 26	566	0.7+	1.7+	1998 11 10	704	0.4+	0.3+	1999 01 06	699	0.1+	0.4+
1998 10 17	691	0.1-	0.2-	1998 11 10	704	0.8+	0.1+	1999 01 06	699	1.3+	0.0
1998 10 17	691	0.1-	0.0	1998 11 10	704	1.5+	0.5-	2000 01 04	704	0.3-	0.3-
1998 10 17	691	0.0	0.0	1998 11 11	704	0.1-	0.1-	2000 01 04	704	1.1+	0.0
1998 10 20	699	0.3-	0.5+	1998 11 11	704	0.0	0.1-	2000 01 04	704	0.5-	0.2-
1998 10 20	699	0.1-	0.9+	1998 11 11	704	0.1-	0.2+	2000 01 04	704	0.2+	0.4-
1998 10 20	699	0.1+	1.0+	1998 11 11	704	0.2+	0.6+	2000 01 04	704	0.3+	0.9+
1998 10 23	691	0.9-	0.1-	1998 11 11	704	0.1+	0.3+	2000 01 06	704	0.9-	0.4+
1998 10 23	691	0.9-	0.1+	1998 11 14	699	0.5+	0.4+	2000 01 06	704	0.1+	0.6-
1998 10 23	691	0.9-	0.0	1998 11 14	699	0.5+	0.4+	2000 01 06	704	0.0	0.4-
1998 10 24	691	1.3-	0.2-	1998 11 14	699	1.1+	0.5+	2000 01 06	704	0.4-	0.6-
1998 10 24	691	0.8-	0.1-	1998 12 08	699	0.2-	0.5-				
1998 10 24	691	1.1-	0.0	1998 12 08	699	0.8-	0.0				

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<i>M</i> 359.74955 (2000.0)			Williams				
			P		Q		
<i>n</i>	0.08201168	ω	8.53755	+0.09484186	-0.99316930		
<i>a</i>	5.2466921	Ω	76.04060	+0.90916064	+0.05860313		
<i>e</i>	0.0392055	<i>i</i>	4.01613	+0.40550209	+0.10089803		
<i>P</i>	12.02	<i>H</i>	12.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 23	691	0.1+	0.0	1999 11 09	704	0.2-	0.4-
1998 10 23	691	0.0	0.0	1999 11 09	704	0.7-	0.6+
1998 10 23	691	0.2+	0.0	1999 11 09	704	0.3+	0.5+
1998 10 24	691	0.1+	0.0	1999 12 07	704	0.5-	0.2+
1998 10 24	691	0.0	0.2+	1999 12 07	704	0.1+	0.1+
1998 10 24	691	0.2+	0.1-	1999 12 07	704	0.5+	0.6-
1998 10 29	691	0.3-	0.1-	1999 12 07	704	0.1+	1.5-
1998 10 29	691	0.3-	0.0	1999 12 07	704	0.4+	0.2-
1999 11 09	704	0.5-	0.1+	1999 12 08	704	0.3-	0.7-
1999 11 09	704	0.1-	0.4+	1999 12 08	704	0.5+	0.0

1998 UG₁₅ = 2000 AG₅₈

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<i>M</i> 281.96813 (2000.0)			Williams				
			P		Q		
<i>n</i>	0.27666661	ω	105.42037	-0.76425745	+0.63377391		
<i>a</i>	2.3325531	Ω	114.06316	-0.63040930	-0.69514930		
<i>e</i>	0.0550272	<i>i</i>	7.50971	-0.13599509	-0.33926107		
<i>P</i>	3.56	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1998 10 20	426	0.6-	0.0	1998 11 15	426	0.3+	0.3-
1998 10 20	426	0.3+	0.0	1998 11 15	426	0.6-	0.0
1998 10 20	426	0.7+	0.4+	1998 12 09	426	0.6+	0.8-
1998 10 25	426	0.0	0.5-	1998 12 09	426	0.4-	0.5+
1998 10 25	426	0.2-	0.3+	1998 12 11	426	0.1-	0.5-
1998 10 25	426	0.1-	0.1+	1998 12 11	426	0.5+	0.0
1998 11 14	426	0.1+	0.5-	1998 12 11	426	0.0	0.3+
1998 11 14	426	0.3-	0.2-	2000 01 04	704	0.0	0.4-
1998 11 14	426	0.0	0.7+	2000 01 04	704	0.3-	0.1-
1998 11 15	426	0.2-	0.4+	2000 01 04	704	0.1-	0.2+
				2000 01 07	104	0.5-	0.7+
				2000 01 07	104	0.2+	0.4+

1998 UN₁₅ = 1996 FO₂₂ = 2000 AB₆₀

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<i>M</i> 119.51901 (2000.0)			Williams				
			P		Q		
<i>n</i>	0.17497460	ω	268.56788	+0.99813239	+0.05117698		
<i>a</i>	3.1658188	Ω	88.49782	-0.03368452	+0.91661120		
<i>e</i>	0.1978273	<i>i</i>	1.91219	-0.05096158	+0.39649063		
<i>P</i>	5.63	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 03 24	809	0.0	0.9+	1998 10 28	120	0.4-	0.1-
1996 03 24	809	0.3-	0.7+	1998 10 29	120	0.5-	0.0
1996 03 24	809	0.9+	0.2+	1998 10 30	120	1.0-	0.9-
1996 03 27	809	(4.5+ 2.5+)		1998 10 30	120	0.6-	0.8+
1996 03 27	809	(4.3+ 1.5+)		1998 11 11	699	0.6+	0.7-
1996 03 27	809	(4.4+ 1.4+)		1998 11 11	699	0.5+	0.2-
1998 10 23	120	1.5-	0.1+	1998 11 11	699	0.2-	0.2-
1998 10 23	120	0.7+	0.4-	1998 11 18	704	0.9+	0.3+
1998 10 23	120	0.6+	0.3+	1998 11 18	704	0.5+	0.2+
1998 10 26	120	0.6-	0.5+	1998 11 18	704	0.0	1.2+
1998 10 26	120	0.4+	0.2-	1998 11 18	704	0.4+	0.2-

1998 UY₁₉ = 2000 AO₂₀₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 257.90631 (2000.0)			Williams				
			P		Q		
<i>n</i>	0.17982340	ω	4.11580	-0.54018386	+0.80872834		
<i>a</i>	3.1086506	Ω	233.35643	-0.78014869	-0.58493544		
<i>e</i>	0.1549086	<i>i</i>	16.86073	-0.31554622	+0.06171717		
<i>P</i>	5.48	<i>H</i>	12.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 19	699	0.4-	0.2-	1998 11 11	704	0.5-	0.4-
1998 10 19	699	1.0-	0.2+	1998 11 11	704	0.5-	0.1+
1998 10 19	699	1.4-	0.0	1998 11 11	704	0.6-	0.3-
1998 10 26	120	0.8-	0.5-	1998 11 11	704	1.8+	1.2-
1998 10 27	120	0.8+	0.0	1998 11 13	910	0.1+	0.7+
1998 10 28	120	0.1-	0.9-	1998 11 13	910	0.2+	0.7+
1998 10 29	120	0.3-	0.9-	1998 11 13	910	0.2+	0.8+
1998 11 09	910	1.4+	0.2+	1998 11 18	704	0.1+	0.1+
1998 11 09	910	1.4+	0.4+	1998 11 18	704	0.4+	0.2-
1998 11 10	910	1.0+	0.3+	1998 11 18	704	0.9+	1.3-
1998 11 10	704	0.7-	0.4-	1998 11 18	704	1.3-	0.8-
1998 11 10	699	0.0	0.1+	1998 11 18	704	(4.2-	0.6-)
1998 11 10	704	0.3-	0.8-	1998 11 19	910	0.6+	0.8+
1998 11 10	704	0.4-	1.1-	1998 11 19	910	0.9+	0.7+
1998 11 10	704	0.2+	0.7+	1998 11 19	910	0.6+	0.7+
1998 11 10	699	0.1-	0.0	1998 11 21	704	0.0	0.2+
1998 11 10	699	0.4-	0.3+	1998 11 21	704	0.8+	0.5-
1998 11 10	910	0.5+	0.7+	1998 11 21	704	0.6+	0.4-
1998 11 10	910	0.4+	0.8+	1998 11 21	704	1.5+	0.4+
1998 11 10	910	0.5+	0.8+	1998 11 26	691	1.7-	0.2+

1998 UY₂₁ = 2000 AU₁₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 269.79755 (2000.0)			Williams				
			P		Q		
<i>n</i>	0.25958123	ω	3.67837	-0.55595653	+0.82089978		
<i>a</i>	2.4338129	Ω	232.59274	-0.76675344	-0.56711081		
<i>e</i>	0.1600905	<i>i</i>	9.45744	-0.32093846	-0.06714817		
<i>P</i>	3.80	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 11	699	0.1+	0.8+	1999 01 14	691	0.2+	0.8+
1998 10 11	699	0.1+	0.5-	1999 01 14	691	0.1-	0.2+
1998 10 11	699	0.0	0.7-	1999 01 14	691	0.3+	0.3+
1998 10 28	704	1.6+	1.6-	1999 01 18	691	0.3+	0.5+
1998 10 28	704	(0.0 2.3-)		1999 01 18	691	1.0-	0.7+
1998 10 28	704	0.9-	0.1+	1999 12 14	704	0.1-	0.6-
1998 10 28	704	0.1-	0.6+	1999 12 14	704	0.8+	0.4-
1998 10 29	704	1.6-	0.7+	1999 12 14	704	0.3-	0.5+
1998 10 29	704	(0.1+ 2.4-)		1999 12 14	704	0.8+	0.7-
1998 10 29	704	0.9+	0.1+	1999 12 14	704	0.3+	1.0-
1998 10 29	704	0.0	1.0-	2000 01 08	704	0.4-	0.9+

1998 UR₂₃ = 2000 AE₁₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 262.39118 (2000.0)			Williams				
			P		Q		
<i>n</i>	0.30316822	ω	96.03512	-0.31235564	+0.94885341		
<i>a</i>	2.1945574	Ω	155.60977	-0.90965743	-0.28481241		
<i>e</i>	0.1880535	<i>i</i>	6.38832	-0.27378335	-0.13623176		
<i>P</i>	3.25	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 24	699	0.7-	0.1-	1998 10 28	704	1.3+	0.9-
1998 09 24	699	0.2-	0.2+	1998 10 28	704	0.3+	0.1-
1998 09 24	699	0.1-	0.1-	1998 10 28	704	0.7-	0.7+
1998 10 17	699	0.4+	0.3+	1998 10 28	704	1.7-	0.8+
1998 10 17	699	1.0+	0.7+	1998 10 29	704	0.6-	1.0-
				2000 01 05	704	0.2+	0.3+
				2000 01 05	704	0.6+	1.0+
				2000 01 05	704	0.2-	0.5-
				2000 01 05	704	0.3-	0.4-
				2000 01 07	704	0.1-	0.9+

2000 JAN. 24

M.P.C. 37797

1998 10 17	699	0.6+	0.9+	1998 10 29	704	0.5+	0.4-	2000 01 07	704	0.1+	0.0
1998 10 20	699	0.8+	0.0	1998 10 29	704	0.4-	1.7+	2000 01 07	704	1.1-	0.5-
1998 10 20	699	0.1+	0.5+	1998 10 29	704	0.3-	0.8-	2000 01 07	704	0.4+	0.3+
1998 10 20	699	0.1+	0.2+	1998 10 29	704	1.2-	1.7-				
1998 10 28	704	0.6+	0.9-	2000 01 05	704	0.4+	0.9-				

1998 UT₂₃

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	317.15449		(2000.0)		P		Q	
n	0.29484608	ω	78.55948		-0.85163021		+0.51825926	
a	2.2356603	Ω	132.60058		-0.51275856		-0.79280777	
e	0.0991761	i	6.10748		-0.10864915		-0.32072292	
P	3.34	H	14.4		G	0.15	U	4

Residuals in seconds of arc

1998 09 24	699	0.1-	0.9+	1998 10 20	699	0.9-	0.0	1999 12 05	704	0.5+	1.6-
1998 09 24	699	0.3-	0.1+	1998 11 10	704	0.0	1.8-	1999 12 05	699	0.5-	0.2+
1998 09 24	699	0.0	0.1-	1998 11 10	704	(2.2+	3.7-)	1999 12 05	704	0.4-	0.6+
1998 10 14	704	0.2-	1.3+	1998 11 10	704	0.6+	1.0-	1999 12 05	699	0.3-	1.4+
1998 10 14	704	0.1-	0.3+	1998 11 10	704	(0.2-	2.3-)	1999 12 05	699	0.0	0.3-
1998 10 14	704	0.2-	0.8+	1998 11 10	704	0.9-	0.3-	1999 12 16	699	0.8+	1.7-
1998 10 14	704	0.2-	0.5-	1998 11 11	704	0.3-	0.3+	1999 12 16	699	0.9-	1.1-
1998 10 14	704	(6.9-	1.2+)	1998 11 11	704	0.4-	1.3-	2000 01 04	704	0.3+	0.8+
1998 10 17	699	0.2+	0.5+	1998 11 11	704	0.2+	0.3-	2000 01 04	704	(0.7-	2.2+)
1998 10 17	699	0.9+	0.6+	1998 11 11	704	(0.1-	2.0-)	2000 01 04	704	(1.2-	2.6+)
1998 10 17	699	0.5+	0.4+	1999 12 05	704	0.7+	0.5-	2000 01 05	699	0.4+	1.1+
1998 10 20	699	0.5+	0.4+	1999 12 05	704	0.7+	0.2-	2000 01 05	699	0.0	0.4+
1998 10 20	699	0.4+	0.4+	1999 12 05	704	1.1-	0.5-	2000 01 05	699	0.1-	1.5+

1998 UZ₂₇ = 2000 AX₁₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	260.22791		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.22938192	ω	107.87909		-0.36714429		+0.92760289
a	2.6429965	Ω	140.36188		-0.88910339		-0.32818127
e	0.0889757	i	6.20734		-0.27331343		-0.17846551
P	4.30	H	13.5	G	0.15	U	4

Residuals in seconds of arc

1998 10 18	809	0.2-	1.5+	1998 11 19	699	0.9+	0.7+	2000 01 07	704	0.0	0.2+
1998 10 18	809	0.3+	1.1+	1998 11 19	699	0.3+	0.3+	2000 01 07	704	0.0	0.2-
1998 10 18	809	0.2-	1.2+	1998 11 19	699	0.0	0.5+	2000 01 09	704	0.3+	0.3-
1998 10 19	809	0.6+	0.3-	1998 12 11	699	0.1+	0.6-	2000 01 09	704	0.5+	0.7-
1998 10 19	809	0.3+	0.3-	1998 12 11	699	0.6+	0.7+	2000 01 09	704	0.4+	0.1+
1998 10 19	809	0.8-	0.1+	1998 12 11	699	0.1-	0.3-	2000 01 12	120	0.1-	0.2+
1998 11 10	704	0.1+	0.5-	2000 01 05	704	0.1-	0.1-	2000 01 12	120	1.5+	0.1+
1998 11 10	704	1.1-	0.7-	2000 01 05	704	0.4-	0.6-	2000 01 12	120	0.9-	1.0+
1998 11 10	704	0.1+	0.6-	2000 01 05	704	0.5-	0.5-	2000 01 12	120	0.1-	0.9-
1998 11 10	704	0.8+	0.7-	2000 01 05	704	0.5-	0.2-	2000 01 15	120	0.4+	0.9+
1998 11 10	704	0.9+	0.6-	2000 01 05	704	0.2-	0.3-	2000 01 15	120	0.1+	1.5+
1998 11 11	704	0.7-	0.2-	2000 01 07	704	0.3-	0.3-	2000 01 15	120	0.0	1.1+
1998 11 11	704	0.3-	0.7-	2000 01 07	704	0.1-	0.4-				
1998 11 11	704	1.7-	0.6-	2000 01 07	704	0.0	0.4-				

1998 UF₃₁ = 1998 UH₃₂ = 1997 TQ₂₉ = 2000 AJ₂₇

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Williams

M	351.83796		(2000.0)		P		Q
n	0.08222186	ω	53.62775		-0.50573961		-0.85312886
a	5.2377470	Ω	67.23173		+0.74034121		-0.50540912
e	0.1133807	i	7.98297		+0.44285702		-0.12935519
P	11.99	H	11.1	G	0.15	U	3

Residuals in seconds of arc

1997 10 06	809	1.2-	0.3-	1998 10 27	327	0.4+	0.2+	2000 01 03	704	0.0	0.6-
1997 10 06	809	0.3+	0.5+	1998 10 27	327	0.2-	0.3+	2000 01 03	704	0.4-	0.3+
1997 10 07	809	0.1-	0.1-	1998 10 27	327	0.6+	0.3+	2000 01 03	704	0.5+	0.4+
1997 10 07	809	0.7+	0.5+	1998 11 01	327	0.4-	0.3-	2000 01 03	704	0.2+	0.1+
1998 10 17	327	0.8+	0.5+	1998 11 01	327	0.5-	0.4+	2000 01 04	704	0.1+	0.1+
1998 10 17	327	0.4+	0.4+	1998 11 01	327	0.2+	0.1-	2000 01 04	704	0.2-	0.2-
1998 10 17	327	1.6-	2.0-	1998 11 21	704	1.5+	0.9-	2000 01 04	704	0.1-	0.1+
1998 10 23	327	0.4+	1.0+	1998 11 21	704	0.5-	0.8-	2000 01 04	704	0.2+	0.2-
1998 10 23	327	0.3+	0.2+	1998 11 21	704	0.4-	0.4-	2000 01 04	704	0.7-	0.4+
1998 10 23	327	0.4-	0.2+	2000 01 03	704	0.6+	0.2+				

1998 UR₃₁ = 1980 EK₁ = 2000 AB₁₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	320.02024		(2000.0)		P		Q
n	0.29758316	ω	176.94458		-0.50154407		+0.85580286
a	2.2219305	Ω	62.92122		-0.79672993		-0.39982982
e	0.1703886	i	8.18142		-0.33715719		-0.32823404
P	3.31	H	13.9	G	0.15	U	4

Residuals in seconds of arc

1980 03 15	095	0.1-	0.3-	1998 11 25	699	0.8+	0.9-	1998 12 17	704	1.3-	0.9-
1998 10 22	327	0.5-	0.7+	1998 12 04	327	(2.2-	0.6+)	1998 12 17	704	1.0+	0.1+
1998 10 22	327	1.1-	0.5+	1998 12 04	327	1.5-	0.4+	1998 12 17	704	1.0+	0.4+
1998 10 22	327	0.1+	0.2+	1998 12 04	327	1.1-	0.5+	1999 01 06	699	0.0	0.4+
1998 10 27	327	0.6-	0.1-	1998 12 08	699	0.2-	1.7+	1999 01 06	699	(0.8-	2.2+)
1998 10 27	327	0.4-	0.4+	1998 12 08	699	0.4+	1.4+	1999 01 06	699	0.0	0.6+
1998 10 27	327	0.6-	0.0	1998 12 08	699	0.8+	0.2+	2000 01 08	704	0.3+	0.4-
1998 11 14	327	0.3-	0.4-	1998 12 11	699	0.4-	0.4+	2000 01 08	704	0.6+	0.4+
1998 11 14	327	0.7-	0.1-	1998 12 11	699	0.0	0.5+	2000 01 08	704	0.0	0.6+
1998 11 14	327	1.0-	0.3+	1998 12 11	699	0.1+	0.1-	2000 01 08	704	0.0	0.4-
1998 11 24	704	0.4-	0.2+	1998 12 14	704	0.5+	0.0	2000 01 08	704	0.1+	0.8-
1998 11 24	704	0.6+	0.1-	1998 12 14	704	0.9-	1.8-	2000 01 10	704	0.1+	0.6+
1998 11 24	704	0.3+	1.3-	1998 12 14	704	1.4+	1.1-	2000 01 10	704	0.0	0.0
1998 11 24	704	0.7+	0.7-	1998 12 14	704	1.6+	0.4-	2000 01 10	704	0.2-	0.4+
1998 11 24	704	0.5+	0.3-	1998 12 14	704	0.8-	0.2+	2000 01 10	704	0.0	0.1+
1998 11 25	699	0.4+	0.1+	1998 12 17	704	0.4+	0.0	2000 01 10	704	0.4-	0.1+
1998 11 25	699	0.3+	0.6-	1998 12 17	704	1.1+	0.3+				

1998 UO₃₂ = 2000 AK₂₀₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	139.63863		(2000.0)		P		Q
n	0.19141355	ω	111.52778		+0.93639216		+0.32287616
a	2.9818624	Ω	229.91199		-0.34960832		+0.89247415
e	0.1029215	i	10.35776		+0.03072035		+0.31502522
P	5.15	H	14.2	G	0.15	U	4

Residuals in seconds of arc

1998 10 19	699	0.7-	0.7+	1998 11 10	704	(1.0-	2.4+)	1998 11 23	691	0.5-	0.2-
1998 10 19	699	0.8+	0.5-	1998 11 11	704	0.2+	0.9+	1998 11 23	691	0.4-	0.2-
1998 10 19	699	0.6+	0.8+	1998 11 11	704	0.1-	1.1-	2000 01 10	704	0.7+	0.1+
1998 10 30	327	0.2-	0.2-	1998 11 11	704	0.8+	0.5-	2000 01 10	704	0.2+	0.6-
1998 10 30	327	0.2+	0.3+	1998 11 11	704	0.1-	0.9-	2000 01 10	704	0.7-	0.4-
1998 10 30	327	0.1-	0.7-	1998 11 16	566	0.7+	0.8+	2000 01 10	704	0.0	1.1+
1998 11 01	327	0.2-	0.2-	1998 11 16	566	0.2+	0.1+	2000 01 11	704	0.7-	1.0-
1998 11 01	327	0.3-	0.3-	1998 11 16	566	0.6+	0.0	2000 01 11	704	0.1+	0.4-
1998 11 01	327	0.3-	0.3-	1998 11 20	699	0.4-	0.5+	2000 01 11	704	0.6+	0.6+
1998 11 10	704	1.2-	0.5-	1998 11 20	699	0.5+	1.0+	2000 01 11	704	0.2-	0.5+
1998 11 10	704	0.5-	0.6-	1998 11 20	699	1.0+	0.7+				
1998 11 10	704	0.4-	1.0+	1998 11 23	691	0.3-	0.6-				

1998 UF₃₃ = 1999 XU₂₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24151986	ω	249.35549	+0.42172299	+0.89538931		
<i>a</i>	2.5536859	Ω	46.43268	-0.74105653	+0.43119062		
<i>e</i>	0.1775594	<i>i</i>	11.37660	-0.52247960	+0.11114239		
<i>P</i>	4.08	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 21	699	0.6-	0.8+	1998 10 29	704	(2.8+ 0.2-)	1999 12 13 699 0.7+ 0.6+
1998 09 21	699	0.1-	0.1+	1998 10 29	704	(2.9+ 0.5+)	1999 12 13 699 0.1+ 0.3+
1998 09 21	699	0.2-	0.4+	1998 11 15	699	0.1+ 0.7+	1999 12 15 704 0.1+ 0.1-
1998 10 18	699	0.0	0.8-	1998 11 15	699	0.5+ 0.5+	1999 12 15 704 0.2- 0.6-
1998 10 18	699	0.0	0.7-	1998 11 15	699	0.1- 0.3+	1999 12 15 704 0.6+ 0.5-
1998 10 18	699	0.1+	0.6-	1998 12 08	704	1.5+ 1.4-	1999 12 15 704 0.2+ 0.6-
1998 10 28	704	0.7-	0.5+	1998 12 08	704	(1.8- 2.4+)	1999 12 15 704 0.6+ 0.1-
1998 10 28	704	0.9+	0.5-	1998 12 08	704	0.7- 1.5+	1999 12 31 106 0.8+ 0.5+
1998 10 28	704	0.7-	0.3+	1999 12 12	704	0.2- 0.3-	1999 12 31 106 0.6+ 0.8+
1998 10 28	704	0.1+	0.5-	1999 12 12	704	0.1- 0.9-	1999 12 31 106 0.2- 0.9+
1998 10 28	704	0.1+	0.2-	1999 12 12	704	0.5- 0.5-	2000 01 02 704 (0.4+ 2.2+)
1998 10 29	704	(3.3+ 0.5-)		1999 12 12	704	0.2- 0.9-	2000 01 02 704 0.8- 0.6+
1998 10 29	704	(2.9+ 0.0)		1999 12 12	704	0.3- 0.8-	2000 01 02 704 0.4- 0.5+
1998 10 29	704	(3.0+ 0.9+)		1999 12 13	699	0.3- 0.3+	2000 01 02 704 0.6- 0.8+

1998 UE₃₄ = 2000 AP₁₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18398621	ω	157.76760	+0.71832746	-0.67947087		
<i>a</i>	3.0615818	Ω	245.93096	+0.61113495	+0.71891057		
<i>e</i>	0.0407630	<i>i</i>	9.41845	+0.33244508	+0.14658424		
<i>P</i>	5.36	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 12	699	0.5+ 0.6-	1998 10 29	704	1.0- 0.8+	1999 12 14	704 1.2+ 0.3-
1998 10 12	699	0.9+ 0.3+	1998 10 29	704	1.2- 2.0+	2000 01 07	704 0.3+ 0.2+
1998 10 12	699	0.1- 1.1-	1998 11 17	699	0.0 0.0	2000 01 07	704 0.2+ 0.1-
1998 10 28	704	0.9+ 1.3-	1998 11 17	699	0.7+ 0.6-	2000 01 07	704 0.1- 0.3+
1998 10 28	704	0.4- 0.3+	1998 11 17	699	0.1+ 1.1+	2000 01 07	704 0.5- 0.1+
1998 10 28	704	0.1- 0.4-	1999 12 06	704	0.8- 0.3+	2000 01 07	704 1.4+ 1.0+
1998 10 28	704	0.7- 0.7+	1999 12 06	704	0.2- 0.8-	2000 01 11	704 0.4- 0.2+
1998 10 28	704	1.1+ 0.0	1999 12 06	704	0.7- 0.3-	2000 01 11	704 0.4- 0.1+
1998 10 29	704	0.6- 0.4-	1999 12 14	704	0.1- 0.0	2000 01 11	704 0.5- 0.3-
1998 10 29	704	0.9- 1.0-	1999 12 14	704	0.2+ 0.4-	2000 01 11	704 0.5- 0.3-
1998 10 29	704	0.7+ 0.3+	1999 12 14	704	0.7+ 0.0		

1998 UJ₄₀ = 2000 AU₂₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23406395	ω	323.52797	-0.94191899	+0.29655997		
<i>a</i>	2.6076324	Ω	234.46802	-0.24366345	-0.92642933		
<i>e</i>	0.1131192	<i>i</i>	11.16723	-0.23112063	-0.23190706		
<i>P</i>	4.21	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 28	704	0.0 0.3+	1998 11 17	699	0.6+ 1.5+	2000 01 07	699 1.0+ 0.7+
1998 10 28	704	0.5+ 1.6-	1998 11 17	699	0.2- 0.2+	2000 01 07	699 0.6+ 0.2+
1998 10 28	704	0.5- 0.2-	1998 11 20	699	0.2+ 0.8+	2000 01 07	699 1.2+ 0.1+
1998 10 28	704	0.2- 0.5+	1998 11 20	699	0.1+ 0.8-	2000 01 09	704 0.7- 0.6-
1998 10 29	704	0.5+ 0.4+	1998 11 20	699	0.7- 0.2-	2000 01 09	704 0.2- 0.5+
1998 10 29	704	0.2- 0.2+	1999 12 14	704	0.5+ 0.2-	2000 01 09	704 0.5- 0.2+
1998 10 29	704	0.8- 0.6+	1999 12 14	704	1.2- 0.2-	2000 01 11	704 0.5- 0.5-
1998 10 29	704	0.8+ 0.9-	1999 12 14	704	0.4+ 0.1+	2000 01 11	704 0.2+ 0.1+
1998 11 10	704	0.7- 0.5+	1999 12 14	704	0.5- 0.8-	2000 01 11	704 0.3- 0.4+
1998 11 10	704	0.1+ 0.6-	1999 12 14	704	1.1- 0.3+	2000 01 11	704 0.5- 0.5-
1998 11 10	704	0.0 1.0-	1999 12 16	699	1.3+ 0.1+	2000 01 11	704 0.4- 0.4-

1998 11 10	704	(3.8- 0.2-)	1999 12 16	699	0.8+ 0.0
1998 11 17	699	0.4+ 0.1+	1999 12 16	699	0.3+ 0.4+

1998 UF₄₁ = 2000 AR₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19074486	ω	176.28740	+0.98271776	-0.18049613		
<i>a</i>	2.9888273	Ω	194.31107	+0.16526846	+0.95545374		
<i>e</i>	0.1434452	<i>i</i>	9.56465	+0.08337952	+0.23351511		
<i>P</i>	5.17	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 09 14	699	1.2- 1.6-	1998 10 22	910	0.8+ 0.1+	1998 11 10	704 0.9- 0.4+
1998 09 14	699	0.5- 1.9-	1998 10 22	910	0.8+ 0.1+	1998 11 11	704 0.2- 1.0+
1998 09 14	699	0.3- 1.6-	1998 10 22	910	0.9+ 0.4+	1998 11 11	704 1.0- 0.0
1998 09 18	910	0.3- 0.7-	1998 10 28	704	0.3+ 0.2+	1998 11 11	704 0.4- 0.8-
1998 09 18	910	0.3- 0.7-	1998 10 28	704	1.7+ 0.4-	1998 11 11	704 0.6- 1.2-
1998 09 18	910	0.3- 0.7-	1998 10 28	704	0.7+ 1.0-	1998 11 11	704 1.1+ 0.1-
1998 09 20	809	0.5+ 1.1+	1998 10 28	704	0.2+ 0.7-	2000 01 08	704 0.8+ 1.0-
1998 09 20	809	0.7- 0.1+	1998 10 29	704	0.1+ 0.2+	2000 01 08	704 1.4- 0.5-
1998 09 20	809	0.9- 1.4+	1998 10 29	704	0.1- 0.4-	2000 01 08	704 0.1- 0.4+
1998 09 21	809	1.3+ 1.5+	1998 10 29	704	0.8- 0.3+	2000 01 08	704 0.2+ 0.4+
1998 09 21	809	1.1+ 1.2+	1998 10 29	704	0.6+ 0.2-	2000 01 11	704 0.2- 0.4-
1998 09 21	809	0.5+ 1.7+	1998 10 29	704	0.8+ 0.7-	2000 01 11	704 1.0+ 0.7+
1998 10 10	699	0.4- 0.7+	1998 11 10	704	0.7- 0.8+	2000 01 11	704 0.3+ 0.5-
1998 10 10	699	0.5- 0.6+	1998 11 10	704	0.9- 0.1+	2000 01 11	704 0.5- 0.9+
1998 10 10	699	0.2+ 0.3+	1998 11 10	704	0.9- 0.3+		

1998 UF₄₂ = 2000 AT₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.24030944	ω	225.77196	+0.25213905	+0.96708814		
<i>a</i>	2.5622539	Ω	58.86109	-0.87607798	+0.24311586		
<i>e</i>	0.1291322	<i>i</i>	2.28683	-0.41099060	+0.07506797		
<i>P</i>	4.10	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 14	699	1.4- 0.4+	1998 11 10	704	0.4- 0.1+	1999 01 13	691 0.1- 0.0
1998 10 14	699	0.2+ 0.3+	1998 11 10	704	2.0- 0.7-	1999 01 13	691 0.6+ 0.0
1998 10 14	699	0.3+ 0.4+	1998 11 10	704	0.2+ 1.0-	1999 01 13	691 0.3+ 0.6-
1998 10 28	704	0.1+ 0.6+	1998 11 10	704	0.1- 0.7+	1999 01 18	691 0.5+ 0.2-
1998 10 28	704	0.4- 0.2+	1998 11 10	704	(0.7+ 2.1-)	1999 01 18	691 0.6- 0.0
1998 10 28	704	1.8+ 0.2-	1998 11 11	704	0.0 1.3-	2000 01 04	704 0.3+ 0.1+
1998 10 28	704	(2.7- 0.7-)	1998 11 11	704	(2.4- 1.0-)	2000 01 04	704 0.4- 0.5-
1998 10 29	704	1.0+ 0.9-	1998 11 11	704	1.0- 0.7+	2000 01 04	704 0.8+ 0.6+
1998 10 29	704	0.0 0.6+	1998 11 11	704	0.7+ 1.8-	2000 01 06	704 0.3- 0.1+
1998 10 29	704	0.1+ 0.4+	1998 11 14	699	1.3+ 0.6-	2000 01 06	704 0.4- 0.4-
1998 10 29	704	0.9- 0.8+	1998 11 14	699	0.4+ 0.4+	2000 01 06	704 0.1- 0.2+
1998 10 29	704	0.3- 0.0	1998 11 14	699	0.2- 1.4+	2000 01 06	704 0.1+ 0.4+

1998 VU = 1998 TK₃₃Id. B. G. Marsden (d, *MPC* 33385), M. Tichý (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18660129	ω	311.33468	+0.98893340	+0.02248009		
<i>a</i>	3.0329107	Ω	47.93087	+0.05633882	+0.85750691		
<i>e</i>	0.1047300	<i>i</i>	11.39360	-0.13724675	+0.51398107		
<i>P</i>	5.28	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 10 14	699	0.4+ 0.5-	1998 11 11	704	0.6+ 1.3+	1998 11 25	046 0.1+ 0.2+
1998 10 14	699	0.3- 0.5-	1998 11 11	704	1.2+ 0.6-	1998 11 25	046 0.7+ 0.3+
1998 10 14	699	0.1+ 0.2-	1998 11 11	704	1.0- 0.4+	1998 11 25	046 0.5+ 0.1+
1998 10 20	699	0.4+ 2.0+	1998 11 11	704	1.7- 1.5+	1998 12 09	046 0.2+ 0.1+
1998 10 20	699	1.0+ 0.9-	1998 11 11	046	0.6- 0.1-	1998 12 09	046 0.3+ 0.0

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M.P.C. 37799

1998 10 20	699	0.5−	1.0+	1998 11 11	046	1.0−	0.1−	1998 12 09	046	0.1−	0.1+
1998 11 07	046	0.3−	0.5−	1998 11 11	046	0.8−	0.2−	1998 12 10	046	0.2−	0.2−
1998 11 07	046	0.4+	0.3−	1998 11 11	046	0.6−	0.0	1998 12 10	046	0.0	0.3−
1998 11 07	046	0.2−	0.4−	1998 11 14	699	1.1+	0.1−	2000 01 13	046	0.6−	0.2+
1998 11 07	046	0.4−	0.3−	1998 11 14	699	0.0	0.1+	2000 01 13	046	0.1+	0.1−
1998 11 07	046	0.1−	0.5−	1998 11 14	699	0.0	0.1+	2000 01 13	046	0.2−	0.2−
1998 11 07	046	0.3−	0.5−	1998 11 17	046	0.3+	0.2−	2000 01 14	046	0.5+	0.1+
1998 11 10	704	0.7+	0.1+	1998 11 17	046	0.1+	0.0	2000 01 14	046	0.2+	0.1−
1998 11 10	704	0.1+	0.3+	1998 11 17	046	0.2−	0.0	2000 01 14	046	0.1−	0.1+
1998 11 10	704	0.0	0.8−	1998 11 25	046	0.3+	0.3−				

1998 VV₂ = 1989 SM₇ = 2000 AX₇₇

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.12455760	ω	46.16353	+0.16244874	+0.97903010		
<i>a</i>	3.9709025	Ω	233.58133	−0.94346281	+0.11763653		
<i>e</i>	0.1144556	<i>i</i>	8.78681	−0.28894346	+0.16631808		
<i>P</i>	7.91	<i>H</i>	11.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1989 09 22	046	1.4+	1.2+	1998 11 11	704	(2.3−	1.1−)	1998 12 08	699	0.9−	0.6−
1989 09 22	046	1.4−	0.9−	1998 11 13	910	0.1+	0.1+	1998 12 08	699	0.1+	0.6−
1998 10 18	699	1.1+	0.6+	1998 11 13	910	0.2+	0.1+	1998 12 08	699	0.3+	0.3−
1998 10 18	699	0.1−	1.4−	1998 11 13	910	0.3+	0.2+	1998 12 16	910	0.8−	0.8+
1998 10 18	699	0.9+	0.8−	1998 11 14	691	0.7−	0.5−	1998 12 16	910	0.6−	1.1+
1998 11 09	910	0.5+	0.1+	1998 11 14	691	0.6−	0.7−	1998 12 16	910	0.8−	1.0+
1998 11 09	910	0.5+	0.2+	1998 11 18	704	1.4+	1.8−	1999 01 06	910	0.1−	0.3+
1998 11 10	910	0.6+	0.2+	1998 11 18	704	0.1−	1.1−	1999 01 06	910	0.1+	0.5+
1998 11 10	699	1.0−	1.3+	1998 11 18	704	(0.4−	2.3−)	1999 01 06	910	0.1−	0.5+
1998 11 10	699	0.4+	0.1−	1998 11 18	704	(2.2−	1.9−)	2000 01 05	704	0.4+	0.3+
1998 11 10	699	1.5−	0.0	1998 11 21	704	0.4−	0.1−	2000 01 05	704	0.7−	0.4−
1998 11 10	910	0.8+	0.0	1998 11 21	704	0.1+	0.4−	2000 01 05	704	0.4+	0.5−
1998 11 10	910	0.7+	0.2+	1998 11 21	704	0.1+	1.7+	2000 01 05	704	0.3−	0.3−
1998 11 10	910	0.8+	0.2+	1998 11 21	704	0.6−	0.6+	2000 01 06	704	0.3+	0.3+
1998 11 11	704	0.9−	0.6−	1998 11 26	691	0.4−	0.4−	2000 01 06	704	0.2+	0.2+
1998 11 11	704	0.2+	0.3+	1998 11 26	691	0.3−	0.3−	2000 01 06	704	0.2−	0.4+
1998 11 11	704	0.5+	0.4+	1998 11 26	691	0.1−	0.4−				

1998 VS₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22853638	ω	94.52719	−0.48946850	−0.85461251		
<i>a</i>	2.6495115	Ω	27.05367	+0.56895201	−0.46364883		
<i>e</i>	0.0186740	<i>i</i>	22.40712	+0.66084355	−0.23381021		
<i>P</i>	4.31	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 11 02	725	0.0	0.6+	1998 11 14	704	(1.5−	2.6−)	1999 01 10	725	0.6+	0.4+
1998 11 02	725	0.4+	0.9+	1998 11 14	704	(4.6−	0.8−)	1999 01 13	725	0.1−	0.2−
1998 11 02	725	0.2+	0.5+	1998 11 16	725	0.8−	0.1+	1999 01 13	725	0.6+	0.0
1998 11 11	725	0.3−	0.2−	1998 11 16	725	0.4−	0.3−	1999 12 14	725	0.9−	1.0+
1998 11 11	725	0.2+	0.2−	1998 11 16	725	0.6−	0.1+	1999 12 14	725	0.6−	1.2−
1998 11 11	725	0.3+	0.4−	1998 11 26	725	0.4−	0.5−	1999 12 17	725	0.6+	0.7+
1998 11 11	725	0.2−	0.5−	1998 11 26	725	0.2+	0.3−	1999 12 17	725	0.3+	0.3−
1998 11 14	704	0.2+	0.3+	1998 12 09	725	0.5−	0.3−	1999 12 17	725	0.8+	0.1+
1998 11 14	704	0.2−	0.5−	1998 12 09	725	1.1+	0.5+				
1998 11 14	704	(3.0−	2.4−)	1999 01 10	725	0.2+	0.0				

1998 VZ₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28458854	ω	257.37793	+0.90067706	+0.41646741		
<i>a</i>	2.2890632	Ω	77.90183	−0.33300783	+0.84475154		
<i>e</i>	0.1353581	<i>i</i>	7.27607	−0.27908174	+0.33607995		
<i>P</i>	3.46	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 11 13	734	0.6−	1.0+	1998 11 26	734	(2.1−	0.0)	1998 12 18	734	0.3+	0.2+
1998 11 13	734	1.0−	1.1+	1998 11 26	734	0.7−	0.0	1998 12 28	734	0.6+	0.5−
1998 11 13	734	0.2+	0.6+	1998 11 26	734	1.1−	0.1+	1998 12 28	734	0.0	0.2+
1998 11 14	734	0.6+	0.6+	1998 12 09	734	0.0	0.2−	1998 12 28	734	0.0	0.2−
1998 11 14	734	0.3−	0.3+	1998 12 09	734	0.1+	0.2+	1999 01 09	734	0.4+	0.8+
1998 11 14	734	0.6−	0.7−	1998 12 09	734	0.6−	0.0	1999 01 09	734	0.2+	0.6+
1998 11 14	734	0.3−	0.3−	1998 12 11	734	0.3−	0.2+	1999 01 15	682	0.6−	0.5−
1998 11 14	734	0.8+	0.0	1998 12 11	734	0.0	0.2−	1999 01 15	734	0.5+	0.2+
1998 11 15	734	0.3+	0.0	1998 12 11	734	0.6−	0.1+	1999 01 15	734	0.5−	0.6+
1998 11 15	734	0.0	0.1+	1998 12 14	704	(2.4+	0.6+)	1999 01 15	734	0.1−	0.7+
1998 11 15	734	0.3+	0.4+	1998 12 14	704	0.7−	0.7−	1999 01 15	682	0.0	0.2+
1998 11 17	734	0.7−	0.6−	1998 12 14	704	0.2+	0.3+	1999 01 19	734	(2.2−	0.9+)
1998 11 17	734	0.2−	0.4−	1998 12 14	704	0.0	0.8+	1999 01 19	734	1.0−	1.3+
1998 11 17	734	0.2−	0.1+	1998 12 15	734	0.1+	0.1+	1999 01 19	734	0.0	1.4+
1998 11 19	734	0.2+	0.1−	1998 12 15	734	0.3+	0.6+	1999 02 09	734	0.6+	0.5−
1998 11 19	734	0.4−	0.1+	1998 12 16	704	0.7+	0.4−	1999 02 09	734	1.7−	0.1−
1998 11 19	734	0.3+	0.2−	1998 12 16	704	1.4+	1.7−	1999 02 13	734	(1.0−	2.6−)
1998 11 21	734	1.1+	1.6−	1998 12 16	704	(1.1+	2.1−)	1999 02 13	734	(4.1−	0.7−)
1998 11 21	734	0.4+	0.2+	1998 12 16	704	(1.1+	3.2−)	2000 01 07	734	1.0+	1.6+
1998 11 21	734	0.0	0.7+	1998 12 17	704	0.1+	0.3−	2000 01 07	734	0.6+	0.6−
1998 11 23	734	1.3+	1.9−	1998 12 17	704	0.5+	1.5−	2000 01 07	734	1.2−	0.3−
1998 11 23	734	(4.2+	1.6−)	1998 12 17	704	0.3−	0.7−	2000 01 11	734	0.8−	1.2−
1998 11 23	734	(2.0−	0.6+)	1998 12 17	704	0.2+	1.2−				
1998 11 23	734	0.2−	0.7+	1998 12 18	734	0.1+	0.3+				

1998 VM₆

Id. T. Kagawa (1999-2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.08238892	ω	127.38002	+0.22589611	−0.97046695		
<i>a</i>	5.2306642	Ω	309.34714	+0.85559907	+0.23919792		
<i>e</i>	0.2201211	<i>i</i>	6.28403	+0.46574798	+0.03127698		
<i>P</i>	11.96	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 19	699	0.0	0.3−	1998 11 14	888	0.0	0.7+	2000 01 03	704	0.2−	0.5−
1998 10 19	699	0.7−	0.7+	1998 11 14	888	0.3−	0.3+	2000 01 03	704	0.2+	0.2−
1998 10 19	699	0.4+	0.2−	1998 11 14	888	1.1−	0.3+	2000 01 03	704	0.2+	0.3−
1998 11 10	704	1.0+	1.0−	1998 11 15	888	0.4−	0.2+	2000 01 03	888	0.0	0.0
1998 11 10	704	1.9+	0.7−	1998 11 15	888	0.1−	0.0	2000 01 03	888	0.3+	0.1+
1998 11 10	704	(0.2−	2.1−)	1998 11 15	888	0.5−	0.0	2000 01 03	888	0.5+	0.1−
1998 11 10	704	0.5−	0.3+	1998 11 17	888	0.5−	0.3+	2000 01 04	704	1.8−	0.5−
1998 11 11	704	0.1+	0.4−	1998 11 17	888	0.6−	0.6−	2000 01 04	704	0.0	0.1−
1998 11 11	704	0.5+	0.3−	1998 11 17	888	0.3+	0.5−	2000 01 04	704	0.1−	0.3−
1998 11 11	704	0.0	0.0	1998 12 09	888	0.0	0.6+	2000 01 04	704	0.1+	0.3+
1998 11 11	704	0.2+	0.7−	1998 12 09	888	0.2+	0.4+	2000 01 04	704	0.5+	1.1+
1998 11 11	704	(2.3−	0.3−)	1999 12 29	888	0.4+	0.4−	2000 01 08	704	0.5+	0.4+
1998 11 11	905	0.3+	1.1+	1999 12 29	888	0.0	0.3−	2000 01 08	704	0.4+	0.0
1998 11 11	905	0.2+	0.3−	1999 12 29	888	0.1−	0.3−	2000 01 08	704	0.7+	0.3+
1998 11 14	385	0.1+	0.4+	2000 01 03	704	0.0	0.1+	2000 01 08	704	0.3+	0.4−
1998 11 14	385	0.3−	0.3−	2000 01 03	704	0.3−	0.3+	2000 01 08	704	1.7−	0.4+

1998 VC₈ = 2000 AQ₁₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	83.00168		(2000.0)	P	Q
<i>n</i>	0.19091719	ω	212.37242	+0.74514282	-0.66617851
<i>a</i>	2.9870284	Ω	189.59090	+0.64473382	+0.73151754
<i>e</i>	0.1268311	<i>i</i>	10.76453	+0.17053000	+0.14521805
<i>P</i>	5.16	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 10 11	699	0.2-	0.1+	1998 11 10	704	0.1+	0.1+	1998 11 16	566	0.0	0.1+
1998 10 11	699	0.4+	0.1-	1998 11 10	704	0.1+	0.3-	1998 11 16	566	0.7-	0.1+
1998 10 11	699	0.1+	0.6-	1998 11 10	704	0.2-	0.9-	1998 11 16	566	0.5-	0.3-
1998 10 28	704	0.2+	0.5-	1998 11 10	704	0.3+	0.0	2000 01 08	704	0.1+	0.0
1998 10 28	704	1.3+	1.0-	1998 11 11	704	0.3+	0.5+	2000 01 08	704	0.1+	0.1+
1998 10 28	704	0.2-	0.3+	1998 11 11	704	0.9-	0.7-	2000 01 08	704	0.0	0.5+
1998 10 28	704	0.1+	0.4+	1998 11 11	704	0.5+	0.5-	2000 01 08	704	0.4+	0.4+
1998 10 29	704	0.3-	0.2+	1998 11 11	704	0.6+	1.7-	2000 01 08	704	0.1-	0.7+
1998 10 29	704	0.1+	0.7+	1998 11 11	704	0.8-	1.1-	2000 01 11	704	0.1-	0.6-
1998 10 29	704	1.0-	0.6+	1998 11 14	699	0.1+	1.2+	2000 01 11	704	0.9-	0.3-
1998 10 29	704	1.2-	0.5-	1998 11 14	699	0.8+	1.6+	2000 01 11	704	0.1-	0.2+
1998 10 29	704	0.2-	1.8+	1998 11 14	699	1.0+	0.5+	2000 01 11	704	0.6+	1.0-

1998 VW₈ = 2000 AH₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	225.05027		(2000.0)	P	Q
<i>n</i>	0.28046432	ω	325.58907	+0.30399761	+0.95167299
<i>a</i>	2.3114489	Ω	322.05611	-0.85733334	+0.25331580
<i>e</i>	0.1668478	<i>i</i>	4.06932	-0.41540943	+0.17363648
<i>P</i>	3.51	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 10 19	699	0.4+	0.1+	1998 10 29	704	0.4-	0.7+	2000 01 04	704	0.1+	0.8-
1998 10 19	699	0.1-	0.1-	1998 11 10	704	0.1+	0.2+	2000 01 04	704	0.0	0.1+
1998 10 19	699	0.3-	0.6-	1998 11 10	704	0.1+	1.4+	2000 01 04	704	0.1-	0.3+
1998 10 28	704	1.3-	0.9-	1998 11 10	704	0.1+	0.8-	2000 01 06	704	0.9+	0.2+
1998 10 28	704	0.9+	0.5+	1998 11 10	704	0.5+	1.1+	2000 01 06	704	0.0	0.3-
1998 10 28	704	1.2+	1.1-	1998 11 11	704	0.4-	0.5+	2000 01 06	704	0.2-	0.6+
1998 10 28	704	0.1+	0.5-	1998 11 11	704	0.3+	1.4+	2000 01 10	120	0.5-	0.7+
1998 10 29	704	1.8+	0.9-	1998 11 11	704	0.5-	0.0	2000 01 16	120	0.6+	0.4+
1998 10 29	704	0.3-	0.3-	1998 11 11	704	1.9-	1.6-	2000 01 16	120	(3.7-	0.9-)
1998 10 29	704	0.3+	0.0	1998 11 11	704	0.1-	1.4+	2000 01 17	120	(2.3+	0.0)
1998 10 29	704	0.4-	0.3-	2000 01 04	704	0.6-	0.7-	2000 01 17	120	0.5-	0.8-

1998 VD₁₃ = 1998 SS₁₃ = 2000 AM₉₁Id. A. Doppler (d, *MPC* 34061), G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	139.26602		(2000.0)	P	Q
<i>n</i>	0.20068626	ω	304.39050	+0.98195151	+0.18482664
<i>a</i>	2.8892888	Ω	44.99600	-0.14949177	+0.88844355
<i>e</i>	0.0715501	<i>i</i>	3.25357	-0.11585957	+0.42012757
<i>P</i>	4.91	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 23	910	1.0-	0.4+	1998 11 11	704	0.5-	0.2+	2000 01 05	704	0.0	0.4-
1998 09 23	910	0.9-	0.5+	1998 11 16	566	0.2-	0.3-	2000 01 05	704	0.9-	0.3+
1998 09 23	910	0.8-	0.4+	1998 11 16	566	0.2-	0.3-	2000 01 06	704	0.6+	0.4-
1998 09 24	910	0.5+	0.1+	1998 11 16	566	0.7-	0.0	2000 01 06	704	0.4-	1.7+
1998 09 24	910	1.0+	0.5-	2000 01 04	704	0.1-	0.4-	2000 01 06	704	0.3+	0.4+
1998 09 24	910	1.1+	0.9-	2000 01 04	704	0.4-	0.4-	2000 01 08	704	0.0	0.6-
1998 11 10	704	0.6+	0.1-	2000 01 04	704	0.4+	0.7-	2000 01 08	704	0.4-	0.0
1998 11 10	704	0.4+	0.7+	2000 01 04	704	0.5-	0.9-	2000 01 08	704	0.2+	0.4-
1998 11 10	704	0.3-	0.4-	2000 01 04	704	0.6-	1.2+	2000 01 08	704	0.2-	0.2+
1998 11 10	704	0.3+	0.6-	2000 01 05	699	0.5+	0.5+	2000 01 08	704	0.1-	0.6+
1998 11 11	704	1.0-	0.8+	2000 01 05	699	1.1+	0.2+	2000 01 09	704	0.4-	0.5-
1998 11 11	704	0.5+	0.4+	2000 01 05	699	0.9+	0.3-	2000 01 09	704	0.3+	0.3+

1998 11 11	704	0.8+	0.1-	2000 01 05	704	0.1+	0.8+	2000 01 09	704	0.3-	1.0-
1998 11 11	704	0.2+	0.2-	2000 01 05	704	0.2-	0.0				

1998 VR₁₃ = 2000 AH₁₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	77.54566		(2000.0)	P	Q
<i>n</i>	0.12313381	ω	2.05364	+0.98949250	-0.14428099
<i>a</i>	4.0014541	Ω	6.26527	+0.13140104	+0.87038122
<i>e</i>	0.2366679	<i>i</i>	4.91948	+0.06031878	+0.47076483
<i>P</i>	8.00	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 10 19	699	0.3+	0.6+	1998 11 11	704	0.8-	0.6-	2000 01 04	704	0.7-	0.4+
1998 10 19	699	0.6-	0.1+	1998 11 11	704	0.8+	0.4-	2000 01 04	704	0.4+	0.1+
1998 10 19	699	0.3-	0.9+	1998 11 11	704	0.5-	0.8-	2000 01 04	704	0.6+	0.2+
1998 10 24	691	0.3+	0.1+	1998 11 11	704	0.8-	0.4+	2000 01 04	704	0.0	0.2-
1998 10 24	691	0.2+	0.2-	1998 11 11	704	0.2+	0.1+	2000 01 04	704	0.3+	0.3-
1998 10 24	691	0.3+	0.2-	1998 11 16	566	0.9-	0.1-	2000 01 08	704	0.5-	0.4+
1998 11 10	704	0.0	0.0	1998 11 16	566	0.2-	0.2+	2000 01 08	704	0.3-	0.2-
1998 11 10	704	1.1+	1.1-	1998 11 16	566	0.6-	0.1-	2000 01 08	704	0.2-	0.3-
1998 11 10	704	0.8+	1.0-	1998 11 20	699	0.5+	0.5+	2000 01 08	704	0.3+	0.3+
1998 11 10	704	0.3-	0.3+	1998 11 20	699	0.9+	1.8+	2000 01 08	704	0.1+	0.4-
1998 11 10	704	1.2-	0.5-	1998 11 20	699	0.6+	0.1-				

1998 VQ₁₅ = 1999 XT₂₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	33.39689		(2000.0)	P	Q
<i>n</i>	0.08398338	ω	2.61056	+0.69405337	-0.71016231
<i>a</i>	5.1642487	Ω	43.47465	+0.65736679	+0.55823877
<i>e</i>	0.0427152	<i>i</i>	9.88791	+0.29352824	+0.42899762
<i>P</i>	11.74	<i>H</i>	11.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 10 14	699	1.0+	0.3-	1998 11 14	691	0.2-	0.1-	1999 12 16	704	0.6+	0.1+
1998 10 14	699	0.4-	0.9+	1998 11 14	699	0.5+	0.0	1999 12 16	704	0.2-	0.4+
1998 10 14	699	0.3-	0.5-	1998 11 14	699	1.0+	0.4+	1999 12 16	704	0.0	0.2-
1998 11 10	704	0.4+	0.2-	1998 11 14	699	0.0	0.2+	1999 12 16	704	0.4-	0.4+
1998 11 10	704	0.4+	1.1+	1999 11 16	704	0.2+	0.4-	1999 12 16	704	0.9-	0.2+
1998 11 10	704	0.9-	1.0-	1999 11 16	704	0.7+	0.4-	2000 01 03	704	0.1+	0.4-
1998 11 10	704	0.5-	0.7+	1999 11 16	704	0.4-	0.5-	2000 01 03	704	0.6+	0.1-
1998 11 11	704	1.2+	0.5-	1999 11 16	704	0.0	0.2-	2000 01 03	704	0.5-	0.1+
1998 11 11	704	0.6-	0.1+	1999 11 16	704	0.4-	0.4-	2000 01 03	704	0.0	0.7-
1998 11 11	704	0.9+	0.2-	1999 12 15	704	0.4-	0.2+	2000 01 03	704	0.3+	0.4-
1998 11 11	704	0.2-	0.5-	1999 12 15	704	0.2+	1.4+	2000 01 04	704	0.6-	0.8-
1998 11 11	704	0.9-	0.3+	1999 12 15	704	0.1-	0.2+	2000 01 04	704	0.9+	0.3-
1998 11 14	691	0.5-	0.2-	1999 12 15	704	0.2+	1.1+	2000 01 04	704	0.2-	0.4+
1998 11 14	691	0.8-	0.2-	1999 12 15	704	0.3+	0.1+				

1998 VM₁₆ = 1975 VY = 1999 XJ₁₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	1.81550		(2000.0)	P	Q
<i>n</i>	0.17050285	ω	67.77029	-0.65335035	-0.72720910
<i>a</i>	3.2209325	Ω	64.78710	+0.58023052	-0.65958535
<i>e</i>	0.1483709	<i>i</i>	13.45252	+0.48627755	-0.19003708
<i>P</i>	5.78	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1975 11 01	095	0.8+	1.7-	1998 11 15	566	0.3-	0.1-	1999 12 10	704	0.3+	0.4-
1998 10 12	699	0.0	0.6+	1998 11 15	566	0.4-	0.9+	1999 12 10	704	0.2-	0.5+
1998 10 12	699	0.7+	0.0	1998 11 19	699	0.1-	0.3-	1999 12 15	704	0.4-	0.3-
1998 10 12	699	0.0	0.4+	1998 11 19	699	0.4+	0.1+	1999 12 15	704	0.6-	0.8-
1998 11 10	704	0.5-	1.2+	1998 11 19	699	0.2-	0.0	1999 12 15	704	0.5+	0.9-
1998 11 10	704	0.4+	0.6-	1998 12 11	699	0.9+	0.1+	1999 12 15	704	0.0	1.1-
1998 11 10	704	0.6+	0.4+	1998 12 11	699	0.2+	0.3+	1999 12 15	704	0.5-	0.4-
1998 11 10	704	1.9-	0.8+	1998 12 11	699	0.4-	0.6+	2000 01 02	704	0.2+	0.4+

2000 JAN. 24

1998 11 10	704	(2.8−	0.1−)	1999 12 08	703	0.4+	0.9+	2000 01 02	704	0.1−	0.3+
1998 11 11	704	0.2+	0.0	1999 12 08	703	0.1+	0.4+	2000 01 02	704	0.3−	0.1+
1998 11 11	704	0.4−	0.2+	1999 12 08	703	0.5+	0.4+	2000 01 02	704	0.3−	0.0
1998 11 11	704	0.2+	0.4−	1999 12 08	703	0.6+	0.2+	2000 01 02	704	0.6−	0.4+
1998 11 11	704	0.1+	1.4−	1999 12 10	704	0.1−	0.3−	2000 01 10	699	0.1−	0.4+
1998 11 11	704	0.1+	1.3−	1999 12 10	704	0.5+	0.5−	2000 01 10	699	0.4+	0.2+
1998 11 15	566	0.5−	0.3+	1999 12 10	704	0.0	0.1−	2000 01 10	699	0.0	0.7+

1998 VW₁₇ = 2000 AN₁₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17762385	<i>ω</i>	96.98059	+0.82072138		+0.53720470	
<i>a</i>	3.1342613	<i>Ω</i>	230.73061	−0.57081106		+0.78548980	
<i>e</i>	0.1160066	<i>i</i>	14.55001	+0.02431348		+0.30727330	
<i>P</i>	5.55	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 11 10	704	0.1−	0.6+	1998 12 11	691	0.5−	0.1−	2000 01 08	704	0.3+	0.1+
1998 11 10	704	0.3−	0.1−	1998 12 11	691	0.5−	0.2−	2000 01 08	704	1.2+	0.8+
1998 11 10	704	0.1−	0.5+	1998 12 14	691	0.3+	0.5−	2000 01 08	704	0.6+	0.5+
1998 11 10	704	0.2−	0.4−	1998 12 14	691	0.5+	0.3−	2000 01 08	704	0.6+	0.2−
1998 11 11	704	0.1−	0.7+	1998 12 14	691	0.3+	0.3−	2000 01 11	704	0.7−	0.2−
1998 11 11	704	0.9+	0.7−	1999 12 05	704	0.5−	0.2−	2000 01 11	704	0.1−	0.5−
1998 11 11	704	0.2+	0.2+	1999 12 05	704	0.0	0.2+	2000 01 11	704	0.7−	0.4−
1998 11 11	704	0.5+	0.6+	1999 12 05	704	0.9−	0.6+	2000 01 11	704	0.2−	0.4−
1998 11 11	704	0.4−	0.5−	1999 12 05	704	0.3+	0.0				
1998 12 11	691	0.6−	0.3+	2000 01 08	704	0.2+	0.1−				

1998 VS₂₁ = 2000 AL₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22292753	<i>ω</i>	329.24758	−0.15378459		+0.98657854	
<i>a</i>	2.6937683	<i>Ω</i>	291.85793	−0.89411389		−0.16258843	
<i>e</i>	0.0328783	<i>i</i>	3.39064	−0.42060747		−0.01509246	
<i>P</i>	4.42	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 19	699	0.5+	0.7+	1998 11 11	704	0.3+	1.5−	1999 12 06	704	0.7+	0.0
1998 10 19	699	0.3−	1.9+	1998 11 11	704	0.5−	1.0−	2000 01 05	704	0.5+	0.3+
1998 10 19	699	0.1−	0.6+	1998 11 15	699	(0.3+	3.5+)	2000 01 05	704	0.9−	0.3+
1998 11 10	704	0.3+	0.0	1998 11 15	699	0.1−	1.0+	2000 01 05	704	0.5+	0.3+
1998 11 10	704	0.0	0.9−	1998 11 15	699	0.1+	1.0+	2000 01 05	704	0.2+	0.7+
1998 11 10	704	0.7−	1.0−	1998 11 20	699	0.1+	0.7+	2000 01 07	704	0.1−	0.4−
1998 11 10	704	0.1−	1.9−	1998 11 20	699	0.5+	0.9+	2000 01 07	704	0.1+	0.2−
1998 11 11	704	0.3+	0.3+	1998 11 20	699	1.3+	0.2+	2000 01 07	704	0.3+	0.0
1998 11 11	704	1.0−	0.9−	1998 12 06	704	0.5−	0.1−	2000 01 07	704	0.7−	1.4−
1998 11 11	704	0.4−	0.1−	1999 12 06	704	0.1+	0.8+				

1998 VQ₂₅ = 2000 AC₁₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28264759	<i>ω</i>	173.32627	−0.61419293		+0.78644552	
<i>a</i>	2.2995306	<i>Ω</i>	58.75933	−0.72752380		−0.53219836	
<i>e</i>	0.0819077	<i>i</i>	4.38350	−0.30573872		−0.31347784	
<i>P</i>	3.49	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 12	691	0.0	0.0	1998 11 11	704	0.6−	0.5+	1998 12 15	691	0.1−	0.2−
1998 10 12	691	0.2+	0.0	1998 11 11	704	0.6−	0.1−	1998 12 15	691	0.2−	0.4−
1998 10 18	699	1.0+	0.0	1998 11 11	704	0.2+	0.3+	1999 01 11	327	0.4+	0.3−
1998 10 18	699	0.8+	0.6−	1998 11 11	699	0.2+	0.2+	1999 01 11	327	0.1+	1.0−
1998 10 18	699	0.1+	0.2+	1998 11 11	704	0.1−	0.0	1999 01 11	327	0.2+	0.0
1998 11 10	704	0.9−	0.4+	1998 11 11	699	0.1+	0.1+	1999 01 14	327	0.2+	0.1−
1998 11 10	704	0.4−	0.1−	1998 11 11	699	0.2+	0.3+	1999 01 14	327	0.0	0.1−
1998 11 10	704	0.5−	0.2+	1998 12 08	704	0.4+	1.3+	1999 01 14	327	0.4+	0.1+

M.P.C. 37801

1998 11 10	704	0.5−	1.3+	1998 12 08	704	(1.5+	2.3−)	2000 01 04	704	0.1+	0.0
1998 11 10	704	0.4−	0.2−	1998 12 08	704	1.1+	1.4+	2000 01 04	704	0.7+	0.3+
1998 11 11	704	0.6−	0.7+	1998 12 08	704	0.3−	1.6−	2000 01 04	704	1.0+	0.4+
1998 11 11	704	0.4+	0.4−	1998 12 08	704	0.9+	1.0−	2000 01 08	704	1.0−	1.2+
1998 11 11	704	0.4+	1.4+	1998 12 11	691	0.2+	0.9−	2000 01 08	704	0.1−	0.2−
1998 11 11	704	0.6−	0.0	1998 12 11	691	0.1+	0.6−	2000 01 08	704	0.3−	0.0
1998 11 11	704	0.5−	0.6+	1998 12 11	691	0.1+	0.5−	2000 01 08	704	0.1+	0.7−
1998 11 11	704	0.8−	1.0−	1998 12 15	691	0.0	0.3−	2000 01 08	704	0.0	0.2−

1998 VU₂₉ = 1979 WM₅ = 2000 AP₂₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	88.31484	<i>ω</i>	169.32776	+0.34496918		−0.92555955	
<i>a</i>	2.8066124	<i>Ω</i>	260.35185	+0.84908522		+0.37856414	
<i>e</i>	0.1446017	<i>i</i>	9.10461	+0.40006319		−0.00535841	
<i>P</i>	4.70	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 11 17	095	0.5+	1.6−	1998 11 18	399	1.0−	1.4−	1999 01 06	699	0.1−	0.4+
1996 05 16	566	0.4+	0.2+	1998 11 18	399	(2.0−	1.1−)	1999 01 06	699	0.2−	0.3+
1996 05 16	566	0.0	0.3−	1998 11 19	399	(0.8−	3.4+)	1999 01 06	699	0.2+	0.5+
1996 05 16	566	0.4−	0.4−	1998 11 19	399	(0.6−	2.4+)	1999 01 24	691	0.2+	0.1−
1998 08 31	704	0.3−	0.3−	1998 11 20	699	0.2+	1.5+	1999 01 24	691	0.1−	0.8−
1998 08 31	704	0.7−	0.2−	1998 11 20	699	0.1+	0.7+	1999 01 24	691	0.4+	0.2−
1998 08 31	704	1.6−	0.9−	1998 11 20	699	0.4+	0.9+	1999 02 04	699	0.6−	0.6+
1998 08 31	704	0.0	0.0	1998 11 21	704	0.2+	0.3+	1999 02 04	699	0.2−	0.8+
1998 08 31	704	0.7−	1.9−	1998 11 21	704	0.2+	0.2−	1999 02 04	699	0.7−	0.4+
1998 10 26	098	0.8+	0.7−	1998 11 21	704	1.8+	1.0+	1999 02 06	704	0.6−	0.6−
1998 10 26	098	1.1−	1.0−	1998 11 21	704	1.6+	1.9+	1999 02 06	704	0.0	0.6−
1998 11 10	704	0.3−	0.4−	1998 11 21	704	(2.2+	1.8+)	1999 02 06	704	0.3+	1.8−
1998 11 10	704	1.1−	0.1+	1998 11 24	704	0.1+	0.6−	1999 02 16	691	0.1−	0.5−
1998 11 10	704	0.5+	0.8+	1998 11 24	704	0.1−	1.0−	1999 02 16	691	0.3−	0.5−
1998 11 10	704	0.1−	0.7+	1998 11 24	704	0.1+	1.4−	1999 02 16	691	0.1−	0.4−
1998 11 10	704	0.4−	0.7−	1998 11 24	704	0.6+	0.5−	2000 01 10	704	0.5−	0.6+
1998 11 11	704	0.8−	1.2−	1998 11 24	704	1.9−	1.9−	2000 01 10	704	1.3−	0.2−
1998 11 11	704	0.6+	0.4−	1998 12 11	699	0.5+	0.1−	2000 01 10	704	0.0	0.1+
1998 11 11	704	0.3−	0.4+	1998 12 11	699	0.6+	0.1+	2000 01 10	704	0.3−	0.7−
1998 11 11	704	0.2−	0.4+	1998 12 11	699	0.7+	0.3+	2000 01 10	704	0.1+	1.3+
1998 11 18	704	0.4+	0.6−	1998 12 14	704	0.3+	0.8+	2000 01 11	704	0.1+	0.4−
1998 11 18	704	1.1+	0.2+	1998 12 14	704	1.2+	0.8+	2000 01 11	704	0.3+	0.1−
1998 11 18	704	0.0	1.8+	1998 12 14	704	0.3+	0.6+	2000 01 11	704	1.0+	1.0−
1998 11 18	704	1.5−	0.4+	1998 12 14	704	0.3−	0.6+	2000 01 11	704	0.3−	1.0−
1998 11 18	704	0.5−	1.2+	1998 12 14	704	0.3+	0.6+				

1998 VF₃₀ = 1999 XN₂₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	24.66492	(2000.0)		P	Q
n	0.08261327	ω	3.50899	+0.33914874	-0.85228587
a	5.2211902	Ω	67.00335	+0.85223114	+0.09910446
e	0.1305017	i	25.63333	+0.39834685	+0.51360208
P	11.93	H	10.5	G 0.15	U 3

M.P.C. 37802

2000 JAN. 24

1998 11 21	704	0.1−	0.1+	1999 12 13	704	0.7+	0.3−	2000 01 21	704	0.0	0.8+
1998 11 21	704	0.6−	0.2−	1999 12 13	704	0.9+	0.0	2000 01 21	704	0.3+	0.5+
1998 11 21	704	1.2−	1.2+	1999 12 13	704	0.2+	0.4−				
1998 11 21	704	(2.6−	1.5+)	1999 12 13	704	0.3+	0.6−				

1998 VU₃₀ = 1962 WO = 2000 AS₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	27.29630		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.08302803	<i>ω</i>	179.22573	+0.29768455		−0.91612528	
<i>a</i>	5.2037878	<i>Ω</i>	253.42455	+0.87437459		+0.37454423	
<i>e</i>	0.0458108	<i>i</i>	16.26935	+0.38321401		−0.14293740	
<i>P</i>	11.87	<i>H</i>	9.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1962 11 24	760	1.0−	0.8+	1998 11 18	704	1.1−	1.2−	1998 12 17	704	0.6−	1.2−
1962 11 24	760	0.7+	2.4+	1998 11 20	699	0.0	0.2+	1999 12 14	704	0.4+	0.4−
1997 10 30	566	0.1+	0.3+	1998 11 20	699	0.2+	0.2+	1999 12 14	704	0.5+	0.3−
1997 10 30	566	0.0	0.2+	1998 11 20	699	0.2+	0.2+	1999 12 14	704	0.2+	0.5−
1997 10 30	566	0.2−	0.2+	1998 11 21	704	1.5+	0.5−	1999 12 14	704	0.0	0.6−
1998 11 10	704	0.1+	0.8+	1998 11 21	704	0.4−	0.4+	1999 12 14	704	0.2−	0.6−
1998 11 10	704	0.0	0.8+	1998 11 21	704	0.5−	0.4+	2000 01 05	704	0.2−	0.6+
1998 11 10	704	0.2+	0.0	1998 11 24	704	0.3+	0.7−	2000 01 05	704	0.2+	0.6+
1998 11 10	704	1.0−	0.1+	1998 11 24	704	0.7+	0.4+	2000 01 05	704	0.3+	0.5+
1998 11 10	704	0.7−	0.1+	1998 11 24	704	0.2−	0.6+	2000 01 05	704	0.0	0.5+
1998 11 11	704	0.0	0.6−	1998 11 24	704	0.5−	0.7+	2000 01 06	704	0.3+	0.5+
1998 11 11	704	0.4−	0.7−	1998 11 24	704	1.1−	1.3+	2000 01 06	704	0.3+	0.5+
1998 11 11	704	0.7−	1.0−	1998 12 14	704	0.3+	0.2−	2000 01 06	704	0.6−	0.6+
1998 11 11	704	0.2+	0.2−	1998 12 14	704	(0.4+ 2.5−)		2000 01 09	145	0.0	0.1+
1998 11 11	704	0.1+	1.9+	1998 12 14	704	0.1−	1.2−	2000 01 09	145	0.0	0.2+
1998 11 18	704	0.3−	1.0−	1998 12 17	704	0.9+	0.3−	2000 01 09	145	0.4−	0.3+
1998 11 18	704	0.7+	0.5−	1998 12 17	704	1.0+	0.0	2000 01 09	145	0.1+	0.2+
1998 11 18	704	0.0	0.3−	1998 12 17	704	0.3−	0.5−				
1998 11 18	704	0.3+	1.8−	1998 12 17	704	0.6+	1.4−				

1998 VZ₃₀

Id. E. Bowell (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	17.31935		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.23951886	<i>ω</i>	101.65665	−0.96201771		−0.14752836	
<i>a</i>	2.5678889	<i>Ω</i>	70.19269	+0.02575644		−0.88669277	
<i>e</i>	0.1007431	<i>i</i>	14.13061	+0.27176928		−0.43819097	
<i>P</i>	4.11	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 05 03	809	0.4+	0.3−	1998 11 19	426	0.5−	0.1+	1998 12 17	704	0.0	0.1−
1992 05 03	809	0.4−	0.4−	1998 11 20	426	1.5−	0.2−	1998 12 17	704	0.4−	0.0
1992 05 03	809	0.1−	0.6+	1998 11 20	426	1.1−	0.1+	1999 01 05	699	0.4−	0.7−
1998 11 10	704	0.4−	1.1+	1998 11 20	426	1.3−	0.1−	1999 01 05	699	0.2−	0.5−
1998 11 10	704	0.4+	1.3+	1998 12 14	704	0.9+	0.5+	1999 01 05	699	0.0	0.9−
1998 11 10	704	1.0+	1.6−	1998 12 14	704	0.6+	0.2−	1999 11 09	703	0.1+	1.3+
1998 11 10	704	0.1−	0.3−	1998 12 14	704	0.4+	0.4+	1999 11 09	703	0.6+	0.5−
1998 11 11	704	0.6−	0.1−	1998 12 14	704	0.4+	0.3+	1999 11 09	703	0.3+	0.2−
1998 11 11	704	1.7+	0.8+	1998 12 14	704	0.6+	1.1+	1999 11 09	703	0.0	0.3+
1998 11 11	704	0.5+	0.1−	1998 12 17	704	0.4+	0.6−	2000 01 08	699	0.1−	0.5−
1998 11 11	704	0.0	0.1+	1998 12 17	704	0.0	0.4−	2000 01 08	699	0.2−	0.3+
1998 11 19	426	0.9−	0.2−	1998 12 17	704	0.7+	0.0	2000 01 08	699	0.2−	0.1−

1998 VN₃₁ = 2000 AW₁₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	57.77761		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.17609762	<i>ω</i>	183.57532	+0.46020295		−0.88241176	
<i>a</i>	3.1523448	<i>Ω</i>	239.04698	+0.81735560		+0.46410545	
<i>e</i>	0.0449445	<i>i</i>	6.54756	+0.34661661		+0.07717261	
<i>P</i>	5.60	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 15	910	0.5+	0.2−	1998 11 10	704	0.2+	1.4−	2000 01 05	704	0.6+	0.5−
1998 10 15	910	0.5+	0.0	1998 11 10	704	(2.5−	0.1−)	2000 01 05	704	0.3−	0.1−
1998 10 15	910	0.6+	0.0	1998 11 10	704	(5.4−	0.1+)	2000 01 05	704	0.4+	0.2−
1998 10 28	704	0.2+	1.1+	1998 11 11	120	0.3−	0.2+	2000 01 05	704	0.6+	0.2−
1998 10 28	704	1.3−	0.6−	1998 11 11	120	1.6+	0.6+	2000 01 05	704	0.6−	0.1−
1998 10 28	704	1.5−	0.8−	1998 11 11	120	0.8−	0.6−	2000 01 07	704	0.2+	0.3+
1998 10 28	704	0.1−	0.6+	1998 11 15	120	0.2−	0.4−	2000 01 07	704	0.1−	0.3+
1998 10 29	704	0.1+	0.4−	1998 11 15	120	0.6+	0.2−	2000 01 07	704	1.0+	0.4−
1998 10 29	704	0.1−	1.8+	1999 12 14	704	0.5+	0.3−	2000 01 07	704	0.6−	0.2+
1998 10 29	704	(2.5−	0.3+)	1999 12 14	704	1.4−	0.3−	2000 01 07	704	0.1−	0.3+
1998 10 29	704	(4.1−	1.2−)	1999 12 14	704	0.2−	0.8+				
1998 11 10	704	(0.8−	2.7−)	1999 12 14	704	0.1+	0.3+				

1998 VP₃₁ = 1987 DO₁ = 1999 XU₂₁₄

Id. G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	256.23588		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.21783287	<i>ω</i>	350.18207	−0.59568073		+0.79298186	
<i>a</i>	2.7356074	<i>Ω</i>	243.14468	−0.72688033		−0.59991844	
<i>e</i>	0.2167578	<i>i</i>	8.23881	−0.34177398		−0.10619620	
<i>P</i>	4.52	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 02 22	010	(4.2+ 1.0−)	1998 11 11	704	0.2+	0.2+	1999 12 14	704	0.7−	0.1−	
1987 02 22	010	0.2−	0.6−	1998 11 11	704	0.3+	0.6+	1999 12 14	704	0.3+	0.1+
1987 02 22	010	0.0	0.2+	1998 11 11	704	0.6−	0.9+	1999 12 15	704	0.1+	0.1+
1988 08 15	675	0.6+	1.2+	1998 11 11	704	0.6+	0.4+	1999 12 15	704	0.2−	0.1+
1988 08 15	675	0.7−	0.5−	1998 11 11	704	1.2−	0.1−	1999 12 15	704	0.7+	1.8−
1998 10 19	699	0.0	0.3−	1998 11 13	120	1.0+	0.4−	1999 12 15	704	0.2−	0.6−
1998 10 19	699	0.7−	0.3+	1998 11 13	120	0.6+	2.0−	1999 12 15	704	0.4−	0.1−
1998 10 19	699	0.9+	1.0+	1998 11 13	120	0.2+	0.2+	2000 01 05	704	0.2+	0.4+
1998 10 28	704	0.3−	0.1−	1998 11 15	120	0.1+	0.4−	2000 01 05	704	0.5+	0.0
1998 10 28	704	(2.3+ 1.5+)	1998 11 15	120	1.5−	0.3−	0.3−	2000 01 05	704	0.4+	0.0
1998 10 28	704	0.4+	1.2−	1998 11 15	120	0.3−	0.7−	2000 01 05	704	0.9+	1.0+
1998 10 28	704	0.6−	0.3+	1998 11 20	699	0.2−	0.2+	2000 01 05	704	0.5+	0.0
1998 10 29	704	0.0	0.9−	1998 11 20	699	1.8+	1.2+	2000 01 06	704	0.0	0.3−
1998 10 29	704	1.5−	1.7+	1998 11 20	699	0.7+	0.2+	2000 01 06	704	0.5+	0.2+
1998 10 29	704	0.4−	0.1+	1999 11 17	704	0.5−	1.3−	2000 01 06	704	0.1+	0.5+
1998 10 29	704	0.1+	1.0−	1999 11 17	704	0.3+	0.0	2000 01 09	704	0.5−	0.3+
1998 10 29	704	0.5−	1.0−	1999 11 17	704	0.6−	0.6−	2000 01 09	704	0.4−	0.4+
1998 11 10	704	0.2−	0.1−	1999 12 14	704	(2.4−	1.0−)	2000 01 09	704	0.1−	1.2+
1998 11 10	704	1.3+	0.2+	1999 12 14	704	0.2+	0.4−	2000 01 09	704	0.5−	0.4+
1998 11 10	704	0.2−	0.4+	1999 12 14	704	0.1−	0.3+	2000 01 09	704	0.5−	0.8+

1998 VO₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	10.68062		(2000.0)	<i>P</i>		<i>Q</i>	
<i>n</i>	0.70688172	<i>ω</i>	209.69663	+0.05753848		+0.97078089	
<i>a</i>	1.2480679	<i>Ω</i>	64.47208	−0.85753855		+0.16754542	
<i>e</i>	0.8093680	<i>i</i>	14.96158	−0.51119171		−0.17179347	
<i>P</i>	1.39	<i>H</i>	17.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 11 15	809	1.0−	0.1−	1998 11 18	711	0.5+	0.7−	1998 11 24	118	0.9−	0.1−
1998 11 15	809	0.7+	1.2−	1998 11 18	711	0.2+	0.7−	1998 11 26	402	0.1−	0.1−
1998 11 16	809	1.2+	0.5−	1998 11 18	711	0.3+	0.7−	1998 11 26	402	0.2−	0.1+
1998 11 17	758	0.1−	0.2+	1998 11 18	355	1.0+	0.5−	1998 11 26	402	0.2−	0.1−
1998 11 17	758	0.4−	0.3+	1998 11 18	355	0.8+	0.2−	1998 11 28	750	0.9+	0.5−
1998 11 17	758	0.1−	0.2+	1998 11 18	355	0.7+	0.4−	1998 11 28	750	(1.5+	3.2−)
1998 11 17	713	1.0−	0.3+	1998 11 18	143	0.4+	0.3+	1998 11 28	118	0.4+	0.3−
1998 11 17	713	0.3−	0.3+	1998 11 18	143	0.3−	0.3+	1998 11 28	118	0.4+	0.4−
1998 11 17	713	0.6−	0.1+	1998 11 18	143	0.3−	0.1−	1998 11 28	120	0.2+	0.1+
1998 11 17	713	0.3−	0.0	1998 11 18	022	(2.9+	0.7−)	1998 11 28	118	0.4+	0.2−
1998 11 17	711	0.2+	0.1+	1998 11 18	022	(2.9+	0.6−)	1998 11 28	120	0.3+	0.1+
1998 11 17	711	0.1+	0.0	1998 11 18	022	(2.9+	0.6−)	1998 11 28	120	0.2−	0.2−

2000 JAN. 24

M.P.C. 37803

1998 11 17	711	0.1+	0.1+	1998 11 19	897	0.2+	0.1+	1998 11 28	587	0.1+	0.3-
1998 11 17	734	0.1-	0.2+	1998 11 19	897	0.2-	0.0	1998 11 28	587	0.1+	0.1-
1998 11 17	734	0.1+	0.2+	1998 11 19	627	0.5-	0.7+	1998 11 28	104	1.3+	0.5-
1998 11 17	734	0.2+	0.2+	1998 11 19	627	0.9-	0.5+	1998 11 28	104	1.2+	0.7-
1998 11 17	426	0.2-	0.2+	1998 11 19	627	0.4-	0.7+	1998 11 28	104	0.0	0.0
1998 11 17	426	0.1-	0.1+	1998 11 19	627	1.0-	0.4+	1998 11 28	104	1.2-	0.2-
1998 11 17	426	0.6+	0.1-	1998 11 20	860	0.2-	0.6+	1998 11 29	402	1.0-	1.0-
1998 11 17	428	1.0+	0.0	1998 11 20	860	0.4-	0.3+	1998 11 29	402	0.9-	1.2-
1998 11 17	428	1.1+	0.1+	1998 11 20	860	1.3-	0.7+	1998 11 29	402	0.9-	1.1-
1998 11 17	428	0.3+	0.1+	1998 11 20	360	0.3-	0.3+	1998 12 07	046	0.1+	0.8+
1998 11 17	428	0.4+	0.1+	1998 11 20	360	0.4-	0.3+	1998 12 07	046	0.3-	0.3+
1998 11 17	428	0.5+	0.1+	1998 11 20	360	0.4-	0.4+	1998 12 07	046	0.4+	0.6+
1998 11 17	428	0.4+	0.4+	1998 11 21	557	0.4-	0.2-	1998 12 08	151	0.2+	1.9+
1998 11 17	355	0.6+	0.3+	1998 11 21	557	0.5-	0.1-	1998 12 08	151	1.2-	1.1+
1998 11 17	355	0.5+	0.1+	1998 11 21	557	0.4-	0.0	1998 12 08	151	(1.5+	2.3+)
1998 11 17	355	0.1+	0.3+	1998 11 21	557	0.7-	0.1-	1998 12 10	118	0.3-	0.5+
1998 11 17	355	0.2+	0.7+	1998 11 21	557	0.4-	0.1-	1998 12 10	118	0.7-	0.4+
1998 11 17	046	0.0	0.1+	1998 11 21	704	(2.9+	1.2-)	1998 12 10	118	0.4-	0.4+
1998 11 17	046	0.2+	0.1+	1998 11 21	704	(2.9+	1.5-)	1998 12 11	360	0.0	0.2-
1998 11 17	046	0.3+	0.0	1998 11 21	704	(2.7+	1.1-)	1998 12 11	360	0.4-	0.3+
1998 11 17	046	0.1+	0.0	1998 11 21	704	1.8+	0.0	1998 12 11	360	0.0	0.2+
1998 11 17	151	0.3+	0.0	1998 11 21	704	1.6+	1.9-	1998 12 12	422	0.3-	0.1-
1998 11 17	151	0.7-	0.0	1998 11 22	151	0.7-	0.1-	1998 12 12	422	0.3-	0.1-
1998 11 17	596	0.1+	0.2+	1998 11 22	151	0.8-	0.6-	1998 12 12	422	0.3+	0.2+
1998 11 17	151	0.1+	0.1+	1998 11 22	151	0.5-	0.5-	1998 12 15	046	0.1+	0.1-
1998 11 17	596	0.2+	0.2-	1998 11 23	699	1.8+	0.3-	1998 12 15	046	0.2-	0.2-
1998 11 17	106	0.8-	0.2+	1998 11 23	699	(2.1+	0.1-)	1998 12 15	046	0.2+	0.0
1998 11 17	596	0.4+	0.0	1998 11 23	699	2.0+	0.2-	1998 12 17	402	0.3+	0.2-
1998 11 17	106	0.9-	0.0	1998 11 23	118	0.4-	0.1+	1998 12 17	402	0.3+	0.4-
1998 11 17	106	0.8-	0.1+	1998 11 23	118	0.5-	0.2+	1998 12 17	402	0.4+	0.2-
1998 11 17	106	0.8-	0.0	1998 11 23	118	0.3-	0.1+	1999 01 02	658	0.1-	0.3+
1998 11 17	106	0.7-	0.1-	1998 11 23	046	0.1+	0.2-	1999 01 02	658	0.2-	0.0
1998 11 17	106	0.9-	0.1+	1998 11 23	046	0.1+	0.0	1999 01 02	658	0.1-	0.5+
1998 11 17	106	0.8-	0.1+	1998 11 23	046	0.3-	0.2-	1999 01 21	561	0.5-	0.2+
1998 11 17	106	0.8-	0.0	1998 11 24	704	1.1+	0.2+	1999 01 21	561	0.4-	0.1-
1998 11 17	587	0.1-	0.2-	1998 11 24	704	1.9+	0.3-	1999 01 21	561	0.3-	0.0
1998 11 17	587	0.2-	0.2+	1998 11 24	704	1.4+	0.4+	2000 01 01	104	0.4+	1.1-
1998 11 17	106	1.0-	0.3+	1998 11 24	750	(4.9+	0.4-)	2000 01 02	104	0.5-	1.2+
1998 11 18	761	0.1+	0.2-	1998 11 24	750	1.5+	0.1+	2000 01 02	104	0.2+	0.2-
1998 11 18	761	0.3+	0.1-	1998 11 24	704	(2.9+	0.8+)	2000 01 02	104	1.4-	1.0+
1998 11 18	713	0.5+	0.6-	1998 11 24	118	0.9-	0.0	2000 01 04	104	0.8+	1.3-
1998 11 18	713	0.6+	0.4-	1998 11 24	118	0.9-	0.1-				

1998 VR₃₆ = 1982 BZ₇ = 1999 YV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	62.64141		<i>P</i>		<i>Q</i>
<i>n</i>	0.22442157	ω	207.14429	+0.02316213	-0.98251939
<i>a</i>	2.6817996	Ω	242.03911	+0.95100118	+0.07863500
<i>e</i>	0.1316106	<i>i</i>	12.07110	+0.30831846	-0.16873702
<i>P</i>	4.39	<i>H</i>	12.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1982 01 23	010	0.3-	1.1-	1998 11 20	704	0.5+	0.5-	1999 12 16	704	0.2-	0.1-
1992 05 03	809	0.1+	0.0	1998 12 09	704	0.1+	1.1+	1999 12 16	704	0.4+	0.2-
1992 05 03	809	0.6-	0.5-	1998 12 09	704	(2.6+	0.8+)	1999 12 17	704	0.0	0.1-
1992 05 03	809	0.4+	0.9-	1998 12 09	704	1.5+	0.1+	1999 12 17	704	0.6+	0.3+
1998 09 20	699	0.6-	0.2+	1998 12 09	704	0.3-	1.7-	1999 12 17	704	0.3+	0.5-
1998 09 20	699	0.2-	0.3-	1998 12 09	704	(2.9+	2.0-)	1999 12 17	704	0.3+	0.6-
1998 09 20	699	0.3-	0.0	1999 01 08	704	0.2+	0.9+	1999 12 17	704	0.3+	0.7-
1998 11 14	704	0.3-	0.2+	1999 01 08	704	0.8-	0.6+	2000 01 10	704	0.4-	0.2+
1998 11 14	704	0.4+	0.1+	1999 01 08	704	0.6-	0.9-	2000 01 10	704	0.2+	0.7+
1998 11 14	704	0.2+	0.2-	1999 01 08	704	0.6-	0.0	2000 01 10	704	0.2+	0.5+
1998 11 14	704	0.9+	0.3-	1999 01 08	704	0.6+	0.0	2000 01 10	704	0.3-	0.8+
1998 11 14	704	0.6+	1.4-	1999 01 11	704	0.5-	0.4+	2000 01 10	704	0.6+	0.1+
1998 11 17	699	0.6+	0.8+	1999 01 11	704	0.7-	0.8+	2000 01 11	704	0.3-	0.5+
1998 11 17	699	0.5+	0.5+	1999 01 11	704	1.4-	0.1-	2000 01 11	704	0.5-	0.0
1998 11 17	699	0.4+	0.6+	1999 01 11	704	0.8-	0.4-	2000 01 11	704	0.4-	0.1-

1998 11 20	704	0.3+	0.0	1999 01 11	704	0.7-	0.1+	2000 01 11	704	0.2+	0.5+
1998 11 20	704	0.1+	0.9-	1999 12 16	704	0.1+	0.2+	2000 01 11	704	0.2-	0.0
1998 11 20	704	0.3+	0.7+	1999 12 16	704	0.6-	0.6-				
1998 11 20	704	0.8-	0.6-	1999 12 16	704	0.4+	0.8-				

1998 WB = 2000 AL₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	95.76722		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.17779896	ω	261.76342	+0.81600507	-0.49009890
<i>a</i>	3.1322030	Ω	127.00933	+0.55085438	+0.82001819
<i>e</i>	0.1322295	<i>i</i>	22.57048	-0.17520038	+0.29558965
<i>P</i>	5.54	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 11 16	703	0.2-	0.0	1998 11 23	703	0.5-	0.2+	2000 01 04	704	0.4-	0.6-
1998 11 16	703	0.6-	0.0	1998 11 23	703	0.5-	0.1-	2000 01 05	704	0.8+	0.4-
1998 11 16	703	0.9+	0.0	2000 01 04	704	0.2+	0.4+	2000 01 05	704	0.4-	0.3-
1998 11 17	703	0.0	0.1+	2000 01 04	704	0.2+	0.4-	2000 01 05	704	1.1-	0.3+
1998 11 17	703	0.1-	0.0	2000 01 04	704	0.2+	0.1+	2000 01 05	704	0.4+	0.1+
1998 11 23	703	1.1+	0.2-	2000 01 04	704	0.3+	0.2+	2000 01 05	704	0.4-	0.6+

1998 WF₁ = 1999 XE₁₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	242.65906		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.23036255	ω	164.16290	+0.04910257	+0.84178071
<i>a</i>	2.6354906	Ω	106.07905	-0.96633810	+0.17613115
<i>e</i>	0.1675999	<i>i</i>	34.01901	-0.25254625	-0.51027742
<i>P</i>	4.28	<i>H</i>	12.9	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1993 09 11	413	0.2+	0.9-	1998 11 23	703	0.7-	0.2+	1999 12 10	704	0.0	0.4+
1993 09 11	413	0.1+	0.0	1998 11 23	703	0.3-	0.2+	1999 12 10	704	0.5+	0.2-
1998 11 17	703	0.3-	0.2-	1998 12 19	704	1.7+	0.5-	1999 12 15	704	0.5+	0.0
1998 11 17	703	0.5-	0.4+	1998 12 19	704	1.2+	0.0	1999 12 15	704	0.1-	0.2+
1998 11 17	703	(2.3-	0.1+)	1998 12 19	704	1.1-	0.5-	1999 12 15	704	0.6+	0.9+
1998 11 18	703	0.1+	0.7-	1998 12 19	704	0.2+	0.9+	1999 12 15	704	0.8-	0.3+
1998 11 18	703	0.1+	0.7+	1999 12 10	704	0.1-	0.4-	1999 12 30	106	0.5-	0.3-
1998 11 18	703	0.6-	0.3-	1999 12 10	704	0.0	0.7-	1999 12 30	106	0.2-	0.5-
1998 11 23	703	0.2-	0.4+	1999 12 10	704	0.5-	0.8-	1999 12 30	106	0.8+	0.2+

1998 WJ₅ = 2000 AF₁₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	60.85381		(2000.0)	<i>P</i>	<i>Q</i>
<i>n</i>	0.08342718	ω	257.45672	+0.69494448	-0.67462867
<i>a</i>	5.1871764	Ω	144.04250	+0.70416674	+0.70857257
<i>e</i>	0.1361886	<i>i</i>	25.07527	-0.14560690	+0.20688418
<i>P</i>	11.81	<i>H</i>	10.4	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 11 18	703	0.6-	0.2+	1998 12 19	704	0.2-	0.7+	2000 01 08	704	0.4-	0.3-
1998 11 18	703	0.1+	0.2-	1999 01 14	699	0.1+	0.3+	2000 01 08	704	0.4-	0.1+
1998 11 18	703	0.1-	0.4-	1999 01 14	699	0.2-	0.6-	2000 01 08	704	0.1-	0.0
1998 11 23	703	0.5+	0.7-	1999 01 14	699	0.1-	0.5+	2000 01 10	704	0.1+	0.1-
1998 11 23	703	0.3+	0.1-	1999 01 15	703	0.5+	0.2-	2000 01 10	704	0.1+	0.1-
1998 12 19	704	0.4+	0.0	1999 01 15	703	0.4-	0.1+	2000 01 10	704	1.4+	0.5-
1998 12 19	704	0.2-	0.6+	1999 01 15	703	0.0	0.7-	2000 01 10	704	0.1-	1.2+
1998 12 19	704	0.0	0.3+	2000 01 08	704	0.2-	0.2-	2000 01 10	704	0.3-	0.2+
1998 12 19	704	0.2-	0.3+	2000 01 08	704	0.1-	0.2-				

1998 WB₇ = 2000 AM₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	169.83050	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19477542	ω	356.97803	+0.80475119	+0.59354467	
<i>a</i>	2.9474511	Ω	326.60784	-0.54428671	+0.73177450	
<i>e</i>	0.1116654	<i>i</i>	0.93262	-0.23691242	+0.33497883	
<i>P</i>	5.06	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1993 11 12	033	0.1-	0.1-	1998 11 23	376	1.0-	0.5-	1999 02 10	691	1.0-	0.2+
1993 11 12	033	0.1+	0.2+	1998 11 24	704	0.2+	0.5+	1999 02 10	691	0.2-	0.1-
1998 11 17	376	0.6-	0.0	1998 11 24	704	0.3+	1.0+	1999 02 10	691	0.2-	0.1+
1998 11 17	376	0.5-	0.3+	1998 11 24	704	1.0+	0.1-	1999 02 14	691	0.1+	0.6-
1998 11 18	704	0.0	0.5-	1998 11 24	704	0.4+	0.3-	1999 02 14	691	0.5+	0.3-
1998 11 18	704	0.9+	0.0	1998 11 24	704	0.3+	0.4-	1999 02 14	691	0.8+	0.1-
1998 11 18	704	0.7+	0.2-	1998 11 25	376	0.9-	0.5+	2000 01 04	704	0.2-	0.2-
1998 11 18	704	0.3-	0.8-	1998 11 25	376	0.4+	0.0	2000 01 04	704	0.5+	0.0
1998 11 18	704	0.6+	0.5+	1998 11 28	376	0.1-	0.2+	2000 01 04	704	0.1-	0.2+
1998 11 19	699	0.5+	1.6+	1998 11 28	376	0.4-	0.0	2000 01 04	704	0.3-	0.5+
1998 11 19	699	0.2-	0.9+	1998 12 11	376	(0.3-	2.4+)	2000 01 04	704	0.2-	0.1+
1998 11 19	699	0.0	1.3+	1998 12 14	704	1.0-	0.5-	2000 01 06	704	0.8+	0.0
1998 11 21	704	0.4-	0.1+	1998 12 14	704	0.3+	1.8-	2000 01 06	704	1.3+	0.5-
1998 11 21	704	0.0	0.5-	1998 12 14	704	0.5-	0.5-	2000 01 06	704	0.2+	0.2+
1998 11 21	704	0.4+	1.0-	1998 12 14	704	0.4-	0.6-	2000 01 11	691	0.5-	0.2-
1998 11 21	704	1.3+	0.3-	1998 12 16	699	0.1+	0.2-	2000 01 11	691	0.7-	0.0
1998 11 21	704	0.2-	1.4-	1998 12 16	699	0.1-	1.1+	2000 01 11	691	0.6-	0.0
1998 11 23	376	0.6-	0.7+	1998 12 16	699	0.2-	1.2+				

1998 WS₉ = 2000 AJ₉₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	242.73717	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27226339	ω	221.60610	+0.35437345	+0.92852059	
<i>a</i>	2.3576349	Ω	69.41673	-0.82365669	+0.36602294	
<i>e</i>	0.1000120	<i>i</i>	6.79507	-0.44272916	+0.06226334	
<i>P</i>	3.62	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 31	704	0.7+	1.9-	1998 11 21	704	0.4-	0.6+	1998 12 25	120	0.0	0.1+
1998 08 31	704	1.0-	0.9+	1998 11 21	704	0.5-	1.7+	1998 12 25	120	0.3+	0.2+
1998 08 31	704	1.0+	0.9-	1998 11 21	704	0.1-	2.0+	1998 12 25	120	0.5+	0.8-
1998 08 31	704	0.5+	0.1-	1998 11 24	704	0.6+	0.0	1999 01 06	699	0.2-	0.2+
1998 10 20	699	0.6+	0.2+	1998 11 24	704	1.0+	0.7-	1999 01 06	699	0.3-	0.7+
1998 10 20	699	0.2+	0.3+	1998 11 24	704	0.3+	0.4-	1999 01 06	699	0.1+	0.2-
1998 10 20	699	0.0	0.3+	1998 11 24	704	0.2-	0.3+	1999 02 11	691	0.2+	0.1+
1998 11 11	704	0.5-	0.4+	1998 11 24	704	0.3-	0.4+	1999 02 11	691	0.3+	0.4-
1998 11 11	704	0.4-	0.7+	1998 11 28	120	0.4+	0.3+	1999 02 11	691	0.3+	0.5-
1998 11 11	704	0.9-	0.8-	1998 11 28	120	0.2+	0.4+	2000 01 04	704	0.0	0.3-
1998 11 11	699	0.5-	0.7+	1998 11 29	120	0.5-	0.1+	2000 01 04	704	0.2-	0.5-
1998 11 11	704	0.3-	1.0-	1998 11 29	120	1.1+	0.6+	2000 01 04	704	0.3-	0.3-
1998 11 11	699	0.4+	0.4+	1998 12 10	691	0.9-	0.2-	2000 01 04	704	0.3+	0.8+
1998 11 11	699	0.5+	0.7+	1998 12 10	691	0.8-	0.0	2000 01 07	704	0.5+	0.1-
1998 11 16	566	0.6-	0.4-	1998 12 10	691	0.0	0.1-	2000 01 07	704	0.2+	0.1-
1998 11 16	566	0.5-	0.4-	1998 12 14	704	0.1+	0.2+	2000 01 07	704	0.3+	0.9-
1998 11 16	566	0.8-	0.4-	1998 12 14	704	0.2-	0.4+	2000 01 07	704	1.0-	0.2+
1998 11 18	704	0.5+	0.3+	1998 12 14	704	0.1-	0.0	2000 01 07	704	0.1-	0.8+
1998 11 18	704	0.2+	0.8-	1998 12 14	704	1.0+	0.7-	2000 01 10	699	0.2-	0.1-
1998 11 18	704	0.7-	0.0	1998 12 14	704	0.5+	0.8-	2000 01 10	699	0.6+	0.7-
1998 11 18	704	1.4-	0.9-	1998 12 14	120	0.3+	1.1-	2000 01 10	699	0.1-	1.0+
1998 11 21	704	0.8+	0.1-	1998 12 14	120	0.1+	0.1-				
1998 11 21	704	0.1+	0.2-	1998 12 14	120	0.2+	0.4-				

1998 WP₁₁ = 1999 XW₁₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	196.39226	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23105370	ω	237.89335	+0.59683204	+0.76615516	
<i>a</i>	2.6302323	Ω	70.62404	-0.62437001	+0.63002247	
<i>e</i>	0.1596573	<i>i</i>	14.63328	-0.50393811	+0.12679893	
<i>P</i>	4.27	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 11 18	704	0.3+	0.1-	1998 11 24	704	0.5+	0.1+	1999 02 14	691	0.5+	0.5-
1998 11 18	704	0.3+	0.0	1998 11 24	704	0.3+	0.4-	1999 12 10	704	0.3-	0.2-
1998 11 18	704	0.6-	0.2+	1998 11 24	704	0.1+	0.8-	1999 12 10	704	0.3-	0.9+
1998 11 18	704	0.1-	0.1-	1998 11 24	704	0.5+	1.3-	1999 12 10	704	0.3+	0.1+
1998 11 18	704	1.9-	0.5-	1998 11 24	704	0.8-	0.3-	1999 12 10	704	0.6-	0.9-
1998 11 21	704	0.7+	0.5+	1999 01 06	699	0.1+	1.0+	1999 12 15	704	0.4-	0.2-
1998 11 21	704	0.1+	0.9+	1999 01 06	699	1.5-	1.0+	1999 12 15	704	0.3+	0.3+
1998 11 21	704	0.5-	0.6+	1999 01 06	699	1.6-	0.5+	1999 12 15	704	0.4-	0.1+
1998 11 21	704	(0.8-	2.8+)	1999 02 09	691	1.0+	0.1-	2000 01 02	704	0.2+	1.0+
1998 11 21	704	0.2-	1.9+	1999 02 09	691	0.7+	0.5-	2000 01 02	704	1.1+	0.4+
1998 11 23	699	0.8+	0.3-	1999 02 09	691	0.4+	0.7-	2000 01 02	704	0.4+	0.2-
1998 11 23	699	0.5+	0.2-	1999 02 14	691	0.0	0.7-	2000 01 02	704	0.6-	0.7-
1998 11 23	699	0.5+	0.2-	1999 02 14	691	0.4+	0.4-	2000 01 02	704	0.3+	0.3-

1998 WQ₁₄ = 2000 AX₁₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	331.89187	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18210677	ω	307.92165	-0.99320599	-0.04280727	
<i>a</i>	3.0826105	Ω	229.89604	+0.07464032	-0.94774894	
<i>e</i>	0.0631309	<i>i</i>	8.13313	-0.08927869	-0.31613205	
<i>P</i>	5.41	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 11 18	704	1.1+	0.8-	1998 11 24	704	0.3+	0.1+	1998 12 21	910	0.1-	0.4+
1998 11 18	704	0.1+	0.2-	1998 11 24	704	(0.3+	2.7-)	1998 12 21	910	0.0	0.5+
1998 11 18	704	1.9-	0.4-	1998 11 24	704	0.7+	0.5-	2000 01 08	704	0.6+	0.3+
1998 11 18	704	1.4-	0.3+	1998 11 24	704	0.8+	1.8-	2000 01 08	704	0.0	1.1-
1998 11 20	699	1.4+	0.2+	1998 11 24	704	1.4+	0.1+	2000 01 08	704	0.7+	0.3+
1998 11 20	699	0.1-	0.9+	1998 12 08	699	0.9-	0.2-	2000 01 08	704	0.3-	0.1+
1998 11 20	699	0.3+	0.1+	1998 12 08	699	0.2+	0.7-	2000 01 08	704	0.6-	0.8+
1998 11 21	704	0.3-	0.4+	1998 12 08	699	0.6-	1.2-	2000 01 10	704	1.0+	1.2-
1998 11 21	704	0.9-	0.4-	1998 12 15	910	0.4+	0.1+	2000 01 10	704	0.7-	0.1+
1998 11 21	704	1.3-	1.1+	1998 12 15	910	0.3+	0.0	2000 01 10	704	0.7-	0.7+
1998 11 21	704	0.5+	0.5+	1998 12 15	910	0.2-	0.1+	2000 01 10	704	1.0+	0.0
1998 11 21	704	0.4+	1.0+	1998 12 21	910	0.1-	0.3+	2000 01 10	704	0.9-	0.1+

1998 WP₁₅ = 1999 XC₉₅

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	60.94044	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17234338	ω	3.84302	+0.21027978	-0.93538308	
<i>a</i>	3.1979596	Ω	74.18697	+0.88890590	+0.06186290	
<i>e</i>	0.0557895	<i>i</i>	17.18804	+0.40697508	+0.34818311	
<i>P</i>	5.72	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 11 11	704	0.6-	0.5+	1998 11 24	704	0.6+	0.1-	1999 12 07	703	0.1+	0.8+
1998 11 11	704	0.0	0.7+	1998 11 24	704	0.4-	0.1+	1999 12 07	703	0.0	0.1+
1998 11 11	704	0.2-	0.2-	1998 11 24	704	0.3+	0.3+	1999 12 07	703	0.1-	1.2+
1998 11 11	704	1.9+	0.4+	1998 11 24	704	0.8-	0.8+	1999 12 09	703	0.5+	0.6+
1998 11 11	699	0.1-	0.4-	1998 12 11	699	0.1-	0.2+	1999 12 09	703	0.2-	0.8+
1998 11 11	699	0.0	0.1-	1998 12 11	699	0.1+	0.0	1999 12 09	703	0.8+	0.3+
1998 11 11	699	0.0	0.2+	1998 12 11	699	0.2-	0.9+	1999 12 09	703	0.3-	1.2+
1998 11 18	704	0.0	0.6-	1999 01 06	699	0.2+	0.4+	1999 12 10	704	0.4+	0.6-
1998 11 18	704	0.5-	0.1-	1999 01 06	699	0.2+	0.4-	1999 12 10	704	0.7+	0.6+
1998 11 18	704	(0.6-	3.0+)	1999 01 06	699	1.0-	0.0	1999 12 10	704	0.3-	1.0-

2000 JAN. 24

M.P.C. 37805

1998 11 18	704	1.1−	1.6+	1999 02 12	691	0.5+	0.1−	1999 12 10	704	0.5−	1.2−
1998 11 18	704	0.6−	0.1+	1999 02 12	691	0.6+	0.3−	1999 12 10	704	0.0	1.6−
1998 11 21	704	0.7+	0.3−	1999 02 12	691	1.5+	0.5−	2000 01 02	704	0.3+	0.2−
1998 11 21	704	0.2−	0.9−	1999 02 13	691	0.8−	0.0	2000 01 02	704	0.2−	0.5−
1998 11 21	704	1.5+	1.4−	1999 02 13	691	0.9−	0.2−	2000 01 02	704	0.3−	0.7−
1998 11 21	704	0.3−	1.7−	1999 02 13	691	0.6−	0.1+	2000 01 02	704	0.5+	0.1−
1998 11 24	704	0.3+	0.3+	1999 12 07	703	0.3−	1.3+	2000 01 02	704	0.9−	0.5−

1998 WR₁₈ = 2000 AY₁₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	244.92887		(2000.0)	Williams			
		<i>P</i>	<i>Q</i>				
<i>n</i>	0.22260238	ω	18.71242	+0.07015552	+0.99110355		
<i>a</i>	2.6963908	Ω	255.43270	−0.92948762	+0.02378932		
<i>e</i>	0.0961947	<i>i</i>	6.71081	−0.36212011	+0.13094967		
<i>P</i>	4.43	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 11 21	704	0.2−	0.3−	1998 12 14	704	0.3−	0.7−	1999 02 16	691	0.1−	0.3−
1998 11 21	704	0.1−	0.4−	1998 12 14	704	0.5+	0.4−	1999 02 16	691	0.1−	0.3−
1998 11 21	704	1.7−	0.6+	1998 12 14	704	1.2+	0.6+	2000 01 05	704	0.3−	0.0
1998 11 21	704	0.3−	0.3−	1998 12 14	704	(0.8−	2.2+)	2000 01 05	704	1.0+	0.4−
1998 11 24	704	1.2+	0.0	1998 12 25	327	0.4−	0.1−	2000 01 05	704	0.4+	0.3−
1998 11 24	704	0.6+	0.3−	1998 12 25	327	0.1−	0.4−	2000 01 05	704	0.6−	0.7+
1998 11 24	704	(2.4+	1.4−)	1998 12 25	327	0.1+	0.8−	2000 01 08	704	0.8+	0.1−
1998 11 24	704	0.2+	0.5−	1999 01 24	691	0.6−	0.4−	2000 01 08	704	0.6−	0.5−
1998 11 24	704	1.1+	0.3−	1999 01 24	691	0.1−	0.5+	2000 01 08	704	0.2−	0.2+
1998 12 11	699	1.1+	0.4+	1999 01 24	691	0.6+	0.0	2000 01 08	704	0.1−	0.3−
1998 12 11	699	0.6−	1.1+	1999 02 10	691	0.0	0.0	2000 01 08	704	0.4−	0.7+
1998 12 11	699	1.1−	0.7+	1999 02 10	691	0.5+	1.7+				
1998 12 14	704	1.3−	0.3+	1999 02 16	691	0.1−	0.3−				

1998 WV₁₈ = 1998 XR₉₆ = 2000 AH₁₈₄Id. G. V. Williams (d, *MPC* 34339; unpublished)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	298.76262		(2000.0)	Williams			
		<i>P</i>	<i>Q</i>				
<i>n</i>	0.12611707	ω	309.87892	−0.95842365	+0.22532441		
<i>a</i>	3.9381005	Ω	243.79426	−0.16328798	−0.93625479		
<i>e</i>	0.1403703	<i>i</i>	11.25275	−0.23401098	−0.26954755		
<i>P</i>	7.82	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 11 18	704	1.3+	0.3+	1998 12 25	327	0.4−	0.8+	1999 12 06	704	1.2−	0.6−
1998 11 18	704	0.1−	0.8+	1998 12 25	327	0.7−	0.1−	1999 12 14	704	0.4−	0.5−
1998 11 18	704	0.2+	1.9−	1998 12 25	327	0.2+	0.8+	1999 12 14	704	0.3+	0.0
1998 11 18	704	1.8+	1.6−	1998 12 26	691	0.4−	0.2+	1999 12 14	704	0.0	0.5−
1998 11 21	704	0.3+	0.9−	1998 12 26	691	0.6−	0.2+	1999 12 14	704	0.7−	0.7−
1998 11 21	704	1.4−	1.9+	1998 12 26	691	0.3−	0.2−	1999 12 30	106	0.6+	0.6+
1998 11 21	704	0.5−	0.3+	1999 01 05	699	0.4−	0.4−	1999 12 30	106	0.1−	0.2+
1998 11 21	704	(3.0−	0.5+)	1999 01 05	699	0.4+	0.3+	1999 12 30	106	0.3+	0.5+
1998 11 24	704	0.2+	0.3−	1999 01 05	699	0.3+	0.7+	2000 01 07	704	0.0	1.8−
1998 11 24	704	0.3−	1.1−	1999 02 07	691	0.0	0.1+	2000 01 07	704	0.4−	0.4−
1998 11 24	704	0.6+	1.7−	1999 02 07	691	0.0	0.0	2000 01 07	704	0.4+	0.3+
1998 11 24	704	1.9+	1.8−	1999 02 07	691	0.2−	0.0	2000 01 07	704	0.3+	0.6+
1998 11 25	699	0.7−	1.3+	1999 02 12	691	0.1+	0.2+	2000 01 09	145	0.0	0.3+
1998 11 25	699	1.2−	1.0+	1999 02 12	691	0.2−	0.1−	2000 01 09	145	0.1−	0.3+
1998 11 25	699	0.1−	0.7+	1999 02 12	691	0.1+	0.6+	2000 01 09	145	0.2+	0.3+
1998 12 13	327	0.1+	0.0	1999 11 12	703	0.5−	0.3+	2000 01 09	145	0.1−	0.7+
1998 12 13	327	0.2−	0.1+	1999 11 12	703	0.7+	0.1+	2000 01 11	704	0.2−	0.5+
1998 12 13	327	0.4−	0.1−	1999 11 12	703	(2.4+	0.4−)	2000 01 11	704	0.2+	0.5+
1998 12 14	704	0.3−	0.2−	1999 11 12	703	0.1+	0.1−	2000 01 11	704	0.1−	0.2+
1998 12 14	704	0.2+	0.1+	1999 12 06	704	0.2+	0.1−	2000 01 11	704	0.9+	0.4−
1998 12 14	704	0.1−	0.6+	1999 12 06	704	0.7−	0.2−	2000 01 11	704	0.1−	0.6+
1998 12 14	704	0.7+	0.2+	1999 12 06	704	0.4+	1.4−				
1998 12 14	704	(2.2−	0.3+)	1999 12 06	704	0.2−	0.1−				

1998 WW₂₀ = 1999 XL₁₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	260.48033		(2000.0)	Williams			
		<i>P</i>	<i>Q</i>				
<i>n</i>	0.19126510	ω	177.47574	−0.46614302	+0.86593701		
<i>a</i>	2.9834051	Ω	64.68765	−0.81517776	−0.34076732		
<i>e</i>	0.0720789	<i>i</i>	11.56838	−0.34379632	−0.36610208		
<i>P</i>	5.15	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 06 12	566	0.3−	0.5−	1998 11 21	704	0.3−	0.1−	1998 12 15	910	1.9+	0.1+
1996 06 12	566	0.4−	0.6−	1998 11 21	704	0.1+	0.2+	1999 12 10	704	0.5+	0.7−
1996 06 12	566	0.1−	0.5−	1998 11 21	704	1.3−	0.0	1999 12 10	704	0.3+	0.1−
1998 11 14	691	0.6−	0.0	1998 11 24	699	0.9−	0.1+	1999 12 10	704	0.9+	0.3−
1998 11 14	691	0.5−	0.2−	1998 11 24	699	0.9−	1.2+	1999 12 10	704	0.3+	0.0
1998 11 14	691	0.6−	0.3−	1998 11 24	699	0.5−	1.1+	1999 12 15	704	0.1−	1.2−
1998 11 16	691	0.0	0.1+	1998 12 07	910	0.0	0.7−	1999 12 15	704	0.9−	0.4−
1998 11 16	691	0.0	0.0	1998 12 07	910	0.2+	0.6−	1999 12 15	704	0.6−	1.0+
1998 11 16	691	0.0	0.1−	1998 12 07	910	0.2−	0.6−	2000 01 02	704	0.0	0.3+
1998 11 18	704	0.4−	0.3+	1998 12 08	910	1.1+	0.1−	2000 01 02	704	0.3−	0.4+
1998 11 18	704	0.4−	0.6−	1998 12 08	910	1.2+	0.1−	2000 01 02	704	0.1+	1.3+
1998 11 18	704	(1.0+	2.2−)	1998 12 08	910	1.0+	0.2+	2000 01 02	704	0.1−	0.3−
1998 11 18	704	0.9−	1.6−	1998 12 15	910	1.7+	0.1−	2000 01 02	704	0.1+	0.2−
1998 11 21	704	0.2+	0.5+	1998 12 15	910	1.5+	0.1−				

1998 WE₃₁ = 2000 AO₁₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	54.70458		(2000.0)	Williams			
		<i>P</i>	<i>Q</i>				
<i>n</i>	0.16962606	ω	297.87838	+0.30451574	−0.91886981		
<i>a</i>	3.2320222	Ω	132.05451	+0.94864085	+0.26886004		
<i>e</i>	0.1185534	<i>i</i>	19.74913	+0.08573620	+0.28877768		
<i>P</i>	5.81	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 15	703	0.2−	0.9+	1998 11 22	703	0.1+	0.6−	2000 01 05	704	0.5+	1.2+
1998 10 15	703	0.1+	0.9+	1999 12 31	699	0.2+	1.3+	2000 01 05	704	0.2+	0.2+
1998 10 15	703	0.2−	1.1+	1999 12 31	699	0.5+	0.0	2000 01 07	704	0.5−	0.1−
1998 11 19	703	0.5+	0.1−	1999 12 31	699	0.5+	0.4−	2000 01 07	704	0.2+	0.4+
1998 11 19	703	0.6−	1.4−	2000 01 05	704	0.6+	0.0	2000 01 07	704	0.1−	0.8−
1998 11 19	703	0.2+	0.4−	2000 01 05	704	0.1−	0.7−	2000 01 07	704	0.9−	0.1−
1998 11 22	703	0.0	0.5−	2000 01 05	704	0.3−	0.6−	2000 01 07	704	0.5−	0.1−

1998 WS₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	358.12441		(2000.0)	Marsden			
		<i>P</i>	<i>Q</i>				
<i>n</i>	0.00392747	ω	28.21720	+0.71861003	−0.69467102		
<i>a</i>	39.7857369	Ω	15.91644	+0.61397313	+0.61208583		
<i>e</i>	0.2088980	<i>i</i>	6.72660	+0.32655263	+0.37786652		
<i>P</i>	251	<i>H</i>	8.2	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 11 18	695	0.1+	0.3−	1999 11 30	695	0.4−	0.3+	2000 01 02	568	0.4+	0.2−
1998 11 18	695	0.0	0.0	1999 11 30	695	0.1+	0.1+	2000 01 02	568	0.5+	0.3−
1998 11 18	695	0.0	0.0	1999 11 30	695	0.0	0.2+	2000 01 02	568	0.3+	0.3−
1998 12 17	950	0.0	0.0	1999 11 30	695	0.1+	0.1+	2000 01 03	697	0.2−	0.2+
1998 12 17	950	0.0	0.0	2000 01 02	697	0.2+	0.1+	2000 01 05	697	0.1+	0.2+
1998 12 17	950	0.1−	0.2+	2000 01 02	697	1.4−	0.4−	2000 01 05	697	0.3+	0.1+

1998 XN

Id. M. Tichý (2000 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	287.81795		(2000.0)	P	Q
<i>n</i>	0.15946340	ω	283.14369	-0.77541122	+0.61446023
<i>a</i>	3.3679220	Ω	294.96341	-0.49914257	-0.73758936
<i>e</i>	0.1027744	<i>i</i>	9.23683	-0.38677401	-0.28000099
<i>P</i>	6.18	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 12 09	046	0.3+	0.1-	1998 12 15	046	0.3+	0.5-	1999 01 19	046	0.1+	0.6-
1998 12 09	046	0.0	0.2-	1998 12 17	046	0.1-	0.2-	1999 01 20	046	0.1+	0.1+
1998 12 09	046	0.2+	0.3+	1998 12 17	046	0.2+	0.0	1999 01 20	046	0.2-	0.4+
1998 12 09	046	0.2-	0.0	1998 12 17	046	0.3-	0.4+	2000 01 12	046	0.3-	0.1-
1998 12 10	046	0.8-	0.0	1998 12 17	046	0.1+	0.0	2000 01 12	046	0.3-	0.4+
1998 12 10	046	0.4-	0.0	1998 12 23	046	0.5+	0.5-	2000 01 12	046	0.3-	0.2+
1998 12 10	046	0.0	0.3+	1998 12 23	046	0.6+	0.2+	2000 01 12	046	0.3-	0.5+
1998 12 10	046	0.5-	0.6+	1998 12 23	046	0.3-	0.3+	2000 01 12	046	0.9-	0.2-
1998 12 10	046	0.1+	0.1+	1998 12 23	046	0.3-	0.1-	2000 01 13	046	0.1+	0.2-
1998 12 10	046	0.0	0.2-	1999 01 06	046	0.6-	0.7+	2000 01 13	046	0.3+	0.2+
1998 12 10	046	0.1+	0.1+	1999 01 06	046	0.2+	0.6-	2000 01 13	046	0.7+	0.2+
1998 12 10	046	0.5-	0.1+	1999 01 06	046	0.4+	0.2+	2000 01 13	046	0.6+	0.5-
1998 12 15	046	0.8+	0.1-	1999 01 19	046	0.0	0.6-	2000 01 13	046	0.5+	0.5-
1998 12 15	046	0.7+	0.0	1999 01 19	046	0.4-	0.1-				

1998 XW₃

Id. E. Bowell (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	26.83481		(2000.0)	P	Q
<i>n</i>	0.18547315	ω	63.97219	-0.61145074	-0.77445581
<i>a</i>	3.0451967	Ω	64.68451	+0.64655415	-0.60724704
<i>e</i>	0.0369225	<i>i</i>	10.34405	+0.45617509	-0.17739568
<i>P</i>	5.31	<i>H</i>	12.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 09 02	566	0.2+	0.0	1998 12 11	699	0.5+	0.0	1999 01 05	369	0.1+	0.3+
1997 09 02	566	0.0	0.2-	1998 12 11	369	0.1-	0.1+	1999 01 05	369	0.2+	0.3+
1997 09 02	566	0.0	0.2-	1998 12 11	369	0.0	0.1-	1999 02 02	699	1.6-	0.1-
1998 11 10	704	0.5-	1.1+	1998 12 14	704	0.1-	0.2+	1999 02 02	699	0.4-	0.4-
1998 11 10	704	2.0-	0.4+	1998 12 14	704	0.4-	0.2+	1999 02 02	699	0.2+	0.9+
1998 11 10	704	1.9-	1.2-	1998 12 14	704	0.1+	0.2-	1999 11 11	699	0.5-	0.4-
1998 11 10	704	1.5-	0.2+	1998 12 14	704	1.5+	0.2+	1999 11 11	699	0.4-	0.5-
1998 11 24	704	0.5+	0.7-	1998 12 14	704	(0.6-	2.2+)	1999 11 11	699	0.0	0.8-
1998 11 24	704	0.6+	0.3+	1998 12 17	704	0.2-	0.3-	1999 12 17	699	0.6+	0.9+
1998 11 24	704	1.1+	0.9+	1998 12 17	704	(0.7+	2.4-)	1999 12 17	699	0.2-	0.2+
1998 11 24	704	1.2+	0.8+	1998 12 17	704	0.2+	1.2-	1999 12 17	699	0.3+	0.8+
1998 11 24	704	(1.7-	3.0+)	1998 12 17	704	(0.2-	2.5-)	2000 01 01	106	0.4-	0.4+
1998 12 09	369	0.2+	0.1-	1998 12 17	704	0.1+	1.2-	2000 01 01	106	0.2-	1.0-
1998 12 09	369	0.6+	0.1+	1998 12 27	369	0.2+	0.0	2000 01 01	106	0.5+	0.2-
1998 12 11	699	0.3+	0.2-	1998 12 27	369	0.4+	0.6+				
1998 12 11	699	0.1+	0.1+	1998 12 27	369	0.1+	0.4-				

1998 XJ₅ = 1999 YB₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	13.80294		(2000.0)	P	Q
<i>n</i>	0.08394674	ω	23.83073	+0.10951879	-0.98517415
<i>a</i>	5.1657513	Ω	60.11721	+0.88573684	+0.03643764
<i>e</i>	0.1871457	<i>i</i>	8.76024	+0.45108301	+0.16764303
<i>P</i>	11.74	<i>H</i>	12.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 11 11	704	0.2-	0.3+	1998 12 09	120	0.4-	0.2-	1999 12 31	120	0.5+	0.3-
1998 11 11	704	1.8-	0.8-	1998 12 12	120	0.5+	0.5-	1999 12 31	120	1.0+	0.1+
1998 11 11	704	1.1+	1.3-	1998 12 12	120	1.3-	0.5+	1999 12 31	120	0.7+	0.0
1998 11 11	704	0.8+	1.8-	1998 12 14	120	(3.9+	0.6-)	1999 12 31	120	0.7-	0.4+
1998 11 11	704	1.5+	0.2-	1998 12 14	120	0.2-	1.4-	2000 01 02	704	0.0	0.1+
1998 11 11	699	0.1+	1.6+	1998 12 14	120	0.4-	1.1+	2000 01 02	704	0.0	0.0

1998 11 11	699	0.1-	0.3+	1998 12 15	120	0.2+	0.0	2000 01 02	704	0.3+	0.1+
1998 11 11	699	0.1+	0.1-	1998 12 22	120	0.1-	0.0	2000 01 02	704	0.6+	0.2+
1998 11 16	566	0.3-	0.4+	1998 12 22	120	0.1-	0.1+	2000 01 02	120	0.2-	0.3+
1998 11 16	566	0.2-	0.1+	1998 12 25	120	0.2+	0.6-	2000 01 02	120	0.6-	0.8-
1998 11 16	566	0.9-	0.0	1998 12 25	120	0.6-	0.6-	2000 01 04	704	0.8-	0.1+
1998 12 07	120	0.4+	1.3+	1999 12 15	704	0.3+	0.3+	2000 01 04	704	0.2+	0.1+
1998 12 07	120	1.5+	0.1-	1999 12 15	704	0.2-	0.0	2000 01 04	704	0.3+	0.3+
1998 12 07	120	0.4+	1.0+	1999 12 15	704	0.1-	0.1-	2000 01 04	704	0.2-	0.2-
1998 12 09	120	0.2+	0.8+	1999 12 15	704	0.8-	0.4-				
1998 12 09	120	0.6-	0.3+	1999 12 15	704	0.3-	0.5-				

1998 XL₅ = 2000 AZ₁₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	183.26548		(2000.0)	P	Q
<i>n</i>	0.19072865	ω	175.88632	+0.75186593	+0.64890580
<i>a</i>	2.9889967	Ω	142.79513	-0.61028443	+0.75194448
<i>e</i>	0.0944254	<i>i</i>	11.12784	-0.24950059	+0.11619274
<i>P</i>	5.17	<i>H</i>	12.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 11 13	704	0.3-	0.2+	1998 12 15	704	1.2-	0.7+	1999 11 06	703	0.7-	1.5+
1998 11 13	704	0.4+	0.6+	1998 12 15	704	0.1-	0.1+	1999 11 06	703	0.1-	0.6+
1998 11 13	704	1.0+	0.8+	1998 12 15	704	1.1-	0.6+	1999 11 13	699	(2.1+	0.7+)
1998 11 13	704	0.3+	0.2-	1998 12 15	704	0.2-	0.2-	1999 11 13	699	0.2+	0.2-
1998 11 13	704	0.7-	0.7+	1998 12 15	120	0.4-	0.2-	1999 11 13	699	(2.3-	0.2-)
1998 12 07	120	0.2-	0.1-	1998 12 17	120	0.1-	0.0	2000 01 05	704	0.3+	0.4-
1998 12 07	120	0.0	0.3-	1998 12 17	120	0.3-	0.2+	2000 01 05	704	0.2+	0.1-
1998 12 07	120	0.7+	0.3+	1998 12 22	704	0.2+	0.1-	2000 01 05	704	0.3+	0.7-
1998 12 09	120	0.6-	0.1+	1998 12 22	704	1.6+	0.5-	2000 01 05	704	0.7-	0.9-
1998 12 09	120	0.7-	0.2+	1998 12 22	704	1.5+	1.4-	2000 01 07	704	0.2-	0.2+
1998 12 09	120	0.8-	0.0	1998 12 22	704	0.8+	1.5-	2000 01 07	704	0.2+	0.3+
1998 12 14	120	0.2-	0.2+	1998 12 22	704	0.9+	1.0-	2000 01 07	704	0.2-	0.2-
1998 12 14	120	0.5-	0.1+	1999 11 06	703	1.0+	1.0+	2000 01 07	704	0.1+	0.4+
1998 12 15	704	(2.4-	0.5+)	1999 11 06	703	0.1+	0.2+	2000 01 07	704	0.4-	0.4-

1998 XM₅ = 2000 AR₁₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	2.77447		(2000.0)	P	Q
<i>n</i>	0.18132414	ω	6.16731	-0.93448790	-0.33903549
<i>a</i>	3.0914742	Ω	153.20894	+0.31546153	-0.92996820
<i>e</i>	0.0887378	<i>i</i>	13.93789	+0.16497388	-0.14217628
<i>P</i>	5.44	<i>H</i>	12.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 11 13	704	0.2+	0.0	1998 12 15	120	0.3+	0.0	1998 12 23	120	(2.1-	4.5-)
1998 11 13	704	0.2-	1.2+	1998 12 16	120	0.0	0.1+	1998 12 23	120	0.2-	0.2-
1998 11 13	704	0.9+	1.0-	1998 12 16	120	0.7-	0.5+	2000 01 05	704	0.2+	0.1-
1998 11 13	704	0.9-	0.4-	1998 12 16	120	0.3+	0.4-	2000 01 05	704	0.3-	0.4-
1998 11 13	704	1.7-	0.4+	1998 12 17	699	0.6+	0.1+	2000 01 05	704	0.9-	1.0-
1998 11 19	699	0.3+	0.6-	1998 12 17	699	0.7+	0.4+	2000 01 05	704	0.6+	1.3-
1998 11 19	699	0.1+	0.5-	1998 12 17	699	0.2+	0.3-	2000 01 06	699	0.5+	0.7+
1998 11 19	699	1.0+	0.3+	1998 12 19	704	0.9-	0.1+	2000 01 06	699	0.1-	0.5+
1998 12 08	120	0.2+	0.4-	1998 12 19	704	1.0-	1.2+	2000 01 06	699	0.3-	0.6+
1998 12 08	120	0.1+	0.5+	1998 12 19	704	1.3-	1.0+	2000 01 08	704	1.2-	0.6-
1998 12 09	120	0.6+	0.2-	1998 12 19	704	(2.2-	1.1+)	2000 01 08	704	0.3+	0.2-
1998 12 09	120	0.1-	0.3-	1998 12 22	704	0.5+	0.7+	2000 01 08	704	0.1+	0.2-
1998 12 14	120	0.6+	0.4-	1998 12 22	704	0.9-	0.1+	2000 01 08	704	0.8+	0.2+
1998 12 14	120	0.7+	0.0	1998 12 22	704	0.2+	0.8-	2000 01 08	704	0.1+	1.7+
1998 12 15	120	0.3-	0.4-	1998 12 22	704	0.4+	0.7-				

1998 XE₁₂

Id. J. T

2000 JAN. 24

M.P.C. 37807

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	279.64314		(2000.0)	P	Q
<i>n</i>	1.19757572	ω	353.02307	+0.05824085	+0.97177161
<i>a</i>	0.8782148	Ω	280.12815	-0.90433754	-0.04563939
<i>e</i>	0.7391278	<i>i</i>	13.42904	-0.42282575	+0.23146703
<i>P</i>	0.82	<i>H</i>	18.9	<i>G</i>	0.15
				<i>U</i>	6

Residuals in seconds of arc

1998 12 14	704	0.5+	0.8+	1998 12 17	402	0.7+	0.0	1999 12 29	046	0.7+	0.3-
1998 12 14	704	1.2+	0.3+	1998 12 17	402	0.1+	0.4-	1999 12 30	046	0.3+	0.5-
1998 12 14	704	0.0	1.7-	1998 12 18	402	0.2+	0.5-	1999 12 30	046	0.2-	0.0
1998 12 14	704	1.1+	0.3-	1998 12 18	402	0.9-	1.4-	1999 12 30	046	0.5-	0.0
1998 12 14	704	(3.2-	3.3+)	1998 12 18	402	0.1-	0.2-	1999 12 30	046	0.5+	0.4+
1998 12 16	557	0.1-	0.2-	1998 12 19	658	1.0-	0.6+	1999 12 30	046	0.1+	0.1-
1998 12 16	557	0.1+	0.1-	1998 12 19	658	0.2-	0.0	1999 12 30	046	1.1+	0.1-
1998 12 16	704	1.4-	0.0	1998 12 19	658	0.4-	0.8+	1999 12 30	046	0.1+	0.4-
1998 12 16	704	0.0	1.7-	1998 12 19	587	0.1+	0.2-	1999 12 30	046	0.2-	0.0
1998 12 16	704	1.3-	0.7+	1998 12 19	587	0.5-	0.4-	1999 12 30	046	0.7+	0.2-
1998 12 16	704	0.9-	1.0-	1998 12 19	587	0.2+	0.8+	1999 12 30	046	0.3+	1.1-
1998 12 16	704	0.4-	0.8+	1998 12 24	402	0.8+	0.6+	1999 12 30	046	0.6+	1.7-
1998 12 16	402	0.3-	0.2-	1998 12 24	402	0.4-	0.5+	1999 12 30	046	0.7+	0.6+
1998 12 16	402	0.9+	0.1-	1998 12 24	402	0.1-	0.9-	1999 12 30	046	0.5+	0.2+
1998 12 16	402	0.7+	0.1-	1999 01 08	658	0.0	0.3-	1999 12 30	046	0.7-	0.3+
1998 12 16	402	0.5-	0.3+	1999 01 08	658	0.9+	1.5+	1999 12 30	046	0.6+	0.2+
1998 12 17	684	0.2+	0.4+	1999 12 18	691	0.0	0.7+	1999 12 31	104	1.2-	1.0+
1998 12 17	684	0.0	1.3+	1999 12 18	691	0.3+	1.3-	1999 12 31	104	0.7-	1.2+
1998 12 17	684	1.1+	1.4+	1999 12 18	691	0.5-	0.1-	1999 12 31	104	0.7-	0.8+
1998 12 17	402	0.1-	0.2+	1999 12 29	046	0.9-	0.3-	1999 12 31	104	0.2-	0.1+
1998 12 17	402	0.0	0.6-	1999 12 29	046	0.8-	0.2+				

1998 XQ₁₂ = 2000 AE₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	253.34220		(2000.0)	P	Q
<i>n</i>	0.18832003	ω	129.36824	-0.22847248	+0.95304165
<i>a</i>	3.0144289	Ω	126.28925	-0.95175659	-0.17569275
<i>e</i>	0.1314600	<i>i</i>	14.27691	-0.20484070	-0.24666511
<i>P</i>	5.23	<i>H</i>	12.4	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1997 09 28	566	0.7+	0.4+	1998 11 28	120	0.4+	0.3-	2000 01 04	704	0.3-	0.7+
1997 09 28	566	0.4-	0.0	1998 12 14	120	0.1+	0.1-	2000 01 06	704	0.1-	0.4+
1997 09 28	566	0.3-	0.2-	1998 12 14	120	0.1+	0.1-	2000 01 06	704	0.2-	0.5+
1998 11 12	120	0.0	0.4-	1998 12 16	120	0.1+	0.1+	2000 01 06	704	0.1-	0.4+
1998 11 12	120	0.2-	0.5-	1998 12 16	120	0.9-	0.2-	2000 01 06	704	0.1+	0.5+
1998 11 13	704	1.4+	0.8-	1998 12 16	120	0.0	0.5+	2000 01 09	704	0.2+	0.8-
1998 11 13	704	0.7-	0.4+	1998 12 17	120	0.1-	0.2-	2000 01 09	704	0.2+	0.7-
1998 11 13	704	0.9+	1.2+	2000 01 04	704	0.9+	0.2+	2000 01 09	704	0.4-	0.3-
1998 11 13	704	(2.6+	1.3-)	2000 01 04	704	0.4-	0.1+	2000 01 11	691	0.1+	0.2-
1998 11 13	704	0.5-	0.2-	2000 01 04	704	0.2+	0.0	2000 01 11	691	0.1+	0.2-
1998 11 28	120	0.6-	0.5+	2000 01 04	704	0.4-	0.1+	2000 01 11	691	0.1+	0.2-

1998 XA₁₃ = 2000 AR₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	3.62637		(2000.0)	P	Q
<i>n</i>	0.08291926	ω	27.78679	-0.36080009	-0.90732056
<i>a</i>	5.2083372	Ω	84.04303	+0.81038917	-0.41954757
<i>e</i>	0.1622725	<i>i</i>	12.53437	+0.46161964	+0.02737202
<i>P</i>	11.89	<i>H</i>	10.8	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 11 24	704	0.7+	0.2-	1998 12 23	120	1.0-	0.3+	1999 12 15	704	0.2+	0.1+
1998 11 24	704	0.2-	0.1-	1998 12 25	120	0.1+	0.5+	1999 12 15	704	0.2+	0.1-
1998 11 24	704	0.4+	0.1-	1998 12 25	120	0.3+	0.0	1999 12 15	704	0.3+	0.3-
1998 11 24	704	0.5-	0.8+	1998 12 25	120	0.0	0.6+	1999 12 31	699	0.4+	0.4+
1998 12 08	910	0.4+	0.1+	1998 12 26	120	0.9+	0.3+	1999 12 31	699	0.0	0.9+

1998 12 08	910	0.3+	0.1+	1998 12 26	120	0.2-	0.8+	1999 12 31	699	0.4+	0.5+
1998 12 09	910	0.7+	0.2+	1998 12 26	120	0.4-	0.4+	2000 01 03	704	0.1-	0.3-
1998 12 16	910	0.6-	0.5-	1999 01 05	120	0.4-	0.1-	2000 01 03	704	0.1-	0.0
1998 12 16	910	0.7-	0.4-	1999 01 05	120	0.3+	0.0	2000 01 03	704	0.2+	0.3-
1998 12 16	910	0.6-	0.5-	1999 12 10	704	0.4+	0.2-	2000 01 03	704	0.1-	0.3-
1998 12 22	704	0.3-	0.0	1999 12 10	704	0.4-	0.3-	2000 01 04	704	0.1+	0.2+
1998 12 22	704	0.4+	0.6-	1999 12 10	704	0.6-	0.4-	2000 01 04	704	0.0	0.4-
1998 12 22	704	0.9+	1.2-	1999 12 10	704	0.4-	0.6+	2000 01 04	704	0.0	0.2+
1998 12 22	704	0.8-	0.6-	1999 12 10	704	0.6-	0.7+	2000 01 04	704	0.2+	0.2-
1998 12 23	120	0.3+	0.3+	1999 12 15	704	0.1+	0.0	2000 01 04	704	0.2-	0.4-
1998 12 23	120	0.0	0.0	1999 12 15	704	0.0	0.2-				

1998 XC₁₇ = 2000 AA₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	49.01820		(2000.0)	P	Q
<i>n</i>	0.08409075	ω	324.40940	+0.61378498	-0.76473685
<i>a</i>	5.1598519	Ω	86.90115	+0.76215682	-0.50921430
<i>e</i>	0.1285235	<i>i</i>	11.32433	+0.20587613	+0.39481433
<i>P</i>	11.72	<i>H</i>	12.2	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 12 08	910	0.2-	0.5+	2000 01 04	704	0.9+	0.5-	2000 01 07	704	1.1+	0.9-
1998 12 08	910	0.0	0.5+	2000 01 04	704	0.6-	0.4+	2000 01 07	704	0.0	0.4+
1998 12 09	910	0.2-	0.2+	2000 01 04	704	0.3-	0.9+	2000 01 07	704	1.0-	0.4-
1998 12 17	910	0.7+	0.1-	2000 01 04	704	0.7-	0.3-	2000 01 07	704	0.2-	0.1-
1998 12 17	910	0.6+	0.2-	2000 01 04	704	0.0	1.0+	2000 01 07	704	0.3-	0.1-
1998 12 17	910	0.5+	0.1-	2000 01 07	704	0.1+	0.3-	2000 01 07	704	0.4-	0.9+
1998 12 25	910	0.4-	0.3-	2000 01 07	704	0.4-	0.5-	2000 01 07	704	0.8-	0.1-
1998 12 25	910	0.5-	0.5-	2000 01 07	704	1.6+	1.0+	2000 01 07	704	0.2-	1.1-
1998 12 26	910	0.9-	0.5-	2000 01 07	704	0.2+	0.3-	2000 01 07	704	0.2-	0.0
1999 01 05	120	0.4+	0.8+	2000 01 07	704	0.3+	0.6+	2000 01 07	704	0.2-	0.2-
1999 01 05	120	0.0	0.4-	2000 01 07	704	0.3-	0.4-	2000 01 08	704	1.2-	0.6-
2000 01 03	704	0.8-	0.3-	2000 01 07	704	0.2-	1.5+	2000 01 08	704	0.2+	0.2-
2000 01 03	704	0.4+	0.8+	2000 01 07	704	0.2+	0.5+	2000 01 08	704	0.9+	0.1-
2000 01 03	704	0.5+	0.7+	2000 01 07	704	0.5+	0.3+	2000 01 08	704	0.4+	1.5-
2000 01 03	704	0.0	0.4+	2000 01 07	704	0.1+	0.1+	2000 01 08	704	0.2+	1.2-

1998 XZ₄₃ = 1949 XE = 2000 AK₂₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	75.54142		(2000.0)	P	Q
<i>n</i>	0.20161308	ω	34.15917	-0.21233453	-0.95218471
<i>a</i>	2.8804273	Ω	68.96470	+0.83575606	-0.29344644
<i>e</i>	0.0817695	<i>i</i>	13.61299	+0.50638508	+0.08504980
<i>P</i>	4.89	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1949 12 14	760	0.1-	0.3-	1998 12 17	704	1.3-	0.5-	1999 01 16	704	0.8-	0.2-
1949 12 14	760	0.3+	0.2-	1998 12 17	704	0.5+	0.6-	1999 01 16	704	0.1-	0.6+
1998 12 14	704	0.2+	0.4-	1998 12 17	704	0.0	0.6-	1999 01 16	704	0.9+	0.5+
1998 12 14	704	0.4+	0.4-	1998 12 17	704	(2.3+	0.2+)	1999 01 16	704	0.1-	1.8-
1998 12 14	704	0.7+	0.4+	1998 12 17	704	0.4-	0.0	1999 01 16	704	0.2+	0.8-
1998 12 14	704	0.8+	0.2+	1998 12 17	704	1.2+	1.3+	1999 01 19	704	0.4-	1.7+
1998 12 16	704	0.3+	1.5-	1998 12 17	704	0.7-	1.9+	1999 01 19	704	0.3+	0.4+
1998 12 16	704	1.8-	1.1-	1998 12 17	704	0.0	0.1-	1999 01 19	704	0.5+	0.6+
1998 12 16	704	0.6-	0.4-	1998 12 17	704	0.2-	0.0	1999 01 19	704	1.2-	1.4-
1998 12 16	704	0.5-	0.4-	1998 12 17	704	0.6+	0.3-	2000 01 13	120	0.7-	0.8+
1998 12 17	704	0.8-	0.1-	1998 12 17	704	1.6+	1.9+	2000 01 13	120	0.4+	0.2+
1998 12 17	704	1.1-	0.1-	1998 12 17	704	1.2+	0.5+	2000 01 13	120	0.9+	1.3-
1998 12 17	704	0.6+	0.3-	1998 12 18	049	0.7+	0.2-	2000 01 15	120	0.6+	0.2+
1998 12 17	704	1.7-	1.5+	1998 12 18	049	0.6+	0.3-	2000 01 16	120	(2.7+	1.2+)
1998 12 17	704	0.4-	0.4+	1998 12 18	049	0.7+	0.1-	2000 01 16	120	1.3-	0.0

1998 XX₄₆ = 1970 AH₁ = 2000 AQ₂₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	270.98208		(2000.0)			P		Q		
<i>n</i>	0.23359495	ω	358.93071			+0.21785918		+0.95313151		
<i>a</i>	2.6111215	Ω	283.62747			−0.89383309		+0.10846930		
<i>e</i>	0.1626334	<i>i</i>	12.47587			−0.39191809		+0.28244421		
<i>P</i>	4.22	<i>H</i>	12.6			<i>G</i>	0.15	<i>U</i>	4	
Residuals in seconds of arc										
1970 01 10	805	0.4−	0.7−	1999 01 16	737	0.5−	0.2+	2000 01 10	704	0.2+ 0.3+
1998 12 14	704	0.5−	1.4−	1999 01 16	704	0.4−	0.1−	2000 01 10	704	0.7+ 0.2−
1998 12 14	704	0.1−	0.3−	1999 01 16	737	0.8−	0.5+	2000 01 10	704	0.3+ 0.4−
1998 12 14	704	0.5+	0.0	1999 01 16	704	0.1−	0.3−	2000 01 10	704	0.3− 0.3+
1998 12 14	704	1.0+	0.1+	1999 01 16	704	0.7+	0.5−	2000 01 10	704	0.1+ 0.0
1998 12 14	704	1.1+	0.1−	1999 01 16	704	1.3+	0.6−	2000 01 11	704	0.7− 0.2+
1998 12 17	704	0.1−	0.1−	1999 01 17	737	(2.5−	1.5+)	2000 01 11	704	0.2+ 0.2+
1998 12 17	704	0.8+	0.3−	1999 01 17	737	0.4−	0.4+	2000 01 11	704	0.3+ 0.2+
1998 12 17	704	0.3−	0.7+	1999 01 19	704	0.7+	1.1+	2000 01 11	704	0.2− 0.1+
1998 12 17	704	0.2−	0.6+	1999 01 19	704	1.5−	1.0+	2000 01 11	704	0.4− 0.2−
1999 01 16	737	0.8−	0.4+	1999 01 19	704	0.4−	0.9−			

1998 XO₈₉ = 2000 AK₁₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.22650		(2000.0)		P		Q				
<i>n</i>	0.08413245	ω	208.56725		−0.35129413		−0.87532773				
<i>a</i>	5.1581467	Ω	263.68200		+0.90997939		−0.23571056				
<i>e</i>	0.0362346	<i>i</i>	19.52912		+0.22029512		−0.42218705				
<i>P</i>	11.71	<i>H</i>	9.9		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1997 12 06	704	0.1−	1.4−	1999 01 20	704	1.4−	0.1−	2000 01 08	704	0.9−	0.6+
1997 12 06	704	0.6−	1.3+	1999 01 20	704	0.1−	0.8−	2000 01 08	704	0.4−	0.2−
1997 12 06	704	0.4+	1.1−	1999 01 20	704	0.8−	0.7+	2000 01 08	704	0.7−	0.3−
1997 12 06	704	0.2+	0.4−	1999 02 04	704	1.4+	1.0+	2000 01 09	145	0.1+	0.6+
1997 12 06	704	0.1−	1.4−	1999 02 04	704	1.8+	1.8+	2000 01 09	145	0.5+	0.9+
1998 12 15	704	0.9+	0.1−	1999 02 04	704	0.2+	0.4+	2000 01 09	145	0.6+	0.8+
1998 12 15	704	1.1+	1.3+	1999 02 04	704	0.9+	1.2−	2000 01 09	145	1.4+	0.8+
1998 12 15	704	0.6−	0.6+	1999 12 14	704	0.9+	0.6+	2000 01 11	704	0.1+	0.5−
1998 12 15	704	0.5−	0.3+	1999 12 14	704	(1.2+	2.3−)	2000 01 11	704	0.1−	0.7−
1998 12 22	704	0.3−	0.6+	1999 12 14	704	0.6+	1.1−	2000 01 11	704	0.4−	1.0−
1998 12 22	704	0.0	0.1−	1999 12 14	704	0.5−	2.0−	2000 01 11	704	0.3−	0.8−
1998 12 22	704	(2.4+	0.5−)	1999 12 16	699	0.6+	0.9+	2000 01 11	704	0.2−	0.2−
1999 01 18	704	0.0	0.5+	1999 12 16	699	0.5+	1.0+	2000 01 11	704	0.7−	1.0−
1999 01 18	704	0.4−	0.3−	1999 12 16	699	0.8+	1.2+	2000 01 11	704	0.6−	0.6−
1999 01 18	704	0.2−	0.4+	2000 01 07	699	0.5+	0.7+	2000 01 11	704	0.8−	0.8−
1999 01 18	704	0.1−	0.6−	2000 01 07	699	0.6+	0.9+	2000 01 11	704	1.3−	0.5−
1999 01 18	704	(2.2−	0.0)	2000 01 07	699	0.6+	0.7+	2000 01 11	704	1.8−	1.3−
1999 01 20	704	0.5−	0.1+	2000 01 08	704	0.1−	0.6−				
1999 01 20	704	0.9+	0.3+	2000 01 08	704	0.7−	0.6−				

1998 XC₉₂ = 2000 AU₂₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	117.11179		(2000.0)		P		Q				
n	0.18556009	ω	159.86002		+0.53097837		−0.83079629				
a	3.0442454	Ω	257.73370		+0.75220143		+0.55277623				
e	0.0324916	i	9.83142		+0.39019864		+0.06493049				
P	5.31	H	12.9	G	0.15	U	4				
Residuals in seconds of arc											
1998 12 15	704	0.6+	0.6−	1999 01 18	704	0.8−	0.3−	2000 01 10	704	0.3−	0.9−
1998 12 15	704	0.6+	0.2−	1999 01 18	704	(1.7−	2.9−)	2000 01 10	704	0.2+	0.5−
1998 12 15	704	0.5−	0.1+	1999 01 18	704	0.8−	1.0−	2000 01 10	704	0.0	0.7−
1998 12 15	704	0.3+	0.1−	1999 01 20	704	0.2+	0.2−	2000 01 11	704	1.0−	0.4−
1998 12 15	704	0.3+	0.1−	1999 01 20	704	0.2−	0.3+	2000 01 11	704	0.1+	0.3−
1998 12 22	704	0.0	0.4−	1999 01 20	704	0.7+	0.4+	2000 01 11	704	0.8+	1.5+

1998 12 22	704	1.7−	1.4+	1999 01 20	704	0.1−	0.5+	2000 01 11	704	0.4+	0.6+
1998 12 22	704	(2.2+	0.3+)	1999 01 20	704	0.0	0.5+				
1999 01 18	704	1.4+	0.4−	2000 01 10	704	0.1−	0.7+				

1998 YC₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	15.75393		(2000.0)			P		Q			
n	0.17389128	ω	320.51898			−0.90623685		−0.42235199			
a	3.1789535	Ω	194.53227			+0.40436544		−0.85294686			
e	0.0398103	i	4.29752			+0.12338296		−0.30675796			
P	5.67	H	13.0		G	0.15		U	3		
Residuals in seconds of arc											
1998 12 15	704	0.5−	1.6−	1998 12 22	704	0.1+	1.0−	1999 01 21	360	0.2−	0.1+
1998 12 15	704	0.4+	0.4−	1998 12 22	704	0.2+	0.2−	1999 02 08	360	0.1+	0.2+
1998 12 15	704	0.1−	0.5−	1998 12 22	704	0.7−	0.1+	1999 02 08	360	0.1+	0.1+
1998 12 15	704	1.5+	0.0	1998 12 22	704	(0.4+	2.1+)	1999 02 14	360	0.1−	0.1+
1998 12 15	704	0.3−	0.5+	1998 12 22	360	0.0	0.4+	1999 02 14	360	0.1−	0.1+
1998 12 16	360	0.3+	0.2+	1998 12 22	360	0.2+	0.3+	1999 04 05	360	0.5+	0.2−
1998 12 16	360	0.1−	0.2+	1998 12 22	360	0.0	0.5+	1999 04 05	360	0.3+	0.1+
1998 12 16	360	0.0	0.1+	1999 01 13	360	0.0	0.1+	1999 04 05	360	0.5−	0.4+
1998 12 17	360	0.4−	0.3+	1999 01 13	360	0.0	0.2+	1999 04 08	360	0.3−	0.1+
1998 12 17	360	0.4−	0.2+	1999 01 20	704	1.7+	0.5+	1999 04 08	360	0.4−	0.2−
1998 12 17	360	0.5−	0.2+	1999 01 20	704	0.6−	0.1+	1999 04 08	360	0.3+	0.7−
1998 12 20	360	0.2+	0.1+	1999 01 20	704	1.0+	0.7−	1999 12 07	360	0.1−	0.3−
1998 12 20	360	0.1+	0.1+	1999 01 20	704	1.3−	0.1−	1999 12 07	360	0.1+	0.2−
1998 12 20	360	0.2+	0.1+	1999 01 20	704	0.1−	0.1−	1999 12 15	360	0.0	0.2+
1998 12 22	704	0.2−	0.1−	1999 01 21	360	0.4−	0.0	1999 12 15	360	0.1+	0.3+

1998 YL₁ = 2000 AE₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	264.90350		(2000.0)		P		Q				
<i>n</i>	0.22651742	ω	301.02473		−0.13686400		+0.98202996				
<i>a</i>	2.6652317	Ω	320.44420		−0.82502244		−0.18560860				
<i>e</i>	0.1581738	<i>i</i>	11.77378		−0.54827568		+0.03415566				
<i>P</i>	4.35	<i>H</i>	12.9		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1998 11 14	704	0.6−	0.3−	1998 12 17	704	0.4+	0.6−	1998 12 21	704	0.5−	0.4+
1998 11 14	704	0.9−	0.5+	1998 12 17	704	1.7−	1.5−	1998 12 21	704	0.2−	1.8+
1998 11 14	704	(0.9+	2.3−)	1998 12 17	704	(0.4+	2.1−)	1998 12 21	704	1.3−	0.4−
1998 11 14	704	1.2+	2.0−	1998 12 17	704	1.2+	0.1+	1998 12 21	704	1.3−	1.3+
1998 11 16	704	0.3+	0.1−	1998 12 17	704	1.3−	0.6−	1998 12 21	704	(2.3−	1.0−)
1998 11 16	704	0.3+	0.3−	1998 12 17	704	0.8+	1.3−	1998 12 23	704	0.5+	0.4−
1998 11 16	704	0.4+	0.4−	1998 12 17	704	0.4+	1.8−	1998 12 23	704	0.1−	1.1+
1998 11 16	704	0.1+	0.2+	1998 12 17	704	(0.2−	2.4−)	1998 12 23	704	0.7−	0.2+
1998 11 16	704	(3.7−	2.1−)	1998 12 19	704	1.5+	1.2−	1998 12 23	704	1.2−	1.8+
1998 12 14	704	0.4+	0.2−	1998 12 19	704	0.5−	1.1+	1998 12 23	704	1.9−	0.1−
1998 12 14	704	0.3+	0.5−	1998 12 19	704	1.6+	0.0	1999 12 04	703	0.9+	0.8−
1998 12 14	704	1.1+	0.3−	1998 12 19	704	0.4+	0.4−	1999 12 04	703	0.8+	0.5+
1998 12 14	704	0.3+	0.1−	1998 12 19	704	(0.5−	2.1−)	1999 12 04	703	0.6−	0.8+
1998 12 14	704	0.5−	0.0	1998 12 19	704	0.2−	0.4+	1999 12 04	703	0.5−	0.4+
1998 12 16	704	0.7+	0.2−	1998 12 19	704	0.1−	0.6−	1999 12 06	704	(0.7+	2.5+)
1998 12 16	704	1.9+	2.0−	1998 12 19	704	1.1+	0.6+	1999 12 06	704	0.1+	0.5+
1998 12 16	704	1.4−	0.8+	1998 12 19	704	0.4+	0.2+	1999 12 06	704	1.6+	1.2+
1998 12 16	704	0.5−	0.8−	1998 12 19	704	0.8+	1.1+	1999 12 06	704	1.0+	0.5+
1998 12 16	704	1.7−	0.5−	1998 12 19	704	0.6−	0.5−	1999 12 06	704	0.1−	0.7−
1998 12 17	704	1.1−	0.7+	1998 12 19	704	0.3+	0.8+	2000 01 04	704	0.0	0.3+
1998 12 17	704	1.0−	1.4+	1998 12 19	704	1.6+	1.1+	2000 01 04	704	0.6−	1.0−
1998 12 17	704	0.4+	0.8−	1998 12 19	704	0.3+	1.7+	2000 01 04	704	0.3−	0.4+
1998 12 17	704	1.0+	0.4+	1998 12 19	049	1.7+	0.6−	2000 01 04	704	0.3−	0.8−
1998 12 17	704	0.2+	2.0−	1998 12 19	049	1.7+	0.4+	2000 01 04	704	1.1−	0.5−
1998 12 17	704	1.1−	0.9−	1998 12 19	049	1.2+	0.4+	2000 01 07	704	0.4+	0.4+
1998 12 17	704	0.7+	0.6+	1998 12 21	704	0.0	0.3−	2000 01 07	704	0.1−	0.7+
1998 12 17	704	0.5−	1.0−	1998 12 21	704	0.6−	0.5+	2000 01 07	704	0.1−	0.5−
1998 12 17	704	1.0−	0.8+	1998 12 21	704	0.8−	1.0−	2000 01 07	704	0.1−	0.7−

2000 JAN. 24

M.P.C. 37809

1998 12 17 704 0.8- 1.6+ 1998 12 21 704 1.1- 1.1+ 2000 01 07 704 0.7- 0.8-
 1998 12 17 704 1.4- 0.3+ 1998 12 21 704 1.1+ 0.2-

1998 YC₆ = 1999 XB₂₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	272.15668		(2000.0)	P	Q
<i>n</i>	0.21449929	ω	356.80401	-0.36624093	+0.90187163
<i>a</i>	2.7638776	Ω	251.61561	-0.84829176	-0.42479841
<i>e</i>	0.1311134	<i>i</i>	13.97159	-0.38245088	+0.07857397
<i>P</i>	4.59	<i>H</i>	12.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 11 24	704 0.2- 0.7+	1998 12 23 758 0.3- 0.1+	1999 12 16 704 0.1+ 0.3-
1998 11 24	704 (0.4+ 2.7-)	1998 12 23 758 1.2- 0.6+	1999 12 16 704 0.7- 1.1-
1998 11 24	704 1.6+ 1.6-	1998 12 23 758 0.5- 0.3-	1999 12 16 704 0.5- 0.4-
1998 11 24	704 1.1- 0.2-	1999 01 05 699 0.9- 0.6-	1999 12 16 704 0.0 0.3-
1998 12 11	699 0.1+ 0.7+	1999 01 05 699 0.7- 0.0	1999 12 16 704 0.2- 0.4-
1998 12 11	699 0.6+ 0.6+	1999 01 05 699 0.2+ 0.1-	2000 01 07 699 0.6+ 0.3-
1998 12 11	699 0.8+ 0.3+	1999 01 06 758 1.3- 0.5+	2000 01 07 699 0.5+ 1.3+
1998 12 14	704 0.6+ 0.2+	1999 01 06 758 0.8+ 1.0+	2000 01 07 699 1.0+ 0.6+
1998 12 14	704 0.3+ 0.4-	1999 01 06 758 0.2- 0.8-	2000 01 11 704 0.2- 0.4-
1998 12 14	704 1.0+ 1.1-	1999 01 07 758 (0.3+ 2.1+)	2000 01 11 704 0.1- 0.0
1998 12 14	704 1.4+ 0.2-	1999 01 07 758 1.6- 0.3-	2000 01 11 704 0.3- 0.1-
1998 12 17	704 0.4+ 0.6-	1999 01 10 691 0.5+ 0.3-	2000 01 11 704 0.4- 0.7+
1998 12 17	704 0.1- 0.2-	1999 01 10 691 0.1- 0.4+	2000 01 11 704 0.4- 0.5+
1998 12 17	704 0.8+ 0.1+	1999 01 10 691 0.2+ 0.3-	2000 01 17 467 1.1+ 0.4+
1998 12 17	704 0.3+ 0.4-	1999 12 14 704 1.2- 0.9-	2000 01 17 467 0.4+ 0.3+
1998 12 17	704 0.8+ 0.4-	1999 12 14 704 0.7- 0.7-	2000 01 17 467 0.2+ 1.0+
1998 12 22	758 1.1- 0.9+	1999 12 14 704 0.4+ 0.2+	2000 01 17 467 0.4+ 0.0
1998 12 22	758 0.9- 1.0+	1999 12 14 704 0.2- 0.5-	
1998 12 22	758 0.9- 1.2+	1999 12 14 704 0.3- 0.7-	

1998 YR₈ = 2000 AG₁₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	15.38342		(2000.0)	P	Q
<i>n</i>	0.17829419	ω	345.46559	-0.61475822	-0.77604953
<i>a</i>	3.1264003	Ω	142.17081	+0.74461431	-0.62991361
<i>e</i>	0.0303673	<i>i</i>	13.27023	+0.26004201	-0.03091862
<i>P</i>	5.53	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 11 13	704 0.6+ 0.8+	1998 12 25 327 0.4- 0.3-	2000 01 05 704 0.3+ 1.0+
1998 11 13	704 0.5+ 0.9-	1998 12 25 327 0.0 0.5-	2000 01 05 704 0.6- 0.3-
1998 11 13	704 1.5- 0.2-	1999 01 09 327 0.3+ 0.9-	2000 01 05 704 0.2+ 0.0
1998 11 13	704 0.6+ 1.6+	1999 01 09 327 0.7- 0.7-	2000 01 07 704 0.3+ 0.1+
1998 11 13	704 (3.4- 0.6-)	1999 01 09 327 0.3- 0.3-	2000 01 07 704 0.0 0.2-
1998 12 17	327 0.1+ 0.1+	1999 01 10 327 0.0 0.6+	2000 01 07 704 0.2+ 0.2+
1998 12 17	327 0.2+ 0.3-	1999 01 10 327 0.3+ 0.4+	2000 01 07 704 0.4- 0.1-
1998 12 17	327 0.4- 0.4-	1999 01 10 327 1.4+ 1.0+	2000 01 07 704 0.2- 0.1-
1998 12 25	327 0.6- 0.3-	2000 01 05 704 0.1+ 0.3-	

1998 YE₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	228.92768		(2000.0)	P	Q
<i>n</i>	0.21880088	ω	214.81044	+0.61577892	+0.72712582
<i>a</i>	2.7275330	Ω	95.19197	-0.63586296	+0.68605841
<i>e</i>	0.2108668	<i>i</i>	17.74236	-0.46528983	+0.02473645
<i>P</i>	4.50	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 12 14	704 1.4- 0.1+	1999 01 04 104 1.0- 0.1-	1999 03 13 104 0.4- 0.7+
1998 12 14	704 0.4- 0.8-	1999 01 14 104 1.0- 0.2+	1999 03 13 104 0.6- 0.5+
1998 12 14	704 1.3+ 0.3-	1999 01 14 104 0.7- 0.1+	1999 03 13 104 0.2+ 0.0
1998 12 14	704 0.7- 0.5-	1999 01 14 104 0.3+ 0.3-	1999 03 13 104 0.9+ 0.6-
1998 12 26	104 1.0+ 0.5+	1999 01 14 104 1.2+ 0.1-	2000 01 02 104 0.9+ 0.4+

1998 12 26 104 0.7+ 0.5+ 1999 01 15 108 1.0- 1.3- 2000 01 02 104 0.2- 0.7-
 1998 12 26 104 0.8+ 0.1+ 1999 01 15 108 1.4+ 0.5- 2000 01 03 104 0.3- 0.2+
 1998 12 26 104 0.4- 1.4+ 1999 01 18 104 0.4- 0.4- 2000 01 03 104 0.4- 0.1+
 1999 01 04 104 0.9+ 1.0+ 1999 01 18 104 0.4- 0.4-
 1999 01 04 104 0.0 0.6+ 1999 01 18 104 0.1- 0.3-

1999 CV₁₁₈

Id. C. Veillet (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	16.04237		(2000.0)	P	Q
<i>n</i>	0.00257270	ω	149.71331	-0.09480913	-0.99247578
<i>a</i>	52.7485147	Ω	305.61962	+0.89316330	-0.05043431
<i>e</i>	0.2864980	<i>i</i>	5.46929	+0.43962546	-0.11157154
<i>P</i>	383	<i>H</i>	7.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1999 02 10	568 0.2- 0.2+	1999 04 08 568 0.2- 0.3-	1999 12 29 568 0.2- 0.2+
1999 02 10	568 0.0 0.4+	1999 04 09 568 0.1- 0.1-	1999 12 29 568 0.2- 0.1+
1999 02 18	568 0.4- 0.3+	1999 05 06 568 0.2- 0.2-	1999 12 30 568 0.2- 0.2+
1999 02 18	568 0.2- 0.2+	1999 05 06 568 0.5- 0.3-	

1999 CY₁₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	357.88981		(2000.0)	P	Q
<i>n</i>	0.00116985	ω	13.52145	-0.99161799	-0.03075341
<i>a</i>	89.2038288	Ω	163.12539	+0.03363095	-0.99921627
<i>e</i>	0.6111051	<i>i</i>	25.61444	+0.12475066	+0.02492140
<i>P</i>	843	<i>H</i>	8.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1999 02 10	568 0.3- 0.1+	1999 04 12 568 0.1- 0.1+	2000 01 01 568 0.0 0.3-
1999 02 10	568 0.2- 0.2+	1999 04 13 568 0.0 0.1-	2000 01 01 568 0.1- 0.2-
1999 02 12	568 0.1- 0.5-	1999 04 13 568 0.3+ 0.1+	2000 01 01 568 0.1- 0.2-
1999 02 12	568 0.1+ 0.0	1999 05 06 568 0.0 0.3+	2000 01 02 568 0.1+ 0.4+
1999 03 16	568 0.2+ 0.2-	1999 05 06 568 0.1- 0.3+	2000 01 02 568 0.0 0.1-
1999 03 16	568 0.3+ 0.1-	1999 05 07 568 0.0 0.2+	2000 01 02 568 0.1+ 0.2+

1999 CZ₁₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	349.68972		(2000.0)	P	Q
<i>n</i>	0.00090785	ω	234.20814	-0.74895070	+0.65179618
<i>a</i>	105.6313630	Ω	345.17696	-0.34867420	-0.54076882
<i>e</i>	0.6362666	<i>i</i>	27.79772	-0.56347063	-0.53172438
<i>P</i>	1090	<i>H</i>	7.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1999 02 10	568 0.1- 0.2+	1999 05 07 568 0.0 0.0	2000 01 01 568 0.0 0.1-
1999 02 10	568 0.1- 0.1-	1999 05 07 568 0.0 0.0	2000 01 02 568 0.3- 0.1+
1999 02 12	568 0.2+ 0.0	2000 01 01 568 0.3+ 0.0	2000 01 02 568 0.1+ 0.0
1999 02 12	568 0.0 0.0	2000 01 01 568 0.2+ 0.0	2000 01 02 568 0.3- 0.0

1999 CF₁₁₉

Id. C. Veillet (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	354.80872		(2000.0)	P	Q
<i>n</i>	0.00111052	ω	204.44985	-0.82678360	-0.48712739
<i>a</i>	92.3530871	Ω	303.43706	+0.55547447	-0.62810246
<i>e</i>	0.5859592	<i>i</i>	19.70056	+0.08875237	-0.60679008
<i>P</i>	888	<i>H</i>	7.3	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1999 02 11	568 0.1- 0.0	1999 04 09 568 0.2- 0.3+	1999 12 30 568 0.4+ 0.1-
1999 02 11	568 0.1- 0.0	1999 05 06 568 0.0 0.1-	1999 12 31 695 1.0- 0.4+
1999 02 17	568 0.1+ 0.2-	1999 05 06 568 0.3+ 0.2+	1999 12 31 695 0.2- 0.3+

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1999 02 17	568	0.1−	0.1−	1999 12 29	568	0.5+	0.6−	1999 12 31	695	0.2−	0.2+
1999 04 08	568	0.0	0.1+	1999 12 29	568	0.4+	0.5−	1999 12 31	695	0.0	0.2+

1999 CG₁₁₉

Id. C. Veillet (1999 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	318.05373		(2000.0)		P		Q
<i>n</i>	0.00265658	ω	257.66195	−0.89378171			+0.38081593
<i>a</i>	51.6321963	Ω	304.26374	−0.21001168			−0.82212035
<i>e</i>	0.3458747	<i>i</i>	16.65908	−0.39629452			−0.42319897
<i>P</i>	371	<i>H</i>	7.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1999 02 11	568	0.1+	0.2−	1999 02 17	568	0.3−	0.3+	1999 12 29	568	0.1+	0.0
1999 02 11	568	0.2+	0.3−	1999 04 08	568	0.1+	0.1+	1999 12 29	568	0.1−	0.1−
1999 02 17	568	0.1−	0.0	1999 04 09	568	0.1+	0.1+	1999 12 30	568	0.0	0.0

1999 CH₁₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	210.74712		(2000.0)		P		Q
<i>n</i>	0.00344831	ω	156.41479	+0.17267258			+0.94178345
<i>a</i>	43.3908762	Ω	122.34852	−0.94931368			+0.23722473
<i>e</i>	0.0894171	<i>i</i>	19.96761	−0.26265511			−0.23826113
<i>P</i>	286	<i>H</i>	7.1	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1999 02 11	568	0.2+	0.0	1999 04 08	568	0.1+	0.1−	2000 01 02	568	0.1+	0.0
1999 02 11	568	0.3+	0.1−	1999 04 09	568	0.2+	0.1−	2000 01 06	568	0.2−	0.2+
1999 02 19	568	0.1+	0.3+	2000 01 02	568	0.1+	0.1−	2000 01 06	568	0.5+	0.1−
1999 02 19	568	0.1+	0.2+	2000 01 02	568	0.2+	0.1+				

1999 CL₁₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	76.27423		(2000.0)		P		Q
<i>n</i>	0.00306340	ω	284.09557	+0.58810615			−0.74136409
<i>a</i>	46.9534334	Ω	125.15672	+0.80586820			+0.57104769
<i>e</i>	0.0203367	<i>i</i>	23.29165	−0.06861192			+0.35253910
<i>P</i>	322	<i>H</i>	6.0	<i>G</i>	0.15		

Residuals in seconds of arc

1999 02 11	568	0.0	0.0	1999 04 09	568	0.0	0.1−	1999 12 29	695	0.3+	0.3+
1999 02 11	568	0.1−	0.1−	1999 04 11	568	0.1+	0.1−	1999 12 30	568	0.3−	0.4−
1999 02 17	568	0.0	0.2−	1999 12 28	695	0.1+	0.1+	1999 12 31	568	0.3−	0.5−
1999 02 17	568	0.1+	0.2+	1999 12 28	695	0.2+	0.4+	1999 12 31	568	0.4−	0.4−
1999 03 10	568	0.0	0.2+	1999 12 28	695	0.3+	0.1+				
1999 03 10	568	0.1−	0.2+	1999 12 29	695	0.1+	0.4+				

1999 CN₁₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	180.91529		(2000.0)		P		Q
<i>n</i>	0.00338864	ω	323.09186	+0.64705970			+0.76242964
<i>a</i>	43.8987357	Ω	347.22691	−0.69530183			+0.58800408
<i>e</i>	0.0174377	<i>i</i>	0.99709	−0.31284039			+0.27009674
<i>P</i>	291	<i>H</i>	8.0	<i>G</i>	0.15		

Residuals in seconds of arc

1999 02 11	568	0.6−	0.2+	1999 02 18	568	0.6−	0.2+	1999 12 31	568	0.8−	0.2+
1999 02 11	568	0.7−	0.2−	1999 12 30	568	0.9−	0.2+				
1999 02 18	568	0.7−	0.2+	1999 12 31	568	0.7−	0.5+				

1999 CX₁₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	269.78779		(2000.0)		P		Q
<i>n</i>	0.00368870	ω	114.26904	−0.45516735			+0.88032448
<i>a</i>	41.4846579	Ω	127.98409	−0.86600428			−0.40279256
<i>e</i>	0.1885419	<i>i</i>	9.75968	−0.20702479			−0.25057327
<i>P</i>	267	<i>H</i>	6.9	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1999 02 11	568	0.0	0.1+	1999 03 19	696	1.0−	0.1−	1999 04 12	568	0.0	0.3+
1999 02 11	568	0.0	0.0	1999 03 19	696	0.3−	0.1−	1999 12 30	568	0.3+	0.1−
1999 02 17	568	0.0	0.1+	1999 03 19	696	1.1+	0.8−	1999 12 31	568	0.1−	0.1+
1999 02 18	568	0.1+	0.1+	1999 04 11	568	0.2+	0.5+	1999 12 31	568	0.2−	0.0

1999 CQ₁₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	131.91171		(2000.0)		P		Q
<i>n</i>	0.00370173	ω	220.78786	+0.94705633			+0.25747986
<i>a</i>	41.3872525	Ω	123.28792	−0.20087868			+0.94120595
<i>e</i>	0.0915214	<i>i</i>	13.26473	−0.25046369			+0.21871323
<i>P</i>	266	<i>H</i>	7.0	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1999 02 12	568	0.2−	0.1+	1999 04 08	568	0.1−	0.1+	2000 01 01	568	0.1−	0.2+
1999 02 12	568	0.3−	0.1+	1999 04 09	568	0.2−	0.2+	2000 01 02	568	0.2−	0.1+
1999 02 17	568	0.1−	0.3−	2000 01 01	568	0.0	0.0	2000 01 02	568	0.1−	0.1+
1999 02 17	568	0.0	0.0	2000 01 01	568	0.3−	0.1−	2000 01 02	568	0.2−	0.3−

1999 CO₁₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.59468		(2000.0)		P		Q
<i>n</i>	0.00340381	ω	162.70397	+0.15961827			−0.98708080
<i>a</i>	43.7682714	Ω	278.10960	+0.90404907			+0.15182209
<i>e</i>	0.0838127	<i>i</i>	0.80507	+0.39650635			+0.05120100
<i>P</i>	290	<i>H</i>	7.4	<i>G</i>	0.15	<i>U</i>	7

Residuals in seconds of arc

1999 02 12	568	0.1−	0.3−	1999 04 08	568	0.1+	0.3+	2000 01 01	568	0.2−	0.0
1999 02 12	568	0.1−	0.2−	1999 04 09	568	0.0	0.3+	2000 01 02	568	0.1+	0.0
1999 02 17	568	0.0	0.0	2000 01 01	568	0.0	0.1+	2000 01 02	568	0.0	0.2−
1999 02 17	568	0.0	0.0	2000 01 01	568	0.0	0.0	2000 01 02	568	0.0	0.0

1999 FW₂₅ = 1952 RR = 1981 QB₄ = 1991 RF₁₅

Id. G. V. Williams, A. Lowe

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	249.28964		(2000.0)		P		Q
<i>n</i>	0.20174782	ω	159.96308	+0.98018219			−0.19768412
<i>a</i>	2.8791446	Ω	211.44711	+0.17824380			+0.90829662
<i>e</i>	0.0785599	<i>i</i>	1.40594	+0.08644082			+0.36867092
<i>P</i>	4.89	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1952 09 15	675	0.1−	0.6+	1999 03 19	704	0.9−	0.1+	1999 05 13	699	0.2−	0.0
1952 09 15	675	0.0	0.2−	1999 03 19	704	0.2+	0.2+	1999 05 13	699	1.4+	0.1−
1981 08 30	675	0.1−	0.7+	1999 03 19	704	1.6−	1.0−	1999 05 13	699	1.0+	0.2−
1981 08 31	675	0.5−	0.7+	1999 03 19	704	1.0−	0.0	1999 05 16	561	0.0	0.2−
1991 09 11	675	1.3+	0.7−	1999 03 20	704	0.2−	0.7+	1999 05 16	561	0.6+	0.3−
1991 09 11	675	0.1+	0.8−	1999 03 20	704	0.3+	0.2−	1999 05 16	561	0.2+	0.7−
1991 09 15	675	1.0−	0.5−	1999 03 20	704	1.7−	0.5+	1999 05 16	561	0.9+	0.1+
1991 09 15	675	1.1+	1.4−	1999 03 20	704	0.6+	1.2−				

2000 JAN. 24

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1999 GP₉ = 1979 WU₂ = 1986 VW₂ = 1995 DM₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	177.06118		(2000.0)		P		Q
<i>n</i>	0.27544327	ω	151.86483		−0.51039309		−0.85863360
<i>a</i>	2.3394545	Ω	328.75701		+0.77084537		−0.43238200
<i>e</i>	0.0380066	<i>i</i>	5.24402		+0.38117754		−0.27530738
<i>P</i>	3.58	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1979 11 16	095	0.4+	1.4−	1999 04 15	704	0.5+	0.2+
1986 11 04	010	1.7−	0.6+	1999 04 15	704	0.0	0.2−
1986 11 04	010	0.3−	0.5+	1999 04 15	699	0.3−	0.7+
1986 11 04	010	1.2+	0.5+	1999 04 15	699	0.6+	0.8+
1995 02 22	033	0.0	0.0	1999 04 15	704	0.1+	0.9−
1995 02 23	033	0.0	0.6−	1999 04 15	699	1.1+	0.1+
1995 02 24	033	0.0	0.7+	1999 04 17	699	0.4+	0.4+
1999 04 15	704	0.5+	0.1+	1999 04 17	699	0.3+	0.4+
1999 04 15	704	1.0+	0.5+	1999 04 17	699	0.1+	0.4+

1999 GV₂₀ = 1996 VW₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	256.77653		(2000.0)		P		Q
<i>n</i>	0.18142797	ω	303.99621		+0.97141915		−0.14962531
<i>a</i>	3.0902947	Ω	65.22178		+0.22054111		+0.85601817
<i>e</i>	0.0612411	<i>i</i>	11.71008		−0.08778638		+0.49481831
<i>P</i>	5.43	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 11 12	095	0.4+	0.1−	1999 04 16	704	0.0	0.2−
1996 11 15	095	0.2−	0.3+	1999 04 16	704	0.5−	0.2−
1996 11 15	095	0.2−	0.2−	1999 04 16	704	0.8+	0.3+
1999 04 12	704	0.2+	0.8−	1999 04 16	704	0.1−	0.8+
1999 04 12	704	0.2−	0.1+	1999 04 16	704	1.5−	0.2+
1999 04 12	704	1.0−	0.5+	1999 05 12	704	0.1−	0.2−
1999 04 12	704	1.5+	0.9−	1999 05 12	704	1.2−	0.7−
1999 04 12	704	1.6+	0.4−	1999 05 12	704	1.2+	0.3−
1999 04 15	704	1.2+	0.4−	1999 05 12	704	0.9+	0.5+
1999 04 15	704	0.6−	0.3+	1999 05 12	704	0.4−	0.7+
1999 04 15	704	1.5−	0.1−	1999 05 13	704	0.1−	0.3+
1999 04 15	704	0.0	0.8+	1999 05 13	704	1.1+	0.7+
				1999 05 17	704	0.9+	1.1−

1999 HF₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	162.91291		(2000.0)		P		Q
<i>n</i>	1.32959068	ω	253.33805		+0.61356559		−0.76969927
<i>a</i>	0.8190758	Ω	155.96632		+0.78146907		+0.62392928
<i>e</i>	0.4624892	<i>i</i>	25.65861		−0.11332855		+0.13518613
<i>P</i>	0.74	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1999 04 20	704	0.3−	0.3−	1999 05 05	557	0.2+	0.1−
1999 04 20	699	1.3−	0.6+	1999 05 05	557	0.2+	0.1+
1999 04 20	704	0.5−	0.1−	1999 05 05	557	0.2+	0.2−
1999 04 20	699	1.1−	0.9+	1999 05 06	557	0.2+	0.1+
1999 04 20	704	0.5−	0.0	1999 05 06	151	0.2+	0.2+
1999 04 20	699	1.4−	1.1+	1999 05 06	151	0.1+	0.6+
1999 04 20	704	0.9−	0.3−	1999 05 06	151	0.5+	0.5+
1999 04 20	704	0.5−	0.1−	1999 05 06	151	0.7+	0.2+
1999 04 20	046	0.2+	0.1+	1999 05 06	151	0.7+	0.6−
1999 04 20	046	0.1+	0.2+	1999 05 06	151	0.7+	0.4+
1999 04 20	046	0.2+	0.1+	1999 05 07	704	0.1+	0.5+
1999 04 20	046	0.2+	0.1+	1999 05 07	704	0.6+	0.5−
1999 04 21	758	0.2+	0.1+	1999 05 07	704	0.7+	0.4+
1999 04 21	758	0.2+	0.1+	1999 05 07	704	0.5+	0.1−
1999 04 21	758	0.3+	0.0	1999 05 07	704	0.8+	0.1+

1999 04 21	758	0.1+	0.2+	1999 05 07	360	0.8+	0.0	1999 05 30	121	0.6+	0.2+
1999 04 21	557	0.0	0.3-	1999 05 07	360	0.7+	0.2+	1999 05 30	121	0.6+	0.0
1999 04 21	557	0.1+	0.2-	1999 05 07	360	0.9+	0.2+	1999 06 02	118	0.1+	0.0
1999 04 21	557	0.1+	0.2-	1999 05 07	557	0.1+	0.1+	1999 06 02	118	0.2+	0.2+
1999 04 21	557	0.2+	0.3-	1999 05 07	557	0.2+	0.0	1999 06 04	704	0.4-	0.1-
1999 04 21	758	0.4+	0.0	1999 05 07	557	0.2+	0.1+	1999 06 04	704	0.1+	0.2-
1999 04 21	758	0.5+	0.2+	1999 05 08	557	0.3+	0.1+	1999 06 04	704	0.2+	0.1+
1999 04 21	711	0.4+	0.4-	1999 05 08	704	0.8+	0.4+	1999 06 04	704	0.5-	0.1+
1999 04 21	711	0.4+	0.4-	1999 05 08	704	0.5+	0.3+	1999 06 04	704	0.1-	0.4-
1999 04 21	711	0.4+	0.3-	1999 05 08	704	0.4+	0.4-	1999 06 04	360	0.1-	0.1-
1999 04 21	658	0.4+	0.0	1999 05 08	704	0.1+	0.2+	1999 06 04	360	0.1-	0.1-
1999 04 21	658	0.5+	0.4+	1999 05 08	704	0.4+	0.5+	1999 06 04	360	0.3-	0.3+
1999 04 21	658	0.2+	0.4+	1999 05 08	355	0.5+	0.3+	1999 06 04	151	0.1+	0.3+
1999 04 21	151	0.1-	0.5-	1999 05 08	355	0.9+	0.5+	1999 06 04	151	1.2-	0.7-
1999 04 21	151	0.2+	0.6-	1999 05 08	355	0.7+	0.1+	1999 06 04	151	0.4-	0.6+
1999 04 21	151	0.0	0.4-	1999 05 09	726	0.1+	0.0	1999 06 04	151	1.0-	0.1-
1999 04 21	151	0.0	0.5-	1999 05 09	726	0.4+	0.0	1999 06 04	151	0.1-	0.4+
1999 04 21	151	0.1-	0.5-	1999 05 09	726	0.2+	0.1+	1999 06 04	151	0.1+	0.0
1999 04 21	151	0.1+	0.7-	1999 05 09	726	0.3+	0.1+	1999 06 05	739	0.3+	0.4+
1999 04 21	611	0.3+	0.1+	1999 05 09	726	0.4+	0.2-	1999 06 05	739	0.1+	0.3-
1999 04 21	611	0.4+	0.1+	1999 05 09	726	0.6+	0.1-	1999 06 05	739	1.0-	0.8-
1999 04 21	611	0.4+	0.4-	1999 05 09	726	0.5+	0.2-	1999 06 07	704	0.3-	0.1+
1999 04 22	658	0.3-	0.3+	1999 05 09	726	0.4+	0.2-	1999 06 07	704	0.7-	0.4+
1999 04 22	658	1.0+	0.3-	1999 05 09	118	0.1+	0.1-	1999 06 07	704	0.3-	0.2+
1999 04 22	658	1.4+	0.6-	1999 05 09	118	0.0	0.1+	1999 06 07	704	0.1-	0.2+
1999 04 22	151	0.2+	0.2-	1999 05 09	151	0.6+	0.6-	1999 06 07	704	0.3-	0.0
1999 04 22	151	0.3+	0.2-	1999 05 09	118	0.1+	0.1+	1999 06 08	704	0.4-	0.0
1999 04 22	151	0.3+	0.2-	1999 05 09	151	0.0	0.5-	1999 06 08	704	0.7-	0.2-
1999 04 22	151	0.1+	0.1-	1999 05 09	151	0.1+	0.4-	1999 06 08	704	0.6-	0.0
1999 04 22	151	0.2+	0.1-	1999 05 09	610	0.3+	0.2-	1999 06 08	704	0.6-	0.1-
1999 04 22	151	0.4+	0.3-	1999 05 09	151	0.4+	0.5-	1999 06 08	704	0.5-	0.2-
1999 04 22	557	0.1+	0.1+	1999 05 09	610	0.3+	0.1-	1999 06 09	587	0.0	0.6-
1999 04 22	557	0.0	0.1+	1999 05 09	557	0.2+	0.0	1999 06 09	587	0.1-	0.7-
1999 04 22	557	0.1-	0.1+	1999 05 09	610	0.1+	0.1-	1999 06 11	071	0.1-	0.1+
1999 04 23	557	0.2+	0.0	1999 05 09	151	0.1-	0.0	1999 06 11	071	0.2+	0.2-
1999 04 23	557	0.2+	0.1-	1999 05 09	610	0.0	0.1-	1999 06 11	071	0.1+	0.3+
1999 04 23	557	0.2+	0.2-	1999 05 09	610	0.0	0.0	1999 06 11	071	1.8-	1.7-
1999 04 23	658	0.6-	0.3+	1999 05 09	151	0.3+	0.2-	1999 06 11	071	0.5+	0.1-
1999 04 23	658	0.1+	0.2-	1999 05 09	557	0.3+	0.0	1999 06 19	151	0.4+	0.8+
1999 04 23	658	0.4+	0.0	1999 05 09	127	0.1+	0.4+	1999 06 19	151	0.7-	0.8-
1999 04 24	557	0.1+	0.1+	1999 05 09	127	0.0	0.2+	1999 06 19	151	0.5+	0.0
1999 04 24	557	0.1+	0.1+	1999 05 09	127	0.3+	0.3+	1999 06 19	151	0.0	0.6+
1999 04 24	557	0.1+	0.1+	1999 05 09	557	0.2+	0.0	1999 06 19	151	0.1-	0.8-
1999 04 24	557	0.0	0.1+	1999 05 10	557	0.2+	0.2-	1999 06 20	900	0.3-	0.1+
1999 04 24	130	0.3+	0.2+	1999 05 10	557	0.2+	0.1-	1999 06 20	900	0.1+	0.0
1999 04 24	130	0.6+	0.4+	1999 05 10	739	0.9+	0.1+	1999 06 22	151	0.4-	0.3+
1999 04 24	130	0.0	0.3+	1999 05 10	739	0.4+	0.4-	1999 06 22	151	0.4-	0.2+
1999 04 24	130	0.5+	0.2-	1999 05 11	360	0.4+	0.2+	1999 06 22	151	0.7-	0.4+
1999 04 25	835	0.2+	0.4-	1999 05 11	360	0.1+	0.3+	1999 06 22	151	0.2-	0.1-
1999 04 25	835	0.5+	0.2-	1999 05 11	360	0.1-	0.3+	1999 06 22	151	0.5-	0.3-
1999 04 25	835	0.2+	0.4-	1999 05 11	900	0.2+	0.1+	1999 06 25	046	0.1+	0.0
1999 04 25	104	0.3+	0.4+	1999 05 11	900	0.3+	0.3+	1999 06 25	046	0.4+	0.2+
1999 04 25	104	0.3+	0.1-	1999 05 13	121	0.3+	0.1-	1999 06 25	046	0.2+	0.1+
1999 04 25	104	0.2+	0.1-	1999 05 13	121	0.4-	0.5-	1999 06 25	046	0.5+	0.3+
1999 04 25	104	0.1+	0.4-	1999 05 13	121	0.5+	0.2+	1999 06 28	151	0.6-	1.2+
1999 04 25	151	0.2+	0.2-	1999 05 13	121	0.3+	0.4-	1999 06 28	151	0.8-	0.7-
1999 04 25	151	0.0	0.2-	1999 05 13	121	0.2+	0.2+	1999 06 28	151	0.4-	0.5-
1999 04 25	151	0.1-	0.1-	1999 05 14	557	0.0	0.2-	1999 06 28	151	0.1+	0.0
1999 04 25	151	0.1+	0.1-	1999 05 14	557	0.1-	0.0	1999 06 28	151	1.1-	0.7-
1999 04 25	151	0.0	0.0	1999 05 14	557	0.1-	0.1-	1999 06 29	118	0.8+	0.4+
1999 04 25	151	0.0	0.2-	1999 05 14	557	0.0	0.1-	1999 06 29	118	0.5+	0.5+
1999 04 26	726	0.3-	0.2-	1999 05 15	121	0.4+	0.8-	1999 07 01	151	0.6+	0.3-
1999 04 26	726	0.0	0.1+	1999 05 15	121	0.2-	0.3+	1999 07 01	151	0.7+	0.8+
1999 04 26	726	0.1+	0.3-	1999 05 15	127	0.1-	0.1+	1999 07 01	151	0.2+	0.1-
1999 04 26	726	0.1-	0.0	1999 05 15	127	0.0	0.1-	1999 07 01	151	0.1-	0.4+
1999 04 26	726	0.1+	0.1-	1999 05 15	127	0.0	0.1-	1999 07 01	151	0.4+	0.1-
1999 04 26	726	0.1+	0.2-	1999 05 15	121	0.2+	0.5-	1999 07 01	151	0.2-	0.2-
1999 04 26	726	0.1+	0.4-	1999 05 16	118	0.2+	0.4-	1999 07 02	151	1.2-	1.4-

1999 04 26	726	0.2-	0.3-	1999 05 16	118	0.1+	0.6-	1999 07 02	151	(2.1-	0.2-)	1999 05 01	151	0.4+	0.1-	1999 05 26	726	0.2-	0.1-	1999 08 07	151	0.2+	0.2+
1999 04 26	726	0.2-	0.0	1999 05 16	118	0.1-	0.3-	1999 07 02	151	1.0-	0.6-	1999 05 01	151	0.1-	0.4-	1999 05 26	726	0.2-	0.7-	1999 08 09	846	(1.7-	2.0-)
1999 04 26	726	0.2+	1.0-	1999 05 16	557	0.1+	0.1-	1999 07 02	151	0.7-	1.1-	1999 05 01	151	0.0	0.0	1999 05 26	726	0.4-	0.3-	1999 08 09	846	1.1-	0.0
1999 04 26	557	0.4-	0.2-	1999 05 16	557	0.2+	0.0	1999 07 02	151	(2.2-	0.8+)	1999 05 01	151	0.1+	0.1-	1999 05 26	726	0.3-	0.3+	1999 08 09	846	1.1-	0.7-
1999 04 26	557	0.2-	0.2-	1999 05 16	557	0.4+	0.0	1999 07 11	846	0.4+	0.1+	1999 05 01	151	0.3-	0.2-	1999 05 26	151	0.0	0.5+	1999 08 09	846	0.4-	0.8-
1999 04 26	557	0.2-	0.2-	1999 05 17	151	0.6+	1.7+	1999 07 11	846	1.0+	0.3+	1999 05 02	726	0.4-	0.3-	1999 05 26	151	0.2-	0.2+	1999 08 13	151	(2.6-	0.2-)
1999 04 26	557	0.3-	0.1+	1999 05 17	151	0.9+	0.2+	1999 07 12	846	0.0	0.7+	1999 05 02	726	0.1+	0.4-	1999 05 26	151	0.4+	0.4+	1999 08 13	151	0.2-	0.1+
1999 04 27	900	0.1-	0.1+	1999 05 17	151	0.5+	0.6+	1999 07 12	846	0.1+	0.8+	1999 05 02	726	0.9-	0.7+	1999 05 26	151	0.2+	0.5+	1999 08 13	151	0.0	0.0
1999 04 27	900	0.2+	0.1-	1999 05 17	151	0.6-	1.0+	1999 07 12	846	0.4+	1.3+	1999 05 02	726	0.3-	0.0	1999 05 26	151	0.2-	0.7-	1999 08 13	151	0.5-	0.3-
1999 04 28	151	0.6-	0.2-	1999 05 17	151	0.4+	0.0	1999 07 14	587	0.2+	0.2-	1999 05 02	726	0.2-	0.0	1999 05 26	151	0.3+	0.5+	1999 08 13	151	0.5-	0.3-
1999 04 28	151	0.9-	0.1-	1999 05 17	151	0.2-	0.1-	1999 07 14	587	0.4+	0.1+	1999 05 02	726	0.2-	1.4-	1999 05 26	628	0.2-	0.6+	1999 08 20	151	(2.3+	0.8+)
1999 04 28	151	0.7-	0.1-	1999 05 17	628	0.7-	0.1-	1999 07 16	151	0.6+	0.6-	1999 05 02	108	0.4+	0.8-	1999 05 26	628	0.0	0.5+	1999 08 20	151	(2.8-	3.1+)
1999 04 28	151	0.4-	0.4-	1999 05 17	628	0.5-	0.6+	1999 07 16	151	0.4+	0.6-	1999 05 02	108	0.6+	1.8-	1999 05 26	628	0.1-	0.4+	1999 08 20	151	0.2-	1.9-
1999 04 28	151	1.0-	0.2-	1999 05 17	628	0.3-	0.0	1999 07 16	151	0.3-	0.8-	1999 05 02	108	1.2-	1.4-	1999 05 26	628	0.1-	0.1+	1999 08 20	151	1.3+	0.9+
1999 04 28	151	0.7-	0.1+	1999 05 18	636	0.4-	0.6+	1999 07 16	151	0.2-	0.9-	1999 05 02	108	1.8+	1.2-	1999 05 26	636	0.3-	0.5+	1999 08 20	151	1.4+	0.4+
1999 04 28	046	0.1-	0.2-	1999 05 18	636	0.3-	0.5+	1999 07 16	151	0.4-	0.5-	1999 05 02	151	0.0	1.0+	1999 05 26	636	0.1+	0.5+	1999 08 21	118	0.1-	1.2+
1999 04 28	046	0.1-	0.1-	1999 05 18	636	0.1-	0.6+	1999 07 16	151	0.4+	1.0-	1999 05 02	151	0.0	0.1-	1999 05 26	636	0.0	0.7+	1999 08 21	118	0.1+	0.4+
1999 04 28	046	0.1-	0.0	1999 05 18	151	0.2+	0.8+	1999 07 18	595	0.1+	0.9-	1999 05 02	151	0.1-	0.2-	1999 05 27	726	0.2+	0.1+	1999 08 25	118	0.3+	0.7-
1999 04 28	118	0.8-	0.0	1999 05 18	151	0.1-	0.3+	1999 07 18	595	0.2+	0.6-	1999 05 02	151	0.1-	0.1+	1999 05 27	726	0.1+	0.4-	1999 08 25	118	0.1-	0.4-
1999 04 28	118	0.8-	0.1+	1999 05 18	151	0.1-	0.4+	1999 07 24	151	1.2-	0.3+	1999 05 02	151	0.1-	0.2-	1999 05 27	726	0.3+	0.1+	1999 08 29	151	1.1-	1.0+
1999 04 28	118	0.7-	0.0	1999 05 18	151	0.1+	0.1+	1999 07 24	151	0.6-	0.6-	1999 05 02	151	0.0	0.1-	1999 05 27	726	0.1+	0.3+	1999 08 29	151	1.6+	0.8+
1999 04 28	636	0.5-	0.6-	1999 05 18	151	0.0	0.0	1999 07 24	151	0.4-	0.0	1999 05 02	636	0.8+	0.1-	1999 05 27	151	1.4+	1.9-	1999 08 29	151	(2.3-	0.3+)
1999 04 28	636	0.2-	0.8-	1999 05 18	557	0.1+	0.2+	1999 07 24	151	1.0-	0.8-	1999 05 02	636	0.9+	0.3-	1999 05 27	151	(1.7+	3.0-)	1999 09 02	151	0.9+	0.8-
1999 04 28	636	0.2-	0.6-	1999 05 18	151	0.3+	0.1+	1999 07 24	151	1.4-	1.2-	1999 05 02	636	0.9+	0.2-	1999 05 27	151	0.2-	0.8+	1999 09 02	151	0.8+	1.0-
1999 04 29	699	1.1-	1.0+	1999 05 18	557	0.1+	0.2+	1999 07 25	859	0.4+	0.7-	1999 05 02	636	1.0+	0.2-	1999 05 27	151	0.1-	0.0	1999 09 02	151	0.3+	1.4-
1999 04 29	699	1.2-	1.0+	1999 05 18	557	0.1+	0.1+	1999 07 25	859	0.1+	0.2+	1999 05 03	557	0.0	0.0	1999 05 27	151	0.4+	0.2+	1999 09 02	151	0.2+	0.5-
1999 04 29	699	1.0-	0.8+	1999 05 19	151	0.4+	0.3-	1999 07 25	859	0.9+	0.2-	1999 05 03	636	0.1+	0.1-	1999 05 27	151	0.2+	0.3+	1999 09 02	151	1.2+	0.5-
1999 04 29	658	0.3-	0.3-	1999 05 19	151	0.1-	0.1-	1999 07 25	118	0.4+	0.7+	1999 05 03	557	0.0	0.1+	1999 05 28	151	1.8-	0.9-	1999 09 02	151	0.8+	1.2-
1999 04 29	658	0.6+	0.3-	1999 05 19	151	0.3+	0.1+	1999 07 25	118	0.0	0.8+	1999 05 03	636	0.1-	0.1-	1999 05 28	151	0.3+	1.2-	1999 09 02	151	0.6-	0.8-
1999 04 29	658	0.1+	0.3-	1999 05 19	151	0.3-	0.3+	1999 07 25	118	0.6+	0.7+	1999 05 03	636	0.0	0.1+	1999 05 28	151	0.4-	0.2-	1999 12 30	413	0.4+	0.5+
1999 04 29	046	0.7-	0.3+	1999 05 19	151	0.4-	0.1+	1999 07 25	151	0.8+	1.1+	1999 05 03	636	0.0	0.1+	1999 05 28	151	0.4-	0.7+	1999 12 30	413	0.4-	0.6-
1999 04 29	046	0.6-	0.3+	1999 05 19	151	0.0	0.2+	1999 07 25	151	0.0	1.6+	1999 05 03	557	0.0	0.0	1999 05 28	151	0.1-	0.2+	2000 01 03	104	0.8+	0.2+
1999 04 29	046	0.8-	0.3+	1999 05 20	704	0.6+	0.1+	1999 07 25	151	0.5-	0.9+	1999 05 04	557	0.0	0.0	1999 05 28	151	0.4+	0.1-	2000 01 03	104	0.4+	0.5+
1999 04 29	046	0.7-	0.2+	1999 05 20	704	0.6+	0.5+	1999 07 25	151	0.6-	0.4+	1999 05 04	151	0.4+	0.2-	1999 05 28	046	0.0	0.9+	2000 01 04	104	0.4+	0.6+
1999 04 29	118	0.4-	0.2+	1999 05 20	704	0.1+	0.1-	1999 07 26	151	0.6-	0.4+	1999 05 04	151	0.0	0.0	1999 05 28	046	0.3-	0.7+	2000 01 04	104	0.1-	0.5+
1999 04 29	118	0.4-	0.2+	1999 05 20	704	0.0	0.1-	1999 07 26	151	1.0+	1.4+	1999 05 04	151	0.3+	0.3+	1999 05 28	046	0.1-	0.7+	2000 01 04	104	0.4+	0.4+
1999 04 29	118	0.4-	0.1+	1999 05 20	704	0.2-	0.1+	1999 07 26	151	0.3-	0.4-	1999 05 04	151	0.0	0.0	1999 05 28	046	0.0	0.7+	2000 01 04	104	0.5+	0.6+
1999 04 29	636	0.1-	0.0	1999 05 20	628	0.0	0.0	1999 07 26	151	0.2+	0.8+	1999 05 04	151	0.4-	0.0	1999 05 29	726	0.1+	0.4+	2000 01 04	104	0.7+	0.3+
1999 04 29	636	0.1+	0.4+	1999 05 20	636	0.8+	0.2-	1999 07 26	595	0.1-	0.9+	1999 05 04	151	0.1+	0.1+	1999 05 29	726	0.3+	0.2-				
1999 04 30	636	0.2-	0.1-	1999 05 20	628	0.1+	0.2-	1999 07 26	595	0.3+	0.8+	1999 05 05	557	0.1+	0.2+	1999 05 29	726	0.5+	0.3+				
1999 04 30	636	0.0	0.1-	1999 05 20	636	0.7+	0.0	1999 07 26	595	0.3+	0.4+												
1999 04 30	726	0.2+	0.2+	1999 05 20	636	0.9+	0.1-	1999 07 29	151	1.0-	1.6-												
1999 04 30	726	0.2+	0.3+	1999 05 20	628	0.6+	0.0	1999 07 29	151	0.8+	0.2-												
1999 04 30	726	0.3+	0.4+	1999 05 20	636	1.1+	0.2-	1999 07 29	151	1.4+	1.2-												
1999 04 30	726	0.1+	0.6+	1999 05 20	628	0.0	0.3+	1999 07 29	151	1.4-	0.2-												
1999 04 30	726	0.1+	0.1+	1999 05 22	628	0.4+	0.2+	1999 07 31	540	0.1-	1.2+												
1999 04 30	402	0.1-	0.1-	1999 05 22	628	0.3+	0.2-	1999 07 31	540	0.3+	0.4+												
1999 04 30	402	0.2-	0.0	1999 05 22	628	0.1-	0.2+	1999 07 31	540	0.4-	0.3+												
1999 04 30	402	0.1-	0.0	1999 05 23	726	0.4+	0.0	1999 07 31	540	1.4+	0.8+												
1999 04 30	151	0.5-	0.3+	1999 05 23	726	0.1+	0.5-	1999 08 02	151	(3.0-	0.2-)												
1999 04 30	151	0.6-	0.3+	1999 05 23	726	0.2-	0.6-	1999 08 02	151	0.6+	0.1+												
1999 04 30	151	0.3-	0.1-	1999 05 23	610	1.0-	0.2+	1999 08 02	151	0.5+	0.5-												
1999 04 30	151	0.3-	0.0	1999 05 23	610	0.8-	0.1+	1999 08 02	151	0.0	0.3-												
1999 04 30	151	0.5-	0.0	1999 05 23	610	0.8-	0.1+	1999 08 02	151	1.6-	0.3+												
1999 04 30	151	0.1-	0.2+	1999 05 23	610	0.7-	0.1+	1999 08 02	151	0.5+	1.3-												
1999 04 30	636	0.7-	1.0+	1999 05 23	610	0.5-	0.1+	1999 08 03	151	1.1+	0.1-												
1999 04 30	636	0.7-																					

2000 JAN. 24

M.P.C. 37813

1999 05 07	711	0.4−	0.2−	1999 05 20	360	0.2−	0.8−	1999 07 05	595	0.4+	0.1−
1999 05 07	719	(2.8+	0.7+)	1999 05 20	360	0.1+	0.8−	1999 07 05	595	0.8−	0.3+
1999 05 07	711	0.3−	0.3−	1999 05 21	118	0.5+	0.3−	1999 07 05	595	0.2−	0.9−
1999 05 07	719	1.3+	0.7+	1999 05 21	118	0.6+	0.3−	1999 07 07	587	0.7+	1.1−
1999 05 07	658	0.5−	0.5+	1999 05 21	118	0.6+	0.3−	1999 07 07	587	1.2+	1.4+
1999 05 07	658	0.7−	0.7−	1999 05 23	118	0.4+	0.5+	1999 07 08	587	0.1+	1.2+
1999 05 07	658	0.1+	0.6+	1999 05 23	118	0.3+	0.2+	1999 07 08	587	0.2−	0.3+
1999 05 07	046	0.9−	0.2+	1999 05 23	118	0.1−	0.0	1999 09 14	413	0.0	0.3+
1999 05 07	046	0.4−	0.4+	1999 05 26	658	0.1+	0.2−	1999 09 14	413	0.0	0.3+
1999 05 07	046	0.0	0.5+	1999 05 26	658	0.4+	0.4−	1999 10 07	413	0.1−	0.2+
1999 05 07	046	0.4+	0.0	1999 05 26	658	0.0	0.1+	1999 10 07	413	0.2−	0.3+
1999 05 07	046	0.3+	0.9+	1999 06 03	704	0.0	0.0	1999 12 30	413	0.1−	0.9+
1999 05 09	046	0.3−	0.1−	1999 06 03	704	0.2−	0.7+	1999 12 30	413	0.3+	0.7−
1999 05 09	046	0.0	0.2−	1999 06 03	704	0.2−	0.4+				

1999 JD₆

Id. DANEOPS (1990 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Gnädig

<i>M</i>	84.59261		(2000.0)	P	Q
<i>n</i>	1.18863839	ω	309.12248	+0.15720086	−0.96195586
<i>a</i>	0.8826114	Ω	130.32283	+0.97217642	+0.11094867
<i>e</i>	0.6329446	<i>i</i>	17.04246	+0.17366894	+0.24966241
<i>P</i>	0.83	<i>H</i>	16.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1990 06 22	675	0.9−	0.2−	1999 05 19	118	0.4−	0.2+	1999 06 07	704	0.2+	0.2−
1990 06 22	675	1.7+	1.0−	1999 05 19	704	0.4−	1.5−	1999 06 07	704	0.7+	0.2+
1999 05 12	699	2.0+	0.6+	1999 05 19	704	0.2−	0.2−	1999 06 07	704	0.5+	0.0
1999 05 12	699	1.6+	0.5+	1999 05 19	704	(2.4+	0.0)	1999 06 07	704	0.3+	0.0
1999 05 12	699	1.6+	0.7+	1999 05 19	704	0.1+	0.4−	1999 06 08	704	0.2+	0.4−
1999 05 12	620	0.9−	0.1+	1999 05 19	704	0.2−	0.2−	1999 06 08	704	0.5+	0.0
1999 05 12	620	0.7−	0.1+	1999 05 20	860	0.2+	0.7−	1999 06 08	704	0.3+	0.3−
1999 05 12	620	0.4−	0.1+	1999 05 20	860	(1.1+	2.1+)	1999 06 08	704	0.6+	0.0
1999 05 12	620	0.2−	0.0	1999 05 20	360	0.1−	0.1−	1999 06 08	704	0.7+	0.0
1999 05 13	758	0.2+	0.0	1999 05 20	360	0.1+	0.3+	1999 06 08	360	0.2−	0.2−
1999 05 13	758	0.5−	0.1−	1999 05 20	360	0.1−	0.1−	1999 06 08	360	0.0	0.0
1999 05 13	758	0.4−	0.1−	1999 05 21	557	0.2+	0.0	1999 06 08	360	0.1+	0.1+
1999 05 13	704	0.2−	0.1+	1999 05 21	557	0.0	0.0	1999 06 08	610	1.0+	1.5−
1999 05 13	704	0.2−	0.2+	1999 05 22	557	0.1−	0.4−	1999 06 08	610	1.1+	1.1−
1999 05 13	704	0.4−	1.2+	1999 05 22	557	0.3−	0.5+	1999 06 08	610	1.1+	0.9−
1999 05 13	734	0.3−	0.2−	1999 05 23	726	1.3−	0.1−	1999 06 08	610	1.1+	0.6−
1999 05 13	704	0.1+	0.3+	1999 05 23	726	0.3+	0.3+	1999 06 08	610	1.1+	0.3−
1999 05 13	734	0.4−	0.2−	1999 05 23	726	1.0−	0.5+	1999 06 09	587	1.1+	0.3+
1999 05 13	734	0.9−	0.3+	1999 05 23	557	0.4−	0.5+	1999 06 11	704	0.6+	0.2+
1999 05 13	734	0.8−	0.4+	1999 05 23	587	0.5−	0.9+	1999 06 11	704	0.7+	0.1+
1999 05 13	704	1.2−	0.3+	1999 05 23	587	0.2+	1.0+	1999 06 11	704	0.8+	0.4+
1999 05 13	713	0.4+	0.4−	1999 05 23	557	0.1−	0.0	1999 06 11	704	0.9+	0.0
1999 05 13	713	0.1+	0.3−	1999 05 23	610	0.1−	1.1+	1999 06 11	704	0.8+	0.0
1999 05 13	713	0.2−	0.2−	1999 05 23	557	0.0	0.9+	1999 06 11	071	1.0−	1.1−
1999 05 13	704	0.3−	0.5+	1999 05 23	610	0.1+	0.5+	1999 06 11	071	0.8−	0.9−
1999 05 13	704	1.0−	0.2+	1999 05 23	610	0.2+	0.3−	1999 06 11	071	0.2−	0.0
1999 05 13	704	0.9−	0.2+	1999 05 23	610	0.5+	1.0−	1999 06 11	071	(0.3−	7.7−)
1999 05 13	704	0.9+	0.1+	1999 05 23	610	0.5+	1.6−	1999 06 12	704	0.1+	0.3−
1999 05 13	704	1.8−	0.5−	1999 05 23	557	0.3+	0.0	1999 06 12	704	0.7+	0.6−
1999 05 13	046	0.1+	0.1+	1999 05 24	557	0.1−	0.4+	1999 06 12	704	0.0	0.6−
1999 05 13	046	0.2+	0.1−	1999 05 24	557	0.0	0.2+	1999 06 12	704	0.8+	0.3−
1999 05 13	046	0.3+	0.3+	1999 05 24	557	0.7+	1.0−	1999 06 12	704	0.0	0.5−
1999 05 13	046	0.0	0.2+	1999 05 24	557	0.6+	1.0−	1999 06 12	557	0.2−	0.2−
1999 05 14	719	0.8−	0.2+	1999 05 24	629	0.3+	1.4−	1999 06 12	557	0.7−	0.4−
1999 05 14	719	0.5+	0.3+	1999 05 24	629	0.0	1.1+	1999 06 12	557	0.2−	0.1+
1999 05 14	719	(1.2−	4.6+)	1999 05 25	629	0.2+	0.6+	1999 06 13	557	0.5−	0.1−
1999 05 14	719	0.9−	1.7+	1999 05 25	629	0.3−	0.5+	1999 06 14	071	(2.9−	1.2−)
1999 05 14	952	0.5−	0.2+	1999 05 25	629	0.6+	0.4+	1999 06 14	071	1.7−	0.5+
1999 05 14	952	0.4+	0.4+	1999 05 26	658	0.1+	0.1−	1999 06 16	071	1.4+	0.6+
1999 05 14	952	0.1−	0.2−	1999 05 26	658	0.2−	0.0	1999 06 16	071	0.9−	0.6+
1999 05 14	952	0.5−	0.5−	1999 05 26	658	0.0	0.0	1999 06 16	071	0.2+	0.5+
1999 05 15	704	0.7+	0.3+	1999 05 26	118	0.6+	0.3−	1999 06 16	071	0.0	0.6+

1999 05 15	704	1.7+	0.3+	1999 05 26	118	0.4+	0.1+	1999 06 16	071	0.1−	0.2+
1999 05 15	704	(2.4+	1.5+)	1999 05 26	118	0.8+	0.3−	1999 07 01	046	0.3−	0.3−
1999 05 15	704	0.5+	0.3+	1999 05 27	711	0.2+	0.3−	1999 07 01	046	0.3+	0.3+
1999 05 15	704	0.1+	0.5+	1999 05 27	711	0.2+	0.1−	1999 07 01	046	0.5+	0.2+
1999 05 16	540	0.0	0.2+	1999 05 27	046	0.3−	0.1−	1999 07 01	046	0.3+	0.1−
1999 05 16	540	0.5+	0.4+	1999 05 27	046	0.4+	0.6−	1999 07 01	595	1.8−	0.7+
1999 05 16	540	0.6−	0.6+	1999 05 27	046	0.3+	0.7−	1999 07 02	595	0.9−	0.9+
1999 05 16	540	0.6−	0.2+	1999 05 30	104	1.8+	0.7−	1999 07 05	046	1.2+	0.8−
1999 05 16	151	(2.1−	2.8+)	1999 05 30	104	1.8+	0.2−	1999 07 05	046	(0.6+	2.1+)
1999 05 16	151	(2.0−	0.6−)	1999 05 30	104	1.4+	0.2−	1999 07 05	046	0.2−	0.0
1999 05 16	151	0.2+	0.0	1999 05 31	402	0.0	0.1+	1999 07 08	587	0.8+	0.9+
1999 05 16	151	1.0−	0.6−	1999 05 31	402	0.4−	0.2+	1999 07 08	587	0.0	0.2+
1999 05 16	151	1.3−	1.1−	1999 05 31	402	0.1+	0.2+	1999 07 09	658	0.3+	0.2+
1999 05 16	151	0.1−	0.5−	1999 06 01	118	0.2−	0.4−	1999 07 09	658	0.1−	0.4−
1999 05 17	046	0.1+	0.2+	1999 06 01	118	0.2+	0.2−	1999 07 09	658	0.4+	0.0
1999 05 17	046	0.0	0.0	1999 06 03	118	0.4−	0.2+	1999 07 20	658	0.3+	0.3+
1999 05 17	046	0.1−	0.1+	1999 06 03	118	0.0	0.2+	1999 07 20	658	0.2−	0.1+
1999 05 17	046	0.2−	0.1−	1999 06 04	704	0.0	0.4−	1999 07 20	658	0.1+	0.2+
1999 05 17	046	0.0	0.2+	1999 06 04	704	0.6−	0.1+	1999 08 03	413	0.3+	0.4+
1999 05 17	118	0.1−	0.2+	1999 06 04	704	0.6−	0.7−	1999 08 03	413	0.2+	0.2+
1999 05 17	118	0.0	0.2+	1999 06 04	704	0.1−	0.1+	1999 08 30	413	0.8+	0.6+
1999 05 17	118	0.1−	0.1+	1999 06 04	704	0.7−	0.3+	1999 08 30	413	0.3−	0.3+
1999 05 17	900	0.8−	0.7+	1999 06 04	610	0.3+	0.4−	1999 08 30	413	0.7−	0.2+
1999 05 17	900	1.5−	0.4+	1999 06 04	610	0.3+	0.1−	1999 08 31	413	0.5+	0.1+
1999 05 18	151	1.4−	1.8−	1999 06 04	610	0.3+	0.1+	1999 08 31	413	0.4+	0.1+
1999 05 18	151	0.2−	0.3+	1999 06 04	610	0.4+	0.3+	1999 10 15	413	0.3−	0.4+
1999 05 18	151	1.5−	0.1+	1999 06 04	610	0.4+	0.6+	1999 10 15	413	0.0	0.1+
1999 05 18	151	0.5−	0.1+	1999 06 04	108	(2.9+	2.6−)	1999 10 16	413	0.3−	0.1−
1999 05 18	151	0.6−	0.2−	1999 06 04	108	0.6+	1.9−	1999 10 17	413	0.1+	0.2−
1999 05 18	151	0.5+	0.4−	1999 06 04	108	(2.1−	3.0−)	1999 10 17	413	0.4−	0.1+
1999 05 19	118	0.2−	0.1+	1999 06 04	108	(2.1+	3.7−)	1999 10 17	413	0.1−	0.2−
1999 05 19	118	0.2−	0.2+	1999 06 07	704	0.4+	0.6+				

1999 JS₅₄ = 1997 WU₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	143.25625		(2000.0)	P	Q
<i>n</i>	0.28739702	ω	226.20808	−0.93960391	−0.33573838
<i>a</i>	2.2741261	Ω	294.07232	+0.33121037	−0.84293413
<i>e</i>	0.1614974	<i>i</i>	4.17774	+0.08627972	−0.42040670
<i>P</i>	3.43	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 03 26 704 0.3+ 0.4+ 1999 05 17 704 0.4- 0.2- 1999 06 14 704 0.2+ 0.2+
 1999 05 12 704 1.0+ 0.6+ 1999 06 08 703 0.2- 1.0-

1999 JQ₁₁₃ = 1992 DC₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.16996780	ω	184.85673	+0.85424543	+0.51955372		
<i>a</i>	3.2276885	Ω	143.82234	-0.47593104	+0.79560139		
<i>e</i>	0.1642395	<i>i</i>	1.76000	-0.20917552	+0.31158042		
<i>P</i>	5.80	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 02 29	691	0.5+	0.5-	1999 05 13	704	(1.5+ 2.4-)	1999 06 15	704	0.2-	0.8-
1992 02 29	691	0.4+	0.1-	1999 05 13	704	1.2-	0.5-	1999 06 15	704	0.2+ 0.5+
1992 02 29	691	0.2+	0.1-	1999 05 13	704	0.4+	1.0+	1999 06 15	704	0.4- 0.2+
1992 03 08	809	0.7+	0.2+	1999 05 13	704	0.4-	0.8-	1999 06 15	704	0.4+ 0.3-
1992 03 09	809	1.4-	1.2+	1999 05 18	704	0.8-	0.4+	1999 06 15	704	0.2- 0.2-
1992 03 11	691	0.3+	0.3-	1999 05 18	704	0.9+	0.2+	1999 06 18	691	0.5- 0.6-
1992 03 11	691	0.2-	0.3-	1999 05 18	704	1.4+	1.2+	1999 06 18	691	0.0 0.2-
1992 03 11	691	0.5-	0.2-	1999 05 18	704	0.5+	0.1+	1999 06 18	691	0.0 0.1-

1999 JB₁₁₄ = 1994 JM₂ = 1998 FJ₁₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19986550	ω	209.48929	+0.99949138	+0.02149796		
<i>a</i>	2.8971935	Ω	149.25179	-0.01154849	+0.93248371		
<i>e</i>	0.1008248	<i>i</i>	2.64062	-0.02972571	+0.36057172		
<i>P</i>	4.93	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 05 01	691	0.7-	0.4+	1998 03 22	704	0.4-	0.0	1999 05 18	704	0.7-	0.5+
1994 05 01	691	0.0	0.4-	1998 03 22	704	0.0	0.6-	1999 05 18	704	0.7+	0.3-
1994 05 01	691	0.0	0.1-	1998 03 22	704	(0.5+ 2.5+)		1999 05 18	704	1.0+	0.7+
1994 05 15	691	0.3+	0.0	1998 03 22	704	0.4+	1.9+	1999 06 14	704	0.6-	0.3-
1994 05 15	691	0.0	0.4+	1999 05 13	704	0.9-	0.6+	1999 06 14	704	0.2-	0.7+
1994 05 15	691	0.6+	0.5+	1999 05 13	704	1.0+	1.8-	1999 06 14	704	0.3+	0.5-
1998 03 20	704	1.2-	0.4-	1999 05 13	704	0.9-	0.3-	1999 06 14	704	0.7-	0.1-
1998 03 20	704	0.9+	0.5-	1999 05 13	704	1.2+	0.8+	1999 06 14	704	0.4+	0.6-
1998 03 20	704	0.0	0.4+	1999 05 13	704	1.1-	1.0-	1999 06 19	691	0.1+	0.4+
1998 03 20	704	1.2-	1.7-	1999 05 18	704	0.7+	0.1-	1999 06 19	691	0.0	0.6+
1998 03 22	704	1.4+	1.1+	1999 05 18	704	0.6-	0.2-	1999 06 19	691	0.2+	0.3+

1999 JW₁₂₀ = 1994 JW₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20564213	ω	331.89789	-0.95117658	+0.28932772		
<i>a</i>	2.8426801	Ω	225.35148	-0.24724022	-0.92269958		
<i>e</i>	0.0764793	<i>i</i>	8.68951	-0.18475763	-0.25478412		
<i>P</i>	4.79	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 05 03	691	0.1+	0.2-	1999 05 18	704	0.6-	0.4-	1999 05 20	699	(2.4+	0.7+)
1994 05 03	691	0.1+	0.3+	1999 05 18	704	1.5-	0.7-	1999 05 20	699	(2.2+	2.2+)
1994 05 03	691	0.7-	0.6+	1999 05 18	704	0.5+	0.1-	1999 06 09	704	0.5-	0.7+
1994 05 11	691	0.3+	0.5-	1999 05 18	704	0.7-	0.3-	1999 06 09	704	0.4-	0.9+
1994 05 11	691	0.1-	0.0	1999 05 19	704	0.2-	0.1-	1999 06 09	704	0.5+	0.0
1994 05 11	691	0.3+	0.3-	1999 05 19	704	0.2-	0.0	1999 06 09	704	0.4+	0.9+
1999 05 13	704	0.1+	0.3+	1999 05 19	704	1.1+	0.1+	1999 06 14	703	1.1-	0.7+
1999 05 13	704	(4.2+	0.0)	1999 05 19	704	0.1-	0.1+	1999 06 14	703	1.0+	1.3-
1999 05 13	704	0.9+	0.2-	1999 05 19	704	0.9-	0.2+	1999 06 14	703	0.0	0.8-
1999 05 18	704	0.2+	0.7-	1999 05 20	699	1.3+	1.4+	1999 06 14	703	0.1+	0.5-

1999 JH₁₂₇ = 4197 T-1 = 1998 FH₁₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21666971	ω	231.45618	+0.98062508	+0.18537598		
<i>a</i>	2.7453892	Ω	117.77831	-0.14996630	+0.91839139		
<i>e</i>	0.1038963	<i>i</i>	4.10443	-0.12603395	+0.34956117		
<i>P</i>	4.55	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 26	675	0.2-	0.3+	1998 03 26	704	0.5-	0.3-	1999 06 11	703	0.1+	0.5+
1971 03 26	675	1.9+	0.4-	1999 05 13	704	0.0	0.7-	1999 06 11	703	0.0	0.1-
1971 03 27	675	(1.1- 4.5-)		1999 05 13	704	0.1-	1.0-	1999 06 11	703	1.4-	0.9+
1971 04 02	675	1.4-	0.9+	1999 05 13	704	0.9+	0.2-	1999 06 11	703	0.4+	1.0+
1998 03 22	704	0.7+	0.8+	1999 05 13	704	0.4+	0.5+	1999 06 15	704	0.5-	0.1-
1998 03 22	704	0.3+	0.0	1999 05 13	704	(3.0- 1.0-)		1999 06 15	704	0.4-	0.6+
1998 03 22	704	(2.8+ 0.4-)		1999 05 19	704	0.7-	0.4-	1999 06 15	704	0.4-	0.3+
1998 03 22	704	(3.8- 1.0-)		1999 05 19	704	1.2+	0.2-	1999 06 15	704	0.2+	0.3+
1998 03 26	704	1.2-	0.5-	1999 05 19	704	0.2-	1.4-	1999 06 15	704	0.0	0.1+
1998 03 26	704	0.5+	0.5-	1999 05 19	704	0.5+	0.2-				

1999 JA₁₃₆ = 1991 BL

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25774135	ω	266.78021	-0.94602002	-0.29082343		
<i>a</i>	2.4453817	Ω	256.27690	+0.32348978	-0.87450244		
<i>e</i>	0.2077924	<i>i</i>	8.46875	-0.02001195	-0.38815876		
<i>P</i>	3.82	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 01 19	391	0.7-	0.7+	1999 05 15	699	0.4+	0.3-	1999 06 06	699	0.4+	0.5+
1991 01 19	391	1.3+	0.2+	1999 05 15	699	0.0	0.1-	1999 06 09	704	0.3-	0.0
1991 01 20	391	0.3-	0.5+	1999 05 15	699	0.1+	0.1-	1999 06 09	704	0.3-	0.2-
1991 01 20	391	(2.7+ 0.0)		1999 05 16	699	0.1-	0.1-	1999 06 09	704	0.3+	0.1+
1991 01 22	391	1.1+	0.4-	1999 05 16	699	0.2-	0.1+	1999 06 09	704	0.1+	0.3-
1991 01 22	391	0.9-	0.5-	1999 05 16	699	0.2-	0.0	1999 06 09	704	0.0	0.6+
1991 01 23	391	(5.5- 1.4+)		1999 06 06	699	0.0	0.1-				
1991 01 23	391	0.5-	0.5-	1999 06 06	699	0.1-	0.0				

1999 KA₈ = 1994 LC₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18310143	ω	48.01327	+0.46955932	+0.86829074		
<i>a</i>	3.0714366	Ω	250.65323	-0.85187681	+0.39795846		
<i>e</i>	0.1020334	<i>i</i>	9.76031	-0.23199127	+0.29614229		
<i>P</i>	5.38	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 06 03	809	1.4-	0.4-	1999 05 18	704	0.4+	0.4-	1999 06 06	699	0.4+	0.4+
1994 06 03	809	0.3-	0.8-	1999 05 18	704	0.2+	0.5+	1999 06 06	699	0.4+	0.2+
1994 06 03	809	0.1-	1.0-	1999 05 18	704	1.1-	0.2+	1999 06 06	699	0.2+	0.4+
1994 06 04	809	1.1+	0.8+	1999 05 19	704	0.3+	0.3-	1999 06 09	704	0.1+	0.5-
1994 06 04	809	0.1+	0.4+	1999 05 19	704	0.0	1.4-	1999 06 09	704	1.6-	0.2-
1994 06 04	809	0.5+	1.0+	1999 05 19	704	1.0-	0.3-	1999 06 09	704	0.3+	0.4+
1999 05 18	704	0.5-	1.0+	1999 05 19	704	1.4+	1.1+	1999 06 09	704	0.3+	1.2-
1999 05 18	704	0.0	0.5-	1999 05 19	704	0.1+	0.2+	1999 06 09	704	0.1+	0.6+

1999 LT₈ = 1990 WJ₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17592856	ω	44.29006	-0.55153981	+0.83339609		
<i>a</i>	3.1543641	Ω	192.37846	-0.80385757	-0.54237192		
<i>e</i>	0.0864675	<i>i</i>	9.51142	-0.22274840	-0.10622454		
<i>P</i>	5.60	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

2000 JAN. 24

M.P.C. 37815

Residuals in seconds of arc

1990 11 11	809	1.0+	1.0-	1999 05 09	699	0.3+	0.1-	1999 06 08	704	0.7+	0.2-
1990 11 11	809	0.7+	0.5-	1999 05 09	699	0.5-	0.3+	1999 06 08	704	0.4-	0.5+
1990 11 11	809	0.4+	0.6-	1999 05 09	699	0.5+	0.3+	1999 06 08	704	0.3-	0.0
1990 11 18	809	1.6+	0.3-	1999 05 14	704	1.6-	1.2-	1999 06 08	704	0.0	0.6+
1990 11 18	809	0.9+	0.1+	1999 05 14	704	(2.5-	0.4-)	1999 06 14	704	0.7+	0.2+
1990 11 18	809	0.1-	0.7-	1999 05 14	704	(3.8-	2.6-)	1999 06 14	704	0.5+	0.2-
1990 11 20	809	1.2-	0.7+	1999 05 14	704	0.6-	0.6-	1999 06 14	704	0.1+	0.3+
1990 11 20	809	1.8-	0.3+	1999 05 14	704	0.3+	0.1+	1999 06 14	704	0.5+	0.1-
1990 11 20	809	1.5-	1.6+	1999 06 08	704	0.1+	0.0	1999 06 14	704	0.0	0.2-

1999 LK₁₀ = 1998 FT₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22528154	ω	291.53623	+0.25206498	-0.95855745		
<i>a</i>	2.6749704	Ω	143.04481	+0.94933896	+0.21833156		
<i>e</i>	0.1516965	<i>i</i>	12.75978	+0.18766670	+0.18302718		
<i>P</i>	4.38	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 03 24	704	0.4+	0.1-	1998 03 25	704	0.0	0.6-	1999 06 08	704	0.8-	0.2+
1998 03 24	704	0.2+	0.6+	1999 05 09	699	0.4+	0.0	1999 06 08	704	0.4+	0.3-
1998 03 24	704	0.1+	0.2-	1999 05 09	699	0.5-	0.2-	1999 06 08	704	0.2+	0.4-
1998 03 24	704	0.2-	0.5-	1999 05 09	699	0.6-	0.9+	1999 06 08	704	0.7-	0.1-
1998 03 24	704	0.3-	0.1+	1999 05 12	704	1.1+	0.4-	1999 06 14	704	0.2-	0.3+
1998 03 25	704	0.1+	0.4-	1999 05 12	704	0.7+	0.1+	1999 06 14	704	0.1+	0.2+
1998 03 25	704	0.7-	0.1-	1999 05 12	704	0.3+	0.7-	1999 06 14	704	0.3+	0.0
1998 03 25	704	0.4+	1.0+	1999 05 12	704	0.2-	1.4+	1999 06 14	704	0.3+	0.1-
1998 03 25	704	0.1+	0.2+	1999 05 12	704	1.0-	1.0-	1999 06 14	704	0.1+	0.0

1999 MJ₁ = 1996 VS₉ = 1998 DR₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26760281	ω	155.22829	+0.01616653	+0.99265925		
<i>a</i>	2.3849298	Ω	115.50609	-0.93807464	+0.05654687		
<i>e</i>	0.1517086	<i>i</i>	7.63156	-0.34605580	-0.10691148		
<i>P</i>	3.68	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 11 03	691	0.3-	0.0	1998 02 24	566	0.5-	0.9+	1999 06 25	699	0.1+	0.3-
1996 11 03	691	0.4-	0.0	1998 02 24	566	0.2-	0.8+	1999 06 25	699	0.3-	0.4+
1996 11 03	691	0.2+	0.2+	1998 02 24	566	0.4+	0.6+	1999 06 25	699	0.4-	0.5-
1996 11 04	691	0.0	0.3-	1998 02 25	566	0.4+	0.9-	1999 07 16	704	0.3-	0.2-
1996 11 04	691	0.4-	0.2-	1998 02 25	566	0.2+	1.6-	1999 07 16	704	0.4+	0.6-
1996 11 04	691	0.6-	0.1+	1998 02 25	566	0.8-	2.0-	1999 07 16	704	0.1-	0.5-
1996 11 06	691	0.7+	0.2-	1999 06 20	699	0.1+	1.9-	1999 07 20	699	0.1+	0.4+
1996 11 06	691	0.5+	0.3-	1999 06 20	699	0.8+	0.3+	1999 07 20	699	0.1-	0.2+
1996 11 06	691	0.6+	0.2-	1999 06 20	699	0.2+	0.5+	1999 07 20	699	0.0	0.0

1999 NB₁₈ = 1998 HZ₁₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28218133	ω	327.91130	+0.78923742	-0.60409304		
<i>a</i>	2.3020629	Ω	69.65025	+0.58535651	+0.68574611		
<i>e</i>	0.1890756	<i>i</i>	6.75879	+0.18563956	+0.40598506		
<i>P</i>	3.49	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 19	704	0.1-	0.2+	1998 04 24	704	0.6+	1.2-	1999 07 14	704	0.4+	0.7+
1998 04 19	704	0.4+	0.1+	1998 04 24	704	0.3-	0.0	1999 07 14	704	0.2+	1.8+
1998 04 19	704	0.8+	0.6-	1998 04 24	704	0.4+	0.5-	1999 07 14	704	0.4+	0.6-
1998 04 19	704	0.9-	0.2+	1999 06 13	699	1.3-	0.4+	1999 07 14	704	0.5-	0.6-
1998 04 20	704	0.7-	0.7+	1999 06 13	699	0.6-	0.9+	1999 07 14	704	0.1+	1.1-
1998 04 20	704	0.7-	0.4+	1999 06 13	699	0.5+	1.4-	1999 07 16	704	0.2-	0.2+
1998 04 20	704	1.1+	0.1-	1999 06 15	704	0.3+	0.9-	1999 07 16	704	0.2+	0.2-

1998 04 20	704	0.1-	1.7+	1999 06 15	704	0.5+	0.0	1999 07 16	704	0.3-	0.2-
1998 04 20	704	0.5-	0.8-	1999 06 15	704	0.2+	0.8+	1999 07 16	704	0.3-	0.1-
1998 04 24	704	0.6-	0.3+	1999 06 15	704	0.4+	0.0				
1998 04 24	704	0.8+	0.4-	1999 06 15	704	0.1-	0.3+				

1999 NG₁₈ = 1973 AC₃ = 1998 KB₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.16917719	ω	247.15899	+0.89648665	+0.22082808		
<i>a</i>	3.2377366	Ω	98.30728	-0.09751695	+0.94402699		
<i>e</i>	0.0155240	<i>i</i>	22.84199	-0.43220613	+0.24504695		
<i>P</i>	5.83	<i>H</i>	11.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1973 01 02	095	0.3-	0.9+	1999 06 13	699	0.3+	1.0+	1999 07 14	704	0.1-	0.1+
1998 05 23	704	0.5-	0.4-	1999 06 13	699	0.4-	0.0	1999 07 14	704	0.2-	0.2+
1998 05 23	704	0.4-	0.2-	1999 06 13	699	0.2-	0.1+	1999 07 14	704	0.0	0.0
1998 05 23	704	0.3+	0.1-	1999 06 15	704	0.0	0.2+	1999 07 16	704	0.0	0.6-
1998 05 23	704	0.8-	0.3+	1999 06 15	704	0.3+	0.3+	1999 07 16	704	0.2-	0.4+
1998 05 23	704	0.4+	0.1-	1999 06 15	704	0.2-	0.3-	1999 07 16	704	0.0	0.0
1998 05 25	704	0.2+	0.2-	1999 06 15	704	0.4+	0.0	1999 07 16	704	0.0	0.2+
1998 05 25	704	1.1+	0.3-	1999 06 15	704	0.3-	0.5-	1999 07 16	704	0.2+	0.2+
1998 05 25	704	1.2-	1.1+	1999 07 14	704	0.2+	0.3-				
1998 05 25	704	1.1+	0.3+	1999 07 14	704	0.5+	0.3-				

1999 NH₁₈ = 1998 FB₁₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19100023	ω	309.96896	+0.05593042	+0.99331975		
<i>a</i>	2.9861626	Ω	322.86365	-0.85750328	-0.00399295		
<i>e</i>	0.0610023	<i>i</i>	9.62439	-0.51142928	+0.11532535		
<i>P</i>	5.16	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 31	704	0.2+	0.1+	1999 06 13	699	0.7+	0.5+	1999 07 14	704	0.7+	0.1+
1998 03 31	704	0.3+	0.3-	1999 06 13	699	0.6-	0.1+	1999 07 14	704	0.6-	0.5-
1998 03 31	704	0.5-	0.3-	1999 06 13	699	0.8-	0.3-	1999 07 14	704	0.4-	0.9-
1998 03 31	704	(4.5+	0.9+)	1999 06 15	704	0.7+	0.5+	1999 07 16	704	0.2+	0.1-
1998 04 01	704	0.3+	0.2-	1999 06 15	704	0.2+	0.4+	1999 07 16	704	0.6-	1.3+
1998 04 01	704	0.0	0.1+	1999 06 15	704	0.3-	0.2-	1999 07 16	704	0.0	0.4+
1998 04 01	704	0.3-	0.2+	1999 06 15	704	0.0	0.8-	1999 07 16	704	0.3+	0.6-
1998 04 01	704	0.3+	0.1-	1999 07 14	704	0.3+	0.3-	1999 07 16	704	0.5-	0.4+
1998 04 01	704	0.2-	0.6+	1999 07 14	704	0.7+	0.0				

1999 NH₂₁ = 1997 CM₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28351833	ω	266.73293	+0.96725427	+0.22031702		
<i>a</i>	2.2948200	Ω	80.51235	-0.15058405	+0.89780934		
<i>e</i>	0.2095839	<i>i</i>	7.34028	-0.20431253	+0.38131195		
<i>P</i>	3.48	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 02 04	691	0.4-	0.0	1999 06 11	703	0.8-	0.1+	1999 07 14	704	0.1+	0.4+
1997 02 04	691	0.1-	0.0	1999 06 11	703	0.6-	0.7-	1999 07 14	704	0.3-	0.2-
1997 02 04	691	0.1-	0.4+	1999 06 15	704	0.3+	0.3-	1999 07 14	704	0.3+	1.2-
1997 02 10	691	0.2+	0.2-	1999 06 15	704	0.7+	0.2+	1999 07 16	704	0.1+	0.3+
1997 02 10	691	0.6+	0.1+	1999 06 15	704	0.3+	0.8+	1999 07 16	704	0.0	0.3+
1997 02 10	691	0.2-	0.4-	1999 06 15	704	0.1-	0.2-	1999 07 16	704	0.0	0.2+
1999 06 11	703	0.3+	0.1-	1999 06 15	704	0.0	0.0	1999 07 16	704	0.5-	0.6+
1999 06 11	703	0.1-	0.1+	1999 07 14	704	0.7+	0.6-	1999 07 16	704	0.5-	0.4+

1999 NQ₂₇ = 1995 SK₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23371671	ω	19.74689	+0.91206848	+0.40931420		
<i>a</i>	2.6102145	Ω	316.06608	-0.38076194	+0.82341610		
<i>e</i>	0.1968494	<i>i</i>	2.01131	-0.15215598	+0.39299849		
<i>P</i>	4.22	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 09 26	010	(2.5+ 0.1+)	1999 06 18	691	0.4+ 0.3-	1999 07 14	704	0.2+ 0.1-
1995 09 26	010	1.7+ 1.0-	1999 06 23	703	0.9+ 1.1-	1999 07 14	704	0.3+ 0.0
1995 09 26	010	1.6+ 0.2+	1999 06 23	703	0.2- 0.1-	1999 07 16	704	0.8+ 0.1-
1995 09 27	010	1.5- 0.1-	1999 06 23	703	0.7- 0.5+	1999 07 16	704	0.3+ 0.2-
1995 09 27	010	1.8- 0.9+	1999 06 23	703	0.7- 1.3+	1999 07 16	704	0.6- 0.3+
1995 09 27	010	(3.0- 0.4-)	1999 07 14	704	0.2- 0.5+	1999 07 16	704	0.1- 0.4+
1999 06 18	691	0.1- 0.1-	1999 07 14	704	0.2+ 0.3-	1999 07 16	704	0.6- 0.2+
1999 06 18	691	0.1+ 0.2+	1999 07 14	704	0.3+ 1.1-			

1999 NS₃₃ = 1994 NM₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20000247	ω	63.79406	+0.96674645	+0.07118413		
<i>a</i>	2.8958706	Ω	291.28744	-0.18331710	+0.86259427		
<i>e</i>	0.2396564	<i>i</i>	15.28475	+0.17831472	+0.50086320		
<i>P</i>	4.93	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 07 08	809	0.5+ 0.1+	1999 06 11	703	0.8+ 0.5+	1999 07 16	704	0.2+ 0.3-
1994 07 08	809	0.5- 0.7+	1999 06 11	703	0.2- 0.4+	1999 07 16	704	0.2- 0.1-
1994 07 08	809	0.8- 0.5-	1999 06 11	703	0.1- 0.8+	1999 07 16	704	0.3- 0.0
1994 07 09	809	1.5+ 0.6-	1999 06 11	703	0.6- 0.1+	1999 07 16	704	0.3+ 0.4+
1994 07 09	809	(2.6+ 1.1-)	1999 07 14	704	0.1- 0.2-	1999 07 16	704	0.7- 0.2+
1994 07 09	809	0.1- 1.1-	1999 07 14	704	0.4+ 0.1+	1999 07 16	704	0.4+ 0.1-
1999 06 07	699	0.1+ 0.8-	1999 07 14	704	0.4+ 0.2+	1999 07 16	704	0.1- 0.2+
1999 06 07	699	1.1- 0.1-	1999 07 14	704	0.1- 0.1+	1999 07 16	704	0.1- 0.8-
1999 06 07	699	0.7- 0.1-	1999 07 16	704	0.6+ 0.8+			

1999 NF₄₀ = 1998 BZ₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30195389	ω	109.89059	-0.68139984	+0.72233261		
<i>a</i>	2.2004371	Ω	116.57775	-0.71115594	-0.61528209		
<i>e</i>	0.1025058	<i>i</i>	7.58347	-0.17306499	-0.31569533		
<i>P</i>	3.26	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 01 23	691	0.3+ 0.5+	1999 07 14	704	0.0 0.4-	1999 08 12	699	0.3- 0.0
1998 01 23	691	0.2+ 0.1+	1999 07 14	704	0.3- 0.1-	1999 08 12	699	0.2+ 0.4-
1998 01 23	691	0.4+ 0.1+	1999 07 14	704	0.3- 0.2+	1999 08 12	699	0.4- 0.3-
1998 01 30	691	0.4- 0.2-	1999 07 14	704	0.2+ 0.4+	1999 08 13	703	0.3+ 0.7-
1998 01 30	691	0.3- 0.4-	1999 07 16	704	0.4+ 0.2+	1999 08 13	703	0.3- 0.1-
1998 01 30	691	0.3- 0.6-	1999 07 16	704	0.3+ 0.2+	1999 08 13	703	0.4- 0.3+
1999 07 14	704	0.2+ 0.2-	1999 07 16	704	0.2+ 0.7-	1999 08 13	703	0.2+ 1.2+

1999 NW₆₃ = 1986 VY₂ = 1998 EQ₂₀Id. G. V. Williams (*MPC* 36022), M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29674211	ω	340.72517	+0.85404892	+0.51980965		
<i>a</i>	2.2261270	Ω	347.89506	-0.46389863	+0.74370429		
<i>e</i>	0.2167888	<i>i</i>	5.46160	-0.23536887	+0.42035921		
<i>P</i>	3.32	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 11 04	010	4.3- 0.2-	1999 07 22	704	0.3+ 0.2-	1999 09 29	704	0.1- 0.4+
1986 11 04	010	1.7+ 0.5+	1999 07 22	704	0.0 0.2+	1999 09 29	704	0.2- 1.1+
1986 11 04	010	2.2+ 0.5+	1999 07 22	704	0.1+ 0.3-	1999 09 29	704	0.2- 0.3-
1998 03 03	809	0.1+ 2.1+	1999 07 22	704	0.1+ 0.3-	1999 09 29	704	1.3- 1.7+
1998 03 03	809	0.4- 0.4+	1999 07 22	704	0.3+ 0.1+	1999 09 29	704	0.1- 0.0
1998 03 03	809	0.3+ 1.1+	1999 09 07	704	0.5- 0.2+	1999 10 05	699	1.1- 0.4+
1998 03 04	809	1.8+ 2.4+	1999 09 07	704	1.5- 0.5+	1999 10 05	699	0.3- 0.1+
1998 03 04	809	1.4+ 1.6+	1999 09 07	704	0.3- 0.6+	1999 10 05	699	0.5- 0.3-
1998 03 04	809	1.4+ 1.7+	1999 09 07	704	0.5- 1.2+	1999 10 15	704	0.5+ 0.0
1999 07 14	704	0.2+ 0.2+	1999 09 11	704	0.5+ 0.1-	1999 10 15	704	1.3- 0.1-
1999 07 14	704	0.7+ 1.1+	1999 09 11	704	0.4+ 0.4+	1999 10 15	704	0.9+ 0.7+
1999 07 14	704	1.3+ 1.3-	1999 09 11	704	0.1- 0.1+	1999 10 15	704	0.8+ 0.3+
1999 07 14	704	1.5- 0.6+	1999 09 11	704	0.6+ 0.4+	1999 10 15	704	0.7+ 0.2+
1999 07 14	704	0.3- 0.3+	1999 09 11	704	0.4- 0.3+			

1999 OP₂ = 1987 BU₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.36968301	ω	127.26875	+0.29274142	-0.91281935		
<i>a</i>	1.9227215	Ω	303.30902	+0.73344133	+0.40540182		
<i>e</i>	0.0874424	<i>i</i>	19.91851	+0.61348699	-0.04909382		
<i>P</i>	2.67	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 01 30	809	(2.8- 0.2-)	1999 07 23	704	0.3- 0.5+	2000 01 03	704	0.4- 0.2+
1987 01 30	809	1.0- 0.1+	1999 07 23	704	0.6- 0.2-	2000 01 04	704	0.3- 0.0
1987 01 30	809	(0.9- 4.0-)	1999 12 13	704	0.2+ 0.7-	2000 01 04	704	0.1- 0.0
1987 01 30	809	1.1+ 2.3-	1999 12 13	704	0.3+ 0.7-	2000 01 04	704	0.1- 0.2+
1987 01 31	809	1.7+ 1.5+	1999 12 13	704	0.6- 0.8-	2000 01 04	704	0.8+ 1.0-
1987 01 31	809	0.7+ 1.5+	1999 12 13	704	0.3+ 0.8-	2000 01 04	704	0.4- 0.5-
1987 02 01	809	0.6- 0.5-	1999 12 13	704	0.4- 1.1-	2000 01 08	327	0.2+ 1.2+
1987 02 01	809	0.8- 0.8-	2000 01 02	704	0.5- 0.6-	2000 01 08	327	0.0 0.7+
1987 02 02	809	1.2- 0.4-	2000 01 02	704	0.0 0.5+	2000 01 08	327	0.5+ 1.4-
1987 02 02	809	0.5- 0.0	2000 01 02	704	0.0 0.1-	2000 01 09	327	0.0 0.8+
1999 07 22	704	0.4+ 0.1-	2000 01 02	704	0.4+ 0.5+	2000 01 09	327	0.3- 1.0+
1999 07 22	704	0.8+ 0.2-	2000 01 02	704	0.4+ 1.0+	2000 01 09	327	0.3- 1.2+
1999 07 22	704	0.4+ 0.2+	2000 01 03	704	0.2- 0.6+	2000 01 10	327	0.3- 1.3+
1999 07 22	704	0.7+ 0.7-	2000 01 03	704	0.2+ 0.5-	2000 01 10	327	0.2- 0.9+
1999 07 23	704	0.8- 0.1-	2000 01 03	704	1.2+ 0.1-			

1999 OQ₂ = 1988 BS = 1990 QD

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23383524	ω	63.93767	+0.97558738	+0.10086552		
<i>a</i>	2.6093324	Ω	289.75591	-0.18089842	+0.87274645		
<i>e</i>	0.2531621	<i>i</i>	11.96289	+0.12451920	+0.47763981		
<i>P</i>	4.21	<i>H</i>	11.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 01 18	071	(1.7- 4.1-)	1999 07 22	704	0.7- 0.1+	1999 12 08	703	0.4- 0.0
1988 01 18	071	0.8+ 2.5-	1999 07 22	704	0.0 0.1+	1999 12 08	703	0.4- 0.1+
1988 01 18	071	(2.3- 4.3-)	1999 07 22	704	0.1+ 0.2-	1999 12 08	703	0.3- 0.0
1988 01 19	071	(0.2+ 4.1-)	1999 07 22	704	0.1+ 0.1-	1999 12 10	704	0.2- 0.0
1988 01 23	552	0.1- 0.3+	1999 07 23	704	0.4+ 0.1-	1999 12 10	704	0.1+ 0.0
1988 01 23	552	1.2- 0.5+	1999 07 23	704	0.4+ 0.2-	1999 12 10	704	0.1+ 0.1+
1990 08 18	675	1.3- 0.5+	1999 07 23	704	0.3+ 0.1-	1999 12 10	704	0.1+ 0.3+
1990 08 18	675	0.5- 1.5-	1999 07 23	704	0.4+ 0.4-	1999 12 10	704	0.6+ 0.2+
1990 08 21	675	1.8+ 0.1+	1999 07 23	704	0.4+ 0.2-			
1999 07 22	704	0.1+ 0.1+	1999 12 08	703	0.4- 0.1-			

2000 JAN. 24

M.P.C. 37817

1999 PW₄ = 1998 DM₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23527885	ω	122.09905	+0.26828607	+0.96022797		
<i>a</i>	2.5986480	Ω	162.94071	−0.94861471	+0.27731918		
<i>e</i>	0.1036122	<i>i</i>	15.29019	−0.16778772	−0.03250095		
<i>P</i>	4.19	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1995 08 20	809	0.3+	0.4+	1999 08 19	557	0.2−	0.1+
1995 08 22	809	0.6+	0.1−	1999 08 22	557	0.0	0.2+
1995 08 26	809	0.2−	0.4−	1999 08 22	557	0.2−	0.0
1995 08 27	809	0.6−	0.6−	1999 08 22	557	0.1−	0.3−
1998 02 28	809	(2.8−	4.6+)	1999 08 30	557	0.0	0.0
1998 02 28	809	0.2+	0.4−	1999 08 30	557	0.1−	0.4−
1998 03 02	809	(2.3−	3.3+)	1999 08 30	557	0.3−	0.3−
1998 03 02	809	0.3−	0.1−	1999 08 31	557	0.2−	0.2+
1999 07 13	704	0.2−	0.2+	1999 08 31	557	0.3−	0.4+
1999 07 13	704	0.6+	0.4−	1999 08 31	557	0.3−	0.4+
1999 07 13	704	0.1−	0.2−	1999 09 06	699	0.3+	0.4+
1999 07 13	704	0.3+	0.3−	1999 09 06	699	1.2−	0.7+
1999 07 13	704	0.3+	0.2−	1999 09 06	699	0.7+	0.5+
1999 07 23	704	0.6+	0.0	1999 09 07	704	0.3+	0.7−
1999 07 23	704	0.2+	0.4+	1999 09 07	704	0.4−	0.3−
1999 07 23	704	0.3+	0.4+	1999 09 07	704	0.4+	0.3+
1999 08 15	557	1.3−	0.7−	1999 09 07	704	0.6+	0.3−
1999 08 15	557	0.1−	0.1−	1999 09 07	704	0.1+	0.5−
1999 08 15	557	0.2+	0.1−	1999 09 09	704	0.4−	0.3−
1999 08 15	557	0.1−	0.3−	1999 09 09	704	0.5+	0.9−
1999 08 15	557	0.0	0.2−	1999 09 09	704	0.8−	0.0
1999 08 15	557	0.7+	0.1−	1999 09 09	704	0.6−	1.2+
1999 08 17	557	0.1+	0.2−	1999 09 11	557	0.1−	0.6+
1999 08 17	557	0.2−	0.2+	1999 09 11	557	0.2−	0.1+
1999 08 19	557	0.1−	0.2−	1999 09 11	557	0.1−	0.1+

1999 RS₁₅ = 1983 VK

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30333875	ω	5.03580	+0.98306854	−0.18322800		
<i>a</i>	2.1937348	Ω	5.52316	+0.16740847	+0.89380157		
<i>e</i>	0.1386005	<i>i</i>	1.15122	+0.07450264	+0.40932414		
<i>P</i>	3.25	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1983 11 08	801	0.3−	1.4+	1999 09 08	704	0.6−	0.3+
1983 11 09	033	0.2+	0.5−	1999 09 08	704	0.7−	0.1+
1983 11 10	033	0.0	0.8−	1999 09 08	704	0.5−	0.6−
1999 08 07	691	0.1−	0.3−	1999 09 08	704	0.2−	0.3−
1999 08 07	691	0.1+	0.5−	1999 09 09	704	0.3+	0.0
1999 08 07	691	0.0	0.2−	1999 09 09	704	0.1−	0.0
1999 08 12	699	0.2−	1.0+	1999 09 09	704	0.1+	0.0
1999 08 12	699	0.2−	0.8+	1999 09 09	704	0.3−	0.4+
1999 08 12	699	0.3+	0.3−	1999 09 09	704	0.0	0.2+
1999 09 07	704	0.2+	0.2+	1999 09 09	704	0.2+	0.2−
1999 09 07	704	0.5−	0.5+	1999 09 09	704	0.0	0.1−
1999 09 07	704	0.1−	0.1+	1999 09 09	704	0.5−	0.3−
1999 09 07	704	0.0	0.3+	1999 09 09	704	0.1−	0.5−
1999 09 07	704	0.3−	0.0	1999 09 09	704	0.3−	0.0
1999 09 08	704	0.1+	0.2−	1999 09 09	704	0.4+	0.3−
1999 09 08	704	0.2−	0.1+	1999 09 09	704	0.2+	0.3+
1999 09 08	704	0.8−	0.2+	1999 09 09	704	(2.5+ 1.6+)	
1999 09 08	704	0.5+	0.1−	1999 09 09	704	1.7+	1.9+
1999 09 08	704	0.4−	0.3−	1999 09 10	704	0.3+	0.1−

1999 RG₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.03359012	ω	273.97336	+0.39255647	+0.89015276		
<i>a</i>	9.5132377	Ω	23.76380	−0.43240146	+0.40064037		
<i>e</i>	0.7741016	<i>i</i>	35.03951	−0.81174404	+0.21706072		
<i>P</i>	29.34	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1996 05 12	675	0.6−	0.1−	1999 09 09	595	0.4+	0.1+
1996 05 12	675	1.1+	0.5+	1999 09 09	118	0.4+	0.7−
1997 04 13	327	0.1−	0.4−	1999 09 09	118	0.5+	0.4−
1997 04 13	327	0.4−	0.0	1999 09 09	118	0.2−	0.3+
1997 04 13	327	0.4−	0.1−	1999 09 10	118	0.7+	0.2+
1999 09 04	703	0.6−	0.4−	1999 09 10	118	1.5+	0.0
1999 09 04	703	0.3−	0.8+	1999 09 10	118	0.0	0.0
1999 09 04	703	0.3+	0.1−	1999 09 10	046	0.0	0.4+
1999 09 04	703	0.9−	0.8+	1999 09 10	046	0.4−	0.1+
1999 09 05	046	0.0	0.0	1999 09 10	046	0.4−	0.4+
1999 09 05	046	0.2+	0.3+	1999 09 11	620	0.4−	0.2−
1999 09 05	046	0.5+	0.1+	1999 09 11	620	0.4+	1.0−
1999 09 05	046	0.2+	0.3+	1999 09 11	620	0.4+	0.3−
1999 09 05	557	0.1+	0.2+	1999 09 11	620	0.3+	0.0
1999 09 05	118	0.1+	0.5−	1999 09 11	046	0.5−	0.6+
1999 09 05	118	0.9+	0.5−	1999 09 11	046	0.2−	0.8+
1999 09 05	557	0.1+	0.1−	1999 09 11	046	0.1−	0.2+
1999 09 05	118	0.4−	0.0	1999 09 11	046	0.1−	0.4+
1999 09 05	703	0.7+	0.5−	1999 09 11	046	0.1−	0.1+
1999 09 05	703	0.0	0.1−	1999 09 11	046	0.2+	0.0
1999 09 05	557	0.3−	0.2+	1999 09 11	046	0.1−	0.0
1999 09 05	557	0.1−	0.3−	1999 09 12	046	0.2+	0.2−
1999 09 06	046	0.3+	0.2+	1999 09 12	046	0.1+	0.4+
1999 09 06	046	0.3−	0.4+	1999 09 12	046	0.1−	0.4−
1999 09 06	046	0.4−	0.2+	1999 09 12	046	0.1+	0.3−
1999 09 06	046	0.2+	0.7+	1999 09 12	046	0.1−	0.1−
1999 09 06	046	0.3+	0.3+	1999 09 12	118	0.2+	0.1+
1999 09 06	046	0.1−	0.2+	1999 09 12	118	0.3−	0.2−
1999 09 06	658	0.2+	0.1+	1999 09 12	118	0.2−	0.5−
1999 09 06	658	0.5+	0.2+	1999 09 12	658	0.6−	0.5−
1999 09 07	859	1.0−	0.2−	1999 09 12	658	0.3−	0.1−
1999 09 07	859	0.6+	0.6−	1999 09 13	848	0.1+	0.3−
1999 09 07	859	0.2−	0.3−	1999 09 13	848	0.7−	0.7+
1999 09 08	557	0.5−	0.2−	1999 09 13	848	0.2+	0.5+
1999 09 08	557	0.2−	0.4−	1999 09 13	848	0.4+	0.4−
1999 09 09	046	0.1+	0.3+	1999 09 13	848	0.1−	0.7−
1999 09 09	046	0.4−	0.5+	1999 09 14	658	0.1+	0.1−
1999 09 09	046	0.2−	0.1+	1999 09 14	658	0.1+	0.1−
1999 09 09	046	0.2+	0.3+	1999 09 14	658	0.0	0.0
1999 09 09	046	0.3−	0.4+	1999 09 15	658	0.0	0.0
1999 09 09	595	0.5+	0.7−	1999 09 15	848	0.1−	0.1+
1999 09 09	595	0.0	0.2+	1999 09 15	658	0.0	0.1−

1999 RH₃₉ = 1987 SP₁₀ = 1996 FH₅ = 1998 RS₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.16950558	ω	340.48851	−0.91604118	−0.40052197		
<i>a</i>	3.2335535	Ω	175.71887	+0.39530267	−0.91052592		
<i>e</i>	0.0367172	<i>i</i>	16.52259	+0.06785547	−0.10258996		
<i>P</i>	5.81	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1987 09 29	033	0.5+	0.6−	1998 09 14	704	0.3−	1.1+
1987 09 29	033	0.7+	0.2−	1998 09 14	704	0.3+	0.6−
1987 09 30	033	0.5+	0.3−	1998 09 17	699	0.3+	0.2−
1987 09 30	033	0.1+	0.6−	1998 09 17	699	0.4−	0.1+
1987 10 01	033	1.4−	0.9−	1998 09 17	699	0.0	0.0
				1999 10 03	703	0.8+	0.3+
				1999 11 02	703	0.1−	0.2+
				1999 11 02	703	0.2+	1.1+
				1999 11 02	703	0.5+	0.3+
				1999 11 02	703	0.8+	0.8+

1996 03 20	400	1.0−	0.1+	1998 09 18	704	0.3−	1.3−	1999 11 07	704	0.4−	0.2+
1996 03 20	400	(1.6−	4.1−)	1998 09 18	704	0.2−	0.1−	1999 11 07	704	0.2+	0.4−
1996 04 23	566	0.5+	0.5−	1998 09 18	704	0.6−	0.0	1999 11 07	704	0.3−	0.2−
1996 04 23	566	0.3+	1.2−	1998 09 18	704	1.0−	0.2−	1999 11 07	704	0.9−	0.8−
1996 04 23	566	1.0+	0.6−	1998 09 18	704	0.9−	0.4+	1999 12 02	704	0.4−	0.9−
1996 04 23	566	0.2+	0.3+	1998 10 11	699	0.5−	0.1+	1999 12 02	704	0.5−	1.0−
1996 04 23	566	0.1−	0.2+	1998 10 11	699	0.1−	0.7+	1999 12 02	704	0.5−	0.6−
1996 04 23	566	0.9−	1.2+	1998 10 11	699	0.4+	0.1−	1999 12 02	704	1.1−	0.3−
1998 07 31	699	0.2−	0.2+	1999 09 08	703	0.2+	0.0	2000 01 09	704	0.2+	0.9−
1998 07 31	699	0.2−	0.1+	1999 09 08	703	0.0	0.4+	2000 01 09	704	0.4+	1.2−
1998 07 31	699	0.4+	0.2+	1999 09 08	703	0.6+	0.9+	2000 01 09	704	1.7−	0.5+
1998 08 23	704	0.7+	0.3−	1999 09 08	703	0.3+	1.5+	2000 01 09	704	0.2+	1.4−
1998 08 23	704	0.2+	0.3+	1999 09 13	703	0.2−	0.3+	2000 01 09	704	0.4−	0.6−
1998 08 23	704	0.5+	0.1+	1999 09 13	703	0.1−	0.2+	2000 01 11	704	0.3−	0.4−
1998 08 23	704	0.5+	0.0	1999 09 13	703	0.6+	1.5+	2000 01 11	704	0.3−	0.4+
1998 08 23	704	0.3+	0.7−	1999 09 13	703	0.5+	1.4+	2000 01 11	704	0.2+	0.1+
1998 09 14	704	0.3+	0.3+	1999 10 03	703	0.4+	0.0	2000 01 11	704	0.1+	0.3−
1998 09 14	704	0.2+	0.7−	1999 10 03	703	0.2+	0.3+	2000 01 11	704	0.4+	0.2+
1998 09 14	704	0.7+	0.3+	1999 10 03	703	0.2+	0.6+				

1999 RN₃₉ = 1999 XG₁₂₇ = 1997 NW₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	336.23769	(2000.0)	
<i>P</i>	302.08598	(2000.0)	
<i>n</i>	0.18642071	ω	311.74961
<i>a</i>	3.0348690	Ω	144.13213
<i>e</i>	0.0892942	<i>i</i>	10.84825
<i>P</i>	5.29	<i>H</i>	13.2

Residuals in seconds of arc

1997 07 08	910	0.2−	0.1−	1999 09 13	703	0.7+	0.4−	1999 12 13	678	0.1−	0.2+
1997 07 08	910	0.2−	0.2−	1999 10 04	703	0.0	0.0	1999 12 14	704	0.5+	0.2−
1997 07 08	910	0.1−	0.2−	1999 10 04	703	0.2−	0.0	1999 12 14	704	0.1+	0.5+
1997 07 09	910	0.1−	0.1−	1999 10 04	703	0.1+	0.3+	1999 12 14	704	0.0	0.4+
1997 07 09	910	0.1+	0.2−	1999 10 04	703	0.2+	0.3−	1999 12 14	704	0.5+	0.3+
1997 07 09	910	0.5−	0.0	1999 12 03	704	0.3+	0.0	1999 12 14	704	0.4−	0.3+
1997 07 09	910	0.2+	0.0	1999 12 03	704	0.7−	0.6−	2000 01 08	704	0.2+	0.2−
1997 07 09	910	0.2+	0.2−	1999 12 03	704	0.4−	0.0	2000 01 08	704	0.3+	0.7−
1997 07 09	910	0.3+	0.1−	1999 12 03	704	0.6−	0.2+	2000 01 08	704	0.3+	0.3−
1999 09 08	703	0.1+	0.6+	1999 12 03	704	0.9−	0.7+	2000 01 08	704	0.2+	0.3−
1999 09 08	703	0.6−	0.4−	1999 12 08	699	0.0	0.3+	2000 01 08	704	0.3−	0.3+
1999 09 08	703	0.1+	0.1+	1999 12 08	699	0.3−	0.3+	2000 01 11	704	0.7−	0.1+
1999 09 08	703	0.0	0.3−	1999 12 08	699	0.2−	0.5+	2000 01 11	704	0.4+	1.0−
1999 09 13	703	0.1−	0.5+	1999 12 09	678	0.3+	0.3−	2000 01 11	704	0.8+	0.0
1999 09 13	703	0.3+	0.2+	1999 12 09	678	1.0−	0.2+	2000 01 11	704	0.8+	1.2−
1999 09 13	703	0.6+	0.1−	1999 12 13	678	0.1+	0.5−	2000 01 11	704	0.2+	1.0−

1999 RZ₄₂ = 1999 XD = 1998 HW₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	20.28748	(2000.0)	
<i>P</i>	20.84279	(2000.0)	
<i>n</i>	0.23823183	ω	318.13226
<i>a</i>	2.5771292	Ω	52.27026
<i>e</i>	0.2188451	<i>i</i>	16.42553
<i>P</i>	4.14	<i>H</i>	13.6

Residuals in seconds of arc

1998 04 21	704	0.0	0.7−	1998 05 01	704	1.0+	0.1+	1999 11 13	704	0.0	0.0
1998 04 21	704	1.0−	1.1−	1998 05 01	704	0.7−	0.1+	1999 11 13	704	0.4+	0.5−
1998 04 21	704	1.1+	0.5−	1998 05 24	704	1.0−	0.3+	1999 11 13	704	0.3+	0.9−
1998 04 21	704	(3.2+	0.9+)	1998 05 24	704	1.3+	1.4−	1999 12 01	704	0.1−	0.9+
1998 04 21	704	(3.9−	0.1+)	1998 05 24	704	1.0−	1.4+	1999 12 01	704	0.4−	0.5+
1998 04 22	704	0.3+	1.0−	1998 05 24	704	0.5+	0.7−	1999 12 01	704	0.8−	0.3+
1998 04 22	704	0.6−	1.6+	1998 05 24	704	0.7+	1.0+	1999 12 01	704	0.2−	1.9+
1998 04 22	704	1.6−	0.6−	1999 09 03	413	0.5−	0.1−	1999 12 02	704	0.9−	0.4+
1998 04 22	704	1.8+	0.6+	1999 09 03	413	0.9−	0.1+	1999 12 02	704	1.4+	0.8−
1998 04 22	704	0.2−	0.1+	1999 09 05	413	0.2+	0.4+	1999 12 03	704	0.2+	1.2−
1998 05 01	704	0.4+	0.0	1999 09 05	413	1.0+	0.1+	1999 12 03	704	0.5−	0.3+

1998 05 01	704	0.8−	1.0+	1999 11 13	704	0.5−	1.0−	1999 12 03	704	(1.9−	2.8+)
1998 05 01	704	0.2−	0.4−	1999 11 13	704	1.1+	0.6−				

1999 RB₅₂ = 1996 AL₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	302.08598	(2000.0)	
<i>P</i>	302.08598	(2000.0)	
<i>n</i>	0.18167063	ω	319.33168
<i>a</i>	3.0875422	Ω	115.78340
<i>e</i>	0.1757668	<i>i</i>	3.02270
<i>P</i>	5.43	<i>H</i>	13.5

Residuals in seconds of arc

1996 01 10	114	1.9+	0.1−	1999 07 16	704	0.1−	0.1−	1999 09 07	704	0.2+	1.4+
1996 01 11	114	1.8−	0.2+	1999 07 16	704	0.4−	0.3−	1999 09 07	704	0.2+	0.3+
1996 01 11	114	1.2+	0.4−	1999 07 20	699	0.3+	0.8+	1999 09 07	704	0.2+	0.6+
1996 01 12	114	0.2+	0.3−	1999 07 20	699	0.4+	1.3−	1999 09 13	704	0.0	0.6−
1996 01 13	114	0.1−	0.1+	1999 07 20	699	0.1−	0.7+	1999 09 13	704	0.2−	0.3+
1996 01 16	114	1.4−	0.5+	1999 09 07	704	1.1−	0.1−	1999 09 13	704	0.7+	1.7−
1999 07 16	704	0.2−	0.3−	1999 09 07	704	0.1+	0.0				

1999 RW₅₂ = 1998 HL₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	46.70574	(2000.0)	
<i>P</i>	46.70574	(2000.0)	
<i>n</i>	0.18224405	ω	260.01537
<i>a</i>	3.0810623	Ω	46.85749
<i>e</i>	0.1887589	<i>i</i>	1.67406
<i>P</i>	5.41	<i>H</i>	13.7

Residuals in seconds of arc

1998 04 21	704	(1.1+	2.7+)	1999 07 16	704	0.5+	0.0	1999 09 07	704	0.1−	0.7−
1998 04 21	704	0.3−	1.1+	1999 07 16	704	0.0	0.2−	1999 09 13	699	0.3−	2.0−
1998 04 21	704	0.7−	0.2+	1999 07 16	704	0.3−	1.1−	1999 09 13	704	0.4+	0.2+
1998 04 21	704	0.9−	0.1+	1999 07 20	699	(0.8−	2.4+)	1999 09 13	699	0.8+	0.2+
1998 04 21	704	0.4+	1.0+	1999 07 20	699	0.1+	0.5+	1999 09 13	704	0.2+	0.1−
1998 04 22	704	0.0	0.1+	1999 07 20	699	0.5−	1.4+	1999 09 13	704	0.2−	0.1+
1998 04 22	704	1.4+	0.4−	1999 09 07	704	0.6+	0.4+	1999 09 13	699	(2.7+	1.1−)
1998 04 22	704	0.4−	0.1+	1999 09 07	704	0.3−	0.3+	1999 09 13	704	0.1−	0.1+
1998 04 22	704	0.3+	1.2−	1999 09 07	704	0.2+	0.5+	1999 09 13	704	0.3−	0.6+
1998 04 22	704	0.0	1.2−	1999 09 07	704	0.6−	0.3−				

1999 RG₅₅ = 1995 YF₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	20.84279	(2000.0)	
<i>P</i>	20.84279	(2000.0)	
<i>n</i>	0.17590738	ω	168.11916
<i>a</i>	3.1546172	Ω	177.55357
<i>e</i>	0.1687538	<i>i</i>	1.03134
<i>P</i>	5.60	<i>H</i>	13.8

Residuals in seconds of arc

1995 12 20	566	0.2+	0.2−	1999 08 07	699	0.6−	0.8+	1999 09 07	704	0.3−	0.2+
1995 12 20	566	0.2−	0.3−	1999 08 07	699	0.1+	0.1+	1999 09 07	704	0.1−	0.4−
1995 12 20	566	1.1−	0.4+	1999 08 08	691	0.4−	0.1−	1999 09 09	704	0.4−	0.1+
1995 12 24	566	0.1−	0.0	1999 08 08	691	0.5−	0.2−	1999 09 09	704	0.2+	0.2−
1995 12 24	566	1.6+	0.0	1999 08 08	691	0.4−	0.3−	1999 09 09	704	0.6+	0.1+
1995 12 24	566	0.3−	0.2+	1999 09 07	704	0.0	0.3−	1999 09 09	704	0.0	0.0
1999 08 07	699	1.9+	0.4+	1999 09 07	704	0.2−	0.0				

1999 RS₅₇ = 1992 ES₂₁ = 1993 TN₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	92.45055		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.31297290	ω	170.79329	+0.20015797	+0.97805413
a	2.1484812	Ω	110.73615	−0.90280663	+0.20705368
e	0.1890240	i	3.54656	−0.38062707	+0.02321405
P	3.15	H	16.1	G 0.15	U 2

2000 JAN. 24

M.P.C. 37819

Residuals in seconds of arc

1992 03 05	809	0.5−	0.8+	1999 07 16	704	0.5+	1.2+	1999 09 07	699	0.1+	0.9−
1992 03 07	809	0.7+	0.3−	1999 07 16	704	0.8−	0.5−	1999 09 07	704	0.0	0.3−
1993 10 09	809	1.1+	0.1−	1999 07 16	704	0.4+	0.4−	1999 09 07	704	0.1+	0.3−
1993 10 09	809	1.6−	0.8−	1999 07 21	699	0.4−	1.5+	1999 09 07	704	0.5−	0.3−
1993 10 09	809	0.5+	1.4+	1999 07 21	699	0.5+	1.5+	1999 09 07	704	0.1+	1.0−
1993 10 11	809	0.3+	1.1+	1999 07 21	699	0.8−	0.5+	1999 09 13	704	0.5+	0.1−
1993 10 11	809	0.6−	0.6+	1999 09 07	699	0.6−	0.3+	1999 09 13	704	1.6+	0.5−
1993 10 11	809	0.7−	0.2+	1999 09 07	699	1.1−	0.3+	1999 09 13	704	0.5+	1.0−
1999 07 16	704	0.2−	0.6+	1999 09 07	704	0.2+	0.1−	1999 09 13	704	0.1−	1.1−

1999 RC₈₉ = 1985 FX₂ = 1998 KJ₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	173.31187		(2000.0)	P	Q		
<i>n</i>	0.23785563	<i>ω</i>	22.29811	−0.79575977	+0.60539618		
<i>a</i>	2.5798458	<i>Ω</i>	194.99300	−0.56465220	−0.75133380		
<i>e</i>	0.1127128	<i>i</i>	3.58621	−0.21893898	−0.26266515		
<i>P</i>	4.14	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1985 03 26	801	0.2+	0.8+	1999 09 07	704	0.1−	0.8+	1999 09 29	703	0.3+	0.3−
1998 05 22	704	0.5−	1.1+	1999 09 07	704	0.3+	0.6+	1999 09 29	703	0.3+	0.8+
1998 05 22	704	0.5−	0.1−	1999 09 07	704	0.5−	0.2−	1999 09 29	703	0.4+	0.9+
1998 05 22	704	0.9−	0.1−	1999 09 07	704	0.1+	0.7+	1999 10 30	691	0.3−	0.4−
1998 05 22	704	0.4−	0.7−	1999 09 07	704	0.5+	0.5+	1999 10 30	691	0.0	0.5−
1998 05 24	704	0.7+	0.0	1999 09 09	704	0.9+	0.6−	1999 10 30	691	0.1−	0.6−
1998 05 24	704	1.7+	0.2+	1999 09 09	704	1.3+	0.2+	1999 11 05	691	0.0	0.2+
1998 05 24	704	0.0	0.4+	1999 09 09	704	0.6−	0.7−	1999 11 05	691	0.0	0.2+
1998 05 24	704	0.3−	0.0	1999 09 09	704	1.3−	1.4−	1999 11 05	691	0.1−	0.2+
1998 05 24	704	0.2+	0.5−	1999 09 29	703	1.4−	0.4+				

1999 RD₁₀₅ = 1993 RQ₁₀ = 1998 OU₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	143.20638		(2000.0)	P	Q		
<i>n</i>	0.17350899	<i>ω</i>	78.66144	−0.32907436	+0.94420443		
<i>a</i>	3.1836213	<i>Ω</i>	172.08522	−0.90057943	−0.30943600		
<i>e</i>	0.0908769	<i>i</i>	5.71564	−0.28401893	−0.11281561		
<i>P</i>	5.68	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 09 14	809	0.3+	0.1+	1998 08 17	704	0.3+	0.9+	1999 10 04	704	0.0	1.8−
1993 09 14	809	0.4+	0.6−	1998 08 17	704	1.0+	0.5−	1999 10 31	691	0.4+	0.0
1993 09 14	809	0.5−	1.3−	1998 08 17	704	0.2−	0.1+	1999 10 31	691	0.6+	0.1−
1993 09 19	809	1.0+	1.0−	1998 08 17	704	0.6−	0.3+	1999 10 31	691	0.5+	0.1−
1993 09 19	809	0.1+	1.0−	1999 09 08	704	0.1−	0.6+	1999 11 01	703	0.4−	1.2+
1993 09 19	809	(0.6−	2.8−)	1999 09 08	704	0.7+	0.9+	1999 11 01	703	1.3−	0.1+
1998 06 26	704	0.1+	1.3−	1999 09 08	704	0.1+	0.4−	1999 11 01	703	1.0−	0.3−
1998 06 26	704	0.7+	0.1+	1999 09 08	704	0.5−	0.9+	1999 11 01	703	1.3−	0.6−
1998 06 26	704	0.5−	0.6−	1999 09 08	704	0.1+	0.2+	1999 11 05	691	0.4+	0.4+
1998 06 26	704	0.9+	1.2−	1999 09 09	704	0.4−	0.4+	1999 11 05	691	0.5+	0.4+
1998 07 29	910	0.0	0.5+	1999 09 09	704	0.7−	0.9+	1999 11 05	691	0.4+	0.2+
1998 07 29	910	0.2−	0.7+	1999 09 09	704	0.8−	0.3+	2000 01 08	704	0.3+	0.7+
1998 07 30	910	0.0	0.5+	1999 09 09	704	0.5+	0.4+	2000 01 08	704	0.7−	0.2+
1998 07 30	910	0.5−	0.6+	1999 10 04	704	0.3+	1.1+	2000 01 08	704	0.4−	0.1+
1998 07 30	910	0.3−	0.8+	1999 10 04	704	0.0	0.4−	2000 01 08	704	0.6+	0.3−
1998 07 30	910	0.3−	0.8+	1999 10 04	704	0.1+	0.8−				
1998 08 17	704	0.6−	0.1−	1999 10 04	704	1.4+	0.7−				

1999 RE₁₁₂ = 1999 KS₁₈ = 1991 JW₂ = 1992 WX₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

				Williams			
<i>M</i>	53.63243		(2000.0)	P	Q		
<i>n</i>	0.25914238	<i>ω</i>	91.48860	+0.69226877	+0.71684053		
<i>a</i>	2.4365599	<i>Ω</i>	222.72806	−0.70118940	+0.64096131		
<i>e</i>	0.1403546	<i>i</i>	7.03380	−0.17057953	+0.27442350		
<i>P</i>	3.80	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 05 12	809	1.2+	1.8−	1999 05 20	704	1.2+	0.7−	1999 09 09	704	0.2−	0.6−
1991 05 12	809	0.1−	1.0−	1999 07 13	704	0.6+	0.4+	1999 09 09	704	0.4+	0.8−
1991 05 12	809	1.5+	1.4−	1999 07 13	704	0.1−	0.3+	1999 09 09	704	0.1−	0.8−
1991 05 17	809	1.6−	1.3+	1999 07 13	704	0.2−	0.4+	1999 09 14	704	0.5−	1.3+
1991 05 17	809	1.5−	1.3+	1999 07 13	704	0.2−	0.0	1999 09 14	704	0.3−	0.4+
1991 05 17	809	(2.8−	1.4+)	1999 07 13	704	0.2−	0.1+	1999 09 14	704	0.0	0.4+
1992 11 19	675	0.3+	1.6+	1999 07 23	704	0.6+	0.0	1999 09 14	704	0.2−	0.0
1992 11 19	675	1.0−	1.0+	1999 07 23	704	0.4+	0.4+	1999 09 14	704	0.3−	0.3−
1992 11 21	675	0.5−	0.9−	1999 07 23	704	0.2+	0.0	1999 11 08	704	0.2+	0.9−
1992 11 21	675	1.8+	1.5−	1999 09 08	704	0.4+	0.8+	1999 11 08	704	0.5+	0.8−
1997 01 15	599	0.2−	0.5−	1999 09 08	704	0.9+	0.4−	1999 11 08	704	0.6−	1.0−
1997 01 15	599	0.1−	0.4−	1999 09 08	704	0.1−	0.2−	1999 11 10	704	0.2−	0.3+
1999 05 20	704	1.0−	0.1+	1999 09 08	704	0.1−	0.5−	1999 11 10	704	0.3−	0.3−
1999 05 20	704	0.1−	1.1+	1999 09 09	704	0.1−	0.6+	1999 11 10	704	1.5−	0.6−
1999 05 20	704	0.6+	0.2+	1999 09 09	704	0.2+	0.1−	1999 11 10	704	0.7−	0.1−

1999 RE₁₁₇ = 1998 FW₁₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

				Williams			
<i>M</i>	300.05884		(2000.0)	P	Q		
<i>n</i>	0.27617637	<i>ω</i>	159.18262	+0.10830908	−0.98913329		
<i>a</i>	2.3353127	<i>Ω</i>	284.49469	+0.89695316	+0.14035607		
<i>e</i>	0.0749319	<i>i</i>	5.89405	+0.42865390	−0.04376655		
<i>P</i>	3.57	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 31	704	0.7+	0.1−	1998 04 01	704	0.8−	0.4+	1999 09 09	704	0.3+	0.3−
1998 03 31	704	0.4+	0.3−	1998 08 12	699	0.1+	0.5−	1999 09 09	704	0.3+	0.4−
1998 03 31	704	0.1+	0.1−	1998 08 12	699	0.8+	0.6+	1999 09 09	704	0.1+	0.3−
1998 03 31	704	0.1+	0.1−	1998 08 12	699	0.9−	0.7+	1999 09 13	704	0.0	0.5+
1998 03 31	704	0.5−	0.6−	1998 08 15	046	0.0	0.3−	1999 09 13	704	0.3−	0.4+
1998 04 01	704	0.5+	0.3−	1998 08 15	046	0.0	0.2+	1999 09 13	704	0.4−	0.5+
1998 04 01	704	0.8−	0.5+	1998 08 15	046	0.1+	0.5−	1999 09 13	704	0.2+	0.0
1998 04 01	704	0.3+	0.0	1998 08 15	046	0.4−	0.1−	1999 09 13	704	0.5−	0.3+
1998 04 01	704	0.0	0.6+	1999 09 09	704	0.5+	0.5−				

1999 RE₁₂₀ = 1990 WL₁₅ = 1998 FV₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

				Williams			
<i>M</i>	227.30831		(2000.0)	P	Q		
<i>n</i>	0.30624028	<i>ω</i>	246.67807	−0.92077230	−0.38974782		
<i>a</i>	2.1798562	<i>Ω</i>	270.37973	+0.36369503	−0.84229600		
<i>e</i>	0.0290184	<i>i</i>	0.95023	+0.14108259	−0.37233599		
<i>P</i>	3.22	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 23	372	0.8−	0.0	1998 03 22	704	0.3+ 1.2+	1999 09 09	704	0.3+ 0.4−
1990 11 23	372	0.7+ 0.5+		1998 03 22	704	0.7− 0.5+	1999 09 09	704	0.2+ 0.3−
1998 03 20	704	0.0 0.6−		1998 03 22	704	0.1+ 0.7+	1999 09 09	704	0.2+ 0.1−
1998 03 20	704	0.1+ 0.8−		1998 08 08	691	0.4− 0.3+	1999 09 09	704	0.2− 0.1−
1998 03 20	704	0.6+ 0.1−		1998 08 08	691	0.3− 0.2+	1999 09 09	704	0.1− 0.1−
1998 03 20	704	0.2+ 0.5+		1998 08 08	691	0.3− 0.2+	1999 09 13	704	0.4+ 0.1+
1998 03 20	704	0.3− 0.2−		1998 08 12	699	0.1+ 0.8+	1999 09 13	704	0.1+ 0.9−
1998 03 22	704	0.1+ 0.0		1998 08 12	699	0.4− 0.6+	1999 09 13	704	0.3+ 0.9−
1998 03 22	704	0.5− 1.4−		1998 08 12	699	0.0 0.6+			

1999 RL₁₅₅ = 1998 HX₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	18.89953	ω	144.53017	+0.89792644	−0.43636382		
<i>a</i>	2.2724554	Ω	241.43994	+0.38718463	+0.84530427		
<i>e</i>	0.1524971	<i>i</i>	3.75844	+0.20932312	+0.30829744		
<i>P</i>	3.43	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	1.1+	1.0+	1999 09 07	704	0.3−	0.1+	1999 10 02	704	0.1+	0.4+
1998 04 21	704	0.9+	0.6+	1999 09 07	704	0.4−	0.5−	1999 10 02	704	0.1−	0.0
1998 04 21	704	(2.2+	2.0−)	1999 09 07	704	0.3−	0.4−	1999 11 04	703	0.4−	0.2+
1998 04 21	704	(4.8−	2.0−)	1999 09 09	704	0.1−	0.0	1999 11 04	703	0.4+	1.0+
1998 04 22	704	0.0	0.2−	1999 09 09	704	0.2+	0.5−	1999 11 04	703	0.2−	0.3−
1998 04 22	704	1.1−	1.2+	1999 09 09	704	0.6+	0.5−	1999 11 04	703	0.5−	0.1−
1998 04 22	704	0.2+	1.8−	1999 09 09	704	0.4+	0.1−	1999 11 07	704	0.1−	0.2−
1998 04 22	704	1.1−	0.3−	1999 09 14	704	0.0	0.9−	1999 11 07	704	0.1+	0.8−
1999 09 05	703	0.7+	0.8+	1999 09 14	704	0.0	0.6−	1999 11 07	704	0.2+	0.2−
1999 09 05	703	0.3+	0.9+	1999 09 14	704	0.6+	0.9−	1999 11 07	704	0.6−	0.0
1999 09 05	703	0.4+	1.0+	1999 09 14	704	1.1−	2.0−	1999 11 14	704	0.3+	0.1+
1999 09 05	703	0.1−	1.3+	1999 10 02	704	0.0	0.5+	1999 11 14	704	0.1−	0.8+
1999 09 07	704	0.9−	0.0	1999 10 02	704	0.6+	0.1+	1999 11 14	704	0.3+	0.4+
1999 09 07	704	0.1−	0.5+	1999 10 02	704	0.3−	0.7+				

1999 RH₁₉₇ = 3060 P-L

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	63.37252	ω	99.35352	+0.88520317	+0.45958285		
<i>a</i>	2.1953019	Ω	233.32034	−0.45427194	+0.82054990		
<i>e</i>	0.2284621	<i>i</i>	5.15822	−0.10026142	+0.33982565		
<i>P</i>	3.25	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 25	675	0.1−	0.0	1999 09 08	699	0.9−	1.1+	1999 11 07	704	0.2+	0.4−
1960 09 27	675	0.0	0.4−	1999 09 08	704	0.4+	0.1+	1999 11 14	704	0.2−	1.1−
1960 09 28	675	0.7+	0.5+	1999 09 16	704	0.8−	0.2+	1999 11 14	704	0.2−	0.6−
1960 09 29	675	0.6−	0.1−	1999 09 16	704	0.6−	0.2−	1999 11 14	704	0.7−	0.5+
1999 07 23	704	0.1−	0.3−	1999 09 16	704	0.3−	0.7−	1999 11 14	704	1.4−	0.4−
1999 07 23	704	0.4+	0.4−	1999 09 16	704	0.8−	0.1−	1999 11 16	704	0.5−	0.1+
1999 07 23	704	0.6−	0.2−	1999 09 29	703	1.5+	0.3+	1999 11 16	704	0.1−	0.6+
1999 07 23	704	0.1−	0.4−	1999 09 29	703	0.9+	0.4+	1999 11 16	704	0.3−	0.4+
1999 07 23	704	0.5−	0.3−	1999 09 29	703	1.5+	0.1+	1999 11 16	704	0.2+	0.6+
1999 09 07	703	1.6−	0.0	1999 09 29	703	(2.1+	0.3+)	1999 12 03	704	0.6−	0.0
1999 09 07	703	0.5−	0.3−	1999 10 04	704	1.2+	0.1−	1999 12 03	704	1.0+	0.6−
1999 09 07	703	0.3+	0.3+	1999 10 04	704	0.5+	0.4−	1999 12 03	704	1.2−	0.5+
1999 09 07	703	0.0	0.8−	1999 10 04	704	0.2+	0.1−	1999 12 03	704	0.6−	0.2−
1999 09 08	699	0.8−	0.5+	1999 10 04	704	1.2+	0.5−	1999 12 07	704	0.6+	0.1+
1999 09 08	704	0.2+	0.5−	1999 10 04	704	1.1+	0.4−	1999 12 07	704	0.9−	0.1+
1999 09 08	699	0.9−	1.6+	1999 11 07	704	0.3−	0.3+	1999 12 07	704	0.0	0.6+
1999 09 08	704	0.4+	0.4+	1999 11 07	704	0.1−	0.4−	1999 12 07	704	0.5−	0.2+
1999 09 08	704	0.2+	0.4+	1999 11 07	704	1.4+	1.0−				
1999 09 08	704	0.1−	0.4+	1999 11 07	704	1.1+	0.4+				

1999 RW₂₀₁ = 1978 WZ₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	69.18431	ω	74.86361	+0.67405760	+0.71459600		
<i>a</i>	2.6451488	Ω	239.08297	−0.73335597	+0.61703371		
<i>e</i>	0.1996242	<i>i</i>	12.59536	−0.08851765	+0.32957845		
<i>P</i>	4.30	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 11 29	675	0.3−	0.8−	1999 09 08	704	0.3−	0.6−	1999 11 05	704	0.2+	0.5+
1978 11 30	675	0.2+	0.1−	1999 09 18	704	0.2+	0.4−	1999 11 05	704	0.4+	1.0+

1998 03 31	704	1.3+	0.6−	1999 09 18	704	0.0	0.8−	1999 11 05	704	0.2+	0.8+
1998 03 31	704	0.2−	0.1+	1999 09 18	704	0.7+	0.5−	1999 11 05	704	0.5+	1.0+
1998 03 31	704	(1.4−	2.5+)	1999 09 18	704	0.3−	0.9−	1999 11 05	704	0.1+	0.9+
1998 03 31	704	0.7−	1.6+	1999 09 18	704	0.3+	0.8−	1999 11 12	703	1.1−	1.1+
1998 04 20	704	0.3+	0.2+	1999 10 03	704	0.3−	0.6+	1999 11 12	703	0.3−	0.0
1998 04 20	704	1.6+	1.4+	1999 10 03	704	0.2+	0.4+	1999 11 12	703	0.8−	0.7+
1998 04 20	704	1.4−	0.3−	1999 10 03	704	0.7+	0.0	1999 11 12	703	0.5−	0.1+
1998 04 20	704	0.3−	0.7+	1999 10 03	704	0.8+	0.3+	1999 12 05	704	0.3+	0.6−
1998 04 20	704	0.2+	0.5+	1999 10 03	704	1.7−	0.5+	1999 12 05	704	0.6−	0.0
1999 07 22	704	0.4+	0.4−	1999 10 28	703	(2.7−	0.8+)	1999 12 05	704	1.2−	0.2−
1999 07 22	704	0.3−	0.5+	1999 10 28	703	(2.2−	3.0+)	1999 12 05	704	0.3+	0.2+
1999 07 22	704	0.4−	0.0	1999 10 28	703	(2.9−	1.6+)	1999 12 05	704	0.4−	0.4+
1999 07 22	704	0.6−	0.1+	1999 10 28	703	(4.0−	0.3+)	2000 01 07	704	0.7−	1.1+
1999 07 22	704	0.6−	0.5−	1999 11 04	704	0.8+	0.0	2000 01 07	704	0.1+	0.6−
1999 09 08	704	(2.4+	1.4−)	1999 11 04	704	0.2+	0.8+	2000 01 07	704	1.3+	0.5−
1999 09 08	704	(1.6+	2.0−)	1999 11 04	704	0.1−	0.1+	2000 01 07	704	0.6−	0.8−
1999 09 08	704	0.3+	0.7−	1999 11 04	704	0.4+	0.9+				
1999 09 08	704	0.2+	0.7−	1999 11 04	704	0.3−	1.2+				

1999 RY₂₀₆ = 1998 KA₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	26.13538	ω	150.27872	+0.92381553	−0.33363969		
<i>a</i>	2.6149352	Ω	230.44096	+0.28529768	+0.92698948		
<i>e</i>	0.1365990	<i>i</i>	14.09454	+0.25528434	+0.17139156		
<i>P</i>	4.23	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 22	704	1.2+	1.6+	1999 09 18	704	0.1−	1.1−	1999 11 04	704	0.0	0.2+
1998 05 22	704	0.6+	1.3+	1999 09 18	704	0.3−	0.5−	1999 11 04	704	0.5−	0.5+
1998 05 22	704	1.8−	0.5−	1999 09 18	704	0.3−	0.1+	1999 11 12	703	0.7−	0.2−
1998 05 22	704	(4.1−	1.4−)	1999 09 18	704	0.8−	0.7−	1999 11 12	703	0.2−	0.3−
1998 05 24	704	1.1−	0.2−	1999 10 03	703	0.1−	0.4+	1999 11 12	703	0.5+	0.1+
1998 05 24	704	1.3+	1.1−	1999 10 03	704	0.1+	0.3−	1999 11 12	703	1.0−	0.8+
1998 05 24	704	0.6−	0.4−	1999 10 03	703	0.2−	0.4+	1999 12 05	704	0.1+	0.0
1998 05 24	704	(2.4−	1.2−)	1999 10 03	704	0.0	0.4−	1999 12 05	704	0.3−	0.5−
1998 05 24	704	0.1+	0.5−	1999 10 03	703	0.0	0.3+	1999 12 05	704	0.3−	0.3−
1999 07 22	704	0.1−	0.6−	1999 10 03	704	0.6+	0.0	1999 12 05	704	0.2+	0.1+
1999 07 22	704	0.5+	0.0	1999 10 03	703	0.5−	0.2+	1999 12 05	704	1.1+	0.4−
1999 07 22	704	0.3+	0.8+	1999 10 03	704	0.2+	0.1−	2000 01 07	704	1.8+	0.1−
1999 07 22	704	0.7+	0.4+	1999 10 03	704	0.2−	0.1−	2000 01 07	704	0.7+	0.2+
1999 07 22	704	0.7+	0.0	1999 10 29	703	0.0	0.7+	2000 01 07	704	0.3+	1.4−
1999 09 08	704	0.1+	0.1−	1999 10 29	703	0.2−	0.7+	2000 01 09	704	0.8−	0.4−
1999 09 08	704	0.1−	0.3−	1999 10 29	703	0.6+	0.6+	2000 01 09	704	0.6−	0.3−
1999 09 08	704	0.3+	0.4−	1999 10 29	703	0.9−	0.5+	2000 01 09	704	0.1−	0.5−
1999 09 08	704	0.1+	0.2−	1999 11 04	704	0.3+	0.4+	2000 01 09	704	0.4+	0.6+
1999 09 08	704	0.4−	0.2+	1999 11 04	704	0.5+	0.4+	2000 01 09	704	0.3−	0.5+
1999 09 18	704	0.5−	0.7−	1999 11 04	704	0.4+	0.5+				

1999 RA₂₀₈ = 1980 TU₂ = 1998 FY₁₁₀Id. A. Doppler (*MPC* 37187), G. V. Williams, M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	145.94667	ω	10.42940	−0.38002808	+0.90917793		
<i>a</i>	2.4300907	Ω	237.42981	−0.86252888	−0.41478925		
<i>e</i>	0.1547445	<i>i</i>	11.65297	−0.33409968	+0.03667938		
<i>P</i>	3.79	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	2

2000 JAN. 24

M.P.C. 37821

1998 03 31	704	0.1-	0.4-	1999 09 06	703	0.8-	0.0	1999 11 05	704	0.2+	0.8-
1998 04 01	704	0.2+	0.2-	1999 09 06	703	0.0	0.3+	1999 11 05	704	0.0	0.6-
1998 04 01	704	0.3+	0.0	1999 09 06	703	(2.3-	2.3+)	1999 11 05	704	0.2-	0.2-
1998 04 01	704	0.4+	0.6-	1999 09 08	704	0.1+	0.6-	1999 11 12	703	0.2-	0.6+
1998 04 01	704	0.3+	0.4-	1999 09 08	704	0.0	0.2-	1999 11 12	703	1.2-	0.5+
1998 04 01	704	0.7-	0.5-	1999 09 08	704	0.3+	0.2-	1999 11 12	703	0.1-	0.3-
1998 05 16	704	0.4-	0.8+	1999 09 08	704	0.4-	0.1-	1999 11 12	703	0.1+	0.2-
1998 05 16	704	0.3-	0.7+	1999 09 08	704	0.1+	0.2-	1999 11 13	699	0.7-	0.0
1998 05 16	704	0.3-	0.1-	1999 09 18	704	0.1-	0.2-	1999 11 13	699	1.1+	0.4-
1998 05 16	704	0.9-	0.6-	1999 09 18	704	0.3+	0.1+	1999 11 13	699	0.9-	0.3+
1998 05 16	704	(2.8-	3.1-)	1999 09 18	704	0.0	0.1+	1999 12 05	704	1.8+	0.1+
1998 05 22	566	0.5+	0.7-	1999 09 18	704	0.2+	0.0	1999 12 05	704	0.2-	1.0-
1998 05 22	566	0.0	0.1-	1999 09 18	704	0.3-	0.4-	1999 12 05	704	0.6+	1.4+
1998 05 22	566	0.2-	0.4-	1999 10 29	703	0.3-	0.1-	1999 12 05	704	0.1-	0.6+
1998 06 18	704	0.3+	0.9-	1999 10 29	703	0.1+	0.1-	2000 01 07	704	0.4-	0.4-
1998 06 18	704	0.4-	0.3+	1999 10 29	703	0.1-	0.2+	2000 01 07	704	0.6+	0.4+
1998 06 18	704	(0.2-	2.2+)	1999 10 29	703	0.3-	0.2-	2000 01 07	704	(1.2-	2.1+)

1999 RD₂₁₁ = 1998 MT₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28588420	ω	251.79616	-0.97563729	-0.20062227		
<i>a</i>	2.2821417	Ω	276.55785	+0.21937461	-0.88735798		
<i>e</i>	0.0919676	<i>i</i>	5.12728	+0.00257924	-0.41514638		
<i>P</i>	3.45	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 24	704	0.6+	0.1-	1999 09 08	704	0.9-	1.0-	1999 10 03	704	0.0	0.1-
1998 06 24	704	0.4+	0.7-	1999 09 08	704	0.6-	0.0	1999 10 03	704	0.5-	0.0
1998 06 24	704	1.6+	1.6-	1999 09 08	704	0.6-	0.4-	1999 11 04	704	0.3-	0.2-
1998 06 24	704	0.5-	1.4+	1999 09 18	704	0.5-	0.0	1999 11 04	704	0.3-	0.0
1998 06 26	704	1.8-	0.7+	1999 09 18	704	0.6-	0.1+	1999 11 04	704	0.0	0.2-
1998 06 26	704	0.1+	0.1+	1999 09 18	704	0.2+	0.1+	1999 11 04	704	0.5+	0.2+
1998 06 26	704	1.4-	0.3-	1999 09 18	704	0.5+	0.6-	1999 11 04	704	0.3+	0.2+
1998 06 26	704	1.0+	0.6+	1999 10 01	703	0.1-	0.0	1999 11 05	704	0.9+	0.5-
1999 09 05	703	0.0	0.4-	1999 10 01	703	0.4+	0.0	1999 11 05	704	1.2+	0.1-
1999 09 05	703	0.1+	0.2+	1999 10 01	703	0.7+	0.6-	1999 11 05	704	0.2+	0.5-
1999 09 05	703	1.0+	0.6+	1999 10 01	703	0.7-	0.8+	1999 11 12	703	1.3-	0.4-
1999 09 05	703	1.1+	0.8+	1999 10 03	704	0.5+	0.3+	1999 11 12	703	0.1-	0.7+
1999 09 08	704	0.2-	0.2-	1999 10 03	704	0.3-	0.4+	1999 11 12	703	0.8-	0.0
1999 09 08	704	0.3-	0.3-	1999 10 03	704	0.5+	0.2+	1999 11 12	703	0.4-	0.9+

1999 RD₂₁₂ = 1998 MY₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17222787	ω	316.29852	+0.21869359	+0.97122107		
<i>a</i>	3.1993894	Ω	326.00865	-0.84247571	+0.13914107		
<i>e</i>	0.1595829	<i>i</i>	9.71637	-0.49234925	+0.19331166		
<i>P</i>	5.72	<i>H</i>	12.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 24	704	0.4+	0.4-	1999 09 18	704	0.3+	0.3-	1999 11 09	703	0.1+	0.3-
1998 06 24	704	0.5-	0.7-	1999 09 18	704	0.3+	0.2-	1999 11 11	703	0.5+	1.8-
1998 06 24	704	0.6+	0.1+	1999 09 18	704	0.7+	0.2-	1999 11 11	703	0.0	0.1+
1998 06 24	704	0.6+	1.4-	1999 09 18	704	0.1+	0.4+	1999 11 11	703	0.4-	0.4+
1998 06 24	704	1.1+	0.9+	1999 09 18	704	0.4+	0.0	1999 11 11	703	0.3-	0.7+
1998 06 26	704	0.3+	0.7+	1999 10 03	704	0.0	0.6+	1999 12 07	699	(0.1+	2.0+)
1998 06 26	704	0.8-	0.8+	1999 10 03	704	0.8-	0.5+	1999 12 07	699	0.1-	0.8+
1998 06 26	704	0.5-	0.3+	1999 10 03	704	0.4+	0.1+	1999 12 07	699	0.7+	1.3+
1998 06 26	704	1.6-	0.5+	1999 10 03	704	0.3-	0.3+	2000 01 06	704	0.3-	0.1-
1999 09 05	703	0.3-	1.0+	1999 10 03	704	0.6-	0.3+	2000 01 06	704	0.3+	0.2+
1999 09 05	703	0.3-	0.5-	1999 11 03	704	0.1+	0.1+	2000 01 06	704	0.5+	0.2+
1999 09 05	703	0.4+	0.7-	1999 11 03	704	0.3+	0.2+	2000 01 06	704	0.1-	0.0
1999 09 05	703	0.7+	0.5-	1999 11 03	704	0.7+	0.1-	2000 01 06	704	0.2+	0.3-
1999 09 08	704	0.3+	1.0-	1999 11 03	704	0.4+	0.2+	2000 01 09	704	0.4-	0.0
1999 09 08	704	0.1-	0.9-	1999 11 03	704	0.9+	0.2+	2000 01 09	704	1.2-	0.3+

1999 09 08	704	(0.3-	2.1-)	1999 11 09	703	0.0	0.2+	2000 01 09	704	0.4-	0.3+
1999 09 08	704	0.1+	0.7-	1999 11 09	703	0.9-	0.1-	2000 01 09	704	1.1-	0.1-
1999 09 08	704	1.1-	0.9-	1999 11 09	703	0.1+	0.1+	2000 01 09	704	0.7-	0.4+

1999 RA₂₁₃ = 1992 AW₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22461743	ω	238.01498	-0.21066345	-0.96815680		
<i>a</i>	2.6802404	Ω	224.79846	+0.94912852	-0.16944463		
<i>e</i>	0.1397189	<i>i</i>	11.06676	+0.23404266	-0.18428489		
<i>P</i>	4.39	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 01 13	303	1.6+	0.2+	1999 10 03	704	0.1+	0.4+	1999 12 07	704	0.0	0.6-
1992 01 14	303	1.8-	0.9-	1999 10 03	704	0.9-	0.5+	1999 12 07	704	0.5+	0.8-
1999 09 09	704	1.2+	0.3-	1999 10 03	704	0.8-	0.5+	1999 12 07	704	0.3+	0.2+
1999 09 09	704	(2.9+	0.8-)	1999 10 03	704	0.4-	0.7+	1999 12 07	704	0.6+	0.9-
1999 09 09	704	0.4+	0.0	1999 11 04	704	0.5+	0.0	2000 01 07	704	0.1-	0.5-
1999 09 09	704	0.0	0.5-	1999 11 04	704	0.2+	0.2+	2000 01 07	704	0.3-	0.7-
1999 09 09	704	0.0	0.6-	1999 11 04	704	0.7-	0.2-	2000 01 07	704	0.1+	0.6+
1999 09 18	704	0.6+	0.4-	1999 11 04	704	0.6-	0.6-	2000 01 07	704	0.4-	0.1+
1999 09 18	704	0.3-	0.3-	1999 11 27	699	0.0	1.1+	2000 01 09	704	0.4-	0.1+
1999 09 18	704	0.5-	1.1+	1999 11 27	699	0.2+	1.7+	2000 01 09	704	0.2+	1.3+
1999 09 18	704	0.1-	1.2-	1999 11 27	699	(0.0	2.4+)	2000 01 09	704	1.4+	1.5+
1999 09 18	704	0.4-	1.4-	1999 12 07	704	0.2-	0.7-				

1999 SX₅ = 1974 PF

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.27939667	ω	268.83295	+0.64936660	-0.70872411		
<i>a</i>	2.3173336	Ω	136.20355	+0.75279945	+0.65045553		
<i>e</i>	0.3041264	<i>i</i>	23.47901	-0.10777760	+0.27316248		
<i>P</i>	3.53	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1974 08 12	675	0.1-	0.5+	1998 06 23	704	0.0	0.4-	1999 12 31	704	0.5+	0.4-
1974 08 13	675	0.1+	0.2+	1998 06 23	704	0.1-	0.8+	1999 12 31	704	0.2+	0.2-
1974 08 14	675	0.6-	0.3-	1998 06 23	704	0.2-	0.4+	1999 12 31	704	0.2+	0.3-
1974 08 16	675	0.7+	1.0-	1999 09 30	704	1.3-	0.1+	1999 12 31	704	(2.2-	0.0)
1992 11 30	808	0.3-	0.3-	1999 09 30	704	0.8+	0.2+	1999 12 31	704	0.5+	0.4+
1992 11 30	808	0.5-	0.7+	1999 09 30	704	0.8-	0.8-	2000 01 02	704	0.0	0.7-
1998 05 27	704	0.0	0.8-	1999 09 30	704	0.4+	1.0-	2000 01 02	704	0.1-	0.8-
1998 05 27	704	0.1+	1.3+	1999 09 30	704	0.3+	0.8-	2000 01 02	704	0.0	0.7-
1998 05 27	704	1.2+	0.1+	1999 10 01	704	0.3-	0.1-	2000 01 02	704	0.3+	0.3-
1998 05 27	704	0.7-	1.1-	1999 10 01	704	0.1-	0.2+	2000 01 02	704	0.2+	0.9-
1998 05 27	704	1.2-	1.2-	1999 10 01	704	0.4-	0.0	2000 01 03	704	0.3-	0.7-
1998 06 04	704	0.6+	0.2+	1999 10 01	704	0.1+	0.4+	2000 01 03	704	0.0	0.7-
1998 06 04	704	0.1-	1.6-	1999 10 01	704	0.7-	0.4-	2000 01 03	704	0.1+	0.7-
1998 06 04	704	0.6-	0.6-	1999 11 30	704	0.3+	0.7+	2000 01 10	704	0.5-	0.1-
1998 06 04	704	0.9-	0.8-	1999 11 30	704	0.7+	0.8+	2000 01 10	704	0.7-	0.1+
1998 06 04	704	(6.2-	0.4-)	1999 11 30	704	0.4+	0.9+	2000 01 10	704	0.5-	0.1+
1998 06 23	704	0.0	0.1+	1999 11 30	704	0.8+	0.7+	2000 01 10	704	0.6-	0.3+
1998 06 23	704	1.0+	1.1+	1999 11 30	704	0.8+	1.0+				

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1998 04 21	704	0.2+	0.7+	1999 08 22	703	0.6-	0.1-	1999 11 03	703	0.4-	0.0
1998 04 21	704	0.3-	1.0-	1999 09 30	703	0.0	0.2+	1999 11 03	703	0.0	0.3-
1998 04 21	704	0.2+	1.3-	1999 09 30	703	0.2+	0.1+	2000 01 05	704	1.1-	0.2+
1998 04 23	704	0.9-	0.1+	1999 09 30	703	(3.1+	1.0+)	2000 01 05	704	0.8+	0.2-
1998 04 23	704	1.0-	1.0-	1999 09 30	703	0.7+	0.1+	2000 01 05	704	0.1+	0.3+
1998 04 23	704	(0.6+	2.3+)	1999 10 04	703	0.1-	0.3-	2000 01 08	704	0.9+	0.6-
1998 04 23	704	0.2-	1.2+	1999 10 04	703	0.8+	0.3+	2000 01 08	704	0.4+	0.0
1998 04 23	704	0.3-	0.0	1999 10 04	703	0.2+	0.4+	2000 01 08	704	0.7-	1.3-
1999 08 22	703	0.5-	0.7-	1999 10 04	703	0.4+	0.4+	2000 01 08	704	1.1-	0.4+

1999 SO₁₁ = 1998 FP₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	87.72674		(2000.0)	P	Q		
<i>n</i>	0.30882085	ω	165.26561	+0.77767850	+0.62786409		
<i>a</i>	2.1676957	Ω	155.75456	-0.58430739	+0.74047794		
<i>e</i>	0.2008065	<i>i</i>	4.42285	-0.23195048	+0.23974802		
<i>P</i>	3.19	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 20	704	0.4-	1.3+	1999 09 30	703	0.3-	0.1+	1999 12 02	699	0.7-	0.7+
1998 03 20	704	0.0	0.1+	1999 10 04	703	0.1+	0.0	1999 12 02	699	0.5-	0.4+
1998 03 20	704	0.8-	0.8-	1999 10 04	703	0.0	0.0	2000 01 05	704	0.5+	0.0
1998 03 20	704	1.7+	0.8+	1999 10 04	703	0.1+	0.1-	2000 01 05	704	0.3+	0.0
1998 03 20	704	1.8-	0.2+	1999 10 04	703	0.1-	0.0	2000 01 05	704	0.3+	0.5-
1998 03 22	704	0.1+	0.0	1999 10 16	164	0.0	1.0-	2000 01 05	704	0.1-	0.4-
1998 03 22	704	0.4+	0.4-	1999 10 16	164	0.2-	0.3-	2000 01 08	704	0.3+	0.5+
1998 03 22	704	0.2-	0.6+	1999 10 17	164	0.1+	0.8+	2000 01 08	704	0.8-	0.3+
1998 03 22	704	(0.2-	3.0+)	1999 11 03	703	0.0	0.3-	2000 01 08	704	0.9+	0.6-
1998 03 22	704	1.0+	1.6-	1999 11 03	703	0.4+	0.4+	2000 01 08	704	0.6-	0.2-
1999 09 30	703	0.2-	0.3+	1999 11 03	703	0.3+	0.3+	2000 01 08	704	0.0	0.6-
1999 09 30	703	0.4+	0.2-	1999 11 03	703	0.2+	0.4-				
1999 09 30	703	0.2-	0.1+	1999 12 02	699	0.2-	0.5+				

1999 TG₆ = 1998 HT₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	147.85201		(2000.0)	P	Q		
<i>n</i>	0.27335874	ω	259.18240	-0.03146564	+0.99943282		
<i>a</i>	2.3513327	Ω	9.04028	-0.88460756	-0.02225845		
<i>e</i>	0.2223742	<i>i</i>	4.37939	-0.46527345	-0.02527072		
<i>P</i>	3.61	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.7+	0.2+	1999 10 03	703	0.8-	0.6-	1999 10 07	046	0.6-	0.8+
1998 04 21	704	0.9+	0.2-	1999 10 04	557	0.1+	0.0	1999 10 07	046	0.7-	0.7+
1998 04 21	704	1.0+	0.1+	1999 10 04	557	0.4+	0.3+	1999 10 07	046	0.5-	0.8+
1998 04 21	704	0.0	0.3-	1999 10 04	557	0.5+	0.0	1999 11 03	704	1.0-	1.3+
1998 04 21	704	0.1+	0.3-	1999 10 04	557	0.5+	0.2+	1999 11 03	704	0.0	0.6+
1998 04 22	704	0.1+	0.1+	1999 10 06	046	0.2+	0.2+	1999 11 03	704	0.5-	1.0-
1998 04 22	704	0.1+	0.2+	1999 10 06	046	0.3-	0.1-	1999 11 03	704	0.2-	0.5-
1998 04 22	704	0.0	0.0	1999 10 06	046	0.1-	0.2+	1999 11 03	704	0.4+	0.1-
1998 04 22	704	0.2-	0.5+	1999 10 06	046	0.2+	0.2+	1999 11 05	704	0.6+	0.6-
1998 04 22	704	0.6-	0.0	1999 10 06	734	0.1-	0.3+	1999 11 05	704	0.3+	1.3-
1998 04 25	699	0.1+	1.1+	1999 10 06	734	0.8+	0.5+	1999 11 05	704	0.7-	0.8-
1998 04 25	699	0.2-	0.9+	1999 10 06	734	1.0+	0.6-	1999 11 05	704	0.2+	0.5-
1998 04 25	699	0.3-	0.7+	1999 10 06	734	1.0+	0.3-	1999 11 05	704	0.0	0.6-
1998 04 30	566	0.4-	0.6-	1999 10 06	734	0.9+	0.0	1999 11 11	703	0.1-	0.1+
1998 04 30	566	0.3-	0.6-	1999 10 07	413	0.3+	0.6+	1999 11 11	703	0.3+	0.7-
1998 04 30	566	0.3-	0.6-	1999 10 07	413	0.3+	0.5+	1999 11 11	703	0.1-	0.2+
1999 10 03	703	0.9+	0.5+	1999 10 07	413	(0.1+	2.3+)	1999 11 11	703	0.4-	0.5+
1999 10 03	703	0.8-	0.2+	1999 10 07	046	0.6-	0.7+				
1999 10 03	703	0.5-	0.7-	1999 10 07	046	0.6-	0.9+				

1999 TH₇ = 1981 UO = 1994 JK₈Id. G. V. Williams (*MPC* 36841), M. E. Sansaturio

2000 JAN. 24

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	293.22952		(2000.0)	P	Q		
<i>n</i>	0.27182168	ω	283.70699	-0.71578305	-0.69614244		
<i>a</i>	2.3601883	Ω	212.22871	+0.67399158	-0.66802543		
<i>e</i>	0.0578835	<i>i</i>	5.93455	+0.18272922	-0.26292152		
<i>P</i>	3.63	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 10 25	046	1.5-	1.8-	1999 10 06	704	0.1-	1.2-	1999 11 05	704	0.6+	0.2+
1981 10 25	046	1.8+	0.1+	1999 10 06	120	0.5+	0.1+	1999 11 05	704	0.6+	0.4+
1994 05 04	675	0.2-	0.2+	1999 10 07	120	0.1+	0.4-	1999 11 05	704	0.8+	0.2+
1994 05 04	675	1.3-	0.2+	1999 10 07	704	0.2+	0.2-	1999 11 09	704	0.4-	0.7-
1994 05 05	675	1.2+	0.2-	1999 10 07	704	0.0	0.0	1999 11 09	704	0.5-	0.9-
1994 05 05	675	0.7+	0.6+	1999 10 07	704	0.4-	0.3-	1999 11 09	704	0.5-	0.7-
1998 06 24	704	0.2+	0.5+	1999 10 07	704	0.2+	0.4-	1999 11 09	704	0.2-	0.8-
1998 06 24	704	1.5-	0.8-	1999 10 07	704	0.0	0.2+	1999 11 09	704	0.2-	0.9-
1998 06 24	704	1.3+	0.1+	1999 10 07	120	0.3-	0.4-	1999 11 12	704	0.4-	0.1-
1999 10 02	703	0.5-	0.4+	1999 10 07	120	0.6-	0.2+	1999 11 12	704	0.4-	0.2+
1999 10 02	703	0.0	0.7+	1999 10 08	120	0.1+	0.3+	1999 11 12	704	0.2-	0.1-
1999 10 02	703	0.3-	0.7+	1999 10 08	120	0.5+	0.5+	1999 11 12	704	0.3-	0.4+
1999 10 02	703	0.1+	0.5+	1999 10 09	703	0.0	0.4+	1999 11 17	704	0.3-	0.5+
1999 10 03	704	0.0	0.2-	1999 10 09	703	0.4-	0.3+	1999 11 17	704	0.3+	0.4+
1999 10 03	704	0.0	0.0	1999 10 09	703	0.0	0.1+	1999 11 17	704	0.5+	0.5+
1999 10 03	704	0.1+	0.0	1999 10 09	703	0.1+	0.7+	1999 11 17	704	0.0	0.1+
1999 10 03	704	0.2-	0.1+	1999 11 02	703	0.0	0.0	1999 11 17	704	0.0	0.5+
1999 10 03	704	0.3-	0.2+	1999 11 02	703	0.3+	0.3+	1999 12 02	699	0.5+	0.3+
1999 10 06	704	0.3+	0.3-	1999 11 02	703	0.6-	1.3+	1999 12 02	699	0.2-	0.9+
1999 10 06	704	0.3+	0.6-	1999 11 02	703	0.1+	0.4+	1999 12 02	699	0.5-	0.7+
1999 10 06	704	0.1-	0.9-	1999 11 05	704	0.6+	0.2+				
1999 10 06	704	0.2+	0.9-	1999 11 05	704	0.1+	0.1+				

1999 TJ₇ = 1991 LM₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	97.94563		(2000.0)	P	Q		
<i>n</i>	0.26846316	ω	99.41156	+0.55612119	+0.83088154		
<i>a</i>	2.3798318	Ω	204.40648	-0.77951693	+0.51349296		
<i>e</i>	0.1795781	<i>i</i>	2.65036	-0.28824047	+0.21438480		
<i>P</i>	3.67	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1991 06 06	809	0.2+	0.1-	1999 10 06	120	0.3-	0.0	1999 11 09	704	0.3+	0.3+
1991 06 06	809	0.8+	0.4-	1999 10 07	120	1.7+	0.3+	1999 11 09	704	0.1-	0.4-
1991 06 06	809	1.1+	0.5+	1999 10 07	120	0.7-	0.4-	1999 11 09	704	0.2-	0.1-
1991 06 08	809	0.9-	0.1-	1999 10 07	120	(2.6+	0.5+)	1999 11 09	704	0.2+	0.2+
1991 06 08	809	1.6-	0.4+	1999 10 09	703	0.1+	0.8-	1999 11 12	704	0.3-	0.5+
1991 06 08	809	0.3+	0.1+	1999 10 09	703	0.4-	0.0	1999 11 12	704	0.2-	0.8+
1999 10 06	691	0.1+	0.2-	1999 10 09	703	1.2-	0.8-	1999 11 12	704	0.8+	0.3+
1999 10 06	691	0.0	0.1-	1999 10 09	703	0.1+	0.5+	1999 11 12	704	0.0	0.4+
1999 10 06	691	0.1+	0.1-	1999 11 09	704	0.2-	0.1+	1999 11 12	704	0.2+	0.3-

1999 TV₈ = 1994 RX₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	309.66743		(2000.0)	P	Q		
<i>n</i>	0.22129247	ω	299.42979	-0.66135712	-0.74951588		
<i>a</i>	2.7070210	Ω	192.10651	+0.72700489	-0.63107701		
<i>e</i>	0.2406471	<i>i</i>	7.90840	+0.18458238	-0.19991934		
<i>P</i>	4.45	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 09 05	809	0.3-	0.6-	1999 10 04	704	0.3+	0.0	1999 11 01	703	1.1-	0.2+
1994 09 05	809	1.2+	0.8+	1999 10 04	704	0.2-	0.3-	1999 11 01	703	0.4-	0.3-
1994 09 05	809	0.6-	0.6+	1999 10 06	120	1.2+	0.2+	2000 01 08	704	0.6+	0.0
1994 09 06	809	0.2+	0.7-	1999 10 06	120	0.0	0.0	2000 01 08	704	0.2-	0.6+
1994 09 06	809	0.4-	0.7+	1999 10 07	704	0.3+	0.2-	2000 01 08	704	0.1-	0.6+
1994 09 06	809	0.1-	0.7-	1999 10 07	704	0.1-	0.4+	2000 01 08	704	0.7-	0.2-

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1999 10 02	703	0.6−	0.5+	1999 10 07	704	0.8+	0.2−	2000 01 08	704	0.4+	0.6−
1999 10 02	703	1.1−	0.2+	1999 10 07	704	0.7+	0.9−	2000 01 10	704	0.2+	1.1−
1999 10 02	703	0.0	0.3+	1999 10 07	120	1.1+	0.4−	2000 01 10	704	0.3−	0.7−
1999 10 02	703	1.0−	0.4+	1999 10 07	120	0.3+	0.0	2000 01 10	704	0.0	1.0+
1999 10 04	704	0.3+	0.8−	1999 11 01	703	0.9+	1.0+	2000 01 10	704	0.2+	0.3+
1999 10 04	704	0.8−	0.3−	1999 11 01	703	0.5−	0.2+				

1999 TD₁₁ = 1992 ES₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	37.31454	(2000.0)		P	Q		
<i>n</i>	0.24080708	ω	77.26889	+0.35485907	−0.93490768		
<i>a</i>	2.5587227	Ω	351.94147	+0.84405365	+0.32255602		
<i>e</i>	0.2988689	<i>i</i>	1.94662	+0.40205532	+0.14800423		
<i>P</i>	4.09	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 03 02	809	1.6−	0.8+	1999 10 12	704	0.6−	0.4+	1999 11 25	159	0.5+	0.8+
1992 03 04	809	1.6+	0.8−	1999 10 12	704	0.5−	0.1+	1999 11 25	159	0.3−	0.3−
1999 10 08	159	0.0	0.4−	1999 10 15	704	0.8+	0.3−	1999 11 25	159	1.2+	0.4−
1999 10 08	159	0.1+	0.2+	1999 10 15	704	0.6+	1.1−	1999 11 25	159	0.9+	0.6−
1999 10 08	159	1.2−	0.8+	1999 10 15	704	0.1−	0.3−	1999 12 18	699	0.6−	0.3+
1999 10 08	159	0.4+	0.4−	1999 10 15	704	0.3+	0.1−	1999 12 18	699	0.5−	0.1+
1999 10 08	159	0.7−	0.0	1999 10 15	704	0.3−	0.1+	1999 12 18	699	0.2−	0.8+
1999 10 08	159	0.7+	0.1+	1999 10 22	704	0.4+	0.6+	2000 01 04	704	0.2−	0.1+
1999 10 08	159	0.6+	0.3−	1999 10 22	704	1.2−	0.6+	2000 01 04	704	0.3+	0.1−
1999 10 08	159	0.2+	0.1+	1999 10 22	704	0.8−	1.1+	2000 01 04	704	0.3+	0.3−
1999 10 10	159	0.5+	0.2−	1999 11 16	704	0.1−	0.3−	2000 01 04	704	0.2+	0.1−
1999 10 10	159	1.3+	0.6+	1999 11 16	704	0.0	0.1−	2000 01 04	704	0.4+	0.4−
1999 10 10	159	0.1−	1.1+	1999 11 16	704	0.4−	0.6−	2000 01 05	699	0.0	0.3+
1999 10 12	704	0.6−	0.0	1999 11 16	704	0.2−	0.1−	2000 01 05	699	0.2−	0.5+
1999 10 12	704	0.2−	0.8−	1999 11 16	704	0.2−	0.4−	2000 01 05	699	0.3−	0.0
1999 10 12	704	0.1+	0.1−	1999 11 25	159	0.2−	0.8−				

1999 TH₂₁ = 1999 VK₄₃ = 1998 DK₆

Id. A. Doppler, G. V. Williams (d)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	113.77834	(2000.0)		P	Q		
<i>n</i>	0.29372676	ω	270.23639	+0.16399703	+0.98631885		
<i>a</i>	2.2413364	Ω	9.25331	−0.85860826	+0.15107448		
<i>e</i>	0.2278352	<i>i</i>	5.97416	−0.48569211	+0.06596684		
<i>P</i>	3.36	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1996 09 22	327	0.1+	0.4+	1999 10 06	704	0.0	0.2−	1999 11 14	704	1.1+	0.0
1996 09 22	327	0.1−	0.4−	1999 10 06	704	0.0	0.1−	1999 11 14	704	0.1−	0.9−
1996 09 22	327	0.0	0.3−	1999 10 06	704	0.0	0.1−	1999 11 14	704	0.4+	0.5−
1996 09 22	327	0.1+	0.1−	1999 10 06	704	0.1−	0.0	1999 11 14	704	0.1+	0.2−
1998 02 22	566	0.3−	0.6−	1999 10 07	704	0.1−	0.1−	1999 11 14	704	0.7−	0.3−
1998 02 22	566	0.2+	0.4−	1999 10 07	704	0.2−	0.5−	1999 11 16	704	0.6+	0.4+
1998 02 22	566	0.2−	0.1−	1999 10 07	704	0.8−	0.8−	1999 11 16	704	0.2−	0.3+
1998 02 23	566	0.3+	0.9−	1999 10 07	704	0.2−	0.9−	1999 11 16	704	0.5+	0.0
1998 02 23	566	0.9−	0.3−	1999 10 07	704	0.0	1.4−	1999 11 16	704	0.0	0.1+
1998 02 23	566	0.2+	0.9+	1999 11 01	703	0.1−	0.0	1999 11 16	704	1.2−	0.1−
1999 09 07	704	1.4+	0.8−	1999 11 01	703	0.1+	0.5+	1999 12 07	704	0.0	0.1−
1999 09 07	704	0.3+	0.3+	1999 11 01	703	0.5−	0.0	1999 12 07	704	0.1−	0.4+
1999 09 07	704	1.2−	0.6−	1999 11 01	703	0.1−	0.7+	1999 12 07	704	0.1+	0.1−
1999 10 01	699	0.3−	1.5+	1999 11 04	703	0.0	0.2+	1999 12 07	704	0.4+	0.2−
1999 10 01	699	0.6−	0.4+	1999 11 04	703	0.0	0.1+	1999 12 07	704	0.3+	0.4+
1999 10 01	699	0.3−	1.2+	1999 11 04	703	1.0−	0.2+	1999 12 13	699	0.1−	0.6+
1999 10 04	704	0.5+	0.1−	1999 11 04	703	0.2−	0.6+	1999 12 13	699	0.8−	1.1+
1999 10 04	704	0.1−	0.2−	1999 11 05	704	0.9+	0.3−	1999 12 13	699	0.3−	0.8+
1999 10 04	704	0.1+	0.0	1999 11 05	704	0.6+	0.6−	2000 01 07	704	0.6−	0.1+
1999 10 04	704	0.3+	0.5−	1999 11 05	704	0.8+	0.3−	2000 01 07	704	1.7−	0.3+
1999 10 04	704	0.5+	0.3−	1999 11 05	704	1.2+	0.2−	2000 01 07	704	0.0	1.2+
1999 10 06	704	0.1+	0.2−	1999 11 05	704	1.0+	0.0	2000 01 07	704	0.4−	0.2+

1999 TE₂₅ = 1995 QP₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	6.03575	(2000.0)		P	Q		
<i>n</i>	0.27453114	ω	208.84170	+0.44897253	−0.89205777		
<i>a</i>	2.3446335	Ω	214.55309	+0.83626251	+0.43981119		
<i>e</i>	0.1232648	<i>i</i>	5.21401	+0.31478355	+0.10391848		
<i>P</i>	3.59	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 08 28	691	0.1−	0.1−	1999 10 03	704	0.4−	0.1−	1999 11 09	704	0.3−	0.8+
1995 08 28	691	0.2+	0.2+	1999 10 03	704	0.2−	0.4−	1999 11 09	704	0.2+	0.4+
1995 08 28	691	0.2−	0.1−	1999 10 06	704	0.0	0.2−	1999 11 09	704	0.5−	0.6+
1995 09 02	691	0.0	0.1−	1999 10 06	704	0.1−	0.1−	1999 11 09	704	0.0	0.6+
1995 09 02	691	0.1+	0.1+	1999 10 06	704	0.1+	0.4+	1999 11 12	704	1.1+	1.1−
1999 10 03	704	0.1+	0.1−	1999 10 06	704	0.0	0.3+	1999 11 12	704	0.4−	0.5−
1999 10 03	704	0.5+	0.6−	1999 10 06	704	0.3+	0.3+	1999 11 12	704	0.1−	0.9−
1999 10 03	704	0.2−	0.1+	1999 11 09	704	0.0	0.5+				

1999 TR₃₀ = 1992 ES₁₄

Id. G. V. Williams, A. Doppler

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	28.39246	(2000.0)		P	Q		
<i>n</i>	0.20537298	ω	72.93517	+0.96756653	−0.25228279		
<i>a</i>	2.8451632	Ω	301.67575	+0.22558638	+0.88601537		
<i>e</i>	0.0207344	<i>i</i>	0.87369	+0.11369164	+0.38901178		
<i>P</i>	4.80	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 03 01	809	0.2−	0.6+	1999 10 06	704	0.1+	0.5−	1999 11 09	704	0.4+	0.0
1992 03 03	809	0.6−	0.0	1999 10 06	704	0.1−	0.1−	1999 11 09	704	0.2−	0.3−
1992 03 06	809	1.1+	0.0	1999 10 06	704	0.2+	0.5−	1999 11 09	704	0.0	0.0
1999 09 05	699	0.2−	1.1+	1999 10 07	704	0.4+	0.5−	1999 11 09	704	0.2+	0.1+
1999 09 05	699	0.7+	0.7−	1999 10 07	704	0.5+	1.2−	1999 11 09	704	0.0	0.1−
1999 09 05	699	1.1+	0.3+	1999 10 07	704	1.2+	0.2+	1999 11 12	704	0.7+	0.2+
1999 10 01	703	0.2−	0.3+	1999 10 07	704	0.3−	1.1−	1999 11 12	704	0.8−	0.4−
1999 10 01	703	0.3−	0.6+	1999 10 07	704	0.5+	0.3−	1999 11 12	704	0.3−	1.3−
1999 10 01	703	0.0	0.2+	1999 10 09	704	0.2−	0.5−	1999 11 12	704	0.1−	0.5+
1999 10 01	703	0.3−	0.7+	1999 10 09	704	0.3−	0.1+	1999 11 12	704	0.7−	0.2−
1999 10 04	704	0.3−	1.1+	1999 10 09	704	0.0	0.1−	1999 11 14	049	0.4+	0.3+
1999 10 04	704	0.5−	0.4+	1999 10 09	704	0.1−	0.3−	1999 11 14	049	0.0	0.6+
1999 10 04	704	0.3−	1.0+	1999 10 09	704	0.1−	0.7−	1999 11 14	049	0.2−	0.1−
1999 10 04	704	0.6−	1.3+	1999 10 30	703	0.5+	1.2+	1999 12 07	704	1.3−	0.7+
1999 10 04	704	0.8−	0.6+	1999 10 30	703	0.2+	0.4+	1999 12 07	704	0.4+	0.8−
1999 10 06	704	0.4+	0.2−	1999 10 30	703	0.9−	0.5−	1999 12 07	704	0.5+	0.6−
1999 10 06	704	0.1−	0.3−	1999 10 30	703	0.1−	0.4+	1999 12 07	704	1.2+	0.6−

1999 TW₃₁ = 1994 RD₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	42.92257	(2000.0)		P	Q		
<i>n</i>	0.20340092	ω	135.33142	+0.99880432	−0.04646189		
<i>a</i>	2.8635236	Ω	227.33802	+0.03704151	+0.92224170		
<i>e</i>	0.0825015	<i>i</i>	1.18487	+0.03190394	+0.38381186		
<i>P</i>	4.85	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 09

1999 TW₃₂ = 1997 EP₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	67.58926		(2000.0)	P			Q				
<i>n</i>	0.20853560	ω	125.30052	+0.79003650			+0.61143805				
<i>a</i>	2.8163238	Ω	197.14751	−0.60003532			+0.75630294				
<i>e</i>	0.1580299	<i>i</i>	8.69332	−0.12569781			+0.23270018				
<i>P</i>	4.73	<i>H</i>	14.9	<i>G</i>	0.15		<i>U</i>	4			
Residuals in seconds of arc											
1997 03 04	691	0.3−	0.1−	1999 10 04	704	0.2−	0.7+	1999 11 09	704	0.7+	0.5+
1997 03 04	691	0.1−	0.2−	1999 10 04	704	0.6+	0.6−	1999 11 09	704	0.5−	0.5+
1997 03 04	691	0.5−	0.2+	1999 10 06	704	0.1−	0.1+	1999 11 09	704	0.7+	0.3−
1997 03 11	691	0.2+	0.1+	1999 10 06	704	0.3+	0.0	1999 11 12	704	0.1−	0.7+
1997 03 11	691	0.4+	0.0	1999 10 06	704	0.3−	0.1+	1999 11 12	704	0.5−	0.0
1997 03 11	691	0.3+	0.0	1999 10 06	704	0.6−	0.2+	1999 11 12	704	0.5+	0.9−
1999 10 04	704	0.1+	0.4−	1999 10 06	704	0.2+	0.0	1999 11 12	704	0.7−	0.7−

1999 TQ₃₃ = 1997 GJ₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	311.41099		(2000.0)			P		Q		
<i>n</i>	0.23099957	ω	260.28832			-0.40910118		-0.91195990		
<i>a</i>	2.6306431	Ω	213.91366			+0.85750993		-0.37258858		
<i>e</i>	0.1165507	<i>i</i>	3.19229			+0.31195023		-0.17177569		
<i>P</i>	4.27	<i>H</i>	14.5			<i>G</i>	0.15	<i>U</i>	4	
Residuals in seconds of arc										
1997 03 12	809	0.3+	0.1-	1997 04 06	704	0.4-	0.4-	1999 11 04	703	0.4+ 0.1+
1997 03 12	809	0.4+	0.2-	1997 04 06	704	(2.2+ 3.3+)		1999 11 05	704	1.0+ 0.4-
1997 03 12	809	0.1+ 0.2-		1999 10 04	704	0.3+ 0.2-		1999 11 05	704	0.1+ 0.1+
1997 03 31	704	0.7+ 0.9-		1999 10 04	704	0.6- 0.0		1999 11 05	704	0.8+ 0.2+
1997 03 31	704	0.5- 0.2+		1999 10 04	704	0.1+ 0.6+		1999 11 05	704	0.4+ 0.4-
1997 03 31	704	0.5+ 0.4-		1999 10 06	704	0.1- 0.1-		1999 11 12	704	0.9- 0.4+
1997 03 31	704	0.6+ 0.9+		1999 10 06	704	0.2- 0.2-		1999 11 12	704	0.9- 0.6-
1997 04 03	704	0.6- 0.9-		1999 10 06	704	0.4- 0.1-		1999 11 12	704	0.8+ 0.4-
1997 04 03	704	0.6- 0.8+		1999 10 06	704	0.2- 0.2-		1999 11 12	704	0.6- 0.1+
1997 04 03	704	0.8- 1.5-		1999 10 06	704	0.1- 0.0		1999 11 27	699	0.0 0.4+
1997 04 03	704	0.3- 1.6+		1999 11 04	703	0.1+ 0.4+		1999 11 27	699	0.4- 0.2+
1997 04 05	704	0.9+ 0.9+		1999 11 04	703	0.2+ 0.4+		1999 11 27	699	0.2+ 0.5-
1997 04 05	704	0.1- 0.4+		1999 11 04	703	0.2- 0.5+				

1999 UW = 1994 PX₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	23.91653		(2000.0)	P			Q				
n	0.21497115	ω	215.43465	+0.87117862			-0.49095264				
a	2.7598317	Ω	173.96517	+0.45807921			+0.81012634				
e	0.0931861	i	1.98920	+0.17666705			+0.32040728				
P	4.58 <th>H</th> <td>15.1<th>G</th><td>0.15<th>U</th><td>4</td><td></td><td></td></td></td>	H	15.1 <th>G</th> <td>0.15<th>U</th><td>4</td><td></td><td></td></td>	G	0.15 <th>U</th> <td>4</td> <td></td> <td></td>	U	4				
Residuals in seconds of arc											
1994 08 10	809	0.2-	0.6+	1999 10 02	703	0.1-	0.6-	1999 11 01	703	0.8-	1.2+
1994 08 10	809	0.4+	0.3+	1999 10 02	703	0.1+	0.2-	1999 11 01	703	0.5-	0.3+
1994 08 10	809	0.2-	0.7+	1999 10 02	703	0.6+	0.0	1999 11 01	703	0.4-	0.6-
1994 08 11	809	(1.3-	3.9-)	1999 10 07	704	0.4+	0.3-	1999 11 01	703	0.7-	0.2+
1994 08 11	809	(1.5-	4.2-)	1999 10 07	704	0.0	0.7-	1999 11 05	704	0.2+	0.5-
1994 08 11	809	(1.2-	3.3-)	1999 10 07	704	(0.9+	2.1-)	1999 11 05	704	0.8-	0.7+
1994 09 03	809	(2.8+	0.5-)	1999 10 07	704	0.6+	0.4-	1999 11 05	704	0.9-	0.8-
1994 09 03	809	0.5+	0.8-	1999 10 16	120	1.0+	0.1+	1999 11 05	704	0.2+	0.9-
1994 09 03	809	0.4-	1.4-	1999 10 16	120	0.0	0.5+	1999 11 12	704	0.3+	0.0
1997 05 02	910	0.3-	0.8-	1999 10 17	120	1.1-	1.2+	1999 11 12	704	1.2+	0.5-
1997 05 02	910	0.2-	0.4-	1999 10 17	120	0.0	0.1-	1999 11 12	704	0.3-	1.4-
1997 05 02	910	0.1-	0.4-	1999 10 19	120	0.5-	1.0+	1999 11 12	704	0.4+	0.4-
1999 10 02	703	0.5+	0.3+	1999 10 19	120	0.8+	0.9+	1999 11 12	704	0.1+	0.1+

1999 UZ = 1993 TR₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	92.97619		(2000.0)			P		Q			
<i>n</i>	0.16996650	ω	260.30713			+0.56031471		+0.82808916			
<i>a</i>	3.2277050	Ω	43.78600			−0.74950760		+0.51604175			
<i>e</i>	0.1568078	<i>i</i>	1.47154			−0.35254188		+0.21901887			
<i>P</i>	5.80	<i>H</i>	13.3			<i>G</i>	0.15	<i>U</i>	5		
Residuals in seconds of arc											
1993 10 10	809	0.7+	1.0+	1999 10 16	120	0.1−	0.5−	1999 11 12	704	0.1−	0.3−
1993 10 10	809	0.4−	0.8+	1999 10 17	120	0.2+	0.0	1999 11 12	704	0.3−	0.1+
1993 10 10	809	1.0−	0.1−	1999 10 17	120	0.6−	0.5−	1999 11 12	704	0.2+	0.2+
1993 10 22	809	0.9+	1.0−	1999 11 09	704	0.2+	0.3−	1999 11 12	704	0.3−	0.2+
1993 10 22	809	0.2+	1.7−	1999 11 09	704	0.2−	0.4+	1999 11 12	704	0.0	0.1+
1993 10 22	809	0.4−	1.0+	1999 11 09	704	0.3+	0.2−				
1999 10 16	120	0.8+	0.3+	1999 11 09	704	0.1−	0.5+				

1999 UG₆ = 1994 TM₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	2.05357		(2000.0)			P		Q			
n	0.19509071	ω	22.33181			+0.60168105		-0.79850576			
a	2.9442746	Ω	30.68764			+0.72702425		+0.53755018			
e	0.1113910	i	2.15552			+0.33078037		+0.27097667			
P	5.05	H	15.1		G	0.15		U	5		
Residuals in seconds of arc											
1994 10 10	691	0.2-	0.2-	1999 10 29	327	0.5+	0.3+	1999 11 09	704	0.2-	0.6+
1994 10 10	691	0.4+	0.2-	1999 10 29	327	0.1-	0.0	1999 11 09	704	0.1-	1.1+
1994 10 10	691	0.0	0.5-	1999 11 01	703	0.9-	1.0+	1999 11 09	704	0.1+	0.6+
1994 10 12	691	0.1-	0.5+	1999 11 01	703	0.0	0.9-	1999 11 12	704	0.7+	0.7-
1994 10 12	691	0.1-	0.1-	1999 11 01	703	0.0	0.0	1999 11 12	704	0.4-	0.2-
1994 10 12	691	0.2+	0.1-	1999 11 01	703	0.0	0.5-	1999 11 12	704	0.2-	0.4-
1999 10 28	327	0.6+	0.9-	1999 11 05	704	0.5+	1.7+	1999 11 12	704	0.5-	0.1-
1999 10 28	327	0.3-	0.2+	1999 11 05	704	1.2+	0.3+	1999 11 12	704	0.3-	1.3-
1999 10 28	327	1.2-	0.4-	1999 11 05	704	0.9+	0.1+				
1999 10 29	327	0.3-	0.4+	1999 11 09	704	0.3-	0.4-				

1999 UH₆ = 1997 EL₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	61.93144		(2000.0)	P		Q					
n	0.26872211	ω	135.69534	+0.99282031	+0.11674299						
a	2.3783026	Ω	217.62346	-0.11814036	+0.92292736						
e	0.2014148	i	2.44623	-0.01872677	+0.36684623						
P	3.67	H	15.6	G	0.15	U	3				
Residuals in seconds of arc											
1997 03 02	691	0.3-	0.1-	1999 10 03	704	0.1+	0.7+	1999 11 09	704	0.6-	0.2+
1997 03 02	691	0.1-	0.0	1999 10 03	704	0.8-	1.0+	1999 11 09	704	0.5-	0.6+
1997 03 02	691	0.2-	0.1-	1999 10 28	327	0.1+	0.1-	1999 11 09	704	0.5-	0.7+
1997 03 09	691	(3.8+	0.1+)	1999 10 28	327	0.3-	0.1+	1999 11 09	704	0.5-	0.8+
1997 03 09	691	0.1+	0.2-	1999 10 28	327	0.1-	0.0	1999 11 12	704	0.2+	0.1-
1997 03 09	691	0.8+	0.8+	1999 10 29	327	0.4+	0.1-	1999 11 12	704	0.6+	0.0
1998 05 01	704	0.3-	0.1-	1999 10 29	327	0.4+	0.2+	1999 11 12	704	0.3+	0.4-
1998 05 01	704	0.4+	0.3+	1999 10 29	327	0.6+	0.7+	1999 11 12	704	0.0	0.5-
1998 05 01	704	1.0-	0.7+	1999 11 04	704	0.3+	0.4-	1999 11 12	704	0.3+	0.9-
1998 05 01	704	1.3+	0.3+	1999 11 04	704	0.5+	0.3-	1999 11 15	691	0.3-	0.0
1999 10 03	704	0.5+	0.0	1999 11 04	704	0.3+	0.8-	1999 11 15	691	1.1-	0.9+
1999 10 03	704	0.0	0.2-	1999 11 04	704	0.2-	0.9-	1999 11 15	691	0.1-	0.0

2000 JAN. 24

M.P.C. 37825

1999 UP₈ = 1997 EE₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	18.98912		(2000.0)	P			Q				
<i>n</i>	0.27241689	ω	47.23047	+0.44717900			−0.89438324				
<i>a</i>	2.3567492	Ω	16.21593	+0.80930369			+0.39960208				
<i>e</i>	0.2023363	<i>i</i>	2.14802	+0.38086543			+0.20098954				
<i>P</i>	3.62 <th><i>H</i></th> <td>16.2</td> <th><i>G</i></th> <td>0.15</td> <th><i>U</i></th> <td>4</td> <td></td> <td></td>	<i>H</i>	16.2	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1997 03 08	684	0.0	0.1−	1999 11 03	704	0.1−	0.5+	1999 11 16	704	0.6+	0.6−
1997 03 08	684	0.1+	0.1+	1999 11 03	704	0.5−	0.3+	1999 12 04	703	0.6−	0.2+
1997 03 09	684	0.1−	0.1−	1999 11 03	704	1.0−	0.3+	1999 12 04	703	0.1−	0.1+
1997 03 09	684	0.0	0.0	1999 11 03	704	0.4−	0.6+	1999 12 04	703	0.7−	0.2−
1999 10 29	703	(0.9+ 2.2−)		1999 11 14	704	0.5+	0.2+	1999 12 04	703	0.1+	0.7−
1999 10 29	703	(0.2+ 2.3−)		1999 11 14	704	0.3+	0.0	1999 12 07	699	0.1−	1.9+
1999 10 29	703	0.5+ 0.7−		1999 11 14	704	0.5+	0.3−	1999 12 07	699	0.3−	0.8+
1999 10 29	703	0.2+ 0.4−		1999 11 14	704	0.5+	0.5−	1999 12 07	699	0.4+	0.6−
1999 11 01	703	0.4− 0.3+		1999 11 14	704	0.2+	0.1+	2000 01 06	704	0.3+	0.6+
1999 11 01	703	0.3− 0.2+		1999 11 16	704	0.3+	0.2−	2000 01 06	704	0.3+	0.9−
1999 11 01	703	0.3− 0.6+		1999 11 16	704	0.1+	0.1−	2000 01 06	704	0.7−	0.1−
1999 11 01	703	0.1− 0.5−		1999 11 16	704	0.6+	0.7−				
1999 11 03	704	0.7− 0.2+		1999 11 16	704	0.6+	0.2−				

1999 UZ₁₀ = 1998 QD₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	358.98082		(2000.0)	P		Q					
<i>n</i>	0.17312572	ω	131.35112	+0.36114406		-0.87593728					
<i>a</i>	3.1883182	Ω	294.76809	+0.71525532		+0.48028080					
<i>e</i>	0.0395745	<i>i</i>	20.62572	+0.59831830		-0.04543377					
<i>P</i>	5.69 <th><i>H</i></th> <td>12.3</td> <th><i>G</i></th> <td>0.15<th><i>U</i></th><td>3<td></td><td></td></td></td>	<i>H</i>	12.3	<i>G</i>	0.15 <th><i>U</i></th> <td>3<td></td><td></td></td>	<i>U</i>	3 <td></td> <td></td>				
Residuals in seconds of arc											
1998 08 24	704	0.2-	0.0	1999 10 31	704	0.1-	0.6+	1999 12 13	704	0.0	0.3-
1998 08 24	704	0.0	0.3-	1999 10 31	704	0.4-	0.4+	1999 12 13	704	0.6-	0.3-
1998 08 24	704	0.2+	0.2-	1999 10 31	704	0.5-	0.1-	2000 01 02	704	0.5-	0.2+
1998 08 24	704	0.2-	0.3-	1999 10 31	704	0.5-	0.5+	2000 01 02	704	0.4+	0.3-
1998 08 27	704	1.0-	1.0+	1999 10 31	704	1.0-	0.2-	2000 01 02	704	0.3+	0.7+
1998 08 27	704	0.7+	1.0-	1999 11 01	704	0.1+	0.7+	2000 01 02	704	0.5+	0.3+
1998 08 27	704	0.3-	0.4-	1999 11 01	704	0.6+	0.5-	2000 01 02	704	0.7+	0.4-
1998 08 27	704	0.3+	0.8+	1999 11 01	704	0.3+	0.1-	2000 01 08	704	0.2-	0.3+
1998 08 27	704	0.5+	0.5+	1999 11 01	704	0.7+	0.3-	2000 01 08	704	0.3+	0.1-
1999 09 22	704	0.7-	1.3-	1999 11 01	704	0.4+	0.4-	2000 01 08	704	0.9-	0.2-
1999 09 22	704	0.4+	0.4+	1999 12 13	704	0.0	0.2-	2000 01 08	704	0.1-	0.3+
1999 09 22	704	0.5+	0.5+	1999 12 13	704	0.2+	0.4-	2000 01 08	704	0.1+	0.0
1999 09 22	704	0.2+	0.7+	1999 12 13	704	0.1+	0.6-				

1999 UH₁₁ = 1998 MJ₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	124.40414		(2000.0)	P		Q					
<i>n</i>	0.20913568	ω	346.66703	+0.51476350		+0.85643286					
<i>a</i>	2.8109338	Ω	314.29801	-0.78146957		+0.44988839					
<i>e</i>	0.0853092	<i>i</i>	3.14443	-0.35259588		+0.25322557					
<i>P</i>	4.71	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1998 06 26	691	0.1-	0.1+	1999 11 01	621	0.2+	0.1+	1999 11 12	621	0.5-	0.3+
1998 06 26	691	0.2-	0.1+	1999 11 01	621	0.1-	0.1+	1999 11 15	621	0.2+	0.3-
1998 06 26	691	0.3+	0.3+	1999 11 01	621	0.1+	0.0	1999 11 15	621	0.1+	0.1+
1998 07 03	691	0.4-	0.3-	1999 11 04	621	0.6-	0.3+	1999 11 15	621	0.1+	0.1-
1998 07 03	691	0.1+	0.2-	1999 11 04	621	0.5-	0.1+	1999 11 16	621	0.4+	0.5-
1998 07 03	691	0.2+	0.1-	1999 11 04	621	0.6-	0.4+	1999 11 16	621	0.4-	1.3-
1999 10 31	621	0.2+	0.4+	1999 11 05	621	1.1+	0.0	1999 11 16	621	0.3+	0.2+
1999 10 31	621	0.2-	0.5+	1999 11 05	621	0.1-	0.3-				
1999 10 31	621	0.0	0.2-	1999 11 12	621	0.3+	0.2+				

1999 UL₁₂ = 1994 EM₇ = 1998 FB₁₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	145.71882		(2000.0)	P		Q					
<i>n</i>	0.27009016	ω	102.21527	-0.30813943		+0.95107256					
<i>a</i>	2.3702648	Ω	149.80766	-0.88938344		-0.27955451					
<i>e</i>	0.1721638	<i>i</i>	2.57645	-0.33770873		-0.13156843					
<i>P</i>	3.65	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1994 03 05	104	0.3-	0.5-	1998 03 22	704	(2.5-	1.4+)	1998 04 22	704	(1.1+	3.1-)
1994 03 05	104	0.6-	0.4-	1998 03 22	704	0.8-	0.4-	1998 04 22	704	1.4+	0.3-
1994 03 05	104	0.0	0.3+	1998 03 22	704	(4.1-	0.7+)	1998 04 22	704	0.8+	1.3-
1994 03 05	104	0.5+	0.4-	1998 03 25	704	0.0	0.5+	1998 04 22	704	(2.1+	1.1+)
1994 03 05	104	0.0	0.3-	1998 03 25	704	0.8+	1.2+	1999 10 31	691	0.2+	0.2-
1994 03 05	104	1.0+	1.1+	1998 03 25	704	1.7+	0.2-	1999 10 31	691	0.3+	0.1-
1994 03 05	104	1.0-	1.6+	1998 03 25	704	1.3-	0.1+	1999 10 31	691	0.4+	0.2-
1994 03 06	104	0.2-	0.6-	1998 03 25	704	0.8-	1.4+	1999 11 03	691	0.1+	0.1+
1994 03 06	104	0.4-	0.7-	1998 03 28	704	1.3-	0.2-	1999 11 03	691	0.5-	0.2+
1994 03 06	104	0.9+	0.5-	1998 03 28	704	0.2+	0.8-	1999 11 03	691	0.1+	0.0
1994 03 06	104	(2.9+	3.7-)	1998 03 28	704	(2.7-	1.7+)	1999 11 05	691	0.0	0.3-
1998 03 20	704	1.8+	1.7+	1998 03 28	704	(3.2-	0.6+)	1999 11 05	691	0.2-	0.1-
1998 03 20	704	0.2+	0.3-	1998 03 28	704	0.3-	0.9-	1999 11 05	691	0.1+	0.2-
1998 03 20	704	0.7-	1.4+	1998 04 20	704	0.4-	0.0	1999 11 10	691	0.2+	0.4-
1998 03 20	704	0.8-	1.2-	1998 04 20	704	0.8-	1.3-	1999 11 10	691	0.0	0.2-
1998 03 20	704	0.1-	0.0	1998 04 20	704	0.0	1.1+	1999 11 10	691	0.1-	0.1-
1998 03 22	704	0.2+	0.6-	1998 04 20	704	0.3+	1.8-				
1998 03 22	704	0.5-	0.9+	1998 04 20	704	(4.0-	3.3-)				

1999 US₁₂ = 1998 HC₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	59.11014		(2000.0)			P		Q			
<i>n</i>	0.26028347	ω	137.40915			+0.94644170		+0.31954276			
<i>a</i>	2.4294334	Ω	204.07271			-0.31827221		+0.89921401			
<i>e</i>	0.1276508	<i>i</i>	6.51283			-0.05432222		+0.29884208			
<i>P</i>	3.79	<i>H</i>	15.7		<i>G</i>	0.15		<i>U</i>	3		
Residuals in seconds of arc											
1998 04 21	704	0.1-	0.6+	1999 09 30	703	0.6-	0.2-	1999 11 03	703	0.4+	0.9+
1998 04 21	704	0.7+	0.8+	1999 09 30	703	0.4-	0.1-	1999 11 03	703	0.1+	0.3-
1998 04 21	704	1.6+	0.4+	1999 09 30	703	0.5-	0.4-	1999 11 03	703	0.6-	0.6-
1998 04 21	704	(0.8-	2.4+)	1999 09 30	703	0.6-	0.5+	1999 11 03	703	0.7-	1.1+
1998 04 22	704	0.5-	1.7+	1999 10 04	704	0.7+	0.6+	1999 11 09	704	0.5-	0.1+
1998 04 22	704	0.8-	0.5+	1999 10 04	704	0.4+	0.2-	1999 11 09	704	0.9-	0.3+
1998 04 22	704	0.0	0.6-	1999 10 04	704	0.8+	0.2-	1999 11 09	704	0.4+	0.6-
1998 04 22	704	(2.2+	0.1-)	1999 10 04	704	0.4-	1.8+	1999 11 09	704	0.3+	0.4+
1999 09 07	704	0.7+	0.2+	1999 10 04	704	0.3-	0.1-	1999 11 09	704	0.4+	0.6-
1999 09 07	704	0.3+	0.2+	1999 10 29	703	0.0	1.9-	1999 12 07	704	0.2+	1.3+
1999 09 07	704	0.7+	0.1-	1999 10 29	703	0.6-	0.1+	1999 12 07	704	0.2+	1.9+
1999 09 07	704	0.7+	0.5+	1999 10 29	703	0.3-	0.2-	1999 12 07	704	0.5+	1.4+
1999 09 07	704	0.1-	1.3-	1999 10 29	703	1.3-	1.2-	1999 12 07	704	0.3+	1.2+

1999 UV₁₂ = 1998 HL₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	43.81545		(2000.0)	P			Q		
n	0.27923324	ω	152.82121	+0.99602793		-0.06679908			
a	2.3182377	Ω	211.18052	+0.04569245		+0.95095483			
e	0.1249422	i	6.52956	+0.07642355		+0.30203112			
P	3.53	H	15.6	G	0.15		U	3	
Residuals in seconds of arc									
1998 04 21	704 1.1+	1.4-	1999 09 07 704	0.8+	0.1-	1999 11 03 703	1.0-	0.2-	
1998 04 21	704 0.7-	1.6-	1999 09 08 699	0.0	0.2+	1999 11 03 703	0.2-	0.5+	
1998 04 21	704 (1.6-	2.6+)	1999 09 08 699	1.2-	0.5+	1999 11 03 703	1.1-	0.2+	
1998 04 21	704 0.9-	1.5+	1999 09 08 699	0.1+	1.6+	1999 11 03 703	0.6-	0.1+	
1998 04 22	704 0.3+	1.3-	1999 09 18 703	0.6-	0.1-	1999 11 09 704	0.3-	0.4+	

1998 04 22	704	0.3+	0.9+	1999 09 18	703	0.5-	0.0	1999 11 09	704	0.6+	0.1+
1998 04 22	704	0.7-	0.2-	1999 09 18	703	0.4-	0.3-	1999 11 09	704	1.2+	1.1+
1998 04 22	704	0.0	0.2+	1999 09 18	703	0.4-	0.5+	1999 11 09	704	0.3+	0.3-
1998 04 22	704	0.3+	0.6+	1999 10 04	704	1.1+	0.6-	1999 11 28	699	0.3+	0.4-
1999 07 23	704	0.1+	0.8+	1999 10 04	704	0.4+	1.1-	1999 11 28	699	0.5+	1.2+
1999 07 23	704	0.1+	0.3+	1999 10 04	704	1.3+	1.6-	1999 11 28	699	1.7+	1.3+
1999 07 23	704	1.8-	0.1+	1999 10 04	704	0.7+	0.9-	1999 12 07	704	0.9-	0.2-
1999 07 23	704	0.3+	0.4+	1999 10 04	704	0.1-	0.5-	1999 12 07	704	0.5-	0.8-
1999 09 07	704	0.4+	0.3-	1999 10 29	703	0.6-	0.2+	1999 12 07	704	0.2-	0.2-
1999 09 07	704	0.8+	0.0	1999 10 29	703	0.6-	0.4-	1999 12 07	704	0.1-	1.1-
1999 09 07	704	0.9+	0.1-	1999 10 29	703	0.2-	0.2+				
1999 09 07	704	0.2+	0.6-	1999 10 29	703	0.6-	0.3-				

1999 UH₁₄ = 1992 WT₆ = 1998 KZ₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	94.92912		(2000.0)		P		Q
<i>n</i>	0.27693074	ω	252.66740		+0.83488898		+0.54202913
<i>a</i>	2.3310698	Ω	74.41380		-0.45970146		+0.78231416
<i>e</i>	0.0488082	<i>i</i>	5.70392		-0.30271267		+0.30690222
<i>P</i>	3.56	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 11 19	691	0.5+	0.4-	1998 05 24	704	0.2-	0.5-	1999 11 03	703	0.1+	0.5-
1992 11 19	691	0.3+	0.0	1998 05 24	704	0.3+	0.3+	1999 11 05	704	0.4+	0.2-
1992 11 19	691	0.4+	0.1-	1998 05 24	704	0.7+	1.7-	1999 11 05	704	0.5-	0.2-
1992 11 20	691	0.8-	0.2-	1999 10 29	703	1.1-	0.2-	1999 11 05	704	0.1-	0.4+
1992 11 20	691	0.3+	0.2+	1999 10 29	703	0.6+	0.3-	1999 11 08	704	0.9+	0.9-
1992 11 20	691	0.5-	0.2+	1999 10 29	703	0.1-	0.1-	1999 11 08	704	0.1-	0.5+
1998 05 22	704	0.0	0.7-	1999 10 29	703	0.4+	0.6+	1999 11 08	704	0.3+	0.1-
1998 05 22	704	0.5-	1.0+	1999 11 03	703	1.8+	0.4+	1999 11 08	704	0.3-	0.7-
1998 05 22	704	0.3+	0.5+	1999 11 03	703	0.9-	0.6+				
1998 05 24	704	0.6-	0.8+	1999 11 03	703	1.3-	0.7+				

1999 UH₁₅ = 1997 LH₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	344.81480		(2000.0)		P		Q
<i>n</i>	0.18060206	ω	304.93955		+0.25523653		-0.96602123
<i>a</i>	3.0997089	Ω	130.22009		+0.90357215		+0.22332845
<i>e</i>	0.0469790	<i>i</i>	3.05619		+0.34410998		+0.13010532
<i>P</i>	5.46	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 08	809	0.9+	0.1-	1999 10 17	012	0.2-	0.7-	1999 11 03	703	0.2+	0.0
1997 06 08	809	0.3-	0.4-	1999 10 29	703	0.7+	0.8+	1999 11 03	703	0.6+	0.5-
1997 06 08	809	0.0	0.6-	1999 10 29	703	(3.6-	0.3-)	1999 11 15	704	0.5-	0.1+
1997 06 09	809	0.3-	1.4+	1999 10 29	703	0.5+	1.1-	1999 11 15	704	0.4+	0.3-
1997 06 09	809	(0.5+	2.7-)	1999 10 29	703	0.2-	1.1+	1999 11 15	704	0.5-	0.3-
1997 06 09	809	0.4-	0.2-	1999 11 03	703	(2.2-	0.3-)	1999 11 15	704	0.3+	0.5+
1999 10 16	012	0.4-	0.3+	1999 11 03	703	0.7-	0.5+	1999 11 15	704	0.0	0.2-

1999 UG₂₂ = 1997 EP₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	319.79274		(2000.0)		P		Q
<i>n</i>	0.23721383	ω	63.21619		-0.38315663		-0.92304114
<i>a</i>	2.5844971	Ω	49.35647		+0.83053005		-0.36059296
<i>e</i>	0.0860299	<i>i</i>	2.60141		+0.40424107		-0.13404389
<i>P</i>	4.15	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 10	809	0.2+	0.7-	1999 10 31	691	0.2-	0.1+	1999 11 09	704	0.2+	0.0
1997 03 10	809	0.0	0.8-	1999 10 31	691	0.2+	0.4+	1999 11 09	704	0.6+	0.0
1997 03 10	809	1.3+	1.8-	1999 10 31	691	0.2-	0.1+	1999 11 09	704	0.4-	0.3-
1997 03 11	809	0.2-	0.7+	1999 11 04	691	0.1-	0.1-	1999 11 09	704	0.0	0.2+
1997 03 11	809	0.3-	0.7+	1999 11 04	691	0.1-	0.1-				
1997 03 11	809	1.0-	1.9+	1999 11 04	691	0.1-	0.1-				

1999 UJ₂₃ = 1998 HG₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	41.99705		(2000.0)		P		Q
<i>n</i>	0.27040088	ω	107.17495		+0.99579894		-0.03515929
<i>a</i>	2.3684487	Ω	254.90274		+0.00085989		+0.92689378
<i>e</i>	0.1205225	<i>i</i>	5.02383		+0.09156274		+0.37367332
<i>P</i>	3.64	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 04 21	704	0.4-	1.3+	1999 09 08	704	0.1-	0.8-	1999 11 04	703	0.1+	0.2-
1998 04 21	704	1.3-	0.1+	1999 09 08	704	0.2+	0.3-	1999 11 04	703	1.3-	1.2+
1998 04 21	704	1.5+	1.1-	1999 09 18	703	0.1-	0.1-	1999 11 04	703	0.5-	0.2+
1998 04 22	704	(0.1+	2.5+)	1999 09 18	703	0.0	0.4+	1999 11 05	704	0.1+	0.8+
1998 04 22	704	0.3+	0.8+	1999 09 18	703	0.4-	0.3+	1999 11 05	704	0.0	0.2+
1998 04 22	704	0.9+	1.6-	1999 09 18	703	0.1+	0.1+	1999 11 05	704	0.5+	0.1+
1998 04 22	704	0.0+	0.4+	1999 10 04	704	0.2+	0.3-	1999 11 05	704	0.9+	0.2+
1998 04 22	704	(2.8-	2.3+)	1999 10 04	704	0.1+	0.9-	1999 11 05	704	0.3+	0.2-
1999 07 23	704	0.3-	0.2+	1999 10 04	704	0.3+	0.5-	1999 11 16	704	0.4+	0.4-
1999 07 23	704	0.3+	0.3-	1999 10 04	704	1.0+	0.7-	1999 11 16	704	0.9+	0.9-
1999 07 23	704	0.0	0.1-	1999 10 04	704	0.5+	0.5-	1999 11 16	704	1.4+	0.0
1999 07 23	704	0.5-	0.2+	1999 10 28	703	1.5-	0.4+	1999 11 16	704	1.4+	0.1+
1999 07 23	704	0.2-	0.2-	1999 10 28	703	1.0-	0.6+	1999 12 03	704	0.7-	0.2+
1999 09 08	704	0.9-	1.1+	1999 10 28	703	1.4-	1.0+	1999 12 03	704	0.4-	1.1-
1999 09 08	704	0.1+	0.5+	1999 10 28	703	0.3+	0.0	1999 12 03	704	0.7-	0.9-
1999 09 08	704	1.1+	0.1-	1999 11 04	703	0.5-	0.3+				

1999 UQ₂₄ = 1980 RH₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	63.36535		(2000.0)		P		Q
<i>n</i>	0.20929801	ω	70.02822		+0.96275903		+0.24918504
<i>a</i>	2.8094803	Ω	275.43049		-0.27020387		+0.87361228
<i>e</i>	0.1009825	<i>i</i>	6.04806		-0.00921507		+0.41798135
<i>P</i>	4.71	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 09 13	675	0.1+	0.4+	1999 11 04	704	0.6+	0.9-	1999 12 06	704	0.8-	0.5+
1980 09 14	675	0.3-	0.1+	1999 11 04	703	(1.0+	2.4-)	1999 12 06	704	1.1-	0.8-
1999 10 03	704	0.3+	0.2-	1999 11 04	703	0.3-	0.1-	1999 12 30	699	0.2+	0.8+
1999 10 03	704	0.1+	0.3-	1999 11 04	703	0.2-	0.4+	1999 12 30	699	0.3-	0.5+
1999 10 03	704	0.1+	0.3-	1999 11 11	703	0.0	0.2+	1999 12 30	699	0.0	0.9+
1999 10 03	704	0.0	0.4-	1999 11 11	703	0.1+	0.4-	2000 01 04	704	0.0	0.2+
1999 10 03	704	0.3+	0.1-	1999 11 11	703	0.0	0.3-	2000 01 04	704	0.1+	0.6-
1999 10 28	703	0.3-	0.1+	1999 11 11	703	0.2+	0.1-	2000 01 04	704	0.2+	0.1-
1999 10 28	703	0.6-	0.5+	1999 11 12	699	0.2+	0.3+	2000 01 04	704	0.1-	0.7-
1999 10 28	703	0.4-	0.0	1999 11 12	699	0.8+	1.0+	2000 01 04	704	0.8+	0.6-
1999 10 28	703	0.3-	0.0	1999 11 12	699	0.0	0.8+	2000 01 06	704	0.3+	0.5+
1999 11 04	704	0.1-	0.3-	1999 12 03	699	0.2+	0.5+	2000 01 06	704	0.4-	0.1-
1999 11 04	704	0.4+	0.4-	1999 12 03	699	0.0	0.7+	2000 01 06	704	0.0	0.3-
1999 11 04	704	0.1-	0.6-	1999 12 03	699	0.3-	0.6+	2000 01 06	704	0.3-	1.3-
1999 11 04	704	0.2+	0.8-	1999 12 06	704	0.7+	0.5+	2000 01 06	704	0.3+	0.2-
1999 11 04	703	0.2-	0.1+	1999 12 06	704	0.2-	0.2-				

1999 UC₂₅ = 1977 RO₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	186.18732		(2000.0)		P		Q
<i>n</i>	0.27193216	ω	241.83788		-0.55550882		+0.83143523
<i>a</i>	2.3595490	Ω	354.37734		-0.71719128		-0.48590680
<i>e</i>	0.0665870	<i>i</i>	6.56306		-0.42076908		-0.26946251
<i>P</i>	3.62	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 09 09	675	0.3+	0.0	1999 10 28	703	0.8-	0.6-	1999 11 11	703	1.0-	0.1-
1977 09 10	675	0.6-	0.4+	1999 10 28	703	0.4-	0.1-	1999 11 12	699	0.3+	0.3+
1995 08 26	809	0.1-	0.0	1999 10 28	703	0.7-	0.3-	1999 11 12	699	0.9-	0.0
1999 09 12	703	0.3-	0.7+	1999 11 04	704	0.2+	0.5-	1999 11 12	699	0.6+	0.3+

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1999 09 12	703	0.7+	0.8+	1999 11 04	704	0.2+	1.5-	1999 12 03	699	0.1+	0.2+
1999 09 12	703	0.4-	0.9-	1999 11 04	704	0.9+	0.8-	1999 12 03	699	0.6+	1.2-
1999 09 12	703	0.3-	0.6-	1999 11 04	703	0.2-	0.3-	1999 12 03	699	0.8+	0.5+
1999 09 18	699	0.6-	0.0	1999 11 04	704	0.7+	1.4-	2000 01 04	704	0.3-	0.6-
1999 09 18	699	0.5-	0.3+	1999 11 04	703	0.4-	0.7+	2000 01 04	704	0.0	1.4+
1999 09 18	699	0.9-	1.0+	1999 11 04	704	0.8+	1.3-	2000 01 04	704	0.6+	0.5+
1999 10 03	704	1.6+	0.2+	1999 11 04	703	0.0	0.2-	2000 01 06	704	0.4-	0.3-
1999 10 03	704	0.2+	0.2-	1999 11 04	703	0.5-	0.1-	2000 01 06	704	0.3+	0.6+
1999 10 03	704	1.1+	0.8+	1999 11 11	703	0.6+	0.7+	2000 01 06	704	1.0-	0.6+
1999 10 03	704	0.7+	0.2-	1999 11 11	703	0.4-	0.2-	2000 01 06	704	0.7-	0.9+
1999 10 28	703	0.3+	0.0	1999 11 11	703	0.1-	1.4+	2000 01 06	704	0.3-	0.2+

1999 UX₂₇ = 1997 JB₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	339.80791		(2000.0)	P		Q	
<i>n</i>	0.21594274	ω	230.09755	+0.37257427		-0.92665154	
<i>a</i>	2.7515472	Ω	198.21886	+0.89278928		+0.37263207	
<i>e</i>	0.1601324	<i>i</i>	9.21240	+0.25321080		+0.04962112	
<i>P</i>	4.56	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 05 08	691	0.2+	0.2+	1999 10 30	691	0.2+	0.0	1999 11 10	691	0.2+	0.1+
1997 05 08	691	0.2+	0.0	1999 10 30	691	0.1-	0.2+	1999 11 10	691	0.2+	0.1+
1997 05 08	691	0.5+	0.2-	1999 10 30	691	0.0	0.2+	1999 11 10	691	0.2+	0.4+
1997 05 09	691	0.4-	0.2-	1999 11 05	691	0.3-	0.5-	1999 11 14	691	0.1-	0.2+
1997 05 09	691	0.2-	0.3+	1999 11 05	691	0.1+	0.4-	1999 11 14	691	0.0	0.2-
1997 05 09	691	0.3-	0.3-	1999 11 05	691	0.1-	0.1-	1999 11 14	691	0.1-	0.0

1999 UQ₂₉ = 1998 HR₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	76.83828		(2000.0)	P		Q	
<i>n</i>	0.25926122	ω	293.56376	+0.78835227		+0.61311778	
<i>a</i>	2.4358153	Ω	28.69925	-0.51876343		+0.70691731	
<i>e</i>	0.1415110	<i>i</i>	6.08034	-0.33073435		+0.35263934	
<i>P</i>	3.80	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 03 29	704	0.8-	1.3+	1999 09 09	704	0.8+	0.5+	1999 10 31	691	0.1+	0.1-
1998 03 29	704	1.2+	0.8-	1999 09 09	704	0.3+	0.6+	1999 11 05	691	0.2+	0.4-
1998 03 29	704	0.4+	0.6-	1999 09 09	704	0.3+	0.0	1999 11 05	691	0.2+	0.5-
1998 03 29	704	1.1+	0.5-	1999 09 09	704	0.4+	0.2-	1999 11 05	691	0.4+	0.5-
1998 04 01	704	1.2-	1.1-	1999 10 01	703	0.5-	0.0	1999 11 09	704	0.3+	0.3-
1998 04 01	704	1.1+	0.9+	1999 10 01	703	0.5-	0.3+	1999 11 09	704	0.7+	0.0
1998 04 01	704	1.2-	1.8+	1999 10 01	703	0.5-	0.3+	1999 11 09	704	0.1-	0.2-
1998 04 01	704	(3.8-	1.7-)	1999 10 01	703	0.7-	0.6+	1999 11 09	704	0.4-	0.1-
1998 04 21	704	0.6-	0.8-	1999 10 04	704	(2.5+	1.9-)	1999 11 09	704	1.1-	0.1+
1998 04 21	704	0.0	0.3+	1999 10 04	704	0.1-	0.5-	1999 11 12	704	0.7+	0.2-
1998 04 21	704	0.3-	0.5-	1999 10 04	704	0.3-	1.5-	1999 11 12	704	0.2+	0.1-
1998 04 21	704	1.3-	0.4-	1999 10 04	704	1.1-	0.6-	1999 11 12	704	0.8+	0.0
1998 04 22	704	0.4+	0.2-	1999 10 30	703	0.8-	0.7+	1999 11 12	704	0.9-	0.4+
1998 04 22	704	0.1+	1.1+	1999 10 30	703	0.6+	0.6+	1999 12 07	704	0.2-	0.2+
1998 04 22	704	0.8+	1.1+	1999 10 30	703	1.2+	0.7+	1999 12 07	704	0.1-	0.3+
1998 04 22	704	0.7+	0.5-	1999 10 30	703	0.2-	1.0+	1999 12 07	704	0.3-	0.9+
1998 04 22	704	0.5+	0.3+	1999 10 31	691	0.0	0.4-	1999 12 07	704	0.4-	0.3+
1999 09 09	704	0.3+	0.2+	1999 10 31	691	0.1+	0.0				

1999 UQ₃₄ = 1998 HC₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	123.71270		(2000.0)	P		Q	
<i>n</i>	0.27734579	ω	247.73282	+0.27964671		+0.95840661	
<i>a</i>	2.3287436	Ω	38.65054	-0.84383316		+0.27369010	
<i>e</i>	0.1618101	<i>i</i>	5.24070	-0.45797743		+0.08093515	
<i>P</i>	3.55	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 25	704	0.3+	1.9-	1998 04 21	704	0.3+	0.1-	1999 11 04	704	1.8-	0.1+
1998 03 25	704	0.3-	0.2-	1998 04 21	704	1.0-	0.8+	1999 11 04	704	0.3-	0.0
1998 03 25	704	0.4-	1.4+	1998 04 21	704	0.7+	0.6+	1999 11 05	691	0.0	0.0
1998 03 25	704	(2.8+	0.4-)	1998 04 21	704	0.2-	0.4+	1999 11 05	691	0.1+	0.2-
1998 03 25	704	0.9-	1.1+	1998 04 21	704	0.1-	0.4+	1999 11 05	691	0.1+	0.1-
1998 03 29	704	1.7+	0.5-	1999 10 29	703	1.4-	0.8+	1999 11 09	704	0.4+	0.5+
1998 03 29	704	1.6+	0.5+	1999 10 29	703	0.7-	0.4+	1999 11 09	704	0.1+	0.6+
1998 03 29	704	0.4-	0.0	1999 10 29	703	0.8+	1.2-	1999 11 09	704	0.1-	0.6+
1998 03 29	704	0.6-	1.0-	1999 10 29	703	0.4-	0.8+	1999 11 09	704	0.4+	0.5-
1998 03 29	704	0.1+	0.3-	1999 10 31	691	0.6+	0.0	1999 11 12	704	0.4+	0.7-
1998 04 20	704	1.0+	0.3-	1999 10 31	691	0.6+	0.1+	1999 11 12	704	0.2+	0.3-
1998 04 20	704	(2.4+	0.3+)	1999 10 31	691	0.5+	0.0	1999 11 12	704	0.1+	0.8-
1998 04 20	704	0.2-	0.3+	1999 11 04	704	0.2+	0.4+	1999 11 12	704	0.2+	0.6-
1998 04 20	704	0.1+	0.6-	1999 11 04	704	0.4+	0.3-				
1998 04 20	704	1.3-	0.1-	1999 11 04	704	0.5-	0.8+				

1999 UT₃₄ = 1993 FC₂₁ = 1997 HR₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	316.86631		(2000.0)	P		Q	
<i>n</i>	0.24575812	ω	275.63444	-0.53584005		-0.84401283	
<i>a</i>	2.5242409	Ω	206.80526	+0.79325104		-0.49401634	
<i>e</i>	0.1300566	<i>i</i>	2.89229	+0.28918546		-0.20878266	
<i>P</i>	4.01	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 03 21	809	0.2-	0.5+	1997 04 30	691	0.1-	0.2+	1999 11 05	691	0.3+	0.3-
1993 03 22	809	0.7+	0.4+	1997 04 30	691	0.0	0.2+	1999 11 09	704	0.2+	0.2-
1993 03 26	809	0.5+	0.5-	1997 04 30	691	0.1-	0.3-	1999 11 09	704	0.2-	0.4+
1995 11 15	327	0.1-	0.5+	1999 10 29	703	0.9+	0.6+	1999 11 09	704	0.6+	0.1-
1995 11 15	327	0.4-	0.1-	1999 10 29	703	0.3-	0.4+	1999 11 09	704	0.7-	0.6+
1995 11 15	327	0.5-	0.0	1999 10 29	703	0.2-	0.5+	1999 11 12	704	0.9+	0.5+
1997 04 06	566	0.3-	0.3-	1999 10 29	703	0.4+	0.2+	1999 11 12	704	0.8-	0.6-
1997 04 06	566	0.1+	0.5-	1999 10 31	691	0.0	0.1-	1999 11 12	704	0.0	0.6-
1997 04 06	566	0.4+	0.1-	1999 10 31	691	0.1+	0.1-	1999 11 12	704	0.2-	0.7-
1997 04 28	691	0.4-	0.2+	1999 10 31	691	0.1+	0.2-	1999 11 12	704	0.2-	0.0
1997 04 28	691	0.5-	0.1+	1999 11 05	691	0.1+	0.3-				
1997 04 28	691	0.1-	0.2+	1999 11 05	691	0.2+	0.3-				

1999 UG₃₅ = 1995 SL₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	28.41394		(2000.0)	P		Q	
<i>n</i>	0.26233431	ω	207.93003	+0.76287516		-0.64652714	
<i>a</i>	2.4167552	Ω	192.35399	+0.59739112		+0.70776265	
<i>e</i>	0.2042418	<i>i</i>	1.31601	+0.24727583		+0.28473617	
<i>P</i>	3.76	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 09 26	691	0.1+	0.1+	1995 10 02	691	0.0	0.2-	1999 11 09	704	0.5-	0.2+
1995 09 26	691	0.0	0.0	1995 10 02	691	0.2+	0.3-	1999 11 09	704	0.1-	0.2+
1995 09 26	691	0.0	0.0	1999 10 31	691	0.1+	0.1-	1999 11 09	704	0.4-	0.2+
1995 09 28	327	0.4-	0.0	1999 10 31	691	0.2+	0.1-	1999 11 12	704	0.6-	1.1-
1995 09 28	327	0.2+	0.0	1999 10 31	691	0.1+	0.1-	1999 11 12	704	0.1+	0.2+
1995 09 28	327	0.2+	0.3-	1999 11 05	691	0.0	0.3-	1999 11 12	704	0.5+	0.4+
1995 09 29	327	0.3-	1.2+	1999 11 05	691	0.1-	0.2-	1999 11 12	704	0.2+	0.3+
1995 09 29	327	0.4-	0.0	1999 11 05	691	0.2+	0.2-	1999 11 12	704	0.5+	0.6+
1995 09 29	327	0.3+	0.2-	1999 11 09	704	0.3-	0.4-				
1995 10 02	691	0.0	0.3-	1999 11 09	704	0.2+	0.3+				

1999 VE₂ = 1993 FU₅₉ = 1995 YA₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	38.12934		(2000.0)	P		Q	
<i>n</i>	0.23976034	ω	196.63010	+0.91034991		-0.41371994	
<i>a</i>	2.5661644	Ω	187.83054	+0.38751416		+0.86062665	
<i>e</i>	0.2069180	<i>i</i>	4.18501	+0.14524400		+0.29691343	
<i>P</i>	4.11	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 03 19	809	0.1-	0.5+	1999 11 05	704	0.1+	0.2+	1999 11 17	704	0.0	0.5+
1993 03 20	809	0.3+	0.1+	1999 11 05	704	0.2+	0.7+	1999 11 17	704	0.3-	0.4-
1995 12 20	691	0.0	0.2-	1999 11 05	704	0.0	0.3-	1999 11 17	704	0.3+	0.5-
1995 12 20	691	0.1+	0.3-	1999 11 05	704	0.4+	0.0	1999 11 17	704	0.1-	0.4+
1995 12 20	691	0.1+	0.5-	1999 11 05	704	0.6-	0.1+	2000 01 05	704	0.4+	0.7+
1995 12 26	691	0.2+	0.1-	1999 11 06	757	0.3-	1.1-	2000 01 05	704	0.5-	0.5-
1995 12 26	691	0.1+	1.0-	1999 11 06	757	0.8+	0.4-	2000 01 05	704	0.1+	0.4+
1995 12 26	691	0.0	0.5-	1999 11 08	757	0.9+	0.1-	2000 01 05	704	0.1-	0.5+
1999 10 30	703	0.4+	0.0	1999 11 08	757	0.4-	1.3-	2000 01 05	704	0.2-	0.9+
1999 10 30	703	0.3+	0.1-	1999 11 15	704	1.5-	0.2+	2000 01 06	699	0.8+	0.5-
1999 10 30	703	0.3-	0.5+	1999 11 15	704	0.1-	0.0	2000 01 06	699	0.6-	1.6+
1999 10 30	703	0.4-	0.2+	1999 11 15	704	0.6+	1.5+	2000 01 06	699	0.3-	0.3-
1999 11 05	757	(0.7-	2.3-)	1999 11 15	704	(2.1-	0.3+)				
1999 11 05	757	(0.2+	2.5-)	1999 11 17	704	0.2-	0.3+				

1999 VG₆ = 1993 FT₆₆

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	51.53575		(2000.0)	P		Q	
<i>n</i>	0.24080742	ω	141.25381	+0.96064932		-0.27458339	
<i>a</i>	2.5587203	Ω	234.73342	+0.24035233		+0.89737834	
<i>e</i>	0.2817429	<i>i</i>	2.94264	+0.13922514		+0.34542160	
<i>P</i>	4.09	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	1.1-	0.0	1999 11 12	704	0.6+	0.0	1999 11 30	411	0.2-	0.3+
1993 03 22	809	1.0+	0.2-	1999 11 12	704	1.0+	0.1-	1999 12 07	704	0.0	0.0
1999 11 03	704	0.3+	0.5+	1999 11 12	704	0.5+	0.7-	1999 12 07	704	0.1-	0.1-
1999 11 03	704	0.2+	0.5+	1999 11 13	411	0.1+	0.3-	1999 12 07	704	1.0+	0.2+
1999 11 03	704	0.2-	0.5+	1999 11 13	411	0.6-	0.6-	1999 12 07	704	0.2-	0.4-
1999 11 03	704	1.4-	1.0+	1999 11 17	704	0.3+	0.3+	1999 12 07	704	0.1-	0.1-
1999 11 05	411	0.5-	1.1+	1999 11 17	704	0.2+	0.1+	1999 12 08	704	0.1+	0.1-
1999 11 05	411	1.3+	0.9-	1999 11 17	704	0.2-	0.4+	1999 12 08	704	0.1+	0.2-
1999 11 08	411	0.7-	0.3-	1999 11 17	704	0.2+	0.3+	1999 12 08	704	0.0	0.2-
1999 11 08	411	0.7+	0.8+	1999 11 17	704	0.2+	0.4+	1999 12 08	704	0.2+	0.3-
1999 11 09	704	0.7+	0.4-	1999 11 22	849	(1.3+	2.8+)	1999 12 08	704	0.1+	0.3-
1999 11 09	704	1.2-	1.4-	1999 11 22	849	(1.6-	2.4+)	1999 12 30	106	0.1+	0.4+
1999 11 09	704	0.9-	0.8-	1999 11 22	849	(0.6-	2.9+)	1999 12 30	106	0.2-	0.2+
1999 11 09	704	0.3-	0.9-	1999 11 26	120	0.5-	0.3-	1999 12 30	106	0.2-	0.9+
1999 11 12	704	0.1+	0.4+	1999 11 26	120	0.4-	0.0				
1999 11 12	704	0.2+	0.1+	1999 11 30	411	0.6-	0.0				

1999 VG₇ = 1992 EJ₂₆ = 1997 EL₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	112.92916		(2000.0)	P		Q	
<i>n</i>	0.21238694	ω	247.01746	+0.58100151		+0.81379954	
<i>a</i>	2.7821733	Ω	58.50992	-0.74107187		+0.53552066	
<i>e</i>	0.0534963	<i>i</i>	0.86978	-0.33652598		+0.22571650	
<i>P</i>	4.64	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 03 02	809	1.3-	0.4+	1999 11 05	704	0.2+	0.4+	1999 11 14	704	1.0+	0.4-
1992 03 04	809	0.9+	1.4-	1999 11 07	120	1.0-	0.4+	1999 11 14	704	0.2+	0.0
1997 03 08	809	1.2+	0.1-	1999 11 07	120	(4.0-	0.9+)	1999 11 16	704	0.6-	0.3+
1997 03 08	809	0.1-	1.1+	1999 11 08	120	0.3+	1.2+	1999 11 16	704	0.3-	0.4-
1997 03 08	809	0.5-	0.5+	1999 11 08	120	0.0	0.3+	1999 11 16	704	0.7-	0.6+

1997 03 09	809	(5.7+	0.2-)	1999 11 09	704	0.1-	0.3+	1999 11 16	704	0.3-	0.1+
1997 03 09	809	(5.4+	0.0)	1999 11 09	704	0.5+	0.4-	1999 11 16	704	0.1-	0.6+
1997 03 09	809	(4.9+	0.0)	1999 11 09	704	0.2+	0.0	1999 11 25	120	1.0-	0.3-
1999 10 03	704	0.7+	0.9-	1999 11 09	704	0.5+	0.2+	1999 11 25	120	0.7-	0.9-
1999 10 03	704	0.5-	0.6-	1999 11 10	120	1.6+	1.0+	1999 11 25	120	0.0	1.9-
1999 10 03	704	1.3-	1.3-	1999 11 10	120	0.5+	0.4-	1999 12 07	704	0.2+	0.6-
1999 10 29	703	0.5-	1.2+	1999 11 12	704	0.3+	0.0	1999 12 07	704	0.2-	0.1-
1999 10 29	703	0.1-	0.3+	1999 11 12	704	0.2+	0.5+	1999 12 07	704	0.2-	0.2+
1999 10 29	703	0.7-	0.9+	1999 11 12	704	0.5+	0.5-	1999 12 07	704	0.8+	0.1+
1999 10 29	703	0.7-	1.0+	1999 11 12	704	(1.2+	2.4-)	1999 12 07	704	0.2-	0.7-
1999 11 05	704	0.6+	0.3-	1999 11 12	704	0.0	0.7-	1999 12 12	703	0.2-	0.2-
1999 11 05	704	0.2-	0.5+	1999 11 14	704	0.0	0.3+	1999 12 12	703	(1.0+	3.0-)
1999 11 05	704	0.1-	0.0	1999 11 14	704	0.2+	0.0	1999 12 12	703	(1.0-	2.1+)
1999 11 05	704	0.5+	0.4-	1999 11 14	704	0.5-	0.0	1999 12 12	703	0.6+	1.0+

1999 VE₈ = 1980 WY₂ = 1991 RY₂₀ = 1996 AO₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	75.40610		(2000.0)	P		Q	
<i>n</i>	0.26275642	ω	265.09697	+0.95723014		-0.28516277	
<i>a</i>	2.4141662	Ω	111.46504	+0.28189922		+0.88116466	
<i>e</i>	0.2139235	<i>i</i>	3.01287	+0.06514047		+0.37713530	
<i>P</i>	3.75	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1980 11 29	675	0.3+	0.2-	1999 11 30	120	(0.9+	3.0+)	2000 01 03	704	0.4-	0.2+
1980 12 01	675	0.1-	0.3-	1999 11 30	120	0.5+	0.1+	2000 01 03	704	0.1-	0.8-
1991 09 14	675	0.7+	0.6-	1999 12 07	704	0.3-	0.5+	2000 01 03	704	0.5-	0.2-
1991 09 14	675	0.1-	0.6-	1999 12 07	704	0.4+	0.1+	2000 01 03	704	0.4-	0.5-
1991 09 16	675	0.1-	0.2+	1999 12 07	704	0.3+	0.9+	2000 01 04	120	0.2-	0.1-
1991 09 16	675	0.0	0.1-	1999 12 07	704	0.0	0.3+	2000 01 04	120	1.0-	0.1-
1996 01 14	691	0.3-	0.3+	1999 12 07	704	0.4-	0.2+	2000 01 04	120	0.6-	0.6-
1996 01 14	691	0.1+	0.1-	1999 12 07	120	0.1+	0.8+	2000 01 05	704	0.3-	1.1-
1996 01 14	691	0.2+	0.1+	1999 12 08	120	0.4-	0.2+	2000 01 05	704	1.0+	0.2-
1996 01 24	691	0.3-	0.4+	1999 12 08	704	0.1+	0.2+	2000 01 05	704	0.1-	1.2-
1996 01 24	691	0.3-	0.5+	1999 12 08	704	0.0	0.6+	2000 01 05	704	0.4-	0.2-
1996 01 24	691	0.5-	0.0	1999 12 08	704	0.4-	0.6+	2000 01 08	704	0.4-	1.3-
1999 11 08	120	1.4+	0.2-	1999 12 08	704	0.1-	0.1-	2000 01 08	704	0.6-	0.4-
1999 11 08	120	0.2+	0.2+	1999 12 08	704	0.0	0.1-	2000 01 08	704	0.3-	0.1+
1999 11 08	120	1.1-	0.1-	1999 12 31	120	1.6+	0.1+	2000 01 08	704	0.5-	0.0
1999 11 09	120	0.4-	0.2+	1999 12 31	120	0.6+	1.3-	2000 01 08	704	0.1+	0.8+
1999 11 09	120	0.3+	0.7+	1999 12 31	120	1.3+	0.6-	2000 01 13	849	0.1-	0.2-
1999 11 09	120	1.5+	0.0	1999 12 31	120	0.6+	0.5-	2000 01 13	849	0.1+	0.4+
1999 11 29	120	0.0	0.5+	2000 01 03	691	0.4+	0.3-	2000 01 13	849	1.4-	0.4+
1999 11 29	120	0.5+	1.2+	2000 01 03	691	0.4+	0.2-				
1999 11 29	120	0.1-	0.7+	2000 01 03	691	0.2+	0.3-				

1999 VB₉ = 1974 VP₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	12.72899		(2000.0)	P		Q	
<i>n</i>	0.19711730	ω	259.72884	+0.61735003		-0.77889338	
<i>a</i>	2.9240596	Ω	151.22174	+0.78121974		+0.59045436	
<i>e</i>	0.3306602	<i>i</i>	13.26589	+0.09259944		+0.21139714	
<i>P</i>	5.00	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1974 11 09	026	0.4-	0.5+	1999 11 08	699	0.2-	0.1+	1999 12 01	704	(0.5+	2.9-)
1974 11 13	026	0.4+	0.5-	1999 11 08	704	1.0+	0.7-	1999 12 01	704	0.1+	1.3+
1999 10 02	704	0.2-	0.4+	1999 11 08	699	0.2-	0.3+	2000 01 09	704	0.3-	0.4+
1999 10 02	704	0.4-	0.0	1999 11 08	704	0.1+	0.8-	2000 01 09	704	0.2+	0.8+
1999 10 02	704	0.6-	0.0	1999 11 08	704	0.9-	1.1-	2000 01 09	704	0.1-	0.6+
1999 10 02	704	0.7-	0.1+	1999 11 09	678	1.0+	0.5-	2000 01 09	704	0.5-	0.5+
1999 10 02	704	1.3-	0.3+	1999 11 09	678	0.9+	0.2-	2000 01 09	704	0.1-	0.4+
1999 10 05	703	0.1+	0.7+	1999 11 10	678	0.4+	0.3-	2000 01 11	704	0.5-	0.2+
1999 10 05	703	0.1-	0.7+	1999 11 10	678	0.5+	0.3-	2000 01 11	704	0.7-	0.1+
1999 10 05	703	0.4+	0.6+	1999 11 13	678	0.4-	0.3-	2000 01 11	704	0.5-	0.1-
1999 10 05	703	0.0	0.4+	1999 11 13	678	0.5-	0.6-	2000 01 11	704	(4.0-	1.0-)

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1999 11 08	704	1.1+	0.2-	1999 11 27	678	0.9+	0.2-	2000 01 11	704	0.7-	0.4-
1999 11 08	699	0.0	0.0	1999 11 27	678	0.5+	0.4-				
1999 11 08	704	0.6+	0.6-	1999 12 01	704	0.1+	0.3-				

1999 VE₉ = 1962 CF₁ = 1976 YR₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	39.94994	ω	350.91028	+0.03121545	-0.99924793		
<i>a</i>	2.4330167	Ω	97.29850	+0.91848619	+0.01959993		
<i>e</i>	0.2154788	<i>i</i>	1.32891	+0.39421912	+0.03345781		
<i>P</i>	3.80	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1962 02 10	033	(0.6-	3.2-)	1999 11 10	120	1.0+	0.2-	1999 12 06	704	0.5-	0.2-
1962 02 10	033	(1.4+	4.1-)	1999 11 16	704	0.1+	1.2+	1999 12 06	704	0.3+	0.2-
1976 12 16	095	(0.6+	2.8-)	1999 11 16	704	0.2-	1.0+	1999 12 07	704	0.5+	0.2+
1976 12 18	095	0.3+	0.2-	1999 11 16	704	0.1+	0.7+	1999 12 07	704	0.7+	0.4-
1976 12 20	095	0.2-	1.6-	1999 11 16	704	0.3-	0.7+	1999 12 07	704	0.3+	0.3-
1999 11 05	703	0.8-	0.6+	1999 11 16	704	0.3-	0.5+	1999 12 07	704	0.9+	0.0
1999 11 05	703	0.5-	0.2-	1999 12 04	703	0.3+	1.1+	1999 12 07	704	0.7+	0.2+
1999 11 05	703	1.2+	0.0	1999 12 04	703	0.5+	0.1+	2000 01 07	106	0.1-	0.5-
1999 11 05	703	0.7+	0.5+	1999 12 04	703	0.2-	0.2-	2000 01 07	106	0.2+	0.1-
1999 11 08	120	(2.1+	0.2+)	1999 12 04	703	(2.3-	1.0+)	2000 01 07	704	0.4+	1.7-
1999 11 08	120	(2.3+	0.7+)	1999 12 06	704	1.1-	0.2-	2000 01 07	704	0.4-	1.0-
1999 11 10	120	0.7-	0.6-	1999 12 06	704	0.2-	0.2+	2000 01 07	704	0.1+	0.6+
1999 11 10	120	0.1+	0.7+	1999 12 06	704	0.6-	0.4+	2000 01 07	704	1.4-	0.6+

1999 VL₁₂

Id. DANEOPS (1993 observations)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	174.86299	ω	40.77049	+0.05941607	+0.95785291		
<i>a</i>	1.5935997	Ω	234.51361	-0.98186696	+0.00530463		
<i>e</i>	0.2361382	<i>i</i>	20.19152	-0.18001946	+0.28721012		
<i>P</i>	2.01	<i>H</i>	17.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 10 20	675	0.3-	0.4-	1999 11 12	853	0.2-	0.3+	1999 11 15	704	0.0	0.9-
1993 10 20	675	0.9+	1.1+	1999 11 12	651	0.4+	0.1-	1999 11 15	704	0.1-	0.8-
1993 11 09	675	0.5-	0.7-	1999 11 12	651	0.2+	0.2-	1999 11 16	118	0.1+	0.1-
1999 11 09	704	0.2+	1.2-	1999 11 12	651	0.5+	0.0	1999 11 16	118	0.3-	0.3+
1999 11 09	704	0.1-	1.1-	1999 11 12	474	0.9-	0.3+	1999 11 16	118	0.7+	0.0
1999 11 09	704	0.3+	1.6-	1999 11 12	474	0.3-	0.2+	1999 11 17	704	0.7+	0.0
1999 11 10	853	0.4-	0.4-	1999 11 12	474	1.3+	0.8+	1999 11 17	704	0.4+	1.3-
1999 11 10	853	0.3-	0.0	1999 11 12	474	1.4-	0.4+	1999 11 17	704	0.6-	0.4-
1999 11 10	853	0.4-	0.4+	1999 11 12	474	0.8-	0.2+	1999 11 17	704	0.3-	0.0
1999 11 10	704	0.1+	0.6-	1999 11 12	474	0.6+	1.5+	1999 11 17	704	0.4-	0.3-
1999 11 10	704	0.7+	0.3-	1999 11 12	474	0.2-	0.3+	1999 11 26	046	0.1+	0.2+
1999 11 10	704	0.1+	0.5-	1999 11 13	402	0.3+	0.1-	1999 11 26	046	0.1-	0.2+
1999 11 10	704	0.1+	0.5+	1999 11 13	402	0.8+	0.1+	1999 11 26	046	0.2-	0.1+
1999 11 11	853	0.1-	0.5+	1999 11 13	402	0.2-	0.6+	1999 11 26	046	0.2+	0.2+
1999 11 11	853	0.3-	0.1+	1999 11 13	360	0.6-	0.4+	1999 11 26	046	0.3+	0.3+
1999 11 11	853	0.3-	0.2+	1999 11 13	360	0.1-	0.7+	1999 12 03	402	0.0	0.4+
1999 11 12	853	0.0	0.1+	1999 11 13	360	0.4-	0.3+	1999 12 03	402	1.0+	0.7-
1999 11 12	853	0.4-	0.1+	1999 11 15	704	0.3+	0.9+	1999 12 03	402	0.0	0.0

1999 VF₁₃ = 1988 VO

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	39.59887	ω	13.99658	+0.53467581	-0.78696995		
<i>a</i>	2.3529408	Ω	44.83493	+0.72723210	+0.24292457		
<i>e</i>	0.2417985	<i>i</i>	25.89294	+0.43041288	+0.56715601		
<i>P</i>	3.61	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 11 03	875	(4.4+	1.5-)	1999 11 01	704	0.1+	0.2+	1999 12 19	704	0.6+	0.9+
1988 11 03	875	1.4+	0.8+	1999 11 01	704	0.3+	0.2+	1999 12 20	704	0.3-	0.7-
1988 11 03	875	1.2+	0.1-	1999 11 02	704	0.1+	0.6-	1999 12 20	704	0.1-	0.2-
1988 11 06	875	0.3-	0.5+	1999 11 02	704	0.2-	0.2+	1999 12 20	704	0.0	0.0
1988 11 06	875	1.1-	0.1-	1999 11 02	704	0.0	0.1+	1999 12 20	704	0.2+	1.1+
1988 11 08	875	1.1+	0.3+	1999 11 02	704	0.2-	0.2-	1999 12 20	704	0.5+	1.0+
1988 11 08	875	0.5-	0.4-	1999 11 02	704	0.3+	0.4-	1999 12 28	704	0.3+	0.2-
1988 11 12	875	1.7-	0.4- Y	1999 12 02	699	0.3+	0.6-	1999 12 28	704	0.4-	0.0
1988 11 12	875	(4.6-	0.8-)Y	1999 12 02	699	0.2+	0.6-	1999 12 28	704	0.5-	0.3-
1988 11 30	875	0.9-	0.3-	1999 12 02	699	0.3+	0.5-	1999 12 28	704	0.7-	0.6-
1988 11 30	875	0.5+	0.1-	1999 12 19	704	0.1+	0.1-	1999 12 28	704	0.8-	0.7-
1999 11 01	704	0.0	0.6+	1999 12 19	704	0.1-	0.1+	1999 12 29	704	0.2+	0.3+
1999 11 01	704	0.1+	0.1+	1999 12 19	704	0.1+	0.6+	1999 12 29	704	0.2-	0.1-
1999 11 01	704	0.3-	0.4-	1999 12 19	704	0.4+	0.6+	1999 12 29	704	0.3-	0.2-

1999 VW₁₆ = 1990 TL₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	38.90953	ω	87.92614	+0.95723205	-0.28756106		
<i>a</i>	2.6989464	Ω	288.78470	+0.25026706	+0.87824452		
<i>e</i>	0.1103528	<i>i</i>	1.92887	+0.14516612	+0.38209319		
<i>P</i>	4.43	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 11	033	0.3+	0.7-	1999 11 02	691	0.3+	0.2-	1999 11 04	703	0.4-	0.6+
1990 10 12	033	0.5-	0.6-	1999 11 03	691	0.1+	0.2-	1999 11 14	704	0.3-	0.3+
1990 10 12	033	0.0	0.5-	1999 11 03	691	0.2+	0.2-	1999 11 14	704	0.2-	0.5+
1990 10 13	033	0.7+	0.5-	1999 11 03	691	0.2+	0.3-	1999 11 14	704	0.2-	0.1+
1990 10 14	033	0.7+	0.3-	1999 11 03	703	0.1+	0.2-	1999 11 14	704	0.0	0.2+
1999 10 02	703	0.2-	0.2-	1999 11 03	703	0.6+	0.2+	1999 11 14	704	0.5-	0.1+
1999 10 02	703	0.2+	0.5+	1999 11 03	703	1.6-	0.3-	1999 11 16	704	0.4+	0.3+
1999 10 02	703	0.2+	0.2+	1999 11 03	703	0.2-	0.6-	1999 11 16	704	0.1-	0.1-
1999 10 02	703	0.4-	0.1+	1999 11 04	704	0.5-	0.1-	1999 11 16	704	0.1-	1.1+
1999 10 03	704	0.2+	0.4+	1999 11 04	704	0.1-	0.0	1999 11 16	704	0.2-	0.1+
1999 10 03	704	0.3+	0.7+	1999 11 04	704	0.1+	0.2+	2000 01 06	704	0.5+	0.8-
1999 10 03	704	0.5+	0.0	1999 11 04	703	0.3-	0.0	2000 01 06	704	0.2+	0.0
1999 10 03	704	0.6+	0.4+	1999 11 04	704	0.0	0.1-	2000 01 06	704	0.5-	0.7-
1999 10 03	704	0.1-	0.8+	1999 11 04	703	0.0	0.5+	2000 01 06	704	0.2-	0.9-
1999 11 02	691	0.1+	0.2-	1999 11 04	704	0.1-	0.1+	2000 01 06	704	1.2+	1.1-
1999 11 02	691	0.2+	0.1-	1999 11 04	703	0.5-	0.5+				

1999 VV₁₇ = 1978 WN₁₈ = 1989 YN₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	50.60280	ω	104.28870	+0.99107842	-0.12334961		
<i>a</i>	2.3152158	Ω	262.81507	+0.09399271	+0.91539787		
<i>e</i>	0.1667344	<i>i</i>	2.91656	+0.09449300	+0.38318613		
<i>P</i>	3.52	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 11 30	675	0.2-	0.8-	1999 10 30	703	0.4+	0.2+	1999 12 04	699	0.8-	0.9+
1978 12 01	675	0.3+	0.3-	1999 11 02	691	0.8-	0.1-	1999 12 07	704	0.5-	0.2+
1989 12 30	413	0.9+	0.6-	1999 11 02	691	0.1-	0.1-	1999 12 07	704	0.5+	0.3+
1989 12 31	413	(5.0+	2.5-)	1999 11 02	691	0.4-	0.0	1999 12 07	704	0.1+	0.1-
1989 12 31	413	0.4-	0.9+	1999 11 03	691	0.4+	0.0	1999 12 07	704	0.0	0.8+
1998 04 21	704	0.2-	1.2+	1999 11 03	691	0.4+	0.1-	1999 12 07	704	1.3+	0.9-
1998 04 21	704	0.6-	0.1+	1999 11 03	691	0.4+	0.1+	1999 12 12	703	0.3+	0.7+
1998 04 21	704	0.7+	1.0-	1999 11 04	704	0.1-	0.2+	1999 12 12	703	0.2+	0.6+
1998 04 21	704	(2.5-	0.1-)	1999 11 04	704	0.1-	0.5-	1999 12 12	703	0.9-	0.0
1998 04 21	704	(5.4-	1.0+)	1999 11 04	704	0.1-	0.2+	1999 12 12	703	0.4-	0.4+
1998 05 01	704	0.0	1.0-	1999 11 04	703	0.0	0.3+	1999 12 30	699	0.3+	0.1+
1998 05 01	704	0.8-	0.5+	1999 11 04	704	0.3-	0.1-	1999 12 30	699	0.9-	0.1+
1998 05 01	704	0.1-	0.2+	1999 11 04	703	0.4-	0.4+	1999 12 30	699	0.3-	0.0
1998 05 01	704	0.1-	0.1+	1999 11 04	704	0.5+	0.1-	2000 01 04	704	0.2-	0.6-
1998 05 01	704	1.3+	1.3+	1999 11 04	703	0.4-	0.3-	2000 01 04	704	0.1-	0.2-

1999 10 03	704	0.0	0.0	1999 11 04	703	0.4−	0.4+	2000 01 04	704	0.2−	0.6−
1999 10 03	704	0.3+	0.9−	1999 11 14	704	1.3+	0.3+	2000 01 04	704	0.7+	0.1−
1999 10 03	704	0.5−	0.4+	1999 11 14	704	0.4+	0.3−	2000 01 04	704	0.8−	0.3−
1999 10 03	704	0.3−	0.1−	1999 11 14	704	1.4+	0.3−	2000 01 07	704	0.6−	0.8+
1999 10 03	704	0.1+	0.3+	1999 11 14	704	1.3+	0.7−	2000 01 07	704	0.1+	0.6−
1999 10 30	703	0.6+	0.4−	1999 11 14	704	0.3−	0.8−	2000 01 07	704	0.1−	0.4+
1999 10 30	703	1.7−	0.4+	1999 12 04	699	0.2−	0.1−	2000 01 07	704	0.5−	0.5−
1999 10 30	703	0.1−	1.5+	1999 12 04	699	0.0	0.7+	2000 01 07	704	0.3−	0.3+

1999 VW₁₇ = 1995 QU₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	297.28516		(2000.0)	P	Q
n	0.28424797	ω	251.03772	−0.73398424	−0.67534235
a	2.2908912	Ω	246.41004	+0.64892965	−0.66609085
e	0.0908104	i	4.50431	+0.20039323	−0.31660021
P	3.47	H	16.8	G 0.15	U 5

Residuals in seconds of arc

1995 08 28	691	0.0	0.0	1999 11 02	691	0.3−	0.1−	1999 11 14	704	0.1−	0.2+
1995 08 28	691	0.4−	0.1+	1999 11 02	691	0.2−	0.1−	1999 11 14	704	0.9+	0.1−
1995 08 28	691	0.1+	0.0	1999 11 02	691	0.5−	0.2+	1999 11 14	704	0.3−	0.6+
1995 09 02	691	0.3+	0.3−	1999 11 03	691	0.3+	0.1−	1999 11 14	704	0.6−	0.8−
1995 09 02	691	0.0	0.2+	1999 11 03	691	0.5+	0.1−				
1995 09 02	691	0.0	0.0	1999 11 03	691	0.3+	0.3+				

1999 VG₁₈ = 1994 NS₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	50.25648		(2000.0)	P	Q
n	0.22734307	ω	73.88763	+0.99888389	−0.03960881
a	2.6587749	Ω	288.37683	+0.02578752	+0.91374287
e	0.1507629	i	1.55373	+0.03957250	+0.40435766
P	4.34	H	16.0	G 0.15	U 6

Residuals in seconds of arc

1994 07 11	809	0.0	0.3−	1999 11 02	691	0.3+	0.0	1999 11 04	704	0.3−	0.8−
1994 07 11	809	0.1−	0.4+	1999 11 03	691	0.2−	0.2−	1999 11 04	703	0.1−	0.5+
1994 07 11	809	0.1+	0.3−	1999 11 03	691	0.2−	0.2−	1999 11 04	704	0.5+	1.6−
1994 07 12	809	0.5+	0.4+	1999 11 03	691	0.2−	0.1−	1999 11 04	703	0.4+	1.8+
1994 07 12	809	0.7−	0.8+	1999 11 04	704	0.1−	0.7+	1999 11 04	703	(3.9−	3.6−)
1994 07 12	809	0.1+	0.9−	1999 11 04	704	1.1−	0.6+	1999 11 15	691	0.0	0.1−
1999 11 02	691	0.0	0.3−	1999 11 04	704	1.1+	1.1−	1999 11 15	691	0.1−	0.3+
1999 11 02	691	0.1−	0.3−	1999 11 04	703	0.1−	1.0+	1999 11 15	691	0.1+	0.1−

1999 VJ₂₁ = 1995 SP₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	13.22978		(2000.0)	P	Q
n	0.25836799	ω	216.36296	+0.55199283	−0.83375145
a	2.4414261	Ω	200.14281	+0.77350514	+0.51769534
e	0.1881522	i	2.12106	+0.31143813	+0.19196370
P	3.81	H	15.8	G 0.15	U 5

Residuals in seconds of arc

1995 09 21	691	0.4−	0.1−	1999 11 05	704	0.1+	0.7+	1999 11 12	704	0.3+	0.5−
1995 09 21	691	0.4−	0.8−	1999 11 05	704	0.1+	0.1+	1999 11 12	704	0.4−	0.0
1995 09 21	691	0.4−	0.2−	1999 11 09	704	0.1−	0.2−	1999 11 12	704	0.1−	0.1+
1995 09 23	691	0.1+	0.2+	1999 11 09	704	0.2−	0.2−	1999 11 12	704	0.2+	0.3−
1995 09 23	691	0.0	0.2+	1999 11 09	704	0.1−	0.2−	1999 11 12	120	0.8−	0.2+
1995 09 23	691	0.3+	0.2+	1999 11 09	704	0.1+	0.2+	1999 11 12	120	0.8+	0.2−
1999 11 05	704	0.2−	0.2+	1999 11 09	704	0.2+	0.2−	1999 11 13	120	(2.5+	1.1−)
1999 11 05	704	0.1−	0.3+	1999 11 12	704	0.1+	0.5−	1999 11 13	120	0.1+	0.7+

1999 VM₂₁ = 1995 TM₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	65.79792		(2000.0)	P	Q
n	0.24357452	ω	148.33656	+0.99965246	−0.02420982
a	2.5393047	Ω	213.05556	+0.01837012	+0.92356715
e	0.0458065	i	1.09594	+0.01890752	+0.38267166
P	4.05	H	15.3	G 0.15	U 5

Residuals in seconds of arc

1995 10 14	327	0.3+	0.1+	1999 11 04	704	0.3−	0.9+	1999 11 13	120	0.6−	0.4−
1995 10 14	327	0.5+	0.1−	1999 11 04	704	1.3+	0.7+	1999 11 13	120	0.8+	0.8−
1995 10 14	327	0.2−	0.2−	1999 11 04	704	0.2+	0.0	1999 11 16	704	1.0+	0.1−
1995 10 15	327	0.0	0.2+	1999 11 09	704	0.1−	0.6−	1999 11 16	704	0.2−	0.1+
1995 10 15	327	0.6+	0.2+	1999 11 09	704	0.1−	0.7−	1999 11 16	704	0.4−	0.3−
1995 10 15	327	1.5−	0.4−	1999 11 09	704	0.2+	0.3−	1999 11 16	691	0.1+	0.1−
1999 10 29	703	0.5−	1.0−	1999 11 09	704	0.9+	0.9−	1999 11 16	691	0.2−	0.2−
1999 10 29	703	0.9+	1.9+	1999 11 12	704	1.2−	0.3−	1999 11 16	691	0.1+	0.1−
1999 10 29	703	0.6−	1.4+	1999 11 12	704	0.3+	0.2−	1999 12 07	704	0.9−	0.9+
1999 10 29	703	0.8−	1.8−	1999 11 12	704	0.3+	0.2+	1999 12 07	704	0.1−	0.9+
1999 11 04	704	0.0	0.8+	1999 11 12	120	0.3−	0.6−	1999 12 07	704	0.2+	0.7−
1999 11 04	704	0.4+	0.4+	1999 11 12	120	0.5−	0.4+	1999 12 07	704	0.3+	0.2+

1999 VN₂₁ = 1969 VE = 1969 VRId. M. E. Sansaturio, H. Oishi (d, *JAM* 852)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	19.36429		(2000.0)	P	Q		
n	0.23063922	ω	4.52734	+0.60257509	−0.79443167		
a	2.6333825	Ω	48.44006	+0.72898012	+0.50913534		
e	0.1624154	i	5.83233	+0.32479415	+0.33114879		
P	4.27	H	14.1	G	0.15	U	3

Residuals in seconds of arc

1969 11 04	095	0.4+	1.1+	1999 11 03	699	0.1−	0.6+	1999 11 25	120	0.2+	0.3+
1969 11 11	095	1.9−	1.7+	1999 11 03	699	0.0	0.0	1999 11 30	691	0.4+	0.1+
1999 10 02	703	0.1−	0.5+	1999 11 04	704	0.2−	0.6+	1999 11 30	691	0.2+	0.3+
1999 10 02	703	0.3+	0.2+	1999 11 04	704	0.2+	0.4+	1999 11 30	691	0.1+	0.4+
1999 10 02	703	0.0	0.6+	1999 11 04	704	0.1−	0.2+	1999 12 04	703	0.3−	0.0
1999 10 02	703	0.3+	0.4+	1999 11 04	704	0.0	0.3−	1999 12 04	703	0.8−	0.2+
1999 10 03	704	1.3+	1.5−	1999 11 04	704	0.3−	0.3−	1999 12 04	703	0.3−	0.2+
1999 10 03	704	0.3+	0.3−	1999 11 09	704	0.0	0.3−	1999 12 04	703	0.7−	0.4+
1999 10 03	704	1.2−	0.7−	1999 11 09	704	0.6+	0.1+	1999 12 06	704	1.3+	0.8−
1999 10 10	704	0.9+	0.2−	1999 11 09	704	0.6+	0.2+	1999 12 06	704	0.5+	0.3−
1999 10 10	704	1.0+	0.2−	1999 11 09	704	0.6+	0.1+	1999 12 06	704	0.2−	1.4−
1999 10 10	704	1.0+	0.1−	1999 11 11	703	0.4−	0.0	1999 12 06	704	0.1+	0.6+
1999 10 10	704	0.5+	0.7−	1999 11 11	703	0.1−	0.1+	1999 12 06	704	1.5−	0.5−
1999 10 10	704	0.2+	0.9−	1999 11 11	703	0.2−	0.1−	1999 12 07	704	1.1+	0.7−
1999 10 10	699	0.4−	0.3+	1999 11 11	703	0.1−	0.3−	1999 12 07	704	0.0	0.7−
1999 10 10	699	0.3−	0.3+	1999 11 12	704	0.1−	0.2−	1999 12 07	704	0.1+	0.3−
1999 10 10	699	0.4+	0.2−	1999 11 12	704	0.3−	0.3−	1999 12 07	704	0.0	0.8−
1999 10 15	704	0.1−	0.1−	1999 11 12	704	0.3−	0.4−	1999 12 07	704	1.3−	1.1−
1999 10 15	704	0.1+	0.3−	1999 11 12	704	0.2−	0.6−	1999 12 12	703	0.0	0.5+
1999 10 15	704	0.3−	0.2−	1999 11 12	704	0.5−	0.4−	1999 12 12	703	0.2−	0.1+
1999 10 15	704	0.2−	0.3−	1999 11 12	120	0.8+	0.5−	1999 12 12	703	0.3−	0.3+
1999 10 17	699	0.4−	1.7+	1999 11 12	120	0.3−	0.1−	1999 12 12	703	0.1−	0.5+
1999 10 17	699	0.5−	0.4+	1999 11 13	120	0.5+	0.3−	2000 01 04	704	0.6+	0.6+
1999 10 17	699	0.2+	1.5+	1999 11 13	120	0.2−	0.3−	2000 01 04	704	0.1+	0.1+
1999 10 21	704	0.3−	0.2−	1999 11 16	704	0.3+	0.7−	2000 01 04	704	0.3+	0.3+
1999 10 21	704	0.1+	0.2−	1999 11 16	704	0.1+	0.0	2000 01 04	704	0.1−	0.2+
1999 10 21	704	0.2+	0.2−	1999 11 16	704	0.1−	0.4−	2000 01 04	704	0.1+	0.0
1999 10 21	704	0.1+	0.5−	1999 11 16	704	0.2+	0.0	2000 01 06	704	0.4−	0.2−
1999 10 21	704	0.1−	0.7−	1999 11 16	704	0.0	0.1−	2000 01 06	704	0.2−	0.0
1999 10 29	703	0.5−	0.5+	1999 11 17	691	0.1+	0.1−	2000 01 06	704	0.1−	0.1+
1999 10 29	703	0.4−	0.3+	1999 11 17	691	0.1+	0.1−	2000 01 06	704	0.2−	0.8+
1999 10 29	703	0.2+	0.6+	1999 11 17	691	0.2+	0.1−	2000 01 06	704	0.2+	1.0+
1999 10 29	703	0.2−	0.7+	1999 11 25	120	0.1−	0.2−				
1999 11 03	699	0.0	0.5+	1999 11 25	120	0.2−	0.0				

1999 VQ₂₁ = 1976 UM₁₂ = 1998 HL₁₄₈Id. G. V. Williams (*MPC* 37209, unpublished), M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	129.84936		(2000.0)		P		Q
<i>n</i>	0.25945007	ω	242.96753	+0.33222022			+0.94235695
<i>a</i>	2.4346331	Ω	46.49553	-0.84470354			+0.31608782
<i>e</i>	0.1632610	<i>i</i>	3.15452	-0.41964944			+0.10978098
<i>P</i>	3.80	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 10 22	381	1.6+	0.9+	1999 11 04	704	0.1+	0.2-	1999 11 12	704	0.6-	0.5+
1976 10 22	381	1.7-	0.8-	1999 11 04	704	0.7+	0.1+	1999 11 12	120	0.2-	0.4+
1998 04 25	809	0.8+	0.4+	1999 11 04	704	0.5+	0.1+	1999 11 12	120	0.9+	0.5+
1998 04 25	809	0.7-	0.4-	1999 11 09	704	1.5+	0.7+	1999 11 12	120	1.1-	0.3-
1998 04 25	809	0.3+	0.2+	1999 11 09	704	0.4+	0.3-	1999 11 12	120	0.7-	0.1-
1998 04 28	809	0.1-	0.1-	1999 11 09	704	0.3+	0.4-	1999 11 13	120	0.6-	0.5+
1998 04 28	809	0.3+	0.6-	1999 11 09	704	0.7+	0.2-	1999 11 13	120	0.2+	0.7+
1998 04 28	809	0.5-	1.2+	1999 11 09	704	0.4+	0.4-	1999 11 16	704	0.5-	0.9+
1998 05 22	704	1.0+	0.0	1999 11 10	691	0.4-	0.8-	1999 11 16	704	0.8-	0.4-
1998 05 22	704	0.7-	0.3-	1999 11 10	691	0.2+	0.0	1999 11 16	704	0.5+	0.1-
1998 05 22	704	0.3-	0.8-	1999 11 10	691	0.3+	0.1-	1999 11 16	704	0.6-	0.4+
1998 05 22	704	0.9+	1.0+	1999 11 10	120	0.1-	1.2-	1999 11 16	704	0.1-	0.1+
1998 05 22	704	(3.8-	0.3-)	1999 11 10	120	0.6+	0.4+	1999 11 25	120	(3.0+	0.5+)
1998 05 23	699	0.0	0.2-	1999 11 12	704	0.2-	0.2-	1999 11 25	120	(2.1+	0.5+)
1998 05 23	699	0.6-	0.7+	1999 11 12	704	0.4-	0.1+	1999 12 07	704	1.0-	0.6+
1998 05 23	699	(2.1+	0.3-)	1999 11 12	704	0.2-	0.3-	1999 12 07	704	0.6-	0.3-
1999 11 04	704	1.0+	0.0	1999 11 12	704	0.4-	0.1+	1999 12 07	704	0.2-	0.1+

1999 VF₂₃ = 1998 MU₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	198.26998		(2000.0)		P		Q
<i>n</i>	0.28861026	ω	300.71431	-0.56760418			+0.82178672
<i>a</i>	2.2677484	Ω	294.62025	-0.73534250			-0.53329970
<i>e</i>	0.0886332	<i>i</i>	3.14786	-0.37026599			-0.20064399
<i>P</i>	3.42	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 06 24	704	0.2-	1.7+	1999 10 29	703	0.6-	0.1+	1999 11 14	703	0.9-	0.8+
1998 06 24	704	0.5-	1.2-	1999 10 29	703	0.3-	0.8+	1999 11 14	703	0.2-	0.2+
1998 06 24	704	0.8-	0.6+	1999 11 03	704	0.2+	1.4-	1999 11 14	703	0.5-	0.4+
1998 06 24	704	1.2+	1.6-	1999 11 03	704	0.5-	0.7-	1999 11 14	703	1.0-	0.3+
1998 06 26	704	0.3+	0.6+	1999 11 03	704	0.3-	0.2+	1999 11 16	704	0.5+	0.2+
1998 06 26	704	0.1-	0.9+	1999 11 03	704	0.2-	0.2+	1999 11 16	704	1.8+	0.5+
1998 06 26	704	0.1+	1.1-	1999 11 03	704	0.6-	0.3-	1999 11 16	704	0.2+	0.5-
1999 10 03	704	0.9+	0.6+	1999 11 08	620	0.2+	0.0	1999 11 16	704	0.2+	0.2+
1999 10 03	704	0.2-	0.3-	1999 11 08	620	0.0	0.2-	1999 12 08	704	0.7+	0.7-
1999 10 03	704	0.6+	0.2-	1999 11 08	620	0.2-	0.3-	1999 12 08	704	0.3+	0.2+
1999 10 03	704	0.3-	0.5-	1999 11 08	620	0.1-	0.3-	1999 12 08	704	0.3+	0.6+
1999 10 03	704	0.4-	0.1-	1999 11 13	620	0.1-	0.1-	1999 12 08	704	0.5-	0.8-
1999 10 29	703	1.1+	1.7+	1999 11 13	620	0.2-	0.2-	1999 12 08	704	0.1+	0.7-
1999 10 29	703	0.7+	0.0	1999 11 13	620	0.1-	0.1-				

1999 VH₂₄ = 1998 HE₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	77.11801		(2000.0)		P		Q
<i>n</i>	0.26479884	ω	148.73806	+0.89206937			+0.45182165
<i>a</i>	2.4017363	Ω	184.42609	-0.43369860			+0.85081580
<i>e</i>	0.1502572	<i>i</i>	6.19881	-0.12695578			+0.26827164
<i>P</i>	3.72	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.2+	0.3+	1998 05 22	704	1.2+	0.4+	1999 11 17	704	0.1+	0.5-
1998 04 21	704	0.2+	0.3-	1998 05 22	704	0.5-	0.4-	1999 11 17	704	0.2+	0.2-
1998 04 21	704	0.1-	1.2+	1998 05 22	704	0.5-	0.2+	1999 11 17	704	0.3-	0.2-
1998 04 21	704	0.1-	1.1-	1998 05 22	704	0.8-	0.4-	1999 11 17	704	0.4+	0.7-

1998 04 21	704	0.3+	0.2-	1998 05 22	704	1.1-	0.8-	1999 11 27	678	0.0	0.1-
1998 04 22	704	0.1+	0.2-	1999 11 05	704	0.1-	0.1-	1999 11 27	678	0.4-	0.2+
1998 04 22	704	0.0	0.7-	1999 11 05	704	0.2-	0.5-	2000 01 05	704	0.0	0.2-
1998 04 22	704	0.5+	1.0-	1999 11 05	704	0.1+	0.7-	2000 01 05	704	0.2-	0.0
1998 04 22	704	0.5+	0.8-	1999 11 05	704	0.1+	0.6-	2000 01 05	704	0.1+	0.4+
1998 04 22	704	0.7-	0.8-	1999 11 05	704	0.3-	0.9-	2000 01 05	704	0.1-	0.2-
1998 05 01	704	0.2-	0.0	1999 11 14	699	0.5-	0.5+	2000 01 05	704	0.0	0.2+
1998 05 01	699	0.6+	0.8+	1999 11 14	699	0.2-	0.6+	2000 01 08	704	0.4-	0.5-
1998 05 01	704	0.1-	0.3+	1999 11 14	699	0.0	0.5+	2000 01 08	704	0.6-	0.7-
1998 05 01	699	0.0	0.3+	1999 11 15	678	0.0	0.1-	2000 01 08	704	0.5-	0.2-
1998 05 01	704	0.0	0.9-	1999 11 15	678	1.9+	0.9+	2000 01 08	704	0.4+	0.4-
1998 05 01	699	0.1+	0.9+	1999 11 16	678	0.1-	0.1+	2000 01 08	704	0.1-	0.6+
1998 05 01	704	0.1+	0.1-	1999 11 16	678	0.5+	0.5+				
1998 05 01	704	0.3-	0.3+	1999 11 17	704	0.2+	0.6-				

1999 VQ₂₆ = 1987 KF₄ = 1995 SU₂₂ = 1998 KK₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	94.96099		(2000.0)		P		Q
<i>n</i>	0.26663888	ω	263.27733	+0.85297792			+0.52071928
<i>a</i>	2.3906742	Ω	65.33662	-0.46197870			+0.78510195
<i>e</i>	0.2023997	<i>i</i>	2.25632	-0.24290811			+0.33536005
<i>P</i>	3.70	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 05 30	413	0.9-	0.4-	1999 10 30	703	0.2-	0.4+	1999 11 12	704	0.2-	0.6-
1987 05 30	413	0.6+	0.5-	1999 11 03	704	1.2+	0.2+	1999 11 12	704	0.5-	1.2-
1995 09 19	691	0.3+	0.0	1999 11 03	704	0.7+	0.4-	1999 11 17	704	0.8+	0.8+
1995 09 19	691	0.2+	0.0	1999 11 03	704	0.6+	0.7-	1999 11 17	704	0.3+	0.0
1995 09 19	691	0.1+	0.0	1999 11 03	704	0.8+	0.8-	1999 11 17	704	0.2+	0.0
1995 09 24	691	0.2+	0.3-	1999 11 03	704	0.2-	0.7-	1999 11 17	704	0.5+	0.2+
1995 09 24	691	0.4-	0.4-	1999 11 09	704	0.2-	1.2-	1999 11 17	704	0.1+	0.3-
1995 09 24	691	0.0	0.2-	1999 11 09	704	0.0	1.1-	1999 11 17	704	0.0	0.3-
1998 05 01	704	0.1-	0.3-	1999 11 09	704	0.4-	0.9-	1999 11 17	704	0.4+	0.6-
1998 05 01	704	1.3-	1.7-	1999 11 09	704	0.1-	0.9-	1999 11 17	704	0.8+	0.4+
1998 05 01	704	0.9+	1.1-	1999 11 09	704	0.6+	0.7-	1999 11 17	704	0.2-	0.0
1998 05 01	704	1.4-	0.4-	1999 11 10	704	0.0	0.2-	1999 11 17	704	0.0	0.4+
1998 05 22	704	0.8-	1.5-	1999 11 10	704	0.0	0.6-	1999 12 03	699	0.2-	0.1+
1998 05 22	704	1.5+	1.4-	1999 11 10	704	0.7+	0.0	1999 12 03	699	0.2+	0.8+
1998 05 22	704	0.6-	0.4-	1999 11 10	704	0.9+	0.5-	1999 12 03	699	0.3-	0.4+
1998 05 22	704	0.2+	0.7+	1999 11 10	704	0.0	0.4-	1999 12 05	703	1.3-	1.3+
1998 05 22	704	0.4-	1.0-	1999 11 10	704	0.1+	0.3-	1999 12 05	703	0.4-	0.7+
1998 05 24	704	0.1-	0.4-	1999 11 10	704	0.7+	0.7-	1999 12 05	703	0.2-	0.6+
1998 05 24	704	(2.8-	1.9-)	1999 11 10	704	0.4-	1.1-	1999 12 05	703	0.7-	0.5+
1998 05 24	704	0.7-	0.7-	1999 11 10	704	0.6+	0.2-	1999 12 07	704	0.5-	0.3+
1998 05 24	704	0.1+	0.6+	1999 11 10	704	0.0	0.3-	1999 12 07	704	0.2-	0.1+
1999 10 30	703	0.5+	0.4+	1999 11 12	704	1.6-	0.3-	1999 12 07	704	0.1+	0.0
1999 10 30	703	0.0	0.4-	1999 11 12	704	0.1+	0.5-	1999 12 07	704	0.3-	0.0
1999 10 30	703	0.5-	0.7+	1999 11 12	704	0.6-	0.5-	1999 12 07	704	0.3-	0.0

1999 VJ₂₇ = 1991 UD₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	31.75530		(2000.0)		P		Q
<i>n</i>	0.24651093	ω	36.74537	+0.87683520			-0.48070793
<i>a</i>	2.5190992	Ω	351.97128	+0.42448401			+0.78274367
<i>e</i>	0.2080440	<i>i</i>	3.66980	+0.22577280			+0.39526223
<i>P</i>	4.00	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

M.P.C. 37832

1999 10 02	703	0.0	0.4+	1999 11 04	703	0.5+	0.2-	2000 01 04	704	0.6-	0.4+
1999 10 02	703	0.1+	0.1+	1999 11 04	703	0.3+	0.2+	2000 01 04	704	1.5-	0.4+
1999 10 03	704	0.1-	0.7+	1999 11 05	704	0.7+	0.7-	2000 01 04	704	0.0	0.2-
1999 10 03	704	0.2+	0.2-	1999 11 05	704	0.4+	0.6-	2000 01 04	704	1.0+	0.7-
1999 10 03	704	0.6-	0.8+	1999 11 05	704	0.5+	0.4-	2000 01 04	704	0.2+	0.1-
1999 10 03	704	0.3-	0.9+	1999 11 05	704	0.1+	0.3-	2000 01 06	704	0.6-	0.1+
1999 10 03	704	0.5-	0.5+	1999 11 05	704	0.1+	0.3-	2000 01 06	704	0.1-	0.4+
1999 11 03	703	0.4+	0.0	1999 11 11	703	0.2-	0.0	2000 01 06	704	0.1+	0.2+
1999 11 03	703	0.2-	0.4+	1999 11 11	703	0.4-	0.1+	2000 01 06	704	0.8+	0.8+
1999 11 03	703	0.5-	0.3+	1999 11 11	703	0.1+	0.3+	2000 01 06	704	0.0	0.8+

1999 VL₂₇ = 1995 SF₅₄ = 1997 ES₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	51.01158	(2000.0)		P		Q	
<i>n</i>	0.26127257	ω	23.12164	+0.99587629		-0.08860185	
<i>a</i>	2.4232981	Ω	341.92909	+0.07027817		+0.88934030	
<i>e</i>	0.1645229	<i>i</i>	3.60360	+0.05737062		+0.44857947	
<i>P</i>	3.77	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 09 02	010	0.2-	0.1-	1999 11 03	703	0.4+	0.1+	1999 12 12	703	0.1-	0.0
1995 09 02	010	0.2+	1.0-	1999 11 03	703	0.4-	0.0	1999 12 12	703	0.2+	0.1+
1995 09 02	010	1.5+	1.3-	1999 11 03	703	0.2-	0.2+	1999 12 12	703	0.1+	0.5+
1995 09 26	010	(2.4-	3.8-)	1999 11 03	703	0.3-	0.2+	1999 12 30	699	0.1+	0.1-
1995 09 26	010	(3.8-	3.4-)	1999 11 04	704	0.1+	0.1-	1999 12 30	699	0.8+	0.6-
1995 09 26	010	(1.5-	3.8-)	1999 11 04	704	0.2-	0.3-	1999 12 30	699	1.3-	0.7+
1995 09 27	010	0.0	0.3-	1999 11 04	704	0.4-	0.6-	2000 01 04	704	0.8+	0.3+
1995 09 27	010	0.8-	0.9+	1999 11 04	703	0.2-	0.0	2000 01 04	704	0.7-	0.1+
1995 09 27	010	0.5-	1.4+	1999 11 04	704	0.1-	0.1-	2000 01 04	704	0.0	0.0
1997 03 04	704	0.1+	0.4-	1999 11 04	703	0.0	0.0	2000 01 04	704	0.6-	0.4-
1997 03 04	704	0.6+	0.3+	1999 11 04	704	0.4-	0.3-	2000 01 04	704	0.7-	0.3+
1997 03 05	704	0.0	0.2-	1999 11 04	703	0.1-	0.6+	2000 01 06	704	0.3+	0.4+
1997 03 05	704	1.0-	0.7-	1999 11 04	703	0.2-	0.3+	2000 01 06	704	0.2+	0.0
1999 10 03	704	0.5+	0.3-	1999 11 11	703	1.5+	0.5-	2000 01 06	704	0.8+	0.5+
1999 10 03	704	0.1-	0.2+	1999 11 11	703	0.3-	0.7-	2000 01 06	704	0.3-	0.6-
1999 10 03	704	0.1-	0.1-	1999 11 11	703	1.3+	0.1-	2000 01 06	704	0.5+	1.0-
1999 10 03	704	0.1-	0.3+	1999 11 11	703	0.1-	0.2+				
1999 10 03	704	0.1+	0.4+	1999 12 12	703	0.8-	0.4+				

1999 VO₂₇ = 1982 BT₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	359.19332	(2000.0)		P		Q	
<i>n</i>	0.21023147	ω	49.97766	+0.39101473		-0.91964332	
<i>a</i>	2.8011577	Ω	17.11553	+0.80159964		+0.32056069	
<i>e</i>	0.1192993	<i>i</i>	7.20826	+0.45226708		+0.22692952	
<i>P</i>	4.69	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 01 26	381	0.7-	0.1-	1999 11 04	704	0.6+	0.4+	1999 11 14	704	0.1-	0.2-
1982 01 26	381	0.5-	0.6+	1999 11 04	703	0.2-	0.0	1999 11 14	704	1.7-	0.2-
1982 01 28	381	1.1+	0.2-	1999 11 04	703	0.0	0.4+	1999 11 16	704	0.1+	0.1+
1999 11 03	703	0.4-	0.5-	1999 11 11	703	0.3-	0.1+	1999 11 16	704	0.2-	0.2+
1999 11 03	703	0.5+	0.3+	1999 11 11	703	0.8-	0.2-	1999 11 16	704	0.4-	0.2+
1999 11 03	703	0.4-	0.4+	1999 11 11	703	0.2+	0.4+	1999 11 16	704	0.9-	0.5-
1999 11 03	703	0.7+	0.3-	1999 11 11	703	0.1+	0.1+	1999 11 16	704	0.3-	0.1+
1999 11 04	704	0.2-	0.4+	1999 11 12	699	0.2+	0.4-	1999 12 03	699	0.3-	0.7-
1999 11 04	704	0.4+	0.0	1999 11 12	699	0.7-	0.4-	1999 12 03	699	0.7+	0.2+
1999 11 04	704	0.5+	0.0	1999 11 12	699	0.4+	0.4+	1999 12 03	699	1.2+	0.5-
1999 11 04	703	0.1-	0.2+	1999 11 14	704	0.2+	0.4+	1999 12 30	699	0.6+	0.7+
1999 11 04	704	0.7+	0.1+	1999 11 14	704	0.1+	0.1-	1999 12 30	699	0.3+	0.9-
1999 11 04	703	0.2-	0.4+	1999 11 14	704	0.4+	0.5-	1999 12 30	699	0.5-	0.0

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1999 VU₂₇ = 1998 HZ₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	91.12157	(2000.0)		P		Q	
<i>n</i>	0.28194320	ω	83.79143	+0.82254463		+0.56525665	
<i>a</i>	2.3033590	Ω	241.77179	-0.54579427		+0.75376087	
<i>e</i>	0.1358809	<i>i</i>	4.06725	-0.15977777		+0.33515588	
<i>P</i>	3.50	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	(2.1+	2.7+)	1999 11 04	704	0.1-	0.1-	1999 11 16	704	0.9-	1.5-
1998 04 21	704	0.4-	0.5-	1999 11 04	704	0.9-	0.1+	1999 11 16	704	0.9+	0.4+
1998 04 21	704	0.6+	0.3+	1999 11 04	704	0.1+	0.4+	1999 11 16	704	0.4-	0.2-
1998 04 22	704	1.1+	0.2-	1999 11 11	703	0.3-	0.6-	1999 12 04	703	0.1-	0.1-
1998 04 22	704	0.9+	0.1+	1999 11 11	703	0.6-	0.6+	1999 12 04	703	0.2+	1.8-
1998 04 22	704	0.4-	0.3-	1999 11 11	703	0.7-	0.2-	1999 12 04	703	0.2+	0.3-
1998 04 22	704	1.6-	1.0+	1999 11 11	703	0.6+	1.5+	1999 12 04	703	1.5-	1.5+
1999 11 03	703	0.1-	0.1+	1999 11 14	704	0.3+	0.4+	1999 12 07	704	0.5-	0.5+
1999 11 03	703	0.1-	0.6-	1999 11 14	704	0.0	0.6+	1999 12 07	704	0.4+	1.0-
1999 11 03	703	0.4-	0.1+	1999 11 14	704	0.3+	0.5+	1999 12 07	704	0.3+	0.2-
1999 11 03	703	0.3+	0.7-	1999 11 14	704	0.8+	0.6+	1999 12 07	704	0.0	0.3+
1999 11 04	704	0.1-	0.1-	1999 11 14	704	0.2+	0.3+				
1999 11 04	704	0.1+	0.1-	1999 11 16	704	1.9+	0.1-				

1999 VN₃₀ = 1987 DN₄ = 1998 MU₂₅Id. G. V. Williams (*MPC* 37217), M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	180.00604	(2000.0)		P		Q	
<i>n</i>	0.28322696	ω	24.52197	-0.17041456		+0.98420459	
<i>a</i>	2.2963935	Ω	235.69973	-0.91337605		-0.17603896	
<i>e</i>	0.1813804	<i>i</i>	3.32828	-0.36973377		-0.01875139	
<i>P</i>	3.48	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1987 02 23	010	0.2+	0.4-	1999 11 09	704	0.2-	1.2-	1999 12 05	703	0.7-	0.7+
1987 02 24	010	2.0-	0.4+	1999 11 12	704	0.4+	0.0	1999 12 05	703	0.8-	0.2+
1987 02 24	010	1.4+	1.1-	1999 11 12	704	0.1+	0.9+	1999 12 05	703	0.7+	0.4-
1998 06 24	704	(0.6-	3.6-)	1999 11 12	704	0.1+	0.0	1999 12 05	703	0.2-	0.4+
1998 06 24	704	(2.5+	0.9-)	1999 11 12	704	0.1+	0.1-	1999 12 07	704	0.1-	0.9-
1998 06 24	704	0.2-	0.6-	1999 11 12	704	0.1+	0.2-	1999 12 07	704	0.1-	0.1-
1998 06 24	704	(0.2-	2.5-)	1999 11 17	704	0.9+	0.6-	1999 12 07	704	0.1-	0.6-
1998 06 26	704	0.6+	0.7-	1999 11 17	704	0.8+	0.1+	1999 12 07	704	0.0	0.1+
1998 06 26	704	(2.1-	0.0)	1999 11 17	704	0.3+	0.7-	1999 12 07	691	0.0	0.4+
1998 06 26	704	0.6-	0.2-	1999 11 17	704	0.5+	0.3+	1999 12 07	691	0.1-	0.4+
1998 06 26	704	0.9+	0.5+	1999 11 17	704	0.0	0.2+	1999 12 07	691	0.0	0.5+
1998 06 26	704	0.7-	0.2+	1999 12 02	691	0.1-	0.0	1999 12 08	704	0.5+	0.0
1999 11 03	704	1.4+	0.3-	1999 12 02	691	0.6-	0.9-	1999 12 08	704	1.0-	0.2-
1999 11 03	704	0.2+	0.0	1999 12 02	691	0.3-	0.1-	1999 12 08	704	0.4-	0.3+
1999 11 03	704	0.9+	0.7-	1999 12 03	699	0.5-	0.3+	1999 12 08	704	0.2-	0.2-
1999 11 03	704	0.7-	0.2-	1999 12 03	699	0.1+	1.2+	1999 12 08	704	0.4+	0.1+
1999 11 03	704	0.6+	1.5-	1999 12 03	699	0.5+	1.0+	1999 12 13	691	0.4-	0.1+
1999 11 09	704	0.2+	0.3-	1999 12 04	703	0.0	0.6+	1999 12 13	691	0.5-	0.0
1999 11 09	704	0.3+	0.3-	1999 12 04	703	1.0-	1.2+	1999 12 13	691	0.5-	0.1+
1999 11 09	704	0.3+	0.8-	1999 12 04	703	0.0	0.1+				
1999 11 09	704	0.0	0.7-	1999 12 04	703	0.8-	0.2+				

1999 VW₃₁ = 1999 XA₂₂₉ = 1998 HX₇₆Id. G. V. Williams (*MPC* 37219; d, unpublished), A. Doppler (*MPC* 37219)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			

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M.P.C. 37833

Residuals in seconds of arc

1998 03 31	910	0.7−	0.3−	1999 11 03	704	0.3+	1.0−	1999 11 16	704	0.4+	0.6+
1998 03 31	910	1.1−	0.4−	1999 11 03	704	0.8+	0.7−	1999 11 16	704	0.1−	0.0
1998 03 31	910	0.4−	0.1−	1999 11 09	704	0.2+	0.3−	1999 12 04	703	0.9−	0.4−
1998 04 21	704	0.5+	0.4−	1999 11 09	704	0.5+	0.0	1999 12 04	703	0.4−	0.2+
1998 04 21	704	0.5+	0.6−	1999 11 09	704	0.2+	0.8−	1999 12 04	703	0.5−	0.3+
1998 04 21	704	1.7+	0.9−	1999 11 09	704	0.2−	0.2+	1999 12 04	703	1.2−	0.1+
1998 04 21	704	0.9+	1.2−	1999 11 09	704	0.6+	0.5−	1999 12 07	704	0.4+	0.0
1998 04 21	704	2.6−	0.6+	1999 11 12	704	0.5−	0.6+	1999 12 07	704	0.1+	0.5−
1998 04 22	704	0.4+	0.6+	1999 11 12	704	0.2−	0.6+	1999 12 07	704	1.4+	0.1+
1998 04 22	704	0.3+	0.7+	1999 11 12	704	0.1+	0.7+	1999 12 07	704	0.3−	0.4−
1998 04 22	704	1.2+	0.6+	1999 11 12	704	0.5−	1.1+	1999 12 08	704	1.7+	1.0+
1998 04 22	704	0.0	0.6+	1999 11 12	704	0.1−	1.2+	1999 12 08	704	0.3−	0.4−
1998 04 22	704	0.8−	0.5+	1999 11 16	704	0.6−	0.3+	1999 12 08	704	1.5−	0.4−
1999 11 03	704	0.1−	0.8−	1999 11 16	704	1.0+	0.8−				
1999 11 03	704	0.0	0.3−	1999 11 16	704	0.0	0.1+				

1999 VM₃₃ = 1999 XA₄₈ = 1995 SX₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	35.44901	ω	0.25827184	Ω	176.45610	ω	+0.71416047	Ω	−0.69974395
<i>a</i>	2.4420320	Ω	227.96833	ω	227.96833	ω	+0.64161516	Ω	+0.66481403
<i>e</i>	0.2044238	i	1.40824	ω	1.40824	ω	+0.27982997	Ω	+0.26149706
<i>P</i>	3.82	<i>H</i>	16.7	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1995 09 25	691	0.1−	0.4+	1999 11 12	704	0.1+	0.7+	1999 12 08	691	0.2−	0.2+
1995 09 25	691	0.0	0.3+	1999 11 12	704	0.9+	0.5−	1999 12 08	691	0.0	0.1+
1995 09 25	691	0.1+	0.3+	1999 11 12	704	0.0	0.0	1999 12 08	704	0.5−	0.6−
1995 09 30	691	0.1−	0.1+	1999 11 12	704	0.4+	0.6−	1999 12 08	704	0.3+	0.5+
1995 09 30	691	0.1−	0.0	1999 11 12	704	0.1+	0.5−	1999 12 08	704	0.7−	0.4−
1995 09 30	691	0.0	0.3−	1999 12 04	703	1.0−	0.9+	1999 12 08	704	0.0	0.7−
1999 11 03	704	1.5−	0.5−	1999 12 04	703	0.6+	1.1+	1999 12 08	704	0.2−	0.4−
1999 11 03	704	0.6+	1.7−	1999 12 04	703	0.4+	1.1+	1999 12 13	691	0.1+	0.2+
1999 11 03	704	0.1−	1.0−	1999 12 04	703	1.1+	0.7+	1999 12 13	691	0.1+	0.2+
1999 11 09	704	0.9+	0.1+	1999 12 07	704	0.2−	0.0	1999 12 13	691	0.1+	0.0
1999 11 09	704	0.1−	0.2−	1999 12 07	704	0.1−	0.5−	2000 01 11	691	0.0	0.0
1999 11 09	704	0.2−	0.4+	1999 12 07	704	0.6−	0.9+	2000 01 11	691	0.1+	0.2−
1999 11 09	704	0.1+	0.2+	1999 12 07	704	0.6−	0.7−	2000 01 11	691	0.2+	0.1−
1999 11 09	704	0.4−	0.3+	1999 12 08	691	0.2+	0.6+				

1999 VY₃₃ = 1998 HB₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	104.63593	ω	0.27121942	Ω	268.79682	ω	+0.65871906	Ω	+0.75164422
<i>a</i>	2.3636810	Ω	42.46866	ω	42.46866	ω	−0.66909077	Ω	+0.60555580
<i>e</i>	0.2231092	i	2.84132	ω	2.84132	ω	−0.34410281	Ω	+0.26140609
<i>P</i>	3.63	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1995 08 29	809	0.4−	0.1−	1999 11 03	704	0.4+	0.6−	1999 11 12	704	0.3+	0.2+
1995 08 30	809	0.4+	0.1+	1999 11 03	704	0.8+	0.4−	1999 11 12	704	0.2+	0.3+
1998 04 20	704	0.3−	0.9+	1999 11 04	703	0.4−	0.7+	1999 11 12	704	0.1−	0.7+
1998 04 20	704	0.9+	0.5+	1999 11 04	703	0.5−	0.4+	1999 11 16	704	0.4+	0.3−
1998 04 20	704	1.5+	0.3−	1999 11 04	703	0.5−	0.2−	1999 11 16	704	0.2−	0.3−
1998 04 20	704	0.4−	1.1−	1999 11 04	703	1.3−	1.1+	1999 11 16	704	0.0	1.6+
1998 04 21	704	(0.1−	2.2−)	1999 11 09	703	0.5+	0.2+	1999 11 16	704	0.3−	0.3−
1998 04 21	704	0.4+	0.3−	1999 11 09	703	0.0	0.2−	1999 12 04	703	1.1−	0.3+
1998 04 21	704	0.7+	0.4+	1999 11 09	703	0.2−	0.4−	1999 12 04	703	0.2−	0.4−
1998 04 21	704	1.7−	0.1−	1999 11 09	703	0.5−	1.2+	1999 12 04	703	1.5+	0.4+
1998 04 22	704	(0.1−	2.7−)	1999 11 09	704	0.1+	0.6−	1999 12 04	703	1.0−	0.4−
1998 04 22	704	0.1−	0.5+	1999 11 09	704	0.3+	0.7−	1999 12 08	704	0.3−	0.5−
1998 04 22	704	0.3−	0.1+	1999 11 09	704	0.6+	1.1−	1999 12 08	704	0.0	0.1−
1998 04 22	704	0.4−	0.2−	1999 11 09	704	0.4+	1.3−	1999 12 08	704	0.2−	0.9+
1998 04 22	704	0.5−	0.7−	1999 11 12	704	0.2+	0.0				
1999 11 03	704	0.7+	0.4−	1999 11 12	704	0.4+	0.1−				

1999 VU₃₇ = 1991 OB

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	136.60840	ω	0.27445262	Ω	244.24334	ω	+0.62329051	Ω	+0.77360380
<i>a</i>	2.3450807	Ω	64.79276	ω	64.79276	ω	−0.66461123	Ω	+0.60101904
<i>e</i>	0.1246660	i	7.25243	ω	7.25243	ω	−0.41206899	Ω	+0.20078167
<i>P</i>	3.59	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1991 07 13	675	0.9−	0.4+	1999 11 03	704	0.2+	0.5−	1999 12 07	704	0.3−	0.2−
1991 07 13	675	0.6−	0.1+	1999 11 09	704	0.6+	0.1−	1999 12 07	704	0.7+	0.5+
1991 07 16	675	0.0	0.4+	1999 11 09	704	0.3−	1.9−	1999 12 07	704	0.6−	0.3+
1991 07 16	675	1.3+	0.3−	1999 11 09	704	0.3−	1.7−	1999 12 07	704	0.5−	0.3−
1998 06 24	704	(0.5+	2.3+)	1999 11 09	704	1.3−	0.1+	1999 12 10	704	1.2+	0.0
1998 06 24	704	0.3+	0.9−	1999 11 09	704	0.3+	1.1−	1999 12 10	704	1.0+	0.1−
1998 06 24	704	0.2+	0.9−	1999 11 12	704	0.1−	0.6+	1999 12 10	704	1.3+	0.0
1998 06 24	704	0.9+	0.6−	1999 11 12	704	0.3−	0.3+	1999 12 10	704	0.8+	0.4−
1998 06 26	704	0.3+	1.6−	1999 11 12	704	0.2−	0.0	2000 01 03	704	0.0	0.3−
1998 06 26	704	(3.1+	2.2+)	1999 11 12	704	0.1+	0.3+	2000 01 03	704	0.5+	0.0
1998 06 26	704	(3.0−	2.0+)	1999 11 12	704	0.1−	0.1+	2000 01 03	704	0.6−	0.1+
1998 06 26	704	0.3−	1.0+	1999 11 16	704	0.0	0.5+	2000 01 03	704	0.4+	0.1+
1998 06 26	704	1.7−	1.4+	1999 11 16	704	0.1+	0.5+	2000 01 04	704	0.0	0.2−
1999 11 03	704	0.1+	0.2+	1999 11 16	704	0.0	0.7+	2000 01 04	704	0.2+	0.1−
1999 11 03	704	0.2−	0.7+	1999 11 16	704	0.4−	0.6+	2000 01 04	704	0.1−	0.1+
1999 11 03	704	1.0−	0.3−	1999 11 16	704	0.4−	0.4+	2000 01 04	704	0.0	0.2+
1999 11 03	704	0.5−	0.1+	1999 12 07	704	0.1−	0.2−	2000 01 04	704	0.1−	0.3−

1999 VU₄₇ = 1977 FR = 1998 MJ₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	179.46621	ω	0.24033433	Ω	324.34970	ω	−0.70119957	Ω	+0.67345380
<i>a</i>	2.5620770	Ω	259.78899	ω	259.78899	ω	−0.58651691	Ω	−0.73151410
<i>e</i>	0.0592642	i	13.75768	ω	13.75768	ω	−0.40536043	Ω	−0.10652280
<i>P</i>	4.10	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1977 03 20	809	0.1−	0.2+	1999 09 13	703	0.5−	0.1−	1999 11 03	704	0.8−	0.1+
1977 03 21	809	0.2+	0.0	1999 09 13	703	0.3+	0.2+	1999 11 03	704	0.1+	1.7+
1998 06 24	704	0.4+	0.7−	1999 09 13	703	1.4+	0.8−	1999 11 03	704	0.7−	0.1−
1998 06 24	704	0.8−	0.5−	1999 09 13	703	0.5+	0.0	1999 11 03	704	0.1−	0.0
1998 06 24	704	0.4−	0.1+	1999 10 03	704	0.4+	0.4−	1999 11 03	704	0.9−	0.1+
1998 06 24	704	0.1+	0.1−	1999 10 03	703	0.2−	0.1+	1999 11 03	704	0.3+	0.9+
1998 06 24	704	0.7−	0.6+	1999 10 03	703	0.5−	0.1−	1999 11 04	704	0.1+	0.4+
1998 06 26	704	0.2−	1.4−	1999 10 03	704	0.0	0.7−	1999 11 04	704	0.9+	0.7−
1998 06 26	704	0.7+	1.4+	1999 10 03	703	0.5−	0.0	1999 11 04	704	0.4−	0.3+
1998 06 26	704	0.1−	1.6+	1999 10 03	704	0.2+	0.7−	1999 11 04	704	0.3+	0.5+
1998 06 26	704	0.9+	0.1+	1999 10 03	703	0.8−	0.1+	1999 11 04	704	0.8+	0.3+
1999 07 22	704	0.9+	0.8+	1999 10 03	704	0.2+	0.0	1999 11 14	699	0.3−	0.4+
1999 07 22	704	0.4−	0.3+	1999 10 03	704	1.4+	0.5−	1999 11 14	699	0.4+	0.4−
1999 07 22	704	0.8+	0.1+	1999 10 31	703	0.8−	0.3+	1999 11 14	699	0.5−	0.8+
1999 09 08	704	0.5−	0.6−	1999 10 31	703	0.3−	0.4+	2000 01 07	704	0.1+	0.4+
1999 09 08	704	0.2−	1.1−	1999 10 31	703	1.0+	0.5+	2000 01 07	704	0.3+	0.2+
1999 09 08	704	0.3−	0.3−	1999 10 31	703	0.1−	0.4+	2000 01 07	704	1.1+	0.7−
1999 09 08	704	0.9−	1.4−	1999 11 03	704	0.2−	0.2+	2000 01 07	704	0.3+	1.0+
1999 09 08	704	1.4−	1.3−	1999 11 03	704	0.4−	0.8+				

Residuals in seconds of arc

1996 12 08	327	0.0	0.2+	1999 11 04	704	0.1+	0.5−	1999 12 05	703	(1.2+	2.5+)
1996 12 08	327	0.2−	0.2−	1999 11 04	703	0.3−	0.0	1999 12 05	703	(2.2−	1.0−)
1996 12 08	327	0.9−	0.8−	1999 11 04	704	0.6+	0.7−	1999 12 05	703	0.0	0.8+
1996 12 10	327	0.2+	0.2−	1999 11 04	703	0.1−	0.1−	1999 12 08	704	0.6−	0.1+
1996 12 10	327	0.0	0.0	1999 11 04	704	0.7+	0.1+	1999 12 08	704	0.9−	0.5+
1996 12 10	327	0.5+	0.2−	1999 11 04	703	0.4−	0.7−	1999 12 08	704	1.4−	1.1+
1996 12 11	327	0.4+	0.0	1999 11 04	703	0.2+	0.5−	1999 12 08	704	1.2−	1.5+
1996 12 11	327	0.3−	0.2+	1999 11 09	703	0.4−	0.4+	1999 12 13	703	0.0	0.3−
1996 12 11	327	0.1+	0.2−	1999 11 09	703	0.1−	0.8+	1999 12 13	703	0.4−	0.0
1999 11 03	704	1.0+	0.0	1999 11 09	703	0.5−	0.1+	1999 12 13	703	0.3−	0.1−
1999 11 03	704	1.0+	0.1+	1999 11 09	703	0.3−	0.1+	1999 12 13	703	0.8−	0.2−
1999 11 03	704	0.6+	0.7−	1999 11 13	703	0.5−	0.6−	2000 01 06	704	0.2+	0.1+
1999 11 03	704	0.1+	0.5+	1999 11 13	703	0.0	0.4+	2000 01 06	704	0.9+	0.7+
1999 11 03	704	0.1+	0.3−	1999 11 13	703	0.0	0.5−	2000 01 06	704	0.4+	0.2+
1999 11 04	704	0.8+	0.6−	1999 11 13	703	0.5+	0.1+	2000 01 06	704	0.5+	0.7+
1999 11 04	704	0.3+	0.3−	1999 12 05	703	0.1−	0.3−	2000 01 06	704	0.1+	1.0−

1999 VH₄₉ = 1995 TT₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	144.27264		(2000.0)	P	Q
<i>n</i>	0.25281553	ω	261.87908	+0.12509964	+0.99172342
<i>a</i>	2.4770431	Ω	15.39757	−0.86204345	+0.12306500
<i>e</i>	0.1286359	<i>i</i>	6.24695	−0.49115291	+0.03660136
<i>P</i>	3.90	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 10 15	691	0.3−	0.1−	1999 11 03	704	0.3+	1.6+	1999 11 04	704	0.3−	0.2+
1995 10 15	691	0.1−	0.2−	1999 11 03	704	0.3+	0.3−	1999 11 04	704	0.9+	0.5+
1995 10 15	691	0.4−	0.5−	1999 11 03	704	0.7−	0.6+	1999 11 16	704	0.6+	0.6+
1995 10 22	691	0.1+	0.8+	1999 11 03	704	0.2−	0.7+	1999 11 16	704	0.1−	1.1−
1995 10 22	691	0.4+	0.0	1999 11 03	704	0.0	0.5−	1999 11 16	704	0.0	0.1+
1995 10 22	691	0.3+	0.1−	1999 11 04	704	1.2−	0.3−	1999 11 16	704	0.6+	1.2−
1999 10 21	653	0.4+	0.0	1999 11 04	704	0.7−	0.1−				
1999 10 21	653	0.3+	0.8−	1999 11 04	704	0.2−	0.1+				

1999 VM₄₉ = 1997 EL₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	41.43672		(2000.0)	P	Q
<i>n</i>	0.26863198	ω	146.46146	+0.90260403	−0.42156631
<i>a</i>	2.3788346	Ω	238.70672	+0.36915223	+0.86210810
<i>e</i>	0.2421464	<i>i</i>	5.85078	+0.22143305	+0.28116094
<i>P</i>	3.67	<i>H</i>	17.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 03	691	0.1+	0.2+	1999 11 03	704	0.4−	0.6−	1999 11 14	704	0.1+	0.3−
1997 03 03	691	0.0	0.2−	1999 11 04	704	0.2+	0.2−	1999 11 14	704	0.1+	0.2−
1997 03 03	691	0.6−	0.1+	1999 11 04	704	0.1−	1.2−	1999 11 14	704	0.5+	0.0
1997 03 10	691	0.3+	0.3−	1999 11 04	704	0.2−	0.3−	1999 11 14	704	0.5+	0.7+
1997 03 10	691	0.0	0.0	1999 11 04	704	0.5−	0.7+	1999 11 14	704	0.0	0.3+
1997 03 10	691	0.2+	0.1+	1999 11 14	704	0.4−	0.7−	1999 11 15	691	0.3+	0.3+
1999 11 03	704	1.5+	0.4+	1999 11 14	704	0.1+	0.1+	1999 11 15	691	0.4+	0.4+
1999 11 03	704	0.3−	0.2−	1999 11 14	704	0.6−	0.6+	1999 11 15	691	0.4+	0.3+
1999 11 03	704	0.1−	0.6+	1999 11 14	704	0.8−	0.7−				
1999 11 03	704	0.6−	0.0	1999 11 14	704	0.1−	0.1−				

1999 VW₅₀ = 1997 JH₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	343.93923		(2000.0)	P	Q
<i>n</i>	0.21781805	ω	54.61275	−0.16785701	−0.98003624
<i>a</i>	2.7357315	Ω	45.43040	+0.84901606	−0.19864647
<i>e</i>	0.0516457	<i>i</i>	8.60176	+0.50099476	+0.00827970
<i>P</i>	4.52	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 11	704	0.7+	0.4+	1999 11 04	704	0.0	0.4−	1999 12 02	699	0.5+	0.1−
1997 04 11	704	1.1+	1.5−	1999 11 04	704	0.3+	0.7−	1999 12 02	699	0.5+	0.9−
1997 05 03	809	(0.3+	3.5−)	1999 11 04	704	0.5−	0.5−	1999 12 05	703	0.0	0.6+
1997 05 03	809	(1.9−	3.4−)	1999 11 04	704	0.4−	0.0	1999 12 05	703	0.9−	0.1−
1997 05 03	809	(1.9−	3.5−)	1999 11 04	704	0.0	0.8−	1999 12 05	703	0.8−	0.1+
1997 05 04	809	0.0	0.3−	1999 11 14	704	0.2−	0.2−	1999 12 05	703	0.2−	1.0+
1997 05 04	809	1.0−	0.9+	1999 11 14	704	0.2−	0.2−	1999 12 08	704	0.5+	0.2+
1997 05 04	809	0.9−	0.3−	1999 11 14	704	0.3−	1.2+	1999 12 08	704	1.0+	0.3−
1999 10 06	704	1.0+	0.9−	1999 11 14	704	1.0−	0.1+	1999 12 08	704	0.9+	0.2−
1999 10 06	704	(2.3+	1.1+)	1999 11 14	704	0.7−	0.0	1999 12 08	704	0.8+	0.1−
1999 10 06	704	0.9+	1.3+	1999 11 16	704	0.2+	0.2−	1999 12 08	704	0.8+	0.4+
1999 11 03	704	0.0	0.3−	1999 11 16	704	0.4+	0.0	1999 12 13	703	0.1+	0.3+
1999 11 03	704	0.1−	0.5−	1999 11 16	704	0.1+	0.0	1999 12 13	703	0.3−	0.0
1999 11 03	704	1.0−	0.2−	1999 11 16	704	0.1−	0.2−	1999 12 13	703	0.8−	0.2+
1999 11 03	704	0.7+	0.8+	1999 11 16	704	0.5−	0.2−	1999 12 13	703	0.6−	0.4+
1999 11 03	704	0.1−	0.1−	1999 12 02	699	0.3+	0.2−				

1999 VX₅₀ = 1993 TL₂₃

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	18.49672		(2000.0)	P	Q
<i>n</i>	0.17259733	ω	272.52251	+0.52807106	−0.84912580
<i>a</i>	3.1948220	Ω	145.59474	+0.78681745	+0.48425655
<i>e</i>	0.2070312	<i>i</i>	1.13980	+0.31946714	+0.21090513
<i>P</i>	5.71	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 10 09	809	(4.6−	6.4−)	1999 11 03	704	0.2+	1.2−	1999 12 07	691	0.1−	0.0
1993 10 09	809	(4.1−	6.7−)	1999 11 04	704	0.2+	0.3−	1999 12 07	704	0.4−	0.2−
1993 10 09	809	(5.1−	6.4−)	1999 11 04	704	0.2+	0.6−	1999 12 07	691	0.0	0.1+
1993 10 11	809	1.2−	0.5−	1999 11 04	704	0.3+	0.9−	1999 12 07	704	0.1+	0.4+
1993 10 11	809	0.3−	0.3−	1999 11 04	704	0.7+	0.2+	1999 12 07	704	0.2+	0.0
1993 10 11	809	1.1−	0.8−	1999 11 04	704	0.8+	0.2+	1999 12 07	691	0.1−	0.1+
1993 10 20	809	0.7+	0.9+	1999 11 17	704	0.3+	0.2−	1999 12 07	704	0.3−	0.0
1993 10 20	809	1.0+	1.1+	1999 11 17	704	0.0	0.6−	1999 12 07	595	0.3−	0.4+
1993 10 20	809	0.4+	0.9+	1999 11 17	704	0.4+	0.3−	1999 12 07	595	0.2−	0.5+
1993 10 22	809	(0.5−	4.3−)	1999 11 17	704	0.1−	0.0	1999 12 07	595	0.1−	0.5+
1993 10 22	809	(4.8−	2.6−)	1999 11 17	704	0.1+	0.3−	1999 12 08	704	0.6−	0.1+
1993 10 22	809	(11.3−	0.8+)	1999 11 29	049	0.3+	0.7+	1999 12 08	704	0.0	0.0
1999 10 30	703	1.1−	0.1+	1999 11 30	049	0.6+	1.0+	1999 12 08	704	0.1−	0.2−
1999 10 30	703	0.1+	0.9+	1999 11 30	049	0.4+	0.9+	1999 12 08	704	0.2−	0.3+
1999 10 30	703	1.1−	0.3+	1999 12 03	699	0.4+	0.4+	1999 12 08	704	0.1−	0.2+
1999 10 30	703	0.2−	0.1−	1999 12 03	699	0.6+	0.2+	1999 12 13	691	0.3−	0.0
1999 11 03	704	0.1+	1.4−	1999 12 03	699	0.4+	0.4−	1999 12 13	691	0.4−	0.0
1999 11 03	704	0.4−	0.8−	1999 12 06	595	0.5−	0.4+	1999 12 13	691	0.4−	0.0
1999 11 03	704	0.4+	1.0−	1999 12 06	595	0.0	0.4+				
1999 11 03	704	0.4+	1.1−	1999 12 07	704	0.2−	0.1−				

1999 VY₅₂ = 1976 UV

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.83688		(2000.0)	P	Q
<i>n</i>	0.21312682	ω	185.54022	+0.18820276	−0.95630461
<i>a</i>	2.7757306	Ω	253.76071	+0.90979990	+0.25556540
<i>e</i>	0.3753702	<i>i</i>	13.47620	+0.36992413	−0.14201345
<i>P</i>	4.62	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1976 10 31	809	1.2+	0.2−	1999 11 04	704	0.1+	0.4+	1999 12 14	704	0.0	0.0
1976 10 31	809	0.4−	0.4+	1999 11 04	704	0.2+	0.1−	1999 12 14	704	0.3−	0.4−
1976 11 01	809	0.0	0.0	1999 11 05	704	0.0	0.1+	1999 12 14	704	0.3+	0.3−
1976 11 01	809	0.0	0.2+	1999 11 05	704	0.1+	0.2+	1999 12 14	704	0.2−	0.4−
1976 11 02	809	0.3+	0.4−	1999 11 05	704	0.1+	0.2+	1999 12 14	704	0.2−	0.2−
1976 11 02	809	0.7−	0.5+	1999 11 05	704	0.1+	0.1−	2000 01 07	704	0.2+	0.1+
1999 09 03	704	0.1+	0.3−	1999 11 05	704	0.0	0.0	2000 01 07	704	0.1−	0.1+

2000 JAN. 24

M.P.C. 37835

1999 09 03	704	0.1−	0.2−	1999 11 17	704	0.0	0.0	2000 01 07	704	0.0	0.1+
1999 09 03	704	0.2+	0.1+	1999 11 17	704	0.3−	0.4+	2000 01 07	704	0.2−	0.0
1999 11 03	704	0.2−	0.2−	1999 11 17	704	0.1−	0.4+	2000 01 07	704	0.1−	0.0
1999 11 03	704	0.0	0.2−	1999 11 17	704	0.5−	0.2+	2000 01 11	704	0.4−	0.0
1999 11 03	704	0.1−	0.2+	1999 11 17	704	0.1−	0.0	2000 01 11	704	0.1+	0.1+
1999 11 03	704	0.0	0.1+	1999 12 06	704	0.1+	0.1−	2000 01 11	704	0.2+	0.0
1999 11 03	704	0.2+	0.3+	1999 12 06	704	0.1−	0.0	2000 01 11	704	0.2+	0.6+
1999 11 04	704	0.1+	0.1+	1999 12 06	704	0.1−	0.1−	2000 01 11	704	0.1+	0.2−
1999 11 04	704	0.0	0.2+	1999 12 06	704	0.0	0.1−				
1999 11 04	704	0.0	0.1−	1999 12 06	704	0.8+	0.8−				

1999 VN₅₃ = 1997 EB₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	157.96620		(2000.0)	P	Q
<i>n</i>	0.24297278	ω	231.15906	−0.18074593	+0.98262758
<i>a</i>	2.5434954	Ω	28.51219	−0.87282815	−0.14051684
<i>e</i>	0.0695215	<i>i</i>	5.06203	−0.45332320	−0.12123554
<i>P</i>	4.06	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 04	704	1.4−	1.0−	1999 11 10	691	0.3+	0.3−	1999 11 15	691	0.0	0.3−
1997 03 04	704	1.0+	0.1−	1999 11 10	691	0.4+	0.3−	1999 11 15	691	0.0	0.4−
1997 03 06	704	0.8+	0.2+	1999 11 10	691	0.3+	0.2−	1999 11 16	704	0.5−	0.3+
1997 03 06	704	0.4−	0.9+	1999 11 12	704	0.7+	0.1+	1999 11 16	704	0.5−	0.5−
1999 10 03	704	0.4−	0.1+	1999 11 12	704	1.0+	0.4−	1999 11 16	704	0.6−	0.2+
1999 10 03	704	0.4−	0.4+	1999 11 12	704	0.4+	0.2+	1999 12 04	699	1.1+	0.6−
1999 10 03	704	0.4−	0.3+	1999 11 12	704	0.1+	0.0	1999 12 04	699	0.6+	0.1−
1999 10 10	120	0.0	0.2+	1999 11 12	704	0.9+	0.1−	1999 12 04	699	0.2−	0.5+
1999 10 10	120	1.3+	0.4−	1999 11 14	704	0.2+	1.0−	1999 12 07	704	0.2−	0.2+
1999 11 04	704	0.2+	0.2+	1999 11 14	704	0.3−	0.7+	1999 12 07	704	0.1+	0.9+
1999 11 04	704	0.6−	0.2−	1999 11 14	704	0.2−	0.2+	1999 12 07	704	0.2+	1.2+
1999 11 04	704	0.8−	0.1+	1999 11 14	704	0.0	0.0	1999 12 07	704	0.4−	0.2−
1999 11 04	704	0.1−	0.5+	1999 11 14	704	0.4−	0.3−	1999 12 07	704	1.4−	0.4−
1999 11 04	704	0.2−	0.1−	1999 11 15	691	0.0	0.3−				

1999 VG₅₄ = 1997 BW₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	4.37813		(2000.0)	P	Q
<i>n</i>	0.28081987	ω	46.76907	+0.22170884	−0.97506227
<i>a</i>	2.3094975	Ω	30.42569	+0.88886522	+0.19789793
<i>e</i>	0.1790161	<i>i</i>	1.12440	+0.40095363	+0.10044887
<i>P</i>	3.51	<i>H</i>	16.9	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1997 01 31	691	0.1−	0.4−	1999 10 29	703	1.0−	0.2−	1999 11 10	691	0.1+	0.1−
1997 01 31	691	0.8+	0.5−	1999 11 04	704	0.5+	0.2+	1999 11 10	691	0.1−	0.1−
1997 01 31	691	0.1+	0.3−	1999 11 04	704	0.5−	0.6−	1999 11 10	691	0.2−	0.3−
1997 02 06	691	0.7+	0.1+	1999 11 04	704	0.9+	0.5+	1999 11 12	704	0.0	0.2+
1997 02 06	691	0.8+	0.3−	1999 11 04	704	1.9+	0.8+	1999 11 12	704	0.1−	0.4+
1997 02 06	691	0.6+	0.0	1999 11 04	704	0.7+	1.3−	1999 11 12	704	0.2−	0.1−
1999 10 29	703	0.3+	0.5−	1999 11 09	704	0.2+	0.4+	1999 11 12	704	0.0	0.1−
1999 10 29	703	0.2−	0.8+	1999 11 09	704	0.2+	0.5+	1999 11 12	704	0.4−	0.1−
1999 10 29	703	1.2−	0.1−	1999 11 09	704	0.8−	0.2−				

1999 VW₅₄ = 1998 KM₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	126.14191		(2000.0)	P	Q
<i>n</i>	0.26359543	ω	248.02880	+0.31110761	+0.94918875
<i>a</i>	2.4090407	Ω	40.19492	−0.84257491	+0.29857751
<i>e</i>	0.1231682	<i>i</i>	4.21746	−0.43963574	+0.09945944
<i>P</i>	3.74	<i>H</i>	15.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 04 22	704	0.4+	1.3+	1998 05 23	704	0.1+	0.1−	1999 11 09	704	0.0	0.0
1998 04 22	704	0.7−	0.4−	1998 05 23	704	0.8−	1.9+	1999 11 09	704	0.5−	0.1−

1998 04 22	704	0.3+	0.6−	1998 05 24	704	0.6+	1.6−	1999 11 09	704	0.8+	0.3+
1998 04 22	704	(5.6−	0.5+)	1998 05 24	704	0.8−	0.2−	1999 11 10	691	0.1+	0.0
1998 05 18	699	0.0	0.1+	1998 05 24	704	0.4+	1.0+	1999 11 10	691	0.0	0.0
1998 05 18	699	0.1−	0.5+	1998 05 24	704	1.2−	0.8−	1999 11 10	691	0.1+	0.0
1998 05 18	699	0.6+	0.4−	1999 10 29	703	(3.5−	0.1−)	1999 11 12	704	0.2−	0.3−
1998 05 22	704	0.6+	1.2−	1999 10 29	703	0.3+	0.9−	1999 11 12	704	0.2+	0.0
1998 05 22	704	0.9+	1.4+	1999 10 29	703	0.6+	0.6+	1999 11 12	704	0.7−	0.4+
1998 05 22	704	0.2−	0.1−	1999 10 29	703	0.2−	0.9+	1999 11 12	704	0.2+	0.2+
1998 05 22	704	1.5−	0.8+	1999 11 04	704	0.1+	0.1−	1999 11 12	704	0.4−	0.0
1998 05 22	704	(4.9−	0.9+)	1999 11 04	704	0.5−	0.6−	1999 11 15	691	0.5+	0.2+
1998 05 23	704	0.9−	0.6+	1999 11 04	704	1.6−	0.4−	1999 11 15	691	0.2+	0.1+
1998 05 23	704	1.0+	1.1−	1999 11 04	704	0.6+	0.3−	1999 11 15	691	0.3+	0.1+
1998 05 23	704	1.3+	0.9−	1999 11 09	704	0.1+	0.4+				

1999 VX₅₄ = 1998 MX₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	226.96643		(2000.0)	P	Q
<i>n</i>	0.27481365	ω	64.25000	−0.89913832	+0.43758474
<i>a</i>	2.3430264	Ω	141.69832	−0.40622650	−0.82729200
<i>e</i>	0.1512300	<i>i</i>	0.77273	−0.16288126	−0.35228901
<i>P</i>	3.59	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 09 20	809	0.0	0.0	1999 11 04	704	0.2−	0.4+	1999 11 09	704	0.4+	0.1−
1998 06 24	704	0.6−	1.5−	1999 11 04	704	0.9+	0.7+	1999 11 12	704	0.0	0.1−
1998 06 24	704	0.4+	0.2+	1999 11 04	704	0.7+	0.2−	1999 11 12	704	0.2+	0.4−
1998 06 24	704	1.5−	0.9+	1999 11 04	704	0.1+	0.8−	1999 11 12	704	0.0	0.6−
1998 06 24	704	0.3+	1.2+	1999 11 04	704	0.6−	1.0−	1999 11 12	704	0.1−	0.9−
1998 06 26	704	1.0+	0.1+	1999 11 05	691	0.7−	0.1−	1999 11 13	691	0.7−	0.0
1998 06 26	704	0.9−	1.8−	1999 11 05	691	0.7−	0.1+	1999 11 13	691	0.5−	0.2−
1998 06 26	704	1.3+	0.6+	1999 11 05	691	0.7−	0.0	1999 11 13	691	0.6−	0.0
1999 10 03	704	0.9+	0.9+	1999 11 09	704	0.3+	0.3+	1999 11 16	704	0.7+	1.0+
1999 10 03	704	1.1−	0.9+	1999 11 09	704	0.1−	0.1−	1999 11 16	704	1.4+	0.4+
1999 10 03	704	0.1+	0.4+	1999 11 09	704	0.3−	0.9−	1999 11 16	704	0.7+	0.6+

1999 VY₅₄ = 1998 HU₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	113.51697		(2000.0)	P	Q
<i>n</i>	0.26841695	ω	118.20501	+0.39984031	+0.91658388
<i>a</i>	2.3801049	Ω	175.36261	−0.84652135	+0.36982364
<i>e</i>	0.1875450	<i>i</i>	0.92728	−0.35146740	+0.15200152
<i>P</i>	3.67	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 03 25	704	0.5+	0.2+	1998 04 22	704	1.0−	0.1+	1999 11 05	691	0.2+	0.3−
1998 03 25	704	0.5+	0.9−	1998 04 22	704	1.5+	0.3−	1999 11 05	691	0.1+	0.3−
1998 03 25	704	0.5−	0.8+	1998 04 22	704	0.4−	0.6+	1999 11 09	704	0.0	0.7+
1998 03 25	704	(5.1−	0.2−)	1998 04 22	704	1.5−	1.4−	1999 11 09	704	0.2+	0.1+
1998 03 29	704	1.0−	0.1−	1999 10 29	703	0.0	1.7+	1999 11 09	704	1.5+	0.9−
1998 03 29	704	0.2+	1.7+	1999 10 29	703	0.2−	1.0+	1999 11 12	704	0.3−	0.5+
1998 03 29	704	(0.6−	3.3+)	1999 10 29	703	(2.9+	1.6+)	1999 11 12	704	0.6−	0.4−
1998 03 29	704	(3.6−	1.0+)	1999 10 29	703	0.7−	0.9+	1999 11 12	704	0.2−	0.3−
1998 04 21	704	1.0−	1.6−	1999 11 04	704	0.4+	0.3−	1999 11 13	691	0.3−	0.5−
1998 04 21	704	1.3+	0.3+	1999 11 04	704	1.1+	0.0	1999 11 13	691	0.5−	0.3−
1998 04 21	704	(2.0−	2.3+)	1999 11 04	704	1.2−	0.3−	1999 11 13	691	0.1−	0.5−
1998 04 21	704	1.2+	0.2−	1999 11 04	704	0.6+	0.6−				
1998 04 21	704	0.1+	0.7+	1999 11 05	691	0.2+	0.4−				

1999 VS₅₅ = 1994 RO₁₄ = 1996 AQ₈

Residuals in seconds of arc

1994 08 11	809	1.6+	1.7+	1996 01 19	691	0.1+	0.2+	1999 11 12	704	0.7+	0.2-
1994 08 11	809	0.4+	0.4-	1999 10 29	703	0.1-	0.7+	1999 11 12	704	1.2+	0.0
1994 08 11	809	0.3-	0.1-	1999 10 29	703	0.5-	0.6+	1999 11 12	704	0.2+	0.6-
1994 09 03	809	1.4-	0.8-	1999 10 29	703	0.4-	0.9+	1999 11 12	704	0.7+	0.2+
1994 09 03	809	0.1+	1.1-	1999 10 29	703	0.3-	0.0	1999 11 12	704	0.6+	1.3-
1994 09 03	809	0.0	0.8+	1999 11 04	704	0.0	0.1+	1999 11 15	691	0.6-	0.4+
1994 09 04	809	1.0-	0.2-	1999 11 04	704	0.8+	0.4-	1999 11 15	691	0.3-	0.3+
1994 09 04	809	0.1+	1.0+	1999 11 04	704	0.8+	0.8-	1999 11 15	691	0.4-	0.3+
1994 09 04	809	0.1+	0.4+	1999 11 04	704	0.3+	0.6-	1999 11 16	704	0.2-	0.3-
1996 01 13	691	0.1-	0.2+	1999 11 04	704	0.6+	0.9-	1999 11 16	704	0.9-	0.4+
1996 01 13	691	0.2+	0.3+	1999 11 09	704	0.5-	0.3+	1999 11 16	704	0.3+	0.2+
1996 01 13	691	0.0	0.2+	1999 11 09	704	0.6-	0.2+	1999 11 16	704	0.7-	1.4-
1996 01 19	691	0.2+	0.1+	1999 11 09	704	0.0	0.7+				
1996 01 19	691	0.2-	0.4+	1999 11 09	704	0.5-	0.6+				

1999 VU₅₅ = 1996 AC₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	34.87941		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.20172925	ω	187.74340	+0.90772040	-0.41949035
a	2.8793213	Ω	197.06664	+0.38648103	+0.84379924
e	0.0597601	i	1.65129	+0.16332818	+0.33470985
P	4.89	H	14.3	G 0.15	U 4

Residuals in seconds of arc

1996 01 13	691	0.2-	0.3-	1999 10 03	704	0.8-	0.4+	1999 11 12	704	0.4+	0.2+
1996 01 13	691	0.1-	0.1-	1999 11 04	704	0.5+	0.3+	1999 11 12	704	0.0	0.0
1996 01 13	691	0.1-	0.2-	1999 11 04	704	0.0	0.3+	1999 11 14	691	0.7-	1.1+
1996 01 19	691	0.4+	0.5+	1999 11 04	704	0.9+	0.2+	1999 11 14	691	0.6-	0.3-
1996 01 19	691	0.3+	0.0	1999 11 04	704	0.0	0.5+	1999 11 14	691	0.5-	0.2-
1996 01 19	691	0.4-	0.0	1999 11 04	704	0.5+	0.5+	1999 11 17	704	0.3+	0.1-
1999 10 01	703	0.3-	1.4+	1999 11 09	704	0.6+	0.6-	1999 11 17	704	1.3-	0.3+
1999 10 01	703	2.0-	1.2-	1999 11 09	704	0.4+	0.5-	1999 11 17	704	0.4-	1.9+
1999 10 01	703	0.5-	1.6+	1999 11 09	704	0.3+	0.3-	1999 12 07	704	0.0	0.0
1999 10 01	703	0.5+	0.0	1999 11 09	704	0.0	0.7-	1999 12 07	704	0.2+	0.2+
1999 10 03	704	0.8+	1.0-	1999 11 09	704	0.3+	0.6-	1999 12 07	704	0.0	0.3+
1999 10 03	704	0.0	0.7-	1999 11 12	704	0.3+	0.2-	1999 12 07	704	0.5+	0.5-
1999 10 03	704	0.2+	1.3-	1999 11 12	704	0.2+	0.2-	1999 12 07	704	0.2-	0.2+
1999 10 03	704	0.3+	0.6-	1999 11 12	704	0.1+	0.4-				

1999 VX₅₅ = 1997 EB₅₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	195.71649		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21837541	ω	13.04096	-0.69073458	+0.72205273
a	2.7310746	Ω	213.29563	-0.66966175	-0.65912734
e	0.0680458	i	4.08009	-0.27283489	-0.21021658
P	4.51	H	14.5	G 0.15	U 3

Residuals in seconds of arc

1997 03 05	809	0.5+	1.0-	1998 08 17	704	1.0+	1.2-	1999 11 10	691	0.2-	0.2+
1997 03 05	809	0.3+	0.8-	1999 11 04	704	0.3+	1.2+	1999 11 12	704	0.5-	0.1-
1997 03 05	809	0.7-	0.9-	1999 11 04	704	0.1-	1.3+	1999 11 12	704	0.2-	0.1-
1997 03 06	809	0.2+	1.3+	1999 11 04	704	0.8+	0.8+	1999 11 12	704	0.1-	0.1+
1997 03 06	809	1.0+	1.6+	1999 11 04	704	(0.4+	2.3+)	1999 11 12	704	0.1-	0.2+
1997 03 06	809	0.5-	1.5+	1999 11 04	704	1.8+	0.7+	1999 11 12	704	0.1-	0.8+
1998 07 29	910	0.0	0.7+	1999 11 09	704	0.1-	0.3+	1999 11 14	691	0.3-	0.1-
1998 07 29	910	0.1-	0.6+	1999 11 09	704	0.4+	0.9-	1999 11 14	691	0.4-	0.0
1998 07 30	910	0.3+	0.5+	1999 11 09	704	0.1+	0.5-	1999 11 14	691	0.3-	0.1-
1998 08 17	704	(2.4-	0.3-)	1999 11 09	704	0.1-	0.1-	1999 11 17	704	0.3+	1.2-
1998 08 17	704	0.1+	0.7-	1999 11 10	691	0.5-	0.2+	1999 11 17	704	0.3-	0.2-
1998 08 17	704	1.6-	1.3+	1999 11 10	691	0.5-	0.1+	1999 11 17	704	0.4-	1.1-

1999 VB₅₇ = 1993 BR₁₄ = 1997 EN₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	342.13371		(2000.0)	P	Q
n	0.26331193	ω	260.52070	-0.26874213	-0.96311173
a	2.4107695	Ω	205.08212	+0.89610411	-0.24469686
e	0.1806708	i	1.88026	+0.35323519	-0.11197873
P	3.74	H	15.0	G 0.15	U 2

Residuals in seconds of arc

1993 01 23	809	0.0	0.7-	1999 11 04	704	0.0	0.1-	1999 11 16	704	0.1-	0.6-
1993 01 28	809	0.1-	0.1+	1999 11 05	704	0.6-	0.2-	1999 11 16	704	0.4+	0.1-
1993 01 28	809	0.3-	0.7-	1999 11 05	704	0.1+	0.1-	1999 11 16	704	0.6-	0.7-
1997 03 08	809	0.4+	0.8+	1999 11 05	704	0.1+	0.2-	1999 12 04	699	0.4+	0.0
1997 03 08	809	0.5+	0.4+	1999 11 05	704	0.2-	0.5-	1999 12 04	699	0.2-	0.3+
1997 03 08	809	0.4-	0.1+	1999 11 05	704	0.1-	0.1+	1999 12 04	699	0.7+	0.7+
1997 03 09	809	(0.4-	3.1+)	1999 11 09	704	0.2+	0.5+	1999 12 06	704	0.8-	0.5+
1997 03 09	809	(0.5+	3.3+)	1999 11 09	704	0.5+	0.2+	1999 12 06	704	0.3+	0.8+
1997 03 09	809	(0.1+	2.4+)	1999 11 09	704	0.2-	0.2+	1999 12 06	704	0.7-	0.4+
1999 10 01	703	0.1+	0.1+	1999 11 09	704	0.2+	0.0	1999 12 06	704	0.7-	0.7-
1999 10 01	703	1.7-	0.2-	1999 11 12	704	0.2+	0.1+	1999 12 06	704	0.2+	1.0-
1999 10 01	703	0.3+	0.9+	1999 11 12	704	0.2+	0.0	1999 12 30	699	0.7+	1.3+
1999 10 01	703	(2.3-	1.2-)	1999 11 12	704	0.3+	0.1-	1999 12 30	699	0.6-	1.2+
1999 11 04	704	0.4+	0.1-	1999 11 12	704	0.3+	0.0	1999 12 30	699	0.2+	0.2+
1999 11 04	704	0.1+	0.3-	1999 11 12	704	0.0	0.0	2000 01 07	704	0.2-	0.8+
1999 11 04	704	0.1+	0.0	1999 11 16	704	0.8+	0.2-	2000 01 07	704	0.7+	0.7-
1999 11 04	704	0.1+	0.1-	1999 11 16	704	0.1-	0.2-	2000 01 07	704	1.5-	0.2-

1999 VN₅₈ = 1994 LA₁₀ = 1995 WV₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	214.11004		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.26472450	ω	16.83193	-0.66037043	+0.75079333
a	2.4021860	Ω	211.84455	-0.69217345	-0.61623717
e	0.1480952	i	1.61190	-0.29121608	-0.23782583
P	3.72	H	14.9	G 0.15	U 2

Residuals in seconds of arc

1994 06 08	809	0.1-	0.6-	1998 08 17	704	(0.4+	3.0+)	1999 11 12	704	0.6+	1.3-
1994 06 08	809	0.1-	0.5+	1998 08 17	704	(0.6+	3.2+)	1999 11 12	704	0.9+	0.2-
1994 06 08	809	0.7+	0.4-	1999 11 01	703	0.7-	0.1+	1999 11 12	704	0.1-	0.1+
1994 06 09	809	0.7-	0.8-	1999 11 01	703	0.9-	0.5+	1999 11 12	704	0.1+	0.2+
1994 06 09	809	0.1-	0.8+	1999 11 01	703	1.6-	1.1+	1999 11 12	704	0.3+	0.1-
1994 06 09	809	0.3+	1.0+	1999 11 01	703	1.1-	1.7+	1999 11 14	704	0.2-	0.2+
1995 11 19	691	0.2-	0.1-	1999 11 04	704	0.1-	0.2-	1999 11 14	704	0.4-	0.4-
1995 11 19	691	0.5-	0.0	1999 11 04	704	0.4-	0.5-	1999 11 14	704	0.5-	0.3+
1995 11 19	691	0.4-	0.2-	1999 11 04	704	0.2+	1.5-	1999 11 14	704	0.0	0.1-
1995 11 25	691	0.5+	0.1+	1999 11 04	704	0.4+	1.8-	1999 11 14	704	0.2+	0.1-
1995 11 25	691	0.4+	0.2+	1999 11 09	704	0.9+	0.1-	1999 12 07	704	0.1+	0.4+
1995 11 25	691	0.2+	0.2+	1999 11 09	704	1.0+	0.6+	1999 12 07	704	0.5-	0.5-
1998 08 17	704	0.1-	0.7-	1999 11 09	704	0.3+	0.5+	1999 12 07	704	0.7+	0.3+
1998 08 17	704	0.0	0.9+	1999 11 09	704	0.0	0.8+	1999 12 07	704	0.3+	0.3+
1998 08 17	704	0.2+	0.5-	1999 11 09	704	0.5+	0.5+				

1999 VP₅₉ = 1997 JC₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	52.08799		(2000.0)	P	Q
n	0.22301436	ω	61.35017	+0.96905850	-0.24666726
a	2.6930691	Ω	312.92865	+0.22195943	+0.88677309
e	0.0888681	i	0.70378	+0.10797980	+0.39088200
P	4.42	H	15.6	G 0.15	U 4

Residuals in seconds of arc

1997 05 03	691	0.1-	0.8-	1999 11 04	704	0.1-	0.4+	1999 11 15	704	0.1-	0.6+
1997 05 03	691	0.3+	0.3-	1999 11 04	704	0.4+	0.4-	1999 11 15	704	0.3-	0.8-
1997 05 03	691	0.0	0.1+	1999 11 04	704	0.4-	0.2-	1999 11 15	704	0.2-	0.2+
1997 05 06	691	0.2-	0.3+	1999 11 04	704	0.5-	0.0	1999 11 15	691	0.2+	0.1-

2000 JAN. 24

M.P.C. 37837

1997 05 06	691	0.1+	0.1-	1999 11 12	704	0.5+	0.1+	1999 11 15	691	0.3+	0.2-
1997 05 06	691	0.5-	0.1-	1999 11 12	704	0.3+	0.2-	1999 11 15	691	0.2+	0.2-
1999 10 06	704	1.0+	0.5-	1999 11 12	704	0.4-	0.2-	1999 11 16	704	0.4+	1.1+
1999 10 06	704	0.6+	0.2-	1999 11 12	704	0.1+	0.6+	1999 11 16	704	0.7-	0.8-
1999 10 06	704	0.6-	0.6-	1999 11 12	704	0.5+	0.5-	1999 11 16	704	0.1-	1.0+
1999 10 06	704	0.3-	0.9-	1999 11 15	704	0.1+	1.4+	1999 11 16	704	0.0	0.6+
1999 10 06	704	0.3-	0.5-	1999 11 15	704	0.5-	0.8-				

1999 VC₆₀ = 1977 RD₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	56.24874		(2000.0)		P		Q
<i>n</i>	0.18272259	ω	263.70750	+0.98192826		+0.18920071	
<i>a</i>	3.0756806	Ω	85.38629	-0.17181498		+0.90110635	
<i>e</i>	0.2030123	<i>i</i>	0.25701	-0.07935058		+0.39014155	
<i>P</i>	5.39	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 09 09	675	0.5-	0.8+	1999 11 05	704	0.4+	1.0-	1999 11 12	704	0.1+	0.2+
1977 09 10	675	0.5+	0.8-	1999 11 05	704	0.4-	0.4-	1999 11 12	704	0.0	0.3-
1999 10 29	703	0.5-	0.5+	1999 11 09	704	(0.7+	2.4-)	1999 11 12	704	0.2+	0.6-
1999 10 29	703	0.9-	0.7+	1999 11 09	704	0.4-	1.3-	1999 11 12	704	0.0	0.3-
1999 10 29	703	0.2-	0.6+	1999 11 09	704	0.1-	0.4+	1999 11 12	704	0.1-	0.3-
1999 10 29	703	0.1-	0.2+	1999 11 09	704	(0.2+	2.6-)	1999 11 16	704	0.2+	0.6+
1999 11 04	704	0.5+	0.1+	1999 11 09	704	0.2-	0.4+	1999 11 16	704	0.1+	0.2+
1999 11 04	704	0.3+	0.4+	1999 11 09	704	(0.6+	2.4-)	1999 11 16	704	0.5+	0.4-
1999 11 04	704	0.1+	0.3+	1999 11 09	704	0.6-	0.4+	1999 11 16	704	0.3+	0.1+
1999 11 04	704	0.1+	0.5-	1999 11 09	704	(0.1-	2.2-)	1999 11 16	704	0.4-	0.4-
1999 11 04	704	0.7+	0.5-	1999 11 11	703	0.5+	0.4+	1999 12 07	704	0.5+	0.2+
1999 11 05	704	0.7+	0.5-	1999 11 11	703	0.7-	0.5+	1999 12 07	704	0.1-	0.1+
1999 11 05	704	0.4+	0.1-	1999 11 11	703	0.7-	0.1+	1999 12 07	704	0.4-	0.2+
1999 11 05	704	0.9+	0.2-	1999 11 11	703	0.6-	0.6+	1999 12 07	704	0.0	0.3-

1999 VR₆₀ = 1997 EA₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	101.95172		(2000.0)		P		Q
<i>n</i>	0.20618392	ω	247.45694	+0.69827479		+0.71425242	
<i>a</i>	2.8376981	Ω	66.92258	-0.63633561		+0.64975104	
<i>e</i>	0.0660524	<i>i</i>	2.95930	-0.32785561		+0.26012895	
<i>P</i>	4.78	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 10	809	0.1+	0.5+	1999 11 04	704	0.0	1.0-	1999 11 12	704	0.1-	0.5+
1997 03 10	809	0.1-	0.2+	1999 11 04	704	0.4-	0.1+	1999 11 12	704	0.1-	0.1-
1997 03 10	809	0.1-	0.4-	1999 11 04	704	0.4-	0.6+	1999 11 12	704	0.4+	0.2+
1997 03 11	809	0.3-	1.2+	1999 11 04	704	0.1-	0.3+	1999 11 12	704	0.2-	0.3+
1997 03 11	809	0.3+	0.8-	1999 11 09	704	0.2-	0.1+	1999 12 06	704	0.7+	0.7+
1997 03 11	809	0.1+	0.7-	1999 11 09	704	0.0	0.0	1999 12 06	704	0.3+	0.9-
1999 10 30	703	0.3+	0.1-	1999 11 09	704	0.2+	0.4-	1999 12 06	704	0.3-	0.1-
1999 10 30	703	(3.3-	0.0)	1999 11 09	704	0.6+	0.3-	1999 12 06	704	0.8-	0.1+
1999 10 30	703	0.2+	0.1-	1999 11 12	704	0.1-	0.1+				

1999 VS₆₁ = 1993 RV₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	304.82644		(2000.0)		P		Q
<i>n</i>	0.18009240	ω	112.06012	-0.62817004		-0.77804762	
<i>a</i>	3.1055542	Ω	16.86033	+0.70514356		-0.57288424	
<i>e</i>	0.1017405	<i>i</i>	1.31503	+0.32889962		-0.25777035	
<i>P</i>	5.47	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 09 15	809	(2.5+	2.3-)	1999 10 06	704	0.1+	0.1-	1999 11 04	704	0.3+	0.4+
1993 09 15	809	(1.1+	2.7-)	1999 10 06	704	0.2+	0.3-	1999 11 11	703	0.5+	1.3-
1993 09 15	809	(0.8-	2.6-)	1999 10 06	704	0.1-	0.0	1999 11 11	703	0.2-	0.1-
1993 09 22	809	0.4+	0.9+	1999 10 06	704	0.2-	0.0	1999 11 11	703	0.2-	0.5+
1993 09 22	809	0.5-	0.7+	1999 10 06	704	0.1-	0.3-	1999 11 11	703	0.7-	0.5+

1993 09 22	809	0.7-	0.3+	1999 10 29	703	0.1-	0.9+	1999 11 12	704	0.2+	0.0
1996 03 17	566	0.0	0.2+	1999 10 29	703	0.2-	0.5-	1999 11 12	704	0.5+	0.4-
1996 03 17	566	0.2+	0.2-	1999 10 29	703	0.8-	0.4+	1999 11 12	704	0.0	0.0
1996 03 17	566	0.1-	0.1-	1999 10 29	703	1.1-	0.3+	1999 11 12	704	0.8+	0.3-
1998 08 17	704	0.3+	1.1-	1999 11 04	704	0.4+	0.0	1999 11 16	704	0.6-	0.6-
1998 08 17	704	0.3+	0.4-	1999 11 04	704	0.1+	0.2+	1999 11 16	704	1.5+	0.1+
1998 08 17	704	(2.7+	0.3+)	1999 11 04	704	0.3-	0.1+	1999 11 16	704	0.0	0.9-
1998 08 17	704	(5.5-	0.4+)	1999 11 04	704	0.1+	0.7+	1999 11 16	704	0.3+	0.4-

1999 VT₆₃ = 1994 RA₁₅ = 1997 EH₅₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	235.12982		(2000.0)		P		Q
<i>n</i>	0.23453590	ω	320.32869	-0.92489674		+0.37959129	
<i>a</i>	2.6041330	Ω	241.99255	-0.34226465		-0.85620272	
<i>e</i>	0.0983429	<i>i</i>	1.41671	-0.16559266		-0.35046734	
<i>P</i>	4.20	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 09 03	809	0.7+	0.0	1999 11 01	703	0.5+	1.6+	1999 11 12	704	0.1+	0.3+
1994 09 03	809	0.5-	1.0-	1999 11 04	704	0.1+	0.6+	1999 11 14	704	0.3+	0.8-
1994 09 03	809	0.6-	1.3+	1999 11 04	704	0.1-	0.2-	1999 11 14	704	0.1-	0.4-
1994 09 04	809	0.4+	0.1-	1999 11 04	704	1.1+	0.2+	1999 11 14	704	0.4-	0.2-
1994 09 04	809	0.3+	0.8-	1999 11 04	704	0.7+	0.3+	1999 11 14	704	0.4-	0.1-
1994 09 04	809	0.2-	0.5+	1999 11 09	704	0.3-	0.2+	1999 11 14	704	0.4-	0.4-
1997 03 05	809	0.5+	0.0	1999 11 09	704	0.1+	0.5-	1999 11 14	691	0.3-	0.2+
1997 03 05	809	0.5-	0.8-	1999 11 09	704	0.1-	0.9+	1999 11 14	691	0.5-	0.2+
1997 03 05	809	0.1+	0.8-	1999 11 09	691	0.2+	0.0	1999 11 14	691	0.3-	0.2+
1997 03 06	809	0.0	1.8+	1999 11 09	704	0.0	0.2-	1999 11 15	704	0.2+	0.9-
1997 03 06	809	(0.2-	3.9+)	1999 11 09	691	0.2+	0.2-	1999 11 15	704	0.0	0.0
1997 03 06	809	(0.8+	2.8+)	1999 11 09	691	0.4+	0.0	1999 11 15	704	0.1+	0.4-
1999 11 01	703	0.1-	0.1-	1999 11 12	704	0.7+	0.4+	1999 11 15	704	0.2-	0.5-
1999 11 01	703	0.3-	0.2+	1999 11 12	704	0.2-	0.4-	1999 11 15	704	0.4-	0.6-
1999 11 01	703	1.0-	0.7+	1999 11 12	704	0.4+	0.2+				

1999 VZ₆₃ = 1998 HW₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	114.73229		(2000.0)		P		Q
<i>n</i>	0.28564401	ω	253.85379	+0.56741256		+0.81803487	
<i>a</i>	2.2834209	Ω	51.09903	-0.70170784		+0.54018433	
<i>e</i>	0.1558943	<i>i</i>	6.94772	-0.43087016		+0.19753440	
<i>P</i>	3.45	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.9+	0.5-	1999 11 04	704	0.7+	0.4+	1999 11 17	691	0.2-	0.1-
1998 04 21	704	0.3+	1.1+	1999 11 04	704	0.5-	0.7+	1999 11 17	691	0.3-	0.1-
1998 04 21	704	1.4-	1.7-	1999 11 04	704	0.8+	0.6-	1999 11 17	691	0.3-	0.0
1998 04 21	704	0.4-	0.0	1999 11 04	704	1.8+	0.0	1999 11 30	691	0.0	0.4-
1998 04 21	704	0.6-	1.3+	1999 11 09	704	0.2-	0.1-	1999 11 30	691	0.1+	0.3-
1998 04 22	704	1.0+	0.5-	1999 11 09	704	0.4+	0.3-	1999 11 30	691	0.3+	0.0
1998 04 22	704	0.0	1.3+	1999 11 09	704	0.9-	1.1-	1999 12 07	691	0.0	0.2+
1998 04 22	704	0.3-	1.4-	1999 11 12	704	0.5-	0.4+	1999 12 07	691	0.1-	0.2+
1998 04 22	704	0.6+	0.4+	1999 11 12	704	0.0	0.4+	1999 12 07	691	0.2+	0.0
1998 04 22	704	(2.5-	2.1+)	1999 11 12	704	0.2-	0.4+				
1999 11 04	704	1.4-	0.1+	1999 11 12	704	0.4+	0.3+				

1999 VB₆₄ = 1999 XD₁₀₈ = 1977 HD₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	149.97757		(2000.0)		P		Q
<i>n</i>	0.23898349	ω	49.41286	+0.00739751		+0.98907815	
<i>a</i>	2.5717226	Ω	221.72824	-0.97123228		-0.02793322	
<i>e</i>	0.1383871	<i>i</i>	12.77740	-0.23801919		+0.14472094	
<i>P</i>	4.12	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 04 24	675	0.2+	0.1-	1999 11 09	704	0.3+	0.8-	1999 11 17	704	0.8+	0.3+
1977 04 25	675	0.2-	0.2+	1999 11 09	704	0.2+	0.5-	1999 11 17	704	0.1+	0.4+
1999 10 03	703	0.2-	0.0	1999 11 09	704	0.1-	0.4-	1999 11 17	704	1.1-	1.2-
1999 10 03	703	0.6+	0.2-	1999 11 12	704	0.1-	0.1+	1999 12 04	703	0.5+	0.4+
1999 10 03	703	0.7+	0.3-	1999 11 12	704	0.7+	1.7+	1999 12 04	703	0.5-	0.6+
1999 10 03	703	0.2-	0.2-	1999 11 12	704	(3.8-	0.1-)	1999 12 04	703	0.4-	1.0-
1999 11 01	703	0.6-	0.7+	1999 11 12	704	0.1+	0.7-	1999 12 04	703	0.8+	0.2-
1999 11 01	703	1.3-	0.5+	1999 11 15	704	0.1-	0.3+	1999 12 07	704	0.7-	0.1-
1999 11 01	703	1.0-	0.3+	1999 11 15	704	0.0	0.3+	1999 12 07	704	0.8+	0.4-
1999 11 01	703	0.8-	0.1+	1999 11 15	704	0.3+	0.4-	1999 12 07	704	0.3+	1.0-
1999 11 04	704	0.5+	1.1+	1999 11 15	704	0.1+	0.4-	1999 12 07	704	0.1+	0.1+
1999 11 04	704	0.2-	1.0+	1999 11 15	704	0.5+	0.3+	1999 12 07	704	0.5+	0.2-
1999 11 04	704	0.0	0.4+	1999 11 16	691	0.4+	0.4-	1999 12 12	703	0.2+	0.5+
1999 11 04	704	0.4-	0.3+	1999 11 16	691	0.3+	0.4-	1999 12 12	703	0.2+	1.4+
1999 11 04	704	0.1-	0.3-	1999 11 16	691	0.3+	0.6-	1999 12 12	703	1.0-	0.1-
1999 11 09	704	0.2+	0.5-	1999 11 17	704	0.1+	0.6+	1999 12 12	703	0.6-	0.6-
1999 11 09	704	0.1+	0.5-	1999 11 17	704	0.3-	0.2+				

1999 VW₆₅ = 1997 JG₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	1.91152		(2000.0)	P	Q
n	0.24593171	ω	286.78676	+0.17251361	-0.98497106
a	2.5230530	Ω	153.27484	+0.91071525	+0.15623559
e	0.1207405	i	1.07412	+0.37528228	+0.07363733
P	4.01	H	15.9	G 0.15	U 5

Residuals in seconds of arc

1997 04 07	704	0.3-	1.0-	1999 11 04	704	1.0+	1.0-	1999 11 14	704	0.1-	0.6+
1997 04 07	704	0.3+	0.7+	1999 11 04	704	0.6-	0.5-	1999 11 14	704	0.1-	0.4+
1997 05 03	691	0.1-	0.0	1999 11 04	704	0.6+	0.9-	1999 11 14	704	0.3-	0.5+
1997 05 03	691	0.0	0.0	1999 11 04	704	0.2-	0.4-	1999 11 14	704	1.1-	0.3+
1997 05 03	691	0.4+	0.2+	1999 11 09	704	0.8+	0.6-	1999 11 17	704	0.7-	1.0+
1997 05 06	691	0.1-	0.1-	1999 11 09	704	0.2-	0.2+	1999 11 17	704	1.2-	0.3+
1997 05 06	691	0.0	0.2+	1999 11 09	704	0.3-	0.2-	1999 11 17	704	0.5+	0.5+
1997 05 06	691	0.2-	0.2+	1999 11 12	704	0.1+	0.4+	1999 11 17	704	0.1+	0.6-
1999 11 01	703	1.4-	0.8+	1999 11 12	704	0.7+	0.1+	1999 11 17	704	0.5-	0.3-
1999 11 01	703	1.0-	0.7-	1999 11 12	704	0.1-	0.5+	1999 12 07	704	0.2+	0.7-
1999 11 01	703	1.3+	0.6-	1999 11 12	704	0.5+	0.4+	1999 12 07	704	0.4+	0.6-
1999 11 01	703	1.3+	0.2+	1999 11 12	704	0.3+	0.0	1999 12 07	704	0.4+	0.4-
1999 11 04	704	0.2-	0.3+	1999 11 14	704	0.4-	1.0+				

1999 VA₆₇ = 1998 HF₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	142.11644		(2000.0)	P	Q
n	0.28437720	ω	219.97585	+0.19264843	+0.97667474
a	2.2901971	Ω	61.32442	-0.87041548	+0.21470581
e	0.1829546	i	6.20515	-0.45306012	+0.00280668
P	3.47	H	15.3	G 0.15	U 4

Residuals in seconds of arc

1998 04 21	704	0.2+	0.1+	1998 05 16	704	0.4-	0.3-	1999 11 12	704	0.1-	0.0
1998 04 21	704	0.6-	0.4-	1998 05 16	704	(4.6-	0.5-)	1999 11 12	704	0.6-	0.2+
1998 04 21	704	0.6-	0.6-	1998 05 25	699	0.1-	0.5-	1999 11 14	704	0.0	0.0
1998 04 21	704	1.2+	0.2-	1998 05 25	699	0.3-	0.2-	1999 11 14	704	0.2+	0.4-
1998 04 21	704	0.2+	0.6-	1998 05 25	699	0.8-	0.5+	1999 11 14	704	0.3+	0.5-
1998 04 22	704	0.6+	0.2-	1999 11 04	704	0.1+	0.4-	1999 11 14	704	1.2+	0.6-
1998 04 22	704	0.0	1.4+	1999 11 04	704	0.5-	0.1-	1999 11 14	704	0.3+	0.5-
1998 04 22	704	(2.5+	0.3-)	1999 11 04	704	0.7-	1.2+	1999 11 17	704	0.5+	1.1+
1998 04 22	704	0.4+	0.0	1999 11 04	704	0.2-	0.5+	1999 11 17	704	0.3+	0.8+
1998 04 22	704	0.6+	0.2+	1999 11 04	704	0.6-	0.3+	1999 11 17	704	0.5-	1.2-
1998 05 01	704	0.1+	0.5+	1999 11 09	704	0.0	0.1+	1999 11 17	704	0.5-	0.8-
1998 05 01	704	0.1+	0.0	1999 11 09	704	1.0+	0.3+	1999 11 17	704	0.5-	0.2-
1998 05 01	704	0.0	0.4+	1999 11 09	704	0.0	0.2-	1999 12 04	703	0.5-	0.7+
1998 05 01	704	0.0	0.5-	1999 11 09	704	0.1+	0.1+	1999 12 04	703	0.5+	0.2+
1998 05 01	704	0.6+	0.1-	1999 11 09	704	0.2-	0.2-	1999 12 04	703	(3.3+	0.0)

1998 05 16	704	0.6-	1.0-	1999 11 12	704	0.2-	0.0	1999 12 04	703	0.9+	1.2-
1998 05 16	704	0.4+	0.1-	1999 11 12	704	0.1-	0.4-				
1998 05 16	704	1.7-	0.2-	1999 11 12	704	0.2+	0.0				

1999 VP₆₇ = 1997 GY₃₉

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	296.23030		(2000.0)	P	Q
n	0.24598393	ω	103.17864	-0.92057610	-0.35933544
a	2.5226958	Ω	55.96134	+0.24657945	-0.83858282
e	0.1531779	i	10.64187	+0.30288318	-0.40945927
P	4.01	H	15.1	G 0.15	U 4

Residuals in seconds of arc

1997 04 07	809	(0.7-	4.1-)	1999 11 04	704	0.2-	0.2+	1999 11 17	704	1.4+	0.5-
1997 04 07	809	(0.9-	3.4-)	1999 11 04	704	0.2-	0.3+	1999 11 17	704	0.3-	0.7-
1997 04 07	809	(1.1-	3.3-)	1999 11 05	691	0.8+	0.4+	1999 11 17	704	0.7+	0.0
1997 04 08	809	(3.6-	6.7-)	1999 11 05	691	0.8+	0.4+	1999 11 17	704	0.3+	0.6-
1997 04 08	809	(2.6-	6.4-)	1999 11 05	691	0.8+	0.5+	1999 11 17	704	0.7+	0.4-
1997 04 08	809	(3.3-	6.2-)	1999 11 09	704	0.4-	0.2-	1999 11 17	704	0.5+	1.2-
1997 04 09	809	0.0	0.1+	1999 11 09	704	0.6-	0.4+	1999 12 04	703	0.2+	0.2+
1997 04 09	809	0.1-	0.4+	1999 11 09	704	0.0	0.3+	1999 12 04	703	0.3+	0.8+
1997 04 09	809	0.6+	0.0	1999 11 09	704	0.2+	0.4-	1999 12 04	703	0.9-	0.6-
1997 04 10	809	0.8-	0.3-	1999 11 09	704	0.3-	0.3+	1999 12 04	703	0.0	0.9+
1997 04 10	809	0.2+	0.3-	1999 11 12	704	1.3-	0.8+	1999 12 05	691	0.0	0.1-
1997 04 10	809	0.1+	0.2+	1999 11 12	704	0.5-	0.3+	1999 12 05	691	0.2+	0.4+
1999 11 01	703	0.1-	0.0	1999 11 12	704	0.2-	0.2-	1999 12 05	691	0.1+	0.1+
1999 11 01	703	1.1-	1.2+	1999 11 12	704	0.5+	0.3-	1999 12 07	704	0.6-	0.5+
1999 11 01	703	1.5-	0.2+	1999 11 12	704	0.1+	0.1-	1999 12 07	704	0.0	0.2+
1999 11 01	703	0.0	1.2+	1999 11 17	704	0.8+	0.6-	1999 12 07	704	(2.5-	1.2-)
1999 11 04	704	0.6-	1.1-	1999 11 17	704	0.3-	0.7-	1999 12 08	704	0.0	0.1+
1999 11 04	704	0.4+	0.3-	1999 11 17	704	1.0+	0.8-	1999 12 08	704	0.3-	0.0
1999 11 04	704	0.1+	0.4-	1999 11 17	704	0.2-	0.3-	1999 12 08	704	0.4-	0.2+

1999 VJ₆₈ = 1976 UY₅ = 1995 SF₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	61.54783		(2000.0)	P	Q
n	0.25893538	ω	157.24408	+0.99644129	-0.08294511
a	2.4378583	Ω	207.52670	+0.07147995	+0.92581011
e	0.2078633	i	1.85936	+0.04466958	+0.36877601
P	3.81	H	15.9	G 0.15	U 4

Residuals in seconds of arc

1976 10 22	381	0.6+	0.1+	1999 11 04	704	0.7-	0.5-	1999 11 13	704	0.8+	0.7+
1976 10 22	381	0.2-	1.1-	1999 11 09	704	0.1-	0.3+	1999 11 13	704	0.9+	0.6-
1995 09 18	691	0.3+	0.0	1999 11 09	704	0.3-	0.2+	1999 11 13	704	0.3+	0.2+
1995 09 18	691	0.1-	0.0	1999 11 09	704	0.3-	0.1-	1999 11 14	704	0.4-	0.7-
1995 09 18	691	1.1-	0.3+	1999 11 09	704	0.3-	0.6-	1999 11 14	704	0.1-	0.0
1995 09 22	691	0.2+	0.1+	1999 11 09	704	0.3-	0.4-	1999 11 14	704	0.2-	0.1+
1995 09 22	691	0.3+	0.0	1999 11 12	704	0.4-	0.2+	1999 11 14	704	0.3-	0.3+
1995 09 22	691	0.1+	0.2+	1999 11 12	704	0.3-	0.1-	1999 11 17	704	0.2+	1.1+
1999 11 04	704	0.8+	0.3-	1999 11 12	704	0.8-	0.2+	1999 11 17	704	0.1-	0.8-
1999 11 04	704	0.5+	0.1-	1999 11 12	704	0.4-	0.2+	1999 11 17	704	0.9+	0.2-
1999 11 04	704	0.2+	0.6+	1999 11 12	704	0.7-	0.1+	1999 11 17	704	0.2+	0.3-
1999 11 04	704	0.2-	0.2-	1999 11 13	704	1.0+	1.2+				

1999 VQ₆₈ = 1998 HN₄₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	119.08

2000 JAN. 24

M.P.C. 37839

Residuals in seconds of arc

1998 04 21	704	0.4+	1.3+	1999 11 09	704	0.1+	0.4-	1999 11 14	704	0.5+	0.2+
1998 04 21	704	0.1-	0.6+	1999 11 09	704	0.3+	0.2-	1999 11 14	704	0.3+	0.5-
1998 04 21	704	0.9-	0.2+	1999 11 12	704	0.0	0.4-	1999 11 14	704	0.3-	0.4+
1998 04 21	704	0.4-	1.5-	1999 11 12	704	1.2+	1.3+	1999 11 14	704	0.2-	0.1+
1998 04 22	704	0.6-	0.4+	1999 11 12	704	0.9-	0.5-	1999 12 07	704	0.2+	1.0+
1998 04 22	704	(2.3-	1.7-)	1999 11 12	704	0.3-	0.0	1999 12 07	704	0.2-	1.3+
1998 04 22	704	0.5+	0.5+	1999 11 12	704	0.1+	0.4-	1999 12 07	704	0.1+	0.4+
1998 04 22	704	1.2+	1.6-	1999 11 14	704	0.3+	0.5+	1999 12 12	703	0.5+	0.8-
1999 11 04	704	(2.7-	1.0+)	1999 11 14	704	0.6-	0.3-	1999 12 12	703	0.1+	1.1-
1999 11 04	704	0.1+	0.5-	1999 11 14	704	0.3-	0.1+	1999 12 12	703	0.9-	0.6-
1999 11 04	704	0.3-	0.5-	1999 11 14	704	0.5-	0.2-	1999 12 12	703	0.4+	0.1-
1999 11 09	704	0.9+	0.1+	1999 11 14	704	0.1-	0.3+				
1999 11 09	704	0.2+	0.6+	1999 11 14	704	0.7-	0.0				

1999 VP₆₉ = 1998 KV₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	122.15166		(2000.0)	P	Q
<i>n</i>	0.26083735	ω	250.50423	+0.38172784	+0.92401278
<i>a</i>	2.4259929	Ω	41.95769	-0.83518584	+0.35503453
<i>e</i>	0.1599396	<i>i</i>	1.88617	-0.39591473	+0.14195377
<i>P</i>	3.78	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 04 22	704	0.7+	0.3-	1998 05 24	704	1.6-	1.1-	1999 11 13	691	0.4+	0.8-
1998 04 22	704	0.2+	1.3+	1999 11 04	704	0.2-	0.2-	1999 11 13	691	0.2+	1.2-
1998 04 22	704	1.0-	0.2+	1999 11 04	704	1.4+	0.4-	1999 11 13	691	0.7+	1.3-
1998 04 22	704	(5.2-	0.3+)	1999 11 04	704	1.0-	1.6+	1999 11 16	704	0.7-	0.3+
1998 05 01	704	1.0+	1.0+	1999 11 04	704	0.2-	0.4+	1999 11 16	704	0.3+	1.0+
1998 05 01	704	0.4-	1.2-	1999 11 09	704	0.0	0.2-	1999 11 16	704	1.3+	1.3+
1998 05 01	704	1.4-	0.2-	1999 11 09	704	0.5-	0.1+	1999 11 16	704	0.2-	0.7+
1998 05 01	704	0.4+	0.1-	1999 11 09	704	0.1-	0.0	1999 11 16	704	0.2-	0.8+
1998 05 01	704	0.3-	1.3-	1999 11 11	703	(2.7-	1.2+)	1999 11 17	691	0.0	0.6-
1998 05 22	704	0.4+	0.3+	1999 11 11	703	(2.7-	0.7+)	1999 11 17	691	0.2-	0.6-
1998 05 22	704	0.8+	1.7+	1999 11 11	703	0.2+	0.4-	1999 11 17	691	0.2-	0.6-
1998 05 22	704	0.4+	1.0+	1999 11 11	703	0.5-	0.3-	1999 12 07	704	0.7-	0.1+
1998 05 22	704	1.3+	0.1-	1999 11 12	704	0.2-	0.0	1999 12 07	704	0.1-	0.6-
1998 05 24	704	0.8+	0.2+	1999 11 12	704	0.4+	0.7+	1999 12 07	704	0.3-	1.7+
1998 05 24	704	0.2-	0.9-	1999 11 12	704	0.3-	0.1-	1999 12 07	704	0.1+	0.4+
1998 05 24	704	0.0	0.5+	1999 11 12	704	0.7+	0.9-				
1998 05 24	704	0.8-	0.3-	1999 11 12	704	0.4-	0.5+				

1999 VQ₆₉ = 1998 HX₁₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	110.70807		(2000.0)	P	Q
<i>n</i>	0.28291872	ω	264.31065	+0.56365930	+0.82327366
<i>a</i>	2.2980612	Ω	40.24047	-0.71073977	+0.52481683
<i>e</i>	0.1786178	<i>i</i>	5.96626	-0.42087667	+0.21630483
<i>P</i>	3.48	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 03 29	704	1.5+	1.0-	1999 11 04	704	0.0	0.2+	1999 11 13	691	0.3-	0.9+
1998 03 29	704	0.3+	0.3-	1999 11 06	691	0.4-	0.0	1999 11 13	691	0.0	0.6+
1998 03 29	704	0.6-	0.5+	1999 11 06	691	0.2-	0.0	1999 11 14	704	0.8-	1.7+
1998 03 29	704	0.0	0.3-	1999 11 06	691	0.3-	0.2-	1999 11 14	704	0.3-	0.1-
1998 03 29	704	(4.8-	0.2-)	1999 11 09	704	0.6-	0.4+	1999 11 14	704	0.4-	0.2-
1998 04 20	704	1.0+	0.8+	1999 11 09	704	0.6-	0.6+	1999 11 14	704	0.2-	1.3-
1998 04 20	704	1.0-	0.3+	1999 11 09	704	0.4+	0.3+	1999 11 14	704	0.4+	1.2-
1998 04 20	704	(2.3+	0.5+)	1999 11 09	704	1.0-	0.2+	1999 11 16	704	1.6+	1.2-
1998 04 22	704	0.3-	0.1+	1999 11 12	704	0.8-	0.4+	1999 11 16	704	0.7+	0.1+
1998 04 22	704	0.3-	1.6+	1999 11 12	704	0.5-	0.1+	1999 11 16	704	1.7+	0.5-
1998 04 22	704	0.3-	1.5-	1999 11 12	704	0.9-	0.7+	1999 11 16	704	0.9+	0.0
1998 04 22	704	0.2-	0.0	1999 11 12	704	0.4-	0.3+	1999 11 16	704	0.6+	1.4-
1999 11 04	704	0.6+	0.1-	1999 11 12	704	0.1+	0.3-				
1999 11 04	704	0.6+	0.3-	1999 11 13	691	0.0	0.5+				

1999 VX₆₉ = 1998 HV₇₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	108.22994		(2000.0)	P	Q
<i>n</i>	0.27228850	ω	62.24677	+0.59692141	+0.80192006
<i>a</i>	2.3574899	Ω	244.42430	-0.74539140	+0.54294005
<i>e</i>	0.1691246	<i>i</i>	1.56779	-0.29677683	+0.24927961
<i>P</i>	3.62	<i>H</i>	16.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 04 21	704	1.7+	1.9-	1999 11 04	704	0.9+	0.4+	1999 11 14	704	0.6-	0.7+
1998 04 21	704	0.8-	1.3-	1999 11 04	704	0.2+	1.4-	1999 11 14	704	1.1+	0.3-
1998 04 21	704	1.6-	0.8+	1999 11 12	704	0.7-	0.1+	1999 11 14	704	0.3+	1.2+
1998 04 22	704	1.3+	1.3+	1999 11 12	704	1.1-	0.6-	1999 11 17	691	0.7+	0.1-
1998 04 22	704	0.2+	0.7-	1999 11 12	704	0.2-	0.1-	1999 11 17	691	0.7+	0.1-
1998 04 22	704	0.9-	1.9+	1999 11 12	704	0.6-	0.2-	1999 11 17	691	0.8+	0.0
1998 04 22	704	0.1+	0.1-	1999 11 12	704	0.5-	0.3+				
1999 11 04	704	0.2+	0.6+	1999 11 14	704	1.4-	0.6-				

1999 VB₇₁ = 1998 HR₁₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	112.17923		(2000.0)	P	Q
<i>n</i>	0.27963373	ω	111.48938	+0.65236976	+0.75780259
<i>a</i>	2.3160237	Ω	199.24703	-0.70834421	+0.60390753
<i>e</i>	0.1815386	<i>i</i>	2.12163	-0.26955922	+0.24704439
<i>P</i>	3.52	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 04 21	704	0.9+	0.3-	1999 11 04	704	0.9+	0.6-	1999 11 17	704	0.1+	0.2-
1998 04 21	704	0.3-	0.5-	1999 11 04	704	0.4-	1.0+	1999 11 17	704	1.0+	0.5+
1998 04 21	704	0.6+	0.6+	1999 11 04	704	1.1-	0.3+	1999 11 17	704	0.1-	0.6+
1998 04 21	704	0.4+	1.8+	1999 11 12	704	0.3-	0.2+	1999 12 04	703	1.3+	1.1-
1998 04 22	704	0.7-	1.3-	1999 11 12	704	0.4-	0.3-	1999 12 04	703	(0.3+	2.7+)
1998 04 22	704	0.3+	0.2+	1999 11 12	704	0.5-	0.2+	1999 12 04	703	0.9-	1.4+
1998 04 22	704	0.2+	0.0	1999 11 12	704	0.5+	0.3+	1999 12 04	703	1.6+	0.3-
1998 04 22	704	0.6-	0.5-	1999 11 12	704	0.3-	0.0	1999 12 07	704	0.5-	0.4-
1998 05 01	704	1.5+	0.3-	1999 11 13	691	0.4-	0.0	1999 12 07	704	0.3+	0.5-
1998 05 01	704	0.5-	1.7+	1999 11 13	691	0.2-	0.1+	1999 12 07	704	1.0-	0.9-
1998 05 01	704	0.8-	0.7-	1999 11 13	691	0.0	0.2+	1999 12 07	704	0.5+	0.6-
1998 05 01	704	0.2+	1.2+	1999 11 17	704	0.3+	0.2+				
1998 05 01	704	0.9-	1.2-	1999 11 17	704	0.2-	0.4+				

1999 VF₇₁ = 1996 DA₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	193.39514		(2000.0)	P	Q
<i>n</i>	0.19571579	ω	53.69153	-0.44074317	+0.89761857
<i>a</i>	2.9380023	Ω	190.16100	-0.83260917	-0.41094635
<i>e</i>	0.0498608	<i>i</i>	1.66754	-0.33542127	-0.15938629
<i>P</i>	5.04	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 09 18	010	(3.5+ 0.5-)	1999 11 09	704	0.4+ 0.1-	1999 11 17	704	0.7+ 0.8+
1993 09 18	010	0.6- 1.7+	1999 11 09	704	0.1+ 0.2-	1999 11 17	704	1.0- 0.5-
1993 09 18	010	(1.9- 3.7+)	1999 11 09	704	0.3+ 0.2-	1999 11 17	704	0.0 0.5-
1996 02 16	010	0.4- 1.0+	1999 11 12	704	0.0 1.4-	1999 11 17	704	0.2+ 0.5-
1996 02 16	010	1.0+ 0.5-	1999 11 12	704	0.1- 0.2-	1999 11 17	704	0.6- 1.0-
1996 02 16	010	1.2- 1.0-	1999 11 12	704	0.1+ 0.5+	1999 12 05	703	1.2- 0.0
1996 02 17	010	0.4+ 1.8+	1999 11 12	704	0.2+ 0.1+	1999 12 05	703	0.3+ 1.5-
1996 02 17	010	0.7+ 0.5+	1999 11 13	704	0.4+ 0.2+	1999 12 05	703	0.1+ 0.3+
1996 02 17	010	(0.3- 2.4+)	1999 11 13	704	0.0 0.4+	1999 12 05	703	1.5- 0.2-
1999 11 04	704	1.5+ 1.1+	1999 11 13	704	0.1- 0.2+	1999 12 07	704	0.4- 0.1+
1999 11 04	704	1.1+ 0.0	1999 11 14	704	0.0 0.3-	1999 12 07	704	0.0 0.7+
1999 11 04	704	0.2+ 1.0+	1999 11 14	704	0.8- 0.4-	1999 12 07	704	0.0 0.5-
1999 11 04	704	0.2+ 0.9+	1999 11 14	704	0.5+ 0.5-	1999 12 07	704	0.3- 0.1-
1999 11 09	704	0.5- 0.5+	1999 11 14	704	0.2+ 0.4+			
1999 11 09	704	0.1- 0.1-	1999 11 14	704	0.3- 0.3+			

1999 VJ₇₁ = 1998 HO₉₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	102.34463		(2000.0)	P		Q	
<i>n</i>	0.27835149	ω	264.76831	+0.76269171	+0.64550986		
<i>a</i>	2.3231309	Ω	55.02101	-0.57224603	+0.70249747		
<i>e</i>	0.1654297	<i>i</i>	2.81423	-0.30138984	+0.29969037		
<i>P</i>	3.54	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	1.1-	1.1-	1999 11 04	704	1.4-	0.8+	1999 11 16	704	0.2+	1.2+
1998 04 21	704	1.1+	0.8-	1999 11 04	704	0.1-	0.2+	1999 11 16	704	0.2+	0.1-
1998 04 21	704	0.7-	0.6-	1999 11 04	704	0.6+	0.3+	1999 11 16	704	0.5+	0.4+
1998 04 21	704	0.8-	0.5-	1999 11 09	704	0.0	0.6-	1999 11 16	704	0.4+	1.0-
1998 04 22	704	0.5-	0.2+	1999 11 09	704	0.3-	0.6-	1999 11 17	704	0.5+	0.2-
1998 04 22	704	1.3+	1.5+	1999 11 09	704	0.3+	0.2-	1999 11 17	704	1.0+	0.8-
1998 04 22	704	(0.4+	2.3-)	1999 11 09	704	0.7-	0.5-	1999 11 17	704	0.5+	0.7-
1998 04 22	704	0.3-	1.9-	1999 11 12	704	0.2-	0.4+	1999 11 17	704	0.1+	0.3-
1998 04 22	704	1.1-	1.4-	1999 11 12	704	0.1-	0.4+	1999 11 17	704	0.7-	0.7-
1998 05 01	704	0.7-	1.1+	1999 11 12	704	0.4-	0.1+	1999 12 07	704	0.2-	0.3-
1998 05 01	704	1.9+	1.2+	1999 11 12	704	0.2-	0.1+	1999 12 07	704	0.2-	0.7+
1998 05 01	704	0.6-	1.4+	1999 11 12	704	0.3-	0.6+	1999 12 07	704	0.3-	0.5+
1998 05 01	704	1.7+	1.6+	1999 11 16	704	1.7+	1.0+	1999 12 07	704	1.2-	0.1-

1999 VY₇₁ = 1998 RP₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	17.45155		(2000.0)	P		Q	
<i>n</i>	0.22842892	ω	310.78657	-0.26192439	-0.96018817		
<i>a</i>	2.6503425	Ω	153.91009	+0.93857572	-0.27686388		
<i>e</i>	0.1063747	<i>i</i>	12.75959	+0.22465804	+0.03721663		
<i>P</i>	4.31	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 23	704	0.2+	0.1+	1998 09 27	699	0.8-	0.1-	1999 12 13	703	0.3+	0.5+
1998 08 23	704	0.0	0.5+	1998 10 12	699	1.3+	0.4-	1999 12 13	703	0.4+	0.7+
1998 08 23	704	0.6+	0.0	1998 10 12	699	0.4+	0.0	1999 12 13	703	0.3+	0.4+
1998 08 23	704	0.4-	0.1+	1998 10 12	699	0.0	0.2-	1999 12 14	704	0.7+	0.2+
1998 08 23	704	0.4+	0.1+	1998 11 23	699	0.3+	0.0	1999 12 14	704	0.3+	0.0
1998 08 30	699	0.2+	0.1-	1998 11 23	699	0.3+	1.0+	1999 12 14	704	0.0	0.0
1998 08 30	699	0.7+	1.3-	1998 11 23	699	0.1-	0.3+	1999 12 14	704	0.2-	1.2+
1998 08 30	699	0.1-	0.2-	1999 11 03	703	0.3+	0.3-	1999 12 14	704	1.2-	0.1+
1998 09 14	704	0.1-	0.2-	1999 11 03	703	0.2-	0.1-	2000 01 08	704	0.3-	0.2+
1998 09 14	704	0.2-	0.5+	1999 11 03	703	0.5-	0.1+	2000 01 08	704	0.3-	0.0
1998 09 14	704	0.4+	0.0	1999 11 03	703	0.7-	0.1-	2000 01 08	704	0.1+	0.1+
1998 09 14	704	0.4-	0.2+	1999 11 07	327	0.1+	0.2-	2000 01 08	704	0.1-	0.4-
1998 09 18	704	0.2+	0.3-	1999 11 07	327	0.2+	0.0	2000 01 08	704	0.5-	0.3-
1998 09 18	704	0.5-	0.0	1999 11 07	327	0.3+	1.0-	2000 01 10	704	0.1+	0.1+
1998 09 18	704	0.4+	0.1-	1999 11 07	327	0.3-	0.3-	2000 01 10	704	0.0	0.2+
1998 09 18	704	0.9-	0.1-	1999 11 14	327	0.2-	0.1-	2000 01 10	704	0.2-	0.2+
1998 09 18	704	1.2-	0.7+	1999 11 14	327	0.4+	0.4-	2000 01 10	704	0.5+	0.1+
1998 09 27	699	0.0	0.3+	1999 11 14	327	0.2-	0.5-	2000 01 10	704	0.5+	1.1-
1998 09 27	699	0.6-	0.4-	1999 12 13	703	0.4+	0.2+				

1999 VA₇₂ = 1996 KD₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	342.32101		(2000.0)	P		Q	
<i>n</i>	0.20609235	ω	47.51042	-0.88883225	-0.45515086		
<i>a</i>	2.8385385	Ω	105.35144	+0.40263104	-0.83100987		
<i>e</i>	0.1200603	<i>i</i>	3.15394	+0.21878179	-0.31978162		
<i>P</i>	4.78	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 05 17	691	0.3+	0.1+	1999 11 16	327	0.8-	0.3+	2000 01 04	704	0.3-	0.3+
1996 05 17	691	0.3+	0.2+	1999 11 16	327	0.5-	0.6-	2000 01 04	704	0.3-	0.2-
1996 05 17	691	0.3+	0.1-	1999 11 16	327	0.1-	0.5-	2000 01 04	704	0.4-	0.2+
1996 05 23	691	0.1+	0.1-	1999 11 17	327	0.1+	0.1-	2000 01 04	704	0.6+	1.0+

1996 05 23	691	0.5-	0.2-	1999 11 17	327	0.0	0.6+	2000 01 04	704	0.1+	0.5-
1996 05 23	691	0.6-	0.1+	1999 11 17	327	0.1+	0.6-	2000 01 06	704	0.4-	1.1-
1999 11 11	327	0.2-	0.5-	1999 11 20	327	0.1+	0.1+	2000 01 06	704	0.3+	0.4+
1999 11 11	327	0.7+	0.6+	1999 11 20	327	0.2+	0.4+	2000 01 06	704	0.6+	0.2-
1999 11 11	327	0.1+	0.2+	1999 11 20	327	0.4+	0.2+	2000 01 06	704	0.1-	0.1-

1999 VO₇₂ = 1982 UW₈ = 1987 SD₂₇ = 1998 XU₆₈

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	176.09311		(2000.0)	P		Q	
<i>n</i>	0.18970984	ω	6.10397	+0.89678063	+0.43316295		
<i>a</i>	2.9996884	Ω	327.74024	-0.41278340	+0.74549570		
<i>e</i>	0.1024904	<i>i</i>	9.74017	-0.15935610	+0.50656296		
<i>P</i>	5.20	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 10 21	095	0.5-	1.8+	1999 11 15	327	0.6+	1.1+	1999 12 06	704	0.1+	0.2+
1987 09 26	095	0.7+	2.1-	1999 11 15	327	0.2-	0.2-	1999 12 06	704	0.1+	0.3+
1992 08 30	095	0.1+	0.2+	1999 11 15	327	0.3+	0.2+	1999 12 06	704	0.7-	0.1+
1992 08 30	095	(1.8+	2.2-)	1999 11 16	704	0.5+	0.7+	1999 12 06	704	0.2-	0.6-
1998 11 16	704	0.7+	0.5+	1999 11 16	704	1.3-	0.6+	1999 12 09	699	0.3+	0.3-
1998 11 16	704	0.3+	0.1-	1999 11 16	704	0.1-	1.0-	1999 12 09	699	0.1+	1.7+
1998 11 16	704	1.1+	1.2-	1999 11 16	704	0.6+	0.6-	1999 12 09	699	0.9+	0.4+
1998 11 16	704	(2.3-	1.9+)	1999 11 17	703	0.3+	0.3-	1999 12 18	120	1.7-	0.3-
1998 11 16	704	1.0+	0.6+	1999 11 17	703	0.3-	0.0	1999 12 18	120	0.0	0.4-
1998 12 14	704	0.0	0.0	1999 11 17	703	0.1+	0.4+	1999 12 18	120	1.3-	1.2-
1998 12 14	704	0.1-	0.0	1999 11 17	703	0.2-	1.1+	2000 01 04	704	0.7+	0.3-
1998 12 14	704	0.0	0.4-	1999 11 17	327	0.3+	0.1+	2000 01 04	704	0.4+	1.3-
1998 12 17	704	0.0	0.3-	1999 11 17	327	0.4+	0.4+	2000 01 04	704	0.3+	1.6-
1998 12 17	704	0.8-	0.8+	1999 11 17	327	0.3+	0.8-	2000 01 05	699	0.1+	0.1+
1998 12 17	704	1.8-	0.1+	1999 11 17	327	0.0	0.3+	2000 01 05	699	0.1-	0.7+
1998 12 17	704	0.4+	0.2+	1999 12 05	703	1.0+	0.4-	2000 01 05	699	0.3+	0.3+
1998 12 17	704	0.9-	0.1+	1999 12 05	703	0.2+	0.5+	2000 01 07	704	0.7+	0.4+
1999 01 08	704	0.6+	0.5+	1999 12 05	703	0.4+	0.2+	2000 01 07	704	0.3+	0.3-
1999 01 08	704	0.5-	0.6-	1999 12 05	703	0.1-	0.2+	2000 01 07	704	0.5-	0.9-
1999 01 08	704	0.9+	0.7-	1999 12 06	120	1.3-	0.2-	2000 01 07	704	0.8-	0.1-
1999 01 08	704	(2.0+	0.7-)	1999 12 06	120	0.7+	0.5+	2000 01 07	704	1.2-	0.0
1999 01 08	704	0.8-	0.0	1999 12 06	704	0.0	0.0				

1999 VY₇₂ = 1992 YT₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	51.87562		(2000.0)	P		Q	
<i>n</i>	0.27129646	ω	253.56754	+0.92983957	-0.10487081		
<i>a</i>	2.3632335	Ω	111.32298	+0.19884990	+0.94972032		
<i>e</i>	0.3104705	<i>i</i>	22.24841	-0.30960796	+0.29501427		
<i>P</i>	3.63	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1992 12 26	885	1.0-	0.7+	1998 06 22	699	0.3+	0.5+	1999 12 01	704	0.0	0.6-
1992 12 26	885	1.1+	1.4-	1998 06 22	699	1.1+	0.1-	1999 12 17	699	0.2+	0.1-
1992 12 30	033	0.2-	0.0	1999 09 30	704	0.0	0.7+	1999 12 17	699	0.2+	0.9-
1992 12 30	033	0.5-	0.2+	1999 09 30	704	0.3+	0.2+	1999 12 17	699	0.3+	0.2-
1992 12 30	885	0.5+	0.4+	1999 09 30	704	0.7+	0.5-	1999 12 18	704	1.3-	0.3+
1993 01 01	033	0.4+	0.2-	1999 09 30	704	1.0+	0.2-	1999 12 18	704	1.8-	0.6+
1993 01 02	885	0.7+	0.5+	1999 09 30	704	1.1+	0.4-	1999 12 18	704	1.6-	0.5+
1993 01 02	885	0.6-	1.2-	1999 11 11	413	0.2+	0.0	1999 12 18	704	1.5-	1.0+
1998 04 28	704	0.6+	0.2+	1999 11 11	413	0.4-	0.0	1999 12 18	704	1.3-	0.8+
1998 04 28	704	0.6-	0.2+	1999 11 13	704	0.1+	0.4+	2000 01 03	413	0.1+	0.2+
1998 04 28	704	0.2+	0.8-	1999 11 13	704	0.3+	0.0	2000 01 03	413	0.1+	0.3+
1998 04 28	704	0.6+	0.6-	1999 11 13	704	0.2+	0.6+	2000 01 03	413	0.5+	0.6+
1998 05 27	704	0.2-	0.6+	1999 11 13	704	0.1+	0.1-	2000 01 03	413	0.4+	0.4+
1998 05 27	704	1.8-	1.6+	1999 11 14	413	0.4+	0.1+	2000 01 09	704	0.5+	0.2+
1998 05 27	704	0.2+	1.8-	1999 11 14	413	0.0	0.1-	2000 01 09	704	0.4+	0.3-
1998 05 27	704	0.5+	0.2-	1999 12 01	704	0.0	0.7-	2000 01 09	704	0.6+	0.3-
1998 05 27	704	1.8-	0.0	1999 12 01	704	0.1+	1.0-	2000 01 09	704	0.6+	0.8-
1998 06 22	699	1.2+	0.0	1999 12 01	704	0.2+	0.6-				

2000 JAN. 24

M.P.C. 37841

1999 VB₇₈ = 1998 KJ₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	107.80760		(2000.0)	P	Q
<i>n</i>	0.23849213	ω	60.51801	+0.42715269	+0.88159420
<i>a</i>	2.5752537	Ω	236.13667	-0.89051297	+0.37171619
<i>e</i>	0.1065978	<i>i</i>	13.99605	-0.15661171	+0.29089299
<i>P</i>	4.13	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 05 22	704	0.0	0.3+	1999 10 03	704	0.0	0.1-	1999 11 05	704	0.7-	0.3-
1998 05 22	704	0.5-	0.1+	1999 10 03	704	0.3+	0.6-	1999 11 05	704	0.7-	0.4-
1998 05 22	704	0.4-	0.2+	1999 10 03	704	1.5+	1.4-	1999 11 05	704	0.5-	0.3-
1998 05 22	704	1.2-	0.7-	1999 10 03	704	0.5+	0.2+	1999 11 05	704	0.4-	0.1-
1998 05 22	704	0.5+	0.3-	1999 10 28	703	0.8-	0.2+	1999 11 09	703	0.5+	0.8+
1998 05 24	704	0.4+	0.8+	1999 10 28	703	1.0-	0.1+	1999 11 09	703	0.2-	0.2+
1998 05 24	704	0.8+	0.2-	1999 10 28	703	0.2-	0.2-	1999 11 09	703	0.2-	0.1-
1998 05 24	704	0.0	0.2-	1999 10 28	703	0.0	0.0	1999 11 09	703	0.6+	0.6+
1998 05 24	704	0.0	1.0+	1999 11 04	704	0.1+	0.4+	1999 11 11	703	0.6-	0.7+
1998 05 24	704	0.1-	0.9-	1999 11 04	704	0.1-	0.4+	1999 11 11	703	0.4-	0.6-
1998 06 03	704	0.0	0.2-	1999 11 04	704	0.1+	0.0	1999 11 11	703	0.3+	0.2+
1998 06 03	704	0.3+	0.1+	1999 11 04	704	0.0	0.0	1999 11 11	703	0.4-	0.5+
1998 06 03	704	1.1-	0.3-	1999 11 04	704	0.2+	0.3-	2000 01 07	704	0.6+	0.3-
1998 06 03	704	1.2+	1.2+	1999 11 04	704	0.3+	0.1+	2000 01 07	704	1.2+	0.9+
1998 06 03	704	(5.2-	0.4-)	1999 11 04	704	0.4+	0.6-	2000 01 07	704	0.0	0.9+
1999 10 03	704	0.4+	0.1-	1999 11 05	704	0.3-	0.2+				

1999 VH₇₉ = 1998 KU₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	164.68832		(2000.0)	P	Q
<i>n</i>	0.29112892	ω	290.30440	-0.15167653	+0.98827548
<i>a</i>	2.2546501	Ω	330.95438	-0.89290010	-0.14458389
<i>e</i>	0.0999147	<i>i</i>	2.06416	-0.42393826	-0.04906193
<i>P</i>	3.39	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 05 22	704	0.7+	0.9-	1999 10 29	703	0.7-	0.5-	1999 11 07	704	0.2+	0.0
1998 05 22	704	0.4-	0.4-	1999 11 04	704	0.7+	1.3+	1999 11 07	704	0.3-	0.3-
1998 05 22	704	0.6+	0.3+	1999 11 04	704	0.3+	0.2-	1999 11 07	704	0.3+	0.5+
1998 05 22	704	1.3-	0.1+	1999 11 04	704	1.0-	0.8+	1999 11 11	703	0.1-	0.3+
1998 05 22	704	0.1-	0.3-	1999 11 04	704	0.2+	0.7-	1999 11 11	703	0.3-	0.5+
1998 05 24	704	0.2+	0.3+	1999 11 05	704	0.4+	0.0	1999 11 11	703	0.8+	1.1+
1998 05 24	704	0.1-	0.6+	1999 11 05	704	0.1+	0.4-	1999 11 11	703	0.5+	1.0-
1998 05 24	704	1.6+	0.3+	1999 11 05	704	0.4+	0.2+	1999 11 14	704	0.4+	0.2-
1998 05 24	704	1.2-	0.0	1999 11 05	704	0.4+	0.5+	1999 11 14	704	0.4-	0.3+
1999 10 29	703	0.2-	0.0	1999 11 05	704	0.4+	0.3-	1999 11 14	704	0.2-	0.4+
1999 10 29	703	0.7-	0.7-	1999 11 07	704	0.0	0.3-	1999 11 14	704	0.9-	0.2-
1999 10 29	703	0.1+	0.6+	1999 11 07	704	0.5+	1.4-	1999 11 14	704	0.8-	0.3-

1999 VG₈₁ = 1997 GD₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	13.66113		(2000.0)	P	Q
<i>n</i>	0.26433526	ω	283.19749	+0.10635040	-0.99414064
<i>a</i>	2.4045436	Ω	160.66582	+0.93340623	+0.09311238
<i>e</i>	0.1697827	<i>i</i>	3.34858	+0.34269871	+0.05490414
<i>P</i>	3.73	<i>H</i>	15.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 03	704	0.8+	0.9-	1999 11 05	704	0.2+	0.1-	1999 12 30	699	0.1-	0.4-
1997 04 03	704	1.1+	0.3+	1999 11 05	704	0.5-	0.3-	2000 01 05	704	0.1-	0.0
1997 04 11	704	0.9-	0.1-	1999 12 06	704	1.4-	0.3-	2000 01 05	704	0.2-	0.1+
1997 04 11	704	0.7-	1.4+	1999 12 06	704	0.5-	0.8+	2000 01 05	704	0.0	0.0
1999 11 04	704	0.7+	0.8+	1999 12 06	704	0.9+	1.0-	2000 01 05	704	0.4+	0.3+
1999 11 04	704	0.3+	0.7+	1999 12 06	704	0.8-	1.5+	2000 01 05	704	0.5+	0.3+
1999 11 04	704	0.2+	0.1-	1999 12 14	704	0.7-	0.4-	2000 01 06	704	1.0+	0.8+
1999 11 04	704	0.3+	0.3+	1999 12 14	704	0.1-	0.1-	2000 01 06	704	0.2+	0.4-

1999 11 04	704	0.9+	0.5+	1999 12 14	704	0.8-	0.6-	2000 01 06	704	0.4+	0.2-
1999 11 05	704	0.2+	0.1-	1999 12 14	704	0.0	0.3-	2000 01 06	704	0.0	0.1-
1999 11 05	704	0.4+	0.4-	1999 12 30	699	0.2-	0.7-	2000 01 06	704	1.0+	0.1+
1999 11 05	704	0.6-	0.3+	1999 12 30	699	0.7-	0.8-				

1999 VG₈₆ = 1991 JG₄ = 1994 CT₂ = 1998 MW₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	211.94997		(2000.0)	P	Q
<i>n</i>	0.28502801	ω	132.48227	-0.78005546	+0.61614106
<i>a</i>	2.2867096	Ω	85.84677	-0.60135801	-0.69009862
<i>e</i>	0.0856020	<i>i</i>	6.27492	-0.17286416	-0.37964995
<i>P</i>	3.46	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1991 05 12	809	1.6+	1.5-	1998 06 24	704	0.1-	0.7+	1999 11 07	704	0.0	0.3-
1991 05 12	809	(2.6+	1.4-)	1998 06 24	704	0.3+	0.3-	1999 11 07	704	0.1-	0.3+
1991 05 12	809	0.4-	1.7-	1998 06 24	704	(2.4-	0.3+)	1999 11 07	704	0.1+	0.1+
1991 05 17	809	1.0-	1.3-	1998 06 24	704	0.3-	0.4+	1999 11 07	704	0.2-	0.0
1991 05 17	809	1.5-	1.5-	1998 06 26	704	0.5-	2.0+	1999 11 08	704	0.4+	0.2+
1991 05 17	809	1.3-	0.9-	1998 06 26	704	(1.4-	2.8+)	1999 11 08	704	0.2-	0.7-
1994 02 13	372	0.4+	0.4-	1998 06 26	704	0.1+	1.2-	1999 11 08	704	0.3+	0.7-
1994 02 13	372	0.2-	0.2+	1998 06 26	704	(3.6-	1.4+)	1999 11 08	704	0.4+	0.6-
1994 02 17	372	0.4+	0.7-	1998 06 26	704	0.4-	0.3-	1999 12 04	699	0.2-	0.8-
1994 02 17	372	0.5-	0.1+	1999 10 03	703	0.4-	0.1-	1999 12 04	699	0.3-	0.1-
1995 09 11	413	0.4+	0.2+	1999 10 03	703	0.1-	0.0	1999 12 04	699	0.2-	0.1+
1995 09 11	413	0.5+	0.2+	1999 10 03	703	0.1+	0.4-	2000 01 05	704	0.2+	1.4-
1998 05 22	704	1.2+	1.9+	1999 10 03	703	0.4+	0.1+	2000 01 05	704	0.0	1.2-
1998 05 22	704	(1.4-	3.2+)	1999 10 30	703	0.5+	0.2+	2000 01 05	704	0.2+	1.1-
1998 05 22	704	0.1+	0.5+	1999 10 30	703	0.1+	0.2+	2000 01 05	704	0.7+	0.7-
1998 05 22	704	1.5+	1.8-	1999 10 30	703	0.0	0.3+	2000 01 05	704	0.9+	0.7-
1998 05 22	704	(5.9-	1.3-)	1999 10 30	703	0.1-	0.2-	2000 01 06	699	1.5+	1.4+
1998 05 24	704	0.6+	1.1-	1999 11 05	704	0.2+	0.5-	2000 01 06	699	0.5+	0.1+
1998 05 24	704	1.8-	0.6+	1999 11 05	704	0.2-	0.3+	2000 01 06	699	0.8-	0.5+
1998 05 24	704	0.4+	0.6+	1999 11 05	704	0.2-	0.3-	2000 01 07	704	0.9-	1.1-
1998 05 24	704	(0.4-	2.3+)	1999 11 05	704	0.7-	0.3+	2000 01 07	704	0.4+	1.1-
1998 06 24	704	0.8-	0.3-	1999 11 05	704	0.3+	0.1-	2000 01 07	704	0.2+	0.6-

1999 VG₈₇ = 1986 RD₄ = 1986 WC₆ = 1998 OU₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	84.04103		(2000.0)	P	Q
<i>n</i>	0.23686466	ω	99.51758	+0.81730178	-0.55282458
<i>a</i>	2.5870364	Ω	294.20947	+0.43359234	+0.77577567
<i>e</i>	0.2752258	<i>i</i>	10.26248	+0.37949372	+0.30423198
<i>P</i>	4.16	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1986 09 09	033	1.2+	0.2+	1998 07 27	910	0.2+	0.3-	1999 12 05	703	0.5+	0.1-
1986 09 09	033	0.8-	0.8-	1999 11 04	703	0.4+	0.7-	1999 12 05	704	0.4-	0.6-
1986 11 27	010	(3.3+	0.3+)	1999 11 04	703	1.3+	1.5+	1999 12 05	704	(0.9-	2.2-)
1986 11 27	010	0.0	0.1-	1999 11 04	703	0.5-	0.3+	1999 12 05	704	0.3-	1.6-
1986 11 27	010	0.9+	0.9+	1999 11 04	703	1.2+	0.3+	2000 01 05	704	0.3+	0.5+
1986 11 28	010	0.4+	0.5+	1999 11 08	703	0.1+	0.9+	2000 01 05	704	0.2-	0.5-
1986 12 02	010	0.5+	0.9-	1999 11 08	703	0.1+	0.4+	2000 01 05	704	0.4-	0.3-
1986 12 03	010	2.1-	0.4-	1999 11 08	703	0.4+	1.2+	2000 01 05	704	0.4+	0.1-
1986 12 03	010	0.0	0.2-	1999 11 08	703	0.8-	0.3-	2000 01 05	704	0.1+	0.2+
1998 07 24	910	0.2+	0.4-	1999 12 05	703	0.5-	0.6+	2000 01 08	704	0.1+	0.7-
1998 07 24	910	0.2+	0.5-	1999 12 05	703	0.4-	0.5+	2000 01 08	704	0.9-	0.7-
1998 07 24	910	0.1+	0.7-	1999 12 05	704	0.7-	0.7-	2000 01 08	704	0.4-	0.1+
1998 07 27	910	0.3+	0.4-	1999 12 05	703	0.3-	0.1-	2000 01 08	704	0.3-	0.3-
1998 07 27	910	0.3+	0.5-	1999 12 05	704	0.1-	1.9-	2000 01 08	704	0.1-	0.8-

1999 VJ₈₇ = 1989 CM₃ = 1994 LZ₆ = 1998 KD₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	122.78457		(2000.0)		P		Q	
<i>n</i>	0.24145015	ω	42.45928		+0.24489653		+0.96490532	
<i>a</i>	2.5541774	Ω	241.92022		-0.91589878		+0.19816874	
<i>e</i>	0.1802114	<i>i</i>	6.16694		-0.31804893		+0.17229882	
<i>P</i>	4.08	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1	

Residuals in seconds of arc

1989 02 04	809	0.2+	0.7-	1998 05 24	704	1.5-	0.5-	1999 11 11	703	0.1-	0.3-
1989 02 04	809	1.0-	0.6-	1998 05 24	704	0.9-	0.8+	1999 11 11	703	1.0-	0.4-
1989 02 04	809	0.2+	0.8-	1998 05 25	699	0.1+	0.1-	1999 11 11	703	0.0	0.1+
1989 02 07	809	0.3-	0.3+	1998 05 25	699	0.1+	0.1+	1999 11 11	703	0.9+	0.1-
1989 02 07	809	0.2-	0.0	1998 05 25	699	0.4+	0.0	1999 11 14	704	0.1+	0.1+
1989 02 07	809	0.5+	0.8+	1998 06 03	704	(1.6+	2.8-)	1999 11 14	704	0.5+	0.1-
1994 06 03	809	1.3-	0.7-	1998 06 03	704	1.0-	1.3+	1999 11 14	704	0.5-	0.3+
1994 06 03	809	0.8-	0.6-	1998 06 03	704	(2.8-	0.3+)	1999 11 14	704	0.0	0.3+
1994 06 03	809	0.5-	0.2-	1998 06 03	704	0.1+	0.4+	1999 11 14	704	0.1-	0.2-
1994 06 04	809	0.7+	0.8-	1998 06 16	704	0.5+	0.6-	1999 12 04	703	0.6-	0.9+
1994 06 04	809	0.8+	0.4-	1998 06 16	704	0.2+	0.3+	1999 12 04	703	0.3+	0.8+
1994 06 04	809	1.2+	0.3-	1998 06 16	704	1.2-	0.4+	1999 12 04	703	1.1+	0.3+
1998 04 25	809	0.8+	1.9+	1998 06 16	704	0.1-	0.6-	1999 12 04	703	1.1-	0.8+
1998 04 25	809	0.4+	1.7+	1998 06 16	704	(6.8-	1.3-)	1999 12 04	699	0.6+	0.8+
1998 04 25	809	0.3+	1.1+	1999 10 03	704	0.5+	0.9-	1999 12 04	699	0.3+	0.2+
1998 04 25	809	(1.2+	2.7-)	1999 10 03	704	0.9+	0.6-	1999 12 04	699	0.4+	0.7+
1998 04 25	809	(1.1+	2.6-)	1999 10 03	704	0.3-	0.2-	1999 12 07	704	0.0	0.1-
1998 04 25	809	(1.1+	2.2-)	1999 10 03	704	0.3-	0.8+	1999 12 07	704	0.3+	0.6-
1998 05 05	699	1.1+	0.6+	1999 10 29	703	0.2+	0.7+	1999 12 07	704	0.3+	0.6-
1998 05 05	699	0.8+	0.1+	1999 10 29	703	0.7-	0.8+	1999 12 07	704	0.9+	0.7-
1998 05 05	699	0.9+	0.1-	1999 10 29	703	0.4+	0.8+	1999 12 07	704	0.2+	0.7-
1998 05 22	704	0.0	0.8+	1999 10 29	703	0.7+	1.4+	2000 01 04	704	0.5-	0.4+
1998 05 22	704	0.3-	0.8-	1999 11 04	704	0.3+	0.1-	2000 01 04	704	0.5-	1.2+
1998 05 22	704	0.4+	0.2-	1999 11 04	704	0.3+	0.5-	2000 01 04	704	(1.1-	2.2+)
1998 05 22	704	1.6+	0.9-	1999 11 04	704	0.4+	0.2-	2000 01 04	704	0.8+	1.3+
1998 05 22	704	(1.7-	2.0+)	1999 11 04	704	0.1-	0.3-	2000 01 07	704	0.5-	0.3-
1998 05 23	699	0.1+	0.0	1999 11 04	704	0.1-	0.5-	2000 01 07	704	0.4+	1.0-
1998 05 23	699	0.6-	0.2+	1999 11 08	704	0.5-	0.6-	2000 01 07	704	0.2-	0.5+
1998 05 23	699	0.4+	0.2-	1999 11 08	704	0.3-	0.1+	2000 01 07	704	0.8-	0.3-
1998 05 24	704	0.4-	0.3+	1999 11 08	704	0.9-	0.1-	2000 01 07	704	1.3-	0.8-
1998 05 24	704	1.2-	0.1-	1999 11 08	704	0.8-	0.1+				
1998 05 24	704	0.4-	0.4+	1999 11 08	704	0.9-	0.5+				

1999 VP₈₇ = 1993 SG₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	32.41488		(2000.0)		P		Q	
<i>n</i>	0.17427555	ω	203.62617		+0.92551912		-0.37868520	
<i>a</i>	3.1742789	Ω	178.61212		+0.36616948		+0.89253502	
<i>e</i>	0.0794310	<i>i</i>	8.17850		+0.09661400		+0.24490562	
<i>P</i>	5.66	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1993 09 16	809	0.8+	1.1+	1999 11 05	704	0.1-	0.0	1999 12 03	704	0.2+	0.0
1993 09 16	809	1.2-	0.5+	1999 11 05	704	0.2-	0.2+	1999 12 03	704	0.3-	1.0-
1993 09 16	809	0.9-	0.7+	1999 11 05	704	0.1+	0.3+	1999 12 03	704	0.1-	0.4+
1993 09 23	809	0.5+	0.2-	1999 11 05	704	0.2+	0.2-	1999 12 03	704	1.1-	0.6-
1993 09 23	809	0.8+	1.1-	1999 11 05	704	0.3+	0.1+	2000 01 05	704	0.6-	0.5+
1993 09 23	809	0.0	1.2-	1999 11 08	704	0.1+	0.2-	2000 01 05	704	0.1+	1.2-
1999 10 01	703	0.2+	0.1+	1999 11 08	704	0.3-	0.3+	2000 01 05	704	0.5-	0.1+
1999 10 01	703	0.9+	0.6-	1999 11 08	704	0.4+	0.1-	2000 01 05	704	0.2+	0.8+
1999 10 01	703	0.0	0.1-	1999 11 08	704	0.1+	0.5+	2000 01 05	704	0.4+	0.0
1999 10 01	703	0.3-	0.6-	1999 11 08	704	0.4-	1.0+	2000 01 08	704	0.4+	0.1+
1999 10 29	703	0.3+	0.1-	1999 11 14	699	0.5-	0.0	2000 01 08	704	0.3+	0.0
1999 10 29	703	0.4-	0.3+	1999 11 14	699	0.4+	0.1-	2000 01 08	704	0.7-	0.1+
1999 10 29	703	0.0	0.5+	1999 11 14	699	0.1-	0.4+	2000 01 08	704	0.4+	0.7-
1999 10 29	703	0.4-	0.2+	1999 12 03	704	0.6+	0.5-	2000 01 08	704	0.5+	0.4-

1999 VP₈₉ = 1984 BF₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	38.22038		(2000.0)		P		Q	
<i>n</i>	0.17417981	ω	198.21068		+0.98232047		-0.18716882	
<i>a</i>	3.1754420	Ω	172.57386		+0.17519469		+0.91197363	
<i>e</i>	0.1951154	<i>i</i>	1.67840		+0.06597969		+0.36506428	
<i>P</i>	5.66	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1984 01 25	675	0.7-	0.2+	1999 10 29	703	0.0	0.3+	1999 11 12	704	0.4-	0.0
1984 01 26	675	0.8+	0.1+	1999 10 29	703	0.5+	0.5+	1999 11 12	704	0.1-	0.0
1993 09 14	809(18.8+	11.7+)		1999 10 29	703	0.1+	0.9+	1999 11 12	704	0.4-	0.1+
1993 09 14	809(17.5+	10.9+)		1999 11 05	704	0.6+	0.1-	1999 12 04	699	1.0-	0.4+
1993 09 14	809(17.4+	10.8+)		1999 11 05	704	0.1-	0.1-	1999 12 04	699	0.2-	0.4+
1999 10 01	703	0.3+	0.2+	1999 11 05	704	0.6+	0.1+	1999 12 04	699	1.2-	0.0
1999 10 01	703	0.5-	0.8+	1999 11 05	704	0.1+	0.2+	2000 01 05	704	1.0+	0.5-
1999 10 01	703	0.5-	0.5+	1999 11 05	704	0.5+	0.2+	2000 01 05	704	0.2+	0.4+
1999 10 01	703	0.3-	0.7-	1999 11 09	704	0.1+	0.1+	2000 01 05	704	0.6+	0.2+
1999 10 03	704	0.9+	0.2-	1999 11 09	704	0.3-	0.2+	2000 01 05	704	0.3-	0.4-
1999 10 03	704	0.4+	0.4-	1999 11 09	704	0.2-	0.0	2000 01 05	704	0.2+	0.0
1999 10 03	704	0.6+	0.5-	1999 11 09	704	0.7-	0.3-	2000 01 07	704	0.2-	0.7+
1999 10 03	704	0.4-	0.2-	1999 11 09	704	0.3-	0.7-	2000 01 07	704	0.5+	0.9-
1999 10 03	704	0.2+	0.4-	1999 11 12	704	0.1+	0.1-	2000 01 07	704	0.4-	0.3-
1999 10 29	703	0.2+	0.6+	1999 11 12	704	0.2-	0.1-	2000 01 07	704	0.1-	1.6-

1999 VT₉₀ = 1999 TM₁₉ = 1978 WR₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	0.41646		(2000.0)		P		Q	
<i>n</i>	0.23483896	ω	41.98966		+0.14391957		-0.98808026	
<i>a</i>	2.6018921	Ω	39.82603		+0.88372033		+0.10348276	
<i>e</i>	0.2971650	<i>i</i>	4.89328		+0.44533754		+0.11396809	
<i>P</i>	4.20	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1978 11 28	675	0.2+	0.0	1999 11 09	704	0.5+	0.0	1999 12 07	704	0.1+	0.9-
1978 11 29	675	0.1+	0.6-	1999 11 09	704	0.5+	0.1+	1999 12 07	704	0.8+	0.5-
1999 10 09	365	0.7-	0.5-	1999 11 09	704	0.4+	0.1+	1999 12 07	704	0.3+	0.7-
1999 10 09	365	0.2-	0.4+	1999 11 09	704	0.2+	0.3-	1999 12 07	704	0.5+	0.9-
1999 11 02	703	0.5-	0.6+	1999 11 09	704	0.7+	0.0	1999 12 07	704	1.1+	0.7-
1999 11 02	703	1.1-	0.2-	1999 11 12	704	0.8+	0.2+	2000 01 04	704	0.1+	0.3+
1999 11 02	703	1.2-	0.3+	1999 11 12	704	0.8+	0.5+	2000 01 04	704	0.5-	0.3-
1999 11 02	703	0.8-	0.4+	1999 11 12	704	0.6+	0.7+	2000 01 04	704	0.3+	0.5+
1999 11 05	704	0.0	0.5-	1999 11 12	704	0.4+	0.6+	2000 01 04	704	0.1+	0.4+
1999 11 05	704	0.3-	0.5-	1999 11 12	704	0.5+	0.5+	2000 01 04	704	0.2-	0.4+
1999 11 05	704	0.0	0.1+	1999 12 02	699	1.0-	1.2-	2000 01 07	704	0.6-	0.1+
1999 11 05	704	0.0	0.1-	1999 12 02	699	0.8-	0.0	2000 01 07	704	0.1-	0.6+
1999 11 05	704	0.2+	0.2+	1999 12 02	699	1.4-	0.0	2000 01 07	704	0.1-	1.1+

1999 VD₉₇ = 1979 OX₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	41.51060		(2000.0)		P	Q
n	0.30063362	ω	171.97422		+0.88379991	-0.46494565
a	2.2068748	Ω	215.88175		+0.42416150	+0.84331465
e	0.2405183	i	5.10811		+0.19744553	+0.26952910
P	3.28	H	15.5	G	0.15	U 3

2000 JAN. 24

M.P.C. 37843

1999 10 06	704	0.5+	0.1+	1999 11 05	704	0.1+	0.0	2000 01 05	704	0.6+	0.7-
1999 10 06	704	0.3+	0.4-	1999 11 09	704	0.1+	0.3+	2000 01 06	699	1.0-	0.1+
1999 10 28	120	0.1-	0.4-	1999 11 09	704	0.2+	0.1+	2000 01 06	699	0.5-	0.4-
1999 10 28	120	0.3+	0.4-	1999 11 09	704	0.3+	0.1-	2000 01 06	699	0.5-	0.6-
1999 10 29	703	0.0	0.3+	1999 11 09	704	0.1-	0.4-	2000 01 07	704	0.3+	0.4-
1999 10 29	703	0.3-	0.3+	1999 11 12	704	0.4+	0.1+	2000 01 07	704	0.3+	0.6+
1999 10 29	703	0.4-	0.3+	1999 11 12	704	0.5+	0.1-	2000 01 07	704	0.1-	0.4+
1999 10 29	703	0.2-	0.1+	1999 11 12	704	0.4+	0.3-	2000 01 07	704	0.2-	0.4+
1999 11 04	704	0.5-	0.2-	1999 11 12	704	0.5+	0.0	2000 01 07	704	0.7+	0.5+

1999 VM₁₁₂ = 1984 BJ₃ = 1993 FD₇₅ = 1994 NK₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	68.52745			<i>P</i>		<i>Q</i>	
<i>n</i>	0.24000869	<i>ω</i>	89.08819		+0.98334033		-0.18083499
<i>a</i>	2.5643939	<i>Ω</i>	281.33005		+0.15839331		+0.90223678
<i>e</i>	0.1503114	<i>i</i>	1.07835		+0.08918164		+0.39149394
<i>P</i>	4.11	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 01 25	675	0.4+	0.2-	1999 11 09	704	0.2+	0.3+	1999 12 07	704	0.1+	0.0
1984 01 26	675	0.3-	0.4+	1999 11 09	704	0.0	0.6+	1999 12 07	704	0.1+	0.1+
1993 03 21	809	0.6-	1.0+	1999 11 09	704	0.5+	0.2+	2000 01 03	704	1.3-	0.4+
1993 03 22	809	1.1+	0.2+	1999 11 09	704	0.3+	0.9-	2000 01 03	704	0.2-	0.2-
1994 07 11	809	0.1-	1.3+	1999 11 09	704	0.8-	0.0	2000 01 03	704	0.3+	0.7+
1994 07 11	809	(2.6-	0.8+)	1999 11 12	704	0.2+	0.3+	2000 01 03	704	0.6-	0.7-
1994 07 11	809	0.7-	0.0	1999 11 12	704	0.4-	0.3+	2000 01 04	704	0.1-	0.1+
1994 07 12	809	0.7+	1.5+	1999 11 12	704	0.3+	0.5+	2000 01 04	704	0.4+	0.0
1994 07 12	809	0.9+	0.1+	1999 12 07	704	0.3+	0.3+	2000 01 04	704	0.4+	0.1+
1994 07 12	809	1.1-	1.1-	1999 12 07	704	0.3+	0.0	2000 01 04	704	0.2-	0.3-

1999 VP₁₁₄ = 1980 RN₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	353.00353			<i>P</i>		<i>Q</i>	
<i>n</i>	0.26147874	<i>ω</i>	115.75491		+0.21489328		-0.97321114
<i>a</i>	2.4220241	<i>Ω</i>	321.55057		+0.84234685		+0.22704808
<i>e</i>	0.0976447	<i>i</i>	7.55324		+0.49423948		+0.03618348
<i>P</i>	3.77	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1980 09 13	675	0.2-	0.1+	1999 11 11	703	0.3+	0.4-	1999 12 07	699	0.7+	0.3+
1980 09 14	675	0.2+	0.1-	1999 11 11	703	0.1+	0.2-	1999 12 08	704	0.3+	0.7+
1999 11 09	703	0.1+	0.8+	1999 11 11	703	0.3+	0.3-	1999 12 08	704	0.7-	0.1-
1999 11 09	703	0.1-	0.3-	1999 11 11	703	0.5-	0.2-	1999 12 08	704	0.2-	1.8-
1999 11 09	703	0.4-	0.6+	1999 12 07	699	0.4-	0.5+				
1999 11 09	703	0.1+	0.0	1999 12 07	699	0.4+	0.4+				

1999 VS₁₁₄ = 1995 YF₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	352.38107			<i>P</i>		<i>Q</i>	
<i>n</i>	0.22983731	<i>ω</i>	178.49728		+0.20496837		-0.96168974
<i>a</i>	2.6395042	<i>Ω</i>	259.64899		+0.89606116		+0.25920372
<i>e</i>	0.1534867	<i>i</i>	10.66451		+0.39377958		-0.08925400
<i>P</i>	4.29	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 17	399	0.0	1.0-	1999 11 03	704	0.8+	0.6-	1999 12 08	704	0.2+	0.1+
1995 12 17	399	(0.7-	2.6-)	1999 11 09	703	0.7-	0.1+	1999 12 08	704	0.3-	0.2-
1995 12 19	399	0.5-	0.4-	1999 11 09	703	0.8-	0.4+	1999 12 08	704	0.5-	1.0-
1995 12 19	399	0.4+	0.5-	1999 11 09	703	0.6-	0.1-	1999 12 08	703	0.2-	0.3-
1999 10 05	704	0.5+	1.0-	1999 11 09	699	0.3-	0.1+	1999 12 08	703	0.2+	0.1+
1999 10 05	704	0.5+	0.1-	1999 11 09	703	0.2+	0.2+	1999 12 08	703	0.0	0.0
1999 10 05	704	0.7+	0.6-	1999 11 09	699	0.0	0.4+	1999 12 08	703	0.3+	0.7+
1999 10 05	704	0.8+	0.6-	1999 11 09	699	0.1-	0.7+	2000 01 04	704	0.0	0.1+
1999 10 05	704	0.1+	0.3-	1999 11 11	703	0.7-	0.1+	2000 01 04	704	1.0+	0.1-
1999 10 28	703	1.3-	0.2+	1999 11 11	703	0.2+	0.4+	2000 01 04	704	0.3-	0.0

1999 10 28	703	0.6-	0.4-	1999 11 11	703	0.2+	0.1-	2000 01 04	704	0.1-	1.1+
1999 10 28	703	0.1+	0.4-	1999 11 11	703	0.5-	0.2+	2000 01 04	704	0.5+	0.7+
1999 10 28	703	0.7-	0.0	1999 12 03	699	0.3-	0.1+	2000 01 06	704	0.2+	1.4+
1999 11 03	704	0.5+	0.3+	1999 12 03	699	0.3-	0.2-	2000 01 06	704	0.2+	0.9+
1999 11 03	704	0.7+	0.0	1999 12 03	699	0.3-	0.6+	2000 01 06	704	0.6+	0.3+
1999 11 03	704	0.7+	0.2+	1999 12 08	704	0.4-	0.2+	2000 01 06	704	0.1-	0.2-
1999 11 03	704	0.4+	0.5-	1999 12 08	704	0.2-	0.3-	2000 01 06	704	0.1-	0.3+

1999 VN₁₃₄ = 1997 EV₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	233.96877			<i>P</i>		<i>Q</i>	
<i>n</i>	0.23589831	<i>ω</i>	286.06834		-0.93934787		+0.34269126
<i>a</i>	2.5940967	<i>Ω</i>	273.97418		-0.30917370		-0.86343406
<i>e</i>	0.0338319	<i>i</i>	0.78811		-0.14844934		-0.37019498
<i>P</i>	4.18	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 05	691	0.2+	0.1+	1999 11 10	691	0.4-	0.0	1999 12 04	703	0.7-	0.7-
1997 03 05	691	0.4+	0.4+	1999 11 10	691	0.5-	0.0	1999 12 04	703	0.5+	1.0+
1997 03 05	691	0.0	0.2-	1999 11 14	704	0.1-	0.0	1999 12 04	703	0.4-	0.6+
1997 03 10	691	0.0	0.2-	1999 11 14	704	0.3+	0.0	1999 12 04	703	0.0	0.5+
1997 03 10	691	0.4-	0.0	1999 11 14	704	0.0	0.5-	1999 12 06	704	0.2-	0.4+
1997 03 10	691	0.2-	0.2-	1999 11 14	704	0.1-	0.6-	1999 12 06	704	0.4+	0.0
1999 11 09	704	0.0	0.2+	1999 11 14	704	0.4+	0.5-	1999 12 06	704	0.5+	0.7-
1999 11 09	704	0.5+	0.6+	1999 11 14	691	0.0	0.0	1999 12 06	704	0.3-	0.1-
1999 11 09	704	0.2+	0.1+	1999 11 14	691	0.0	0.0				
1999 11 10	691	0.4-	0.0	1999 11 14	691	0.1+	0.1-				

1999 VM₁₃₅ = 1980 WG₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	6.65790			<i>P</i>		<i>Q</i>	
<i>n</i>	0.25838114	<i>ω</i>	325.01120		+0.22009036		-0.97362374
<i>a</i>	2.4413433	<i>Ω</i>	112.20859		+0.90914925		+0.18238806
<i>e</i>	0.2281546	<i>i</i>	3.72461		+0.35356452		+0.13708172
<i>P</i>	3.81	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 11 29	675	0.3+	0.9-	1999 11 13	699	0.4-	0.2-	2000 01 05	704	0.6-	0.5+
1980 12 01	675	0.2+	1.1-	1999 11 13	699	0.1-	0.2-	2000 01 05	704	0.3-	0.5+
1999 10 30	703	1.0-	0.0	1999 11 14	699	0.2+	1.0+	2000 01 05	704	0.2-	0.4+
1999 10 30	703	0.7-	0.3+	1999 11 14	699	0.0	1.2+	2000 01 05	704	0.2+	0.1+
1999 10 30	703	0.1+	0.2+	1999 11 14	699	0.1+	1.5+	2000 01 05	704	1.0-	0.4+
1999 10 30	703	0.0	0.3-	1999 12 04	699	0.3-	0.1+	2000 01 07	704	0.3+	0.2+
1999 11 05	704	0.2+	0.2-	1999 12 04	699	1.3+	0.4+	2000 01 07	704	0.8+	0.3-
1999 11 05	704	0.0	1.0-	1999 12 04	699	0.4+	0.3+	2000 01 07	704	0.4+	0.8-
1999 11 05	704	0.5+	1.3-	1999 12 14	704	1.6-	0.5+	2000 01 07	704	0.1-	0.6-
1999 11 05	704	0.7+	1.1-	1999 12 14	704	0.2+	1.6+	2000 01 07	704	0.1-	0.6-
1999 11 13	699	0.1+	0.5-	1999 12 14	704	(0.3-	2.3+)				

1999 WQ₁ = 1983 BC

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
<i>M</i>	6.17098			<i>P</i>		<i>Q</i>	
<i>n</i>	0.22705436	<i>ω</i>	314.42550		+0.40455559		-0.86413545
<i>a</i>	2.6610282	<i>Ω</i>	109.50875		+0.90305308		+0.32582236

1983 01 21	688	0.2+	2.3-	1999 11 11	699	1.6-	1.9+	2000 01 10	704	0.1-	0.1+
1999 09 13	704	1.5+	0.2-	1999 11 13	704	0.1+	0.5-	2000 01 10	704	0.0	0.2+
1999 09 13	704	0.5+	0.4+	1999 11 13	704	0.4-	0.1-	2000 01 10	704	0.2+	0.1-
1999 09 13	704	0.8+	0.1+	1999 11 13	704	0.4-	0.5+	2000 01 11	704	0.1-	0.0
1999 09 13	704	0.7+	0.2-	1999 11 13	704	0.5-	0.0	2000 01 11	704	0.1-	0.7+
1999 09 13	699	0.4-	0.0	1999 11 13	704	0.9-	0.5+	2000 01 11	704	0.3-	0.8+
1999 09 13	699	0.2-	0.2+	1999 11 30	704	0.1-	0.7-	2000 01 11	704	0.0	1.0+
1999 09 13	699	0.4-	0.3+	1999 11 30	704	0.5+	0.1-	2000 01 11	704	0.4-	0.6+

1999 WS₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	51.33552		(2000.0)	P	Q
n	0.17894013	ω	84.57525	+0.66473510	+0.71246530
a	3.1188720	Ω	229.72692	-0.74706710	+0.63221834
e	0.5383507	i	17.13324	-0.00424090	+0.30445553
P	5.51	H	13.6	G 0.15	U 1

Residuals in seconds of arc

1982 07 10	413	1.1+	0.6+	1999 11 14	704	0.2-	0.2-	1999 12 11	610	0.9+	0.8-
1982 07 10	413	1.3-	0.1-	1999 11 14	703	0.3-	0.3+	1999 12 11	610	0.7+	0.9-
1993 05 17	675	0.1+	0.8-	1999 11 14	704	0.4-	0.5-	1999 12 11	610	0.4+	1.0-
1993 05 17	675	0.2-	0.7-	1999 11 14	703	0.6-	0.1+	1999 12 11	610	0.2+	1.0-
1993 05 19	675	0.4+	1.1+	1999 11 14	691	0.4+	1.1+	1999 12 11	610	0.1-	1.2-
1993 05 19	675	0.3-	0.7+	1999 11 14	703	0.6-	0.0	1999 12 12	703	0.2-	0.0
1999 09 26	699	0.1+	0.0	1999 11 14	691	0.4+	1.3+	1999 12 12	703	0.3-	0.1-
1999 09 26	699	0.6-	0.4+	1999 11 14	691	0.5+	1.0+	1999 12 12	703	0.3-	0.6+
1999 09 26	699	0.0	0.4+	1999 11 16	704	0.3-	0.3+	1999 12 12	703	0.3-	0.2-
1999 10 05	704	0.1-	0.3-	1999 11 16	704	0.3-	0.5+	1999 12 13	120	0.2-	0.1+
1999 10 05	704	0.5+	0.1-	1999 11 16	704	0.1+	0.1-	1999 12 13	120	0.2+	0.0
1999 10 05	704	0.6+	0.7-	1999 11 16	704	0.0	0.0	1999 12 13	610	0.0	0.6+
1999 10 05	704	0.1+	0.4-	1999 11 25	120	0.1+	0.3-	1999 12 13	120	0.2+	0.4+
1999 10 05	704	0.4+	0.9-	1999 11 25	120	0.2+	0.3+	1999 12 13	610	0.1-	0.5+
1999 10 15	699	0.5-	0.4+	1999 11 25	120	1.0+	0.5-	1999 12 13	610	0.2-	0.3+
1999 10 15	699	0.2-	0.1-	1999 11 26	120	0.1+	0.3-	1999 12 13	610	0.3-	0.1+
1999 10 15	699	0.0	0.3+	1999 11 26	120	1.2+	0.3-	1999 12 13	610	0.3-	0.1-
1999 10 22	704	0.0	0.2+	1999 11 27	120	0.4+	0.4-	1999 12 13	610	0.3-	0.3-
1999 10 22	704	0.2-	0.2-	1999 11 27	120	0.5+	1.1-	1999 12 16	402	0.0	0.2+
1999 10 22	704	0.2+	0.2-	1999 11 28	691	0.2+	0.2-	1999 12 16	402	0.4-	0.4-
1999 10 22	704	0.0	0.3-	1999 11 28	691	0.2+	0.1-	1999 12 16	402	0.3-	0.0
1999 10 22	704	0.2+	0.1+	1999 11 28	691	0.3+	0.2-	1999 12 17	120	1.0-	0.2+
1999 10 29	703	0.5-	0.3+	1999 11 30	120	0.4+	0.4-	1999 12 17	120	0.6-	0.6-
1999 10 29	703	0.5-	0.4+	1999 11 30	120	0.2-	0.6-	1999 12 17	120	0.1-	0.4+
1999 10 29	703	0.1+	0.1+	1999 12 04	703	0.8-	0.1-	2000 01 03	587	0.0	0.3+
1999 10 29	703	0.3-	0.1+	1999 12 04	703	0.5-	0.3+	2000 01 03	587	0.1+	0.2+
1999 11 03	704	0.1-	0.5-	1999 12 04	703	0.3-	0.5+	2000 01 05	704	0.1+	0.1-
1999 11 03	704	0.2+	0.3-	1999 12 04	703	0.5-	0.2-	2000 01 05	704	0.2+	0.7+
1999 11 03	704	0.3+	0.2+	1999 12 06	704	0.1+	0.1+	2000 01 05	704	0.1+	1.0+
1999 11 03	699	0.6-	0.4+	1999 12 06	704	0.0	0.9+	2000 01 05	704	0.5-	0.5+
1999 11 03	704	0.1+	0.1+	1999 12 06	704	0.3+	0.3+	2000 01 05	704	0.5+	0.1+
1999 11 03	699	0.4-	0.8+	1999 12 06	704	0.7+	0.5-	2000 01 06	699	0.6-	1.1+
1999 11 03	704	0.0	0.2+	1999 12 06	704	0.5+	0.5-	2000 01 06	699	0.0	0.2-
1999 11 03	699	0.5-	0.3+	1999 12 07	704	0.2-	0.5+	2000 01 06	699	0.3-	0.5+
1999 11 11	703	0.5-	0.2-	1999 12 07	704	0.1+	0.1+	2000 01 07	704	1.7+	0.2-
1999 11 11	703	0.4-	0.1+	1999 12 07	704	0.0	0.3-	2000 01 07	704	0.2+	0.4+
1999 11 11	703	0.5-	0.2+	1999 12 07	704	0.2+	0.0	2000 01 07	704	0.1+	0.2+
1999 11 11	703	0.5-	0.2+	1999 12 07	704	0.4+	0.2-	2000 01 07	704	0.3+	0.3+
1999 11 14	704	0.3+	0.2-	1999 12 07	120	0.1+	0.1-	2000 01 07	704	0.2+	0.6+
1999 11 14	704	0.9+	1.4-	1999 12 07	120	0.9+	0.4-				
1999 11 14	703	0.4-	0.0	1999 12 07	120	0.5-	0.1-				

1999 WB₂ = 1997 WR₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	55.89325		(2000.0)	P	Q
n	0.08500041	ω	3.95863	+0.58550792	-0.79190945
a	5.1229727	Ω	50.29899	+0.73744698	+0.43147793
e	0.0968839	i	13.02317	+0.33667853	+0.43209515
P	11.60	H	11.5	G 0.15	U 3

Residuals in seconds of arc

1997 11 26	809	0.9-	0.4+	1999 11 21	046	0.6+	0.6-	1999 12 15	704	0.3+	0.0
1997 11 26	809	0.5+	0.1+	1999 11 21	046	0.1+	0.2+	1999 12 15	704	0.3+	0.5+
1997 11 28	809	0.6-	0.5-	1999 11 21	046	0.0	0.1-	1999 12 15	704	0.1+	0.0
1997 11 28	809	1.0+	0.1+	1999 11 21	693	0.1-	0.8-	1999 12 15	704	0.9+	0.1+
1999 11 17	703	0.9+	0.5+	1999 11 21	693	0.1+	1.0-	2000 01 02	704	0.4-	0.1-
1999 11 17	703	0.6+	0.4+	1999 11 21	693	0.1+	1.1-	2000 01 02	704	0.8-	1.3-
1999 11 17	703	0.8-	0.3-	1999 11 26	557	0.4+	0.2-	2000 01 02	704	0.5-	0.8-
1999 11 17	703	1.5-	0.6+	1999 11 26	557	0.1-	0.9+	2000 01 02	704	0.2-	0.1-
1999 11 19	557	0.5+	0.0	1999 11 26	557	0.8-	0.8+	2000 01 02	704	0.1+	0.5-
1999 11 19	557	0.1+	0.2-	1999 11 30	046	0.0	0.1+	2000 01 05	699	0.4-	1.0+
1999 11 21	046	0.2+	0.7+	1999 11 30	046	0.1-	0.3+	2000 01 05	699	0.4-	0.5+
1999 11 21	046	0.0	0.7+	1999 11 30	046	0.1+	0.2-	2000 01 05	699	1.5+	0.4+
1999 11 21	046	0.8-	0.2-	1999 12 15	704	0.1-	0.2-				

1999 WM₂ = 1994 JL₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	325.10081		(2000.0)	P	Q
n	0.28200824	ω	61.80586	-0.68765411	-0.72220538
a	2.3030049	Ω	71.84267	+0.63561333	-0.64842800
e	0.0653424	i	4.49724	+0.35089531	-0.24074991
P	3.49	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1994 05 01	691	0.2+	0.1-	1999 11 12	704	1.1-	0.4+	1999 12 07	704	0.1+	0.6+
1994 05 01	691	0.0	0.2-	1999 11 12	704	0.7-	0.1+	1999 12 08	704	0.7+	0.1+
1994 05 01	691	0.9-	0.2+	1999 11 17	704	0.3+	0.3+	1999 12 08	704	1.2+	0.9+
1994 05 16	691	0.1-	0.4-	1999 11 17	704	1.0+	1.4+	1999 12 08	704	0.4+	0.1-
1994 05 16	691	0.4+	0.2+	1999 11 17	704	1.5-	1.1+	1999 12 08	704	0.9+	0.4-
1994 05 16	691	0.5+	0.7+	1999 11 17	704	0.6+	0.0	1999 12 08	704	1.0-	0.5-
1999 11 09	704	0.4-	0.0	1999 11 26	120	0.6+	0.6-	2000 01 04	704	0.2+	0.3+
1999 11 09	704	1.1-	0.1-	1999 11 26	120	0.4+	0.1-	2000 01 04	704	0.6+	0.4+
1999 11 09	704	0.2-	0.5-	1999 11 26	120	0.9+	0.6-	2000 01 04	704	0.2-	0.4-
1999 11 09	704	1.0-	0.6-	1999 11 27	120	1.3-	0.5-	2000 01 04	704	0.6-	0.3+
1999 11 09	704	0.7-	0.2-	1999 11 27	120	1.9+	1.0+	2000 01 04	704	0.7-	0.8-
1999 11 10	691	0.3+	0.1-	1999 11 28	120	1.0+	0.8-	2000 01 06	704	0.2+	0.2-
1999 11 10	691	0.1+	0.0	1999 11 28	120	0.6+	0.9-	2000 01 06	704	0.2+	0.5+
1999 11 10	691	0.0	0.0	1999 12 07	704	0.3+	0.1-	2000 01 06	704	0.1+	0.2+
1999 11 12	704	0.5-	0.2-	1999 12 07	704	0.1+	0.6+	2000 01 06	704	1.0-	0.3-
1999 11 12	704	0.5+	0.0	1999 12 07	704	0.1-	0.7+	2000 01 06	704	0.1-	0.2-
1999 11 12	704	0.6-	0.2-	1999 12 07	704	0.1+	0.0				

1999 WQ₂ = 1990 TB₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	99.23232		(2000.0)	P	Q
n	0.21901442	ω	122.36542	+0.77692551	+0.62909339
a	2.7257598	Ω	198.69004	-0.60073089	+0.72880638
e	0.0457634	i	4.48621	-0.18843872	+0.27033825
P	4.50	H	14.0	G 0.15	U 1

Residuals in seconds of arc

1990 10 13	033	0.5+	0.3-	1999 11 04	704	0.4+	0.1+	1999 12 03	747	0.9-	0.0
1990 10 13	033	0.0	0.4-	1999 11 04	704	0.7-	0.6+	1999 12 03	747	0.7-	0.3+
1990 10 14	033	0.3-	0.1+	1999 11 04	704	0.8-	0.6+	1999 12 03	747	0.5-	0.0
1997 03 05	809	1.1+	0.3+	1999 11 04	704	0.0	0.7+	1999 12 05	704	0.1-	0.8-
1997 03 05	809	0.4-	0.7+	1999 11 04	704	0.1-	0.1-	1999 12 05	704	0.2+	1.3-
1997 03 05	809	0.4-	0.5-	1999 11 15	704	0.9-	0.3-	1999 12 05	704	0.1-	0.2+

2000 JAN. 24

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1998 06 24	704	0.2−	0.5−	1999 11 15	704	0.1+	0.3+	1999 12 05	704	0.9+	0.1+
1998 06 24	704	0.7+	0.2+	1999 11 15	704	0.4+	0.6+	1999 12 05	704	0.4−	0.1−
1998 06 24	704	0.5−	0.7+	1999 11 15	704	0.2+	0.7+	1999 12 06	747	0.2−	0.7−
1998 06 24	704	0.0	0.3−	1999 11 15	704	0.0	0.9+	1999 12 06	747	0.0	0.1+
1999 10 01	703	0.3−	0.1−	1999 11 17	704	0.9+	0.5+	1999 12 06	747	0.1−	0.3+
1999 10 01	703	0.7−	0.7−	1999 11 17	704	0.3−	0.0	1999 12 07	704	1.2+	0.1−
1999 10 01	703	0.1−	0.8+	1999 11 17	704	1.6+	0.1+	1999 12 07	704	0.1−	0.2−
1999 10 01	703	1.0+	0.6+	1999 11 17	704	1.7+	0.6−	1999 12 07	704	0.3+	0.5−
1999 10 03	704	0.0	0.7+	1999 11 17	704	1.0+	0.5−	1999 12 07	704	0.1+	0.9−
1999 10 03	704	0.8−	0.3−	1999 11 27	747	0.2+	0.7+	1999 12 07	704	0.5+	0.6−
1999 10 03	704	0.1+	0.3−	1999 11 27	747	0.4−	0.2+	2000 01 02	747	0.1−	0.2+
1999 10 03	704	0.1+	0.9−	1999 11 27	747	0.1−	0.3+	2000 01 02	747	0.4−	0.4+
1999 10 30	703	0.7−	0.3+	1999 11 28	747	0.2−	0.3+	2000 01 02	747	0.2−	0.3+
1999 10 30	703	0.9−	0.2−	1999 11 28	747	0.1+	0.3+	2000 01 02	747	0.1−	0.2−
1999 10 30	703	0.3−	0.3−	1999 11 28	747	0.4−	0.0				
1999 10 30	703	0.2−	0.1+	1999 11 28	747	0.4+	0.7−				

1999 WV₂ = 1993 ON₆

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>	342.29081	(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.21617687	ω	6.52136	−0.47336529		−0.86549819	
<i>a</i>	2.7495602	Ω	111.83930	+0.79999639		−0.50024896	
<i>e</i>	0.0888889	<i>i</i>	10.16539	+0.36868832		−0.02576550	
<i>P</i>	4.56	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 07 13	809	1.6+	0.2−	1999 11 30	046	0.2−	0.2+	2000 01 03	046	0.4+	0.0
1993 07 13	809	1.3+	0.2−	1999 11 30	046	0.1−	0.2+	2000 01 03	046	0.4−	0.5+
1993 07 13	809	0.8+	0.2+	1999 11 30	046	0.3−	0.0	2000 01 05	704	0.2+	0.1+
1993 07 20	809	0.3+	0.1+	1999 12 03	046	0.2−	0.6+	2000 01 05	704	0.1−	0.2+
1993 07 20	809	1.0−	0.1−	1999 12 03	046	0.3+	0.5+	2000 01 05	704	0.1−	0.1−
1993 07 20	809	1.8−	0.3+	1999 12 03	046	0.0	0.5+	2000 01 05	704	0.4+	0.6−
1993 07 24	809	1.1−	0.2+	1999 12 06	704	0.4+	0.4−	2000 01 05	704	0.0	0.0
1999 11 04	704	0.0	0.1+	1999 12 06	704	0.1−	0.4−	2000 01 05	046	0.0	0.1+
1999 11 04	704	0.2+	0.1−	1999 12 06	704	0.3−	0.3−	2000 01 05	046	0.1+	0.1+
1999 11 04	704	0.2+	1.1−	1999 12 06	704	0.1−	0.1−	2000 01 05	046	0.1−	0.1+
1999 11 04	704	1.0+	0.0	1999 12 06	704	0.7+	0.5+	2000 01 06	704	0.2+	0.2+
1999 11 30	046	0.1+	0.0	1999 12 14	704	1.2−	1.1−	2000 01 06	704	0.6+	0.3+
1999 11 30	046	0.0	0.2+	1999 12 14	704	0.4−	0.5−	2000 01 06	704	0.1+	0.0
1999 11 30	046	0.1+	0.3+	1999 12 14	704	0.3−	0.5−	2000 01 06	704	0.1+	0.1+
1999 11 30	046	0.1+	0.2+	1999 12 14	704	0.5−	0.1−	2000 01 06	704	0.1+	0.1−
1999 11 30	046	0.1−	0.3+	2000 01 03	046	0.6−	0.4+				

1999 WW₂ = 1991 RL₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>	71.10370	(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26028834	ω	281.52682	+0.99761526		−0.02750837	
<i>a</i>	2.4294031	Ω	80.07281	+0.05097916		+0.91195108	
<i>e</i>	0.1966667	<i>i</i>	3.68458	−0.04652873		+0.40937576	
<i>P</i>	3.79	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 09 04	675	(2.5+	0.6+)	1999 11 12	704	0.6+	0.4+	1999 12 07	704	0.0	0.3+
1991 09 04	675	1.7+	0.3−	1999 11 12	704	0.3+	0.1+	1999 12 08	704	0.1−	0.8+
1991 09 05	675	0.4+	1.1−	1999 11 17	704	0.8−	0.8+	1999 12 08	704	0.1−	0.5+
1991 09 14	675	1.1−	0.8+	1999 11 17	704	1.2−	0.5+	1999 12 08	704	0.1−	0.1+
1991 09 14	675	1.2−	1.2+	1999 11 17	704	0.4−	0.6+	1999 12 08	704	0.3−	0.6+
1998 05 24	704	0.6+	0.7−	1999 11 17	704	0.2−	0.5−	1999 12 08	704	0.4−	0.9+
1998 05 24	704	0.1−	1.9+	1999 11 17	704	0.0	0.7−	1999 12 31	120	0.9+	1.5+
1998 05 24	704	0.4−	1.2−	1999 11 26	120	0.9−	0.6−	1999 12 31	120	0.5+	0.3+
1998 05 24	704	0.2−	0.3−	1999 11 26	120	0.8+	0.6−	2000 01 04	704	0.7−	0.7−
1999 11 03	704	0.3+	1.0−	1999 11 27	120	0.1−	0.2−	2000 01 04	704	0.6−	0.3−
1999 11 03	704	0.3−	0.5−	1999 11 27	120	0.0	0.1+	2000 01 04	704	0.3−	0.1+
1999 11 03	704	0.2+	0.8−	1999 11 28	120	0.9−	0.6−	2000 01 04	704	0.5+	0.4+
1999 11 03	704	0.2+	1.4−	1999 11 28	120	0.1−	0.1−	2000 01 06	704	0.4+	0.6−

1999 11 09	704	0.1+	0.5−	1999 12 06	120	0.2+	0.9+	2000 01 06	704	1.2−	1.6−
1999 11 09	704	0.4+	0.7−	1999 12 06	120	0.5+	0.1+	2000 01 06	704	0.3−	0.3+
1999 11 09	704	0.0	0.8−	1999 12 07	704	0.5+	0.1+	2000 01 06	704	1.0−	0.8−
1999 11 12	704	0.8+	0.0	1999 12 07	704	0.4+	0.4+	2000 01 06	704	0.6+	0.3+
1999 11 12	704	0.3+	0.2+	1999 12 07	704	0.4+	0.7+				
1999 11 12	704	0.6+	0.6+	1999 12 07	704	0.1+	0.4+				

1999 WA₃ = 1994 WH₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>	37.53530	(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.19333095	ω	332.39420	+0.72250770		−0.64963408	
<i>a</i>	2.9621141	Ω	70.17041	+0.67158973		+0.57823719	
<i>e</i>	0.1048929	<i>i</i>	14.56424	+0.16416412		+0.49357605	
<i>P</i>	5.10	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 11 27	010	0.4−	0.5+	1999 11 17	704	0.1+	0.3−	1999 12 08	704	0.1−	0.0
1994 11 27	010	1.2−	0.5−	1999 11 17	704	0.1−	0.1+	1999 12 08	704	0.0	0.5−
1994 11 28	010	1.2−	0.6−	1999 11 17	704	0.1+	0.1−	1999 12 08	704	0.2−	0.3−
1994 11 28	010	1.1+	0.3−	1999 11 17	704	0.2+	0.1−	1999 12 31	703	0.2−	0.9+
1994 11 28	010	0.8+	0.6+	1999 11 27	120	0.3−	0.7+	1999 12 31	703	0.3−	0.6+
1994 11 29	010	1.1+	0.3−	1999 11 27	120	0.5+	0.2+	1999 12 31	703	0.5−	0.2+
1999 11 04	704	0.1+	0.4−	1999 11 28	120	0.7+	0.3−	1999 12 31	703	0.8−	0.0
1999 11 04	704	0.5+	0.6+	1999 11 28	120	0.9+	0.2−	2000 01 03	704	0.4+	0.4+
1999 11 04	704	0.2−	0.3+	1999 12 06	120	1.9−	0.8+	2000 01 03	704	0.1−	0.4−
1999 11 04	704	0.7+	0.5+	1999 12 06	120	0.3−	0.3+	2000 01 03	704	0.1+	0.3−
1999 11 04	704	1.1+	0.7+	1999 12 07	704	0.4+	0.7+	2000 01 03	704	0.4−	0.4−
1999 11 15	704	0.5−	0.0	1999 12 07	704	0.1−	1.2−	2000 01 03	704	0.9−	1.0−
1999 11 15	704	0.4−	0.1−	1999 12 07	704	0.2+	0.4−	2000 01 04	704	0.5+	0.6+
1999 11 15	704	0.3−	0.0	1999 12 07	704	0.3+	0.6−	2000 01 04	704	0.4+	0.4+
1999 11 15	704	0.6−	0.1−	1999 12 07	704	0.3+	0.7−	2000 01 04	704	0.4+	0.0
1999 11 15	704	0.3−	0.3+	1999 12 08	704	0.1−	0.1−	2000 01 04	704	0.1+	0.0
1999 11 17	704	0.1+	0.8−	1999 12 08	704	0.2+	0.2+	2000 01 04	704	0.2+	0.3+

1999 WB₃ = 1991 YV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>	22.56242	(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.23985904	ω	342.66102	+0.41104470		−0.91067133	
<i>a</i>	2.5654604	Ω	83.05226	+0.84126541		+0.36140689	
<i>e</i>	0.2103756	<i>i</i>	2.39449	+0.35116202		+0.20015692	
<i>P</i>	4.11	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 12 28	691	0.2+	0.2−	1999 11 15	704	0.9−	0.5+	1999 11 29	120	0.6+	0.5+
1991 12 28	691	0.2+	0.2+	1999 11 15	704	0.7−	0.0	1999 12 06	120	1.2+	0.4−
1991 12 28	691	0.3+	0.3+	1999 11 17	704	0.6−	1.2+	1999 12 06	120	0.5+	0.3−
1992 01 01	691	0.1−	0.2+	1999 11 17	704	0.3−	0.2−	1999 12 07	704	0.3+	0.2−
1992 01 01	691	0.3−	0.2−	1999 11 17	704	2.0−	0.1−	1999 12 07	704	0.0	0.5−
1992 01 01	691	0.2−	0.4+	1999 11 17	704	0.2+	0.1+	1999 12 07	704	0.4+	0.8−
1999 11 03	704	0.2+	0.4−	1999 11 17	704	0.3+	0.2−	1999 12 07	704	0.2+	0.1+
1999 11 03	704	0.9+	0.4+	1999 11 27	120	0.3−	0.3−	1999 12 07	704	0.4+	0.3−
1999 11 03	704	0.4+	0.2+	1999 11 27	120	1.3+	0.4+	1999 12 08	704	0.1−	0.5−
1999 11 03	704	0.7+	0.2+	1999 11 28	120	0.9+	0.6+	1999 12 08	704	0.1+	0.5−
1999 11 15	704	0.4−	0.7+	1999 11 28	120	0.2−	0.6+	1999 12 08	704	0.4+	0.2+
1999 11 15	704	0.7−	0.3−	1999 11 29	120	(2.6− 0.8−)					
1999 11 15	704	0.9−	0.3−	1999 11 29	120	1.5− 0.8−					

Residuals in seconds of arc

1998 06 28	809	0.6+	1.2-	1999 12 07	411	0.1+	0.2+	1999 12 15	704	0.1-	1.0-
1998 06 28	809	0.1+	1.5-	1999 12 10	704	0.7-	0.3+	2000 01 03	704	1.1-	0.6-
1998 06 28	809	0.1+	1.2-	1999 12 10	704	0.1+	0.2+	2000 01 03	704	0.4+	0.2+
1998 07 01	809	0.8-	1.0+	1999 12 10	704	0.6+	0.2-	2000 01 03	704	0.9+	0.1-
1998 07 01	809	0.1+	1.0+	1999 12 10	704	1.2+	0.8+	2000 01 04	704	0.7-	1.0-
1998 07 01	809	0.0	1.6+	1999 12 10	704	0.2+	0.7+	2000 01 04	704	0.7+	0.7-
1999 11 28	411	0.3-	1.7+	1999 12 15	704	0.0	0.0	2000 01 04	704	0.3-	0.2+
1999 11 28	411	1.3-	0.7-	1999 12 15	704	0.7+	0.1+	2000 01 04	704	0.1-	0.7+
1999 11 29	411	0.2-	0.9-	1999 12 15	704	0.4+	0.0	2000 01 04	704	0.4-	0.3+
1999 11 29	411	0.2-	0.8-	1999 12 15	704	0.2+	0.3+				

1999 WM₃ = 1998 QX₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
98.26729		(2000.0)			
<i>n</i>	0.18669459	ω	62.63363	+0.90504900	+0.39986720
<i>a</i>	3.0319002	Ω	273.49236	-0.42313366	+0.81216602
<i>e</i>	0.1201956	<i>i</i>	8.34640	-0.04294428	+0.42484418
<i>P</i>	5.28	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 06 30	699	0.0	0.7+	1999 11 16	704	0.4+	0.3-	1999 12 14	704	0.7+	0.2+
1998 06 30	699	0.2-	0.8+	1999 11 16	704	0.4+	1.5-	1999 12 14	704	0.0	0.3-
1998 06 30	699	0.2-	0.5+	1999 11 16	704	0.1-	1.3-	1999 12 14	704	0.6+	0.4+
1998 07 31	699	0.3+	0.2+	1999 11 28	411	0.4-	0.1+	1999 12 14	704	0.1+	1.4+
1998 07 31	699	0.1+	0.0	1999 11 28	411	0.2+	0.4-	1999 12 15	704	0.6-	0.3+
1998 07 31	699	0.3-	0.1+	1999 11 29	411	0.6-	0.0	1999 12 15	704	0.3-	0.1-
1998 08 24	704	0.4-	0.4-	1999 11 29	411	0.1-	0.8-	1999 12 15	704	0.5+	0.2-
1998 08 24	704	0.1+	0.5-	1999 12 07	411	1.5-	1.1+	1999 12 15	704	0.1-	0.3+
1998 08 24	704	0.8-	0.2+	1999 12 07	411	(2.1-	0.6-)	1999 12 15	704	0.4-	0.5-
1998 08 24	704	0.5-	0.7-	1999 12 10	704	0.6-	0.9+	2000 01 03	704	0.9+	0.4-
1998 08 24	704	0.1-	1.0-	1999 12 10	704	0.7-	0.1-	2000 01 03	704	0.5+	0.4-
1998 08 27	704	0.3-	0.0	1999 12 10	704	0.8-	1.2-	2000 01 03	704	0.1-	0.2+
1998 08 27	704	0.9+	0.0	1999 12 10	704	0.2-	0.9-	2000 01 03	704	0.6-	0.4+
1998 08 27	704	1.5+	1.0+	1999 12 10	704	0.8-	0.7+	2000 01 04	704	0.2-	0.5+
1998 08 27	704	0.4-	0.0	1999 12 14	704	0.1+	0.1+	2000 01 04	704	0.3+	0.8+
1999 11 14	704	0.3+	0.1-	1999 12 14	704	0.7+	0.1-	2000 01 04	704	0.0	0.8+
1999 11 14	704	0.3+	0.3+	1999 12 14	704	1.0+	0.6+	2000 01 04	704	0.0	0.0
1999 11 14	704	0.4+	0.3+	1999 12 14	704	0.0	0.0	2000 01 04	704	0.5-	0.4+
1999 11 14	704	0.5+	0.2+	1999 12 14	704	0.5+	0.1-				
1999 11 14	704	0.6+	0.4+	1999 12 14	704	0.6-	0.7-				

1999 WN₃ = 1998 QC₁₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
78.58438		(2000.0)			
<i>n</i>	0.17098831	ω	220.91046	+0.99271428	-0.11582286
<i>a</i>	3.2148331	Ω	145.69792	+0.12007749	+0.92810953
<i>e</i>	0.0733087	<i>i</i>	3.37916	+0.00998759	+0.35383296
<i>P</i>	5.76	<i>H</i>	13.2	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 26	809	0.4+	0.5-	1999 11 15	704	0.2-	0.4-	1999 12 14	704	0.3-	0.1-
1998 08 26	809	1.1+	0.2-	1999 11 15	704	0.1+	0.2-	1999 12 14	704	1.0-	0.1-
1998 08 26	809	0.4+	1.2-	1999 11 17	704	0.3-	0.1+	1999 12 14	704	0.7-	0.7+
1998 08 27	809	0.4-	0.3+	1999 11 17	704	1.0+	0.7+	1999 12 14	704	0.6-	0.2-
1998 08 27	809	0.2+	0.3+	1999 11 17	704	0.1-	0.3-	1999 12 25	411	0.9+	0.9+
1998 08 27	809	0.4+	0.0	1999 11 17	704	0.3+	0.1+	1999 12 25	411	0.5+	1.7+
1998 10 10	699	(3.4-	1.7+)	1999 11 28	411	0.5-	0.3-	2000 01 05	704	0.3-	0.1-
1998 10 10	699	(2.7-	2.4+)	1999 11 28	411	1.0-	0.1+	2000 01 05	704	0.4+	0.4-
1998 10 10	699	1.9-	0.8+	1999 11 29	411	0.4+	1.4-	2000 01 05	704	0.9+	0.1-
1999 11 04	704	0.4-	1.0+	1999 11 29	411	0.6+	0.6+	2000 01 05	704	0.2+	0.5-
1999 11 04	704	0.4+	0.8+	1999 12 07	411	1.5-	0.5-	2000 01 05	704	0.0	0.2+
1999 11 04	704	0.1+	0.2+	1999 12 07	411	(2.5-	0.9-)	2000 01 06	704	0.3-	0.5-
1999 11 04	704	0.1-	0.7+	1999 12 08	704	0.6-	0.7-	2000 01 06	704	0.8+	0.7-
1999 11 04	704	0.1+	0.7+	1999 12 08	704	0.2-	0.4-	2000 01 06	704	0.4+	0.0
1999 11 15	704	0.3+	0.1+	1999 12 08	704	0.1+	0.5-	2000 01 06	704	0.3+	0.1-

1999 11 15	704	0.3-	0.0	1999 12 08	704	0.3-	0.4-	2000 01 06	704	0.3+	1.1-
1999 11 15	704	0.6+	0.4-	1999 12 14	704	0.2+	0.7+				

1999 WO₃ = 9071 P-L

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
331.50759		(2000.0)			
<i>n</i>	0.28203513	ω	263.57792	-0.73335369	-0.67599425
<i>a</i>	2.3028585	Ω	233.86249	+0.65376408	-0.67205455
<i>e</i>	0.0844813	<i>i</i>	5.13468	+0.18650710	-0.30228207
<i>P</i>	3.49	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1960 10 22	675	0.0	0.7+	1999 11 28	411	0.5-	1.7+	1999 12 15	704	0.1+	0.3+
1960 10 24	675	0.2-	0.3+	1999 11 28	411	(0.4+	2.4+)	1999 12 15	704	0.1-	0.1-
1960 10 26	675	0.1+	0.8-	1999 11 29	411	0.1+	1.2-	1999 12 15	704	0.1-	0.3-
1999 11 03	704	1.0+	0.4+	1999 11 29	411	0.3+	0.1-	1999 12 15	704	0.3-	0.1-
1999 11 03	704	0.2+	0.2+	1999 12 07	411	0.4-	0.7-	1999 12 25	411	1.4+	1.1+
1999 11 03	704	0.4-	0.8+	1999 12 07	411	0.1+	0.2-	1999 12 25	411	1.7+	0.5-
1999 11 03	704	0.8-	0.1+	1999 12 08	704	0.1+	0.1-	1999 12 28	849	0.8-	0.2+
1999 11 15	704	0.3-	0.1-	1999 12 08	704	0.1-	0.3+	1999 12 28	849	0.0	0.3+
1999 11 15	704	0.0	0.3-	1999 12 08	704	0.4+	0.1-	1999 12 28	849	0.3-	0.9+
1999 11 15	704	0.3-	0.1-	1999 12 08	704	0.2+	0.1+	1999 12 30	739	0.1-	0.3+
1999 11 15	704	0.6-	0.4-	1999 12 08	704	0.2+	0.1+	1999 12 30	739	0.9+	0.6-
1999 11 15	704	0.8-	0.7-	1999 12 14	704	0.3+	0.3+	2000 01 05	704	0.0	0.1+
1999 11 17	704	0.5+	0.1-	1999 12 14	704	0.1+	0.2-	2000 01 05	704	0.4-	0.2+
1999 11 17	704	0.2-	0.7-	1999 12 14	704	0.2+	0.0	2000 01 05	704	0.2-	0.1-
1999 11 17	704	0.2+	0.4-	1999 12 14	704	0.2-	0.2+	2000 01 05	704	0.3-	0.0
1999 11 17	704	0.1-	0.1+	1999 12 14	704	0.1+	0.0	2000 01 05	704	0.7-	0.4-
1999 11 17	704	0.3+	0.1-	1999 12 15	704	0.3-	0.0				

1999 WQ₃ = 1998 KY₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		<i>P</i>		<i>Q</i>	
90.02631		(2000.0)			
<i>n</i>	0.28969926	ω	255.79527	+0.96981826	+0.22736041
<i>a</i>	2.2620617	Ω	91.00687	-0.17556127	+0.90183334
<i>e</i>	0.2144661	<i>i</i>	5.05450	-0.16920633	+0.36742873
<i>P</i>	3.40	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 05 22	704	0.5+	0.6+	1999 11 17	704	0.1+	0.7+	1999 12 10	411	(2.6-	0.9+)
1998 05 22	704	0.7-	1.4-	1999 11 28	411	0.7+	1.5+	1999 12 10	411	(2.4-	0.5-)
1998 05 22	704	1.7+	1.1+	1999 11 28	411	1.1+	0.8-	2000 01 02	691	0.1-	0.1+
1998 05 24	704	1.5-	0.2-	1999 11 29	411	0.4+	1.1-	2000 01 02	691	0.1-	0.1-
1998 05 24	704	0.8+	0.2+	1999 11 29	411	0.8-	0.6-	2000 01 02	691	0.4-	0.1-
1998 05 24	704	0.9-	1.1+	1999 12 07	704	0.2-	0.2-	2000 01 05	704	0.1-	0.2+
1998 05 24	704	0.3+	0.5-	1999 12 07	704	0.3-	0.3-	2000 01 05	704	0.2+	0.2+
1998 05 24	704	0.2-	0.8-	1999 12 07	704	0.9-	0.6-	2000 01 05	704	0.2-	0.2-
1999 11 15	704	0.0	0.4+	1999 12 07	704	0.3-	0.1-	2000 01 05	704	0.1-	0.5-
1999 11 15	704	0.6+	0.5+	1999 12 07	704	0.4-	0.0	2000 01 05	704	0.0	0.5+
1999 11 15	704	0.2-	0.9+	1999 12 07	411	0.2-	1.3-	2000 01 06	704	0.6+	1.1+
1999 11 15	704	0.1-	0.1+	1999 12 07	411	0.1-	0.1-	2000 01 06	704	0.1+	0.3+
1999 11 15	704	0.3+	0.5+	1999 12 08	704	0.2-	0.3-	2000 01 06	704	0.0	0.0
1999 11 17	704	0.3+	0.0	1999 12 08	704	0.4+	0.6-	2000 01 06	704	0.5+	0.4+
1999 11 17	704	0.3+	0.0	1999 12 08	704	0.1-	0.7-	2000 01 06	704	0.1+	0.8+
1999 11 17	704	0.4-	0.3+	1999 12 08	704	0.1-	0.2-				
1999 11 17	704	0.2-	0.4+	1999 12 08	704	0.1-	0.3-				

2000 JAN. 24

M.P.C. 37847

1999 WU₃ = 1995 SH₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	289.04788	(2000.0)	P		Q	
<i>n</i>	0.26936062	ω	330.19029	−0.99824277	−0.01245356	
<i>a</i>	2.3745427	Ω	209.26741	+0.02931292	−0.95344757	
<i>e</i>	0.0690936	<i>i</i>	6.80558	−0.05149876	−0.30130159	
<i>P</i>	3.66	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 2

Residuals in seconds of arc

1995 09 28	327	0.0	0.5+	1998 08 17	704	1.0−	0.5−	1999 12 14	704	0.6+	0.1+
1995 09 28	327	0.1+	0.3−	1998 08 17	704	0.8−	0.5−	1999 12 14	704	0.3+	0.6+
1995 09 28	327	0.0	0.1−	1998 08 17	704	1.0−	0.5−	1999 12 14	704	0.2+	0.3+
1995 09 28	327	0.4+	0.4−	1998 08 17	704	0.1−	0.1−	1999 12 14	704	0.1−	0.2+
1995 09 29	327	0.2+	0.2+	1998 08 30	699	0.3+	0.0	1999 12 14	704	0.3+	0.3+
1995 09 29	327	0.4+	0.1−	1998 08 30	699	0.3−	0.0	1999 12 15	704	0.7+	0.8−
1995 09 29	327	0.2+	0.6−	1998 08 30	699	0.0	0.0	1999 12 15	704	0.4+	0.0
1995 10 16	372	(2.4−	0.5+)	1999 11 04	704	0.3+	0.4+	1999 12 15	704	0.3+	0.0
1995 10 16	372	1.2−	0.9+	1999 11 04	704	0.5+	0.2+	1999 12 15	704	0.1+	0.6−
1995 10 17	372	(2.2+	0.2+)	1999 11 04	704	0.1−	0.2+	1999 12 15	704	0.1+	0.0
1995 10 17	372	0.3−	0.4+	1999 11 04	704	0.6+	0.9+	2000 01 07	704	0.0	0.5+
1995 12 07	327	0.4+	0.2−	1999 11 04	704	0.5+	0.7+	2000 01 07	704	0.0	0.9+
1995 12 07	327	0.1−	0.4−	1999 11 28	411	(2.4−	2.3−)	2000 01 07	704	0.2+	0.0
1995 12 07	327	0.3+	0.6−	1999 11 28	411	1.2−	0.7−	2000 01 07	704	0.3−	0.6+
1998 06 19	699	0.4+	0.6+	1999 11 29	411	1.0−	0.3−	2000 01 07	704	0.0	0.8+
1998 06 19	699	0.3−	0.7+	1999 11 29	411	1.0−	0.3−	2000 01 11	704	0.1−	0.5+
1998 06 19	699	1.8+	0.0	1999 12 06	704	0.6−	0.2−	2000 01 11	704	0.2+	0.0
1998 07 31	699	0.0	0.5+	1999 12 06	704	0.8−	0.4−	2000 01 11	704	0.3+	0.7−
1998 07 31	699	0.0	0.9+	1999 12 06	704	0.1+	0.6−	2000 01 11	704	0.2+	0.3+
1998 07 31	699	1.6+	0.1−	1999 12 06	704	0.3+	0.7−	2000 01 11	704	0.4−	0.4−
1998 08 17	704	0.3−	0.4−	1999 12 06	704	0.3−	0.5−				

1999 WV₃ = 1978 VO₁ = 1998 KY₄₃

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	122.72138	(2000.0)	P		Q	
<i>n</i>	0.28357476	ω	291.99952	+0.77248618	+0.63377667	
<i>a</i>	2.2945155	Ω	28.71721	−0.54770244	+0.69673843	
<i>e</i>	0.1228536	<i>i</i>	4.76371	−0.32138316	+0.33598019	
<i>P</i>	3.48	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1978 10 30	010	1.2+	1.7−	1999 11 14	704	0.8+	0.5+	1999 12 10	704	0.2−	0.1−
1978 11 01	010	0.4−	0.1+	1999 11 14	704	0.9+	0.5+	1999 12 15	704	0.3−	0.3+
1978 11 01	010	0.2−	0.3−	1999 11 16	704	0.6−	0.2+	1999 12 15	704	0.1+	1.0+
1998 05 22	704	0.2−	0.4−	1999 11 16	704	0.6−	0.4+	1999 12 15	704	0.0	0.1−
1998 05 22	704	0.3+	0.1−	1999 11 16	704	0.7−	0.3+	1999 12 15	704	0.2−	0.6+
1998 05 22	704	1.7+	0.1+	1999 11 16	704	0.5−	0.2+	1999 12 15	704	0.3+	0.3+
1998 05 22	704	0.2−	1.3+	1999 11 16	704	0.2−	1.3−	2000 01 03	704	1.6+	0.3+
1998 05 22	704	0.6−	1.3−	1999 11 28	411	1.5−	1.5+	2000 01 03	704	0.5+	0.3−
1998 05 24	704	0.8−	0.1+	1999 11 28	411	1.3−	0.2+	2000 01 03	704	0.5+	0.7−
1998 05 24	704	0.5+	0.1−	1999 11 29	411	0.8−	1.2−	2000 01 03	704	0.2+	0.5−
1998 05 24	704	0.2−	1.4+	1999 11 29	411	0.5−	1.3−	2000 01 03	704	1.0+	0.9−
1998 05 24	704	1.9−	1.5−	1999 12 07	411	0.1+	0.8+	2000 01 04	704	0.5+	0.1−
1998 05 24	704	1.2+	0.3−	1999 12 07	411	0.5−	0.6+	2000 01 04	704	0.4+	0.5−
1999 11 14	704	0.4+	0.3+	1999 12 10	704	0.5−	0.5+	2000 01 04	704	0.2−	0.1+
1999 11 14	704	0.7+	0.5+	1999 12 10	704	0.5−	0.3−	2000 01 04	704	0.6+	0.4−
1999 11 14	704	0.6+	0.7+	1999 12 10	704	0.1+	0.2−	2000 01 04	704	0.3+	1.1−

1999 WX₃ = 1978 XG₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	32.77357	(2000.0)	P		Q	
<i>n</i>	0.28295539	ω	211.50253	+0.44999355	−0.89186258	
<i>a</i>	2.2978627	Ω	211.82065	+0.83629588	+0.43879566	
<i>e</i>	0.1867719	<i>i</i>	4.97046	+0.31323315	+0.10972466	
<i>P</i>	3.48	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1978 12 03	675	0.0	0.0	1999 11 29	411	0.1−	0.5+	1999 12 28	849	0.6−	0.2+
1978 12 03	675	0.2−	0.5−	1999 12 06	704	0.3+	0.6+	1999 12 28	849	0.5−	0.5−
1978 12 05	675	0.0	0.4+	1999 12 06	704	0.1−	0.7+	1999 12 30	739	0.4−	0.5−
1978 12 06	675	0.6−	0.5−	1999 12 06	704	0.1+	0.8+	1999 12 30	739	(2.2−	0.2+)
1978 12 06	675	1.0+	0.6−	1999 12 06	704	0.3+	1.8+	1999 12 30	739	0.4−	0.5−
1999 11 04	704	0.9+	0.6+	1999 12 06	704	0.0	0.7+	2000 01 05	704	0.3+	0.2+
1999 11 04	704	1.0+	0.2+	1999 12 09	411	0.3+	0.4−	2000 01 05	704	0.2−	0.2−
1999 11 04	704	0.7−	0.6−	1999 12 09	411	0.1+	0.3−	2000 01 05	704	0.2+	0.2−
1999 11 17	704	0.2−	0.2−	1999 12 14	704	0.1−	0.2−	2000 01 05	704	0.0	0.2−
1999 11 17	704	0.4−	0.0	1999 12 14	704	1.7+	0.0	2000 01 05	704	0.1−	0.3−
1999 11 17	704	0.7−	0.4−	1999 12 14	704	(1.9+	2.5−)	2000 01 07	704	0.0	0.0
1999 11 17	704	0.5−	0.1−	1999 12 14	704	0.5−	0.5−	2000 01 07	704	0.4+	0.4+
1999 11 28	411	(2.4−	3.2−)	1999 12 14	704	0.1−	0.2+	2000 01 07	704	0.0	0.3+
1999 11 28	411	(2.2−	4.2−)	1999 12 28	849	0.2+	0.5−	2000 01 07	704	0.2+	0.2−
1999 11 29	411	0.3−	0.6−	1999 12 28	849	0.3−	0.2−	2000 01 07	704	0.1+	0.2+

1999 WY₃ = 1978 GO₂ = 1981 EB₄₉ = 1986 WL₆ = 1994 CO₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	221.81311	(2000.0)	P		Q	
<i>n</i>	0.30370390	ω	143.29068	−0.42267976	+0.90417492	
<i>a</i>	2.1919760	Ω	101.63185	−0.84575974	−0.36906844	
<i>e</i>	0.1214000	<i>i</i>	3.61292	−0.32562599	−0.21507255	
<i>P</i>	3.25	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1978 04 11	095	0.4−	1.6−	1999 11 28	411	(3.0−	3.7+)	1999 12 29	106	0.3+	0.5+
1981 03 08	095	2.1+	2.3+	1999 11 28	411	(1.7−	2.3+)	1999 12 29	106	0.9+	0.7+
1986 11 28	010	1.7−	0.4−	1999 11 29	411	1.0+	0.0	1999 12 29	106	0.4+	0.8+
1986 11 28	010	0.5−	0.6−	1999 11 29	411	0.7+	0.9−	1999 12 30	106	0.4+	0.8+
1986 11 28	010	0.1+	0.8−	1999 12 07	704	0.2+	0.4−	1999 12 30	106	0.5+	0.6+
1994 02 07	372	2.0−	0.0	1999 12 07	704	1.6−	0.8−	1999 12 30	106	0.5+	0.6+
1994 02 07	372	(0.4−	2.8+)	1999 12 07	704	0.5+	0.1+	2000 01 04	049	1.5+	0.1−
1994 02 10	372	(16.5−	8.9+)	1999 12 08	704	0.1+	0.2+	2000 01 04	049	1.4+	0.1−
1994 02 10	372	(17.8−	8.3+)	1999 12 08	704	0.0	0.8+	2000 01 04	049	1.7+	0.2+
1999 11 15	704	0.0	0.0	1999 12 08	704	0.2+	0.2+	2000 01 05	704	0.6+	0.3−
1999 11 15	704	0.3−	0.4+	1999 12 08	704	0.3+	0.1+	2000 01 05	704	0.2+	0.3−
1999 11 15	704	0.8−	0.1+	1999 12 08	704	0.0	0.4+	2000 01 05	704	0.7+	0.2−
1999 11 15	704	0.8−	0.2+	1999 12 09	411	0.2−	0.2−	2000 01 05	704	0.2−	0.0
1999 11 15	704	0.9−	0.4+	1999 12 09	411	0.0	0.3−	2000 01 05	704	0.5+	0.2−
1999 11 17	704	0.0	0.1+	1999 12 12	133	0.1−	0.4−	2000 01 06	704	0.0	0.1−
1999 11 17	704	0.2−	0.4+	1999 12 12	133	0.7−	0.2+	2000 01 06	704	0.2−	0.3−
1999 11 17	704	1.0−	0.1−	1999 12 12	133	0.2−	0.5+	2000 01 06	704	0.0	0.3−
1999 11 17	704	0.2+	0.2+	1999 12 25	411	0.4−	1.2−	2000 01 06	704	0.1−	0.7−
1999 11 17	704	1.0−	0.4+	1999 12 25	411	1.3−	0.6−	2000 01 06	704	0.1−	0.4−

1999 WF₄ = 1998 QJ₇₈

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	74.50440	(2000.0)	P		Q	
<i>n</i>	0.18117058	ω	151.38479	+0.96407963	−0.24290232	
<i>a</i>	3.0932209	Ω	223.11436	+0.20374124	+0.93585418	
<i>e</i>	0.0572729	<i>i</i>	9.04666	+0.17041118	+0.25529478	
<i>P</i>	5.44	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704	1.5−	1.7+	1999 11 29	411	0.5−	0.0	1999 12 26	411	1.0−	0.2+
1998 08 24	704	0.0	1.8+	1999 11 29	411	0.4−	0.8−	2000 01 05	704	1.2−	0.1−
1998 08 24	704	1.0+	1.8−	1999 12 09	411	0.9−	1.5+	2000 01 05	704	1.4−	0.1+
1998 08 24	704	1.5−	0.4+	1999 12 09	411	1.2+	0.1−	2000 01 05	704	0.5+	0.4−
1998 08 27	704	1.6+	0.1+	1999 12 14	704	0.1−	0.3−	2000 01 07	704	0.8+	0.3+
1998 08 27	704	0.9−	1.2−	1999 12 14	704	0.5+	0.0	2000 01 07	704	0.2+	0.3−
1998 08 27	704	0.2+	0.4+	1999 12 14	704	0.9+	0.8+	2000 01 07	704	0.8+	0.1−
1998 08 27	704	1.1+	1.3−	1999 12 14	704	0.2−	0.1+	2000 01 07	704	0.1+	0.1+
1999 11 28	411	(4.5−	0.8−)	1999 12 14	704	0.8+	0.4−	2000 01 07	704	0.1−	0.4+
1999 11 28	411	(3.0−	1.5−)	1999 12 26	411	0.1−	0.8−				

1999 WK₄ = 1991 RE₈ = 1993 BA₆ = 1995 UU₁₆ = 1998 MG₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	115.79814		(2000.0)	P	Q
<i>n</i>	0.26236868	ω	234.05342	+0.89934455	+0.43327272
<i>a</i>	2.4165441	Ω	100.20558	−0.37947044	+0.84021107
<i>e</i>	0.0935184	<i>i</i>	3.42355	−0.21721318	+0.32606766
<i>P</i>	3.76	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1991 09 12	675	0.1−	0.5−	1999 11 03	704	0.2+	0.6−	1999 12 08	704	0.3−	0.0
1991 09 12	675	0.3+	0.4+	1999 11 03	704	0.2−	0.2−	1999 12 09	411	0.1−	0.4−
1991 09 14	675	0.8+	0.8−	1999 11 03	704	0.1−	0.1−	1999 12 09	411	0.6−	0.1−
1991 09 14	675	0.1−	0.7−	1999 11 03	704	0.3+	0.3−	2000 01 02	691	0.2+	0.3+
1993 01 27	010	0.5−	1.2+	1999 11 03	704	0.3−	0.5+	2000 01 02	691	0.1−	0.3+
1993 01 27	010	0.9−	1.2+	1999 11 15	704	0.0	0.2+	2000 01 02	691	0.2+	0.3+
1993 01 27	010	1.3+	0.7+	1999 11 15	704	0.3−	0.1−	2000 01 05	704	0.2+	0.4+
1993 01 28	010	0.7+	1.2−	1999 11 15	704	0.2+	0.1−	2000 01 05	704	0.0	0.1−
1993 01 28	010	0.5−	1.2−	1999 11 15	704	0.2−	0.3−	2000 01 05	704	0.3+	0.1−
1993 01 28	010	(0.7−	2.6−)	1999 11 15	704	0.4−	0.3−	2000 01 05	704	0.0	0.0
1995 10 17	691	0.4−	0.2+	1999 11 17	704	0.3−	0.2+	2000 01 05	704	0.4+	0.1−
1995 10 17	691	0.2−	0.1−	1999 11 17	704	0.2+	0.0	2000 01 06	704	0.3−	0.1−
1995 10 17	691	0.0	0.0	1999 11 17	704	0.1−	0.2+	2000 01 06	704	0.1+	0.0
1995 10 28	691	0.1−	0.2+	1999 11 17	704	0.2−	0.4+	2000 01 06	704	0.2+	0.4−
1995 10 28	691	0.2−	0.2+	1999 11 17	704	0.3−	0.3+	2000 01 06	704	0.3+	0.0
1995 10 28	691	0.1+	0.1+	1999 11 28	411	(0.7+	2.4+)	2000 01 08	106	0.3−	0.6−
1998 06 24	704	0.3−	0.4+	1999 11 28	411	0.7−	1.2+	2000 01 08	106	0.3+	0.3−
1998 06 24	704	1.2+	0.9+	1999 11 29	411	1.5+	1.1+	2000 01 08	106	0.0	0.7+
1998 06 24	704	0.1−	0.7+	1999 11 29	411	0.2+	1.3+	2000 01 12	858	0.3−	0.1+
1998 06 24	704	(2.3−	0.3+)	1999 12 07	704	0.4−	0.5+	2000 01 12	858	0.4−	0.5+
1998 06 24	704	0.1+	0.4+	1999 12 07	704	0.5−	0.1−	2000 01 12	858	0.1+	0.3+
1998 06 26	704	0.7−	0.7+	1999 12 07	704	0.4−	0.6−	2000 01 13	858	0.1−	0.2+
1998 06 26	704	0.0	0.8+	1999 12 08	704	0.2+	0.3+	2000 01 13	858	0.1+	0.3+
1998 06 26	704	0.2−	0.4−	1999 12 08	704	1.8+	0.1+	2000 01 13	858	0.2+	0.7+
1998 06 26	704	0.4−	1.8+	1999 12 08	704	0.4−	0.1−				

1999 WT₄ = 1992 GZ₃ = 1998 VR₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	4.76862		(2000.0)	P	Q
<i>n</i>	0.08155699	ω	34.63355	+0.20918414	−0.97061815
<i>a</i>	5.2661747	Ω	43.63548	+0.85371361	+0.12196151
<i>e</i>	0.0751600	<i>i</i>	9.92353	+0.47688055	+0.20742662
<i>P</i>	12.08	<i>H</i>	10.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1992 04 04	809	0.8+	0.8−	1998 11 14	699	0.1+	0.6+	1999 12 15	704	0.1−	0.1−
1992 04 04	809	0.1+	1.0+	1999 11 16	704	0.1+	0.4−	1999 12 15	704	0.4+	0.3+
1992 04 04	809	0.4+	0.5−	1999 11 16	704	0.1−	0.7−	1999 12 15	704	0.1+	0.2−
1992 04 06	809	0.8−	0.5+	1999 11 16	704	0.6−	0.2−	1999 12 15	704	0.1−	0.2+
1992 04 06	809	0.1+	0.8+	1999 11 16	704	0.2−	0.6−	1999 12 15	704	0.1−	0.0
1992 04 06	809	0.4+	0.5+	1999 11 28	411	1.1−	0.8+	1999 12 15	704	0.2−	0.2−
1998 11 10	704	0.1−	0.6+	1999 11 28	411	0.4−	0.4−	2000 01 03	704	0.2+	0.1+
1998 11 10	704	0.2−	0.6+	1999 11 29	411	1.0+	1.7−	2000 01 03	704	0.3+	0.0
1998 11 10	704	0.2−	0.3+	1999 11 29	411	0.0	0.1+	2000 01 03	704	0.1+	0.4−
1998 11 10	704	0.7+	0.7+	1999 12 07	411	0.1−	0.0	2000 01 03	704	0.4+	0.4+

1998 11 10	704	0.9+	0.1+	1999 12 07	411	0.1+	0.2+	2000 01 03	704	0.1+	0.4−
1998 11 11	704	0.5−	0.8−	1999 12 10	704	0.7+	0.9+	2000 01 04	704	0.4+	0.1+
1998 11 11	704	0.6−	0.1+	1999 12 10	704	1.1−	0.8+	2000 01 04	704	0.3+	0.1−
1998 11 11	704	0.6+	1.3−	1999 12 10	704	1.2−	1.1+	2000 01 04	704	0.4+	0.2−
1998 11 11	704	0.1−	0.1+	1999 12 15	704	1.7+	0.1+	2000 01 04	704	0.4+	0.1−
1998 11 11	704	1.2−	0.3+	1999 12 15	704	0.2−	0.2+	2000 01 04	704	0.2+	0.2−
1998 11 14	699	0.5−	0.2+	1999 12 15	704	0.1+	0.1+	2000 01 06	106	1.0−	0.0
1998 11 14	699	0.1+	0.2+	1999 12 15	704	0.0	0.2+	2000 01 06	106	0.5−	0.1−

1999 WU₄ = 1993 BN₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	113.21836		(2000.0)	P	Q
<i>n</i>	0.27463746	ω	32.93091	+0.85308956	+0.51277373
<i>a</i>	2.3440284	Ω	295.92938	−0.49890162	+0.74753609
<i>e</i>	0.1310516	<i>i</i>	6.15616	−0.15275922	+0.42220007
<i>P</i>	3.59	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 01 16	010	0.7+	0.3−	1999 12 15	704	0.2+	0.2−	2000 01 01	739	0.3−	0.7+
1993 01 16	010	0.4+	0.2+	1999 12 15	704	0.6+	0.3−	2000 01 03	704	0.1+	0.4−
1993 01 16	010	0.8−	0.1−	1999 12 15	704	0.3+	0.4−	2000 01 03	704	0.0	0.2+
1993 01 17	010	0.1−	0.8+	1999 12 15	704	0.0	0.1−	2000 01 03	704	1.3+	0.8−
1993 01 17	010	0.6−	0.5−	1999 12 16	704	0.1+	0.1+	2000 01 03	704	0.2+	0.6−
1993 01 17	010	0.4+	0.0	1999 12 16	704	0.1−	0.0	2000 01 03	704	0.5−	1.0−
1999 11 28	411	0.6−	0.4+	1999 12 16	704	0.1−	0.1+	2000 01 04	704	0.0	0.3−
1999 11 28	411	0.2−	0.6+	1999 12 16	704	0.3−	0.2+	2000 01 04	704	0.6+	0.3+
1999 11 29	411	0.8+	0.0	1999 12 16	704	0.5+	0.2+	2000 01 04	704	0.2−	0.1+
1999 11 29	411	0.1+	0.2−	1999 12 31	739	0.1−	0.3+	2000 01 04	704	0.2+	0.4−
1999 12 07	411	0.2+	1.0−	1999 12 31	739	0.1−	0.3+	2000 01 04	704	0.3−	0.5−
1999 12 07	411	0.6−	0.2+	2000 01 01	739	0.7−	1.5+				
1999 12 15	704	0.1+	0.0	2000 01 01	739	0.9−	0.7+				

1999 WW₄ = 1988 XF₃ = 1991 LC₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	148.64739		(2000.0)	P	Q
<i>n</i>	0.17489193	ω	202.79047	+0.54896531	+0.81257953
<i>a</i>	3.1668163	Ω	101.03121	−0.73284436	+0.58059455
<i>e</i>	0.0398908	<i>i</i>	11.50902	−0.40196545	+0.05122961
<i>P</i>	5.64	<i>H</i>	12.2	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1988 12 07	033	0.6−	0.1+	1999 11 04	704	0.1−	0.3+	1999 12 14	704	0.0	0.2+
1988 12 08	033	0.2+	0.5+	1999 11 04	704	0.1−	0.1+	1999 12 14	704	0.0	0.1+
1991 06 06	809	0.5+	0.8+	1999 11 04	704	0.1−	0.1+	1999 12 14	704	0.2+	0.1−
1991 06 06	809	0.0	1.5+	1999 11 17	704	0.4+	0.2+	1999 12 14	704	0.6+	0.1−
1991 06 06	809	1.0−	2.0+	1999 11 17	704	0.0	0.3+	2000 01 05	704	0.2−	0.2+
1991 06 08	809	1.8+	0.3+	1999 11 17	704	0.4+	0.6+	2000 01 05	704	0.1+	0.3+
1991 06 08	809	0.5+	0.4+	1999 11 17	704	0.1−	0.2+	2000 01 05	704	0.8−	1.0−
1991 06 08	809	0.6+	0.6+	1999 11 17	704	0.3+	1.0+	2000 01 05	704	0.5−	0.1+
1997 07 02	704	0.4+	0.5−	1999 11 28	411	0.9−	0.6+	2000 01 05	704	0.0	0.1−
1997 07 02	704	0.1+	0.8+	1999 11 28	411	0.5−	0.4+	2000 01 06	704	0.6+	1.1−
1997 07 02	704	0.4−	0.2+	1999 11 29	411	0.4+	0.2+	2000 01 06	704	0.4−	1.9−

2000 JAN. 24

M.P.C. 37849

1999 WX₄ = 1998 MG₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23579342	<i>ω</i>	275.27042	+0.69673381	−0.71531339		
<i>a</i>	2.5948660	<i>Ω</i>	130.41278	+0.68293034	+0.63853309		
<i>e</i>	0.1640121	<i>i</i>	4.04790	+0.21947244	+0.28390535		
<i>P</i>	4.18	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 06 26	809	0.0	0.8−	1999 11 29	411	0.5−	0.2+
1998 06 26	809	0.3+	0.6+	1999 12 07	411	0.1−	1.0−
1998 06 26	809	0.3−	0.6+	1999 12 07	411	0.6−	0.3+
1998 06 27	809	0.2−	1.9+	1999 12 08	704	0.5−	0.2−
1998 06 27	809	0.5−	0.7+	1999 12 08	704	0.3−	0.1−
1998 06 27	809	0.2+	1.4+	1999 12 08	704	0.3−	0.2−
1999 11 17	704	1.2+	0.7−	1999 12 08	704	0.1−	0.3−
1999 11 17	704	0.1+	0.6−	1999 12 08	704	0.1−	0.1−
1999 11 17	704	0.3+	1.0−	1999 12 14	704	0.0	0.4−
1999 11 17	704	0.5+	1.0−	1999 12 14	704	0.3+	0.7−
1999 11 28	411	0.5+	0.1−	1999 12 14	704	0.0	0.0
1999 11 28	411	0.8−	1.0+	1999 12 14	704	0.3+	0.7−
1999 11 29	411	0.8−	1.1−	1999 12 14	704	0.1−	0.3+

1999 WE₆ = 1993 BH₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26436473	<i>ω</i>	350.55177	−0.30192632	−0.95177730		
<i>a</i>	2.4043649	<i>Ω</i>	117.00516	+0.87860362	−0.29995673		
<i>e</i>	0.1192822	<i>i</i>	3.50116	+0.36999484	−0.06438887		
<i>P</i>	3.73	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1993 01 27	010	0.6+	1.4−	1999 11 04	704	0.1−	0.7−
1993 01 27	010	0.5+	1.4−	1999 11 17	704	0.0	0.8+
1993 01 27	010	1.1+	0.7−	1999 11 17	704	0.2−	0.4−
1993 01 28	010	0.5−	0.1+	1999 11 17	704	0.3+	0.5−
1993 01 28	010	0.2−	0.2+	1999 11 17	704	0.3+	0.5+
1993 01 28	010	1.0−	0.0	1999 11 17	704	0.4+	0.5+
1993 02 20	010	1.0−	0.9+	1999 11 28	120	0.3−	0.7+
1993 02 20	010	0.1−	0.3−	1999 11 28	120	0.5+	0.1−
1993 02 20	010	0.1+	0.1−	1999 11 29	120	0.4+	0.3−
1993 02 22	010	0.4−	1.2+	1999 11 29	120	1.0+	0.3+
1993 02 23	010	0.5+	1.0+	1999 11 29	120	1.4−	0.0
1999 11 04	704	0.2−	0.7−	1999 12 02	699	0.9+	1.0+
1999 11 04	704	0.3−	1.6−	1999 12 02	699	0.3−	0.7+
1999 11 04	704	0.3+	0.4−	1999 12 02	699	0.0	0.0
1999 11 04	704	0.6−	1.1−	1999 12 04	703	0.2+	0.4+

1999 WH₆ = 1991 LX₂ = 1994 CC₁₃ = 1998 MA₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28296101	<i>ω</i>	169.98181	−0.09128724	+0.99230714		
<i>a</i>	2.2978322	<i>Ω</i>	94.74535	−0.91935962	−0.05170932		
<i>e</i>	0.1408490	<i>i</i>	4.81351	−0.38268072	−0.11248414		
<i>P</i>	3.48	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1991 06 06	809	0.9−	0.2−	1998 06 26	704	0.4−	0.3−
1991 06 06	809	0.7−	0.1−	1998 06 26	704	1.7+	0.6−
1991 06 06	809	0.4−	0.9+	1999 10 30	703	1.7−	1.6+
1991 06 08	809	1.1+	0.4+	1999 10 30	703	(1.9+ 2.3+)	
1991 06 08	809	1.3+	0.6+	1999 10 30	703	0.1−	0.1+
1991 06 08	809	0.1+	0.2+	1999 10 30	703	0.1−	0.4−
1994 02 08	809	0.8+	1.7−	1999 11 04	704	0.4−	0.6+
1994 02 08	809	0.9+	1.7−	1999 11 04	704	0.1−	0.2+
				1999 12 07	704	0.6−	0.6−

1994 02 08	809	0.9+	1.5−	1999 11 04	704	0.1+	0.2−	1999 12 07	704	0.8−	0.4−
1994 02 08	809	(2.9− 2.0−)		1999 11 04	704	1.6+	0.2−	1999 12 07	704	0.8−	0.7−
1994 02 08	809	(3.1− 2.8−)		1999 11 15	704	0.5−	0.4−	1999 12 07	704	0.4−	1.0−
1994 02 08	809	(2.8− 2.4−)		1999 11 15	704	0.2−	0.2−	1999 12 07	704	0.5−	0.6−
1994 02 10	809	0.0	1.5+	1999 11 15	704	0.5−	0.4−	1999 12 07	120	1.6+	1.0−
1994 02 10	809	1.6−	1.8+	1999 11 15	704	0.3−	0.1−	1999 12 07	120	0.1−	1.3−
1994 02 10	809	1.2−	0.9+	1999 11 15	704	0.0	0.1+	1999 12 14	704	0.1+	0.2+
1994 02 13	809	(0.6− 3.3+)		1999 11 17	704	0.0	0.4+	1999 12 14	704	1.3+	0.4−
1994 02 13	809	(0.8− 3.7+)		1999 11 17	704	0.3+	0.3+	1999 12 14	704	0.5+	0.7+
1994 02 13	809	(0.5− 2.8+)		1999 11 17	704	0.8−	0.1+	1999 12 14	704	0.9+	0.7+
1998 06 24	704	0.0	0.0	1999 11 17	704	0.4+	0.5−	1999 12 14	704	(2.1+ 1.1+)	
1998 06 24	704	0.5−	0.2+	1999 11 17	704	0.0	0.1+	1999 12 17	120	0.7+	0.7+
1998 06 24	704	0.4+	0.2−	1999 11 28	120	0.2−	0.2+	1999 12 17	120	1.6+	0.2−
1998 06 24	704	0.0	0.4−	1999 11 28	120	0.4+	1.0+	2000 01 06	699	0.3−	0.6+
1998 06 24	704	0.1+	1.6−	1999 11 28	120	1.1+	0.6+	2000 01 06	699	0.1+	1.8+
1998 06 26	704	0.9−	0.2−	1999 11 29	120	0.7+	0.1+	2000 01 06	699	0.4−	0.2+
1998 06 26	704	(1.0− 2.4+)		1999 11 29	120	0.1−	0.7−				
1998 06 26	704	0.8−	0.6+	1999 11 29	120	0.6+	0.3+				

1999 WL₆ = 1989 TT₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20580342	<i>ω</i>	283.97816	+0.98265268	−0.17680366		
<i>a</i>	2.8411947	<i>Ω</i>	86.22758	+0.18431130	+0.89755176		
<i>e</i>	0.0845059	<i>i</i>	3.21628	+0.02056822	+0.40390754		
<i>P</i>	4.79	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1989 09 29	675	1.3+	1.8−	1998 08 17	704	0.2−	0.7+
1989 09 29	675	(2.3+ 2.8−)		1998 08 17	704	0.6−	1.2+
1989 10 07	809	1.9+	0.1+	1998 08 17	704	1.1+	1.6+
1989 10 07	809	0.3+	0.3+	1999 11 15	704	0.5−	0.3+
1989 10 07	809	0.6−	0.3−	1999 11 15	704	0.8−	0.2+
1989 10 08	809	0.5−	0.3+	1999 11 15	704	0.9−	0.3+
1989 10 08	809	0.8−	0.3+	1999 11 15	704	1.2−	0.2−
1989 10 08	809	1.4−	0.5+	1999 11 15	704	0.4−	0.2−
1997 04 07	704	0.5+	0.6+	1999 11 28	120	0.3−	1.4+
1997 04 07	704	0.0	1.6+	1999 11 28	120	0.5+	0.4+
1997 04 30	704	0.7+	0.9+	1999 11 29	120	1.5−	0.9+
1997 04 30	704	0.2−	1.2+	1999 11 29	120	0.1−	1.5+
1997 04 30	704	1.1+	1.6+	1999 11 29	120	1.2−	1.2+
1997 04 30	704	(1.5+ 2.0+)		1999 12 06	120	0.7+	1.2−
1997 04 30	704	(2.7− 0.1+)		1999 12 06	120	1.0+	0.4+
1998 08 17	704	1.2−	0.2+	1999 12 07	704	0.4+	0.0

1999 WV₆ = 1994 SZ₁₁

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22329224	<i>ω</i>	345.62911	−0.74175431	−0.67052022		
<i>a</i>	2.6908343	<i>Ω</i>	152.24733	+0.61831183	−0.69192303		
<i>e</i>	0.0653461	<i>i</i>	1.75410	+0.25979033	−0.26766613		
<i>P</i>	4.41	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1994 09 29	691	0.7−	0.0	1999 11 28	120	0.2−	1.4−
1994 09 29	691	0.4−	0.1+	1999 11 28	120	0.5−	0.7+
1994 09 29	691	0.8−	0.2−	1999 11 29	120	0.3+	0.9+
1994 10 06	691	1.0+	0.0	1999 11 29	120	1.2+	0.6+
1994 10 06	691	1.1+	0.1−	1999 11 30	120	1.3−	0.6−
1994 10 06	691	0.0	0.1−	1999 11 30	120	1.1+	0.0
1999 11 15	704	0.6+	0.1−	1999 12 07	704	0.0	0.4−
1999 11 15	704	0.1−	0.1+	1999 12 07	704	0.2−	0.8−
1999 11 15	704	0.2+	1.6+	1999 12 07	704	0.4−	0.3−
1999 11 15	704	0.6−	0.2+	1999 12 07	704	0.4−	0.4−
1999 11 15	704	0.3−	0.9+	1999 12 07	704	0.2−	0.5−

1999 WC₇ = 1998 KO₃₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 144.44063 (2000.0)			P		Q	
<i>n</i>	0.27902276	ω	198.00398	+0.37016859	+0.92338074	
<i>a</i>	2.3194034	Ω	93.82114	−0.83928640	+0.37935330	
<i>e</i>	0.1856808	<i>i</i>	5.85022	−0.39821296	+0.05881396	
<i>P</i>	3.53	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 05 22	704	0.2−	0.2+	1999 11 15	704	0.5−	0.3+	1999 12 07	704	0.8+	0.4−
1998 05 22	704	0.2−	1.1+	1999 11 15	704	0.2+	0.5−	1999 12 07	704	0.7+	0.1−
1998 05 22	704	0.0	0.1+	1999 11 17	704	0.2+	0.1+	1999 12 07	704	0.4−	0.8+
1998 05 22	704	0.1+	0.3+	1999 11 17	704	0.6+	0.1−	1999 12 07	704	0.0	0.7+
1998 05 22	704	1.3−	0.4−	1999 11 17	704	0.8−	0.2+	1999 12 07	704	0.5+	0.9+
1998 05 24	704	0.1+	0.0	1999 11 17	704	0.1+	0.5−	1999 12 13	120	1.3−	1.4−
1998 05 24	704	0.5+	0.2+	1999 11 28	120	0.2−	0.1+	1999 12 13	120	0.5+	1.4+
1998 05 24	704	1.2+	0.6−	1999 11 28	120	0.2−	0.0	1999 12 17	120	0.9+	0.2−
1998 05 24	704	(1.3− 2.5−)		1999 11 29	120	0.8−	0.1+	1999 12 17	120	0.5−	0.1+
1998 05 24	704	0.3−	1.1−	1999 11 29	120	1.0+	0.8−	2000 01 06	704	0.5+	0.1+
1999 11 15	704	0.9+	0.0	1999 11 29	120	1.4−	0.6+	2000 01 06	704	0.0	1.3−
1999 11 15	704	0.2−	0.2−	1999 11 30	120	0.3+	0.7−	2000 01 06	704	0.7−	0.6+
1999 11 15	704	0.0	0.2−	1999 11 30	120	(2.1+ 0.8−)					

1999 WO₇ = 1993 FD₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 348.60856 (2000.0)			P		Q	
<i>n</i>	0.25790310	ω	24.91071	−0.43752778	−0.89551324	
<i>a</i>	2.4443591	Ω	91.12465	+0.81076387	−0.43202353	
<i>e</i>	0.1515223	<i>i</i>	4.66977	+0.38888480	−0.10682559	
<i>P</i>	3.82	<i>H</i>	15.6	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1993 03 17	809	0.1+	0.1+	1999 11 28	120	0.3+	0.7+	1999 12 17	120	1.0−	0.1−
1993 03 18	809	0.2−	0.4−	1999 11 29	120	0.2+	1.1−	1999 12 17	120	1.2+	0.8+
1999 11 15	704	0.4+	0.5+	1999 11 29	120	0.5−	0.5−	2000 01 05	704	1.2−	0.1−
1999 11 15	704	0.4−	0.3+	1999 12 07	704	0.7−	0.2+	2000 01 05	704	0.5−	0.2+
1999 11 15	704	0.3+	0.2−	1999 12 07	704	0.3−	0.3+	2000 01 05	704	0.6+	0.6+
1999 11 15	704	0.3−	0.0	1999 12 07	704	0.3−	0.5+	2000 01 05	704	0.2−	1.0−
1999 11 15	704	0.6−	0.5−	1999 12 07	704	0.3−	0.5+	2000 01 06	704	0.5+	0.0
1999 11 17	704	0.2−	0.5−	1999 12 07	704	0.1+	0.7+	2000 01 06	704	0.4+	0.6−
1999 11 17	704	1.0+	0.3−	1999 12 08	704	(2.9− 0.2−)		2000 01 06	704	0.4+	0.2−
1999 11 17	704	0.6+	1.3−	1999 12 08	704	0.6+	0.2+	2000 01 06	704	0.0	0.1+
1999 11 17	704	0.9+	1.0−	1999 12 08	704	1.1−	0.5+	2000 01 06	704	0.4−	0.3−
1999 11 28	120	1.2+	0.4+	1999 12 08	704	0.6−	0.8+				

1999 WR₇ = 1997 GJ₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 329.95244 (2000.0)			P		Q	
<i>n</i>	0.25201122	ω	50.66078	−0.69634491	−0.71205874	
<i>a</i>	2.4823107	Ω	83.72558	+0.62753741	−0.66482984	
<i>e</i>	0.1121817	<i>i</i>	5.18712	+0.34828230	−0.22577342	
<i>P</i>	3.91	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1997 04 09	809	0.0	0.8+	1999 11 15	704	0.1+	1.5−	1999 12 07	704	0.3−	0.2−
1997 04 09	809	0.2+	0.4+	1999 11 17	704	0.1−	0.5+	1999 12 08	704	0.6−	0.3+
1997 04 09	809	0.0	0.1+	1999 11 17	704	0.1+	0.4+	1999 12 08	704	0.5−	0.0
1997 04 10	809	0.6−	1.5−	1999 11 17	704	0.2+	0.8+	1999 12 08	704	0.1−	0.3+
1997 04 10	809	0.0	0.8+	1999 11 17	704	0.5−	0.1−	1999 12 08	704	0.3−	0.0
1997 04 10	809	0.4+	0.5−	1999 11 17	704	1.2−	0.2+	1999 12 08	704	0.1+	0.3+
1998 08 17	704	1.0−	1.1−	1999 11 26	120	0.6+	0.2+	1999 12 17	120	0.0	1.7+
1998 08 17	704	0.4−	0.5+	1999 11 26	120	0.4+	0.2−	1999 12 17	120	1.5−	0.6+
1998 08 17	704	1.4+	1.4+	1999 11 28	120	1.1+	0.7+	2000 01 04	704	0.2+	0.1+
1998 08 17	704	0.0	0.8−	1999 11 28	120	0.7+	0.0	2000 01 04	704	0.0	0.1+

1999 11 03	704	0.4+	0.4−	1999 11 29	120	0.5+	0.2+	2000 01 04	704	0.1−	0.0
1999 11 03	704	0.0	0.3+	1999 11 29	120	0.3+	0.1−	2000 01 04	704	0.3+	0.4−
1999 11 03	704	0.5−	0.2−	1999 12 06	120	0.0	0.3+	2000 01 04	704	0.3+	0.8−
1999 11 03	704	0.7+	0.4+	1999 12 06	120	0.1+	0.9+	2000 01 06	704	0.5+	0.5−
1999 11 15	704	0.3+	0.7−	1999 12 07	704	0.3−	0.3+	2000 01 06	704	0.2+	0.6−
1999 11 15	704	0.3+	0.9−	1999 12 07	704	0.6−	0.3+	2000 01 06	704	0.0	0.5−
1999 11 15	704	0.2+	0.8−	1999 12 07	704	0.5−	0.1+	2000 01 06	704	0.1+	0.4−
1999 11 15	704	0.2+	0.8−	1999 12 07	704	0.2−	0.0	2000 01 06	704	0.1−	0.1−

1999 WW₇ = 1995 VE₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 42.73581 (2000.0)			P		Q	
<i>n</i>	0.24345013	ω	153.55101	+0.41525567	−0.90952630	
<i>a</i>	2.5401696	Ω	271.90902	+0.83141130	+0.38748087	
<i>e</i>	0.1224408	<i>i</i>	1.03297	+0.36921263	+0.15040108	
<i>P</i>	4.05	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1995 11 15	327	0.2−	0.1−	1999 12 06	120	0.8−	0.7−	1999 12 31	120	0.1−	0.2+
1995 11 15	327	0.5−	0.7−	1999 12 07	704	0.6−	0.2−	1999 12 31	120	0.4−	0.2−
1995 11 18	327	0.0	0.9−	1999 12 07	704	0.8+	1.3+	1999 12 31	120	0.3−	0.1−
1995 11 18	327	0.1−	0.4−	1999 12 07	704	0.6−	0.2+	2000 01 03	691	0.4−	0.2+
1995 11 18	327	0.3+	0.3−	1999 12 08	704	0.9+	0.3+	2000 01 03	691	0.4−	0.1+
1999 11 29	120	0.1+	0.3+	1999 12 08	704	0.4+	0.0	2000 01 03	691	0.3−	0.2+
1999 11 29	120	0.1+	0.4−	1999 12 08	704	0.1−	0.5+	2000 01 08	691	1.8+	0.9−
1999 11 30	120	0.4+	0.3+	1999 12 08	704	0.5+	0.0	2000 01 08	691	0.0	0.0
1999 11 30	120	0.3−	0.7+	1999 12 08	704	0.3−	0.2−	2000 01 08	691	0.0	0.2+
1999 12 05	120	(3.3+ 1.3+)		1999 12 31	120	0.1−	0.3+				

1999 WJ₉ = 1988 VN₂ = 1998 HO₁₃₅ = 1999 NE₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i> 35.69742 (2000.0)			P		Q	
<i>n</i>	0.26321343	ω	229.83011	+0.97282319	+0.20801758	
<i>a</i>	2.4113709	Ω	117.94165	−0.16152014	+0.92436172	
<i>e</i>	0.3117159	<i>i</i>	6.61082	−0.16591046	+0.31981885	
<i>P</i>	3.74	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 2	

Residuals in seconds of arc

1988 11 12	675	1.1+	2.3−	1999 11 10	704	0.1−	0.5−	1999 12 01	428	0.0	0.1+
1988 11 13	675	0.2+	1.2−	1999 11 10	704	0.2−	0.2−	1999 12 01	428	0.2−	0.0
1998 04 19	704	1.2−	0.1−	1999 11 10	704	0.7+	0.4+	1999 12 01	468	0.7−	0.1+
1998 04 19	704	0.4−	0.1+	1999 11 13	704	0.1−	1.4+	1999 12 01	468	0.8+	0.6+
1998 04 19	704	1.3+	0.2−	1999 11 13	704	0.5+	0.0	1999 12 02	104	0.1+	0.2−
1998 04 19	704	1.2+	0.5+	1999 11 13	704	0.2+	0.9+	1999 12 02	104	0.4−	0.3+
1998 04 20	704	0.2+	0.7+	1999 11 13	704	0.1+	0.6+	1999 12 02	104	0.4+	0.1−
1998 04 20	704	(0.0	2.7+)	1999 11 13	704	0.2−	0.7+	1999 12 02	104	0.2+	0.6+
1998 04 20	704	0.2−	0.6−	1999 11 27	699	0.9−	0.5−	1999 12 02	046	0.4+	0.5+
1998 04 20	704	0.8−	0.1+	1999 11 27	699	0.2−	0.2−	1999 12 02	046	0.8+	0.3+
1999 07 14	704	0.2+	0.1−	1999 11 27	699	0.8−	1.0−	1999 12 02	046	0.4+	0.0
1999 07 14	704	0.0	0.1−	1999 11 30	557	0.3−	0.1−	1999 12 02	557	0.1+	0.2+
1999 07 14	704	0.2−	0.4−	1999 11 30	046	0.3−	0.1+	1999 12 02	557	0.1−	0.3+
1999 07 14	704	0.1+	0.4−	1999 11 30	557	0.5+	0.1+	1999 12 02	557	0.3−	0.3+
1999 07 14	704	0.5−	0.5−	1999 11 30	046	0.7−	0.2+	1999 12 02	557	0.3−	0.4+
1999 07 16	704	0.3+	0.2−	1999 11 30	046	0.5−	0.1−	1999 12 02	587	0.4+	1.0−
1999 07 16	704	0.3+	0.2−	1999 11 30	046	0.8−	0.3+	1999 12 02	587	0.1−	0.0
1999 07 16	704	0.1+	0.3−	1999 11 30	557	0.3+	0.6+	1999 12 02	587	0.1−	0.5+
1999 11 10	704	0.1+	0.2+	1999 12 01	428	0.4−	1.0+				

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M.P.C. 37851

Residuals in seconds of arc

1998 05 01	699	1.0+	0.5+	1999 11 05	704	0.1+	0.9+	1999 12 01	132	1.7-	0.8-
1998 05 01	699	0.6-	1.8+	1999 11 05	704	0.1-	0.3+	1999 12 02	132	0.9-	0.6-
1998 05 01	699	0.4-	0.4+	1999 11 05	704	0.8-	0.6-	1999 12 05	704	0.3+	0.8-
1998 05 05	699	0.0	0.9-	1999 11 16	703	0.1+	0.1+	1999 12 05	704	0.0	0.1+
1998 05 05	699	0.3-	1.0-	1999 11 16	703	0.1-	1.1-	1999 12 05	704	0.8+	0.1+
1998 05 05	699	1.7+	0.6+	1999 11 16	703	0.3-	0.5+	1999 12 05	704	0.8+	1.0-
1998 05 23	704	0.0	0.5-	1999 11 16	703	0.0	1.1-	1999 12 05	704	0.3+	0.5-
1998 05 23	704	0.5-	0.6-	1999 11 29	132	0.7+	1.9+	1999 12 06	132	0.3-	0.6-
1998 05 23	704	1.0-	0.5-	1999 11 30	132	0.3-	0.6+	1999 12 06	132	0.8+	0.6+
1998 05 23	704	(1.5- 3.4+)		1999 11 30	132	0.2+	1.1+	1999 12 14	704	0.5-	0.0
1998 05 23	704	(0.4- 2.2-)		1999 12 01	132	0.2+	0.3-	1999 12 14	704	1.3+	0.3-
1999 11 05	704	0.3+	1.2+	1999 12 01	132	(2.5+ 0.5-)		1999 12 14	704	0.9-	0.3+

1999 WR₉ = 1999 XN₁₀₀ = 1998 VZ₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	304.52968	(2000.0)	P	Q	
<i>n</i>	0.15598533	ω 246.20620	-0.98405676	-0.13465828	
<i>a</i>	3.4178019	Ω 285.89059	+0.17180570	-0.88863862	
<i>e</i>	0.0900996	<i>i</i> 6.93847	-0.04599019	-0.43839315	
<i>P</i>	6.32	<i>H</i> 12.1	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 11 10	704	(1.3- 2.4-)	1999 12 02	411	0.4-	0.9-	1999 12 10	411	0.2+	0.5-
1998 11 10	704	(2.6- 0.2-)	1999 12 02	411	0.6-	0.6+	1999 12 25	411	0.4-	0.6-
1998 11 10	704	0.2+ 0.9+	1999 12 07	704	0.6+	0.0	1999 12 25	411	1.2+	0.2+
1998 11 10	704	(5.6- 0.9-)	1999 12 07	704	0.3+	0.1+	1999 12 28	739	0.1-	0.3-
1998 11 16	704	0.7+	1999 12 07	704	0.4+	0.1+	1999 12 28	739	0.0	0.3-
1998 11 16	704	1.0-	1999 12 07	704	0.4+	0.0	2000 01 03	704	0.4-	0.5+
1998 11 16	704	0.2+	1999 12 07	704	0.2+	0.2+	2000 01 03	704	0.2-	0.1+
1998 11 16	704	0.1-	1999 12 10	704	0.0	0.3+	2000 01 03	704	0.1-	0.1-
1999 11 16	704	1.1+	1999 12 10	704	0.1+	0.2+	2000 01 04	704	0.1-	0.1-
1999 11 16	704	0.3+	1999 12 10	704	0.1-	0.8+	2000 01 04	704	0.1+	0.1+
1999 11 16	704	1.5-	1999 12 10	704	0.2+	0.7+	2000 01 04	704	0.1+	0.0
1999 11 30	411	0.6-	1999 12 10	704	0.1-	0.1-	2000 01 04	704	0.2-	0.3-
1999 11 30	411	0.2-	1999 12 10	411	0.5-	1.4+	2000 01 04	704	0.2+	0.1-

1999 WV₉ = 1978 WP₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	56.72480	(2000.0)	P	Q	
<i>n</i>	0.19040473	ω 324.30785	+0.71322550	-0.67442370	
<i>a</i>	2.9923856	Ω 79.29358	+0.67972593	+0.59897844	
<i>e</i>	0.1001382	<i>i</i> 11.20578	+0.17112000	+0.43171461	
<i>P</i>	5.18	<i>H</i> 11.9	<i>G</i> 0.15	<i>U</i> 1	

Residuals in seconds of arc

1978 11 29	675	0.7-	0.8+	1999 11 03	704	0.8+	0.4+	1999 12 15	704	0.2-	0.0
1978 11 30	675	0.3+	0.1+	1999 11 03	704	0.6+	0.2+	1999 12 25	411	1.0-	0.2-
1998 06 29	704	0.5+	0.4+	1999 11 03	704	1.5+	0.3+	1999 12 25	411	0.2-	0.3+
1998 06 29	704	1.2-	0.4-	1999 11 16	704	0.4+	0.5-	2000 01 01	849	0.1+	0.1-
1998 06 29	704	0.8-	1.2+	1999 11 16	704	0.4+	0.0	2000 01 01	849	0.4+	0.3+
1998 06 29	704	0.4+	0.1+	1999 11 16	704	1.3+	0.6+	2000 01 01	849	0.3-	0.7+
1998 06 29	704	0.8+	0.7-	1999 11 16	704	1.2+	0.8+	2000 01 03	704	0.3-	0.7-
1998 06 29	704	1.3-	0.7+	1999 11 16	704	0.2-	1.5+	2000 01 03	704	0.0	0.4-
1998 06 29	704	(0.7+ 2.1-)		1999 11 30	411	0.5+	1.2+	2000 01 03	704	0.4+	0.2-
1998 06 29	704	(0.4- 2.4+)		1999 11 30	411	0.3+	0.8+	2000 01 03	704	0.3+	1.0-
1998 09 22	699	0.9+	0.2+	1999 12 02	411	0.4+	1.1-	2000 01 04	704	0.5-	0.2-
1998 09 22	699	0.7+	0.1-	1999 12 02	411	0.2+	0.9-	2000 01 04	704	0.2-	0.2-
1998 09 22	699	0.6+	0.2+	1999 12 10	704	1.3+	0.3-	2000 01 04	704	0.2-	0.2-
1998 09 22	699	0.4+	0.1-	1999 12 10	704	0.4-	0.5-	2000 01 04	704	0.6+	0.4-
1998 09 22	699	0.4+	0.7+	1999 12 10	704	0.4+	0.1+	2000 01 04	704	0.1+	0.8-
1998 09 22	699	0.8+	0.2-	1999 12 10	704	0.4+	0.4-	2000 01 06	106	0.1-	0.3+
1998 12 08	704	0.2-	0.8-	1999 12 10	704	0.4+	0.4-	2000 01 06	106	0.1-	0.3+
1998 12 08	704	1.7-	0.5-	1999 12 10	411	0.4+	0.1-	2000 01 06	106	0.1-	0.2+
1998 12 08	704	0.7-	0.6+	1999 12 10	411	0.1+	0.1-	2000 01 08	704	0.6-	0.5-
1998 12 08	704	0.2+	1.0-	1999 12 15	704	0.5-	0.6-	2000 01 08	704	0.6-	0.3-

1998 12 08	704	1.4-	1.7-	1999 12 15	704	0.6-	0.2+	2000 01 08	704	0.6-	0.0
1999 11 03	704	0.3-	0.4-	1999 12 15	704	0.6-	2.0+	2000 01 08	704	0.6-	0.1-
1999 11 03	704	0.9+	0.1-	1999 12 15	704	1.8-	0.1+	2000 01 08	704	0.8-	0.1+

1999 WC₁₀ = 1998 SK₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	358.84472	(2000.0)	P	Q	
<i>n</i>	0.16983515	ω 73.13472	-0.42961131	-0.90140303	
<i>a</i>	3.2293690	Ω 42.43923	+0.79511035	-0.40590290	
<i>e</i>	0.1729924	<i>i</i> 4.58254	+0.42805800	-0.15071635	
<i>P</i>	5.80	<i>H</i> 13.6	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1992 09 03	809	(33.0+ 13.5+)	1999 11 30	411	(0.4- 3.5+)	2000 01 04	704	0.2-	0.2-
1992 09 23	809	(31.6+ 11.6+)	1999 12 02	411	0.3+ 0.8-	2000 01 04	704	0.3-	0.0
1992 09 23	809	(29.8+ 11.5+)	1999 12 02	411	0.9+ 0.0	2000 01 04	704	0.3-	0.5+
1992 09 23	809	(29.4+ 11.4+)	1999 12 10	704	0.0 0.2-	2000 01 04	704	1.1+	1.1+
1998 09 26	704	0.6+ 0.7-	1999 12 10	704	0.0 0.3+	2000 01 04	704	(0.6- 2.6+)	
1998 09 26	704	(2.9+ 1.9-)	1999 12 10	704	0.6- 0.6-	2000 01 06	704	0.3-	0.0
1998 09 26	704	0.3+ 0.3+	1999 12 10	704	0.7- 0.1+	2000 01 06	704	0.1-	0.1+
1998 09 26	704	0.0 1.0+	1999 12 10	411	1.3- 0.8-	2000 01 06	704	1.2+	0.3+
1998 09 27	704	0.7- 0.1-	1999 12 10	411	0.0 0.4+	2000 01 08	704	0.4-	0.2-
1998 09 27	704	1.4- 0.1-	1999 12 15	704	0.3+ 0.0	2000 01 08	704	0.0	0.5-
1998 09 27	704	0.2- 0.4+	1999 12 15	704	0.1+ 0.4+	2000 01 08	704	0.1-	0.5-
1998 09 27	704	0.2- 0.3-	1999 12 15	704	0.8+ 0.7+	2000 01 08	704	0.1-	0.3-
1998 09 27	704	1.5+ 0.4-	1999 12 15	704	0.0 0.1+	2000 01 08	704	0.3-	0.3-
1999 11 30	411	(2.5- 1.7+)	1999 12 15	704	0.1- 0.4+				

1999 WA₁₂ = 1996 BP₁₂

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	5.64799	(2000.0)	P	Q	
<i>n</i>	0.21107021	ω 5.26593	+0.04882551	-0.99440512	
<i>a</i>	2.7937321	Ω 81.95884	+0.91289948	+0.00637749	
<i>e</i>	0.0648436	<i>i</i> 5.42845	+0.40525375	+0.10544093	
<i>P</i>	4.67	<i>H</i> 15.1	<i>G</i> 0.15	<i>U</i> 5	

Residuals in seconds of arc

1996 01 24	691	0.3-	0.1-	1999 11 28	691	0.3-	0.3+	1999 12 07	704	0.1+	0.4-
1996 01 24	691	0.3+	0.3+	1999 12 03	691	0.0	0.3+	1999 12 08	704	0.2-	0.2-
1996 01 24	691	0.4+	0.2+	1999 12 03	691	0.3-	0.0	1999 12 08	704	0.3+	0.0
1996 01 29	691	0.0	0.1-	1999 12 03	691	0.5+	0.1+	1999 12 08	704	0.2+	0.6-
1996 01 29	691	0.1-	0.0	1999 12 07	704	0.1-	0.1-	1999 12 08	704	0.5+	0.4-
1996 01 29	691	0.3-	0.3-	1999 12 07	704	0.1+	0.2+	1999 12 08	704	0.3+	0.0
1999 11 28	691	1.7+	0.0	1999 12 07	704	0.5-	0.9+				
1999 11 28	691	0.3-	0.1+	1999 12 07	704	0.9-	0.1-				

1999 WB₁₃ = 1998 MV₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams		
<i>M</i>	228.65107	(2000.0)	P	Q	
<i>n</i>	0.27856253	ω 79.21240	-0.72005889	+0.69074642	
<i>a</i>	2.3219574	Ω 144.42079	-0.67280568	-0.67161379	
<i>e</i>	0.0749399	<i>i</i> 6.53483	-0.16984616	-0.26796325	
<i>P</i>	3.54	<i>H</i> 14.7	<i>G</i> 0.15	<i>U</i> 4	

Residuals in seconds of arc

1998 06 24	704	0.2-	1.4-	1998 06 27	809	0.7-	0.7+	1999 12 02	132	0.6-	0.8-
1998 06 24	704	0.8+	0.1+	1998 06 27	809	0.0	0.8+	1999 12 05	504	0.5+	0.0
1998 06 24	704	0.4+	0.0	1999 11 05	704	0.1-	0.1-	1999 12 05	504	1.8+	0.7-
1998 06 24	704	0.0	0.7-	1999 11 05	704	0.4+	0.2-	1999 12 05	504	0.4+	0.6-
1998 06 24	704	1.0-	0.1+	1999 11 05	704	0.2-	0.3-	1999 12 06	132	1.4-	1.4+
1998 06 26	809	0.2	0.1+	1999 11 05	704	0.3+	0.7+	1999 12 06	132	0.7-	1.4+
1998 06 26	809	0.5-	1.2+	1999 11 16	703	0.8-	0.1+	1999 12 14	704	0.2-	0.6+
1998 06 26	809	0.5	0.2+	1999 11 16	703	1.3+	0.1+	1999 12 14	704	0.9+	0.1+
1998 06 26	704	0.7-	0.8-	1999 11 16	703	0.2+	0.3+	1999 12 14	704	1.1+	0.3+

1998 06 26	704	1.4+	0.2−	1999 11 16	703	0.1+	0.2+	2000 01 05	704	0.1+	0.4+
1998 06 26	704	(2.1+	1.9−)	1999 11 29	132	1.4−	1.0−	2000 01 05	704	0.7+	0.1+
1998 06 26	704	(0.8+	2.5−)	1999 11 30	132	0.2+	0.5−	2000 01 05	704	1.1−	0.4+
1998 06 26	704	0.8+	1.1−	1999 11 30	132	1.0−	1.3−	2000 01 05	704	0.1+	0.2+
1998 06 27	809	0.4+	1.4+	1999 12 01	132	0.5−	0.5−	2000 01 05	704	0.2−	0.4+

1999 WE₁₃ = 1996 XG₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	85.69349	ω		94.64834		+0.91481106		+0.40104758							
<i>a</i>	2.3476086	Ω		241.71454		−0.38872505		+0.84220494							
<i>e</i>	0.1319354	<i>i</i>		3.10939		−0.10960643		+0.36034937							
<i>P</i>	3.60	<i>H</i>		16.8		<i>G</i>	0.15	<i>U</i>		4					

Residuals in seconds of arc

1996 12 12	691	0.3−	0.3−	1999 11 10	691	0.0	0.1+	1999 11 16	704	0.0	0.9+
1996 12 12	691	0.3+	0.1+	1999 11 10	691	0.1+	0.1−	1999 11 30	691	0.0	0.3+
1996 12 12	691	0.0	0.2+	1999 11 14	704	0.4+	0.4−	1999 11 30	691	0.2+	0.6+
1996 12 17	691	0.3−	0.1−	1999 11 14	704	0.5+	0.7−	1999 11 30	691	0.3+	0.6+
1996 12 17	691	0.1+	0.1+	1999 11 14	704	1.8−	0.7+	1999 12 04	691	0.2−	0.0
1996 12 17	691	0.1+	0.1−	1999 11 14	704	0.2+	1.5−	1999 12 04	691	0.4−	0.1+
1999 10 06	704	0.2−	0.3+	1999 11 14	704	0.2+	0.2−	1999 12 04	691	0.1−	0.2+
1999 10 06	704	0.9−	0.1−	1999 11 14	691	0.2+	0.2+	1999 12 07	691	0.3+	0.3−
1999 10 06	704	0.3+	0.1−	1999 11 14	691	0.3+	0.1+	1999 12 07	691	0.2+	0.3−
1999 10 06	704	0.1−	0.2−	1999 11 14	691	0.3+	0.0	1999 12 07	691	0.2+	0.2−
1999 10 06	704	0.8+	0.0	1999 11 16	704	0.7−	0.4+				
1999 11 10	691	0.0	0.1−	1999 11 16	704	0.1+	0.3−				

1999 WH₁₃ = 1995 WY₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	107.60732	ω		88.26790		+0.73642897		+0.67561557							
<i>a</i>	2.5402445	Ω		229.22824		−0.63755963		+0.67586258							
<i>e</i>	0.0852242	<i>i</i>		2.63913		−0.22625228		+0.29453924							
<i>P</i>	4.05	<i>H</i>		16.2		<i>G</i>	0.15	<i>U</i>		6					

Residuals in seconds of arc

1995 11 16	691	0.1+	0.0	1999 11 09	704	0.1−	0.2+	1999 11 14	691	0.1+	0.1−
1995 11 16	691	0.2+	0.2−	1999 11 10	691	0.0	0.0	1999 11 14	691	0.0	0.1−
1995 11 16	691	0.4−	0.0	1999 11 10	691	0.0	0.0	1999 11 14	691	0.1−	0.0
1995 11 19	691	0.5+	0.4−	1999 11 10	691	0.2−	0.1+	1999 11 30	691	0.5+	0.5+
1995 11 19	691	0.1−	0.2−	1999 11 12	704	0.3−	0.5+	1999 11 30	691	0.5+	0.7+
1995 11 19	691	0.1−	0.5−	1999 11 12	704	0.1+	0.3−	1999 11 30	691	0.5+	0.2+
1999 11 09	704	0.3+	0.3−	1999 11 12	704	0.2−	0.6+	1999 12 04	691	0.3−	0.3−
1999 11 09	704	0.1−	0.5−	1999 11 12	704	1.0−	0.0	1999 12 04	691	0.1+	0.6+
1999 11 09	704	0.4+	0.4+	1999 11 12	704	0.7−	1.0−	1999 12 04	691	0.2+	0.4+

1999 WK₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	48.35115	ω		312.36908		+0.73170371		−0.39956398							
<i>a</i>	1.8438723	Ω		78.58627		+0.66080517		+0.61451932							
<i>e</i>	0.3633674	<i>i</i>		34.28929		−0.16717122		+0.68023130							
<i>P</i>	2.50	<i>H</i>		17.2		<i>G</i>	0.15	<i>U</i>		2					

Residuals in seconds of arc

1979 11 18	413	0.4−	1.4+	1999 12 05	704	0.7−	0.4+	1999 12 13	670	0.5+	0.6−
1979 11 18	413	0.4−	0.8−	1999 12 05	670	0.6−	0.5+	1999 12 13	670	0.4−	0.2+
1999 11 30	704	0.7−	0.3+	1999 12 05	704	(1.4−	2.7+)	1999 12 13	108	0.0	1.7−
1999 11 30	704	0.0	0.8+	1999 12 05	670	0.6−	0.6+	1999 12 13	108	(0.3+	2.3−)
1999 11 30	704	0.1+	0.8+	1999 12 05	719	0.7−	0.1+	1999 12 13	108	(1.4+	2.1−)
1999 11 30	704	0.4−	0.7+	1999 12 05	719	0.4+	0.5−	1999 12 13	118	0.2−	0.1+
1999 11 30	704	0.0	1.0+	1999 12 05	046	0.2+	0.6+	1999 12 13	118	0.2−	0.0
1999 11 30	046	0.3+	0.0	1999 12 05	046	0.2+	0.4+	1999 12 14	704	0.4+	0.5−
1999 11 30	046	0.3+	0.1+	1999 12 05	046	0.0	0.5+	1999 12 14	704	0.0	0.4−

1999 11 30	046	0.5+	0.3+	1999 12 05	046	0.2+	0.3+	1999 12 14	704	0.3+	0.5−
1999 11 30	046	0.2+	0.7−	1999 12 05	046	0.0	0.6+	1999 12 14	704	0.0	0.2−
1999 11 30	557	0.1−	0.5+	1999 12 05	595	0.7−	0.6+	1999 12 14	704	0.0	0.2+
1999 11 30	557	0.3−	0.4+	1999 12 05	595	0.8−	0.4+	1999 12 14	699	(0.6+	2.6−)
1999 11 30	557	0.2−	0.2+	1999 12 05	595	1.0−	0.6+	1999 12 14	699	(0.6+	3.0−)
1999 11 30	557	0.1−	0.1−	1999 12 05	595	0.7−	0.4+	1999 12 14	699	(0.8+	2.4−)
1999 12 01	704	0.4+	0.0	1999 12 05	952	(1.6+	3.3−)	1999 12 14	670	0.3+	1.0−
1999 12 01	704	0.7+	0.2+	1999 12 05	952	(1.2+	3.0−)	1999 12 14	670	1.0−	0.6+
1999 12 01	704	0.1+	0.2−	1999 12 05	952	(1.7+	2.8−)	1999 12 16	402	0.4−	0.5−
1999 12 01	704	0.5+	0.3−	1999 12 05	952	(2.0+	3.4−)	1999 12 16	402	0.0	0.3−
1999 12 01	428	0.1+	0.2+	1999 12 05	952	(2.0+	2.9−)	1999 12 16	402	0.1−	0.0
1999 12 01	428	0.5+	0.9−	1999 12 05	952	(1.7+	2.8−)	1999 12 17	670	0.5+	0.2+
1999 12 01	428	(1.5+	2.5−)	1999 12 06	704	0.7−	0.5+	1999 12 17	670	0.6+	0.4+
1999 12 01	428	0.0	0.6+	1999 12 06	704	0.9−	0.2+	1999 12 17	118	0.0	0.1+
1999 12 01	428	0.0	0.4−	1999 12 06	726	1.2−	0.3+	1999 12 17	118	0.3−	0.5+
1999 12 02	587	0.5+	0.2+	1999 12 06	726	1.0−	0.3−	1999 12 21	670	0.2−	0.1+
1999 12 02	587	0.1+	0.1+	1999 12 06	726	1.0−	0.2−	1999 12 21	670	0.1−	0.0
1999 12 02	587	0.3+	0.4+	1999 12 06	704	0.8−	0.7+	1999 12 21	670	0.7−	0.3−
1999 12 02	557	0.4+	0.0	1999 12 06	726	0.9−	1.0−	1999 12 21	118	0.0	0.1+
1999 12 02	557	0.5+	0.1−	1999 12 06	704	0.8−	0.7+	1999 12 21	118	0.8−	0.0
1999 12 02	557	0.3+	0.2−	1999 12 06	704	0.8−	0.1+	1999 12 22	726	0.0	0.1−
1999 12 02	557	0.2+	0.0	1999 12 06	108	1.5−	0.7+	1999 12 22	726	0.8+	1.7+
1999 12 02	046	0.5+	0.2+	1999 12 06	108	(1.4−	2.0+)	1999 12 22	726	0.7−	0.1+
1999 12 02	046	0.1+	0.8+	1999 12 06	108	(2.0−	0.7−)	1999 12 22	726	0.3+	0.3+
1999 12 02	046	0.5+	0.6+	1999 12 06	108	0.5+	1.1+	1999 12 22	726	0.9−	1.2+
1999 12 02	046	0.4+	0.8+	1999 12 06	108	0.6+	0.1−	1999 12 22	726	0.2+	0.5−
1999 12 03	747	0.3+	0.2−	1999 12 07	108	1.1+	0.7+	1999 12 22	402	0.5+	0.4+
1999 12 03	747	0.5+	0.5+	1999 12 07	108	1.7+	0.2+	1999 12 22	402	0.7+	0.4−
1999 12 03	747	0.5+	0.4+	1999 12 07	108	0.4−	0.4−	1999 12 22	118	0.2−	0.0
1999 12 03	704	0.4+	0.8−	1999 12 07	108	1.8+	0.1+	1999 12 22	118	0.3−	0.2+
1999 12 03	711	0.1−	1.4−	1999 12 08	402	0.2+	0.0	1999 12 24	670	0.3−	0.4+
1999 12 03	711	0.6+	0.7−	1999 12 08	402	0.3+	0.1−	1999 12 24	670	0.0	0.1−
1999 12 03	711	0.7+	0.8−	1999 12 08	402	0.2+	0.0	1999 12 24	348	0.0	0.0
1999 12 03	704	0.5+	0.5−	1999 12 08	118	0.1+	0.1+	1999 12 24	348	0.6+	0.3+
1999 12 03	704	0.6+	0.7−	1999 12 08	118	0.1+	0.0	1999 12 25	355	0.2−	0.3+
1999 12 03	704	0.3+	1.0−	1999 12 08	118	0.0	0.3+	1999 12 25	355	0.4−	0.1+
1999 12 03	719	1.8+	1.4+	1999 12 09	703	0.1−	1.0+	1999 12 29	360	0.7+	0.0
1999 12 03	704	0.2+	0.9−	1999 12 09	703	0.1−	1.0+	1999 12 29	360	0.6+	0.1+
1999 12 03	719	0.2−	1.2−	1999 12 09	703	0.1−	1.0+	1999 12 29	360	0.5+	0.3+
1999 12 03	719	0.4−	0.3−	1999 12 09	703	0.3−	1.2+	1999 12 31	699	0.3+	0.9−
1999 12 03	719	0.4−	0.7−	1999 12 11	670	0.5−	1.2−	1999 12 31	699	0.1+	1.1−
1999 12 03	428	0.0	0.9−	1999 12 11	670	0.2−	0.6−	1999 12 31	699	0.4−	1.1−
1999 12 03	428	0.4−	1.1−	1999 12 11	670	0.4−	1.1−	2000 01 02	704	0.1−	0.4+
1999 12 03	428	0.0	1.8−	1999 12 11	046	0.7+	0.4−	2000 01 02	704	0.4+	0.8+
1999 12 03	428	0.5−	0.9−	1999 12 11	046	0.1−	0.2+	2000 01 02	704	0.5+	0.7+
1999 12 04	428	(0.9+	2.8−)	1999 12 11	046	1.5+	0.1+	2000 01 02	704	1.0+	0.4+
1999 12 04	428	0.3+	1.6−	1999 12 11	046	0.0	0.1−	2000 01 02	704	1.2+	0.4+
1999 12 04	428	0.2+	0.9−	1999 12 12	726	1.1−	0.2−	2000 01 05	118	0.4−	0.0
1999 12 04	428	0.4+	1.4−	1999 12 12	726	0.8+	0.7−	2000 01 05	118	0.1−	0.3+
1999 12 05	704	0.8−	0.5+	1999 12 12	726	0.1−	0.6−	2000 01 05	118	0.3−	0.1+
1999 12 05	704	0.7−	0.3+	1999 12 12	726	0.3−	0.1−	2000 01 09	049	0.1−	0.5−
1999 12 05	704	0.6−	0.4+	1999 12 12	726	0.6−	0.1+	2000 01 09	049	0.3−	0.4−
1999 12 05	670	0.3−	0.3+	1999 12 12	726	0.5+	0.1−	2000 01 09	049	0.2−	0.3−

2000 JAN. 24

M.P.C. 37853

1995 10 26	691	0.0	0.1+	1999 11 12	704	0.5-	0.9+	1999 12 05	691	0.2-	0.0
1995 10 26	691	0.0	0.2-	1999 11 12	704	1.0-	1.2+				
1999 11 09	704	1.5+	1.7-	1999 11 28	691	0.2+	0.2+				

1999 WU₁₄ = 1995 SJ₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	275.35448	(2000.0)		P		Q	
<i>n</i>	0.27488811	ω	107.05191	-0.99766581		-0.05849830	
<i>a</i>	2.3426033	Ω	69.60562	+0.03898499		-0.91147139	
<i>e</i>	0.0862887	<i>i</i>	2.15379	+0.05606339		-0.40718283	
<i>P</i>	3.59	<i>H</i>	17.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 09 19	691	0.1-	0.3-	1995 09 30	691	0.1+	0.2+	1999 11 28	691	0.6-	0.0
1995 09 19	691	1.0+	0.1-	1995 09 30	691	0.1+	0.2-	1999 11 28	691	0.2-	0.1-
1995 09 19	691	0.5-	0.3-	1995 09 30	691	0.3-	0.1+	1999 11 28	691	0.1-	0.2-
1995 09 25	691	0.6-	0.4+	1999 11 17	691	0.1+	0.2-	1999 12 05	691	0.4+	0.3-
1995 09 25	691	0.3+	0.0	1999 11 17	691	0.1+	0.3+	1999 12 05	691	0.2+	0.3+
1995 09 25	691	0.1+	0.2+	1999 11 17	691	0.2+	0.1-	1999 12 05	691	0.3-	0.2+

1999 WV₁₆ = 1995 WS₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	15.08560	(2000.0)		P		Q	
<i>n</i>	0.23206294	ω	181.69980	+0.76477549		-0.64423751	
<i>a</i>	2.6226008	Ω	218.41334	+0.59129677		+0.70719148	
<i>e</i>	0.1284655	<i>i</i>	0.80651	+0.25590345		+0.29127007	
<i>P</i>	4.25	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 19	691	0.1-	0.0	1999 11 09	704	0.4-	0.8+	1999 11 30	691	0.0	0.1+
1995 11 19	691	0.1+	0.1-	1999 11 09	704	0.0	0.6+	1999 11 30	691	0.6-	0.5+
1995 11 19	691	0.2-	0.2-	1999 11 09	704	0.1+	0.2-	1999 11 30	691	0.1+	0.1+
1995 11 27	691	0.0	0.0	1999 11 09	704	0.3-	0.0	1999 12 05	691	0.1+	0.3+
1995 11 27	691	0.1+	0.0	1999 11 12	704	0.7+	0.7-	1999 12 05	691	0.1-	0.2+
1995 11 27	691	0.2+	0.1-	1999 11 12	704	0.9+	0.6-	1999 12 05	691	0.0	0.1+
1999 11 09	704	0.5+	1.1-	1999 11 12	704	1.0-	0.1+				

1999 WY₁₇ = 1995 SS₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	353.72782	(2000.0)		P		Q	
<i>n</i>	0.25715295	ω	243.82123	-0.04816303		-0.99882214	
<i>a</i>	2.4491105	Ω	208.94122	+0.92070570		-0.04210934	
<i>e</i>	0.1532149	<i>i</i>	0.69711	+0.38727424		-0.02410694	
<i>P</i>	3.83	<i>H</i>	17.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 09 19	691	0.1-	0.0	1999 11 09	704	0.2-	1.3+	1999 11 17	691	0.0	0.5+
1995 09 19	691	0.0	0.1+	1999 11 12	704	0.0	0.0	1999 11 30	691	0.1+	0.0
1995 09 19	691	0.0	0.2+	1999 11 12	704	0.0	0.1+	1999 11 30	691	0.4+	0.0
1995 09 24	691	0.1+	0.3-	1999 11 12	704	0.1-	0.1+	1999 11 30	691	0.2+	0.0
1995 09 24	691	0.1+	0.3-	1999 11 12	704	0.4+	0.4-	1999 12 06	691	0.4+	0.1-
1995 09 24	691	0.2+	0.2-	1999 11 12	704	0.5-	0.4-	1999 12 06	691	0.5+	0.3-
1999 11 06	691	0.3+	0.1-	1999 11 12	691	0.0	0.2-	1999 12 06	691	0.4+	0.2-
1999 11 06	691	0.2+	0.0	1999 11 12	691	0.2-	0.3-	1999 12 13	691	0.1-	0.4-
1999 11 06	691	0.2+	0.1+	1999 11 12	691	0.2-	0.3-	1999 12 13	691	0.4-	0.5-
1999 11 09	704	1.0-	0.1+	1999 11 17	691	0.1-	0.5+	1999 12 13	691	0.1-	0.4-
1999 11 09	704	0.0	0.7+	1999 11 17	691	0.1-	0.3+				

1999 WG₁₈ = 1998 LH

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	68.29062	(2000.0)		P		Q	
<i>n</i>	0.29482073	ω	309.95755	+0.95006334		-0.30919756	
<i>a</i>	2.2357884	Ω	68.09039	+0.29837041		+0.86050714	
<i>e</i>	0.0978781	<i>i</i>	2.60385	+0.09140434		+0.40487569	
<i>P</i>	3.34	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 06 01	809	0.8-	1.5+	1999 11 12	704	0.5-	0.6+	1999 12 08	704	0.4+	1.2+
1998 06 01	809	0.6-	2.2+	1999 11 12	704	0.6-	0.4+	1999 12 31	703	0.5-	0.9+
1998 06 01	809	0.1-	1.9+	1999 11 12	704	0.5-	0.8+	1999 12 31	703	0.4-	0.7+
1998 06 02	809	1.8+	1.7+	1999 11 28	120	1.2-	1.0+	1999 12 31	703	0.5-	0.5+
1998 06 02	809	0.9+	2.5+	1999 11 28	120	1.4-	1.1+	1999 12 31	703	0.3-	1.0+
1998 06 02	809	1.2+	2.4+	1999 12 06	120	1.3+	0.7+	2000 01 06	704	0.2-	0.0
1999 11 09	704	0.5+	0.4-	1999 12 06	120	1.2+	0.1+	2000 01 06	704	0.3-	0.6-
1999 11 09	704	0.2-	0.2-	1999 12 06	120	0.5+	0.3+	2000 01 06	704	0.1+	0.7-
1999 11 09	704	0.2-	0.1+	1999 12 08	704	2.0+	0.3+	2000 01 06	704	0.0	0.5+
1999 11 09	704	0.3-	0.2+	1999 12 08	704	0.7+	0.8+	2000 01 06	704	1.1-	0.4-
1999 11 09	704	0.8-	0.2+	1999 12 08	704	0.2-	1.2+				
1999 11 12	704	0.3-	0.5+	1999 12 08	704	0.1-	0.9+				

1999 WK₁₈ = 1992 OT₄ = 1996 GU = 1996 GW = 1998 RP₆₉Id. G. V. Williams, S. Nakano (d, *MPC* 31437)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	162.00781	(2000.0)		P		Q	
<i>n</i>	0.17840278	ω	150.69419	+0.14428473		+0.98917929	
<i>a</i>	3.1251315	Ω	127.58904	-0.91428659		+0.14353712	
<i>e</i>	0.1550814	<i>i</i>	1.92193	-0.37849961		+0.03035512	
<i>P</i>	5.52	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1992 07 26	809	0.3+	1.2-	1998 09 18	704	(2.8-	0.5-)	1999 12 06	120	0.2-	0.2+
1992 07 26	809	0.1+	1.5-	1998 09 18	704	(1.6-	2.5-)	1999 12 07	704	0.2+	0.3+
1992 07 26	809	(0.9-	2.5-)	1998 09 18	704	0.7-	1.7+	1999 12 07	704	0.7-	1.1+
1992 07 30	809	0.9+	1.7-	1998 10 14	699	0.3-	1.4+	1999 12 07	704	0.4+	1.0-
1992 07 30	809	1.1+	1.2-	1998 10 14	699	0.2+	0.4+	1999 12 07	120	0.8+	0.0
1992 07 30	809	0.2-	1.3-	1998 10 14	699	0.8+	0.4+	1999 12 07	120	0.3-	0.1-
1996 04 10	608	0.6-	1.0+	1999 11 09	704	0.2-	0.7-	1999 12 08	704	0.3+	0.2-
1996 04 10	608	0.7-	0.9+	1999 11 09	704	0.5-	0.7-	1999 12 08	704	0.1-	0.5-
1996 04 11	608	0.0	0.4-	1999 11 09	704	0.3-	0.7-	1999 12 08	704	0.7+	0.6-
1996 04 11	608	0.0	0.2-	1999 11 09	704	0.5-	1.3-	1999 12 08	704	0.1+	0.3-
1996 04 12	608	0.1-	0.0	1999 11 09	704	0.7-	1.5-	1999 12 08	704	0.0	0.3-
1996 04 12	608	0.1+	0.1+	1999 11 12	704	0.6-	0.6-	2000 01 05	704	0.0	0.8+
1996 04 14	608	0.4+	0.6-	1999 11 12	704	0.5-	0.3-	2000 01 05	704	0.3+	0.1+
1996 04 14	608	0.8+	0.5-	1999 11 12	704	0.4-	0.8-	2000 01 05	704	0.0	0.5+
1998 09 14	704	0.2+	1.0+	1999 11 12	704	0.7-	0.2-	2000 01 05	704	0.2-	0.4-
1998 09 14	704	0.1-	0.3-	1999 11 12	704	0.7-	0.1+	2000 01 06	704	0.2+	0.0
1998 09 14	704	0.5-	0.3+	1999 11 13	120	0.5-	0.0	2000 01 06	704	0.5+	0.1+
1998 09 17	699	0.6-	1.7+	1999 11 13	120	0.7+	0.2-	2000 01 06	704	0.3+	0.5+
1998 09 17	699	0.4-	0.3+	1999 11 29	120	0.5+	0.6+	2000 01 06	704	0.6+	0.4-
1998 09 17	699	0.2-	0.3+	1999 11 29	120	0.5+	0.2-	2000 01 06	704	0.1-	0.5-
1998 09 18	704	0.5-	0.4+	1999 12 06	120	(2.2-	0.0)				
1998 09 18	704	0.9-	0.2-	1999 12 06	120	1.5+	0.8+				

1999 WN₁₈ = 1998 HB₁₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	20.02737	(2000.0)		P		Q	
<i>n</i>	0.27342546	ω	249.01846	+0.92588441		-0.35064852	
<i>a</i>	2.3509501	Ω	131.21816	+0.37684730		+0.88366280	
<i>e</i>	0.2595815	<i>i</i>	10.77713	-0.02691039		+0.31013814	
<i>P</i>	3.60	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 04 23	704	0.3−	1.5−	1999 06 20	703	0.5−	0.5−	1999 11 13	704	0.9−	0.2+
1998 04 23	704	0.0	0.7−	1999 06 20	703	0.4−	0.1+	1999 11 13	704	0.5+	1.2−
1998 04 23	704	0.3+	0.2+	1999 07 16	704	1.5+	0.3−	1999 11 13	704	0.2+	0.1−
1998 04 23	704	1.1−	1.1−	1999 07 16	704	0.3+	0.1−	1999 11 13	704	0.1−	0.7−
1998 04 24	704	0.3−	1.1+	1999 07 16	704	1.1+	1.8−	1999 11 27	699	0.5−	0.4−
1998 04 24	704	0.6+	1.3+	1999 09 11	704	0.1−	0.2+	1999 11 27	699	0.1−	0.5−
1998 04 24	704	0.9−	1.0−	1999 09 11	704	0.0	0.2+	1999 11 27	699	0.4−	0.8−
1998 04 24	704	0.4−	1.2−	1999 09 11	704	0.4+	0.4+	1999 12 04	699	0.8+	0.1+
1998 04 24	704	1.1+	0.5+	1999 09 11	704	0.4+	0.7+	1999 12 04	699	1.2−	0.9−
1999 06 20	703	1.2−	0.7+	1999 09 11	704	0.1+	0.6+	1999 12 04	699	0.2−	0.5−
1999 06 20	703	1.6−	1.5+	1999 11 13	704	0.7+	0.0				

1999 WU₁₈ = 1993 FG₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams			<i>Q</i>		
144.11963			(2000.0)			<i>P</i>		
<i>n</i>	0.22816493	ω	215.24115	+0.09550820	+0.99485439			
<i>a</i>	2.6523864	Ω	60.26129	−0.90411868	+0.10090661			
<i>e</i>	0.1352467	<i>i</i>	2.23139	−0.41647040	+0.00908874			
<i>P</i>	4.32	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1990 09 28	675	0.5−	1.2+	1999 11 17	691	1.0−	0.0	1999 12 07	691	0.4+	0.0
1993 03 19	809	0.4+	0.6+	1999 11 30	691	0.2−	0.2−	1999 12 13	691	1.6+	0.2+
1993 03 20	809	0.2+	0.3−	1999 11 30	691	0.7−	0.0	1999 12 13	691	1.1+	0.0
1993 03 24	809	0.1−	0.9+	1999 11 30	691	0.3−	0.3−	1999 12 13	691	1.3+	0.3+
1999 11 17	691	1.0−	0.1+	1999 12 07	691	0.4+	0.1+				
1999 11 17	691	1.4−	0.1−	1999 12 07	691	0.1+	0.1+				

1999 XA = 1998 KE₄₂ = 1999 SO₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams			<i>Q</i>		
20.02563			(2000.0)			<i>P</i>		
<i>n</i>	0.26182825	ω	345.05521	+0.92547795	−0.35814437			
<i>a</i>	2.4198682	Ω	36.69649	+0.36527316	+0.75748947			
<i>e</i>	0.2456773	<i>i</i>	11.91563	+0.10032987	+0.54584091			
<i>P</i>	3.76	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1998 05 28	691	0.6+	1.0+	1999 11 09	699	0.8+	0.4+	1999 12 02	704	1.3−	0.4−
1998 05 28	691	0.6+	0.9+	1999 11 09	699	1.1+	0.2+	1999 12 02	704	0.5+	0.1+
1998 05 28	691	0.7+	1.0+	1999 11 10	704	0.7+	0.5+	1999 12 02	704	0.2+	0.5−
1998 06 01	691	0.3+	0.4+	1999 11 10	704	0.6+	0.3+	1999 12 02	704	1.2−	0.1−
1998 06 01	691	0.5+	0.8+	1999 11 10	704	1.0+	0.5+	1999 12 03	704	0.2−	0.1−
1998 06 01	691	0.3+	0.6+	1999 11 10	704	0.2+	0.2−	1999 12 03	704	0.2−	0.2+
1999 09 29	704	0.2−	1.0−	1999 11 10	704	0.4+	0.3+	1999 12 03	704	0.4−	0.3−
1999 09 29	704	0.8+	0.7−	1999 11 13	704	0.2+	0.5+	1999 12 03	704	0.4−	0.1+
1999 09 29	704	0.8−	0.5−	1999 11 13	704	0.4+	0.7+	1999 12 03	704	0.7−	0.2+
1999 09 29	704	0.8−	0.4+	1999 11 13	704	0.1+	0.7+	1999 12 03	704	0.7−	0.1−
1999 09 29	704	0.8−	0.1−	1999 11 13	704	0.1+	0.3+	1999 12 03	704	(1.4−	3.4+)
1999 09 30	704	0.5+	0.2−	1999 11 13	704	0.4+	0.4+	1999 12 03	704	0.6−	0.4−
1999 09 30	704	0.4+	0.0	1999 12 01	704	0.6−	0.3+	1999 12 03	704	0.8−	0.1−
1999 09 30	704	0.3+	0.4−	1999 12 01	704	0.6−	1.5+	1999 12 03	704	0.2−	0.2+
1999 09 30	704	0.7+	0.6−	1999 12 01	704	0.0	0.5+	1999 12 31	699	1.7−	0.8+
1999 09 30	704	0.0	0.8−	1999 12 01	704	0.0	0.6+	1999 12 31	699	1.7−	0.5+
1999 11 09	699	0.4+	0.6+	1999 12 01	704	0.5−	0.8+				

1999 XB = 1999 SV₈ = 1998 HP₈₀

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams			<i>Q</i>		
33.28349			(2000.0)			<i>P</i>		
<i>n</i>	0.22980429	ω	322.02086	+0.98006037	+0.14782429			
<i>a</i>	2.6397570	Ω	30.28983	−0.04112529	+0.80466587			
<i>e</i>	0.2060449	<i>i</i>	15.26301	−0.19439750	+0.57503114			
<i>P</i>	4.29	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1998 04 21	704	0.1+	0.4+	1999 09 29	704	0.5−	1.3+	1999 12 01	704	1.1−	0.8−
1998 04 21	704	1.2+	0.5+	1999 09 29	704	0.5−	0.1+	1999 12 01	704	1.8−	0.3+
1998 04 21	704	0.2+	0.3−	1999 09 29	704	0.1−	0.2−	1999 12 02	704	0.6−	0.1+
1998 04 21	704	0.5+	0.4−	1999 09 29	704	0.3−	0.5−	1999 12 02	704	0.0	0.2−
1998 04 21	704	0.9+	0.7−	1999 09 30	704	0.3+	0.1−	1999 12 02	704	0.6−	1.0+
1998 04 22	704	2.9−	1.5−	1999 09 30	704	0.6+	0.1−	1999 12 02	704	1.4+	1.2−
1998 04 22	704	0.8+	0.8+	1999 09 30	704	1.2+	0.9+	1999 12 03	704	0.7+	1.2−
1998 04 22	704	0.0	1.1+	1999 09 30	704	0.0	0.7−	1999 12 03	704	0.1+	0.1+
1998 04 22	704	0.7+	0.4+	1999 09 30	704	0.6+	0.7−	1999 12 03	704	0.6+	0.3+
1998 04 22	704	1.5−	0.4−	1999 12 01	704	1.4+	0.8+	1999 12 03	704	0.8−	0.3+
1999 09 29	704	1.3−	0.0	1999 12 01	704	0.6+	0.6+				

1999 XL = 1989 TM₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams			<i>Q</i>		
86.16304			(2000.0)			<i>P</i>		
<i>n</i>	0.19108751	ω	268.70119	+0.28088824	+0.95530492			
<i>a</i>	2.9852533	Ω	18.43325	−0.72306287	+0.27378840			
<i>e</i>	0.0678593	<i>i</i>	16.94635	−0.63109578	+0.11150081			
<i>P</i>	5.16	<i>H</i>	12.2	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1989 10 09	809	0.3−	0.5−	1999 09 30	704	0.6+	0.7−	1999 12 02	704	0.8−	0.4−
1989 10 09	809	0.1−	0.7−	1999 09 30	704	0.2−	0.4−	1999 12 02	704	0.6−	0.2−
1989 10 09	809	0.2+	0.6−	1999 09 30	704	0.3+	0.1+	1999 12 03	704	0.9−	0.3+
1989 10 10	809	0.4+	0.7−	1999 10 04	703	0.1+	0.2+	1999 12 03	704	0.2−	1.1−
1989 10 10	809	0.6+	0.6−	1999 10 04	703	0.0	0.3+	1999 12 03	704	0.6+	0.1+
1989 10 10	809	0.8+	0.5−	1999 10 04	703	0.2−	0.5+	1999 12 03	704	0.5−	0.5+
1994 11 01	033	0.4+	0.9+	1999 10 04	703	0.1−	0.3+	1999 12 03	704	0.1+	0.1+
1994 11 01	033	1.2+	0.7+	1999 11 08	704	0.1−	0.9+	1999 12 03	704	0.1−	0.3−
1999 09 07	699	0.4+	0.8+	1999 11 08	704	0.9+	0.2−	1999 12 03	704	0.1+	0.4−
1999 09 07	699	0.4+	0.4+	1999 11 08	704	0.5+	0.3+	1999 12 03	704	0.4+	0.1+
1999 09 07	699	0.4+	0.7+	1999 11 08	704	1.3+	0.2+	1999 12 03	704	0.2−	0.7+
1999 09 13	704	0.0	1.0−	1999 12 01	704	0.8−	0.2+	1999 12 03	704	0.4+	0.2+
1999 09 13	704	0.6−	0.4−	1999 12 01	704	0.0	0.1+	1999 12 09	703	1.4−	0.4+
1999 09 13	704	0.0	0.8−	1999 12 01	704	0.1−	0.1−	1999 12 09	703	0.8−	0.3−
1999 09 13	704	0.0	1.4−	1999 12 01	704	0.3−	0.7+	1999 12 09	703	0.6−	0.8+
1999 09 30	704	0.3+	0.1−	1999 12 01	704	1.0−	0.6+	1999 12 09	703	1.8−	1.0+
1999 09 30	704	0.4+	0.1−	1999 12 02	704	1.3−	0.3+				

1999 XW = 1982 YH₃ = 1983 AG

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>			Williams			<i>Q</i>		
44.98712			(2000.0)			<i>P</i>		
<i>n</i>	0.17177251	ω	325.67037	+0.67185457	−0.70614253			
<i>a</i>	3.2050411	Ω	80.99094	+0.72017067	+0.55224764			
<i>e</i>	0.1219511	<i>i</i>	13.08176	+0.17310590	+0.44315378			
<i>P</i>	5.74	<i>H</i>	12.1	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1982 12 22	095	2.0−	1.5+	1999 12 03	411	0.8+	1.1+	2000 01 03	704	0.2−	0.1+
1983 01 09	688	(3.5−	3.9−)	1999 12 07	704	0.2+	0.2+	2000 01 03	704	0.1−	0.0
1983 01 09	688	1.2+	1.1−	1999 12 07	704	0.1+	0.1−	2000 01 03	704	0.1+	0.3−
1983 01 09	688	1.9+	0.6−	1999 12 07	704	0.0	0.2+	2000 01 03	704	0.1−	0.5−
1983 01 09	688	1.1−	0.2+	1999 12 10	704	0.0	0.4−	2000 01 03	704	0.1+	0.3−
1999 11 16	704	0.1+	0.3−	1999 12 10	704	0.9+	0.8−	2000 01 04	704	0.0	0.1+
1999 11 16	704	0.1+	0.2−	1999 12 10	704	0.6−	0.3−	2000 01 04	704	0.4+	0.1−
1999 11 16	704	0.2+	0.3−	1999 12 10	704	0.6+	0.5−	2000 01 04	704	0.1+	0.2−
1999 11 16	704	0.2−	0.2−	1999 12 10	704	0.6+	0.6−	2000 01 04	704	0.2−	0.3+
1999 11 16	704	0.2−	0.1−	1999 12 11	411	0.1+	0.1−	2000 01 04	704	0.4−	0.2+
1999 12 02	411	1.1−	0.3+	1999 12 11	411	0.4−	0.1+	2000 01 06	106	0.0	0.5+
1999 12 02	411	1.4−	0.3+	1999 12 26	411	0.6+	0.1+	2000 01 06	106	0.5−	0.4+
1999 12 03	411	0.1+	1.0+	1999 12 26	411	0.3+	0.2−	2000 01 06	106	0.0	0.8+

2000 JAN. 24

M.P.C. 37855

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.26959839	ω	204.13148	ω	204.13148	Ω	301.94497	Ω	301.94497
<i>a</i>	2.3731463	Ω	301.94497	Ω	301.94497	i	3.56566	i	3.56566
<i>e</i>	0.1535857	i	3.56566	i	3.56566	G	0.15	G	0.15
<i>P</i>	3.66	H	13.7	H	13.7	U	3	U	3
Residuals in seconds of arc									
1982 01 20	095	0.5−	0.8−	1999 12 03	411	0.3−	0.3−	2000 01 03	704
1988 12 01	054	0.2+	1.0+	1999 12 10	704	0.2−	0.4−	2000 01 03	704
1993 02 19	511	1.2−	0.2−	1999 12 10	704	0.8+	0.8+	2000 01 03	704
1993 02 19	511	0.3+	1.0−	1999 12 10	704	0.1−	0.1−	2000 01 03	704
1993 02 19	511	(4.8−	0.1−)	1999 12 10	704	0.1−	0.2−	2000 01 04	704
1993 02 19	511	1.5+	0.7+	1999 12 10	704	0.0	0.1−	2000 01 04	704
1993 02 24	511	0.7−	0.8+	1999 12 11	411	0.0	0.3−	2000 01 04	704
1993 02 25	511	0.4+	0.5+	1999 12 11	411	0.2+	0.2−	2000 01 04	704
1999 12 02	411	0.1−	0.4−	1999 12 26	411	0.8−	0.9−	2000 01 04	704
1999 12 02	411	0.3−	0.5+	1999 12 26	411	0.5−	0.7−	2000 01 05	106
1999 12 03	411	0.4−	0.4−	2000 01 03	704	0.0	0.3+	2000 01 05	106

1999 XG₁ = 1994 NB₁₁ = 1998 SN₁₄

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.27107569	ω	134.56653	ω	134.56653	Ω	109.30552	Ω	109.30552
<i>a</i>	2.3645164	Ω	109.30552	Ω	109.30552	i	7.73958	i	7.73958
<i>e</i>	0.0723121	i	7.73958	i	7.73958	G	0.15	G	0.15
<i>P</i>	3.64	H	13.5	H	13.5	U	3	U	3
Residuals in seconds of arc									
1994 07 08	809	0.3+	0.6+	1999 12 02	411	(2.0−	4.2−)	1999 12 08	704
1994 07 08	809	0.8−	0.1+	1999 12 02	411	(1.8−	5.3−)	1999 12 08	704
1994 07 08	809	1.1−	0.2−	1999 12 03	411	0.9−	0.3−	1999 12 11	411
1994 07 09	809	0.7+	0.6+	1999 12 03	411	0.3+	1.2−	1999 12 11	411
1994 07 09	809	1.3+	1.0+	1999 12 07	704	0.9−	0.3−	1999 12 26	411
1994 07 09	809	0.5−	0.6+	1999 12 07	704	0.1−	0.1−	1999 12 26	411
1998 09 17	699	0.3−	0.1+	1999 12 07	704	0.0	0.0	2000 01 05	704
1998 09 17	699	0.2−	0.1−	1999 12 07	704	0.1−	0.3+	2000 01 05	704
1998 09 17	699	0.5−	0.2−	1999 12 07	704	0.0	0.0	2000 01 05	704
1998 09 22	699	0.9+	0.4+	1999 12 08	704	0.1−	0.1+	2000 01 05	704
1998 09 22	699	0.0	0.2+	1999 12 08	704	0.2−	0.2−		
1998 09 22	699	0.1+	0.6−	1999 12 08	704	0.1+	0.3−		

1999 XP₁ = 1975 VO₃ = 1991 RQ₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.24482451	ω	7.76312	ω	7.76312	Ω	59.60690	Ω	59.60690
<i>a</i>	2.5306541	Ω	59.60690	Ω	59.60690	i	6.46332	i	6.46332
<i>e</i>	0.1585049	i	6.46332	i	6.46332	G	0.15	G	0.15
<i>P</i>	4.03	H	13.8	H	13.8	U	4	U	4
Residuals in seconds of arc									
1975 11 02	095	(0.4−	5.1−)	1999 09 14	704	0.2−	0.1−	1999 12 03	704
1991 09 12	675	0.2−	1.8−	1999 10 02	704	0.3−	1.0+	1999 12 03	704
1991 09 12	675	0.6+	1.4−	1999 10 02	704	0.3+	1.2+	1999 12 03	704
1991 09 13	675	0.7+	1.4−	1999 10 02	704	0.8−	1.5+	1999 12 03	704
1991 09 13	675	(0.1+	2.2−)	1999 10 02	704	0.7−	0.6+	1999 12 03	704
1991 09 15	675	0.4+	0.3−	1999 10 02	704	0.2−	0.7+	1999 12 09	699
1991 09 15	675	0.4+	0.0	1999 11 17	704	0.2+	0.4−	1999 12 09	699
1991 09 16	675	0.2+	0.7−	1999 11 17	704	0.1+	0.4+	1999 12 09	699
1991 09 16	675	0.7+	0.6−	1999 11 17	704	(0.4+	2.9+)	2000 01 08	704
1999 09 14	704	0.1+	0.2−	1999 12 02	704	0.2−	0.1+	2000 01 08	704
1999 09 14	704	0.1−	0.1+	1999 12 02	704	0.1+	0.1−	2000 01 08	704
1999 09 14	704	0.3−	0.0	1999 12 02	704	0.1+	1.8+	2000 01 08	704
1999 09 14	704	0.3−	0.2+	1999 12 02	704	0.5+	0.3+	2000 01 08	704

1999 XA₂ = 1994 NR₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.23741812	ω	280.08992	ω	280.08992	Ω	113.06928	Ω	113.06928
<i>a</i>	2.5830143	Ω	113.06928	Ω	113.06928	i	14.18598	i	14.18598
<i>e</i>	0.1853429	i	14.18598	i	14.18598	G	0.15	G	0.15
<i>P</i>	4.15	H	14.0	H	14.0	U	4	U	4
Residuals in seconds of arc									
1994 07 11	809	0.3+	0.6+	1999 12 03	678	0.5−	0.2−	2000 01 05	106
1994 07 11	809	1.0+	0.8+	1999 12 03	704	0.4+	0.1+	2000 01 07	704
1994 07 11	809	1.2+	0.9+	1999 12 03	704	0.4+	0.3−	2000 01 07	704
1994 07 12	809	0.7−	0.4−	1999 12 03	704	0.7+	0.2+	2000 01 07	704
1994 07 12	809	0.4−	0.1+	1999 12 03	704	0.1−	0.1−	2000 01 07	704
1994 07 12	809	1.2−	1.0−	1999 12 03	704	0.3+	0.1−	2000 01 07	704
1999 11 17	699	1.0+	0.2−	1999 12 04	678	0.1−	0.5+	2000 01 11	704
1999 11 17	699	0.0	0.9−	1999 12 04	678	0.6−	0.4+	2000 01 11	704
1999 11 17	699	0.9+	0.5−	2000 01 04	699	0.4−	0.1+	2000 01 11	704
1999 12 02	699	0.9+	0.2−	2000 01 04	699	0.4−	0.1−	2000 01 11	704
1999 12 02	699	0.1+	0.1+	2000 01 04	699	0.8−	0.2+	2000 01 11	704
1999 12 02	699	0.3−	0.4+	2000 01 05	106	0.3+	0.9+		
1999 12 03	678	0.8−	0.1−	2000 01 05	106	0.3+	0.0		

1999 XR₂ = 1931 TT = 1975 RY

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.29023177	ω	53.94307	ω	53.94307	Ω	319.62469	Ω	319.62469
<i>a</i>	2.2592940	Ω	319.62469	Ω	319.62469	i	4.31654	i	4.31654
<i>e</i>	0.1716070	i	4.31654	i	4.31654	G	0.15	G	0.15
<i>P</i>	3.40	H	14.2	H	14.2	U	2	U	2
Residuals in seconds of arc									
1931 10 05	024	(2.5+	4.3−)	1999 10 03	704	0.1−	0.4−	1999 12 05	678
1931 10 07	024	1.6+	2.2−	1999 10 03	704	0.2+	0.4−	1999 12 06	704
1975 09 03	095	1.4−	0.3−	1999 10 03	704	0.2−	0.2−	1999 12 06	704
1975 09 06	095	(3.8−	2.1+)	1999 10 03	704	0.3−	0.2−	1999 12 06	704
1992 08 30	095	(3.5−	5.6+)	1999 10 28	703	0.0	0.4+	1999 12 06	704
1992 08 30	095	(4.0−	2.7+)	1999 10 28	703	0.3−	0.4+	1999 12 06	704
1998 04 25	699	0.3−	0.4−	1999 10 28	703	0.1−	0.3+	1999 12 30	699
1998 04 25	699	0.1+	0.9−	1999 10 28	703	0.0	0.4+	1999 12 30	699
1998 04 25	699	0.5−	0.6−	1999 11 04	704	0.3+	0.2+	2000 01 04	704
1998 05 01	704	0.2−	0.7−	1999 11 04	704	0.2+	0.2+	2000 01 04	704
1998 05 01	704	0.2−	0.7−	1999 11 04	704	0.2−	0.4+	2000 01 04	704
1998 05 01	704	0.6+	0.9+	1999 11 04	704	0.0	0.7+	2000 01 04	704
1998 05 01	704	0.2−	0.2+	1999 11 04	704	0.0	0.8+	2000 01 04	704
1999 07 23	704	0.1+	0.3+	1999 11 11	703	0.1+	0.3+	2000 01 06	704
1999 07 23	704	0.4+	0.3−	1999 11 11	703	0.1+	0.5+	2000 01 06	704
1999 07 23	704	0.7+	0.9+	1999 11 11	703	0.2+	0.3+	2000 01 06	704
1999 07 23	704	1.8+	1.0−	1999 11 11	703	0.0	0.3+	2000 01 06	704
1999 07 23	704	1.4+	0.3−	1999 12 03	699	0.4−	0.4+	2000 01 06	704
1999 09 05	703	1.3−	0.4−	1999 12 03	699	0.5−	0.3+	2000 01 09	704
1999 09 05	703	0.2−	0.6+	1999 12 03	699	0.0	0.2+	2000 01 09	704
1999 09 05	703	0.2−	0.6+	1999 12 04	678	1.6+	0.6−	2000 01 09	704
1999 09 05	703	0.2−	1.0+	1999 12 04	678	0.1−	0.0	2000 01 09	704
1999 10 03	704	0.7+	0.2−	1999 12 05	678	1.2−	1.2−	2000 01 09	704

1999 XS₂ = 1994 LK₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	205.12736	(2000.0)		P		Q	
n	0.25893355	ω	323.92953		-0.77952405		+0.58613883
a	2.4378697	Ω	253.44250		-0.50707696		-0.79753234
e	0.1845748	i	13.32207		-0.36771621		-0.14277056
P	3.81	H	12.9	G	0.15	U	3

Residuals in seconds of arc

1994 06 03	809	0.5−	0.9−	1999 10 28	703	0.5−	0.0	1999 12 08	704	0.1+	0.7−
1994 06 03	809	0.1+	1.5−	1999 11 03	704	0.2−	0.5−	1999 12 08	704	0.9−	0.0
1994 06 03	809	0.7−	1.0−	1999 11 03	704	0.4−	0.1−	1999 12 08	704	0.8+	0.0
1994 06 04	809	0.8+	0.6+	1999 11 03	704	0.1−	0.2−	1999 12 08	704	0.1−	0.4−
1994 06 04	809	0.2−	0.8+	1999 11 03	704	0.4+	0.1−	1999 12 08	703	0.4+	0.4−
1994 06 04	809	0.6+	0.7+	1999 11 03	704	0.0	0.5−	1999 12 08	703	1.0+	0.9−
1998 06 19	704	0.7−	0.2+	1999 11 10	703	0.1+	0.6+	1999 12 08	703	0.6−	0.7−
1998 06 19	704	0.3+	1.6+	1999 11 10	703	0.9−	0.2+	1999 12 08	703	0.1−	0.6−
1998 06 19	704	0.6+	0.7−	1999 11 10	703	0.8−	0.2+	2000 01 04	704	0.1−	0.2−
1998 06 19	704	0.5−	0.2−	1999 11 10	703	0.6−	0.0	2000 01 04	704	0.6−	0.4+
1999 10 05	704	0.3+	0.3+	1999 12 03	699	0.6+	1.1+	2000 01 04	704	0.4+	0.1−
1999 10 05	704	0.4+	0.7−	1999 12 03	699	0.1+	0.5+	2000 01 04	704	0.4−	0.4+
1999 10 05	704	1.3+	0.4−	1999 12 03	699	0.1+	0.6+	2000 01 04	704	0.6+	1.1+
1999 10 05	704	0.4+	0.2−	1999 12 04	678	(1.2+	2.1−)	2000 01 06	704	0.1+	0.1−
1999 10 05	704	0.2+	1.2+	1999 12 04	678	0.5+	0.0	2000 01 06	704	0.1+	0.6−
1999 10 28	703	0.8−	0.1+	1999 12 05	678	0.6+	0.0	2000 01 06	704	0.0	0.2+
1999 10 28	703	0.5−	0.1−	1999 12 05	678	(1.0−	2.1−)	2000 01 06	704	0.3+	0.1−
1999 10 28	703	0.4−	0.0	1999 12 08	704	0.4−	0.0	2000 01 06	704	0.4+	0.1−

1999 XW₂ = 1995 UL₅₃ = 1998 MM₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	301.07380		(2000.0)	P	Q
n	0.24695866	ω	231.34561	−0.62192850	−0.76156829
a	2.5160535	Ω	258.09672	+0.76381300	−0.53866667
e	0.0714682	i	10.73490	+0.17261124	−0.36034977
P	3.99	H	13.2	G 0.15	U 2

Residuals in seconds of arc

1995 10 27	399	1.0+	0.1+	1999 11 03	704	(0.7−	3.0+)	1999 12 08	704	0.4+	0.3+
1995 10 27	399	0.8−	1.2−	1999 11 03	704	0.1−	0.3−	1999 12 08	704	0.7+	0.1+
1998 06 24	704	0.9−	0.3+	1999 11 03	704	0.1−	0.6−	1999 12 08	704	0.4+	0.1+
1998 06 24	704	0.3−	0.3−	1999 11 03	704	0.3−	0.7−	1999 12 08	703	0.1−	0.3−
1998 06 24	704	0.2+	0.3−	1999 11 09	699	0.1−	0.0	1999 12 08	703	0.1+	0.3+
1998 06 24	704	0.7+	0.1−	1999 11 09	699	0.0	0.2−	1999 12 08	703	0.2−	0.2+
1998 06 26	704	1.1−	0.2−	1999 11 09	699	0.1−	0.1+	1999 12 08	703	0.2+	0.2−
1998 06 26	704	0.9+	0.2−	1999 11 11	703	0.1−	0.5−	1999 12 30	699	0.4−	1.3+
1998 06 26	704	0.9+	1.2+	1999 11 11	703	0.4−	0.3−	1999 12 30	699	0.3−	1.1+
1998 06 26	704	0.6−	0.7+	1999 11 11	703	0.1+	0.3−	1999 12 30	699	0.7−	1.5+
1999 10 05	704	0.1−	0.1−	1999 11 11	703	0.0	0.2−	2000 01 04	704	0.1+	0.4+
1999 10 05	704	0.2−	0.1−	1999 12 03	699	0.7+	0.3+	2000 01 04	704	0.3+	0.5+
1999 10 05	704	0.6−	0.1+	1999 12 03	699	0.5+	0.6+	2000 01 04	704	0.2+	0.6+
1999 10 05	704	0.1−	0.1+	1999 12 03	699	0.1+	0.5+	2000 01 04	704	0.4−	0.1−
1999 10 05	704	0.2−	0.2−	1999 12 04	678	0.6+	0.2−	2000 01 04	704	0.1−	0.0
1999 10 28	703	0.5−	0.3−	1999 12 04	678	0.2−	0.0	2000 01 06	704	0.3+	0.9+
1999 10 28	703	0.1−	0.2+	1999 12 05	678	0.4−	0.9−	2000 01 06	704	0.9+	0.3+
1999 10 28	703	0.4−	0.2−	1999 12 05	678	0.5−	0.2−	2000 01 06	704	0.6+	0.5−
1999 10 28	703	0.3−	0.0	1999 12 08	704	0.2−	0.5+	2000 01 06	704	0.6+	0.2−
1999 11 03	704	0.1−	0.2−	1999 12 08	704	0.5+	0.3+	2000 01 06	704	0.6+	0.3−

1999 XJ₃ = 1996 BB₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	304.67498		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.21763433	ω	57.03675	−0.90421733	−0.41256828
a	2.7372709	Ω	98.38550	+0.34507831	−0.85804426
e	0.1944644	i	6.40459	+0.25161873	−0.30585529
P	4.53	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1996 01 18	691	0.2+	0.0	1999 11 04	704	0.3−	0.6+	1999 12 04	703	1.6+	0.4+
1996 01 18	691	0.4+	0.2+	1999 11 17	704	0.5+	0.2+	1999 12 04	703	0.0	0.5+
1996 01 18	691	0.2+	0.2−	1999 11 17	704	0.2+	0.0	1999 12 04	703	0.3−	0.1−
1996 01 25	691	0.4+	0.3−	1999 11 17	704	0.9−	0.5−	1999 12 04	703	0.3−	1.0−
1996 01 25	691	0.2−	0.2−	1999 11 17	704	0.6+	0.0	1999 12 05	703	0.3+	0.2−
1996 01 25	691	1.0−	0.5+	1999 12 02	699	0.9−	0.2+	1999 12 05	703	0.6−	0.2−

1999 11 04	704	0.6+	0.1−	1999 12 02	699	0.8+	0.2−	1999 12 05	703	0.2−	0.0
1999 11 04	704	0.5−	0.1−	1999 12 02	699	0.0	0.1+	1999 12 05	703	0.6−	0.4+

1999 XV₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	25.99937		(2000.0)	P	Q
n	0.15939933	ω	272.34123	+0.68381530	−0.72824926
a	3.3688246	Ω	134.40350	+0.69210612	+0.62772758
e	0.0225053	i	3.63323	+0.23105357	+0.27497473
P	6.18	H	13.4	G 0.15	U 5

Residuals in seconds of arc

1998 08 17	704	1.6−	1.1+	1999 11 15	704	0.3+	0.8−	1999 12 04	703	0.3−	0.9+
1998 08 17	704	0.0	0.0	1999 11 15	704	1.1−	0.9−	1999 12 04	703	0.6−	0.0
1998 08 17	704	0.3+	1.0−	1999 11 15	704	0.5−	1.2−	1999 12 04	703	0.4−	0.4−
1998 08 17	704	1.1+	0.2+	1999 11 17	704	1.1+	1.4−	1999 12 04	703	1.0+	1.3+
1998 08 17	704	(2.5−	1.5+)	1999 11 17	704	0.1+	0.7−	1999 12 05	703	0.3−	0.6+
1999 11 04	704	0.7+	0.2+	1999 11 17	704	0.1−	0.1+	1999 12 05	703	1.0−	0.1+
1999 11 04	704	0.2−	0.2+	1999 11 17	704	0.3+	0.1+	1999 12 05	703	(3.9+	0.0)
1999 11 04	704	0.7+	0.2−	1999 12 02	699	1.0−	0.2+	1999 12 05	703	0.9+	0.1+
1999 11 04	704	1.2+	0.2+	1999 12 02	699	0.6+	1.7+	1999 12 14	704	1.5+	0.2+
1999 11 12	699	0.9−	1.7−	1999 12 02	699	0.5−	1.4+	1999 12 14	704	0.2+	0.4−
1999 11 12	699	0.8−	0.0	1999 12 04	703	(3.1+	2.6+)	1999 12 14	704	0.8−	0.4+
1999 11 12	699	0.0	0.4+	1999 12 04	703	0.0	0.9+	1999 12 14	704	0.4−	0.9−
1999 11 15	704	0.3+	0.6−	1999 12 04	703	0.2−	0.2−	1999 12 14	704	0.7−	0.0
1999 11 15	704	0.2−	0.9−	1999 12 04	703	0.5+	1.4+				

1999 XW₃ = 1997 LW₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	71.90119		(2000.0)	P	Q
n	0.17921059	ω	128.80645	+0.98101203	+0.13292598
a	3.1157332	Ω	224.07937	−0.16586200	+0.95242598
e	0.1109216	i	11.71352	+0.10052457	+0.27425432
P	5.50	H	14.2	G 0.15	U 3

Residuals in seconds of arc

1997 06 07	809	0.1+	0.8−	1999 11 04	691	0.0	0.5−	1999 11 17	704	1.1+	0.1+
1997 06 07	809	0.4−	0.2+	1999 11 04	691	0.1+	0.5−	1999 11 17	704	0.6+	0.4−
1997 06 07	809	0.9−	1.1−	1999 11 04	691	0.1+	0.6−	1999 12 02	699	0.1+	0.7−
1997 06 08	809	0.3+	0.7+	1999 11 09	691	0.0	0.0	1999 12 02	699	0.3+	0.4+
1997 06 08	809	0.9+	0.3+	1999 11 09	691	0.1−	0.1−	1999 12 02	699	0.1−	0.2+
1997 06 08	809	0.0	0.5+	1999 11 09	691	0.1−	0.0	1999 12 04	703	0.7−	0.0
1998 08 24	704	0.7−	1.9+	1999 11 15	704	0.2+	0.1+	1999 12 04	703	1.4+	0.2+
1998 08 24	704	0.4−	1.8−	1999 11 15	704	0.5−	0.4+	1999 12 04	703	0.3−	0.2−
1998 08 24	704	0.1+	1.0−	1999 11 15	704	0.2−	0.7+	1999 12 04	703	0.4−	0.0
1998 08 24	704	0.9+	0.9+	1999 11 15	704	0.3−	0.3+	1999 12 05	703	0.0	0.2−
1999 11 04	704	0.4+	0.6−	1999 11 15	704	0.1−	0.6+	1999 12 05	703	0.6−	0.6−
1999 11 04	704	0.3−	0.7−	1999 11 17	704	0.3−	0.3+	1999 12 05	703	0.1+	0.3−
1999 11 04	704	0.4+	0.3−	1999 11 17	704	1.4+	0.8+	1999 12 05	703	0.2−	0.3−
1999 11 04	704	0.8−	0.8+	1999 11 17	704	1.1−	0.9+				

1999 XE₄ = 1997 EU₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	16.08032		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$		
n	0.26695175	ω	271.05184	+0.28073842	−0.95968172		
a	2.3888059	Ω	162.62419	+0.89821828	+0.25754972		
e	0.1940691	i	2.69342	+0.33821570	+0.11260169		
P	3.69	H	15.4	G	0.15	U	3

2000 JAN. 24

M.P.C. 37857

1997 03 08	809	1.1−	0.0	1999 11 15	704	0.1+	0.1−	1999 12 14	704	0.2+	0.8−
1997 03 09	809	0.6+	0.4+	1999 11 15	704	0.1+	0.3−	1999 12 14	704	0.0	0.2+
1997 03 09	809	0.7+	0.3−	1999 11 15	704	0.2+	0.1−	1999 12 14	704	0.5−	0.3+
1997 03 09	809	1.2+	0.9−	1999 11 15	704	0.2+	0.4+	1999 12 14	704	0.3+	0.0
1999 10 03	704	0.8−	0.1+	1999 11 15	704	0.3+	0.1−	1999 12 14	704	0.0	0.0
1999 10 03	704	1.2+	0.2+	1999 12 04	703	0.0	0.4+	2000 01 05	704	0.8−	0.5−
1999 10 03	704	0.4−	0.4−	1999 12 04	703	0.2−	0.1+	2000 01 05	704	0.5+	1.1−
1999 10 03	704	0.6−	1.1−	1999 12 04	703	0.1+	0.2+	2000 01 05	704	0.3+	0.7+
1999 10 03	704	0.6+	0.1+	1999 12 04	703	0.5−	0.3+	2000 01 07	704	0.2−	1.1−
1999 10 30	703	0.2+	0.6+	1999 12 05	703	0.2−	0.1+	2000 01 07	704	0.1−	0.4−
1999 10 30	703	0.0	0.7+	1999 12 05	703	0.1−	0.5+	2000 01 07	704	0.4−	0.7+
1999 10 30	703	0.3−	0.4+	1999 12 05	703	0.2+	0.4+	2000 01 07	704	0.3−	0.7−
1999 10 30	703	1.5−	0.2−	1999 12 05	703	0.1−	0.0	2000 01 07	704	0.2+	1.0+

1999 XF₄ = 1996 EE₁ = 1998 SF₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	297.80150	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19200754	<i>ω</i>	337.38182	−0.87269143	−0.48826164	
<i>a</i>	2.9757095	<i>Ω</i>	173.38909	+0.45212552	−0.81054359	
<i>e</i>	0.1174913	<i>i</i>	1.59269	+0.18436970	−0.32344964	
<i>P</i>	5.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 03 15	566	0.3−	0.6−	1999 11 12	704	0.2+	0.7−	1999 12 04	703	1.1−	1.1+
1996 03 15	566	0.1+	0.2+	1999 11 12	704	0.3−	0.8−	1999 12 04	703	0.5+	1.1−
1996 03 15	566	0.6−	0.6−	1999 11 12	704	0.3−	0.1−	1999 12 05	703	0.4−	0.8+
1996 03 15	566	0.2−	0.4+	1999 11 12	704	0.0	0.0	1999 12 05	703	0.4−	1.3+
1996 03 15	566	0.3+	0.5−	1999 11 12	704	0.4−	0.4−	1999 12 05	703	1.8−	1.3−
1996 03 15	566	0.1+	0.1+	1999 11 13	691	0.3−	0.4−	1999 12 05	703	(3.1+ 1.5−)	
1996 03 16	566	0.1+	0.1+	1999 11 13	691	0.2−	0.6−	1999 12 07	704	0.0	0.3−
1996 03 16	566	0.2+	0.1+	1999 11 13	691	0.3−	0.6−	1999 12 07	704	0.5+	0.0
1996 03 16	566	0.1+	0.1−	1999 11 17	704	0.4+	0.5+	1999 12 07	704	0.4+	0.9−
1998 09 23	691	0.3+	0.0	1999 11 17	704	1.1+	0.2+	1999 12 07	704	0.3−	0.4+
1998 09 23	691	0.2+	0.0	1999 11 17	704	0.6+	0.0	1999 12 07	704	0.2−	0.3−
1998 09 23	691	0.3+	0.3−	1999 11 17	704	1.2+	0.1−	1999 12 17	691	0.5+	0.6+
1998 09 27	691	0.1−	0.2−	1999 11 17	704	0.3+	0.2+	1999 12 17	691	0.5+	0.5+
1998 09 27	691	0.3−	0.1−	1999 12 04	703	1.0−	0.5−	1999 12 17	691	0.4+	0.6+
1998 09 27	691	0.2−	0.1−	1999 12 04	703	0.3+	1.6+				

1999 XL₄ = 1997 LD₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	43.91492	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17889048	<i>ω</i>	297.24850	+0.93940501	−0.32639500	
<i>a</i>	3.1194490	<i>Ω</i>	81.95605	+0.33987120	+0.84681674	
<i>e</i>	0.1721106	<i>i</i>	6.07606	+0.04478618	+0.41996157	
<i>P</i>	5.51	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 06 07	809	0.7−	0.3+	1999 11 15	704	0.4−	0.3−	1999 12 05	703	0.1+	0.8+
1997 06 07	809	0.1+	0.6−	1999 11 15	704	0.5−	0.6−	1999 12 06	704	0.4+	0.9−
1997 06 07	809	0.6−	1.4−	1999 11 17	704	0.1−	0.1+	1999 12 06	704	0.6+	0.8−
1997 06 08	809	0.3−	0.5+	1999 11 17	704	0.0	0.0	1999 12 06	704	0.6+	0.6−
1997 06 08	809	0.4+	0.1+	1999 11 17	704	0.4+	0.0	1999 12 06	704	0.3+	1.0−
1997 06 08	809	1.1+	1.1+	1999 11 17	704	0.0	0.4−	1999 12 06	704	0.3+	0.7−
1999 11 04	704	0.3+	0.3−	1999 11 17	704	0.1−	0.0	1999 12 07	704	0.5+	0.5−
1999 11 04	704	0.2+	0.5−	1999 12 02	699	0.0	0.5+	1999 12 07	704	0.4+	0.4−
1999 11 04	704	0.2−	0.2+	1999 12 02	699	0.3−	0.2+	1999 12 07	704	0.5+	0.3−
1999 11 04	704	0.5+	0.1+	1999 12 02	699	1.2−	0.2−	1999 12 07	704	0.7+	0.2−
1999 11 04	704	0.1+	0.1+	1999 12 04	703	0.4−	0.2−	1999 12 07	704	0.5+	0.4−
1999 11 12	699	0.5−	1.1+	1999 12 04	703	0.2−	0.2+	1999 12 12	703	0.5−	0.6+
1999 11 12	699	0.4+	0.4+	1999 12 04	703	0.5−	0.1+	1999 12 12	703	0.1−	0.5+
1999 11 12	699	0.5+	0.6+	1999 12 04	703	0.2+	0.0	1999 12 12	703	0.4−	0.9+
1999 11 15	704	0.2−	0.2+	1999 12 05	703	0.0	0.6+	1999 12 12	703	0.5−	0.7+
1999 11 15	704	0.2−	0.1−	1999 12 05	703	0.5−	0.0				
1999 11 15	704	0.4−	0.2−	1999 12 05	703	0.4−	0.7+				

1999 XM₄ = 1995 SB₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	33.35558	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26346124	<i>ω</i>	225.31028	+0.70521204	−0.70899645	
<i>a</i>	2.4098586	<i>Ω</i>	179.84292	+0.66113711	+0.65755305	
<i>e</i>	0.2037220	<i>i</i>	2.26060	+0.25607363	+0.25484901	
<i>P</i>	3.74	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1995 09 01	809	(2.2− 4.1−)	1999 11 14	691	0.2+	0.3−	1999 12 05	703	0.0	0.0
1995 09 19	809	1.3− 0.9−	1999 11 15	704	0.5+	0.8−	1999 12 05	703	0.4− 0.4+	
1995 09 19	809	1.0+ 0.2+	1999 11 15	704	0.5+ 0.8−		1999 12 06	704	0.0	0.2−
1995 09 20	809	0.5+ 0.2−	1999 11 15	704	0.3+ 0.8−		1999 12 06	704	0.3+ 0.0	
1995 09 24	691	0.1− 0.4+	1999 11 15	704	0.7+ 0.9−		1999 12 06	704	0.1− 0.0	
1995 09 24	691	0.1− 0.3+	1999 11 15	704	0.1+ 1.1−		1999 12 06	704	0.3− 0.1−	
1995 09 24	691	0.0 0.3+	1999 11 17	704	0.0 0.2−		1999 12 06	704	0.2+ 0.2−	
1995 09 29	691	0.2+ 0.1+	1999 11 17	704	0.5+ 0.4−		1999 12 17	120	0.4+ 0.0	
1995 09 29	691	0.0 0.2+	1999 11 17	704	0.0 0.2−		1999 12 17	120	0.1+ 0.6+	
1995 09 29	691	0.3− 0.0	1999 11 17	704	0.1− 0.3−		2000 01 05	704	0.6− 0.1−	
1999 11 04	704	0.7− 0.3+	1999 11 17	704	0.5+ 0.1−		2000 01 05	704	0.5+ 0.2+	
1999 11 04	704	0.3− 0.4+	1999 12 02	699	0.0 0.2+		2000 01 05	704	0.8− 0.8+	
1999 11 04	704	0.3− 0.7+	1999 12 02	699	0.0 0.4+		2000 01 05	704	0.4− 0.7−	
1999 11 04	704	0.1+ 1.1+	1999 12 02	699	1.4− 0.1+		2000 01 05	704	0.6+ 0.7+	
1999 11 04	704	0.3− 0.9+	1999 12 04	703	0.1+ 0.5+		2000 01 06	704	0.4− 0.6−	
1999 11 09	691	0.2− 0.1+	1999 12 04	703	0.0 0.2−		2000 01 06	704	0.3+ 0.4−	
1999 11 09	691	0.4− 0.1+	1999 12 04	703	0.4+ 0.2−		2000 01 06	704	0.2− 0.5+	
1999 11 09	691	0.2− 0.1+	1999 12 04	703	0.3+ 0.1−		2000 01 06	704	0.2+ 0.4+	
1999 11 14	691	0.1+ 0.4−	1999 12 05	703	0.1+ 0.1+		2000 01 06	704	0.0 0.7+	
1999 11 14	691	0.0 0.1+	1999 12 05	703	0.0 0.1+					

1999 XT₄ = 1997 AW₁₅ = 1998 KK₄₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	137.48629	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.25741861	<i>ω</i>	199.01205	+0.33124249	+0.94110494	
<i>a</i>	2.4474252	<i>Ω</i>	90.37771	−0.85666001	+0.33009129	
<i>e</i>	0.1681949	<i>i</i>	3.88902	−0.39548963	+0.07322047	
<i>P</i>	3.83	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 01 12	566	0.3+	0.1+	1999 11 10	691	0.1+	0.3-	1999 12 02	699	1.6+	0.3+
1997 01 12	566	0.0	0.4+	1999 11 15	704	0.2-	0.1+	1999 12 04	703	0.8-	0.1-
1997 01 12	566	0.1+	0.2+	1999 11 15	704	0.6-	0.3+	1999 12 04	703	1.0-	0.2-
1997 01 14	566	0.2-	0.2-	1999 11 15	704	0.2+	1.5-	1999 12 04	703	0.6-	0.1+
1997 01 14	566	0.2-	0.5-	1999 11 15	704	0.2-	0.2+	1999 12 04	703	0.1+	0.2-
1997 01 14	566	0.1-	0.1-	1999 11 15	704	0.0	1.0+	1999 12 05	703	0.1-	0.1+
1998 05 22	704	0.5+	0.3-	1999 11 17	704	0.3+	0.5-	1999 12 05	703	0.4+	0.2+
1998 05 22	704	0.8-	0.7+	1999 11 17	704	0.4-	0.5+	1999 12 05	703	0.6-	0.2-
1998 05 22	704	0.3+	0.5-	1999 11 17	704	0.1+	0.0	1999 12 05	703	0.5-	0.7-
1998 05 22	704	1.2-	0.6+	1999 11 17	704	0.8-	0.7-	1999 12 07	704	0.2-	0.2+
1998 05 24	704	0.7-	0.9-	1999 11 17	704	0.3+	0.5-	1999 12 07	704	0.2-	0.3+
1998 05 24	704	0.4+	0.3-	1999 11 28	691	0.3+	0.3-	1999 12 07	704	0.1+	0.3+
1998 05 24	704	0.4+	0.8+	1999 11 28	691	0.3+	0.2-	1999 12 07	704	0.3+	0.3+
1998 05 24	704	1.0+	0.1-	1999 11 28	691	0.0	0.5-	1999 12 07	704	0.3-	0.2-
1999 11 10	691	0.1+	0.2-	1999 12 02	699	1.5+	1.0+				
1999 11 10	691	0.0	0.3-	1999 12 02	699	0.8+	1.7+				

Residuals in seconds of arc

1978 11 05	675	0.1−	0.2−	1999 11 13	704	1.2−	0.2−	1999 11 29	691	0.0	0.0
1978 11 06	675	0.3−	0.3−	1999 11 13	704	0.5+	0.1+	1999 12 04	703	0.5−	0.5−
1978 11 07	675	0.6+	1.5+	1999 11 15	704	0.3−	0.3−	1999 12 04	703	0.1−	0.4+
1978 11 08	675	0.5−	0.6+	1999 11 15	704	0.1−	0.5+	1999 12 04	703	0.2−	0.4+
1990 01 29	033	1.3−	0.8+	1999 11 15	704	0.3−	0.1+	1999 12 04	703	0.9+	0.1−
1990 01 29	033	1.3+	0.9−	1999 11 15	704	0.2−	0.0	1999 12 05	703	0.4+	0.3−
1999 11 05	691	0.4+	0.0	1999 11 15	704	0.5−	0.4−	1999 12 05	703	0.6−	0.1−
1999 11 05	691	0.2+	0.2−	1999 11 16	691	0.3+	0.2+	1999 12 05	703	0.1−	0.4+
1999 11 05	691	0.2+	0.1−	1999 11 16	691	0.2+	0.1+	1999 12 05	703	0.1−	0.5−
1999 11 13	704	0.4−	1.0−	1999 11 16	691	0.3+	0.0	1999 12 07	704	0.0	0.6−
1999 11 13	704	0.3−	0.6+	1999 11 17	704	0.1−	1.1−	1999 12 07	704	1.0−	0.4+
1999 11 13	704	0.3+	0.3+	1999 11 17	704	0.6−	0.0	1999 12 07	704	0.3−	0.1−
1999 11 13	704	0.9+	0.4−	1999 11 17	704	1.5+	0.7+	1999 12 07	704	0.3+	0.1−
1999 11 13	704	0.1−	0.4+	1999 11 17	704	0.6−	1.5+	1999 12 07	704	0.1−	0.3−
1999 11 13	704	0.5−	0.1−	1999 11 17	704	0.6−	0.0	1999 12 09	691	0.8+	0.5−
1999 11 13	704	1.2+	0.4−	1999 11 29	691	0.0	0.1−	1999 12 09	691	0.6+	0.3−
1999 11 13	704	0.2−	0.2+	1999 11 29	691	0.1−	0.1−	1999 12 09	691	0.4+	0.2−

1999 XD₅ = 1995 UD₄₂ = 1998 QL₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	264.55044	(2000.0)		P	Q		
<i>n</i>	0.27013262	ω	335.31827	−0.97428436	+0.21752947		
<i>a</i>	2.3700165	Ω	217.39764	−0.18731439	−0.92683360		
<i>e</i>	0.1273210	<i>i</i>	5.55054	−0.12523298	−0.30603988		
<i>P</i>	3.65	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 10 24	691	0.1+	0.1+	1999 11 04	704	1.2−	0.8+	1999 12 04	703	0.6+	0.4+
1995 10 24	691	0.1+	0.2+	1999 11 04	704	1.4−	0.7−	1999 12 04	703	0.2−	0.1−
1995 10 24	691	0.2+	0.3−	1999 11 14	704	0.0	0.4−	1999 12 04	703	0.2−	0.1+
1995 10 28	691	0.1−	0.1+	1999 11 14	704	1.1+	0.2+	1999 12 05	703	0.4+	0.2+
1995 10 28	691	0.1−	0.0	1999 11 14	704	0.4−	0.3−	1999 12 05	703	0.5−	0.0
1995 10 28	691	0.2−	0.0	1999 11 14	704	0.3−	0.4−	1999 12 05	703	0.4−	0.1−
1998 08 17	704	0.4−	0.1−	1999 11 15	704	0.2+	0.0	1999 12 05	703	0.8−	0.2+
1998 08 17	704	0.6−	0.7+	1999 11 15	704	0.0	0.2+	1999 12 06	704	0.8−	1.1−
1998 08 17	704	1.7−	1.3−	1999 11 15	704	0.1−	0.3+	1999 12 06	704	0.3−	0.1+
1998 08 17	704	0.5−	1.2+	1999 11 15	704	0.1+	0.1+	1999 12 06	704	0.1−	0.1−
1998 08 17	704	0.9+	0.2−	1999 11 15	704	0.5+	0.9+	1999 12 06	704	0.5−	0.5−
1998 08 23	704	(2.4+	0.6−)	1999 11 17	704	0.8+	0.8−	1999 12 06	704	0.3−	0.3−
1998 08 23	704	1.4+	1.1−	1999 11 17	704	0.5+	0.6−	1999 12 07	704	0.4−	0.4−
1998 08 23	704	0.1+	0.8+	1999 11 17	704	0.1−	1.5−	1999 12 07	704	0.1−	0.6−
1998 08 23	704	1.2−	1.8−	1999 11 17	704	0.3+	1.3−	1999 12 07	704	0.2+	0.2+
1998 08 23	704	2.0+	1.9+	1999 11 17	704	0.3−	1.1−	1999 12 07	704	0.2−	0.1−
1999 10 30	703	0.5+	0.7+	1999 11 19	049	1.2+	0.8+	1999 12 07	704	0.2+	0.6−
1999 10 30	703	0.5+	0.2+	1999 11 19	049	1.2+	1.0+	1999 12 13	699	1.1+	0.7+
1999 10 30	703	0.1+	1.4+	1999 11 19	049	1.0+	1.0+	1999 12 13	699	0.5+	1.5+
1999 10 30	703	1.1+	1.0+	1999 11 28	691	0.4−	0.3−	1999 12 13	699	0.0	0.5+
1999 11 04	704	0.0	0.8−	1999 11 28	691	0.5−	0.2−	1999 12 30	699	1.3+	0.3−
1999 11 04	704	0.9−	0.5−	1999 11 28	691	0.5−	0.2−	1999 12 30	699	1.0+	0.2+
1999 11 04	704	1.0−	0.6−	1999 12 04	703	0.9−	0.1+	1999 12 30	699	1.3−	1.4+

1999 XT₅ = 1993 OL₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	90.49847	(2000.0)		P	Q		
<i>n</i>	0.20267599	ω	97.98896	+0.94092777	+0.33817220		
<i>a</i>	2.8703477	Ω	242.24689	−0.31780479	+0.86449642		
<i>e</i>	0.0843991	<i>i</i>	1.11112	−0.11685479	+0.37186759		
<i>P</i>	4.86	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 07 13	809	0.9+	1.8+	1999 11 09	704	0.0	0.2−	1999 12 04	703	0.0	0.3+
1993 07 13	809	0.5+	1.7+	1999 11 09	704	0.2+	0.3−	1999 12 04	703	0.6−	0.3+
1993 07 13	809	0.7+	0.7+	1999 11 12	704	0.2−	0.7+	1999 12 04	703	0.3+	0.4+
1993 07 20	809	(3.6−	1.9−)	1999 11 12	704	0.6−	0.0	1999 12 05	703	0.6−	0.1+
1993 07 20	809	1.3−	1.7−	1999 11 12	704	0.0	0.7+	1999 12 05	703	0.4+	0.3+

1993 07 20	809	0.7−	1.2−	1999 11 12	704	0.4−	0.1−	1999 12 05	703	0.0	0.0
1993 07 24	809	0.2−	1.0−	1999 11 17	704	0.4+	0.8−	1999 12 05	703	1.5−	0.7+
1999 11 09	704	0.3+	0.7−	1999 11 17	704	0.0	0.2+	1999 12 13	691	0.7+	0.1+
1999 11 09	704	0.5−	0.5−	1999 11 17	704	0.2+	1.0−	1999 12 13	691	0.7+	0.1+
1999 11 09	704	0.6+	0.5−	1999 12 04	703	0.4−	0.5+	1999 12 13	691	0.8+	0.0

1999 XE₆ = 1998 KD₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	98.37817	(2000.0)		P	Q		
<i>n</i>	0.27704372	ω	273.10247	+0.90507030	+0.40960098		
<i>a</i>	2.3304360	Ω	62.74286	−0.32085916	+0.83419305		
<i>e</i>	0.1437511	<i>i</i>	7.39031	−0.27910062	+0.36925464		
<i>P</i>	3.56	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 25	809	1.2+	0.4−	1999 11 12	704	0.1−	0.7+	1999 12 08	704	0.0	1.3−
1998 04 25	809	0.2+	0.1−	1999 11 12	704	0.1+	1.3+	1999 12 08	704	0.4+	0.9−
1998 04 25	809	1.0−	1.3−	1999 11 17	704	0.1+	0.1+	1999 12 08	704	0.3+	0.3−
1998 05 22	704	0.7−	0.2+	1999 11 17	704	0.4+	0.8−	1999 12 08	704	0.3−	0.6−
1998 05 22	704	0.5+	1.1+	1999 11 17	704	0.3−	0.2−	1999 12 08	704	0.2−	0.5−
1998 05 22	704	(2.6−	0.6+)	1999 11 17	704	0.3+	0.2+	1999 12 14	691	0.1+	0.2+
1998 05 22	704	(3.2+	0.9+)	1999 11 17	704	0.1−	0.1−	1999 12 14	691	0.2+	0.2+
1998 05 22	704	0.1+	1.6+	1999 12 04	703	0.0	0.5+	1999 12 14	691	0.2+	0.1+
1998 05 24	704	0.3−	0.1+	1999 12 04	703	0.2+	0.3+	2000 01 03	704	0.3−	0.9−
1998 05 24	704	0.2+	0.2+	1999 12 04	703	0.1−	0.8+	2000 01 03	704	0.6−	0.2−
1998 05 24	704	0.7+	0.6+	1999 12 04	703	0.1+	0.6−	2000 01 03	704	0.3+	0.1+
1999 11 09	704	0.4−	0.6+	1999 12 05	703	0.2+	0.7+	2000 01 03	704	0.0	1.3+
1999 11 09	704	0.0	0.6+	1999 12 05	703	0.2+	0.5+	2000 01 04	704	0.0	0.2+
1999 11 09	704	0.6−	0.0	1999 12 05	703	0.2−	0.3+	2000 01 04	704	0.5−	1.2+
1999 11 09	704	0.0	0.2+	1999 12 05	703	0.2+	0.1−	2000 01 04	704	0.0	1.2+
1999 11 09	704	0.0	0.6+	1999 12 07	704	0.3+	1.5−	2000 01 04	704	0.4+	0.1+
1999 11 12	704	0.3−	0.2+	1999 12 07	704	0.1−	0.7−	2000 01 04	704	1.2−	0.3+
1999 11 12	704	0.3+	0.2+	1999 12 07	704	0.4+	0.9−				
1999 11 12	704	0.6−	0.3+	1999 12 07	704	0.2+	0.5−				

1999 XT₆ = 1990 WJ₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	74.59397	(2000.0)		P	Q		
<i>n</i>	0.22319303	ω	302.30523	+0.98579192	+0.11600471		
<i>a</i>	2.6916316	Ω	51.32626	−0.04355409	+0.87501047		
<i>e</i>	0.1519497	<i>i</i>	8.95157	−0.16222617	+0.46999956		
<i>P</i>	4.42	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 21	809	0.3−	0.7−	1999 11 16	704	0.7−	0.2−	1999 12 13	703	0.3−	0.2+
1990 11 21	809	0.7−	0.0	1999 11 16	704	0.5−	0.0	1999 12 13	703	0.6+	0.5+
1990 11 21	809	0.9−	0.8−	1999 11 16	704	0.0	0.0	1999 12 13	703	0.5−	0.3+
1990 11 22	809	0.4+	0.0	1999 11 16	704	0.4−	0.4+	1999 12 15	704	0.7−	0.2−
1990 11 22	809	0.9+	0.3+	1999 12 04	703	0.6−	0.4+	1999 12 15	704	0.1+	0.2+
1990 11 22	809	1.4+	0.4−	1999 12 04	703	0.2−	0.6+	1999 12 15	704	0.2+	0.4−
1999 11 03	704	0.4−	0.3−	1999 12 04	703	0.1+	0.2+	1999 12 15	704	0.2+	0.3+
1999 11 03	704	0.2+	0.7+	1999 12 04	703	0.4−	0.2+	1999 12 15	704	0.2+	0.7+
1999 11 03	704	0.0	1.0+	1999 12 05	703	0.4−	0.7+	2000 01 03	704	1.0+	0.7−
1999 11 03	704	0.0	0.0	1999 12 05	703	0.4−	0.4+	2000 01 03	704	0.7+	0.0
1999 11 03	704	0.7−	0.2−	1999 12 05	703	0.0	0.4+	2000 01 03	704	0.3+	1.9−
1999 11 14	704	0.3+	0.4−	1999 12 05	703	0.1−	0.4+	2000 01 03	704	0.2−	0.3−
1999 11 14	704	0.2+	0.5−	1999 12 07	704	0.1+	0.2+	2000 01 04	704	1.4+	0.2+
1999 11 14	704	0.1+	0.2−	1999 12 07	704	0.0	0.1−	2000 01 04	704	0.4−	0.5−
1999 11 14	704	0.4+	0.4−	1999 12 07	704	0.2+	0.6+	2000 01 04	704	0.1+	1.1−
1999 11 14	704	0.2+	0.6−	1999 12 07	704	0.4+	0.1+	2000 01 04	704	0.7+	0.2−
1999 11 16	704	0.8−	0.4−	1999 12 13	703	0.2−	0.9+	2000 01 04	704	0.1+	0.1+

2000 JAN. 24

M.P.C. 37859

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	25.09593		(2000.0)	P	Q
<i>n</i>	0.18467624	ω	159.02224	+0.56690400	-0.80706270
<i>a</i>	3.0539508	Ω	256.09006	+0.72951161	+0.58495612
<i>e</i>	0.0513662	<i>i</i>	9.79504	+0.38266521	+0.08047449
<i>P</i>	5.34	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 24	704	1.3+	0.7-	1999 11 16	704	0.0	0.1-	1999 12 08	704	0.6-	0.1+
1998 08 24	704	0.5-	0.1+	1999 12 03	699	0.6+	0.8+	1999 12 08	704	0.0	0.2-
1998 08 24	704	0.6-	1.4+	1999 12 03	699	0.0	0.6+	1999 12 08	704	0.5+	0.2-
1998 08 24	704	0.6+	0.6-	1999 12 03	699	0.7+	0.4+	1999 12 08	704	0.6+	0.2-
1998 08 24	704	0.5-	0.3-	1999 12 04	703	0.1-	0.0	1999 12 14	691	0.1-	0.6+
1998 08 27	704	0.6+	1.4-	1999 12 04	703	0.3-	0.4+	1999 12 14	691	0.1+	0.4+
1998 08 27	704	0.6+	0.6+	1999 12 04	703	0.2-	0.4+	1999 12 14	691	0.0	0.4+
1998 08 27	704	0.1+	0.2+	1999 12 04	703	0.3-	0.9-	2000 01 04	704	0.0	0.1+
1998 08 27	704	0.4-	0.7+	1999 12 05	703	0.1+	0.3+	2000 01 04	704	0.3+	0.7+
1999 11 14	704	0.1-	0.1+	1999 12 05	703	0.0	0.6+	2000 01 04	704	0.7+	0.2-
1999 11 14	704	(3.0-	1.4+)	1999 12 05	703	0.4+	0.5+	2000 01 04	704	0.2-	0.0
1999 11 14	704	0.0	0.4-	1999 12 05	703	0.1-	0.3+	2000 01 04	704	1.3-	0.1+
1999 11 14	704	0.1-	0.9-	1999 12 07	704	0.4+	0.1+	2000 01 06	704	0.6-	1.6-
1999 11 14	704	0.4-	1.0-	1999 12 07	704	0.1-	0.0	2000 01 06	704	0.0	0.5-
1999 11 16	704	0.4-	0.5-	1999 12 07	704	0.3+	0.5-	2000 01 06	704	0.2+	0.6-
1999 11 16	704	0.2+	0.3+	1999 12 07	704	0.0	0.3-	2000 01 06	704	(0.5+	2.6-)
1999 11 16	704	0.4-	0.2+	1999 12 07	704	0.1+	0.1-				
1999 11 16	704	0.1-	0.2+	1999 12 08	704	0.2+	0.4+				

1999 XC₇ = 1992 EU₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	13.40200		(2000.0)	P	Q
<i>n</i>	0.22848958	ω	41.98695	+0.24336846	-0.96966487
<i>a</i>	2.6498734	Ω	33.94608	+0.87865702	+0.21043042
<i>e</i>	0.1905804	<i>i</i>	2.34454	+0.41077199	+0.12437477
<i>P</i>	4.31	<i>H</i>	16.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 03 03	809	0.3-	0.1+	1999 11 16	704	0.7+	0.6-	1999 12 07	704	0.2-	0.1-
1992 03 07	809	0.3+	0.1-	1999 11 16	704	0.7+	0.1-	1999 12 07	704	0.1+	0.6-
1999 11 14	704	0.0	0.5+	1999 12 04	703	0.2-	0.4+	1999 12 07	704	0.0	0.4-
1999 11 14	704	0.0	0.2-	1999 12 04	703	0.4-	0.0	1999 12 07	704	0.4+	0.4+
1999 11 14	704	0.7-	0.4+	1999 12 04	703	1.0-	0.6+	1999 12 07	704	0.3-	0.6-
1999 11 14	704	0.4-	0.3+	1999 12 04	703	0.4+	0.3-	1999 12 15	691	0.1+	0.2-
1999 11 14	704	0.3-	0.7-	1999 12 05	703	0.3-	1.1+	1999 12 15	691	0.1+	0.1-
1999 11 16	704	0.3+	0.7-	1999 12 05	703	0.1+	0.3+	1999 12 15	691	0.2+	0.2-
1999 11 16	704	0.2+	0.3+	1999 12 05	703	0.5+	0.5+				
1999 11 16	704	0.2+	0.1-	1999 12 05	703	0.2-	0.0				

1999 XH₇ = 1997 KY

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	241.73726		(2000.0)	P	Q
<i>n</i>	0.22966438	ω	156.37249	-0.82749662	+0.52159504
<i>a</i>	2.6408291	Ω	56.69619	-0.54660135	-0.66375281
<i>e</i>	0.1130011	<i>i</i>	14.39783	-0.12836006	-0.53606980
<i>P</i>	4.29	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 05 27	910	0.3+	0.2-	1999 11 14	704	0.2-	0.3-	1999 12 15	704	1.1+	1.1-
1997 05 27	910	0.3+	0.2-	1999 11 14	704	(2.6-	0.5-)	1999 12 31	699	0.4-	0.7+
1997 05 27	910	0.2+	0.3-	1999 11 14	704	0.3-	0.2-	1999 12 31	699	0.9+	0.3-
1997 05 29	910	0.3-	0.1+	1999 12 04	703	0.4-	0.2-	1999 12 31	699	0.2+	1.8+
1997 05 29	910	0.2-	0.1+	1999 12 04	703	0.1+	0.4+	2000 01 03	704	0.5+	0.2-
1997 05 29	910	0.4-	0.2+	1999 12 04	703	0.6+	0.6-	2000 01 03	704	0.1+	0.8-
1999 11 03	704	0.3+	0.1-	1999 12 04	703	0.2+	1.0+	2000 01 03	704	0.5-	0.3+
1999 11 03	704	0.7-	0.2+	1999 12 05	703	0.5+	0.3+	2000 01 03	704	1.8-	0.9-
1999 11 03	704	1.1-	0.2-	1999 12 05	703	0.2+	0.2+	2000 01 04	704	0.3+	0.4-

1999 11 03	704	0.2+	0.2-	1999 12 05	703	0.3+	0.2+	2000 01 04	704	0.2-	0.3-
1999 11 03	704	1.0-	0.4-	1999 12 05	703	0.6+	0.4+	2000 01 04	704	0.3-	0.6-
1999 11 14	704	0.2+	0.1-	1999 12 15	704	0.8+	0.2-	2000 01 04	704	1.0-	0.9+
1999 11 14	704	0.5+	0.1-	1999 12 15	704	0.2-	0.8+				

1999 XJ₇ = 1998 MK₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	45.27315		(2000.0)	P	Q
<i>n</i>	0.27593382	ω	297.04259	+0.79565706	-0.59188556
<i>a</i>	2.3366810	Ω	99.52201	+0.59169806	+0.71387255
<i>e</i>	0.1034008	<i>i</i>	7.50693	+0.12970447	+0.37424253
<i>P</i>	3.57	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 24	704	0.3-	1.2+	1999 12 03	699	0.4+	0.4+	1999 12 30	699	0.0	0.3+
1998 06 24	704	0.7+	0.7-	1999 12 03	699	0.3+	0.3+	1999 12 30	699	0.0	0.0
1998 06 24	704	0.8-	0.6+	1999 12 04	678	0.9-	0.0	1999 12 31	849	0.3-	0.3-
1998 06 24	704	(2.7-	0.5+)	1999 12 04	678	0.9-	0.5+	1999 12 31	849	0.4-	0.2+
1998 06 26	704	1.4+	1.4-	1999 12 05	678	1.5-	0.1-	1999 12 31	849	0.3-	0.0
1998 06 26	704	0.6-	1.3+	1999 12 05	678	0.7+	0.3+	2000 01 05	704	0.4-	1.5-
1998 06 26	704	(2.9-	0.5-)	1999 12 06	704	1.2+	0.2-	2000 01 05	704	1.3+	0.1-
1998 06 26	704	0.4-	0.6-	1999 12 06	704	0.2+	0.4-	2000 01 05	704	0.8+	0.0
1999 11 05	704	0.1+	0.0	1999 12 06	704	0.1+	0.6-	2000 01 05	704	0.1-	0.8+
1999 11 05	704	0.3+	0.1-	1999 12 06	704	0.4+	0.1+	2000 01 05	704	0.0	1.4+
1999 11 05	704	0.3+	0.3-	1999 12 06	704	0.1+	0.3-	2000 01 05	106	0.2+	0.1-
1999 11 05	704	0.1-	0.1-	1999 12 14	704	0.1+	0.4-	2000 01 05	106	0.3+	0.1-
1999 11 17	703	0.3-	0.2+	1999 12 14	704	0.1-	0.1+	2000 01 05	106	0.3-	0.3-
1999 11 17	703	0.3-	0.1-	1999 12 14	704	0.0	0.0	2000 01 07	704	0.3-	1.4-
1999 11 17	703	0.3-	0.2-	1999 12 14	704	0.3+	0.0	2000 01 07	704	0.1+	0.1-
1999 11 17	703	0.1-	0.2+	1999 12 14	704	0.6+	0.0	2000 01 07	704	0.9-	0.5+
1999 12 03	699	0.2+	0.5+	1999 12 30	699	0.3-	0.1-	2000 01 07	704	0.1-	1.4+

1999 XK₇ = 1998 MJ₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	49.47911		(2000.0)	P	Q
<i>n</i>	0.23880369	ω	157.44227	+0.90814041	-0.38447292
<i>a</i>	2.5730133	Ω	226.27700	+0.34055417	+0.90860938
<i>e</i>	0.1904310	<i>i</i>	13.25607	+0.24352383	+0.16312441
<i>P</i>	4.13	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 05 26	704	(0.6-	2.8+)	1999 11 04	704	0.5-	0.5-	1999 12 06	704	0.0	0.2-
1998 05 26	704	0.1-	1.2+	1999 11 04	704	0.3-	0.5-	1999 12 06	704	0.8+	0.4+
1998 05 26	704	(0.5+	4.2+)	1999 11 17	704	0.6+	0.1+	1999 12 06	704	1.4-	0.2-
1998 05 26	704	(0.1-	2.7+)	1999 11 17	704	0.4+	0.3-	1999 12 06	704	0.2+	0.2+
1998 06 19	704	0.6+	0.0	1999 11 17	704	0.5+	0.1-	1999 12 13	699	0.3+	0.2+
1998 06 19	704	0.2-	0.3+	1999 11 17	704	0.4+	0.0	1999 12 13	699	0.0	0.1+
1998 06 19	704	0.2+	0.3-	1999 11 17	704	0.8+	0.3-	1999 12 13	699	0.3-	0.1+
1998 06 19	704	0.9+	0.3-	1999 11 17	704	0.4+	0.0	1999 12 14	704	0.2+	0.4-
1998 06 25	704	0.4-	0.8-	1999 11 17	704	0.8+	0.5+	1999 12 14	704	0.4-	0.6-
1998 06 25	704	0.7-	0.8-	1999 11 17	704	0.2+	0.1+	1999 12 14	704	0.9-	0.5-
1998 06 25	704	0.8+	0.0	1999 11 17	704	0.5+	0.3-	1999 12 14	699	0.5-	0.8+
1998 06 25	704	1.1-	1.2+	1999 11 17	704	0.3+	0.1-	1999 12 14	699	0.6+	1.5+
1999 10 03	704	1.0-	0.5+	1999 12 03	699	0.0	0.4+	1999 12 14	699	0.3-	0.7+
1999 10 03	704	0.5+	0.7+	1999 12 03	699	0.1-	0.4+	2000 01 04	699	0.4-	0.3-
1999 10 03	704	0.5+	0.2+	1999 12 03	699	0.4-	0.4+	2000 01 04	699	0.6-	0.1-
1999 10 03	704	0.3-	0.0	1999 12 04	678	0.4-	0.8-	2000 01 04	699	0.1-	0.3+
1999 10 03	704	0.1-	0.1-	1999 12 04	678	0.5-	0.3+	2000 01 06	106	1.6+	0.0
1999 11 04	704	0.3-	0.4-	1999 12 05	678	0.3-	0.3-	2000 01 06	106	0.1+	0.2-
1999 11 04	704	0.2-	0.3-	1999 12 05	678	0.3-	0.1+				
1999 11 04	704	0.3-	0.4-	1999 12 06	704	0.2-	0.5-				

1999 XM₇ = 1975 TW₆ = 1996 BU₁₁ = 1997 JY₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	31.23701		(2000.0)		P		Q
<i>n</i>	0.20922614	ω	321.81881		+0.61273394		-0.78455517
<i>a</i>	2.8101236	Ω	90.19065		+0.74643664		+0.53503663
<i>e</i>	0.0990160	<i>i</i>	5.45296		+0.25959481		+0.31338312
<i>P</i>	4.71	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1975 10 10	033	0.1-	0.7+	1999 11 04	704	0.1-	0.4+	1999 12 07	704	0.2+	0.1-
1996 01 24	691	0.4-	0.2-	1999 11 04	704	0.1+	0.2-	1999 12 07	704	0.1-	0.3-
1996 01 24	691	0.4-	0.1-	1999 11 04	704	0.2-	0.2-	1999 12 08	704	0.3+	0.3+
1996 01 24	691	0.3-	0.3-	1999 11 04	704	0.6-	0.6-	1999 12 08	704	0.1+	0.0
1996 01 27	691	0.5-	0.2-	1999 11 04	704	0.1-	0.6-	1999 12 08	704	0.0	0.1+
1996 01 27	691	0.7-	0.3-	1999 11 15	704	1.4+	0.0	1999 12 08	704	0.0	0.0
1996 01 27	691	0.6-	0.1-	1999 11 15	704	0.3-	1.2+	1999 12 08	704	0.1-	0.2+
1997 05 03	809	(0.8+	2.2+)	1999 11 15	704	0.4+	0.5-	1999 12 31	703	0.3-	0.8+
1997 05 03	809	(0.3-	2.5+)	1999 11 15	704	0.3+	0.2-	1999 12 31	703	0.1-	0.6+
1997 05 03	809	0.9+	1.8+	1999 11 15	704	0.0	0.5-	1999 12 31	703	0.2-	0.8+
1997 05 04	809	1.6+	0.8+	1999 11 17	704	0.3+	0.0	1999 12 31	703	0.3-	1.0+
1997 05 04	809	0.4+	0.9+	1999 11 17	704	0.3+	0.2-	2000 01 04	106	0.3+	1.1+
1997 05 04	809	1.2+	1.1+	1999 11 17	704	0.1-	0.2+	2000 01 04	106	0.2-	0.7+
1998 07 31	699	0.7+	0.1+	1999 11 17	704	0.1+	0.1+	2000 01 04	106	0.0	0.7+
1998 07 31	699	0.6+	0.3+	1999 11 17	704	0.1-	0.1+	2000 01 05	704	0.4+	0.5-
1998 07 31	699	1.0+	0.3-	1999 12 03	699	0.6+	0.7+	2000 01 05	704	0.0	0.8+
1998 08 17	704	0.6+	0.5+	1999 12 03	699	0.4+	0.2+	2000 01 05	704	0.0	0.5+
1998 08 17	704	0.9-	0.9-	1999 12 03	699	0.7+	0.6+	2000 01 05	704	0.4-	0.4-
1998 08 17	704	(1.6-	2.6+)	1999 12 04	678	0.7-	0.0	2000 01 05	704	0.7-	0.0
1998 08 17	704	0.3-	0.7-	1999 12 04	678	0.7-	0.4-	2000 01 06	704	0.5+	0.1-
1998 08 17	704	(6.0-	1.7+)	1999 12 05	678	1.1-	0.3-	2000 01 06	704	0.5+	0.4+
1998 08 23	704	1.9-	0.5+	1999 12 05	678	1.4-	0.5+	2000 01 06	704	0.2-	0.3+
1998 08 23	704	0.9-	0.7+	1999 12 07	704	0.4+	0.0	2000 01 06	704	0.2-	0.3-
1998 08 23	704	0.9-	0.2-	1999 12 07	704	0.3+	0.2+	2000 01 06	704	0.1-	1.5-
1998 08 23	704	(6.6-	0.9-)	1999 12 07	704	0.5+	0.1-				

1999 XQ₇ = 1977 SB₃ = 1977 UB₃ = 1997 GE₂₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	63.56667		(2000.0)		P		Q
<i>n</i>	0.27307460	ω	23.88983		+0.81067385		-0.58511127
<i>a</i>	2.3529635	Ω	11.99162		+0.51933764		+0.70181340
<i>e</i>	0.2281052	<i>i</i>	5.87781		+0.27036332		+0.40632839
<i>P</i>	3.61	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 09 22	095	1.0-	0.5-	1999 12 04	678	0.0	0.0	1999 12 15	704	0.5-	0.1-
1977 10 18	675	0.5+	0.5-	1999 12 04	678	0.3-	0.2+	1999 12 15	704	0.7-	0.3-
1977 10 19	675	1.3+	0.9-	1999 12 05	678	0.5+	0.1+	1999 12 15	704	0.9-	0.6-
1997 04 09	691	0.6-	0.3-	1999 12 05	678	1.1-	0.3-	1999 12 31	699	0.4+	0.4+
1997 04 09	691	0.8-	0.3-	1999 12 10	704	0.8+	0.5-	1999 12 31	699	0.6+	0.3+
1997 04 09	691	0.3+	0.2-	1999 12 10	704	0.4-	0.0	1999 12 31	699	0.1+	0.4+
1997 04 13	691	0.3+	0.4-	1999 12 10	704	0.1+	0.4+	2000 01 02	704	0.3+	0.5-
1997 04 13	691	0.1+	0.2-	1999 12 10	704	0.0	0.3+	2000 01 02	704	0.2+	0.7-
1997 04 13	691	0.4-	0.5-	1999 12 10	704	0.6-	0.2+	2000 01 02	704	0.5+	1.0-
1999 11 16	703	0.5+	0.4+	1999 12 12	704	0.0	0.0	2000 01 02	704	0.2-	1.2-
1999 11 16	703	0.2+	0.5+	1999 12 12	704	0.9-	0.2+	2000 01 02	704	0.1+	1.0-
1999 11 16	703	0.6+	0.9+	1999 12 12	704	0.4-	0.6+	2000 01 07	106	0.4+	0.2+
1999 11 16	703	0.4+	0.5+	1999 12 12	704	0.8-	0.5+	2000 01 07	106	0.7+	0.5+
1999 12 03	699	0.1+	0.2+	1999 12 12	704	(0.6-	2.1+)	2000 01 07	106	0.3+	0.2+
1999 12 03	699	0.4+	0.5+	1999 12 15	704	0.2-	0.2-				
1999 12 03	699	0.3+	0.7+	1999 12 15	704	0.4-	0.2-				

1999 XW₇ = 1995 YQ₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	47.36570		(2000.0)		P		Q
<i>n</i>	0.24346845	ω	148.70465		+0.65176937		-0.75806625
<i>a</i>	2.5400422	Ω	260.60962		+0.69091325		+0.60602850
<i>e</i>	0.1483131	<i>i</i>	1.33992		+0.31278678		+0.24096682
<i>P</i>	4.05	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 12 24	566	0.4+	0.8+	1999 12 07	684	0.3-	1.1+	2000 01 03	704	0.1-	0.1-
1995 12 24	566	0.6-	0.8+	1999 12 07	684	0.6+	0.7+	2000 01 03	684	0.4-	0.3-
1995 12 24	566	0.1-	0.7+	1999 12 08	704	0.4+	0.4-	2000 01 03	684	0.4-	0.1-
1995 12 25	566	0.2+	0.2-	1999 12 08	704	0.2+	0.0	2000 01 03	704	0.1-	0.8-
1995 12 25	566	0.4+	0.2-	1999 12 08	704	0.3-	0.4-	2000 01 03	704	0.6-	0.4-
1995 12 25	566	0.1-	0.1-	1999 12 19	704	0.0	0.0	2000 01 04	684	0.2-	0.1-
1999 12 04	684	0.3-	0.8+	1999 12 19	704	0.7+	0.0	2000 01 04	684	0.3-	0.1-
1999 12 04	684	0.3-	0.6-	1999 12 19	704	1.5+	0.3-	2000 01 05	704	0.0	0.6-
1999 12 05	684	0.1-	0.3-	2000 01 03	704	0.7-	0.3-	2000 01 05	704	0.3+	0.1+
1999 12 05	684	0.2-	0.2-	2000 01 03	704	0.6+	0.0	2000 01 05	704	0.1-	0.6+

1999 XX₇ = 1999 RP₁₉₆ = 1992 RP

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	57.00723		(2000.0)		P		Q
<i>n</i>	0.28356199	ω	48.99202		+0.91284785		+0.40056491
<i>a</i>	2.2945844	Ω	287.25977		-0.39505500		+0.81756090
<i>e</i>	0.2210176	<i>i</i>	4.75115		-0.10315208		+0.41369304
<i>P</i>	3.48	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 08 31	894	0.8-	0.6+	1999 10 01	703	0.5-	0.1-	1999 12 05	704	0.1+	0.0
1992 08 31	894	1.2+	0.5-	1999 10 01	703	0.9-	0.1+	1999 12 05	704	0.6-	0.0
1992 09 03	894	0.4-	0.5+	1999 10 01	703	0.8-	0.1+	1999 12 05	704	0.4+	0.4+
1992 09 03	894	0.5-	0.3+	1999 10 01	703	0.0	0.3+	1999 12 05	704	1.0-	0.5+
1999 07 23	704	0.3-	0.0	1999 10 04	704	0.2+	0.1+	1999 12 06	704	0.7+	0.6-
1999 07 23	704	0.3-	0.1-	1999 10 04	704	0.1-	0.3+	1999 12 06	704	0.0	0.5-
1999 07 23	704	0.4-	0.8-	1999 10 04	704	0.3+	0.3+	1999 12 06	704	0.5+	0.2+
1999 09 08	704	0.7+	0.4-	1999 10 04	704	0.4+	0.5+	1999 12 06	704	0.6-	0.5-
1999 09 08	704	0.7+	0.0	1999 10 04	704	0.1-	0.4+	1999 12 06	704	0.0	0.2+
1999 09 08	704	0.5+	0.3-	1999 12 03	704	0.2+	0.0	2000 01 07	704	0.3-	0.9+
1999 09 16	704	0.7+	0.1-	1999 12 03	704	0.7+	0.8-	2000 01 07	704	0.4+	0.4+
1999 09 16	704	0.1+	0.2+	1999 12 03	704	0.3+	0.0	2000 01 07	704	0.7-	0.5-
1999 09 16	704	0.4+	0.6-	1999 12 03	704	(2.4-	0.2+)				
1999 09 16	704	0.3-	0.4-	1999 12 05	704	0.5-	0.9-				

1999 XC₈ = 1991 PP₁₉

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	51.66148		(2000.0)		P		Q
<i>n</i>	0.27458840	ω	301.62123		+0.65652546		-0.75383525
<i>a</i>	2.3443076	Ω	107.31940		+0.70115061		+0.59688744
<i>e</i>	0.0869153	<i>i</i>	1.59573		+0.27814051		+0.27469583
<i>P</i>	3.59	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1991 08 02	809	0.5+	0.7-	1999 12 07	704	0.3+	0.4-	2000 01 03	704	0.1+	0.2-
1991 08 02	809	0.4+	0.1+	1999 12 08	704	0.1+	0.6+	2000 01 03	704	0.6+	0.3-
1991 08 02	809	0.1-	0.1+	1999 12 08	704	0.2+	0.1+	2000 01 05	704	0.0	0.1+
1991 08 14	809	0.2+	0.0	1999 12 08	704	0.3+	0.2+	2000 01 05	704	0.5+	0.0
1991 08 14	809	0.4-	0.1-	1999 12 08	704	0.3-	0.3+	2000 01 05	704	0.5+	0.1+
1991 08 14	809	0.6-	0.6+	1999 12 08	704	0.1+	0.2+	2000 01 05	704	0.8+	0.2-
1999 12 03	411	0.6+	0.6-	1999 12 11	411	0.5-	1.7-	2000 01 05	704	0.2+	0.2-
1999 12 03	411	0.1-	0.6+	1999 12 11	411	0.4+	0.4-	2000 01 06	691	0.2-	0.2+
1999 12 06	411	(2.6-	1.4+)	1999 12 26	411	0.9-	0.3-	2000 01 06	691	0.2-	0.1+
1999 12 06	411	(2.6-	0.6+)	1999 12 26	411	0.0	0.7+	2000 01 06	691	0.3-	0.2-

2000 JAN. 24

M.P.C. 37861

1999 12 07 704 0.5- 0.3+ 2000 01 03 704 (2.4- 0.3-)
 1999 12 07 704 0.1+ 0.1+ 2000 01 03 704 1.6- 0.9+

1999 XH₈ = 1976 KM₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	59.73390		(2000.0)	P	Q
<i>n</i>	0.23072285	ω	310.28012	+0.70192036	-0.68223261
<i>a</i>	2.6327461	Ω	93.82223	+0.69975352	+0.60694388
<i>e</i>	0.0239941	<i>i</i>	11.83354	+0.13286390	+0.40764910
<i>P</i>	4.27	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1976 05 29	413	0.5+	0.8+	1999 12 07	704	0.1+	0.0	2000 01 03	704	0.3+	0.6+
1976 05 29	413	0.6-	0.0	1999 12 07	704	0.1-	0.4-	2000 01 03	704	0.3-	0.4-
1976 05 30	413	0.4-	0.8-	1999 12 07	704	0.0	0.1+	2000 01 03	704	0.1-	0.3-
1976 05 30	413	0.3+	1.2-	1999 12 08	704	0.1-	0.0	2000 01 03	704	0.1-	0.4-
1998 08 20	699	0.5-	0.5+	1999 12 08	704	0.6-	0.1+	2000 01 04	704	0.2+	0.0
1998 08 20	699	0.1-	0.3-	1999 12 08	704	0.2+	0.0	2000 01 04	704	0.4+	0.2+
1998 08 20	699	0.7+	0.5-	1999 12 08	704	0.2-	0.2+	2000 01 04	704	0.2+	0.2-
1999 11 15	704	0.3+	0.4-	1999 12 08	704	0.4-	0.3-	2000 01 04	704	0.3-	0.3-
1999 11 15	704	0.3-	0.6-	1999 12 11	411	0.2+	0.8+	2000 01 04	704	0.3-	0.4+
1999 11 15	704	0.6-	1.5-	1999 12 11	411	0.3-	0.1-	2000 01 05	106	0.0	0.2+
1999 12 03	411	0.3-	0.1+	1999 12 17	704	0.5+	0.1-	2000 01 05	106	0.2+	0.2+
1999 12 03	411	0.4+	1.8+	1999 12 17	704	0.1+	0.2+	2000 01 05	106	0.1-	0.0
1999 12 06	411	0.8-	1.1+	1999 12 17	704	0.1-	0.0	2000 01 10	691	0.0	0.9-
1999 12 06	411	0.9+	0.5-	1999 12 17	704	0.7+	0.5+	2000 01 10	691	0.1-	0.9-
1999 12 07	704	0.2+	0.1-	2000 01 03	704	0.2+	0.0	2000 01 10	691	0.1+	0.9-

1999 XM₈ = 1998 QW₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	124.77099		(2000.0)	P	Q
<i>n</i>	0.23503939	ω	58.45341	+0.90496367	+0.36425296
<i>a</i>	2.6004127	Ω	279.38384	-0.42487587	+0.80133880
<i>e</i>	0.2232490	<i>i</i>	12.87901	+0.02283078	+0.47452703
<i>P</i>	4.19	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 06 25	699	0.3-	0.3+	1998 09 18	699	0.2-	0.1+	1999 12 08	704	0.2+	0.6-
1998 06 25	699	0.8-	0.8+	1998 09 18	699	0.0	0.1+	1999 12 08	704	0.1+	0.9-
1998 06 25	699	0.4-	0.8+	1998 10 16	699	0.1+	0.1-	2000 01 05	049	0.3+	0.3+
1998 06 30	704	0.7-	0.5-	1998 10 16	699	0.3-	0.2+	2000 01 05	049	0.2+	0.1+
1998 06 30	704	0.2+	0.3-	1998 10 16	699	0.2-	0.1+	2000 01 05	049	0.4+	0.1+
1998 06 30	704	0.2-	0.6-	1998 12 09	704	0.2-	0.4-	2000 01 05	049	1.3+	0.6+
1998 06 30	704	0.2+	0.7-	1998 12 09	704	0.2-	0.6+	2000 01 05	049	1.5+	0.4+
1998 08 02	699	0.8-	0.8+	1998 12 09	704	0.2-	0.5-	2000 01 05	049	1.0+	0.7+
1998 08 02	699	1.6+	0.6+	1998 12 09	704	0.4+	1.4-	2000 01 05	704	0.6-	0.7-
1998 08 02	699	1.4+	0.6-	1999 12 02	049	0.3+	0.2+	2000 01 05	704	0.9-	0.3-
1998 08 24	704	0.2+	0.2+	1999 12 02	049	0.2-	0.3+	2000 01 05	704	1.1-	0.0
1998 08 24	704	0.4+	0.1+	1999 12 02	049	0.7-	1.2+	2000 01 05	704	0.3-	0.5+
1998 08 24	704	0.5-	0.4-	1999 12 03	049	1.0+	0.1-	2000 01 05	704	0.4-	1.5+
1998 08 24	704	0.0	1.0-	1999 12 03	049	0.6+	0.3-	2000 01 09	049	1.2+	0.0
1998 08 24	704	0.6+	0.8-	1999 12 03	049	0.3-	0.9+	2000 01 09	049	0.8+	0.5+
1998 08 27	704	0.2-	1.2+	1999 12 07	704	0.5-	0.5+	2000 01 09	049	0.9+	0.3+
1998 08 27	704	0.1+	0.6+	1999 12 07	704	0.4-	0.1-	2000 01 16	049	0.6-	0.5-
1998 08 27	704	0.7-	0.1+	1999 12 07	704	0.8-	1.5-	2000 01 16	049	0.8-	0.4-
1998 08 27	704	0.4-	0.3+	1999 12 07	704	0.1-	0.7-	2000 01 16	049	0.8-	0.2-
1998 08 27	704	0.1-	0.3+	1999 12 08	704	1.0-	0.4-				
1998 09 18	699	0.2+	0.1+	1999 12 08	704	0.1-	0.4-				

1999 XA₁₀ = 1997 CB₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.41755		(2000.0)	P	Q
<i>n</i>	0.28539558	ω	306.30095	+0.97747433	+0.21066277
<i>a</i>	2.2847458	Ω	41.54218	-0.18689599	+0.89226773
<i>e</i>	0.2269778	<i>i</i>	1.11029	-0.09805010	+0.39934884
<i>P</i>	3.45	<i>H</i>	16.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 02 03	691	0.5-	0.4-	1999 12 06	691	0.5-	0.3+	1999 12 14	691	0.0	0.2-
1997 02 03	691	0.5-	0.1+	1999 12 06	691	0.0	0.4+	1999 12 17	691	0.5+	0.1+
1997 02 13	691	0.3+	0.1-	1999 12 06	691	0.4-	0.6+	1999 12 17	691	0.5+	0.1-
1997 02 13	691	0.4+	0.1+	1999 12 07	691	0.1+	0.0	1999 12 17	691	0.3+	0.3-
1997 02 13	691	0.2+	0.4+	1999 12 07	691	0.3+	0.3+	2000 01 03	704	0.4-	0.7+
1999 12 05	691	0.0	0.0	1999 12 07	691	0.1+	0.1+	2000 01 03	704	0.2+	0.4-
1999 12 05	691	0.1+	0.0	1999 12 14	691	0.8-	1.1-	2000 01 03	704	0.2-	0.1-
1999 12 05	691	0.0	0.2-	1999 12 14	691	0.3+	0.1-				

1999 XC₁₀ = 1998 MB

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	184.61369		(2000.0)	P	Q
<i>n</i>	0.37473388	ω	203.92294	+0.47748068	+0.77486559
<i>a</i>	1.9054055	Ω	97.02182	-0.72371904	+0.61418112
<i>e</i>	0.0925984	<i>i</i>	24.66874	-0.49823985	-0.14954889
<i>P</i>	2.63	<i>H</i>	16.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 05 27	704	0.4-	0.5+	1999 12 04	691	0.2-	0.5-	1999 12 07	691	0.1-	0.1-
1998 05 27	704	1.4+	0.0	1999 12 04	691	0.1+	0.4-	1999 12 07	691	0.2-	0.1-
1998 05 27	704	1.3+	0.3-	1999 12 04	691	0.1+	0.4-	1999 12 08	704	0.3+	1.4+
1998 05 27	704	0.2-	0.8-	1999 12 05	691	0.4-	0.1-	1999 12 08	704	1.0+	0.2-
1998 05 27	704	2.0-	0.7+	1999 12 05	691	0.2-	0.3-	1999 12 08	704	0.1+	0.4+
1998 06 17	704	0.6-	0.1+	1999 12 05	691	0.3-	0.2-	1999 12 08	704	0.2-	1.0+
1998 06 17	704	(2.4-	2.8+)	1999 12 06	691	0.4-	0.1-	1999 12 31	699	0.4-	0.6+
1998 06 17	704	0.2-	1.1-	1999 12 06	691	0.4-	0.1-	1999 12 31	699	1.1+	0.2+
1998 06 17	704	1.0-	0.3+	1999 12 06	691	0.5-	0.2-	1999 12 31	699	0.2+	0.8+
1998 06 18	704	0.1+	0.1-	1999 12 07	691	0.0	0.1-	2000 01 08	704	0.2-	0.3+
1998 06 18	704	1.2+	1.4+	1999 12 07	691	0.5-	0.1+	2000 01 08	704	0.8-	0.1-
1998 06 18	704	1.0-	0.2-	1999 12 07	691	0.5+	0.2-	2000 01 08	704	0.5+	1.2-
1998 06 18	704	1.2+	0.5-	1999 12 07	691	0.1-	0.1+	2000 01 08	704	0.6+	0.4-

1999 XF₁₀ = 1998 OE₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	9.70708		(2000.0)	P	Q
<i>n</i>	0.18607487	ω	133.63532	+0.52064567	-0.83970536
<i>a</i>	3.0386282	Ω	284.38605	+0.73026896	+0.53164951
<i>e</i>	0.1303263	<i>i</i>	9.16879	+0.44230682	+0.11065129
<i>P</i>	5.30	<i>H</i>	14.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 07 26	910	0.4+	0.2-	1999 11 08	699	0.0	0.1+	1999 12 07	703	0.6-	0.2+
1998 07 27	910	0.2+	0.1-	1999 12 05	699	0.4+	0.3+	1999 12 07	703	0.7-	0.0
1998 07 27	910	0.2+	0.2-	1999 12 05	703	0.7-	0.5-	1999 12 07	703	1.3-	0.2-
1998 07 29	910	0.2-	0.1-	1999 12 05	703	1.3+	1.0-	1999 12 07	703	1.6-	0.5+
1998 07 29	910	0.2-	0.2+	1999 12 05	699	1.2+	0.5+	1999 12 13	703	0.7+	0.6-
1998 07 29	910	0.3-	0.4+	1999 12 05	703	0.6+	0.3+	1999 12 13	703	0.2-	0.9-
1999 11 08	699	0.0	0.4+	1999 12 05	703	1.1+	0.9+	1999 12 13	703	0.1+	0.4+
1999 11 08	699	0.3-	0.5-	1999 12 05	699	0.2+	0.1-	1999 12 13	703	0.3-	0.1+

1999 XW₁₀ = 1994 EB₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	174.68567		(2000.0)	P		Q	
<i>n</i>	0.29243975	ω	289.87876	-0.17191830		+0.98420868	
<i>a</i>	2.2479075	Ω	330.12409	-0.86920692		-0.17169217	
<i>e</i>	0.0838638	<i>i</i>	4.85507	-0.46359835		-0.04307060	
<i>P</i>	3.37	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 02 12	675	0.3-	0.8+	1999 11 09	699	1.2-	0.4+	1999 12 08	704	0.6+	1.1-
1994 02 12	675	0.1+	0.1+	1999 11 13	703	0.1+	0.1+	1999 12 08	704	0.4+	0.4-
1994 03 09	675	0.2+	1.6-	1999 11 13	703	0.3-	0.2+	1999 12 08	704	0.1+	0.6-
1994 03 09	675	0.7-	1.3-	1999 11 13	703	0.1-	0.1-	1999 12 08	704	0.1+	1.1-
1994 03 11	098	0.4+	0.7+	1999 11 13	703	0.2-	0.2+	1999 12 13	703	0.5-	0.8+
1994 03 12	098	0.3+	1.3+	1999 11 14	703	0.2-	0.2-	1999 12 13	703	0.3-	0.4+
1999 10 05	704	0.7+	0.5-	1999 11 14	703	0.1-	0.1+	1999 12 13	703	0.2-	0.7+
1999 10 05	704	0.8+	0.6-	1999 11 14	703	0.1-	0.2-	1999 12 13	703	0.3-	0.2+
1999 10 05	704	0.6+	0.1-	1999 11 14	703	0.1-	0.2+	2000 01 04	704	0.3-	0.0
1999 10 05	704	0.6+	0.1-	1999 12 05	703	0.0	0.1+	2000 01 04	704	0.1+	0.1+
1999 10 05	704	0.7-	0.3+	1999 12 05	703	0.3-	0.0	2000 01 04	704	0.1-	0.9-
1999 11 03	704	0.1+	0.4-	1999 12 05	703	0.3-	0.5+	2000 01 04	704	0.2+	0.4-
1999 11 03	704	0.2+	0.3+	1999 12 05	703	0.1+	0.0	2000 01 04	704	0.0	1.2+
1999 11 03	704	0.3+	0.2-	1999 12 07	703	0.2+	0.2+	2000 01 06	704	0.6-	0.7-
1999 11 03	704	0.4+	0.9+	1999 12 07	703	0.0	0.3+	2000 01 06	704	0.3+	0.8+
1999 11 03	704	0.3-	0.9+	1999 12 07	703	0.1+	0.8+	2000 01 06	704	0.1+	0.3-
1999 11 09	699	0.2-	0.2-	1999 12 07	703	0.3-	0.1-	2000 01 06	704	0.0	0.0
1999 11 09	699	0.2+	0.4-	1999 12 08	704	0.4+	0.7-	2000 01 06	704	0.5+	0.9-

1999 XT₁₁ = 1994 XO₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	325.21470		(2000.0)	P		Q	
<i>n</i>	0.17113291	ω	175.66582	-0.29555053		-0.93804379	
<i>a</i>	3.2130219	Ω	291.44431	+0.87054940		-0.18646662	
<i>e</i>	0.0753453	<i>i</i>	11.20683	+0.39343821		-0.29206857	
<i>P</i>	5.76	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 12 06	114	1.3-	0.2+	1999 12 07	703	0.2-	0.3+	1999 12 13	703	0.1+	0.2+
1994 12 06	114	0.0	0.2-	1999 12 07	703	1.0-	0.2+	1999 12 13	703	0.2-	0.2-
1994 12 07	114	1.3+	0.0	1999 12 07	703	0.5-	0.5+	1999 12 13	703	0.0	0.5+
1999 12 05	699	0.3-	0.3+	1999 12 07	703	0.5-	0.2-	1999 12 15	704	0.2+	0.4+
1999 12 05	699	0.4-	0.3-	1999 12 10	704	0.7+	0.3-	1999 12 15	704	0.3+	0.7-
1999 12 05	699	0.3+	0.6+	1999 12 10	704	0.9+	1.2-	1999 12 15	704	0.4+	0.3+
1999 12 06	703	0.8-	0.1+	1999 12 10	704	0.0	1.1-	1999 12 15	704	0.9+	0.1-
1999 12 06	703	0.2-	0.6+	1999 12 10	704	1.2+	0.2+	2000 01 07	699	0.0	0.3-
1999 12 06	703	0.4-	0.0	1999 12 10	704	0.6+	0.6-	2000 01 07	699	0.4-	0.1+
1999 12 06	703	0.4-	0.1+	1999 12 13	703	0.1-	0.4+	2000 01 07	699	0.3-	0.0

1999 XV₁₁ = 1989 YR₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	34.38019		(2000.0)	P		Q	
<i>n</i>	0.28417398	ω	98.47290	+0.72571786		-0.68130140	
<i>a</i>	2.2912889	Ω	304.53691	+0.57663524		+0.67822610	
<i>e</i>	0.1372877	<i>i</i>	6.67265	+0.37526710		+0.27538657	
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1989 12 30	413	0.2-	0.2-	1999 12 07	703	0.1-	0.1+	1999 12 15	704	0.4+	0.1-
1989 12 30	413	0.1+	1.4+	1999 12 07	699	0.2+	0.2-	1999 12 15	704	0.3+	0.1-
1989 12 31	413	1.1-	1.5-	1999 12 07	699	(2.1+	1.6+)	1999 12 15	704	0.0	0.2-
1989 12 31	413	1.0+	0.3-	1999 12 07	699	0.3-	0.9+	1999 12 15	704	0.0	0.6-
1999 10 05	704	0.2+	0.9-	1999 12 10	704	0.2+	0.0	2000 01 03	704	0.4+	0.3+
1999 10 05	704	0.7-	0.6-	1999 12 10	704	0.5-	0.5-	2000 01 03	704	0.3-	0.3-
1999 10 05	704	1.5+	0.1-	1999 12 10	704	0.2-	1.1-	2000 01 03	704	0.2+	0.1+
1999 10 05	704	0.2+	0.6+	1999 12 10	704	0.7+	0.6-	2000 01 03	704	0.4+	0.3+

1999 12 06	703	0.6-	0.4+	1999 12 10	704	0.4-	0.4-	2000 01 03	704	0.8+	1.5-
1999 12 06	703	0.7-	0.4+	1999 12 13	703	0.1-	0.8+	2000 01 04	704	0.0	0.3+
1999 12 06	703	0.3-	0.2+	1999 12 13	703	0.1-	0.5+	2000 01 04	704	0.5-	0.2-
1999 12 07	703	0.1-	0.3+	1999 12 13	703	0.1+	0.4+	2000 01 04	704	0.2-	0.1+
1999 12 07	703	0.4-	0.1+	1999 12 13	703	0.2-	0.3+	2000 01 04	704	0.1-	0.3+
1999 12 07	703	0.4-	0.0	1999 12 15	704	0.6+	0.2+	2000 01 04	704	0.3+	0.9+

1999 XB₁₂ = 1985 QZ₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	295.67534		(2000.0)	P		Q	
<i>n</i>	0.22599323	ω	222.51446	-0.84968856		-0.49001196	
<i>a</i>	2.6693515	Ω	287.16790	+0.52176462		-0.72806106	
<i>e</i>	0.1140027	<i>i</i>	11.75957	+0.07609880		-0.47939064	
<i>P</i>	4.36	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1985 08 16	675	2.0-	0.3-	1999 11 08	699	0.2-	0.5-	1999 12 13	703	0.5+	0.5+
1985 08 16	675	(10.7+	2.0+)	1999 12 05	699	0.7+	1.1+	1999 12 13	703	0.2+	0.3+
1985 08 17	675	(4.1-	1.3-)	1999 12 05	699	0.8+	0.2+	1999 12 13	703	0.4-	0.0
1985 08 17	675	0.6-	0.6+	1999 12 05	699	0.3+	0.7+	1999 12 13	703	0.5+	0.0
1985 08 23	675	1.1+	2.3+	1999 12 06	703	0.3+	0.0	1999 12 15	704	0.3+	0.7-
1998 08 17	704	0.2-	1.0-	1999 12 06	703	1.1-	0.3-	1999 12 15	704	0.5+	0.0
1998 08 17	704	0.3+	1.4+	1999 12 06	703	0.6-	1.0+	1999 12 15	704	0.2+	0.7-
1998 08 17	704	0.8+	0.4-	1999 12 06	703	1.3+	0.9+	2000 01 03	704	0.1-	0.2+
1998 08 17	704	(7.0-	0.8+)	1999 12 07	703	1.0-	0.4+	2000 01 03	704	0.0	0.2-
1998 08 27	704	0.5+	0.1+	1999 12 07	703	0.4-	0.4+	2000 01 03	704	0.9+	0.6+
1998 08 27	704	0.1-	1.9-	1999 12 07	703	0.6-	0.1-	2000 01 03	704	0.2-	0.2-
1998 08 27	704	0.7-	0.6+	1999 12 07	703	0.0	0.2-	2000 01 03	704	1.0+	0.9-
1998 08 27	704	0.7+	1.5-	1999 12 10	704	0.5+	0.7-	2000 01 07	699	0.2+	1.1+
1998 08 27	704	(2.1-	3.2-)	1999 12 10	704	0.9-	1.0-	2000 01 07	699	0.7-	0.5+
1999 11 08	699	0.0	0.1-	1999 12 10	704	0.3-	0.9-	2000 01 07	699	0.9-	0.2-
1999 11 08	699	0.5-	0.3+	1999 12 10	704	0.0	1.5-				

1999 XN₁₂ = 1998 MA₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	64.88100		(2000.0)	P		Q	
<i>n</i>	0.28188643	ω	268.57084	+0.69308865		-0.71684546	
<i>a</i>	2.3036682	Ω	137.21509	+0.69781385		+0.64080140	
<i>e</i>	0.0775541	<i>i</i>	6.41565	+0.18078705		+0.27478384	
<i>P</i>	3.50	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 24	704	0.4-	1.0-	1998 06 27	809	0.7+	1.0-	1999 12 14	704	0.1-	0.3-
1998 06 24	704	1.7-	0.3+	1998 06 27	809	1.1+	0.7-	1999 12 14	704	0.1-	0.2+
1998 06 24	704	0.8-	0.6+	1999 12 05	704	1.1+	0.8-	1999 12 14	704	0.1-	0.0
1998 06 24	704	0.1-	1.0-	1999 12 05	704	0.7+	0.4+	1999 12 14	704	0.2-	0.4-
1998 06 24	704	(3.3-	0.8+)	1999 12 05	704	0.3+	0.3-	2000 01 05	704	0.1-	0.3-
1998 06 26	809	1.1+	0.6+	1999 12 05	704	0.2-	0.6+	2000 01 05	704	0.2-	0.5-
1998 06 26	809	0.7+	0.9+	1999 12 05	704	0.6-	0.9+	2000 01 05	704	0.1-	0.3-
1998 06 26	809	0.7+	0.5+	1999 12 06	704	0.7+	0.1+	2000 01 05	704	0.0	0.1-
1998 06 26	704	0.7-	0.1-	1999 12 06	704	0.3-	0.1+	2000 01 05	704	0.3-	0.1-
1998 06 26	704	0.2-	1.9+	1999 12 06	704	0.3+	0.2+	2000 01 06	704	0.2-	0.1-
1998 06 26	704	1.2-	0.6-	1999 12 06	704	0.3+	0.1+	2000 01 06	704	0.2-	0.2-
1998 06 26	704	0.8-	0.3-	1999 12 06	704	0.2-	0.1-	2000 01 06	704	0.2-	0.1-
1998 06 27	809	1.7+	1.1-	1999 12 14	704	0.1-	0.1+				

1999 XO₁₂ = 1995 WR₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	45.73275		(2000.0)	P	Q
n	0.25817311	ω	167.48945	+0.51721744	-0.83312531
a	2.4426545	Ω	251.06680	+0.76630271	+0.55274949
e	0.1803592	i	11.95457	+0.38113813	+0.01924107
P	3.82	H	15.2	G 0.15	U 4

Residuals in seconds of arc

1995 11 21	358	0.1−	0.1−	1999 12 05	704	0.1+	0.7−	2000 01 07	704	0.1+	0.0
1995 11 21	358	1.2+	0.8−	1999 12 06	704	0.0	0.8−	2000 01 07	704	0.4+	1.2−
1995 11 22	358	(3.0−	3.1+)	1999 12 06	704	0.4−	0.5−	2000 01 07	704	0.1−	0.0
1995 11 22	358	1.1−	1.1+	1999 12 06	704	0.5+	1.2+	2000 01 07	704	0.3−	0.3+
1999 12 05	704	(2.3+	0.9−)	1999 12 06	704	0.0	0.6−	2000 01 07	704	0.5−	0.0
1999 12 05	704	0.4−	0.9+	1999 12 14	704	0.1+	0.2−	2000 01 11	704	0.3+	1.0+
1999 12 05	704	1.2+	0.4+	1999 12 14	704	0.5−	0.2−	2000 01 11	704	0.2−	0.6+
1999 12 05	704	0.5−	1.1+	1999 12 14	704	0.5+	1.3−	2000 01 11	704	0.6+	0.3−
1999 12 05	704	1.2−	0.0	1999 12 14	704	0.2+	0.2−	2000 01 11	704	0.1−	0.1+
1999 12 05	704	0.1+	0.3+	1999 12 14	704	0.0	0.0				

1999 XP₁₂ = 1997 GA₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	70.03077		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26249882	<i>ω</i>	217.51533	+0.76749460	−0.64104411		
<i>a</i>	2.4157453	<i>Ω</i>	182.36481	+0.60824018	+0.73006958		
<i>e</i>	0.0748032	<i>i</i>	5.29302	+0.20247448	+0.23677173		
<i>P</i>	3.75	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 12	809	(0.6+	6.1−)	1998 08 17	704	0.3−	0.0	1999 12 14	704	0.3−	0.3+
1997 03 12	809	(0.6+	4.8−)	1999 12 05	704	0.5−	0.5+	1999 12 14	704	0.1+	0.1−
1997 03 12	809	(0.5+	6.2−)	1999 12 05	704	1.0+	0.4−	1999 12 14	704	0.2+	0.3−
1997 04 03	704	0.1−	0.2−	1999 12 05	704	1.9+	1.0−	1999 12 14	704	0.3−	0.5+
1997 04 03	704	0.7+	0.6−	1999 12 05	704	0.8+	0.8−	2000 01 05	704	0.1−	0.2−
1997 04 05	704	0.2−	0.3+	1999 12 05	704	0.2−	0.0	2000 01 05	704	0.1−	0.2+
1997 04 05	704	0.5−	0.0	1999 12 05	704	0.1−	0.7+	2000 01 05	704	0.2+	0.1+
1997 04 07	704	0.0	0.1−	1999 12 05	704	0.1−	0.3−	2000 01 05	704	1.1−	1.4+
1997 04 07	704	0.6−	0.1−	1999 12 05	704	0.1+	0.8+	2000 01 05	704	0.2+	0.8+
1997 04 07	704	0.3+	0.3+	1999 12 06	704	0.3−	0.5−	2000 01 07	704	0.2−	0.3−
1997 04 07	704	0.3+	0.0	1999 12 06	704	0.8−	0.1+	2000 01 07	704	0.8+	0.2+
1998 08 17	704	0.1+	0.1−	1999 12 06	704	0.6−	0.3−	2000 01 07	704	0.1−	0.2+
1998 08 17	704	1.4−	0.9+	1999 12 06	704	0.3−	0.4−	2000 01 07	704	0.5+	0.4−
1998 08 17	704	0.2−	0.0	1999 12 06	704	0.5−	0.1−	2000 01 07	704	0.2−	0.5−
1998 08 17	704	1.8+	1.2−	1999 12 14	704	0.1−	0.8−				

1999 XQ₁₂ = 1997 HU₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	84.24202		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28692890	<i>ω</i>	202.92989	+0.84629025	−0.53255182		
<i>a</i>	2.2765989	<i>Ω</i>	189.28326	+0.50078912	+0.80392781		
<i>e</i>	0.0195585	<i>i</i>	4.78887	+0.18166744	+0.26474258		
<i>P</i>	3.44	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 04 28	704	1.0−	0.3−	1999 12 05	704	1.2+	0.2+	2000 01 05	704	0.2−	0.4+
1997 04 28	704	1.2−	0.5−	1999 12 05	704	1.6+	0.7−	2000 01 05	704	(2.5−	0.4−)
1997 04 28	704	0.7−	0.7−	1999 12 05	704	0.7−	0.2−	2000 01 05	704	0.0	0.8+
1997 04 28	704	1.7−	0.8+	1999 12 06	704	0.5+	0.1−	2000 01 05	704	0.0	0.3+
1997 04 29	704	1.2+	0.1+	1999 12 06	704	0.6−	0.3+	2000 01 05	704	0.1−	0.8+
1997 04 29	704	0.9+	0.9+	1999 12 06	704	0.0	0.9+	2000 01 07	704	0.2−	0.2+
1997 04 29	704	0.3+	0.6−	1999 12 06	704	0.8−	0.3−	2000 01 07	704	0.7+	0.7−
1997 04 29	704	0.8+	0.5−	1999 12 14	704	0.0	1.2−	2000 01 07	704	0.1+	0.2+
1997 04 29	704	1.4+	0.6+	1999 12 14	704	0.1+	0.8−	2000 01 07	704	0.4+	0.2+
1999 12 05	704	(2.6−	2.4+)	1999 12 14	704	0.7−	1.0−	2000 01 07	704	0.5+	0.2−
1999 12 05	704	0.3+	1.6+	1999 12 14	704	0.0	0.4−				
1999 12 05	704	0.6−	0.0	1999 12 14	704	1.5−	0.3−				

1999 XV₁₂ = 1997 GE₃₇ = 1998 QB₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	119.63142		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21130396	<i>ω</i>	132.22139	+0.72968109	+0.68367478		
<i>a</i>	2.7916714	<i>Ω</i>	184.69711	−0.66352359	+0.70355042		
<i>e</i>	0.1524553	<i>i</i>	8.72500	−0.16523305	+0.19392163		
<i>P</i>	4.66	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 03	704	1.0+	0.5+	1998 08 27	704	0.1−	0.8−	1999 12 06	704	0.2+	0.5+
1997 04 03	704	0.9+	0.2−	1998 08 27	704	0.9+	1.1−	1999 12 06	704	0.0	0.3−
1997 04 04	566	1.5−	0.1+	1998 08 27	704	1.0−	0.9−	1999 12 06	704	0.8−	0.1−
1997 04 04	566	1.6−	0.2−	1998 08 27	704	0.2+	0.6−	1999 12 06	704	0.7−	0.0
1997 04 04	566	0.7−	0.3+	1998 08 27	704	0.3−	0.2+	1999 12 07	704	0.1+	0.0
1997 04 11	704	0.7+	0.9−	1999 12 05	704	0.2+	0.5−	1999 12 07	704	0.1−	0.1+
1997 04 11	704	1.2+	0.0	1999 12 05	704	0.1−	0.3+	1999 12 07	704	0.1−	0.7+
1998 08 23	704	0.7+	0.8+	1999 12 05	704	0.2−	0.1−	1999 12 07	704	0.5−	0.6+
1998 08 23	704	(2.5−	1.2−)	1999 12 05	704	(2.5−	2.0+)	1999 12 14	704	1.1+	0.1−
1998 08 23	704	0.7+	1.6+	1999 12 05	704	0.3+	0.5+	1999 12 14	704	0.1+	0.6−
1998 08 23	704	1.1−	0.6+	1999 12 06	704	0.7+	0.5−	1999 12 14	704	0.1−	1.0−

1999 XK₁₃ = 1997 CU₄ = 1998 KT₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	80.13897		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26986465	<i>ω</i>	208.55487	+0.97873806	+0.19242069		
<i>a</i>	2.3715851	<i>Ω</i>	140.14843	−0.16072281	+0.93462525		
<i>e</i>	0.1448207	<i>i</i>	6.36459	−0.12743624	+0.29908178		
<i>P</i>	3.65	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1997 02 03	566	0.1−	0.1+	1999 11 05	704	0.1−	0.4−	1999 12 14	704	0.6−	0.1+
1997 02 03	566	0.0	0.2−	1999 11 05	704	0.8−	0.6−	1999 12 14	704	1.4−	0.2+
1997 02 03	566	0.2−	0.1−	1999 11 05	704	1.0−	0.8−	1999 12 14	704	0.3−	0.2+
1997 02 07	566	0.1+	0.5−	1999 12 04	699	0.4−	0.7+	1999 12 14	699	0.3+	0.1+
1997 02 07	566	0.2−	0.1+	1999 12 04	699	1.0−	1.2+	1999 12 14	699	0.2−	0.5+
1997 02 07	566	0.2+	0.2−	1999 12 04	699	0.2−	1.1+	1999 12 14	699	0.0	1.0+
1998 05 23	704	0.2+	0.1+	1999 12 05	704	0.2+	0.3+	2000 01 05	704	0.1+	1.5+
1998 05 23	704	0.4+	0.5+	1999 12 05	704	0.7+	0.2−	2000 01 05	704	0.7+	0.0
1998 05 23	704	0.3+	0.0	1999 12 05	704	0.5+	0.2+	2000 01 05	704	0.9−	0.5−
1998 05 23	704	0.2+	0.2+	1999 12 05	704	0.1+	0.6−	2000 01 05	704	0.0	0.4+
1998 05 26	704	0.1−	0.3+	1999 12 05	704	0.4+	0.1+	2000 01 05	704	0.9+	0.9+
1998 05 26	704	0.1+	0.3+	1999 12 06	704	1.1+	0.1−	2000 01 07	704	0.1+	0.7+
1998 05 26	704	(0.6+	2.2+)	1999 12 06	704	0.9+	0.1−	2000 01 07	704	0.1+	0.2−
1998 05 26	704	0.8+	0.1+	1999 12 06	704	(2.2+	0.3+)	2000 01 07	704	0.9+	0.1+
1998 05 26	704	1.2−	1.0+	1999 12 06	704	0.5+	1.3−	2000 01 07	704	0.3+	0.1−
1999 11 05	704	0.4−	0.1+	1999 12 14	704	1.0−	0.6−	2000 01 07	704	0.9+	0.0
1999 11 05	704	0.4+	0.7−	1999 12 14	704	0.9−	0.1+				

1999 XM₁₃ = 1992 EL₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.83063		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21666124	<i>ω</i>	179.15128	+0.99394958	+0.10919866		
<i>a</i>	2.7454607	<i>Ω</i>	174.53709	−0.10149163	+0.95425892		
<i>e</i>	0.0487347	<i>i</i>	7.13667	−0.04199624	+0.27832637		
<i>P</i>	4.55	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 03 03	809	1.5−	0.4−	1999 11 17	703	0.7−	0.5−	1999 12 06	704	0.5+	1.4+
1992 03 06	809	1.5+	0.6+	1999 11 17	703	1.0−	0.2+	1999 12 06	704	1.4+	0.7+
1999 11 05	704	0.1−	0.0	1999 12 04	699	0.1+	0.1−	1999 12 06	704	0.0	1.4−
1999 11 05	704	0.2+	1.0−	1999 12 04	699	0.6+	0.1+	1999 12 07	704	0.1−	0.1−
1999 11 05	704	0.2+	0.9+	1999 12 04	699	0.2−	1.0+	1999 12 07	704	0.1+	0.6−
1999 11 05	704	0.5−	0.1−	1999 12 05	704	0.5+	0.0	1999 12 07	704	0.1+	0.9−
1999 11 17	703	0.3−	1.0+	1999 12 05	704	0.7−	1.2−	1999 12 07	704	1.0+	0.8−
1999 11 17	703	0.7−	1.4+	1999 12 05	704	0.5−	0.0				

1999 XR₁₃ = 1970 EJ = 1971 HP = 1980 WM = 1983 EZ = 1984 KH₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	235.00594		(2000.0)		P		Q
<i>n</i>	0.15905538	ω	116.68134		-0.88552519		+0.37251656
<i>a</i>	3.3736793	Ω	86.28603		-0.45898634		-0.79400499
<i>e</i>	0.1134468	<i>i</i>	16.15346		+0.07194920		-0.48040347
<i>P</i>	6.20	<i>H</i>	10.6	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1955 10 23	675	0.7+	0.2+	1998 12 08	704	(0.5+	3.0+)	1999 12 14	699	0.1+	0.1+
1955 10 23	675	0.3+	0.2-	1998 12 08	704	(2.3-	2.1+)	1999 12 27	849	0.2+	0.5+
1970 03 07	095	2.3-	2.3-	1999 10 31	703	0.4-	0.1-	1999 12 27	849	0.0	0.5+
1971 04 27	095	0.9+	0.2-	1999 10 31	703	0.4-	0.1-	1999 12 27	849	0.2+	0.2+
1980 11 30	095	0.1+	1.7-	1999 10 31	703	0.5-	0.1-	1999 12 31	849	0.1-	0.3+
1983 03 11	675	0.6+	0.7-	1999 10 31	703	0.1-	0.1-	1999 12 31	849	0.1-	0.4+
1983 03 11	675	0.9-	0.2+	1999 12 04	699	1.8+	0.2-	1999 12 31	849	0.3-	0.4+
1983 03 13	675	0.6-	0.1+	1999 12 04	699	0.1+	0.5+	2000 01 05	704	0.8+	0.6-
1983 03 13	675	0.1-	1.1+	1999 12 04	699	0.3-	0.1+	2000 01 05	704	1.1+	1.2+
1983 03 15	675	0.9+	0.7+	1999 12 05	704	0.6-	1.7-	2000 01 05	704	0.7+	1.0+
1983 03 15	675	1.3+	0.5+	1999 12 05	704	0.4-	0.3+	2000 01 05	704	1.1+	1.3+
1984 05 22	413	0.3-	0.7-	1999 12 05	704	0.3+	1.1-	2000 01 05	704	0.6-	1.8+
1984 05 22	413	(3.1+	0.4+)	1999 12 05	704	1.4-	0.4-	2000 01 05	106	0.3-	0.3+
1984 05 22	413	0.9+	0.5-	1999 12 06	704	0.4+	0.0	2000 01 05	106	0.2+	0.1-
1997 08 03	566	0.7-	0.0	1999 12 06	704	0.1-	0.0	2000 01 05	106	0.1+	0.0
1997 08 03	566	0.7-	0.0	1999 12 06	704	0.3-	0.0	2000 01 06	699	0.2-	0.1-
1997 08 03	566	0.0	1.1+	1999 12 06	704	0.5-	0.3+	2000 01 06	699	0.2+	0.1+
1998 10 03	699	0.2-	0.2-	1999 12 06	704	0.4-	0.2-	2000 01 06	699	0.2-	0.0
1998 10 03	699	0.6+	0.2-	1999 12 14	704	0.2+	1.1-	2000 01 07	704	0.3+	0.5-
1998 10 03	699	0.5+	0.4-	1999 12 14	704	0.7-	1.9-	2000 01 07	704	0.7+	0.6+
1998 12 08	704	1.2-	0.3+	1999 12 14	704	1.2-	1.3-	2000 01 07	704	1.3+	1.3+
1998 12 08	704	1.0-	0.5+	1999 12 14	699	0.3+	0.4+	2000 01 07	704	0.1+	0.6+
1998 12 08	704	0.0	0.7+	1999 12 14	699	0.4+	0.1+	2000 01 07	704	0.3-	1.6+

1999 XS₁₃ = 1969 TR = 1986 TC₃ = 1997 GA₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	8.94002		(2000.0)		P		Q
<i>n</i>	0.23235744	ω	249.46918		+0.18739799		-0.98195958
<i>a</i>	2.6203844	Ω	189.83233		+0.94730357		+0.18746254
<i>e</i>	0.1737723	<i>i</i>	8.50182		+0.25980367		+0.02476223
<i>P</i>	4.24	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1969 10 07	095	0.0	1.0+	1999 11 12	699	0.4+	0.8+	1999 12 14	704	0.2-	0.1-
1986 10 04	046	0.7+	0.2-	1999 11 17	703	0.5-	0.3+	1999 12 14	699	0.1-	0.7+
1986 10 04	046	0.6-	2.1-	1999 11 17	703	0.1+	0.4+	1999 12 14	704	0.1-	0.2+
1997 04 06	704	0.3-	0.4+	1999 11 17	703	0.4-	0.2+	1999 12 14	704	0.2+	0.4+
1997 04 06	704	0.2-	0.1+	1999 11 17	703	0.5-	0.2+	1999 12 14	699	0.2-	0.2+
1997 04 11	704	0.2+	0.4-	1999 12 04	699	0.3+	0.3+	1999 12 14	704	1.0-	0.1+
1997 04 11	704	0.1-	0.0	1999 12 04	699	0.2-	0.5+	1999 12 14	699	0.0	0.2+
1997 04 11	704	0.1-	0.3-	1999 12 04	699	0.1-	0.0	2000 01 05	106	0.8-	0.4+
1997 04 11	704	0.4+	0.3-	1999 12 05	704	0.2+	0.8-	2000 01 05	106	0.4-	0.1+
1999 10 03	704	0.3+	1.1+	1999 12 05	704	0.0	1.2-	2000 01 05	106	0.0	0.2+
1999 10 03	704	0.7+	0.3+	1999 12 05	704	0.1-	1.4-	2000 01 06	699	0.5-	0.1+
1999 10 03	704	1.2+	0.8+	1999 12 05	704	0.1-	1.3-	2000 01 06	699	0.3-	0.1-
1999 10 03	704	1.0+	0.3-	1999 12 06	704	0.2+	0.2-	2000 01 06	699	0.3-	0.1-
1999 10 03	704	0.8+	1.0-	1999 12 06	704	0.5+	1.0-	2000 01 07	704	(0.7+	2.8-)
1999 11 05	704	0.3-	0.2+	1999 12 06	704	0.3-	0.5-	2000 01 07	704	(2.2+	1.6-)
1999 11 05	704	0.2-	0.1+	1999 12 06	704	0.3-	1.1-	2000 01 07	704	0.6+	0.1+
1999 11 05	704	0.3-	0.0	1999 12 07	678	0.4+	0.1+	2000 01 11	704	0.1-	1.4-
1999 11 05	704	0.3-	0.1+	1999 12 07	678	0.3+	0.4+	2000 01 11	704	0.6+	0.8-
1999 11 05	704	0.4-	0.2-	1999 12 08	678	0.1-	0.0	2000 01 11	704	0.5+	0.3-
1999 11 12	699	0.1+	0.4+	1999 12 08	678	0.3-	1.6+	2000 01 11	704	0.2+	0.3-
1999 11 12	699	0.2-	1.0+	1999 12 14	704	0.4+	0.1-	2000 01 11	704	0.5+	1.3+

1999 XT₁₃ = 1982 BQ₁₃ = 1991 RW₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	47.14587		(2000.0)		P		Q
<i>n</i>	0.27133742	ω	277.52045		+0.54928997		-0.83170632
<i>a</i>	2.3629957	Ω	138.82141		+0.80694331		+0.50278980
<i>e</i>	0.1791943	<i>i</i>	7.05806		+0.21707838		+0.23551435
<i>P</i>	3.63	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1982 01 30	675	1.0+	0.6-	1999 12 05	704	0.4-	0.5-	1999 12 14	704	0.1-	0.6-
1982 01 31	675	0.9-	1.3+	1999 12 05	704	0.6+	0.5-	1999 12 14	704	0.0	0.3-
1991 09 04	809	(3.0+	1.6+)	1999 12 05	704	0.4-	0.6-	1999 12 14	704	0.3+	0.4-
1991 09 04	809	1.3+	0.9+	1999 12 05	704	0.3+	0.3-	1999 12 14	704	(0.9-	2.2-)
1991 09 04	809	0.9+	0.6+	1999 12 05	704	0.0	0.4+	2000 01 05	704	0.0	0.0
1991 09 05	809	0.2-	0.4+	1999 12 05	704	0.3-	0.1-	2000 01 05	704	0.2-	0.3+
1991 09 05	809	0.7-	0.3-	1999 12 05	704	0.1+	0.1+	2000 01 05	704	0.0	0.4-
1991 09 05	809	1.5-	0.7-	1999 12 05	704	0.4-	0.3-	2000 01 05	704	0.4-	0.2+
1991 09 06	809	(7.4-	4.0-)	1999 12 06	704	0.9+	0.2-	2000 01 05	704	0.3+	0.3+
1991 09 06	809	(5.0-	2.5-)	1999 12 06	704	0.1-	0.7+	2000 01 06	704	0.3-	0.3+
1991 09 06	809	(4.2-	3.7-)	1999 12 06	704	0.6+	1.6+	2000 01 06	704	0.0	0.2+
1991 09 07	809	(0.9+	2.8-)	1999 12 06	704	0.7+	0.2-	2000 01 06	704	0.2-	0.2+
1991 09 07	809	(0.6+	2.6-)	1999 12 06	704	0.8-	0.1-				

1999 XW₁₃ = 1983 UO = 1991 GP₄ = 1998 RT₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	6.49898		(2000.0)		P		Q
<i>n</i>	0.18851280	ω	248.07123		+0.22626608		-0.97363196
<i>a</i>	3.0123735	Ω	188.99996		+0.94813743		+0.22698271
<i>e</i>	0.0797068	<i>i</i>	10.70561		+0.22324666		+0.02279581
<i>P</i>	5.23	<i>H</i>	12.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1983 10 30	675	(3.8+	3.3-)	1998 08 23	704	0.1-	1.2-	1999 11 16	703	0.1-	0.1-
1983 11 04	675	0.2+	0.7-	1998 08 23	704	1.2+	1.2-	1999 11 16	703	0.3+	0.1-
1991 04 08	809	(1.2-	5.7-)	1998 08 23	704	0.9-	0.6+	1999 11 17	703	0.1+	0.1+
1991 04 08	809	(0.9-	5.3-)	1998 09 14	704	0.7-	0.2+	1999 11 17	703	0.5-	0.1-
1991 04 08	809	(1.7-	5.9-)	1998 09 14	704	0.3+	0.3+	1999 11 17	703	1.3+	1.2-
1991 04 10	809	(1.4-	2.3-)	1998 09 14	704	0.0	0.3-	1999 11 17	703	0.2-	0.0
1991 04 10	809	(1.8-	2.5-)	1998 09 14	704	0.3-	0.7+	1999 12 05	704	0.1+	0.2-
1991 04 10	809	(1.0-	3.2-)	1998 09 14	704	0.1+	1.0-	1999 12 05	704	0.1+	0.1-
1991 04 11	033	0.6+	0.3+	1998 09 18	704	0.4+	0.3+	1999 12 05	704	0.2-	0.0
1991 04 11	033	0.6-	0.6+	1998 09 18	704	0.8-	0.7-	1999 12 05	704	0.2-	0.2+
1991 04 12	033	1.0-	1.3+	1998 09 18	704	0.5+	0.4-	1999 12 05	704	0.2+	0.3+
1991 04 19	809	(0.7-	2.0-)	1998 09 18	704	0.2+	0.2-	1999 12 06	704	0.3-	0.1-
1991 04 19	809	(3.1-	0.1-)	1998 09 18	704	0.1-	0.7-	1999 12 06	704	0.2+	0.7-
1991 04 19	809	0.4-	1.9-	1998 10 11	699	0.0	0.0	1999 12 06	704	0.5-	0.3-
1991 04 19	809	0.7+	0.2+	1998 10 11	699	0.1-	0.1-	1999 12 06	704	0.1+	0.2+
1991 04 19	675	0.7+	0.4+	1998 10 11	699	0.2+	0.1+	1999 12 14	704	0.3+	0.4-
1996 03 21	566	0.4-	1.0-	1999 11 05	704	0.3-	0.0	1999 12 14	704	0.3-	0.0
1996 03 21	566	0.1-	0.7-	1999 11 05	704	0.4-	0.3+	1999 12 14	704	0.1-	0.3-
1996 03 21	566	0.1-	0.5-	1999 11 05	704	0.4-	0.1-	1999 12 14	704	0.0	0.1-
1996 04 21	566	0.2-	0.3-	1999 11 05	704	0.6-	0.2-	1999 12 14	704	1.3-	0.3-
1996 04 21	566	0.0	0.6-	1999 11 05	704	0.1-	0.4-	2000 01 04	699	0.2+	0.3+

2000 JAN. 24

M.P.C. 37865

1999 XG₁₄ = 1992 AY₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	241.06714		(2000.0)	P		Q					
<i>n</i>	0.23794324	ω	349.04043	-0.41591841	+0.87659029						
<i>a</i>	2.5792126	Ω	256.01437	-0.81435837	-0.47749083						
<i>e</i>	0.1149296	<i>i</i>	14.44629	-0.40476206	+0.05993301						
<i>P</i>	4.14	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1992 01 13	303	0.0	0.3-	1999 12 06	704	1.5-	1.4-	1999 12 14	704	0.1-	0.3-
1992 01 14	303	0.1-	0.1+	1999 12 06	704	0.4-	0.0	2000 01 07	704	0.4-	0.1-
1999 11 17	704	1.0-	0.4-	1999 12 06	704	1.0+	1.3-	2000 01 07	704	0.2-	0.1-
1999 11 17	704	0.5-	1.2+	1999 12 06	704	0.2+	0.8-	2000 01 07	704	0.1-	0.1-
1999 11 17	704	0.6-	0.2+	1999 12 06	704	1.6+	0.5+	2000 01 07	704	0.2-	0.8+
1999 11 17	704	0.9+	1.8+	1999 12 14	704	0.4-	0.1+	2000 01 11	704	0.1+	1.4+
1999 12 05	704	1.2+	0.2-	1999 12 14	704	0.2+	0.7+	2000 01 11	704	0.3-	0.3+
1999 12 05	704	0.1-	0.9-	1999 12 14	704	0.3-	0.9-	2000 01 11	704	0.1-	0.3-
1999 12 05	704	0.0	0.2-	1999 12 14	704	0.7+	0.1-	2000 01 11	704	0.4+	0.4+

1999 XG₁₅ = 1996 FY₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	275.27704		(2000.0)	P		Q					
<i>n</i>	0.17935791	ω	11.05833	-0.99998384	+0.00517502						
<i>a</i>	3.1140269	Ω	169.23735	-0.00568305	-0.92232272						
<i>e</i>	0.1060830	<i>i</i>	0.72258	+0.00017254	-0.38638583						
<i>P</i>	5.50	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1996 03 22	809	1.3+	0.0	1999 11 03	704	0.4+	0.6+	1999 12 08	704	0.4-	0.3-
1996 03 22	809	0.9+	0.1+	1999 11 09	704	0.8-	0.8-	1999 12 08	704	0.7+	0.0
1996 03 22	809	0.2+	0.5-	1999 11 09	704	0.3-	0.3+	1999 12 08	704	0.5+	0.4-
1996 03 24	809	0.1+	0.8-	1999 11 09	704	0.6-	0.1+	1999 12 08	704	0.1+	1.0-
1996 03 24	809	1.2-	0.3-	1999 11 09	704	0.4-	0.4-	1999 12 13	557	0.3-	0.1+
1996 03 24	809	0.9-	0.1-	1999 12 02	557	0.2-	0.7+	1999 12 13	557	0.6-	0.4+
1996 03 26	809	(1.7+ 3.4+)		1999 12 02	557	0.0	0.5+	1999 12 31	703	0.0	0.3-
1996 03 26	809	(1.1+ 3.4+)		1999 12 02	557	0.2-	0.1-	1999 12 31	703	0.2+	1.7+
1996 03 26	809	(0.7+ 3.4+)		1999 12 06	557	0.5+	0.6-	1999 12 31	703	0.3+	0.4+
1996 03 26	809	0.3+	0.1-	1999 12 06	557	0.2+	0.3-	1999 12 31	703	1.1-	1.4+
1996 03 26	809	0.2+	1.1+	1999 12 06	557	1.1+	0.4-	2000 01 05	704	0.0	1.6-
1996 03 26	809	0.7-	0.7+	1999 12 06	557	0.1+	0.4+	2000 01 05	704	0.1+	0.0
1999 11 03	704	0.8+	0.9+	1999 12 06	557	0.6+	0.0	2000 01 05	704	0.0	0.2-
1999 11 03	704	0.1-	0.5+	1999 12 08	704	0.6-	1.3-	2000 01 05	704	0.1-	0.0

1999 XH₁₅ = 1993 QR₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	79.76141		(2000.0)	P		Q					
<i>n</i>	0.18318347	ω	116.53903	+0.87640622		+0.48146276					
<i>a</i>	3.0705195	Ω	214.68270	-0.44801656		+0.80732029					
<i>e</i>	0.2900007	<i>i</i>	1.03555	-0.17661627		+0.34121484					
<i>P</i>	5.38	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1993 08 16	010	0.1+	0.7+	1999 11 12	704	0.6-	0.7+	1999 12 07	704	0.0	0.1-
1993 08 16	010	0.1-	0.1-	1999 11 17	704	(2.8-	0.8+)	1999 12 07	704	1.2+	1.2-
1993 08 16	010	0.5+	0.3-	1999 11 17	704	0.7-	0.9+	1999 12 07	704	0.7+	0.8-
1993 08 17	010	0.4-	0.5-	1999 11 17	704	1.5-	1.1+	1999 12 07	704	0.4+	0.2-
1999 11 09	704	(2.1+	0.2+)	1999 11 17	704	(2.0-	2.0+)	1999 12 07	704	0.4+	0.8-
1999 11 09	704	1.7+	0.5+	1999 12 02	557	0.4+	0.5+	1999 12 08	704	0.2-	0.1-
1999 11 09	704	0.5+	0.4-	1999 12 02	557	0.7-	0.5+	1999 12 08	704	0.6+	0.9-
1999 11 09	704	0.6+	0.5-	1999 12 02	557	0.2-	0.7+	1999 12 08	704	0.2-	0.7-
1999 11 09	704	0.8+	0.6-	1999 12 06	557	0.3-	0.1+	1999 12 08	704	0.3-	0.3+
1999 11 12	704	1.0-	0.1-	1999 12 06	557	0.4-	0.2-	1999 12 08	704	0.5+	0.3-
1999 11 12	704	0.1-	0.2+	1999 12 06	557	0.2+	0.5-	1999 12 13	557	0.4-	0.8+
1999 11 12	704	0.9-	0.6+	1999 12 06	557	0.2-	0.2-	1999 12 13	557	0.4-	0.7+
1999 11 12	704	0.0	0.6+	1999 12 06	557	0.3+	0.3-				

1999 XJ₁₅ = 1987 RA₆ = 1987 SX₂₉ = 1998 KT₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	116.51401		(2000.0)	P		Q					
<i>n</i>	0.25637704	ω	313.34331	+0.67980232	+0.73339530						
<i>a</i>	2.4540494	Ω	359.48444	-0.66008785	+0.61162615						
<i>e</i>	0.1994483	<i>i</i>	2.41716	-0.31961359	+0.29672342						
<i>P</i>	3.84	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1				
Residuals in seconds of arc											
1987 09 04	095	0.4-	0.9+	1999 11 03	704	0.7+	0.2-	1999 12 10	704	0.8-	0.7+
1987 09 27	095	(2.3-	3.5+)	1999 11 14	704	0.2-	0.2-	1999 12 10	704	0.2-	0.1-
1997 03 06	704	0.5+	1.0-	1999 11 14	704	0.0	0.1+	1999 12 10	704	0.9-	0.3+
1997 03 06	704	0.3-	1.7+	1999 11 14	704	0.4-	0.2+	1999 12 10	704	0.4-	0.2+
1998 05 22	704	0.6-	0.3+	1999 11 14	704	0.4-	0.2+	1999 12 13	120	(11.8-	0.8+)
1998 05 22	704	0.3+	0.5+	1999 11 16	704	0.4+	0.0	1999 12 13	120	0.3+	0.1-
1998 05 22	704	0.1+	1.4+	1999 11 16	704	1.4+	0.5-	1999 12 15	704	0.2-	0.2-
1998 05 22	704	0.4+	0.1-	1999 11 16	704	0.5-	0.9-	1999 12 15	704	0.3+	0.3-
1998 05 24	704	1.9-	0.7-	1999 11 16	704	0.2-	0.1-	1999 12 15	704	0.1-	1.2-
1998 05 24	704	1.1+	0.5-	1999 11 16	704	0.2+	0.3-	1999 12 15	704	0.3+	0.2-
1998 05 24	704	0.4+	0.4-	1999 12 05	120	0.4+	0.2-	1999 12 15	704	0.3-	0.5-
1998 05 24	704	0.1-	1.2-	1999 12 05	120	0.3+	0.0	2000 01 03	704	0.4-	0.1-
1998 06 18	704	1.5+	0.7-	1999 12 06	120	0.1+	0.8+	2000 01 03	704	0.4+	0.1-
1998 06 18	704	0.0	0.8+	1999 12 06	120	0.6-	1.3+	2000 01 03	704	(0.6-	2.1+)
1998 06 18	704	0.6+	1.2+	1999 12 06	120	0.1-	1.0+	2000 01 03	704	0.6-	1.4+
1998 06 18	704	0.5-	0.7+	1999 12 06	120	0.8+	0.3-	2000 01 04	704	0.1-	0.3-
1998 06 18	704	0.9-	0.2-	1999 12 07	704	0.5-	0.2-	2000 01 04	704	0.1+	0.0
1999 11 03	704	0.2+	0.7-	1999 12 07	704	0.2+	0.4-	2000 01 04	704	0.0	0.5+
1999 11 03	704	0.6+	0.3-	1999 12 07	704	0.1-	0.4+	2000 01 04	704	0.2+	0.9+
1999 11 03	704	0.1+	0.9-	1999 12 07	704	0.1+	0.1+				
1999 11 03	704	0.5-	0.3+	1999 12 07	704	0.2-	0.4+				

1999 XM₁₅ = 1998 RV₂₆

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	39.40495		(2000.0)	P		Q					
<i>n</i>	0.12492764	ω	55.50635	+0.89841342	−0.43854400						
<i>a</i>	3.9630574	Ω	330.48515	+0.38599703	+0.81363941						
<i>e</i>	0.2035117	<i>i</i>	2.68469	+0.20942686	+0.38166749						
<i>P</i>	7.89	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 09 14	704	0.6+	0.2−	1999 11 16	704	0.8−	0.2−	2000 01 03	704	0.8−	0.4−
1998 09 14	704	0.8+	1.3−	1999 11 16	704	0.0	0.1−	2000 01 03	704	0.7−	0.6−
1998 09 14	704	0.0	0.1−	1999 11 16	704	0.9−	0.0	2000 01 03	704	0.0	0.3+
1998 09 14	704	1.3+	0.1−	1999 11 16	704	0.6−	0.1−	2000 01 03	704	1.0−	0.0
1998 09 14	704	0.2−	0.1−	1999 12 05	120	0.1+	0.2+	2000 01 04	704	0.3+	0.1−
1998 09 18	704	0.8+	0.3+	1999 12 05	120	0.1−	1.0−	2000 01 04	704	0.2−	0.3+
1998 09 18	704	1.0−	0.5+	1999 12 06	120	(4.8− 5.9−)		2000 01 04	704	0.2−	0.9−
1998 09 18	704	0.2−	0.9+	1999 12 06	120	1.1−	0.0	2000 01 04	704	0.7+	0.2−
1998 09 18	704	1.9−	1.2−	1999 12 06	120	0.1+	0.7−	2000 01 04	704	0.0	0.1+
1998 09 18	704	0.4−	1.4+	1999 12 13	120	0.5+	0.0	2000 01 04	704	0.4+	0.8+
1999 11 14	704	0.9+	0.3−	1999 12 13	120	1.0−	1.1+	2000 01 04	704	0.6−	0.1−
1999 11 14	704	0.6+	0.1−	1999 12 31	703	0.2−	0.3+	2000 01 04	704	0.7+	0.2+
1999 11 14	704	0.6+	0.1+	1999 12 31	703	0.5+	0.1+	2000 01 04	704	0.2+	0.4−
1999 11 14	704	0.7+	0.5+	1999 12 31	703	0.2+	0.4+	2000 01 04	704	0.4+	0.3+
1999 11 14	704	0.4+	0.5+	1999 12 31	703	0.7+	0.6+				
1999 11 16	704	0.3−	0.1−	2000 01 03	704	0.6+	0.1−				

1999 XO₁₅ = 1998 RY₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18842349	ω	259.93157	+0.61453193	−0.78835940		
<i>a</i>	3.0133253	Ω	152.08627	+0.74587702	+0.56866654		
<i>e</i>	0.0071666	<i>i</i>	3.54938	+0.25693966	+0.23475055		
<i>P</i>	5.23	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.3+	0.3−	1999 11 04	704	0.8−	0.8−	1999 12 05	120	0.6+	0.0
1998 09 14	704	0.0	0.3−	1999 11 04	704	0.6−	0.5+	1999 12 05	120	0.5−	0.4−
1998 09 14	704	1.0+	1.3+	1999 11 04	704	1.0−	0.5−	1999 12 06	120	0.6+	0.6+
1998 09 14	704	0.2−	0.0	1999 11 04	704	0.1−	0.6+	1999 12 06	120	0.8−	0.2+
1998 09 18	704	0.6+	1.4−	1999 11 15	704	0.2−	0.0	1999 12 08	704	0.1+	0.0
1998 09 18	704	0.0	1.1+	1999 11 15	704	0.2+	0.2+	1999 12 08	704	0.2−	0.5+
1998 09 18	704	0.4+	0.8−	1999 11 15	704	0.1+	0.4+	1999 12 08	704	1.0−	0.1−
1998 09 18	704	0.8−	0.9+	1999 11 15	704	0.7+	0.4+	1999 12 08	704	0.2−	0.2+
1998 09 18	704	1.2−	0.4−	1999 11 15	704	0.5+	0.9+	1999 12 08	704	0.0	0.1−
1999 11 04	704	0.4−	0.9−	1999 11 17	704	1.7+	0.5−	1999 12 14	704	0.2+	0.5+
1999 11 04	704	0.5−	0.4−	1999 11 17	704	0.2+	0.1−	1999 12 14	704	0.4−	0.0
1999 11 04	704	0.2+	0.4−	1999 11 17	704	1.9+	0.6−	1999 12 14	704	0.0	0.3−
1999 11 04	704	0.3+	0.0	1999 11 17	704	(2.8+	0.4−)	1999 12 14	704	0.1+	0.4+
1999 11 04	704	0.8−	0.1+	1999 11 29	120	0.6+	0.4−	1999 12 31	120	(1.4−	2.9+)
1999 11 04	704	0.0	0.3+	1999 11 30	120	0.6−	0.4−	1999 12 31	120	(2.4+	1.1+)

1999 XS₁₅ = 1989 YD₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19855163	ω	237.48070	+0.93950553	+0.24840239		
<i>a</i>	2.9099604	Ω	107.19396	−0.16676188	+0.93313706		
<i>e</i>	0.0695510	<i>i</i>	14.29321	−0.29919867	+0.25990666		
<i>P</i>	4.96	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 12 25	033	0.5−	0.6−	1999 12 07	704	0.4+	0.2−	2000 01 06	704	0.5−	0.5+
1989 12 26	033	0.2+	0.3+	1999 12 07	411	0.0	0.5+	2000 01 06	704	0.6−	0.2+
1989 12 26	033	0.3+	0.4+	1999 12 07	411	0.3+	1.1+	2000 01 06	704	0.5−	0.6+
1999 12 05	120	0.3−	0.2−	1999 12 08	120	0.0	0.5+	2000 01 06	704	0.5−	0.3+
1999 12 06	120	0.2−	0.6−	1999 12 09	411	0.5−	0.1+	2000 01 07	106	0.1+	0.2+
1999 12 06	120	0.5−	0.1+	1999 12 09	411	0.9+	0.5+	2000 01 07	106	0.2+	0.0
1999 12 06	120	0.5−	0.0	1999 12 17	120	1.0−	0.6−	2000 01 07	106	0.4+	0.1−
1999 12 07	120	0.1+	0.1−	1999 12 17	120	(4.7−	0.5−)	2000 01 14	691	0.3+	0.5−
1999 12 07	704	0.3+	0.5−	1999 12 26	739	0.2−	0.4+	2000 01 14	691	0.3+	0.5−
1999 12 07	704	0.6+	0.3−	1999 12 26	739	0.6−	0.5+	2000 01 14	691	0.3+	0.5−
1999 12 07	704	0.1−	0.7−	2000 01 01	739	0.9+	0.1−				
1999 12 07	704	0.1+	0.6−	2000 01 01	739	0.9+	0.1−				

1999 XX₁₅ = 1978 NY₅ = 1992 WG₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29189369	ω	276.32993	+0.95586814	−0.29082977		
<i>a</i>	2.2507102	Ω	100.58354	+0.28351863	+0.87595535		
<i>e</i>	0.1712032	<i>i</i>	2.42800	+0.07702786	+0.38486397		
<i>P</i>	3.38	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 07 10	675	(9.2−	0.9+)	Y	1999 11 12	703	0.1−	0.2+	1999 12 13	691	0.4−	0.1+
1978 07 11	675	(2.1+	5.3+)	Y	1999 11 14	703	0.9+	1.0+	1999 12 13	691	0.1−	0.1+
1978 07 13	675	(6.1−	5.5+)	Y	1999 11 14	703	1.3+	0.3+	1999 12 13	691	0.1−	0.6−
1992 11 21	399	(2.5−	0.6+)		1999 11 14	703	0.6+	0.1−	1999 12 13	691	0.3−	0.6−
1992 11 21	399	1.6−	0.1+		1999 11 14	703	0.0	0.2+	1999 12 13	691	0.8−	0.3−
1992 11 23	372	0.7+	0.8+		1999 12 03	699	0.5+	0.2+	1999 12 17	691	0.4+	1.0+
1992 11 23	372	(2.5+	4.3+)		1999 12 03	699	0.2−	0.2−	1999 12 17	691	0.6+	1.1+
1992 11 25	675	1.1+	0.2−		1999 12 03	699	0.1−	0.0	1999 12 17	691	0.7+	1.0+
1992 11 25	675	0.9+	0.5+		1999 12 04	691	0.5−	0.0	1999 12 17	120	0.3+	0.1+

1992 11 25	372	1.2−	1.6−	1999 12 04	691	0.5−	0.0	1999 12 17	120	1.3+	0.3−
1992 11 25	372	(1.8−	3.2−)	1999 12 04	691	0.5−	0.0	2000 01 03	704	0.1−	0.1+
1992 11 26	691	0.2+	0.7−	1999 12 06	120	0.5+	0.1+	2000 01 03	704	0.4+	0.1−
1992 11 26	691	0.0	0.7−	1999 12 06	120	0.2−	0.0	2000 01 03	704	0.3+	0.3−
1992 11 26	691	(2.1+	0.3−)	1999 12 06	703	0.5−	0.9+	2000 01 03	704	0.3+	0.5+
1992 11 27	399	(2.8−	3.7+)	1999 12 06	703	0.8−	0.6+	2000 01 03	704	1.5+	1.8−
1992 11 27	399	1.1−	0.8+	1999 12 06	703	0.1−	0.3+	2000 01 04	704	0.3−	0.3−
1992 11 28	675	1.3+	0.5+	1999 12 06	703	0.2+	0.3+	2000 01 04	704	0.3−	0.3−
1992 11 28	675	0.1−	0.1+	1999 12 07	120	0.5−	0.5−	2000 01 04	704	0.2−	0.4−
1997 02 08	566	0.6−	0.1+	1999 12 07	120	0.0	0.2−	2000 01 04	704	0.1−	0.3−
1997 02 08	566	0.3+	0.1−	1999 12 07	704	0.2+	1.2+	2000 01 04	704	0.2−	0.5−
1997 02 08	566	0.5+	0.2+	1999 12 07	704	0.5+	1.4+	2000 01 07	106	0.3+	0.5+
1998 06 24	704	(0.8−	2.3+)	1999 12 07	704	0.1+	0.6+	2000 01 07	106	0.0	0.1−
1998 06 24	704	(1.6−	2.7+)	1999 12 08	704	0.3+	0.4−	2000 01 07	106	0.0	0.0
1998 06 24	704	0.1+	0.8+	1999 12 08	704	0.8−	0.7−	2000 01 15	691	0.4−	0.1−
1998 06 24	704	(0.8+	3.4+)	1999 12 08	704	0.1−	0.5−	2000 01 15	691	0.3−	0.2−
1999 11 12	703	0.3−	0.1−	1999 12 08	704	0.7−	0.4−	2000 01 15	691	0.4−	0.1−
1999 11 12	703	0.4+	0.5−	1999 12 08	704	0.5−	0.9−				
1999 11 12	703	0.3−	0.2+	1999 12 13	691	0.2−	0.4+				

1999 XY₁₅ = 1998 SC₁₀₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25700020	ω	22.96794	−0.98492865	−0.17042939		
<i>a</i>	2.4500808	Ω	147.17630	+0.14904612	−0.92281246		
<i>e</i>	0.1226837	<i>i</i>	3.11814	+0.08775422	−0.34550106		
<i>P</i>	3.84	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.9+	1.5+	1999 12 06	704	0.6−	0.2+	1999 12 30	120	0.3+	1.2+
1998 09 26	704	0.1−	0.0	1999 12 06	704	0.3−	0.6+	1999 12 30	120	0.1−	0.7+
1998 09 26	704	1.0−	0.9+	1999 12 06	704	1.4+	0.6+	1999 12 30	120	0.4+	0.2−
1998 09 26	704	1.8−	0.9−	1999 12 06	704	0.2+	0.9−	1999 12 30	120	0.4−	0.3+
1998 09 26	704	1.7+	0.8+	1999 12 07	120	0.1+	0.0	1999 12 31	120	0.6+	0.3−
1998 09 27	704	0.5−	0.8−	1999 12 07	120	1.1−	0.2−	1999 12 31	120	0.7+	0.1−
1998 09 27	704	0.0	1.3+	1999 12 07	120	0.9−	0.3+	2000 01 03	120	0.6−	0.0
1998 09 27	704	0.0	0.2−	1999 12 07	704	0.1−	0.0	2000 01 03	120	0.6−	0.2+
1998 09 27	704	0.1−	0.7−	1999 12 07	704	0.3−	0.6−	2000 01 06	106	0.0	0.8+
1998 09 27	704	0.1+	0.1+	1999 12 07	704	0.3−	0.7−	2000 01 06	106	0.1+	1.1+
1998 10 17	699	1.1+	0.0	1999 12 07	704	0.1−	0.2−	2000 01 06	106	0.4+	0.8+
1998 10 17	699	0.8−	1.1−	1999 12 07	704	0.4−	0.8−	2000 01 07	704	0.2+	0.1+
1998 10 17	699	0.2+	0.5−	1999 12 18	120	0.2+	0.6−	2000 01 07	704	0.2−	0.3−
1999 12 06	120	0.5+	0.7−	1999 12 18	120	(2.3+	0.4+)	2000 01 07	704	0.2−	0.4−
1999 12 06	120	0.2+	0.3−	1999 12 18	120	0.3+	0.4+	2000 01 07	704	0.3−	0.2−
1999 12 06	120	(2.9+	0.6−)	1999 12 30	120	0.9+	0.7−	2000 01 07	704	0.4−	0.2−

1999 XE₁₆ = 1997 JY₁₈

Id. B. G. Marsden

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	344.01794		(2000.0)		P		Q				
n	0.27001720	ω	76.51348		−0.76650050		−0.63067406				
a	2.3706918	Ω	64.24509		+0.52473548		−0.72392566				
e	0.1671424	i	7.74363		+0.37031021		−0.27961019				
P	3.65	H	14.9	G	0.15		U	4			
Residuals in seconds of arc											
1997 05 04	809	(3.8−	0.7+)	1999 12 08	684	0.1−	0.0	1999 12 31	684	0.4−	0.3+
1997 05 04	809	(4.0−	1.1+)	1999 12 08	684	0.2−	0.2+	1999 12 31	684	0.6−	0.2+
1997 05 04	809	(4.1−	3.0+)	1999 12 10	704	0.3+	0.4+	2000 01 02	704	0.1−	0.3−
1997 05 07	704	0.1−	0.2−	1999 12 10	704	0.3+	0.3+	2000 01 02	704	0.1−	0.3+
1997 05 07	704	0.1−	0.6−	1999 12 10	704	0.3+	0.1−	2000 01 02	704	0.1−	0.1+
1997 05 07	704	0.4−	0.4−	1999 12 10	704	0.4+	0.5+	2000 01 02	704	0.2+	0.7+
1997 05 07	704	0.1−	0.2−	1999 12 11	684	0.0	0.2+	2000 01 02	704	0.6+	0.4+
1999 11 03	704	0.6+	0.6−	1999 12 11	684	0.1−	0.0	2000 01 04	704	0.2−	0.1−
1999 11 03	704	0.4+	0.4−	1999 12 15	704	0.0	0.4−	2000 01 04	704	0.2−	0.2−
1999 11 03	704	0.7+	0.2−	1999 12 15	704	0.6+	0.2−	2000 01 04	704	0.1+	0.1+

2000 JAN. 24

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1999 11 16	704	0.2−	1.0−	1999 12 15	704	0.4+	0.4−	2000 01 04	704	0.3−	0.1−
1999 11 16	704	0.2+	0.4−	1999 12 15	704	1.4−	0.7+	2000 01 04	704	0.4−	0.1−
1999 11 16	704	0.6+	1.1−	1999 12 15	704	0.4−	0.8−	2000 01 06	106	0.3+	0.3+
1999 11 16	704	0.0	0.5−	1999 12 28	684	0.4+	0.6−	2000 01 06	106	0.1−	0.4+
1999 11 16	704	0.5+	0.5−	1999 12 28	684	0.1+	0.1−	2000 01 06	106	0.5−	0.5+
1999 12 07	684	0.3−	0.1−	1999 12 30	684	0.1−	0.3+				
1999 12 07	684	0.4−	0.1−	1999 12 30	684	0.1−	0.4+				

1999 XZ₁₇ = 1986 VP₈ = 1993 FV₆₉ = 1998 KD₄₉

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	31.55630		(2000.0)	P	Q
<i>n</i>	0.22362562	ω	162.84825	+0.98873733	−0.11557491
<i>a</i>	2.6881594	Ω	204.40026	+0.09537724	+0.97619768
<i>e</i>	0.1594870	<i>i</i>	13.30688	+0.11533287	+0.18352257
<i>P</i>	4.41	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1986 11 04	675	0.8−	0.3−	1999 11 05	703	(2.7−	2.5+)	1999 11 28	699	0.5−	0.8+
1986 11 04	675	0.8+	0.5+	1999 11 05	703	(3.3−	0.4−)	1999 11 28	699	0.8−	1.0+
1993 03 21	809	(1.1−	3.4+)	1999 11 05	703	(2.6−	1.9+)	1999 11 28	699	1.0−	1.4+
1993 03 22	809	0.1+	0.0	1999 11 14	704	0.1−	0.2−	1999 12 03	704	1.0+	0.3−
1998 05 23	704	0.3−	1.1+	1999 11 14	704	0.2+	0.4−	1999 12 03	704	0.9−	0.8+
1998 05 23	704	0.8+	0.3−	1999 11 14	704	0.4+	0.9−	1999 12 03	704	0.1−	0.1+
1998 05 23	704	0.5−	1.0+	1999 11 14	704	0.2−	1.3−	1999 12 03	704	0.1+	0.3+
1998 05 23	704	0.6+	1.4−	1999 11 14	704	0.1+	1.5−	1999 12 03	704	0.2−	0.2−
1998 05 23	704	(3.0−	1.4−)	1999 11 16	704	0.1−	0.3−	1999 12 07	704	0.6−	0.5+
1998 05 26	704	0.2−	0.4−	1999 11 16	704	0.8+	0.6+	1999 12 07	704	0.2+	0.1+
1998 05 26	704	0.2+	0.6−	1999 11 16	704	0.2+	0.1+	1999 12 07	704	0.3+	0.2−
1998 05 26	704	0.7−	1.0+	1999 11 16	704	1.5+	0.4−	1999 12 07	704	0.5+	1.5−
1999 11 05	703	1.9−	1.5+	1999 11 16	704	1.1+	0.1+				

1999 XK₁₈ = 1982 VJ₃ = 1997 AM₁₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	15.44989		(2000.0)	P	Q
<i>n</i>	0.28768141	ω	179.09442	+0.60203859	−0.79799576
<i>a</i>	2.2726271	Ω	233.88901	+0.73236553	+0.56555790
<i>e</i>	0.2220126	<i>i</i>	1.94562	+0.31810416	+0.20819952
<i>P</i>	3.43	<i>H</i>	15.8	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1982 11 14	381	0.2−	0.1−	1999 11 13	699	0.2−	0.4−	1999 12 07	704	0.1+	0.3+
1982 11 14	381	0.4+	0.7−	1999 11 27	699	0.3−	0.3+	1999 12 07	704	0.2+	1.0−
1997 01 11	566	0.2+	0.1−	1999 11 27	699	0.4−	0.7+	1999 12 07	704	0.3+	0.6+
1997 01 11	566	0.3+	0.2+	1999 11 27	699	0.7+	0.1+	1999 12 08	691	0.1+	1.2−
1997 01 11	566	0.1+	0.1+	1999 12 03	704	0.9−	0.4+	1999 12 08	691	0.1+	1.3−
1997 01 14	566	0.1−	0.2+	1999 12 03	704	0.5−	0.1−	1999 12 08	691	0.1+	1.1−
1997 01 14	566	0.1+	0.3−	1999 12 03	704	0.3+	0.3−	1999 12 13	699	1.4−	0.4−
1997 01 14	566	0.5−	0.1+	1999 12 03	704	0.3+	0.2−	1999 12 13	699	0.0	1.1+
1999 11 13	699	0.3−	0.6+	1999 12 07	704	1.6+	1.2+	1999 12 13	699	0.0	1.5+
1999 11 13	699	0.2+	0.1−	1999 12 07	704	0.4−	0.3+				

1999 XM₁₈ = 1997 AL₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	35.95064		(2000.0)	P	Q
<i>n</i>	0.25881033	ω	306.85711	+0.96602309	−0.25282969
<i>a</i>	2.4386435	Ω	67.84313	+0.25171789	+0.87328456
<i>e</i>	0.2138249	<i>i</i>	3.31984	+0.05863016	+0.41647476
<i>P</i>	3.81	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1997 01 14	566	0.2−	0.6+	1999 09 14	704	0.5+	0.5−	1999 12 03	704	0.1+	1.4−
1997 01 14	566	0.2−	0.6+	1999 09 14	704	0.3+	0.1+	1999 12 03	704	0.2+	0.9−
1997 01 14	566	0.1+	0.5+	1999 09 14	704	0.4−	0.3−	1999 12 03	704	0.3+	0.8−

1997 01 15	566	0.9+	0.2+	1999 10 01	703	0.0	0.5+	1999 12 07	704	0.0	0.3−
1997 01 15	566	1.3+	0.2−	1999 10 01	703	0.2+	0.7+	1999 12 07	704	0.2−	0.6−
1997 01 15	566	1.1−	0.2+	1999 10 01	703	0.3+	0.4+	1999 12 07	704	0.7+	0.1−
1998 04 22	704	(2.6+	2.1−)	1999 10 01	703	0.1+	0.6+	1999 12 07	704	0.0	0.1+
1998 04 22	704	0.3−	0.9−	1999 10 02	704	0.4−	0.4+	1999 12 07	704	0.4+	0.1−
1998 04 22	704	1.3+	0.4+	1999 10 02	704	0.1−	0.0	2000 01 08	704	0.4−	0.0
1998 04 22	704	1.4−	0.6+	1999 10 02	704	0.9−	0.3+	2000 01 08	704	0.1+	0.4+
1998 04 22	704	0.3−	0.7+	1999 10 02	704	0.8−	0.2+	2000 01 08	704	0.2+	0.1−
1998 05 01	704	0.0	0.1+	1999 10 02	704	0.8−	0.6+	2000 01 08	704	0.4+	0.0
1998 05 01	704	(3.0+	1.5−)	1999 11 05	703	0.3−	0.2+	2000 01 08	704	0.7+	0.1+
1998 05 01	704	0.5−	0.6−	1999 11 05	703	0.6−	0.6+	2000 01 10	704	0.1−	0.1+
1998 05 01	704	0.5+	0.2+	1999 11 05	703	0.6−	0.1+	2000 01 10	704	0.5−	0.3+
1998 05 01	704	1.6+	1.0+	1999 11 05	703	0.1+	0.3+	2000 01 10	704	0.2+	0.5+
1999 09 14	704	0.7+	0.2−	1999 12 03	704	0.5+	0.6+	2000 01 10	704	0.5−	0.4+
1999 09 14	704	0.4+	0.2−	1999 12 03	704	0.1+	0.4−	2000 01 10	704	0.7−	0.6+

1999 XT₁₈ = 1991 VF₁₆ = 1995 WO₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	58.92449		(2000.0)	P	Q
<i>n</i>	0.24170035	ω	158.40059	+0.90507764	+0.42522889
<i>a</i>	2.5524144	Ω	176.42723	−0.39865460	+0.85160138
<i>e</i>	0.2635133	<i>i</i>	3.54679	−0.14801683	+0.30652158
<i>P</i>	4.08	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1991 11 10	894	0.3−	2.0−	1999 10 02	703	0.4−	0.0	1999 11 05	691	0.1+	0.1−
1991 11 10	894	0.4−	0.9−	1999 10 02	703	0.1−	0.0	1999 11 28	684	0.9−	0.3−
1995 11 20	691	0.2+	0.3+	1999 10 02	703	0.0	0.1+	1999 11 28	684	1.2−	0.1−
1995 11 20	691	0.1+	0.2+	1999 10 04	704	0.2+	1.3+	1999 12 03	704	0.7+	0.1−
1995 11 20	691	0.7+	0.4+	1999 10 04	704	0.9+	0.1−	1999 12 03	704	0.0	0.1−
1995 11 28	691	0.7+	0.3+	1999 10 04	704	0.7+	0.1+	1999 12 03	704	0.6+	0.2+
1995 11 28	691	0.1+	0.3+	1999 10 04	704	1.1−	0.4−	1999 12 03	704	0.3+	0.9+
1995 11 28	691	0.3+	0.6+	1999 10 04	704	0.3+	0.2−	1999 12 03	704	1.0−	0.4+
1997 02 02	327	0.2+	0.2+	1999 11 01	691	0.1−	0.1−	1999 12 07	704	0.0	0.4+
1997 02 02	327	0.1+	0.3+	1999 11 01	691	0.1−	0.2−	1999 12 07	704	0.0	0.1−
1997 02 02	327	0.0	0.3−	1999 11 01	691	0.2−	0.2−	1999 12 07	704	0.5−	0.3+
1997 02 02	327	0.0	0.4+	1999 11 05	691	0.0	0.1−	1999 12 07	704	0.1−	0.5−
1999 10 02	703	0.2−	0.1−	1999 11 05	691	0.1+	0.2−	1999 12 07	704	0.2−	0.3+

1999 XU₁₈ = 1995 XQ₂ = 1997 EY₃₃ = 1998 HP₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	63.41363		(2000.0)	P	Q
<i>n</i>	0.23735431	ω	260.34898	+0.89607685	+0.43986190
<i>a</i>	2.5834772	Ω	73.53603	−0.37892924	+0.82805675
<i>e</i>	0.2013114	<i>i</i>	3.57097	−0.23121184	+0.34762556
<i>P</i>	4.15	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1995 12 02	327	0.6+	0.3+	1998 05 01	699	0.6+	0.3−	1999 11 17	704	0.1−	0.9+
1995 12 02	327	0.2+	0.3+	1998 05 01	704	1.1−	0.7+	1999 11 17	704	0.3−	1.0+
1995 12 02	327	0.1+	0.1−	1998 05 01	699	0.7+	0.1+	1999 12 03	704	(0.8+	2.9−)
1995 12 07	327	0.9−	0.6+	1998 05 01	704	0.3−	0.0	1999 12 03	704	1.8+	1.3−
1995 12 07	327	0.2−	0.1+	1998 05 01	704	0.6−	1.0+	1999 12 03	704	0.2−	0.9−
1995 12 07	327	0.2−	0.1+	1998 05 22	704	0.9+	0.7+	1999 12 03	704	1.1+	1.0+
1997 03 04	704	0.3+	0.3−	1998 05 22	704	0.1−	1.7+	1999 12 07	704	0.4−	0.5−
1997 03 04	704	(0.2+	2.3−)	1998 05 22	704	0.5−	0.8+	1999 12 07	704	0.2−	0.8−
1997 03 05	704	0.1+	0.4+	1998 05 22	704	1.0−	1.1+	1999 12 07	704	0.5−	0.9−
1997 03 05	704	0.1−	0.8+	1998 05 22	704	0.1−	1.8+	1999 12 07	704	0.3+	0.9−
1997 03 06	704	0.1−	0.3+	1999 10 03	703	0.6−	0.5+	1999 12 07	704	0.0	0.2−
1997 03 06	704	0.0	0.2+	1999 10 03	703	0.1+	0.4+	1999 12 13	699	0.0	0.2+
1998 04 21	704	0.0	0.2+	1999 10 03	703	0.1−	0.4+	1999 12 13	699	0.9−	0.4−
1998 04 21	704	0.1+	0.1−	1999 10 03	703	0.1−	0.3+	1999 12 13	699	0.8−	0.2−
1998 04 21	704	0.4−	1.0−	1999 10 04	704	0.3−	0.3+	2000 01 08	704	0.6−	0.4+
1998 04 21	704	0.1+	0.7−	1999 10 04	704	0.3−	0.2−	2000 01 08	704	0.3+	0.5+
1998 04 21	704	0.3−	0.1−	1999 10 04	704	0.4−	0.3−	2000 01 08	704	0.8+	0.0
1998 04 22	704	0.3+	0.1+	1999 10 04	704	0.4−	0.2+	2000 01 08	704	0.5+	0.6+

1998 04 22	704	0.5+	0.8−	1999 10 04	704	1.0−	0.0	2000 01 08	704	0.0	1.0+
1998 04 22	704	0.1+	0.7−	1999 11 15	704	0.9+	0.2+	2000 01 10	704	0.3−	0.2−
1998 04 22	704	0.7+	0.9−	1999 11 15	704	0.1+	0.6+	2000 01 10	704	0.5+	1.2+
1998 04 22	704	0.4+	0.0	1999 11 15	704	0.3+	0.3+	2000 01 10	704	0.1−	0.2+
1998 05 01	704	0.7+	0.5−	1999 11 15	704	0.5−	0.6−	2000 01 10	704	0.0	0.1−
1998 05 01	699	0.0	0.3+	1999 11 15	704	(2.3−	1.1+)	2000 01 10	704	0.5−	1.1−
1998 05 01	704	0.9+	0.2+	1999 11 17	704	1.5+	0.6+				

1999 XB₁₉ = 1993 FL₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	35.03308		(2000.0)	P	Q
<i>n</i>	0.22508244	ω	334.37915	+0.99505319	−0.01466815
<i>a</i>	2.6765476	Ω	27.01696	+0.06792504	+0.82218396
<i>e</i>	0.2007461	<i>i</i>	12.49175	−0.07249368	+0.56903285
<i>P</i>	4.38	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1993 03 17	809	(3.6−	0.6+)	1999 11 05	703	0.3+	1.4+	1999 12 03	704	0.5−	0.6+
1993 03 18	809	0.2−	0.0	1999 11 05	703	0.1+	1.5+	1999 12 03	704	0.1+	0.3+
1993 03 23	809	0.2+	0.0	1999 11 15	704	0.0	0.7−	1999 12 03	704	1.4+	1.5−
1999 10 02	704	0.6+	0.0	1999 11 15	704	0.4−	0.7−	1999 12 07	704	0.9+	0.1−
1999 10 02	704	0.4+	0.3−	1999 11 15	704	0.8−	0.7−	1999 12 07	704	0.9+	0.0
1999 10 02	704	0.5+	0.0	1999 11 15	704	0.7−	0.1+	1999 12 07	704	0.3+	0.5−
1999 10 02	704	0.1−	0.7−	1999 11 15	704	0.5−	1.0−	1999 12 07	704	0.5+	0.0
1999 10 02	704	0.4−	0.3−	1999 11 28	699	1.3−	0.4+	1999 12 07	704	0.2−	0.3−
1999 11 05	703	0.5−	1.3+	1999 11 28	699	0.6−	0.0				
1999 11 05	703	0.1+	1.1+	1999 11 28	699	(2.1−	3.5+)				

1999 XU₁₉ = 1993 FG₅₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	33.27482		(2000.0)	P	Q
<i>n</i>	0.23441738	ω	346.09089	+0.93889511	−0.32663196
<i>a</i>	2.6050107	Ω	33.60753	+0.33157910	+0.77364485
<i>e</i>	0.1529030	<i>i</i>	11.31204	+0.09236484	+0.54294126
<i>P</i>	4.20	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1993 03 17	809	1.2−	0.2−	1999 11 16	704	0.4+	0.5+	1999 12 05	704	0.1+	0.9+
1993 03 18	809	0.7+	0.6−	1999 11 16	704	0.4+	1.4+	1999 12 05	704	0.9+	1.3+
1999 11 05	704	0.1+	0.6−	1999 11 24	327	0.5−	0.1−	1999 12 07	704	0.3+	0.4+
1999 11 05	704	0.3−	0.2−	1999 11 24	327	0.8−	0.3+	1999 12 07	704	0.2+	0.8+
1999 11 05	704	0.2+	0.1−	1999 11 24	327	0.5−	0.5+	1999 12 07	704	0.9+	0.4+
1999 11 05	704	0.5+	0.2−	1999 11 27	699	0.5−	0.5+	1999 12 07	704	0.1+	0.2+
1999 11 05	704	0.0	0.2−	1999 11 27	699	0.3−	0.2−	1999 12 07	704	1.1+	0.5+
1999 11 09	704	0.2+	1.0−	1999 11 27	699	0.8−	0.1−	1999 12 13	327	0.5−	0.8−
1999 11 09	704	0.2+	0.8−	1999 12 02	327	0.1−	0.7+	1999 12 13	327	0.8−	0.9−
1999 11 09	704	0.4+	1.3−	1999 12 02	327	0.3−	0.5+	1999 12 13	327	0.3−	1.2−
1999 11 09	704	0.1−	1.1−	1999 12 02	327	0.1−	0.5+	1999 12 14	327	0.4−	0.7−
1999 11 16	704	0.5+	0.4+	1999 12 05	704	0.2−	0.1−	1999 12 14	327	0.6−	0.5−
1999 11 16	704	0.4+	0.1−	1999 12 05	704	1.4+	0.3−	1999 12 14	327	0.5−	0.5−
1999 11 16	704	0.3+	0.6+	1999 12 05	704	0.7+	0.1+				

1999 XE₂₀ = 1989 TD₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.64119		(2000.0)	P	Q
<i>n</i>	0.19969985	ω	278.44355	+0.93569985	−0.34903053
<i>a</i>	2.8987953	Ω	101.99662	+0.34083232	+0.85668363
<i>e</i>	0.0917868	<i>i</i>	3.01302	+0.09109954	+0.37983003
<i>P</i>	4.94	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1989 10 03	809	0.9+	1.1+	1999 10 29	703	0.7+	0.3+	1999 12 07	704	0.1+	1.2+
1989 10 03	809	0.5+	0.7+	1999 11 05	704	0.4−	0.3+	1999 12 07	704	0.0	0.3−
1989 10 03	809	0.5+	0.5+	1999 11 05	704	0.5−	0.1+	1999 12 07	704	1.1−	0.3−

1989 10 07	809	0.2+	0.8−	1999 11 05	704	0.4−	0.7+	2000 01 05	704	0.3−	0.1−
1989 10 07	809	1.0−	0.7−	1999 11 05	704	0.1−	0.3+	2000 01 05	704	0.0	0.5−
1989 10 07	809	0.0	0.4−	1999 11 05	704	0.3−	1.0−	2000 01 05	704	0.3−	0.1+
1989 10 08	809	0.4+	0.3−	1999 12 05	704	0.9+	0.6−	2000 01 05	704	0.8−	0.2+
1989 10 08	809	0.7−	0.4−	1999 12 05	704	0.5+	0.9−	2000 01 07	704	0.6−	0.4−
1989 10 08	809	0.5−	0.3−	1999 12 05	704	0.4+	0.3+	2000 01 07	704	0.4−	1.2+
1999 10 29	703	0.2+	0.5+	1999 12 05	704	0.7+	1.2−	2000 01 07	704	0.2−	1.0+
1999 10 29	703	0.7−	0.7+	1999 12 05	704	1.2−	0.6−	2000 01 07	704	1.4+	0.2+
1999 10 29	703	0.7+	0.6+	1999 12 07	704	0.5+	0.2−	2000 01 07	704	1.0+	0.9−

1999 XJ₂₀ = 1975 VC₄ = 1982 KH = 1985 YS₁ = 1997 ET₅₈= 1998 MP₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	98.22424		(2000.0)	P	Q
<i>n</i>	0.20512693	ω	248.43777	+0.73021683	+0.68141606
<i>a</i>	2.8474379	Ω	68.56985	−0.60549668	+0.67904389
<i>e</i>	0.0583286	<i>i</i>	3.05152	−0.31647616	+0.27307793
<i>P</i>	4.80	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1975 11 02	095	0.1−	1.5−	1998 07 01	809	(1.5+	2.3+)	1999 11 17	704	0.2−	0.5+
1982 05 26	801	1.2−	2.2+	1999 10 01	703	0.8+	0.0	1999 11 17	704	0.7−	0.2+
1985 12 17	010	2.2+	1.6−	1999 10 01	703	0.4−	0.8+	1999 11 17	704	(1.2−	2.2+)
1985 12 17	010	0.7+	0.5−	1999 10 01	703	0.2−	0.3−	1999 11 17	704	0.2−	0.8−
1997 03 10	809	0.5+	0.2+	1999 10 01	703	0.2−	0.2−	1999 12 05	704	1.3+	0.4+
1997 03 10	809	0.3+	0.3−	1999 10 29	703	0.6−	0.2−	1999 12 05	704	0.2−	1.8+
1997 03 10	809	0.1+	0.5+	1999 10 29	703	0.9−	0.4+	1999 12 05	704	0.3+	1.2+
1997 03 11	809	0.8−	1.7−	1999 10 29	703	0.5−	0.0	1999 12 05	704	1.2−	0.5−
1997 03 11	809	1.4−	1.8−	1999 10 29	703	0.3−	0.2−	1999 12 07	704	1.1+	0.3+
1997 03 11	809	0.8−	1.8−	1999 11 05	704	0.3+	0.0	1999 12 07	704	0.4+	0.7+
1998 06 24	704	0.3+	1.1−	1999 11 05	704	0.4+	0.5−	1999 12 07	704	0.0	0.1+
1998 06 24	704	0.5−	1.0−	1999 11 05	704	0.3+	0.1−	1999 12 07	704	0.3+	0.2+
1998 06 24	704	0.4+	0.3−	1999 11 05	704	0.1+	0.4−	1999 12 07	704	0.5−	0.3+
1998 06 24	704	0.2+	0.9−	1999 11 05	704	0.0	0.5−	2000 01 04	704	0.1+	0.2+
1998 06 24	704	0.6+	1.0−	1999 11 12	704	0.1+	0.2−	2000 01 04	704	0.2+	0.1−
1998 06 26	704	0.1−	0.1−	1999 11 12	704	0.0	0.2−	2000 01 04	704	0.6+	0.2+
1998 06 26	704	1.1−	1.0−	1999 11 12	704	0.2−	0.5−	2000 01 04	704	0.5−	1.2−
1998 06 26	704	0.4−	0.8−	1999 11 12	704	0.3+	0.8−	2000 01 04	704	0.7+	0.1+
1998 06 26	704	1.4+	1.1−	1999 11 12	704	(0.1+	2.5−)	2000 01 07	704	0.0	0.3+
1998 06 26	704	0.0	0.7−	1999 11 17	704	0.5+	0.8−	2000 01 07	704	0.3+	0.3−
1998 06 28	809	0.7−	1.5+	1999 11 17	704	0.2+	0.2−	2000 01 07	704	0.3−	0.2+
1998 06 28	809	0.3−	1.3+	1999 11 17	704	0.7−	0.2+	2000 01 07	704	0.4+	0.4−
1998 06 28	809	0.7−	1.7+	1999 11 17	704	0.3−	0.5−	2000 01 07	704	0.1+	1.1−
1998 07 01	809	(1.9+	2.4+)	1999 11 17	704	0.7−	0.1+				
1998 07 01	809	(1.4+	2.3+)	1999 11 17	704	0.1−	0.7−				

1999 XN₂₀ = 1997 EA₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	330.41348		(2000.0)	P	Q
<i>n</i>	0.25780766	ω	302.57307	−0.39329687	−0.91937592
<i>a</i>	2.4449623	Ω	170.57622	+0.85924478	−0.37067679
<i>e</i>	0.1308253	<i>i</i>	2.83290	+0.32713296	−0.13170663
<i>P</i>	3.82	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1997 03 02	691	0.5+	0.5+	1999 10 02	703	0.7−	0.3+	1999 11 17	704	1.6+	1.1−
1997 03 02	691	0.6+	0.3+	1999 10 02	703	1.0−	0.6+	1999 11 17	704	0.2−	0.4+
1997 03 02	691	0.4+	0.4+	1999 10 02	703	0.3−	0.3−	1999 11 17	704	0.6+	0.6−
1997 03 07	691	0.4+	0.5+	1999 10 30	703	0.5+	0.7−	1999 12 04	699	0.1+	0.3+
1997 03 07	691	0.2+	0.2+	1999 10 30	703	0.4−	0.2−	1999 12 04	699	0.7+	0.6−
1997 03 07	691	0.1+	0.1+	1999 10 30	703	0.2+	0.2+	1999 12 04	699	1.7−	0.5

2000 JAN. 24

M.P.C. 37869

1997 03 10	120	1.0−	0.6+	1999 11 15	704	0.1−	0.7+	1999 12 07	704	1.2−	0.0
1999 10 02	703	0.6+	0.3−	1999 11 17	704	1.8+	1.1−	1999 12 07	704	0.9−	1.7−

1999 XP₂₀ = 1976 SO₄ = 1990 WD₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	93.07757		(2000.0)	P	Q		
<i>n</i>	0.21650502	ω	139.39898	+0.78182695	+0.62349107		
<i>a</i>	2.7467812	Ω	182.03383	−0.58780433	+0.73581149		
<i>e</i>	0.0928789	<i>i</i>	3.79274	−0.20792472	+0.26427322		
<i>P</i>	4.55	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1976 09 24	095	0.2+	0.7−	1999 12 04	699	0.2+	0.4+	1999 12 07	704	0.7−	0.3+
1976 09 29	095	(1.8+	4.7−)	1999 12 04	699	0.3+	0.3+	2000 01 05	106	0.4−	0.3−
1990 11 14	809	0.8−	0.5−	1999 12 04	699	0.2−	0.2+	2000 01 05	106	1.0−	0.6+
1990 11 14	809	0.2+	1.5−	1999 12 05	704	0.2+	0.7+	2000 01 05	106	1.2+	0.4−
1990 11 19	809	0.0	0.9−	1999 12 05	704	0.1−	0.0	2000 01 06	699	1.2−	0.1+
1990 11 19	809	1.0+	0.2+	1999 12 05	704	0.6+	0.1−	2000 01 06	699	1.1−	0.2+
1990 11 19	809	0.5+	0.5−	1999 12 05	704	0.5+	0.0	2000 01 06	699	1.3+	0.2−
1999 11 05	704	0.0	0.5+	1999 12 05	704	1.1−	0.2+	2000 01 07	704	0.3+	0.4−
1999 11 05	704	0.1+	0.3+	1999 12 07	704	0.6+	0.5+	2000 01 07	704	0.3+	0.2−
1999 11 05	704	0.1−	0.3+	1999 12 07	704	0.1−	0.2+	2000 01 07	704	0.0	0.1+
1999 11 05	704	0.5−	0.3+	1999 12 07	704	0.1−	0.1−	2000 01 07	704	0.0	0.0
1999 11 05	704	0.3−	0.1−	1999 12 07	704	0.1+	0.6+	2000 01 07	704	0.2−	0.3−

1999 XU₂₀ = 1977 UA₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	357.88093		(2000.0)	P	Q		
<i>n</i>	0.17934489	ω	244.15127	+0.27199455	−0.96222814		
<i>a</i>	3.1141776	Ω	190.08656	+0.90501324	+0.25990243		
<i>e</i>	0.1852590	<i>i</i>	3.81763	+0.32706270	+0.08104155		
<i>P</i>	5.50	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 10 18	675	0.2+	0.7−	1999 11 04	704	0.4−	0.1+	1999 12 07	704	0.5+	0.2+
1977 10 19	675	0.1+	0.5−	1999 11 04	704	0.3−	0.1−	1999 12 07	704	0.7+	0.6+
1998 07 29	910	0.3+	0.0	1999 11 05	704	0.7+	0.1−	1999 12 07	704	0.1−	0.4−
1998 07 29	910	0.1+	0.1+	1999 11 05	704	0.0	0.3−	1999 12 07	704	0.2+	0.3+
1998 07 29	910	0.3−	0.0	1999 11 05	704	0.4+	0.4−	1999 12 07	704	0.5−	0.3+
1998 08 17	704	(3.2−	2.4−)	1999 11 05	704	0.1+	0.1+	2000 01 05	704	0.0	0.2+
1998 08 17	704	(4.0−	2.3−)	1999 11 05	704	0.1−	0.2−	2000 01 05	704	0.8+	0.0
1998 08 17	704	(1.0−	3.4+)	1999 11 17	704	0.0	0.4−	2000 01 05	704	0.5+	0.6−
1998 08 17	704	(3.0−	2.4+)	1999 11 17	704	0.6−	1.1−	2000 01 05	704	0.8+	0.6−
1999 10 02	703	0.3+	0.3−	1999 11 17	704	0.2−	0.0	2000 01 05	704	0.5+	0.4−
1999 10 02	703	0.0	0.6+	1999 11 17	704	0.2−	0.6−	2000 01 06	699	1.6−	0.3+
1999 10 02	703	0.2+	0.1+	1999 11 17	704	0.6−	0.2+	2000 01 06	699	0.4−	1.0−
1999 10 02	703	0.3−	0.0	1999 12 04	699	0.6−	1.7+	2000 01 06	699	0.2−	0.1−
1999 10 30	703	0.9−	0.1+	1999 12 04	699	0.3+	1.2+	2000 01 07	704	0.5−	0.6+
1999 10 30	703	0.5−	0.2−	1999 12 04	699	0.3+	0.8+	2000 01 07	704	0.1+	0.8−
1999 10 30	703	0.7−	0.2+	1999 12 05	704	1.3+	0.7+	2000 01 07	704	0.4+	0.3+
1999 10 30	703	0.9−	0.4+	1999 12 05	704	1.0+	1.2+	2000 01 07	704	0.7+	0.5−
1999 11 04	704	0.1+	0.2−	1999 12 05	704	0.3+	1.1+	2000 01 07	704	0.0	0.9−
1999 11 04	704	0.3−	0.5−	1999 12 05	704	0.9+	0.2−				
1999 11 04	704	0.3−	0.1+	1999 12 05	704	0.5−	0.3−				

1999 XB₂₁ = 1993 BV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	5.57406		(2000.0)	P	Q		
<i>n</i>	0.26878186	ω	358.19077	+0.33862387	−0.93732081		
<i>a</i>	2.3779502	Ω	72.00932	+0.86436118	+0.27534553		
<i>e</i>	0.0920153	<i>i</i>	4.96049	+0.37177094	+0.21357562		
<i>P</i>	3.67	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 01 16	010	0.1−	0.2−	1999 11 05	704	0.3+	0.5−	1999 12 04	699	0.3+	1.3+
1993 01 16	010	0.8−	0.8−	1999 11 05	704	0.1+	0.1+	1999 12 04	699	0.3+	0.5−
1993 01 16	010	0.5−	0.1−	1999 11 05	704	0.4−	0.1+	1999 12 05	704	0.8−	0.5−
1993 01 17	010	0.3−	0.4+	1999 11 14	699	0.7−	0.6+	1999 12 05	704	0.4−	0.8+
1993 01 17	010	0.4+	0.9+	1999 11 14	699	1.1+	0.6+	1999 12 05	704	0.4+	0.8−
1993 01 17	010	1.3+	0.8+	1999 11 14	699	0.9−	0.0	1999 12 05	704	0.3+	0.2−
1999 10 02	703	0.0	0.5+	1999 11 15	704	0.3−	0.5+	1999 12 07	704	0.7+	1.0−
1999 10 02	703	0.3−	0.2+	1999 11 15	704	0.0	0.3+	1999 12 07	704	0.5+	1.0−
1999 10 02	703	0.2−	1.0−	1999 11 15	704	0.1−	0.9+	1999 12 07	704	0.4+	0.9−
1999 10 02	703	0.3+	1.0+	1999 11 15	704	0.3−	0.4+	1999 12 07	704	1.0+	0.2−
1999 10 30	703	0.8−	0.3−	1999 11 15	704	0.1−	1.1+	1999 12 07	704	0.5−	1.4−
1999 10 30	703	0.2−	0.3−	1999 11 17	704	1.0+	0.8+	2000 01 05	704	0.0	1.5+
1999 10 30	703	0.6−	0.1+	1999 11 17	704	0.9+	0.6−	2000 01 05	704	0.3+	0.8−
1999 10 30	703	0.3−	0.3−	1999 11 17	704	0.3−	0.5+	2000 01 05	704	0.1+	0.7−
1999 11 05	704	0.7−	0.2+	1999 11 17	704	0.5+	0.7−	2000 01 05	704	0.1+	0.2+
1999 11 05	704	0.2+	0.2−	1999 12 04	699	0.7−	0.2−	2000 01 05	704	0.3+	0.1−

1999 XJ₂₁ = 1990 TG₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	318.61254		(2000.0)	P	Q		
<i>n</i>	0.23516534	ω	290.40912	−0.69434942	−0.71526683		
<i>a</i>	2.5994841	Ω	204.14665	+0.71109904	−0.66503987		
<i>e</i>	0.1630432	<i>i</i>	11.16307	+0.11053071	−0.21474482		
<i>P</i>	4.19	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1990 10 09	413	0.0	0.1−	1999 12 05	704	(2.3+	3.5−)	1999 12 14	704	(1.7−	2.5+)
1990 10 11	413	0.0	0.2+	1999 12 07	704	0.5+	0.2−	1999 12 14	699	1.5+	0.5+
1999 12 04	699	0.1+	0.1+	1999 12 07	704	0.1+	0.2−	1999 12 14	699	0.1+	0.1+
1999 12 04	699	0.1+	0.2+	1999 12 07	704	0.3+	0.5+	1999 12 14	699	0.5−	0.8+
1999 12 04	699	0.5−	0.4+	1999 12 07	704	0.2−	1.0−	2000 01 06	699	0.0	0.6−
1999 12 05	704	1.4+	0.8−	1999 12 07	704	0.5−	0.4−	2000 01 06	699	0.4−	0.5+
1999 12 05	704	0.4−	0.1+	1999 12 14	704	1.5−	1.1−	2000 01 06	699	0.6+	0.0
1999 12 05	704	(3.2+	2.7−)	1999 12 14	704	0.6−	0.9+				

1999 XZ₂₁ = 1996 DT₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	281.09768		(2000.0)	P	Q		
<i>n</i>	0.24231313	ω	95.35483	−0.59692547	+0.78812997		
<i>a</i>	2.5481095	Ω	136.80123	−0.79515844	−0.55626606		
<i>e</i>	0.1100301	<i>i</i>	12.66672	−0.10678501	−0.26347527		
<i>P</i>	4.07	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1993 07 23	010	0.6−	1.5−	1998 11 13	704	0.1+	1.2+	1999 12 07	704	0.1+	0.3−
1993 07 23	010	0.0	1.6−	1998 11 13	704	0.4+	1.9−	2000 01 05	704	0.1+	0.3+
1993 07 23	010	0.6+	0.6−	1998 11 13	704	0.0	0.4−	2000 01 05	704	1.1−	0.7−
1996 02 16	010	0.5−	1.0−	1998 11 13	704	(0.7+	2.3−)	2000 01 05	704	0.1+	0.5+
1996 02 16	010	0.1+	1.4−	1999 12 05	704	0.1−	0.4−	2000 01 05	704	0.0	0.9+
1996 02 16	010	0.2−	0.8−	1999 12 05	704	0.1−	0.5−	2000 01 05	704	0.5−	0.3+
1996 02 17	010	(1.8+	4.1−)	1999 12 05	704	0.4+	0.6−	2000 01 07	704	0.2−	0.4−
1996 02 17	010	(1.3+	4.9−)	1999 12 05	704	0.1−	0.9−	2000 01 07	704	0.2−	0.2+
1996 02 17	010	(1.7+	3.9−)	1999 12 05	704	0.7+	0.3+	2000 01 07	704	0.1−	0.4+
1998 10 29	699	0.0	0.3+	1999 12 07	704	0.4+	0.4−	2000 01 07	704	0.2+	0.6+
1998 10 29	699	0.5+	0.2+	1999 12 07	704	0.4+	0.8−	2000 01 07	704	0.0	0.7+
1998 10 29	699	0.3−	0.1−	1999 12 07	704	0.2−	0.6−				
1998 11 13	704	0.5−	0.4−	1999 12 07	704	0.9+	0.2−				

1999 XK₂₂ = 1992 ES₂₉ = 1998 MK

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21419834	ω	142.19593	−0.27248872	+0.96059925		
<i>a</i>	2.7664659	Ω	111.93259	−0.89653329	−0.23283141		
<i>e</i>	0.0102561	<i>i</i>	3.38446	−0.34925343	−0.15178476		
<i>P</i>	4.60	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 03 03	809	1.5+	0.8+	1999 11 04	704	1.0+	0.4+	1999 12 06	704	1.3+	0.0
1992 03 07	809	0.6−	1.5+	1999 11 17	704	0.1−	0.9+	1999 12 06	704	0.6+	0.2+
1998 06 17	691	0.0	0.2+	1999 11 17	704	0.2+	0.9+	1999 12 06	704	0.2−	0.8−
1998 06 17	691	0.4−	0.3+	1999 11 17	704	0.2−	0.2+	1999 12 06	704	0.2+	0.7−
1998 06 17	691	0.2−	0.7+	1999 11 17	704	1.4−	0.6+	1999 12 06	704	1.7−	0.3−
1998 06 18	691	0.2−	0.4+	1999 11 17	704	(0.3+	2.6+)	1999 12 07	704	0.4−	0.9−
1998 06 18	691	0.1+	0.6+	1999 12 04	703	1.0−	0.5+	1999 12 07	704	0.9−	0.2−
1998 06 18	691	0.1+	0.3+	1999 12 04	703	(4.0−	1.4−)	1999 12 07	704	0.6−	0.6+
1999 11 04	704	1.7+	0.7−	1999 12 04	703	0.1+	1.6+	1999 12 07	704	0.9+	0.5−
1999 11 04	704	0.3−	0.5−	1999 12 04	703	0.6+	0.7+	1999 12 07	704	0.6−	0.3−

1999 XL₂₂ = 4097 T-1 = 1998 MY₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19404251	ω	307.87230	+0.74151995	−0.66736142		
<i>a</i>	2.9548682	Ω	94.10478	+0.63527571	+0.66524340		
<i>e</i>	0.0912730	<i>i</i>	3.97338	+0.21580765	+0.33478345		
<i>P</i>	5.08	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1971 03 24	675	(0.2+	3.0−)	1999 11 15	704	0.1−	0.5−	1999 12 06	704	0.0	0.9+
1971 03 26	675	1.2−	1.0+	1999 11 17	704	0.4+	0.3+	1999 12 07	704	0.0	0.3−
1971 03 26	675	1.2+	0.9+	1999 11 17	704	0.2+	0.0	1999 12 07	704	0.7−	1.5−
1971 03 27	675	1.5−	1.0−	1999 11 17	704	0.6−	0.2+	1999 12 07	704	0.3−	0.1−
1971 04 02	675	1.4+	1.1−	1999 11 17	704	0.3−	0.1−	1999 12 07	704	0.0	0.1−
1998 06 22	691	0.3−	0.2−	1999 11 17	704	0.1+	0.1+	1999 12 12	703	0.2−	0.1+
1998 06 22	691	0.6−	0.1−	1999 12 04	703	0.1+	0.1+	1999 12 12	703	0.2+	0.5+
1998 06 22	691	0.4−	0.1+	1999 12 04	703	1.3−	0.5+	1999 12 12	703	0.1−	0.0
1998 06 29	691	0.6+	0.2−	1999 12 04	703	0.5−	0.9+	1999 12 12	703	0.1+	0.2−
1998 06 29	691	0.6+	0.4+	1999 12 04	703	0.1+	0.1+	2000 01 05	704	0.2−	0.7−
1999 11 15	704	0.5+	0.7−	1999 12 06	704	0.2+	0.6+	2000 01 05	704	0.4−	0.3+
1999 11 15	704	0.4+	0.4−	1999 12 06	704	0.6+	0.0	2000 01 05	704	0.2−	0.5+
1999 11 15	704	0.0	0.3−	1999 12 06	704	0.9+	0.7−	2000 01 05	704	0.0	0.5+
1999 11 15	704	0.0	0.5−	1999 12 06	704	0.9+	0.4+				

1999 XH₂₃ = 1994 JW₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28086855	ω	42.03925	+0.24867219	−0.96561744		
<i>a</i>	2.3092306	Ω	33.76739	+0.84837960	+0.17938420		
<i>e</i>	0.1849543	<i>i</i>	7.83773	+0.46734805	+0.18816021		
<i>P</i>	3.51	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 05 05	691	0.6−	0.6+	1999 11 05	704	0.5+	0.4−	1999 12 06	704	0.6+	0.1+
1994 05 05	691	0.5+	0.0	1999 11 09	704	0.4−	0.2−	1999 12 07	704	0.3+	0.2−
1994 05 05	691	0.1+	0.3+	1999 11 09	704	0.8−	0.1+	1999 12 07	704	0.1−	0.1+
1994 05 08	691	0.2−	0.8−	1999 11 09	704	0.4−	0.3+	1999 12 07	704	0.8+	0.6+
1994 05 08	691	0.0	1.0−	1999 11 09	704	0.5−	0.4+	1999 12 07	704	0.0	0.6+
1994 05 08	691	0.4−	0.3−	1999 11 09	704	0.6−	0.1+	1999 12 07	704	0.0	0.3+
1999 11 05	704	0.7+	0.3−	1999 12 06	704	0.1−	0.8−	2000 01 06	704	0.3−	0.2+
1999 11 05	704	0.7+	0.2−	1999 12 06	704	0.5−	0.6−	2000 01 06	704	0.0	0.3−
1999 11 05	704	0.7+	0.0	1999 12 06	704	1.1−	0.0	2000 01 06	704	0.7+	0.1−
1999 11 05	704	0.3+	0.5−	1999 12 06	704	0.3+	0.1−				

1999 XN₂₃ = 1993 NL

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19806261	ω	209.26979	+0.99973952	−0.00046525		
<i>a</i>	2.9147483	Ω	150.73023	+0.00865072	+0.93291570		
<i>e</i>	0.0973600	<i>i</i>	2.67502	−0.02112019	+0.36009453		
<i>P</i>	4.98	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 07 12	809	(1.6+	2.8+)	1999 11 04	704	0.2+	0.0	1999 11 17	704	0.1−	1.0+
1993 07 12	809	0.3+	1.2+	1999 11 04	704	0.5−	0.8−	1999 11 17	704	0.4−	0.7+
1993 07 12	809	(0.2+	2.4+)	1999 11 04	704	0.1+	1.0−	1999 12 04	703	0.2−	0.8+
1993 07 23	809	(4.3−	2.7−)	1999 11 04	704	0.2−	0.9−	1999 12 04	703	0.6−	0.0
1993 07 23	809	(5.0−	2.2−)	1999 11 04	704	0.2−	1.2−	1999 12 04	703	0.6−	0.2+
1993 07 23	809	(5.6−	1.8−)	1999 11 15	704	0.5+	0.2−	1999 12 04	703	0.3−	0.1−
1993 07 23	809	0.5−	0.1−	1999 11 15	704	1.2+	0.0	1999 12 06	704	1.1+	0.4+
1993 07 23	809	0.6+	0.6−	1999 11 15	704	0.5+	0.2−	1999 12 06	704	0.0	0.8+
1993 07 23	809	0.4−	0.7−	1999 11 15	704	0.1−	1.2−	1999 12 06	704	0.7+	0.4+
1998 06 26	704	1.0−	0.4+	1999 11 16	704	0.2−	0.6−	1999 12 06	704	0.1+	0.7−
1998 06 26	704	0.6−	1.3+	1999 11 16	704	0.4−	0.7+	1999 12 07	704	0.8+	0.3−
1998 06 26	704	1.4+	0.5+	1999 11 16	704	0.1+	0.6+	1999 12 07	704	0.2−	0.3−
1998 06 26	704	0.1+	1.6−	1999 11 16	704	0.2+	0.2+	1999 12 07	704	0.1+	0.3+
1999 11 01	703	0.4−	0.2+	1999 11 16	704	0.2+	0.4−	1999 12 07	704	0.2+	0.4+
1999 11 01	703	0.4−	0.0	1999 11 17	704	0.1−	0.3−	1999 12 07	704	0.1+	0.2+
1999 11 01	703	0.3−	0.2+	1999 11 17	704	0.1−	0.3+				
1999 11 01	703	0.0	0.0	1999 11 17	704	0.8−	1.3+				

1999 XV₂₃ = 1998 HF₃₈

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26416724	ω	342.51033	+0.65432222	+0.75604331		
<i>a</i>	2.4055630	Ω	328.35228	−0.69008203	+0.58822669		
<i>e</i>	0.2012787	<i>i</i>	1.76428	−0.30927210	+0.28703289		
<i>P</i>	3.73	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 20	704	0.2−	0.2+	1999 11 14	704	0.1−	0.4+	1999 12 06	704	0.7+	1.6−
1998 04 20	704	0.8+	0.1−	1999 11 14	704	0.3+	0.7+	1999 12 06	704	0.3−	0.0
1998 04 20	704	0.6+	0.4−	1999 11 14	704	0.1−	0.5+	1999 12 07	704	1.6+	0.1+
1998 04 20	704	0.6−	0.3+	1999 11 14	704	0.0	0.2+	1999 12 07	704	0.2+	0.6−
1998 04 20	704	0.5−	1.1−	1999 11 14	704	0.1−	0.3+	1999 12 07	704	0.8−	0.0
1998 04 21	704	0.2−	0.6−	1999 11 16	704	0.4+	0.0	1999 12 30	699	0.8−	0.1+
1998 04 21	704	0.1+	0.7+	1999 11 16	704	0.4+	0.1+	1999 12 30	699	0.1+	0.9+
1998 04 21	704	0.3+	0.2−	1999 11 16	704	0.2+	0.2−	1999 12 30	699	0.1+	0.6+
1998 04 21	704	0.6−	0.3+	1999 11 16	704	0.3+	0.7−	2000 01 04	704	0.2−	0.2−
1998 04 21	704	0.4+	0.3+	1999 11 16	704	0.5+	0.5−	2000 01 04	704	0.0	0.0
1998 04 22	704	0.0	0.7−	1999 12 04	703	1.0−	0.3+	2000 01 04	704	0.6−	0.0
1998 04 22	704	0.0	0.2+	1999 12 04	703	0.1+	0.1−	2000 01 04	704	1.0+	0.2−
1998 04 22	704	(0.1−	3.4−)	1999 12 04	703	0.0	0.5+	2000 01 04	704	0.3−	0.7−
1998 04 22	704	0.3−	0.1−	1999 12 04	703	0.3−	0.2−	2000 01 06	704	0.3+	0.5+
1998 04 22	704	0.1−	0.9+	1999 12 04	699	0.3−	0.3+	2000 01 06	704	0.2−	0.7+
1999 11 07	704	0.2−	0.4−	1999 12 04	699	0.2+	0.6+	2000 01 06	704	0.5+	0.3+
1999 11 07	704	0.2−	0.2−	1999 12 04	699	0.3−	0.5+	2000 01 06	704	0.1−	0.2−
1999 11 07	704	0.4−	0.4−	1999 12 06	704	0.6−	1.2+	2000 01 06	704	0.2+	1.0−
1999 11 07	704	0.4−	0.2−	1999 12 06	704	0.3+	0.7−				
1999 11 07	704	0.2+	0.2−	1999 12 06	704	0.1−	0.5−				

2000 JAN. 24

M.P.C. 37871

1999 XY₂₃ = 1995 WL₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	16.12522		(2000.0)	P		Q	
<i>n</i>	0.24732493	ω	180.04683	+0.56786847		−0.81515700	
<i>a</i>	2.5135689	Ω	235.35190	+0.75524233		+0.57117631	
<i>e</i>	0.0730535	<i>i</i>	7.98033	+0.32731394		+0.09631559	
<i>P</i>	3.99	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 17	691	0.4−	0.3+	1999 11 04	704	0.6−	1.5−	1999 12 04	703	0.6+	0.0
1995 11 17	691	0.3−	0.4+	1999 11 11	703	0.3−	0.6+	1999 12 04	699	1.1+	0.2+
1995 11 17	691	0.3−	0.3+	1999 11 11	703	0.4−	0.5+	1999 12 06	704	0.4+	0.2−
1995 11 28	691	0.5+	0.0	1999 11 11	703	0.1−	0.1+	1999 12 06	704	0.7+	1.1−
1995 11 28	691	0.2+	0.1+	1999 11 11	703	1.0−	0.9−	1999 12 06	704	0.1+	0.5−
1995 11 28	691	0.1+	0.1−	1999 11 17	704	0.7+	0.4+	1999 12 06	704	0.4+	0.4−
1999 10 03	704	1.0+	1.0+	1999 11 17	704	0.4+	0.5+	1999 12 07	704	0.5−	0.2−
1999 10 03	704	0.1+	0.1+	1999 11 17	704	0.5+	0.1−	1999 12 07	704	0.3−	0.1+
1999 10 03	704	0.5−	0.5−	1999 11 17	704	0.4+	0.3+	1999 12 07	704	0.7−	1.3−
1999 10 03	704	0.3−	0.6+	1999 11 17	704	1.2+	0.0	1999 12 07	704	0.8−	0.1−
1999 10 03	704	1.5−	0.5−	1999 12 04	703	0.9−	0.6+	1999 12 07	704	0.1−	0.2+
1999 11 04	704	0.1+	0.0	1999 12 04	699	0.2+	0.3+	2000 01 04	704	0.3−	0.8+
1999 11 04	704	0.2−	0.2−	1999 12 04	703	0.2−	0.4+	2000 01 04	704	0.4−	0.1−
1999 11 04	704	0.2+	0.5−	1999 12 04	703	0.2−	1.4+	2000 01 04	704	0.3+	0.4−
1999 11 04	704	0.6+	0.8−	1999 12 04	699	0.3+	0.8+				

1999 XA₂₄ = 1989 YU₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	328.86150		(2000.0)	P		Q	
<i>n</i>	0.28567792	ω	233.31619	−0.47594122		−0.87555379	
<i>a</i>	2.2832402	Ω	245.30303	+0.83323617		−0.41871499	
<i>e</i>	0.1117430	<i>i</i>	5.24031	+0.28142039		−0.24100480	
<i>P</i>	3.45	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1989 12 26	033	0.5−	0.6+	1999 11 14	703	0.1−	0.1+	1999 12 07	704	0.0	0.4−
1989 12 26	033	0.5−	0.1+	1999 11 14	703	0.2−	0.3+	1999 12 07	704	0.2+	1.0−
1989 12 26	033	1.1+	0.3−	1999 11 14	703	0.3−	0.4+	1999 12 07	704	0.1−	1.2−
1992 12 14	010	0.3+	0.5−	1999 11 16	704	0.4+	0.0	1999 12 12	703	0.9−	0.1−
1999 11 03	704	0.0	0.2−	1999 11 16	704	0.2+	0.3−	1999 12 12	703	0.3−	0.4−
1999 11 03	704	0.2+	0.5+	1999 11 16	704	0.4+	0.1−	1999 12 12	703	0.2+	0.1−
1999 11 03	704	0.6−	0.2+	1999 11 16	704	0.1+	0.2−	1999 12 12	703	0.4−	0.2+
1999 11 03	704	0.1−	0.2+	1999 11 16	704	0.2+	0.4−	2000 01 04	704	0.4−	0.2−
1999 11 03	704	0.1−	1.1+	1999 12 04	703	0.9−	0.0	2000 01 04	704	0.5−	0.4+
1999 11 11	703	0.1−	0.1+	1999 12 04	699	0.3−	0.7+	2000 01 04	704	0.1−	0.5+
1999 11 11	703	0.2−	0.6+	1999 12 04	703	0.0	0.1−	2000 01 04	704	0.3−	0.7+
1999 11 11	703	0.3−	0.0	1999 12 04	703	0.0	0.7+	2000 01 04	704	0.3−	0.5+
1999 11 11	703	0.1−	0.3+	1999 12 04	699	0.3−	0.2+	2000 01 07	704	0.1−	0.7−
1999 11 12	699	0.1+	0.7+	1999 12 04	703	1.3−	0.3+	2000 01 07	704	0.7+	0.3−
1999 11 12	699	0.3−	0.6+	1999 12 04	699	0.3−	0.2−	2000 01 07	704	0.1+	0.3−
1999 11 12	699	1.0+	0.3+	1999 12 06	704	0.7−	0.1+	2000 01 07	704	0.9+	0.4+
1999 11 14	704	0.8+	0.3−	1999 12 06	704	1.0+	0.6+	2000 01 07	704	0.5+	0.2−
1999 11 14	704	0.8+	0.4−	1999 12 06	704	0.4−	0.4−	2000 01 09	704	1.2−	1.4+
1999 11 14	704	0.6+	0.4−	1999 12 06	704	0.3+	0.5−	2000 01 09	704	0.6+	0.5+
1999 11 14	704	0.7+	0.7−	1999 12 06	704	0.1−	0.5−	2000 01 09	704	0.7+	0.8−
1999 11 14	704	0.6+	0.4−	1999 12 07	704	0.0	0.3−	2000 01 09	704	0.7+	0.9−
1999 11 14	703	0.4−	0.3+	1999 12 07	704	0.2−	0.7−				

1999 XK₂₄ = 1995 WY₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	341.00179		(2000.0)	P		Q	
<i>n</i>	0.26943696	ω	88.41503	−0.86844311		−0.45969804	
<i>a</i>	2.3740942	Ω	64.18279	+0.33163921		−0.81704598	
<i>e</i>	0.1266563	<i>i</i>	11.90500	+0.36854036		−0.34801376	
<i>P</i>	3.66	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 27	691	0.8−	0.1+	1995 11 29	369	0.5+	0.6+	1999 12 15	704	0.1−	0.7+
1995 11 27	691	0.2−	0.0	1999 12 12	704	0.2−	0.5−	1999 12 15	704	0.2−	0.2+
1995 11 27	691	0.1−	0.3+	1999 12 12	704	0.1+	0.2−	1999 12 15	704	0.2−	0.1−
1995 11 27	369	1.2+	0.3−	1999 12 12	704	0.0	0.2+	1999 12 15	704	0.0	1.0−
1995 11 27	369	0.0	0.6+	1999 12 12	704	0.5−	0.5−	2000 01 02	704	0.8−	0.4+
1995 11 27	369	0.3+	0.4−	1999 12 13	704	0.7+	0.1−	2000 01 02	704	0.3+	0.0
1995 11 29	369	1.1−	0.1−	1999 12 13	704	0.4+	0.2+	2000 01 02	704	0.0	0.1+
1995 11 29	369	0.1+	0.7−	1999 12 13	704	0.5+	0.5+	2000 01 02	704	0.0	0.2+

1999 XP₂₄ = 1978 WG₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	341.38231		(2000.0)	P		Q	
<i>n</i>	0.23319898	ω	33.70010	−0.35020191		−0.93237930	
<i>a</i>	2.6140764	Ω	76.93977	+0.83780601		−0.35457458	
<i>e</i>	0.1894745	<i>i</i>	5.27725	+0.41885523		−0.07032573	
<i>P</i>	4.23	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 11 29	675	0.9−	0.2+	1999 11 12	699	0.3−	0.2+	1999 12 06	704	0.2−	0.3−
1978 11 30	675	0.7+	0.6+	1999 11 12	699	0.0	0.2+	1999 12 06	704	0.4−	0.5+
1999 11 01	703	0.4+	0.1+	1999 11 15	704	0.1−	0.1−	1999 12 06	704	0.4−	0.1+
1999 11 01	703	0.3−	0.9+	1999 11 15	704	0.4+	0.4−	1999 12 06	704	0.4−	0.4+
1999 11 01	703	0.9−	1.5+	1999 11 15	704	0.3+	0.2−	1999 12 07	704	0.5−	0.1−
1999 11 01	703	0.3−	0.2+	1999 11 15	704	0.1−	0.2−	1999 12 07	704	0.7−	0.3+

1999 XZ₂₃ = 1998 HM₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	151.19238		(2000.0)	P		Q	
<i>n</i>	0.31105615	ω	243.37232	+0.13347510		+0.99012189	
<i>a</i>	2.1572982	Ω	34.38260	−0.88009990		+0.13833655	
<i>e</i>	0.0910237	<i>i</i>	4.35993	−0.45564083		+0.02283957	
<i>P</i>	3.17	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 25	699	0.1−	0.1−	1998 05 16	704	0.0	0.9+	1999 12 04	699	0.3−	0.1+
1998 03 25	699	0.9+	0.6−	1998 05 25	699	0.4+	0.2+	1999 12 06	704	0.0	0.3+
1998 03 25	699	0.1+	0.6−	1998 05 25	699	0.6+	0.0	1999 12 06	704	0.5+	0.3−
1998 04 21	704	0.2+	0.0	1998 05 25	699	0.4+	0.5−	1999 12 06	704	0.2−	0.1−
1998 04 21	704	0.7−	0.3+	1999 10 03	704	0.0	0.1−	1999 12 06	704	0.0	0.1−
1998 04 21	704	0.3−	0.4−	1999 10 03	704	0.2−	0.3−	1999 12 06	704	0.4+	0.1−
1998 04 21	704	0.1−	0.4−	1999 10 03	704	0.3+	0.6+	1999 12 07	704	0.4+	0.5−
1998 04 21	704	0.4−	0.1+	1999 10 03	704	0.6+	0.4+	1999 12 07	704	0.1+	0.6−
1998 04 22	704	0.1−	0.4+	1999 10 03	704	0.5+	0.3+	1999 12 07	704	0.3+	0.4−
1998 04 22	704	0.2−	0.4+	1999 10 29	703	1.3−	1.4+	1999 12 07	704	0.2+	0.6−
1998 04 22	704	0.3+	0.1+	1999 10 29	703	1.5−	1.9+	1999 12 07	704	0.2+	1.1−
1998 04 22	704	0.5+	1.5+	1999 10 29	703	(1.5+	3.1+)	1999 12 12	703	0.0	0.1−
1998 04 22	704	(2.3+	1.6+)	1999 11 04	704	0.2−	0.9+	1999 12 12	703	0.3−	0.3−
1998 04 24	699	0.1−	0.8+	1999 11 04	704	0.1−	0.7+	1999 12 12	703	0.1−	0.0
1998 04 24	699	0.1+	1.3+	1999 11 04	704	0.1−	0.8+	1999 12 12	703	0.1−	0.3+
1998 04 24	699	0.3−	1.1+	1999 11 04	704	0.2−	0.7+	1999 12 30	699	0.3−	0.8+
1998 04 25	699	1.2+	0.4+	1999 11 04	704	0.1−	0.9+	1999 12 30	699	0.2−	0.6+
1998 04 25	699	0.1−	0.4+	1999 12 04	703	0.4−	0.3+	1999 12 30	699	1.3+	0.2+
1998 04 25	699	0.0	0.4+	1999 12 04	699	0.1−	0.0	2000 01 04	704	0.0	0.2+
1998 05 16	704	0.1−	0.4−	1999 12 04	703	0.4−	0.1−	2000 01 04	704	0.5+	0.3−
1998 05 16	704	0.2+	0.1−	1999 12 04	703	0.6−	0.4+	2000 01 04	704	0.8+	0.6−
1998 05 16	704	0.2+	0.1+	1999 12 04	699	0.4−	0.4+	2000 01 04	704	0.3+	0.5−
1998 05 16	704	0.1−	1.3−	1999 12 04	703	0.7−	0.5−	2000 01 04	704	0.6+	1.1−

1999 11 04	704	0.3+	0.2−	1999 11 15	704	0.1+	0.1+	1999 12 07	704	0.0	0.7+
1999 11 04	704	0.5+	0.5−	1999 11 17	704	0.6+	0.4−	1999 12 07	704	0.4−	1.0+
1999 11 04	704	0.4−	0.0	1999 11 17	704	0.0	0.6−	1999 12 12	703	1.2+	0.1−
1999 11 04	704	0.4+	0.8−	1999 11 17	704	(2.4+	1.0−)	1999 12 12	703	0.1+	0.1+
1999 11 04	704	0.3+	0.4−	1999 11 17	704	0.6+	1.2−	1999 12 12	703	0.7−	0.1−
1999 11 05	704	0.2−	0.1−	1999 11 17	704	1.4+	1.1−	1999 12 12	703	0.5+	0.3−
1999 11 05	704	0.4+	0.2+	1999 12 04	703	0.3−	0.5+	2000 01 05	704	0.4+	0.6−
1999 11 05	704	0.2−	0.0	1999 12 04	703	0.1−	0.1+	2000 01 05	704	0.6−	0.7−
1999 11 05	704	0.0	0.3+	1999 12 04	703	(2.1−	0.1−)	2000 01 05	704	0.4+	0.7−
1999 11 05	704	0.9+	1.0+	1999 12 04	703	1.2−	0.3−	2000 01 05	704	0.9+	0.2−
1999 11 12	699	1.0−	0.8−	1999 12 06	704	0.3−	0.5+	2000 01 05	704	0.3+	0.3+

1999 XT₂₄ = 1995 SO₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	58.97865		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.25946474	ω	258.93525	+0.99806885	−0.00795013
a	2.4345413	Ω	101.49895	+0.03114042	+0.92218569
e	0.2364302	i	3.60447	−0.05374790	+0.38666568
P	3.80	H	14.9	G 0.15	U 2

Residuals in seconds of arc

1995 09 20	400	0.2+	0.3−	1999 11 05	704	0.3+	0.7+	1999 12 06	704	1.1+	0.2−
1995 09 20	400	0.3−	0.3+	1999 11 12	699	0.4+	0.2+	1999 12 06	704	0.6−	0.2−
1995 09 21	400	0.4+	0.3−	1999 11 12	699	0.1+	0.6+	1999 12 06	704	0.0	0.7−
1995 09 21	400	0.2+	0.9−	1999 11 12	699	0.2−	0.4+	1999 12 06	704	0.1−	0.5−
1998 05 01	704	0.4−	0.6−	1999 11 15	704	0.2+	0.1+	1999 12 06	704	0.9−	0.4−
1998 05 01	704	0.3+	0.0	1999 11 15	704	0.1−	0.0	1999 12 07	704	0.3−	0.0
1998 05 01	704	0.8+	0.1−	1999 11 15	704	0.1+	0.1+	1999 12 07	704	0.0	0.1−
1998 05 01	704	0.7−	0.8+	1999 11 15	704	0.5+	1.6−	1999 12 07	704	0.7−	0.2+
1998 05 01	704	(3.0−	1.1+)	1999 11 15	704	0.2−	0.4−	1999 12 07	704	0.1−	0.6−
1999 11 01	703	0.6−	0.4+	1999 11 17	704	0.0	0.0	1999 12 07	704	0.1−	0.4−
1999 11 01	703	0.1−	0.2+	1999 11 17	704	0.4−	0.1−	2000 01 05	704	0.2+	0.0
1999 11 01	703	0.6−	0.7+	1999 11 17	704	0.3−	0.0	2000 01 05	704	0.2+	0.2+
1999 11 01	703	0.1+	0.4+	1999 11 17	704	0.2−	0.1+	2000 01 05	704	0.2+	0.0
1999 11 04	704	0.2−	0.1+	1999 11 17	704	0.1+	0.2+	2000 01 05	704	0.0	0.1+
1999 11 04	704	0.4−	0.1+	1999 12 02	699	0.2−	0.2+	2000 01 05	704	0.4+	0.4−
1999 11 04	704	0.3+	0.3+	1999 12 02	699	0.0	0.7+	2000 01 07	704	0.3−	0.7−
1999 11 04	704	0.1−	0.3+	1999 12 02	699	0.0	0.5+	2000 01 07	704	0.2−	0.1−
1999 11 04	704	0.0	0.3+	1999 12 04	703	0.4−	0.3+	2000 01 07	704	0.9+	0.8−
1999 11 05	704	0.2+	0.4+	1999 12 04	703	0.2+	0.2+	2000 01 07	704	0.6+	0.6−
1999 11 05	704	0.3+	0.1−	1999 12 04	703	0.1+	0.5+	2000 01 07	704	0.7+	0.6−
1999 11 05	704	0.5+	0.0	1999 12 04	703	0.1+	0.1+				

1999 XW₂₄ = 1993 FO₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	23.89939		(2000.0)	P	Q
n	0.24575608	ω	327.78809	+0.59510583	−0.80095412
a	2.5242548	Ω	85.60924	+0.75060657	+0.52474107
e	0.1679105	i	3.78037	+0.28712163	+0.28830419
P	4.01	H	15.3	G 0.15	U 4

Residuals in seconds of arc

1993 03 19	809	0.1+	0.0	1999 11 15	704	0.3+	0.0	1999 12 06	704	0.2+	0.6−
1993 03 20	809	0.8+	0.1+	1999 11 15	704	0.9+	0.6+	1999 12 07	704	0.5+	0.3−
1993 03 24	691	0.4−	0.4−	1999 11 17	704	0.8+	0.1−	1999 12 07	704	0.3−	0.2+
1993 03 24	691	0.7−	0.3−	1999 11 17	704	0.8+	0.0	1999 12 07	704	0.1+	0.5+
1993 03 24	691	0.1−	0.2−	1999 11 17	704	0.4+	0.5−	1999 12 07	704	0.6−	0.0
1999 11 01	703	0.2−	0.2−	1999 11 17	704	0.3+	0.2+	1999 12 12	703	0.3+	0.4+
1999 11 01	703	0.5−	0.2−	1999 12 02	699	0.5−	1.0+	1999 12 12	703	1.3−	0.2−
1999 11 01	703	0.3−	0.1+	1999 12 02	699	0.1−	0.7+	1999 12 12	703	0.1−	0.7−
1999 11 01	703	0.3−	0.1+	1999 12 02	699	0.2−	0.8+	1999 12 12	703	1.2+	0.2−
1999 11 04	704	0.3−	0.2−	1999 12 04	703	0.7−	0.3+	2000 01 05	704	0.1−	0.3−
1999 11 04	704	0.1−	0.4−	1999 12 04	703	0.9−	0.8+	2000 01 05	704	1.5−	0.4−
1999 11 04	704	0.5−	0.6−	1999 12 04	703	0.1+	0.0	2000 01 05	704	0.9+	0.1+
1999 11 04	704	0.3−	0.9−	1999 12 04	703	0.6+	1.0+	2000 01 05	704	0.2−	0.2+
1999 11 04	704	0.5−	0.8−	1999 12 06	704	0.2+	0.2+	2000 01 06	704	0.1+	0.4+

1999 11 15	704	0.5+	0.1−	1999 12 06	704	0.3+	0.6−	2000 01 06	704	0.1+	0.2+
1999 11 15	704	0.4+	0.1+	1999 12 06	704	0.1+	0.0	2000 01 06	704	0.6+	0.8−
1999 11 15	704	0.4+	0.2−	1999 12 06	704	0.2+	0.2−	2000 01 06	704	1.0−	0.3+

1999 XA₂₅ = 1978 NJ₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	332.49740		(2000.0)	P	Q
n	0.25173395	ω	52.28059	−0.38428571	−0.91001807
a	2.4841330	Ω	61.00488	+0.78119094	−0.41030387
e	0.0793877	i	10.24309	+0.49200123	−0.05931137
P	3.92	H	13.7	G 0.15	U 4

Residuals in seconds of arc

1978 07 09	809	0.5−	0.2−	1999 11 16	691	0.7+	0.5−	1999 12 07	704	0.1+	0.3+
1978 07 10	809	0.3−	0.7−	1999 11 17	704	0.1−	0.4−	1999 12 07	704	0.2+	0.4+
1978 07 11	809	0.4+	0.1−	1999 11 17	704	0.3−	1.2−	1999 12 07	704	0.3−	0.5+
1999 09 18	703	0.5+	0.9+	1999 11 17	704	0.2−	0.8−	1999 12 12	703	0.5−	0.0
1999 09 18	703	0.1−	0.2+	1999 11 17	704	0.3+	1.0−	1999 12 12	703	0.1−	0.0
1999 09 18	703	0.6−	0.7+	1999 11 17	704	0.1−	1.0−	1999 12 12	703	0.5−	0.0
1999 09 18	703	1.0−	1.0+	1999 12 02	699	0.2+	0.7+	1999 12 12	703	0.2+	0.1+
1999 11 01	703	0.8−	0.4+	1999 12 02	699	0.7+	0.3−	1999 12 18	691	0.4+	0.1−
1999 11 01	703	0.1−	0.3+	1999 12 02	699	0.2−	0.6+	1999 12 18	691	0.5+	0.2−
1999 11 01	703	0.0	0.5+	1999 12 03	691	0.0	0.1+	1999 12 18	691	0.1+	0.0
1999 11 01	703	0.3−	0.4+	1999 12 03	691	0.2−	0.1+	2000 01 04	704	0.1−	1.1−
1999 11 04	704	0.3−	0.2+	1999 12 03	691	0.1−	0.0	2000 01 04	704	0.3−	0.3+
1999 11 04	704	0.2−	0.1+	1999 12 04	703	0.4−	0.8+	2000 01 04	704	0.5−	0.4−
1999 11 04	704	0.4−	0.0	1999 12 04	703	0.5−	0.0	2000 01 04	704	0.9+	1.2+
1999 11 04	704	0.0	0.2−	1999 12 04	703	0.2−	0.1+	2000 01 05	106	1.0−	0.5+
1999 11 04	704	0.1−	0.1+	1999 12 04	703	0.6−	0.0	2000 01 05	106	0.4−	0.0
1999 11 15	704	0.4+	0.6−	1999 12 06	704	0.2−	0.0	2000 01 06	704	0.1−	1.1−
1999 11 15	704	0.4+	0.9−	1999 12 06	704	0.1+	0.2+	2000 01 06	704	0.7+	0.6+
1999 11 15	704	0.5+	0.9−	1999 12 06	704	0.3+	0.2+	2000 01 06	704	0.7+	0.1−
1999 11 15	704	0.5+	1.0−	1999 12 06	704	0.1+	0.5+	2000 01 06	704	0.2−	0.5−
1999 11 16	691	0.8+	0.6−	1999 12 06	704	0.0	0.3+	2000 01 06	704	1.0+	1.2+
1999 11 16	691	0.7+	0.5−	1999 12 07	704	0.0	0.3+				

1999 XF₂₅ = 1984 EG₂ = 1988 XE₃ = 1991 LE₆ = 1998 QY₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	2.78899		(2000.0)	P	Q
n	0.17147785	ω	208.29647	+0.31115935	−0.93936683
a	3.2087116	Ω	224.00579	+0.90637148	+0.33892673
e	0.1138072	i	11.97257	+0.28578069	−0.05214049
P	5.75	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1984 03 07	413	0.7+	0.2+	1999 11 04	704	0.3+	0.3+	1999 12 04	703	0.4−	0.0
1984 03 07	413	1.6+	1.7−	1999 11 04	704	0.0	0.4+	1999 12 04	703	0.4−	0.3+
1988 12 07	033	0.9−	0.4−	1999 11 04	704	0.5+	0.5+	1999 12 06	704	0.1+	0.3+
1988 12 07	033	1.4−	0.1−	1999 11 09	691	0.6+	0.1+	1999 12 06	704	0.3+	0.1+
1991 06 06	809	0.4−	1.5+	1999 11 09	691	0.7+	0.0	1999 12 06	704	0.1+	0.2−
1991 06 06	809	1.2−	1.8+	1999 11 09	691	0.4+	0.1+	1999 12 06	704	0.0	0.6−
1991 06 06	809	0.7−	1.4+	1999 11 10	699	0.5−	0.7+	1999 12 06	704	0.1−	0.1−
1998 08 24	704	0.6+	0.5−	1999 11 10	699	0.4−	0.8+	1999 12 07	704	0.2+	0.3−
1998 08 24	704	0.2−	0.1−	1999 11 10	699	0.3+	0.7+	1999 12 07	704	0.2+	0.3+
1998 08 24	704	0.9−	1.4−	1999 11 15	704	0.2−	0.3+	1999 12 07	704	0.0	0.2−
1998 08 24	704	0.6+	0.8+	1999 11 15	704	0.3−	0.5+	1999 12 07	704	0.2−	0.5−
1998 08 24	704	0.0	0.7−	1999 11 15	704	(0.4+	2.7−)	1999 12 07	704	0.6−	0.3−
1998 08 27	704	0.0	0.7−	1999 11 15	704	0.5−	0.2+	1999 12 12	703	0.0	0.2+
1998 08 27	704	0.4−	1.2−	1999 11 15	704	0.8+	0.2−	1999 12 12	703	0.0	0.0
1998 08 27	704	0.4+	0.3−	1999 11 15	704	0.3−	0.7+	1999 12 12	703	0.4−	0.5+
1998 08 27	704	1.3+	1.1−	1999 11 15	704	0.6+	0.2+	1999 12 12	703	0.2−	0.3+
1998 09 17	699	0.8+	0.6+	1999 11 15	704	0.4+	0.1−	1999 12 14	704	0.2+	0.1+
1998 09 17	699	0.4−	0.5+	1999 11 17	704	0.0	0.4−	1999 12 14	704	1.2−	0.1−
1998 09 17	699	0.3−	1.1+	1999 11 17	704	0.2−	0.5−	1999 12 14	704	0.6−	0.6−
1998 10 18	327	0.0	0.1−	1999 11 17	704	0.2−	0.5−	1999 12 14	704	0.4−	0.4+
1998 10 18	327	0.3+	0.5+	1999 11 17	704	0.1+	0.5−	1999 12 14	704	0.4−	0.1−

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1998 10 18	327	0.1+	0.5+	1999 11 17	704	0.3+	0.3-	2000 01 04	106	0.2+	0.6-
1999 11 04	704	0.4+	0.1+	1999 12 04	703	0.3+	1.0+	2000 01 04	106	0.4+	0.4+
1999 11 04	704	0.5+	0.2+	1999 12 04	703	0.1-	0.8+				

1999 XH₂₅ = 1982 YZ₂ = 1989 AZ₈ = 1998 OP₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	348.55676		(2000.0)		P		Q
<i>n</i>	0.17064972	ω	335.54355	-0.06038246	-0.99732081		
<i>a</i>	3.2190841	Ω	117.89528	+0.92333025	-0.07152411		
<i>e</i>	0.1579161	<i>i</i>	2.67798	+0.37922975	+0.01534607		
<i>P</i>	5.78	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 12 22	095	0.2-	1.6+	1999 11 17	704	0.4-	0.4-	1999 12 07	704	0.5+	0.1+
1989 01 04	372	0.6-	1.3-	1999 11 17	704	0.7-	0.2-	1999 12 07	704	0.5+	0.0
1989 01 04	372	0.4+	0.5-	1999 11 17	704	0.8-	0.1+	1999 12 07	704	0.7+	0.5-
1998 07 26	809	0.6+	0.1-	1999 11 17	704	0.9-	0.0	1999 12 07	704	0.4+	0.3-
1998 07 26	809	0.4+	0.3-	1999 11 17	704	0.6-	0.1-	1999 12 07	704	0.2+	0.7-
1998 07 26	809	0.1+	0.2+	1999 12 04	703	0.2-	0.3+	1999 12 08	704	0.4+	0.1+
1998 07 27	809	0.4+	0.2+	1999 12 04	703	0.2-	0.5+	1999 12 08	704	1.3+	1.3+
1998 07 27	809	0.3-	0.9-	1999 12 04	703	0.5-	0.6+	1999 12 08	704	0.2+	0.1+
1998 07 27	809	0.9-	0.0	1999 12 04	703	0.1+	1.0+	1999 12 08	704	0.3+	0.3+
1999 11 15	704	0.2+	0.2-	1999 12 06	704	0.1+	0.5-	1999 12 12	703	0.5-	0.7+
1999 11 15	704	0.2+	0.1-	1999 12 06	704	0.3-	1.2-	1999 12 12	703	0.2-	0.6+
1999 11 15	704	0.2-	0.1-	1999 12 06	704	0.1+	0.7-	1999 12 12	703	0.5-	0.4+
1999 11 15	704	0.1+	0.1-	1999 12 06	704	0.6+	0.5-	1999 12 12	703	0.0	0.2+
1999 11 15	704	0.1+	0.2-	1999 12 06	704	0.1+	0.7-				

1999 XM₂₅ = 1997 HE₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	56.31375		(2000.0)		P		Q
<i>n</i>	0.17897153	ω	198.64251	+0.99972359	-0.02227801		
<i>a</i>	3.1185072	Ω	162.62890	+0.02346810	+0.92647648		
<i>e</i>	0.1747801	<i>i</i>	1.44171	+0.00140862	+0.37569272		
<i>P</i>	5.51	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 09 14	809	1.2+	0.1+	1999 11 04	704	0.6-	0.3-	1999 11 17	704	0.1-	0.5-
1993 09 14	809	0.1+	0.0	1999 11 05	691	0.2-	0.2-	1999 12 03	691	0.0	0.0
1993 09 14	809	1.2-	0.3-	1999 11 05	691	0.3-	0.1-	1999 12 03	691	0.1+	0.1-
1997 04 30	704	0.0	0.3-	1999 11 05	691	0.3-	0.2-	1999 12 03	691	0.1+	0.1-
1997 04 30	704	0.2+	0.1-	1999 11 09	691	0.3+	0.1-	1999 12 04	703	0.4-	0.1+
1997 04 30	704	0.6-	1.1-	1999 11 09	691	0.4+	0.1-	1999 12 04	703	0.7+	0.2-
1997 04 30	704	1.0-	0.7+	1999 11 09	691	0.4+	0.1-	1999 12 04	703	0.2-	0.6-
1997 05 01	704	0.3+	1.0-	1999 11 09	704	0.2-	0.4-	1999 12 04	703	1.1-	0.0
1997 05 01	704	0.2-	0.9+	1999 11 09	704	0.4+	0.1-	1999 12 06	704	0.4-	0.4-
1997 05 01	704	0.6+	0.2-	1999 11 09	704	0.1-	0.1+	1999 12 06	704	0.4-	0.3-
1997 05 01	704	0.2-	0.0	1999 11 09	704	0.1-	0.0	1999 12 06	704	0.9-	0.5-
1997 05 05	704	0.3-	0.5-	1999 11 09	704	0.4-	0.2+	1999 12 06	704	0.4+	0.1+
1997 05 05	704	1.0+	0.2+	1999 11 12	691	0.5+	0.4-	1999 12 06	704	0.1+	0.2+
1997 05 05	704	0.3-	0.3-	1999 11 12	691	0.7+	0.3-	1999 12 07	704	0.1+	0.8+
1997 05 05	704	0.0	0.0	1999 11 12	691	0.4+	0.2-	1999 12 07	704	0.2-	0.5-
1997 05 05	704	(2.9-	1.0-)	1999 11 15	704	0.0	0.6+	1999 12 07	704	0.0	1.1+
1999 11 01	703	0.1+	0.5+	1999 11 15	704	0.2+	0.2+	1999 12 07	704	0.1-	0.3-
1999 11 01	703	0.6+	0.3+	1999 11 15	704	0.0	0.0	1999 12 07	704	0.2-	0.1-
1999 11 01	703	0.2+	0.5+	1999 11 15	704	0.3+	0.2-	1999 12 07	704	0.4-	0.2-
1999 11 01	703	0.4-	0.5-	1999 11 15	704	0.3-	0.4-	1999 12 12	703	0.3-	0.1-
1999 11 04	704	0.7+	0.0	1999 11 17	704	0.3-	0.4+	1999 12 12	703	0.3+	0.3-
1999 11 04	704	1.3+	0.4-	1999 11 17	704	0.2-	0.8+	1999 12 12	703	0.1+	1.0+
1999 11 04	704	0.1+	0.2-	1999 11 17	704	0.9+	1.3+				
1999 11 04	704	0.6+	1.6-	1999 11 17	704	0.3-	0.4+				

1999 XS₂₅ = 1988 KK = 1998 HQ₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	135.58892		(2000.0)		P		Q
<i>n</i>	0.28886567	ω	200.89999	+0.35669229	+0.93078934		
<i>a</i>	2.2664115	Ω	90.06736	-0.84537793	+0.35803753		
<i>e</i>	0.1915529	<i>i</i>	4.58922	-0.39762642	+0.07375857		
<i>P</i>	3.41	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 05 19	675	0.0	2.0-	1998 05 25	699	0.2+	0.1-	1999 11 17	704	0.1-	0.6-
1988 05 21	675	0.2-	0.7-	1998 05 25	699	0.2+	0.1+	1999 12 02	699	0.6+	0.4-
1998 03 24	704	0.2-	0.1-	1998 05 25	699	0.0	0.2-	1999 12 02	699	0.9+	0.8+
1998 03 24	704	0.4-	0.4+	1999 10 30	703	0.4-	0.2+	1999 12 02	699	0.0	0.0
1998 03 24	704	0.5-	0.4+	1999 10 30	703	0.1-	0.2+	1999 12 04	703	0.2+	0.5+
1998 03 24	704	0.1+	0.6+	1999 10 30	703	0.2-	0.0	1999 12 04	703	0.4-	0.3+
1998 03 24	704	1.0-	0.6+	1999 10 30	703	0.0	0.5+	1999 12 04	703	0.1+	0.0
1998 04 21	704	0.8-	0.7-	1999 11 04	704	0.3-	0.0	1999 12 04	703	0.8-	0.7+
1998 04 21	704	0.4-	0.2-	1999 11 04	704	0.0	0.1+	1999 12 06	704	0.7+	1.5-
1998 04 21	704	1.1-	0.4-	1999 11 04	704	0.6-	0.2+	1999 12 06	704	0.2-	1.5-
1998 04 21	704	0.3+	0.5-	1999 11 04	704	0.4+	0.6-	1999 12 06	704	0.2+	1.4-
1998 04 22	704	0.9-	0.0	1999 11 04	704	0.7-	0.3-	1999 12 06	704	0.3+	1.8-
1998 04 22	704	0.9-	0.4-	1999 11 12	699	0.7-	1.8+	1999 12 06	704	0.4-	1.4-
1998 04 22	704	0.9-	0.3+	1999 11 12	699	0.5-	1.1+	1999 12 07	704	0.0	0.7-
1998 04 22	704	0.7-	0.1-	1999 11 12	699	0.9-	0.2+	1999 12 07	704	0.0	0.8-
1998 04 22	704	1.9-	0.1+	1999 11 15	704	0.2-	0.6+	1999 12 07	704	0.1-	0.7-
1998 04 24	910	1.5+	0.4-	1999 11 15	704	0.0	0.7+	1999 12 07	704	0.2-	0.6-
1998 04 24	910	1.4+	0.5-	1999 11 15	704	0.1+	0.6+	1999 12 07	704	0.1-	0.7-
1998 04 24	910	1.5+	0.4-	1999 11 15	704	0.2+	0.2-	1999 12 07	120	1.2+	1.1-
1998 05 16	704	1.2+	0.2+	1999 11 15	704	0.4+	0.3-	1999 12 07	120	0.8+	0.9-
1998 05 16	704	0.9+	0.3+	1999 11 17	704	0.3+	0.3+	2000 01 06	699	0.4+	1.0+
1998 05 16	704	0.8+	0.6+	1999 11 17	704	0.8+	0.3+	2000 01 06	699	0.5-	1.1+
1998 05 16	704	0.4+	0.2-	1999 11 17	704	0.6+	0.4+	2000 01 06	699	0.5-	1.0+
1998 05 16	704	0.8+	0.5+	1999 11 17	704	0.9+	0.4-				

1999 XT₂₅ = 1998 LF₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	56.24850		(2000.0)		P		Q
<i>n</i>	0.27790446	ω	302.49410	+0.92601881	-0.36931109		
<i>a</i>	2.3256215	Ω	79.28203	+0.36748924	+0.83473699		
<i>e</i>	0.1111307	<i>i</i>	4.55864	+0.08626021	+0.40844029		
<i>P</i>	3.55	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 06	704	0.6+	0.6-	1999 11 15	704	0.4-	0.5+	1999 12 04	703	0.6-	0.5-
1997 03 06	704	0.7-	0.4+	1999 11 15	704	0.1-	0.6+	1999 12 04	703	0.5-	0.6-
1998 06 01	809	0.4+	0.9-	1999 11 15	704	0.2-	0.7+	1999 12 06	704	1.4+	0.2+
1998 06 01	809	0.2-	0.3-	1999 11 15	704	0.1+	0.9+	1999 12 06	704	1.2+	0.7+
1998 06 01	809	0.5-	0.1+	1999 11 16	691	0.3-	0.1-	1999 12 06	704	0.4+	1.0+
1998 06 02	809	0.7+	0.4-	1999 11 16	691	0.2-	0.1-	1999 12 06	704	0.3+	1.0-
1998 06 02	809	0.3-	0.9-	1999 11 16	691	0.2-	0.1-	1999 12 06	704	0.1+	0.2-
1998 06 02	809	0.7-	0.2-	1999 11 17	704	0.1+	0.7+	1999 12 07	704	0.2-	0.1+
1999 11 04	704	0.6-	0.2-	1999 11 17	704	0.1+	0.1-	1999 12 07	704	0.1-	0.2+
1999 11 04	704	0.5+	0.4-	1999 11 17	704	0.5-	0.1-	1999 12 07	704	0.1-	0.3-
1999 11 04	704	0.4+	0.0	1999 11 17	704	0.4-	0.0	1999 12 07	704	0.2-	0.1-
1999 11 04	704	0.5+	0.2-	1999 11 17	704	0.1+	0.5-	1999 12 07	704	0.4-	0.2-
1999 11 04	704	0.3+	0.4-	1999 11 28	691	0.8+	0.4-	2000 01 06	704	0.2-	1.1-
1999 11 10	691	0.4-	0.2-	1999 11 28	691	0.9+	0.3-	2000 01 06	704	1.4+	0.4-
1999 11 10	691	0.4-	0.1-	1999 11 28	691	0.8+	0.4-	2000 01 06	704	0.4-	0.2-
1999 11 10	691	0.4-	0.2-	1999 12 04	703	0.8-	0.2+	2000 01 06	704	0.2-	0.3+
1999 11 15	704	0.4-	0.3-	1999 12 04	703	0.3-	0.1+				

1999 XZ₂₅ = 1998 HJ₁₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	88.54241		(2000.0)	P		Q	
<i>n</i>	0.29520248	ω	260.63216	+0.92706289	+0.34329814		
<i>a</i>	2.2338605	Ω	79.17443	−0.25448929	+0.87135094		
<i>e</i>	0.1837022	<i>i</i>	8.82388	−0.27529912	+0.35056229		
<i>P</i>	3.34	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.3−	0.6−	1999 10 30	703	0.4+	1.4+	1999 12 06	704	0.0	0.5+
1998 04 21	704	0.1+	0.3−	1999 10 30	703	0.8−	0.1−	1999 12 07	704	0.1+	0.2+
1998 04 21	704	0.9−	1.0−	1999 11 04	704	1.4+	0.3−	1999 12 07	704	0.5+	0.1+
1998 04 21	704	0.0	0.6−	1999 11 04	704	0.8+	0.4−	1999 12 07	704	0.5+	0.1+
1998 04 21	704	0.9−	1.4+	1999 11 04	704	0.6+	0.6−	1999 12 07	704	0.3+	0.5−
1998 04 23	704	0.0	0.1+	1999 11 04	704	0.4+	0.7−	1999 12 07	704	0.1+	0.9−
1998 04 23	704	1.3+	0.9+	1999 11 04	704	0.8+	0.5−	1999 12 09	691	0.0	0.8−
1998 04 23	704	0.3+	0.1+	1999 11 15	704	0.2−	0.4+	1999 12 09	691	0.1−	0.8−
1998 04 23	704	0.1+	1.4−	1999 11 15	704	0.1−	0.4+	1999 12 09	691	0.1+	1.0−
1998 04 23	704	0.7+	0.6−	1999 11 15	704	0.0	0.4+	1999 12 16	691	0.2−	0.1+
1998 04 24	704	0.3+	0.2−	1999 11 15	704	0.5−	0.1+	1999 12 16	691	0.3−	0.0
1998 04 24	704	(2.4−	0.6+)	1999 11 15	704	0.1−	0.2−	1999 12 16	691	0.2−	0.0
1998 04 24	704	0.4−	0.8+	1999 11 17	704	0.3−	0.1+	2000 01 06	704	0.3−	1.2−
1998 04 24	704	1.1+	0.3−	1999 11 17	704	0.5−	0.3+	2000 01 06	704	0.1−	0.4+
1998 04 24	704	0.0	0.2+	1999 11 17	704	0.1−	0.4+	2000 01 06	704	1.2+	1.0+
1998 05 16	704	1.3−	0.9+	1999 11 17	704	0.1−	0.4+	2000 01 06	704	0.4+	1.9+
1998 05 16	704	0.3−	0.9+	1999 11 17	704	0.7−	0.4+	2000 01 11	691	0.3−	0.1−
1998 05 16	704	0.5−	0.3+	1999 12 06	704	0.4−	0.5−	2000 01 11	691	0.3−	0.1−
1998 05 16	704	0.7+	0.0	1999 12 06	704	0.2−	0.4−	2000 01 11	691	0.2−	0.1−
1999 10 30	703	0.5−	0.1−	1999 12 06	704	0.4−	0.6+				
1999 10 30	703	1.2−	0.9+	1999 12 06	704	0.3+	0.1+				

1999 XH₂₆ = 1998 MQ₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	75.25098		(2000.0)	P		Q	
<i>n</i>	0.19767204	ω	14.31670	+0.93460599	+0.35550932		
<i>a</i>	2.9185864	Ω	324.85220	−0.32821317	+0.84989382		
<i>e</i>	0.0778424	<i>i</i>	1.11175	−0.13706844	+0.38896480		
<i>P</i>	4.99	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 11	704	0.9+	1.0+	1999 10 06	704	0.2+	0.5−	1999 11 14	704	0.2+	0.6−
1997 04 11	704	0.1−	0.8+	1999 10 06	704	0.2+	0.5−	1999 11 14	704	0.1+	0.2−
1998 06 26	809	0.0	1.1+	1999 10 06	704	0.3+	0.4−	1999 11 14	704	0.0	0.3−
1998 06 26	809	0.7−	0.9+	1999 10 06	704	0.3−	0.6−	1999 11 14	704	0.5−	0.1+
1998 06 26	809	0.6−	1.0+	1999 10 29	703	1.1−	0.6+	1999 11 14	704	0.1+	0.6−
1998 06 27	809	0.3+	0.0	1999 10 29	703	1.6+	0.5+	1999 12 06	704	0.7+	0.1+
1998 06 27	809	0.2+	0.2+	1999 10 29	703	1.8−	0.9+	1999 12 06	704	0.4+	0.2+
1998 06 27	809	0.7−	0.2+	1999 10 29	703	0.7−	0.5+	1999 12 06	704	1.6−	0.0
1998 07 26	704	(3.2+	0.4−)	1999 11 04	704	0.3+	0.6+	1999 12 07	704	1.1+	0.8+
1998 07 26	704	(1.4+	3.1−)	1999 11 04	704	(1.8−	2.7+)	1999 12 07	704	0.7−	0.2−
1998 07 26	704	0.6−	1.8−	1999 11 04	704	0.6+	0.8+	1999 12 07	704	0.1−	0.3+
1998 07 26	704	1.8+	0.5−	1999 11 04	704	0.1+	0.9+	1999 12 07	704	0.5−	0.2−
1999 10 06	704	0.5+	0.3−	1999 11 04	704	0.1+	0.5+				

1999 XK₂₆ = 1982 BD₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	319.76420		(2000.0)	P		Q	
<i>n</i>	0.26599482	ω	143.98667	−0.62273622	−0.78236893		
<i>a</i>	2.3945317	Ω	344.52161	+0.70889129	−0.55879259		
<i>e</i>	0.1500577	<i>i</i>	2.13072	+0.33116874	−0.27504490		
<i>P</i>	3.71	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 01 30	675	0.3+	0.4−	1999 11 11	703	0.0	0.2+	1999 12 06	704	0.0	0.5+
1982 01 31	675	0.4−	0.2+	1999 11 11	703	0.4−	0.2+	1999 12 06	704	0.0	1.3+

1999 10 03	704	0.5+	0.1−	1999 11 11	703	0.1−	0.0	1999 12 06	704	1.4−	0.1−
1999 10 03	704	0.0	0.8+	1999 11 11	703	0.3+	0.1−	1999 12 07	704	0.3+	0.5+
1999 10 03	704	0.2+	1.5+	1999 11 11	695	0.5+	0.9−	1999 12 07	704	0.1−	0.1−
1999 10 03	704	0.1+	0.3+	1999 11 14	704	0.1+	0.7−	1999 12 07	704	0.4−	0.2+
1999 10 03	704	0.2+	1.1+	1999 11 14	704	0.1+	0.9−	1999 12 07	704	0.4−	0.4+
1999 10 29	703	0.3−	0.4+	1999 11 14	704	0.2−	0.9−	1999 12 07	704	0.5−	0.1−
1999 10 29	703	0.6−	0.3+	1999 11 14	704	0.3+	1.0−	1999 12 12	703	(3.0+	2.5−)
1999 10 29	703	0.1+	0.1+	1999 11 14	704	0.0	1.0−	1999 12 12	703	0.0	0.8−
1999 10 29	703	0.0	0.2+	1999 11 16	704	0.8−	0.3−	1999 12 12	703	0.3−	0.3+
1999 11 04	704	0.2+	0.5−	1999 11 16	704	0.2−	0.6−	1999 12 12	703	0.3−	0.8+
1999 11 04	704	0.0	0.2−	1999 11 16	704	0.6−	0.1−	2000 01 04	704	0.8+	0.2−
1999 11 04	704	0.0	0.2+	1999 11 16	704	(2.1−	0.1+)	2000 01 04	704	0.0	0.2−
1999 11 04	704	0.4+	0.3+	1999 11 16	704	0.8−	0.4−	2000 01 04	704	0.1−	0.3−
1999 11 04	704	0.4+	0.1+	1999 12 04	703	1.5+	0.9−	2000 01 04	704	0.0	0.1−
1999 11 05	704	0.1+	0.2−	1999 12 04	703	0.7−	0.1+	2000 01 04	704	0.4+	0.2−
1999 11 05	704	0.6+	0.0	1999 12 04	703	0.4−	0.2−	2000 01 06	704	0.2−	0.8+
1999 11 05	704	0.2+	0.6−	1999 12 04	703	0.1+	0.3+	2000 01 06	704	0.4−	0.7+
1999 11 05	704	0.3+	0.4−	1999 12 04	699	0.8+	0.8+	2000 01 06	704	0.2−	0.2+
1999 11 05	704	0.1+	0.2−	1999 12 04	699	0.1+	0.4+	2000 01 06	704	0.1−	0.7+
1999 11 11	695	0.2+	1.2−	1999 12 04	699	0.6+	0.0	2000 01 06	704	0.1−	1.1+

1999 XN₂₆ = 1993 FE₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	260.03072		(2000.0)	P		Q	
<i>n</i>	0.24337016	ω	296.90139	−0.99919024	+0.02983140		
<i>a</i>	2.5407260	Ω	244.81853	−0.01710867	−0.92235964		
<i>e</i>	0.1288562	<i>i</i>	1.70965	−0.03641656	−0.38517891		
<i>P</i>	4.05	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 21	809	0.2−	0.0	1999 11 11	703	0.2−	0.9+	1999 12 04	703	0.7+	0.1−
1993 03 22	809	0.3+	0.1−	1999 11 11	703	(0.9−	2.1+)	1999 12 04	699	0.3−	0.4+
1993 03 26	809	0.1−	0.1+	1999 11 11	703	0.1−	0.6−	1999 12 04	703	0.5+	0.3−
1993 04 21	413	(4.5+	0.4+)	1999 11 11	703	0.5−	0.5+	1999 12 04	699	1.1−	0.7−
1999 10 06	704	0.1−	0.1−	1999 11 12	704	0.2−	0.4+	1999 12 06	704	0.5+	0.8−
1999 10 06	704	0.4−	0.5−	1999 11 12	704	0.3−	0.6+	1999 12 06	704	0.1+	1.3−
1999 10 06	704	0.5−	0.2−	1999 11 12	704	0.4−	0.5+	1999 12 06	704	0.6+	0.9−
1999 10 06	704	0.4−	0.3−	1999 11 12	704	0.2−	0.6+	1999 12 06	704	0.6+	1.3−
1999 10 06	704	0.4−	0.2−	1999 11 12	704	0.1+	0.8+	1999 12 07	704	1.0+	0.8−
1999 10 29	703	0.0	0.9+	1999 11 14	704	0.3+	0.2+	1999 12 07	704	0.5+	0.8−
1999 10 29	703	0.1−	0.0	1999 11 14	704	0.0	0.1+	1999 12 07	704	1.4+	0.1−
1999 10 29	703	1.2−	0.2+	1999 11 14	704	0.4+	0.0	1999 12 07	704	0.5+	0.3−
1999 10 29	703	0.2+	0.1−	1999 11 14	704	0.0	0.2−	1999 12 07	704	0.2−	0.9−
1999 11 04	704	0.7+	0.6−	1999 11 14	704	0.5−	0.2+	1999 12 12	703	0.3−	0.1+
1999 11 04	704	0.3+	0.1+	1999 11 16	704	0.3+	0.3+	1999 12 12	703	0.9−	0.6+
1999 11 04	704	0.5+	0.1+	1999 11 16	704	1.2+	0.2+	1999 12 12	703	0.5−	0.0
1999 11 04	704	(0.8+	2.1+)	1999 11 16	704	0.3+	0.7−	1999 12 12	703	0.7−	1.1−
1999 11 04	704	0.1+	0.8+	1999 11 16	704	0.6+	0.1−	2000 01 09	704	1.0−	0.9+
1999 11 09	704	0.6−	0.5+	1999 11 16	704	0.9+	0.7−	2000 01 09	704	0.8−	0.3−
1999 11 09	704	0.1+	0.2+	1999 12 04	703	1.2−	0.0	2000 01 09	704	0.1−	0.7+
1999 11 09	704	0.1−	0.1+	1999 12 04	699	0.1+	0.8+	2000 01 09	704	0.1+	0.9+
1999 11 09	704	0.0	0.2+	1999 12 04	703	(4.8−	0.5+)	2000 01 09	704	0.6+	1.4+

2000 JAN. 24

M.P.C. 37875

1982 12 14	381	0.2−	0.1−	1999 10 07	691	0.1+	0.1−	1999 11 04	704	0.6−	1.1−
1993 09 17	809	1.5−	1.0−	1999 10 08	703	0.0	0.1−	1999 11 17	704	0.2+	0.6−
1993 09 17	809	2.4−	0.9−	1999 10 08	703	0.2−	0.3+	1999 11 17	704	0.3−	0.3−
1993 09 17	809	2.6−	0.4−	1999 10 08	703	0.3+	0.7−	1999 11 17	704	0.9+	0.1−
1993 09 18	809	0.4−	0.9−	1999 10 08	703	0.6+	0.0	1999 11 17	704	0.3+	0.4−
1993 09 18	809	0.1−	0.4−	1999 10 10	704	0.4+	0.9+	1999 11 17	704	0.3+	0.8−
1993 09 18	809	0.9−	0.9−	1999 10 10	704	0.6+	0.5−	1999 12 04	703	0.4−	0.5−
1997 04 30	704	0.2−	0.7+	1999 10 10	704	0.9+	0.0	1999 12 04	703	0.1+	0.5+
1997 04 30	704	0.7+	1.5+	1999 10 10	704	0.3+	0.4+	1999 12 04	703	0.9−	0.2+
1997 04 30	704	0.6+	0.8+	1999 10 10	704	0.2+	0.3+	1999 12 04	703	0.4−	1.1+
1997 04 30	704	0.3−	0.8−	1999 10 11	691	0.1−	0.5+	1999 12 05	691	0.7+	0.0
1997 05 05	704	0.0	0.5+	1999 10 11	691	0.3−	0.5+	1999 12 05	691	0.7+	0.2+
1997 05 05	704	0.6−	0.8+	1999 10 11	691	0.1−	0.7+	1999 12 05	691	0.9+	0.1+
1997 05 05	704	0.5−	0.1−	1999 10 15	704	0.4+	0.5+	1999 12 06	704	0.5−	1.3+
1997 05 05	704	0.7−	0.1−	1999 10 15	704	0.6+	0.9+	1999 12 06	704	0.0	0.2−
1997 05 05	704	2.1−	0.2−	1999 10 15	704	0.2+	0.4+	1999 12 06	704	0.0	0.2+
1998 06 26	809	2.4+	0.1−	1999 10 15	704	0.7+	0.5+	1999 12 07	704	0.3+	0.1−
1998 06 26	809	2.0+	0.4−	1999 10 16	120	0.3+	0.8+	1999 12 07	704	0.2+	0.2+
1998 06 26	809	1.9+	0.1+	1999 10 16	120	1.0+	0.8−	1999 12 07	704	0.5−	0.1−
1998 06 26	704	0.3+	1.3+	1999 10 21	704	0.7−	0.0	1999 12 07	704	0.4+	0.4+
1998 06 26	704	1.1−	1.7+	1999 10 21	704	0.4−	0.5−	1999 12 12	691	0.4+	0.3−
1998 06 26	704	0.2+	0.4−	1999 10 21	704	0.3−	0.2−	1999 12 12	691	0.4+	0.4−
1998 06 26	704	3.7−	0.7−	1999 10 21	704	0.9−	0.4+	1999 12 12	691	0.3+	0.3−
1998 06 27	809	1.1+	1.6−	1999 10 21	704	0.5−	0.5+	1999 12 12	703	0.3−	0.7+
1998 06 27	809	0.3+	1.2−	1999 11 01	703	0.6−	0.2+	1999 12 12	703	0.7−	0.8+
1998 06 27	809	0.0	1.8−	1999 11 01	703	0.3+	0.4+	1999 12 12	703	0.0	0.6+
1998 07 26	704	1.8+	0.1−	1999 11 01	703	0.2−	0.2+	1999 12 12	703	0.5+	1.1+
1998 07 26	704	0.4−	2.3+	1999 11 01	703	0.0	0.0				
1998 07 26	704	2.0+	0.3+	1999 11 04	704	0.5−	0.5−				

1999 XT₂₇ = 1995 WU₃₁ = 1998 RQ₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	346.43177	(2000.0)	P	Q	
<i>n</i>	0.20366279	ω	292.97447	−0.00059142	−0.99987400
<i>a</i>	2.8610685	Ω	157.04240	+0.93173261	−0.00631155
<i>e</i>	0.0070308	<i>i</i>	2.33082	+0.36314460	+0.01456536
<i>P</i>	4.84	<i>H</i>	14.0	<i>G</i>	0.15 <i>U</i> 4

Residuals in seconds of arc

1995 11 19	691	0.1−	0.0	1999 11 14	691	0.1+	0.3−	1999 12 04	703	0.2+	0.1+
1995 11 19	691	0.0	0.1−	1999 11 14	691	0.0	0.3−	1999 12 04	703	0.6+	0.3+
1995 11 19	691	0.1−	0.1−	1999 11 14	691	0.0	0.2−	1999 12 06	704	1.0+	0.5−
1995 11 29	691	0.1−	0.2+	1999 11 15	704	0.3+	0.3−	1999 12 06	704	0.2−	0.5−
1995 11 29	691	0.0	0.1−	1999 11 15	704	0.2+	0.1−	1999 12 06	704	0.2−	1.1+
1995 11 29	691	0.3+	0.0	1999 11 15	704	0.5+	0.1+	1999 12 06	704	0.2+	0.2−
1998 09 11	426	0.6+	0.0	1999 11 15	704	0.1+	0.5−	1999 12 07	704	0.8+	0.2+
1998 09 11	426	0.3+	0.1+	1999 11 15	704	0.1−	0.2+	1999 12 07	704	0.6+	0.2−
1998 09 12	426	0.6−	0.4−	1999 11 17	704	0.1−	0.2+	1999 12 07	704	0.3−	0.2−
1998 09 12	426	0.3−	0.3+	1999 11 17	704	0.1+	0.3+	1999 12 07	704	0.7+	0.2−
1999 11 04	704	0.2+	0.3+	1999 11 17	704	0.2+	0.4−	1999 12 07	704	0.0	0.1+
1999 11 04	704	1.1−	0.1+	1999 11 17	704	0.6+	0.4−	1999 12 12	703	0.5+	1.1−
1999 11 04	704	0.6−	0.1+	1999 11 17	704	0.7−	0.1−	1999 12 12	703	0.6−	0.6+
1999 11 04	704	0.5+	0.2−	1999 12 04	703	0.7−	0.0	1999 12 12	703	1.3−	0.9+
1999 11 04	704	0.4−	0.2−	1999 12 04	703	0.3−	0.9+	1999 12 12	703	1.1−	0.4+

1999 XW₂₇ = 1995 YR₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	15.95764	(2000.0)	P	Q	
<i>n</i>	0.23870477	ω	335.03480	+0.28793719	−0.95056898
<i>a</i>	2.5737241	Ω	98.05773	+0.89715852	+0.22530074
<i>e</i>	0.2854847	<i>i</i>	6.74178	+0.33496085	+0.21367776
<i>P</i>	4.13	<i>H</i>	15.3	<i>G</i>	0.15 <i>U</i> 3

Residuals in seconds of arc

1995 12 29	817	0.1−	0.3+	1999 12 06	704	0.3−	0.6−	1999 12 14	704	0.3+	0.0
1995 12 29	817	0.0	0.2+	1999 12 06	704	0.1+	0.1−	1999 12 14	704	0.0	0.0

1995 12 29	817	0.0	0.1+	1999 12 06	704	0.1−	0.5−	1999 12 14	704	0.3+	0.6+
1995 12 29	817	0.0	0.1−	1999 12 07	704	0.0	0.1−	1999 12 14	704	0.1−	0.5−
1995 12 30	817	0.0	0.3−	1999 12 07	704	0.1−	0.3−	1999 12 30	699	0.3−	0.2+
1995 12 30	817	0.0	0.0	1999 12 07	704	0.1+	0.1−	1999 12 30	699	0.7+	0.6+
1995 12 30	817	0.1−	0.1−	1999 12 07	704	0.1−	0.3−	1999 12 30	699	0.3−	0.9+
1995 12 30	817	0.1+	0.1−	1999 12 07	704	0.1−	0.3+	2000 01 05	704	0.4+	0.4−
1999 11 05	704	0.3+	0.2−	1999 12 08	704	0.0	0.3−	2000 01 05	704	0.1+	0.5−
1999 11 05	704	0.1+	0.1+	1999 12 08	704	0.1−	0.2−	2000 01 05	704	0.1+	0.4−
1999 11 05	704	0.3−	0.2−	1999 12 08	704	0.3+	0.5−	2000 01 05	704	0.3+	0.3−
1999 11 05	704	0.2−	0.4−	1999 12 08	704	0.1−	0.1−	2000 01 05	704	0.7+	0.2−
1999 11 05	704	0.4−	0.3−	1999 12 08	704	0.3+	0.1+	2000 01 06	704	0.7−	0.0
1999 11 12	699	0.5−	1.0+	1999 12 13	699	0.1+	0.1+	2000 01 06	704	0.1+	0.0
1999 11 12	699	0.1−	0.5+	1999 12 13	699	0.7+	1.4+	2000 01 06	704	0.3−	0.3+
1999 11 12	699	0.4+	0.2+	1999 12 13	699	0.7+	0.5+	2000 01 06	704	0.8−	0.2+
1999 12 06	704	0.4−	0.5−	1999 12 14	704	0.3−	0.1+	2000 01 06	704	0.4−	0.2−

1999 XZ₂₇ = 1997 EL₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		Williams			
<i>M</i>	317.98044	(2000.0)	P	Q	
<i>n</i>	0.26364183	ω	119.86354	−0.67919874	−0.73389591
<i>a</i>	2.4087580	Ω	12.93052	+0.65829857	−0.61472137
<i>e</i>	0.1645532	<i>i</i>	2.37333	+0.32454901	−0.28898864
<i>P</i>	3.74	<i>H</i>	14.9	<i>G</i>	0.15 <i>U</i> 4

Residuals in seconds of arc

1997 03 02	691	0.5−	0.0	1999 11 14	704	0.1+	0.0	1999 12 04	703	0.6−	0.7−
1997 03 02	691	0.2−	0.0	1999 11 14	704	0.1+	0.1+	1999 12 06	704	0.6+	0.0
1997 03 02	691	0.3−	0.1+	1999 11 14	704	0.1−	0.2+	1999 12 06	704	0.1−	0.9+
1997 03 07	691	0.4+	0.0	1999 11 14	704	0.4+	0.2+	1999 12 06	704	0.2+	0.4−
1997 03 07	691	0.1+	0.2−	1999 11 14	704	0.1+	1.0+	1999 12 07	704	0.2−	0.1−
1997 03 07	691	0.2+	0.3−	1999 11 15	704	0.1+	0.0	1999 12 07	704	0.5+	0.0
1999 10 06	704	0.5+	0.7+	1999 11 15	704	0.2+	0.4−	1999 12 07	704	1.0+	0.9+
1999 10 06	704	0.4+	0.2−	1999 11 15	704	0.4+	0.3+	1999 12 07	704	0.3+	1.0+
1999 10 06	704	1.0+	0.6−	1999 11 15	704	0.4+	0.1−	1999 12 07	704	0.6−	0.1−
1999 10 06	704	0.4−	0.1−	1999 11 15	704	0.7+	0.1+	1999 12 12	703	0.3−	0.4+
1999 10 06	704	0.5−	0.3+	1999 11 16	704	0.2+	0.0	1999 12 12	703	0.5+	0.3+
1999 11 04	704	0.0	0.0	1999 11 16	704	0.5+	0.5−	1999 12 12	703	0.6−	0.3+
1999 11 04	704	0.5−	0.2−	1999 11 16	704	0.5+	0.3+	1999 12 12	703	0.3−	0.8+
1999 11 04	704	0.2−	0.0	1999 11 16	704	0.0	0.2−	2000 01 04	704	0.8−	0.3−
1999 11 04	704	1.3+	0.7−	1999 11 16	704	0.2+	0.4+	2000 01 04	704	0.2+	0.0
1999 11 04	704	0.6−	0.2−	1999 11 17	704	0.0	0.6+	2000 01 04	704	0.4+	0.3+
1999 11 11	703	0.6−	0.0	1999 11 17	704	0.1−	0.4−	2000 01 04	704	0.1−	0.0
1999 11 11	703	0.3−	0.2+	1999 11 17	704	0.1+	0.2−	2000 01 06	704	0.4+	0.2−
1999 11 11	703	1.0−	0.6−	1999 11 17	704	0.5+	0.1−	2000 01 06	704	0.6−	0.9−
1999 11 11	703	0.3−	1.1−	1999 11 17	704	0.4+	0.3−	2000 01 06	704	0.4+	0.9+
1999 11 12	699	0.9−	0.2−	1999 12 04	703	1.3−	0.1+	2000 01 06	704	0.2+	0.3−
1999 11 12	699	(0.9−	2.2−)	1999 12 04	703	0.2−	0.9−				
1999 11 12	699	1.3−	1.0−	1999 12 04	703	0.5−	0.7+				

1999 11 15 704 0.6− 0.3− 1999 12 02 699 0.5− 1.6+ 1999 12 07 704 0.5+ 0.4−
 1999 11 15 704 0.1− 0.4− 1999 12 02 699 1.4− 1.1+ 1999 12 07 704 0.3+ 0.3−

1999 XJ₂₈ = 1997 KL₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	14.10335		(2000.0)	P	Q
<i>n</i>	0.22406462	ω	219.25342	+0.14883973	−0.97758898
<i>a</i>	2.6846470	Ω	222.79192	+0.95345852	+0.18180124
<i>e</i>	0.1528338	<i>i</i>	12.65975	+0.26222813	−0.10615133
<i>P</i>	4.40	<i>H</i>	15.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 05 29	691	0.2+	0.1+	1999 12 06	704	(2.2+	4.2−)	1999 12 14	704	0.9−	1.4+
1997 05 29	691	0.0	0.4−	1999 12 06	704	1.1+	0.2+	1999 12 14	704	0.2+	0.1+
1997 05 29	691	0.2−	0.0	1999 12 06	704	0.3+	0.0	1999 12 14	704	0.6+	0.5+
1997 06 05	691	0.0	0.1+	1999 12 07	704	1.1−	0.7+	2000 01 07	704	0.1+	0.5−
1997 06 05	691	0.1+	0.1+	1999 12 07	704	0.5−	1.4−	2000 01 07	704	0.1−	0.0
1997 06 05	691	0.1−	0.3+	1999 12 07	704	0.1−	0.7−	2000 01 07	704	0.5+	0.2−

1999 XN₂₈ = 1996 DK₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	275.83195		(2000.0)	P	Q
<i>n</i>	0.20448765	ω	46.76179	−0.98862254	−0.14396254
<i>a</i>	2.8533694	Ω	124.91501	+0.11794751	−0.92179563
<i>e</i>	0.0581189	<i>i</i>	3.04733	+0.09334809	−0.35995500
<i>P</i>	4.82	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 02 16	010	0.4+	0.3−	1999 11 15	704	0.3+	0.0	1999 12 07	704	0.0	0.6+
1996 02 16	010	0.2+	0.1−	1999 11 15	704	0.5+	0.5−	1999 12 07	704	0.4−	0.3−
1996 02 16	010	0.4+	0.3+	1999 11 15	704	0.4−	0.1+	1999 12 07	704	0.0	0.3+
1996 02 17	010	0.1−	0.6+	1999 11 17	704	0.4+	0.1−	1999 12 09	691	0.0	0.9+
1996 02 17	010	0.0	0.1+	1999 11 17	704	0.3+	0.6−	1999 12 09	691	0.1+	0.8+
1996 02 17	010	0.2−	1.4+	1999 11 17	704	0.4−	0.2−	1999 12 09	691	0.2+	0.7+
1998 08 17	704	(0.6+	2.6+)	1999 11 17	704	0.1+	0.4+	1999 12 16	691	0.4+	0.3−
1998 08 17	704	0.5+	1.2+	1999 11 17	704	0.8+	0.1+	1999 12 16	691	0.4+	0.3−
1998 08 17	704	(0.4+	3.2+)	1999 11 28	691	1.3−	0.1−	1999 12 16	691	0.5+	0.3−
1998 08 17	704	1.2−	1.0+	1999 11 28	691	0.9−	0.3−	1999 12 27	691	0.4+	0.2−
1998 08 17	704	(4.7−	1.0+)	1999 11 28	691	1.0−	0.2−	1999 12 27	691	0.3+	0.2−
1999 11 15	704	0.0	0.1−	1999 12 06	704	0.6−	0.1+	1999 12 27	691	0.2+	0.3−
1999 11 15	704	0.0	0.2−	1999 12 06	704	0.1−	0.5+	2000 01 02	691	0.3+	0.2−
1999 11 15	704	0.1+	0.3−	1999 12 06	704	0.1+	0.5+	2000 01 02	691	0.3+	0.4−
1999 11 15	704	0.2−	0.3−	1999 12 06	704	0.3+	0.2+	2000 01 02	691	0.2+	0.4−
1999 11 15	704	0.3−	0.5−	1999 12 07	704	0.4+	0.4+				
1999 11 15	704	0.1+	0.4+	1999 12 07	704	0.7−	0.2−				

1999 XP₂₈ = 1992 EK₂₆ = 1997 GH₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	69.29171		(2000.0)	P	Q
<i>n</i>	0.22070162	ω	224.11031	+0.99728961	−0.06785536
<i>a</i>	2.7118502	Ω	139.75468	+0.07356051	+0.92748217
<i>e</i>	0.1031713	<i>i</i>	2.52338	−0.00150851	+0.36765809
<i>P</i>	4.47	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 03 02	809	0.2+	0.9−	1999 11 17	704	0.4+	0.0	1999 12 09	691	0.1+	1.1+
1992 03 04	809	0.7−	0.6−	1999 11 17	704	1.5+	0.3−	1999 12 09	691	0.2+	1.3+
1997 04 03	704	0.5−	1.1+	1999 11 28	691	0.8−	0.2−	1999 12 09	691	0.4−	0.4−
1997 04 03	704	0.1+	1.2+	1999 11 28	691	0.6−	0.4−	1999 12 09	691	0.3−	0.3−
1997 04 11	704	0.4+	0.2−	1999 11 28	691	0.6−	0.1−	1999 12 09	691	1.5+	0.4−
1997 04 11	704	0.5+	0.6−	1999 12 06	704	0.4−	0.2+	1999 12 16	691	0.3+	0.2−
1999 11 15	704	0.2−	0.1−	1999 12 06	704	0.1−	0.1+	1999 12 16	691	0.0	0.0
1999 11 15	704	0.0	0.1−	1999 12 06	704	0.6−	0.4+	1999 12 16	691	0.3+	0.1−
1999 11 15	704	0.0	1.0−	1999 12 06	704	0.4+	0.9+	1999 12 27	691	0.9+	1.2−
1999 11 15	704	0.3−	0.5−	1999 12 06	704	0.8−	0.7+	1999 12 27	691	0.1+	0.0

1999 11 15	704	0.2+	0.4−	1999 12 07	704	0.6−	0.4+	1999 12 27	691	0.0	0.0
1999 11 15	704	0.3−	1.1−	1999 12 07	704	0.2+	1.6+	2000 01 02	691	0.2+	0.1−
1999 11 15	704	0.3−	1.1−	1999 12 07	704	0.2+	0.0	2000 01 02	691	0.2+	0.1−
1999 11 15	704	0.9−	0.9−	1999 12 07	704	0.3−	1.0+	2000 01 02	691	0.1+	0.2−
1999 11 17	704	1.0+	0.4+	1999 12 07	704	0.0	0.9+				
1999 11 17	704	0.0	0.3−	1999 12 09	691	0.3−	1.1+				

**1999 XF₂₉ = 1951 CG₂ = 1978 GL₂ = 1980 WS₁ = 1991 RR₂₅
= 1998 MN₃₇**

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	296.92830		(2000.0)	P	Q
<i>n</i>	0.25878424	ω	52.67327	−0.89698662	−0.42883258
<i>a</i>	2.4388074	Ω	101.70616	+0.36295227	−0.85302786
<i>e</i>	0.0260415	<i>i</i>	6.29224	+0.25235026	−0.29739889
<i>P</i>	3.81	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1951 02 04	675	1.1+	0.2−	1999 10 30	703	0.1−	0.5+	1999 12 08	704	0.0	0.5+
1951 02 04	675	0.1−	0.1+	1999 10 30	703	0.1+	0.3+	1999 12 08	704	0.2+	0.5+
1978 04 11	095	(2.4−	4.6+)	1999 10 30	703	0.6−	0.4−	1999 12 14	704	0.5+	0.6−
1980 11 30	095	1.4−	1.9−	1999 10 30	703	0.2−	0.1+	1999 12 14	704	1.4−	1.2−
1980 12 10	095	1.5−	1.3−	1999 11 04	704	0.1−	0.3−	1999 12 14	704	0.1−	0.5−
1991 09 12	675	0.6+	0.7−	1999 11 04	704	0.4−	0.4−	1999 12 14	704	(2.2+	0.9−)
1991 09 12	675	0.2+	1.2−	1999 11 04	704	0.1+	0.2−	1999 12 30	699	0.1−	0.4+
1991 09 13	675	0.9+	0.2+	1999 11 04	704	0.1−	0.1−	1999 12 30	699	0.2−	0.5+
1991 09 13	675	0.1+	0.1−	1999 11 04	704	0.1−	0.0	1999 12 30	699	0.3−	0.6+
1991 09 15	675	1.0+	0.5+	1999 11 17	704	0.3−	0.0	2000 01 04	106	0.3−	0.4+
1991 09 15	675	0.3+	0.8+	1999 11 17	704	0.3−	0.1+	2000 01 04	106	0.1−	0.4+
1991 09 16	675	0.1−	1.2−	1999 11 17	704	0.1−	0.0	2000 01 04	106	0.3−	0.4+
1991 09 16	675	0.5+	1.1−	1999 11 17	704	0.4−	0.1−	2000 01 05	704	0.8+	0.4−
1998 06 24	699	0.0	0.9+	1999 11 17	704	0.0	0.3+	2000 01 05	704	0.5+	0.1+
1998 06 24	699	0.1−	0.6+	1999 12 06	704	0.0	0.4+	2000 01 05	704	0.5+	0.3+
1998 06 24	699	1.2−	0.1−	1999 12 06	704	0.0	0.3+	2000 01 05	704	0.0	0.4−
1998 07 02	699	0.5+	0.8+	1999 12 06	704	0.1+	0.3+	2000 01 05	704	0.1−	0.4+
1998 07 02	699	0.3+	0.9+	1999 12 06	704	0.0	0.0	2000 01 06	704	0.4+	0.5−
1998 07 02	699	0.0	1.0+	1999 12 06	704	0.2−	0.0	2000 01 06	704	0.8+	0.5+
1998 07 16	699	0.1+	0.3+	1999 12 07	704	0.4+	0.4+	2000 01 06	704	0.6+	0.7+
1998 07 16	699	0.6−	0.4+	1999 12 07	704	0.0	0.1+	2000 01 06	704	0.7+	0.8+
1998 07 16	699	0.4+	0.1+	1999 12 07	704	0.1+	0.4+	2000 01 06	704	0.1+	1.3+
1998 08 17	704	0.3+	0.2−	1999 12 07	704	0.3+	0.7+	2000 01 11	691	0.7−	0.5+
1998 08 17	704	0.5−	0.1−	1999 12 07	704	0.1−	0.5+	2000 01 11	691	0.6−	0.3+
1998 08 17	704	0.7−	0.2+	1999 12 08	704	0.2+	0.3+	2000 01 11	691	0.5−	0.3−
1998 08 17	704	1.4+	0.1−	1999 12 08	704	0.3+	0.1+				
1998 08 17	704	1.5−	0.2+	1999 12 08	704	0.0	0.1+				

1999 XG₂₉ = 1998 QA₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	59.15971		(2000.0)	P	Q
<i>n</i>	0.19090714	ω	151.03469	+0.96307578	−0.23945429
<i>a</i>	2.9871333	Ω	223.39417	+0.19932994	+0.94145160
<i>e</i>	0.1125834	<i>i</i>	10.31969	+0.18097686	+0.23734051
<i>P</i>	5.16	<i>H</i>	14.1	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 24	704	0.2−	1.2+	1999 11 15	704	0.3−	0.5−	1999 12 07	704	0.0	0.3−
1998 08 24	704	1.9−	0.3−	1999 11 15	704	0.2+	0.7−	1999 12 07	704	0.3+	0.2−
1998 08 24	704	0.9+	1.9−	1999 11 17	704	0.2+	0.9−	1999 12 07	704	0.2+	1.1−
1998 08 24	704	(4.5−	0.4−)	1999 11 17	704	0.2−	0.2−	1999 12 07	704	0.1−	0.8−
1998 08 27	704	1.2+	0.3−	1999 11 17	704	1.1+	0.3−	1999 12 07	704	0.2−	0.7−
1998 08 27</											

2000 JAN. 24

M.P.C. 37877

1999 11 15	704	0.1+	0.4−	1999 12 06	704	0.7+	0.6+	1999 12 14	704	0.1−	1.1+
1999 11 15	704	0.4+	0.1−	1999 12 06	704	1.0−	0.0				
1999 11 15	704	0.1−	0.0	1999 12 06	704	1.9−	0.0				

1999 XL₂₉ = 1997 DS = 1998 QO₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	214.06087		(2000.0)		P		Q		Williams		
<i>n</i>	0.24275125	ω	132.37202		−0.55591645		+0.82346187				
<i>a</i>	2.5450427	Ω	103.51534		−0.79281992		−0.48425513				
<i>e</i>	0.1255580	<i>i</i>	6.69970		−0.24978685		−0.29564763				
<i>P</i>	4.06	<i>H</i>	14.0		<i>G</i>	0.15	<i>U</i>	3			

Residuals in seconds of arc

1997 02 20	327	0.3+	0.5+	1999 11 04	704	1.8−	0.3+	1999 12 08	704	0.6+	0.5+
1997 02 20	327	0.0	0.9−	1999 12 06	704	0.6+	0.2+	1999 12 31	699	1.0−	0.6+
1997 02 20	327	0.4−	0.3+	1999 12 06	704	0.4+	0.5−	1999 12 31	699	0.5−	0.5+
1998 08 17	704	0.3+	0.7+	1999 12 06	704	0.3+	0.5−	1999 12 31	699	0.2−	1.3+
1998 08 17	704	0.5−	1.9−	1999 12 06	704	0.9+	0.7+	2000 01 05	704	0.0	0.4−
1998 08 17	704	0.4+	0.3−	1999 12 06	704	0.4+	0.3−	2000 01 05	704	0.3−	0.0
1998 08 17	704	0.7+	0.1−	1999 12 07	704	0.3+	0.1−	2000 01 05	704	0.5+	0.4−
1998 08 17	704	0.1−	0.8−	1999 12 07	704	0.4+	0.0	2000 01 05	704	0.4−	0.3−
1998 08 23	704	1.0+	0.6−	1999 12 07	704	0.0	0.3−	2000 01 05	704	0.3+	0.1−
1998 08 23	704	0.8−	0.1−	1999 12 07	704	0.7+	0.3−	2000 01 06	704	0.3−	0.4−
1998 08 23	704	0.7+	1.2+	1999 12 07	704	0.2+	0.1−	2000 01 06	704	0.6−	0.7+
1998 08 23	704	1.6−	1.6+	1999 12 08	704	0.3−	0.0	2000 01 06	704	0.9−	1.0−
1999 11 04	704	0.8−	0.1−	1999 12 08	704	0.4+	0.1+	2000 01 06	704	0.2+	0.1−
1999 11 04	704	0.4+	0.6+	1999 12 08	704	0.5+	0.3+	2000 01 06	704	0.4−	0.9−
1999 11 04	704	0.2−	0.2−	1999 12 08	704	0.2+	0.1−				

1999 XQ₂₉ = 1969 TY₅ = 1998 HA₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	87.03183		(2000.0)		P		Q		Williams		
<i>n</i>	0.26502384	ω	173.32823		+0.90365974		+0.42804367				
<i>a</i>	2.4003768	Ω	161.31084		−0.39481023		+0.84475000				
<i>e</i>	0.2404246	<i>i</i>	2.38415		−0.16590344		+0.32121029				
<i>P</i>	3.72	<i>H</i>	14.6		<i>G</i>	0.15	<i>U</i>	3			

Residuals in seconds of arc

1969 10 15	095	1.3−	1.1−	1999 11 04	704	1.0+	0.8−	1999 12 07	704	0.4+	0.3−
1969 10 17	095	1.1+	1.7+	1999 11 04	704	1.1+	0.3−	1999 12 07	704	0.4−	0.4−
1998 04 21	704	0.3+	0.1+	1999 11 04	704	0.3+	0.7−	1999 12 07	704	0.4+	0.8−
1998 04 21	704	0.4−	0.0	1999 11 15	704	0.0	0.3−	1999 12 07	704	(2.5+	2.8−)
1998 04 21	704	0.2+	0.6−	1999 11 15	704	0.2+	0.4−	1999 12 07	704	(0.2−	2.6−)
1998 04 21	704	0.3−	0.4+	1999 11 15	704	0.2−	0.4−	1999 12 13	699	0.6+	0.6+
1998 04 22	704	0.0	0.4−	1999 11 15	704	0.0	0.3−	1999 12 13	699	0.7+	1.3+
1998 04 22	704	1.0+	0.3−	1999 11 15	704	0.1−	0.1−	1999 12 13	699	(0.1−	2.4+)
1998 04 22	704	0.3+	1.1−	1999 11 17	704	0.3+	0.5−	1999 12 16	691	0.8−	0.0
1998 04 22	704	0.4−	0.0	1999 11 17	704	0.4+	0.4−	1999 12 16	691	0.7−	0.1+
1998 04 22	704	1.2+	0.1+	1999 11 17	704	0.5+	1.0−	1999 12 16	691	0.7−	0.0
1998 05 01	704	0.8−	0.2−	1999 11 17	704	0.0	0.6−	1999 12 30	699	0.6−	0.8+
1998 05 01	704	1.2−	0.3−	1999 11 17	704	0.3+	0.7−	1999 12 30	699	0.5−	1.7+
1998 05 01	704	0.1+	0.7+	1999 12 03	699	0.4+	0.5+	1999 12 30	699	0.6−	0.6+
1998 05 01	704	0.3−	0.7+	1999 12 03	699	0.2−	1.0+	1999 12 31	691	0.3−	0.0
1999 10 30	703	0.1+	0.8+	1999 12 03	699	0.5+	0.5+	1999 12 31	691	0.1−	0.1+
1999 10 30	703	0.4−	0.3+	1999 12 06	704	0.3−	0.2−	1999 12 31	691	0.3−	0.0
1999 10 30	703	0.9−	0.8+	1999 12 06	704	0.0	0.3−	2000 01 05	691	0.1−	0.0
1999 10 30	703	1.2−	0.4−	1999 12 06	704	0.1+	0.4−	2000 01 05	691	0.1−	0.0
1999 11 04	704	0.1−	0.1−	1999 12 06	704	0.2+	0.5−	2000 01 05	691	0.2−	0.1−
1999 11 04	704	0.7+	0.4−	1999 12 06	704	0.3+	0.4+				

1999 XR₂₉ = 1982 XZ₂ = 1998 HG₁₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	85.98525		(2000.0)		P		Q		Williams		
<i>n</i>	0.29077110	ω	246.30858		+0.96585764		+0.24802701				
<i>a</i>	2.2564994	Ω	99.26308		−0.20137501		+0.90049430				
<i>e</i>	0.1803558	<i>i</i>	4.34908		−0.16299426		+0.35720108				
<i>P</i>	3.39	<i>H</i>	15.4		<i>G</i>	0.15	<i>U</i>	3			

Residuals in seconds of arc

1982 12 13	381	0.1+	1.0+	1999 10 30	703	1.3−	0.3+	1999 12 06	704	0.4+	0.3+
1982 12 14	381	0.2−	0.6−	1999 10 30	703	0.7−	1.5−	1999 12 06	704	0.7−	0.0
1982 12 14	381	0.1−	0.2+	1999 11 04	704	0.8−	0.1+	1999 12 06	704	0.1+	0.6−
1998 04 21	704	1.0+	0.3+	1999 11 04	704	0.1−	0.9+	1999 12 06	704	0.2+	0.2+
1998 04 21	704	0.6+	0.3−	1999 11 04	704	0.2+	0.8+	1999 12 06	704	0.5+	0.2+
1998 04 21	704	0.8+	1.1−	1999 11 04	704	0.3−	0.1+	1999 12 07	704	0.1−	0.0
1998 04 21	704	0.3+	1.7−	1999 11 04	704	0.1−	0.6+	1999 12 07	704	0.2−	0.1+
1998 04 22	704	0.9−	1.2+	1999 11 15	704	0.3+	0.1+	1999 12 07	704	1.1+	0.6−
1998 04 22	704	0.5+	0.7+	1999 11 15	704	0.1+	0.1+	1999 12 07	704	0.4+	0.4−
1998 04 22	704	1.1−	0.8−	1999 11 15	704	0.4+	0.1−	1999 12 07	704	0.5+	0.9−
1998 05 01	704	0.7−	0.5+	1999 11 15	704	0.2+	0.3+	1999 12 16	691	0.1−	0.1−
1998 05 01	704	1.4+	0.4+	1999 11 15	704	0.1+	0.2−	1999 12 16	691	0.3−	0.5+
1998 05 01	704	1.6+	0.4+	1999 11 17	704	0.0	0.0	1999 12 16	691	0.1−	0.3+
1998 05 01	704	(2.7−	0.4+)	1999 11 17	704	0.1+	0.0	2000 01 04	691	0.9−	0.3−
1998 05 24	704	0.7−	0.2+	1999 11 17	704	0.2+	0.8−	2000 01 04	691	0.5+	0.3−
1998 05 24	704	1.7−	1.1+	1999 11 17	704	0.0	0.0	2000 01 04	691	0.1−	0.2−
1998 05 24	704	0.8−	0.4+	1999 11 17	704	0.3+	0.3−	2000 01 10	691	0.2+	0.1−
1998 05 24	704	(5.6−	0.9+)	1999 12 03	699	0.2+	0.5+	2000 01 10	691	0.2+	0.1−
1999 10 30	703	0.6−	0.2−	1999 12 03	699	0.0	1.1+	2000 01 10	691	0.4+	0.0
1999 10 30	703	1.0−	0.1+	1999 12 03	699	0.5+	0.3+				

1999 XS₂₉ = 1976 UF₁₁ = 1987 SH₁₈ = 1990 EJ₉ = 1998 QY₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	47.48004		(2000.0)		P		Q		Williams		
<i>n</i>	0.17419092	ω	189.19798		+0.88689625		−0.46040266				
<i>a</i>	3.1753068	Ω	198.36181		+0.43114960		+0.85446863				
<i>e</i>	0.1622272	<i>i</i>	6.92943		+0.16590680		+0.24065069				
<i>P</i>	5.66	<i>H</i>	13.5		<i>G</i>	0.15	<i>U</i>	1			

Residuals in seconds of arc

1976 10 22	381	0.5+	0.5+	1999 11 04	704	0.6+	0.3−	1999 12 13	699	0.1+	1.0+
1976 10 22	381	0.1+	0.7+	1999 11 04	704	0.3+	1.4−	1999 12 14	704	0.1−	0.2−
1976 10 24	381	0.5−	0.6−	1999 12 06	704	0.1−	0.6−	1999 12 14	704	0.0	0.9−
1987 09 16	095	0.2−	1.7−	1999 12 06	704	0.0	0.1−	1999 12 14	704	0.1−	0.0
1990 03 02	809	0.4+	1.1−	1999 12 06	704	0.0	0.5−	1999 12 14	704	0.8−	0.5−
1990 03 02	809	0.7−	0.3−	1999 12 06	704	0.3+	0.1−	1999 12 30	699	0.3−	1.5+
1990 03 02	809	0.4−	0.8−	1999 12 06	704	0.3−	0.5−	1999 12 30	699	0.5+	0.1−
1998 08 17	704	0.2+	0.7−	1999 12 07	704	0.2+	0.1−	1999 12 30	699	1.0−	0.8+
1998 08 17	704	0.0	0.0	1999 12 07	704	0.1+	0.0	2000 01 05	704	0.3+	0.1+
1998 08 17	704	0.3−	0.7+	1999 12 07	704	0.0	0.2+	2000 01 05	704	0.3−	1.6−
1998 08 17	704	0.1−	0.4−	1999 12 07	704	0.2−	0.0	2000 01 05	704	0.0	0.2−
1998 08 23	704	0.1+	0.0	1999 12 07	704	0.2+	0.2+	2000 01 05	704	0.2+	0.5−
1998 08 23	704	0.2−	1.1+	1999 12 08	704	0.4+	0.1−	2000 01 05	704	0.4−	0.3−
1998 08 23	704	0.5−	0.5+	1999 12 08	704	0.1+	0.2−	2000 01 07	704	0.3+	0.4+
1998 08 23	704	0.1+	1.0−	1999 12 08	704	0.5+	0.0	2000 01 07	704	0.1−	0.1+
1998 08 23	704	1.3+	0.8−	1999 12 08	704	0.2+	0.1+	2000 01 07	704	0.1+	0.5−
1999 11 04	704	0.0	0.1−	1999 12 08	704	0.6+	0.2+	2000 01 07	704	0.2−	0.0
1999 11 04	704	0.3−	0.2+	1999 12 13	699	0.4+	1.2+	2000 01 07	704	0.1−	0.4+
1999 11 04	704	1.7−	0.9+	1999 12 13	699	0.5+	1.0+				

1999 XZ₂₉ = 1994 JC₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28026057	ω	352.19012	−0.90196352	+0.42759857		
<i>a</i>	2.3125691	Ω	213.33285	−0.39002526	−0.86653703		
<i>e</i>	0.0418779	<i>i</i>	6.28718	−0.18531624	−0.25743551		
<i>P</i>	3.52	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1994 05 05	691	0.0	0.1−	1999 12 07	704	0.2−	0.1+
1994 05 05	691	0.1−	0.0	1999 12 07	704	0.0	0.7+
1994 05 05	691	0.2−	0.0	1999 12 07	704	0.1−	0.2+
1994 05 15	691	0.2+	0.3+	1999 12 07	704	0.2+	0.2−
1994 05 15	691	0.2+	0.2+	1999 12 07	704	0.1−	0.6+
1999 12 06	704	0.4−	0.1+	1999 12 08	704	0.0	0.1+
1999 12 06	704	0.4+	0.9−	1999 12 08	704	0.2+	0.2+
1999 12 06	704	0.1−	0.4+	1999 12 08	704	0.8−	0.3−
1999 12 06	704	0.1+	1.2+	1999 12 08	704	0.0	0.5−

1999 XM₃₀ = 1958 AH = 1977 CK₂ = 1993 NR₁ = 1998 QQ₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21073718	ω	331.78042	+0.10444752	−0.98339392		
<i>a</i>	2.7966746	Ω	111.89870	+0.93990746	+0.04882941		
<i>e</i>	0.1996446	<i>i</i>	9.20441	+0.32506105	+0.17479156		
<i>P</i>	4.68	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2
Residuals in seconds of arc							
1958 01 12	760	(17.2+)	1.2−	1998 08 17	704	0.3−	1.1+
1977 02 11	675	0.0	0.9+	1998 08 17	704	0.4−	1.4+
1977 02 12	675	0.4+	0.9+	1998 08 23	704	1.1+	0.8−
1993 07 12	809	0.3−	0.5−	1998 08 23	704	0.4+	1.1+
1993 07 12	809	0.2+	0.8+	1998 08 23	704	0.3−	0.4+
1993 07 12	809	0.2−	0.5+	1998 08 23	704	0.9−	0.2+
1993 07 19	809	0.3−	1.1−	1999 11 04	704	0.9+	1.1+
1993 07 19	809	0.5−	1.0−	1999 11 04	704	0.7+	0.8+
1993 07 19	809	1.2−	1.4−	1999 11 04	704	0.2−	0.6−
1993 07 23	809	0.5+	0.8−	1999 11 04	704	0.1+	0.4−
1993 07 23	809	0.9+	1.7−	1999 11 04	704	1.2−	0.1−
1993 07 23	809	1.0+	0.3−	1999 12 06	704	0.8−	0.0
1993 07 26	809	1.2−	0.7+	1999 12 06	704	0.1+	0.0
1993 07 26	809	(0.8−	2.8+)	1999 12 06	704	0.2+	0.1−
1993 07 26	809	(0.4+	3.4+)	1999 12 06	704	0.2+	0.0
1998 08 17	704	0.6+	1.1+	1999 12 06	704	0.5+	0.5−
1998 08 17	704	(3.3+	0.1+)	1999 12 07	704	0.0	0.0
1998 08 17	704	0.0	0.9+	1999 12 07	704	0.2−	0.1−

1999 XT₃₀ = 1998 MH₄₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21799345	ω	236.96981	+0.98143387	+0.10650206		
<i>a</i>	2.7342639	Ω	116.46629	−0.05094041	+0.94653615		
<i>e</i>	0.1691627	<i>i</i>	10.26431	−0.18491249	+0.30451047		
<i>P</i>	4.52	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 06 28	809	(2.8+	2.5+)	1999 12 06	704	1.1+	0.8+
1998 06 28	809	(2.1+	2.6+)	1999 12 06	704	0.2−	0.4+
1998 06 28	809	(2.9+	3.1+)	1999 12 06	704	0.3−	0.1+
1998 07 01	809	1.0−	1.1+	1999 12 06	704	0.0	0.0
1998 07 01	809	0.1−	1.3+	1999 12 07	704	0.0	0.0
1998 07 01	809	0.6−	0.9+	1999 12 07	704	0.4+	0.4−
1998 07 16	699	0.5+	1.4−	1999 12 07	704	0.2+	0.2−
1998 07 16	699	1.0+	0.0	1999 12 07	704	0.9−	0.6−
1998 07 16	699	0.2+	0.7−	1999 12 14	704	0.2−	0.6−

1999 11 04	704	0.6+	0.0	1999 12 14	704	0.1+	0.4+	2000 01 06	704	0.3−	0.2−
1999 11 04	704	1.3+	0.2−	1999 12 14	704	0.0	0.1+	2000 01 07	704	0.4+	1.3+
1999 11 04	704	1.7−	1.0−	1999 12 14	704	0.5+	0.7−	2000 01 07	704	0.3−	0.0
1999 11 04	704	1.3−	0.6−	1999 12 14	704	0.4−	0.6+	2000 01 07	704	1.2−	1.0+

1999 XF₃₁ = 1990 EL₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27956507	ω	288.30509	−0.41664210	−0.90899401		
<i>a</i>	2.3164029	Ω	186.35543	+0.86912964	−0.39449746		
<i>e</i>	0.0536347	<i>i</i>	6.11959	+0.26650147	−0.13454238		
<i>P</i>	3.53	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1990 03 02	809	0.2−	0.8+	1999 12 07	704	0.2−	0.5−
1990 03 02	809	0.4+	1.0−	1999 12 07	704	0.0	0.7−
1990 03 02	809	0.0	1.9−	1999 12 08	704	0.9+	0.0
1990 03 04	809	1.1+	0.5+	1999 12 08	704	0.5−	0.0
1990 03 04	809	0.3+	0.8+	1999 12 08	704	0.2+	0.4+
1990 03 04	809	1.6−	0.8+	1999 12 08	704	0.1−	0.2+
1999 12 06	704	0.5−	0.6−	1999 12 08	704	0.4+	0.4−
1999 12 06	704	(2.7+	1.6−)	1999 12 14	704	1.7+	0.7+
1999 12 06	704	(3.2+	0.5+)	1999 12 14	704	0.7−	1.2−
1999 12 07	704	0.0	0.1−	1999 12 14	704	0.6−	0.7+
1999 12 07	704	1.0+	0.4+	1999 12 15	704	0.5−	0.8−
1999 12 07	704	0.7+	0.8+	1999 12 15	704	0.2−	0.1−

1999 XL₃₁ = 1998 QW₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23890056	ω	335.32353	−0.33831936	−0.93249568		
<i>a</i>	2.5723177	Ω	134.16565	+0.89001122	−0.36072190		
<i>e</i>	0.0186267	<i>i</i>	10.15382	+0.30564692	+0.01820792		
<i>P</i>	4.13	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 08 17	704	0.4−	1.8+	1999 12 06	704	0.1+	0.2+
1998 08 17	704	0.4+	0.5−	1999 12 07	704	0.1−	0.0
1998 08 17	704	0.8+	1.6−	1999 12 07	704	0.2+	0.6−
1998 08 17	704	0.3−	0.0	1999 12 07	704	0.4−	0.6−
1998 08 17	704	1.6−	1.2−	1999 12 07	704	0.0	0.2−
1998 08 23	704	1.3−	1.1+	1999 12 08	704	0.1+	0.2−
1998 08 23	704	1.1−	1.2+	1999 12 08	704	0.9+	0.1+
1998 08 23	704	0.7+	1.3−	1999 12 08	704	1.0−	1.7+
1998 08 23	704	0.4−	0.3+	1999 12 08	704	0.3−	0.3−
1998 08 23	704	(1.9−	2.6+)	1999 12 08	704	0.6−	0.3−
1999 12 06	704	0.1+	0.7−	1999 12 14	704	0.2+	0.1+
1999 12 06	704	0.7+	0.9+	1999 12 14	704	0.2+	0.6+
1999 12 06	704	0.2+	0.5+	1999 12 14	704	0.4−	0.4−
1999 12 06	704	0.5+	0.0	1999 12 14	704	0.3−	0.4+

1999 XT₃₁ = 1998 QZ₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22616840	ω	189.57564	+0.26989729	−0.96268704		
<i>a</i>	2.6679730	Ω	244.76833	+0.88487018	+0.25605476		
<i>e</i>	0.2306508	<i>i</i>	1.24954	+0.37968437	+0.08757642		
<i>P</i>	4.36	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1998 08 17	704	0.5−	2.0−	1998 08 23	699	0.3+	1.0+
1998 08 17	704	0.0	0.7−	1998 08 23	704	1.1−	0.9+
1998 08 17	704	0.5+	0.4+	1999 12 06	704	0.0	0.3+
1998 08 17	704	0.5+	0.4−	1999 12 06	704	1.0−	0.6−
1998 08 17	704	(4.3−	0.2−)	1999 12 06	704	0.1+	0.1+

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1998 08 23	699	0.2+	0.7+	1999 12 06	704	0.3-	0.5-	2000 01 05	704	0.1-	0.5+
1998 08 23	704	0.6+	0.4-	1999 12 06	704	0.4-	0.1-	2000 01 07	704	0.2+	0.2+
1998 08 23	704	1.2+	1.3-	1999 12 07	704	0.3-	0.4-	2000 01 07	704	0.4+	0.3+
1998 08 23	699	1.0-	0.8+	1999 12 07	704	1.4+	0.1+	2000 01 07	704	0.8+	0.2+
1998 08 23	704	(1.4-	2.4+)	1999 12 07	704	0.5-	1.0-	2000 01 07	704	0.3-	0.1-
1998 08 23	704	1.0-	1.6+	1999 12 07	704	0.4+	0.2+	2000 01 07	704	0.0	0.1-

1999 XW₃₁ = 1987 SP₂₄ = 1991 XK₃ = 1996 BA₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	45.43395		(2000.0)	P	Q
<i>n</i>	0.26199937	ω	193.58932	+0.06155908	-0.99746032
<i>a</i>	2.4188144	Ω	252.89043	+0.91920962	+0.07064279
<i>e</i>	0.1493171	<i>i</i>	2.14814	+0.38892692	-0.00908344
<i>P</i>	3.76	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1987 09 23	095	0.4+	0.9+	1998 08 26	699	0.3+	0.0	1999 12 07	704	0.6+	0.3+
1991 12 04	372	0.6-	0.4+	1998 08 26	699	0.2+	1.2-	1999 12 07	704	0.3-	0.4-
1991 12 04	372	0.8+	1.1-	1998 09 15	699	0.7-	0.3+	1999 12 07	704	0.1-	0.1-
1996 01 16	098	0.2+	0.3-	1998 09 15	699	0.5+	0.8+	1999 12 07	704	0.2+	0.1+
1996 01 16	098	1.2-	1.1-	1998 09 15	699	0.1+	0.5+	2000 01 05	704	0.4+	0.2+
1996 01 17	098	0.7+	0.5+	1999 11 05	703	1.2+	0.3+	2000 01 05	704	0.3-	1.0-
1996 01 17	098	0.7-	0.3-	1999 11 05	703	1.1+	0.5+	2000 01 05	704	0.3-	0.4+
1996 01 19	098	0.6+	0.3+	1999 11 05	703	1.0+	0.6+	2000 01 05	704	0.2-	0.1-
1996 01 19	098	1.4-	0.4+	1999 11 05	703	1.2+	0.6+	2000 01 05	704	1.3-	0.1-
1998 08 17	704	0.2-	0.3-	1999 12 06	704	0.3+	0.4-	2000 01 07	704	0.4+	0.1+
1998 08 17	704	0.4-	1.2-	1999 12 06	704	0.2-	0.1-	2000 01 07	704	0.2-	0.3-
1998 08 17	704	0.7+	0.3+	1999 12 06	704	0.6+	0.3-	2000 01 07	704	0.1-	0.4+
1998 08 17	704	(0.5+	2.5-)	1999 12 06	704	0.2-	0.6-	2000 01 07	704	0.1+	0.5+
1998 08 17	704	0.0	0.6+	1999 12 06	704	0.5+	0.5-	2000 01 07	704	0.9-	0.0
1998 08 26	699	0.5-	0.7-	1999 12 07	704	0.1+	0.1+				

**1999 XA₃₂ = 1976 YL₂ = 1978 GN = 1983 CP₇ = 1987 YQ₃
= 1989 EG₁₁ = 1991 RP₄₁ = 1994 AQ₁₅ = 1998 XS₂₇**

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Williams

<i>M</i>	291.04090		(2000.0)	P	Q
<i>n</i>	0.17707291	ω	288.95886	-0.75120422	+0.62735212
<i>a</i>	3.1407592	Ω	290.44215	-0.49260940	-0.73979265
<i>e</i>	0.1066139	<i>i</i>	12.65198	-0.43934973	-0.24317926
<i>P</i>	5.57	<i>H</i>	11.9	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1976 12 16	095	1.4+	1.2+	1998 12 14	704	0.2+	0.1-	1999 12 06	704	0.3+	0.7-
1978 04 07	095	(7.1-	3.1+)	1998 12 14	704	0.2-	0.1-	1999 12 06	704	0.0	0.1-
1983 02 10	095	0.0	1.0+	1998 12 14	704	0.3-	0.4+	1999 12 06	704	0.2+	0.8-
1987 12 20	010	2.3-	2.2-	1998 12 14	704	0.5+	0.4+	1999 12 07	704	0.1+	1.2+
1987 12 20	010	0.2+	0.3+	1998 12 17	704	0.2-	0.1+	1999 12 07	704	1.6+	0.9+
1989 03 03	809	0.3+	0.1-	1998 12 17	704	0.2-	0.4-	1999 12 07	704	1.0-	0.3-
1989 03 03	809	0.9-	1.0-	1998 12 17	704	0.3+	0.4-	1999 12 07	704	1.5+	0.1-
1991 09 04	095	(12.2-	3.5-)	1998 12 17	704	0.2+	1.2-	1999 12 07	704	0.7+	2.0-
1994 01 14	033	0.8+	0.2-	1998 12 17	704	0.5-	1.3-	2000 01 05	704	0.1-	0.4+
1994 01 15	033	0.2-	1.7+	1999 01 06	699	0.8-	0.2-	2000 01 05	699	0.4+	0.2+
1994 01 18	033	0.8+	0.8+	1999 01 06	699	(2.6-	1.0+)	2000 01 05	704	0.3-	0.0
1998 11 14	704	1.0+	1.2+	1999 01 06	699	0.2-	0.9+	2000 01 05	704	0.6-	0.0
1998 11 14	704	0.6+	0.8-	1999 11 05	703	0.6-	0.0	2000 01 05	699	0.5+	0.4+
1998 11 14	704	1.0+	0.2+	1999 11 05	703	0.5-	0.3-	2000 01 05	704	0.6-	0.2+
1998 11 14	704	0.2-	0.5-	1999 11 05	703	0.2+	0.2+	2000 01 05	699	0.7+	0.5+
1998 11 14	704	0.4-	1.4-	1999 11 05	703	0.7+	0.2-	2000 01 05	704	1.4-	0.3-
1998 11 16	704	0.0	1.2+	1999 11 05	703	0.5+	0.1+	2000 01 07	704	0.0	0.2-
1998 11 16	704	0.6+	0.6+	1999 11 05	703	0.8+	0.4+	2000 01 07	704	0.5-	0.5-
1998 11 16	704	0.2+	0.1-	1999 11 05	703	0.3+	0.2+	2000 01 07	704	0.5-	0.0
1998 11 16	704	0.0	0.7+	1999 11 05	703	0.0	0.4-	2000 01 07	704	0.5-	0.3-
1998 11 16	704	0.0	0.6+	1999 12 06	704	0.4-	0.2+	2000 01 07	704	1.6-	0.2-
1998 12 14	704	1.0-	1.3-	1999 12 06	704	0.3+	0.2-				

1999 XD₃₂ = 1998 RG₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	8.82508		(2000.0)	P	Q
<i>n</i>	0.28429643	ω	234.33763	-0.65220048	-0.75483104
<i>a</i>	2.2906309	Ω	256.52406	+0.71661522	-0.58393735
<i>e</i>	0.0741459	<i>i</i>	4.11288	+0.24717842	-0.29874282
<i>P</i>	3.47	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 14	704	0.5-	0.3+	1999 12 06	704	1.7+	0.2-	2000 01 05	704	0.1+	0.5-
1998 09 14	704	0.2+	0.5-	1999 12 06	704	0.3+	0.8+	2000 01 05	699	0.7+	0.6+
1998 09 14	704	0.4-	1.0-	1999 12 06	704	0.4-	0.2-	2000 01 05	704	0.0	0.3-
1998 09 14	704	(0.6-	2.3+)	1999 12 07	704	0.4-	0.2+	2000 01 05	704	0.2+	0.6-
1998 09 14	704	0.4+	1.4+	1999 12 07	704	0.5-	0.3-	2000 01 05	699	0.3-	0.6+
1998 09 18	704	1.3+	0.4-	1999 12 07	704	0.4-	0.6-	2000 01 07	704	0.1-	0.4-
1998 09 18	704	0.8+	0.1-	1999 12 07	704	0.0	0.2-	2000 01 07	704	0.3-	0.1+
1998 09 18	704	1.1-	0.0	1999 12 07	704	0.4+	0.5+	2000 01 07	704	0.4-	0.0
1998 09 18	704	0.5-	0.2+	2000 01 05	704	0.1+	0.5-	2000 01 07	704	0.2-	0.5-
1999 12 06	704	0.1-	0.1-	2000 01 05	704	0.3+	0.3+	2000 01 07	704	0.6-	0.4-
1999 12 06	704	0.3-	0.3+	2000 01 05	699	0.4+	1.2+				

1999 XF₃₂ = 1990 UK₂ = 1990 WZ₃

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	100.45149		(2000.0)	P	Q
<i>n</i>	0.23168965	ω	97.30445	+0.99433185	+0.03649600
<i>a</i>	2.6254170	Ω	260.64095	-0.07206514	+0.92191333
<i>e</i>	0.2633260	<i>i</i>	5.80875	+0.07817155	+0.38567325
<i>P</i>	4.25	<i>H</i>	13.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 10 20	402	0.5+	1.7-	1999 12 06	704	0.2+	0.0	2000 01 05	704	0.1-	0.1-
1990 10 20	402	1.7-	1.2+	1999 12 06	704	0.4-	0.6-	2000 01 05	704	0.3+	0.6-
1990 10 21	402	1.7+	0.7+	1999 12 06	704	0.1+	0.0	2000 01 05	704	0.0	0.1+
1990 10 21	402	0.0	0.3-	1999 12 06	704	1.0-	0.3-	2000 01 05	704	0.1+	0.1+
1990 11 22	385	1.7-	0.2+	1999 12 07	704	0.2+	0.1+	2000 01 05	704	0.5-	0.3-
1990 11 22	385	(3.0-	0.9-)	1999 12 07	704	0.3+	0.0	2000 01 06	704	0.3-	1.2+
1990 11 23	889	1.2+	0.2-	1999 12 07	704	0.3-	0.7-	2000 01 06	704	0.1+	0.6-
1990 11 23	889	(1.5+	2.6-)	1999 12 07	704	0.5+	0.0	2000 01 06	704	0.3+	0.4-
1999 12 05	699	0.9+	1.0+	1999 12 07	704	0.1-	0.8-	2000 01 06	704	0.2-	0.1-
1999 12 05	699	0.2+	1.4+	1999 12 31	699	0.2+	0.2+	2000 01 06	704	0.4-	0.2+
1999 12 05	699	0.3-	1.6+	1999 12 31	699	0.1+	0.1-	2000 01 07	106	0.6+	0.6-
1999 12 06	704	0.4+	0.2-	1999 12 31	699	0.3-	0.2+	2000 01 07	106	0.5-	0.4-

1999 XH₃₂ = 1998 MA₄₆

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Williams

<i>M</i>	160.05954		(2000.0)	P	Q
<i>n</i>	0.29769626	ω	158.06716	+0.76306161	+0.64620350
<i>a</i>	2.2213677	Ω	161.65937	-0.59876968	+0.71410486
<i>e</i>	0.2037877	<i>i</i>	2.28949	-0.24333486	+0.26921235
<i>P</i>	3.31	<i>H</i>	14.8	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 06 24	704	(0.2- 2.3+)	1999 12 06	704	0.1+ 0.8-	2000 01 03	120	0.3- 0.6-
1998 06 24	704	1.0+ 0.5-	1999 12 06	704	0.5- 1.1-	2000 01 04	120	0.8+ 0.6-
1998 06 24	704	(2.5- 2.5+)	1999 12 06	704	1.1- 0.3-	2000 01 05	704	(0.4+ 2.7+)
1998 06 24	704	1.6- 0.5+	1999 12 07	704	0.2+ 0.4-	2000 01 05	704	0.8- 0.8+
1998 06 24	704	(2.3- 1.6+)	1999 12 07	704	0.3- 1.1-	2000 01 05	704	(0.2- 3.2+)
1998 06 26	704	(1.3- 2.8-)	1999 12 07	704	0.5- 0.6-	2000 01 05	704	(2.1- 2.4+)
1998 06 26	704	0.3+ 1.0-	1999 12 07	704	1.0- 0.2+	2000 01 06	704	0.2- 0.5-
1998 06 26	704	1.3- 0.7+	1999 12 07	704	0.3- 1.0+	2000 01 06	704	0.2+ 0.4-
1998 06 27	809	1.1+ 0.2-	1999 12 30	120	1.7+ 0.3-	2000 01 06	704	0.1+ 0.7-
1998 06 27	809	0.4+ 0.6-	1999 12 30	120	0.8+ 0.7-	2000 01 08	704	0.4- 0.3+
1998 06 27	809	0.4+ 0.8-	1999 12 31	699	0.1- 0.1+	2000 01 08	704	0.8+ 0.5+
1998 11 21	703	0.5+ 0.2-	1999 12 31	699	0.3+ 1.4+	2000 01 08	704	0.9- 0.6-

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1998 11 21	703	0.6−	0.4+	1999 12 31	699	0.4+	0.7+	2000 01 08	704	0.2−	0.2−
1998 11 21	703	0.4+	0.2−	2000 01 01	120	0.6+	0.1+	2000 01 08	704	0.1+	0.0
1999 12 06	704	0.1−	0.4+	2000 01 01	120	0.3−	0.7+				

1999 XO₃₂ = 1978 EB₉ = 1998 SN₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	344.78984		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26600727	<i>ω</i>	338.04451	−0.91104557	−0.41230492		
<i>a</i>	2.3944570	<i>Ω</i>	177.60534	+0.38105632	−0.84273057		
<i>e</i>	0.1268736	<i>i</i>	1.09015	+0.15745493	−0.34613558		
<i>P</i>	3.71	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1978 03 15	675	0.3−	0.7+	1999 11 11	703	1.0+	0.4+	2000 01 05	704	0.3−	0.4+
1978 03 16	675	0.6+	0.1+	1999 12 05	699	0.8−	1.0+	2000 01 05	704	0.2−	0.1+
1993 04 25	809	0.7−	0.2−	1999 12 05	699	1.0+	0.5+	2000 01 06	106	0.1−	0.1−
1993 04 25	809	0.1−	0.2−	1999 12 05	699	0.1+	0.8+	2000 01 06	106	0.1+	0.8+
1993 04 25	809	0.7+	0.4+	1999 12 06	704	0.2−	0.2−	2000 01 06	106	0.1+	0.0
1998 09 14	704	(0.8+	2.3−)	1999 12 06	704	0.4−	0.1+	2000 01 06	704	0.5−	0.2−
1998 09 14	704	1.0+	0.6−	1999 12 06	704	0.1−	0.2−	2000 01 06	704	0.6−	0.0
1998 09 14	704	0.7−	0.8+	1999 12 06	704	0.3−	0.3+	2000 01 06	704	0.4−	0.1−
1998 09 18	704	0.1+	0.9−	1999 12 06	704	0.1−	0.4−	2000 01 06	704	0.6−	0.1+
1998 09 18	704	1.1−	0.5−	1999 12 07	704	0.0	1.4+	2000 01 07	704	0.1−	0.3−
1998 09 18	704	0.3−	0.1+	1999 12 07	704	0.5−	0.4−	2000 01 07	704	0.2−	0.4−
1998 09 18	704	0.6−	0.7+	1999 12 07	704	0.8+	1.3+	2000 01 07	704	0.0	0.4−
1998 09 18	704	0.3+	1.1+	1999 12 07	704	0.4+	0.0	2000 01 07	704	0.1+	0.5−
1998 09 20	691	0.5+	0.0	1999 12 07	704	0.0	0.6−	2000 01 07	704	0.3+	0.8−
1998 09 20	691	0.7+	0.1−	1999 12 31	699	0.7+	0.0	2000 01 08	704	0.3+	0.1−
1998 09 21	691	0.2+	0.2−	1999 12 31	699	0.6+	0.3+	2000 01 08	704	0.0	0.3−
1998 09 21	691	0.2+	0.2−	1999 12 31	699	0.7+	0.2+	2000 01 08	704	0.4+	0.0
1998 09 21	691	0.4+	0.0	2000 01 04	120	1.0−	0.7+	2000 01 08	704	0.0	0.4−
1998 09 23	691	0.2−	0.1+	2000 01 04	120	0.4−	0.0	2000 01 08	704	0.3+	0.5−
1998 09 23	691	0.2−	0.1−	2000 01 04	120	0.9+	0.0	2000 01 09	704	0.0	0.2−
1998 09 23	691	0.3−	0.0	2000 01 05	120	0.4−	0.0	2000 01 09	704	0.1−	0.7−
1999 11 11	703	0.9−	0.1+	2000 01 05	704	0.2+	0.0	2000 01 09	704	0.1+	0.8−
1999 11 11	703	0.4+	0.5−	2000 01 05	704	0.1−	0.2+	2000 01 09	704	0.2−	0.7−
1999 11 11	703	0.4−	0.4+	2000 01 05	704	0.0	0.0				

1999 XS₃₂ = 1998 OV₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.91363		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28388436	<i>ω</i>	174.46137	+0.29401308	−0.95377012		
<i>a</i>	2.2928470	<i>Ω</i>	258.42880	+0.87447187	+0.29472633		
<i>e</i>	0.1096724	<i>i</i>	3.64490	+0.38581763	+0.05881278		
<i>P</i>	3.47	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 24	910	0.2−	0.2−	1999 12 06	704	0.3+	0.5+	1999 12 31	699	0.2+	0.4+
1998 07 24	910	0.3−	0.1−	1999 12 06	704	0.5−	0.5−	1999 12 31	699	0.1+	1.0+
1998 07 24	910	0.0	0.0	1999 12 06	704	0.4−	0.2−	1999 12 31	699	0.6+	1.1+
1998 07 27	910	0.1+	0.3−	1999 12 06	704	0.7+	1.2−	2000 01 05	704	0.1−	0.4−
1998 07 27	910	0.0	0.4−	1999 12 07	704	0.3−	1.0−	2000 01 05	704	0.0	0.2−
1998 07 27	910	0.0	0.3−	1999 12 07	704	0.0	0.6−	2000 01 05	704	0.3−	0.5−
1998 07 28	910	0.5+	0.7−	1999 12 07	704	0.5−	0.7−	2000 01 05	704	0.0	0.0
1998 07 28	910	0.8+	0.2−	1999 12 07	704	0.9−	0.5−	2000 01 05	704	0.0	0.4−
1998 07 28	910	0.1−	0.8−	1999 12 07	704	0.2−	0.2−	2000 01 07	704	0.4−	0.3−
1998 08 17	704	0.4+	0.9+	1999 12 15	703	0.3+	1.5+	2000 01 07	704	0.1−	0.1−
1998 08 17	704	0.1+	1.0+	1999 12 15	703	0.4+	0.8+	2000 01 07	704	0.2+	0.3−
1998 08 17	704	0.0	1.2+	1999 12 15	703	0.3−	0.6+	2000 01 07	704	0.4+	0.1+
1998 08 17	704	1.3−	0.6−	1999 12 15	703	0.9+	0.7+	2000 01 07	704	0.3−	0.3−

1999 XV₃₂ = 1998 RU₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	78.42023		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23324991	<i>ω</i>	108.42461	+0.80562644	−0.56753534		
<i>a</i>	2.6136959	<i>Ω</i>	286.48834	+0.45432194	+0.77593570		
<i>e</i>	0.1963738	<i>i</i>	10.20657	+0.38020733	+0.27536781		
<i>P</i>	4.23	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 26	699	1.3−	0.6−	1998 11 17	699	0.2−	0.1+	1999 12 15	703	0.1−	0.1+
1998 06 26	699	0.2−	0.5−	1998 11 17	699	0.2−	1.7+	1999 12 15	703	0.1−	0.2+
1998 06 26	699	0.8−	1.0−	1998 11 17	699	0.0	0.9+	1999 12 31	699	1.6−	0.5+
1998 07 31	699	0.6+	0.1+	1999 11 17	704	1.3−	0.6+	1999 12 31	699	1.3+	0.2+
1998 07 31	699	0.2+	0.1+	1999 11 17	704	0.2−	0.1+	1999 12 31	699	1.4+	0.0
1998 07 31	699	0.5+	0.2+	1999 11 17	704	0.1−	0.3+	2000 01 05	704	0.1+	0.4−
1998 08 23	699	0.5+	0.2−	1999 11 17	704	0.2−	0.1+	2000 01 05	704	0.2−	0.5−
1998 08 23	699	0.7+	0.4+	1999 11 17	704	0.2−	0.6−	2000 01 05	704	0.1−	0.5−
1998 08 23	699	0.6+	0.0	1999 12 06	704	0.5−	0.3+	2000 01 05	704	0.2+	0.8−
1998 08 27	704	0.2+	0.1−	1999 12 06	704	0.5−	0.4+	2000 01 05	704	0.6+	0.4−
1998 08 27	704	0.4+	0.4−	1999 12 06	704	0.1−	0.5−	2000 01 06	106	0.2+	0.3+
1998 08 27	704	0.1−	0.7−	1999 12 06	704	0.1−	0.2+	2000 01 06	106	0.6+	0.3−
1998 08 27	704	0.7+	1.3−	1999 12 06	704	0.1+	0.6−	2000 01 06	106	0.1−	0.5+
1998 08 27	704	0.3−	1.4−	1999 12 07	704	0.6−	0.1+	2000 01 07	704	0.2−	0.4−
1998 09 15	699	0.2−	0.4+	1999 12 07	704	0.2−	0.3+	2000 01 07	704	0.1−	0.4−
1998 09 15	699	0.4−	0.1−	1999 12 07	704	0.1+	0.0	2000 01 07	704	0.1+	0.4−
1998 09 15	699	0.0	0.1+	1999 12 07	704	0.4−	0.6−	2000 01 07	704	0.0	0.4−
1998 09 22	699	0.2−	0.2+	1999 12 07	704	0.2−	0.7−	2000 01 07	704	0.2+	0.5−
1998 09 22	699	0.2−	0.3+	1999 12 15	703	0.3−	0.6+				
1998 09 22	699	0.1+	0.4+	1999 12 15	703	0.1+	0.7+				

1999 XC₃₃ = 1998 RE₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	308.57700		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28905559	<i>ω</i>	264.06576	−0.90433495	+0.42202848		
<i>a</i>	2.2654186	<i>Ω</i>	300.88145	−0.35627113	−0.82868624		
<i>e</i>	0.1366166	<i>i</i>	4.26315	−0.23505144	−0.36765620		
<i>P</i>	3.41	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.1+	1.2+	1998 09 27	704	0.9−	0.2−	2000 01 05	120	0.2+	1.3−
1998 09 14	704	0.6+	0.1−	1999 12 06	704	0.6+	1.1+	2000 01 05	120	0.6−	0.3−
1998 09 14	704	0.5−	1.2−	1999 12 06	704	1.1+	0.7+	2000 01 06	704	0.8−	0.1−
1998 09 18	704	0.9−	1.3−	1999 12 06	704	0.5−	0.4+	2000 01 06	704	0.3+	0.1−
1998 09 18	704	0.7+	0.5+	1999 12 06	704	1.4+	0.5−	2000 01 06	704	0.0	0.0
1998 09 18	704	0.3+	0.3−	1999 12 06	704	0.1−	0.3+	2000 01 06	704	0.1−	0.0
1998 09 18	704	1.1+	1.4−	1999 12 07	704	0.5−	0.5+	2000 01 06	704	0.6−	0.2−
1998 09 26	704	0.4+	1.6+	1999 12 07	704	0.2+	0.3+	2000 01 07	120	0.6+	0.2+
1998 09 26	704	0.6−	0.9−	1999 12 07	704	0.2+	0.0	2000 01 07	120	0.1−	1.2−
1998 09 26	704	0.0	0.5−	1999 12 07	704	0.2−	0.4+	2000 01 11	120	0.1−	0.4+
1998 09 26	704	0.7−	0.5−	1999 12 07	704	0.2−	0.6+	2000 01 11	120	0.1+	0.2−
1998 09 26	704	0.3+	0.4+	2000 01 04	704	0.3+	0.5+	2000 01 13	691	0.1−	0.0
1998 09 27	704	0.9−	0.4−	2000 01 04	704	0.6−	0.4+	2000 01 13	691	0.1−	0.0
1998 09 27	704	0.8+	0.7+	2000 01 04	704	0.1+	0.6−	2000 01 13	691	0.0	0.0
1998 09 27	704	0.1+	0.7+	2000 01 04	704	0.2−	0.6−				
1998 09 27	704	0.4+	1.0+	2000 01 04	704	0.0	0.3−				

1999 XG₃₃ = 1998 RE₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	15.45075		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.23986029	ω	198.05895	-0.47895953	-0.87227368
a	2.5654515	Ω	280.65905	+0.81727418	-0.40206233
e	0.2523563	i	5.76253	+0.32040706	-0.27836038
P	4.11	H	13.8	G 0.15	U 4

2000 JAN. 24

M.P.C. 37881

Residuals in seconds of arc

1998 08 17	704	0.7+	0.2+	1998 09 18	704	0.0	0.5+	1999 12 09	691	0.9+	1.3+
1998 08 17	704	0.3-	0.7+	1999 11 16	704	0.3+	0.3+	2000 01 05	704	0.4+	1.1+
1998 08 17	704	(2.9-	0.3+)	1999 11 16	704	0.6+	0.5-	2000 01 05	699	0.6+	1.0+
1998 08 17	704	(2.4-	2.4-)	1999 11 16	704	0.4+	0.1-	2000 01 05	704	0.1+	0.5-
1998 08 17	704	0.2-	0.2+	1999 11 16	704	0.3+	0.2-	2000 01 05	704	0.0	0.5-
1998 08 23	704	1.1-	0.2+	1999 11 16	704	1.5-	0.3-	2000 01 05	699	0.5+	1.1+
1998 08 23	704	0.1-	1.9-	1999 12 06	704	0.5-	0.2-	2000 01 05	704	0.0	0.3-
1998 08 23	704	0.3-	0.8+	1999 12 06	704	0.5-	0.2+	2000 01 05	699	0.6+	0.9+
1998 08 23	704	0.8+	1.0-	1999 12 06	704	0.6-	0.3-	2000 01 05	704	0.8-	1.2-
1998 09 14	704	0.7-	0.8+	1999 12 06	704	0.6-	0.0	2000 01 06	106	0.3+	0.4+
1998 09 14	704	0.9+	1.5-	1999 12 06	704	0.5-	0.2+	2000 01 06	106	0.4+	0.8+
1998 09 14	704	0.9+	0.9+	1999 12 07	704	0.4+	0.4-	2000 01 06	106	0.1-	0.6+
1998 09 14	704	(2.4-	0.6+)	1999 12 07	704	0.2+	0.2-	2000 01 07	704	0.6+	0.4+
1998 09 14	704	1.6-	0.9+	1999 12 07	704	0.1-	0.6-	2000 01 07	704	0.5+	1.3-
1998 09 18	704	1.7+	1.6-	1999 12 07	704	0.3-	0.8-	2000 01 07	704	0.4-	0.3+
1998 09 18	704	0.3+	0.1-	1999 12 07	704	0.4+	0.7-	2000 01 07	704	0.1-	0.5-
1998 09 18	704	1.2-	1.6+	1999 12 09	691	0.2-	0.5+	2000 01 07	704	1.2-	0.5-
1998 09 18	704	0.2-	0.0	1999 12 09	691	0.4-	0.2-				

1999 XK₃₃ = 1998 MP₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	338.54678		(2000.0)	P	Q
<i>n</i>	0.36106454	ω	55.81811	-0.91070613	-0.15448269
<i>a</i>	1.9531975	Ω	112.57284	+0.07436620	-0.97359605
<i>e</i>	0.0610182	<i>i</i>	24.51053	+0.40630533	-0.16806496
<i>P</i>	2.73	<i>H</i>	15.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 06 20	691	0.6+	0.0	1999 12 06	704	0.1+	0.0	2000 01 04	704	0.2-	0.7-
1998 06 20	691	0.8+	0.1-	1999 12 07	704	1.4-	0.3+	2000 01 06	699	1.3+	0.5+
1998 06 20	691	1.0+	0.3+	1999 12 07	704	0.2-	0.5+	2000 01 06	699	0.3+	0.1+
1998 06 27	691	0.7-	0.0	1999 12 07	704	1.0+	0.2-	2000 01 06	699	0.0	1.1+
1998 06 27	691	0.8-	0.1-	1999 12 07	704	0.2+	0.3+	2000 01 08	704	0.3-	0.2-
1998 06 27	691	0.8-	0.1+	2000 01 04	704	0.0	0.5+	2000 01 08	704	0.3-	0.2-
1999 12 06	704	1.3-	0.1+	2000 01 04	704	0.7-	0.4-	2000 01 08	704	0.0	0.5-
1999 12 06	704	0.6+	0.6-	2000 01 04	704	0.3-	0.1-				
1999 12 06	704	1.1+	0.1-	2000 01 04	704	0.2+	0.0				

1999 XM₃₃ = 1997 NW₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	39.35363		(2000.0)	P	Q
<i>n</i>	0.23854540	ω	321.63636	+0.05043699	-0.99686268
<i>a</i>	2.5748703	Ω	125.39121	+0.93379618	+0.02540682
<i>e</i>	0.1863238	<i>i</i>	4.29121	+0.35423270	+0.07496191
<i>P</i>	4.13	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1997 07 03	688	0.1-	0.2+	1999 12 06	704	0.2+	0.9-	2000 01 04	704	0.3-	0.3+
1997 07 03	688	0.3+	0.3+	1999 12 06	704	0.5-	0.6-	2000 01 04	704	0.2-	0.2-
1997 07 03	688	0.7+	0.2-	1999 12 07	704	0.8-	0.0	2000 01 04	704	0.1-	0.6+
1997 07 03	688	0.0	0.1-	1999 12 07	704	0.0	0.5-	2000 01 04	704	0.2+	0.7+
1997 07 04	688	0.5-	0.8-	1999 12 07	704	0.0	1.0-	2000 01 05	704	0.2+	0.0
1997 07 04	688	0.6-	0.0	1999 12 07	704	0.3+	0.7-	2000 01 05	704	0.4+	0.3-
1998 08 17	704	1.0-	1.5-	1999 12 09	691	0.1-	0.2+	2000 01 05	704	0.2-	0.1+
1998 08 17	704	1.8+	0.9+	1999 12 09	691	0.2-	0.1+	2000 01 05	704	0.1+	0.7+
1998 08 17	704	0.4+	0.9+	1999 12 09	691	0.1-	0.2+	2000 01 07	704	0.0	0.1-
1998 08 17	704	1.3-	0.0	1999 12 18	691	0.1-	0.2+	2000 01 07	704	0.0	0.5-
1999 12 06	704	1.4+	1.0-	1999 12 18	691	0.1-	0.2+	2000 01 07	704	0.2+	0.3+
1999 12 06	704	0.5-	0.0	1999 12 18	691	0.4+	0.1+	2000 01 07	704	0.1-	0.8+
1999 12 06	704	0.2-	0.1-	2000 01 04	704	0.1-	0.0	2000 01 07	704	0.3+	0.3+

1999 XN₃₃ = 1987 SE₃₀ = 1993 FW₇₁ = 1998 MU₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	80.89237		(2000.0)	P	Q
<i>n</i>	0.26106204	ω	120.78394	+0.79672093	-0.60348224
<i>a</i>	2.4246007	Ω	276.35511	+0.54276988	+0.73804079
<i>e</i>	0.1909898	<i>i</i>	1.86390	+0.26577550	+0.30183602
<i>P</i>	3.78	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1987 09 26	095	1.0+	2.3-	1999 12 06	704	0.8+	0.4-	2000 01 05	704	0.3-	0.3-
1993 03 21	809	0.9-	0.8-	1999 12 06	704	0.0	0.9-	2000 01 06	106	0.7-	0.3+
1993 03 22	809	0.1+	1.2-	1999 12 06	704	0.9+	0.8-	2000 01 06	106	0.7-	0.6+
1998 06 25	691	1.1+	0.1-	1999 12 07	704	0.4+	0.4-	2000 01 06	106	1.2+	0.8+
1998 06 25	691	1.1+	0.2+	1999 12 07	704	0.1-	0.2+	2000 01 07	704	0.5-	0.2-
1998 06 25	691	0.9+	0.0	1999 12 07	704	1.0+	0.1-	2000 01 07	704	0.4-	0.1-
1998 06 30	691	1.2-	0.6+	1999 12 07	704	0.5+	0.1+	2000 01 07	704	0.4-	0.2+
1998 06 30	691	1.1-	0.5+	1999 12 07	704	1.2+	0.0	2000 01 07	704	0.3-	0.1+
1998 06 30	691	1.1-	0.4+	1999 12 09	691	0.1+	0.4+	2000 01 07	704	0.5-	0.5+
1999 11 05	703	0.8+	1.1+	1999 12 09	691	0.3+	0.4+	2000 01 12	120	0.1-	0.5-
1999 11 05	703	1.1-	2.0+	1999 12 09	691	0.4+	0.4+	2000 01 12	120	0.4-	0.8-
1999 11 05	703	1.0-	0.9+	2000 01 05	704	0.1-	0.2+	2000 01 12	120	0.9-	1.1-
1999 11 05	703	1.3+	0.1-	2000 01 05	704	0.6-	0.0	2000 01 12	120	0.1-	0.4-
1999 12 06	704	0.5+	0.3-	2000 01 05	704	0.1-	0.2+				
1999 12 06	704	0.7+	0.0	2000 01 05	704	0.0	0.0				

1999 XQ₃₃ = 1988 YZ = 1998 MK₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	296.80449		(2000.0)	P	Q
<i>n</i>	0.37111454	ω	103.10375	-0.73023309	+0.53091991
<i>a</i>	1.9177739	Ω	110.58157	-0.65171060	-0.73018214
<i>e</i>	0.0653389	<i>i</i>	27.34174	+0.20501934	-0.43006754
<i>P</i>	2.66	<i>H</i>	15.3	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1988 12 30	413	0.8-	0.8+	1999 12 06	704	0.4+	0.6+	1999 12 15	704	0.8+	0.0
1988 12 30	413	0.9+	1.2-	1999 12 06	704	0.5-	0.1-	1999 12 15	704	1.5+	0.3+
1998 06 24	699	1.0+	0.0	1999 12 06	704	0.8-	0.2-	2000 01 03	704	0.2-	0.2-
1998 06 24	699	1.0-	0.3+	1999 12 06	704	0.8-	0.4-	2000 01 03	704	0.3-	0.5-
1998 06 24	699	1.3+	1.2-	1999 12 06	704	0.2+	0.8+	2000 01 03	704	0.3-	0.2+
1998 06 26	691	0.7-	0.2+	1999 12 07	704	0.6+	0.1-	2000 01 03	704	0.2+	0.5-
1998 06 26	691	0.7-	0.1+	1999 12 07	704	0.4-	0.1-	2000 01 03	704	0.3-	0.5-
1998 06 26	691	0.0	0.3+	1999 12 07	704	0.1-	0.1+	2000 01 04	688	0.1+	0.1+
1999 12 04	703	(2.6+	1.3-)	1999 12 07	704	0.3+	0.1+	2000 01 04	688	0.1+	0.1+
1999 12 04	703	0.3+	0.6+	1999 12 07	704	0.1-	0.2+	2000 01 06	106	0.0	0.0
1999 12 04	703	0.8-	0.2+	1999 12 15	704	0.3+	0.2+	2000 01 06	106	0.1+	0.3+
1999 12 04	703	(0.1+	3.1-)	1999 12 15	704	0.2-	1.1-	2000 01 06	106	0.1-	0.1-

1999 XR₃₃ = 1953 YN = 1993 OU₆ = 1998 QY₈₉

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Williams

<i>M</i>	90.08510		(2000.0)	P	Q
<i>n</i>	0.21836994	ω	85.70418	+0.82796321	-0.54485325
<i>a</i>	2.7311202	Ω	307.25345	+0.42524117	+0.76428440
<i>e</i>	0.1504534	<i>i</i>	9.59763	+0.36557745	+0.34496999
<i>P</i>	4.51	<i>H</i>	13.0	<i>G</i>	0.15
				<i>U</i>	1

Residuals in seconds of arc

1953 12 31	675	(9.7+ 0.9+)	1998 08 27	704	0.0	1.4+	1999 12 07	704	1.0+	0.7+
1953 12 31	675	0.3- 0.2+	1998 08 27	704	0.1-	1.5+	1999 12 07	704	0.9+	0.5+
1991 02 11	511	(1.0- 3.6-)	1998 09 18	699	0.2+	0.4+	1999 12 07	704	0.5+	0.0
1991 02 12	511	0.8+ 0.2+	1998 09 18	699	0.0	0.4+	1999 12 09	699	0.2-	1.0+
1993 07 13	809	0.5- 1.7+	1998 09 18	699	0.4+	0.1-	1999 12 09	699	0.6-	0.9+
1993 07 13	809	0.4+ 1.6+	1998 12 09	704	0.2+	0.3-	1999 12 09	699	0.6-	1.4+
1993 07 13	809	1.2- 1.3+	1998 12 09	704	0.8+	0.7+	2000 01 04	704	0.1-	0.1-
1993 07 20	809	0.2+ 0.2-	1998 12 09	704	0.6+	0.1+	2000 01 04	704	0.0	0.5-
1993 07 20	809	0.1+ 0.4-	1998 12 09	704	0.9+	0.4+	2000 01 04	704	0.0	0.2-

1993 07 20	809	0.1−	0.4−	1998 12 09	704	1.1−	0.5−	2000 01 04	704	0.2−	0.6−
1993 07 24	809	0.1+	0.5−	1998 12 22	699	0.0	0.7+	2000 01 04	704	0.2−	0.7−
1998 06 30	704	(2.6−	0.7+)	1998 12 22	699	0.1+	0.3+	2000 01 05	704	0.4+	0.1+
1998 06 30	704	1.0−	1.8−	1998 12 22	699	0.3−	0.7+	2000 01 05	704	0.2−	0.1+
1998 06 30	704	0.2+	0.2+	1999 11 16	704	0.0	0.2+	2000 01 05	704	0.2−	0.5−
1998 06 30	704	1.3+	0.7+	1999 11 16	704	0.3−	0.6+	2000 01 05	704	0.2−	0.1−
1998 06 30	704	1.6−	0.3−	1999 11 16	704	0.2−	0.0	2000 01 06	704	0.3−	0.6−
1998 08 20	699	0.1+	0.4−	1999 11 16	704	0.4−	0.1+	2000 01 06	704	0.4−	0.6+
1998 08 20	699	0.2−	0.5−	1999 12 04	703	1.0−	0.4+	2000 01 06	704	0.7−	0.5+
1998 08 20	699	0.1+	0.5−	1999 12 04	703	0.3−	0.1−	2000 01 06	704	1.6−	0.7+
1998 08 24	704	1.2+	1.4−	1999 12 04	703	0.0	0.8+	2000 01 07	704	0.2+	0.1−
1998 08 24	704	0.1+	0.2−	1999 12 04	703	0.8+	1.0−	2000 01 07	704	0.4+	0.3−
1998 08 24	704	0.3−	1.4−	1999 12 06	704	0.2−	0.3+	2000 01 07	704	0.4+	0.6−
1998 08 24	704	(0.1+	2.0−)	1999 12 06	704	0.4+	0.0	2000 01 07	704	0.4+	0.6−
1998 08 24	704	0.6−	0.7−	1999 12 06	704	1.3+	0.9+	2000 01 07	704	0.4+	0.6−
1998 08 27	704	0.5+	0.3+	1999 12 06	704	0.0	0.6+	2000 01 12	120	0.1+	0.3−
1998 08 27	704	0.1+	0.2+	1999 12 06	704	0.6+	0.1−	2000 01 12	120	0.4+	0.2−
1998 08 27	704	0.2+	0.3−	1999 12 07	704	(0.1+	2.0+)				

1999 XV₃₃ = 1986 VX₆ = 1992 RO = 1992 RH = 1997 EP₄₆

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				Williams			
<i>M</i>	100.51872		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.31323145	ω	139.81520	+0.91266298	−0.40832326		
<i>a</i>	2.1472988	Ω	244.29282	+0.36972049	+0.84341505		
<i>e</i>	0.1525626	<i>i</i>	1.13475	+0.17422124	+0.34917499		
<i>P</i>	3.15	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 11 06	688	(13.6−	1.7−)	1999 11 05	703	1.0−	0.1+	1999 12 07	704	0.1+	0.0
1986 11 06	688	(7.1−	1.9+)	1999 11 17	704	0.2−	0.1+	1999 12 07	704	0.5+	0.2−
1992 09 01	894	0.6+	0.8−	1999 11 17	704	1.1+	0.6+	2000 01 05	704	0.7+	0.6+
1992 09 01	894	0.8+	0.1−	1999 11 17	704	1.1+	0.7−	2000 01 05	704	1.0+	0.6+
1992 09 03	894	0.8−	0.2−	1999 11 17	704	0.4−	0.8+	2000 01 05	704	0.6−	0.1−
1992 09 03	894	0.3+	0.7−	1999 12 04	703	(4.6+	1.7+)	2000 01 05	704	0.2+	0.5−
1992 09 04	372	(3.6−	3.8−)	1999 12 04	703	0.2−	0.1+	2000 01 05	704	1.5−	0.6+
1992 09 05	372	0.8−	0.5−	1999 12 04	703	0.1−	0.5+	2000 01 07	704	0.2−	0.5−
1992 09 05	372	0.2+	1.7+	1999 12 04	703	0.3−	0.4+	2000 01 07	704	0.2−	0.6−
1997 03 05	691	0.5−	0.0	1999 12 06	704	0.2−	0.6+	2000 01 07	704	0.4+	0.5−
1997 03 05	691	0.7−	0.0	1999 12 06	704	0.0	0.7−	2000 01 07	704	0.2−	0.4−
1997 03 05	691	0.7−	0.0	1999 12 06	704	0.5−	0.2−	2000 01 07	704	0.2−	0.4−
1997 03 12	704	1.3+	0.2+	1999 12 06	704	0.8+	0.4+	2000 01 12	120	0.4−	0.4−
1997 03 12	704	0.4+	0.8−	1999 12 06	704	0.1+	0.3−	2000 01 12	120	0.4−	0.8+
1999 11 05	703	1.2+	0.9−	1999 12 07	704	0.3−	0.6−	2000 01 13	699	0.3+	0.3+
1999 11 05	703	0.7−	0.1+	1999 12 07	704	0.2−	0.1−	2000 01 13	699	0.8+	0.4+
1999 11 05	703	0.2−	0.4+	1999 12 07	704	0.3−	0.9−	2000 01 13	699	0.2+	0.3+

1999 XC₃₄ = 1997 FB₁

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				Williams			
<i>M</i>	118.82999		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.27851715	ω	263.01480	+0.97168666	−0.20056510		
<i>a</i>	2.3222096	Ω	108.49646	+0.23257434	+0.90508991		
<i>e</i>	0.1359473	<i>i</i>	7.56771	−0.04164379	+0.37494786		
<i>P</i>	3.54	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1997 03 28	327	0.7−	0.9+	1998 12 08	704	1.4−	0.3−	1999 12 07	704	0.1+	0.0
1997 03 28	327	0.2+	0.3+	1998 12 08	704	1.0+	0.2+	1999 12 09	699	0.9−	0.5+
1997 03 28	327	0.4−	0.1+	1998 12 08	704	0.6+	0.0	1999 12 09	699	0.8−	0.9+
1997 03 30	327	0.2−	0.1+	1998 12 08	704	(2.7−	0.4+)	1999 12 09	699	1.5−	0.7+
1997 03 30	327	0.4−	0.7+	1999 11 05	703	0.7−	0.1+	2000 01 04	704	0.2+	0.3−
1997 03 30	327	0.1−	0.3−	1999 11 05	703	1.4+	1.9+	2000 01 04	704	0.8+	0.4−
1997 03 30	327	1.6+	1.7−	1999 11 05	703	0.0	0.5+	2000 01 04	704	0.7+	0.2−
1998 07 04	699	0.1+	0.9+	1999 11 05	703	1.4+	1.3+	2000 01 04	704	0.6+	0.5−
1998 07 04	699	0.4+	0.3−	1999 12 06	704	0.3+	0.8−	2000 01 04	688	0.5+	0.4+
1998 07 04	699	0.6−	0.4+	1999 12 06	704	0.6+	1.0−	2000 01 04	704	0.9+	0.7−

1998 08 17	704	0.2−	0.2−	1999 12 06	704	0.6+	1.0−	2000 01 04	688	0.3+	0.2+
1998 08 17	704	0.0	0.1+	1999 12 06	704	0.5−	0.3+	2000 01 06	704	0.9−	0.1−
1998 08 17	704	0.2−	0.0	1999 12 07	704	0.6−	1.1−	2000 01 06	704	0.1+	0.3+
1998 08 17	704	0.2+	0.2+	1999 12 07	704	0.1+	0.5−	2000 01 06	704	0.2−	0.1−
1998 08 17	704	0.7+	1.1−	1999 12 07	704	0.4−	0.9−	2000 01 06	704	1.3−	0.4+
1998 12 08	704	0.7−	0.0	1999 12 07	704	0.4−	0.3+	2000 01 06	704	0.3−	0.5+

1999 XH₃₄ = 1998 SR₉₅

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				Williams			
<i>M</i>	17.22955		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.21791401	ω	359.22713	−0.52953160	−0.84271134		
<i>a</i>	2.7349283	Ω	122.74155	+0.77890932	−0.52837601		
<i>e</i>	0.2081049	<i>i</i>	6.63102	+0.33600082	−0.10322978		
<i>P</i>	4.52	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.2−	0.0	1999 12 06	704	0.1−	0.1+	2000 01 04	704	0.4+	0.5−
1998 09 26	704	1.7+	0.1−	1999 12 06	704	0.3−	0.2−	2000 01 04	704	0.1+	1.3+
1998 09 26	704	(0.4+	2.5−)	1999 12 06	704	0.6−	0.2+	2000 01 06	106	0.6+	0.4+
1998 09 26	704	1.3−	0.3−	1999 12 06	704	1.0−	0.3+	2000 01 06	106	0.0	0.6+
1998 09 27	704	0.5+	0.0	1999 12 07	704	0.9+	0.5+	2000 01 06	106	0.1+	0.5+
1998 09 27	704	(0.5+	2.0+)	1999 12 07	704	0.8−	0.2−	2000 01 07	704	0.6−	0.5−
1998 09 27	704	0.7−	0.5+	1999 12 07	704	1.2+	0.2−	2000 01 07	704	0.7−	0.7−
1999 11 17	704	0.8+	0.3−	1999 12 07	704	0.4−	0.2+	2000 01 07	704	0.5−	0.6+
1999 11 17	704	0.4−	0.2−	1999 12 07	704	0.0	0.3−	2000 01 07	704	0.6+	0.2−
1999 11 17	704	0.4+	0.1+	2000 01 04	704	0.3+	0.5−	2000 01 07	704	0.4−	0.4+
1999 11 17	704	0.4+	0.1+	2000 01 04	704	0.0	0.6−				
1999 12 06	704	0.7−	0.3−	2000 01 04	704	0.8+	0.4−				

1999 XL₃₄ = 1991 SA₃ = 1997 LK_s

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	41.79306		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.26536907	ω	270.85170	−0.00195375	−0.99999794		
<i>a</i>	2.3982945	Ω	179.25955	+0.93382637	−0.00202443		
<i>e</i>	0.1381074	<i>i</i>	2.47920	+0.35772125	−0.00017689		
<i>P</i>	3.71	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 09 29	691	0.1+	0.2+	1997 06 08	809	1.1−	0.1+	2000 01 05	704	0.2−	0.2+
1991 09 29	691	0.3+	0.5+	1997 06 08	809	0.1−	0.9+	2000 01 05	704	0.8−	0.4−
1991 09 29	691	0.1−	0.3+	1999 12 06	704	0.2−	1.3+	2000 01 05	704	0.5−	0.4+
1991 10 13	691	1.1−	1.1−	1999 12 06	704	0.8+	0.0	2000 01 05	704	0.7+	0.5+
1991 10 13	691	0.3+	0.0	1999 12 06	704	0.7−	0.2−	2000 01 05	704	1.2+	0.7−
1991 10 13	691	0.5+	0.0	1999 12 07	704	0.8+	1.2−	2000 01 07	704	0.4+	0.2+
1997 06 07	809	1.9+	0.8−	1999 12 07	704	0.8−	0.6+	2000 01 07	704	0.4−	0.5+
1997 06 07	809	0.1−	0.4−	1999 12 07	704	0.3−	0.8−	2000 01 07	704	0.9−	0.3−
1997 06 07	809	0.5+	0.5−	1999 12 07	704	0.1+	0.1+	2000 01 07	704	0.0	0.3+
1997 06 08	809	1.2−	0.4+	1999 12 07	704	0.3+	0.3−	2000 01 07	704	0.4+	0.3−

1999 XQ₃₄ = 1990 BV₄ = 1990 DN₅ = 1997 EY

2000 JAN. 24

M.P.C. 37883

1997 03 09	809	0.5−	1.1+	1999 12 31	699	0.1+	0.7+	2000 01 13	120	0.7+	0.0
1997 03 09	809	0.3−	0.4+	1999 12 31	699	0.2+	1.2+	2000 01 16	120	0.3−	0.7−
1997 03 09	809	0.3−	0.7+	1999 12 31	699	0.0	0.2+	2000 01 16	120	0.5−	0.8−
1998 08 17	704	(1.3−	3.3−)	2000 01 05	704	0.5−	0.4−	2000 01 16	120	0.3−	0.5−
1998 08 17	704	0.2+	0.8−	2000 01 05	704	0.2−	0.1−	2000 01 16	120	0.4+	0.3+
1998 08 17	704	0.1−	0.0	2000 01 05	704	0.2+	0.1+	2000 01 17	120	0.0	0.8−
1998 08 17	704	0.4+	0.7−	2000 01 05	704	0.1+	0.5+				
1999 12 06	704	0.7+	0.1−	2000 01 05	704	0.8−	0.0				

1999 XW₃₄ = 1991 TZ = 1994 NF₈ = 1998 VB₁₀

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Williams

<i>M</i>	217.43549		(2000.0)		P		Q
<i>n</i>	0.28225635	ω	184.49985	+0.40556057			+0.91062027
<i>a</i>	2.3016551	Ω	109.44285	−0.83599423			+0.40461194
<i>e</i>	0.1524239	<i>i</i>	4.82513	−0.36964075			+0.08402328
<i>P</i>	3.49	<i>H</i>	13.8	<i>G</i>	0.15		<i>U</i> 1

Residuals in seconds of arc

1991 09 12	675	0.2+	0.6+	1998 10 11	699	0.2+	0.2+	1999 12 07	704	0.5+	0.0
1991 09 12	675	0.7+	0.7−	1998 11 10	704	0.5−	0.3−	1999 12 07	704	0.5+	0.7−
1991 09 14	675	0.3−	0.8+	1998 11 10	704	0.3+	0.4−	1999 12 07	704	0.4−	0.7−
1991 09 14	675	0.4−	1.5−	1998 11 10	704	0.1−	0.0	1999 12 07	704	0.7+	0.4+
1991 10 01	372	(2.8−	0.5+)	1998 11 10	704	0.3−	0.2+	2000 01 04	704	0.2+	0.7−
1991 10 01	372	(4.6−	1.8+)	1998 11 11	704	0.0	0.4−	2000 01 04	704	0.4−	0.2+
1991 10 02	372	(0.4+	3.7+)	1998 11 11	704	0.1+	0.3−	2000 01 04	704	0.7−	0.1−
1994 07 11	809	1.0+	0.5+	1998 11 11	704	0.3+	0.1+	2000 01 04	704	0.1+	0.4−
1994 07 11	809	0.2−	0.1+	1998 11 11	704	0.1+	0.5+	2000 01 04	704	0.0	0.1−
1994 07 11	809	0.6+	0.2+	1998 11 11	704	0.3−	0.2+	2000 01 06	704	0.6−	0.3−
1994 07 12	809	1.1+	0.1+	1999 12 06	704	1.3+	0.2+	2000 01 06	704	0.4−	0.2+
1994 07 12	809	0.7−	1.1−	1999 12 06	704	0.6+	0.8−	2000 01 06	704	1.4−	0.9−
1994 07 12	809	1.7−	0.8−	1999 12 06	704	1.1+	1.9+	2000 01 06	704	1.2−	0.3−
1998 10 11	699	0.3−	0.2+	1999 12 06	704	1.5+	0.6+	2000 01 06	704	0.8−	0.0
1998 10 11	699	0.3+	0.0	1999 12 07	704	0.1−	0.3+				

1999 XX₃₄ = 1998 OV₁₀

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Williams

<i>M</i>	49.92663		(2000.0)		P		Q
<i>n</i>	0.23441757	ω	128.93000	+0.29922987			−0.95232588
<i>a</i>	2.6050093	Ω	303.55936	+0.85187706			+0.29470580
<i>e</i>	0.2330539	<i>i</i>	4.09256	+0.42984528			+0.07889174
<i>P</i>	4.20	<i>H</i>	14.6	<i>G</i>	0.15		<i>U</i> 4

Residuals in seconds of arc

1998 07 26	809	0.6+	0.7−	1999 12 04	703	0.2−	0.9+	2000 01 05	704	0.1+	0.0
1998 07 26	809	0.3+	0.6+	1999 12 04	703	0.6+	0.7+	2000 01 05	704	0.0	0.8−
1998 07 26	809	0.5+	0.2+	1999 12 04	703	0.1−	0.4+	2000 01 05	704	0.3−	1.2−
1998 07 27	809	0.6+	1.0−	1999 12 04	703	0.8+	0.6−	2000 01 05	704	0.6−	0.4−
1998 07 27	809	0.6−	0.7−	1999 12 06	704	0.0	0.3+	2000 01 05	704	0.2−	0.3−
1998 07 27	809	0.0	0.4−	1999 12 06	704	1.0+	0.1−	2000 01 07	704	0.3−	0.2−
1998 08 17	704	0.2−	0.2+	1999 12 06	704	1.1−	1.3+	2000 01 07	704	0.2−	0.2−
1998 08 17	704	0.4−	0.4+	1999 12 06	704	0.5−	0.3+	2000 01 07	704	0.1+	0.6−
1998 08 17	704	0.7+	0.3−	1999 12 07	704	0.1+	0.1+	2000 01 07	704	0.7−	0.2−
1998 08 17	704	0.5−	0.8−	1999 12 07	704	0.7+	0.5−	2000 01 07	704	0.1−	0.6−
1998 08 17	704	(3.0−	1.4−)	1999 12 07	704	0.1−	0.2−				

1999 XA₃₅ = 1998 SE₁₄₃

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Williams

<i>M</i>	344.80081		(2000.0)		P		Q
<i>n</i>	0.23935249	ω	61.92095	−0.98225258			−0.16245664
<i>a</i>	2.5690787	Ω	108.60249	+0.11761090			−0.92280462
<i>e</i>	0.2232157	<i>i</i>	5.67643	+0.14610796			−0.34934149
<i>P</i>	4.12	<i>H</i>	14.4	<i>G</i>	0.15		<i>U</i> 6

Residuals in seconds of arc

1998 09 26	704	0.4−	1.7−	1999 12 06	704	0.8+	1.5+	2000 01 04	704	0.4−	0.3−
1998 09 26	704	1.4+	0.7−	1999 12 06	704	0.0	1.2+	2000 01 04	704	0.4+	0.2−
1998 09 26	704	0.1+	0.4+	1999 12 06	704	(0.6+	3.0+)	2000 01 04	704	0.4−	0.8+
1998 09 27	704	0.6+	0.1+	1999 12 07	704	0.2+	1.3−	2000 01 06	106	0.1+	0.4+
1998 09 27	704	0.8+	1.5+	1999 12 07	704	1.1+	0.2−	2000 01 06	106	1.0−	0.1+
1998 09 27	704	1.3−	0.5+	1999 12 07	704	0.3−	0.1−	2000 01 06	106	0.3−	0.0
1998 09 27	704	1.1−	0.5−	1999 12 07	704	0.1−	0.2+	2000 01 06	704	0.0	1.7−
1999 12 04	703	(5.2+	1.2−)	1999 12 09	699	0.8−	0.3+	2000 01 06	704	0.3+	0.4−
1999 12 04	703	0.1−	0.0	1999 12 09	699	0.3+	0.4+	2000 01 06	704	0.2+	0.1−
1999 12 04	703	0.4−	0.1+	1999 12 09	699	0.1+	0.7+	2000 01 06	704	0.6+	0.0
1999 12 04	703	0.6−	0.2−	2000 01 04	704	0.3+	0.7−				

1999 XX₃₅ = 1999 XW₈₃ = 1995 UD₄₉

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	77.48069		(2000.0)		P		Q
<i>n</i>	0.26585397	ω	211.39948	+0.97285911			−0.23104287
<i>a</i>	2.3953774	Ω	161.94567	+0.21995328			+0.90611425
<i>e</i>	0.2178137	<i>i</i>	2.37062	+0.07187279			+0.35436727
<i>P</i>	3.71	<i>H</i>	15.0	<i>G</i>	0.15		<i>U</i> 5

Residuals in seconds of arc

1995 10 23	033	0.2+	0.3−	1999 12 08	704	0.1−	1.0−	2000 01 07	704	0.6−	0.5+
1995 10 24	033	0.1−	0.2−	1999 12 08	704	0.2+	0.0	2000 01 07	704	0.1−	0.5+
1995 10 24	033	0.0	0.4+	1999 12 19	411	1.0+	0.2−	2000 01 07	704	0.2+	0.1+
1999 12 06	411	0.8+	1.5+	1999 12 19	411	1.5+	0.5−	2000 01 07	704	0.3−	0.1−
1999 12 06	411	0.1+	0.5+	1999 12 27	411	1.2+	1.0−	2000 01 07	704	0.6−	0.2+
1999 12 07	704	1.3−	1.8−	1999 12 27	411	1.0+	0.1−	2000 01 07	704	0.1+	0.1−
1999 12 07	704	0.3−	0.2−	1999 12 27	411	1.6+	0.0	2000 01 07	704	0.5−	0.5−
1999 12 07	704	0.3+	0.4+	2000 01 05	704	0.0	0.3+	2000 01 07	704	0.4−	0.1+
1999 12 07	704	0.3+	0.2−	2000 01 05	704	0.4−	0.4+	2000 01 07	704	0.1−	0.1−
1999 12 07	704	0.8−	0.7+	2000 01 05	704	0.1+	0.1+	2000 01 07	704	0.1+	0.1+
1999 12 07	411	0.8−	0.1+	2000 01 05	704	0.5−	1.0−	2000 01 07	704	0.1−	0.1+
1999 12 07	411	1.2−	1.7+	2000 01 05	704	(0.5−	2.3−)	2000 01 07	704	0.7−	0.1−
1999 12 08	704	0.2+	0.6−	2000 01 07	704	0.1−	0.3+	2000 01 07	704	0.3−	0.1−
1999 12 08	704	0.5+	0.5+	2000 01 07	704	0.3−	0.4−	2000 01 07	704	0.2+	0.0

1999 XZ₃₅ = 1992 CW₇ = 1998 RX₂₀

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	74.43608		(2000.0)		P		Q
<i>n</i>	0.24034935	ω	98.05498	+0.85955654			−0.49145624
<i>a</i>	2.5619703	Ω	291.47921	+0.38916878			+0.80719549
<i>e</i>	0.0979782	<i>i</i>	8.66033	+0.33122534			+0.32696514
<i>P</i>	4.10	<i>H</i>	14.1	<i>G</i>	0.15		<i>U</i> 2

Residuals in seconds of arc

1992 02 12	809	0.5+	0.3−	1999 12 10	704	0.1+	0.4+	2000 01 03	704	0.5+	0.1−
1992 02 12	809	0.8+	0.2+	1999 12 10	704	0.4−	0.5+	2000 01 03	704	0.3+	0.2−
1992 02 12	809	1.2−	0.3+	1999 12 10	704	0.1−	0.1+	2000 01 03	704	0.5+	0.0
1998 09 15	699	0.2−	0.2+	1999 12 10	704	0.7−	0.2+	2000 01 03	704	0.4+	0.6+
1998 09 15	699	1.3+	0.3−	1999 12 19	411	0.7−	0.3+	2000 01 04	704	0.1−	0.2+
1998 09 15	699	1.0−	1.2−	1999 12 19	411	0.7−	0.9+	2000 01 04	704	0.0	0.0
1998 09 22	699	0.4+	0.4+	1999 12 26	739	0.4+	0.1−	2000 01 04	704	0.1−	0.1+
1998 09 22	699	0.1−	0.5+	1999 12 26	739	0.4+	0.3−	2000 01 04	704	0.0	0.0
1998 09 22	699	0.6−	0.8+	1999 12 29	739	0.4+	0.4+	2000 01 04	704	0.4+	0.6+
1999 12 06	411	0.8−	1.4−	1999 12 29	739	0.0	0.2+	2000 01 08	704	0.3−	0.8−
1999 12 06	411	0.3−	1.5−	2000 01 01	411	0.3+	0.8−	2000 01 08	704	0.6+	0.3−
1999 12 07	411	1.7−	0.7+	2000 01 01	411	1.0+	0.9+	2000 01 08	704	0.4+	0.0
1999 12 07	411	0.1−	0.4−	2000 01 03	704	0.2+	0.0	2000 01 08	704	0.0	0.7−

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	1.64301	(2000.0)	P	Q
<i>n</i>	0.20381399	ω	258.91969	-0.47201734
<i>a</i>	2.8596533	Ω	219.34754	+0.83400588
<i>e</i>	0.2135015	<i>i</i>	4.06747	-0.20103701
<i>P</i>	4.84	<i>H</i>	14.2	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1991 04 19	809	0.0	0.7-	1999 12 06	411	0.1+	0.7-	2000 01 05	704	0.2-	0.2+
1991 04 19	809	0.5-	0.9-	1999 12 07	411	0.3+	0.2-	2000 01 05	704	0.0	0.3+
1991 04 19	809	0.3-	1.0-	1999 12 07	411	0.1+	0.8-	2000 01 05	704	0.1+	0.4+
1996 04 17	809	1.2+	0.1-	1999 12 19	411	1.5-	0.5+	2000 01 06	704	0.4+	0.2-
1996 04 17	809	0.0	0.0	1999 12 19	411	1.0-	0.8-	2000 01 06	704	0.1+	0.2-
1996 04 17	809	0.4+	1.1+	1999 12 30	106	0.1+	0.5+	2000 01 06	704	0.0	0.2-
1996 04 18	809	1.7-	1.0+	1999 12 30	106	0.6+	0.3+	2000 01 07	704	0.2+	0.2+
1996 04 18	809	1.0+	0.0	1999 12 30	106	0.2+	0.3+	2000 01 07	704	0.2-	0.1+
1996 04 18	809	1.4+	1.5+	1999 12 30	106	0.5-	0.3+	2000 01 07	704	0.6+	0.7-
1996 05 22	809	(2.3+ 0.1-)		1999 12 30	106	0.1-	0.5+	2000 01 07	704	0.2-	0.0
1996 05 22	809	0.6-	0.2+	1999 12 30	106	0.6+	0.4+	2000 01 07	704	0.2-	0.3-
1996 05 22	809	1.1-	1.1-	2000 01 05	704	0.3+	0.7+				
1999 12 06	411	0.1-	0.3-	2000 01 05	704	0.3+	0.0				

1999 XJ₃₆ = 1997 JW₁₁ = 1998 QM₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.54850	(2000.0)	P	Q
<i>n</i>	0.19558175	ω	187.50594	+0.99567713
<i>a</i>	2.9393445	Ω	167.17578	-0.08327992
<i>e</i>	0.1183451	<i>i</i>	2.02122	-0.04112787
<i>P</i>	5.04	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1997 04 11	704	(1.9- 3.0-)	1998 08 17	704	0.1+	0.7+	1999 12 06	120	0.6+	1.1+
1997 04 11	704	0.4- 0.6+	1998 08 17	704	0.2+	1.9+	1999 12 07	120	1.4+	0.3+
1997 05 03	809	(1.5+ 2.1+)	1998 08 23	704	0.2+	1.0+	1999 12 07	120	(2.2+ 1.2+)	
1997 05 03	809	1.3+ 1.2+	1998 08 23	704	0.8-	1.1+	1999 12 17	120	1.3-	0.5+
1997 05 03	809	0.0 1.0+	1998 08 23	704	1.7-	0.2-	1999 12 17	120	1.1+	0.3-
1997 05 04	809	1.1+ 0.9+	1998 08 23	704	0.2+	0.5-	1999 12 30	120	0.0	0.5+
1997 05 04	809	0.4- 1.8+	1998 08 23	704	0.4+	0.4-	1999 12 30	120	1.5+	0.1+
1997 05 04	809	(0.6+ 2.8+)	1999 11 03	704	0.7-	0.7+	2000 01 05	704	1.4-	0.5+
1998 08 17	704	0.1- 0.5-	1999 11 03	704	0.5-	0.6+	2000 01 05	704	1.1-	0.2+
1998 08 17	704	0.0 0.6-	1999 11 03	704	0.0	0.4+	2000 01 05	704	1.2-	0.5+
1998 08 17	704	0.6+ 0.0	1999 12 06	120	0.6+	1.0+				

1999 XL₃₆ = 1998 QX₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	10.44224	(2000.0)	P	Q
<i>n</i>	0.23634647	ω	186.46984	-0.04548548
<i>a</i>	2.5908164	Ω	266.27799	+0.92559539
<i>e</i>	0.1081214	<i>i</i>	11.99455	+0.37577154
<i>P</i>	4.17	<i>H</i>	14.0	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1998 08 24	704	0.3+	1.1+	1999 11 16	704	1.2-	0.6-	1999 12 15	703	0.0	0.2+
1998 08 24	704	0.3+	0.3-	1999 11 16	704	0.8-	0.7-	1999 12 15	703	0.2-	0.5+
1998 08 24	704	0.3-	1.5-	1999 12 06	946	0.5-	2.0+	1999 12 15	703	0.1+	0.2+
1998 08 24	704	0.3+	0.9+	1999 12 06	946	1.2+	0.7+	1999 12 15	703	0.0	0.0
1998 08 24	704	0.5+	0.4+	1999 12 06	946	1.7+	1.0+	2000 01 04	106	0.1-	0.5+
1998 08 27	704	0.5-	1.0+	1999 12 07	704	0.2+	0.1+	2000 01 04	106	0.3+	0.7+
1998 08 27	704	0.4+	0.7+	1999 12 07	704	1.6+	0.1+	2000 01 05	704	0.2-	0.2-
1998 08 27	704	1.5-	0.7-	1999 12 07	704	0.0	0.1-	2000 01 05	704	0.5+	0.3-
1998 08 27	704	0.3+	1.2-	1999 12 07	704	0.2+	0.1+	2000 01 05	704	0.9-	0.8-
1999 11 14	704	1.4-	0.6+	1999 12 07	946	0.4+	0.3-	2000 01 05	704	0.0	0.3-
1999 11 14	704	0.6-	0.6-	1999 12 07	946	0.3-	0.6+	2000 01 05	704	0.2+	0.7-
1999 11 14	704	0.2-	0.4-	1999 12 07	946	0.3+	1.1+	2000 01 06	704	0.3-	0.2-
1999 11 14	704	0.7-	0.7-	1999 12 10	704	0.3+	0.1+	2000 01 06	704	0.3-	0.3-

1999 11 14	704	0.7-	1.0-	1999 12 10	704	0.1+	0.5-	2000 01 06	704	0.2-	0.4-
1999 11 16	704	0.6+	0.2+	1999 12 10	704	0.3+	0.8+	2000 01 06	704	(0.5+ 2.8-)	
1999 11 16	704	0.9+	1.3-	1999 12 10	704	0.3+	0.2-	2000 01 06	704	0.1-	0.3-
1999 11 16	704	0.7-	1.1-	1999 12 10	704	0.5-	0.8+				

1999 XP₃₆ = 1978 TP = 1990 JD

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	39.52312	(2000.0)	P	Q
<i>n</i>	0.23789181	ω	10.18210	+0.85635771
<i>a</i>	2.5795842	Ω	21.03357	+0.45954485
<i>e</i>	0.1807279	<i>i</i>	10.85439	+0.23552071
<i>P</i>	4.14	<i>H</i>	13.5	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1978 10 09	095	0.9-	1.3+	1999 12 05	699	0.0	0.5+	1999 12 15	704	0.3+	0.8-
1990 05 03	413	0.0	0.7-	1999 12 05	699	0.4+	0.4+	1999 12 15	704	0.7-	0.5-
1990 05 04	413	0.5+	0.3-	1999 12 07	678	0.8-	0.2-	1999 12 15	704	0.7-	0.0
1997 03 30	327	0.1+	0.0	1999 12 07	678	0.4-	0.4-	1999 12 15	704	1.0-	0.6-
1997 03 30	327	0.0	0.4+	1999 12 07	703	0.1+	0.1+	1999 12 31	699	0.1+	0.6+
1997 03 30	327	0.2-	0.4-	1999 12 07	703	0.2-	0.3+	1999 12 31	699	0.2+	0.5+
1999 10 05	704	0.2+	0.6-	1999 12 07	703	0.0	0.2+	1999 12 31	699	0.1-	0.5+
1999 10 05	704	0.4+	0.3-	1999 12 07	703	0.0	0.3+	2000 01 03	704	0.8-	1.5+
1999 10 05	704	0.1-	0.2-	1999 12 08	678	0.9-	0.2-	2000 01 03	704	0.3+	1.7+
1999 10 05	704	0.7+	0.2-	1999 12 08	678	0.0	0.3-	2000 01 03	704	0.5+	0.2-
1999 10 05	704	0.1+	0.4-	1999 12 10	704	0.8+	0.6-	2000 01 03	704	1.5+	0.0
1999 11 13	703	0.1+	0.2+	1999 12 10	704	0.1-	1.1-	2000 01 04	106	0.1-	0.3+
1999 11 13	703	0.0	0.2+	1999 12 10	704	0.0	0.9-	2000 01 04	106	0.6+	0.5+
1999 11 13	703	0.0	0.2+	1999 12 10	704	0.3+	0.9-	2000 01 04	106	0.3-	0.4+
1999 11 13	703	0.0	0.3+	1999 12 10	704	0.3-	1.2-				
1999 12 05	699	0.6+	0.5+	1999 12 15	704	0.3+	0.6-				

1999 XQ₃₆ = 1997 FH₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	17.79785	(2000.0)	P	Q
<i>n</i>	0.28664479	ω	71.16784	+0.38355027
<i>a</i>	2.2781029	Ω	356.25497	+0.80033434
<i>e</i>	0.0928705	<i>i</i>	6.33523	+0.46081898
<i>P</i>	3.44	<i>H</i>	14.2	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1997 03 31	704	0.5+	0.5+	1999 12 05	699	0.0	0.6+	1999 12 13	703	0.1-	0.3+
1997 03 31	704	0.2+	0.2-	1999 12 07	678	0.7+	0.8-	1999 12 13	703	0.3+	0.6+
1997 04 01	704	0.4-	0.5-	1999 12 07	678	0.7-	0.6-	1999 12 13	703	0.1+	0.4+
1997 04 01	704	0.5-	0.6-	1999 12 07	703	0.5+	1.9-	1999 12 15	704	0.8-	0.4-
1999 10 05	704	0.2+	1.5-	1999 12 07	703	0.3-	0.1+	1999 12 15	704	1.0-	0.8-
1999 10 05	704	1.3+	0.2-	1999 12 07	703	0.2-	0.2+	1999 12 15	704	0.8-	0.1-
1999 10 05	704	1.1+	0.4-	1999 12 07	703	0.0	0.3+	1999 12 15	704	0.9-	1.2-
1999 10 05	704	0.9+	0.1+	1999 12 08	678	0.8+	0.4-	1999 12 15	704	0.4-	0.4-
1999 10 05	704	0.0	0.2+	1999 12 08	678	0.4-	0.3-	1999 12 31	699	0.5+	1.0+
1999 11 13	703	0.2-	0.9+	1999 12 10	704	0.1+	0.8-	1999 12 31	699	0.6+	0.8+
1999 11 13	703	0.0	0.7+	1999 12 10	704	0.3+	0.9-	1999 12 31	699	0.5+	1.5+
1999 11 13	703	0.4-	1.1+	1999 12 10	704	0.1-	0.4+	2000 01 01	106	0.7+	0.5+
1999 11 13	703	0.5-	0.8+	1999 12 10	704	0.1-	1.3-	2000 01 01	106	0.0	0.4+
1999 12 05	699	0.7-	0.9+	1999 12 10	704	0.1-	1.1-	2000 01 01	106	0.1-	0.2+
1999 12 05	699	0.1+	0.4+	1999 12 13	703	0.0	0.4+				

1999 XR₃₆ = 1979 WH

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	212.89932	(2000.0)	P	Q
<i>n</i>	0.19959062	ω	213.75298	-0.84701663
<i>a</i>	2.8998529	Ω	358.31644	-0.42704262
<i>e</i>	0.0262593	<i>i</i>	12.53116	-0.31653977
<i>P</i>	4.94	<i>H</i>	12.8	<i>G</i> 0.15 <i>U</i> 3

2000 JAN. 24

M.P.C. 37885

Residuals in seconds of arc

1979 11 22	675	0.4-	0.5+	1999 11 08	699	0.1-	0.0	1999 12 08	678	0.7-	0.1-
1979 11 24	675	0.4-	0.6+	1999 11 08	699	0.0	0.1-	1999 12 10	704	0.9+	0.6-
1999 09 04	703	0.2+	0.6+	1999 11 10	703	0.3-	0.4+	1999 12 10	704	0.6+	0.1+
1999 09 04	703	0.1+	0.2+	1999 11 10	703	0.1-	0.0	1999 12 10	704	0.3+	0.5-
1999 09 04	703	0.0	0.9+	1999 11 10	703	0.1-	0.3+	1999 12 10	704	0.2+	0.1+
1999 09 04	703	0.2-	0.2-	1999 11 10	703	0.4-	0.0	1999 12 10	704	0.3-	0.4-
1999 10 05	704	0.5+	0.8-	1999 12 05	699	0.1-	0.1+	2000 01 05	106	0.1-	0.4+
1999 10 05	704	0.3-	1.0-	1999 12 05	699	0.9+	1.5+	2000 01 05	106	0.3-	0.6+
1999 10 05	704	0.1+	0.6-	1999 12 05	699	0.9+	1.0+	2000 01 05	106	0.0	0.3-
1999 10 05	704	0.0	1.2-	1999 12 07	678	0.9-	0.2-	2000 01 07	699	0.3+	0.1-
1999 10 05	704	0.1-	0.8-	1999 12 07	678	0.1+	0.2-	2000 01 07	699	0.7-	0.3-
1999 11 08	699	0.0	0.1+	1999 12 08	678	0.4+	0.1-	2000 01 07	699	0.7-	0.3+

1999 XT₃₆ = 1997 EV₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	24.78376		(2000.0)		P		Q
<i>n</i>	0.24701285	ω	42.29154		+0.58112076		-0.81324727
<i>a</i>	2.5156855	Ω	12.28280		+0.70309412		+0.48285951
<i>e</i>	0.1175368	<i>i</i>	8.23077		+0.40982596		+0.32477004
<i>P</i>	3.99	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 08	809	1.6-	0.7+	1999 12 07	678	0.2-	1.2+	1999 12 13	703	0.1+	0.1-
1997 03 08	809	0.0	0.2-	1999 12 08	678	0.9+	0.0	1999 12 13	703	0.1-	0.1+
1997 03 08	809	1.3-	0.7+	1999 12 08	678	1.3+	0.2-	1999 12 15	704	0.8+	0.6-
1997 03 09	809	0.8+	0.5-	1999 12 10	704	0.1+	0.7-	1999 12 15	704	0.2+	0.7-
1997 03 09	809	0.9+	0.6-	1999 12 10	704	0.1-	0.5-	1999 12 15	704	0.6+	1.3-
1997 03 09	809	1.2+	0.2-	1999 12 10	704	0.4-	0.7-	1999 12 15	704	0.3-	0.5-
1999 12 05	699	0.3+	0.5+	1999 12 10	704	0.1-	0.1+	2000 01 01	106	0.5+	0.6+
1999 12 05	699	0.5+	0.5+	1999 12 10	704	0.2-	0.5-	2000 01 01	106	0.4-	0.8+
1999 12 05	699	0.5-	0.9+	1999 12 13	703	0.8-	0.2-				
1999 12 07	678	1.0-	1.0+	1999 12 13	703	0.1-	0.4+				

1999 XC₃₇ = 1998 HZ₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	64.16576		(2000.0)		P		Q
<i>n</i>	0.29863194	ω	174.73545		+0.99464313		-0.09995092
<i>a</i>	2.2167253	Ω	191.10483		+0.08914114		+0.95849482
<i>e</i>	0.2117851	<i>i</i>	7.86633		+0.05233460		+0.26701591
<i>P</i>	3.30	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.2+	0.4-	1999 11 05	704	0.4+	0.2-	1999 12 14	704	0.1-	0.6-
1998 04 21	704	(0.0	2.1-)	1999 11 05	704	0.5+	0.2-	1999 12 14	699	(0.5-	2.3+)
1998 04 21	704	0.1+	0.3-	1999 11 05	704	0.4+	0.3-	1999 12 14	704	0.5+	0.7-
1998 04 21	704	(2.2+	2.0-)	1999 11 05	704	0.4+	0.2-	1999 12 14	704	0.0	0.3-
1998 04 21	704	0.1+	0.8+	1999 11 17	703	0.2+	0.4+	1999 12 14	699	0.1+	1.6+
1998 04 22	704	0.8-	0.6-	1999 11 17	703	0.0	0.0	1999 12 14	704	0.2-	0.2-
1998 04 22	704	1.3+	0.4-	1999 11 17	703	0.1+	0.3+	1999 12 14	699	0.6+	1.4+
1998 04 22	704	1.1+	0.2-	1999 11 17	703	0.3+	0.4+	2000 01 04	106	0.2-	0.2+
1998 05 01	704	0.4-	1.5+	1999 12 04	699	0.4+	0.3+	2000 01 04	106	0.1+	0.5+
1998 05 01	704	0.6+	0.2+	1999 12 04	699	0.4+	0.7+	2000 01 04	106	0.3+	0.1+
1998 05 01	704	0.4-	0.9-	1999 12 04	699	0.0	0.5+	2000 01 07	704	1.0-	0.7-
1998 05 01	704	1.3-	0.8-	1999 12 05	704	0.2+	0.1+	2000 01 07	704	0.1-	0.8-
1998 05 01	704	0.9-	0.3-	1999 12 05	704	0.5-	0.6-	2000 01 07	704	0.4-	0.3+
1999 10 03	704	1.0-	0.2-	1999 12 05	704	0.2-	0.1-	2000 01 07	704	0.8-	1.2+
1999 10 03	704	0.5+	0.4-	1999 12 05	704	0.1+	0.7-	2000 01 11	704	0.4+	0.2-
1999 10 03	704	0.2+	0.0	1999 12 05	704	0.1+	0.5-	2000 01 11	704	0.1-	0.1-
1999 10 03	704	0.3+	0.3+	1999 12 07	678	0.3-	0.1-	2000 01 11	704	0.4+	0.6-
1999 10 03	704	0.7+	0.7-	1999 12 07	678	0.0	0.4+	2000 01 11	704	0.1+	0.0
1999 10 08	120	0.9-	0.2-	1999 12 08	678	0.9-	0.5-	2000 01 11	704	0.8+	0.4-
1999 10 08	120	0.5-	0.0	1999 12 08	678	1.1-	0.0				
1999 11 05	704	0.4-	0.8-	1999 12 14	704	0.1-	0.2-				

1999 XF₃₇ = 1990 QQ₁₆ = 1998 MD₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	98.65049		(2000.0)		P		Q
<i>n</i>	0.23371714	ω	175.05950		+0.86397380		+0.49086632
<i>a</i>	2.6102113	Ω	154.56029		-0.47047595		+0.86637768
<i>e</i>	0.1280425	<i>i</i>	15.14767		-0.17944818		+0.09186928
<i>P</i>	4.22	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 08 26	809	0.0	0.6+	1999 11 07	704	0.9+	1.3-	1999 12 09	703	0.3-	0.5+
1990 08 26	809	0.5+	0.1-	1999 11 07	704	1.0+	0.7-	1999 12 16	704	1.2-	0.5-
1990 08 26	809	0.6-	0.1+	1999 11 07	704	0.4+	0.7-	1999 12 16	704	0.4-	0.4-
1998 06 19	704	0.5-	0.3+	1999 11 07	704	0.4+	0.9-	1999 12 16	704	0.8-	0.2-
1998 06 19	704	0.8-	0.0	1999 12 05	699	0.0	0.8+	1999 12 16	704	0.5-	0.3-
1998 06 19	704	0.1+	0.1+	1999 12 05	699	0.1+	0.7+	1999 12 16	704	0.4-	0.5-
1998 06 19	704	0.8-	0.9-	1999 12 05	699	0.1+	0.5+	2000 01 05	106	0.2-	0.4+
1998 06 25	704	0.4+	0.2-	1999 12 07	678	0.2-	0.1+	2000 01 05	106	0.2+	0.1+
1998 06 25	704	1.1+	0.0	1999 12 07	678	0.4-	0.0	2000 01 05	106	0.0	0.3-
1998 06 25	704	0.1+	0.8-	1999 12 08	678	0.7+	0.3+	2000 01 09	704	0.9-	0.7-
1998 06 25	704	0.1+	0.3-	1999 12 08	678	0.5-	0.5+	2000 01 09	704	0.8-	0.7-
1998 06 25	704	0.2+	1.0+	1999 12 09	699	0.4+	0.2+	2000 01 09	704	0.7-	0.0
1999 11 02	703	0.4-	0.1+	1999 12 09	699	0.5+	0.3+	2000 01 09	704	0.9-	0.0
1999 11 02	703	0.5+	0.1+	1999 12 09	699	0.4+	0.2+	2000 01 09	704	0.6-	0.4+
1999 11 02	703	0.4+	0.3+	1999 12 09	703	0.2+	0.5+	2000 01 10	699	0.5+	0.5-
1999 11 02	703	0.3+	0.2+	1999 12 09	703	0.0	0.3+	2000 01 10	699	0.7+	0.1-
1999 11 07	704	0.8+	0.2-	1999 12 09	703	0.5+	0.3+	2000 01 10	699	0.2+	0.1+

1999 XG₃₇ = 1990 TM₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	40.90231		(2000.0)		P		Q
<i>n</i>	0.22283193	ω	214.40632		+0.83291690		-0.55338757
<i>a</i>	2.6945387	Ω	179.17031		+0.54576240		+0.82038902
<i>e</i>	0.1960681	<i>i</i>	13.61775		+0.09161243		+0.14395847
<i>P</i>	4.42	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 09	413	(1.5-	5.1-)	1999 12 05	699	1.1+	1.5+	1999 12 16	699	0.4+	0.2-
1990 10 09	413	1.1+	0.5+	1999 12 05	699	0.5+	1.2+	1999 12 16	699	0.4+	0.9+
1990 10 20	413	1.0-	1.1-	1999 12 05	699	0.6+	0.7+	2000 01 08	704	0.3-	1.2-
1990 10 20	413	(0.9+	2.5+)	1999 12 07	678	0.9-	0.0	2000 01 08	704	0.8-	0.6+
1999 11 13	703	0.5+	0.2+	1999 12 07	678	0.1+	0.4-	2000 01 08	704	0.6-	0.6-
1999 11 13	703	0.1-	0.1+	1999 12 08	678	0.7-	0.2-	2000 01 10	699	0.0	0.3-
1999 11 13	703	0.3+	0.8+	1999 12 08	678	0.6-	0.6-	2000 01 10	699	0.5+	0.6+
1999 11 13	703	0.1+	0.7+	1999 12 16	704	0.3-	0.8-	2000 01 10	699	0.2-	0.8+
1999 12 03	704	0.4-	0.7-	1999 12 16	704	0.3-	0.1-	2000 01 11	704	0.5+	0.0
1999 12 03	704	0.1-	0.8-	1999 12 16	704	0.3+	0.1-	2000 01 11	704	0.7+	0.0
1999 12 03	704	0.1+	0.9-	1999 12 16	704	0.4-	0.1+	2000 01 11	704	0.2+	0.2+
1999 12 03	704	0.5-	0.3-	1999 12 16	704	0.3-	0.6-	2000 01 11	704	0.3+	0.5-
1999 12 03	704	0.8-	0.1+	1999 12 16	699	0.8+	0.3+				

1999 XH₃₇ = 1990 SP₁₂ = 1998 QQ₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	311.67467		(2000.0)		P		Q
<i>n</i>	0.23642510	ω	334.51015		-0.75832843		-0.64826617
<i>a</i>	2.5902419	Ω	164.47120		+0.63327764		-0.75753172
<i>e</i>	0.0339522	<i>i</i>	14.81934		+0.15458787		-0.07678976
<i>P</i>	4.17	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 09 18	809	0.3-	0.3+	1998 08 23	704	0.8-	0.2-	1999 12 08	678	(3.2-	1.7-)
1990 09 18	809	0.1+	0.3+	1999 11 06	699	0.2-	0.1-	1999 12 08	678	0.1+	0.9+
1990 09 18	809	0.4+	0.3+	1999 11 06	699	0.5-	0.5+	1999 12 16	704	1.1-	0.7-
1990 09 21	809	0.4-	0.2-	1999 11 06	699	0.1-	0.8+	1999 12 16	704	0.6-	0.5-
1990 09 21	809	0.1+	0.3-	1999 12 03	704	0.5+	0.2-	1999 12 16	704	0.8-	1.0-
1990 09 21	809	0.1+	0.4-	1999 12 03	704	0.2-	0.1+	1999 12 16	704	1.4+	0.8-

1998 08 17	704	0.6+	0.2+	1999 12 03	704	0.3-	0.1-	2000 01 09	704	0.3-	0.6-
1998 08 17	704	0.2-	0.1+	1999 12 03	704	0.4+	0.2-	2000 01 09	704	0.0	0.5-
1998 08 17	704	0.4-	1.0+	1999 12 03	704	0.1-	0.7-	2000 01 09	704	0.3+	1.5-
1998 08 17	704	0.1-	1.0+	1999 12 05	699	0.7+	1.8+	2000 01 09	704	0.6-	0.6-
1998 08 23	704	1.0+	0.8-	1999 12 05	699	0.4+	0.5+	2000 01 10	699	0.3-	0.0
1998 08 23	704	0.4+	0.7-	1999 12 05	699	0.3+	0.8+	2000 01 10	699	1.0+	0.3+
1998 08 23	704	0.5-	0.5-	1999 12 07	678	0.4-	0.6+	2000 01 10	699	0.3+	0.8+
1998 08 23	704	0.1+	0.6-	1999 12 07	678	0.1+	0.1+				

1999 XP₃₇ = 1994 WO₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	336.37640	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21532223	ω	272.07817	-0.70836302	-0.69906074	
<i>a</i>	2.7568309	Ω	223.59033	+0.69074972	-0.65808283	
<i>e</i>	0.0992482	<i>i</i>	8.14205	+0.14521243	-0.27971607	
<i>P</i>	4.58	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1994 11 29	691	0.2+	0.2-	1999 11 17	704	0.2+	0.5-	1999 12 14	704	0.7+	0.0
1994 11 29	691	0.3-	0.3-	1999 11 17	704	0.4+	0.2+	2000 01 05	704	0.9-	0.5+
1994 11 29	691	0.4+	0.0	1999 12 06	704	0.2+	0.5-	2000 01 05	704	0.2-	0.2+
1994 12 03	691	0.2-	0.3+	1999 12 06	704	0.2-	1.3-	2000 01 05	704	0.2-	0.1-
1994 12 03	691	0.2-	0.2+	1999 12 06	704	0.1+	0.6-	2000 01 05	704	0.5-	1.2-
1994 12 03	691	0.0	0.2+	1999 12 06	704	0.1-	0.3-	2000 01 05	704	0.4-	0.4-
1998 08 19	704	0.7+	0.3-	1999 12 06	704	0.1-	0.4-	2000 01 07	704	0.3-	0.6-
1998 08 19	704	1.6-	1.8+	1999 12 07	106	0.1+	0.4+	2000 01 07	704	0.2-	0.2-
1998 08 19	704	0.4+	0.4-	1999 12 07	106	1.6-	0.1+	2000 01 07	704	0.1-	0.4+
1998 08 19	704	(1.8-	2.0+)	1999 12 08	106	0.7+	0.5+	2000 01 07	704	0.1-	0.4+
1998 08 19	704	0.4-	0.4-	1999 12 08	106	0.5-	0.6+	2000 01 07	704	0.6+	0.7+
1998 08 24	704	0.6+	0.9+	1999 12 14	106	0.1+	0.0	2000 01 11	704	0.1+	0.2-
1998 08 24	704	0.3+	0.5-	1999 12 14	106	0.8-	0.1+	2000 01 11	704	0.1-	0.3+
1998 08 24	704	0.1+	1.3-	1999 12 14	704	0.1+	0.4+	2000 01 11	704	0.6+	0.4-
1998 08 24	704	(5.1-	2.0-)	1999 12 14	704	0.3+	0.3-	2000 01 11	704	0.7+	0.2+
1999 11 17	704	0.6+	0.8+	1999 12 14	704	0.0	0.5+	2000 01 11	704	0.1+	0.2+
1999 11 17	704	0.9+	1.1+	1999 12 14	704	0.1+	0.4-				

1999 XC₃₈ = 1998 MA₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	59.20697	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.24617666	ω	300.27917	+0.96279036	-0.17278001	
<i>a</i>	2.5213790	Ω	70.35186	+0.25162246	+0.85364572	
<i>e</i>	0.2899249	<i>i</i>	12.74719	-0.09859444	+0.49136143	
<i>P</i>	4.00	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 06 20	691	0.1-	0.5+	1999 11 16	704	0.1-	0.0	1999 12 07	143	1.0+	1.2+
1998 06 20	691	0.4-	0.1+	1999 11 16	704	0.4+	0.5-	1999 12 10	704	0.0	0.8-
1998 06 20	691	0.2-	0.1+	1999 11 16	704	0.6+	0.9-	1999 12 10	704	1.2+	0.2+
1998 06 26	691	0.1+	0.3+	1999 11 16	704	0.9+	0.1+	1999 12 10	704	0.0	1.0-
1998 06 26	691	0.1+	0.0	1999 12 06	143	0.4-	0.1+	1999 12 10	704	0.6+	0.5-
1998 06 26	691	0.0	0.2-	1999 12 06	143	0.1-	1.3+	1999 12 15	704	0.5-	0.6-
1998 07 01	691	(0.0	4.9-)	1999 12 07	704	0.2-	0.6+	1999 12 15	704	0.5+	1.3-
1998 07 01	691	0.9+	0.4-	1999 12 07	704	0.4-	0.2+	1999 12 15	704	0.8-	0.8-
1998 07 01	691	(2.9+	2.6-)	1999 12 07	704	0.0	0.2+	1999 12 15	704	1.0-	0.6-
1999 11 03	704	0.8-	0.5+	1999 12 07	704	0.0	0.4+	1999 12 15	704	1.3-	1.1-
1999 11 03	704	1.0-	0.6+	1999 12 07	704	0.2-	0.0	2000 01 03	704	0.5-	0.1-
1999 11 03	704	0.4+	0.1-	1999 12 07	143	0.3+	1.0+	2000 01 03	704	0.1-	0.2+
1999 11 16	704	0.3-	0.5+	1999 12 07	143	0.4+	0.5+	2000 01 03	704	1.1+	1.6+

1999 XJ₃₈ = 1991 GB = 1998 MJ₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	165.99966	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.29686121	ω	76.80751	+0.26741909	+0.96347286	
<i>a</i>	2.2255315	Ω	208.71572	-0.89526177	+0.24290821	
<i>e</i>	0.1410729	<i>i</i>	1.71626	-0.35636132	+0.11276364	
<i>P</i>	3.32	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1991 04 03	372	0.6-	0.5-	1999 12 03	376	0.7+	1.0+	1999 12 08	704	0.3+	0.6-
1991 04 03	372	0.4+	0.1+	1999 12 03	376	0.5+	1.4+	1999 12 08	704	0.0	0.1-
1998 06 24	704	0.4-	0.3+	1999 12 07	704	1.1+	0.7-	1999 12 11	376	0.5-	0.2-
1998 06 24	704	0.2-	0.6+	1999 12 07	704	0.5+	0.7-	1999 12 11	376	0.3+	0.1-
1998 06 24	704	0.3+	0.4+	1999 12 07	704	0.1+	0.9-	2000 01 05	704	0.4-	0.9+
1998 06 24	704	0.6-	0.3-	1999 12 07	704	0.2+	0.9-	2000 01 05	704	0.0	0.4+
1998 06 24	704	0.4+	0.7-	1999 12 07	704	0.2-	0.6-	2000 01 05	704	0.0	0.1-
1998 06 26	704	0.9+	0.3-	1999 12 07	376	0.5+	0.3-	2000 01 05	704	0.1-	0.6+
1998 06 26	704	0.7-	1.0+	1999 12 07	376	0.7-	0.1+	2000 01 05	704	0.7-	0.7+
1998 06 26	704	0.8+	0.3-	1999 12 08	704	0.2+	0.6-	2000 01 06	704	1.2-	0.1+
1998 06 26	704	1.2+	1.7-	1999 12 08	704	0.3-	0.4-	2000 01 06	704	0.2-	1.1+
1998 06 26	704	1.5-	0.6+	1999 12 08	704	0.1+	0.9-	2000 01 06	704	0.5-	0.1-

1999 XD₃₉ = 1993 TH₁₅ = 1996 FY₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	356.04171	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17735446	ω	254.33982	+0.00966212	-0.99971958	
<i>a</i>	3.1374343	Ω	195.15597	+0.94619809	+0.01613393	
<i>e</i>	0.1254456	<i>i</i>	4.74331	+0.32344367	-0.01733373	
<i>P</i>	5.56	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1993 10 09	809	0.4-	1.0+	1999 10 30	703	0.4+	0.1+	1999 12 06	704	0.3-	0.9-
1993 10 09	809	0.0	0.6+	1999 10 30	703	0.1-	0.4+	1999 12 06	704	0.3-	0.7-
1993 10 09	809	0.5-	0.8+	1999 10 30	703	0.3+	0.4+	1999 12 08	704	0.2-	0.8-
1993 10 10	809	(0.0	2.9-)	1999 11 04	704	0.5+	0.4-	1999 12 08	704	0.1+	0.4-
1993 10 10	809	(0.0	2.6-)	1999 11 04	704	0.7+	0.3-	1999 12 08	704	0.0	1.0-
1993 10 10	809	(1.9-	3.3-)	1999 11 04	704	0.4+	0.1+	1999 12 08	704	0.5-	1.1-
1993 10 11	809	0.2+	0.6-	1999 11 04	704	0.2-	1.3+	1999 12 08	704	0.5-	1.4-
1993 10 11	809	0.2+	0.5-	1999 11 04	704	0.9+	0.5+	1999 12 14	704	0.5-	0.6+
1993 10 11	809	0.2+	0.2+	1999 11 15	704	0.3+	0.3+	1999 12 14	704	0.6-	0.5+
1996 03 24	809(96.0-	29.8+)		1999 11 15	704	0.1-	0.0	1999 12 14	704	0.5-	0.3-
1996 03 24	809(97.2-	30.9+)		1999 11 15	704	0.0	0.2-	1999 12 14	704	0.5-	0.3+
1996 03 24	809(97.6-	31.0+)		1999 11 15	704	0.2+	0.3-	1999 12 14	704	0.3-	0.5-
1996 03 26	809(97.3-	32.8+)		1999 11 15	704	0.5-	0.6-	1999 12 30	699	0.3+	1.6+
1996 03 26	809(98.4-	32.1+)		1999 11 17	704	0.4+	0.1-	1999 12 30	699	1.0-	1.3+
1996 03 26	809(98.6-	31.4+)		1999 11 17	704	0.7+	0.3-	2000 01 01	106	2.0+	1.4+
1998 08 17	704	0.7-	1.2-	1999 11 17	704	0.2+	0.2+	2000 01 01	106	0.0	0.4+
1998 08 17	704	1.0-	0.3+	1999 11 17	704	0.2+	0.4+	2000 01 05	704	0.5+	0.7+
1998 08 17	704	(3.1+	1.5+)	1999 11 17	704	0.4-	0.1+	2000 01 05	704	0.1+	1.8+
1998 08 17	704	0.5+	0.7+	1999 12 06	704	0.3-	0.3-	2000 01 05	704	1.1-	0.7-
1998 08 17	704	1.3+	0.3-	1999 12 06	704	0.1-	1.8-	2000 01 05	704	0.8-	0.5+
1999 10 30	703	1.0+	0.2-	1999 12 06	704	0.4-	1.0-				

1999 XG₃₉ = 3001 P-L = 1986 WE₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	50.69116	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.22977889	ω	159.98774	+0.88961032	-0.43355631	
<i>a</i>	2.6399516	Ω	226.56565	+0.38748625	+0.88291308	
<i>e</i>	0.1952434	<i>i</i>	11.40593	+0.24175995	+0.18025932	
<i>P</i>	4.29	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1960 09 24	675	1.3+	0.2-	1999 11 04	704	0.6-	0.3-	1999 12 08	704	0.0	0.2-
1960 09 24	675	0.2-	0.4+	1999 11 04	704	0.4+	0.4+	1999 12 08	704	0.1+	0.2+
1960 09 25	675	0.4+	0.1-	1999 11 17	704	0.3-	0.6+	1999 12 13	699	0.2+	0.6+

2000 JAN. 24

M.P.C. 37887

1960 09 26	675	0.5−	1.0+	1999 11 17	704	0.1+	0.8−	1999 12 13	699	0.4+	0.5+
1960 09 26	675	0.2+	0.2−	1999 11 17	704	0.5−	0.2+	1999 12 13	699	0.1+	0.8+
1960 09 27	675	0.4+	1.1−	1999 11 17	704	0.3−	0.8−	1999 12 14	704	0.5−	0.1+
1960 09 29	675	1.7−	0.7+	1999 11 17	704	0.1+	1.7+	1999 12 14	704	0.2−	0.2+
1986 11 30	381	(2.1+	2.6+)	1999 12 06	704	0.0	0.5−	1999 12 14	704	0.1−	0.2−
1986 11 30	381	0.2−	1.4−	1999 12 06	704	0.4+	0.5−	1999 12 14	704	0.5−	0.4−
1986 12 01	381	0.1−	0.5+	1999 12 06	704	0.2+	0.5−	1999 12 14	704	0.0	0.1+
1986 12 01	381	0.3+	0.8+	1999 12 06	704	0.2+	0.7−	2000 01 07	704	1.1+	0.6+
1999 11 04	704	0.3−	0.6−	1999 12 08	704	0.1−	0.2−	2000 01 07	704	0.4+	0.0
1999 11 04	704	0.3−	0.3−	1999 12 08	704	0.2+	0.1+	2000 01 07	704	0.3+	0.1−
1999 11 04	704	0.0	0.4−	1999 12 08	704	0.2+	0.2+	2000 01 07	704	0.6−	0.3+

1999 XK₃₉ = 1997 AL₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	66.75765		(2000.0)	P	Q	
<i>n</i>	0.29212734	ω	222.35354	+0.94074966	−0.33834840	
<i>a</i>	2.2495099	Ω	157.39284	+0.32474189	+0.87972651	
<i>e</i>	0.1213356	<i>i</i>	3.36939	+0.09763600	+0.33406831	
<i>P</i>	3.37	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 01 11	691	0.1+	0.2−	1999 11 04	704	0.3−	0.2−	2000 01 05	704	1.0+	0.3−
1997 01 11	691	0.3+	0.3−	1999 12 06	704	0.6−	0.6+	2000 01 05	704	1.1−	0.5−
1997 01 11	691	0.3+	0.2−	1999 12 06	704	0.3−	0.6+	2000 01 05	704	0.7+	0.3+
1997 01 17	691	0.3+	0.2−	1999 12 06	704	0.0	0.5−	2000 01 05	704	0.5+	1.0−
1997 01 17	691	0.3+	0.1−	1999 12 06	704	1.3−	0.6−	2000 01 05	704	0.4+	0.1−
1997 01 17	691	0.1+	0.0	1999 12 06	704	0.0	0.3+	2000 01 06	704	0.3+	0.5−
1997 02 11	327	0.2−	0.2+	1999 12 08	704	0.1+	0.3+	2000 01 06	704	0.3+	0.5−
1997 02 11	327	0.9−	0.3+	1999 12 08	704	0.0	1.1+	2000 01 06	704	0.1+	0.2−
1997 02 11	327	0.1−	0.3+	1999 12 08	704	1.6+	0.6+	2000 01 06	704	0.4−	0.5−
1997 02 11	327	0.1−	0.9+	1999 12 30	699	0.2+	0.2+	2000 01 06	704	0.6−	0.5−
1999 11 04	704	0.3+	1.3+	1999 12 30	699	0.4+	0.5−				
1999 11 04	704	0.2+	0.5−	1999 12 30	699	1.3−	0.4+				

1999 XL₃₉ = 1997 BM

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	332.99723		(2000.0)	P	Q	
<i>n</i>	0.27363080	ω	309.14433	−0.79351817	−0.60834315	
<i>a</i>	2.3497738	Ω	193.41021	+0.57716791	−0.74415553	
<i>e</i>	0.1963216	<i>i</i>	3.88980	+0.19288890	−0.27595498	
<i>P</i>	3.60	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 01 17	684	0.3+	0.8+	1999 11 17	704	1.3−	0.4+	1999 12 14	704	0.8−	0.3+
1997 01 17	684	0.0	0.4+	1999 11 17	704	0.5+	0.9+	1999 12 14	704	0.1+	0.6−
1997 01 17	684	0.5−	0.6−	1999 11 17	704	0.7−	0.7−	1999 12 14	704	0.7−	0.4−
1997 01 18	684	0.0	0.1+	1999 11 17	704	0.8−	0.1−	1999 12 30	699	1.0−	0.1−
1997 01 18	684	0.5+	0.2+	1999 12 06	704	0.2+	0.5+	1999 12 30	699	0.4+	0.7+
1999 11 04	704	0.4+	0.2+	1999 12 06	704	0.3+	0.2+	1999 12 30	699	1.2−	0.3−
1999 11 04	704	0.7+	0.1−	1999 12 06	704	0.0	0.5+	2000 01 05	704	0.1+	0.0
1999 11 04	704	1.5+	1.0+	1999 12 06	704	0.3−	0.5+	2000 01 05	704	0.0	0.1+
1999 11 04	704	0.5−	0.7+	1999 12 06	704	0.7+	0.0	2000 01 05	704	0.0	0.5−
1999 11 04	704	0.4−	0.3+	1999 12 08	704	0.2+	0.4+	2000 01 05	704	0.4+	0.5−
1999 11 15	704	0.3−	0.5−	1999 12 08	704	0.3+	0.7+	2000 01 05	704	0.4+	0.4−
1999 11 15	704	0.1+	0.4−	1999 12 08	704	0.1+	0.0	2000 01 06	704	0.3+	0.5−
1999 11 15	704	0.1+	0.6+	1999 12 08	704	0.8+	1.0+	2000 01 06	704	0.3+	0.2−
1999 11 15	704	0.1+	0.4−	1999 12 08	704	0.2+	0.8+	2000 01 06	704	0.6+	0.4−
1999 11 15	704	0.3−	0.7−	1999 12 14	704	1.1−	0.1+	2000 01 06	704	0.3+	0.5−
1999 11 17	704	1.0+	1.8−	1999 12 14	704	0.4−	0.2+	2000 01 06	704	0.0	1.0−

1999 XQ₃₉ = 1990 WG₁₁ = 1998 MV₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	100.03839		(2000.0)	P	Q	
<i>n</i>	0.21784537	ω	91.22553	+0.76931595	+0.61136457	
<i>a</i>	2.7355027	Ω	231.12093	−0.63863389	+0.72806009	
<i>e</i>	0.1826618	<i>i</i>	13.78059	−0.01731270	+0.31009978	
<i>P</i>	4.52	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1990 11 22	809	0.2−	1.2+	1999 11 04	704	0.9+	0.4−	1999 12 08	704	0.2−	0.7−
1990 11 22	809	0.2+	1.4+	1999 11 04	704	0.2−	0.2+	1999 12 08	704	0.3−	0.3−
1990 11 22	809	0.1+	0.6−	1999 11 04	704	0.3+	1.0−	1999 12 08	704	0.5−	0.6−
1998 06 19	704	1.4−	0.9+	1999 11 04	704	0.2−	0.7−	1999 12 08	704	0.0	0.1−
1998 06 19	704	0.6−	0.6+	1999 11 15	704	0.3+	0.2−	1999 12 13	699	0.5+	0.3+
1998 06 19	704	0.5+	1.5−	1999 11 15	704	0.2−	0.0	1999 12 13	699	0.3−	1.1+
1998 06 19	704	(2.0+	0.1+)	1999 11 15	704	0.3+	0.2−	1999 12 13	699	0.1−	0.4+
1998 06 19	704	(2.1−	2.2+)	1999 11 15	704	0.3+	0.1−	1999 12 14	704	1.1−	0.2+
1998 06 25	704	0.1−	0.0	1999 11 15	704	0.1+	0.0	1999 12 14	704	0.1+	0.1−
1998 06 25	704	0.7+	0.7−	1999 11 17	704	0.1−	0.1+	1999 12 14	704	0.6−	0.2−
1998 06 25	704	(1.0−	2.7−)	1999 11 17	704	0.1+	0.1−	1999 12 14	704	1.2−	0.3−
1998 06 25	704	1.2+	0.7+	1999 11 17	704	0.1−	0.0	1999 12 14	704	0.6−	0.1−
1998 06 25	704	0.4−	0.0	1999 11 17	704	0.9+	0.9+	2000 01 05	704	(2.4+	1.4+)
1999 10 30	703	0.2−	0.3+	1999 11 17	704	0.5+	0.4+	2000 01 05	704	0.3+	1.0+
1999 10 30	703	1.7+	0.6+	1999 12 06	704	0.4−	1.0−	2000 01 05	704	(2.3+	1.2−)
1999 10 30	703	0.4+	0.8+	1999 12 06	704	0.6−	1.1−	2000 01 05	704	0.4+	0.4−
1999 10 30	703	0.3−	0.2+	1999 12 06	704	0.6+	1.6+	2000 01 05	704	0.2−	1.0−
1999 11 04	704	0.2+	1.0−	1999 12 08	704	0.4−	0.7−				

1999 XU₃₉ = 1998 KX₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	101.41374		(2000.0)	P	Q	
<i>n</i>	0.27823789	ω	155.16593	+0.94817595	+0.31749764	
<i>a</i>	2.3237632	Ω	186.36153	−0.30716703	+0.90578246	
<i>e</i>	0.1340539	<i>i</i>	6.50579	−0.08130667	+0.28063034	
<i>P</i>	3.54	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 05 22	704	1.2−	1.7−	1998 06 19	704	1.5+	1.7+	1999 12 14	704	0.4−	0.3−
1998 05 22	704	1.4+	1.3+	1998 06 19	704	0.7−	0.3−	1999 12 14	704	1.1−	0.3−
1998 05 22	704	0.4−	0.9+	1999 11 04	704	0.4+	1.3−	1999 12 30	699	0.3−	1.3+
1998 05 22	704	1.0−	0.0	1999 11 04	704	1.6+	0.4−	1999 12 30	699	0.2−	0.9+
1998 05 22	704	0.1−	0.7−	1999 11 04	704	1.1+	1.0+	1999 12 30	699	0.8+	1.4+
1998 05 24	704	0.3+	0.4+	1999 12 06	704	0.4−	1.5−	2000 01 07	704	0.2+	0.3−
1998 05 24	704	0.7−	0.2−	1999 12 06	704	(0.7−	3.1−)	2000 01 07	704	0.3−	0.1+
1998 05 24	704	1.2−	1.6−	1999 12 06	704	(2.5−	1.1−)	2000 01 07	704	0.2−	0.7−
1998 05 24	704	(0.9−	3.0+)	1999 12 08	704	0.6+	0.2−	2000 01 07	704	0.6+	0.1+
1998 05 26	704	0.8−	0.5−	1999 12 08	704	0.8+	1.8−	2000 01 07	704	0.5+	0.9−
1998 05 26	704	(1.0+	2.5+)	1999 12 08	704	0.9+	0.7−	2000 01 11	704	(2.2+	2.0−)
1998 05 26	704	0.6+	0.5+	1999 12 08	704	0.1+	1.8+	2000 01 11	704	0.5−	0.2−
1998 05 26	704	0.0	0.3−	1999 12 08	704	0.8−	0.1+	2000 01 11	704	0.5−	0.1+
1998 06 19	704	0.9+	0.1+	1999 12 14	704	0.6−	0.3+	2000 01 11	704	0.8−	0.4−
1998 06 19	704	1.4+	1.4−	1999 12 14	704	0.3−	0.4−	2000 01 11	704	1.0−	0.6+

1999 XA₄₀ = 1998 QF₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	7.16864		(2000.0)	P	Q	
<i>n</i>	0.26640958	ω	258.20496	−0.33967196	−0.93891890	
<i>a</i>	2.3920458	Ω	211.82519	+0.89859138	−0.30660703	
<i>e</i>	0.0976845	<i>i</i>	6.01579	+0.27777057	−0.15627999	
<i>P</i>	3.70	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.8−	1.7−	1999 11 17	704	0.7+	0.5+	1999 12 14	704	0.9−	0.1−
1998 08 17	704	0.5+	0.9+	1999 12 06	704	0.1−	0.8−	1999 12 14	704	0.3+	0.2+
1998 08 17	704	0.4+	0.9−	1999 12 06	704	0.3−	0.4−	1999 12 14	704	0.6−	0.5−

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1998 08 17	704	0.7−	0.3+	1999 12 06	704	0.8−	0.5+	2000 01 07	704	0.1−	0.6−
1998 08 17	704	1.3+	0.0	1999 12 06	704	0.5−	1.4+	2000 01 07	704	0.1+	0.6−
1998 08 23	704	1.4−	1.7−	1999 12 06	704	0.1−	0.6−	2000 01 07	704	0.2+	0.1+
1998 08 23	704	0.3+	0.9+	1999 12 08	704	0.1+	0.3−	2000 01 07	704	0.8+	0.0
1998 08 23	704	0.0	0.3+	1999 12 08	704	0.2−	0.5−	2000 01 07	704	0.4−	1.2−
1998 08 23	704	0.5+	1.4+	1999 12 08	704	0.1+	0.4−	2000 01 11	704	0.0	0.1+
1999 11 17	704	0.4+	0.0	1999 12 08	704	0.1−	0.3−	2000 01 11	704	0.1−	0.2−
1999 11 17	704	0.1−	0.3+	1999 12 08	704	0.0	0.3−	2000 01 11	704	0.3+	1.3+
1999 11 17	704	1.3+	0.7+	1999 12 14	704	0.2−	0.4−	2000 01 11	704	0.1−	0.5+
1999 11 17	704	0.7+	1.3+	1999 12 14	704	0.0	0.0	2000 01 11	704	0.0	0.1+

1999 XB₄₀ = 1987 SB₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	132.47875		(2000.0)	P	Q
<i>n</i>	0.26202345	ω	139.89966	+0.86004256	+0.50991452
<i>a</i>	2.4186662	Ω	189.49084	−0.49132554	+0.81832634
<i>e</i>	0.1423863	<i>i</i>	6.16895	−0.13757182	+0.26519649
<i>P</i>	3.76	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1987 09 21	046	0.9−	0.9−	1999 12 08	704	0.0	0.5+	1999 12 14	704	0.8+	0.2+
1987 09 21	046	1.2+	1.5+	1999 12 08	704	0.1+	0.0	1999 12 14	704	0.3+	0.1−
1987 09 27	095	0.2−	0.7−	1999 12 08	704	0.2+	0.2−	2000 01 07	704	0.0	0.1+
1999 12 06	704	0.1−	0.1+	1999 12 08	704	0.2−	0.2+	2000 01 07	704	0.2−	0.1−
1999 12 06	704	0.7+	1.2+	1999 12 08	704	0.1−	0.3−	2000 01 07	704	0.3−	0.4−
1999 12 06	704	0.3−	0.3−	1999 12 14	704	0.1−	0.0	2000 01 07	704	0.0	0.4−
1999 12 06	704	0.3−	0.4−	1999 12 14	704	0.1−	0.8+	2000 01 07	704	0.1−	0.1−
1999 12 06	704	0.2−	0.4−	1999 12 14	704	0.3−	0.4−				

1999 XF₄₀ = 1993 TZ₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	235.86583		(2000.0)	P	Q
<i>n</i>	0.17308154	ω	101.66632	−0.98562144	+0.16020380
<i>a</i>	3.1888607	Ω	87.56937	−0.16825069	−0.90125257
<i>e</i>	0.0651238	<i>i</i>	3.08180	−0.01555910	−0.40258980
<i>P</i>	5.69	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1993 10 09	809	(2.3+	1.1−)	1999 10 02	703	1.6+	0.3−	1999 11 05	704	0.6+	0.8+
1993 10 09	809	0.9+	0.8−	1999 10 02	703	0.3+	0.5+	1999 11 05	704	0.1−	0.0
1993 10 11	809	0.7+	0.6−	1999 10 02	703	0.0	0.5+	1999 11 05	704	1.8+	0.5+
1993 10 11	809	0.3+	1.0−	1999 10 02	703	1.2+	0.5−	1999 12 07	704	0.6−	0.1−
1993 10 11	809	0.4−	1.2−	1999 10 30	703	1.4−	0.3+	1999 12 07	704	0.7−	0.4+
1993 10 20	809	(1.5+	2.9−)	1999 10 30	703	0.4−	0.6−	1999 12 07	704	0.4−	0.2−
1993 10 20	809	(1.1+	2.4−)	1999 10 30	703	0.5−	0.7+	1999 12 07	704	0.2−	1.0+
1993 10 20	809	(0.5+	2.1−)	1999 10 30	703	0.2−	0.6−	1999 12 07	704	0.5−	1.0+
1996 03 25	566	0.3−	0.5−	1999 11 04	704	0.4+	0.5−	1999 12 08	704	0.4+	0.8−
1996 03 25	566	0.2−	0.7−	1999 11 04	704	0.8−	0.2+	1999 12 08	704	0.5−	0.0
1996 03 25	566	0.1−	0.3−	1999 11 04	704	0.1+	1.0+	1999 12 08	704	0.4−	0.5−
1998 08 17	704	0.3+	0.6−	1999 11 04	704	0.7+	0.6−	1999 12 08	704	0.4−	0.1−
1998 08 17	704	0.4−	1.1+	1999 11 04	704	1.2−	0.0	1999 12 08	704	0.8−	0.7−
1998 08 17	704	(5.2−	2.5+)	1999 11 05	704	0.7+	0.1+				
1998 08 17	704	(2.8−	0.9+)	1999 11 05	704	0.3+	0.4+				

1999 XW₄₁ = 1995 WC₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	29.94708		(2000.0)	P	Q
<i>n</i>	0.21893633	ω	130.07936	+0.80185582	−0.59643230
<i>a</i>	2.7264079	Ω	266.56529	+0.53665116	+0.74535671
<i>e</i>	0.2935954	<i>i</i>	2.06661	+0.26274090	+0.29784541
<i>P</i>	4.50	<i>H</i>	16.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1995 11 19	691	0.1−	0.2−	1999 11 14	704	0.5−	0.2−	1999 12 07	704	0.7−	0.1−
1995 11 19	691	0.5−	0.4−	1999 11 14	704	0.5−	0.4−	1999 12 07	704	0.3−	0.7+

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1995 11 19	691	0.1−	0.0	1999 11 14	704	0.5−	0.1+	1999 12 07	704	0.1−	0.8−
1995 11 29	691	0.2+	0.2+	1999 11 14	704	0.1−	0.3−	1999 12 07	704	0.1−	0.3−
1995 11 29	691	0.1+	0.0	1999 11 14	704	1.1−	0.2−	1999 12 08	704	0.5+	0.3+
1995 11 29	691	0.2+	0.0	1999 11 16	704	0.2+	1.1−	1999 12 08	704	0.3+	0.5+
1999 10 29	703	0.4+	0.7+	1999 11 16	704	0.4−	0.5−	1999 12 08	704	0.1+	0.2−
1999 10 29	703	0.3+	0.5−	1999 11 16	704	0.2+	0.1−	1999 12 08	704	0.9+	0.5−
1999 10 29	703	1.2−	0.5+	1999 11 16	704	0.3−	0.2+	1999 12 08	704	0.6+	0.1−
1999 10 29	703	0.0	0.4+	1999 11 16	704	0.1−	0.0	1999 12 12	703	0.6−	2.0+
1999 11 03	704	0.4+	0.5−	1999 12 04	703	0.0	1.2+	1999 12 12	703	0.2+	0.0
1999 11 03	704	0.9+	0.2−	1999 12 04	703	0.4−	1.9−	1999 12 12	703	0.5+	0.0
1999 11 03	704	0.5+	0.3−	1999 12 04	703	0.1+	0.7+	1999 12 12	703	0.5−	0.2−
1999 11 03	704	0.6+	0.2−	1999 12 04	703	0.1−	0.7+				
1999 11 03	704	0.7+	0.6+	1999 12 07	704	0.1+	0.3+				

1999 XY₄₁ = 1988 RG₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	116.26193		(2000.0)	P	Q
<i>n</i>	0.19393423	ω	314.02212	+0.54979579	+0.83529715
<i>a</i>	2.9559681	Ω	349.33046	−0.76355788	+0.50169868
<i>e</i>	0.1026999	<i>i</i>	0.55830	−0.33867972	+0.22489353
<i>P</i>	5.08	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1988 09 06	809	0.9−	0.5−	1988 09 12	809	2.1+	0.5+	1999 11 12	704	0.0	0.3−
1988 09 06	809	0.5−	0.5−	1988 09 16	809	1.1−	0.1−	1999 12 07	704	0.2−	0.1+
1988 09 06	809	0.0	0.5−	1988 09 16	809	1.1−	0.2−	1999 12 07	704	0.1−	0.0
1988 09 08	809	0.9−	0.6−	1988 09 16	809	1.1−	0.2−	1999 12 07	704	0.1+	0.6+
1988 09 08	809	0.7−	0.3−	1999 11 09	704	0.2+	0.2−	1999 12 07	704	0.1+	0.3−
1988 09 08	809	0.5−	0.2−	1999 11 09	704	0.0	0.2−	1999 12 07	704	0.4+	0.5+
1988 09 09	809	0.6+	0.6+	1999 11 09	704	0.1+	0.1−	1999 12 08	704	0.8−	0.1−
1988 09 09	809	0.6+	0.7+	1999 11 09	704	0.3+	0.4−	1999 12 08	704	0.1−	0.5+
1988 09 09	809	0.5+	0.4+	1999 11 09	704	0.2+	0.1+	1999 12 08	704	0.3+	0.4−
1988 09 10	675	0.6−	0.5−	1999 11 12	704	0.1−	0.2+	1999 12 08	704	0.2−	0.6+
1988 09 10	675	0.7−	0.1+	1999 11 12	704	0.2+	0.4−	1999 12 08	704	0.5−	0.3+
1988 09 12	809	2.1+	0.7+	1999 11 12	704	0.2−	0.1−				
1988 09 12	809	2.0+	0.8+	1999 11 12	704	0.2+	0.6−				

1999 XZ₄₁ = 1978 WQ₁₈ = 1982 UV₇

Id. S. Nakano, G. V. Williams

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	41.18931		(2000.0)	P	Q
<i>n</i>	0.23413393	ω	150.74740	+0.84752840	−0.49600010
<i>a</i>	2.6071127	Ω	240.19363	+0.43475906	+0.85292815
<i>e</i>	0.0967093	<i>i</i>	12.57328	+0.30443420	+0.16278043
<i>P</i>	4.21	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1978 11 30	675	0.2−	1.0−	1999 11 14	704	0.6+	0.5−	1999 12 08	704	0.1+	0.1+
1978 12 01	675	0.3+	1.2−	1999 11 14	704	0.3+	0.2−	1999 12 12	703	0.7−	0.0
1982 10 21	095	0.0	0.6−	1999 11 14	704	0.5+	0.3−	1999 12 12	703	0.3−	0.2+
1999 11 03	704	0.6+	0.7+	1999 11 16	704	0.5+	0.6−	1999 12 12	703	0.0	0.3+
1999 11 03	704	0.7+	0.2−	1999 11 16	704	0.5+	0.6−	1999 12 12	703	0.3−	0.1+
1999 11 03	704	0.7+	0.1+	1999 11 16	704	0.2+	0.6−	1999 12 18	691	0.7−	0.3−
1999 11 03	704	0.8+	0.2+	1999 11 16	704	0.2+	0.4−	1999 12 18	691	0.7−	0.3−
1999 11 03	704	0.2+	0.2+	1999 11 16	704	0.2+	0.2−	1999 12 18	691	1.0−	0.4−
1999 11 04	703	0.3−	0.2+	1999 12 04	703	0.0	0.1−	2000 01 04	106	0.1−	0.3+
1999 11 04	703	0.5−	0.4+	1999 12 04	703	0.3−	0.0	2000 01 04	106	0.4−	0.3−
1999 11 04	703	0.6−	0.5+	1999 12 04	703	0.3−	0.4+	2000 01 04	106	0.1−	0.4−
1999 11 04	703	0.5−	0.2+	1999 12 04	703	0.2−	0.1+	2000 01 05	704	0.3−	0.0
1999 11 09	703	0.5−	0.6+	1999 12 07	704	0.3+	0.1+	2000 01 05	704	0.7+	0.9+
1999 11 09	703	0.4−	0.3+	1999 12 07	704	0.3+	0.0	2000 01 05	704	0.5+	0.7+
1999 11 09	703	0.7−	0.6+	1999 12 07	704	0.1−	0.1+	2000 01 05	704	0.3+	1.2+
1999 11 09	703	0.3−	0.6+	1999 12 07	704	0.2+	0.2−	2000 01 05	704	0.6+	1.1−
1999 11 12	699	0.2+	0.2+	1999 12 07	704	0.1−	0.0	2000 01 06	704	1.8−	0.1+
1999 11 12	699	0.2+	0.5+	1999 12 08	704	0.1−	0.1+	2000 01 06	704	0.2+	0.3+
1999 11 12	699	0.2+	0.4+	1999 12 08	704	0.0	0.2−	2000 01 06	704	0.5+	0.1−

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1999 11 14 704 0.3+ 0.6- 1999 12 08 704 0.1- 0.0
 1999 11 14 704 0.2+ 0.5- 1999 12 08 704 0.1+ 0.0

1999 XD₄₂ = 1991 GJ₁₁

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	130.46842	<i>P</i>		<i>Q</i>	
<i>n</i>	0.17346891	ω	242.69022	+0.27202065	+0.95822891
<i>a</i>	3.18411116	Ω	43.39620	-0.83120170	+0.28022391
<i>e</i>	0.1337299	<i>i</i>	7.38671	-0.48487987	+0.05720069
<i>P</i>	5.68	<i>H</i>	13.4	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1991 04 11	033	0.5+	0.5-	1999 11 16	704	0.1+	0.0	1999 12 04	703	0.0	0.4+
1991 04 11	033	0.7-	0.3-	1999 11 16	704	0.4+	0.2-	1999 12 07	704	0.3-	0.3-
1991 04 12	033	0.1+	0.8+	1999 11 17	704	0.9+	0.0	1999 12 07	704	0.5-	0.1-
1999 10 22	704	0.3-	0.6-	1999 11 17	704	0.7+	0.4-	1999 12 07	704	1.0-	0.3-
1999 10 22	704	0.0	0.5+	1999 11 17	704	0.6-	0.4+	1999 12 07	704	0.7-	0.9+
1999 10 22	704	0.6-	0.2-	1999 11 17	704	0.5-	0.6+	1999 12 07	704	0.3-	0.1+
1999 10 22	704	0.2-	0.7+	1999 11 17	704	1.0+	0.4+	1999 12 08	704	0.7-	0.1+
1999 11 14	704	0.4-	0.5-	1999 11 17	704	0.9+	1.0-	1999 12 08	704	1.1+	0.0
1999 11 14	704	0.4-	0.2-	1999 11 17	704	0.2-	0.4+	1999 12 08	704	0.9+	0.4+
1999 11 14	704	0.4-	0.2+	1999 11 17	704	0.3+	0.1+	1999 12 08	704	0.3+	0.8+
1999 11 14	704	0.6-	0.9-	1999 11 17	704	0.3+	0.2+	1999 12 12	703	0.5+	0.5-
1999 11 14	704	0.1-	0.5-	1999 11 17	704	0.6-	0.7-	1999 12 12	703	0.2-	0.3+
1999 11 16	704	0.0	0.1+	1999 12 04	703	0.5+	0.4+	1999 12 12	703	0.1+	0.4-
1999 11 16	704	0.2-	0.5-	1999 12 04	703	0.1-	0.1+	1999 12 12	703	0.1-	0.3-
1999 11 16	704	0.8+	0.3-	1999 12 04	703	0.1-	0.7+				

1999 XO₄₂ = 1996 DM₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	299.00090	<i>P</i>		<i>Q</i>	
<i>n</i>	0.19586804	ω	132.13106	-0.76559820	-0.64330959
<i>a</i>	2.9364797	Ω	7.83213	+0.58242753	-0.69542458
<i>e</i>	0.0507794	<i>i</i>	1.46642	+0.27319876	-0.32021464
<i>P</i>	5.03	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1996 02 15	691	1.0-	0.0	1999 11 03	704	0.4+	0.4-	1999 12 04	703	0.5+	0.2-
1996 02 15	691	1.0-	0.0	1999 11 03	704	0.1+	0.0	1999 12 04	703	0.4-	0.3+
1996 02 15	691	0.8-	0.0	1999 11 12	699	1.5-	0.1+	1999 12 04	703	0.7+	0.4-
1996 02 16	566	1.8+	0.1+	1999 11 12	699	0.7-	1.0+	1999 12 07	704	0.1-	0.1-
1996 02 16	566	0.9+	0.0	1999 11 12	699	0.5-	0.4-	1999 12 07	704	0.6+	0.2+
1996 02 16	566	1.1+	0.1+	1999 11 14	704	0.1+	0.2-	1999 12 07	704	1.6-	1.4+
1996 02 24	566	0.8-	0.6-	1999 11 14	704	0.3-	0.7-	1999 12 07	704	0.1-	0.1-
1996 02 24	566	0.5-	0.1-	1999 11 14	704	0.5+	0.5-	1999 12 07	704	0.3+	0.5-
1998 08 17	704	0.4-	0.6+	1999 11 14	704	0.2+	0.7-	1999 12 08	704	0.1+	0.4-
1998 08 17	704	0.0	1.4-	1999 11 14	704	0.1+	0.8-	1999 12 08	704	0.4-	0.1-
1998 08 17	704	1.4+	0.5-	1999 11 16	704	0.2-	0.5-	1999 12 08	704	0.0	0.4-
1998 08 17	704	0.9-	1.1+	1999 11 16	704	0.6+	0.2-	1999 12 08	704	0.1+	0.1+
1999 10 06	704	1.3+	0.2-	1999 11 16	704	0.2+	0.3-	1999 12 08	704	0.0	0.6+
1999 10 06	704	0.0	0.9+	1999 11 16	704	0.3+	0.6-	1999 12 12	703	0.1-	0.4-
1999 10 06	704	0.6-	0.1-	1999 11 16	704	0.2-	0.2-	1999 12 12	703	0.0	0.7+
1999 10 06	704	0.2-	0.0	1999 12 02	699	0.3-	0.8+	1999 12 12	703	2.0-	1.5+
1999 11 03	704	0.0	0.3-	1999 12 02	699	1.0+	1.2+	1999 12 12	703	0.5-	0.1+
1999 11 03	704	0.1+	0.1+	1999 12 02	699	1.3+	0.1-				
1999 11 03	704	0.3+	0.5-	1999 12 04	703	0.6+	0.4+				

1999 XP₄₂ = 1997 CS₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	185.53214	<i>P</i>		<i>Q</i>	
<i>n</i>	0.24195575	ω	257.25238	-0.37406472	+0.92739331
<i>a</i>	2.5506180	Ω	350.77786	-0.84050720	-0.34090461
<i>e</i>	0.1500832	<i>i</i>	1.48466	-0.39194799	-0.15403150
<i>P</i>	4.07	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 02 01	691	0.2-	0.1-	1999 11 14	704	0.8-	0.4-	1999 11 16	704	0.4-	0.3-
1997 02 01	691	0.5+	0.1-	1999 11 14	704	0.4-	1.0+	1999 11 16	704	1.2+	0.1+
1997 02 01	691	0.4+	0.2-	1999 11 14	704	0.0	0.4+	1999 12 07	704	0.8-	0.4+
1997 02 06	691	0.3-	0.2+	1999 11 15	704	0.1-	0.4-	1999 12 07	704	0.2+	0.4-
1997 02 06	691	0.3-	0.3+	1999 11 15	704	0.3-	0.1-	1999 12 07	704	0.7+	1.3+
1999 10 06	704	(0.6-	2.7-)	1999 11 15	704	0.3-	0.1-	1999 12 08	704	1.1+	0.4-
1999 10 06	704	0.3+	0.0	1999 11 15	704	0.1+	0.7+	1999 12 08	704	0.1+	0.2-
1999 10 06	704	0.7-	0.1-	1999 11 15	704	0.1+	0.1-	1999 12 08	704	1.2-	1.0-
1999 11 14	704	0.3+	0.2-	1999 11 16	704	0.4+	0.6+				
1999 11 14	704	0.1-	0.2+	1999 11 16	704	0.6+	0.9-				

1999 XV₄₂ = 1996 AG₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	53.47726	<i>P</i>		<i>Q</i>	
<i>n</i>	0.24626196	ω	134.71002	+0.97493346	-0.22067135
<i>a</i>	2.5207968	Ω	238.05815	+0.19348891	+0.90398218
<i>e</i>	0.1792255	<i>i</i>	1.92068	+0.10984892	+0.36622449
<i>P</i>	4.00	<i>H</i>	15.9	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 01 12	691	0.1-	0.0	1999 11 09	704	0.4+	0.5+	1999 12 07	704	0.2+	0.7-
1996 01 12	691	0.1-	0.1-	1999 11 09	704	0.5+	0.7+	1999 12 08	704	0.2-	0.8+
1996 01 12	691	0.6-	0.5-	1999 11 12	704	0.2-	0.1-	1999 12 08	704	0.6-	0.2+
1996 01 24	691	0.7+	0.3-	1999 11 12	704	0.3+	0.4-	1999 12 08	704	0.9-	0.6-
1996 01 24	691	0.1+	0.3+	1999 11 12	704	0.1+	0.7-	1999 12 08	704	0.5-	0.9+
1996 01 24	691	0.4+	0.2-	1999 11 12	704	0.3+	0.5-	1999 12 08	704	0.0	0.2+
1999 11 09	704	0.2+	0.3+	1999 12 07	704	0.5-	0.4+				
1999 11 09	704	0.2+	0.4-	1999 12 07	704	0.3+	0.1-				

1999 XF₄₃ = 1990 EE₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

		(2000.0)		Williams	
<i>M</i>	139.21427	<i>P</i>		<i>Q</i>	
<i>n</i>	0.26242730	ω	25.85522	+0.27876914	+0.95939288
<i>a</i>	2.4161842	Ω	260.35600	-0.88851261	+0.24064375
<i>e</i>	0.1662236	<i>i</i>	2.50258	-0.36446276	+0.14715941
<i>P</i>	3.76	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1990 03 02	809	0.0	1.1+	1999 10 06	704	0.1+	0.4-	1999 12 04	703	(2.5-	0.0)
1990 03 02	809	1.2+	0.5+	1999 10 06	704	0.6-	0.5-	1999 12 04	703	0.6-	1.4+
1990 03 02	809	1.3-	0.7+	1999 10 06	704	0.8-	0.1+	1999 12 04	703	1.3-	0.8+
1990 03 04	809	1.0+	1.0-	1999 11 03	704	0.3+	0.4+	1999 12 07	704	0.3-	0.2+
1990 03 04	809	0.5+	1.3-	1999 11 03	704	1.0+	0.7+	1999 12 07	704	0.1+	0.0
1990 03 04	809	1.6-	0.3-	1999 11 03	704	0.0	0.4-	1999 12 07	704	0.9+	0.7-
1998 05 24	704	0.2+	0.7-	1999 11 03	704	0.9+	0.3+	1999 12 07	704	0.1-	0.7+
1998 05 24	704	0.0	0.4-	1999 11 14	704	0.2+	0.6-	1999 12 07	704	0.4-	0.3-
1998 05 24	704	0.4+	0.2-	1999 11 14	704	0.7+	0.5-	1999 12 08	704	0.5+	0.3-
1998 05 24	704	0.3-	0.2-	1999 11 14	704	0.7+	0.6-	1999 12 08	704	0.1-	0.3-
1998 05 24	704	0.1-	0.1+	1999 11 14	704	0.4+	0.5-	1999 12 08	704	0.4-	0.3+
1998 06 03	704	0.4+	0.3+	1999 11 14	704	0.2+	0.4-	1999 12 08	704	0.8-	0.2-
1998 06 03	704	0.8-	0.2+	1999 11 16	704	0.8+	0.0	1999 12 12	703	0.3+	0.2+
1998 06 03	704	0.8-	1.8+	1999 11 16	704	0.3-	0.2+	1999 12 12	703	0.4-	0.3-
1998 06 03	704	0.6+	1.2-	1999 11 16	704	1.2-	0.4+	1999 12 12	703	0.3-	0.4+
1998 06 03	704	0.5+	0.2+	1999 11 16	704	0.2-	0.3-	1999 12 12	703	0.3-	0.7+
1999 10 06	704	0.1+	0.1-	1999 11 16	704	0.7+	0.8-				
1999 10 06	704	0.1-	0.1+	1999 12 04	703	0.3-	0.3-				

1999 XQ₄₃ = 1998 HD₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	120.19497		(2000.0)	P		Q	
<i>n</i>	0.28727463	ω	320.07852	+0.60741753	+0.79435295		
<i>a</i>	2.2747720	Ω	347.31949	−0.72059836	+0.54733348		
<i>e</i>	0.1490607	<i>i</i>	1.79590	−0.33433806	+0.26349469		
<i>P</i>	3.43	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.3+	1.4−	1999 11 12	699	1.6−	1.5+	1999 12 07	704	0.3+	0.1+
1998 04 21	704	0.7+	0.7−	1999 11 14	704	0.1+	0.4−	1999 12 07	704	0.2+	0.5−
1998 04 21	704	0.2−	0.5−	1999 11 14	704	0.3−	0.5−	1999 12 07	704	0.4−	0.6+
1998 04 21	704	0.6−	0.0	1999 11 14	704	0.2+	0.4−	1999 12 07	704	0.2−	0.1+
1998 04 21	704	0.2−	1.8+	1999 11 14	704	0.1+	0.0	1999 12 07	704	0.7+	0.4−
1998 04 22	704	0.9−	0.2+	1999 11 14	704	0.2+	0.1−	1999 12 08	704	0.5+	0.8−
1998 04 22	704	0.8+	1.3+	1999 11 16	704	0.3+	0.8−	1999 12 08	704	0.3+	0.7−
1998 04 22	704	0.2−	0.4−	1999 11 16	704	0.2+	0.4−	1999 12 08	704	0.0	0.2−
1998 04 22	704	0.4+	0.1+	1999 11 16	704	0.1+	0.4−	1999 12 08	704	0.4−	0.8−
1999 11 09	703	0.1−	0.5+	1999 11 16	704	0.8+	1.1−	1999 12 08	704	0.2+	1.7−
1999 11 09	703	0.4−	1.0+	1999 11 16	704	0.4+	0.4−	1999 12 13	703	0.8−	0.7+
1999 11 09	703	0.5−	0.7+	1999 12 05	703	0.3−	1.2+	1999 12 13	703	0.1−	0.3+
1999 11 09	703	0.4−	0.8+	1999 12 05	703	0.3+	0.7+	1999 12 13	703	0.5−	0.6+
1999 11 12	699	0.8+	0.1−	1999 12 05	703	0.0	0.5+	1999 12 13	703	0.1−	0.5−
1999 11 12	699	0.1−	0.3+	1999 12 05	703	0.1+	1.0+				

1999 XU₄₃ = 1993 FG₅₈ = 1993 HT₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.72494		(2000.0)	P		Q	
<i>n</i>	0.24038924	ω	61.47086	+0.95652357	−0.29049098		
<i>a</i>	2.5616868	Ω	315.40269	+0.25295691	+0.87072410		
<i>e</i>	0.1546260	<i>i</i>	2.12478	+0.14517390	+0.39680540		
<i>P</i>	4.10	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 03 19	809	0.9+	0.9+	1999 11 14	704	0.7−	1.2−	1999 12 07	704	0.6+	0.1−
1993 03 20	809	0.4+	0.3−	1999 11 15	012	0.0	0.4−	1999 12 07	704	0.7+	0.3−
1993 04 17	413	1.1−	0.2−	1999 11 15	012	0.6+	0.7−	1999 12 07	704	0.3−	0.1−
1999 11 03	704	0.0	0.1+	1999 11 15	012	0.1−	1.8+	1999 12 08	704	0.2+	0.4−
1999 11 03	704	0.0	0.4+	1999 11 15	012	0.2+	0.5+	1999 12 08	704	0.0	0.3−
1999 11 03	704	0.2−	0.6+	1999 11 16	704	0.0	0.1+	1999 12 08	704	0.3+	0.6−
1999 11 03	704	0.1+	0.5+	1999 11 16	704	0.1+	0.1+	1999 12 08	704	0.4+	0.4−
1999 11 03	704	0.3+	0.4+	1999 11 16	704	0.1+	0.4−	1999 12 08	704	0.5+	0.2−
1999 11 09	703	0.1−	0.8+	1999 11 16	704	0.5+	0.4−	1999 12 13	703	0.4+	0.1−
1999 11 09	703	0.2−	0.8+	1999 11 16	704	0.5+	0.3−	1999 12 13	703	0.3−	0.4+
1999 11 09	703	1.2−	0.5−	1999 12 02	699	1.0−	0.2+	1999 12 13	703	0.5+	0.4+
1999 11 09	703	1.7+	0.1+	1999 12 02	699	0.2−	0.8+	1999 12 13	703	0.2−	0.7+
1999 11 12	699	0.3−	0.5+	1999 12 02	699	0.2+	0.9+	2000 01 06	704	0.8−	0.4+
1999 11 12	699	0.3−	1.2+	1999 12 05	703	0.3−	0.3−	2000 01 06	704	0.1−	0.7−
1999 11 12	699	0.0	0.1−	1999 12 05	703	0.2−	0.0	2000 01 06	704	0.6−	0.2−
1999 11 14	704	0.2−	0.5−	1999 12 05	703	0.3−	0.4+	2000 01 06	704	0.1−	0.1+
1999 11 14	704	0.4−	1.2−	1999 12 05	703	0.5−	0.5+	2000 01 06	704	1.3+	0.4−
1999 11 14	704	0.7−	1.0−	1999 12 07	704	0.1+	0.1−				
1999 11 14	704	0.5−	1.4−	1999 12 07	704	0.5+	0.4−				

1999 XB₄₄ = 1991 HA₄ = 1993 TY₁₃ = 1993 UP₉ = 1996 GZ₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	200.86866		(2000.0)	P		Q	
<i>n</i>	0.18105500	ω	216.75575	−0.59722150	+0.80193533		
<i>a</i>	3.0945371	Ω	16.59004	−0.72278372	−0.52995682		
<i>e</i>	0.0717001	<i>i</i>	3.01948	−0.34772141	−0.27576347		
<i>P</i>	5.44	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1991 04 19	809	0.6−	0.9−	1998 08 17	704	0.3−	0.1−	1999 11 14	704	0.4−	0.3+
1991 04 19	809	1.3−	1.0−	1998 08 17	704	(4.5−	2.3+)	1999 11 16	704	1.8−	0.1−

1991 04 19	809	0.9−	0.9−	1999 10 06	704	1.3+	0.4−	1999 11 16	704	1.2−	0.7+
1993 10 09	809	(4.6+	0.2+)	1999 10 06	704	0.1+	0.0	1999 11 16	704	0.9−	0.6−
1993 10 09	809	(3.7+	0.6+)	1999 10 06	704	0.4−	0.7−	1999 11 16	704	0.2+	0.5−
1993 10 09	809	(3.1+	0.1+)	1999 11 03	704	0.6−	1.2+	1999 11 16	704	0.3−	0.6−
1993 10 11	809	(0.4−	3.9−)	1999 11 03	704	0.1−	0.7+	1999 12 07	704	0.7+	0.2−
1993 10 11	809	(1.0−	4.0−)	1999 11 03	704	0.3−	0.4−	1999 12 07	704	0.1+	0.2+
1993 10 11	809	(2.3−	4.8−)	1999 11 03	704	0.1−	0.2−	1999 12 07	704	0.6+	1.5−
1993 10 22	809	(3.8+	0.8−)	1999 11 03	704	0.1+	0.6+	1999 12 07	704	0.2−	0.7+
1993 10 22	809	1.4+	0.9−	1999 11 09	703	0.7+	0.1+	1999 12 08	704	0.9+	1.1−
1993 10 22	809	0.7+	0.5−	1999 11 09	703	0.0	0.1−	1999 12 08	704	0.8+	0.0
1996 04 10	608	0.2+	0.0	1999 11 09	703	1.4−	0.1−	1999 12 08	704	0.4−	0.8−
1996 04 10	608	0.7+	0.2−	1999 11 09	703	0.5−	1.4+	1999 12 08	704	0.1+	0.9−
1996 04 11	608	0.7+	0.3−	1999 11 14	704	0.0	1.0−	1999 12 13	703	0.7+	0.8+
1996 04 11	608	0.3+	0.2+	1999 11 14	704	0.0	0.4+	1999 12 13	703	0.3+	0.1+
1998 08 17	704	1.2+	0.0	1999 11 14	704	0.1−	0.3+	1999 12 13	703	0.2−	0.4+
1998 08 17	704	0.7−	0.1−	1999 11 14	704	0.5+	0.3−	1999 12 13	703	0.6+	0.3−

1999 XE₄₄ = 1978 WV₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	116.57095		(2000.0)	P		Q	
<i>n</i>	0.28066624	ω	38.54054	+0.64579927	+0.76052099		
<i>a</i>	2.3103402	Ω	271.79174	−0.71616892	+0.57276141		
<i>e</i>	0.1550156	<i>i</i>	3.87013	−0.26466086	+0.30586305		
<i>P</i>	3.51	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1978 11 29	675	2.2+	1.2+	1999 11 14	704	0.4−	0.3−	1999 12 07	704	0.7+	0.2+
1978 11 30	675	2.4−	0.4+	1999 11 14	704	0.2−	0.4−	1999 12 07	704	0.1+	0.7+
1998 05 22	704	0.9+	0.7−	1999 11 14	704	0.1−	0.5−	1999 12 07	704	0.2+	0.2−
1998 05 22	704	0.7−	0.8+	1999 11 16	704	0.0	0.3−	1999 12 08	704	0.5+	0.4−
1998 05 22	704	(2.3+	2.4+)	1999 11 16	704	0.8−	0.5−	1999 12 08	704	0.7+	0.2−
1998 05 22	704	1.8+	0.5−	1999 11 16	704	0.6−	0.1−	1999 12 08	704	0.9+	0.1−
1998 05 22	704	(3.9−	0.4−)	1999 11 16	704	0.4−	0.3+	1999 12 08	704	0.3−	0.9−
1998 05 24	704	1.8−	0.2+	1999 11 16	704	0.2−	0.6+	1999 12 08	704	0.2−	1.0−
1998 05 24	704	0.7−	0.7+	1999 12 05	703	0.1−	0.7+	1999 12 13	703	1.0+	0.2+
1998 05 24	704	0.3−	0.2+	1999 12 05	703	0.8+	0.7−	1999 12 13	703	0.1+	0.1+
1998 05 24	704	0.6+	1.7−	1999 12 05	703	0.1+	0.3−	1999 12 13	703	0.4+	0.4−
1999 11 14	704	0.4−	0.0	1999 12 05	703	0.1+	0.9+	1999 12 13	703	0.8−	0.6+
1999 11 14	704	0.5−	0.2−	1999 12 07	704	0.1+	0.1−				

1999 XF₄₄ = 1991 RC₃₇ = 1998 KV₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	127.86672		(2000.0)	P		Q	
<i>n</i>	0.26647770	ω	253.44911	+0.50805099	+0.85659032		
<i>a</i>	2.3916382	Ω	47.43918	−0.73618016	+0.48621228		
<i>e</i>	0.1332652	<i>i</i>	7.03468	−0.44712747	+0.17277338		
<i>P</i>	3.70	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 09 15	675	0.4−	1.2+	1999 11 03	704	0.6+	0.1+	1999 12 07	704	0.3−	0.3+
1991 09 15	675	(9.5−	0.3−)	1999 11 14	704	0.3+	0.8−	1999 12 07	704	0.3+	0.0
1998 05 22	704	0.4+	1.2−	1999 11 14	704	0.3+	0.8−	1999 12 07	704	0.8+	0.0
1998 05 22	704	0.6−	0.3+	1999 11 14	704	0.3+	0.7−	1999 12 07	704	1.3−	0.3+
1998 05 22	704	1.1+	0.7−	1999 11 14	704	0.2+	0.8−	1999 12 07	704	0.7−	0.3+
1998 05 22	704	0.5−	0.3−	1999 11 14	704	0.5+	0.6−	1999 12 08	704	0.2+	0.4−
1998 05 24	704	0.3−	0.3+	1999 11 16	704	0.5+	1.1−	1999 12 08	704	0.0	0.4−
1998 05 24	704	0.2−	1.1−	1999 11 16	704	0.6+	0.8−	1999 12 08	704	0.1+	0.1−
1998 05 24	704	0.2−	0.7+	1999 11 16	704	0.1−	0.6−	1999 12 08	704	0.3+	0.2+
1998 05 24	704	0.8−	1.7−	1999 11 16	704	0.1−	0.7−	1999 12 08	704	0.0	0.4−
1999 11 03	704	0.5+	0.4−	1999 11 16	704	0.0	0.6−	1999 12 13	703	0.8−	0.6+
1999 11 03	704	0.3+	0.7−	1999 12 02	699	0.1−	0.3−	1999 12 13	703	0.5−	0.9+
1999 11 03	704	0.1−	0.1−	1999 12 02	699	0.8−	1.2+	1999 12 13	703	0.3−	1.1+
1999 11 03	704	0.6+	0.2−	1999 12 02	699	0.1+	0.5+	1999 12 13	703	0.2−	0.6+

2000 JAN. 24

M.P.C. 37891

1999 XL₄₄ = 1992 HO₆ = 1998 OH₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20577787	ω	155.29962	-0.48052895	-0.87690051		
<i>a</i>	2.8414298	Ω	323.41719	+0.80130767	-0.43359503		
<i>e</i>	0.0354418	<i>i</i>	1.12702	+0.35636770	-0.20746287		
<i>P</i>	4.79	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 04 25	809	1.3-	0.1-	1999 11 04	703	0.3-	1.0+	1999 12 05	703	0.4-	0.8+
1992 04 25	809	0.9-	1.0-	1999 11 04	703	0.1-	0.0	1999 12 05	703	0.2-	1.2+
1992 04 25	809	1.3+	1.5-	1999 11 04	703	0.9-	0.1+	1999 12 05	703	0.2-	0.5-
1998 07 26	809	1.3+	0.4+	1999 11 04	703	0.3-	0.2+	1999 12 07	704	0.2+	0.1+
1998 07 26	809	0.3+	0.6+	1999 11 09	703	0.3-	0.6+	1999 12 07	704	0.2+	0.1+
1998 07 26	809	0.4+	0.1+	1999 11 09	703	0.4-	0.2+	1999 12 07	704	0.3+	0.8+
1998 07 27	809	0.1-	0.4+	1999 11 09	703	0.2-	0.5+	1999 12 07	704	0.2+	0.0
1998 07 27	809	0.7-	0.8-	1999 11 09	703	0.4-	0.3+	1999 12 07	704	0.2+	0.8+
1998 07 27	809	0.6-	0.0	1999 11 14	704	0.5+	0.9-	1999 12 08	704	0.2+	0.7-
1998 08 17	704	0.0	0.5-	1999 11 14	704	0.3+	1.0-	1999 12 08	704	0.3+	0.1-
1998 08 17	704	0.9-	0.7-	1999 11 14	704	0.5+	1.1-	1999 12 08	704	0.2+	1.2-
1998 08 17	704	0.5+	0.2-	1999 11 14	704	0.4+	1.4-	1999 12 08	704	0.1-	0.0
1998 08 17	704	(1.5+	2.8-)	1999 11 14	704	0.4+	1.6-	1999 12 08	704	0.6-	0.6+
1999 11 03	704	0.2-	0.8+	1999 11 16	704	0.3+	0.7-	1999 12 12	703	0.5-	0.1-
1999 11 03	704	0.5+	0.1+	1999 11 16	704	0.5+	1.1-	1999 12 12	703	0.7-	0.5+
1999 11 03	704	0.2+	0.6+	1999 11 16	704	0.3+	1.2-	1999 12 12	703	0.2-	0.4+
1999 11 03	704	0.1+	0.7+	1999 11 16	704	0.5+	1.2-	1999 12 12	703	0.5-	0.3+
1999 11 03	704	0.4+	0.7+	1999 11 16	704	0.4+	1.1-				

1999 XF₄₅ = 1998 KN₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.25891885	ω	229.83489	+0.36673577	+0.90708516		
<i>a</i>	2.4379620	Ω	62.82932	-0.76727056	+0.42051693		
<i>e</i>	0.1634820	<i>i</i>	13.43102	-0.52611858	+0.01902673		
<i>P</i>	3.81	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 22	704	0.1-	0.1-	1999 11 15	704	0.0	0.2-	1999 12 04	703	0.4+	0.6+
1998 05 22	704	0.2-	0.2+	1999 11 15	704	0.4+	0.3-	1999 12 04	703	0.2+	0.1+
1998 05 22	704	0.4-	0.1-	1999 11 15	704	0.3+	0.2-	1999 12 04	703	0.6-	0.1+
1998 05 22	704	0.1+	0.4-	1999 11 15	704	0.3+	0.4-	1999 12 07	704	0.9+	0.2+
1998 05 22	704	0.4-	0.3-	1999 11 15	704	0.0	0.5-	1999 12 07	704	0.1-	0.7-
1998 05 24	704	0.5+	0.3+	1999 11 16	691	0.0	0.3-	1999 12 07	704	0.2-	0.7-
1998 05 24	704	0.6-	0.0	1999 11 16	691	0.0	0.3-	1999 12 07	704	0.4+	0.1-
1998 05 24	704	1.1+	0.2+	1999 11 16	691	0.3-	0.3-	1999 12 07	704	0.4+	0.7-
1998 05 24	704	0.4+	0.5+	1999 11 17	704	0.3-	0.5-	1999 12 08	704	0.1+	0.4+
1998 05 24	704	0.4-	0.2-	1999 11 17	704	0.0	0.6-	1999 12 08	704	0.1-	0.1+
1999 10 08	703	0.0	0.8+	1999 11 17	704	0.3+	0.2-	1999 12 08	704	0.1-	0.0
1999 10 08	703	0.4-	0.6+	1999 11 17	704	0.6+	0.6-	1999 12 08	704	0.1+	0.1-
1999 10 08	703	0.6+	0.8+	1999 11 17	704	0.3-	0.2-	1999 12 08	704	1.5-	0.9-
1999 10 08	703	0.3+	0.6-	1999 12 02	699	0.5-	0.8+	1999 12 12	703	0.2+	0.3+
1999 11 10	691	0.5-	0.2-	1999 12 02	699	0.4+	1.8+	1999 12 12	703	0.0	0.4+
1999 11 10	691	0.4-	0.2-	1999 12 02	699	0.3-	0.6+	1999 12 12	703	0.1+	0.0
1999 11 10	691	0.5-	0.0	1999 12 04	703	0.2+	0.8+	1999 12 12	703	0.0	0.6+

1999 XP₄₅ = 1976 KN₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18397256	ω	71.59423	+0.73469463	+0.64923659		
<i>a</i>	3.0617333	Ω	247.41531	-0.67455919	+0.66832321		
<i>e</i>	0.0924364	<i>i</i>	12.30440	-0.07206729	+0.36309219		
<i>P</i>	5.36	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1976 05 29	413	0.6-	0.2-	1999 11 14	704	0.1-	0.7-	1999 12 07	704	0.0	0.4-
1976 05 29	413	1.2+	0.7+	1999 11 14	704	0.0	0.8-	1999 12 07	704	0.4+	0.1-
1976 05 30	413	0.8-	0.1-	1999 11 14	704	0.0	0.5-	1999 12 07	704	0.4+	0.4-
1976 05 30	413	0.2+	0.4-	1999 11 14	704	1.0-	0.3-	1999 12 07	704	0.2+	0.3-
1999 11 03	704	0.1+	0.3+	1999 11 16	704	0.0	0.3-	1999 12 07	704	0.1+	0.4-
1999 11 03	704	0.2+	0.9-	1999 11 16	704	0.5+	0.4-	1999 12 08	704	0.8+	0.3-
1999 11 03	704	0.6-	0.2-	1999 11 16	704	0.1+	0.0	1999 12 08	704	0.3+	0.3-
1999 11 03	704	0.3+	0.4+	1999 11 16	704	0.7+	0.1-	1999 12 08	704	0.4+	0.1-
1999 11 03	704	0.1+	0.6+	1999 11 16	704	0.5+	0.0	1999 12 08	704	0.4+	0.2-
1999 11 09	703	0.2-	0.5+	1999 12 02	699	0.1+	0.2+	1999 12 08	704	0.4+	0.1+
1999 11 09	703	0.1+	0.4+	1999 12 02	699	0.8-	0.1-	1999 12 13	703	0.2-	0.4+
1999 11 09	703	0.2-	0.1+	1999 12 02	699	0.3-	0.4+	1999 12 13	703	0.9-	0.3+
1999 11 09	703	0.0	0.1+	1999 12 05	703	0.4-	0.2-	1999 12 13	703	0.3-	0.3+
1999 11 12	699	0.1+	1.0+	1999 12 05	703	0.2+	0.8+	1999 12 13	703	1.1-	0.5+
1999 11 12	699	0.4-	0.2-	1999 12 05	703	0.3-	0.4+				
1999 11 12	699	0.5+	0.5+	1999 12 05	703	0.1-	0.5-				

1999 XT₄₅ = 1991 PM₉ = 1998 MZ₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27300865	ω	325.70779	-0.05960133	+0.99780860		
<i>a</i>	2.3533423	Ω	300.85973	-0.90818566	-0.06615028		
<i>e</i>	0.1938393	<i>i</i>	1.91826	-0.41430242	+0.00146274		
<i>P</i>	3.61	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 03	809	1.5+	1.0+	1999 10 06	704	0.5+	1.0-	1999 12 02	699	0.7+	1.4+
1991 08 03	809	1.0+	0.7+	1999 10 06	704	0.1+	0.7-	1999 12 02	699	0.7-	0.1-
1991 08 03	809	0.6+	0.7+	1999 10 06	704	0.3-	0.5+	1999 12 02	699	0.1+	0.7+
1991 08 05	809	1.7-	1.0-	1999 11 04	704	0.6+	1.0+	1999 12 05	703	0.5-	0.2+
1991 08 05	809	1.7-	0.4-	1999 11 04	704	0.9-	0.6-	1999 12 05	703	0.2+	0.7+
1991 08 05	675	0.1+	0.3+	1999 11 04	704	0.6+	0.4-	1999 12 05	703	0.9-	0.6-
1991 08 05	809	(2.4-	0.0)	1999 11 04	704	0.4+	0.1+	1999 12 05	703	0.2+	0.4+
1991 08 05	675	0.8+	0.5-	1999 11 09	703	0.1-	0.8+	1999 12 07	704	0.9+	0.1+
1991 08 07	675	0.5+	0.9-	1999 11 09	703	0.6-	0.3+	1999 12 07	704	0.4+	0.4-
1991 08 07	675	0.9-	0.5-	1999 11 09	703	1.0-	0.5+	1999 12 07	704	0.1+	0.3+
1998 06 24	704	0.7+	0.7-	1999 11 09	703	0.4-	1.0+	1999 12 07	704	0.9+	0.0
1998 06 24	704	0.7-	0.1+	1999 11 14	704	0.4-	0.2-	1999 12 07	704	0.2+	0.5-
1998 06 24	704	0.5+	0.6+	1999 11 14	704	0.4-	0.1+	1999 12 08	704	0.7+	0.1+
1998 06 24	704	0.1-	0.6+	1999 11 14	704	0.6-	0.2-	1999 12 08	704	0.2+	0.4+
1998 06 24	704	0.9-	0.3+	1999 11 14	704	0.5-	0.5-	1999 12 08	704	0.3+	0.7-
1998 06 26	704	0.2+	0.6+	1999 11 14	704	0.3-	0.3-	1999 12 08	704	0.1-	0.2+
1998 06 26	704	(3.9+	1.1-)	1999 11 16	704	0.1-	0.5-	1999 12 08	704	0.6-	0.1-
1998 06 26	704	(2.1-	0.0)	1999 11 16	704	1.2-	0.9-	1999 12 13	703	0.3+	0.2+
1998 06 26	704	0.4+	0.7+	1999 11 16	704	0.1-	0.3-	1999 12 13	703	0.2+	0.7+
1999 10 06	704	1.7+	0.1+	1999 11 16	704	0.0	0.2-	1999 12 13	703	0.5+	0.1+
1999 10 06	704	0.9+	1.0-	1999 11 16	704	0.2+	0.3+	1999 12 13	703	0.8-	1.0+

1999 XA₄₆ = 1998 HQ₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27479123	ω	33.85769	+0.48824606	+0.86905037		
<i>a</i>	2.3431539	Ω	265.48474	-0.81738482	+0.42334427		
<i>e</i>	0.2028669	<i>i</i>	4.59106	-0.30577415	+0.25599038		
<i>P</i>	3.59	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.1+	0.2-	1999 11 16	704	0.1+	0.9-	1999 12 07	704	0.2+

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1998 04 22	704	0.3−	0.3−	1999 12 05	703	1.1−	0.2+	1999 12 13	703	0.2+	0.5+
1998 04 22	704	0.5−	0.1−	1999 12 05	703	0.2−	0.9−	1999 12 13	703	0.3−	0.3+
1999 11 09	703	0.1−	0.7+	1999 12 05	703	0.1+	0.4+	1999 12 13	703	1.0−	0.4+
1999 11 09	703	0.0	0.9+	1999 12 05	703	0.4−	1.2+	1999 12 13	703	0.2−	0.7−
1999 11 09	703	0.5+	0.2−	1999 12 07	704	0.7+	0.1+				
1999 11 09	703	0.7−	0.8+	1999 12 07	704	0.2−	0.1+				

1999 XU₄₆ = 1996 EL₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	359.76153	(2000.0)	P	Q			
<i>n</i>	0.19825831	<i>ω</i>	63.97140	+0.15616154	−0.98768879		
<i>a</i>	2.9128298	<i>Ω</i>	17.05193	+0.89465793	+0.13749829		
<i>e</i>	0.0605493	<i>i</i>	1.79560	+0.41856989	+0.07459941		
<i>P</i>	4.97	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 03 12	691	0.4+	0.1−	1999 11 16	704	0.1+	0.5+	1999 12 07	704	0.3+	1.1−
1996 03 12	691	0.5+	0.1+	1999 11 16	704	0.7+	0.5+	1999 12 07	704	0.5+	0.3−
1996 03 12	691	0.3+	0.1−	1999 11 16	704	0.2+	0.1+	1999 12 07	704	0.1−	0.3−
1996 03 17	691	0.7−	0.1+	1999 11 16	704	0.8+	0.1+	1999 12 08	704	0.0	0.6−
1996 03 17	691	0.1−	0.0	1999 12 03	691	0.3+	0.3−	1999 12 08	704	0.4+	1.0−
1996 03 17	691	0.4−	0.1−	1999 12 03	691	0.0	0.1−	1999 12 08	704	0.0	0.5−
1999 11 03	704	0.1+	0.6−	1999 12 03	691	0.0	0.5−	1999 12 08	704	0.2+	0.3−
1999 11 03	704	0.2−	0.2−	1999 12 05	703	0.2−	0.9+	1999 12 08	704	(2.1−	0.1−)
1999 11 03	704	0.8−	0.3+	1999 12 05	703	0.4+	0.5+	1999 12 13	703	0.2−	1.1+
1999 11 03	704	1.2−	0.0	1999 12 05	703	0.2−	0.3+	1999 12 13	703	0.7−	1.0+
1999 11 03	704	0.3+	0.1−	1999 12 05	703	1.1−	0.1+	1999 12 13	703	0.4−	0.4+
1999 11 16	704	0.2+	0.4−	1999 12 07	704	0.6+	0.7−	1999 12 13	703	0.0	1.3+

1999 XZ₄₆ = 1995 YE₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	138.57739	(2000.0)	P	Q			
<i>n</i>	0.20287934	<i>ω</i>	296.49228	+0.41320407	+0.91063800		
<i>a</i>	2.8684294	<i>Ω</i>	357.91334	−0.82629990	+0.37451308		
<i>e</i>	0.0686609	<i>i</i>	1.43896	−0.38274125	+0.17458062		
<i>P</i>	4.86	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 22	691	0.2+	0.0	1999 11 16	704	0.1−	0.7+	1999 12 07	704	0.4+	1.3−
1995 12 22	691	0.2+	0.0	1999 12 02	699	0.2+	1.0+	1999 12 07	704	0.9+	1.6−
1995 12 22	691	0.1+	0.1−	1999 12 02	699	0.3−	1.6+	1999 12 08	704	0.5+	0.5−
1995 12 27	691	0.2−	0.0	1999 12 02	699	0.1+	0.3+	1999 12 08	704	0.1+	1.5−
1995 12 27	691	0.1−	0.1−	1999 12 04	691	0.6−	0.1+	1999 12 08	704	0.2−	0.4−
1995 12 27	691	0.2−	0.1−	1999 12 04	691	0.7−	1.0+	1999 12 08	704	0.3+	1.0−
1998 08 17	704	0.0	0.3−	1999 12 04	691	0.0	0.9+	1999 12 08	704	0.7+	1.6−
1998 08 17	704	0.2−	0.3−	1999 12 05	703	0.2+	1.2+	1999 12 13	703	0.5−	1.3+
1998 08 17	704	(4.3+	0.4+)	1999 12 05	703	0.5−	0.7+	1999 12 13	703	0.1−	0.2+
1998 08 17	704	(2.4−	1.6−)	1999 12 05	703	0.1−	1.3+	1999 12 13	703	0.2−	0.9+
1998 08 17	704	0.2+	0.4+	1999 12 05	703	0.9−	0.4+	1999 12 13	703	0.1−	0.2+
1999 11 16	704	0.0	0.7−	1999 12 07	704	0.9+	1.6−	1999 12 14	691	0.1−	0.4−
1999 11 16	704	0.3+	0.5+	1999 12 07	704	0.2−	1.2−	1999 12 14	691	0.1+	0.3−
1999 11 16	704	0.1+	0.2−	1999 12 07	704	0.4−	0.6+	1999 12 14	691	0.0	0.7−

1999 XZ₄₇ = 1996 XP₃₃

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	22.37765	(2000.0)	P	Q			
<i>n</i>	0.29216225	<i>ω</i>	353.87530	+0.37485825	−0.92453868		
<i>a</i>	2.2493307	<i>Ω</i>	74.09298	+0.85358100	+0.31530555		
<i>e</i>	0.0990446	<i>i</i>	4.09202	+0.36177447	+0.21403422		
<i>P</i>	3.37	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 12 08	327	0.4+	1.0+	1999 11 17	704	0.2−	0.1+	1999 12 07	704	0.1+	0.5−
1996 12 08	327	0.3+	0.5+	1999 11 17	704	0.4+	0.5−	1999 12 07	691	0.0	0.3+

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1996 12 08	327	1.0−	0.8−	1999 11 17	704	0.5+	0.1−	1999 12 07	691	0.2+	0.2+
1996 12 12	327	0.6−	0.2−	1999 11 17	704	0.0	0.1−	1999 12 07	691	0.2+	0.2+
1996 12 12	327	0.7+	0.6−	1999 11 17	704	0.1+	0.1+	1999 12 08	704	0.4−	0.1−
1996 12 12	327	0.0	0.1−	1999 12 03	699	0.2−	0.6+	1999 12 08	704	0.3+	0.1−
1999 11 04	704	0.2−	0.0	1999 12 03	699	0.7−	0.9+	1999 12 08	704	0.1−	0.1−
1999 11 04	704	0.1+	0.1−	1999 12 03	699	0.2+	1.3+	1999 12 08	704	0.2−	0.4−
1999 11 04	704	0.1−	0.2−	1999 12 05	703	0.1−	0.2+	1999 12 08	704	0.0	0.5−
1999 11 04	704	1.3+	0.6+	1999 12 05	703	0.2−	0.5+	1999 12 13	691	0.3+	0.1+
1999 11 04	704	0.1−	0.8−	1999 12 05	703	0.6−	0.6+	1999 12 13	691	0.3+	0.0
1999 11 15	704	0.0	0.3−	1999 12 05	703	0.4−	0.3+	1999 12 13	691	0.3+	0.1−
1999 11 15	704	0.2+	0.2−	1999 12 07	704	1.1−	0.4−	2000 01 09	691	0.1+	0.2+
1999 11 15	704	0.1−	0.3+	1999 12 07	704	0.1−	0.3−	2000 01 09	691	0.1+	0.5−
1999 11 15	704	0.2+	0.0	1999 12 07	704	0.4+	0.7−	2000 01 09	691	0.0	0.0
1999 11 15	704	0.1+	0.1−	1999 12 07	704	0.5−	0.4−				

1999 XC₄₈ = 1999 XE₂₂₉ = 1998 KA₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	190.22664	(2000.0)	P	Q			
<i>n</i>	0.30674881	<i>ω</i>	179.00230	−0.27023372	+0.95593874		
<i>a</i>	2.1774463	<i>Ω</i>	75.31245	−0.88416612	−0.19924589		
<i>e</i>	0.1751402	<i>i</i>	6.80953	−0.38108269	−0.21559733		
<i>P</i>	3.21	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 11 20	327	0.4−	0.5−	1999 11 15	704	0.1−	0.7−	1999 12 04	703	0.5−	0.7+
1996 11 20	327	0.5+	0.2+	1999 11 15	704	0.1+	0.7−	1999 12 05	691	0.1+	0.1−
1996 11 20	327	0.1−	0.3−	1999 11 15	704	0.1+	0.1+	1999 12 05	691	0.1−	0.2−
1998 05 22	704	0.5+	0.6+	1999 11 15	704	0.5+	0.2−	1999 12 05	691	0.0	0.2−
1998 05 22	704	0.3−	0.8−	1999 11 15	704	0.2−	0.0	1999 12 07	704	0.7+	0.6+
1998 05 22	704	0.1+	0.8+	1999 11 15	704	0.1−	0.3+	1999 12 07	704	0.4−	0.8−
1998 05 22	704	0.1−	0.5+	1999 11 15	704	0.2+	1.1+	1999 12 07	704	0.0	0.2−
1998 05 24	704	0.5+	0.1+	1999 11 17	704	0.6−	0.2−	1999 12 07	704	0.1−	0.6+
1998 05 24	704	0.2−	0.6+	1999 11 17	704	0.5−	0.2−	1999 12 08	704	0.3+	0.2−
1998 05 24	704	0.6+	0.7+	1999 11 17	704	0.2+	0.0	1999 12 08	704	1.5+	0.0
1998 05 24	704	0.4−	1.4−	1999 11 17	704	0.4−	1.0−	1999 12 08	704	0.3+	0.7+
1998 05 24	704	0.6−	0.5−	1999 11 17	704	0.9+	0.2−	1999 12 12	691	0.3+	0.1−
1999 11 15	704	0.5−	0.3−	1999 12 04	703	0.6−	1.4+	1999 12 12	691	0.3+	0.1−
1999 11 15	704	0.0	0.3−	1999 12 04	703	0.8−	0.9+	1999 12 12	691	0.1−	0.5−
1999 11 15	704	0.0	0.2−	1999 12 04	703	0.8−	1.2+				

1999 XH₄₈ = 1994 NW₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>	222.89027	(2000.0)	P	Q			
<i>n</i>	0.25998378	<i>ω</i>	131.82244	−0.66770066	+0.74208365		
<i>a</i>	2.4313000	<i>Ω</i>	96.18694	−0.69940109	−0.59816375		
<i>e</i>	0.1443653	<i>i</i>	3.40553	−0.25497832	−0.30250948		
<i>P</i>	3.79	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 07 11	809	0.0	0.2−	1998 08 17	704	1.0+	1.0−	1999 12 07	704	0.0	0.5+
1994 07 11	809	0.1+	0.5−	1998 08 17	704	0.4−	1.6+	1999 12 08	704	0.5−	0.4−
1994 07 11	809	0.6−	0.1+	1999 11 17	704	0.4+	0.3+	1999 12 08	704	0.1+	0.5−
1994 07 12	809	0.3+	0.2+	1999 11 17	704	0.8+	0.1+	1999 12 08	704	0.6+	0.3−
1994 07 12	809	0.6+	0.6+	1999 11 17	704	1.3−	0.2−	1999 12 08	704	0.2+	0.1+
1994 07 12	809	0.4−	0.6−	1999 11 17	704	0.3+	0.3+	1999 12 08	704	0.8−	0.2+
1998 08 17	704	0.3+	0.1−	1999 12 07	704	0.1+	0.2−	1999 12 12	691	0.3+	0.0
1998 08 17	704	0.3−	0.5+	1999 12 07	704	0.6−	0.1−	1999 12 12	691	0.3+	0.1−
1998 08 17	704	0.6−	0.7−	1999 12 07	704	0.0	0.3+	1999 12 12	691	0.3+	0.2−

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1999 XJ₄₈ = 1997 GK₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	274.45273		(2000.0)	P	Q
<i>n</i>	0.23975537	ω	99.35751	-0.99351393	+0.01704596
<i>a</i>	2.5661999	Ω	81.67890	-0.06203836	-0.90984352
<i>e</i>	0.1064816	<i>i</i>	6.52413	+0.09529592	-0.41460125
<i>P</i>	4.11	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 07	809	(3.9+ 2.0+)	1999 11 15	704	0.2- 0.4-	1999 12 08	704	0.3- 0.6+
1997 04 07	809	(3.6+ 2.4+)	1999 11 15	704	0.3+ 0.2-	1999 12 08	704	0.5- 0.6-
1997 04 07	809	(3.3+ 2.6+)	1999 11 15	704	0.5- 0.3-	1999 12 08	704	0.7- 0.4+
1997 04 08	809	1.1+ 0.4+	1999 11 17	704	0.5- 0.5-	1999 12 08	704	1.6- 0.5-
1997 04 08	809	0.9+ 0.4-	1999 11 17	704	1.1+ 0.7-	1999 12 09	691	0.4+ 0.2-
1997 04 08	809	0.4+ 0.3-	1999 11 17	704	0.2+ 0.2+	1999 12 09	691	0.9+ 0.2+
1997 04 09	809	0.5+ 0.3-	1999 11 17	704	0.1+ 0.0	1999 12 09	691	0.2+ 0.3-
1997 04 09	809	1.5- 0.7+	1999 11 17	704	0.4- 0.2+	1999 12 12	691	0.4+ 0.3-
1997 04 09	809	1.3- 0.1-	1999 11 19	049	0.1+ 0.5+	1999 12 12	691	0.3+ 0.2-
1997 04 10	809	(0.4+ 2.7+)	1999 11 19	049	0.0 0.6+	1999 12 12	691	0.3+ 0.4-
1997 04 10	809	(0.5+ 3.2+)	1999 11 19	049	(0.1- 2.2+)	2000 01 06	704	0.5+ 0.2+
1997 04 10	809	(1.1+ 3.8+)	1999 12 07	704	0.1- 0.3+	2000 01 06	704	0.7+ 0.9+
1999 11 15	704	0.2+ 0.8+	1999 12 07	704	0.1- 0.3-	2000 01 06	704	0.5- 0.8-
1999 11 15	704	0.1+ 0.1+	1999 12 07	704	0.6+ 0.4+	2000 01 06	704	0.6- 0.2+
1999 11 15	704	(3.3- 0.4+)	1999 12 07	704	0.1- 0.2+	2000 01 06	704	0.0 0.2-
1999 11 15	704	0.5- 0.3-	1999 12 07	704	0.4- 0.2-			
1999 11 15	704	0.1+ 0.8+	1999 12 08	704	0.4+ 0.1+			

1999 XA₄₉ = 1998 QP₈₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	252.48459		(2000.0)	P	Q
<i>n</i>	0.22981722	ω	319.86178	-0.85451750	+0.48174956
<i>a</i>	2.6396580	Ω	249.95736	-0.40759964	-0.85367989
<i>e</i>	0.2522605	<i>i</i>	11.93074	-0.32196642	-0.19785856
<i>P</i>	4.29	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704	0.4+ 0.2-	1999 11 14	704	0.5+ 0.4+	1999 12 08	704	0.6+ 0.1-
1998 08 24	704	0.6- 1.3+	1999 11 14	704	0.2- 0.2+	1999 12 13	703	0.8- 0.3-
1998 08 24	704	0.3- 1.7-	1999 11 16	704	0.1+ 0.4-	1999 12 13	703	0.4- 0.5-
1998 08 24	704	0.1- 1.5+	1999 11 16	704	0.4- 1.3-	1999 12 13	703	0.1- 0.7+
1998 08 27	704	1.7+ 0.6-	1999 11 16	704	0.1- 0.3-	1999 12 13	703	0.3- 0.1+
1998 08 27	704	1.1- 1.2+	1999 11 16	704	0.2- 1.7-	1999 12 14	691	0.6+ 0.5-
1998 08 27	704	0.3+ 0.7-	1999 12 04	691	0.6+ 0.5+	1999 12 14	691	0.2- 0.8-
1998 08 27	704	0.9- 1.6+	1999 12 04	691	0.6+ 0.3+	1999 12 14	691	0.3- 0.6-
1998 08 27	704	0.2- 0.6-	1999 12 04	691	0.2+ 2.0+	2000 01 06	704	0.3+ 0.4-
1998 09 19	699	0.3+ 1.4-	1999 12 07	704	0.3+ 0.2+	2000 01 06	704	0.0 0.5-
1998 09 19	699	0.4+ 0.5-	1999 12 07	704	0.8- 0.6+	2000 01 06	704	0.5+ 0.3+
1998 09 19	699	0.0 0.2+	1999 12 07	704	0.3+ 0.2+	2000 01 06	704	0.0 0.4+
1999 11 03	704	0.1+ 0.7-	1999 12 07	704	0.3+ 0.2+	2000 01 06	704	0.6+ 0.3-
1999 11 03	704	0.3+ 0.1+	1999 12 07	704	0.6+ 0.4+	2000 01 08	691	0.3- 0.3-
1999 11 03	704	1.0- 0.8+	1999 12 08	704	0.1- 0.4+	2000 01 08	691	0.5- 0.2-
1999 11 14	704	0.2+ 0.0	1999 12 08	704	0.6- 0.3+	2000 01 08	691	0.6- 0.2-
1999 11 14	704	0.0 0.1-	1999 12 08	704	0.1- 0.3+			
1999 11 14	704	0.1+ 0.4+	1999 12 08	704	0.0 0.5+			

1999 XF₄₉ = 1997 EM₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	24.46045		(2000.0)	P	Q
<i>n</i>	0.26140614	ω	82.08163	+0.46328595	-0.88616387
<i>a</i>	2.4224725	Ω	340.31145	+0.80228242	+0.42366999
<i>e</i>	0.1209677	<i>i</i>	1.51865	+0.37644261	+0.18766282
<i>P</i>	3.77	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 03 02	691	0.2+ 0.1+	1999 11 03	704	0.5+ 0.4-	1999 12 06	691	0.4+ 0.5-
1997 03 02	691	0.0 0.2-	1999 11 03	704	0.2- 0.8-	1999 12 06	691	0.0 0.1-
1997 03 02	691	0.1+ 0.1+	1999 11 14	704	0.2- 0.4-	1999 12 07	704	0.4- 0.3-
1997 03 08	691	0.3+ 0.5-	1999 11 14	704	0.0 0.3+	1999 12 07	704	0.5- 0.9+
1997 03 08	691	0.1+ 0.1+	1999 11 14	704	0.1+ 0.2+	1999 12 07	704	0.3- 0.1-
1997 03 08	691	0.0 0.4+	1999 11 14	704	0.2+ 0.0	1999 12 08	704	0.5+ 0.6-
1997 03 09	691	0.7- 0.4-	1999 11 14	704	0.4+ 0.7+	1999 12 08	704	0.2+ 0.3-
1997 03 09	691	0.3- 0.1-	1999 11 16	704	0.1- 0.3+	1999 12 08	704	0.1- 0.8-
1997 03 09	691	0.0 0.3-	1999 11 16	704	0.1- 0.6-	1999 12 08	704	0.5+ 0.6-
1999 10 06	704	0.2- 0.1-	1999 11 16	704	0.2- 0.3-	1999 12 13	703	1.2- 0.9+
1999 10 06	704	0.4+ 0.2-	1999 11 16	704	0.5+ 0.3+	1999 12 13	703	0.3- 0.3+
1999 10 06	704	0.5- 0.2-	1999 11 16	704	0.1+ 0.9-	1999 12 13	703	0.4+ 0.5+
1999 10 06	704	0.0 0.2-	1999 12 04	703	0.0 1.1+	1999 12 13	703	0.1+ 0.4+
1999 10 06	704	0.9+ 0.8-	1999 12 04	703	0.4- 0.4+	1999 12 14	691	0.5+ 0.1+
1999 11 03	704	1.3- 0.7+	1999 12 04	703	0.4- 1.4+	1999 12 14	691	0.5+ 0.1+
1999 11 03	704	0.0 0.2+	1999 12 04	703	0.7- 0.1-	1999 12 14	691	0.6+ 0.0
1999 11 03	704	0.1+ 0.9-	1999 12 06	691	0.1+ 0.1-			

1999 XH₄₉ = 1417 T-2 = 1994 RN₂₆ = 1998 MN₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	1.41166		(2000.0)	P	Q
<i>n</i>	0.23167349	ω	160.55065	+0.05727761	-0.99773896
<i>a</i>	2.6255391	Ω	286.15349	+0.91105918	+0.06663911
<i>e</i>	0.0792417	<i>i</i>	2.09781	+0.40827741	-0.00872951
<i>P</i>	4.25	<i>H</i>	15.3	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1973 09 19	675	0.5+ 0.4+	1994 09 04	809	0.3- 0.2+	1999 12 05	703	0.6- 0.3+
1973 09 19	675	1.5- 1.3-	1998 06 27	568	0.4+ 0.3-	1999 12 05	703	1.4- 0.6-
1973 09 24	675	0.3- 0.8+	1998 06 27	568	0.1- 0.3-	1999 12 05	703	1.0- 0.6-
1973 09 24	675	1.0+ 0.8-	1998 06 27	568	0.1- 0.3-	1999 12 05	703	0.6- 0.9-
1973 09 25	675	0.6- 1.2+	1998 06 27	568	0.2- 0.4-	1999 12 06	691	0.8- 0.0
1973 09 30	675	1.1+ 0.0	1998 06 28	568	0.2+ 0.2-	1999 12 06	691	0.3- 0.1+
1973 09 30	675	0.0 1.0-	1998 06 28	568	0.2+ 0.1-	1999 12 06	691	0.3- 0.0
1994 08 10	809	(1.6+ 2.9+)	1998 06 28	568	0.4+ 0.1-	1999 12 07	704	1.1+ 0.2+
1994 08 10	809	(2.4+ 2.7+)	1999 11 03	704	1.6+ 1.4+	1999 12 07	704	0.8+ 0.5+
1994 08 10	809	(3.1+ 2.4+)	1999 11 03	704	0.2+ 0.4+	1999 12 07	704	0.9- 0.6-
1994 09 03	809	0.0 0.8+	1999 11 03	704	(0.6- 2.7-)	1999 12 08	704	0.6+ 0.0
1994 09 03	809	1.2- 0.4-	1999 11 16	704	0.2+ 0.0	1999 12 08	704	0.6+ 0.5+
1994 09 03	809	(2.1- 1.0-)	1999 11 16	704	0.1- 0.6-	1999 12 08	704	0.5+ 0.3+
1994 09 04	809	0.6- 0.5+	1999 11 16	704	0.0 0.9-	1999 12 08	704	0.2+ 0.2+
1994 09 04	809	1.2+ 0.7+	1999 11 16	704	0.1+ 0.1-	1999 12 08	704	0.4+ 0.0

1999 XT₄₉ = 1993 FD₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	308.49781		(2000.0)	P	Q
<i>n</i>	0.24406950	ω	241.41769	-0.75737680	-0.65248458
<i>a</i>	2.5358703	Ω	257.84120	+0.60779987	-0.69023510
<i>e</i>	0.0152563	<i>i</i>	1.48784	+0.23866233	-0.31279288
<i>P</i>	4.04	<i>H</i>	15.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1993 03 21	809	0.7- 0.1+	1999 11 09	704	0.4- 0.2+	1999 12 07	704	0.2- 0.3-
1993 03 22	809	0.0 0.9+	1999 11 12	704	0.6+ 0.2-	1999 12 07	704	0.3- 0.1-
1993 03 26	809	0.7+ 0.9-	1999 11 12	704	0.6+ 0.2+	1999 12 08	704	0.9+ 0.7+
1999 11 09	704	0.5+ 1.0-	1999 11 12	704	0.2+ 0.5-	1999 12 08	704	0.3+ 0.5-
1999 11 09	704	0.7- 0.5+	1999 11 12	704	0.1+ 0.2-	1999 12 08	704	0.2+ 0.5+
1999 11 09	704	0.2- 0.8+	1999 12 07	704	1.0- 0.0			
1999 11 09	704	0.3- 0.3+	1999 12 07	704	0.1- 0.5-			

1999 XD₅₀ = 1995 UV₄₅ = 1997 BR₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	86.55988		(2000.0)	P		Q	
<i>n</i>	0.26229083	ω	100.67116	+0.90646751		+0.42168199	
<i>a</i>	2.4170222	Ω	234.39162	-0.39739563		+0.83393577	
<i>e</i>	0.2305596	<i>i</i>	1.57753	-0.14280536		+0.35599920	
<i>P</i>	3.76	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 10 20	010	0.3+	1.6+	1999 11 09	704	0.5-	0.2-	1999 11 27	049	(2.9+	0.2+)
1995 10 20	010	0.4-	1.0+	1999 11 09	704	0.7-	0.5-	1999 12 07	704	0.5+	0.6+
1995 10 20	010	0.3+	1.5+	1999 11 09	704	0.2-	0.3-	1999 12 07	704	0.5-	0.6+
1995 10 23	010	0.2+	0.2-	1999 11 12	704	0.5+	0.7-	1999 12 07	704	0.1+	0.1+
1995 10 23	010	0.1+	0.5-	1999 11 12	704	0.5+	0.4-	1999 12 07	704	0.0	0.2+
1995 10 23	010	1.1-	2.0-	1999 11 12	704	0.4+	0.1+	1999 12 08	704	0.3+	0.2+
1997 01 31	691	1.0-	0.0	1999 11 12	704	0.2+	0.0	1999 12 08	704	0.2-	0.4+
1997 01 31	691	0.0	0.3-	1999 11 12	704	0.6+	0.2+	1999 12 08	704	0.1-	0.8+
1997 01 31	691	0.3-	0.1+	1999 11 16	704	1.5-	0.6-	1999 12 08	704	0.6-	0.2+
1997 02 07	691	0.6+	0.2+	1999 11 16	704	1.0+	1.6-	1999 12 08	704	1.0-	0.1+
1997 02 07	691	1.0+	0.4+	1999 11 16	704	0.3-	0.4-	1999 12 13	691	0.5+	0.1+
1997 02 07	691	0.1+	0.5+	1999 11 16	704	0.2+	1.0-	1999 12 13	691	0.6+	0.2+
1999 11 09	704	0.3-	0.3-	1999 11 27	049	(2.4+	0.5+)	1999 12 13	691	0.6+	0.4+
1999 11 09	704	0.1-	0.2+	1999 11 27	049	(3.3+	0.5+)				

1999 XP₅₀ = 1998 HR₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	91.24736		(2000.0)	P		Q	
<i>n</i>	0.26890288	ω	244.98536	+0.85752467		+0.50431351	
<i>a</i>	2.3772366	Ω	84.58294	-0.42752304		+0.80843814	
<i>e</i>	0.2375562	<i>i</i>	5.85664	-0.28613894		+0.30347266	
<i>P</i>	3.67	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 21	704	0.2+	1.2-	1999 11 15	704	0.0	0.2-	1999 12 08	704	0.4+	0.5+
1998 04 21	704	0.1-	0.4-	1999 11 15	704	0.6+	0.4+	1999 12 08	704	0.0	0.8+
1998 04 21	704	1.8-	0.3+	1999 11 15	704	0.8+	0.7-	1999 12 08	704	0.4-	0.2-
1998 04 21	704	1.9-	1.7+	1999 11 17	704	1.2-	0.8+	1999 12 09	691	0.3+	0.2+
1998 04 22	704	(2.0+	0.7+)	1999 11 17	704	0.6+	0.3-	1999 12 09	691	0.1+	0.1+
1998 04 22	704	1.6+	0.6+	1999 11 17	704	0.1-	0.5-	1999 12 09	691	0.0	0.2+
1998 04 22	704	1.0+	0.5+	1999 11 17	704	0.4-	0.4-	1999 12 17	691	0.2+	0.1-
1998 04 22	704	0.8+	0.6+	1999 11 17	704	0.0	0.6-	1999 12 17	691	0.1+	0.1-
1998 05 01	704	0.1-	1.0-	1999 12 07	704	0.1-	0.3-	1999 12 17	691	0.2+	0.1-
1998 05 01	704	0.3-	0.3-	1999 12 07	704	0.8-	0.7+	2000 01 11	691	0.1-	0.4-
1998 05 01	704	0.5+	1.1-	1999 12 07	704	0.4-	0.1+	2000 01 11	691	0.0	0.3-
1998 05 01	704	(5.0-	0.3-)	1999 12 07	704	0.0	0.0	2000 01 11	691	0.1-	0.4-
1999 11 15	704	0.4+	0.1-	1999 12 08	704	0.1-	0.4+				

1999 XT₅₀ = 1977 LF₁ = 1977 LJ₁Id. G. V. Williams, A. Lowe (d, *MPC* 11231)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	182.55890		(2000.0)	P		Q	
<i>n</i>	0.23881472	ω	177.03572	-0.21912061		+0.96386080	
<i>a</i>	2.5729340	Ω	80.27131	-0.89831782		-0.13868554	
<i>e</i>	0.1728483	<i>i</i>	8.84323	-0.38080344		-0.22746139	
<i>P</i>	4.13	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 06 12	675	0.1-	1.2-	1999 11 17	704	0.4+	0.1-	2000 01 04	691	0.1-	0.1+
1977 06 13	675	1.3-	1.4-	1999 11 17	704	0.6-	0.1-	2000 01 04	691	0.4-	0.0
1977 06 13	675	0.6+	0.2+	1999 11 17	704	0.0	1.2-	2000 01 04	691	0.2-	0.1+
1977 06 14	675	0.3+	0.4-	1999 12 07	704	0.1+	0.3-	2000 01 05	704	0.3+	1.5-
1997 01 30	327	0.8+	0.2-	1999 12 07	704	0.4+	0.5+	2000 01 05	704	0.1-	0.1+
1997 01 30	327	0.6+	0.2-	1999 12 07	704	0.2+	0.4-	2000 01 05	704	0.1+	0.7+
1997 01 30	327	1.6-	0.4-	1999 12 07	704	0.2+	0.5-	2000 01 05	704	0.1-	0.1-
1999 10 30	703	0.3+	0.5-	1999 12 08	704	0.2+	0.6-	2000 01 05	704	0.4-	0.3-

1999 10 30	703	1.0-	1.1+	1999 12 08	704	0.3-	0.1+	2000 01 06	704	1.1+	0.1-
1999 10 30	703	0.9+	0.6+	1999 12 08	704	0.2+	0.2+	2000 01 06	704	0.1-	0.1+
1999 10 30	703	0.1+	0.9+	1999 12 08	704	0.0	0.1-	2000 01 06	704	0.4+	0.4+
1999 11 04	704	0.3+	0.1+	1999 12 08	704	0.1+	0.4+	2000 01 06	704	0.4+	0.1-
1999 11 04	704	0.2-	0.6-	1999 12 09	691	0.3-	0.0	2000 01 06	704	0.0	0.3-
1999 11 04	704	0.2-	0.2-	1999 12 09	691	0.3-	0.1-	2000 01 10	691	0.2+	0.6-
1999 11 04	704	0.1-	0.2+	1999 12 09	691	0.2-	0.2+	2000 01 10	691	0.0	0.4-
1999 11 04	704	0.1-	0.5+	1999 12 12	691	0.2-	0.1-	2000 01 10	691	0.1+	0.7-
1999 11 17	704	0.9+	0.6-	1999 12 12	691	0.1-	0.0				
1999 11 17	704	0.2-	0.3-	1999 12 12	691	0.2-	0.0				

1999 XM₅₁ = 1998 KG₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	184.15782		(2000.0)	P		Q	
<i>n</i>	0.30426913	ω	78.57433	-0.13948789		+0.99022355	
<i>a</i>	2.1892606	Ω	183.40768	-0.91289564		-0.12885990	
<i>e</i>	0.1732564	<i>i</i>	0.65260	-0.38362048		-0.05340839	
<i>P</i>	3.24	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 22	704	1.4+	0.5-	1999 11 09	704	1.5+	0.2-	1999 12 07	704	1.2-	0.2-
1998 05 22	704	0.5-	1.0-	1999 11 09	704	0.4-	0.4+	1999 12 07	704	0.3+	0.7-
1998 05 22	704	0.1-	0.9+	1999 11 09	704	0.4-	0.3+	1999 12 07	704	0.2+	0.4-
1998 05 22	704	0.4+	0.4+	1999 11 09	704	0.4-	1.1+	1999 12 08	704	0.0	0.2-
1998 05 22	704	0.1+	0.4-	1999 11 12	704	0.5-	0.3+	1999 12 08	704	0.1+	0.3-
1998 05 24	704	0.0	0.4-	1999 11 12	704	0.2+	0.2+	1999 12 08	704	0.4+	0.3-
1998 05 24	704	0.8-	0.1+	1999 11 12	704	0.0	0.1-	1999 12 08	704	0.3+	0.3-
1998 05 24	704	0.5-	0.7+	1999 11 12	704	0.1+	0.1+	2000 01 06	691	0.0	0.9+
1998 05 24	704	0.1+	0.9+	1999 11 12	704	0.2-	0.3-	2000 01 06	691	0.0	0.8+
1998 05 24	704	0.1+	0.4+	1999 12 07	704	1.0-	0.3-	2000 01 06	691	0.0	0.9+
1999 11 09	704	0.0	0.8+	1999 12 07	704	0.6+	0.7-				

1999 XW₅₁ = 1998 HW₁₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	97.81177		(2000.0)	P		Q	
<i>n</i>	0.29607238	ω	278.28526	+0.86157805		+0.50468613	
<i>a</i>	2.2294828	Ω	51.42244	-0.43394487		+0.78801187	
<i>e</i>	0.2141605	<i>i</i>	4.00089	-0.26339157		+0.35260348	
<i>P</i>	3.33	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 04 21	704	0.3-	0.0	1999 11 09	704	0.1+	0.6+	1999 12 05	703	1.4-	0.3+
1998 04 21	704	1.3+	0.6-	1999 11 09	704	0.5+	0.2-	1999 12 05	703	0.5+	1.5+
1998 04 21	704	1.7-	1.2-	1999 11 12	704	0.4-	0.1+	1999 12 05	703	0.7-	1.4+
1998 04 21	704	0.6-	1.7-	1999 11 12	704	0.5+	0.8+	1999 12 07	704	0.3-	0.1+
1998 04 22	704	0.5+	1.2+	1999 11 12	704	0.3+	0.2-	1999 12 07	704	0.2-	0.4-
1998 04 22	704	1.4-	1.0+	1999 11 12	704	0.4+	0.1+	1999 12 07	704	1.2-	0.1-
1998 04 22	704	1.0+	0.8+	1999 11 12	704	0.2+	0.7-	1999 12 07	704	0.5+	0.1+
1998 04 22	704	1.3+	0.5+	1999 11 14	704	0.5-	0.2-	1999 12 08	704	0.1+	0.4-
1999 11 03	704	0.7+	0.5+	1999 11 14	704	0.4-	0.3-	1999 12 08	704	0.5+	0.4-
1999 11 03	704	1.5-	0.5-	1999 11 14	704	0.8-	0.1-	1999 12 08	704	0.8+	0.3-
1999 11 03	704	(2.2-	0.7-)	1999 11 14	704	1.2-	0.1-	1999 12 08	704	0.9+	0.8-
1999 11 09	704	1.7+	0.3-	1999 11 14	704	0.2-	0.1-	1999 12 08	704	0.2+	0.8-
1999 11 09	704	0.9+	0.4+	1999 12 05	703	0.1-	0.1-				

1999 XD₅₂ = 1998 HK₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	102.00595		(2000.0)	P	Q
n	0.30730271	ω	273.35620	+0.87004087	+0.48710589
a	2.1748291	Ω	57.50639	-0.40901151	+0.79916708
e	0.1797403	i	5.16106	-0.27520624	+0.35222128
P	3.21	H	15.7	G 0.15	U 4

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M.P.C. 37895

Residuals in seconds of arc

1998 03 29	704	1.4+	1.2-	1999 11 09	704	0.8-	0.3-	1999 12 05	703	0.3+	0.3+
1998 03 29	704	0.6-	1.3-	1999 11 09	704	0.7-	0.1+	1999 12 05	703	0.5+	1.1+
1998 03 29	704	1.6-	0.2+	1999 11 09	704	0.7-	0.2-	1999 12 07	704	0.2-	0.2+
1998 03 29	704	0.4+	1.3-	1999 11 09	704	0.3-	0.0	1999 12 07	704	0.0	0.2-
1998 03 29	704	(5.3-	0.9+)	1999 11 12	704	0.5+	0.4+	1999 12 07	704	0.4-	0.6-
1998 04 21	704	0.7+	1.3+	1999 11 12	704	0.3-	0.2-	1999 12 07	704	0.3+	0.1+
1998 04 21	704	1.4-	1.6+	1999 11 12	704	0.2+	0.5+	1999 12 07	704	0.0	0.2-
1998 04 21	704	0.6+	0.6+	1999 11 12	704	0.3-	0.2-	1999 12 08	704	0.9+	0.2-
1998 04 21	704	1.5-	1.6+	1999 11 12	704	0.4+	0.3-	1999 12 08	704	0.6-	0.4-
1998 04 21	704	0.5+	1.1+	1999 11 16	704	0.1+	0.2-	1999 12 08	704	0.3-	0.7-
1998 04 21	910	1.4+	0.3-	1999 11 16	704	0.3+	0.1+	1999 12 08	704	0.3+	0.4-
1998 04 22	910	1.6+	0.2-	1999 11 16	704	0.2-	0.8+	1999 12 08	704	0.0	0.0
1998 04 22	910	1.5+	0.4-	1999 11 16	704	0.1-	0.3-	1999 12 15	691	0.3+	0.0
1998 04 22	704	0.1-	0.9-	1999 11 16	704	0.2-	0.1-	1999 12 15	691	0.3+	0.0
1998 04 22	704	1.7-	0.5-	1999 11 17	704	0.4+	0.2-	1999 12 15	691	0.2+	0.0
1998 04 22	704	(2.1+	0.4-)	1999 11 17	704	0.3+	0.5-	2000 01 03	704	0.5-	1.0+
1998 04 22	704	1.2-	0.2-	1999 11 17	704	0.0	0.8-	2000 01 03	704	0.1-	0.6+
1999 11 03	704	0.3-	0.7+	1999 11 17	704	0.4-	0.3-	2000 01 03	704	0.8-	0.8-
1999 11 03	704	0.6+	0.3+	1999 11 17	704	0.2-	0.2-	2000 01 03	704	0.5-	0.2+
1999 11 03	704	0.9+	0.2+	1999 12 05	703	0.0	0.8+				
1999 11 03	704	0.4+	0.2+	1999 12 05	703	0.2+	0.6+				

1999 XE₅₂ = 1998 OZ₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	43.40586		(2000.0)	P	Q
n	0.21494715	ω	134.18726	+0.77532911	-0.62792872
a	2.7600371	Ω	264.82819	+0.55835747	+0.73154887
e	0.0501341	i	3.89225	+0.29512999	+0.26559700
P	4.59	H	15.4	G 0.15	U 4

Residuals in seconds of arc

1998 07 24	910	0.2+	0.1-	1999 11 16	704	0.2-	0.3-	1999 12 05	703	0.6-	0.3+
1998 07 24	910	0.6-	0.4-	1999 11 16	704	0.2-	1.0-	1999 12 07	704	0.4+	0.1+
1998 07 24	910	0.2+	0.3-	1999 11 16	704	1.8+	0.6+	1999 12 07	704	0.0	0.6-
1998 07 27	910	0.1+	0.1+	1999 11 16	704	0.3-	0.6+	1999 12 07	704	0.7-	0.1+
1998 07 27	910	0.1+	0.3+	1999 12 05	703	0.4+	0.4+	1999 12 07	704	0.6-	0.6-
1998 07 27	910	0.1+	0.4+	1999 12 05	703	0.8+	0.2+	1999 12 07	704	0.1-	0.4+
1999 11 14	704	0.2-	0.3-	1999 12 05	703	0.2-	0.0	1999 12 08	704	0.7+	0.4+
1999 11 14	704	0.0	0.4-	1999 12 05	703	0.5+	0.4+	1999 12 08	704	0.3-	0.5-
1999 11 14	704	0.3-	0.3-	1999 12 05	703	0.1+	0.7+	1999 12 08	704	0.9+	1.5-
1999 11 14	704	0.3-	0.1+	1999 12 05	703	2.0-	0.7-	1999 12 08	704	0.4+	0.1+
1999 11 14	704	0.1+	0.8+	1999 12 05	703	0.1-	1.1+				

1999 XH₅₂ = 1993 TA₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	43.66173		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.17811317	ω	349.13348	+0.85666844	-0.51534423
a	3.1285182	Ω	41.91351	+0.47586833	+0.77205933
e	0.1184160	i	1.99262	+0.19916957	+0.37194719
P	5.53	H	14.4	G 0.15	U 5

Residuals in seconds of arc

1993 10 10	809	1.4+	1.4+	1999 11 12	704	0.3-	0.2-	1999 12 07	704	0.4-	0.1+
1993 10 10	809	0.3+	0.7+	1999 11 12	704	0.0	0.4+	1999 12 07	704	0.4-	1.1-
1993 10 10	809	1.0-	0.0	1999 11 12	704	0.5+	0.6+	1999 12 07	704	0.1+	1.5-
1993 10 22	809	0.8+	0.9-	1999 11 12	704	0.5+	1.0+	1999 12 08	704	0.9-	0.5-
1993 10 22	809	1.3-	1.7-	1999 11 12	704	0.1+	0.5+	1999 12 08	704	0.7-	1.0-
1993 10 22	809	(2.6-	0.9-)	1999 12 05	703	0.4-	0.4+	1999 12 08	704	0.5+	0.6-
1999 11 09	704	0.4-	0.3+	1999 12 05	703	0.6-	1.0+	1999 12 08	704	0.6+	1.4-
1999 11 09	704	0.5-	0.3+	1999 12 05	703	0.1+	0.6+	1999 12 08	704	0.9+	0.4+
1999 11 09	704	0.0	0.1+	1999 12 05	703	0.1+	0.9+	2000 01 06	704	(0.5+	2.4+)
1999 11 09	704	0.1-	0.4+	1999 12 07	704	0.2-	0.1+	2000 01 06	704	0.3+	0.6+
1999 11 09	704	0.2+	0.1-	1999 12 07	704	0.7+	0.8-	2000 01 06	704	0.4+	0.1+

1999 XN₅₂ = 1997 CY₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	187.86935		(2000.0)	P	Q
n	0.26606351	ω	270.86855	-0.19690575	+0.98041698
a	2.3941196	Ω	347.77390	-0.89327526	-0.18077520
e	0.1455784	i	0.88360	-0.40408840	-0.07812085
P	3.70	H	15.2	G 0.15	U 4

Residuals in seconds of arc

1997 02 06	566	1.0-	0.6-	1999 11 14	704	0.3-	0.6-	1999 12 07	704	0.0	0.0
1997 02 06	566	0.3-	0.9-	1999 11 14	704	0.0	0.6-	1999 12 07	704	1.1-	0.3+
1997 02 06	566	0.5+	0.6-	1999 11 14	704	0.5+	0.2-	1999 12 07	704	0.3+	0.8-
1997 02 08	566	0.0	0.6+	1999 11 14	704	0.5-	0.1+	1999 12 07	704	0.1+	0.4-
1997 02 08	566	0.3-	0.6+	1999 11 14	704	0.0	0.6-	1999 12 08	704	0.3+	0.1-
1997 02 08	566	0.8+	0.3+	1999 11 16	704	0.3+	0.7-	1999 12 08	704	0.6+	0.1+
1998 07 02	699	0.1+	0.1+	1999 11 16	704	1.3+	1.3+	1999 12 08	704	0.6-	0.0
1998 07 02	699	0.2-	0.5-	1999 11 16	704	0.0	0.7+	1999 12 08	704	0.3-	0.1+
1998 07 02	699	0.3+	0.4-	1999 11 16	704	0.4-	1.2+				

1999 XR₅₂ = 1998 MU₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	331.53841		(2000.0)	P	Q
n	0.28330015	ω	223.76135	-0.62538515	-0.77725181
a	2.2959980	Ω	265.07102	+0.73365067	-0.55551720
e	0.0839660	i	3.97629	+0.26580089	-0.29543234
P	3.48	H	14.6	G 0.15	U 4

Residuals in seconds of arc

1998 06 26	809	0.2+	0.6-	1999 11 14	704	0.5-	0.2-	1999 12 08	704	0.4+	0.1+
1998 06 26	809	0.4-	0.7-	1999 11 14	704	0.5-	0.0	1999 12 08	704	0.3+	0.3+
1998 06 26	809	0.5-	1.2-	1999 12 05	703	0.3-	0.6+	2000 01 04	704	0.7+	0.1-
1998 06 27	809	0.8+	1.5+	1999 12 05	703	0.2-	0.3+	2000 01 04	704	0.3+	0.1-
1998 06 27	809	0.8-	0.2+	1999 12 05	703	0.7-	0.4+	2000 01 04	704	0.6+	0.2-
1998 06 27	809	0.7+	0.7+	1999 12 05	703	0.9-	0.3+	2000 01 04	704	0.2-	0.1+
1999 11 03	704	0.0	0.3+	1999 12 07	704	0.5+	0.1+	2000 01 04	704	0.3-	0.4-
1999 11 03	704	0.1+	0.2-	1999 12 07	704	0.2+	0.0	2000 01 06	704	0.2+	0.2+
1999 11 03	704	0.1-	0.4-	1999 12 07	704	0.6+	0.0	2000 01 06	704	0.1-	0.1-
1999 11 03	704	0.3+	0.1+	1999 12 07	704	0.6+	0.2+	2000 01 06	704	0.5-	0.0
1999 11 03	704	0.1-	0.3+	1999 12 07	704	0.6+	0.1-	2000 01 06	704	0.8-	0.3+
1999 11 14	704	0.3-	0.4-	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.5-	1.3-
1999 11 14	704	0.2-	0.5-	1999 12 08	704	0.2+	0.0				
1999 11 14	704	0.1+	0.2-	1999 12 08	704	0.2+	0.1+				

1999 XT₅₂ = 1998 KD₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	113.07528		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.25779048	ω	22.30442	+0.71059417	+0.70319370
a	2.4450710	Ω	292.98851	-0.64940947	+0.64237146
e	0.1940966	i	1.49201	-0.27078271	+0.30475814
P	3.82	H	15.3	G 0.15	U 4

Residuals in seconds of arc

1998 05 22	704	0.3+	0.4-	1999 11 12	704	0.3-	0.0	1999 12 07	704	0.1-	0.2-
1998 05 22	704	0.5-	0.7+	1999 11 12	704	0.4-	0.1+	1999 12 07	704	0.0	0.4+
1998 05 22	704	(2.9+	1.5+)	1999 11 12	704	0.1-	0.2+	1999 12 07	704	0.2-	0.2+
1998 05 22	704	0.1+	0.2+	1999 11 12	704	0.1-	0.2+	1999 12 08	704	0.2-	0.2-
1998 05 24	704	0.5-	0.2+	1999 11 12	704	0.3+	0.4+	1999 12 08	704	0.3+	0.4+
1998 05 24	704	1.3+	1.1-	1999 11 14	704	0.6-	0.0	1999 12 08	704	0.1+	0.3-
1998 05 24	704	0.9+	2.0+	1999 11 14	704	0.4+	0.4-	1999 12 08	704	0.1+	0.1+
1998 05 24	704	1.5-	1.6-	1999 11 14	704	0.8+	0.5-	1999 12 08	704	0.0	0.4-

1999 XB₅₃ = 1977 RG₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	356.15462		(2000.0)	P		Q	
<i>n</i>	0.18512436	ω	23.56733	+0.00060792	−0.99989179		
<i>a</i>	3.0490205	Ω	66.40054	+0.91491209	−0.00537673		
<i>e</i>	0.0683108	<i>i</i>	0.91903	+0.40365269	+0.01369270		
<i>P</i>	5.32	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 09 09	675	0.2+	0.4−	1999 11 17	704	1.7+	0.7+	1999 12 08	704	0.2−	0.5−
1977 09 10	675	(5.1+	0.8+)	1999 11 17	704	0.6+	0.7+	1999 12 08	704	0.5+	0.3−
1999 11 09	704	0.5−	1.0+	1999 11 17	704	0.6+	0.1−	1999 12 08	704	0.2+	0.3−
1999 11 09	704	1.1−	0.3+	1999 12 05	703	0.3−	0.9+	1999 12 08	704	0.7+	0.3−
1999 11 09	704	0.8−	0.4+	1999 12 05	703	0.1+	0.2−	2000 01 04	704	0.3+	0.4+
1999 11 09	704	1.1−	0.7+	1999 12 05	703	0.0	0.1−	2000 01 04	704	0.8−	0.8−
1999 11 09	704	0.4−	1.0+	1999 12 05	703	0.5−	0.6+	2000 01 04	704	0.1+	0.1−
1999 11 12	704	0.8−	0.2−	1999 12 07	704	1.0+	0.6−	2000 01 06	704	0.2+	1.2+
1999 11 12	704	0.3−	0.1−	1999 12 07	704	(2.4+	1.0+)	2000 01 06	704	0.4+	0.9+
1999 11 12	704	1.0−	0.1+	1999 12 07	704	0.7+	0.8−	2000 01 06	704	0.9+	0.8−
1999 11 12	704	0.5−	0.1−	1999 12 07	704	1.4+	1.0−	2000 01 06	704	0.9−	0.2−
1999 11 12	704	1.0−	0.1−	1999 12 07	704	0.4+	0.4−				
1999 11 17	704	0.2+	1.1−	1999 12 08	704	0.3+	0.5−				

1999 XD₅₃ = 1998 KF₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	105.30926		(2000.0)	P		Q	
<i>n</i>	0.28821273	ω	256.42224	+0.89245002	+0.44886181		
<i>a</i>	2.2698332	Ω	76.89117	−0.39382918	+0.82414938		
<i>e</i>	0.1135520	<i>i</i>	2.66847	−0.22007167	+0.34539958		
<i>P</i>	3.42	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 22	704	1.5−	1.1+	1999 11 09	704	0.5−	1.0−	1999 12 07	704	0.6+	0.0
1998 05 22	704	0.7−	0.8−	1999 11 12	704	0.2+	0.6+	1999 12 07	704	0.1+	0.1−
1998 05 22	704	0.0	0.7−	1999 11 12	704	0.2+	0.0	1999 12 08	704	0.4−	0.4−
1998 05 22	704	1.3+	0.8−	1999 11 12	704	0.3−	0.5+	1999 12 08	704	0.3−	0.4−
1998 05 24	704	1.5+	0.6−	1999 11 12	704	0.2−	0.5+	1999 12 08	704	0.4+	0.2−
1998 05 24	704	1.8+	0.5+	1999 11 12	704	0.7−	0.6+	1999 12 08	704	0.0	0.2−
1998 05 24	704	1.5−	0.5+	1999 12 05	703	0.1+	0.9+	1999 12 08	704	0.4+	0.1−
1998 05 24	704	0.5−	0.2+	1999 12 05	703	0.9+	0.0	2000 01 04	704	0.1−	0.1+
1998 05 24	704	0.7−	0.5−	1999 12 05	703	0.5−	0.1+	2000 01 04	704	0.3−	0.3−
1999 11 09	704	0.1−	0.7−	1999 12 05	703	0.2−	0.8+	2000 01 04	704	0.4−	0.2−
1999 11 09	704	0.6+	0.2−	1999 12 07	704	0.4+	0.1+	2000 01 04	704	0.1−	0.1+
1999 11 09	704	0.3+	0.6−	1999 12 07	704	0.1+	0.3+				
1999 11 09	704	0.1−	1.0−	1999 12 07	704	0.1+	0.2−				

1999 XE₅₃ = 1995 SC₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.37181		(2000.0)	P		Q	
<i>n</i>	0.26862053	ω	142.34982	+0.99787385	−0.06262966		
<i>a</i>	2.3789022	Ω	221.25216	+0.05115223	+0.92407998		
<i>e</i>	0.2230438	<i>i</i>	1.56742	+0.04038840	+0.37703278		
<i>P</i>	3.67	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 09 02	010	0.2+	1.5+	1999 11 03	704	0.0	0.2−	1999 11 17	704	0.5−	0.2−
1995 09 02	010	0.1−	0.3+	1999 11 09	704	0.4+	0.3−	1999 12 03	699	0.2−	1.3+
1995 09 02	010	0.7−	0.8+	1999 11 09	704	0.9+	1.0−	1999 12 03	699	0.1−	0.1+
1995 09 26	010	1.2−	0.9−	1999 11 09	704	0.1−	0.2−	1999 12 03	699	0.9+	1.0+
1995 09 26	010	0.6−	0.4−	1999 11 09	704	0.0	0.1+	1999 12 07	704	0.3+	0.2+
1995 09 26	010	0.8−	1.2−	1999 11 09	704	0.1+	0.2+	1999 12 07	704	0.1−	0.1−
1995 09 27	010	1.3+	0.4+	1999 11 12	704	0.8+	0.1−	1999 12 07	704	0.6−	0.4+
1995 09 27	010	1.8+	0.4−	1999 11 12	704	0.3−	0.4+	1999 12 07	704	0.3−	0.8+
1995 09 27	010	(2.7+	0.2+)	1999 11 12	704	0.1−	0.0	1999 12 07	704	0.6−	0.3+
1999 10 30	703	0.3+	0.1+	1999 11 12	704	0.1−	0.2−	1999 12 08	704	0.1+	0.0

1999 10 30	703	0.1−	0.7+	1999 11 12	704	0.3+	0.3−	1999 12 08	704	0.6+	0.3+
1999 10 30	703	0.0	0.6+	1999 11 17	704	0.7−	0.8−	1999 12 08	704	0.0	0.4−
1999 10 30	703	0.5−	0.3−	1999 11 17	704	0.5+	0.3+	1999 12 08	704	0.0	0.4−
1999 11 03	704	0.1−	0.2−	1999 11 17	704	0.4−	0.4−	1999 12 08	704	0.6+	0.0
1999 11 03	704	0.4−	0.4−	1999 11 17	704	0.8−	0.4−				

1999 XF₅₃ = 1995 WN₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	351.17788		(2000.0)	P		Q	
<i>n</i>	0.26266677	ω	227.24882	−0.26001569	−0.96394210		
<i>a</i>	2.4147154	Ω	237.90477	+0.90430592	−0.22252567		
<i>e</i>	0.1019282	<i>i</i>	3.83318	+0.33855966	−0.14593820		
<i>P</i>	3.75	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 24	691	0.1+	0.8−	1999 11 12	704	0.4−	0.4+	1999 12 07	704	0.8+	0.4−
1995 11 24	691	0.1+	0.2+	1999 11 12	704	0.3−	0.1+	1999 12 07	704	1.3−	1.2+
1995 11 24	691	0.0	0.0	1999 11 12	704	0.1+	0.4+	1999 12 07	704	0.5+	0.2+
1995 11 28	691	0.2+	0.3+	1999 11 27	049	0.7+	1.7−	1999 12 07	704	0.1+	0.3−
1995 11 28	691	0.8−	0.1+	1999 11 27	049	0.2+	1.8−	1999 12 08	704	0.6+	0.9+
1995 11 28	691	0.5+	0.2−	1999 11 27	049	0.3+	1.7−	1999 12 08	704	0.5+	0.0
1999 11 09	704	0.2+	0.1+	1999 12 04	703	0.2−	1.2+	1999 12 08	704	0.4+	0.5−
1999 11 09	704	0.0	0.6+	1999 12 04	703	0.7−	0.1+	1999 12 08	704	0.5−	0.1+
1999 11 09	704	0.6+	0.5+	1999 12 04	703	0.6−	0.1−	1999 12 08	704	0.3−	0.3−
1999 11 09	704	0.1−	0.5+	1999 12 04	703	0.3−	1.1+				
1999 11 09	704	0.5+	0.7+	1999 12 07	704	0.9−	1.0−				

1999 XH₅₃ = 1996 AV₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	152.96284		(2000.0)	P		Q	
<i>n</i>	0.20948203	ω	206.13755	+0.28743818	+0.95549355		
<i>a</i>	2.8078347	Ω	80.62608	−0.86654618	+0.28896720		
<i>e</i>	0.0663583	<i>i</i>	3.85990	−0.40801595	+0.05941410		
<i>P</i>	4.70	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 01 12	691	0.0	0.2+	1999 12 04	703	0.2−	1.0−	2000 01 05	704	0.0	0.7+
1996 01 12	691	0.0	0.2+	1999 12 04	703	0.1−	0.1−	2000 01 05	704	0.1−	0.4+
1996 01 12	691	0.0	0.1−	1999 12 07	704	0.2+	0.1+	2000 01 06	704	0.5−	0.3−
1996 01 25	691	0.1+	0.2−	1999 12 07	704	0.4+	0.0	2000 01 06	704	0.2−	0.3+
1996 01 25	691	0.1−	0.0	1999 12 07	704	0.6+	0.9−	2000 01 06	704	(1.8+	2.3+)
1996 01 25	691	0.1+	0.0	1999 12 07	704	0.5−	0.4+	2000 01 08	691	0.4+	0.4−
1999 11 12	704	0.1−	0.6+	1999 12 08	704	0.0	0.2−	2000 01 08	691	0.5+	0.2−
1999 11 12	704	0.3+	0.5+	1999 12 08	704	0.7+	1.0−	2000 01 08	691	0.3+	0.5−
1999 11 12	704	0.4−	0.8+	1999 12 08	704	0.2+	1.1−	2000 01 10	691	0.4+	0.0
1999 11 12	704	0.0	0.9+	1999 12 08	704	0.6+	1.0−	2000 01 10	691	0.3+	0.0
1999 12 04	703	0.5+	0.9+	2000 01 05	704	1.5−	1.1+	2000 01 10	691	0.1+	0.1+
1999 12 04	703	1.5−	0.7−	2000 01 05	704	0.1−	0.8+				

1999 XX₅₃ = 1994 SW₆

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	114.78618		(2000.0)	P		Q	
<i>n</i>	0.22091130	ω	145.99362	+0.79750231	+0.60331143		
<i>a</i>	2.7101340	Ω	176.89599	−0.56261948	+0.74508893		
<i>e</i>	0.0610025	<i>i</i>	2.45360	−0.21782878	+0.28435505		
<i>P</i>	4.46	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 09 28	691	0.1+	0.1−	1999 11 17	704	0.5+	0.5−	1999 12 09	691	0.0	0.4+
1994 09 28	691	0.6+	0.0	1999 11 17	704	0.2−	0.1+	1999 12 09	691	0.2+	1.0−
1994 09 28	691	0.0	0.1+	1999 11 17	704	0.2+	0.6−	1999 12 09	691	0.1−	0.1−

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1999 11 04	704	0.0	0.3+	1999 12 07	704	1.0+	0.6-	1999 12 31	691	0.2+	0.2-
1999 11 04	704	1.3-	0.8+	1999 12 07	704	0.2+	0.1+	1999 12 31	691	0.0	0.3-
1999 11 04	704	0.2+	0.2+	1999 12 07	704	0.2-	0.1-	1999 12 31	691	0.2+	0.1-
1999 11 15	704	0.4+	0.8-	1999 12 08	704	1.2-	0.3+	2000 01 05	691	0.1-	0.3-
1999 11 15	704	0.2+	0.4-	1999 12 08	704	0.5-	0.7-	2000 01 05	691	0.1+	0.2-
1999 11 15	704	0.6+	0.1-	1999 12 08	704	2.0-	0.8+	2000 01 05	691	0.3+	0.3-
1999 11 15	704	1.2+	0.5+	1999 12 08	704	0.3+	0.2+				
1999 11 15	704	1.1+	0.6+	1999 12 08	704	1.4-	0.8+				

1999 XD₅₄ = 1997 HS₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	254.28252		(2000.0)		P		Q
<i>n</i>	0.26214038	ω	345.29292	-0.89753015		+0.43702272	
<i>a</i>	2.4179470	Ω	220.78434	-0.39494220		-0.85596171	
<i>e</i>	0.1449431	<i>i</i>	5.15957	-0.19611296		-0.27629822	
<i>P</i>	3.76	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 28	704	1.1-	0.7-	1999 11 04	704	1.0+	0.6+	1999 12 07	704	0.0	0.1-
1997 04 28	704	0.6-	0.1+	1999 11 04	704	0.3+	0.8+	1999 12 08	704	0.1-	0.2+
1997 04 28	704	1.0-	0.5-	1999 11 15	704	0.0	0.1+	1999 12 08	704	0.1+	0.5+
1997 04 28	704	(2.5-	0.2-)	1999 11 15	704	0.4-	0.7-	1999 12 08	704	0.8-	0.0
1997 04 29	704	1.0+	0.2+	1999 11 15	704	0.4-	0.2-	1999 12 08	704	0.6-	0.3-
1997 04 29	704	1.4+	0.5-	1999 11 15	704	1.6+	0.3-	1999 12 12	691	0.8-	0.3+
1997 04 29	704	1.3+	0.3+	1999 11 15	704	0.1-	0.5-	1999 12 12	691	0.6-	0.4+
1997 04 29	704	1.1-	0.8+	1999 11 17	704	0.2+	0.1+	1999 12 12	691	0.7-	0.1+
1998 08 17	704	0.3+	1.1-	1999 11 17	704	0.5+	1.3-	2000 01 02	691	0.6+	0.3+
1998 08 17	704	0.6+	1.4+	1999 11 17	704	0.0	0.5-	2000 01 02	691	0.1+	0.3+
1998 08 17	704	(1.3-	2.4+)	1999 11 17	704	0.3-	0.2-	2000 01 02	691	0.2+	0.3+
1998 08 17	704	(0.4-	2.4-)	1999 12 07	704	0.5-	0.4+	2000 01 11	691	0.1+	0.4+
1998 08 17	704	1.0-	0.2-	1999 12 07	704	0.1-	0.0	2000 01 11	691	0.0	0.2+
1999 11 04	704	0.4-	1.1-	1999 12 07	704	0.9+	0.4-	2000 01 11	691	0.1-	0.5+
1999 11 04	704	0.8+	0.2+	1999 12 07	704	0.2-	0.1-				

1999 XE₅₄ = 1978 XF₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	35.67624		(2000.0)		P		Q
<i>n</i>	0.18840277	ω	295.90681	+0.76235784		-0.64511710	
<i>a</i>	3.0135463	Ω	104.31223	+0.61109543		+0.69150550	
<i>e</i>	0.1395163	<i>i</i>	3.03644	+0.21300916		+0.32502933	
<i>P</i>	5.23	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1978 12 03	675	1.2+	0.5-	1999 11 04	704	1.2-	0.3+	1999 12 04	703	0.9+	1.5+
1978 12 03	675	0.6-	1.3-	1999 11 04	704	0.1-	0.3+	1999 12 07	704	0.1+	0.2-
1978 12 05	675	2.2+	0.3+	1999 11 15	704	0.1-	0.1-	1999 12 07	704	0.4-	0.0
1978 12 06	675	1.5-	0.9-	1999 11 15	704	0.3+	0.3-	1999 12 07	704	0.4-	0.0
1978 12 06	675	0.4-	1.0-	1999 11 15	704	0.2-	0.1-	1999 12 07	704	0.1-	0.4+
1998 08 17	704	0.9-	1.4-	1999 11 15	704	0.2-	0.0	1999 12 07	704	0.4+	0.6-
1998 08 17	704	0.6+	0.5+	1999 11 15	704	0.2-	0.3-	1999 12 08	704	0.2+	0.1+
1998 08 17	704	0.3+	1.0+	1999 11 17	704	0.3-	0.3+	1999 12 08	704	0.2-	0.1-
1998 08 17	704	(3.1-	1.5+)	1999 11 17	704	0.1-	0.5-	1999 12 08	704	0.1-	0.0
1999 10 30	703	0.3+	1.0+	1999 11 17	704	0.0	0.0	1999 12 08	704	0.1-	0.2-
1999 10 30	703	0.5-	0.8+	1999 11 17	704	0.1+	0.2-	1999 12 08	704	0.2-	0.2-
1999 10 30	703	(2.6+	0.4+)	1999 11 17	704	0.4+	0.5+	2000 01 05	704	0.4+	1.3-
1999 10 30	703	0.4-	0.2+	1999 12 04	703	0.6+	0.1-	2000 01 05	704	0.1+	1.0+
1999 11 04	704	0.4+	0.2+	1999 12 04	703	0.1+	0.4+	2000 01 05	704	0.4-	0.4+
1999 11 04	704	(2.6+	0.3-)	1999 12 04	703	0.1+	0.5+				

1999 XH₅₄ = 1996 HO₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	22.60287		(2000.0)		P		Q
<i>n</i>	0.17178768	ω	290.83400	+0.57417729		-0.81812418	
<i>a</i>	3.2048524	Ω	124.08471	+0.76460891		+0.52206065	
<i>e</i>	0.1851050	<i>i</i>	2.18081	+0.29273477		+0.24109230	
<i>P</i>	5.74	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 19	691	0.1-	0.0	1999 11 15	704	0.0	0.3-	1999 12 04	703	0.8-	0.4+
1996 04 19	691	1.9-	0.1-	1999 11 15	704	0.6-	0.8-	1999 12 07	704	0.2-	0.8-
1996 04 19	691	0.1-	0.1-	1999 11 17	704	1.3+	0.2-	1999 12 07	704	0.4-	0.5-
1996 04 24	691	0.7+	0.2+	1999 11 17	704	0.7+	0.3+	1999 12 07	704	0.3+	0.5-
1996 04 24	691	0.7+	0.2+	1999 11 17	704	0.7-	0.3-	1999 12 07	704	0.2-	0.4-
1996 04 24	691	0.7+	0.3-	1999 11 17	704	0.4+	0.6-	1999 12 07	704	0.1-	0.2-
1999 11 04	704	0.4-	0.1+	1999 11 17	704	0.0	0.4+	1999 12 08	704	0.2-	0.2-
1999 11 04	704	0.4+	0.2+	1999 12 03	699	0.1-	1.6+	1999 12 08	704	0.0	0.2-
1999 11 04	704	0.2-	0.1+	1999 12 03	699	0.6-	0.2-	1999 12 08	704	0.6+	0.4+
1999 11 04	704	0.7+	0.1+	1999 12 03	699	1.5+	0.8-	1999 12 08	704	0.1+	0.3+
1999 11 15	704	0.3+	0.0	1999 12 04	703	0.0	0.8+	1999 12 08	704	0.1+	0.1-
1999 11 15	704	0.3-	0.1+	1999 12 04	703	0.7-	0.1+				
1999 11 15	704	0.0	0.0	1999 12 04	703	0.9-	1.0+				

1999 XN₅₄ = 1998 OP₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	129.13674		(2000.0)		P		Q
<i>n</i>	0.20727875	ω	146.39886	+0.62555386		+0.78008493	
<i>a</i>	2.8276970	Ω	162.31397	-0.72438006		+0.58656838	
<i>e</i>	0.0638454	<i>i</i>	2.30941	-0.28975142		+0.21772697	
<i>P</i>	4.75	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 07 26	809	0.6-	0.6+	1999 11 04	704	1.1+	0.2+	1999 12 07	704	0.1-	0.2-
1998 07 26	809	0.0	0.1+	1999 11 15	704	0.5+	0.4-	1999 12 07	704	0.3+	0.4-
1998 07 26	809	0.6-	0.2-	1999 11 15	704	0.3+	0.3+	1999 12 08	704	0.1+	0.1-
1998 07 27	809	0.8+	0.5-	1999 11 15	704	0.3+	0.2-	1999 12 08	704	0.3-	0.5+
1998 07 27	809	0.2-	1.2-	1999 11 15	704	0.5-	0.5+	1999 12 08	704	0.4+	0.5-
1998 07 27	809	0.3-	0.7-	1999 11 15	704	0.9+	0.2-	1999 12 08	704	1.1-	0.2-
1998 08 17	704	0.8+	0.2-	1999 12 04	703	0.5+	0.4-	1999 12 17	691	0.4+	0.5+
1998 08 17	704	0.4-	1.9+	1999 12 04	703	0.5-	1.5+	1999 12 17	691	0.2+	0.4+
1998 08 17	704	0.0	0.5-	1999 12 04	703	0.5+	0.4-	1999 12 17	691	0.1+	0.6+
1998 08 17	704	1.5+	1.3+	1999 12 04	703	1.5-	1.9+	2000 01 04	691	0.2-	0.6-
1998 08 17	704	1.0-	0.8-	1999 12 07	704	0.6+	0.4-	2000 01 04	691	0.1-	0.1-
1999 11 04	704	0.8-	1.2-	1999 12 07	704	0.1-	0.5-	2000 01 04	691	0.4-	0.3-
1999 11 04	704	0.3-	0.7+	1999 12 07	704	0.4-	1.2-				

1999 XO₅₄ = 1982 DZ₃ = 1993 BQ₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	321.55673		(2000.0)		P		Q
<i>n</i>	0.26660877	ω	34.63950	-0.82533012		-0.56198314	
<i>a</i>	2.3908542	Ω	111.07554	+0.50386670		-0.77682403	
<i>e</i>	0.1566210	<i>i</i>	3.36802	+0.25485006		-0.28411157	
<i>P</i>	3.70	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1982 02 20	033	0.9-	0.6+	1993 01 28	010	0.4-	0.4-	1999 12 08	704	0.1+	0.3+
1982 02 20	033	1.0+	0.6-	1993 01 28	010	0.4-	0.2-	1999 12 08	704	0.2+	0.1-
1982 02 20	033	0.8-	0.6+	1999 12 07	704	0.0	0.1-	1999 12 08	704	0.2-	0.0
1982 02 21	033	0.6+	0.4-	1999 12 07	704	0.3+	0.3-	2000 01 04	691	0.1+	0.0
1982 02 21	033	0.3+	0.3+	1999 12 07	704	0.2+	0.2+	2000 01 04	691	0.2+	0.2+
1993 01 27	010	0.4+	0.2+	1999 12 07	704	0.1-	0.2-	2000 01 04	691	0.1+	0.1+
1993 01 27	010	0.8+	0.0	1999 12 07	704	0.2-	0.1-	2000 01 10	691	0.1-	0.1+
1993 01 27	010	0.4+	0.2+	1999 12 08	704	0.0	0.3-	2000 01 10	691	0.3-	0.7+
1993 01 28	010	1.0-	0.7-	1999 12 08	704	0.3-	0.3-	2000 01 10	691	0.2-	0.4+

1999 XX₅₄ = 1998 TF₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	260.44560		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17771207	ω	17.64660	-0.97749264	+0.21096584		
<i>a</i>	3.1332239	Ω	174.53191	-0.19509970	-0.90170487		
<i>e</i>	0.1055240	<i>i</i>	0.74742	-0.08027599	-0.37738806		
<i>P</i>	5.55	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 10 12	691	0.6-	0.3-	1999 11 12	704	0.1-	0.2+	1999 12 07	704	1.1+	0.3-
1998 10 12	691	0.4-	0.1-	1999 11 17	704	0.4-	0.1-	1999 12 07	704	0.8-	0.7-
1998 10 12	691	0.3-	0.4-	1999 11 17	704	0.5+	0.4+	1999 12 07	704	0.4-	0.5-
1998 10 15	691	0.6+	0.3+	1999 11 17	704	0.2-	0.1-	1999 12 07	704	0.1+	0.2+
1998 10 15	691	0.3+	0.0	1999 11 17	704	0.4+	0.1-	1999 12 08	704	0.3-	0.1-
1998 10 15	691	0.4+	0.5+	1999 12 04	703	0.8-	0.0	1999 12 08	704	0.1-	0.2-
1999 11 12	704	0.2+	0.3+	1999 12 04	703	0.1-	0.3+	1999 12 08	704	0.5+	0.2-
1999 11 12	704	0.2-	0.4+	1999 12 04	703	0.6-	0.1-	1999 12 08	704	1.2+	0.4+
1999 11 12	704	0.3+	0.1-	1999 12 04	703	1.0-	0.7+	1999 12 08	704	0.2-	0.2-
1999 11 12	704	0.1-	0.5-	1999 12 07	704	1.0+	0.3+				

1999 XB₅₅ = 1997 AC

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	87.21480		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.30621885	ω	269.01758	+0.99463694	+0.09924397		
<i>a</i>	2.1799579	Ω	85.28636	-0.07940808	+0.91315174		
<i>e</i>	0.1198910	<i>i</i>	1.67437	-0.06626999	+0.39535369		
<i>P</i>	3.22	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 01 01	684	0.3-	0.2+	1999 11 12	704	0.5-	0.2-	1999 12 05	703	0.3+	0.8+
1997 01 01	684	0.4+	0.1-	1999 11 12	704	0.7+	0.1+	1999 12 05	703	0.5-	0.6+
1997 01 01	684	1.0-	0.1+	1999 11 12	704	0.2-	0.5+	1999 12 07	704	0.4-	0.7-
1997 01 02	684	0.2+	0.0	1999 11 25	120	1.9-	0.5-	1999 12 07	704	1.3+	0.5-
1997 01 02	684	0.6+	0.1-	1999 11 26	120	1.1+	1.2-	1999 12 07	704	1.2-	1.1+
1999 11 09	704	0.2+	0.1-	1999 11 26	120	1.2+	0.2-	1999 12 07	704	0.0	0.9-
1999 11 09	704	0.0	0.2-	1999 11 28	120	0.1+	0.2-	1999 12 07	704	0.1+	0.0
1999 11 09	704	0.2+	0.1-	1999 11 28	120	(1.4- 2.3-)		1999 12 08	704	0.4-	0.5-
1999 11 09	704	0.7+	0.7+	1999 11 29	120	0.6-	0.3+	1999 12 08	704	0.0	0.1-
1999 11 09	704	1.0-	0.2-	1999 11 29	120	0.1+	0.3-	1999 12 08	704	1.0+	0.4-
1999 11 12	704	0.2+	0.3+	1999 12 05	703	0.2-	0.8+	1999 12 08	704	0.3+	0.2+
1999 11 12	704	0.2-	0.1-	1999 12 05	703	0.3-	1.1+				

1999 XM₅₅ = 1998 QN₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	303.57276		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21086351	ω	79.18346	-0.82774242	-0.55741007		
<i>a</i>	2.7955575	Ω	66.91050	+0.48361946	-0.76685189		
<i>e</i>	0.0305419	<i>i</i>	4.00918	+0.28452539	-0.31817006		
<i>P</i>	4.67	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 25	428	0.6+	0.1+	1999 11 12	704	0.7-	0.2+	1999 12 07	704	0.5+	0.1-
1998 08 25	428	0.3+	0.2+	1999 11 12	704	0.3-	0.2+	1999 12 08	704	0.3+	0.1-
1998 08 30	428	0.3+	0.1-	1999 11 12	704	0.6-	0.2+	1999 12 08	704	0.6+	0.2-
1998 08 30	428	1.3-	0.1-	1999 11 17	704	0.5-	0.1-	1999 12 08	704	0.3+	0.5-
1999 11 09	704	0.4-	0.2+	1999 11 17	704	0.6+	0.3-	1999 12 08	704	1.0+	0.1-
1999 11 09	704	0.2+	0.1+	1999 11 17	704	1.3+	0.6-	1999 12 08	704	1.1+	0.4-
1999 11 09	704	0.1-	0.5+	1999 11 17	704	0.7-	0.3-	2000 01 06	704	0.8-	0.2+
1999 11 09	704	0.1-	0.2+	1999 12 07	704	0.1+	0.2-	2000 01 06	704	0.1-	0.3-
1999 11 09	704	0.3+	0.3-	1999 12 07	704	1.4+	0.5-	2000 01 06	704	0.9-	1.2+
1999 11 12	704	1.9-	0.7+	1999 12 07	704	0.7+	0.2+	2000 01 06	704	1.4-	0.6+
1999 11 12	704	0.6-	0.1+	1999 12 07	704	0.2+	0.2-				

1999 XE₅₆ = 1978 UO₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	337.89456		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23925267	ω	230.03920	-0.45473697	-0.88597664		
<i>a</i>	2.5697933	Ω	247.23042	+0.84423925	-0.39630001		
<i>e</i>	0.0691883	<i>i</i>	5.65648	+0.28368007	-0.24081465		
<i>P</i>	4.12	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 10 27	675	0.3+	0.3-	1999 11 16	704	1.6-	0.8-	1999 12 08	704	0.4+	0.5+
1978 10 28	675	0.3-	0.0	1999 11 16	704	0.2+	0.1-	1999 12 08	704	0.0	0.9-
1978 10 29	675	0.0	0.1+	1999 11 16	704	0.1-	0.2-	1999 12 08	704	0.0	0.1+
1999 11 09	704	0.0	0.7+	1999 11 16	704	0.8+	0.6-	1999 12 31	699	0.3+	0.4+
1999 11 09	704	0.6+	1.0+	1999 12 07	704	0.2+	0.9-	1999 12 31	699	0.5+	0.1-
1999 11 09	704	0.2+	0.6+	1999 12 07	704	0.6+	0.1-	1999 12 31	699	0.1-	0.0
1999 11 12	704	0.3+	0.5+	1999 12 07	704	0.2-	0.2-	2000 01 06	704	0.5-	1.0+
1999 11 12	704	0.0	0.2+	1999 12 07	704	0.1-	0.0	2000 01 06	704	0.3+	0.6+
1999 11 12	704	0.1-	0.2+	1999 12 07	704	0.5-	0.5-	2000 01 06	704	0.6-	0.1+
1999 11 12	704	0.3+	0.9+	1999 12 08	704	0.1+	1.3-	2000 01 06	704	0.5-	0.2-
1999 11 12	704	0.2-	0.3+	1999 12 08	704	0.4-	1.0-				

1999 XK₅₆ = 1978 WV₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	263.90747		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28151268	ω	119.13835	-0.95852694	+0.27256828		
<i>a</i>	2.3057068	Ω	76.78227	-0.28205720	-0.86535003		
<i>e</i>	0.0653734	<i>i</i>	4.90640	-0.04086358	-0.42056612		
<i>P</i>	3.50	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1978 11 29	675	1.7+	0.5+	1999 11 12	704	0.8+	0.1-	1999 12 07	704	0.3-	0.2-
1978 11 30	675	1.8-	0.2-	1999 11 12	704	0.1-	0.8-	1999 12 07	704	0.4+	0.2-
1999 11 09	704	0.7-	0.2-	1999 11 17	704	0.0	0.1+	1999 12 07	704	0.1+	0.3-
1999 11 09	704	0.2+	0.6+	1999 11 17	704	0.2-	0.6-	1999 12 08	704	0.3-	0.4-
1999 11 09	704	0.3-	0.0	1999 11 17	704	0.1-	0.0	1999 12 08	704	0.3+	0.0
1999 11 09	704	0.5+	0.3-	1999 11 17	704	0.2+	0.6+	1999 12 08	704	0.1+	0.0
1999 11 09	704	0.3+	0.9+	1999 12 07	704	0.1-	0.3+	1999 12 08	704	0.3-	0.0
1999 11 12	704	0.8-	0.5-	1999 12 07	704	0.5+	0.2+	1999 12 08	704	0.2-	0.3+

1999 XQ₅₆ = 1982 XM₃

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	295.64543		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.29120559	ω	99.63534	-0.99149476	-0.08615859		
<i>a</i>	2.2542543	Ω	75.46944	+0.03761974	-0.90723041		
<i>e</i>	0.1492323	<i>i</i>	5.78335	+0.12459092	-0.41171554		
<i>P</i>	3.38	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 12 13	381	0.8+	0.4+	1999 12 06	557	0.2+	0.2-	1999 12 31	703	0.3+	0.2+
1982 12 14	381	0.6-	0.3+	1999 12 06	557	0.1+	0.2-	1999 12 31	703	0.7+	0.1+
1982 12 14	381	0.2-	0.9-	1999 12 06	557	0.4+	0.3-	1999 12 31	703	0.1+	0.5+
1999 11 15	704	0.5-	0.2+	1999 12 06	120	0.6+	0.1-	1999 12 31	703	0.3+	0.6+
1999 11 15	704	0.2-	0.2+	1999 12 06	120	1.7+	0.4+	2000 01 04	704	1.3-	0.7-
1999 11 15	704	0.3-	0.6+	1999 12 07	704	0.4+	0.3-	2000 01 04	704	0.1-	0.7+
1999 11 15	704	0.4-	0.5+	1999 12 07	704	0.5+	0.3-	2000 01 04	704	0.5-	0.0
1999 11 15	704	0.3-	0.6+	1999 12 07	704	0.5+	0.8-	2000 01 04	704	0.0	0.2+
1999 11 17	704	0.2-	0.2+	1999 12 07	704	0.5+	0.4-	2000 01 04	106	0.4+	0.2-
1999 11 17	704	0.8-	0.2+	1999 12 07	704	0.5+	0.4-	2000 01 04	106	0.2+	0.1-
1999 11 17	704	0.8-	0.7-	1999 12 08	704	0.2+	0.5-	2000 01 04	106	0.1+	0.3+
1999 11 17	704	0.7-	0.2-	1999 12 08	704	0.2+	0.4-	2000 01 06	704	0.2+	0.6-
1999 11 29	120	0.1+	0.2+	1999 12 08	704	0.3+	0.4-	2000 01 06	704	0.1-	0.0
1999 11 29	120	0.7-	0.5+	1999 12 08	704	0.2+	0.4-	2000 01 06	704	0.1+	0.4+
1999 11 29	120	0.4-	0.5+	1999 12 08	704	0.4+	0.2-	2000 01 06	704	0.5-	0.1+

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1999 12 06 557 0.1+ 0.3- 1999 12 11 557 0.6- 0.4+ 2000 01 06 704 0.8- 0.5+
 1999 12 06 557 0.0 0.3- 1999 12 11 557 0.4- 0.5+

1999 XS₅₆ = 1997 CL₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	16.79257		(2000.0)	P	Q
<i>n</i>	0.29840798	ω	301.26747	+0.18472854	-0.98276312
<i>a</i>	2.2178343	Ω	138.08528	+0.90532308	+0.16730715
<i>e</i>	0.0799774	<i>i</i>	0.61864	+0.38244672	+0.07864460
<i>P</i>	3.30	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 01 15	566	0.4-	0.1+	1999 11 12	704	0.4-	0.1+	1999 12 08	704	0.3+	0.5-
1997 01 15	566	0.2+	0.0	1999 11 12	704	0.5+	0.7+	1999 12 08	704	0.2+	0.9-
1997 01 15	566	0.3-	0.3+	1999 11 12	704	0.1-	0.4+	1999 12 08	704	0.1+	0.2-
1997 02 09	691	0.5+	0.0	1999 11 12	704	0.0	0.5+	1999 12 31	699	0.6+	0.4+
1997 02 09	691	0.7+	0.0	1999 11 17	704	0.9-	0.3+	1999 12 31	699	1.0-	0.7+
1997 02 09	691	0.4+	0.1-	1999 11 17	704	0.8-	0.2-	1999 12 31	703	1.0-	1.5+
1997 02 14	691	0.5-	0.1+	1999 11 17	704	0.7-	0.2+	1999 12 31	703	0.4-	0.5+
1997 02 14	691	0.1-	0.6-	1999 11 17	704	0.6-	0.1+	1999 12 31	703	0.5-	1.8+
1997 02 14	691	0.5-	0.0	1999 12 07	704	0.1+	1.1-	1999 12 31	703	0.1-	1.0+
1999 11 09	704	0.3+	0.2+	1999 12 07	704	0.7+	0.4-	2000 01 05	704	0.4+	0.6-
1999 11 09	704	0.1+	0.4+	1999 12 07	704	0.3+	1.1-	2000 01 05	704	1.6+	0.2+
1999 11 09	704	0.1+	0.2+	1999 12 07	704	0.1+	0.7-	2000 01 05	704	0.7-	0.3+
1999 11 09	704	0.2+	0.1+	1999 12 07	704	0.1+	0.4-	2000 01 05	704	0.1-	1.3-
1999 11 09	704	0.9+	1.0-	1999 12 08	704	0.4+	0.2-				
1999 11 12	704	0.1-	0.3+	1999 12 08	704	0.5+	0.6-				

1999 XQ₅₇ = 1985 BL₁ = 1998 QZ₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	170.42125		(2000.0)	P	Q
<i>n</i>	0.18593062	ω	37.97642	+0.01748792	+0.99137591
<i>a</i>	3.0401996	Ω	233.39854	-0.95238186	-0.02303076
<i>e</i>	0.0460191	<i>i</i>	9.31019	-0.30440591	+0.12900923
<i>P</i>	5.30	<i>H</i>	13.8	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1985 01 18	691	0.3+	0.5-	1999 11 03	704	0.2+	0.1+	1999 12 08	704	0.1+	0.8+
1985 01 18	691	(5.0-	0.5-)	1999 11 15	704	0.2+	0.0	1999 12 08	704	0.4+	0.3-
1985 01 18	691	0.7-	0.8-	1999 11 15	704	0.2+	0.3+	1999 12 08	704	0.3-	0.1-
1998 08 19	704	1.3+	0.4+	1999 11 15	704	0.1-	0.0	1999 12 08	704	0.8+	1.1-
1998 08 19	704	1.6+	0.2+	1999 11 15	704	0.1+	0.3+	1999 12 31	691	0.6-	0.6+
1998 08 19	704	0.4-	0.0	1999 11 15	704	0.3-	0.4+	1999 12 31	691	0.6-	0.6+
1998 08 27	704	1.3+	0.2+	1999 11 17	704	0.9+	0.1+	1999 12 31	691	0.6-	0.6+
1998 08 27	704	0.5+	0.0	1999 11 17	704	0.8-	1.4-	2000 01 05	691	0.5-	0.7+
1998 08 27	704	0.7-	0.1-	1999 11 17	704	0.4-	0.3-	2000 01 05	691	0.6-	0.6+
1998 08 27	704	(2.1-	0.2-)	1999 11 17	704	0.3+	1.2-	2000 01 05	691	0.5-	0.6+
1998 09 16	699	1.8-	0.6-	1999 12 07	704	0.0	0.0	2000 01 11	691	0.1+	0.1+
1998 09 16	699	0.1+	0.3-	1999 12 07	704	0.4+	0.0	2000 01 11	691	0.1+	0.0
1998 09 16	699	1.7-	0.4-	1999 12 07	704	0.2+	0.0	2000 01 11	691	0.1+	0.1+
1999 11 03	704	0.2+	0.1-	1999 12 07	704	0.0	0.2-				
1999 11 03	704	0.3+	0.6-	1999 12 07	704	0.6+	0.1+				

1999 XF₅₈ = 1998 RJ₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	236.17726		(2000.0)	P	Q
<i>n</i>	0.17780591	ω	344.79685	-0.81902851	+0.56787464
<i>a</i>	3.1321214	Ω	230.10046	-0.51464190	-0.79024063
<i>e</i>	0.0967342	<i>i</i>	6.12976	-0.25364545	-0.23030013
<i>P</i>	5.54	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.0	0.1-	1999 11 03	704	1.4-	0.5+	1999 12 07	704	0.3+	0.3-
1998 09 14	704	0.1-	0.2-	1999 11 03	704	0.2+	0.3-	1999 12 07	704	0.5+	0.4-
1998 09 14	704	0.7-	0.2+	1999 11 03	704	0.1+	0.5-	1999 12 08	704	1.1+	0.7-

1998 09 18	704	1.3+	0.0	1999 11 15	704	0.5+	0.7+	1999 12 08	704	0.4+	0.1-
1998 09 18	704	0.3+	0.5-	1999 11 15	704	0.3+	0.2-	1999 12 08	704	0.7-	1.0-
1998 09 18	704	0.5-	1.0-	1999 11 15	704	0.3-	0.2-	1999 12 08	704	0.2+	0.4-
1998 09 18	704	1.2-	1.3-	1999 11 15	704	0.7-	0.2+	1999 12 08	704	0.0	0.0
1998 09 18	704	(2.3-	1.9-)	1999 11 15	704	0.4-	0.4-	1999 12 31	703	0.0	0.9+
1998 09 26	704	0.7+	0.0	1999 11 17	704	0.8+	0.4+	1999 12 31	703	0.6-	0.1-
1998 09 26	704	0.1+	1.9+	1999 11 17	704	0.4-	0.3+	1999 12 31	703	0.3+	1.4+
1998 09 26	704	0.1-	0.8+	1999 11 17	704	0.4+	0.2-	1999 12 31	703	1.4-	0.7+
1998 09 26	704	1.0+	1.0-	1999 11 17	704	1.0+	0.4-	2000 01 05	704	0.0	0.6+
1998 09 27	704	0.7+	0.1-	1999 11 17	704	0.8-	0.6+	2000 01 05	704	0.3-	0.4+
1998 09 27	704	1.0-	0.1-	1999 12 07	704	0.5+	0.1+	2000 01 05	704	0.6+	0.6+
1998 09 27	704	0.5+	1.1+	1999 12 07	704	1.0+	0.6-	2000 01 05	704	1.3-	0.7-
1998 09 27	704	1.1-	0.3+	1999 12 07	704	0.1-	0.7-				

1999 XG₅₈ = 1998 LS₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	90.37737		(2000.0)	P	Q
<i>n</i>	0.23420874	ω	252.98821	+0.88533474	+0.43524132
<i>a</i>	2.6065576	Ω	80.95698	-0.33809094	+0.84409739
<i>e</i>	0.2184610	<i>i</i>	9.53236	-0.31918164	+0.31315265
<i>P</i>	4.21	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 06 01	809	0.5+	1.1+	1999 12 07	704	0.3-	0.2-	1999 12 31	703	0.3+	0.3+
1998 06 01	809	0.4-	0.2+	1999 12 07	704	0.6-	0.4+	1999 12 31	703	0.9-	0.6-
1998 06 01	809	0.1+	0.5+	1999 12 07	704	0.9-	0.3-	2000 01 05	704	(0.1+	2.2+)
1998 06 02	809	0.6+	1.3+	1999 12 07	704	0.5-	0.6-	2000 01 05	704	0.0	0.2+
1998 06 02	809	0.9+	1.6+	1999 12 08	704	0.7-	0.2-	2000 01 05	704	0.8+	1.4+
1998 06 02	809	0.3+	1.9+	1999 12 08	704	0.2-	0.0	2000 01 05	704	0.3+	1.1+
1999 11 04	704	0.4-	0.7+	1999 12 08	704	0.4-	0.0	2000 01 06	704	1.2+	0.8+
1999 11 04	704	0.6-	0.7+	1999 12 08	704	0.1-	0.1-	2000 01 06	704	1.5+	0.4+
1999 11 04	704	0.7+	1.5+	1999 12 08	704	0.3-	0.5-	2000 01 06	704	0.7+	1.3+
1999 11 04	704	0.2+	0.2-	1999 12 31	703	0.7-	1.4+				
1999 12 07	704	0.5-	0.2-	1999 12 31	703	0.3-	0.2+				

1999 XO₅₈ = 1996 GC₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	352.35821		(2000.0)	P	Q
<i>n</i>	0.16988361	ω	21.64679	-0.10881363	-0.96483018
<i>a</i>	3.2287548	Ω	75.24001	+0.87186975	-0.20826333
<i>e</i>	0.1086276	<i>i</i>	14.32734	+0.47749632	+0.16040296
<i>P</i>	5.80	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1996 04 15	691	0.8+	0.2+	1999 11 15	704	0.5-	0.3-	1999 12 07	704	0.2+	0.4+
1996 04 15	691	0.5+	0.3+	1999 11 15	704	0.4+	0.2-	1999 12 07	704	1.0+	0.8+
1996 04 23	691	0.4-	0.3-	1999 11 17	704	1.1-	0.1-	1999 12 07	704	0.9-	0.0
1996 04 23	691	0.8-	0.1-	1999 11 17	704	0.1-	0.1-	1999 12 08	704	0.3-	0.1-
1996 04 23	691	0.2-	0.2-	1999 11 17	704	0.1-	0.1-	1999 12 08	704	0.3+	0.1+
1999 11 15	704	0.9-	0.3+	1999 11 17	704	1.2+	0.0	1999 12 08	704	0.0	0.3-
1999 11 15	704	0.0	0.4-	1999 12 07	704	0.7+	0.8-	1999 12 08	704	0.2+	0.0
1999 11 15	704	0.2+	0.5+	1999 12 07	704	0.3-	0.2-	1999 12 08	704	0.1+	0.4+

1999 XP₅₈ = 1998 QV₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	13.14545		(2000.0)	P	Q
<i>n</i>	0.18377157	ω	187.36516	+0.29706548	-0.94211141
<i>a</i>	3.0639653	Ω	245.45636	+0.88455006	+0.33284900
<i>e</i>	0.0815432	<i>i</i>	9.84239	+0.35961549	-0.04046773
<i>P</i>	5.36	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 24	704	0.2-	1.0-	1999 11 12	704	0.3-	0.6+	1999 12 08	704	0.2+	0.2-
1998 08 24	704	1.8-	1.7-	1999 11 12	704	0.1-	0.1-	1999 12 08	704	1.5+	1.0-
1998 08 24	704	(2.1-	0.3-)	1999 11 12	704	1.2-	0.1+	1999 12 08	704	0.0	0.2-

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1998 08 24	704	0.2+	0.4+	1999 11 12	704	0.5−	0.3−	1999 12 08	704	0.0	0.2−
1998 08 27	704	1.7+	0.8+	1999 11 16	704	0.6−	0.2+	1999 12 08	704	0.2+	0.3−
1998 08 27	704	(3.0+	0.8+)	1999 11 16	704	1.0+	0.5+	2000 01 05	704	0.3+	0.5−
1998 08 27	704	0.4−	0.7+	1999 11 16	704	0.5+	0.9+	2000 01 05	704	0.5−	0.7+
1998 08 27	704	0.5+	0.9+	1999 11 16	704	0.1−	0.6+	2000 01 05	704	0.6+	0.1+
1999 11 09	704	0.7+	0.4−	1999 11 16	704	0.0	0.8+	2000 01 05	704	0.5−	1.3−
1999 11 09	704	0.7−	1.4−	1999 12 07	704	0.0	0.1+	2000 01 06	704	0.1−	1.0+
1999 11 09	704	0.1−	0.3−	1999 12 07	704	0.2−	0.0	2000 01 06	704	0.3−	0.1−
1999 11 09	704	0.4+	0.1−	1999 12 07	704	0.3−	0.2−	2000 01 06	704	0.1+	0.4+
1999 11 09	704	0.0	0.1+	1999 12 07	704	0.2+	0.0	2000 01 06	704	0.4−	0.5+
1999 11 12	704	0.1+	0.3+	1999 12 07	704	0.4+	0.1−	2000 01 06	704	0.4−	0.1−

1999 XS₅₈ = 1995 WY₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	31.51496		(2000.0)	P	Q
<i>n</i>	0.25830813	ω	181.58883	+0.55725843	−0.82965622
<i>a</i>	2.4418032	Ω	234.54609	+0.76227638	+0.52723726
<i>e</i>	0.1815459	<i>i</i>	2.36888	+0.32923816	+0.18355227
<i>P</i>	3.82	<i>H</i>	16.0	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1995 11 18	691	0.3−	0.0	1999 11 12	704	0.3−	0.1−	1999 12 07	704	0.1−	0.3−
1995 11 18	691	0.2−	0.2+	1999 11 12	704	0.6−	0.1+	1999 12 07	704	0.6+	0.3+
1995 11 18	691	0.1+	0.1−	1999 11 12	704	1.1−	0.0	1999 12 07	704	0.1−	0.1+
1995 11 24	691	0.1−	0.1+	1999 11 12	704	0.4+	0.3−	1999 12 08	704	0.1−	0.2+
1995 11 24	691	0.1+	0.2+	1999 11 17	704	0.3−	0.4−	1999 12 08	704	0.4+	0.3+
1995 11 24	691	0.1+	0.1+	1999 11 17	704	0.0	0.6−	1999 12 08	704	0.2+	0.1−
1999 11 09	704	0.6+	0.3−	1999 11 17	704	0.2−	0.5+	1999 12 08	704	0.2−	0.1+
1999 11 09	704	1.5+	0.3−	1999 11 17	704	0.1+	0.6−	1999 12 08	704	0.2−	0.1+
1999 11 09	704	0.4−	0.2−	1999 12 07	704	0.3−	1.1+				
1999 11 12	704	0.3−	0.0	1999 12 07	704	0.4+	0.1−				

1999 XT₅₈ = 1997 EU₅₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	326.28364		(2000.0)	P	Q
<i>n</i>	0.27858776	ω	291.62891	−0.81607120	−0.57775766
<i>a</i>	2.3218172	Ω	213.08342	+0.53988025	−0.75281813
<i>e</i>	0.1610707	<i>i</i>	1.57074	+0.20629376	−0.31537429
<i>P</i>	3.54	<i>H</i>	15.2	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1997 03 05	809	0.2+	1.7+	1999 11 12	704	0.1−	0.3−	1999 12 08	704	0.0	0.2−
1997 03 05	809	1.3+	1.0+	1999 11 12	704	0.4−	0.2−	1999 12 08	704	0.5−	0.6−
1997 03 05	809	1.8+	1.2+	1999 11 12	704	0.4+	0.0	1999 12 31	703	0.7−	0.1+
1997 03 06	809	0.3−	1.7−	1999 11 12	704	0.0	0.7+	1999 12 31	703	1.3−	0.5+
1997 03 06	809	0.6−	1.6−	1999 12 07	704	0.4+	0.3−	1999 12 31	703	0.0	0.3+
1997 03 06	809	1.6−	1.4−	1999 12 07	704	0.2−	1.0−	1999 12 31	703	0.2−	1.0+
1999 11 09	704	0.1−	0.0	1999 12 07	704	0.7+	0.5−	2000 01 06	704	0.0	0.4+
1999 11 09	704	0.2−	0.1+	1999 12 07	704	0.3+	0.6−	2000 01 06	704	0.4+	0.2+
1999 11 09	704	0.6−	0.2+	1999 12 08	704	0.4+	0.7+	2000 01 06	704	0.4+	0.5+
1999 11 09	704	0.1+	0.3−	1999 12 08	704	0.3+	0.2−	2000 01 06	704	0.2+	0.4+
1999 11 12	704	0.3+	0.1−	1999 12 08	704	0.5+	0.7−	2000 01 06	704	0.1−	0.1+

1999 XB₅₉ = 1998 KL₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	141.66561		(2000.0)	P	Q
<i>n</i>	0.27773674	ω	236.93568	+0.44704335	+0.89274728
<i>a</i>	2.3265577	Ω	59.71666	−0.79749188	+0.42620971
<i>e</i>	0.1740145	<i>i</i>	3.72919	−0.40516532	+0.14610814
<i>P</i>	3.55	<i>H</i>	15.4	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1998 05 22	704	0.7+	0.3+	1999 11 09	704	0.4−	0.1−	1999 12 07	704	0.9−	0.5+
1998 05 22	704	0.3−	0.4+	1999 11 09	704	0.5−	0.1+	1999 12 07	704	0.0	0.8+
1998 05 22	704	(2.5+	0.7−)	1999 11 09	704	0.4−	1.4+	1999 12 07	704	0.0	0.9+

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1998 05 22	704	1.6+	0.3+	1999 11 12	704	1.3+	0.0	1999 12 08	704	0.6+	0.9−
1998 05 24	704	0.1+	0.4+	1999 11 12	704	0.1+	0.2−	1999 12 08	704	0.1−	0.3−
1998 05 24	704	0.0	0.5−	1999 11 12	704	0.1−	0.5−	1999 12 08	704	1.8+	1.7−
1998 05 24	704	0.3−	1.3−	1999 12 07	704	0.4−	0.2+				
1998 05 24	704	1.7−	0.9+	1999 12 07	704	1.1−	0.5+				

1999 XD₅₉ = 1997 LS₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	328.06168		(2000.0)	P	Q
<i>n</i>	0.23310461	ω	60.35275	−0.62505919	−0.73562696
<i>a</i>	2.6147820	Ω	70.72314	+0.58575580	−0.66310215
<i>e</i>	0.0916892	<i>i</i>	16.05555	+0.51593716	−0.13837820
<i>P</i>	4.23	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1997 06 07	809	0.8−	0.2−	1999 12 07	704	0.1−	0.2+	2000 01 03	704	0.3+	0.1−
1997 06 07	809	0.1−	0.1−	1999 12 07	704	0.3−	0.3+	2000 01 03	704	0.7+	0.2+
1997 06 07	809	0.2−	0.9+	1999 12 07	704	0.6−	0.1+	2000 01 03	704	0.5−	0.0
1997 06 08	809	0.4+	0.2−	1999 12 07	704	0.3−	0.3+	2000 01 03	704	0.7−	0.2+
1997 06 08	809	0.5+	0.4−	1999 12 08	704	0.6+	0.6−	2000 01 04	704	0.4+	0.4−
1997 06 08	809	0.2+	0.1−	1999 12 08	704	1.3−	1.1+	2000 01 04	704	0.0	0.8−
1999 11 03	704	0.5+	0.1−	1999 12 08	704	1.1+	0.0	2000 01 04	704	0.4−	0.8+
1999 11 03	704	0.4−	0.5−	1999 12 08	704	0.4+	0.3−	2000 01 04	704	0.2−	0.3−
1999 11 03	704	0.3+	0.0	1999 12 08	704	0.3+	0.1−	2000 01 04	704	0.3+	0.5+
1999 12 07	704	0.3−	0.1+	2000 01 03	704	0.3+	1.0−				

1999 XT₅₉ = 1995 AN₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	57.00377		(2000.0)	P	Q
<i>n</i>	0.18555137	ω	306.29536	+0.91589998	−0.35122633
<i>a</i>	3.0443408	Ω	74.98423	+0.40139728	+0.80467376
<i>e</i>	0.0932541	<i>i</i>	11.60763	−0.00272763	+0.47868592
<i>P</i>	5.31	<i>H</i>	12.7	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1995 01 04	010	0.7+	0.8+	1999 12 07	704	0.2+	0.2−	2000 01 04	704	0.1+	0.0
1995 01 04	010	0.3−	1.3+	1999 12 07	704	0.1+	0.1+	2000 01 04	704	0.3+	0.4−
1995 01 04	010	0.1+	1.1+	1999 12 07	704	0.1+	0.2+	2000 01 04	704	0.5+	0.4+
1995 01 04	010	0.1+	0.8−	1999 12 07	704	0.0	0.2+	2000 01 04	704	0.1+	0.4−
1995 01 05	010	0.2−	1.1−	1999 12 07	704	0.1−	0.1+	2000 01 06	704	0.4+	0.1+
1995 01 05	010	0.4−	1.1−	1999 12 08	704	0.0	0.3+	2000 01 06	704	0.5+	0.2+
1999 11 03	704	0.3+	0.8−	1999 12 08	704	0.1−	0.7−	2000 01 06	704	0.2+	0.5−
1999 11 03	704	0.9−	0.4−	1999 12 08	704	0.2−	0.1+	2000 01 06	704	0.0	0.2−
1999 11 03	704	0.5−	0.3+	1999 12 08	704	0.0	0.3+	2000 01 06	704	0.2+	0.6−
1999 12 06	120	0.1−	0.3+	1999 12 08	704	0.3−	0.5+				
1999 12 06	120	0.5−	0.6+	2000 01 04	704	0.0	0.4+				

1999 XW₅₉ = 1998 UO₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	2.04769		(2000.0)	P	Q
<i>n</i>	0.08473003	ω	3.31313	+0.24177078	−0.96286047
<i>a</i>	5.1338653	Ω	72.72171	+0.88734478	+0.16926759
<i>e</i>	0.0456862	<i>i</i>	7.23125	+0.39263996	+0.21035254
<i>P</i>	11.63	<i>H</i>	11.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 10 22	910	0.2−	0.3+	1999 11 09	704	0.1−	0.4+	1999 12 07	704	0.7+	0.2−
1998 10 22	910	0.1−	0.4+	1999 11 09	704	0.0	0.2+	1999 12 07	704	0.1+	0.1−
1998 10 22	910	0.3−	0.8+	1999 11 12	704	0.8+	0.5−	1999 12 07	704	0.4−	0.5+
1998 10 23	910	0.5−	0.2+	1999 11 12	704	0.5−	1.0+	1999 12 08	704	0.5+	0.2+
1998 10 23	910	0.4−	0.5+	1999 11 12	704	0.6+	0.6+	1999 12 08	704	0.2+	0.7−
1998 10 23	910	0.3−	0.4+	1999 11 12	704	0.0	0.3+	1999 12 08	704	0.9−	0.3+
1998 11 11	704	0.9+	0.7−	1999 11 17	704	0.2−	0.7+	1999 12 08	704	0.1−	0.7−
1998 11 11	704	1.7+	0.6−	1999 11 17	704	1.5+	0.8+	1999 12 08	704	0.3−	0.2−
1998 11 11	704	0.5+	0.8−	1999 11 17	704	0.0	0.8−	2000 01 06	704	0.2−	0.2+

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1998 11 11	704	1.2−	0.9−	1999 11 17	704	0.3+	0.1−	2000 01 06	704	0.1+	0.4−
1999 11 09	704	0.3−	0.5−	1999 11 17	704	0.7−	0.0	2000 01 06	704	0.1+	0.7−
1999 11 09	704	0.1−	0.5+	1999 12 07	704	0.7−	0.2+	2000 01 06	704	0.0	0.2+
1999 11 09	704	0.3−	0.5−	1999 12 07	704	0.3−	0.1+	2000 01 06	704	0.4+	0.7−

1999 XK₆₀ = 1998 QB₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	17.47592		(2000.0)	P	Q
<i>n</i>	0.17111645	ω	202.96086	+0.38870949	−0.92080539
<i>a</i>	3.2132279	Ω	224.18272	+0.85229116	+0.37253676
<i>e</i>	0.1461024	<i>i</i>	2.62953	+0.35000673	+0.11547208
<i>P</i>	5.76	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	0.0	0.2+	1999 11 09	704	0.0	0.2−	1999 12 08	704	0.0	0.3+
1998 08 17	704	0.7+	0.6+	1999 11 09	704	0.2−	0.4−	1999 12 08	704	0.3−	0.1+
1998 08 17	704	0.5+	0.6−	1999 11 12	704	0.1+	0.1−	1999 12 08	704	0.4−	0.2+
1998 08 17	704	0.1−	1.8−	1999 11 12	704	0.1−	0.0	1999 12 08	704	0.5−	0.1+
1998 08 23	704	(0.5−	2.2−)	1999 11 12	704	0.1−	0.1−	1999 12 08	704	0.3−	0.3−
1998 08 23	704	1.4−	0.9+	1999 11 12	704	0.3+	0.2−	2000 01 05	704	0.2+	0.3+
1998 08 23	704	(2.7−	1.2−)	1999 11 12	704	0.2−	0.1+	2000 01 05	704	0.2+	0.1+
1998 08 23	704	0.0	1.5+	1999 11 17	704	0.7+	0.4+	2000 01 05	704	0.4+	0.2−
1998 08 25	910	0.3+	0.1−	1999 11 17	704	0.3−	0.3−	2000 01 05	704	0.4+	0.3−
1998 08 25	910	0.0	0.4−	1999 11 17	704	0.5+	0.3−	2000 01 05	704	0.1−	0.2+
1998 08 26	910	0.1+	0.3−	1999 11 17	704	0.3−	0.5−	2000 01 06	704	0.2+	0.1+
1999 11 03	704	0.2+	1.3+	1999 11 17	704	0.0	0.9−	2000 01 06	704	0.4+	0.1+
1999 11 03	704	0.4+	0.8+	1999 12 07	704	0.0	0.2−	2000 01 06	704	0.2+	0.2−
1999 11 03	704	0.0	0.8+	1999 12 07	704	0.3−	0.3−	2000 01 06	704	0.1−	0.0
1999 11 09	704	0.0	0.5−	1999 12 07	704	0.1+	0.0	2000 01 06	704	0.1−	0.1+
1999 11 09	704	0.2+	0.1+	1999 12 07	704	0.4−	0.2+				
1999 11 09	704	0.4+	0.2−	1999 12 07	704	1.0−	0.1−				

1999 XR₆₀ = 1992 EW₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	88.02699		(2000.0)	P	Q
<i>n</i>	0.21838041	ω	245.38306	+0.97998962	+0.19206433
<i>a</i>	2.7310329	Ω	103.50947	−0.15759632	+0.90907276
<i>e</i>	0.1077790	<i>i</i>	3.08127	−0.12158845	+0.36972694
<i>P</i>	4.51	<i>H</i>	14.2	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1992 02 29	809	1.5+	0.2−	1999 12 07	704	0.1−	0.1−	2000 01 05	704	0.2+	0.0
1992 03 03	809	0.2−	0.8+	1999 12 08	704	1.2−	0.5+	2000 01 05	704	0.6+	0.1+
1992 03 08	809	0.7+	1.1−	1999 12 08	704	0.1−	0.2+	2000 01 05	704	0.4−	0.4−
1992 03 09	809	1.8−	0.7+	1999 12 08	704	0.4+	0.1−	2000 01 06	704	0.6+	0.4−
1999 12 07	704	0.4−	0.1+	1999 12 08	704	0.2+	0.4+	2000 01 06	704	0.2−	0.1−
1999 12 07	704	0.2+	0.3−	1999 12 08	704	0.1+	0.5+	2000 01 06	704	0.3+	0.2−
1999 12 07	704	0.1−	0.2+	2000 01 05	704	0.2−	0.1+	2000 01 06	704	0.6+	0.6+
1999 12 07	704	0.2−	0.1−	2000 01 05	704	0.2+	0.2−	2000 01 06	704	0.1−	0.9−

1999 XS₆₀ = 1991 RZ₃₀ = 1998 MB₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	168.91289		(2000.0)	P	Q
<i>n</i>	0.27089874	ω	141.60230	+0.07371360	+0.99694605
<i>a</i>	2.3655460	Ω	132.60889	−0.92342405	+0.07799648
<i>e</i>	0.1956428	<i>i</i>	2.00775	−0.37663555	+0.00388877
<i>P</i>	3.64	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1991 09 08	691	0.6−	0.5+	1998 06 26	704	0.8−	0.6−	1999 12 08	704	0.1+	0.0
1991 09 08	691	0.3−	0.0	1998 07 21	704	0.2−	1.0−	1999 12 08	704	0.2+	0.5+
1991 09 08	691	0.3−	0.3+	1998 07 21	704	0.4+	1.2+	1999 12 08	704	0.4−	0.8−
1991 09 16	675	0.4−	0.7−	1998 07 21	704	0.3−	0.1−	2000 01 05	704	0.6−	0.6+
1991 09 16	675	1.7+	0.5−	1998 07 21	704	0.9+	0.7+	2000 01 05	704	0.3−	0.3−
1998 06 24	704	(0.9−	2.5−)	1998 07 21	704	0.8−	0.5+	2000 01 05	704	0.4+	0.9−

1998 06 24	704	0.5+	0.2−	1999 12 07	704	0.2+	0.2−	2000 01 05	704	0.8−	0.2+
1998 06 24	704	(3.3+	0.7−)	1999 12 07	704	0.2−	0.0	2000 01 06	704	0.7+	0.8+
1998 06 24	704	0.3−	1.1−	1999 12 07	704	0.2+	0.3−	2000 01 06	704	0.9−	0.1+
1998 06 26	704	0.4+	0.0	1999 12 07	704	0.6+	0.2+	2000 01 06	704	0.2−	0.3+
1998 06 26	704	0.2−	0.5+	1999 12 07	704	0.4+	0.6+	2000 01 06	704	0.1+	0.2+
1998 06 26	704	0.6+	1.0−	1999 12 08	704	0.4−	0.2−	2000 01 06	704	0.2+	0.1−
1998 06 26	704	0.2−	1.7+	1999 12 08	704	0.3+	0.1−				

1999 XV₆₀ = 1993 RR₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	71.15933		(2000.0)	P	Q
<i>n</i>	0.18405283	ω	162.40729	+0.99983630	−0.01387892
<i>a</i>	3.0608429	Ω	198.39960	+0.00867682	+0.93077449
<i>e</i>	0.1378523	<i>i</i>	2.10764	+0.01587738	+0.36533031
<i>P</i>	5.36	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 09 15	809	0.0	0.2+	1999 12 07	704	0.7−	0.5+	2000 01 05	704	0.1−	0.5−
1993 09 15	809	1.7−	0.4−	1999 12 07	704	0.1+	0.2+	2000 01 05	704	0.6−	0.0
1993 09 15	809	1.8−	1.9−	1999 12 07	704	0.3+	0.4+	2000 01 05	704	0.5−	0.8−
1993 09 22	809	0.7+	0.4+	1999 12 08	704	0.1+	0.3+	2000 01 06	704	0.6−	0.0
1993 09 22	809	1.5+	1.0+	1999 12 08	704	1.2+	0.4+	2000 01 06	704	0.2+	0.7+
1993 09 22	809	1.4+	0.4+	1999 12 08	704	0.7−	0.0	2000 01 06	704	0.7+	1.6−
1999 12 07	704	0.2+	0.6+	1999 12 08	704	0.2−	0.5−	2000 01 06	704	0.1+	0.4−
1999 12 07	704	0.0	0.6+	2000 01 05	704	0.5+	0.1−				

1999 XZ₆₀ = 1990 ST₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	74.88536		(2000.0)	P	Q
<i>n</i>	0.23001036	ω	114.13664	+0.98140701	+0.11589425
<i>a</i>	2.6381802	Ω	239.53093	−0.15889024	+0.93773665
<i>e</i>	0.2041775	<i>i</i>	10.22496	+0.10767625	+0.32744234
<i>P</i>	4.29	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 09 17	675	0.1−	0.0	1999 11 12	704	0.1−	0.0	1999 12 07	704	0.2−	0.7−
1990 09 17	675	0.0	0.5−	1999 11 12	704	0.4−	0.2−	1999 12 08	704	0.5+	0.4+
1990 09 19	675	0.3+	0.5+	1999 11 12	704	0.1+	0.2−	1999 12 08	704	0.1+	0.4−
1990 09 19	675	0.2−	0.1−	1999 11 12	704	0.1+	0.1−	1999 12 08	704	0.4+	0.3+
1999 11 09	704	0.1−	0.3+	1999 11 12	704	0.2−	0.3−	1999 12 08	704	0.5+	0.7+
1999 11 09	704	0.1−	0.1−	1999 12 07	704	0.0	0.1+	2000 01 06	704	0.6+	0.2−
1999 11 09	704	0.0	0.4+	1999 12 07	704	0.2−	0.7−	2000 01 06	704	0.5−	0.7+
1999 11 09	704	0.4+	0.5+	1999 12 07	704	0.3+	0.5−	2000 01 06	704	0.2−	0.4+
1999 11 09	704	0.2+	0.9+	1999 12 07	704	0.2−	0.8−	2000 01 06	704	0.9−	0.1−

1999 XL₆₃ = 1996 FL₁₂ = 1997 LS₁₁ = 1998 RY₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	138.14630		(2000.0)	P	Q
<i>n</i>	0.17487538	ω	160.31410	+0.30084295	+0.95319199
<i>a</i>	3.1670161	Ω	127.18247	−0.87999684	+0.28970921
<i>e</i>	0.1573617	<i>i</i>	2.18010	−0.36755827	+0.08656558
<i>P</i>	5.64	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1996 03 17	691	0.9+	0.3−	1998 08 17	704	1.6−	1.5−	1999 12 08	704	0.6−	1.6−
1996 03 17	691	0.8+	0.0	1998 08 17	704	0.6+	0.5+	1999 12 08	704	0.4−	0.1−
1996 03 17	691	0.6+	0.4+	1998 09 14	704	0.4+	0.8−	1999 12 08	704	1.2−	0.1−
1996 03 23	691	0.7−	0.6+	1998 09 14	704	(1.1+	3.1−)	1999 12 12	691	0.5+	0.1−
1996 03 23	691	0.5−	0.8+	1998 09 14	704	0.3+	1.4+	1999 12 12	691	0.6+	0.1−
1996 03 23	691	0.4−	0.3+	1998 09 14	704	0.9−	1.3+	1999 12 12	691	0.6+	0.1+
1997 06 07	809	0.9+	0.7+	1998 09 18	704	0.5−	0.9+	1999 12 17	691	0.5+	0.0
1997 06 07	809	0.1+	0.2−	1998 09 18	704	1.7+	0.0	1999 12 17	691	0.2+	0.1+
1997 06 07	809	0.1−	0.6−	1998 09 18	704	1.4−	0.7−	1999 12 17	691	0.0	0.1−
1997 06 08	809	0.6−	1.3−	1998 09 18	704	0.2−	1.4−	2000 01 04	691	0.1−	0.5+
1997 06 08	809	1.2−	1.9−	1999 12 07	704	0.5−	1.4−	2000 01 04	691	0.4+	0.2−

1997 06 08	809	(1.5− 2.2−)	1999 12 07	704	0.3− 0.5+	2000 01 04	691	1.4+	0.4−
1998 08 17	704	0.2+ 0.6+	1999 12 07	704	0.1− 0.4−				
1998 08 17	704	0.9+ 1.1+	1999 12 08	704	0.0 0.2−				

1999 XV₆₃ = 1994 GA₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams			
<i>M</i>		(2000.0)	P		Q	
<i>n</i>	0.29461485	ω	254.23115	−0.10787535	−0.99370097	
<i>a</i>	2.2368299	Ω	202.02993	+0.94030248	−0.09207034	
<i>e</i>	0.0872360	<i>i</i>	4.64151	+0.32279119	−0.06388611	
<i>P</i>	3.35	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1994 04 06	691	0.5+ 0.1−	1999 12 07	704	0.2− 0.2+	2000 01 05	704	0.5+ 0.2+
1994 04 06	691	0.5+ 0.4+	1999 12 07	704	0.1+ 0.2−	2000 01 05	704	0.2+ 0.1+
1994 04 06	691	0.7+ 0.4−	1999 12 07	704	0.5− 0.9+	2000 01 05	704	0.2+ 0.2+
1994 04 11	691	0.7− 0.1+	1999 12 08	704	0.6− 0.0	2000 01 05	704	0.3+ 0.1+
1994 04 11	691	0.5− 0.1−	1999 12 08	704	0.5+ 0.6−	2000 01 07	704	0.8− 0.7−
1994 04 11	691	0.5− 0.1+	1999 12 08	704	0.3+ 0.1+	2000 01 07	704	0.5− 0.3−
1999 12 07	704	0.2+ 0.2−	1999 12 08	704	0.5− 0.2−	2000 01 07	704	0.1+ 0.5+
1999 12 07	704	0.7+ 0.5−	1999 12 08	704	0.0 0.5+			

1999 XG₆₄ = 1993 DG

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams			
<i>M</i>		(2000.0)	P		Q	
<i>n</i>	0.26345106	ω	70.31797	−0.86941936	−0.49240148	
<i>a</i>	2.4099207	Ω	80.16490	+0.43645869	−0.80396992	
<i>e</i>	0.1297309	<i>i</i>	2.36330	+0.23154653	−0.33342637	
<i>P</i>	3.74	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1993 02 17	372	0.9− 0.1−	1999 11 12	704	0.1+ 0.3−	1999 12 08	704	0.3+ 0.0
1993 02 17	372	(4.8− 1.3−)	1999 11 12	704	0.5+ 0.6−	1999 12 08	704	0.1− 0.3−
1993 02 19	372	(4.5+ 1.0+)	1999 11 12	704	0.5+ 0.5−	1999 12 08	704	0.4+ 0.7−
1993 02 19	372	0.8+ 0.0	1999 12 07	704	0.7− 0.2+	2000 01 04	704	0.0 0.5+
1999 11 09	704	0.1− 0.1−	1999 12 07	704	0.1− 0.0	2000 01 04	704	0.4+ 0.1+
1999 11 09	704	0.3+ 0.4+	1999 12 07	704	0.0 0.2+	2000 01 04	704	0.5− 0.0
1999 11 09	704	0.4− 0.2−	1999 12 07	704	0.7− 0.5+	2000 01 06	704	0.4+ 0.3−
1999 11 09	704	0.1+ 0.1−	1999 12 07	704	0.1− 0.5+	2000 01 06	704	0.4− 0.2+
1999 11 09	704	0.7+ 0.2+	1999 12 08	704	0.5+ 0.4−	2000 01 06	704	0.1+ 0.3−
1999 11 12	704	0.8− 0.8+	1999 12 08	704	0.4− 0.1+			

1999 XR₆₄ = 1994 YM₄ = 1998 RP₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams			
<i>M</i>		(2000.0)	P		Q	
<i>n</i>	0.17835858	ω	268.30121	+0.99854462	−0.04153730	
<i>a</i>	3.1256479	Ω	94.07838	+0.05176668	+0.91709642	
<i>e</i>	0.0545815	<i>i</i>	1.97632	−0.01512800	+0.39649565	
<i>P</i>	5.53	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1994 12 31	691	0.2+ 0.0	1998 09 18	704	(0.6− 2.3+)	1999 12 07	704	0.1− 0.1−
1994 12 31	691	0.2+ 0.1−	1998 09 18	704	1.5− 1.2+	1999 12 07	704	0.3− 0.4−
1994 12 31	691	0.0 0.2+	1998 09 18	704	(2.6− 0.8+)	1999 12 08	704	0.6− 0.3+
1995 01 07	691	0.1+ 0.0	1999 11 09	704	0.0 0.9+	1999 12 08	704	0.2− 0.0
1995 01 07	691	0.1− 0.0	1999 11 09	704	1.0+ 0.7+	1999 12 08	704	0.2− 1.0−
1995 01 07	691	0.2− 0.4+	1999 11 09	704	0.6− 1.9+	1999 12 08	704	0.3− 0.5−
1998 08 23	704	0.5+ 1.6−	1999 11 09	704	0.1+ 0.6+	1999 12 08	704	0.8− 0.2+
1998 08 23	704	0.4+ 0.4+	1999 11 09	704	0.3+ 0.9+	2000 01 05	704	0.1+ 0.5−
1998 08 23	704	(0.3− 3.4−)	1999 11 12	704	0.3+ 0.1+	2000 01 05	704	0.6+ 0.5−
1998 08 23	704	(5.2− 0.6−)	1999 11 12	704	0.0 0.1−	2000 01 05	704	0.4− 0.1−
1998 09 14	704	0.5− 0.6+	1999 11 12	704	0.4+ 0.3+	2000 01 05	704	0.4− 0.4−
1998 09 14	704	0.1− 1.1−	1999 11 12	704	0.4+ 1.9−	2000 01 06	704	0.2− 0.9−
1998 09 14	704	0.8+ 0.3+	1999 11 12	704	1.7+ 1.3−	2000 01 06	704	0.1− 0.5+
1998 09 14	704	0.5+ 0.4+	1999 12 07	704	0.3+ 0.0	2000 01 06	704	0.4+ 0.3+

1998 09 18	704	0.1− 0.5+	1999 12 07	704	0.3− 0.2+	2000 01 06	704	0.1− 0.0
1998 09 18	704	0.1+ 0.7−	1999 12 07	704	0.5− 0.2+			

1999 XU₆₄ = 1993 TW₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams			
<i>M</i>		(2000.0)	P		Q	
<i>n</i>	0.17756990	ω	19.94718	−0.00408851	−0.99926975	
<i>a</i>	3.1348960	Ω	70.30206	+0.91191163	−0.01931587	
<i>e</i>	0.1704042	<i>i</i>	2.31260	+0.41036625	+0.03296772	
<i>P</i>	5.55	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1993 10 09	809	0.7− 1.8−	1999 11 09	704	0.1+ 0.3+	1999 12 07	704	0.6+ 0.1+
1993 10 09	809	0.3− 0.6−	1999 11 09	704	0.2+ 0.4+	1999 12 07	704	1.0− 0.3−
1993 10 09	809	0.5− 0.0	1999 11 09	704	0.2− 1.0+	1999 12 08	704	0.1+ 0.8+
1993 10 11	809	1.0+ 1.0+	1999 11 12	704	0.2+ 0.8−	1999 12 08	704	0.1− 0.7+
1993 10 11	809	0.5+ 0.4+	1999 11 12	704	0.7+ 0.4−	1999 12 08	704	0.1− 0.2−
1993 10 11	809	0.3+ 0.7+	1999 11 12	704	0.9+ 1.1−	1999 12 08	704	0.4− 0.2−
1993 10 20	809	0.5+ 0.2+	1999 11 12	704	0.1− 1.4−	2000 01 03	704	1.3− 0.0
1993 10 20	809	0.6− 0.6+	1999 11 12	704	0.3− 0.6−	2000 01 03	704	0.9+ 0.9−
1993 10 20	809	0.3− 0.3−	1999 12 07	704	0.0 0.9+	2000 01 03	704	0.3+ 0.0
1999 11 09	704	0.2− 0.4−	1999 12 07	704	0.4− 0.7+			
1999 11 09	704	0.3− 0.3+	1999 12 07	704	0.3+ 0.8+			

1999 XV₆₄ = 1996 HX₂₂ = 1998 SP₁₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams			
<i>M</i>		(2000.0)	P		Q	
<i>n</i>	0.17699109	ω	71.49961	−0.83326418	−0.54356555	
<i>a</i>	3.1417271	Ω	75.45910	+0.45968548	−0.78267824	
<i>e</i>	0.1065706	<i>i</i>	5.99113	+0.30718085	−0.30323466	
<i>P</i>	5.57	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1996 04 20	809	(4.3+ 1.6+)	1998 09 27	704	0.1− 0.0	1999 12 07	704	1.2− 0.1+
1996 04 20	809	(3.6+ 1.5+)	1999 11 09	704	0.5+ 0.7+	1999 12 07	704	0.5− 0.7+
1996 04 20	809	(4.5+ 1.3+)	1999 11 09	704	0.6+ 0.4+	1999 12 08	704	1.5− 0.0
1996 04 21	809	(3.2+ 2.0−)	1999 11 09	704	0.1+ 1.0+	1999 12 08	704	1.3− 0.3+
1996 04 21	809	(2.3+ 2.1−)	1999 11 09	704	0.8+ 0.6+	1999 12 08	704	1.3− 0.5−
1996 04 21	809	(2.3+ 2.0−)	1999 11 09	704	0.6+ 0.5+	1999 12 08	704	1.0− 0.3+
1996 05 19	809	0.1− 1.8+	1999 11 12	704	0.5+ 0.3−	1999 12 08	704	1.0− 0.0
1996 05 19	809	0.2− 1.8+	1999 11 12	704	0.6+ 0.2−	2000 01 04	704	0.0 0.0
1996 05 19	809	(0.7− 2.3+)	1999 11 12	704	0.4+ 0.5−	2000 01 04	704	0.0 0.0
1996 05 22	809	1.1+ 0.1+	1999 11 12	704	0.3+ 0.1−	2000 01 04	704	1.2+ 0.9+
1996 05 22	809	0.3+ 1.6−	1999 11 12	704	0.5+ 0.1+	2000 01 04	704	0.1+ 0.4−
1996 05 22	809	0.6− 1.3−	1999 11 17	704	0.9+ 0.7−	2000 01 04	704	0.2+ 0.6−
1998 09 26	704	0.0 0.4+	1999 11 17	704	0.3− 0.1+	2000 01 06	704	0.4+ 0.6+
1998 09 26	704	0.1− 0.3+	1999 11 17	704	0.6+ 0.8−	2000 01 06	704	0.6+ 0.1−
1998 09 26	704	0.1+ 0.2+	1999 11 17	704	0.1+ 0.6−	2000 01 06	704	1.7+ 0.6−
1998 09 26	704	0.3− 0.2−	1999 11 17	704	0.6+ 0.4−	2000 01 06	704	0.3+ 0.1+
1998 09 27	704	0.2+ 0.1−	1999 12 07	704	1.2− 0.3−	2000 01 06	704	0.5+ 0.4−
1998 09 27	704	1.5− 0.1−	1999 12 07	704	1.1− 0.7+			
1998 09 27	704	1.7+ 0.1−	1999 12 07	704	1.1− 0.1−			

1999 XX₆₄ = 1995 UG₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

			Williams			
<i>M</i>		(2000.0)	P		Q	
<i>n</i>	0.26008664	ω	186.12885	+0.67014612	−0.74219326	
<i>a</i>	2.4306589	Ω	221.79314	+0.68144658	+0.61913701	
<i>e</i>	0.1816526	<i>i</i>	0.62798	+0.29416786	+0.25655124	
<i>P</i>	3.79	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1995 10 19	691	0.1− 0.0	1999 11 09	704	0.2+ 0.4−	1999 12 07	704	0.0 0.1+
1995 10 19	691	0.1− 0.1+	1999 11 09	704	0.0 0.1−	1999 12 07	704	0.7+ 0.0
1995 10 19	691	0.1− 0.1+	1999 11 12	704	0.2+ 0.0	1999 12 07	704	0.1− 0.1−

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1995 10 22	691	0.0	0.1−	1999 11 12	704	0.2−	0.2−	1999 12 08	704	0.2−	0.6−
1995 10 22	691	0.1−	0.1+	1999 11 12	704	0.0	0.2−	1999 12 08	704	0.4−	0.3−
1995 10 22	691	0.2+	0.1−	1999 11 12	704	0.0	0.1+	1999 12 08	704	0.3+	0.3+
1999 11 09	704	0.2−	0.2−	1999 11 12	704	0.1−	0.2−	1999 12 08	704	0.3−	0.6+
1999 11 09	704	0.4+	0.5+	1999 12 07	704	0.3−	0.1−	1999 12 08	704	0.1+	0.7+
1999 11 09	704	0.3−	0.2−	1999 12 07	704	0.1+	0.2+				

1999 XG₆₅ = 1997 CY₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30266130	<i>ω</i>	204.93027	+0.31581806	−0.94853837		
<i>a</i>	2.1970071	<i>Ω</i>	226.66887	+0.87576462	+0.30078576		
<i>e</i>	0.1304293	<i>i</i>	1.82037	+0.36509626	+0.09900957		
<i>P</i>	3.26	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 02 15	691	0.1−	0.3+	1999 11 17	704	0.9−	0.9+	1999 12 07	120	1.3+	0.4−
1997 02 15	691	0.2+	0.3+	1999 11 17	704	0.3+	0.4+	1999 12 07	120	1.5−	0.6−
1997 02 15	691	0.2+	0.0	1999 11 27	120	0.4−	1.0+	1999 12 08	704	0.3+	0.0
1997 02 16	691	0.3−	0.0	1999 11 27	120	0.5+	0.4+	1999 12 08	704	0.2+	0.8−
1997 02 16	691	0.1+	0.1−	1999 11 28	691	0.4−	0.0	1999 12 08	704	0.2−	0.0
1999 11 12	704	(0.0	2.4+)	1999 11 28	691	0.1−	0.0	1999 12 08	704	0.3−	0.1−
1999 11 12	704	0.0	0.2+	1999 11 28	691	0.3−	0.1−	1999 12 08	704	0.5+	0.2−
1999 11 12	704	0.2+	0.3+	1999 12 06	120	0.9+	0.1+	2000 01 05	704	0.5−	0.5+
1999 11 12	704	0.2+	0.2+	1999 12 07	704	0.2+	0.2−	2000 01 05	704	0.0	1.1−
1999 11 12	704	0.1+	0.6+	1999 12 07	704	0.1−	0.6−	2000 01 05	704	0.1−	0.6+
1999 11 17	704	(0.8−	2.5+)	1999 12 07	704	0.2+	0.2−	2000 01 05	704	0.1−	0.9+
1999 11 17	704	0.4−	0.6+	1999 12 07	704	0.1+	1.0−				
1999 11 17	704	0.3+	0.3−	1999 12 07	704	0.2+	1.0−				

1999 XH₆₅ = 1996 EL₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20088813	<i>ω</i>	230.76533	+0.92398519	−0.38184276		
<i>a</i>	2.8873529	<i>Ω</i>	151.66405	+0.36317009	+0.85878037		
<i>e</i>	0.0876386	<i>i</i>	2.55438	+0.11982843	+0.34160267		
<i>P</i>	4.91	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1996 03 12	691	0.0	0.3+	1999 11 04	704	0.1−	0.6+	1999 12 08	704	0.1−	0.1−
1996 03 12	691	0.4+	0.2+	1999 11 04	704	0.1−	0.5+	1999 12 08	704	0.6−	0.3+
1996 03 12	691	0.4+	0.1−	1999 11 15	704	0.2+	0.1+	1999 12 08	704	0.0	0.1−
1996 03 17	691	0.2+	0.3−	1999 11 15	704	0.1+	0.0	1999 12 08	704	0.2+	0.9+
1996 03 17	691	0.9−	0.4−	1999 11 15	704	0.6+	0.3+	1999 12 14	704	0.8−	0.3+
1996 03 17	691	0.5−	0.5−	1999 11 15	704	0.1−	0.1+	1999 12 14	704	0.5−	0.2+
1997 05 04	809	0.7+	2.0+	1999 11 15	704	0.3+	0.3+	1999 12 14	704	0.9+	0.5−
1997 05 04	809	0.3+	0.5+	1999 11 17	704	(2.4+	0.3+)	1999 12 14	704	1.0+	0.1−
1997 05 04	809	0.3−	0.2+	1999 11 17	704	1.2+	0.4+	2000 01 05	704	0.2−	0.4−
1998 08 17	704	0.5−	0.5−	1999 11 17	704	0.7+	1.2−	2000 01 05	704	0.2−	0.7−
1998 08 17	704	0.3−	0.9−	1999 11 17	704	0.2−	1.1−	2000 01 05	704	0.6−	0.8−
1998 08 17	704	1.5−	0.1+	1999 12 07	704	0.5−	0.3+	2000 01 05	704	0.2−	0.1−
1998 08 17	704	1.1+	0.9+	1999 12 07	704	0.1−	0.6+	2000 01 06	704	0.0	0.1+
1998 08 17	704	1.2+	0.3+	1999 12 07	704	0.2−	0.3+	2000 01 06	704	0.6+	0.3+
1999 11 04	704	0.1−	0.4+	1999 12 07	704	0.6−	0.3−	2000 01 06	704	0.1−	0.7−
1999 11 04	704	0.3+	0.2+	1999 12 07	704	0.4−	0.5+	2000 01 06	704	0.2+	0.1−
1999 11 04	704	0.2−	0.7+	1999 12 08	704	0.3−	1.0+	2000 01 06	704	0.1−	0.0

1999 XX₆₅ = 1998 SQ₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17626031	<i>ω</i>	359.42250	−0.41048352	+0.90722351		
<i>a</i>	3.1504048	<i>Ω</i>	246.33936	−0.83621970	−0.41471152		
<i>e</i>	0.1076064	<i>i</i>	5.75950	−0.36364804	−0.07042622		
<i>P</i>	5.59	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 17	699	0.3+	0.0	1998 10 14	699	0.2−	1.0−	1999 12 08	704	0.7−	0.7+
1998 09 17	699	0.1−	0.5−	1999 11 09	704	0.2−	0.1−	1999 12 08	704	0.6+	0.1+
1998 09 17	699	0.9+	0.3−	1999 11 09	704	0.9+	0.4+	1999 12 08	704	0.0	0.2−
1998 09 25	699	0.6−	1.3+	1999 11 09	704	0.1+	0.2−	1999 12 08	704	0.1+	1.0+
1998 09 25	699	0.6+	1.2+	1999 11 09	704	0.6+	0.2−	1999 12 08	704	1.5−	1.0−
1998 09 25	699	0.7−	1.0+	1999 11 09	704	0.4+	1.0+	2000 01 05	704	0.2−	0.2−
1998 09 26	704	(1.2+	2.3−)	1999 11 12	704	0.8−	0.4−	2000 01 05	704	0.2+	1.4−
1998 09 26	704	1.1−	1.7−	1999 11 12	704	0.2+	0.3−	2000 01 05	704	0.5+	0.3−
1998 09 26	704	0.4−	0.2+	1999 11 12	704	0.0	0.4−	2000 01 05	704	0.5+	0.7−
1998 09 26	704	0.5−	0.6−	1999 11 12	704	0.3+	0.4−	2000 01 05	704	0.5+	0.7+
1998 09 26	704	1.4−	0.1−	1999 12 07	704	0.8−	0.8−	2000 01 06	704	0.2+	0.2−
1998 09 27	704	0.9+	0.1+	1999 12 07	704	0.8+	0.7+	2000 01 06	704	0.1−	0.8+
1998 09 27	704	0.7+	0.1+	1999 12 07	704	0.4−	0.5+	2000 01 06	704	0.2−	0.9−
1998 09 27	704	0.3+	0.5−	1999 12 07	704	1.0−	0.0	2000 01 06	704	0.4−	0.4−
1998 09 27	704	0.2+	0.6+	1999 12 07	704	0.2−	0.4+	2000 01 06	704	0.4+	0.8+
1998 10 14	699	0.6+	0.1−	1999 12 08	704	0.5−	0.1+				
1998 10 14	699	0.7+	0.0	1999 12 08	704	0.6+	0.7+				

1999 XZ₆₅ = 1999 XS₁₄₄ = 1995 UQ₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26067901	<i>ω</i>	171.82590	+0.93592354	−0.35216608		
<i>a</i>	2.4269752	<i>Ω</i>	208.79561	+0.32253647	+0.86283377		
<i>e</i>	0.1951298	<i>i</i>	0.60858	+0.14148268	+0.36262506		
<i>P</i>	3.78	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 19	691	0.1−	0.5+	1999 11 12	704	0.1−	0.7−	1999 12 08	704	0.4−	0.0
1995 10 19	691	0.0	0.6+	1999 11 17	704	(2.9+	1.2−)	1999 12 08	704	0.2+	0.1−
1995 10 19	691	0.1−	0.5+	1999 11 17	704	0.8+	1.9−	1999 12 08	704	0.7−	1.3−
1995 10 22	691	0.2−	0.1−	1999 11 17	704	0.5−	0.5+	1999 12 08	704	0.3+	0.6−
1995 10 22	691	0.1−	0.3−	1999 12 05	691	0.6+	1.5+	1999 12 08	704	0.4+	0.2+
1995 10 22	691	0.2−	0.2−	1999 12 05	691	0.0	0.2−	1999 12 13	159	0.8−	0.1+
1995 10 28	691	0.2+	0.1+	1999 12 05	691	0.1−	0.1−	1999 12 13	159	0.8+	0.3+
1995 10 28	691	0.1+	0.0	1999 12 07	159	0.0	0.2−	1999 12 13	159	0.0	1.1+
1995 10 28	691	0.0	0.0	1999 12 07	159	0.1−	1.0+	1999 12 17	159	0.0	0.1−
1999 11 09	704	0.3+	0.1−	1999 12 07	159	0.6−	0.9+	1999 12 18	159	0.1+	1.5+
1999 11 09	704	0.2+	0.8−	1999 12 07	704	0.0	0.4−	1999 12 18	159	0.1+	0.8+
1999 11 09	704	0.1−	1.3−	1999 12 07	704	0.1−	0.0	1999 12 18	159	0.4−	0.0
1999 11 12	704	0.2−	0.2+	1999 12 07	704	0.2−	0.1+	1999 12 18	159	0.3+	0.6−
1999 11 12	704	0.1−	0.4−	1999 12 07	704	0.1+	0.3−	1999 12 18	159	0.3−	0.9+
1999 11 12	704	0.1−	0.2−	1999 12 07	704	0.2+	0.6−	1999 12 18	159	0.2+	0.0

1999 XD₆₆ = 1990 HT₅ = 1997 EE₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26154417	<i>ω</i>	18.33337	−0.88859658	+0.45868396		
<i>a</i>	2.4216202	<i>Ω</i>	188.96986	−0.42263865	−0.82066850		
<i>e</i>	0.1092443	<i>i</i>	0.83353	−0.17824895	−0.34075245		
<i>P</i>	3.77	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 04 29	413	0.4+	1.2−	1999 11 09	704	0.6+	0.5−	1999 12 07	704	0.5+	0.6−
1990 05 01	413	0.4−	1.1−	1999 11 09	704	0.3+	0.0	1999 12 07	704	0.4+	1.1−
1990 05 02	413	0.3+	1.3−	1999 11 09	704	0.6−	0.6+	1999 12 08	704	0.3−	0.4+
1997 03 04	691	0.4+	0.1+	1999 11 12	704	0.8+	0.9−	1999 12 08	704	0.4−	0.3+
1997 03 04	691	0.3+	0.3+	1999 11 12	704	0.1−	1.3−	1999 12 08	704	0.5−	0.3−
1997 03 04	691	0.2+	0.1+	1999 11 12	704	0.1−	0.2+	1999 12 08	704	0.1+	0.3−
1997 03 07	691	0.3−	0.5−	1999 11 12	704	0.5+	0.1−	2000 01 06	704	0.2−	0.4+
1997 03 07	691	0.2−	0.0	1999 11 12	704	0.1+	0.7+	2000 01 06	704	0.6+	0.4+
1997 03 07	691	0.6−	0.3−	1999 12 07	704	0.4−	0.2−	2000 01 06	704	0.8−	0.2−
1999 11 09	704	0.1+	0.1+	1999 12 07	704	0.2+	0.1−	2000 01 06	704	0.1−	0.5−
1999 11 09	704	0.3−	0.6−	1999 12 07	704	0.0	0.0	2000 01 06	704	0.1−	0.1+

1999 XJ₆₆ = 1997 KL₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22784583	ω	357.47415	+0.31476517	-0.93918520				
<i>a</i>	2.6548622	Ω	74.15301	+0.87332909	+0.22990543				
<i>e</i>	0.1039326	<i>i</i>	8.20613	+0.37177841	+0.25509735				
<i>P</i>	4.33	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1997 05 27	910	0.1-	0.0	1999 11 12	704	0.4-	0.2+	1999 12 08	704	0.9+	1.1-
1997 05 27	910	0.2-	0.0	1999 12 07	704	0.3-	0.0	2000 01 03	704	0.4-	0.3+
1997 05 27	910	0.3-	0.1+	1999 12 07	704	0.1-	0.3+	2000 01 03	704	0.1-	0.3-
1997 05 29	910	0.5+	0.2-	1999 12 07	704	0.2+	0.4+	2000 01 03	704	0.4-	1.5+
1997 05 29	910	0.1+	0.0	1999 12 07	704	0.1+	0.2+	2000 01 03	704	0.3+	0.2-
1997 05 29	910	0.1+	0.2+	1999 12 07	704	0.7+	0.8+	2000 01 04	704	0.3+	0.8+
1999 11 12	704	0.6-	0.0	1999 12 08	704	1.0+	0.4-	2000 01 04	704	0.6-	0.2-
1999 11 12	704	0.4-	0.0	1999 12 08	704	0.5-	0.7-	2000 01 04	704	0.1+	1.4-
1999 11 12	704	0.2-	0.4+	1999 12 08	704	0.3+	0.4+				
1999 11 12	704	0.2-	0.1+	1999 12 08	704	0.1+	0.8-				

1999 XK₆₆ = 1998 MG₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26533868	ω	44.96122	+0.48754601	+0.86788892				
<i>a</i>	2.3984776	Ω	254.43721	-0.82626795	+0.42340443				
<i>e</i>	0.1966654	<i>i</i>	5.67287	-0.28209958	+0.25980283				
<i>P</i>	3.71	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 06 24	704	0.3+	0.9+	1999 11 09	704	1.3-	0.3-	1999 12 07	704	0.1-	0.7-
1998 06 24	704	0.9-	0.6+	1999 11 09	704	0.3-	0.7+	1999 12 07	704	0.4-	0.1-
1998 06 24	704	0.0	0.6-	1999 11 09	704	0.1-	0.5+	1999 12 07	704	0.5-	0.4-
1998 06 24	704	0.1-	1.1-	1999 11 12	704	1.3+	0.3-	1999 12 07	704	0.3-	0.1+
1998 06 26	704	0.6-	0.6+	1999 11 12	704	0.7-	0.9+	1999 12 08	704	0.1-	0.1+
1998 06 26	704	1.3+	0.3-	1999 11 12	704	0.4+	0.8-	1999 12 08	704	0.3-	0.9+
1998 06 26	704	(1.6-	2.5-)	1999 11 12	704	0.7+	0.3-	1999 12 08	704	0.1-	0.2-
1999 11 09	704	0.6-	0.1-	1999 11 12	704	0.1+	0.1+	1999 12 08	704	1.1+	0.1-
1999 11 09	704	0.6+	0.3-	1999 12 07	704	0.7+	0.5+				

1999 XS₆₆ = 1996 BN₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.22239169	ω	150.36099	+0.72170180	-0.69017798				
<i>a</i>	2.6980936	Ω	253.38394	+0.62372583	+0.68155860				
<i>e</i>	0.0761325	<i>i</i>	3.16603	+0.30018761	+0.24317121				
<i>P</i>	4.43	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1996 01 21	691	0.3+	0.0	1999 11 12	704	0.1-	0.3-	1999 12 08	704	0.4-	0.0
1996 01 21	691	0.4+	0.4-	1999 11 12	704	0.0	0.0	1999 12 08	704	0.2+	0.3+
1996 01 21	691	0.5+	0.1-	1999 11 12	704	0.6+	0.4+	2000 01 05	704	0.6+	0.7+
1996 01 29	691	0.1+	0.0	1999 11 12	704	0.1+	0.0	2000 01 05	704	0.9+	0.7+
1996 01 29	691	0.9-	0.1+	1999 12 07	704	0.2-	0.4+	2000 01 05	704	1.0-	0.8-
1996 01 29	691	0.4-	0.0	1999 12 07	704	0.3-	0.1+	2000 01 05	704	0.8+	0.0
1999 11 09	704	1.5-	0.7-	1999 12 07	704	0.1-	0.2-	2000 01 06	704	0.6-	0.1+
1999 11 09	704	0.1+	0.4+	1999 12 07	704	0.1+	0.2+	2000 01 06	704	0.7-	1.4-
1999 11 09	704	0.1-	0.6-	1999 12 07	704	0.1-	0.3+	2000 01 06	704	0.9+	1.5+
1999 11 09	704	0.6-	0.5-	1999 12 08	704	0.1+	0.2+	2000 01 06	704	0.2+	0.7-
1999 11 09	704	0.1+	0.5-	1999 12 08	704	0.9+	0.2+	2000 01 06	704	0.3+	0.7+
1999 11 12	704	1.2+	0.0	1999 12 08	704	1.5-	0.3-				

1999 XX₆₆ = 1998 QA₇₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.24531002	ω	338.20025	-0.58926386	+0.78151721				
<i>a</i>	2.5273139	Ω	255.11398	-0.70641707	-0.62146852				
<i>e</i>	0.1215480	<i>i</i>	12.24270	-0.39210079	-0.05484274				
<i>P</i>	4.02	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 08 24	704	0.5-	0.7-	1999 11 12	704	0.3-	0.3-	1999 12 08	704	0.6-	0.5-
1998 08 24	704	0.3+	0.7-	1999 11 12	704	0.2-	0.2+	2000 01 05	704	0.7-	1.7+
1998 08 24	704	0.3+	1.0+	1999 11 12	704	0.1-	0.1-	2000 01 05	704	0.1-	0.2+
1998 08 24	704	1.0+	0.5-	1999 12 07	704	0.2+	0.3+	2000 01 05	704	0.0	0.4-
1998 08 24	704	0.3+	0.8+	1999 12 07	704	0.2-	0.2+	2000 01 05	704	0.1+	0.5-
1998 08 27	704	0.9+	1.6-	1999 12 07	704	0.2+	0.1+	2000 01 05	704	0.4-	0.4-
1998 08 27	704	0.9-	1.8-	1999 12 07	704	0.4+	0.4+	2000 01 06	704	0.1-	0.1+
1998 08 27	704	0.3-	0.8+	1999 12 07	704	0.2-	0.2+	2000 01 06	704	0.1+	0.0
1998 08 27	704	0.1-	1.6+	1999 12 08	704	0.3+	0.8-	2000 01 06	704	0.9+	0.2+
1998 08 27	704	1.1-	1.2+	1999 12 08	704	0.8+	0.3-	2000 01 06	704	0.5+	0.4-
1999 11 12	704	0.3-	0.3+	1999 12 08	704	0.4-	0.1+	2000 01 06	704	0.4-	0.5-
1999 11 12	704	0.3+	0.2-	1999 12 08	704	0.3+	0.3+				

1999 XC₆₇ = 1977 RU₁₂ = 1993 SV₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.18649793	ω	130.61722	+0.86127392	+0.50811537				
<i>a</i>	3.0340312	Ω	198.84614	-0.47084819	+0.79424983				
<i>e</i>	0.1270052	<i>i</i>	0.90474	-0.19107386	+0.33314559				
<i>P</i>	5.28	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1977 09 09	675	1.4-	1.1-	1999 11 09	704	1.3+	0.2-	1999 12 07	704	0.0	1.2+
1977 09 10	675	1.9+	0.0	1999 11 09	704	0.1-	0.4-	1999 12 07	704	0.1+	0.9-
1993 09 17	809	0.4-	0.9-	1999 11 12	704	0.3-	0.2-	1999 12 07	704	0.1+	0.1+
1993 09 17	809	0.2-	0.1+	1999 11 12	704	0.0	0.1+	1999 12 08	704	0.6-	0.9+
1993 09 17	809	0.2-	1.5-	1999 11 12	704	0.3-	0.4-	1999 12 08	704	0.1+	0.1-
1993 09 18	809	1.5+	0.9+	1999 11 12	704	0.1+	0.4-	1999 12 08	704	0.5-	0.3+
1993 09 18	809	0.7-	2.0+	1999 11 12	704	0.9-	0.5-	1999 12 08	704	0.2+	0.0
1993 09 18	809	0.6-	0.9+	1999 12 07	704	0.9+	1.0+				
1999 11 09	704	0.2+	0.5-	1999 12 07	704	0.3-	0.3-				

1999 XW₆₇ = 1993 FN₄₈ = 1997 GE₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		Williams		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26123951	ω	311.31789	-0.78458996	-0.61997946				
<i>a</i>	2.4235025	Ω	190.37338	+0.57929883	-0.72920838				
<i>e</i>	0.1703731	<i>i</i>	2.11272	+0.22097841	-0.28962148				
<i>P</i>	3.77	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	1		

Residuals in seconds of arc

1993 03 19	809	0.3-	0.5-	1997 05 07	704	0.5+	0.1-	1999 12 08	704	0.3+	0.1+
1993 03 20	809	0.0	0.3+	1999 11 17	704	0.1+	0.5+	1999 12 08	704	0.2+	0.3+
1993 03 24	809	0.3+	0.1+	1999 11 17	704	0.3-	0.1-	1999 12 08	704	0.1+	0.3+
1995 11 23	327	0.4-	1.1+	1999 11 17	704	0.9-	0.4-	2000 01 05	704	0.4+	1.4+
1995 11 23	327	0.3-	0.2-	1999 11 17	704	0.4+	0.1-	2000 01 05	704	0.6+	0.3-
1995 11 23	327	0.1+	0.9+	1999 11 17	704	0.2-	0.5-	2000 01 05	704	0.0	0.8-
1997 04 06	704	1.4-	0.2+	1999 12 07	704	0.5-	0.4+	2000 01 06	704	0.4-	0.2-
1997 04 06	704	0.8-	0.2+	1999 12 07	704	0.1-	0.2+	2000 01 06	704	0.4+	0.2-
1997 04 11	704	0.1-	0.4+	1999 12 07	704	0.1+	0.7+	2000 01 06	704	0.1-	0.7-
1997 04 11	704	0.6+	0.4+	1999 12 07	704	0.0	0.1+	2000 01 06	704	0.3+	0.1-
1997 05 07	704	0.8+	0.6+	1999 12 07	704	0.0	0.4+	2000 01 06	704	0.4-	0.8-
1997 05 07	704	0.5+	0.2-	1999 12 08	704	0.1-	0.0				
1997 05 07	704	0.3+	0.5+	1999 12 08	704	0.2-	0.1-				

2000 JAN. 24

M.P.C. 37905

1999 XA₆₈ = 1991 GK₁₄ = 1998 KB₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	104.05880		(2000.0)			P		Q			
<i>n</i>	0.28935421	ω	106.46177			+0.90678121		+0.41521091			
<i>a</i>	2.2638597	Ω	229.06893			−0.41424390		+0.84518779			
<i>e</i>	0.1657073	<i>i</i>	5.55463			−0.07842087		+0.33653752			
<i>P</i>	3.41	<i>H</i>	15.4			<i>G</i>	0.15	<i>U</i>	2		
Residuals in seconds of arc											
1991 04 10	809	0.8−	1.4+	1999 11 03	704	0.6−	0.9−	1999 12 07	704	0.4+	0.4+
1991 04 10	809	0.2−	0.6+	1999 11 15	704	0.6−	0.5−	1999 12 07	704	0.2+	0.1+
1991 04 10	809	1.1+	1.4−	1999 11 15	704	0.0	0.4−	1999 12 07	704	0.2−	0.4+
1998 05 22	704	1.4−	0.2+	1999 11 15	704	0.1−	0.5−	1999 12 07	120	0.2+	0.2+
1998 05 22	704	0.7+	0.6−	1999 11 15	704	0.7−	0.2−	1999 12 07	120	0.1+	0.2−
1998 05 22	704	1.0+	2.0−	1999 11 15	704	0.0	0.7−	1999 12 08	704	0.2+	0.1+
1998 05 22	704	0.3+	0.1+	1999 11 17	704	0.2−	0.9−	1999 12 08	704	0.9+	0.6−
1998 05 22	704	0.6−	0.8−	1999 11 17	704	1.3−	0.3−	1999 12 08	704	1.2−	0.2+
1998 05 24	704	0.3−	0.4+	1999 11 17	704	0.7+	0.4+	1999 12 08	704	0.3+	0.4+
1998 05 24	704	(2.2−	2.8−)	1999 11 17	704	0.4+	0.1−	1999 12 08	704	0.4+	1.2+
1998 05 24	704	1.1+	1.5−	1999 11 17	704	0.1+	0.1−	1999 12 14	704	1.0−	0.8+
1998 05 24	704	0.7−	0.3−	1999 12 06	120	0.6+	0.1−	1999 12 14	704	0.6+	0.2−
1998 05 24	704	0.7−	0.9+	1999 12 06	120	1.0+	0.3−	1999 12 14	704	0.1−	0.4+
1999 11 03	704	0.0	0.9−	1999 12 07	704	0.1−	0.1+	1999 12 17	120	0.6+	0.3+
1999 11 03	704	0.5−	0.8−	1999 12 07	704	0.6−	0.7−	1999 12 17	120	(2.7−	0.2−)

1999 XE₆₈ = 1996 EF₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	17.86459	(2000.0)		P		Q					
<i>n</i>	0.20328240	ω	297.36025		+0.27818987		−0.95989778				
<i>a</i>	2.8646366	Ω	136.44113		+0.89811622		+0.24712117				
<i>e</i>	0.0387345	<i>i</i>	2.88946		+0.34058428		+0.13239104				
<i>P</i>	4.85	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1996 03 12	691	0.2−	0.1−	1999 11 15	704	0.4−	0.0	1999 12 07	704	0.5+	0.1−
1996 03 12	691	0.1−	0.0	1999 11 15	704	0.0	0.1+	1999 12 07	704	0.3−	0.1−
1996 03 12	691	0.3−	0.1−	1999 11 15	704	0.1−	0.2−	1999 12 07	704	0.1−	0.6−
1996 03 17	691	0.3+	0.3+	1999 11 15	704	0.1−	0.6+	1999 12 08	704	0.0	0.3+
1996 03 17	691	0.0	0.1+	1999 11 15	704	0.1−	0.0	1999 12 08	704	0.7+	0.2−
1996 03 17	691	0.3+	0.1−	1999 11 17	704	0.1−	0.1−	1999 12 08	704	0.4−	0.4−
1999 11 09	120	0.6+	0.6+	1999 11 17	704	0.9−	0.3−	1999 12 08	704	0.8+	0.1−
1999 11 09	120	0.3−	0.7+	1999 11 17	704	0.4+	0.2−	2000 01 06	704	0.4−	0.2+
1999 11 09	120	0.4−	0.3−	1999 12 07	704	0.2+	0.3−	2000 01 06	704	0.1−	0.9+
1999 11 10	120	0.4−	0.2−	1999 12 07	704	0.4+	0.0	2000 01 06	704	0.4+	0.2−

1999 XK₆₈ = 1993 KC₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	141.19564		(2000.0)			P		Q		
<i>n</i>	0.21852080	ω	210.33656			+0.44925440		+0.86110350		
<i>a</i>	2.7298631	Ω	87.29548			−0.76432694		+0.50841577		
<i>e</i>	0.1696348	<i>i</i>	13.78756			−0.46257411		−0.00376443		
<i>P</i>	4.51	<i>H</i>	13.7		<i>G</i>	0.15		<i>U</i>	5	
Residuals in seconds of arc										
1993 05 27	010	0.9+	0.2+	1999 12 07	704	0.0	0.3+	2000 01 05	704	0.2+ 0.4+
1993 05 27	010	1.7−	1.4−	1999 12 07	704	0.5+	0.1+	2000 01 05	704	0.3+ 0.3−
1993 05 28	010	0.9−	0.8−	1999 12 07	704	0.3−	0.1−	2000 01 05	704	0.6− 0.2+
1993 05 29	010	1.8+	0.9+	1999 12 07	704	0.3−	0.6−	2000 01 06	704	0.5+ 0.1−
1993 05 29	010	0.1+	0.7+	1999 12 07	704	0.3−	0.3−	2000 01 06	704	0.5− 0.6+
1993 05 29	010	0.2−	0.3+	1999 12 08	704	0.6−	0.3−	2000 01 06	704	0.7+ 0.8+
1999 11 04	704	1.0+	0.0	1999 12 08	704	0.5−	0.5−	2000 01 06	704	0.2− 0.1+
1999 11 04	704	0.2−	0.0	1999 12 08	704	0.3+	0.3−	2000 01 06	704	0.3− 0.3−
1999 11 04	704	0.6+	1.3+	1999 12 08	704	0.7+	0.6−			
1999 11 04	704	0.2−	0.1+	2000 01 05	704	0.5−	0.3−			

1999 XN₆₈ = 1995 XR₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	152.92555			(2000.0)			P			Q		
<i>n</i>	0.26292084	ω		107.20784			+0.49304580			+0.86998083		
<i>a</i>	2.4131596	Ω		192.33891			−0.80893251			+0.45577521		
<i>e</i>	0.0532455	<i>i</i>		1.67901			−0.32020938			+0.18815504		
<i>P</i>	3.75	<i>H</i>		14.3	<i>G</i>		0.15	<i>U</i>		4		
Residuals in seconds of arc												
1995 12 02	327	0.2−	0.1−	1999 12 07	704	0.3+	0.6−	2000 01 05	704	0.0	0.1+	
1995 12 02	327	0.5−	0.3−	1999 12 07	704	0.1+	0.3−	2000 01 05	704	0.4−	0.1+	
1995 12 02	327	0.6−	0.2−	1999 12 07	704	(2.3+	1.3−)	2000 01 05	704	0.2+	0.2+	
1995 12 07	327	0.1+	0.3+	1999 12 07	704	1.0−	1.6−	2000 01 05	704	0.4−	0.0	
1995 12 07	327	1.1+	0.4+	1999 12 07	704	0.9+	0.7+	2000 01 05	704	0.0	0.3−	
1995 12 07	327	0.0	0.4+	1999 12 08	704	0.0	0.1−	2000 01 06	704	0.0	0.1+	
1999 11 03	704	0.2−	0.1−	1999 12 08	704	0.0	0.6−	2000 01 06	704	0.4+	0.1+	
1999 11 03	704	0.5+	0.5−	1999 12 08	704	0.0	0.1−	2000 01 06	704	0.3−	0.5+	
1999 11 03	704	0.2−	0.7+	1999 12 08	704	0.4+	0.0	2000 01 06	704	0.2−	0.8+	
1999 11 03	704	0.3−	0.7+	1999 12 08	704	0.4+	0.1−	2000 01 06	704	0.3−	0.3+	

1999 XR₆₈ = 1998 QZ₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	115.03215		(2000.0)			P		Q			
n	0.21801062	ω	236.69037			+0.86100368		+0.49523782			
a	2.7341203	Ω	93.37977			−0.41950733		+0.82026553			
e	0.0751442	i	6.66204			−0.28755220		+0.28618868			
P	4.52	H	13.7			G	0.15	U	4		
Residuals in seconds of arc											
1998 08 17	704	1.0−	0.8−	1999 11 15	704	0.0	0.6+	2000 01 05	704	0.5+	0.2−
1998 08 17	704	0.0	0.9+	1999 11 15	704	0.4+	1.3+	2000 01 05	704	0.5−	0.2−
1998 08 17	704	1.1−	0.1+	1999 12 07	704	0.3+	0.4−	2000 01 05	704	0.3−	0.5+
1998 08 17	704	0.3−	1.4−	1999 12 07	704	0.2−	0.8−	2000 01 05	704	0.2−	1.0+
1998 08 17	704	0.1+	0.2+	1999 12 07	704	0.0	0.8−	2000 01 05	704	0.3−	1.1+
1998 08 23	704	1.2+	1.7−	1999 12 07	704	0.0	0.7−	2000 01 06	704	0.1+	0.1+
1998 08 23	704	0.8+	0.5+	1999 12 07	704	0.2−	0.8−	2000 01 06	704	0.1−	0.1+
1998 08 23	704	0.5+	1.3+	1999 12 08	704	0.3+	0.1−	2000 01 06	704	0.1−	0.4+
1998 08 23	704	0.2−	0.8+	1999 12 08	704	0.3+	0.1−	2000 01 06	704	0.4+	0.3−
1999 11 15	704	0.2−	0.3+	1999 12 08	704	0.0	0.4−	2000 01 06	704	0.0	0.3−
1999 11 15	704	0.0	0.3+	1999 12 08	704	0.1+	0.6−				
1999 11 15	704	0.0	0.4+	1999 12 08	704	0.2−	0.3−				

1999 XJ₆₉ = 1997 CU₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	40.87280		(2000.0)			P		Q			
n	0.29887118	ω	273.09216			+0.57202730		−0.82022081			
a	2.2155422	Ω	142.01484			+0.75558495		+0.52467705			
e	0.1267858	i	0.44252			+0.31918043		+0.22792943			
P	3.30	H	15.9	G	0.15	U	4				
Residuals in seconds of arc											
1997 02 07	566	0.8−	0.1−	1999 11 09	704	0.4−	0.5−	1999 12 08	704	0.1−	0.0
1997 02 07	566	0.9−	0.3+	1999 11 09	704	0.2−	0.7−	1999 12 08	704	0.0	0.2−
1997 02 07	566	0.4−	0.1−	1999 11 12	704	0.3+	0.6−	1999 12 08	704	1.2+	0.7+
1997 02 08	540	1.3+	0.5+	1999 11 12	704	0.3+	0.9−	2000 01 05	704	0.5−	0.7+
1997 02 08	540	1.4+	0.7−	1999 11 12	704	0.3−	0.8−	2000 01 05	704	0.0	0.3+
1997 02 08	540	0.7−	1.3−	1999 11 12	704	0.1−	0.9−	2000 01 05	704	0.4+	0.1+
1997 02 08	540	1.4+	1.3−	1999 11 12	704	0.1−	0.6−	2000 01 05	704	0.1−	0.3+
1997 02 09	540	0.2−	0.7+	1999 12 07	704	0.3+	0.3+	2000 01 05	704	0.0	0.4+
1997 02 09	540	0.1−	0.3+	1999 12 07	704	0.1−	0.1−	2000 01 06	704	0.3+	0.3+
1997 02 10	540	0.8−	0.5+	1999 12 07	704	0.5+	0.4+	2000 01 06	704	0.1−	0.6−
1997 02 10	540	0.4−	0.0	1999 12 07	704	0.0	0.2+	2000 01 06	704	0.1−	0.4−
1997 02 10	540	0.2−	0.3−	1999 12 07	704	0.5−	0.0	2000 01 06	704	0.3−	0.8+
1999 11 09	704	0.2+	0.1−	1999 12 08	704	0.1+	1.9+	2000 01 06	704	0.0	0.3+
1999 11 09	704	0.3+	0.6−	1999 12 08	704	1.1−	0.8+				

1999 XV₆₉ = 1954 PS = 1994 LA₇ = 1997 EO₃₆ = 1998 QJ₁₉
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	196.24123		(2000.0)		P		Q
<i>n</i>	0.26923565	ω	177.02828	−0.14012048	+0.98845268		
<i>a</i>	2.3752774	Ω	84.91188	−0.90962071	−0.10549559		
<i>e</i>	0.1845124	<i>i</i>	3.32004	−0.39109642	−0.10877492		
<i>P</i>	3.66	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1954 08 04	675	0.3+	0.2−	1998 08 17	704	0.5−	0.8+	1999 12 08	704	0.0	0.1−
1954 08 04	675	0.1−	0.5−	1998 08 23	704	0.1+	0.6+	1999 12 08	704	0.1−	0.0
1994 06 03	809	1.1−	0.0	1998 08 23	704	1.2−	0.9+	1999 12 08	704	0.3−	0.0
1994 06 03	809	0.0	0.3+	1998 08 23	704	(3.4−	2.5+)	1999 12 18	691	0.0	0.2+
1994 06 03	809	0.4+	1.0+	1998 08 23	704	0.4+	0.1+	1999 12 18	691	0.1+	0.2+
1994 06 04	809	0.0	1.0+	1999 11 03	704	1.3+	0.7−	1999 12 18	691	0.1+	0.2+
1994 06 04	809	1.4+	1.2+	1999 11 03	704	0.3−	0.1−	2000 01 03	704	1.2+	0.2+
1994 06 04	809	0.5+	1.1+	1999 11 03	704	0.0	0.3+	2000 01 03	704	0.2+	0.3+
1997 03 04	704	0.4+	0.3−	1999 11 09	704	0.4+	0.5+	2000 01 03	704	0.3+	0.0
1997 03 04	704	(7.1−	2.2+)	1999 11 09	704	0.2+	0.2+	2000 01 03	704	1.0−	0.8−
1997 03 04	704	0.1−	0.8+	1999 11 09	704	0.2+	0.5+	2000 01 03	704	0.4−	0.7−
1997 03 04	704	0.6−	0.2+	1999 11 09	704	0.1−	0.5+	2000 01 04	704	0.2−	0.8+
1997 03 05	704	0.2+	0.0	1999 11 09	704	0.1−	0.4+	2000 01 04	704	0.1−	0.2−
1997 03 05	704	0.4−	0.3+	1999 12 07	704	0.0	0.6+	2000 01 04	704	0.0	0.4+
1997 03 06	704	0.0	0.7+	1999 12 07	704	0.1+	0.0	2000 01 04	704	0.5+	1.0+
1997 03 06	704	0.4+	0.6+	1999 12 07	704	0.3−	0.7+	2000 01 04	704	0.4+	1.0+
1998 08 17	704	0.0	0.5−	1999 12 07	704	0.3−	0.0	2000 01 07	691	0.5−	0.1+
1998 08 17	704	0.4+	0.4+	1999 12 07	704	0.4+	0.1−	2000 01 07	691	0.5−	0.5+
1998 08 17	704	0.8−	0.7+	1999 12 08	704	0.2−	0.3+	2000 01 07	691	1.8−	0.5+
1998 08 17	704	0.2+	0.3−	1999 12 08	704	0.5+	0.2−				

1999 XA₇₀ = 1992 ST₁₁ = 1994 CK₁₉
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	252.37616		(2000.0)		P		Q
<i>n</i>	0.30324716	ω	102.66386	−0.82938805	+0.55805843		
<i>a</i>	2.1941765	Ω	111.26335	−0.52286389	−0.75885581		
<i>e</i>	0.0613205	<i>i</i>	1.61080	−0.19679638	−0.33572109		
<i>P</i>	3.25	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 09 28	691	0.1−	0.6+	1994 02 12	809	0.4−	0.2+	1999 12 08	704	0.9+	0.2−
1992 09 28	691	1.7+	0.3−	1999 12 03	691	0.3+	0.1+	1999 12 08	704	0.0	0.4+
1992 09 28	691	0.2−	0.3+	1999 12 03	691	0.2−	0.1+	1999 12 08	704	0.4−	1.2+
1992 10 02	691	0.5−	0.6−	1999 12 03	691	0.1−	0.1+	1999 12 27	691	0.2−	0.6−
1992 10 02	691	0.5−	0.0	1999 12 07	704	0.4−	0.3+	1999 12 27	691	0.4−	0.7−
1992 10 02	691	0.6−	0.5+	1999 12 07	704	0.4+	0.0	1999 12 27	691	0.3−	0.8−
1994 02 07	809	0.9+	0.5−	1999 12 07	704	0.3−	0.1+	2000 01 06	704	0.8+	0.7−
1994 02 07	809	0.3+	1.4−	1999 12 07	704	0.2+	0.7+	2000 01 06	704	0.7+	0.4−
1994 02 07	809	0.2−	0.8−	1999 12 07	704	0.4−	0.5+	2000 01 06	704	0.4+	2.0−
1994 02 12	809	0.5−	1.7+	1999 12 08	704	0.2−	0.3+				
1994 02 12	809	0.2+	1.7+	1999 12 08	704	0.4−	0.9+				

1999 XD₇₀ = 1997 EX₅₇
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	318.27086		(2000.0)		P		Q
<i>n</i>	0.28083775	ω	337.84971	−0.94999545	−0.31225985		
<i>a</i>	2.3093994	Ω	183.95580	+0.28978216	−0.87972708		
<i>e</i>	0.1822079	<i>i</i>	1.29621	+0.11633980	−0.35857225		
<i>P</i>	3.51	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 10	809	0.1−	0.4−	1999 12 07	704	0.0	0.5−	2000 01 05	704	0.1+	0.9+
1997 03 10	809	0.4−	0.5−	1999 12 07	704	0.0	0.1−	2000 01 05	704	0.5−	0.6+
1997 03 10	809	0.7−	1.1−	1999 12 07	704	0.0	0.5−	2000 01 05	704	0.1+	0.5+
1997 03 11	809	0.3+	0.5−	1999 12 08	704	0.4+	0.6−	2000 01 06	704	0.5−	0.0
1997 03 11	809	0.1−	0.9−	1999 12 08	704	0.2−	0.2−	2000 01 06	704	0.4+	0.2+

1997 03 11	809	0.1−	0.3−	1999 12 08	704	0.2−	0.5−	2000 01 06	704	0.5+	0.7+
1997 03 31	704	1.5+	1.2+	1999 12 08	704	0.3−	0.5−	2000 01 06	704	0.1−	0.3+
1997 03 31	704	0.5−	1.9+	1999 12 08	704	0.3−	0.3−	2000 01 06	704	0.0	1.1+
1999 12 07	704	0.3+	0.3−	2000 01 05	704	0.5+	0.3+				
1999 12 07	704	0.1+	0.6−	2000 01 05	704	0.5−	0.3+				

1999 XN₇₀ = 1995 UW₂₉
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	51.63572		(2000.0)		P		Q
<i>n</i>	0.26808498	ω	264.30342	+0.78618760	−0.61738872		
<i>a</i>	2.3820693	Ω	133.81857	+0.58087174	+0.72322545		
<i>e</i>	0.1252764	<i>i</i>	2.16097	+0.21094332	+0.30947717		
<i>P</i>	3.68	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 20	691	0.4−	0.1+	1999 12 07	704	0.4+	0.1−	2000 01 05	704	1.2−	0.7−
1995 10 20	691	0.1−	0.1−	1999 12 07	704	0.4+	1.4−	2000 01 05	704	0.1−	0.5−
1995 10 20	691	0.0	0.1−	1999 12 07	704	0.1+	0.3−	2000 01 05	704	1.2+	0.3+
1995 10 26	691	0.1−	0.3+	1999 12 08	704	0.5−	0.4−	2000 01 06	704	0.3−	1.1+
1995 10 26	691	0.2+	0.0	1999 12 08	704	0.4−	0.0	2000 01 06	704	0.1+	0.7+
1995 10 26	691	0.2+	0.1−	1999 12 08	704	0.6−	0.2−	2000 01 06	704	0.2−	0.4+
1999 12 07	704	1.3+	0.6+	1999 12 08	704	0.1+	0.1+				
1999 12 07	704	0.1+	0.1−	1999 12 08	704	0.4−	0.4+				

1999 XO₇₀ = 1981 UX₆ = 1997 GZ₃₄
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	88.12991		(2000.0)		P		Q
<i>n</i>	0.22164861	ω	123.42402	+0.98894104	+0.14222066		
<i>a</i>	2.7041205	Ω	228.43733	−0.14774525	+0.92002760		
<i>e</i>	0.1301585	<i>i</i>	3.22233	−0.01292168	+0.36513354		
<i>P</i>	4.45	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 10 30	381	0.3−	0.8+	1999 11 04	704	1.1+	0.6−	2000 01 05	704	0.1−	0.2−
1981 10 30	381	0.1+	0.1+	1999 12 07	704	0.3−	0.0	2000 01 05	704	0.2−	0.1−
1997 04 03	704	0.1−	0.5−	1999 12 07	704	0.2+	0.0	2000 01 06	704	0.7−	0.9+
1997 04 03	704	0.3−	0.1+	1999 12 07	704	0.1+	0.3−	2000 01 06	704	0.7−	0.1−
1997 04 11	704	0.4−	0.6+	1999 12 07	704	0.3+	0.5−	2000 01 06	704	0.2−	0.4−
1997 04 11	704	0.7+	0.6−	1999 12 07	704	0.2−	0.4−	2000 01 06	704	0.5−	0.3−
1998 08 17	704	0.3−	0.9−	1999 12 08	704	0.4−	0.4−	2000 01 06	704	0.6−	0.3−
1998 08 17	704	0.1−	0.6+	1999 12 08	704	0.0	0.5−	2000 01 07	704	0.7+	0.5+
1998 08 17	704	1.7+	0.7−	1999 12 08	704	0.2+	0.3−	2000 01 07	704	0.0	0.7−
1998 08 17	704	1.1−	0.1+	1999 12 08	704	0.5−	0.3−	2000 01 07	704	0.1−	0.3+
1999 11 04	704	1.2+	0.5+	1999 12 08	704	0.3+	0.4−	2000 01 07	704	0.3−	0.7+
1999 11 04	704	0.2+	0.0	2000 01 05	704	0.0	0.7+	2000 01 07	704	0.1+	0.1+
1999 11 04	704	1.1+	0.6+	2000 01 05	704	0.4−	0.1−				

1999 XU₇₀ = 1998 OB₁₀
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5 Williams

<i>M</i>	53.84756		(2000.0)		P		Q
<i>n</i>	0.20660547	ω	198.56812	+0.82695507	−0.56221440		
<i>a</i>	2.8338368	Ω	195.64830	+0.51944851	+0.76919131		
<i>e</i>	0.0773841	<i>i</i>	1.64958	+0.21521748	+0.30374283		
<i>P</i>	4.77	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 26	809	1.1+	0.5+	1998 08 17	704	0.8−	1.0−	1999 12 08	704	0.5−	0.4−
1998 07 26	809	0.4+	0.1+	1999 12 07	704	0.1+	0.9−	2000 01 05	704	0.9+	0.7+
1998 07 26	809	0.9+	0.1+	1999 12 07	704	0.2−	0.5−	2000 01 05	704	0.4+	0.1−
1998 07 27	809	0.2−	0.2+	1999 12 07	704	0.2−	0.5−	2000 01 05	704	0.2−	1.3+
1998 07 27	809	0.3−	0.2−	1999 12 07	704	0.0	0.4−	2000 01 05	704	0.1−	0.7+
1998 07 27	809	0.0	0.1−	1999 12 07	704	0.0	0.7−	2000 01 05	704	0.3−	1.5+
1998 08 17	704	0.6−	1.8+	1999 12 08	704	0.3−	0.2−	2000 01 06	704	0.7−	0.7+
1998 08 17	704	(2.8−	3.3+)	1999 12 08	704	0.1+	0.2−	2000 01 06	704	0.7+	0.5−

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1998 08 17 704 0.5- 0.4+ 1999 12 08 704 0.6+ 0.8- 2000 01 06 704 0.4+ 0.6+
 1998 08 17 704 0.2- 1.2- 1999 12 08 704 0.5- 0.0 2000 01 06 704 0.3- 0.3+

1999 XV₇₀ = 1977 TW = 1991 NO₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	161.07543		(2000.0)	P	Q
<i>n</i>	0.27938909	ω	168.41123	+0.35566510	+0.93375258
<i>a</i>	2.3173756	Ω	122.41124	-0.86124248	+0.34410830
<i>e</i>	0.1129598	<i>i</i>	2.72291	-0.36299274	+0.09846621
<i>P</i>	3.53	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1977 10 09	809	0.1+	0.2-	1999 12 07	704	0.2-	0.6-	2000 01 06	704	0.5-	0.3-
1991 07 08	809	0.2-	0.7+	1999 12 08	704	0.3-	0.2+	2000 01 06	704	0.2+	0.2+
1991 07 08	809	0.2-	0.6+	1999 12 08	704	0.2+	0.5-	2000 01 06	704	0.6+	0.5+
1991 07 08	809	0.1+	0.4+	1999 12 08	704	0.1-	0.5+	2000 01 06	704	0.5-	0.6+
1991 07 10	809	0.3-	0.6-	1999 12 08	704	0.6-	0.3+	2000 01 07	704	0.2+	0.4-
1991 07 10	809	0.5+	0.3-	1999 12 08	704	0.4-	0.4-	2000 01 07	704	0.2+	0.4+
1999 12 07	704	1.5+	0.4-	2000 01 05	704	0.9-	0.5-	2000 01 07	704	0.5+	0.6+
1999 12 07	704	0.0	0.2-	2000 01 05	704	0.5+	0.3+	2000 01 07	704	1.2+	1.4+
1999 12 07	704	0.1+	0.0	2000 01 05	704	0.6-	0.1+				
1999 12 07	704	0.3+	0.6-	2000 01 06	704	1.4-	0.1-				

1999 XW₇₀ = 1978 WM₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	316.00421		(2000.0)	P	Q
<i>n</i>	0.18841819	ω	264.42619	-0.80540868	-0.57425093
<i>a</i>	3.0133818	Ω	240.44175	+0.58833182	-0.74445241
<i>e</i>	0.0915437	<i>i</i>	9.71652	+0.07198980	-0.34062660
<i>P</i>	5.23	<i>H</i>	13.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1978 11 29	675	0.3-	0.1+	1999 12 07	704	0.3+	0.0	2000 01 04	049	0.7+	0.1+
1978 11 30	675	0.4+	0.7+	1999 12 07	704	0.4+	1.9+	2000 01 04	049	0.3+	0.3+
1999 11 03	704	0.2-	0.7-	1999 12 07	704	0.3+	0.1-	2000 01 05	704	0.2+	0.1-
1999 11 03	704	0.3-	1.2-	1999 12 07	704	0.1-	0.0	2000 01 05	704	0.2+	0.6-
1999 11 03	704	0.2-	0.8-	1999 12 07	704	1.0+	0.9+	2000 01 05	704	0.6-	0.5-
1999 11 15	704	0.0	0.5+	1999 12 08	704	0.0	0.3-	2000 01 05	704	0.0	0.3-
1999 11 15	704	0.5-	0.3+	1999 12 08	704	0.0	0.8-	2000 01 06	704	0.2+	0.4-
1999 11 15	704	0.3-	0.3+	1999 12 08	704	0.2+	0.3-	2000 01 06	704	0.6+	0.1+
1999 11 15	704	0.2-	0.0	1999 12 08	704	0.2+	0.5-	2000 01 06	704	0.2-	0.4+
1999 11 15	704	0.3-	0.5+	1999 12 08	704	0.3-	1.2-	2000 01 06	704	0.1+	0.5+
1999 11 17	704	0.1-	0.2+	1999 12 31	120	0.9-	0.3+	2000 01 06	704	0.3+	0.5+
1999 11 17	704	0.4-	0.0	1999 12 31	120	1.5-	0.4-				
1999 11 17	704	0.4-	0.7+	2000 01 04	049	1.1+	0.2-				

1999 XF₇₁ = 1998 KA₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	148.50688		(2000.0)	P	Q
<i>n</i>	0.29165078	ω	205.71172	+0.46928076	+0.87159594
<i>a</i>	2.2519597	Ω	92.56085	-0.78372180	+0.48506360
<i>e</i>	0.1588713	<i>i</i>	8.15794	-0.40688538	+0.07094944
<i>P</i>	3.38	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 05 22	704	0.6-	1.5-	1998 06 03	704	0.4+	0.3-	1999 12 08	704	0.4+	0.2+
1998 05 22	704	0.2-	0.9+	1998 07 02	699	0.1+	0.6+	1999 12 08	704	0.5+	0.1+
1998 05 22	704	0.0	0.5-	1998 07 02	699	0.4+	0.5+	1999 12 08	704	0.4+	0.1-
1998 05 22	704	0.1+	0.9-	1998 07 02	699	0.3+	0.8+	2000 01 05	704	0.1+	0.4+
1998 05 22	704	1.4-	0.3+	1999 11 04	704	0.2-	0.1-	2000 01 05	704	0.1-	0.7-
1998 05 24	704	0.2+	0.6+	1999 11 04	704	0.4-	0.1-	2000 01 05	704	0.2-	0.1-
1998 05 24	704	0.5-	0.1+	1999 11 04	704	0.9-	0.2-	2000 01 05	704	0.3-	0.2+
1998 05 24	704	0.9+	0.8+	1999 11 04	704	0.1+	0.0	2000 01 05	704	0.2+	0.2-
1998 05 24	704	0.0	0.6+	1999 12 07	704	0.7+	0.5+	2000 01 06	704	0.4-	0.1+
1998 05 24	704	0.1-	0.8+	1999 12 07	704	0.0	0.7+	2000 01 06	704	0.5-	1.0+

1998 06 03 704 0.3- 0.2- 1999 12 07 704 0.0 0.3+ 2000 01 06 704 0.4- 0.0
 1998 06 03 704 0.5+ 0.1- 1999 12 07 704 0.1+ 0.3- 2000 01 06 704 0.0 0.4+
 1998 06 03 704 0.5+ 0.2+ 1999 12 07 704 0.1+ 0.1+ 2000 01 06 704 0.1+ 0.2-
 1998 06 03 704 0.4+ 1.0- 1999 12 08 704 0.1- 0.1+

1999 XL₇₁ = 1997 GT₃₃

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	294.87364		(2000.0)	P	Q
<i>n</i>	0.27020950	ω	9.82841	-0.99868084	+0.05116234
<i>a</i>	2.3695669	Ω	173.09979	-0.04923022	-0.92991375
<i>e</i>	0.1630874	<i>i</i>	2.07929	-0.01459354	-0.36420164
<i>P</i>	3.65	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 04 03	704	0.0	0.8-	1999 12 08	704	1.0-	0.8+	2000 01 06	704	0.1-	0.3+
1997 04 03	704	0.3+	0.0	1999 12 08	704	0.4-	0.1-	2000 01 06	704	0.4-	0.1+
1997 04 11	704	0.5-	0.4+	1999 12 12	732	0.3+	0.3-	2000 01 06	704	0.3-	0.5-
1997 04 11	704	0.0	0.0	1999 12 12	732	0.3-	0.4-	2000 01 06	704	0.1-	0.0
1999 11 15	704	0.3-	0.5-	1999 12 13	732	0.8-	0.3+	2000 01 06	704	0.3+	0.3+
1999 11 15	704	0.1+	0.4-	1999 12 13	732	0.1-	0.6+	2000 01 07	704	0.3-	1.1-
1999 11 15	704	0.7+	0.9-	1999 12 13	732	0.9+	0.6-	2000 01 07	704	0.2-	0.2+
1999 12 07	704	0.4-	0.9-	1999 12 13	732	0.2+	0.4+	2000 01 07	704	0.1-	0.2+
1999 12 07	704	0.5+	0.8-	2000 01 05	704	0.0	0.5+	2000 01 07	704	0.2+	1.3+
1999 12 07	704	0.3-	0.5-	2000 01 05	704	0.2-	0.0				
1999 12 08	704	1.4+	1.5+	2000 01 05	704	0.5+	0.5+				

1999 XQ₇₁ = 1990 TK₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	101.90290		(2000.0)	P	Q
<i>n</i>	0.23182119	ω	94.16977	+0.83994399	+0.54167121
<i>a</i>	2.6244238	Ω	233.03612	-0.51282534	+0.77241487
<i>e</i>	0.2419586	<i>i</i>	2.36421	-0.17749440	+0.33161358
<i>P</i>	4.25	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 10 11	033	0.0	0.5+	1999 11 09	704	1.0+	0.5-	1999 12 08	704	0.4+	0.0
1990 10 12	033	0.0	0.2+	1999 11 09	704	0.1-	0.2-	2000 01 05	704	0.6-	0.9-
1990 10 12	033	0.0	0.3+	1999 12 07	704	0.5-	0.1+	2000 01 05	704	0.0	0.5+
1990 10 13	033	0.1+	0.8-	1999 12 07	704	0.3-	0.1+	2000 01 05	704	0.7+	0.1-
1990 10 14	033	0.0	0.1-	1999 12 07	704	0.8-	0.2+	2000 01 05	704	0.6+	0.7+
1999 11 09	704	0.2-	0.1-	1999 12 07	704	0.3+	0.4+	2000 01 06	704	0.2+	0.1-
1999 11 09	704	0.5-	0.4+	1999 12 08	704	(0.3-	2.3-)	2000 01 06	704	0.0	0.4+
1999 11 09	704	0.1+	0.1-	1999 12 08	704	0.5-	0.8-	2000 01 06	704	0.2+	0.0

1999 XT₇₁ = 1997 JQ₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	32.73172		(2000.0)	P	Q
<i>n</i>	0.26012785	ω	209.47794	+0.49402837	-0.86934293
<i>a</i>	2.4304022	Ω	210.92200	+0.80270835	+0.46196321
<i>e</i>	0.1805250	<i>i</i>	1.49123	+0.33405877	+0.17559290
<i>P</i>	3.79	<i>H</i>	16.2	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 05 05	691	0.2+	0.2-	1999 12 07	704	0.2-	0.2-	2000 01 05	704	0.1+	0.2-
1997 05 05	691	0.2+	0.3+	1999 12 07	704	0.4-	0.1+	2000 01 05	704	0.2+	0.2-
1997 05 05	691	0.1-	0.1+	1999 12 08	704	0.2+	0.8+	2000 01 05	704	0.2-	0.3+
1997 05 08	691	0.3-	0.2+	1999 12 08	704	0.8-	0.4-	2000 01 06	704	0.5+	0.1+
1997 05 08	691	0.1+	0.1-	1999 12 08	704	0.5+	0.3-	2000 01 06	704	0.5+	0.1+
1997 05 08	691	0.1-	0.2-	1999 12 08	704	0.7+	0.2+	2000 01 06	704	0.3+	0.5+
1999 12 07	704	0.0	0.0	1999 12 08	704	0.2-	0.0	2000 01 06	704	0.6-	0.2-
1999 12 07	704	0.3+	0.0	2000 01 05	704	0.9-	0.4-				

1999 XJ₇₂ = 1991 RG₃₇ = 1998 KT₄₁
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i>	107.47673	(2000.0)		P		Q					
<i>n</i>	0.26648726	ω	248.06053	+0.86873711		+0.49363734					
<i>a</i>	2.3915809	Ω	82.33943	-0.43811456		+0.80381537					
<i>e</i>	0.2031967	<i>i</i>	2.32609	-0.23097937		+0.33196843					
<i>P</i>	3.70	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1991 09 15	675	0.0	0.4+	1998 06 18	704	0.8-	0.1-	2000 01 03	704	0.1+	0.2+
1991 09 15	675	0.0	0.2-	1998 06 18	704	0.2-	0.4+	2000 01 03	704	0.6-	0.5+
1998 05 22	704	0.5-	0.3+	1998 06 18	704	0.0	0.0	2000 01 03	704	0.4+	1.1-
1998 05 22	704	0.9-	1.3+	1999 12 07	704	0.1-	0.1+	2000 01 03	704	1.1-	0.5+
1998 05 22	704	0.5-	0.9-	1999 12 07	704	0.2+	0.1+	2000 01 05	704	0.5-	0.0
1998 05 22	704	(2.7-	0.1-)	1999 12 07	704	0.4-	0.1-	2000 01 05	704	0.4+	0.4+
1998 05 24	704	1.0+	0.4+	1999 12 07	704	0.2+	0.1+	2000 01 05	704	0.1-	0.1-
1998 05 24	704	0.1-	1.1-	1999 12 08	704	0.2-	0.4+	2000 01 05	704	0.6+	0.2-
1998 05 24	704	1.0+	0.5+	1999 12 08	704	0.3-	0.6-	2000 01 05	704	0.2-	0.3+
1998 05 24	704	0.7+	0.5+	1999 12 08	704	0.6+	0.4+	2000 01 13	691	0.1-	0.5-
1998 05 24	704	0.0	0.8-	1999 12 08	704	0.2+	0.3+	2000 01 13	691	0.2+	0.1-
1998 06 18	704	0.5+	0.5+	1999 12 08	704	0.3+	0.5+	2000 01 13	691	0.2+	0.2-

1999 XK₇₂ = 1990 RD₄
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Epoch 2000 Feb. 26.0 TT = JD _T 2451600.5						Williams					
<i>M</i>	87.18824	(2000.0)		P		Q					
<i>n</i>	0.23296371	<i>ω</i>	143.83571	+0.98917872		+0.14649851					
<i>a</i>	2.6158362	<i>Ω</i>	207.74342	−0.13831169		+0.91299833					
<i>e</i>	0.1718930	<i>i</i>	0.98202	−0.04894225		+0.38075220					
<i>P</i>	4.23	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1990 09 14	675	0.4+	0.1+	1999 12 07	704	0.3−	0.0	2000 01 02	691	0.2+	0.0
1990 09 14	675	1.4−	0.9+	1999 12 07	704	0.7−	0.7+	2000 01 02	691	0.3+	0.0
1990 09 18	675	0.5+	0.4−	1999 12 08	704	0.5−	0.5−	2000 01 02	691	0.3+	0.0
1990 09 18	675	0.7+	0.8−	1999 12 08	704	(2.2+	0.9+)	2000 01 05	704	0.8−	0.3−
1999 11 09	704	0.8+	0.2+	1999 12 08	704	(2.1−	1.3−)	2000 01 05	704	0.3+	0.4−
1999 11 09	704	0.5−	0.5+	1999 12 08	704	0.4−	0.7+	2000 01 05	704	0.6+	1.0−
1999 11 09	704	0.3+	0.1+	1999 12 08	704	0.4−	0.3+	2000 01 06	704	0.4−	0.3−
1999 11 09	704	0.0	0.6−	1999 12 27	691	0.6+	0.1+	2000 01 06	704	0.2−	0.9−
1999 12 07	704	0.1+	0.8+	1999 12 27	691	0.5+	0.1+	2000 01 06	704	(1.6+	2.3−)
1999 12 07	704	0.3−	0.2+	1999 12 27	691	0.6+	0.1+				

1999 XM₇₂ = 1998 RS₂₃
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i>	221.01510		(2000.0)		P		Q				
<i>n</i>	0.22772992	ω	346.28787		-0.51402642		+0.85680753				
<i>a</i>	2.6557630	Ω	252.76598		-0.78291848		-0.48803224				
<i>e</i>	0.0441910	<i>i</i>	2.44319		-0.35045041		-0.16644936				
<i>P</i>	4.33	<i>H</i>	14.3		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1997 05 07	704	0.1+	0.1+	1998 09 14	704	0.4+	0.2-	1999 12 08	704	0.0	0.3+
1997 05 07	704	0.1+	0.3-	1998 09 14	704	0.6-	0.6+	1999 12 08	704	0.3-	0.0
1997 05 07	704	0.1-	0.6+	1998 09 14	704	1.2-	0.2+	1999 12 08	704	0.2-	0.4+
1997 05 07	704	0.1-	0.4-	1998 09 15	699	0.7+	0.0	1999 12 08	704	0.5-	0.1-
1998 08 17	704	1.4+	0.6-	1998 09 15	699	0.6+	0.6+	1999 12 31	691	0.5+	0.3+
1998 08 17	704	0.2-	0.3-	1998 09 15	699	1.4+	0.7+	1999 12 31	691	0.5+	0.3+
1998 08 17	704	0.2-	0.1+	1998 09 18	704	0.9-	0.0	1999 12 31	691	0.3+	0.3+
1998 08 17	704	0.1+	0.3+	1998 09 18	704	0.2-	0.5-	2000 01 03	704	0.0	0.4-
1998 08 17	704	1.4+	0.5+	1998 09 18	704	1.2-	0.9-	2000 01 03	704	0.3+	0.4+
1998 08 23	704	0.6-	1.3-	1998 09 18	704	0.8-	1.2+	2000 01 03	704	0.4-	0.4-
1998 08 23	704	1.2+	0.6+	1998 09 18	704	(2.2-	1.6+)	2000 01 03	704	0.5-	0.9-
1998 08 23	704	0.4+	0.2-	1999 12 07	704	0.2-	0.2+	2000 01 05	704	0.4+	0.8-
1998 08 23	704	0.4-	1.4-	1999 12 07	704	0.2-	0.7-	2000 01 05	704	0.5+	0.3+
1998 08 23	704	(5.4-	0.9+)	1999 12 07	704	0.1-	0.1-	2000 01 05	704	0.4+	0.3+

1998 09 14 704 0.8- 1.0- 1999 12 07 704 0.3- 0.3+ 2000 01 05 704 0.2+ 0.3+
1998 09 14 704 0.4- 1.5+ 1999 12 08 704 0.3- 0.3-

1999 XS₇₂ = 1997 LU₁₅
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5						Williams					
<i>M</i>	118.10180	(2000.0)		P		Q					
<i>n</i>	0.18819367	ω	239.62391	+0.79199804		+0.58038121					
<i>a</i>	3.0157781	Ω	84.24836	−0.47413648		+0.78020797					
<i>e</i>	0.1146081	<i>i</i>	10.97747	−0.38462151		+0.23330916					
<i>P</i>	5.24	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1997 05 04	809	0.2+	0.5−	1999 11 03	704	0.6+	0.5+	1999 12 31	691	0.3+	0.2+
1997 05 04	809	0.1+	0.4−	1999 12 07	704	0.4−	0.7−	2000 01 03	704	0.4−	0.2−
1997 05 04	809	0.8−	0.6−	1999 12 07	704	0.2−	0.3−	2000 01 03	704	0.0	0.4−
1997 06 08	809	(3.7+	0.8+)	1999 12 07	704	0.2−	0.5−	2000 01 03	704	0.3−	0.6+
1997 06 08	809	(3.4+	1.1+)	1999 12 07	704	0.1+	0.2−	2000 01 03	704	0.4−	0.1−
1997 06 08	809	(3.4+	0.7+)	1999 12 08	704	0.1−	0.6−	2000 01 05	704	0.0	0.1−
1997 06 09	809	(1.9+	2.9+)	1999 12 08	704	0.4−	1.0−	2000 01 05	704	0.4−	0.7+
1997 06 09	809	(2.4+	2.4+)	1999 12 08	704	0.3+	1.0−	2000 01 05	704	0.1−	0.9+
1997 06 09	809	(2.3+	2.2+)	1999 12 08	704	0.3−	1.2−	2000 01 05	704	0.1−	0.3−
1998 11 11	699	0.1+	0.4−	1999 12 08	704	0.8−	1.0−	2000 01 05	704	0.0	0.4−
1998 11 11	699	1.3−	0.6−	1999 12 18	691	0.3−	0.8+	2000 01 13	691	0.4−	0.1+
1998 11 11	699	1.6+	0.3+	1999 12 18	691	0.6+	0.6+	2000 01 13	691	0.3−	0.0
1999 11 03	704	1.0+	0.5+	1999 12 18	691	0.2+	0.3−	2000 01 13	691	0.1−	0.1−
1999 11 03	704	0.9+	0.4+	1999 12 31	691	0.5+	0.1−				
1999 11 03	704	0.8+	1.5+	1999 12 31	691	0.4+	0.3+				

1999 XT₇₃ = 1998 RB₁₁
Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Epoch 2000 Feb. 26.0 TT = JD _T 2451600.5					Williams						
<i>M</i>	313.24724	(2000.0)			P	Q					
<i>n</i>	0.17070120	<i>ω</i>	337.76654		−0.88412450	−0.46725096					
<i>a</i>	3.2184369	<i>Ω</i>	174.37734		+0.42968025	−0.81357501					
<i>e</i>	0.0993938	<i>i</i>	0.37747		+0.18357220	−0.34608127					
<i>P</i>	5.77	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1995 04 06	809	0.2−	0.1+	1998 09 18	691	0.4−	0.6+	1999 12 15	703	0.3−	0.2+
1995 04 07	809	0.1−	0.1+	1998 09 18	691	0.3+	0.0	1999 12 15	703	0.1−	0.1−
1995 04 07	809	0.1+	0.1+	1998 09 18	691	0.0	0.1−	1999 12 15	703	0.6−	0.7+
1995 04 07	809	0.0	0.1+	1999 12 07	704	0.0	0.1+	1999 12 15	703	0.8−	0.3+
1995 04 07	809	0.1+	0.1+	1999 12 07	704	0.5+	0.6+	1999 12 27	691	0.6−	0.1+
1995 04 07	809	0.1+	0.2+	1999 12 07	704	0.1−	1.0−	1999 12 27	691	1.2−	0.1+
1995 04 07	809	0.1+	0.1−	1999 12 07	704	0.4+	0.2−	1999 12 27	691	0.7−	0.2−
1995 04 07	809	0.1+	0.2+	1999 12 08	704	0.3+	0.6−	2000 01 07	691	0.7+	0.3+
1995 04 07	809	0.1+	0.0	1999 12 08	704	0.7+	0.9−	2000 01 07	691	0.7+	0.4+
1998 09 13	691	0.4−	0.0	1999 12 08	704	0.3+	0.8+	2000 01 07	691	0.7+	0.1+
1998 09 13	691	0.5−	0.2+	1999 12 08	704	0.8+	1.0−				
1998 09 13	691	0.6+	0.4+	1999 12 08	704	0.7−	0.1−				

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1998 06 26	704	0.4+	0.4+	1999 12 08	704	0.6+	0.2-	2000 01 03	704	0.3+	0.5+
1998 06 26	704	0.8+	1.2+	1999 12 08	704	0.2+	0.1-	2000 01 05	704	0.5-	0.0
1998 06 26	704	1.2+	0.4+	1999 12 08	704	0.0	0.7-	2000 01 05	704	0.4-	0.0
1999 11 03	704	0.3-	0.7+	1999 12 15	703	0.5-	0.6+	2000 01 05	704	0.6-	0.1+
1999 11 03	704	0.4-	0.7+	1999 12 15	703	0.7-	0.6+	2000 01 05	704	0.5-	0.3+
1999 11 03	704	0.0	0.1+	1999 12 15	703	1.7-	1.3+	2000 01 05	704	0.3-	0.2+
1999 11 03	704	0.2-	1.0+	1999 12 15	703	0.4+	0.5+				

1999 XY₇₃ = 1988 VT₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	31.44697		(2000.0)	P		Q	
<i>n</i>	0.27103597	ω	180.78560	+0.42078572		-0.90689037	
<i>a</i>	2.3647474	Ω	244.33043	+0.83243687		+0.39570108	
<i>e</i>	0.2019601	<i>i</i>	1.40622	+0.36053881		+0.14481200	
<i>P</i>	3.64	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1988 11 10	401	(0.9-	4.0-)	1999 12 08	704	0.1-	0.3-	2000 01 05	704	0.1+	0.2+
1988 11 10	401	(2.6+	2.4-)	1999 12 08	704	0.5-	0.0	2000 01 05	704	0.3-	0.2+
1988 11 11	401	0.2+	1.4-	1999 12 08	704	0.4-	0.1-	2000 01 05	704	0.2+	0.1+
1988 11 11	401	(9.7-	0.3-)	1999 12 08	704	0.2-	0.1-	2000 01 05	704	0.2-	0.0
1993 01 28	809	0.9+	0.6-	1999 12 08	704	0.1-	0.2+	2000 01 06	704	0.1+	0.3+
1993 01 28	809	1.4-	0.9-	1999 12 15	703	(4.8-	3.0+)	2000 01 06	704	0.1+	0.3+
1999 12 07	704	1.0+	0.8+	1999 12 15	703	(0.1-	3.5+)	2000 01 06	704	0.2+	0.5+
1999 12 07	704	0.8-	0.2-	1999 12 15	703	(3.4+	6.4+)	2000 01 06	704	0.4+	0.9+
1999 12 07	704	0.2-	0.4-	1999 12 15	703	(5.9+	7.2+)	2000 01 06	704	0.2+	0.3+
1999 12 07	704	0.2+	0.5-	2000 01 05	704	0.1+	0.2+				

1999 XC₇₄ = 1976 GX₁ = 1982 DO₁ = 1989 RY₄ = 1992 OH₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	194.01967		(2000.0)	P		Q	
<i>n</i>	0.31778311	ω	177.37615	+0.00442751		+0.99919868	
<i>a</i>	2.1267454	Ω	92.87545	-0.91819683		+0.01981905	
<i>e</i>	0.1494208	<i>i</i>	2.28267	-0.39609971		-0.03477363	
<i>P</i>	3.10	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1976 04 01	095	2.2-	1.4-	1998 06 26	704	0.1-	0.4+	2000 01 03	691	0.3-	0.7-
1976 04 04	095	(1.7-	2.8-)	1998 06 26	704	(4.6-	1.1+)	2000 01 03	691	0.3-	0.6-
1982 02 24	801	1.8+	1.9-	1999 11 03	704	0.6+	0.2+	2000 01 03	704	0.3+	0.2-
1989 09 09	095	(0.5-	12.0+)	1999 11 03	704	0.3-	0.8+	2000 01 03	704	0.1+	0.7-
1989 09 09	095	1.7-	1.8+	1999 11 03	704	0.7-	0.4-	2000 01 03	704	0.6+	0.0
1992 07 26	809	1.9+	1.6-	1999 11 03	704	0.4-	0.8+	2000 01 03	704	0.3+	0.3-
1992 07 26	809	(2.0+	2.1-)	1999 12 07	704	0.2-	0.2-	2000 01 03	704	1.0+	1.2+
1992 07 26	809	(2.0+	2.6-)	1999 12 07	704	0.1-	0.3+	2000 01 05	704	0.6+	0.6-
1992 07 28	809	1.0+	1.5-	1999 12 07	704	0.2-	0.0	2000 01 05	704	0.6+	0.5-
1992 07 28	809	0.7+	1.6-	1999 12 08	704	0.2-	0.0	2000 01 05	704	0.6+	0.4-
1992 07 28	809	0.4+	1.7-	1999 12 08	704	0.3+	1.4+	2000 01 05	704	0.1+	0.9-
1998 06 03	704	0.2+	0.5-	1999 12 08	704	0.6-	0.0	2000 01 05	704	0.2+	0.9-
1998 06 03	704	0.9-	0.6+	1999 12 08	704	0.1+	0.0	2000 01 13	691	0.2-	0.5-
1998 06 03	704	0.9+	0.9-	1999 12 27	691	0.8-	0.7-	2000 01 13	691	0.2-	0.5-
1998 06 03	704	0.3-	1.1+	1999 12 27	691	0.9-	0.7-	2000 01 13	691	0.2-	0.5-
1998 06 26	704	0.3-	0.1-	1999 12 27	691	(0.1+	2.1-)				
1998 06 26	704	(2.1+	2.3+)	2000 01 03	691	0.1-	0.6-				

1999 XN₇₄ = 1998 QL₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	238.69855		(2000.0)	P		Q	
<i>n</i>	0.27170366	ω	101.29126	-0.65407520		+0.75536685	
<i>a</i>	2.3608717	Ω	127.78359	-0.71229180		-0.59720906	
<i>e</i>	0.0778644	<i>i</i>	2.90702	-0.25460957		-0.26974479	
<i>P</i>	3.63	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

M.P.C. 37909

Residuals in seconds of arc

1998 08 17	704	0.3+	0.8+	1998 08 23	704	0.0	0.2-	1999 12 08	704	0.3+	0.7-
1998 08 17	704	0.4+	0.2+	1999 12 07	704	0.8-	1.0+	1999 12 08	704	0.2-	0.4-
1998 08 17	704	0.1+	0.3+	1999 12 07	704	0.4+	0.2-	2000 01 05	704	0.4-	0.7+
1998 08 17	704	0.5-	0.1+	1999 12 07	704	0.6-	0.2+	2000 01 05	704	0.2+	0.5-
1998 08 17	704	0.7-	1.0+	1999 12 07	704	0.1+	0.6-	2000 01 05	704	0.1+	0.2-
1998 08 23	704	0.3+	0.5-	1999 12 08	704	0.1-	0.1-	2000 01 06	704	0.6+	0.9+
1998 08 23	704	1.2-	0.8-	1999 12 08	704	0.4+	0.0	2000 01 06	704	0.7-	0.4-
1998 08 23	704	1.4+	0.7-	1999 12 08	704	0.3+	0.1+	2000 01 06	704	0.2+	0.4+

1999 XD₇₅ = 1974 HF₃ = 1982 YW₃ = 1992 WD₉ = 1998 KS₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	129.28064		(2000.0)	P		Q	
<i>n</i>	0.28901326	ω	210.48873	+0.75414188		+0.65225008	
<i>a</i>	2.2656399	Ω	108.59850	-0.58507821		+0.72016504	
<i>e</i>	0.1653161	<i>i</i>	4.62476	-0.29825075		+0.23649978	
<i>P</i>	3.41	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1974 04 25	805	0.1-	0.5+	1998 05 24	704	0.1-	0.5-	1999 12 08	704	0.4-	1.0+
1982 12 23	095	0.4+	1.8-	1998 05 24	704	0.2-	0.1-	1999 12 15	703	0.2-	0.9+
1992 11 18	400	1.1-	0.0	1998 06 29	699	0.7-	0.2+	1999 12 15	703	(3.3-	3.4-)
1992 11 18	400	0.2+	0.3-	1998 06 29	699	0.5-	0.2+	1999 12 15	703	0.1+	0.9+
1992 11 21	399	0.2+	0.4+	1998 06 29	699	0.5-	0.8+	1999 12 15	703	1.4+	0.7-
1992 11 21	399	1.4+	1.7-	1999 11 03	704	1.3+	0.1+	2000 01 05	704	0.4-	0.4-
1992 11 27	399	(4.9-	0.7-)	1999 11 03	704	0.6+	0.2-	2000 01 05	704	0.3-	0.0
1992 11 27	399	(3.5-	0.7+)	1999 11 03	704	0.3-	0.6-	2000 01 05	704	0.2+	0.1-
1998 05 22	704	0.3+	0.3-	1999 11 03	704	1.2-	1.0-	2000 01 05	704	0.4+	0.1-
1998 05 22	704	0.9+	0.4-	1999 12 07	704	0.2+	0.1-	2000 01 05	704	0.3+	0.1+
1998 05 22	704	0.4+	0.2-	1999 12 07	704	0.6-	0.0	2000 01 06	704	0.4-	0.4+
1998 05 22	704	0.6+	1.0-	1999 12 07	704	0.2-	0.7+	2000 01 06	704	0.1+	0.1-
1998 05 22	704	0.4+	0.7-	1999 12 07	704	0.2-	0.6+	2000 01 06	704	1.6-	0.5+
1998 05 24	704	0.2+	0.3-	1999 12 08	704	0.2+	0.4+	2000 01 06	704	1.8+	1.8-
1998 05 24	704	0.4-	0.1-	1999 12 08	704	0.4-	0.7+	2000 01 06	704	0.9-	0.5-
1998 05 24	704	0.7-	1.1+	1999 12 08	704	0.2-	0.8+				

1999 XF₇₅ = 1998 MQ₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	170.26317		(2000.0)	P		Q	
<i>n</i>	0.28744406	ω	46.16085	+0.25736644		+0.96311452	
<i>a</i>	2.2738780	Ω	238.90753	-0.91081805		+0.21462525	
<i>e</i>	0.2218363	<i>i</i>	5.26425	-0.32275842		+0.16231584	
<i>P</i>	3.43	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 24	704	(0.0	2.4-)	1998 07 21	704	0.8+	0.0	2000 01 05	704	0.1-	0.1-
1998 06 24	704	(1.4-	2.7-)	1998 07 21	704	0.9+	0.8-	2000 01 05	704	0.2+	0.1-
1998 06 24	704	0.7-	0.7-	1999 12 07	704	0.5+	0.7+	2000 01 05	704	0.0	0.1+
1998 06 24	704	0.3-	0.2-	1999 12 07	704	0.4-	0.4+	2000 01 06	704	0.2+	0.4-
1998 06 24	704	0.8-	0.2-	1999 12 07	704	0.1-	0.8-	2000 01 06	704	0.6-	0.9+
1998 06 26	704	0.4+	0.1+	1999 12 07	704	0.4+	0.0	2000 01 06	704	0.5-	0.4-
1998 06 26	704	0.8+	0.7-	1999 12 08	704	0.1+	0.3-	2000 01 06	704	1.1-	0.4-
1998 06 26	704	0.7+	0.2-	1999 12 08	704	0.0	0.7-	2000 01 06	704	0.6+	0.5+
1998 07 21	704	0.3+	1.4+	1999 12 08	704	0.1-	1.0-				
1998 07 21	704	1.8-	0.6+	2000 01 05	704	0.7+	0.1+				

1999 XO₇₆ = 1997 HN₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	342.11106		(2000.0)	P	Q
n	0.29033671	ω	234.41530	-0.68349251	-0.72706486
a	2.2587496	Ω	258.83928	+0.68930673	-0.61360632
e	0.1025803	i	3.79415	+0.24019619	-0.30799996
P	3.39	H	15.1	G 0.15	U 4

M.P.C. 37910

2000 JAN. 24

Residuals in seconds of arc

1997 04 28	704	1.2−	0.5−	1998 08 17	704	0.5+	0.8−	2000 01 05	704	0.3−	0.4+
1997 04 28	704	1.1−	0.4+	1998 08 17	704	(5.3−	1.8+)	2000 01 05	704	0.4−	0.4+
1997 04 28	704	0.1−	0.6−	1999 12 07	704	0.5+	0.5−	2000 01 05	704	0.2−	0.5+
1997 04 28	704	1.6−	0.4−	1999 12 07	704	0.0	0.3+	2000 01 05	704	0.5−	0.1+
1997 04 28	704	(3.6−	0.2−)	1999 12 07	704	0.6+	0.2−	2000 01 05	704	0.7−	0.2+
1997 04 29	704	0.8+	0.0	1999 12 07	704	0.4+	0.2−	2000 01 06	704	0.2−	0.1−
1997 04 29	704	(2.2+	0.4−)	1999 12 08	704	0.3+	0.5−	2000 01 06	704	0.2−	0.3+
1997 04 29	704	1.1+	0.3+	1999 12 08	704	0.4+	0.7−	2000 01 06	704	0.2−	0.1+
1997 04 29	704	1.5+	0.8−	1999 12 08	704	0.1+	0.7−	2000 01 06	704	0.2−	0.2+
1998 08 17	704	0.5+	0.2−	1999 12 08	704	0.2+	0.4−	2000 01 06	704	0.3−	0.2+
1998 08 17	704	0.6−	0.5−	1999 12 08	704	0.5+	0.6−				

1999 XZ₇₆ = 1998 SR₁₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	291.95413		(2000.0)	P		Q
<i>n</i>	0.16906479	ω	275.02674	−0.98947392	−0.08353459	
<i>a</i>	3.2391715	Ω	260.21731	+0.12246347	−0.91840382	
<i>e</i>	0.0558747	<i>i</i>	6.88691	−0.07709770	−0.38672522	
<i>P</i>	5.83	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 26	704	0.8+	1.3+	1999 12 07	704	0.3+	0.0	2000 01 05	704	0.3−	0.1−
1998 09 26	704	0.9+	0.6+	1999 12 07	704	0.1+	0.2+	2000 01 05	704	0.2+	0.1−
1998 09 26	704	0.4+	0.1−	1999 12 07	704	0.4−	0.3+	2000 01 05	704	0.1−	0.2+
1998 09 26	704	0.9−	1.6−	1999 12 08	704	0.1+	0.1−	2000 01 06	704	0.4−	0.2−
1998 09 27	704	0.2+	1.2+	1999 12 08	704	0.2−	0.4−	2000 01 06	704	0.1+	0.0
1998 09 27	704	1.6−	1.5+	1999 12 08	704	0.3+	0.2−	2000 01 06	704	0.1+	0.4+
1998 09 27	704	0.3−	1.3−	1999 12 08	704	0.0	0.0	2000 01 06	704	0.0	0.2−
1998 09 27	704	0.6+	1.6−	2000 01 05	704	0.1+	0.3−				
1999 12 07	704	0.2−	0.2+	2000 01 05	704	0.5+	0.2+				

1999 XH₇₇ = 1998 QR₉₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	338.89522		(2000.0)	P		Q
<i>n</i>	0.21554835	ω	234.62936	−0.65078812	−0.74756874	
<i>a</i>	2.7549026	Ω	256.53399	+0.73335065	−0.57362637	
<i>e</i>	0.0781927	<i>i</i>	7.84401	+0.19665108	−0.33480407	
<i>P</i>	4.57	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704	0.8−	0.5+	1999 12 07	704	0.8+	0.8−	1999 12 16	704	0.1+	0.4+
1998 08 24	704	0.6+	0.8+	1999 12 07	704	0.3−	0.7−	1999 12 16	704	0.2+	0.6+
1998 08 24	704	0.7−	0.6−	1999 12 07	704	0.5−	0.4−	1999 12 16	704	0.1−	1.0+
1998 08 24	704	(4.0−	0.3−)	1999 12 08	704	0.4−	0.3+	2000 01 05	704	0.3+	0.5+
1998 08 27	704	0.5−	0.4−	1999 12 08	704	0.2−	1.0+	2000 01 05	704	0.2−	0.1+
1998 08 27	704	0.6−	0.5−	1999 12 08	704	0.4+	0.2−	2000 01 05	704	0.3+	0.9−
1998 08 27	704	0.9+	0.2−	1999 12 08	704	0.1−	0.6−	2000 01 05	704	0.1−	0.3−
1998 08 27	704	1.1+	0.4+	1999 12 08	704	0.1−	0.5−	2000 01 05	704	0.3−	0.2−
1998 08 27	704	(1.9+	2.6−)	1999 12 16	704	0.3+	0.4+				
1999 12 07	704	0.1+	0.1−	1999 12 16	704	0.1−	0.5+				

1999 XN₇₇ = 1998 MF₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	96.81928		(2000.0)	P		Q
<i>n</i>	0.23478076	ω	242.88355	+0.89559493	+0.37316947	
<i>a</i>	2.6023221	Ω	94.36219	−0.27072699	+0.88916165	
<i>e</i>	0.2701319	<i>i</i>	14.05718	−0.35301078	+0.26483222	
<i>P</i>	4.20	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 06 03	704	1.1−	0.1+	1998 06 26	704	0.4+	0.8−	2000 01 03	704	0.9+	0.3+
1998 06 03	704	0.1−	1.7+	1998 06 26	704	0.0	0.6−	2000 01 03	704	0.5−	0.0
1998 06 03	704	0.4−	1.1−	1999 12 07	704	0.3−	0.1−	2000 01 03	704	0.5−	0.2−
1998 06 03	704	(0.9+	2.9+)	1999 12 07	704	0.0	0.2−	2000 01 03	704	0.3−	0.1−

1998 06 24	704	0.4+	0.1−	1999 12 07	704	1.6−	0.3−	2000 01 05	704	0.4+	0.8−
1998 06 24	704	1.0−	0.4+	1999 12 07	704	0.5+	0.5−	2000 01 05	704	0.7+	0.1+
1998 06 24	704	1.6+	0.7−	1999 12 08	704	1.4+	0.2+	2000 01 05	704	0.1−	0.4+
1998 06 24	704	0.5+	0.3+	1999 12 08	704	0.8−	0.3−	2000 01 05	704	0.0	0.3+
1998 06 26	704	0.1+	0.4+	1999 12 08	704	0.0	0.1−	2000 01 05	704	0.2−	0.1−
1998 06 26	704	0.1+	0.7−	1999 12 08	704	0.2+	0.2−				
1998 06 26	704	0.9−	0.3+	2000 01 03	704	0.6+	0.6+				

1999 XV₇₇ = 1997 EU₄₃ = 1998 MO₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	70.64545		(2000.0)	P		Q
<i>n</i>	0.28489405	ω	130.99641	+0.95938111	−0.27589385	
<i>a</i>	2.2874264	Ω	245.09378	+0.23539630	+0.89795476	
<i>e</i>	0.2147834	<i>i</i>	3.72406	+0.15548786	+0.34286999	
<i>P</i>	3.46	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1997 03 11	704	0.8+	1.1+	1999 12 07	704	0.2−	0.6−	1999 12 17	704	0.7+	0.5+
1997 03 11	704	0.4+	0.1+	1999 12 07	704	0.8+	1.1−	1999 12 17	704	1.7−	0.5−
1997 03 12	704	0.4−	0.9−	1999 12 08	704	0.2−	0.2−	1999 12 17	704	0.2+	0.1+
1997 03 12	704	0.7−	0.1+	1999 12 08	704	0.1+	0.0	1999 12 17	704	0.1+	0.6+
1998 06 25	691	0.4+	0.1−	1999 12 08	704	0.2+	0.7−	1999 12 17	704	0.7+	0.6+
1998 06 25	691	0.6+	0.3−	1999 12 08	704	0.0	0.3−	2000 01 05	704	0.2−	0.1−
1998 06 25	691	1.0+	1.2−	1999 12 16	704	1.9+	0.3−	2000 01 05	704	1.2−	0.2+
1998 07 01	691	0.9−	0.2−	1999 12 16	704	0.3−	0.1−	2000 01 05	704	0.6−	0.0
1998 07 01	691	0.9−	0.5−	1999 12 16	704	0.2−	0.3−	2000 01 06	704	0.5−	0.3+
1998 07 01	691	0.7−	0.6−	1999 12 16	704	0.0	0.1−	2000 01 06	704	0.6+	0.6+
1999 12 07	704	0.2+	0.0	1999 12 17	704	0.3+	0.1−	2000 01 06	704	0.4−	0.0
1999 12 07	704	0.3+	0.6−	1999 12 17	704	0.8−	0.7−				

1999 XB₇₈ = 1982 YL₄ = 1992 DR₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	28.63494		(2000.0)	P		Q
<i>n</i>	0.23061165	ω	159.02254	+0.55718139	−0.82719390	
<i>a</i>	2.6335923	Ω	257.04909	+0.75083658	+0.53930463	
<i>e</i>	0.2419768	<i>i</i>	4.28372	+0.35467355	+0.15779977	
<i>P</i>	4.27	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1982 12 23	095	0.1−	0.8−	1999 11 16	704	0.4+	0.3−	1999 12 08	704	0.2−	1.0+
1992 02 29	809	0.2−	1.0+	1999 11 20	327	0.6+	0.4−	1999 12 08	704	1.8−	1.6+
1992 03 03	809	1.1+	0.2−	1999 11 20	327	0.7+	0.0	1999 12 08	704	0.6−	0.9+
1992 03 05	809	(3.7+	1.6−)	1999 11 20	327	0.4+	0.2+	2000 01 05	704	0.5+	1.0+
1992 03 08	809	0.7−	0.2−	1999 11 21	327	0.8+	0.7+	2000 01 05	704	0.2+	0.9−
1999 11 14	704	0.5+	0.7−	1999 11 21	327	0.4+	0.6+	2000 01 05	704	0.2+	0.6−
1999 11 14	704	0.4+	0.6−	1999 11 21	327	0.4+	0.5+	2000 01 05	704	0.0	0.8−
1999 11 14	704	0.4+	0.5−	1999 12 07	704	0.5−	0.6+	2000 01 05	704	0.0	1.3−
1999 11 14	704	0.3+	0.7−	1999 12 07	704	0.6−	0.6+	2000 01 06	704	0.3−	1.1+
1999 11 14	704	0.0	0.9−	1999 12 07	704	0.4−	0.7+	2000 01 06	704	0.2+	0.1−
1999 11 16	704	1.4−	0.4−	1999 12 07	704	0.2−	0.8+	2000 01 06	704	0.6+	1.1−
1999 11 16	704	0.2+	0.3−	1999 12 08	704	0.6−	0.8+	2000 01 06	704	0.7+	0.9−
1999 11 16	704	0.2+	0.3−	1999 12 08	704	0.7−	0.9+	2000 01 06	704	0.7−	1.3−

1999 XD₇₈ = 1996 HN₉ = 1999 VK₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	15.69128		(2000.0)	P		Q
<i>n</i>	0.17123012	ω	8.74905	+0.34260485	−0.93934161	
<i>a</i>	3.2118057	Ω	61.21667	+0.86084030	+0.30701672	
<i>e</i>	0.1786730	<i>i</i>	1.05267	+0.37626572	+0.15289893	
<i>P</i>	5.76	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 04 17	809	0.1−	0.6−	1999 11 09	704	0.6+	0.4−	1999 12 08	704	1.1−	0.6+
1996 04 17	809	(3.3−	2.2+)	1999 11 09	704	0.6+	0.0	1999 12 08	704	0.4−	0.1+
1996 04 17	809	0.1−	1.0−	1999 11 12	704	0.1+	0.2+	2000 01 03	704	0.6+	0.1−

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1996 04 18	809	0.1+	1.0+	1999 11 12	704	1.2+	0.2-	2000 01 03	704	0.0	0.1+
1996 04 18	809	0.1+	1.0+	1999 11 12	704	1.0-	0.6-	2000 01 03	704	0.4+	0.9+
1996 04 18	809	0.2+	0.2+	1999 11 12	704	0.4+	0.0	2000 01 03	704	0.1-	0.3-
1999 11 03	704	0.0	0.1+	1999 12 07	704	1.4-	0.6-	2000 01 03	704	0.7-	0.9-
1999 11 03	704	0.7-	0.5+	1999 12 07	704	0.5-	0.0	2000 01 04	704	0.6+	0.4-
1999 11 03	704	0.1-	0.8+	1999 12 07	704	0.1-	0.0	2000 01 04	704	0.4+	0.0
1999 11 09	704	0.7+	0.4+	1999 12 08	704	0.2-	0.1-	2000 01 04	704	0.2+	0.2-
1999 11 09	704	0.9+	0.3-	1999 12 08	704	0.4-	0.4+	2000 01 04	704	0.2+	0.3-
1999 11 09	704	0.3+	0.1+	1999 12 08	704	0.3-	1.0+	2000 01 04	704	0.2+	0.3-

1999 XP₈₁ = 1996 GT₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.20516127	<i>ω</i>	5.96306	-0.42094716	-0.90545627		
<i>a</i>	2.8471202	<i>Ω</i>	108.94159	+0.82984241	-0.40859867		
<i>e</i>	0.1607263	<i>i</i>	3.29329	+0.36628549	-0.11487417		
<i>P</i>	4.80	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1996 04 14	691	0.0	0.0	1999 12 07	704	0.0	0.5-	2000 01 05	704	0.1+	0.0
1996 04 14	691	0.1+	0.1+	1999 12 08	704	0.1-	0.3+	2000 01 05	704	0.0	0.1+
1996 04 14	691	0.3+	0.2-	1999 12 08	704	0.0	0.2+	2000 01 05	704	0.2-	0.3+
1996 04 18	691	0.4-	0.0	1999 12 08	704	0.2-	0.0	2000 01 06	704	0.7-	0.9+
1996 04 18	691	0.1+	0.1+	1999 12 08	704	0.3+	0.0	2000 01 06	704	0.3+	0.5-
1996 04 18	691	0.2-	0.0	1999 12 08	704	0.2+	0.2+	2000 01 06	704	1.0+	0.4+
1999 12 07	704	0.1+	0.2-	2000 01 05	704	1.2+	0.4-	2000 01 06	704	1.7-	0.4-
1999 12 07	704	0.2-	0.0	2000 01 05	704	0.3-	0.1-	2000 01 06	704	0.3+	0.3-

1999 XU₈₁ = 1998 OG₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.29106450	<i>ω</i>	323.01648	-0.83801549	+0.54362565		
<i>a</i>	2.2549827	<i>Ω</i>	249.97825	-0.48791233	-0.78506476		
<i>e</i>	0.0979011	<i>i</i>	2.86224	-0.24427769	-0.29689136		
<i>P</i>	3.39	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 26	809	(2.0+	0.3+)	1998 08 17	704	1.4-	1.8-	2000 01 05	704	0.5+	0.1-
1998 07 26	809	0.3+	0.9+	1998 08 17	704	(3.2-	0.6-)	2000 01 05	704	0.7+	0.4-
1998 07 26	809	1.0+	0.4+	1999 12 07	704	0.4-	0.0	2000 01 05	704	0.5+	0.6+
1998 07 27	809	1.1+	1.5+	1999 12 07	704	1.0-	0.2+	2000 01 05	704	0.5+	0.4+
1998 07 27	809	1.1+	0.9+	1999 12 07	704	0.7-	0.3+	2000 01 06	704	0.4+	0.5+
1998 07 27	809	0.7+	0.0	1999 12 08	704	0.0	0.3-	2000 01 06	704	0.8+	0.3+
1998 08 17	704	0.2-	0.7-	1999 12 08	704	0.7-	0.8-	2000 01 06	704	0.6-	0.5-
1998 08 17	704	0.9-	1.3-	1999 12 08	704	1.1-	0.2-	2000 01 06	704	0.3+	0.1+
1998 08 17	704	1.7-	0.6+	2000 01 05	704	0.3+	0.5+	2000 01 06	704	0.6+	0.1-

1999 XW₈₁ = 1998 RW₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.17264850	<i>ω</i>	137.85419	+0.78267470	-0.61662426		
<i>a</i>	3.1941907	<i>Ω</i>	260.41335	+0.54564707	+0.74529111		
<i>e</i>	0.1448523	<i>i</i>	4.93490	+0.29948220	+0.25360538		
<i>P</i>	5.71	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 26	699	0.3-	0.4+	1998 09 18	704	1.1-	0.1+	1999 12 08	704	0.3+	0.0
1998 08 26	699	0.1-	0.6-	1998 09 18	704	0.9+	1.5-	2000 01 03	704	0.5+	0.3-
1998 08 26	699	0.6-	0.9+	1998 09 18	704	0.2+	0.8-	2000 01 03	704	0.4-	0.9-
1998 09 14	704	0.4+	0.9-	1998 09 18	704	1.7-	1.3+	2000 01 03	704	0.4+	0.7+
1998 09 14	704	0.2+	0.2+	1999 12 07	704	0.5-	0.4-	2000 01 05	704	0.6+	1.1+
1998 09 14	704	0.6+	1.0-	1999 12 07	704	0.1+	0.1-	2000 01 05	704	0.4+	0.3+
1998 09 14	704	1.4+	0.5+	1999 12 07	704	0.2+	0.4+	2000 01 05	704	1.6-	0.9-
1998 09 14	704	0.2+	1.1+	1999 12 08	704	0.3+	0.2+				
1998 09 18	704	0.2-	0.4+	1999 12 08	704	0.1-	0.0				

1999 XX₈₁ = 1987 KH₁ = 1994 LX₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.28728284	<i>ω</i>	269.91733	-0.95717575	-0.26593349		
<i>a</i>	2.2747286	<i>Ω</i>	254.65965	+0.28948226	-0.88437668		
<i>e</i>	0.1276553	<i>i</i>	6.81457	-0.00382229	-0.38361081		
<i>P</i>	3.43	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 05 30	413	0.1+	0.7+	1998 08 24	704	(2.3+	2.5-)	2000 01 05	704	0.2-	0.3-
1987 05 30	413	0.0	0.4-	1998 08 24	704	0.5-	0.6+	2000 01 05	704	0.1+	0.7-
1994 06 08	809	(3.3+	2.9+)	1999 12 07	704	0.0	0.1+	2000 01 05	704	0.4+	0.2-
1994 06 08	809	(4.2+	2.6+)	1999 12 07	704	0.8-	0.4+	2000 01 05	704	0.4+	0.6-
1994 06 08	809	(3.6+	2.8+)	1999 12 07	704	0.6-	0.1+	2000 01 05	704	0.9+	0.3-
1994 06 09	809	0.3+	0.4-	1999 12 08	704	0.3+	0.6-	2000 01 06	704	0.2-	0.5-
1994 06 09	809	0.5+	0.5-	1999 12 08	704	0.2-	0.5+	2000 01 06	704	0.1-	0.1-
1994 06 09	809	0.9-	1.5-	1999 12 08	704	0.4-	0.3+	2000 01 06	704	0.2+	0.4-
1998 08 24	704	0.2+	1.1-	1999 12 08	704	0.7+	0.2+				
1998 08 24	704	0.7+	0.1-	1999 12 08	704	0.7-	0.3-				

1999 XY₈₁ = 1996 AW₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26852327	<i>ω</i>	214.31489	+0.97178967	-0.23547553		
<i>a</i>	2.3794766	<i>Ω</i>	159.29264	+0.22393102	+0.90355968		
<i>e</i>	0.1162693	<i>i</i>	2.15088	+0.07402524	+0.35795415		
<i>P</i>	3.67	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 11	327	0.0	0.9+	1997 04 10	704	1.8+	0.6+	2000 01 05	704	0.6-	0.0
1996 01 11	327	0.5-	0.1+	1999 12 07	704	0.1-	0.6-	2000 01 05	704	0.1-	0.4-
1996 01 11	327	0.8-	0.0	1999 12 07	704	0.3-	0.3-	2000 01 05	704	0.0	0.1+
1996 01 12	327	0.2+	0.6+	1999 12 07	704	0.5-	0.2-	2000 01 06	704	0.1-	0.1+
1996 01 12	327	0.4-	0.6+	1999 12 08	704	0.3+	0.5-	2000 01 06	704	0.3-	0.4+
1996 01 12	327	0.6+	0.6+	1999 12 08	704	1.0+	0.9-	2000 01 06	704	0.3+	0.2+
1997 04 10	704	0.8-	0.5-	1999 12 08	704	0.4-	0.3-	2000 01 06	704	0.3+	0.5+
1997 04 10	704	1.0-	0.3-	1999 12 08	704	0.5+	0.3-	2000 01 06	704	0.0	0.3+
1997 04 10	704	0.4+	1.0+	1999 12 08	704	0.1-	0.1+				

1999 XN₈₂ = 1994 GX₆ = 1998 KM₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	0.26614550	<i>ω</i>	99.66413	+0.80787950	+0.58912671		
<i>a</i>	2.3936278	<i>Ω</i>	224.24303	-0.54938106	+0.74289877		
<i>e</i>	0.2197104	<i>i</i>	1.32536	-0.21333343	+0.31785395		
<i>P</i>	3.70	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 04 11	691	0.1-	0.0	1998 05 24	704	0.6-	0.3+	1999 12 08	704	0.5+	1.0+
1994 04 11	691	0.0	0.0	1998 05 24	704	0.5-	0.1-	1999 12 08	704	(0.7+	2.1+)
1994 04 11	691	0.2+	0.1+	1999 11 09	704	0.1+	0.3+	1999 12 27	691	0.1+	0.2-
1994 04 19	691	0.6-	0.3+	1999 11 09	704	0.4+	0.5+	1999 12 27	691	0.0	1.2-
1994 04 19	691	0.1-	0.0	1999 11 09	704	0.3+	1.1+	1999 12 27	691	0.3-	0.3-
1994 04 19	691	0.6+	0.4-	1999 11 09	704	0.1-	0.6+	2000 01 02	691	1.1-	0.8-
1998 05 22	704	(2.5+	0.3-)	1999 12 07	704	0.7+	0.3+	2000 01 02	691	0.6-	0.6-
1998 05 22	704	0.4+	0.3-	1999 12 07	704	0.5-	0.3+	2000 01 02	691	0.9-	0.6-
1998 05 22	704	1.6+	0.3-	1999 12 07	704	0.9-	1.2+	2000 01 05	704	0.0	0.6+
1998 05 24	704	0.4-	1.3+	1999 12 08	704	0.3+	0.3+	2000 01 05	704	0.1-	1.0-
1998 05 24	704	0.4-	0.6+	1999 12 08	704	0.6+	0.5+	2000 01 05	704	0.5+	1.1-
1998 05 24	704	0.4+	0.7+	1999 12 08	704	1.1+	1.0+				

1999 XO₈₂ = 1994 NT₁₁ = 1998 VL₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	329.28316	(2000.0)	P		Q	
<i>n</i>	0.08227861	ω	25.17368	-0.55583001	-0.82151431	
<i>a</i>	5.2353384	Ω	98.83540	+0.73927190	-0.55843325	
<i>e</i>	0.1133754	<i>i</i>	7.39317	+0.38017109	-0.11518049	
<i>P</i>	11.98	<i>H</i>	11.7	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1994 07 08	809	0.1+	1.7-	1998 11 11	704	0.1+	1.6+	1999 12 08	704	0.5-	0.2+
1994 07 08	809	0.8-	0.2-	1999 11 15	704	0.5+	0.5-	1999 12 08	704	0.3-	0.4-
1994 07 08	809	(3.0-	0.9+)	1999 11 15	704	1.0+	1.6-	1999 12 08	704	0.6-	0.9-
1994 07 09	809	(1.0+	2.3-)	1999 11 15	704	1.3-	1.0-	2000 01 05	704	0.4+	0.4-
1994 07 09	809	0.2+	1.5-	1999 11 17	704	0.1-	0.0	2000 01 05	704	0.4-	0.0
1994 07 09	809	0.6+	1.3-	1999 11 17	704	0.1-	0.2+	2000 01 05	704	0.2+	0.2-
1998 11 10	704	0.4-	1.3+	1999 11 17	704	0.4-	1.2-	2000 01 05	704	0.6+	0.2+
1998 11 10	704	0.3-	1.3+	1999 11 17	704	0.2+	1.1-	2000 01 05	704	0.2+	0.2-
1998 11 10	704	0.1-	1.1-	1999 12 07	704	0.2-	0.5+	2000 01 06	704	0.0	0.2+
1998 11 10	704	(2.3-	0.0)	1999 12 07	704	0.6+	0.2+	2000 01 06	704	0.1+	0.1-
1998 11 11	704	0.4+	0.6+	1999 12 07	704	0.0	0.5+	2000 01 06	704	0.5+	0.0
1998 11 11	704	1.5-	0.7+	1999 12 08	704	0.8+	0.8-	2000 01 06	704	0.3+	0.0
1998 11 11	704	0.3+	0.8-	1999 12 08	704	0.2+	0.8-	2000 01 06	704	0.4-	0.2-

1999 XT₈₂ = 1998 RR₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	68.42574	(2000.0)	P		Q	
<i>n</i>	0.19064526	ω	122.30787	+0.92571579	-0.36040853	
<i>a</i>	2.9898682	Ω	259.03830	+0.29569677	+0.87874081	
<i>e</i>	0.1617483	<i>i</i>	6.70925	+0.23582559	+0.31292216	
<i>P</i>	5.17	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 24	704	0.8-	0.4+	1998 10 11	699	0.7-	1.1+	2000 01 05	704	0.2+	0.5+
1998 08 24	704	0.2-	0.8-	1998 10 11	699	0.7-	0.4+	2000 01 06	704	0.5-	0.1-
1998 08 24	704	0.1-	0.1+	1999 12 07	704	1.2+	0.4-	2000 01 06	704	0.2+	1.0-
1998 08 24	704	1.0-	1.0-	1999 12 07	704	0.4+	0.7-	2000 01 06	704	0.4-	0.1+
1998 08 24	704	0.1-	0.8-	1999 12 07	704	0.0	0.2-	2000 01 07	704	0.5-	0.1-
1998 09 14	704	0.3+	0.8+	1999 12 07	704	0.3+	0.4-	2000 01 07	704	0.0	0.7+
1998 09 14	704	0.3-	0.6+	1999 12 07	704	0.2+	0.3-	2000 01 07	704	0.5-	0.0
1998 09 14	704	1.3+	0.6+	1999 12 08	704	0.3+	0.2-	2000 01 07	704	0.8-	0.7+
1998 09 14	704	0.5+	0.1-	1999 12 08	704	0.1+	0.0	2000 01 07	704	0.8-	0.7-
1998 09 14	704	0.3+	0.3+	1999 12 08	704	0.0	0.2-	2000 01 09	704	0.1+	0.0
1998 09 18	704	0.6-	0.7-	1999 12 08	704	0.3-	0.2+	2000 01 09	704	0.1+	0.1+
1998 09 18	704	0.9+	0.5-	1999 12 08	704	0.2+	0.4+	2000 01 09	704	0.2+	0.2-
1998 09 18	704	1.3+	0.1+	2000 01 05	704	0.2+	0.1+	2000 01 09	704	0.1+	0.4+
1998 09 18	704	0.4-	1.0-	2000 01 05	704	0.5+	0.1-	2000 01 09	704	0.1+	0.4+
1998 09 18	704	0.9+	0.1+	2000 01 05	704	0.2+	0.8+				
1998 10 11	699	0.9-	0.6+	2000 01 05	704	0.8-	0.1-				

1999 XU₈₂ = 1998 QV₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	338.65387	(2000.0)	P		Q	
<i>n</i>	0.21250038	ω	230.84390	-0.71729120	-0.68279317	
<i>a</i>	2.7811830	Ω	265.61062	+0.67451263	-0.63046419	
<i>e</i>	0.0981258	<i>i</i>	8.00651	+0.17471704	-0.36919967	
<i>P</i>	4.64	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704	0.5+	0.5-	1999 12 07	704	0.4-	0.0	1999 12 08	704	0.1-	1.4-
1998 08 24	704	0.5+	0.6+	1999 12 07	704	0.5+	0.4-	1999 12 10	734	0.2-	0.3-
1998 08 24	704	0.9+	0.5+	1999 12 07	704	0.2+	0.2+	1999 12 10	734	0.1-	0.2+
1998 08 24	704	0.9-	0.4-	1999 12 07	704	0.2+	0.8+	1999 12 10	734	0.2-	0.1+
1998 08 24	704	1.3+	1.1-	1999 12 08	734	0.6-	0.4+	2000 01 05	704	0.4+	0.1+
1998 08 27	704	0.6-	0.7+	1999 12 08	734	0.1+	0.9+	2000 01 05	704	0.2+	0.1-
1998 08 27	704	1.2-	0.9+	1999 12 08	734	0.1-	0.4+	2000 01 05	704	0.4+	0.1-

1998 08 27	704	0.3+	0.6-	1999 12 08	734	0.2+	0.1+	2000 01 05	704	0.3+	0.1+
1998 08 27	704	0.8+	0.7-	1999 12 08	734	0.9+	0.6+	2000 01 05	704	0.1+	0.0
1998 08 27	704	1.5-	0.4+	1999 12 08	734	1.1-	0.8-	2000 01 06	704	0.2+	0.3-
1999 11 05	704	0.5-	1.2+	1999 12 08	734	0.2-	0.6-	2000 01 06	704	0.4-	0.5+
1999 11 05	704	0.3+	1.5+	1999 12 08	734	1.0-	0.1+	2000 01 06	704	0.5-	0.1+
1999 11 05	704	0.0	0.6+	1999 12 08	704	0.5-	1.4-	2000 01 06	106	0.0	0.5+
1999 11 05	704	0.5+	0.4+	1999 12 08	704	0.1+	1.0-	2000 01 06	106	0.2-	0.3+
1999 11 05	704	0.8+	0.2-	1999 12 08	704	0.1+	1.1-	2000 01 06	106	0.0	0.6+
1999 12 07	704	0.7+	0.2-	1999 12 08	704	0.1-	1.2-				

1999 XX₈₂ = 1998 QY₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	3.54177	(2000.0)	P		Q	
<i>n</i>	0.18393216	ω	208.74498	-0.27042943	-0.95075296	
<i>a</i>	3.0621815	Ω	257.28366	+0.91033610	-0.20133315	
<i>e</i>	0.1490827	<i>i</i>	8.93170	+0.31329874	-0.23565605	
<i>P</i>	5.36	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 19	704	(2.2-	0.8+)	1998 08 27	704	(0.5+	3.1-)	1999 12 08	704	0.3-	0.6-
1998 08 19	704	1.0-	1.2+	1998 09 18	699	0.0	0.5+	1999 12 08	704	0.6+	0.4-
1998 08 19	704	0.1+	1.6+	1998 09 18	699	0.2-	1.1+	1999 12 08	704	0.4+	0.5-
1998 08 19	704	(1.1+	2.4-)	1998 09 18	699	1.0-	0.3+	1999 12 08	704	0.2+	0.9-
1998 08 19	704	(4.0-	2.1-)	1999 11 03	704	0.3+	0.9+	1999 12 08	704	0.2-	0.8-
1998 08 24	704	0.9+	0.0	1999 11 03	704	0.1+	0.4+	2000 01 05	704	0.2-	0.4+
1998 08 24	704	0.5+	0.1+	1999 11 03	704	0.1+	0.2+	2000 01 05	704	0.2+	0.1-
1998 08 24	704	0.1-	1.9-	1999 11 03	704	0.2-	0.7+	2000 01 05	704	0.1-	0.1+
1998 08 24	704	0.7-	0.6-	1999 12 07	704	0.5+	0.3-	2000 01 05	704	0.1-	0.4+
1998 08 24	704	0.8+	0.8+	1999 12 07	704	0.3-	0.9+	2000 01 05	704	0.0	0.1-
1998 08 27	704	1.5+	0.1-	1999 12 07	704	0.7-	1.5-	2000 01 06	704	0.2+	0.4+
1998 08 27	704	0.5-	1.3-	1999 12 07	704	0.6-	0.1-	2000 01 06	704	0.2+	0.2+
1998 08 27	704	0.3-	1.8-	1999 12 07	704	0.2-	0.4+	2000 01 06	704	0.1+	0.5+

1999 XA₈₃ = 1998 QA₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	220.98269	(2000.0)	P		Q	
<i>n</i>	0.29469807	ω	352.09040	-0.26302935	+0.95789357	
<i>a</i>	2.2364088	Ω	262.60490	-0.87869914	-0.28712225	
<i>e</i>	0.0467594	<i>i</i>	6.66697	-0.39837593	+0.00085335	
<i>P</i>	3.34	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 17	704	1.0+	1.0+	1999 12 07	704	0.2+	0.1+	2000 01 06	704	0.3+	0.1-
1998 08 17	704	0.5-	0.1+	1999 12 07	704	0.6-	0.5-	2000 01 06	704	0.1-	0.1-
1998 08 17	704	0.6+	0.3-	1999 12 07	704	0.2-	0.3+	2000 01 06	704	0.0	0.6-
1998 08 17	704	1.7-	0.0	1999 12 08	704	0.3-	0.2-	2000 01 07	704	0.2-	0.1-
1998 08 17	704	0.4-	1.0-	1999 12 08	704	0.7+	0.7+	2000 01 07	704	0.2-	0.0
1998 08 23	704	1.1+	1.0-	1999 12 08	704	0.2+	0.1-	2000 01 07	704	0.2-	0.0
1998 08 23	704	1.4+	1.1+	1999 12 08	704	0.4+	0.3+	2000 01 07	704	0.2-	0.2+
1998 08 23	704	0.2-	0.6+	2000 01 05	704	0.6-	0.6-	2000 01 07	704	0.2-	0.0
1998 08 23	704	0.1-	0.2+	2000 01 05	704	0.3-	0.5-	2000 01 09	704	0.1-	0.5+
1998 08 23	704	1.1-	0.8-	2000 01 05	704	0.3+	0.2+	2000 01 09	704	0.2-	0.7+
1999 12 07	704	0.2+	0.0	2000 01 05	704	0.1-	0.3-	2000 01 09	704	0.2+	0.6+
1999 12 07	704	0.3-	0.3-	2000 01 05	704	0.4-	0.2-	2000 01 09	704	1.6+	0.0

1999 XK₈₃ = 1994 PE₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	354.58222		(2000.0)	P	Q
n	0.24612161	ω	225.83961	-0.59170465	-0.80574793
a	2.5217550	Ω	260.45542	+0.74684583	-0.53593636
e	0.1580155	i	1.48812	+0.30349122	-0.25207635
P	4.00	H	13.9	G 0.15	U 4

2000 JAN. 24

M.P.C. 37913

Residuals in seconds of arc

1994 08 10	809	1.5+	1.1+	1999 12 07	704	0.7+	0.3+	2000 01 03	704	1.3-	0.1-
1994 08 10	809	0.3+	1.4+	1999 12 07	704	0.2+	0.1+	2000 01 03	704	0.1+	0.9-
1994 08 10	809	(0.7+	2.3+)	1999 12 07	704	0.1-	0.1+	2000 01 04	120	0.8-	0.1+
1994 08 11	809	0.2-	0.6-	1999 12 07	704	0.1+	0.1+	2000 01 04	120	0.6-	0.0
1994 08 11	809	0.4-	1.1-	1999 12 07	704	0.4-	0.3+	2000 01 04	120	0.1+	0.5-
1994 08 11	809	1.4-	0.4-	1999 12 08	704	0.5+	0.2+	2000 01 05	704	0.4+	0.0
1994 09 04	809	(2.6-	6.7-)	1999 12 08	704	0.4+	0.5+	2000 01 05	704	0.5+	0.3+
1994 09 04	809	(3.0-	7.0-)	1999 12 08	704	0.2+	0.3+	2000 01 05	704	0.3+	0.1+
1994 09 04	809	(3.9-	6.5-)	1999 12 08	704	0.1-	0.6+	2000 01 05	704	0.4+	0.0
1998 08 23	704	1.5-	0.6-	1999 12 08	704	0.1-	0.6+	2000 01 05	704	0.1-	0.2+
1998 08 23	704	1.3+	1.5-	2000 01 03	704	0.1+	0.2-	2000 01 05	120	0.6-	0.5-
1998 08 23	704	0.6+	1.1+	2000 01 03	704	0.2-	1.3-	2000 01 05	120	0.5+	0.0
1998 08 23	704	(5.6-	2.8+)	2000 01 03	704	0.0	0.5-				

1999 XQ₈₃ = 1991 RP₈ = 1998 MS₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	143.49423		(2000.0)		P		Q
<i>n</i>	0.26898567	ω	197.70660		+0.70026414		+0.71199228
<i>a</i>	2.3767488	Ω	116.77851		-0.64773664		+0.66427835
<i>e</i>	0.2254084	<i>i</i>	3.33493		-0.30011229		+0.22759892
<i>P</i>	3.66	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 09 12	675	0.2-	1.1-	1998 06 26	704	1.7+	0.3+	1999 12 08	704	0.2+	1.1+
1991 09 12	675	1.2-	0.3-	1998 06 26	704	(2.1-	0.7+)	2000 01 05	704	0.2+	0.2-
1991 09 13	675	0.4+	0.4-	1998 06 26	704	0.4-	0.5+	2000 01 05	704	0.2-	0.0
1991 09 13	675	1.2+	0.1+	1998 07 21	704	0.3-	0.2-	2000 01 05	704	0.3+	0.2-
1991 09 14	675	1.2-	0.6+	1998 07 21	704	1.9+	0.0	2000 01 05	704	0.2+	1.5-
1991 09 14	675	0.5-	0.1+	1998 07 21	704	1.1-	1.1+	2000 01 05	704	0.0	0.0
1991 09 15	675	0.4+	0.1-	1998 07 21	704	1.8-	0.9+	2000 01 05	120	1.2-	0.5+
1991 09 15	675	(3.6+	1.4+)	1999 12 07	704	0.1+	1.0+	2000 01 05	120	0.0	0.2-
1991 09 16	095	1.5+	0.1+	1999 12 07	704	0.9-	0.6+	2000 01 05	120	0.0	0.8-
1991 09 16	095	(0.3-	2.8+)	1999 12 07	704	0.3+	1.1+	2000 01 06	704	0.2-	0.1-
1998 06 24	704	1.0+	1.1+	1999 12 07	704	0.2+	0.4+	2000 01 06	704	0.2-	0.9-
1998 06 24	704	1.1-	1.2+	1999 12 07	704	0.4-	0.4+	2000 01 06	704	0.0	0.1+
1998 06 24	704	0.3+	0.3-	1999 12 08	704	0.4-	0.9+	2000 01 10	120	(2.6-	0.6+)
1998 06 24	704	0.1+	0.9-	1999 12 08	704	1.4+	1.5+	2000 01 10	120	1.0+	0.2+
1998 06 24	704	0.4-	0.8-	1999 12 08	704	0.2-	0.2-				

1999 XT₈₃ = 1995 UX₄₁ = 1997 KP₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	344.93560		(2000.0)		P		Q
<i>n</i>	0.26748218	ω	20.57667		-0.76132447		-0.64626398
<i>a</i>	2.3856468	Ω	119.05295		+0.58620390		-0.72050989
<i>e</i>	0.1334259	<i>i</i>	3.42532		+0.27703798		-0.25141273
<i>P</i>	3.68	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1995 10 23	691	0.2+	0.2-	1997 05 27	910	0.1+	0.0	1999 12 08	704	0.6-	0.3+
1995 10 23	691	0.2+	0.0	1997 05 27	910	0.3+	0.0	2000 01 05	704	0.0	0.4+
1995 10 28	691	0.1-	0.4-	1997 05 27	910	0.3+	0.1+	2000 01 05	704	0.0	0.5+
1995 10 28	691	0.1-	0.1-	1997 05 28	910	0.4+	0.2+	2000 01 05	704	0.1-	0.2+
1995 10 28	691	0.0	0.2-	1997 05 28	910	0.1+	0.1-	2000 01 05	704	0.1+	0.9+
1997 05 07	704	1.2+	0.8-	1997 05 29	910	0.1+	0.0	2000 01 06	704	0.1-	0.2-
1997 05 07	704	0.3+	1.3+	1997 05 29	910	0.1+	0.2-	2000 01 06	704	0.4-	0.1+
1997 05 07	704	0.3-	0.6-	1997 05 29	910	0.2+	0.6-	2000 01 06	704	0.2-	0.7-
1997 05 07	704	0.4-	0.8-	1999 12 07	704	0.9+	0.1+	2000 01 09	704	0.4-	0.2+
1997 05 07	704	0.5+	0.6+	1999 12 07	704	0.1+	0.1-	2000 01 09	704	0.3-	0.2+
1997 05 07	704	0.5-	0.2+	1999 12 07	704	0.1-	1.0-	2000 01 09	704	0.2-	0.6-
1997 05 07	704	0.8-	0.1-	1999 12 08	704	0.3+	0.3+	2000 01 09	704	0.2+	0.1+
1997 05 07	704	(2.3-	0.8-)	1999 12 08	704	0.6+	0.3+	2000 01 09	704	0.0	0.8-
1997 05 07	704	1.9-	0.2-	1999 12 08	704	0.3+	0.3-				
1997 05 27	910	0.1+	0.0	1999 12 08	704	0.1-	0.1+				

1999 XB₈₄ = 1995 WR₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	47.63470		(2000.0)		P		Q
<i>n</i>	0.26222330	ω	299.24333		+0.56281610		-0.82425514
<i>a</i>	2.4174372	Ω	116.37597		+0.78036100		+0.50512560
<i>e</i>	0.1683796	<i>i</i>	3.96699		+0.27253396		+0.25583507
<i>P</i>	3.76	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 16	399	0.2+	0.8-	1999 12 07	704	0.5+	1.0-	2000 01 05	704	0.0	0.4+
1995 11 16	399	0.9-	0.0	1999 12 07	704	0.4-	0.7+	2000 01 05	704	0.3-	0.2-
1995 11 17	399	1.2+	0.5+	1999 12 07	704	1.0-	0.0	2000 01 05	704	0.8+	1.3+
1995 11 17	399	(3.3+	1.7-)	1999 12 08	704	1.4+	0.7+	2000 01 05	704	0.3+	0.1-
1995 11 21	399	0.3-	0.5+	1999 12 08	704	0.4+	1.1+	2000 01 06	704	0.2+	0.2-
1995 11 21	399	0.3-	0.2-	1999 12 08	704	0.2+	1.5-	2000 01 06	704	0.7-	1.4-
1999 12 07	704	0.4+	0.3-	1999 12 08	704	1.4-	0.5-	2000 01 06	704	0.0	0.3+
1999 12 07	704	0.2-	0.6+	2000 01 05	704	0.2-	0.1-				

1999 XG₈₄ = 1995 YB₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	36.56550		(2000.0)		P		Q
<i>n</i>	0.25754266	ω	156.79038		+0.28931811		-0.94065973
<i>a</i>	2.4466392	Ω	276.01605		+0.84791738		+0.33782196
<i>e</i>	0.1321989	<i>i</i>	10.27284		+0.44421970		-0.03218050
<i>P</i>	3.83	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 17	327	0.5+	0.1+	1999 12 08	704	0.2-	0.3-	2000 01 06	704	0.7-	0.8+
1995 12 17	327	0.5-	0.2-	1999 12 08	704	0.1-	0.2+	2000 01 07	704	0.1-	0.1+
1995 12 17	327	0.3+	0.6+	1999 12 08	704	0.1+	0.1+	2000 01 07	704	0.0	0.1-
1995 12 18	327	0.1+	0.2-	1999 12 08	704	0.2-	0.3+	2000 01 07	704	0.0	0.5-
1995 12 18	327	0.3-	0.0	1999 12 08	704	0.1+	0.0	2000 01 07	704	0.1-	0.3-
1995 12 18	327	0.0	0.3-	2000 01 05	704	0.4-	0.3+	2000 01 07	704	0.4+	0.7+
1999 12 07	704	0.3+	0.0	2000 01 05	704	0.7+	0.7+	2000 01 09	704	0.2+	0.2-
1999 12 07	704	0.3+	0.1+	2000 01 05	704	0.2+	0.1+	2000 01 09	704	0.6+	0.1-
1999 12 07	704	0.1-	0.1+	2000 01 05	704	0.2-	0.2-	2000 01 09	704	0.1-	0.6-
1999 12 07	704	0.3-	0.0	2000 01 06	704	0.4-	0.1-	2000 01 09	704	0.1-	0.2+
1999 12 07	704	0.1+	0.5-	2000 01 06	704	0.3-	0.2-	2000 01 09	704	0.3+	0.4-

1999 XK₈₄ = 1977 LB

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	27.23978		(2000.0)		P		Q
<i>n</i>	0.28714788	ω	194.82704		+0.01692495		-0.99438924
<i>a</i>	2.2754413	Ω	254.28648		+0.92803884		+0.05448912
<i>e</i>	0.0688452	<i>i</i>	6.22736		+0.37209872		-0.09066957
<i>P</i>	3.43	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1977 06 12	675	0.4+	0.7+	1999 11 17	704	0.4+	0.3-	1999 12 14	704	0.2+	0.0
1977 06 12	675	0.8+	0.5-	1999 11 17	704	0.5-	0.1-	1999 12 14	704	0.0	0.4-
1977 06 13	675	0.7+	0.2+	1999 12 07	704	0.1-	1.3+	1999 12 14	704	0.2+	0.2-
1977 06 13	675	1.9-	0.3+	1999 12 07	704	0.4-	1.5+	1999 12 14	704	0.0	1.0-
1999 11 13	120	0.2+	0.2+	1999 12 07	704	0.4-	0.9+	1999 12 14	704	0.6+	0.5-
1999 11 13	120	0.6+	0.1+	1999 12 07	704	0.7+	0.5+	2000 01 05	704	0.3+	0.1-
1999 11 13	120	0.1-	0.3-	1999 12 08	704	0.5-	0.3+	2000 01 05	704	0.2-	0.9-
1999 11 17	704	0.5-	0.3+	1999 12 08	704	0.1-	0.0	2000 01 05	704	0.0	0.4+
1999 11 17	704	0.1-	0.2-	1999 12 08	704	0.0	0.1-	2000 01 05	704	0.3-	0.5+
1999 11 17	704	0.6+	0.4-	1999 12 08	704	0.1-	0.0	2000 01 05	704	0.0	0.8-

1999 XM₈₄ = 1994 NL₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	293.42112		(2000.0)	P		Q	
<i>n</i>	0.27497635	ω	286.96485	-0.98118374	+0.17639930		
<i>a</i>	2.3421021	Ω	263.24803	-0.13292378	-0.91202119		
<i>e</i>	0.0502559	<i>i</i>	4.53368	-0.14003478	-0.37027103		
<i>P</i>	3.58	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1994 07 08	809	0.2-	0.4-	1998 10 11	699	0.1-	0.9-
1994 07 08	809	0.3+	0.2-	1999 12 07	704	0.4+	0.0
1994 07 08	809	1.0+	0.0	1999 12 07	704	0.4-	0.0
1994 07 09	809	1.2-	0.4-	1999 12 07	704	0.2+	0.3+
1994 07 09	809	0.3-	0.4-	1999 12 07	704	0.1+	0.5-
1994 07 09	809	0.6+	0.4-	1999 12 07	704	0.1-	0.4-
1998 08 17	704	0.1-	0.1-	1999 12 08	704	0.1+	0.4+
1998 08 17	704	0.7-	0.0	1999 12 08	704	0.1-	0.4+
1998 08 17	704	0.8-	0.0	1999 12 08	704	0.1-	0.4-
1998 08 17	704	(7.9-	1.6-)	1999 12 08	704	0.2+	0.3-
1998 09 15	699	0.4+	0.1+	1999 12 08	704	0.2-	0.7+
1998 09 15	699	0.3-	0.2-	2000 01 05	704	0.4-	0.3-
1998 09 15	699	0.7+	0.1+	2000 01 05	704	0.1-	0.2-
1998 10 11	699	1.1+	0.2+	2000 01 05	704	0.0	0.1-
1998 10 11	699	0.1+	0.9+	2000 01 05	704	0.3-	0.2-

1999 XN₈₄ = 1993 FH₂₈ = 1995 WH₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	35.33924		(2000.0)	P		Q	
<i>n</i>	0.26078040	ω	187.56785	+0.26873384	-0.96269371		
<i>a</i>	2.4263461	Ω	246.84749	+0.88552660	+0.25986184		
<i>e</i>	0.1494235	<i>i</i>	1.97385	+0.37897858	+0.07544966		
<i>P</i>	3.78	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1993 03 21	809	(3.2-	1.7+)	1999 12 07	704	0.0	0.4+
1993 03 22	809	0.3-	0.3-	1999 12 07	704	0.1-	0.1+
1993 03 26	809	0.5+	0.6+	1999 12 07	704	0.5-	0.2+
1995 11 17	399	1.3+	0.5+	1999 12 07	704	0.1-	0.3+
1995 11 17	399	(3.9+	0.4-)	1999 12 08	704	0.5-	0.4+
1995 11 21	399	0.7-	1.3-	1999 12 08	704	0.3+	0.6+
1995 11 21	399	0.6-	0.2+	1999 12 08	704	0.2+	0.3+
1999 11 13	703	1.5+	0.1+	1999 12 08	704	0.0	0.4+
1999 11 13	703	0.6+	0.5-	1999 12 08	704	0.1-	0.6+
1999 11 13	703	0.5-	0.8+	2000 01 05	704	0.3+	0.0
1999 11 13	703	0.1+	0.2-	2000 01 05	704	0.5-	0.9-
1999 12 07	704	0.0	0.2+	2000 01 05	704	0.5-	0.3-

1999 XS₈₄ = 1998 QH₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	11.28450		(2000.0)	P		Q	
<i>n</i>	0.22687355	ω	193.29223	-0.26122071	-0.95901976		
<i>a</i>	2.6624419	Ω	271.93278	+0.89536619	-0.19824787		
<i>e</i>	0.1352693	<i>i</i>	6.30445	+0.36067038	-0.20243243		
<i>P</i>	4.34	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 08 17	704	0.7-	0.4-	1999 12 07	704	0.1-	0.5+
1998 08 17	704	0.8+	0.6+	1999 12 08	704	0.5+	0.5-
1998 08 17	704	0.8-	1.6+	1999 12 08	704	0.2+	0.2+
1998 08 17	704	1.1-	0.4+	1999 12 08	704	0.1+	0.4-
1998 08 17	704	0.2-	1.0-	1999 12 08	704	0.1+	0.2+
1998 08 23	704	1.6+	0.7-	1999 12 08	704	0.3-	0.4-
1998 08 23	704	2.0+	0.5-	1999 12 31	732	0.2-	0.7+
1998 08 23	704	1.5-	0.0	1999 12 31	732	0.2+	0.3+
1999 12 07	704	0.6+	0.0	1999 12 31	732	0.3-	0.4+
				2000 01 02	732	0.1-	0.9+
				2000 01 02	732	0.2+	0.9+
				2000 01 02	732	0.3+	1.0+
				2000 01 05	704	0.1-	0.7-
				2000 01 05	704	0.0	0.4-
				2000 01 05	704	0.4+	0.6-
				2000 01 05	704	0.3-	0.6-
				2000 01 05	704	0.1+	0.2-
				2000 01 06	704	0.0	0.3-

1999 12 07	704	0.0	0.3+	2000 01 01	732	0.0	0.4-	2000 01 06	704	0.0	0.5-
1999 12 07	704	0.5-	0.1-	2000 01 01	732	0.1-	0.0	2000 01 06	704	0.2-	0.4-
1999 12 07	704	0.1-	0.2-	2000 01 01	732	0.3-	0.1+				

1999 XD₈₅ = 1994 NP₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	5.30421		(2000.0)	P		Q	
<i>n</i>	0.26892974	ω	356.00356	-0.44129080	-0.89594405		
<i>a</i>	2.3770784	Ω	120.17615	+0.82492540	-0.42716161		
<i>e</i>	0.1109450	<i>i</i>	3.34658	+0.35321455	-0.12172601		
<i>P</i>	3.66	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 07 11	809	0.3+	1.4+	1999 12 07	704	0.2-	0.8-
1994 07 11	809	0.3+	1.7+	1999 12 07	704	0.5+	0.4+
1994 07 11	809	0.5+	0.8+	1999 12 07	704	0.1+	0.8+
1994 07 12	809	(3.6-	0.1+)	1999 12 07	704	0.3+	0.1-
1994 07 12	809	0.6-	0.4+	1999 12 08	704	1.1-	0.6-
1994 07 12	809	1.2-	1.6+	1999 12 08	704	0.6+	1.2-
1999 11 17	704	0.2-	0.1-	1999 12 08	704	1.0-	0.2-
1999 11 17	704	0.4-	0.1-	1999 12 08	704	0.6-	0.7-
1999 11 17	704	0.2+	0.3+	1999 12 08	704	0.7-	0.7+
1999 11 17	704	0.7+	0.3-	2000 01 05	704	0.8+	0.6+
1999 12 07	704	0.0	0.4-	2000 01 05	704	0.2-	0.7+
				2000 01 05	704	0.1+	0.5+
				2000 01 05	704	0.0	0.5+
				2000 01 07	704	0.0	0.5+
				2000 01 07	704	0.5+	0.5+
				2000 01 07	704	0.1-	0.4+
				2000 01 07	704	0.2+	0.4+
				2000 01 07	704	0.1+	0.5+

1999 XF₈₅ = 1961 TS = 1978 QP₂

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Williams

<i>M</i>	95.20013		(2000.0)	P		Q	
<i>n</i>	0.28877575	ω	63.55099	+0.99967696	-0.01128811		
<i>a</i>	2.2668819	Ω	297.08835	+0.00100606	+0.91283251		
<i>e</i>	0.1986689	<i>i</i>	1.46563	+0.02539602	+0.40817812		
<i>P</i>	3.41	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1961 10 07	760	0.4+	0.4-	1999 12 08	704	0.8-	1.6-
1961 10 07	760	0.1-	0.2-	2000 01 03	704	0.2-	0.5+
1978 08 31	095	0.3-	0.9+	2000 01 03	704	0.5+	0.3-
1978 09 05	095	0.2-	0.2+	2000 01 03	704	0.2-	0.1+
1999 12 07	704	1.3-	1.0-	2000 01 03	704	0.6-	0.1+
1999 12 07	704	0.8+	0.2+	2000 01 04	704	0.0	0.2-
1999 12 07	704	0.5+	0.3+	2000 01 04	704	0.2+	0.5+
1999 12 07	704	0.0	0.1+	2000 01 04	704	0.1-	1.8+
1999 12 08	704	0.0	0.1-	2000 01 08	704	0.2-	0.2-
1999 12 08	704	0.6-	0.1-	2000 01 08	704	0.8-	0.2+
1999 12 08	704	0.3-	0.4-	2000 01 08	704	0.2+	0.2-
1999 12 08	704	0.2+	1.1-	2000 01 08	704	0.5-	0.1-
				2000 01 08	704	0.0	0.1-
				2000 01 08	704	0.3-	0.1+
				2000 01 08	704	1.0-	1.0-
				2000 01 08	704	0.1+	0.1-
				2000 01 08	704	0.2-	0.2+
				2000 01 08	704	0.3-	0.4+
				2000 01 09	691	0.3+	0.1+
				2000 01 09	691	0.2+	0.0
				2000 01 09	691	0.3+	0.0
				2000 01 15	691	1.2+	0.9+
				2000 01 15	691	1.2+	0.9+
				2000 01 15	691	1.5+	0.9+

1999 XR₈₅ = 1993 FH₄₂ = 1995 YB₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	350.84022		(2000.0)	P		Q	
<i>n</i>	0.26643894	ω	307.53433	-0.74894765	-0.66260778		
<i>a</i>	2.3918701	Ω	190.97007	+0.61643345	-0.69376465		
<i>e</i>	0.1545162	<i>i</i>	1.60299	+0.24307861	-0.28220833		
<i>P</i>	3.70	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1993 03 19	809	(0.1-	2.9+)	1999 11 17	704	0.1+	0.0
1993 03 20	809	0.4-	0.9+	1999 11 17	704	0.5+	0.4-
1993 03 24	809	0.6+	0.3-	1999 11 17	704	0.0	0.2+
1995 12 16	691	0.2-	0.4+	1999 11 17	704	0.6+	0.7+
1995 12 16	691	0.2-	0.4+	1999 11 17	704	0.3+	0.5-
1995 12 16	691	0.2-	0.5+	1999 12 07	704	1.2+	0.1+
1995 12 22	691	0.1+	0.3+	1999 12 07	704	0.6+	0.2-
1995 12 22	691	0.1-	0.3+	1999 12 07	704	(0.7+	2.5-)
1995 12 22	691	0.2+	0.0	1999 12 07	704	0.2-	1.5-
				2000 01 07	704	0.0	0.0

2000 JAN. 24

M.P.C. 37915

1998 08 17	704	1.5+	0.6−	1999 12 07	411	0.3−	1.1+	2000 01 07	704	0.3+	0.1+
1998 08 17	704	0.6−	0.5+	1999 12 07	411	1.0−	0.7+	2000 01 07	704	0.3−	0.2+
1998 08 17	704	0.0	0.2+	1999 12 08	704	(1.5+	2.3−)	2000 01 07	704	0.1+	0.1+
1998 08 17	704	0.6−	0.8−	1999 12 08	704	0.2+	1.2−	2000 01 07	704	0.2−	0.3−
1998 08 17	704	(4.5−	2.4−)	1999 12 08	704	1.1−	0.4+				

1999 XH₈₆ = 1998 QK₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	79.19984		(2000.0)	P	Q		
<i>n</i>	0.22325015	ω	94.25633	+0.92823658	−0.33705375		
<i>a</i>	2.6911726	Ω	285.49961	+0.24204885	+0.86854627		
<i>e</i>	0.1699340	<i>i</i>	9.40023	+0.28246984	+0.36334852		
<i>P</i>	4.41	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	1.3+	0.6−	1998 09 15	699	0.1−	0.4−	2000 01 04	704	0.8+	0.4+
1998 08 17	704	1.3−	0.6+	1998 09 15	699	0.3−	0.5+	2000 01 04	704	0.0	0.1+
1998 08 17	704	0.4+	0.3+	1999 12 07	704	0.9−	0.7+	2000 01 04	704	0.4+	0.1−
1998 08 17	704	1.5−	1.4−	1999 12 07	704	1.0+	0.1+	2000 01 04	704	0.2−	0.6−
1998 08 17	704	0.8−	0.2+	1999 12 07	704	0.3+	0.6+	2000 01 04	704	0.2−	0.0
1998 08 23	704	1.9+	0.1+	1999 12 07	704	0.2−	0.3+	2000 01 06	704	0.5+	0.6+
1998 08 23	704	0.1+	0.9+	1999 12 08	704	0.4−	0.3+	2000 01 06	704	0.4−	0.0
1998 08 23	704	(2.2+	2.7−)	1999 12 08	704	0.8−	0.4+	2000 01 06	704	0.2−	0.5−
1998 08 23	704	(2.6+	2.0−)	1999 12 08	704	0.4−	0.3+	2000 01 06	704	1.0−	0.6−
1998 08 23	704	0.1+	1.2−	1999 12 08	704	1.7+	0.7−				
1998 09 15	699	0.3+	0.7+	1999 12 08	704	0.2+	1.5−				

1999 XK₈₆ = 1986 RY₉ = 1992 CY₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	94.71527		(2000.0)	P	Q		
<i>n</i>	0.24119394	ω	83.33138	+0.97418757	−0.16541126		
<i>a</i>	2.5559859	Ω	286.10637	+0.08402160	+0.89729728		
<i>e</i>	0.1329415	<i>i</i>	9.20060	+0.20952078	+0.40926362		
<i>P</i>	4.09	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 09 08	095	0.7+	1.8+	1999 12 07	704	0.0	0.4−	2000 01 03	704	0.2+	0.6−
1986 09 11	095	0.9−	1.3−	1999 12 07	704	0.3−	0.2+	2000 01 03	704	0.5+	0.2+
1992 02 12	809	1.4+	0.3+	1999 12 07	704	0.5−	0.1+	2000 01 03	704	0.4+	0.1+
1992 02 12	809	0.3−	0.3+	1999 12 07	704	0.0	1.0−	2000 01 03	704	0.1+	0.1+
1992 02 12	809	1.1−	0.8−	1999 12 07	691	0.4−	0.1+	2000 01 04	704	0.5+	0.2+
1999 12 03	699	0.3+	0.6+	1999 12 07	691	0.5−	0.1+	2000 01 04	704	0.9+	1.8+
1999 12 03	699	0.1+	0.1−	1999 12 07	691	0.5−	0.0	2000 01 04	704	0.8+	0.9+
1999 12 03	699	0.8−	0.5+	1999 12 08	704	0.7+	0.2−	2000 01 04	704	0.9+	0.4+
1999 12 06	703	0.5−	1.1−	1999 12 08	704	0.1+	0.4−	2000 01 04	704	0.4+	0.8+
1999 12 06	703	0.5−	0.3−	1999 12 08	704	0.5−	0.5−	2000 01 06	106	0.1+	0.1+
1999 12 06	703	0.8−	0.3−	1999 12 08	704	0.3−	0.4−	2000 01 06	106	0.1+	0.1+
1999 12 06	703	0.2−	0.5+	1999 12 08	704	0.4−	0.4−	2000 01 06	106	0.3−	0.1−
1999 12 07	704	0.1−	0.6−	2000 01 03	704	0.3+	0.1−				

1999 XN₈₆ = 1981 JN₃ = 1991 LQ₆ = 1997 HM₅ = 1998 SL₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	8.88916		(2000.0)	P	Q		
<i>n</i>	0.30125348	ω	222.82702	−0.43462791	−0.89730570		
<i>a</i>	2.2038465	Ω	253.06919	+0.84655074	−0.37783508		
<i>e</i>	0.0899572	<i>i</i>	4.62135	+0.30732787	−0.22821728		
<i>P</i>	3.27	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 05 08	675	(2.0−	3.0+)	1998 09 19	910	0.4+	0.4+	1999 12 08	704	0.1−	0.5−
1981 05 09	675	(3.0+	0.7+)	1998 09 19	910	0.3+	0.3+	1999 12 08	704	0.1+	0.3−
1991 06 06	809	0.5+	0.5−	1998 09 22	910	0.0	0.1+	1999 12 08	704	0.7−	1.2−
1991 06 06	809	0.2−	0.0	1998 09 22	910	0.2−	0.2+	1999 12 10	411	0.3−	0.7+
1991 06 06	809	0.3−	0.6+	1998 09 22	910	0.2−	0.0	1999 12 10	411	1.2−	0.9+

1997 04 28	704	0.9−	0.3+	1999 11 17	704	0.3−	0.3+	1999 12 11	411	0.3−	0.5+
1997 04 28	704	0.3−	1.1−	1999 11 17	704	0.1+	0.4−	1999 12 11	411	0.3−	0.1+
1997 04 28	704	1.0−	0.2+	1999 11 17	704	0.3+	0.5−	2000 01 05	704	0.6−	0.2+
1997 04 28	704	1.0−	0.4+	1999 11 17	704	0.1−	0.6−	2000 01 05	704	0.5−	0.2+
1997 04 28	704	0.8−	1.0+	1999 11 17	704	0.4+	0.0	2000 01 05	704	0.6−	0.1+
1997 04 29	704	1.3+	0.6+	1999 12 05	699	0.2+	0.9+	2000 01 05	704	0.5−	0.2+
1997 04 29	704	1.1+	0.4−	1999 12 05	699	0.2+	1.0+	2000 01 05	704	0.4−	0.4+
1997 04 29	704	1.3+	1.7−	1999 12 05	699	0.5+	0.5+	2000 01 06	106	0.4+	0.2+
1997 04 29	704	0.2+	0.0	1999 12 07	704	1.4+	0.3+	2000 01 06	106	0.2+	0.7−
1998 08 17	704	1.2+	0.1+	1999 12 07	704	(0.2−	2.9+)	2000 01 06	106	0.3+	0.3+
1998 08 17	704	0.8−	0.6−	1999 12 07	704	0.4+	1.0−	2000 01 13	849	0.3−	0.2−
1998 08 17	704	0.8+	0.7−	1999 12 07	704	0.4+	1.0−	2000 01 13	849	0.7+	0.0
1998 08 17	704	0.6+	0.0	1999 12 07	704	0.1−	1.3−	2000 01 13	849	0.0	0.1+
1998 08 17	704	0.6−	0.8−	1999 12 08	704	1.3+	0.1−				
1998 09 19	910	1.4−	0.5+	1999 12 08	704	0.5−	0.0				

1999 XO₈₆ = 1995 SH₃₉

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	46.33585		(2000.0)	P	Q		
<i>n</i>	0.27180040	ω	230.66877	+0.48770793	−0.87298946		
<i>a</i>	2.3603115	Ω	190.14556	+0.81028812	+0.45501084		
<i>e</i>	0.1966427	<i>i</i>	1.79319	+0.32492175	+0.17565461		
<i>P</i>	3.63	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 09 24	691	0.0	0.1−	1999 12 07	704	0.8−	1.2−	2000 01 04	888	0.1+	0.0
1995 09 24	691	0.1+	0.0	1999 12 08	704	1.0+	0.5+	2000 01 05	704	0.3−	0.4−
1995 09 24	691	0.0	0.0	1999 12 08	704	0.4−	1.2+	2000 01 05	704	0.2−	0.8+
1995 09 27	691	0.0	0.1+	1999 12 08	704	1.0−	0.7−	2000 01 05	704	0.2+	0.4+
1995 09 27	691	0.1−	0.0	1999 12 08	704	1.1−	1.3−	2000 01 05	704	0.4+	0.2+
1995 09 27	691	0.1+	0.1+	1999 12 08	704	0.3+	0.3+	2000 01 05	704	0.2−	0.1+
1999 12 07	704	0.3+	1.1+	2000 01 03	888	0.1−	0.3−	2000 01 07	888	0.5+	0.1−
1999 12 07	704	1.6+	1.2+	2000 01 03	888	0.0	0.3−	2000 01 07	888	0.4+	0.5−
1999 12 07	704	0.0	1.5−	2000 01 04	888	0.0	0.4+				

1999 XQ₈₆ = 1977 QM₅ = 1982 YZ₃ = 1998 MH₃₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	81.41625		(2000.0)	P	Q		
<i>n</i>	0.23409888	ω	270.88295	+0.94446257	−0.24375710		
<i>a</i>	2.6073729	Ω	103.24846	+0.30859378	+0.88841379		
<i>e</i>	0.2200120	<i>i</i>	13.08632	−0.11296162	+0.38897739		
<i>P</i>	4.21	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1977 08 18	808	0.4+	0.6+	1999 11 17	704	1.7+	1.5−	1999 12 09	691	0.1+	0.1+
1977 08 18	808	0.4−	1.7+	1999 11 17	704	1.0+	0.5−	1999 12 09	691	0.1+	0.0
1977 08 22	808	0.1+	0.8−	1999 11 17	704	0.3+	0.2+	1999 12 09	691	0.1+	0.1−
1982 12 23	095	(4.5+	3.9−)	1999 11 17	704	0.6+	1.6+	1999 12 10	411	0.4+	0.7−
1998 06 24	704	0.5+	0.2+	1999 12 02	691	0.2−	0.1+	1999 12 10	411	1.3+	1.0−
1998 06 24	704	0.2+	0.3+	1999 12 02	691	0.2−	0.2+	1999 12 11	411	1.0+	0.8−
1998 06 24	704	0.7+	1.0+	1999 12 02	691	0.3−	0.0	1999 12 11	411	0.1+	0.8−
1998 06 24	704	0.1+	1.1+	1999 12 05	699	0.4+	0.0	1999 12 17	691	0.1−	0.3+
1998 06 26	704	0.5+	0.3−	1999 12 05	699	0.6+	0.3−	1999 12 17	691	0.0	0.2+
1998 06 26	704	0.8+	0.4−	1999 12 05	699	0.6+	0.1+	1999 12 17	691	0.1+	0.2+
1998 06 26	704	0.3−	0.0	1999 12 06	703	(0.1−	5.7−)	2000 01 03	704	0.7−	0.5−
1998 06 26	704	0.6+	0.1−	1999 12 06	703	0.1+	0.1−	2000 01 03	704	1.0−	0.1+
1998 06 26	704	0.9−	0.6−	1999 12 06	703	0.1+	0.4+	2000 01 03	704	0.8−	0.0
1998 06 28	809	0.5+	1.1−	1999 12 06	703	0.0	0.1+	2000 01 03	704	0.6−	0.2+
1998 06 28	809	0.5+	1.8−	1999 12 07	704	0.5+	0.8−	2000 01 03	704	0.9−	0.1+
1998 06 28	809	0.4+	1.5−	1999 12 07	704	0.3+	0.5−	2000 01 04	704	0.6−	0.1+
1998 07 01	809	1.9−	0.6−	1999 12 07	704	0.1+	0.3−	2000 01 04	704	0.9−	0.1+
1998 07 01	809	(2.6−	0.1+)	1999 12 07	704	0.1−	0.3−	2000 01 04	704	0.7−	0.2+
1998 07 01	809	1.8−	0.1−	1999 12 07	704	0.6−	0.5−	2000 01 04	704	0.8−	0.1+
1999 11 14	703	0.1−	0.8+	1999 12 08	704	0.4+	0.3−	2000 01 04	704	0.9−	0.3+

1999 11 14	703	0.4+	0.7+	1999 12 08	704	0.1+	0.1-	2000 01 06	106	0.0	0.4+
1999 11 14	703	0.4+	0.2+	1999 12 08	704	0.4+	0.4-	2000 01 06	106	0.1+	0.4+
1999 11 14	703	0.8+	0.7+	1999 12 08	704	0.3-	0.2-	2000 01 06	106	(2.9-	1.1+)
1999 11 17	704	0.0	1.7-	1999 12 08	704	0.6-	0.4+				

1999 XS₈₆ = 1986 AE₂

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<i>M</i>	66.88731	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28114864	ω	297.01765	+0.76289460	-0.64241945	
<i>a</i>	2.3076967	Ω	103.04721	+0.61648102	+0.68893701	
<i>e</i>	0.1591216	<i>i</i>	4.28130	+0.19478958	+0.33565317	
<i>P</i>	3.51	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1986 01 12	688	0.9-	0.2+	1999 12 07	704	0.6+	0.5-	2000 01 03	704	0.1+	0.3+
1986 01 12	688	0.9+	0.8-	1999 12 07	704	0.2-	0.9-	2000 01 03	704	0.1-	0.4-
1986 01 17	688	(5.5-	4.9+)	1999 12 07	704	0.1+	0.7-	2000 01 03	704	0.2-	0.5-
1986 01 17	688	0.1+	2.1+	1999 12 07	704	0.2+	0.2-	2000 01 03	704	0.0	0.4-
1999 11 12	703	0.1-	0.1+	1999 12 08	704	1.0+	0.7-	2000 01 03	704	0.3-	0.5-
1999 11 12	703	0.7+	1.5+	1999 12 08	704	0.7+	0.4-	2000 01 04	704	0.2-	0.0
1999 11 12	703	0.1+	0.8+	1999 12 08	704	0.5+	0.2-	2000 01 04	704	0.4-	0.4-
1999 11 12	703	0.1+	0.3+	1999 12 08	704	0.7+	0.0	2000 01 04	704	0.5-	0.3+
1999 11 17	704	0.5-	0.1+	1999 12 08	704	0.6-	0.0	2000 01 04	704	0.2-	0.1-
1999 11 17	704	0.0	0.3-	1999 12 09	691	0.2-	0.3-	2000 01 04	704	0.3+	0.5+
1999 11 17	704	0.1-	0.5+	1999 12 09	691	0.4-	0.2-	2000 01 04	704	0.5-	0.2-
1999 11 17	704	0.3-	0.1-	1999 12 09	691	0.3-	0.4-	2000 01 04	704	0.2+	0.3+
1999 11 17	704	0.2-	0.0	1999 12 16	691	0.4-	0.4+	2000 01 04	704	0.2-	0.1-
1999 12 06	703	0.2-	0.3+	1999 12 16	691	0.4-	0.3+	2000 01 04	704	0.1+	0.7+
1999 12 06	703	0.9-	1.3-	1999 12 16	691	0.6-	0.3+	2000 01 04	704	0.3-	0.1+
1999 12 06	703	0.2+	1.3+	1999 12 30	699	0.4+	0.0	2000 01 06	106	0.4+	0.1-
1999 12 06	703	0.2-	0.7+	1999 12 30	699	0.3+	0.6+	2000 01 06	106	0.4+	0.3-
1999 12 07	704	0.8+	1.0-	1999 12 30	699	0.2-	0.2+	2000 01 06	106	0.6+	0.2-

1999 XU₈₆ = 1997 MY₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	80.42272	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18386406	ω	106.06517	+0.86765379	-0.48001441	
<i>a</i>	3.0629377	Ω	282.77731	+0.39012388	+0.81877856	
<i>e</i>	0.0977676	<i>i</i>	7.62910	+0.30818869	+0.31494099	
<i>P</i>	5.36	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1997 06 28	704	0.7-	0.1-	1998 10 18	699	0.4+	0.6+	1999 12 15	691	0.1+	0.1+
1997 06 28	704	0.6+	0.2+	1998 10 18	699	0.3-	0.4+	1999 12 15	691	0.2+	0.0
1997 06 28	704	(2.7-	0.7+)	1999 12 03	691	0.1-	0.1+	1999 12 30	699	0.1+	0.6+
1997 06 29	704	0.1-	0.4+	1999 12 03	691	0.0	0.1+	1999 12 30	699	0.4+	0.0
1997 06 29	704	0.6-	1.4+	1999 12 03	691	0.1+	0.2+	1999 12 30	699	0.4+	0.4+
1997 06 29	704	0.2-	0.7+	1999 12 05	699	0.0	1.6+	2000 01 04	704	0.0	1.0+
1997 06 29	704	0.2-	1.4+	1999 12 05	699	0.4+	1.1+	2000 01 04	704	0.5-	0.6+
1997 06 29	704	0.0	1.6+	1999 12 05	699	0.1-	1.6+	2000 01 04	704	0.7-	0.5+
1997 07 02	704	0.2-	0.4+	1999 12 07	704	0.5+	0.2-	2000 01 05	704	0.2-	0.0
1997 07 02	704	1.4+	0.1-	1999 12 07	704	1.0+	0.9-	2000 01 05	704	0.5-	0.2+
1997 07 02	704	1.0-	1.7+	1999 12 07	704	0.9+	0.1-	2000 01 05	704	0.6-	0.2-
1997 07 02	704	0.2-	1.0+	1999 12 07	704	0.5+	0.9-	2000 01 05	704	0.2+	0.3+
1997 07 02	704	0.8-	0.2+	1999 12 08	704	0.3+	0.9+	2000 01 05	704	0.0	0.8+
1998 08 23	699	0.2-	0.6+	1999 12 08	704	1.3+	0.6-	2000 01 06	106	0.2+	0.8+
1998 08 23	699	0.5-	0.9-	1999 12 08	704	0.6-	0.0	2000 01 06	106	0.2+	0.9+
1998 08 23	699	0.2+	0.6+	1999 12 08	704	0.3-	1.3-	2000 01 06	106	0.1+	0.9+
1998 10 18	699	0.1-	0.0	1999 12 15	691	0.2+	0.1+				

1999 XX₈₆ = 1998 QF₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	63.43327	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21256428	ω	106.87895	+0.82716654	-0.54346364	
<i>a</i>	2.7806256	Ω	286.25322	+0.44204086	+0.78634261	
<i>e</i>	0.2229253	<i>i</i>	8.56495	+0.34698039	+0.29379002	
<i>P</i>	4.64	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1998 06 24	699	0.8-	0.0	1999 11 16	704	0.2+	0.9+	1999 12 13	691	0.6+	0.1-
1998 06 24	699	0.7-	1.0-	1999 11 16	704	0.3+	0.2+	1999 12 17	691	0.1-	0.2-
1998 06 24	699	0.2-	0.4-	1999 11 16	704	0.9+	0.6+	1999 12 17	691	0.0	0.2-
1998 07 14	699	0.1-	0.3+	1999 11 16	704	1.1+	1.8-	1999 12 17	691	0.1+	0.2-
1998 07 14	699	0.2-	0.3-	1999 12 03	699	0.3+	0.3-	1999 12 31	739	0.7-	0.5+
1998 07 14	699	0.7-	0.2-	1999 12 03	699	0.2-	0.3-	1999 12 31	739	0.9-	0.7+
1998 08 17	704	0.9+	0.0	1999 12 03	699	0.1+	0.1-	1999 12 31	849	1.0-	0.3+
1998 08 17	704	0.1+	0.1+	1999 12 05	691	0.1-	0.2-	1999 12 31	849	0.8-	0.4+
1998 08 17	704	0.7-	0.4+	1999 12 05	691	0.0	0.3-	1999 12 31	849	0.8-	0.5+
1998 08 17	704	1.1-	0.1+	1999 12 05	691	0.1-	0.2-	1999 12 31	849	0.4-	0.3+
1998 08 17	704	0.5+	0.4+	1999 12 06	703	0.3-	1.2+	1999 12 31	849	1.0-	0.7+
1998 08 19	566	1.0+	0.2+	1999 12 06	703	0.4+	0.4+	1999 12 31	849	0.7-	0.2+
1998 08 19	566	0.3-	0.2-	1999 12 06	703	0.5-	0.0	1999 12 31	849	0.6-	0.3-
1998 08 19	566	0.0	0.5-	1999 12 06	703	0.1+	0.2+	2000 01 05	704	0.1+	0.0
1998 08 23	704	0.7+	0.7-	1999 12 07	704	0.9+	0.2-	2000 01 05	704	0.0	0.2-
1998 08 23	704	0.7+	0.4+	1999 12 07	704	0.7+	0.2-	2000 01 05	704	0.2+	0.1-
1998 08 23	704	1.1+	0.0	1999 12 07	704	0.5+	0.2+	2000 01 05	704	0.1-	0.1-
1998 08 23	704	0.1-	0.5+	1999 12 07	704	0.4+	0.8-	2000 01 05	704	0.1-	0.0
1999 09 18	703	0.4-	0.0	1999 12 07	704	0.5-	0.3-	2000 01 06	106	0.1-	0.2+
1999 09 18	703	0.6-	0.6+	1999 12 08	704	1.3+	0.1-	2000 01 06	106	0.1-	0.2+
1999 09 18	703	0.3-	0.8+	1999 12 08	704	0.4+	1.1-	2000 01 06	106	0.2-	0.5+
1999 09 18	703	0.3-	0.1-	1999 12 08	704	0.4+	0.6-	2000 01 07	849	0.3-	0.2-
1999 11 12	703	0.5+	0.0	1999 12 08	704	1.0+	0.7-	2000 01 07	849	0.0	0.0
1999 11 12	703	0.1-	0.1+	1999 12 08	704	0.6-	1.3-	2000 01 07	849	0.1-	0.0
1999 11 12	703	0.5+	0.2+	1999 12 13	691	0.5+	0.2-				
1999 11 12	703	0.1-	0.1+	1999 12 13	691	0.5+	0.1-				

1999 XZ₈₆ = 1998 QA₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	345.97414	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.22739875	ω	222.01390	-0.83325215	-0.52153030	
<i>a</i>	2.6583409	Ω	285.66581	+0.54433264	-0.71561786	
<i>e</i>	0.1883128	<i>i</i>	10.99069	+0.09691668	-0.46464742	
<i>P</i>	4.33	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>

Residuals in seconds of arc

1998 08 24	704	1.2+	1.1-	1999 12 08	704	1.0+	0.9+	2000 01 04	704	0.5-	0.1-
1998 08 24	704	1.0-	1.3-	1999 12 08	704	0.1-	0.2+	2000 01 04	704	0.5-	0.0
1998 08 24	704	0.4+	0.7-	1999 12 08	704	0.3-	0.1+	2000 01 04	704	0.5-	0.2-
1998 08 24	704	(0.1-	2.8-)	1999 12 08	704	0.3-	0.6-	2000 01 05	106	0.1-	0.3+
1998 08 24	704	0.5-	1.1+	1999 12 08	704	0.7-	0.7-	2000 01 05	106	0.2-	0.0
1998 08 27	704	1.1+	0.4+	1999 12 09	691	0.3-	0.1+	2000 01 05	106	0.3+	0.3+
1998 08 27	704	1.1-	0.4+	1999 12 09	691	0.3-	0.2+	2000 01 05	704	0.5-	0.1-
1998 08 27	704	1.0+	0.3+	1999 12 09	691	0.1-	0.1-	2000 01 05	704	0.2-	0.2-
1998 08 27	704	0.3-	0.3+	1999 12 13	691	0.3+	0.2-	2000 01 05	704	0.5-	0.1+
1998 08 27	704	0.5-	0.3+	1999 12 13	691	0.4+	0.1-	2000 01 05	704	0.4-	0.2-
1999 11 16	704	0.0	0.6+	1999 12 13	691	0.5+	0.0	2000 01 05	704	0.3-	0.0
1999 11 16	704	0.5+	0.4-	1999 12 18	699	0.2+	0.3+	2000 01 05	704	0.4-	0.3-
1999 11 16	704	0.2-	0.1-	1999 12 18	699	0.5+	0.2+	2000 01 05	704	0.3-	0.1+
1999 11 16	704	0.5-	0.1+	1999 12 18	699	0.5+	0.1+	2000 01 05	704	0.7-	0.2-
1999 11 16	704	0.2+	0.1-	1999 12 30	120	0.2+	0.6-	2000 01 05	704	0.3-	0.1+
1999 12 07	704	0.9+	1.2+	1999 12 30	120	0.2+	1.0-	2000 01 05	704	0.7-	0.1-
1999 12 07	704	0.6+	0.6+	2000 01 03	120	0.4+	0.3+	2000 01 16	049	(2.2+	2.2+)
1999 12 07	704	0.0	0.2-	2000 01 03	120	0.9+	0.7+	2000 01 16	049	1.2+	0.4+
1999 12 07	704	0.7+	0.4-	2000 01 04	704	0.4-	0.1+	2000 01 16	049	1.4+	0.3-
1999 12 07	704	0.8-	0.7-	2000 01 04	704	0.4-	0.2-				

2000 JAN. 24

M.P.C. 37917

1999 XF₈₇ = 1998 MN₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	80.03264		(2000.0)	P		Q	
<i>n</i>	0.24191513	ω	87.71457	+0.92708875	−0.32979644		
<i>a</i>	2.5509035	Ω	291.50018	+0.21962798	+0.86308512		
<i>e</i>	0.2055757	<i>i</i>	11.03937	+0.30375976	+0.38251587		
<i>P</i>	4.07	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1998 06 24	704	0.3−	0.2−	1998 07 26	704	0.2+	0.8+	1999 12 17	691	0.3+	0.3−
1998 06 24	704	(2.8+	2.7−)	1999 12 07	704	0.7+	0.6+	1999 12 17	691	0.0	0.4−
1998 06 24	704	(0.3+	3.5−)	1999 12 07	704	0.4−	0.4+	1999 12 30	699	0.3+	0.0
1998 06 24	704	(3.9−	0.1−)	1999 12 07	704	0.3−	0.4+	1999 12 30	699	0.4+	0.4+
1998 06 26	809	0.7+	0.9+	1999 12 07	704	0.1−	0.3+	1999 12 30	699	0.3−	1.5+
1998 06 26	809	0.7−	1.2+	1999 12 07	691	0.4−	0.4−	1999 12 31	691	0.4+	0.2+
1998 06 26	809	0.5+	1.8+	1999 12 07	691	0.3−	0.1−	1999 12 31	691	0.4+	0.2+
1998 06 26	704	0.3−	0.4+	1999 12 07	691	0.4−	0.0	1999 12 31	691	0.4+	0.2+
1998 06 26	704	1.5+	1.1−	1999 12 08	704	1.1+	0.8+	2000 01 04	704	0.9+	0.4+
1998 06 26	704	(2.1+	0.8+)	1999 12 08	704	1.1−	0.0	2000 01 04	704	0.2+	0.2−
1998 06 26	704	1.3+	1.8−	1999 12 08	704	0.6−	0.4−	2000 01 04	704	0.3+	0.3+
1998 06 27	809	0.7−	0.3+	1999 12 08	704	1.1−	0.3+	2000 01 04	704	0.2+	0.6+
1998 06 27	809	0.9−	0.8−	1999 12 08	704	0.4−	1.3−	2000 01 04	704	0.7+	0.7+
1998 06 27	809	1.6−	0.0	1999 12 14	691	0.0	0.6−	2000 01 06	106	0.0	0.1−
1998 07 26	704	0.3+	1.2+	1999 12 14	691	0.0	0.7−	2000 01 06	106	0.3+	0.2+
1998 07 26	704	0.1+	0.8−	1999 12 14	691	0.1+	0.7−	2000 01 06	106	0.8−	0.1+
1998 07 26	704	1.2−	0.7+	1999 12 17	691	0.1+	0.2+				

1999 XO₈₇ = 1997 AY₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	266.09077		(2000.0)	P		Q	
<i>n</i>	0.29092524	ω	319.31153	−0.84821153	+0.51994340		
<i>a</i>	2.2557023	Ω	252.29029	−0.45430888	−0.81220816		
<i>e</i>	0.0577359	<i>i</i>	6.08471	−0.27228779	−0.26453120		
<i>P</i>	3.39	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 3		

Residuals in seconds of arc

1997 01 12	910	0.3+	0.1−	1998 08 27	704	0.7−	0.3−	1999 12 08	704	0.6+	0.3+
1997 01 12	910	0.1−	0.2+	1998 08 27	704	0.6−	0.8−	1999 12 08	704	0.5−	0.5+
1997 01 12	910	0.3−	0.1−	1998 08 27	704	(0.3+	2.3−)	2000 01 05	704	0.3+	0.5−
1997 01 15	910	0.2+	0.3+	1998 08 27	704	0.4+	1.4−	2000 01 05	704	0.0	0.1−
1997 01 15	910	0.0	0.2+	1999 12 07	704	0.5−	0.1−	2000 01 05	704	0.3+	0.2−
1997 01 15	910	0.1+	0.1+	1999 12 07	704	0.2−	0.0	2000 01 05	704	0.0	0.3−
1998 08 17	704	0.4−	0.4+	1999 12 07	704	0.4+	0.0	2000 01 05	704	0.1+	0.9−
1998 08 17	704	0.9+	0.3+	1999 12 07	704	0.4+	0.1+	2000 01 06	704	0.2−	0.9+
1998 08 17	704	0.7+	0.4+	1999 12 08	704	0.3−	0.4−	2000 01 06	704	0.2+	0.1+
1998 08 17	704	0.3−	1.4+	1999 12 08	704	0.4−	0.4+	2000 01 06	704	0.0	0.1+
1998 08 27	704	0.1−	0.4+	1999 12 08	704	0.2−	0.4+				

1999 XZ₈₇ = 1988 VB₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	51.02649		(2000.0)	P		Q	
<i>n</i>	0.27713239	ω	236.28663	+0.64730501	−0.76222462		
<i>a</i>	2.3299389	Ω	173.37199	+0.70802183	+0.59973919		
<i>e</i>	0.1626371	<i>i</i>	1.55802	+0.28231421	+0.24357039		
<i>P</i>	3.56	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1988 11 03	033	0.1−	0.0	1999 12 07	704	0.8−	0.0	2000 01 05	704	0.1+	0.1+
1988 11 03	033	0.3+	0.7−	1999 12 07	704	0.4+	0.3+	2000 01 05	704	0.5−	0.7−
1988 11 04	033	0.2+	0.5−	1999 12 07	704	0.3−	0.2−	2000 01 05	704	0.1+	0.1−
1999 11 03	704	0.6−	0.9+	1999 12 08	704	0.2−	0.1−	2000 01 05	704	0.1+	0.4−
1999 11 03	704	0.7+	1.0+	1999 12 08	704	0.3+	0.1−	2000 01 05	704	0.2+	0.0
1999 11 03	704	0.0	0.8+	1999 12 08	704	0.2+	0.0	2000 01 06	704	0.2−	0.0
1999 11 03	704	0.1+	0.9+	1999 12 08	704	1.3−	1.1+	2000 01 06	704	0.4+	1.0−
1999 11 03	704	0.5+	0.0	1999 12 08	704	0.6+	0.7−	2000 01 06	704	0.5+	0.4−

1999 XG₈₈ = 1998 RG₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	92.52298		(2000.0)	P		Q	
<i>n</i>	0.20292464	ω	131.35965	+0.98698241	−0.16004029		
<i>a</i>	2.8680025	Ω	237.85531	+0.14138236	+0.91052071		
<i>e</i>	0.0818914	<i>i</i>	1.07605	+0.07666002	+0.38123372		
<i>P</i>	4.86	<i>H</i>	13.9	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1998 08 17	704	(2.9−	0.7+)	1998 09 18	704	0.1+	0.3+	1999 12 08	704	1.4+	0.3+
1998 08 17	704	0.1−	0.4−	1998 09 18	704	0.5+	0.0	2000 01 03	704	0.2+	0.1−
1998 08 17	704	0.2+	1.6−	1998 09 18	704	0.0	0.1−	2000 01 03	704	0.0	0.6−
1998 08 17	704	0.2+	0.3−	1999 12 07	704	0.2+	0.8+	2000 01 03	704	0.1−	0.8−
1998 09 14	704	0.0	0.1−	1999 12 07	704	0.1+	0.3+	2000 01 03	704	0.3−	0.9−
1998 09 14	704	0.3−	0.1−	1999 12 07	704	0.2−	0.4−	2000 01 05	704	0.3−	0.1−
1998 09 14	704	0.7−	0.2+	1999 12 07	704	0.7+	0.2−	2000 01 05	704	0.1+	0.1+
1998 09 14	704	0.0	0.4+	1999 12 08	704	1.0−	0.5+	2000 01 05	704	0.4−	0.6+
1998 09 18	704	0.2−	0.9+	1999 12 08	704	0.5−	0.3+	2000 01 05	704	0.3−	0.1−
1998 09 18	704	0.1+	0.5+	1999 12 08	704	0.2+	0.1+				

1999 XJ₈₈ = 1998 TT₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	323.89936		(2000.0)	P		Q	
<i>n</i>	0.18379614	ω	317.71184	−0.90971900	−0.41500031		
<i>a</i>	3.0636921	Ω	197.78302	+0.39191611	−0.84733707		
<i>e</i>	0.1058551	<i>i</i>	2.55992	+0.13716084	−0.33135271		
<i>P</i>	5.36	<i>H</i>	13.3	<i>G</i> 0.15	<i>U</i> 5		

Residuals in seconds of arc

1998 10 14	327	0.1−	0.5+	1999 12 07	704	0.3+	0.2−	2000 01 05	704	0.7+	0.1−
1998 10 14	327	0.3−	0.2+	1999 12 08	704	0.6−	0.1−	2000 01 06	704	0.1+	0.2+
1998 10 14	327	0.4+	0.1−	1999 12 08	704	0.1−	0.1−	2000 01 06	704	0.0	0.3−
1998 10 15	327	0.2−	0.3−	1999 12 08	704	0.6+	0.2−	2000 01 06	704	0.6+	0.1+
1998 10 15	327	0.1+	0.1+	1999 12 08	704	0.4+	0.4+	2000 01 07	704	0.1−	0.1−
1998 10 15	327	0.1+	0.3−	1999 12 08	704	0.2−	0.4+	2000 01 07	704	0.1+	0.0
1999 12 07	704	0.1−	0.4+	2000 01 05	704	0.1+	0.1−	2000 01 07	704	0.3−	0.7+
1999 12 07	704	0.4−	0.5−	2000 01 05	704	0.3−	0.6−	2000 01 07	704	0.6−	0.5+
1999 12 07	704	0.0	0.2−	2000 01 05	704	0.3−	0.2−				

1999 XL₈₈ = 1998 MV₄₃Id. G. V. Williams; 1999 VN₁₉ = 1998 MV₄₃ (MPC 37208) is invalid

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	37.95290		(2000.0)	P		Q	
<i>n</i>	0.26421193	ω	282.42031	+0.39643643	−0.91772356		
<i>a</i>	2.4052918	Ω	144.19170	+0.85799396	+0.36069906		
<i>e</i>	0.1718965	<i>i</i>	2.44236	+0.32662596	+0.16637207		
<i>P</i>	3.73	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4		

Residuals in seconds of arc

1998 06 26	809	0.0	0.2+	1999 12 07	704	0.2−	0.1−	2000 01 05	704	0.2−	0.2+
1998 06 26	809	0.1+	0.7−	1999 12 07	704	0.1−	0.2+	2000 01 05	704	0.4+	0.2−
1998 06 26	809	0.3+	0.1+	1999 12 08	704	0.1+	0.4+	2000 01 05	704	0.2−	0.4−
1998 06 27	809	0.2−	0.2+	1999 12 08	704	0.4+	0.3+	2000 01 05	704	0.0	0.4−
1998 06 27	809	0.8−	0.1−	1999 12 08	704	1.2+	0.8−	2000 01 06	704	0.0	0.3+
1998 06 27	809	0.5+	0.5+	1999 12 08	704	0.9−	0.3+	2000 01 06	704	0.1+	0.5+
1999 12 07	704	0.3−	0.6−	2000 01 05	704	0.6+	0.0	2000 01 06	704	0.4−	0.0
1999 12 07	704	0.2−	0.1+	2000 01 05	704	0.4−	0.1+				

1999 XO₈₈ = 1984 GN = 1991 NG₄ = 1997 EZ₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29416485	ω	134.08599	−0.34665001	+0.93633727		
<i>a</i>	2.2391105	Ω	115.55584	−0.87728093	−0.30260982		
<i>e</i>	0.1596232	<i>i</i>	3.54188	−0.33198183	−0.17804440		
<i>P</i>	3.35	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1984 04 02	801	0.8−	0.4−	1997 03 05	704	0.8+	0.8+
1991 07 08	809	0.5−	0.4−	1997 03 06	704	0.4+	0.7+
1991 07 08	809	0.1−	0.6−	1997 03 06	704	0.4−	0.7+
1991 07 08	809	0.2+	0.6−	1998 08 23	704	0.4−	0.5−
1991 07 08	809	0.7+	0.6−	1998 08 23	704	0.5−	0.5+
1991 07 08	809	0.9+	0.5−	1998 08 23	704	0.2−	0.8+
1991 07 08	809	1.2+	0.5−	1998 08 23	704	0.1+	0.3−
1991 07 18	809	0.6−	0.2+	1998 08 23	704	0.4−	0.5−
1991 07 18	809	0.2−	0.3+	1998 08 30	699	0.5−	0.4+
1991 07 18	809	0.0	0.2+	1998 08 30	699	0.7−	0.3+
1997 03 04	704	0.0	0.3+	1998 08 30	699	0.3+	0.6+
1997 03 04	704	0.7−	0.4−	1999 12 07	704	0.0	1.0−
1997 03 05	704	0.5−	0.6+	1999 12 07	704	0.7−	1.0−

1999 XB₈₉ = 1998 UK₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19311953	ω	332.00096	−0.58946057	+0.79182496		
<i>a</i>	2.9642756	Ω	261.44610	−0.70767757	−0.60160716		
<i>e</i>	0.0499386	<i>i</i>	9.30210	−0.38952368	−0.10527140		
<i>P</i>	5.10	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 10 20	327	0.3+	0.3−	1998 10 23	327	0.2+	0.1−
1998 10 20	327	0.1+	0.1−	1999 12 07	704	0.1−	0.1+
1998 10 20	327	0.3−	0.5+	1999 12 07	704	0.3−	0.2+
1998 10 22	327	0.4−	0.6−	1999 12 07	704	0.6−	0.6+
1998 10 22	327	0.1−	0.2+	1999 12 07	704	0.3−	0.4−
1998 10 22	327	0.0	0.3+	1999 12 08	704	0.1+	0.5+
1998 10 23	327	0.1−	0.1−	1999 12 08	704	0.6+	0.4−
1998 10 23	327	0.4+	0.2+	1999 12 08	704	0.8+	0.5−

1999 XO₈₉ = 1994 WM₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21228121	ω	7.23638	+0.03927340	+0.98917231		
<i>a</i>	2.7830970	Ω	265.08725	−0.92373881	−0.01801863		
<i>e</i>	0.1195797	<i>i</i>	8.15941	−0.38100422	+0.14564842		
<i>P</i>	4.64	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1994 11 27	010	1.5−	1.6+	1998 11 17	699	0.4+	0.2+
1994 11 27	010	(2.3−	2.8+)	1998 11 17	699	1.3−	0.9−
1994 11 28	010	(3.3−	1.1+)	1998 11 17	699	0.2−	0.6+
1994 11 28	010	0.3+	0.6−	1999 12 07	704	0.5+	0.2+
1994 11 28	010	0.4+	0.3+	1999 12 07	704	0.8−	0.2−
1994 11 29	010	1.0+	0.1+	1999 12 07	704	0.1+	0.2+
1998 09 20	699	0.8+	0.7−	1999 12 07	704	0.1+	0.6−
1998 09 20	699	0.7+	0.0	1999 12 08	704	0.1−	0.5+
1998 09 20	699	0.5+	0.8+	1999 12 08	704	0.1+	0.7−
1998 11 17	699	0.8−	1.1−	1999 12 08	704	0.3−	0.2−
1998 11 17	699	0.4+	0.2+	1999 12 08	704	0.3−	0.2−
1998 11 17	699	0.3−	0.2+	2000 01 05	704	0.3+	0.2−

1999 XA₉₀ = 1996 RM₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.12467036	ω	308.55181	−0.88254788	+0.45024834		
<i>a</i>	3.9685077	Ω	258.58530	−0.37681672	−0.84968796		
<i>e</i>	0.1221466	<i>i</i>	7.95122	−0.28127993	−0.27442086		
<i>P</i>	7.91	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 09 13	809	0.7−	0.7+	1999 12 08	704	0.4+	1.0+
1996 09 13	809	0.6−	0.9+	1999 12 08	704	0.1+	0.6−
1996 09 15	809	1.3+	1.7−	1999 12 08	704	0.8−	0.5+
1999 12 07	704	0.3+	0.4+	1999 12 14	704	0.6−	0.2+
1999 12 07	704	0.1+	0.4−	1999 12 14	704	0.6−	0.1−
1999 12 07	704	0.7−	0.1+	1999 12 14	704	0.2+	0.6−
1999 12 07	704	0.9+	0.0	1999 12 14	704	0.2+	0.2+
1999 12 08	704	0.4+	0.7−	2000 01 05	704	0.7+	0.5+

1999 XC₉₀ = 1991 NJ₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17638753	ω	354.48767	+0.10651236	+0.96059794		
<i>a</i>	3.1488898	Ω	281.43726	−0.90196250	−0.01532041		
<i>e</i>	0.2057610	<i>i</i>	15.18427	−0.41847194	+0.27751917		
<i>P</i>	5.59	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1991 07 06	809	0.1−	0.4−	1999 12 07	704	1.0−	1.0−
1991 07 06	809	0.1+	0.1−	1999 12 07	704	0.5−	0.7+
1991 07 06	809	0.1+	0.2+	1999 12 07	704	1.1−	0.2−
1991 07 07	809	0.1−	0.1+	1999 12 07	704	0.8−	0.4+
1998 11 14	704	0.3−	0.1−	1999 12 08	704	0.3+	0.8+
1998 11 14	704	0.9+	0.0	1999 12 08	704	0.9+	0.9+
1998 11 14	704	1.4−	0.8−	1999 12 08	704	0.8+	0.2+
1998 11 14	704	0.2+	0.6−	1999 12 08	704	0.1+	0.3−
1998 11 14	704	0.7+	1.4+	2000 01 06	704	0.0	0.0

1999 XM₉₀ = 1987 VM = 1989 CZ₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17310324	ω	119.79979	+0.69087418	−0.67874863		
<i>a</i>	3.1885942	Ω	284.22035	+0.54234618	+0.71429121		
<i>e</i>	0.0886728	<i>i</i>	14.88352	+0.47807268	+0.17055311		
<i>P</i>	5.69	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1987 11 14	010	1.0−	0.4+	1999 12 07	704	0.3−	1.1−
1987 11 14	010	0.4+	0.1+	1999 12 07	704	0.4−	1.3−
1987 11 14	010	0.5+	0.4−	1999 12 07	704	0.8−	1.4−
1989 02 04	809	0.4+	0.7−	1999 12 08	704	0.5+	0.8−
1989 02 04	809	0.4+	1.0−	1999 12 08	704	0.0	1.1−
1989 02 04	809	0.2+	1.0−	1999 12 08	704	0.1−	1.1−
1989 02 07	809	0.2−	0.5+	1999 12 08	704	0.1+	1.4−
1989 02 07	809	1.0−	0.6+	1999 12 08	704	0.6−	1.2−
1989 02 07	809	0.5−	0.1+	2000 01 05	704	0.6+	1.0+
1999 12 07	704	0.8−	0.3+	2000 01 05	704	0.5+	1.0+

2000 JAN. 24

M.P.C. 37919

1999 XT₉₀ = 1998 QQ₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	109.95466		(2000.0)	P		Q	
<i>n</i>	0.23318074	ω	84.64099	+0.96741479	+0.10650279		
<i>a</i>	2.6142128	Ω	269.10131	-0.19060725	+0.90351647		
<i>e</i>	0.1371942	<i>i</i>	13.28155	+0.16666582	+0.41510859		
<i>P</i>	4.23	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.9+	0.1+	1999 12 07	704	0.4+	0.5+	1999 12 26	739	0.7-	0.3-
1998 08 24	704	0.4+	0.7+	1999 12 07	704	0.6+	0.2+	1999 12 26	739	0.2+	0.1+
1998 08 24	704	1.4-	0.2-	1999 12 07	411	1.5-	0.6-	2000 01 05	704	0.3+	0.3+
1998 08 24	704	0.6+	0.0	1999 12 07	411	1.6-	0.7-	2000 01 05	704	0.7+	0.2+
1998 08 27	704	0.4-	0.2+	1999 12 08	704	0.5+	0.4+	2000 01 05	704	0.4-	1.5-
1998 08 27	704	0.2-	0.2-	1999 12 08	704	0.2-	0.2+	2000 01 05	106	0.8-	1.0+
1998 08 27	704	0.1-	0.3-	1999 12 08	704	0.6+	0.2+	2000 01 06	106	0.3+	0.3+
1998 08 27	704	0.1-	0.4+	1999 12 08	704	0.1+	1.0+	2000 01 06	106	0.3-	0.0
1998 08 27	704	0.3+	0.7-	1999 12 08	704	0.4-	0.3+	2000 01 06	704	0.4+	0.0
1999 12 07	704	0.4+	0.2-	1999 12 09	411	0.6+	1.2-	2000 01 06	704	0.1+	0.0
1999 12 07	704	0.1+	0.1-	1999 12 09	411	0.6+	0.0	2000 01 06	704	0.1+	0.0

1999 XV₉₀ = 1998 QH₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	279.66242		(2000.0)	P		Q	
<i>n</i>	0.29866289	ω	313.14399	-0.78230832	+0.61297386		
<i>a</i>	2.2165722	Ω	264.96752	-0.53437207	-0.75177528		
<i>e</i>	0.1478776	<i>i</i>	6.38095	-0.32006277	-0.24309869		
<i>P</i>	3.30	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	0.3+	1.2-	1999 12 07	704	0.8+	0.3+	2000 01 07	704	0.2+	0.0
1998 08 19	704	0.9+	1.3+	1999 12 08	704	0.1+	0.4-	2000 01 07	704	0.1-	0.4+
1998 08 19	704	1.8-	1.9+	1999 12 08	704	0.6-	0.3-	2000 01 07	704	1.6+	0.1-
1998 08 19	704	(5.9-	0.9+)	1999 12 08	704	0.0	0.9-	2000 01 07	704	1.3+	0.3-
1998 08 24	704	0.1+	0.2-	2000 01 05	704	0.1-	0.8+	2000 01 07	704	0.6-	0.2+
1998 08 24	704	1.6-	0.1+	2000 01 05	704	0.9-	0.4-	2000 01 09	704	0.2+	0.2+
1998 08 24	704	0.7+	0.4+	2000 01 05	704	0.1+	0.4-	2000 01 09	704	0.1-	0.0
1998 08 24	704	0.0	1.5-	2000 01 05	704	0.5-	0.4-	2000 01 09	704	0.0	0.2-
1998 08 24	704	(3.6-	1.1+)	2000 01 06	704	(0.7+	3.4-)	2000 01 09	704	0.4-	0.1-
1998 08 27	704	0.7+	0.5-	2000 01 06	704	0.9+	0.8-	2000 01 09	704	0.5-	0.2-
1998 08 27	704	(1.0+	2.7+)	2000 01 06	704	0.2+	0.4+	2000 01 10	704	0.4-	0.6+
1998 08 27	704	0.6-	0.3-	2000 01 07	704	0.9-	0.6+	2000 01 10	704	0.6+	0.4-
1998 08 27	704	1.3+	0.0	2000 01 07	704	0.5-	0.2+	2000 01 10	704	0.0	0.2-
1999 12 07	704	0.2-	1.2+	2000 01 07	704	0.2-	0.1-	2000 01 10	704	0.0	0.1-
1999 12 07	704	0.2+	0.2+	2000 01 07	704	0.3-	0.4+	2000 01 10	704	0.0	0.1+

1999 XJ₉₁ = 1998 SJ₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	42.89655		(2000.0)	P		Q	
<i>n</i>	0.20572850	ω	128.31927	+0.28446759	-0.95857946		
<i>a</i>	2.8418844	Ω	305.14786	+0.87404098	+0.26543754		
<i>e</i>	0.0578443	<i>i</i>	0.99993	+0.39386617	+0.10328761		
<i>P</i>	4.79	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 16	699	0.7+	0.1+	1999 12 08	704	0.3+	0.9+	2000 01 03	704	0.4-	0.5-
1998 09 16	699	0.6-	0.5+	1999 12 08	704	0.1-	0.7-	2000 01 04	704	0.4-	0.0
1998 09 16	699	0.9-	0.7+	1999 12 08	704	0.4-	0.5-	2000 01 04	704	0.1+	0.4+
1998 09 26	704	1.2+	0.6-	1999 12 08	704	1.0-	0.3+	2000 01 04	704	0.6-	0.2+
1998 09 26	704	0.7-	0.2-	1999 12 13	691	0.1+	0.2-	2000 01 04	704	0.4-	0.4+
1998 09 26	704	0.0	1.6+	1999 12 13	691	0.1-	0.3-	2000 01 04	704	0.6-	0.1+
1998 09 26	704	0.0	0.3+	1999 12 13	691	0.1+	0.1-	2000 01 04	704	0.3-	0.1+
1998 09 26	704	0.4+	0.1+	1999 12 17	691	0.1-	0.3-	2000 01 04	704	0.4-	0.2+
1998 09 27	704	0.7+	0.4-	1999 12 17	691	0.2+	0.2-	2000 01 04	704	0.5-	0.1-
1998 09 27	704	0.2+	0.5-	1999 12 17	691	0.2+	0.1-	2000 01 04	704	0.0	0.9+

1998 09 27	704	0.5-	0.0	1999 12 30	699	0.7+	0.3+	2000 01 04	704	0.7-	0.5+
1998 09 27	704	0.1+	0.4-	1999 12 30	699	0.8+	0.2+	2000 01 05	106	0.6+	0.1+
1998 09 27	704	0.7-	1.0-	1999 12 30	699	1.4+	0.0	2000 01 06	106	0.2+	0.0
1999 12 07	704	0.2+	0.6-	2000 01 03	704	0.0	0.4-	2000 01 06	106	0.4+	0.0
1999 12 07	704	0.3+	0.2-	2000 01 03	704	0.1-	0.4+	2000 01 07	106	0.7+	0.3-
1999 12 07	704	0.2+	0.4-	2000 01 03	704	0.0	0.1+	2000 01 07	106	0.8+	0.5+
1999 12 07	704	0.8-	0.7-	2000 01 03	704	0.6-	0.2-				

1999 XP₉₁ = 1998 RJ₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	70.89035		(2000.0)	P		Q	
<i>n</i>	0.21470670	ω	300.98243	+0.74685585	-0.66304072		
<i>a</i>	2.7620973	Ω	100.60159	+0.62638956	+0.67578914		
<i>e</i>	0.0911206	<i>i</i>	2.96405	+0.22325426	+0.32200318		
<i>P</i>	4.59	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 30	699	0.1+	0.2+	1999 12 08	704	0.8+	0.5+	1999 12 31	691	0.1+	0.2+
1998 08 30	699	0.1-	0.5-	1999 12 08	704	0.8-	0.3+	1999 12 31	691	0.1+	0.3+
1998 08 30	699	0.6-	0.1-	1999 12 08	704	0.9-	0.2+	2000 01 04	704	0.5+	0.2-
1998 09 14	704	0.9-	0.7-	1999 12 13	691	0.0	0.2+	2000 01 04	704	0.3+	0.3-
1998 09 14	704	0.5+	0.5-	1999 12 13	691	0.0	0.1+	2000 01 04	704	0.1+	1.0-
1998 09 14	704	0.1-	1.4-	1999 12 13	691	0.0	0.1+	2000 01 04	704	0.1-	0.6-
1998 09 14	704	0.1+	0.1-	1999 12 16	691	0.1+	0.1+	2000 01 12	649	0.4-	0.2+
1998 09 18	704	0.7+	0.3+	1999 12 16	691	0.2+	0.0	2000 01 12	649	0.2-	0.1-
1998 09 18	704	0.0	0.9+	1999 12 16	691	0.1+	0.0	2000 01 12	649	0.2-	0.4+
1998 09 18	704	0.6-	0.6+	1999 12 27	691	0.0	0.2+	2000 01 13	649	1.0-	0.1-
1998 09 18	704	0.2+	0.6+	1999 12 27	691	0.2+	0.2+	2000 01 13	649	0.4-	0.1+
1998 09 18	704	0.7+	0.5+	1999 12 27	691	0.1+	0.0	2000 01 13	649	(2.3-	1.2+)
1999 12 07	704	0.8+	0.1+	1999 12 30	699	1.1+	0.1+	2000 01 15	649	1.1+	0.9-
1999 12 07	704	0.2+	0.2+	1999 12 30	699	0.7+	0.4-	2000 01 15	649	0.6-	0.2-
1999 12 07	704	0.9-	0.6+	1999 12 30	699	0.4+	0.6+	2000 01 15	649	0.5-	0.6+
1999 12 08	704	0.4-	1.0-	1999 12 31	691	0.2+	0.0	2000 01 15	649	0.6-	0.2-

1999 XQ₉₁ = 1998 QB₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	130.28192		(2000.0)	P		Q	
<i>n</i>	0.25220328	ω	196.51798	+0.91031665	+0.41288967		
<i>a</i>	2.4810503	Ω	139.05659	-0.37456201	+0.85163686		
<i>e</i>	0.2068257	<i>i</i>	2.54347	-0.17614451	+0.32285722		
<i>P</i>	3.91	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	0.3-	1998 09 24	699	0.7+	0.3+	2000 01 04	704	0.3+	0.7-
1998 08 17	704	1.1-	0.4+	1998 11 06	699	0.0	0.3+	2000 01 04	704	0.2-	0.4-
1998 08 17	704	0.1+	0.7-	1998 11 06	699	0.4-	0.2+	2000 01 04	704	0.4-	0.6-
1998 08 17	704	0.1-	1.0-	1998 11 06	699	0.8-	0.5+	2000 01 05	704	0.4-	0.0
1998 08 17	704	1.3+	1.4-	1999 12 07	704	0.6+	0.5+	2000 01 05	704	0.1-	0.1+
1998 08 23	704	0.7+	0.0	1999 12 07	704	0.6-	1.2-	2000 01 05	704	0.0	0.3+
1998 08 23	704	0.2+	0.6+	1999 12 07	704	0.4+	0.3+	2000 01 05	704	0.1-	0.0
1998 08 23	704	1.1-	0.1+	1999 12 07	704	0.1-	0.4+	2000 01 05	704	0.6+	0.0
1998 08 23	704	0.8-	0.8+	1999 12 08	704	0.4+	0.4+	2000 01 05	704	0.4+	0.1-
1998 08 23	704	0.8-	0.1+	1999 12 08	704	0.3-	0.4-	2000 01 05	704	0.2-	0.1+
1998 08 27	699	0.6+	0.9-	1999 12 08	704	0.3+	0.5+	2000 01 05	704	0.3+	0.0
1998 08 27	699	0.2-	0.4-	1999 12 08	704	0.3+	0.4-	2000 01 05	704	0.1+	0.2-
1998 08 27	699	0.1+	0.3+	1999 12 08	704	1.0-	0.1+	2000 01 05	704	0.1-	0.2+
1998 09 24	699	0.6+	0.0	2000 01 04	704	0.2+	0.1-				
1998 09 24	699	0.9+	0.7+	2000 01 04	704	0.3-	0.2-				

1999 XX₉₁ = 1997 MG₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	232.29375		(2000.0)		P		Q				
<i>n</i>	0.23259458	ω	150.40011		−0.46996126		+0.86029774				
<i>a</i>	2.6186030	Ω	90.93432		−0.84370336		−0.37203590				
<i>e</i>	0.1011385	<i>i</i>	11.39500		−0.25942448		−0.34853562				
<i>P</i>	4.24	<i>H</i>	14.3		<i>G</i>	0.15	<i>U</i>	4			
Residuals in seconds of arc											
1997 06 29	691	0.2+	0.7−	1999 12 07	704	0.4+	0.4+	2000 01 03	704	0.4−	0.1+
1997 06 29	691	0.2+	0.4+	1999 12 08	704	0.1−	0.3−	2000 01 03	704	1.1−	0.6−
1997 06 29	691	0.1+	0.0	1999 12 08	704	0.2+	0.4+	2000 01 03	704	0.5−	0.6−
1997 07 11	691	0.0	0.5−	1999 12 08	704	0.6+	0.3+	2000 01 04	704	0.3−	0.1−
1997 07 11	691	0.1+	0.5+	1999 12 20	704	0.9+	0.8+	2000 01 04	704	0.3+	0.5−
1997 07 11	691	0.4−	0.7+	1999 12 20	704	0.0	0.4−	2000 01 04	704	0.0	1.9+
1999 12 07	704	0.3+	0.7+	1999 12 20	704	0.5−	0.1−				
1999 12 07	704	0.5+	0.2+	2000 01 03	704	0.2−	1.9−				

1999 XK₉₂ = 1989 YB₃ = 1995 UK₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	307.45620		(2000.0)		P		Q				
<i>n</i>	0.29060002	ω	55.22900		−0.99704154		−0.06595676				
<i>a</i>	2.2573850	Ω	120.95945		+0.04636117		−0.92560877				
<i>e</i>	0.0907918	<i>i</i>	2.63811		+0.06130913		−0.37269036				
<i>P</i>	3.39	<i>H</i>	14.8		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1989 12 30	413	0.9−	0.4+	1997 04 02	704	(0.9+	2.6−)	1999 12 08	704	0.2+	0.6−
1989 12 30	413	0.1+	0.2−	1997 04 02	704	0.7+	0.3+	1999 12 08	704	0.4+	0.2−
1989 12 31	413	0.1−	0.2−	1998 08 17	704	1.2−	1.3−	1999 12 08	704	0.6+	0.3−
1989 12 31	413	0.3−	0.6+	1998 08 17	704	(1.3−	2.5+)	2000 01 05	704	1.3+	1.2+
1995 10 20	691	0.5+	1.0+	1998 08 17	704	(3.4+	1.7+)	2000 01 05	704	0.7−	0.2+
1995 10 20	691	0.4+	0.8+	1998 08 17	704	0.6−	0.4−	2000 01 05	704	0.6−	0.2+
1995 10 20	691	0.7+	0.8+	1998 08 17	704	0.4−	0.6+	2000 01 05	704	0.2−	0.8+
1995 10 24	691	0.1+	0.6+	1999 12 07	704	0.6−	0.1−	2000 01 06	704	0.4−	0.1+
1995 10 24	691	0.1+	0.5+	1999 12 07	704	0.1+	0.4−	2000 01 06	704	0.2−	0.3−
1995 10 24	691	0.2+	0.5+	1999 12 07	704	0.4+	0.5−	2000 01 06	704	0.3−	0.2+
1997 04 02	704	0.9+	0.3+	1999 12 08	704	1.2−	1.7−				
1997 04 02	704	0.6+	0.5+	1999 12 08	704	0.2−	0.2−				

1999 XQ₉₂ = 1998 RX₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	322.11994		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.25573685	ω	46.65163		−0.95846870		−0.27244094				
a	2.4581432	Ω	117.37464		+0.22640120		−0.90668073				
e	0.1220826	i	5.45008		+0.17343661		−0.32203413				
P	3.85	H	14.8		G	0.15	U	5			
Residuals in seconds of arc											
1998 09 14	704	1.9+	1.1+	1999 12 07	704	0.4+	0.1−	2000 01 05	704	0.2−	0.5+
1998 09 14	704	1.0+	0.9+	1999 12 07	704	0.8−	0.0	2000 01 05	704	0.0	0.2+
1998 09 14	704	0.5−	1.1−	1999 12 08	704	0.5−	0.7+	2000 01 05	704	0.0	0.4−
1998 09 18	704	1.8−	0.1+	1999 12 08	704	0.1−	0.0	2000 01 05	704	0.4+	0.5−
1998 09 18	704	0.9−	1.6−	1999 12 08	704	0.1+	0.2+	2000 01 05	704	0.1+	0.0
1998 09 18	704	0.2+	0.7+	1999 12 08	704	0.2+	0.4+				
1999 12 07	704	0.2+	0.6−	1999 12 08	704	0.1+	0.3−				

1999 XS₉₂ = 1993 FO₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	19.73163		(2000.0)		P		Q				
n	0.26247181	ω	295.43095		−0.05010506		−0.99870179				
a	2.4159111	Ω	157.43538		+0.92470644		−0.04986053				
e	0.1466693	i	1.37036		+0.37736915		−0.01042391				
P	3.76	H	14.7		G	0.15	U	4			
Residuals in seconds of arc											
1993 03 19	809	0.5−	0.3+	1999 12 07	704	0.2+	0.3−	2000 01 05	704	0.0	0.1−
1993 03 20	809	1.3+	0.8−	1999 12 07	704	0.4+	0.2−	2000 01 05	704	0.1−	0.0
1993 03 24	809	0.7−	0.6+	1999 12 08	704	0.2+	0.4−	2000 01 05	704	0.2+	0.3−
1999 11 03	704	0.1+	0.1−	1999 12 08	704	0.1−	0.2+	2000 01 05	704	0.1+	0.6−
1999 11 03	704	0.1+	0.3+	1999 12 08	704	0.0	0.3+	2000 01 06	704	0.2−	0.5+
1999 11 03	704	0.4−	0.2+	1999 12 08	704	0.4+	0.2+	2000 01 06	704	0.4−	0.1−
1999 12 07	704	0.3+	0.3+	1999 12 08	704	0.3−	0.1+	2000 01 06	704	0.4−	0.0

1999 XA₉₃ = 1998 KS₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	113.71068		(2000.0) <th colspan="3">P</th> <th colspan="3">Q</th>	P			Q				
n	0.30618616	ω	218.71908	+0.95179436			+0.30371342				
a	2.1801130	Ω	123.54815	−0.26704074			+0.88936233				
e	0.2298216	i	2.95479	−0.15091966			+0.34174963				
P	3.22 <th>H</th> <td>15.1</td> <th>G</th> <td>0.15<th>U</th><td colspan="3">5</td></td>	H	15.1	G	0.15 <th>U</th> <td colspan="3">5</td>	U	5				
Residuals in seconds of arc											
1998 04 22	704	0.0	0.1+	1998 05 24	704	1.1+	0.0	2000 01 05	704	0.3−	0.3−
1998 04 22	704	0.9−	0.1+	1998 05 24	704	(2.4+	0.6+)	2000 01 05	704	0.0	0.3−
1998 04 22	704	(0.2−	4.0−)	1999 12 07	704	0.5+	0.3−	2000 01 05	704	0.6+	0.6−
1998 04 22	704	(3.9−	1.6−)	1999 12 07	704	0.1−	0.5−	2000 01 06	704	0.3−	0.1−
1998 05 22	704	1.5+	1.1−	1999 12 07	704	1.1+	0.3−	2000 01 06	704	0.6−	0.3−
1998 05 22	704	1.9−	0.3−	1999 12 08	704	0.1+	0.8+	2000 01 06	704	0.4−	0.5−
1998 05 22	704	0.9−	0.2+	1999 12 08	704	0.3+	0.4+	2000 01 07	704	0.4−	0.2+
1998 05 22	704	0.1+	0.7+	1999 12 08	704	0.2−	0.0	2000 01 07	704	0.1+	0.2−
1998 05 22	704	0.2−	1.3+	1999 12 08	704	0.5+	0.4+	2000 01 07	704	0.4−	0.0
1998 05 24	704	0.3+	0.2−	1999 12 08	704	0.5+	0.3+	2000 01 07	704	0.2−	0.8+
1998 05 24	704	1.0+	0.7−	2000 01 05	704	0.3−	0.2−	2000 01 07	704	0.1−	0.5+

1999 XG₉₃ = 1998 QB₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	40.55976		(2000.0)		P		Q				
n	0.20978404	ω	158.32748		+0.17742128		−0.97544235				
a	2.8051392	Ω	281.26532		+0.88225054		+0.21641131				
e	0.0725333	i	7.64749		+0.43606842		−0.04096778				
P	4.70 <th>H</th> <td>13.1</td> <th>G</th> <td>0.15<th>U</th><td>3<th></th><th></th></td></td>	H	13.1	G	0.15 <th>U</th> <td>3<th></th><th></th></td>	U	3 <th></th> <th></th>				
Residuals in seconds of arc											
1998 08 20	699	0.7−	0.8+	1999 11 11	703	0.6−	0.2−	1999 12 08	704	0.3−	0.6−
1998 08 20	699	0.2−	0.6+	1999 11 11	703	0.5−	0.4+	1999 12 18	699	0.0	0.6+
1998 08 20	699	0.4+	0.2+	1999 11 16	704	0.5−	0.9−	1999 12 18	699	0.1−	0.6+
1998 08 27	699	0.2−	0.5−	1999 11 16	704	0.2−	1.0−	1999 12 18	699	0.4+	0.8+
1998 08 27	699	0.2−	0.8−	1999 11 16	704	0.2−	0.8−	1999 12 30	699	0.5+	0.5+
1998 08 27	699	0.1−	0.1−	1999 11 16	704	0.3+	0.5−	1999 12 30	699	0.4+	0.5+
1998 09 18	699	0.4+	0.3+	1999 11 16	704	0.6+	1.0−	1999 12 30	699	0.5+	0.4+
1998 09 18	699	0.4+	0.4+	1999 11 17	704	0.1+	0.4−	2000 01 05	704	0.1−	0.0
1998 09 18	699	0.7+	0.1−	1999 11 17	704	0.3+	1.0−	2000 01 05	704	0.6+	0.3−
1998 10 15	699	0.6+	0.4−	1999 11 17	704	0.4−	0.5−	2000 01 05	704	(3.5−	0.5−)
1998 10 15	699	0.3+	0.4+	1999 11 17	704	0.2+	0.2−	2000 01 05	704	0.3−	0.1+
1998 10 15	699	0.4+	0.2+	1999 11 17	704	0.8+	0.6−	2000 01 06	106	0.1+	0.4+
1998 12 09	704	0.8−	0.8+	1999 12 05	699	0.1−	0.6+	2000 01 06	106	0.3+	0.7+
1998 12 09	704	1.6−	0.4−	1999 12 05	699	0.1−	0.0	2000 01 06	106	0.2+	0.9+
1998 12 09	704	1.2−	0.9+	1999 12 05	699	0.2−	0.3+	2000 01 06	704	0.0	0.1+
1998 12 09	704	0.4−	0.8+	1999 12 07	704	1.0+	1.2+	2000 01 06	704	0.2−	0.2−
1998 12 09	704	0.2−	1.1−	1999 12 07	704	0.6+	1.1−	2000 01 06	704	0.0	0.3+
1998 12 22	699	0.5+	1.2−	1999 12 07	704	0.5+	1.0−	2000 01 07	704	0.1−	0.4+

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1998 12 22	699	0.4−	0.3−	1999 12 07	704	1.2−	1.1+	2000 01 07	704	0.2−	0.2+
1998 12 22	699	0.5+	0.6+	1999 12 07	704	1.3−	0.7−	2000 01 07	704	0.5−	0.3+
1999 11 11	703	0.6−	0.2−	1999 12 08	704	1.7+	0.1+	2000 01 07	704	0.5−	0.3+
1999 11 11	703	0.5−	0.4−	1999 12 08	704	0.4+	1.3−	2000 01 07	704	0.6−	0.3+

1999 XM₉₃ = 1998 RV₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
84.32071				(2000.0)			
				P		Q	
<i>n</i>	0.22689983	<i>ω</i>	80.12495	+0.90041178		−0.43268136	
<i>a</i>	2.6622363	<i>Ω</i>	305.49920	+0.37419881		+0.82331719	
<i>e</i>	0.1235939	<i>i</i>	3.18458	+0.22188707		+0.36733587	
<i>P</i>	4.34	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 23	704	0.6−	0.4+	1999 11 16	704	0.2+	0.4+	1999 12 18	699	0.3+	0.2+
1998 08 23	704	0.8−	0.4−	1999 11 16	704	0.7+	0.4+	1999 12 18	699	0.3−	0.8+
1998 08 23	704	0.9−	0.2−	1999 12 07	704	0.8+	0.3−	1999 12 18	699	0.0	1.1+
1998 08 23	704	1.1−	1.4−	1999 12 07	704	0.6+	0.1+	1999 12 30	699	0.5−	0.3+
1998 08 25	910	1.4+	0.7+	1999 12 07	704	0.4+	0.1−	1999 12 30	699	0.1−	0.4+
1998 08 25	910	1.4+	0.8+	1999 12 07	704	0.1+	1.0−	1999 12 30	699	0.8−	0.5+
1998 08 26	910	1.3+	0.7+	1999 12 07	704	1.6−	0.1+	1999 12 31	691	0.0	1.0−
1998 09 14	704	0.5−	0.4+	1999 12 08	704	1.0+	0.1+	1999 12 31	691	0.1+	1.1−
1998 09 14	704	0.5−	0.1−	1999 12 08	704	0.1+	0.1−	1999 12 31	691	0.2−	0.8−
1998 09 14	704	0.5+	0.4+	1999 12 08	704	0.2−	0.5−	2000 01 04	704	0.2+	0.1+
1998 09 14	704	1.2+	0.9−	1999 12 08	704	0.3−	1.2+	2000 01 04	704	0.1−	0.6−
1998 09 14	704	0.2−	0.1−	1999 12 08	704	0.3−	0.1−	2000 01 04	704	0.4+	0.4−
1998 09 18	704	0.5+	0.4+	1999 12 13	691	0.3+	0.2+	2000 01 04	704	0.4+	0.4−
1998 09 18	704	0.7+	0.5−	1999 12 13	691	0.3−	0.5+	2000 01 04	704	0.5+	0.5−
1998 09 18	704	1.4−	0.4−	1999 12 13	691	0.2−	0.5+	2000 01 11	691	0.1−	0.0
1998 09 18	704	0.9−	0.1−	1999 12 17	691	0.1−	0.2+	2000 01 11	691	0.1−	0.1−
1999 11 16	704	0.2+	0.3+	1999 12 17	691	0.1−	0.2+	2000 01 11	691	0.2−	0.1−
1999 11 16	704	0.4−	0.8−	1999 12 17	691	0.0	0.1+				

1999 XT₉₃ = 1997 OP

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
61.18548				(2000.0)			
				P		Q	
<i>n</i>	0.17309097	<i>ω</i>	124.66578	+0.54018373		−0.81423495	
<i>a</i>	3.1887449	<i>Ω</i>	291.25042	+0.67801133		+0.57077480	
<i>e</i>	0.0714875	<i>i</i>	13.18944	+0.49849992		+0.10600741	
<i>P</i>	5.69	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 07 26	910	0.1+	0.0	1999 12 05	699	(0.8−	2.6+)	1999 12 30	699	0.3−	0.5+
1997 07 26	910	0.1+	0.1−	1999 12 07	704	0.6+	0.1−	1999 12 30	699	0.0	1.1+
1997 07 27	910	0.2+	0.0	1999 12 07	704	0.3−	0.2+	2000 01 05	106	0.3−	0.1+
1997 07 28	910	0.1+	0.2−	1999 12 07	704	0.5+	0.1+	2000 01 05	106	0.1−	0.3+
1997 07 28	910	0.1−	0.1−	1999 12 07	704	0.3−	0.8−	2000 01 05	704	0.3+	0.1+
1997 07 28	910	0.2−	0.1−	1999 12 07	704	0.4−	1.0−	2000 01 05	704	0.3−	0.2−
1999 11 16	704	0.4+	1.2+	1999 12 08	704	0.4+	0.2+	2000 01 05	704	0.1−	0.4−
1999 11 16	704	0.2−	0.2−	1999 12 08	704	0.6+	0.6−	2000 01 05	704	0.2+	0.3+
1999 11 16	704	0.6+	0.1+	1999 12 08	704	0.2+	0.4−	2000 01 05	704	0.4−	0.6−
1999 11 16	704	0.2+	0.7−	1999 12 08	704	0.4−	1.1−	2000 01 06	704	0.0	0.8−
1999 12 05	699	0.4−	1.3+	1999 12 08	704	0.0	0.2−	2000 01 06	704	0.1+	0.1−
1999 12 05	699	0.2+	1.7+	1999 12 30	699	0.1−	0.5+	2000 01 06	704	0.5−	1.1−

1999 XB₉₄ = 1987 UB₃ = 1991 KX = 1992 QM₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
123.78088				(2000.0)			
				P		Q	
<i>n</i>	0.17648792	<i>ω</i>	246.35077	+0.94073638		+0.28183668	
<i>a</i>	3.1476956	<i>Ω</i>	96.84570	−0.19783357		+0.90782335	
<i>e</i>	0.1909655	<i>i</i>	10.95217	−0.27545769		+0.31052350	
<i>P</i>	5.58	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1987 10 21	092	1.5+	1.0+	1999 01 11	704	0.0	0.0	1999 12 08	704	0.6+	0.2−
1987 10 21	092	1.4−	0.4+	1999 01 11	704	0.5−	0.6+	1999 12 08	704	0.2+	0.2+
1987 10 22	092	(9.0−	3.2+)	1999 01 17	699	0.8−	0.1−	1999 12 08	704	0.3−	1.1+
1987 10 22	092	0.4−	0.0	1999 01 17	699	0.9−	0.1+	1999 12 09	704	0.1+	0.8−
1991 05 17	809	0.5+	0.1+	1999 01 17	699	0.3−	0.4−	1999 12 09	704	1.0−	0.6−
1991 05 17	809	0.3+	0.1−	1999 02 04	704	0.0	0.8−	1999 12 09	704	0.2−	0.4−
1991 05 17	809	0.0	1.3+	1999 02 04	704	1.2+	0.2−	1999 12 09	704	0.2−	0.0
1992 08 25	675	(0.9−	3.6−)	1999 02 04	704	0.1−	1.3+	1999 12 15	704	0.1−	0.1−
1992 08 25	675	(1.5+	2.4−)	1999 02 04	704	(5.3−	0.7+)	1999 12 15	704	0.0	0.1−
1992 08 27	675	0.6−	0.1+	1999 02 04	699	0.2−	0.2+	1999 12 15	704	0.0	0.1−
1998 10 12	699	0.2+	0.3−	1999 02 04	699	1.6−	0.1+	1999 12 15	704	0.7−	0.1+
1998 10 12	699	1.4+	0.7−	1999 02 04	699	0.7−	0.3+	1999 12 15	704	0.9−	0.3+
1998 10 12	699	0.6+	0.3−	1999 11 11	703	1.1−	0.7+	1999 12 18	699	0.1−	0.5+
1998 10 29	699	0.5+	0.0	1999 11 11	703	0.1+	1.1+	1999 12 18	699	0.4−	0.6−
1998 10 29	699	0.4+	0.1−	1999 11 11	703	0.6−	0.3+	1999 12 18	699	0.4+	0.3+
1998 10 29	699	0.2+	0.1+	1999 11 11	703	0.8+	1.0+	2000 01 03	704	0.1+	0.9−
1998 11 13	704	0.9+	1.4−	1999 12 07	704	0.0	0.1−	2000 01 03	704	0.3+	0.8−
1998 11 13	704	0.6−	0.5+	1999 12 07	704	0.2−	0.5−	2000 01 03	704	0.3+	0.3−
1998 11 13	704	0.3+	0.3−	1999 12 07	704	0.6−	0.9−	2000 01 03	704	0.2+	0.4−
1998 11 13	704	0.1+	0.6+	1999 12 07	704	0.3+	0.4−	2000 01 03	704	0.4+	0.3−
1998 11 13	704	(2.9−	0.3−)	1999 12 07	704	0.8−	0.4+	2000 01 04	704	0.3+	0.5−
1998 12 11	699	0.3−	0.1−	1999 12 08	703	0.1−	0.9+	2000 01 04	704	0.3+	0.2+
1998 12 11	699	0.0	0.2−	1999 12 08	703	0.3+	0.1+	2000 01 04	704	0.1+	0.2+
1998 12 11	699	0.1−	0.2−	1999 12 08	703	0.4−	0.3−	2000 01 04	704	0.1+	0.7+
1999 01 11	704	0.1+	0.1+	1999 12 08	703	0.4+	0.1+	2000 01 04	704	0.1+	1.0+
1999 01 11	704	0.5−	1.0+	1999 12 08	704	0.8+	0.9−				
1999 01 11	704	0.6−	1.1+	1999 12 08	704	0.7+	0.0				

1999 XG₉₄ = 1998 QB₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				Williams			
148.74203				(2000.0)			
				P		Q	
<i>n</i>	0.27221145	<i>ω</i>	35.45539	+0.88124936		+0.46319171	
<i>a</i>	2.3579348	<i>Ω</i>	296.68941	−0.45431150		+0.77518557	
<i>e</i>	0.1316068	<i>i</i>	6.04507	−0.13038643		+0.42958209	
<i>P</i>	3.62	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 26	699	0.1+	0.5−	1998 10 11	699	0.9−	0.1+	1999 12 08	704	(1.4−	2.2+)
1998 07 26	699	0.1+	0.5−	1998 10 11	699	0.1−	0.5−	1999 12 08	704	0.2−	0.8−
1998 07 26	699	0.3+	0.6−	1998 11 19	699	0.6−	0.2+	1999 12 08	704	1.3−	0.2−
1998 08 17	704	0.0	0.6−	1998 11 19	699	0.3−	0.5+	1999 12 30	699	0.1+	0.8+
1998 08 17	704	0.1+	0.1+	1998 11 19	699	0.4−	1.1+	1999 12 30	699	1.5+	1.0+
1998 08 17	704	0.9+	0.4−	1998 12 09	704	0.4+	1.6−	1999 12 30	699	(0.4−	2.2+)
1998 08 17	704	0.2−	0.2−	1998 12 09	704	0.1−	0.2+	2000 01 05	704	0.4+	0.5−
1998 08 17	704	0.2−	0.8+	1998 12 09	704	1.2+	0.3−	2000 01 05	704	1.0−	0.4+
1998 08 23	704	0.3+	0.0	1998 12 09	704	(2.6−	0.9+)	2000 01 05	704	0.5+	0.2+
1998 08 23	704	0.6−	0.1−	1999 12 07	704	0.3−	0.1+	2000 01 05	704	0.3+	0.0
1998 08 23	704	0.4+	0.9+	1999 12 07	704	0.6−	0.2−	2000 01 06	704	0.7+	0.3+
1998 08 23	704	0.6+	0.3+	1999 12 07	704	0.9−	0.9−	2000 01 06	704	0.7+	0.6−
1998 08 23	704	0.6−	0.1+	1999 12 07	704	1.7−	0.9−	2000 01 06	704	0.6+	0.3+
1998 10 11	699	0.6−	0.7+	1999 12 08	704	0.3+	0.4+				

1996 02 07	327	0.1−	0.4+	1999 11 04	704	0.9+	1.3−	2000 01 05	704	0.3−	0.1−
1996 02 07	327	0.3+	0.7+	1999 11 04	704	0.1−	1.4+	2000 01 05	704	0.4−	0.0
1996 02 07	327	0.7−	0.3+	1999 11 04	704	0.8+	1.3+	2000 01 05	704	0.3−	0.2−
1998 05 22	704	0.7+	0.3−	1999 12 08	704	0.0	0.0	2000 01 05	704	0.2−	0.2−
1998 05 22	704	0.8+	1.2+	1999 12 08	704	0.1+	0.1−	2000 01 05	704	0.9−	0.4+
1998 05 22	704	0.2−	0.6+	1999 12 08	704	0.0	0.1−	2000 01 06	704	0.0	0.2−
1998 05 22	704	(0.8+	4.7−)	1999 12 08	704	0.2+	0.4−	2000 01 06	704	0.6+	0.4+
1998 05 24	704	0.4+	1.0−	1999 12 08	704	0.0	0.2+	2000 01 06	704	0.3−	0.4+
1998 05 24	704	0.1−	0.2−	1999 12 08	704	0.1+	0.3−	2000 01 06	704	0.3−	0.1−
1998 05 24	704	0.3−	0.5+	1999 12 08	704	0.1+	0.2+	2000 01 06	704	0.1−	0.0
1998 05 24	704	0.6−	0.9+	1999 12 08	704	0.1+	0.3−	2000 01 12	691	0.1−	0.3+
1998 05 24	704	(5.6−	0.4−)	1999 12 08	704	0.2+	0.2+	2000 01 12	691	0.2−	0.3+
1998 06 24	704	1.2+	1.1+	1999 12 08	704	0.0	0.2−	2000 01 12	691	0.1−	0.3+
1998 06 24	704	0.6+	0.8−	1999 12 14	704	0.1−	0.0				

1999 XD₉₅ = 1978 VN₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	139.43927	(2000.0)	
<i>n</i>	0.18300807	ω	13.88171
<i>a</i>	3.0724811	Ω	258.85155
<i>e</i>	0.0474569	<i>i</i>	10.82496
<i>P</i>	5.39	<i>H</i>	13.8

Residuals in seconds of arc

1978 11 05	675	0.2−	0.6−	1999 11 11	703	0.7−	0.2−	1999 12 09	695	0.2+	1.0−
1978 11 06	675	0.5+	0.3−	1999 12 04	703	0.0	0.4+	1999 12 09	695	2.0−	1.4−
1978 11 07	675	0.5+	0.4+	1999 12 04	703	0.0	0.3+	1999 12 10	739	0.7+	0.9−
1978 11 08	675	0.9−	0.2−	1999 12 04	703	0.5−	0.6+	1999 12 10	739	0.7+	1.1−
1999 10 31	703	0.0	0.4+	1999 12 04	703	0.1+	0.2+	1999 12 10	739	(1.7−	2.3−)
1999 10 31	703	0.4−	0.2−	1999 12 08	739	(1.0+	2.1+)	1999 12 13	732	1.5−	0.6+
1999 10 31	703	1.7+	0.1+	1999 12 08	739	1.6+	0.4−	1999 12 13	732	1.0+	0.2−
1999 10 31	703	0.6−	0.4−	1999 12 08	739	0.3−	0.8−	1999 12 13	732	0.1+	0.8+
1999 11 03	704	1.1+	0.5−	1999 12 08	739	0.9−	0.2−	1999 12 14	732	1.6−	0.6+
1999 11 03	704	0.6+	0.3−	1999 12 08	704	0.5+	1.0+	1999 12 14	732	0.1−	0.9+
1999 11 03	704	0.9+	0.3−	1999 12 08	704	0.9+	0.3−	1999 12 14	732	0.2+	0.8+
1999 11 03	704	0.0	0.2−	1999 12 08	704	0.2−	0.1+	1999 12 23	695	1.2−	0.4+
1999 11 03	704	0.5+	0.2+	1999 12 08	704	1.0−	1.4+	1999 12 23	695	0.5−	0.9−
1999 11 09	699	1.0−	0.5−	1999 12 08	704	0.1−	0.2+	1999 12 23	695	1.2−	0.2+
1999 11 09	699	0.3+	0.8+	1999 12 09	684	0.0	0.4−	2000 01 07	739	1.7+	0.0
1999 11 09	699	(2.1−	0.9−)	1999 12 09	684	0.5−	0.4+	2000 01 07	739	0.5+	1.2+
1999 11 11	703	0.3−	0.1+	1999 12 09	684	0.3−	0.6−	2000 01 07	739	1.2+	0.2+
1999 11 11	703	0.4−	0.6−	1999 12 09	695	(1.0+	2.1+)				
1999 11 11	703	0.8+	0.5+	1999 12 09	695	(1.4+	2.3−)				

1999 XH₉₅ = 1998 SZ₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	53.25577	(2000.0)	
<i>n</i>	0.19309685	ω	104.40617
<i>a</i>	2.9645077	Ω	300.39249
<i>e</i>	0.1050415	<i>i</i>	9.25952
<i>P</i>	5.10	<i>H</i>	14.4

Residuals in seconds of arc

1998 08 17	704	0.5−	0.8+	1998 09 23	704	1.2−	0.0	1999 12 15	704	0.5+	0.0
1998 08 17	704	0.3−	1.3+	1998 09 23	704	0.2+	0.5+	1999 12 19	411	1.1−	0.9+
1998 08 17	704	0.2−	1.0+	1998 09 23	704	0.8−	0.8+	2000 01 03	704	1.1−	0.2+
1998 08 17	704	0.3−	0.6−	1998 09 23	704	1.5+	0.8−	2000 01 03	704	0.7+	0.2−
1998 08 17	704	(7.1−	0.2−)	1998 09 23	704	0.2+	0.2+	2000 01 03	704	0.7−	0.9+
1998 08 30	699	0.7+	0.8−	1999 12 07	411	0.8+	0.0	2000 01 03	704	0.1−	0.2+
1998 08 30	699	(2.5+	0.2+)	1999 12 07	411	0.7+	0.0	2000 01 03	411	0.2−	1.1+
1998 08 30	699	(2.7+	0.0)	1999 12 09	411	1.0−	1.1−	2000 01 03	411	1.3−	0.3−
1998 09 19	704	1.6+	0.5−	1999 12 09	411	0.3−	0.0	2000 01 04	704	0.2−	0.5−
1998 09 19	704	(2.2−	0.6−)	1999 12 15	704	0.4−	1.4−	2000 01 04	704	0.5+	0.2−
1998 09 19	704	0.5−	0.7−	1999 12 15	704	0.6+	0.5−	2000 01 04	704	0.8+	0.2+
1998 09 19	704	0.6−	0.9−	1999 12 15	704	0.5+	0.2+	2000 01 04	704	0.5+	0.6+
1998 09 19	704	0.2+	0.1−	1999 12 15	704	0.1−	0.1−	2000 01 04	704	0.7+	0.3+

1999 XK₉₅ = 1987 KN₃ = 1988 VK₃

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	207.94273	(2000.0)	
<i>n</i>	0.28138949	ω	220.00855
<i>a</i>	2.3063797	Ω	46.47654
<i>e</i>	0.1061308	<i>i</i>	7.70309
<i>P</i>	3.50	<i>H</i>	14.2

Residuals in seconds of arc

1987 05 30	413	0.1+	0.5−	1999 12 07	411	0.9−	0.3+	1999 12 15	704	0.5+	0.8+
1987 05 30	413	0.1−	0.4+	1999 12 07	411	1.4+	1.7−	1999 12 15	704	0.1−	0.1−
1988 11 02	372	(6.3−	1.1−)	Y 1999 12 09	411	0.4+	0.6−	1999 12 15	704	0.1−	0.0
1988 11 02	372	(7.5−	0.3+)	Y 1999 12 09	411	1.0+	0.0	1999 12 19	411	0.7+	1.4−
1988 11 02	372	0.8+	0.5−	1999 12 12	704	0.4+	0.0	1999 12 19	411	(0.6+	2.9−)
1988 11 03	372	0.6+	2.0−	1999 12 12	704	0.4−	0.3−	2000 01 03	411	0.3−	0.5−
1988 11 04	046	1.4−	1.9+	1999 12 12	704	0.7−	0.4+	2000 01 03	411	0.8−	0.4−
1988 11 04	046	0.8−	0.3−	1999 12 12	704	0.8−	0.5+	2000 01 05	106	0.5+	0.1+
1988 11 05	046	1.8+	1.3+	1999 12 12	704	0.9−	0.5+	2000 01 05	106	0.1−	0.4+
1988 11 05	046	1.1−	0.7−	1999 12 15	704	0.2−	0.2+	2000 01 05	106	0.2−	0.6+
1988 11 06	372	0.0	0.3+	Y 1999 12 15	704	0.8+	1.1+				

1999 XP₉₅ = 1988 TB₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	32.33899	(2000.0)	
<i>n</i>	0.19195648	ω	271.40165
<i>a</i>	2.9762371	Ω	155.95315
<i>e</i>	0.2706762	<i>i</i>	3.23882
<i>P</i>	5.13	<i>H</i>	15.1

Residuals in seconds of arc

1988 10 06	807	0.6+	0.1+	1999 12 09	411	0.3+	0.3−	2000 01 05	704	0.6+	0.1−
1988 10 07	807	0.2−	0.0	1999 12 19	411	0.8+	0.7+	2000 01 05	704	0.1−	0.2+
1999 12 07	411	0.4−	0.3−	1999 12 19	411	0.5−	0.4+	2000 01 05	704	0.1−	0.4−
1999 12 07	411	0.1+	0.2−	2000 01 04	411	0.7−	0.1+				
1999 12 09	411	0.1−	0.1+	2000 01 04	411	0.2+	0.1−				

1999 XS₉₅ = 1994 WO₅ = 1998 QC₁₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	351.50410	(2000.0)	
<i>n</i>	0.21540798	ω	75.26078
<i>a</i>	2.7560992	Ω	52.75639
<i>e</i>	0.1701806	<i>i</i>	8.42365
<i>P</i>	4.58	<i>H</i>	13.8

Residuals in seconds of arc

1994 11 28	691	0.4−	0.4+	1999 12 09	411	0.2+	0.2−	1999 12 19	411	0.0	1.3−
1994 11 28	691	0.1+	0.0	1999 12 10	411	1.6−	0.5+	2000 01 02	704	0.4+	1.6+
1994 11 28	691	0.0	0.2+	1999 12 10	411	0.4−	0.6−	2000 01 02	704	0.5+	0.6+
1994 12 03	691	0.1−	0.3+	1999 12 12	704	0.1+	0.2−	2000 01 02	704	0.1+	0.7+
1994 12 03	691	0.3−	0.5+	1999 12 12	704	0.8+	0.0	2000 01 02	704	0.0	0.6−
1994 12 03	691	0.1−	0.3+	1999 12 12	704	0.3+	0.4−	2000 01 02	704	0.1+	0.3+
1998 08 25	809	0.2+	0.2−	1999 12 12	704	0.3+	0.4+	2000 01 03	411	0.8−	0.0
1998 08 25	809	0.7−	0.5−	1999 12 12	704	0.5+	0.3+	2000 01 03	411	1.2−	0.5−
1998 08 25	809	0.1+	1.6−	1999 12 15	704	0.2+	0.6−	2000 01 05	106	0.1−	0.8+
1998 08 26	809	0.7+	0.4+	1999 12 15	704	0.5+	0.7−	2000 01 05	106	0.1+	0.5+
1998 08 26	809	0.0	0.4+	1999 12 15	704	0.3+	0.8−	2000 01 05	106	0.3−	0.7+
1998 08 26	809	0.2+	0.7+	1999 12 15	704	0.3+	1.2−				
1999 12 09	411	0.2+	0.7−	1999 12 19	411	0.5−	0.1−				

2000 JAN. 24

M.P.C. 37923

1999 XZ₉₅ = 1982 XE₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.94841		(2000.0)	P	Q
<i>n</i>	0.17829946	ω	313.52550	+0.84499893	-0.46742704
<i>a</i>	3.1263387	Ω	75.93542	+0.53439241	+0.71986945
<i>e</i>	0.1537891	<i>i</i>	15.53425	+0.02003903	+0.51312760
<i>P</i>	5.53	<i>H</i>	13.5	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1982 12 13	381	0.5+	0.1-	1999 12 10	411	0.7+	0.7-	1999 12 15	704	0.3-	0.4+
1982 12 14	381	0.3-	0.2+	1999 12 10	411	0.2+	0.5+	1999 12 15	704	0.1+	0.1-
1982 12 14	381	0.3-	0.1+	1999 12 12	704	0.1+	0.0	1999 12 19	411	0.1-	0.8+
1998 09 28	699	0.5-	0.1-	1999 12 12	704	1.1+	1.2-	1999 12 19	411	0.7-	1.1+
1998 09 28	699	0.6+	0.0	1999 12 12	704	0.1-	0.8-	2000 01 02	704	0.4+	1.2+
1998 09 28	699	0.2-	0.3+	1999 12 12	704	0.4-	0.9-	2000 01 02	704	1.1-	0.1+
1999 11 16	704	0.8+	0.4-	1999 12 12	704	0.8-	0.7-	2000 01 02	704	0.6-	0.9-
1999 11 16	704	0.4+	0.1-	1999 12 13	596	0.2-	0.3+	2000 01 02	704	0.4-	0.1+
1999 11 16	704	0.7+	0.3-	1999 12 13	596	0.2-	0.4+	2000 01 02	704	0.8-	0.5+
1999 11 16	704	0.9+	0.3-	1999 12 13	596	0.1+	0.2-	2000 01 03	411	0.3+	0.6+
1999 11 16	704	1.0+	0.4-	1999 12 15	704	0.0	0.1+	2000 01 03	411	0.6+	0.2+
1999 12 09	411	0.6-	0.3-	1999 12 15	704	0.2-	0.3+				
1999 12 09	411	0.1-	0.2+	1999 12 15	704	0.5-	0.0				

1999 XC₉₆ = 1995 QG₄

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.09004		(2000.0)	P	Q
<i>n</i>	0.28384631	ω	14.00171	+0.98166403	+0.18390699
<i>a</i>	2.2930519	Ω	335.23054	-0.18437807	+0.84932933
<i>e</i>	0.1372254	<i>i</i>	6.87326	-0.04837836	+0.49479077
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 08 20	691	0.0	0.3-	1999 12 12	704	0.0	0.9+	2000 01 02	704	0.9-	0.9-
1995 08 20	691	0.2+	0.1-	1999 12 12	704	0.4+	0.2+	2000 01 02	704	0.5+	0.8-
1995 08 20	691	0.6+	0.3-	1999 12 14	649	1.9-	0.5+	2000 01 02	704	0.4+	0.6-
1995 08 28	691	0.4-	0.6+	1999 12 14	649	1.2+	0.7+	2000 01 03	411	0.4-	0.5-
1995 08 28	691	0.4-	0.1+	1999 12 14	649	0.7+	0.6+	2000 01 03	411	1.2-	0.2+
1999 12 09	411	0.6-	0.1-	1999 12 15	704	0.3+	0.1+	2000 01 04	704	0.0	0.3-
1999 12 09	411	1.0-	0.2+	1999 12 15	704	0.3+	0.1-	2000 01 04	704	0.4+	0.0
1999 12 10	411	0.4+	1.6-	1999 12 15	704	0.4+	0.0	2000 01 04	704	0.5+	0.1+
1999 12 10	411	0.2-	1.2-	1999 12 15	704	0.5+	0.5-	2000 01 04	704	0.3+	0.0
1999 12 12	704	0.1+	0.0	1999 12 19	411	(2.2+ 1.6+)		2000 01 04	704	0.2+	0.3+
1999 12 12	704	0.3-	0.1+	1999 12 19	411	0.1+	1.4+	2000 01 05	106	0.3-	0.7+
1999 12 12	704	0.0	0.2+	2000 01 02	704	0.0	0.1-	2000 01 05	106	0.0	0.4+

1999 XL₉₆ = 1992 EL₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	5.57416		(2000.0)	P	Q
<i>n</i>	0.22682961	ω	25.22399	-0.02578190	-0.97932792
<i>a</i>	2.6627857	Ω	66.79483	+0.87619384	-0.11875853
<i>e</i>	0.1412730	<i>i</i>	12.60855	+0.48126879	+0.16374749
<i>P</i>	4.35	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1992 03 01	033	0.1-	0.3+	1999 11 16	704	0.2-	1.0+	1999 12 15	704	0.1+	0.4+
1992 03 01	033	0.9-	0.8-	1999 11 16	704	0.2-	0.1-	1999 12 15	704	0.1-	0.5-
1992 03 02	033	1.2+	0.8+	1999 11 16	704	0.1-	0.3+	2000 01 03	704	0.2+	1.5-
1999 11 09	704	0.6-	0.4+	1999 12 07	704	0.3+	0.2-	2000 01 03	704	0.7+	0.9-
1999 11 09	704	0.2-	0.1+	1999 12 07	704	0.5+	0.5+	2000 01 03	704	0.8+	0.1-
1999 11 09	704	0.0	0.3-	1999 12 07	704	0.2+	0.2+	2000 01 03	704	0.4-	0.1+
1999 11 09	704	0.1-	0.4+	1999 12 07	704	0.1-	0.7+	2000 01 03	704	0.8+	0.0
1999 11 12	704	0.1+	0.7-	1999 12 07	704	0.5+	0.2-	2000 01 04	704	0.9+	0.8+
1999 11 12	704	0.4-	0.1+	1999 12 10	704	1.1+	0.1-	2000 01 04	704	0.8-	0.2-
1999 11 12	704	0.4-	0.1-	1999 12 10	704	1.6-	0.1+	2000 01 04	704	0.8-	0.7-

1999 11 12	704	0.1-	0.2-	1999 12 10	704	0.3-	0.1+	2000 01 04	704	0.9+	0.9+
1999 11 12	704	0.8-	0.7-	1999 12 15	704	0.2-	0.1-	2000 01 04	704	0.7+	0.7+
1999 11 16	704	0.6-	0.1-	1999 12 15	704	0.3+	0.3+				

1999 XM₉₆ = 1969 RE = 1979 SQ₉ = 1991 ED₄ = 1991 EH₉**= 1998 HA₁₄₃**

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	114.30183		(2000.0)	P	Q
<i>n</i>	0.30046530	ω	39.11279	+0.79764954	+0.60272379
<i>a</i>	2.2076989	Ω	283.80823	-0.55885597	+0.72497114
<i>e</i>	0.2002091	<i>i</i>	1.29174	-0.22679333	+0.33337798
<i>P</i>	3.28	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 1

Residuals in seconds of arc

1969 09 08	095	(0.2+ 4.8+)	1998 04 22	704	(1.9+ 2.8+)	1999 12 07	704	0.1-	0.2-
1979 09 22	095	0.2+ 1.8+	1998 04 22	704	0.3- 1.1+	1999 12 07	704	0.1-	0.0
1979 09 28	095	1.6- 0.6+	1998 04 22	704	0.3+ 0.1+	1999 12 07	704	0.1-	0.6-
1991 03 12	809	0.7+ 0.8-	1998 04 22	704	0.5-	0.0	1999 12 10	704	0.1+ 0.3+
1991 03 12	809	0.5+ 0.9+	1998 05 16	704	0.7- 0.2-	1999 12 10	704	0.3-	0.5-
1991 03 12	809	(0.4+ 2.7+)	1998 05 16	704	1.2- 1.8+	1999 12 10	704	0.6+	0.2-
1991 03 14	809	(3.0- 1.7+)	1998 05 16	704	1.0+ 0.5+	1999 12 10	704	0.5+ 0.8+	
1991 03 14	809	0.8- 1.2+	1998 05 16	704	1.1+ 1.8+	1999 12 10	704	0.2+ 0.7+	
1991 03 14	809	1.6+ 1.0+	1998 05 16	704	(1.6- 2.4+)	2000 01 03	704	0.1-	0.4+
1992 08 31	095	0.0 0.4+	1999 11 03	704	0.4+ 0.6-	2000 01 03	704	0.3-	0.0
1992 08 31	095	0.2- 1.7+	1999 11 03	704	0.6+ 0.3-	2000 01 03	704	0.4+ 0.3-	
1997 01 10	566	0.6+ 0.2-	1999 11 03	704	0.2+ 0.2-	2000 01 03	704	0.6+ 0.2+	
1997 01 10	566	0.1- 0.1-	1999 11 03	704	0.0 0.1+	2000 01 03	704	0.8- 0.5+	
1997 01 10	566	0.0 0.3-	1999 11 03	704	0.3- 0.1-	2000 01 04	704	0.3+ 0.6+	
1998 04 01	704	0.1- 0.2-	1999 11 12	704	0.3- 0.2-	2000 01 04	704	0.2- 0.1+	
1998 04 01	704	1.0- 0.3+	1999 11 12	704	0.3- 0.2-	2000 01 04	704	0.2+ 0.3-	
1998 04 01	704	0.4- 0.7-	1999 11 12	704	0.2- 0.1+	2000 01 04	704	0.6+ 0.3-	
1998 04 01	704	(0.6- 2.2-)	1999 11 12	704	1.4- 0.4+	2000 01 04	704	0.1- 0.7+	
1998 04 01	704	0.7- 1.9-	1999 11 12	704	0.4- 0.0	2000 01 04	704	0.3- 0.1+	
1998 04 21	704	0.6+ 0.2-	1999 12 05	703	0.2- 0.0	2000 01 04	704	0.1- 0.5+	
1998 04 21	704	0.2+ 0.9+	1999 12 05	703	0.3+ 0.5+	2000 01 04	704	0.2- 0.4+	
1998 04 21	704	1.1+ 0.2+	1999 12 05	703	0.2- 0.2+	2000 01 04	704	0.0 0.4-	
1998 04 21	704	0.8+ 0.4+	1999 12 05	703	0.2- 0.8-	2000 01 04	704	0.2- 1.4+	
1998 04 21	704	0.4+ 0.1-	1999 12 07	704	0.0 0.2+				
1998 04 22	704	0.2+ 0.4+	1999 12 07	704	0.3- 0.2-				

1999 XN₉₆ = 1990 ED₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	37.33341		(2000.0)	P	Q
<i>n</i>	0.27943122	ω	146.34756	+0.57128060	-0.81953707
<i>a</i>	2.3171426	Ω	268.77420	+0.74283083	+0.53943345
<i>e</i>	0.1536722	<i>i</i>	2.56216	+0.34905706	+0.19331463
<i>P</i>	3.53	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1990 03 02	809	1.0-	0.2-	1999 11 14	704	0.2-	0.3-	1999 12 10	704	0.0	0.1+
1990 03 02	809	0.7+	0.7-	1999 11 14	704	0.2-	0.2-	1999 12 10	704	0.4+	0.3-
1990 03 02	809	1.4-	0.6+	1999 12 05	703	0.2-	0.6+	2000 01 03	704	0.1+	0.1+
1990 03 04	809	0.9+	0.1-	1999 12 05	703	0.9-	0.2-	2000 01 03	704	0.1+	0.4+
1990 03 04	809	0.1+	0.6+	1999 12 05	703	0.5+	0.1-	2000 01 03	704	0.3-	0.6+
1990 03 04	809	0.4+	0.8-	1999 12 05	703	0.3-	0.6+	2000 01 03	704	0.6-	0.2+
1999 11 03	704	1.4+	0.6-	1999 12 07	704	0.2-	0.2-	2000 01 03	704	0.1-	0.2-
1999 11 03	704	0.4+	0.4+	1999 12 07	704	0.2+	0.5-	2000 01 04	704	0.5+	0.4+
1999 11 03	704	0.3-	0.9+	1999 12 07	704	0.1-	0.5-	2000 01 04	704	0.5+	0.2+
1999 11 03	704	0.6-	0.2-	1999 12 07	704	0.1-	0.4-	2000 01 04	704	0.3+	0.1+
1999 11 03	704	0.9-	0.3-	1999 12 07	704	0.1-	0.7-	2000 01 04	704	0.1+	0.3+
1999 11 14	704	0.1+	0.1-	1999 12 10	704	0.2+	0.1-	2000 01 04	704	0.4+	0.6+
1999 11 14	704	0.3+	0.1-	1999 12 10	704	0.9-	0.0				
1999 11 14	704	0.0	0.3-	1999 12 10	704	0.4+	0.1+				

1999 XR₉₆ = 3044 T-1 = 1976 SV₇ = 1991 RC₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	87.41541		(2000.0)		P		Q
<i>n</i>	0.26176982	ω	3.58720	+0.98238414	+0.18664747		
<i>a</i>	2.4202283	Ω	345.64573	-0.17235992	+0.88603515		
<i>e</i>	0.1801892	<i>i</i>	2.12017	-0.07220427	+0.42438712		
<i>P</i>	3.77	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	0.3+	0.8-	1999 11 14	704	0.2-	0.3+	1999 12 10	704	0.2+	0.4-
1971 03 25	675	0.8-	0.6-	1999 11 14	704	0.7+	0.0	1999 12 10	704	0.4+	0.1+
1971 03 26	675	0.2+	1.5-	1999 11 14	704	0.6+	0.2-	1999 12 10	704	0.6+	0.5-
1971 03 26	675	1.2-	1.3-	1999 11 16	704	0.0	0.3+	1999 12 10	704	0.4+	0.9-
1971 04 02	675	0.5-	0.0	1999 11 16	704	0.1-	0.1+	1999 12 30	888	0.1-	0.5+
1976 09 25	095	1.5-	1.2+	1999 11 16	704	0.2-	0.1+	1999 12 30	888	0.0	0.7+
1976 09 28	095	2.0+	2.1-	1999 11 16	704	0.2-	0.5+	2000 01 03	704	0.1-	0.5-
1991 09 09	691	0.3+	0.5+	1999 11 16	704	0.3+	0.2+	2000 01 03	704	0.3+	0.2-
1991 09 09	691	0.4+	0.0	1999 12 05	703	0.8-	0.4+	2000 01 03	704	0.4+	0.6+
1991 09 09	691	0.5+	0.1+	1999 12 05	703	0.5-	0.6+	2000 01 03	704	0.4+	0.2-
1991 09 11	675	0.4-	1.6-	1999 12 05	703	0.6-	0.6+	2000 01 03	704	1.0+	0.4+
1991 09 11	675	0.1-	0.7-	1999 12 05	703	0.2+	0.2-	2000 01 04	704	0.0	0.3+
1999 11 03	704	0.9-	0.8-	1999 12 07	704	0.0	0.3-	2000 01 04	704	0.2-	0.6+
1999 11 03	704	0.0	0.8-	1999 12 07	704	0.2-	0.4-	2000 01 04	704	0.1-	0.2+
1999 11 03	704	1.5-	0.0	1999 12 07	704	0.1-	0.2-	2000 01 04	704	0.6-	0.2+
1999 11 03	704	0.4-	0.8-	1999 12 07	704	0.0	0.3-	2000 01 04	704	0.0	0.7+
1999 11 03	704	0.2-	1.4-	1999 12 07	704	0.1+	0.4-				
1999 11 14	704	1.1+	0.4+	1999 12 10	704	0.1+	0.2-				

1999 XS₉₆ = 1998 OM₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	64.75401		(2000.0)		P		Q
<i>n</i>	0.21808135	ω	96.34558	+0.91793628	-0.39063344		
<i>a</i>	2.7335291	Ω	286.66559	+0.32938245	+0.84773190		
<i>e</i>	0.0688103	<i>i</i>	4.14659	+0.22113386	+0.35882606		
<i>P</i>	4.52	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 24	910	0.8+	0.4-	1999 12 07	704	0.1-	0.4-	2000 01 03	704	0.1-	0.0
1998 07 24	910	0.5+	0.5-	1999 12 07	704	0.4-	0.6-	2000 01 03	704	0.4+	0.5+
1998 07 24	910	0.7+	0.6-	1999 12 07	704	0.1+	1.0-	2000 01 03	704	0.2+	0.7+
1998 08 01	910	0.7-	0.5+	1999 12 07	704	0.3-	0.8-	2000 01 03	704	0.1+	0.1-
1998 08 02	910	0.5-	0.5+	1999 12 07	704	0.1-	0.6-	2000 01 04	704	0.6-	0.2-
1998 08 02	910	0.6-	0.4+	1999 12 10	704	0.2-	0.2-	2000 01 04	704	0.3+	0.2-
1999 11 14	704	0.4+	0.2+	1999 12 10	704	0.4-	0.9-	2000 01 04	704	0.3-	0.5-
1999 11 14	704	0.2+	0.4+	1999 12 10	704	0.3-	0.4+	2000 01 04	704	0.3+	0.5+
1999 11 14	704	0.1-	0.8+	1999 12 10	704	0.1-	0.1-	2000 01 04	704	0.2-	0.5-
1999 11 14	704	0.1-	0.9+	1999 12 10	704	1.0+	0.2+				
1999 11 14	704	0.0	0.5+	2000 01 03	704	0.5+	1.1+				

1999 XA₉₇ = 1998 QM₈₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	278.77161		(2000.0)		P		Q
<i>n</i>	0.18034143	ω	272.08092	-0.96863544	-0.04529513		
<i>a</i>	3.1026947	Ω	265.38629	+0.13573231	-0.92004442		
<i>e</i>	0.0354146	<i>i</i>	14.18876	-0.20813968	-0.38918712		
<i>P</i>	5.47	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.9+	0.3+	1999 12 07	704	0.1+	0.6-	2000 01 03	704	0.2-	0.1+
1998 08 24	704	0.6-	0.4-	1999 12 07	704	0.4+	0.2+	2000 01 03	704	0.5-	1.9+
1998 08 24	704	0.8+	1.6-	1999 12 07	704	0.5+	0.5-	2000 01 03	704	0.2-	0.2+
1998 08 27	704	0.1-	0.6+	1999 12 07	704	0.3+	0.2+	2000 01 04	704	0.3+	0.1-
1998 08 27	704	0.4-	0.6+	1999 12 07	704	0.1-	0.0	2000 01 04	704	0.9-	0.1+
1998 08 27	704	0.6-	0.5+	1999 12 10	704	0.8+	0.4-	2000 01 04	704	0.3+	0.2-
1998 08 27	704	(3.1-	2.8+)	1999 12 10	704	0.7+	0.6-	2000 01 04	704	0.3+	0.3+

1999 11 14	704	0.7-	0.2-	1999 12 10	704	0.6+	0.3+	2000 01 04	704	0.8-	0.2-
1999 11 14	704	0.7-	0.4+	2000 01 03	704	0.7+	0.9-				
1999 11 14	704	0.6-	0.5+	2000 01 03	704	0.6-	0.4-				

1999 XB₉₇ = 1998 RV₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	302.83892		(2000.0)		P		Q
<i>n</i>	0.26605176	ω	256.92435	-0.98103288	-0.16634799		
<i>a</i>	2.3941901	Ω	273.43473	+0.19254726	-0.89549071		
<i>e</i>	0.1238968	<i>i</i>	5.72144	-0.02236161	-0.41282532		
<i>P</i>	3.70	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.1-	0.5+	1999 11 14	704	0.2-	0.4-	1999 12 10	704	0.9+	0.1+
1998 09 14	704	0.2+	1.4+	1999 11 14	704	0.2-	0.1-	1999 12 10	704	0.5+	0.4+
1998 09 14	704	0.4+	0.3+	1999 11 14	704	0.3+	0.3-	2000 01 03	704	0.4-	0.4-
1998 09 14	704	(2.4+	0.2+)	1999 11 14	704	0.2-	0.3-	2000 01 03	704	0.2-	0.2-
1998 09 14	704	0.8-	0.6-	1999 12 07	704	0.1+	0.2+	2000 01 03	704	(0.2+	2.4+)
1998 09 18	704	1.2+	1.0+	1999 12 07	704	0.8+	0.1-	2000 01 03	704	0.4-	1.2+
1998 09 18	704	(2.6-	0.2-)	1999 12 07	704	1.4-	1.4+	2000 01 04	704	0.3-	1.0-
1998 09 18	704	0.1+	1.4-	1999 12 07	704	0.1+	0.2+	2000 01 04	704	0.3+	0.4+
1998 09 18	704	1.2-	1.6-	1999 12 07	704	0.3-	0.1-	2000 01 04	704	0.6+	0.7-
1998 09 18	704	0.2+	0.5+	1999 12 10	704	0.7+	0.5-	2000 01 04	704	0.3-	0.4+
1999 11 14	704	0.9-	0.5-	1999 12 10	704	0.4+	0.4+				

1999 XD₉₇ = 1997 GF₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	351.95556		(2000.0)		P		Q
<i>n</i>	0.27302723	ω	77.46600	-0.44059222	-0.89705555		
<i>a</i>	2.3532356	Ω	38.73398	+0.80094876	-0.41002430		
<i>e</i>	0.1274305	<i>i</i>	3.13350	+0.40541286	-0.16483752		
<i>P</i>	3.61	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 03	704	0.9+	0.7+	1999 11 16	704	0.1+	0.5+	1999 12 15	704	1.3-	0.3-
1997 04 03	704	0.6+	0.4+	1999 11 16	704	0.1+	0.9-	2000 01 03	704	0.5-	1.3+
1997 04 05	704	1.5+	0.4-	1999 12 07	704	0.1+	0.1+	2000 01 03	704	0.7+	0.5+
1997 04 05	704	0.4+	1.4-	1999 12 07	704	0.5+	0.5+	2000 01 03	704	0.9+	0.1+
1997 04 06	704	0.2-	0.2-	1999 12 07	704	0.2+	0.3+	2000 01 03	704	0.4+	0.5-
1997 04 06	704	1.0-	0.2+	1999 12 07	704	0.8+	0.1+	2000 01 03	704	0.2+	0.5+
1997 04 07	704	1.1-	0.2+	1999 12 07	704	0.3+	0.7+	2000 01 04	704	0.8-	0.0
1997 04 07	704	1.2-	0.6+	1999 12 10	704	0.8+	0.3-	2000 01 04	704	0.0	0.8+
1999 11 14	704	1.4+	0.5+	1999 12 10	704	0.0	1.0-	2000 01 04	704	0.9-	1.6-
1999 11 14	704	(2.3+	1.1+)	1999 12 10	704	0.6-	0.7+	2000 01 04	704	0.0	0.1+
1999 11 14	704	0.1+	0.1+	1999 12 15	704	0.4-	0.6-	2000 01 04	704	0.6+	0.5-
1999 11 16	704	1.3-	0.3+	1999 12 15	704	0.4-	0.6-				
1999 11 16	704	0.7-	0.2-	1999 12 15	704	0.3-	0.8-				

1999 XF₉₇ = 1997 EG₅₁ = 1998 QB₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	258.22795		(2000.0)		P		Q
<i>n</i>	0.26187620	ω	229.05932	-0.85296982	+0.52184246		
<i>a</i>	2.4195728	Ω	342.38765	-0.46720466	-0.77278911		
<i>e</i>	0.1157438	<i>i</i>	2.10001	-0.23272793	-0.36121660		
<i>P</i>	3.76	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 05	809	0.0	0.3+	1999 12 05	703	0.3-	0.7+	2000 01 04	704	0.5-	0.5+
1997 03 05	809	1.0+	0.3+	1999 12 05	703	0.9-	0.5+	2000 01 04	704	0.2-	0.1+
1997 03 05	809	0.3+	0.2-	1999 12 05	703	0.3-	1.0+	2000 01 04	704	0.1-	0.4-
1997 03 06	809	0.4-	0.6+	1999 12 05	703	0.4-	0.4+	2000 01 04	704	0.1+	0.5-
1997 03 06	809	0.1+	0.3+	1999 12 07	704	0.2-	0.1-	2000 01 04	704	0.0	0.3+
1997 03 06	809	0.4-	0.1-	1999 12 07	704	0.4-	0.1-	2000 01 04	704	0.2-	0.1-
1998 08 17	704	0.4+	0.7+	1999 12 07	704	0.2-	0.3+	2000 01 04	704	0.5+	0.1+
1998 08 17	704	0.7+	0.2+	1999 12 07	704	0.4+	0.3+	2000 01 04	704	0.1-	0.4-

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M.P.C. 37925

1998 08 17	704	0.2+	0.8+	1999 12 07	704	0.4+	0.0	2000 01 04	704	0.6−	0.4+
1998 08 17	704	0.7+	0.4−	1999 12 10	704	0.5−	0.1−	2000 01 04	704	0.3−	0.2+
1998 08 17	704	0.2+	0.4−	1999 12 10	704	0.3+	0.6−	2000 01 04	704	0.4+	0.3+
1998 08 23	704	1.5−	0.8+	1999 12 10	704	0.0	0.7−	2000 01 04	704	0.1−	0.3+
1998 08 23	704	0.1−	0.0	1999 12 10	704	0.9+	0.0	2000 01 04	704	0.2−	0.4+
1998 08 23	704	0.9−	0.7+	2000 01 03	704	1.6+	0.5+	2000 01 04	704	0.2+	0.0
1998 08 23	704	0.4−	0.7−	2000 01 03	704	0.9+	0.0	2000 01 04	704	0.1−	0.1+
1999 11 14	704	0.3+	0.8−	2000 01 03	704	0.7+	0.6+	2000 01 04	704	0.2−	0.3+
1999 11 14	704	0.4+	0.9−	2000 01 03	704	0.1+	0.0	2000 01 04	704	0.0	0.4−
1999 11 14	704	0.1−	0.7−	2000 01 03	704	0.3−	0.1−	2000 01 04	704	0.1−	0.5−
1999 11 14	704	0.1−	0.8−	2000 01 04	704	0.9−	0.3+				

1999 XG₉₇ = 1997 EY₂₆ = 1998 KF₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	101.71753	(2000.0)	
<i>n</i>	0.28073997	<i>ω</i> 72.19320	+0.90004385 +0.42970641
<i>a</i>	2.3099357	<i>Ω</i> 262.30616	−0.42243308 +0.81928855
<i>e</i>	0.2084077	<i>i</i> 4.20231	−0.10710447 +0.37962964
<i>P</i>	3.51	<i>H</i> 14.7	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1997 03 05	691	0.1−	0.5−	1999 11 03	704	0.2+	0.4+	1999 12 10	704	0.9−	0.0
1997 03 05	691	0.2−	0.7−	1999 11 03	704	0.2+	0.6−	1999 12 31	691	0.2−	0.1+
1997 03 05	691	0.3−	0.6−	1999 11 03	704	0.0	0.1+	1999 12 31	691	0.2−	0.1+
1997 03 13	691	0.3−	0.6−	1999 11 09	704	0.3+	0.2−	1999 12 31	691	0.1−	0.1+
1997 03 13	691	0.0	0.3−	1999 11 09	704	0.1+	0.5−	2000 01 03	704	1.0+	0.5+
1997 03 13	691	0.0	0.5−	1999 11 09	704	0.2−	0.2−	2000 01 03	704	0.2+	0.2+
1998 05 22	704	0.1−	0.2−	1999 11 09	704	0.2−	0.1+	2000 01 03	704	0.2+	0.6−
1998 05 22	704	0.8−	1.0+	1999 11 09	704	0.3−	0.2−	2000 01 03	704	0.3+	1.1+
1998 05 22	704	0.5+	1.7+	1999 12 07	704	0.0	0.1+	2000 01 03	704	0.1−	0.1+
1998 05 22	704	0.9−	1.0+	1999 12 07	704	0.4−	0.1+	2000 01 04	704	0.3−	0.6+
1998 05 24	704	0.6+	0.2+	1999 12 07	704	0.3+	0.3+	2000 01 04	704	0.6+	1.0+
1998 05 24	704	(2.4+	0.1−)	1999 12 07	704	0.7+	0.9+	2000 01 04	704	0.1+	1.2+
1998 05 24	704	0.8+	1.0+	1999 12 07	704	0.2+	0.5+	2000 01 04	704	0.0	0.9+
1998 05 24	704	1.1+	1.4−	1999 12 10	704	0.0	0.3−	2000 01 04	704	0.7−	0.4+
1998 05 24	704	0.4−	0.1+	1999 12 10	704	0.5−	1.0−				
1999 11 03	704	0.3−	0.0	1999 12 10	704	0.1−	0.4−				

1999 XO₉₇ = 1949 OT = 1987 RR₁ = 1997 CQ₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	107.55187	(2000.0)	
<i>n</i>	0.26012082	<i>ω</i> 6.07016	+0.87382855 +0.48588435
<i>a</i>	2.4304460	<i>Ω</i> 324.84016	−0.44744730 +0.78870158
<i>e</i>	0.1863793	<i>i</i> 1.83509	−0.19030128 +0.37665132
<i>P</i>	3.79	<i>H</i> 14.4	<i>G</i> 0.15 <i>U</i> 2

Residuals in seconds of arc

1949 07 28	024	0.8+	2.4−	1999 11 03	704	0.0	0.1+	1999 12 10	704	0.5+	0.9−
1949 07 30	024	(0.4+	3.7−)	1999 11 03	704	0.1+	1.1+	1999 12 10	704	0.4+	0.3+
1987 09 01	046	(1.5+	2.9+)	1999 11 14	704	0.2+	0.2+	2000 01 03	704	0.6−	0.2−
1987 09 01	046	0.4−	1.0+	1999 11 14	704	0.1−	0.5+	2000 01 03	704	0.2+	0.3−
1997 02 10	691	0.1+	0.2+	1999 11 14	704	0.1+	0.1−	2000 01 03	704	0.0	0.0
1997 02 10	691	0.0	0.1−	1999 11 14	704	0.3−	0.1−	2000 01 03	704	0.2+	0.9−
1997 02 10	691	0.3+	0.6+	1999 11 14	704	0.3−	0.1+	2000 01 03	704	0.0	0.1+
1997 02 16	691	0.2−	0.8−	1999 12 07	704	0.6−	0.7+	2000 01 04	704	0.8−	0.5−
1997 02 16	691	0.3−	0.1−	1999 12 07	704	0.2+	0.4+	2000 01 04	704	0.4+	0.5+
1997 02 16	691	0.1−	0.4−	1999 12 07	704	0.1−	0.3+	2000 01 04	704	1.0+	0.4−
1999 11 03	704	(2.5+	1.2+)	1999 12 07	704	0.7+	0.3+	2000 01 04	704	0.5+	0.5−
1999 11 03	704	0.7+	0.5+	1999 12 10	704	0.3+	0.8−	2000 01 04	704	0.7−	0.6−
1999 11 03	704	0.4−	0.5+	1999 12 10	704	1.1−	1.5−				

1999 XR₉₇ = 1998 RC₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	7.59141	(2000.0)	
<i>n</i>	0.16955078	<i>ω</i> 19.49870	+0.05526884 −0.99810232
<i>a</i>	3.2329787	<i>Ω</i> 67.34067	+0.91212910 +0.03940978
<i>e</i>	0.1258977	<i>i</i> 1.68594	+0.40615989 +0.04731423
<i>P</i>	5.81	<i>H</i> 13.9	<i>G</i> 0.15 <i>U</i> 5

Residuals in seconds of arc

1998 09 14	704	0.7+	0.7−	1999 12 07	704	0.3−	0.1+	2000 01 03	704	0.2+	0.4+
1998 09 14	704	1.0+	0.4−	1999 12 07	704	0.0	0.5+	2000 01 03	704	1.1−	0.6−
1998 09 14	704	1.3−	1.2+	1999 12 07	704	0.1−	0.4+	2000 01 04	704	0.1+	0.2−
1998 09 14	704	(1.2+	2.7+)	1999 12 10	704	0.1−	0.6−	2000 01 04	704	0.2+	0.4−
1998 09 18	704	0.7−	0.0	1999 12 10	704	0.6+	0.5−	2000 01 04	704	0.1−	0.5+
1998 09 18	704	1.1−	1.1−	1999 12 10	704	0.1+	0.4−	2000 01 04	704	0.1−	0.1−
1998 09 18	704	1.5+	1.0+	2000 01 03	704	0.7+	0.7+	2000 01 04	704	0.3−	0.1−
1998 09 18	704	(2.2−	1.6+)	2000 01 03	704	0.2−	0.0				
1999 12 07	704	0.3−	0.4+	2000 01 03	704	0.7+	0.2−				

1999 XS₉₇ = 1995 UN₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	41.78478	(2000.0)	
<i>n</i>	0.26334101	<i>ω</i> 139.86926	+0.66883069 −0.74305341
<i>a</i>	2.4105921	<i>Ω</i> 268.14051	+0.67598682 +0.62084524
<i>e</i>	0.1892578	<i>i</i> 1.32871	+0.30936601 +0.24984558
<i>P</i>	3.74	<i>H</i> 15.4	<i>G</i> 0.15 <i>U</i> 4

Residuals in seconds of arc

1995 10 20	010	0.6+	0.4−	1999 11 09	704	0.2−	0.5+	2000 01 03	704	0.2−	0.2−
1995 10 20	010	0.0	0.7+	1999 12 07	704	0.2−	0.6−	2000 01 03	704	0.0	0.5+
1995 10 20	010	0.3+	0.7+	1999 12 07	704	0.0	0.7−	2000 01 03	704	0.2−	0.6+
1995 10 23	010	0.1+	0.5−	1999 12 07	704	0.4+	0.1−	2000 01 05	704	0.1−	0.8−
1995 10 23	010	0.9+	0.6−	1999 12 07	704	0.7−	0.2−	2000 01 05	704	0.0	1.2−
1995 10 23	010	1.6−	0.4−	1999 12 10	704	0.2+	0.6+	2000 01 05	704	0.8+	0.1+
1999 11 09	704	0.2+	0.5+	1999 12 10	704	0.2−	0.7+	2000 01 05	704	0.2−	0.1+
1999 11 09	704	0.0	0.5+	1999 12 10	704	0.2+	0.1−				
1999 11 09	704	0.2+	0.2+	2000 01 03	704	0.1+	0.3+				

1999 XT₉₇ = 1949 WK₁ = 1981 UX₂₆ = 1988 VF₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams			
<i>M</i>	8.75607	(2000.0)	
<i>n</i>	0.27688114	<i>ω</i> 24.10877	−0.11335291 −0.99015491
<i>a</i>	2.3313482	<i>Ω</i> 72.48332	+0.89700483 −0.13753085
<i>e</i>	0.1398468	<i>i</i> 4.94028	+0.42723934 +0.02604838
<i>P</i>	3.56	<i>H</i> 14.5	<i>G</i> 0.15 <i>U</i> 3

Residuals in seconds of arc

1949 11 21	675	(8.2+	6.2−)	1999 11 09	704	0.1+	0.7+	2000 01 03	704	0.1+	0.1+
1949 11 21	675	0.1−	0.3+	1999 12 07	704	0.4+	0.6−	2000 01 03	704	0.5+	0.3+
1981 10 25	675	0.2−	0.6+	1999 12 07	704	0.1−	0.0	2000 01 03	704	0.4+	0.1+
1981 10 26	675	0.4−	1.0+	1999 12 07	704	0.0	0.4−	2000 01 03	704	0.3+	0.6+
1988 11 04	033	0.2+	0.9−	1999 12 07	704	(1.8−	2.2+)	2000 01 03	704	0.5+	0.4+
1988 11 04	033	0.4+	0.4−	1999 12 10	704	0.4−	0.8−	2000 01 04	704	0.3+	0.2+
1999 11 09	704	0.1+	0.2−	1999 12 10	704	0.3−	0.2−	2000 01 04	704	0.1−	0.3−
1999 11 09	704	0.1+	0.3−	1999 12 10	704	0.7−	0.8−	2000 01 04	704	0.3+	0.0
1999 11 09	704	0.0	0.1+	1999 12 10	704	0.8−	0.3−	2000 01 04	704	0.0	0.6−
1999 11 09	704	0.5+	0.4+	1999 12 10	704	0.8−	0.5−	2000 01 04	704	0.0	1.6+

1999 XU₉₇ = 1997 CJ₁₈ = 1998 MQ₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27227272	ω	301.57242	+0.58558056	+0.81061378		
<i>a</i>	2.3575811	Ω	4.27187	-0.73985960	+0.53489015		
<i>e</i>	0.0807444	<i>i</i>	0.64456	-0.33121470	+0.23832294		
<i>P</i>	3.62	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 02 07	691	0.5+	0.2-	1998 06 27	809	(0.1+ 4.2+)	1999 12 10 704 0.4- 0.1+
1997 02 07	691	0.2+	0.0	1998 06 28	809	(5.2+ 1.4+)	1999 12 10 704 0.2+ 0.0
1997 02 07	691	0.4+	0.0	1998 06 28	809	(4.9+ 0.5+)	1999 12 30 169 0.8+ 0.8+
1997 02 11	691	0.3-	0.3+	1998 06 28	809	(4.7+ 1.6+)	1999 12 30 169 1.9+ 1.2-
1997 02 11	691	0.2-	0.2+	1999 11 03	704	0.1+ 0.1+	1999 12 30 169 1.4- 0.6-
1997 02 11	691	0.4+	0.0	1999 11 03	704	0.2+ 0.4+	1999 12 30 169 (0.8+ 2.2-)
1998 06 24	704	1.2-	0.6+	1999 11 03	704	0.0 0.3+	2000 01 02 169 0.1- 0.2+
1998 06 24	704	0.1+	0.1-	1999 11 03	704	0.2- 0.2+	2000 01 02 169 1.1- 0.3-
1998 06 24	704	0.2-	0.7+	1999 11 09	704	0.0 0.3+	2000 01 02 169 0.3+ 0.3-
1998 06 24	704	(0.9- 2.4-)		1999 11 09	704	0.1+ 0.4+	2000 01 03 704 0.1- 0.1+
1998 06 24	704	(2.2- 1.0-)		1999 11 09	704	0.1+ 0.4+	2000 01 03 704 0.3- 0.7-
1998 06 26	809	(1.5+ 3.3+)		1999 11 09	704	0.1+ 0.5+	2000 01 03 704 0.7- 0.4-
1998 06 26	809	(0.0 3.9+)		1999 11 09	704	0.2+ 0.6+	2000 01 03 704 0.6- 0.6-
1998 06 26	809	(0.0 3.5+)		1999 12 07	704	0.1+ 0.1+	2000 01 04 704 0.3+ 0.0
1998 06 26	704	0.5+ 0.2+		1999 12 07	704	0.1+ 0.2-	2000 01 04 704 0.4- 0.3+
1998 06 26	704	0.0 0.0		1999 12 07	704	0.3+ 0.6-	2000 01 04 704 0.5- 0.2+
1998 06 26	704	0.4+ 1.1-		1999 12 07	704	0.3+ 0.1-	2000 01 04 704 0.4- 0.2-
1998 06 26	704	0.4+ 0.7-		1999 12 10	704	0.6+ 0.2-	2000 01 04 704 0.2+ 0.4+
1998 06 27	809	(0.1- 3.9+)		1999 12 10	704	0.0 0.3-	
1998 06 27	809	(0.5+ 4.3+)		1999 12 10	704	0.4+ 0.1-	

1999 XV₉₇ = 1987 KV₃ = 1998 RQ₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20185044	ω	64.54142	+0.14689195	-0.98909786		
<i>a</i>	2.8781688	Ω	17.02139	+0.89429149	+0.12830424		
<i>e</i>	0.0141454	<i>i</i>	2.03617	+0.42268840	+0.07227340		
<i>P</i>	4.88	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1987 05 30	413	0.7+	0.1+	1999 11 14	704	0.4+ 0.0	1999 12 10 704 0.4+ 0.2+
1987 05 30	413	0.6-	0.0	1999 11 14	704	0.1- 0.3+	1999 12 10 704 0.2- 0.1+
1998 09 14	704	1.0+	0.4-	1999 11 14	704	0.1- 0.4-	1999 12 10 704 0.2- 0.2-
1998 09 14	704	0.7-	0.1-	1999 11 14	704	0.1- 0.2-	2000 01 03 704 1.0+ 0.2-
1998 09 14	704	1.0-	0.8-	1999 12 05	703	0.4- 1.0+	2000 01 03 704 0.1- 0.3-
1998 09 14	704	0.1-	1.5-	1999 12 05	703	0.4+ 0.4+	2000 01 03 704 0.5+ 0.6-
1998 09 18	704	0.2-	1.1+	1999 12 05	703	0.4- 0.2+	2000 01 04 704 0.4- 0.5-
1998 09 18	704	(3.2+ 0.4+)		1999 12 05	703	0.4- 0.4+	2000 01 04 704 0.5- 0.6+
1998 09 18	704	(2.4+ 0.9+)		1999 12 07	704	0.0 0.3-	2000 01 04 704 0.4- 0.9-
1998 09 18	704	0.4+ 0.8+		1999 12 07	704	0.6+ 0.0	2000 01 04 704 0.0 0.3-
1998 09 18	704	0.6+ 0.8+		1999 12 07	704	0.0 0.2+	2000 01 04 704 0.9- 0.0
1999 11 14	704	0.2+ 0.1-		1999 12 07	704	0.6+ 0.7+	

1999 XX₉₇ = 1981 RB₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28129448	ω	330.07211	+0.98502064	-0.17015102		
<i>a</i>	2.3068990	Ω	39.75535	+0.16561780	+0.88834997		
<i>e</i>	0.1607231	<i>i</i>	2.50775	+0.04801122	+0.42647738		
<i>P</i>	3.50	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1981 09 03	675	0.4+ 0.2+		1999 12 07	704	1.2- 0.1+	2000 01 03 704 0.1+ 0.4+
1981 09 04	675	0.4- 0.2-		1999 12 07	704	0.0 0.4+	2000 01 03 704 0.7- 1.3-
1999 11 14	704	0.3- 0.2-		1999 12 07	704	0.1+ 0.0	2000 01 03 704 0.6+ 0.0
1999 11 14	704	0.6+ 0.1-		1999 12 10	704	0.5+ 0.5-	2000 01 04 704 0.5- 0.1-

1999 11 14	704	0.1-	0.2-	1999 12 10	704	0.3+	1.1+	2000 01 04	704	0.3-	0.1+
1999 11 14	704	0.1-	0.1+	1999 12 10	704	0.3+	0.9+	2000 01 04	704	0.2-	0.2-
1999 11 14	704	0.2-	0.1-	2000 01 03	704	0.4+	0.0	2000 01 04	704	0.2+	0.2+
1999 12 07	704	0.3+	0.6-	2000 01 03	704	0.2+	0.2-	2000 01 04	704	0.3+	0.2+

1999 XZ₉₇ = 1998 UG₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.15469370	ω	145.95560	-0.70968727	+0.67582679		
<i>a</i>	3.4368002	Ω	77.89534	-0.68319548	-0.59121766		
<i>e</i>	0.1078111	<i>i</i>	11.74335	-0.17201141	-0.44013615		
<i>P</i>	6.37	<i>H</i>	11.9	<i>G</i>	0.15	<i>U</i>	1
Residuals in seconds of arc							
1994 01 08	675	(0.5+ 2.4-)		1999 11 03	704	0.3+ 0.4-	1999 12 10 704 0.3- 0.0
1994 01 08	675	0.1+ 1.1-		1999 11 03	704	0.8- 0.6+	1999 12 10 704 0.1+ 0.3-
1997 08 30	566	0.0 0.6-		1999 11 09	704	0.8+ 0.5-	1999 12 10 704 0.3+ 0.2-
1997 08 30	566	0.4+ 0.8-		1999 11 09	704	0.2+ 1.0-	2000 01 03 704 0.0 0.0
1997 08 30	566	0.4+ 0.6-		1999 11 09	704	0.2- 0.9-	2000 01 03 704 0.8+ 0.2-
1998 10 17	699	1.2+ 0.4+		1999 11 09	704	0.5- 1.0-	2000 01 03 704 0.3+ 0.1-
1998 10 17	699	0.4- 0.4-		1999 11 09	704	0.6- 1.1-	2000 01 03 704 0.3+ 0.0
1998 10 17	699	0.6+ 1.0-		1999 11 16	704	0.1+ 0.6+	2000 01 03 704 0.3+ 0.0
1998 10 20	699	0.1- 0.2+		1999 11 16	704	0.5- 0.3+	2000 01 04 704 0.2+ 0.2+
1998 10 20	699	0.1- 0.0		1999 11 16	704	0.1+ 0.2+	2000 01 04 704 0.2+ 0.0
1998 10 20	699	0.3+ 0.1-		1999 11 16	704	0.3- 0.5+	2000 01 04 704 0.2+ 0.1-
1998 11 13	704	(2.1+ 4.0-)		1999 11 16	704	1.1- 0.2+	2000 01 04 704 0.0 0.3-
1998 11 13	704	1.2- 0.7+		1999 12 07	704	0.2- 0.0	2000 01 04 704 0.3+ 0.1-
1998 11 13	704	0.2- 1.0+		1999 12 07	704	0.1- 0.1+	2000 01 04 106 0.1+ 0.6+
1998 11 13	704	1.4- 1.3+		1999 12 07	704	0.2- 0.4+	2000 01 04 106 0.1+ 0.7+
1998 11 13	704	(2.9- 1.6+)		1999 12 07	704	0.0 0.3+	2000 01 04 106 0.1+ 0.7+
1999 11 03	704	1.0- 0.6-		1999 12 10	704	1.1+ 0.2-	

1999 XD₉₈ = 1998 MK₂₁

Id. G. V. Williams, S. Nakano

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<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23931481	ω	103.25847	+0.97474962	-0.08380995		
<i>a</i>	2.5693484	Ω	261.83772	+0.00334491	+0.93227009		
<i>e</i>	0.2249999	<i>i</i>	12.06927	+0.22327559	+0.35192097		
<i>P</i>	4.12	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 06 24	704	1.9- 0.7+		1999 12 05	703	0.7- 0.7+	1999 12 27 691 0.0 0.3+
1998 06 24	704	0.0 1.1+		1999 12 05	703	0.2- 0.4+	1999 12 27 691 0.1+ 0.3+
1998 06 24	704	0.5- 1.5+		1999 12 07	704	0.1- 0.3+	2000 01 02 691 1.0- 1.1-
1998 06 24	704	1.4- 0.2-		1999 12 07	704	0.0 0.2-	2000 01 02 691 0.4+ 0.3+
1998 06 26	704	1.9+ 0.3+		1999 12 07	704	0.1+ 0.1-	2000 01 02 691 0.0 0.1+
1998 06 26	704	0.7- 0.6-		1999 12 07	704	0.3+ 0.3-	2000 01 04 106 0.1+ 0.8+
1998 06 26	704	0.4+ 0.9+		1999 12 10	704	0.2- 0.1+	2000 01 04 106 0.1- 0.7+
1998 06 26	704	1.8+ 1.1-		1999 12 10	704	0.0 0.5+	2000 01 04 106 0.0 0.8+
1999 11 14	704	0.3- 0.0		1999 12 10	704	0.1+ 0.2+	2000 01 05 704 1.0+ 0.8-
1999 11 14	704	0.3- 0.3-		1999 12 10	704	0.0 0.2+	2000 01 05 704 0.5- 1.0-
1999 11 14	704	0.1- 0.5-		1999 12 11	732	0.8+ 1.0+	2000 01 05 704 0.1- 0.9-
1999 11 14	704	0.2- 0.7-		1999 12 11	732	0.1+ 1.5+	2000 01 05 704 0.4+ 0.5-
1999 11 14	704	0.3- 0.9-		1999 12 11	732	0.7+ 0.1-	2000 01 05 704 0.2- 0.8-
1999 11 16	704	0.3- 0.5-		1999 12 12	732	0.3- 0.3+	2000 01 06 704 0.1+ 0.1-
1999 11 16	704	0.0 0.3-		1999 12 12	732	0.2+ 1.0+	2000 01 06 704 0.2- 0.3-
1999 11 16	704	0.1- 0.4-		1999 12 12	732	0.3+ 0.3+	2000 01 06 704 0.0 0.4-
1999 11 16	704	0.5- 0.4+		1999 12 14	649	0.0 0.5+	2000 01 06 704 0.6+ 0.6-
1999 11 16	704	0.1- 0.3-		1999 12 14	649	0.5- 0.3+	2000 01 06 704 0.8+ 0.3-
1999 12 05	703	0.2- 0.4+		1999 12 14	649	0.1+ 0.9+	
1999 12 05	703	0.1+ 0.5+		1999 12 27	691	0.2+ 0.4+	

2000 JAN. 24

M.P.C. 37927

1999 XJ₉₈ = 1993 BE₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	20.16741		(2000.0)	P		Q	
<i>n</i>	0.27243272	ω	182.85874	+0.12047029		−0.98902677	
<i>a</i>	2.3566579	Ω	260.23272	+0.91251279		+0.14424647	
<i>e</i>	0.1700253	<i>i</i>	4.97802	+0.39090576		−0.03192178	
<i>P</i>	3.62	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 01 23	809	0.6−	0.1−	1999 12 07	704	0.1−	0.6−	2000 01 05	704	0.1−	0.3+
1993 01 23	809	0.4−	0.4−	1999 12 10	704	0.2+	0.1+	2000 01 05	704	0.2+	0.1+
1993 01 23	809	0.2−	0.8−	1999 12 10	704	0.3+	0.2+	2000 01 06	704	0.2−	0.4−
1993 01 28	809	0.7+	0.6+	1999 12 10	704	0.3+	0.4+	2000 01 06	704	0.3−	0.2+
1993 01 28	809	0.8+	0.6+	1999 12 10	704	0.3−	0.2+	2000 01 06	704	0.4−	0.2−
1993 01 28	809	0.3−	0.2+	1999 12 10	704	0.1−	0.4−	2000 01 06	704	0.0	0.5+
1999 12 07	704	0.1+	0.3+	2000 01 05	704	0.8+	0.3−	2000 01 06	704	0.4−	0.0
1999 12 07	704	0.0	0.2+	2000 01 05	704	0.3+	0.1+				
1999 12 07	704	0.2−	0.0	2000 01 05	704	0.1+	0.6−				

1999 XK₉₈ = 1993 MM = 1998 QF₉₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	246.38310		(2000.0)	P		Q	
<i>n</i>	0.22790411	ω	321.25119	−0.70002212		+0.68534436	
<i>a</i>	2.6544096	Ω	263.28196	−0.59452709		−0.71498181	
<i>e</i>	0.1287239	<i>i</i>	11.65783	−0.39560911		−0.13821764	
<i>P</i>	4.32	<i>H</i>	12.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1993 06 18	675	0.3+	1.0−	1998 09 19	699	0.1+	0.3+	1999 12 10	704	0.2+	0.0
1993 06 20	675	0.2+	0.3−	1998 09 19	699	0.0	0.1+	1999 12 10	704	0.3−	0.4+
1998 06 30	704	1.0−	0.8−	1998 10 21	699	0.1+	0.7+	1999 12 10	704	0.2+	0.3+
1998 06 30	704	1.7+	1.8+	1998 10 21	699	1.4+	0.8−	1999 12 16	118	0.2+	0.5+
1998 06 30	704	0.5+	0.8+	1998 10 21	699	0.1+	0.6−	1999 12 17	118	0.1+	0.3+
1998 06 30	704	0.9−	0.5−	1998 12 09	704	1.1+	1.2+	1999 12 17	118	0.2+	0.4+
1998 08 23	699	0.2−	0.4−	1998 12 09	704	1.2+	0.7+	1999 12 27	691	0.0	0.2−
1998 08 23	699	0.7−	0.5−	1998 12 09	704	(2.6+	1.4+)	1999 12 27	691	0.2−	0.6−
1998 08 23	699	0.3−	0.2−	1998 12 09	704	0.1−	0.5−	1999 12 27	691	0.0	0.2−
1998 08 24	704	0.2+	0.9−	1999 11 03	704	0.0	0.1+	2000 01 05	704	0.1−	0.1−
1998 08 24	704	0.2+	1.1+	1999 11 03	704	0.3+	0.1−	2000 01 05	704	0.3−	0.3−
1998 08 24	704	0.0	1.5+	1999 11 03	704	0.1−	0.1−	2000 01 05	704	0.4+	0.3−
1998 08 24	704	0.5−	0.6+	1999 11 03	704	0.2−	0.6+	2000 01 05	704	0.4−	0.7−
1998 08 24	704	0.1−	1.0−	1999 11 03	704	0.4−	0.0	2000 01 05	704	0.1−	0.1+
1998 08 27	704	0.4−	0.6−	1999 12 07	704	1.0+	1.2−	2000 01 06	704	0.3−	0.2−
1998 08 27	704	1.0−	0.3−	1999 12 07	704	0.4+	0.1+	2000 01 06	704	0.6−	0.2−
1998 08 27	704	0.0	0.8−	1999 12 07	704	0.3+	0.1−	2000 01 06	704	0.3−	0.4−
1998 08 27	704	0.2+	0.4−	1999 12 07	704	0.2+	0.1+	2000 01 06	704	0.3−	0.1−
1998 08 27	704	0.1+	0.3+	1999 12 10	704	0.2−	0.0	2000 01 06	704	0.0	0.1+
1998 09 19	699	1.0−	0.1+	1999 12 10	704	0.2+	0.2+				

1999 XT₉₈ = 1997 MY₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	19.17346		(2000.0)	P		Q	
<i>n</i>	0.18486116	ω	0.01517	+0.16838033		−0.96400124	
<i>a</i>	3.0519138	Ω	80.29150	+0.90436035		+0.06802295	
<i>e</i>	0.0285618	<i>i</i>	12.05089	+0.39214846		+0.25704957	
<i>P</i>	5.33	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 06 29	704	0.5−	0.2−	1999 12 08	365	0.2+	0.2−	2000 01 03	704	0.4+	0.8−
1997 06 29	704	1.7+	0.4+	1999 12 08	365	0.4−	0.5+	2000 01 04	704	0.5−	0.0
1997 06 29	704	0.1−	0.3−	1999 12 10	704	1.0−	0.1−	2000 01 04	704	0.5−	0.0
1997 06 29	704	0.9−	0.4+	1999 12 10	704	(0.2+	2.2−)	2000 01 04	704	0.4−	0.3−
1997 07 02	704	0.1+	0.3−	1999 12 10	704	0.3−	0.1+	2000 01 04	704	0.1−	0.3−
1997 07 02	704	0.4−	0.3−	1999 12 10	704	0.3−	0.2−	2000 01 04	704	0.4+	0.7+
1997 07 02	704	0.1−	0.1−	1999 12 10	704	0.0	0.2−	2000 01 04	106	0.2+	0.9+

1997 07 02	704	0.3−	0.2−	1999 12 10	365	0.6+	0.1+	2000 01 04	106	0.4+	1.2+
1997 07 02	704	0.6+	0.8+	1999 12 10	365	0.2+	0.3+	2000 01 04	106	0.1+	0.8+
1999 11 03	704	0.1+	0.3−	1999 12 14	649	0.2+	0.7+	2000 01 10	704	0.4−	0.1−
1999 11 03	704	0.3+	0.5−	1999 12 14	649	1.4+	0.2+	2000 01 10	704	0.1+	0.2+
1999 11 03	704	0.4+	0.5−	1999 12 14	649	0.3−	0.7+	2000 01 10	704	0.4+	1.7−
1999 12 07	704	0.3+	1.5+	2000 01 03	704	0.0	0.4−	2000 01 10	704	0.3−	0.2+
1999 12 07	704	0.7−	0.1+	2000 01 03	704	0.2+	0.1−	2000 01 10	704	0.2−	0.0
1999 12 07	704	0.3−	0.3−	2000 01 03	704	0.1−	0.5−				
1999 12 07	704	0.3−	0.7−	2000 01 03	704	0.4+	0.9−				

1999 XV₉₈ = 1997 ET₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	273.96212		(2000.0)	P		Q	
<i>n</i>	0.27436546	ω	258.89271	−0.85021254		+0.52568989	
<i>a</i>	2.3455774	Ω	312.81501	−0.46682317		−0.77751698	
<i>e</i>	0.2017012	<i>i</i>	2.19419	−0.24334083		−0.34513400	
<i>P</i>	3.59	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 05	809	0.4−	1.7−	1999 12 07	704	0.1+	0.1−	2000 01 03	704	1.2+	0.4−
1997 03 05	809	0.6−	1.6−	1999 12 07	704	0.2−	0.3+	2000 01 03	704	1.0+	0.3−
1997 03 05	809	(1.1−	2.4−)	1999 12 10	704	0.1−	0.3+	2000 01 04	704	0.1+	0.8+
1997 03 06	809	(1.2+	2.1+)	1999 12 10	704	0.5+	0.2−	2000 01 04	704	0.2+	0.4+
1997 03 06	809	0.8+	1.8+	1999 12 10	704	0.5+	0.3+	2000 01 04	704	0.2+	0.6+
1997 03 06	809	0.1+	1.5+	2000 01 03	704	0.1+	0.2+	2000 01 04	704	0.9−	0.3+
1999 12 07	704	0.4−	0.7−	2000 01 03	704	0.5−	0.5−	2000 01 04	704	0.1+	0.5+
1999 12 07	704	0.3−	0.3−	2000 01 03	704	1.7−	1.3−				

1999 XW₉₈ = 1998 SD₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	329.86871		(2000.0)	P		Q	
<i>n</i>	0.21797218	ω	236.98815	−0.75288314		−0.62321167	
<i>a</i>	2.7344417	Ω	263.54522	+0.65222518		−0.66343139	
<i>e</i>	0.1012422	<i>i</i>	12.29523	+0.08814359		−0.41408454	
<i>P</i>	4.52	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 27	704	0.5+	0.7−	1999 11 16	704	0.2−	0.3+	2000 01 04	106	0.1−	0.9+
1998 08 27	704	0.4−	1.7+	1999 11 16	704	0.2−	0.3−	2000 01 04	106	0.4−	0.4+
1998 08 27	704	1.1−	0.3+	1999 11 16	704	0.4+	0.3−	2000 01 04	106	0.4−	0.6+
1998 08 27	704	(1.8+	2.4−)	1999 11 16	704	0.1−	0.2−	2000 01 05	704	0.2+	0.2−
1998 08 27	704	(2.5−	2.5+)	1999 11 16	704	0.2−	0.1−	2000 01 05	704	0.1+	0.3−
1998 09 19	704	(2.7+	0.6+)	1999 12 07	704	0.2−	0.0	2000 01 05	704	0.2−	0.3−
1998 09 19	704	1.0−	0.8−	1999 12 07	704	0.4+	0.1−	2000 01 05	704	0.3−	0.8−
1998 09 19	704	(0.3−	2.4−)	1999 12 07	704	0.5−	0.0	2000 01 05	704	0.1−	0.8−
1998 09 19	704	0.5+	0.6+	1999 12 07	704	0.2−	0.6+	2000 01 06	704	0.5+	0.2+
1998 09 19	704	1.1+	0.8−	1999 12 10	704	0.0	0.0	2000 01 06	704	0.5+	0.3+
1998 09 23	704	1.1−	0.6+	1999 12 10	704	0.8+	0.5−	2000 01 06	704	0.1−	0.0
1998 09 23	704	0.5+	0.7+	1999 12 10	704	0.0	0.3+	2000 01 06	704	0.2+	0.1−
1998 09 23	704	1.1+	0.4−	1999 12 10	704	0.4+	0.2+	2000 01 06	704	0.4−	0.1−
1998 09 23	704	0.1−	1.2−	1999 12 10	704	0.1−	0.2+				

1999 XC₉₉ = 1980 RH₁ = 1994 NW₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	307.24283		(2000.0)	P		Q	
n	0.27287158	ω	239.25497	−0.98714996		−0.14450515	
a	2.3541304	Ω	292.36183	+0.15979653		−0.89219330	
e	0.1099020	i	4.23006	+0.00018430		−0.42791281	
P	3.61	H	14.5	G	0.15	U	3

1994 07 12	809	0.5−	1.1−	1999 12 07	704	0.6−	1.5+	2000 01 03	704	0.6+	0.0
1994 07 12	809	0.2+	1.5−	1999 12 07	704	1.3−	0.8+	2000 01 04	704	0.3+	0.2−
1994 07 12	809	1.6−	0.9−	1999 12 10	704	0.3−	0.0	2000 01 04	704	0.9+	0.1+
1999 11 14	704	0.8+	0.4−	1999 12 10	704	0.1−	1.2−	2000 01 04	704	0.2+	0.2+
1999 11 14	704	0.5−	0.1−	1999 12 10	704	0.3+	0.9−	2000 01 04	704	0.1−	0.3+

1999 XH₉₉ = 1978 EG₂ = 1978 GU = 1998 RX₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	221.11365		(2000.0)		P		Q
n	0.25961361	ω	324.74887		−0.31941809		+0.94716298
a	2.4336106	Ω	286.60783		−0.86226594		−0.30330438
e	0.1414795	i	1.74792		−0.39302611		−0.10434918
P	3.80	H	13.9	G	0.15	U	4

Residuals in seconds of arc

1978 03 05	095	0.3−	0.7−	1999 12 07	704	0.3−	0.0	2000 01 04	704	0.0	0.0
1978 04 07	095	0.0	0.0	1999 12 07	704	0.2−	0.3−	2000 01 04	704	0.1−	0.1+
1998 09 14	704	0.1−	0.8−	1999 12 07	704	(1.2+ 2.6−)		2000 01 04	704	0.3+	0.7+
1998 09 14	704	0.5−	0.4−	1999 12 10	704	0.7−	0.2+	2000 01 04	704	0.1+	0.1+
1998 09 14	704	0.6+	0.7−	1999 12 10	704	1.1−	0.4+	2000 01 07	691	0.5−	0.3−
1998 09 14	704	0.2+	0.3−	1999 12 10	704	0.0	0.6+	2000 01 07	691	0.2−	0.3−
1998 09 18	704	0.5−	0.5−	2000 01 03	704	0.1+	0.4−	2000 01 07	691	0.2+	0.7−
1998 09 18	704	0.3+	0.1+	2000 01 03	704	0.2+	0.1−	2000 01 10	691	0.4+	0.2−
1998 09 18	704	0.9+	0.4+	2000 01 03	704	0.4+	0.4+	2000 01 10	691	0.5+	0.2−
1998 09 18	704	0.0	0.8+	2000 01 03	704	0.1−	0.6−	2000 01 10	691	0.5+	0.1−
1998 09 18	704	0.5−	0.7+	2000 01 03	704	0.7+	0.1−				
1999 12 07	704	0.1−	0.5+	2000 01 04	704	0.0	0.3+				

1999 XL₉₉ = 1988 VP₁₃ = 1991 ND₃ = 1997 EP₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	105.17576		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$
n	0.27693650	ω	60.93297		+0.97845961		+0.20381078
a	2.3310375	Ω	287.29108		−0.19934071		+0.89144836
e	0.1318816	i	1.97057		−0.05366625		+0.40469864
P	3.56	H	14.4	G	0.15	U	1

Residuals in seconds of arc

1988 11 04	327	1.6−	0.3+	1999 11 16	704	0.1−	0.3−	2000 01 03	704	0.4+	0.2−
1988 11 04	327	0.9+	1.8+	1999 11 16	704	0.1+	0.5+	2000 01 03	704	1.1+	0.5+
1991 07 04	809	1.1−	0.7+	1999 11 17	704	1.6+	0.0	2000 01 04	704	0.4−	0.4−
1991 07 04	809	0.7−	0.6+	1999 11 17	704	0.3−	0.8+	2000 01 04	704	0.0	0.7−
1991 07 04	809	0.6−	0.8+	1999 11 17	704	0.4+	0.5−	2000 01 04	704	0.3+	0.3−
1991 07 05	809	0.5+	0.4−	1999 11 17	704	0.2−	0.3+	2000 01 04	704	0.4+	0.7−
1991 07 05	809	0.6+	0.2−	1999 12 07	704	0.3−	0.0	2000 01 05	106	0.5−	0.2−
1991 07 05	809	1.0+	0.1+	1999 12 07	704	0.6−	0.3+	2000 01 05	106	0.2+	0.1+
1997 03 10	704	0.6−	0.5+	1999 12 07	704	0.4−	0.2−	2000 01 05	106	0.1+	0.3+
1997 03 10	704	0.3+	0.4+	1999 12 07	704	0.5−	0.6−	2000 01 10	691	0.1−	1.0−
1997 03 11	704	0.0	0.3+	1999 12 10	704	1.4−	0.1−	2000 01 10	691	0.3+	0.1−
1997 03 11	704	0.2+	0.9+	1999 12 10	704	0.7−	0.0	2000 01 10	691	0.1+	0.3−
1997 03 12	704	0.3+	0.8+	1999 12 10	704	0.9−	0.4+	2000 01 15	691	0.1+	0.0
1997 03 12	704	1.0+	0.0	2000 01 03	704	0.2+	0.3+	2000 01 15	691	0.0	0.0
1999 11 16	704	0.7+	0.2+	2000 01 03	704	0.4+	0.0	2000 01 15	691	0.1+	0.0
1999 11 16	704	0.1−	0.5+	2000 01 03	704	0.4+	0.6+				

1999 XN₉₉ = 1997 AT₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	65.81140		(2000.0)		P		Q
n	0.30581615	ω	106.66573		+0.89341236		−0.44655760
a	2.1818712	Ω	279.87969		+0.39089063		+0.82649081
e	0.1920754	i	2.85073		+0.22140206		+0.34278165
P	3.22	H	15.4	G	0.15	U	4

Residuals in seconds of arc

1997 01 10	691	0.2−	0.2+	1999 12 07	704	0.7−	0.5+	2000 01 03	704	0.1+	0.2−
1997 01 10	691	0.2−	0.1+	1999 12 07	704	0.3−	0.5+	2000 01 03	704	0.2+	0.4−

1997 01 10	691	0.1−	0.1+	1999 12 07	704	0.3−	0.1+	2000 01 03	704	0.6+	0.4−
1997 01 17	691	0.5+	0.1+	1999 12 07	704	0.0	0.2+	2000 01 04	704	0.2+	0.3+
1997 01 17	691	0.2−	0.1+	1999 12 10	704	1.2−	0.7−	2000 01 04	704	0.2+	0.2+
1999 11 03	704	0.5−	0.0	1999 12 10	704	0.3−	0.1−	2000 01 04	704	0.3+	0.3−
1999 11 03	704	0.1−	0.3+	1999 12 10	704	0.4−	0.2−	2000 01 04	704	0.4−	0.4−
1999 11 03	704	0.5+	0.5+	1999 12 10	704	0.1−	0.2+	2000 01 04	704	0.5+	0.1−
1999 11 03	704	0.1+	0.2−	2000 01 03	704	0.1+	0.1−				
1999 11 03	704	1.0+	0.0	2000 01 03	704	0.8+	0.0				

1999 XR₉₉ = 1995 XA₂ = 1998 QG₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	245.82950		(2000.0)		P		Q
n	0.29838335	ω	305.10894		−0.71468043		+0.69677145
a	2.2179563	Ω	279.14681		−0.61988641		−0.67146488
e	0.1885443	i	3.55203		−0.32399495		−0.25227854
P	3.30	H	14.4	G	0.15	U	4

Residuals in seconds of arc

1995 12 14	327	1.0+	0.3+	1998 08 23	704	1.0+	0.8+	1999 12 07	704	1.1−	0.3+
1995 12 14	327	0.7+	0.4−	1998 08 23	704	0.7+	1.8−	1999 12 10	704	1.2−	0.7+
1995 12 14	327	0.1−	0.2−	1999 11 03	704	0.3+	0.5+	1999 12 10	704	0.0	0.5+
1995 12 15	327	0.6−	0.7−	1999 11 03	704	0.0	0.0	1999 12 10	704	0.9−	0.8−
1995 12 15	327	0.5−	0.0	1999 11 03	704	0.9+	0.9+	2000 01 03	704	0.7+	0.3+
1995 12 15	327	0.3+	0.6−	1999 11 03	704	0.2−	1.0+	2000 01 03	704	0.0	0.5−
1998 08 17	704	0.2+	0.0	1999 11 03	704	0.9−	1.0+	2000 01 03	704	(2.3+ 0.8+)	
1998 08 17	704	0.8−	0.2+	1999 11 14	704	0.6+	0.5−	2000 01 03	704	0.0	0.6−
1998 08 17	704	0.3−	0.4+	1999 11 14	704	0.9+	0.5−	2000 01 04	704	0.8+	1.4−
1998 08 17	704	0.8−	0.2+	1999 11 14	704	0.3+	0.8−	2000 01 04	704	0.2+	0.5+
1998 08 17	704	0.8−	0.0	1999 11 14	704	0.2+	1.1−	2000 01 04	704	0.1+	0.5−
1998 08 23	704	0.0	0.2+	1999 11 14	704	(1.9+ 2.6−)		2000 01 04	704	0.4−	1.0+
1998 08 23	704	0.3−	0.3+	1999 12 07	704	0.0	0.7+				
1998 08 23	704	1.0+	0.3+	1999 12 07	704	0.1+	0.5+				

1999 XU₉₉ = 1992 YL₁ = 1994 LT₈

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Williams

M	309.05601		(2000.0)		P		Q	
n	0.27954340	ω	95.25374		−0.95665945		−0.28337774	
a	2.3165227	Ω	68.29763		+0.23031063		−0.87722240	
e	0.0645152	i	4.14023		+0.17821256		−0.38752795	
P	3.53	H	14.9		G	0.15	U	1

Residuals in seconds of arc

1992 12 18	010	0.3+	0.5+	1998 08 17	704	0.6−	1.0+	1999 12 15	703	0.6+	0.2+
1992 12 19	010	0.5−	0.6+	1998 08 17	704	0.9−	1.4−	2000 01 03	704	0.2+	0.2−
1992 12 19	010	0.2−	1.2+	1998 08 17	704	0.2−	0.1+	2000 01 03	704	0.0	0.2+
1992 12 19	010	0.1−	1.3+	1998 08 17	704	2.0+	1.6+	2000 01 03	704	0.4−	0.6−
1992 12 19	010	(0.2− 2.1+)		1999 12 07	704	0.7−	0.5+	2000 01 03	704	0.1+	0.2−
1992 12 20	010	0.4+	1.5+	1999 12 07	704	0.4−	0.2−	2000 01 03	704	0.1+	0.1−
1994 06 08	809	0.2+	1.5+	1999 12 07	704	0.1−	0.8−	2000 01 04	704	1.0+	0.3−
1994 06 08	809	1.2+	0.2+	1999 12 10	704	0.0	0.1−	2000 01 04	704	0.2−	0.2+
1994 06 08	809	1.3+	1.2+	1999 12 10	704	0.6+	0.9+	2000 01 04	704	0.2−	0.1−
1994 06 09	809	0.1−	0.8+	1999 12 10	704	0.2+	0.2+	2000 01 04	704	0.1−	0.0
1994 06 09	809	1.4−	0.9+	1999 12 15	703	0.2−	0.2+	2000 01 04	704	0.1+	0.5−
1994 06 09	809	0.5−	0.2−	1999 12 15	703	0.3−	0.3+				
1998 08 17	704	0.6−	0.1+	1999 12 15	703	0.3−	0.6+				

1999 XV₉₉ = 1993 FG₅₃ = 1998 MS₃₇

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Williams

<i>M</i>	126.21905		(2000.0)		P

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Residuals in seconds of arc

1993 03 17	809	0.0	0.1−	1998 08 17	704	0.6+	0.9−	1999 12 15	703	0.6−	0.5+
1993 03 18	809	(5.5−	1.4+)	1998 08 17	704	1.1+	0.2+	1999 12 15	703	0.2−	0.9+
1998 06 24	699	0.2−	0.5+	1998 08 23	704	1.8+	1.3−	1999 12 15	703	0.9+	0.8+
1998 06 24	699	0.5+	0.3+	1998 08 23	704	0.6+	1.7+	2000 01 03	704	0.4+	0.2+
1998 06 24	699	0.0	0.2−	1998 08 23	704	0.9−	0.4+	2000 01 03	704	0.0	0.2−
1998 07 02	699	0.1+	0.1+	1998 08 23	704	0.2−	1.1−	2000 01 03	704	1.7−	1.6−
1998 07 02	699	0.3+	0.8+	1998 08 23	704	4.4−	1.9−	2000 01 03	704	1.2−	0.4−
1998 07 02	699	0.7−	0.7−	1999 12 07	704	0.3+	0.7+	2000 01 03	704	0.2−	0.9−
1998 07 16	699	0.0	0.4+	1999 12 07	704	0.3+	0.9+	2000 01 04	704	0.3+	0.3+
1998 07 16	699	0.6−	1.4+	1999 12 07	704	0.0	0.3+	2000 01 04	704	0.2+	0.1−
1998 07 16	699	0.4+	0.6+	1999 12 10	704	0.7+	1.1+	2000 01 04	704	1.0−	0.7−
1998 08 17	704	1.0+	0.4−	1999 12 10	704	0.6+	0.9+	2000 01 04	704	0.7−	2.3−
1998 08 17	704	0.3−	0.6+	1999 12 10	704	0.5+	0.8+				
1998 08 17	704	0.7+	0.4−	1999 12 15	703	1.4+	1.0−				

1999 XB₁₀₀ = 1982 BU₁₁ = 1990 MQ₁ = 1993 BK₁₄ = 1998 RF₃₁

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Williams

<i>M</i>	311.71203		(2000.0)		P		Q
<i>n</i>	0.27168280	ω	259.49647	−0.99687276	−0.04081599		
<i>a</i>	2.3609926	Ω	278.14009	+0.06486846	−0.91168957		
<i>e</i>	0.1710270	<i>i</i>	3.91952	−0.04513064	−0.40884739		
<i>P</i>	3.63	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 01 20	095	0.0	0.1−	1998 09 14	704	0.3−	0.0	1999 12 07	704	0.2+	1.1−
1990 06 25	808	(0.5−	2.6+)	1998 09 14	704	0.2−	0.9−	1999 12 10	704	0.2−	0.1+
1990 06 25	808	(4.0−	0.4−)	1998 09 14	704	0.7−	0.3−	1999 12 10	704	0.1−	0.3+
1993 01 23	809	0.1−	1.9−	1998 09 15	699	0.1+	0.7+	1999 12 10	704	0.0	0.1+
1993 01 28	809	1.3−	1.5−	1998 09 15	699	0.1+	1.5−	1999 12 10	704	0.0	0.1−
1993 01 28	809	(2.7−	1.9−)	1998 09 15	699	0.6+	0.1+	2000 01 03	704	0.3−	0.2+
1998 08 17	704	0.4−	1.0−	1998 09 18	704	0.2−	0.0	2000 01 03	704	0.2+	0.2−
1998 08 17	704	0.1−	1.1−	1998 09 18	704	1.2+	0.8+	2000 01 03	704	0.3+	1.2+
1998 08 17	704	1.4−	0.3+	1998 09 18	704	0.1+	0.4+	2000 01 03	704	0.0	0.6+
1998 08 17	704	0.3+	0.7−	1998 09 18	704	0.1−	0.8+	2000 01 04	704	0.2−	0.5+
1998 08 17	704	0.5−	1.5−	1998 09 18	704	1.0+	1.6+	2000 01 04	704	0.1+	0.3+
1998 08 30	699	0.1+	0.1−	1999 12 07	704	1.0+	0.1−	2000 01 04	704	0.2−	0.4+
1998 08 30	699	0.9+	0.2+	1999 12 07	704	0.5−	0.2−	2000 01 04	704	0.4−	0.8+
1998 08 30	699	0.6−	0.1−	1999 12 07	704	0.2+	0.5−	2000 01 04	704	0.0	1.1+
1998 09 14	704	1.2+	0.1−	1999 12 07	704	0.2+	1.2−				

1999 XE₁₀₀ = 1997 MR₁₁

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Williams

<i>M</i>	25.40294		(2000.0)		P		Q
<i>n</i>	0.17160536	ω	350.54224	+0.30076727	−0.94204936		
<i>a</i>	3.2071220	Ω	81.84330	+0.88451988	+0.21728244		
<i>e</i>	0.1848484	<i>i</i>	8.63382	+0.35660009	+0.25559997		
<i>P</i>	5.74	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 06 29	704	0.0	0.6+	1997 07 02	704	(2.3−	0.5+)	1999 12 07	704	1.0−	0.3+
1997 06 29	704	0.3+	1.1−	1998 09 22	699	0.6−	0.7−	1999 12 10	704	0.3+	0.2+
1997 06 29	704	0.4+	0.5+	1998 09 22	699	0.8−	0.5+	1999 12 10	704	0.6+	0.0
1997 06 29	704	0.4−	1.4+	1998 09 22	699	0.2+	0.1+	1999 12 10	704	0.1−	0.2+
1997 07 02	704	0.7−	0.4+	1998 11 11	699	0.6+	0.8−	1999 12 10	704	0.2+	0.2−
1997 07 02	704	0.3+	1.0+	1998 11 11	699	0.0	0.8+	1999 12 10	704	0.2+	0.2−
1997 07 02	704	0.4+	0.3−	1998 11 11	699	0.8+	0.0	2000 01 03	704	0.5−	0.0
1997 07 02	704	0.0	1.7−	1999 11 03	704	0.1+	0.3−	2000 01 03	704	0.4−	0.2+
1997 07 02	704	0.7−	0.2+	1999 11 03	704	0.8+	0.3−	2000 01 03	704	0.7−	0.3−
1997 07 02	704	0.3+	0.3+	1999 11 03	704	0.1+	1.0−	2000 01 03	704	0.5−	0.4−
1997 07 02	704	0.6−	0.9−	1999 11 03	704	1.1+	0.2−	2000 01 03	704	0.7−	0.0
1997 07 02	704	0.4−	0.5+	1999 11 03	704	1.2+	1.1+	2000 01 04	704	0.6−	0.1+
1997 07 02	704	0.3+	0.6+	1999 11 16	704	0.9+	0.6−	2000 01 04	704	0.5−	1.2+
1997 07 02	704	0.1+	0.1−	1999 11 16	704	1.3+	0.6−	2000 01 04	704	1.1−	0.1+
1997 07 02	704	1.3+	0.2−	1999 11 16	704	0.8+	0.6+	2000 01 04	704	0.9−	0.2+
1997 07 02	704	0.4+	1.4−	1999 11 16	704	0.0	0.7+	2000 01 04	704	0.9−	0.1+

1997 07 02	704	0.4−	0.9+	1999 11 16	704	0.1+	0.6+	2000 01 05	106	0.4+	0.4+
1997 07 02	704	0.6+	0.1−	1999 12 07	704	0.1+	0.2−	2000 01 05	106	0.1+	0.4+
1997 07 02	704	0.8−	0.7+	1999 12 07	704	0.2−	0.3+	2000 01 05	106	0.2−	0.4+
1997 07 02	704	0.6−	1.1+	1999 12 07	704	0.4+	0.6+				
1997 07 02	704	0.6+	1.0+	1999 12 07	704	0.3+	0.8−				

1999 XH₁₀₀ = 1988 GM

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Williams

<i>M</i>	227.16086		(2000.0)		P		Q
<i>n</i>	0.22646561	ω	168.81409	−0.32554788	+0.91963718		
<i>a</i>	2.6656382	Ω	81.89659	−0.88373031	−0.21330278		
<i>e</i>	0.1655486	<i>i</i>	12.82400	−0.33621321	−0.32980205		
<i>P</i>	4.35	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1988 04 07	046	1.5+	1.4−	1999 12 07	704	0.1+	0.6+	2000 01 03	704	0.9−	0.1−
1988 04 07	046	0.5−	0.6−	1999 12 07	704	0.5+	0.1+	2000 01 03	704	0.3+	0.2−
1988 04 10	046	0.7−	0.6−	1999 12 07	704	0.3+	0.1+	2000 01 03	704	0.5−	0.3−
1988 04 10	046	1.4−	0.9−	1999 12 07	704	0.2+	0.2+	2000 01 03	704	0.3−	0.2+
1988 04 11	046	0.9+	1.1+	1999 12 10	704	0.6+	0.1+	2000 01 03	704	0.7−	0.4−
1988 04 11	046	0.2+	2.3+	1999 12 10	704	0.2+	0.0	2000 01 04	704	0.3−	0.0
1999 11 03	704	0.1−	1.0−	1999 12 10	704	0.2−	0.4+	2000 01 04	704	0.0	0.2+
1999 11 03	704	0.7+	0.8−	1999 12 10	704	0.4+	0.3+	2000 01 04	704	0.5−	0.0
1999 11 03	704	0.6+	0.2−	1999 12 10	704	0.4+	0.2+	2000 01 04	704	0.6−	0.2+
1999 11 03	704	0.5+	0.1+	1999 12 15	704	0.4+	0.0	2000 01 04	704	0.4−	0.1+
1999 11 03	704	0.2−	1.3+	1999 12 15	704	0.1+	0.3−				
1999 12 07	704	0.2−	0.0	1999 12 15	704	0.1+	1.3−				

1999 XK₁₀₀ = 1990 VY₁₄

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Williams

<i>M</i>	59.90280		(2000.0)		P		Q
<i>n</i>	0.22596419	ω	304.10343	+0.84996186	−0.52138654		
<i>a</i>	2.6695802	Ω	87.42989	+0.50487322	+0.76505077		
<i>e</i>	0.1788559	<i>i</i>	4.34218	+0.15055852	+0.37795951		
<i>P</i>	4.36	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 11 11	809	0.5+	0.3−	1998 07 20	566	0.3−	1.6−	1999 12 10	704	0.6−	1.7−
1990 11 11	809	0.5+	1.1−	1998 07 20	566	0.4−	1.4−	1999 12 10	704	0.3−	0.0
1990 11 11	809	0.4−	0.6−	1998 07 20	566	(1.9−	2.5−)	2000 01 03	704	0.0	0.3+
1990 11 15	095	(8.9+	2.7−)	1999 11 03	704	0.2−	0.6−	2000 01 03	704	0.2+	0.4+
1990 11 15	095	(0.4+	3.2−)	1999 11 03	704	0.4−	0.3−	2000 01 03	704	0.6−	0.5+
1990 11 23	095	(0.1+	2.3−)	1999 11 03	704	0.2+	0.1−	2000 01 03	704	0.2−	0.4+
1990 11 23	095	(0.3+	2.6−)	1999 11 03	704	0.9−	0.1+	2000 01 03	704	0.1−	0.8+
1997 04 09	809	0.5−	1.3−	1999 11 05	704	0.9−	1.4−	2000 01 04	704	0.0	0.0
1997 04 09	809	0.0	0.5−	1999 11 05	704	0.5+	0.3+	2000 01 04	704	0.2−	0.6+
1997 04 09	809	0.8−	1.1−	1999 11 05	704	1.4+	0.3+	2000 01 04	704	0.1+	0.7+
1998 06 26	704	0.1+	1.0+	1999 12 07	704	0.2+	0.0	2000 01 04	704	1.2+	0.5+
1998 06 26	704	0.5+	1.1+	1999 12 07	704	0.1+	0.3−	2000 01 04	704	(0.9−	2.3+)
1998 06 26	704	0.4+	0.3+	1999 12 07	704	0.2+	0.2−	2000 01 05	106	0.4−	0.2−
1998 06 26	704	0.2+	1.2+	1999 12 07	704	0.1+	0.2−	2000 01 05	106	0.5+	1.0+
1998 07 16	699	0.9−	0.1−	1999 12 07	704	0.1−	0.2−	2000 01 05	106	0.0	0.2+
1998 07 16	699	0.2−	0.4+	1999 12 10	704	0.3−	0.0				
1998 07 16	699	0.5+	0.2+	1999 12 10	704	0.1+	0.0				

Residuals in seconds of arc

1995 11 23	691	0.2+	0.4-	1999 12 07	704	0.5+	0.4-	1999 12 15	704	0.3-	0.9-
1995 11 23	691	0.1+	0.6-	1999 12 07	704	0.7+	1.6+	2000 01 03	704	0.5-	0.2-
1995 11 23	691	0.0	0.7-	1999 12 07	704	0.5-	1.2+	2000 01 03	704	0.6+	0.8-
1995 11 28	691	0.5+	1.3-	1999 12 07	704	0.5-	0.8+	2000 01 03	704	0.1+	0.3-
1995 11 28	691	0.6+	0.3-	1999 12 10	704	0.9-	0.1-	2000 01 03	704	0.2-	0.0
1995 11 28	691	0.5+	0.9-	1999 12 10	704	0.1-	0.2+	2000 01 03	704	0.2+	0.8-
1997 04 01	809	0.4-	1.4-	1999 12 10	704	0.2-	0.1+	2000 01 04	704	0.0	0.0
1997 04 01	809	0.8-	1.9-	1999 12 10	704	0.0	0.0	2000 01 04	704	0.0	0.2-
1997 04 01	809	0.7-	1.2-	1999 12 10	704	0.1+	0.2-	2000 01 04	704	0.3+	0.0
1998 08 17	704	0.2+	2.0+	1999 12 15	704	0.1-	0.2+	2000 01 04	704	0.2+	0.3+
1998 08 17	704	1.4+	0.8-	1999 12 15	704	0.1+	0.2+	2000 01 04	704	0.6+	0.1+
1998 08 17	704	1.1+	1.9-	1999 12 15	704	0.3-	0.4-				
1998 08 17	704	1.7-	1.6-	1999 12 15	704	0.1-	0.4-				

1999 XL₁₀₁ = 1995 CM₅ = 1998 QA₅₃

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				Williams			
<i>M</i>	73.46475		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.18436079	ω	92.76864	+0.85470209	-0.50276619		
<i>a</i>	3.0574334	Ω	297.44485	+0.39931993	+0.79586455		
<i>e</i>	0.1053028	<i>i</i>	8.37566	+0.33170459	+0.33738075		
<i>P</i>	5.35	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 02 01	691	0.0	0.1+	1998 08 27	704	0.0	0.5-	1999 12 10	704	0.5-	0.1+
1995 02 01	691	0.1+	0.1+	1998 08 27	699	1.2-	0.4+	1999 12 10	704	0.4+	0.3+
1995 02 01	691	0.2+	0.1+	1998 08 27	704	1.1-	0.3-	2000 01 03	704	0.1+	0.5-
1995 02 07	691	0.4+	0.8+	1999 12 03	699	0.6-	0.9+	2000 01 03	704	0.5+	0.2+
1995 02 07	691	0.1-	0.2+	1999 12 03	699	0.5+	0.3+	2000 01 03	704	1.4-	0.0
1995 02 07	691	0.1-	0.1+	1999 12 03	699	0.7+	0.4+	2000 01 03	704	0.2+	0.8-
1998 08 20	699	0.6+	0.4+	1999 12 07	704	0.4+	0.6-	2000 01 03	704	0.4-	1.5-
1998 08 20	699	0.7+	0.5+	1999 12 07	704	0.3+	0.8+	2000 01 04	704	0.2-	0.0
1998 08 20	699	0.2+	0.8+	1999 12 07	704	0.8+	0.3-	2000 01 04	704	0.1+	0.1-
1998 08 27	704	1.0+	0.7-	1999 12 07	704	0.1-	0.0	2000 01 04	704	0.0	0.2-
1998 08 27	699	0.1-	0.4+	1999 12 07	704	0.6-	0.0	2000 01 04	704	0.1+	0.3-
1998 08 27	704	0.3-	0.4-	1999 12 10	704	0.1-	0.1-	2000 01 04	704	0.1+	0.3-
1998 08 27	704	0.6+	0.7-	1999 12 10	704	0.3-	0.3+				
1998 08 27	699	0.6-	0.9+	1999 12 10	704	0.2-	0.3+				

1999 XO₁₀₁ = 1985 YX = 1994 XP₃ = 1998 QY₁₀₃

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				Williams			
<i>M</i>	48.03531		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.21619762	ω	339.90786	+0.38714573	-0.91544577		
<i>a</i>	2.7493843	Ω	87.18560	+0.86025966	+0.31575030		
<i>e</i>	0.0305126	<i>i</i>	6.31699	+0.33177025	+0.24952111		
<i>P</i>	4.56	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1985 12 17	010	1.0+	1.7-	1999 12 07	704	0.7+	0.0	2000 01 02	159	0.5-	0.1-
1985 12 17	010	0.1+	2.2-	1999 12 10	704	0.3-	0.1+	2000 01 02	159	0.0	0.5-
1994 12 02	691	0.6-	0.5+	1999 12 10	704	0.0	0.5+	2000 01 03	704	0.2+	0.9-
1994 12 02	691	0.6-	0.8+	1999 12 10	704	0.7-	0.3-	2000 01 03	704	0.1+	0.5+
1994 12 02	691	0.4-	0.6+	1999 12 10	704	0.5-	0.0	2000 01 03	704	0.8+	0.1-
1994 12 03	691	0.2+	0.9+	1999 12 10	704	0.2-	0.1-	2000 01 03	704	0.7+	0.2+
1994 12 03	691	0.1-	0.9+	1999 12 31	159	0.1-	0.2+	2000 01 03	704	0.2+	0.0
1994 12 03	691	0.2-	0.9+	1999 12 31	159	0.3+	0.1+	2000 01 04	704	0.3-	0.8-
1998 08 26	809	0.0	1.9-	1999 12 31	159	1.5+	0.2+	2000 01 04	704	0.0	0.5-
1998 08 26	809	0.3-	1.7-	1999 12 31	159	0.1-	0.3+	2000 01 04	704	0.2+	0.5-
1998 08 26	809	1.0-	1.5-	1999 12 31	159	0.4-	0.2+	2000 01 04	704	0.9+	0.3-
1998 08 27	809	0.9+	1.7+	2000 01 02	159	0.1-	0.3+	2000 01 04	704	0.6+	0.5+
1998 08 27	809	0.4+	1.0+	2000 01 02	159	0.1-	0.4-	2000 01 07	704	1.2-	1.1-
1998 08 27	809	0.7+	1.1+	2000 01 02	159	0.2-	0.3-	2000 01 07	704	0.6-	0.7+
1999 12 07	704	0.0	1.3-	2000 01 02	159	1.1-	1.5+	2000 01 07	704	0.1+	0.9-
1999 12 07	704	0.8-	0.0	2000 01 02	159	0.2+	0.2+	2000 01 07	704	0.1+	0.6+
1999 12 07	704	0.6+	0.1+	2000 01 02	159	0.4-	0.1+				
1999 12 07	704	0.4+	0.2+	2000 01 02	159	0.1+	0.8+				

1999 XB₁₀₂ = 1984 JQ = 1991 KQ₁

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				Williams			
<i>M</i>	101.99410		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.28677511	ω	279.27184	+0.99440992	+0.01668725		
<i>a</i>	2.2774128	Ω	79.82314	+0.02799372	+0.91043180		
<i>e</i>	0.1902289	<i>i</i>	6.08064	-0.10180995	+0.41332248		
<i>P</i>	3.44	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1984 05 07	675	1.1+	0.2-	1999 12 03	699	(3.5+	1.6+)	2000 01 03	704	0.5+	0.3+
1984 05 08	675	0.1+	0.7-	1999 12 07	704	0.3-	0.7+	2000 01 03	704	0.6-	0.5+
1984 05 09	675	0.0	0.0	1999 12 07	704	1.0-	0.6-	2000 01 03	704	0.5+	0.5-
1991 05 17	809	0.2-	0.2+	1999 12 07	704	0.1+	0.4-	2000 01 03	704	0.3+	0.1-
1991 05 17	809	1.7-	0.4+	1999 12 07	704	0.5+	0.1-	2000 01 04	704	0.8+	0.3+
1991 05 17	809	0.9-	0.3-	1999 12 07	704	0.3-	0.0	2000 01 04	704	0.1+	0.6+
1998 06 24	704	1.1-	0.5-	1999 12 10	704	0.5-	0.2-	2000 01 04	704	0.0	0.6+
1998 06 24	704	1.7+	0.6-	1999 12 10	704	0.2-	0.4-	2000 01 04	704	0.0	0.2+
1998 06 24	704	1.0+	0.9+	1999 12 10	704	0.4-	0.3-	2000 01 04	704	0.4+	0.2+
1998 06 24	704	0.3-	0.5+	1999 12 10	704	1.0-	0.6-	2000 01 05	106	0.4-	0.0
1999 11 16	704	0.0	1.7-	1999 12 10	704	0.3-	0.5-	2000 01 05	106	0.0	0.1+
1999 11 16	704	0.4-	0.2+	1999 12 15	704	0.2+	0.3+	2000 01 05	106	0.2+	0.7+
1999 11 16	704	1.3+	0.1+	1999 12 15	704	0.8+	0.0	2000 01 06	106	0.1-	0.0
1999 11 16	704	0.1-	0.3+	1999 12 15	704	0.7-	0.8-	2000 01 06	106	0.6+	0.1-
1999 12 03	699	(2.9-	1.8+)	1999 12 15	704	0.8-	0.4+	2000 01 06	106	0.2-	0.4+
1999 12 03	699	(0.7-	2.3+)	1999 12 15	704	0.7+	0.1-				

1999 XA₁₀₃ = 1998 SN₁₁₁ = 1998 SV₂₁Id. G. V. Williams (d, *MPC* 33385; unpublished)

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				Williams			
<i>M</i>	4.82637		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.17331280	ω	85.68420	-0.37567048	-0.92669422		
<i>a</i>	3.1860233	Ω	26.38915	+0.84066777	-0.34550557		
<i>e</i>	0.1181159	<i>i</i>	1.34912	+0.39006332	-0.14786384		
<i>P</i>	5.69	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 17	327	0.8+	0.0	1998 10 13	120	1.2+	0.3+	2000 01 04	704	1.3+	1.0+
1998 09 17	327	0.4+	1.1-	1998 10 13	120	0.1+	0.4+	2000 01 06	704	(2.1+	1.7+)
1998 09 17	327	0.4-	0.7-	1999 12 07	704	0.5-	1.8+	2000 01 06	704	0.1-	0.0
1998 09 18	120	1.4+	1.4-	1999 12 07	704	0.7+	0.3-	2000 01 06	704	0.0	0.6-
1998 09 18	120	0.5+	0.6+	1999 12 07	704	0.1-	0.2+	2000 01 06	704	0.4-	0.2-
1998 09 26	704	1.2-	0.4-	1999 12 07	704	0.5-	0.3+	2000 01 06	120	0.3+	0.1+
1998 09 26	704	0.3-	0.0	1999 12 10	704	0.1+	0.1+	2000 01 06	120	0.3+	0.0
1998 09 26	704	1.1+	1.3+	1999 12 10	704	0.0	0.6-	2000 01 08	704	0.1+	0.4-
1998 09 26	704	0.2+	0.8+	1999 12 10	704	0.0	0.1-	2000 01 08	704	0.1+	0.4-
1998 09 26	704	0.8-	0.3+	2000 01 03	704	0.7-	0.1+	2000 01 08	704	0.3+	0.3-
1998 09 27	704	0.1-	0.1-	2000 01 03	704	0.1-	0.1-	2000 01 08	704	0.5+	1.4+
1998 09 27	704	0.7-	0.2-	2000 01 03	704	0.7-	1.0-	2000 01 08	704	0.0	0.3-
1998 09 27	704	(3.1-	0.9-)	2000 01 03	704	0.2-	0.2-	2000 01 10	120	1.1+	0.5-
1998 09 27	704	(2.3-	1.2-)	2000 01 03	704	0.4-	0.4-	2000 01 10	120	0.2-	0.1+
1998 10 13	691	0.7-	0.0	2000 01 04	704	0.0	0.3+	2000 01 11	120	1.2-	0.0
1998 10 13	691	0.7-	0.1-	2000 01 04	704	0.2-	0.3+	2000 01 11	120	0.5+	0.2-
1998 10 13	691	0.8-	0.0	2000 01 04	704	0.1-	0.0				

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1991 08 10	675	0.0	0.9−	1998 06 26	704	0.0	0.3−	1999 12 10	704	0.3−	0.8+
1991 08 10	675	0.4−	1.5+	1998 06 26	704	0.0	0.4−	2000 01 04	704	0.2−	0.6+
1996 01 16	327	0.1−	0.3−	1998 06 26	704	0.9−	0.3−	2000 01 04	704	0.8−	0.6+
1996 01 16	327	0.6+	0.9−	1998 06 26	704	0.4−	1.5−	2000 01 04	704	(0.2−	2.6+)
1996 01 17	327	0.9−	0.6+	1999 12 07	704	0.1+	0.6+	2000 01 07	704	0.4+	0.7−
1996 01 17	327	0.3+	0.5+	1999 12 07	704	0.6−	1.2−	2000 01 07	704	0.3+	0.2−
1996 01 17	327	0.1+	0.8+	1999 12 07	704	0.3−	0.4+	2000 01 07	704	0.8+	0.1−
1998 06 24	704	0.3+	0.1+	1999 12 10	704	0.6−	0.5−	2000 01 07	704	0.5+	0.0
1998 06 24	704	0.3+	1.0+	1999 12 10	704	0.4−	0.1−	2000 01 07	704	0.7+	0.3−

1999 XK₁₀₃ = 1998 RC₃₄

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Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22617368	<i>ω</i>	10.97485	+0.11729045		−0.98995707	
<i>a</i>	2.6679315	<i>Ω</i>	72.32535	+0.90476208		+0.07375622	
<i>e</i>	0.0799885	<i>i</i>	4.75109	+0.40944906		+0.12060274	
<i>P</i>	4.36	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.2+	0.2−	1999 12 07	704	0.1−	0.1+	2000 01 03	704	0.2−	0.2−
1998 09 14	704	0.8+	0.6−	1999 12 10	704	0.3+	0.3−	2000 01 03	704	0.1+	0.1−
1998 09 14	704	0.0	0.2−	1999 12 10	704	0.3−	0.7−	2000 01 03	704	0.1−	0.2−
1998 09 14	704	0.8+	0.2+	1999 12 10	704	0.3−	0.2+	2000 01 03	704	0.1−	0.0
1998 09 18	704	0.2−	0.9−	1999 12 10	704	0.3−	0.3−	2000 01 03	704	0.1−	0.3−
1998 09 18	704	0.6−	1.6+	1999 12 10	704	0.5−	0.1−	2000 01 04	704	0.2−	0.1−
1998 09 18	704	0.1−	0.6+	1999 12 15	704	0.1−	0.9−	2000 01 04	704	0.1+	0.1−
1998 09 18	704	0.9−	0.4−	1999 12 15	704	0.5+	0.1+	2000 01 04	704	0.1+	0.4+
1999 12 07	704	0.3+	0.3+	1999 12 15	704	0.3+	0.3+	2000 01 04	704	0.1+	0.2+
1999 12 07	704	0.4+	0.3+	1999 12 15	704	0.0	0.5+	2000 01 04	704	0.7+	0.2+
1999 12 07	704	0.2+	0.3−	1999 12 15	704	1.0−	1.0+				

1999 XL₁₀₃ = 1997 ED₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30265897	<i>ω</i>	260.67741	+0.89393875		+0.44119699	
<i>a</i>	2.1970183	<i>Ω</i>	73.10864	−0.37202960		+0.82857727	
<i>e</i>	0.1072806	<i>i</i>	4.72737	−0.24993498		+0.34468090	
<i>P</i>	3.26	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 04	704	0.9−	1.0+	1999 12 07	704	0.8+	1.1+	1999 12 31	699	0.3+	0.5+
1997 03 04	704	0.7+	0.3+	1999 12 10	704	0.3+	0.4−	1999 12 31	699	0.5−	0.8+
1997 03 06	704	(3.1+	1.0+)	1999 12 10	704	0.0	0.5+	2000 01 03	704	0.9−	1.0−
1997 03 06	704	0.1+	1.5−	1999 12 10	704	1.2−	0.6−	2000 01 03	704	0.5−	1.1−
1998 06 24	704	1.3+	1.3+	1999 12 10	704	0.7+	0.7−	2000 01 03	704	0.8−	0.2+
1998 06 24	704	0.5−	0.1−	1999 12 10	704	0.5+	0.5−	2000 01 03	704	0.2−	0.1+
1998 06 24	704	0.8−	0.5−	1999 12 15	704	0.4−	0.1+	2000 01 04	704	0.2+	0.6+
1998 06 24	704	(2.3−	2.8−)	1999 12 15	704	0.9−	0.2+	2000 01 04	704	0.5+	0.5+
1999 12 07	704	1.6+	0.6−	1999 12 15	704	0.5−	0.1−	2000 01 04	704	0.4+	0.3+
1999 12 07	704	0.6−	0.4+	1999 12 15	704	0.3−	0.1+	2000 01 04	704	0.1+	0.2−
1999 12 07	704	0.5+	0.0	1999 12 31	699	0.0	0.1+	2000 01 04	704	1.0+	0.5+

1999 XW₁₀₄ = 1992 WP₂

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29013299	<i>ω</i>	31.92479	−0.03428558		−0.99616706	
<i>a</i>	2.2598068	<i>Ω</i>	60.15343	+0.89632167		−0.06626569	
<i>e</i>	0.1460844	<i>i</i>	5.32342	+0.44207688		+0.05709688	
<i>P</i>	3.40	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1992 11 16	400	0.7+	1.0−	1999 12 15	704	0.2+	0.1+	2000 01 02	704	0.3+	0.5−
1992 11 16	400	(3.2+	1.2+)	1999 12 15	704	1.1+	0.3+	2000 01 02	704	0.4+	0.0
1992 11 18	399	(2.7−	0.3+)	1999 12 15	704	0.7+	0.0	2000 01 02	704	0.1−	0.8+

1992 11 18	399	0.0	0.8−	1999 12 15	704	0.3+	0.3−	2000 01 02	704	0.4+	0.7+
1992 11 21	399	0.3+	0.7+	1999 12 15	704	0.2+	0.6−	2000 01 04	704	0.3−	0.2−
1992 11 21	399	0.9−	0.7+	1999 12 19	411	0.2+	0.2−	2000 01 04	704	0.1−	0.2−
1999 12 10	411	0.5+	0.2−	1999 12 19	411	0.3+	0.3+	2000 01 04	704	0.1−	0.6−
1999 12 10	411	0.6−	1.3+	1999 12 27	411	0.6−	0.5+	2000 01 04	704	0.0	0.6−
1999 12 11	411	1.1−	0.8+	1999 12 27	411	0.3−	0.2−	2000 01 04	704	0.2+	0.7−
1999 12 11	411	1.3−	0.7+	2000 01 02	704	0.1−	0.6−				

1999 XX₁₀₄ = 1979 MU₃ = 1979 OW₁ = 1993 FP₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26482998	<i>ω</i>	244.48995	−0.68275615		−0.73022581	
<i>a</i>	2.4015481	<i>Ω</i>	248.59280	+0.67954961		−0.62218023	
<i>e</i>	0.1052549	<i>i</i>	1.52551	+0.26843318		−0.28224464	
<i>P</i>	3.72	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1979 06 25	413	0.4+	0.8+	1998 08 17	704	1.0+	0.3+	1999 12 15	691	0.1−	0.1−
1979 06 29	413	0.2+	0.1−	1999 11 14	703	0.1+	0.9+	1999 12 15	691	0.0	0.1−
1979 07 24	675	0.8−	0.5+	1999 11 14	703	0.2+	0.1−	1999 12 15	691	0.1+	0.3+
1979 07 25	675(30.3+	25.7+)		1999 11 14	703	0.2+	0.7−	1999 12 19	411	0.6+	0.5−
1993 03 21	809	(4.2−	0.1−)	1999 11 14	703	0.5−	1.1+	1999 12 19	411	0.5−	0.9−
1993 03 21	809	(2.6+	0.1+)	1999 12 08	691	0.3−	0.2−	2000 01 05	106	0.1+	0.6+
1993 03 22	809	1.3−	0.3−	1999 12 08	691	0.1−	0.1−	2000 01 05	106	0.0	0.4+
1993 03 26	809	0.4+	1.5−	1999 12 08	691	0.0	0.2−	2000 01 05	106	0.2−	0.8+
1998 08 17	704	0.8−	1.1−	1999 12 10	411	0.3+	0.1−	2000 01 05	704	0.8+	0.8−
1998 08 17	704	1.1−	0.4+	1999 12 10	411	0.2−	0.5−	2000 01 05	704	0.2+	0.5−
1998 08 17	704	1.3+	1.7−	1999 12 11	411	0.2−	1.3+	2000 01 05	704	0.7+	0.9−
1998 08 17	704	0.8−	1.1−	1999 12 11	411	1.3−	0.2+	2000 01 05	704	(2.6−	0.5+)

1999 XA₁₀₅ = 1998 NL

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Williams							
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18910812	<i>ω</i>	255.19114	+0.37652743		−0.92608004	
<i>a</i>	3.0060482	<i>Ω</i>	172.54977	+0.90601979		+0.36258314	
<i>e</i>	0.0827914	<i>i</i>	10.91528	+0.19327502		+0.10444723	
<i>P</i>	5.21	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 07 15	699	0.4−	0.4−	1999 11 17	703	0.3−	0.1+	2000 01 04	106	0.3−	0.2+
1998 07 15	699	0.2+	0.2−	1999 12 03	704	0.9+	0.6−	2000 01 04	106	0.0	0.4+
1998 07 15	699	0.2+	0.0	1999 12 03	704	0.1+	0.2−	2000 01 04	106	0.2−	0.5+
1998 07 16	699	0.1−	0.4+	1999 12 03	704	0.3+	0.0	2000 01 08	704	0.0	1.0−
1998 07 16	699	0.0	0.0	1999 12 03	704	0.3+	0.1−	2000 01 08	704	0.2−	0.2−
1998 07 16	699	0.2+	0.3−	1999 12 03	704	0.4−	0.3−	2000 01 08	704	0.3+	0.8−
1999 09 13	703	0.1+	0.6−	1999 12 08	699	0.6−	1.3+	2000 01 08	704	0.3−	0.0
1999 09 13	703	0.5+	0.1+	1999 12 08	699	0.1−	0.8+	2000 01 08	704	0.4−	0.1−
1999 09 13	703	0.2−	0.2+	1999 12 08	699	0.3+	0.9+	2000 01 11	704	0.8+	0.5−
1999 09 13	703	0.1−	0.9+	1999 12 09	678	0.6+	0.9−	2000 01 11	704	0.0	0.5−
1999 11 17	703	0.3−	0.3−	1999 12 09	678	0.8−	0.5+	2000 01 11	704	0.1+	0.7−
1999 11 17	703	0.4−	0.0	1999 12 11	678	0.3+	0.0	2000 01 11	704	0.1+	0.1−
1999 11 17	703	0.3−	0.0	1999 12 11	678	0.4+	0.6+				

1994 08 11	809	0.3+	0.6+	1999 11 13	699	0.2+	0.1−	2000 01 04	106	0.3−	0.5−
1994 08 11	809	0.2+	0.9+	1999 11 13	699	0.0	0.5+	2000 01 04	106	0.0	0.2−
1994 08 11	809	0.4−	0.4+	1999 12 03	704	0.2+	0.5−	2000 01 04	106	0.2−	0.0
1994 09 03	809	0.2+	1.6−	1999 12 03	704	0.1+	0.4−	2000 01 08	704	0.5+	0.7−
1994 09 03	809	0.2+	1.3−	1999 12 03	704	0.2+	0.2−	2000 01 08	704	0.1−	0.9−
1994 09 03	809	0.1−	1.3−	1999 12 03	704	0.3−	0.5−	2000 01 08	704	0.5+	1.3−
1994 09 04	809	0.6+	0.4−	1999 12 03	704	0.4−	0.0	2000 01 08	704	0.7+	0.3−
1994 09 04	809	0.0	0.2−	1999 12 08	699	1.2+	0.3+	2000 01 11	704	0.7−	0.3−
1994 09 04	809	0.0	0.2+	1999 12 08	699	0.0	0.0	2000 01 11	704	0.1+	0.3−
1999 11 01	703	1.0−	0.8+	1999 12 08	699	0.4+	0.5+	2000 01 11	704	0.2+	0.2+
1999 11 01	703	0.3−	0.6+	1999 12 09	678	1.1−	0.5−				

1999 XK₁₀₅ = 1998 QE₆₆

Id. S. Nakano

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				Williams			
<i>M</i>				(2000.0)			
<i>n</i>				<i>P</i>			
<i>a</i>				<i>Q</i>			
<i>e</i>				<i>i</i>			
<i>P</i>				<i>H</i>			
41.44977				127.30216	+0.73394983	−0.65798146	
0.18573918	<i>ω</i>			274.50836	+0.55736474	+0.72521153	
3.0422883	<i>Ω</i>			9.72856	+0.38815227	+0.20280197	
0.1190900	<i>i</i>						
5.31	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3	

Residuals in seconds of arc

1998 08 24	704	0.8+	0.1+	1999 12 08	905	0.1+	0.9−	1999 12 30	888	0.2−	1.0+
1998 08 24	704	0.4−	0.2−	1999 12 10	704	0.0	0.1+	1999 12 30	888	0.1−	0.5+
1998 08 24	704	0.4−	0.5+	1999 12 10	704	0.3−	0.1−	1999 12 30	888	0.1+	0.4+
1998 08 24	704	0.4−	0.8−	1999 12 10	704	0.3+	0.5−	2000 01 01	106	0.2+	0.2+
1998 08 27	704	0.5+	0.4+	1999 12 10	704	0.5+	1.2−	2000 01 01	106	0.2+	0.5+
1998 08 27	704	0.3+	0.5−	1999 12 10	704	0.5−	0.2+	2000 01 01	106	0.1+	0.6+
1998 08 27	704	0.2−	0.4−	1999 12 10	905	0.1+	0.3−	2000 01 03	704	0.1−	0.2+
1998 08 27	704	0.7+	0.3−	1999 12 10	905	0.3−	0.1−	2000 01 03	704	0.2+	0.0
1998 08 27	704	0.8−	1.2+	1999 12 11	385	0.1+	0.0	2000 01 03	704	0.8+	0.6−
1999 11 16	704	0.5+	0.4+	1999 12 11	385	0.4−	0.1−	2000 01 03	704	0.4+	0.4−
1999 11 16	704	0.2+	0.5+	1999 12 12	905	1.5−	0.9−	2000 01 03	704	0.4+	0.1+
1999 11 16	704	0.6+	0.2+	1999 12 12	905	0.2−	1.1−	2000 01 04	704	0.1−	0.4−
1999 11 16	704	0.4+	0.3+	1999 12 12	886	0.1+	0.2+	2000 01 04	704	0.4−	0.3+
1999 11 16	704	0.4+	0.7+	1999 12 12	886	0.9−	0.5+	2000 01 04	704	0.3−	0.3−
1999 12 05	703	0.0	0.7+	1999 12 15	704	0.1+	0.1+	2000 01 04	704	0.0	0.1+
1999 12 05	703	0.6−	0.4+	1999 12 15	704	0.2+	0.1+	2000 01 04	704	0.2+	0.5+
1999 12 05	703	0.2−	0.5+	1999 12 15	704	0.7+	1.2−	2000 01 07	888	0.1+	0.1−
1999 12 05	703	0.4−	0.3+	1999 12 15	385	0.1−	0.2−	2000 01 07	888	0.2−	0.1−
1999 12 08	905	0.0	0.7−	1999 12 15	385	0.2+	0.4−				

1999 XT₁₀₅ = 1998 QO₇₆

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>				(2000.0)			
<i>n</i>				<i>P</i>			
<i>a</i>				<i>Q</i>			
<i>e</i>				<i>i</i>			
<i>P</i>				<i>H</i>			
288.44319				335.92974	−0.82384111	+0.55766886	
0.30607403	<i>ω</i>			238.34818	−0.49879833	−0.79827889	
2.1806454	<i>Ω</i>			6.84435	−0.26923235	−0.22750000	
0.1479538	<i>i</i>						
3.22	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1998 08 24	704	0.6−	0.1−	1999 12 11	411	0.5−	0.1+	2000 01 07	704	1.4+	0.6−
1998 08 24	704	0.6−	1.6+	1999 12 11	411	0.5−	0.6+	2000 01 07	704	0.4+	0.1+
1998 08 24	704	0.0	0.7+	1999 12 12	411	0.3+	0.6+	2000 01 07	704	0.2−	0.3+
1998 08 24	704	1.5−	0.2−	1999 12 12	411	1.2+	0.6−	2000 01 11	704	0.3−	0.3−
1998 08 24	704	1.0+	0.1+	1999 12 14	704	0.1+	1.3+	2000 01 11	704	0.1−	0.3−
1998 08 27	704	0.9+	0.8−	1999 12 14	704	0.3+	0.2−	2000 01 11	704	0.3−	0.7+
1998 08 27	704	0.2−	1.2+	1999 12 14	704	0.1+	0.6−	2000 01 11	704	0.4−	0.1+
1998 08 27	704	0.5+	0.3+	1999 12 19	411	0.5−	0.6−	2000 01 11	704	0.2−	0.5+
1998 08 27	704	0.4+	1.2−	1999 12 19	411	0.9−	0.8−				
1998 08 27	704	0.1+	1.6−	2000 01 07	704	0.3+	0.3−				

1999 XU₁₀₅ = 1989 TT₁₆ = 1998 MS₃₄

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>				(2000.0)			
<i>n</i>				<i>P</i>			
<i>a</i>				<i>Q</i>			
<i>e</i>				<i>i</i>			
<i>P</i>				<i>H</i>			
71.71716				226.71691	+0.95837252	−0.27483469	
0.21090365	<i>ω</i>			148.99656	+0.28548417	+0.91804553	
2.7952027	<i>Ω</i>			8.64029	+0.00457220	+0.28575915	
0.2414035	<i>i</i>						
4.67	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2	

Residuals in seconds of arc

1989 10 07	809	0.0	0.2−	1998 06 26	704	0.2−	0.9+	1999 12 14	704	0.8−	0.1−
1989 10 07	809	0.3+	0.0	1998 06 26	704	1.7−	0.3−	1999 12 14	704	0.5+	1.3+
1989 10 07	809	0.7+	0.1+	1998 06 26	704	0.2+	0.2+	1999 12 14	704	0.2−	0.2+
1989 10 08	809	0.7−	0.1+	1998 06 27	910	1.1+	0.0	1999 12 19	411	0.8+	1.1−
1989 10 08	809	0.4−	0.0	1998 06 27	910	1.1+	0.1+	1999 12 19	411	1.0−	0.8−
1989 10 08	809	0.2+	0.0	1998 06 27	910	1.2+	0.1−	2000 01 04	411	0.1−	0.0
1998 06 24	704	0.1−	0.0	1999 12 11	411	0.2−	0.5+	2000 01 04	411	0.8+	0.4+
1998 06 24	704	1.1−	0.2−	1999 12 11	411	0.6+	0.5+	2000 01 07	704	0.1+	0.0
1998 06 24	704	(2.3+	0.9+)	1999 12 12	411	1.6−	0.5−	2000 01 07	704	1.0+	0.2−
1998 06 24	704	0.5−	0.2+	1999 12 12	411	0.9−	0.0	2000 01 07	704	0.8−	0.4−
1998 06 24	704	0.0	0.2+	1999 12 14	704	0.3+	0.9−	2000 01 07	704	0.5+	0.1+
1998 06 26	704	0.0	0.9−	1999 12 14	704	0.5+	0.5+	2000 01 07	704	0.4+	0.9+

1999 XX₁₀₅ = 1998 MO₃₄

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>				(2000.0)			
<i>n</i>				<i>P</i>			
<i>a</i>				<i>Q</i>			
<i>e</i>				<i>i</i>			
<i>P</i>				<i>H</i>			
108.14883				211.70711	+0.98851629	+0.12928614	
0.25526411	<i>ω</i>			140.62643	−0.09946040	+0.94640933	
2.4611772	<i>Ω</i>			7.08407	−0.11376806	+0.29596364	
0.1587072	<i>i</i>						
3.86	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4	

Residuals in seconds of arc

1998 06 24	704	1.9+	0.7+	1998 06 26	704	0.3+	0.7+	1999 12 19	411	0.9+	0.9−
1998 06 24	704	0.5+	0.6−	1998 06 27	809	(1.8+	3.0+)	1999 12 19	411	0.3−	0.4−
1998 06 24	704	0.2+	0.9−	1998 06 27	809	(1.0+	2.4+)	2000 01 04	411	0.5+	0.8+
1998 06 24	704	0.0	1.3−	1998 06 27	809	(3.0+	3.9+)	2000 01 04	411	0.4−	0.7+
1998 06 24	704	0.8−	0.3−	1999 12 11	411	0.3−	0.0	2000 01 05	704	0.5+	0.3+
1998 06 26	809	0.7+	1.3+	1999 12 11	411	0.1−	0.1+	2000 01 05	704	0.2−	0.0
1998 06 26	809	0.5−	0.7+	1999 12 12	411	0.7−	0.6−	2000 01 05	704	0.1+	0.2−
1998 06 26	809	0.4−	1.2+	1999 12 12	411	0.3+	0.9+	2000 01 05	704	0.2−	0.2−
1998 06 26	704	0.4−	1.1−	1999 12 14	704	1.0+	0.2+	2000 01 05	704	0.2−	0.9−
1998 06 26	704	0.4−	0.6+	1999 12 14	704	(2.3+	0.3+)	2000 01 06	704	0.3+	0.2+
1998 06 26	704	0.0	0.4−	1999 12 14	704	1.7−	0.2−	2000 01 06	704	0.1−	0.4+
1998 06 26	704	1.1−	0.3−	1999 12 14	704	0.6+	0.1+	2000 01 06	704	0.1−	0.1+

2000 JAN. 24

M.P.C. 37933

1999 XZ₁₀₅ = 1990 VB₁₀ = 1990 WN₁₃ = 1990 YF₁ = 1993 JS
= 1998 MN₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22570412	ω	143.36408	+0.90797696	−0.38770404		
<i>a</i>	2.6716305	Ω	240.18201	+0.32764435	+0.89337171		
<i>e</i>	0.1901423	<i>i</i>	10.55612	+0.26120303	+0.22709594		
<i>P</i>	4.37	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 11 14	675	(2.4− 2.1−)	1998 06 25	699	0.5− 0.4−	2000 01 04	411	0.9+ 0.1−
1990 11 14	675	0.4− 0.7−	1998 06 25	699	0.1− 0.3+	2000 01 04	411	0.9+ 0.0
1990 11 20	095	(2.8+ 8.2−)	1998 06 25	699	0.3+ 0.2−	2000 01 07	704	0.1+ 0.5−
1990 11 20	095	1.2+ 1.1+	1999 12 11	411	0.5− 0.2+	2000 01 07	704	0.4+ 0.1+
1990 12 26	413	0.9− 0.4−	1999 12 11	411	0.3− 0.4−	2000 01 07	704	0.4+ 0.5−
1993 05 14	809	0.1+ 1.9+	1999 12 12	411	1.1− 0.1+	2000 01 07	704	0.0 0.1−
1993 05 14	809	0.7+ 0.8+	1999 12 12	411	0.5+ 0.7−	2000 01 07	704	0.2+ 0.2+
1993 05 14	809	0.3− 0.7+	1999 12 14	704	0.2− 1.3+	2000 01 11	704	0.2+ 0.1−
1993 05 15	809	0.3− 1.0−	1999 12 14	704	0.5+ 0.7+	2000 01 11	704	0.0 0.0
1993 05 15	809	0.1− 0.8−	1999 12 14	704	0.3+ 1.9+	2000 01 11	704	0.0 0.2−
1993 05 15	809	0.2− 1.2−	1999 12 14	704	1.4− 0.0	2000 01 11	704	0.1− 0.4−
1998 06 18	699	0.4+ 0.1−	1999 12 14	704	0.5− 0.3−	2000 01 11	704	0.0 0.5−
1998 06 18	699	0.4+ 0.2−	1999 12 19	411	0.0 0.4−			
1998 06 18	699	0.3− 0.5+	1999 12 19	411	0.4− 0.1+			

1999 XA₁₀₆ = 1980 TX₁ = 1998 QG₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21622824	ω	286.04838	+0.40732397	−0.90623652		
<i>a</i>	2.7491247	Ω	139.31587	+0.89020802	+0.36627299		
<i>e</i>	0.1389981	<i>i</i>	10.00335	+0.20400212	+0.21113850		
<i>P</i>	4.56	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 10 05	809	0.3+ 0.4+	1998 08 23	699	0.6+ 0.3+	1999 12 14	704	0.4− 0.0
1980 10 05	809	0.1− 1.1−	1998 08 23	704	0.1− 0.9+	1999 12 19	411	0.6− 1.2+
1998 08 17	704	0.1− 0.6−	1998 09 21	699	0.3+ 0.2+	1999 12 19	411	1.0+ 0.4+
1998 08 17	704	1.7− 0.9+	1998 09 21	699	0.3+ 0.8+	2000 01 04	411	0.6+ 0.8−
1998 08 17	704	0.3− 1.2−	1998 09 21	699	0.5+ 0.3+	2000 01 04	411	0.4− 0.1−
1998 08 17	704	1.3− 0.3−	1999 12 11	411	0.4− 0.6−	2000 01 05	704	0.3+ 0.1−
1998 08 23	699	0.7+ 0.4−	1999 12 11	411	0.3− 1.0+	2000 01 05	704	1.1− 0.9−
1998 08 23	704	0.6+ 0.0	1999 12 12	411	1.1+ 1.3−	2000 01 05	704	0.6+ 0.0
1998 08 23	704	0.0 0.1+	1999 12 12	411	0.3+ 0.4−	2000 01 05	704	0.6− 0.3+
1998 08 23	699	0.4+ 0.2−	1999 12 14	704	0.7− 0.7−	2000 01 07	704	0.9+ 1.3+
1998 08 23	704	(2.6+ 2.0+)	1999 12 14	704	0.2+ 0.3−	2000 01 07	704	0.4+ 0.1−
1998 08 23	704	(0.6− 3.0+)	1999 12 14	704	1.6− 1.7+	2000 01 07	704	0.5+ 0.3−

1999 XB₁₀₆ = 1991 BF₁ = 1997 GB₂₈

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21736338	ω	276.91245	+0.80981286	−0.54760960		
<i>a</i>	2.7395452	Ω	116.49797	+0.58668825	+0.75598641		
<i>e</i>	0.3774257	<i>i</i>	13.60652	−0.00018697	+0.35861996		
<i>P</i>	4.53	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 01 16	675	1.1+ 0.1−	1999 12 12	411	1.0− 0.1−	2000 01 07	704	0.6+ 0.1+
1991 01 16	675	0.9+ 0.1−	1999 12 14	704	0.6− 0.2−	2000 01 07	704	0.0 0.0
1991 01 18	511	0.0 0.6−	1999 12 14	704	0.4− 0.3−	2000 01 07	704	0.1− 0.3+
1991 01 18	511	1.7− 1.3−	1999 12 14	704	0.5− 0.0	2000 01 07	704	0.1− 0.1−
1991 01 18	046	(2.6− 0.9−)	1999 12 14	704	0.7− 0.0	2000 01 07	704	0.1+ 0.1−
1991 01 18	046	(1.3− 3.0−)	1999 12 19	411	0.2− 0.1+	2000 01 07	704	0.1− 0.1−

1991 01 18	511	0.1− 0.7−	1999 12 19	411	0.1+ 0.3−	2000 01 07	704	0.3− 0.2+
1991 01 19	511	(2.8− 3.0+)	1999 12 26	411	0.1− 0.0	2000 01 07	704	0.2− 0.3−
1991 01 19	511	(3.8− 1.8+)	1999 12 26	411	0.2− 0.1+	2000 01 07	704	0.3− 0.4+
1991 01 20	511	(2.3− 0.2+)	2000 01 04	411	1.2− 0.3−	2000 01 09	704	0.7+ 0.1−
1991 01 20	511	(1.0+ 2.6−)	2000 01 04	411	0.3− 0.4+	2000 01 09	704	1.1+ 0.2+
1997 04 07	691	0.1− 0.4+	2000 01 05	704	0.1+ 0.2+	2000 01 09	704	0.6+ 0.0
1997 04 07	691	0.3− 0.3+	2000 01 05	704	0.1+ 1.0+	2000 01 09	704	0.6+ 0.1+
1997 04 07	691	0.2− 0.5+	2000 01 05	704	0.6+ 0.7+	2000 01 09	704	0.3+ 0.2+
1997 04 14	691	0.5+ 0.5−	2000 01 05	704	0.2+ 0.5+	2000 01 10	704	0.2+ 0.2−
1997 04 14	691	0.2+ 0.0	2000 01 05	704	0.2+ 0.5+	2000 01 10	704	0.1+ 0.3−
1997 04 14	691	0.1− 0.1−	2000 01 06	704	0.2+ 0.3+	2000 01 10	704	0.2+ 0.2−
1999 12 11	411	0.4− 0.3+	2000 01 06	704	0.2+ 1.0+	2000 01 10	704	0.4+ 0.2−
1999 12 11	411	0.2+ 0.4−	2000 01 06	704	0.0 0.4+	2000 01 10	704	0.3+ 0.1−
1999 12 12	411	1.1− 0.9−	2000 01 07	704	0.4+ 0.2−			

1999 XG₁₀₆ = 1995 CT₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18715702	ω	218.97379	−0.13232384	−0.99086342		
<i>a</i>	3.0269040	Ω	238.64459	+0.91688381	−0.11236382		
<i>e</i>	0.1593542	<i>i</i>	1.75000	+0.37658264	−0.07459262		
<i>P</i>	5.27	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 02 01	691	0.1+ 0.1+	1999 12 12	684	0.3+ 0.2+	2000 01 07	704	0.1+ 0.3−
1995 02 01	691	0.1+ 0.0	1999 12 12	684	0.0 0.2+	2000 01 07	704	0.0 0.0
1995 02 01	691	0.1+ 0.1−	2000 01 05	704	0.4− 0.7−	2000 01 07	704	0.1+ 0.5+
1995 02 07	691	0.1− 0.1+	2000 01 05	704	0.3+ 0.1+	2000 01 09	704	0.1+ 0.6+
1995 02 07	691	0.3− 0.1+	2000 01 05	704	0.2+ 0.2+	2000 01 09	704	0.0 0.3+
1995 02 07	691	0.1+ 0.3−	2000 01 05	704	0.4− 0.3−	2000 01 09	704	0.4+ 0.2+
1999 12 11	684	0.1− 0.3−	2000 01 07	704	0.2− 0.2+			
1999 12 11	684	0.4− 0.2−	2000 01 07	704	0.3− 0.6−			

1999 XM₁₀₆ = 1998 KW₂₇

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	82.34264	ω	86.41948	+0.79948094	+0.56800610		
<i>a</i>	2.5729394	Ω	238.87085	−0.60057146	+0.74932479		
<i>e</i>	0.1578024	<i>i</i>	13.19842	−0.01200589	+0.34041362		
<i>P</i>	4.13	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 22	704	0.3+ 0.0	1999 11 12	699	0.0 0.6−	1999 12 12	703	0.2− 0.1+
1998 05 22	704	0.0 1.5+	1999 11 12	699	0.8− 1.0+	1999 12 12	703	0.4− 0.0
1998 05 22	704	1.2− 1.2−	1999 11 12	699	1.1+ 0.1−	1999 12 12	703	0.2− 0.1−
1998 05 22	704	0.0 0.8−	1999 12 03	699	0.5+ 0.4−	1999 12 12	703	0.4+ 0.2−
1998 05 22	704	0.0 0.5+	1999 12 03	699	0.7+ 0.3+	2000 01 07	704	0.3− 0.2+
1998 05 24	704	0.3+ 0.1+	1999 12 03	699	0.4+ 0.2+	2000 01 07	704	0.5+ 0.2+
1998 05 24	704	1.0+ 1.3−	1999 12 04	703	0.1− 0.7−	2000 01 07	704	0.5− 0.3+
1998 05 24	704	1.4− 1.2+	1999 12 04	703	1.0− 0.2+	2000 01 07	704	0.3+ 0.2+
1998 05 24	704	1.1+ 0.3+	1999 12 04	703	0.4− 0.8+	2000 01 07	704	0.4+ 0.3−
1998 05 24	704	(1.0+ 2.4+)	1999 12 04	703	0.3− 0.8−			

1999 XQ₁₀₆ = 1991 LG₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28587220	ω	313.32027	−0.89597954	+0.43569364		
<i>a</i>	2.2822056	Ω	252.67871	−0.37692786	−0.84845067		
<i>e</i>	0.1064984	<i>i</i>	5.16702	−0.23483197	−0.30050376		
<i>P</i>	3.45	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 06 06	809	0.5+ 0.3−	1999 10 29	703	0.8+ 0.4+	1999 11 16	704	0.8− 0.1+
1991 06 06	809	0.1+ 1.0+	1999 11 04	704	0.5+ 0.1+	1999 11 16	704	0.4+ 0.3+

1991 06 06	809	0.8−	0.2+	1999 11 04	704	0.5+	0.0	1999 12 03	699	(0.8−	2.7−)
1991 06 08	809	0.1+	0.3+	1999 11 04	704	0.5+	0.4+	1999 12 03	699	1.2−	0.1+
1991 06 08	809	0.0	0.4+	1999 11 04	704	0.1+	0.0	1999 12 03	699	0.6−	0.1+
1991 06 08	809	0.3+	0.3−	1999 11 04	704	0.2+	0.1−	1999 12 04	703	1.0−	0.3−
1999 10 03	704	0.6−	1.1−	1999 11 11	703	0.1+	0.4−	1999 12 04	703	0.5−	0.9−
1999 10 03	704	1.1−	1.2−	1999 11 11	703	0.3+	0.2+	1999 12 04	703	1.0+	1.5+
1999 10 03	704	0.0	1.7−	1999 11 11	703	0.9−	0.0	1999 12 04	703	1.6−	0.1−
1999 10 03	704	0.9−	0.9−	1999 11 11	703	0.2−	0.1+	1999 12 12	703	1.8+	1.1+
1999 10 29	703	0.2+	0.8+	1999 11 16	704	0.4+	0.3−	1999 12 12	703	(3.5+	1.0+)
1999 10 29	703	0.7+	0.0	1999 11 16	704	0.1−	0.7+	1999 12 12	703	0.5+	1.7+
1999 10 29	703	0.4+	1.5+	1999 11 16	704	0.4−	0.1−	1999 12 12	703	0.6+	0.7−

1999 XX₁₀₆ = 1997 JP₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.88631		(2000.0)	Williams	
	P		Q		
<i>n</i>	0.17665347	ω	344.07410	+0.95114206	−0.27750087
<i>a</i>	3.1457287	Ω	33.01898	+0.30339960	+0.75875218
<i>e</i>	0.1556457	<i>i</i>	14.38304	+0.05724921	+0.58931180
<i>P</i>	5.58	<i>H</i>	14.0	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1997 05 01	704	1.0+	0.2−	1999 10 29	703	0.6−	0.3−	1999 12 08	704	0.1−	0.1+
1997 05 01	704	0.4+	1.2+	1999 10 29	703	0.4−	0.3−	1999 12 08	704	0.2−	0.5+
1997 05 01	704	0.6+	0.3+	1999 10 29	703	0.7−	0.1−	1999 12 08	704	0.1+	0.2−
1997 05 01	704	1.0−	0.1+	1999 11 04	704	0.5+	0.1−	1999 12 12	703	0.3−	0.3+
1997 05 05	704	0.6+	0.7−	1999 11 04	704	0.8+	0.7+	1999 12 12	703	0.1−	0.2+
1997 05 05	704	0.6+	0.6+	1999 11 04	704	0.2−	0.7−	1999 12 12	703	0.3−	0.0
1997 05 05	704	1.1+	1.2+	1999 11 04	704	0.0	0.1−	1999 12 12	703	0.8−	0.2+
1997 05 05	704	1.1−	0.6−	1999 11 04	704	0.4−	0.2−	2000 01 04	704	0.3−	0.8+
1997 05 05	704	0.6−	0.7+	1999 11 07	704	0.0	0.7−	2000 01 04	704	0.2−	0.4−
1999 09 18	703	0.2+	0.2−	1999 11 07	704	0.6+	0.1−	2000 01 04	704	0.3−	0.2+
1999 09 18	703	0.3+	0.3+	1999 11 07	704	0.0	0.3−	2000 01 04	704	0.3+	0.3−
1999 09 18	703	0.3−	0.4+	1999 11 07	704	0.2−	0.0	2000 01 04	704	0.4+	0.5+
1999 09 18	703	0.1+	0.3+	1999 11 07	704	0.1−	0.5−	2000 01 06	704	0.4−	0.0
1999 10 01	703	0.4−	0.3+	1999 11 11	703	0.0	0.1+	2000 01 06	704	1.0−	0.5+
1999 10 01	703	1.5−	0.1+	1999 11 11	703	0.5−	0.2+	2000 01 06	704	0.2−	0.5+
1999 10 01	703	0.3−	0.1−	1999 11 11	703	0.1+	0.0	2000 01 06	704	0.5+	0.1−
1999 10 01	703	0.2−	0.1+	1999 11 11	703	0.6+	0.1+	2000 01 06	704	0.2+	1.2−
1999 10 03	704	1.4+	0.1+	1999 12 04	703	0.7+	0.7+	2000 01 09	704	0.4−	0.7+
1999 10 03	704	0.1+	0.7−	1999 12 04	703	0.4−	0.3+	2000 01 09	704	0.6+	0.8−
1999 10 03	704	0.4−	0.1+	1999 12 04	703	0.3+	0.8+	2000 01 09	704	0.3−	0.3+
1999 10 03	704	0.7+	0.4+	1999 12 04	703	0.2+	1.0+	2000 01 09	704	0.4−	1.1−
1999 10 03	704	0.5+	0.4+	1999 12 08	704	0.8+	0.1+				
1999 10 29	703	0.5−	0.1+	1999 12 08	704	0.4+	0.3−				

1999 XZ₁₀₆ = 1998 KU₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	97.87808		(2000.0)	Williams	
	P		Q		
<i>n</i>	0.24167601	ω	70.16860	+0.72373452	+0.65661172
<i>a</i>	2.5525859	Ω	248.15223	−0.68715905	+0.65745389
<i>e</i>	0.1170987	<i>i</i>	13.22192	−0.06340966	+0.36961524
<i>P</i>	4.08	<i>H</i>	14.4	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 05 22	704	0.4−	1.5+	1998 06 24	704	0.7+	1.2+	1999 12 07	699	0.8+	1.1+
1998 05 22	704	(0.3−	2.3+)	1998 06 24	704	0.2−	1.4+	1999 12 08	704	0.7+	0.3−
1998 05 22	704	(1.7+	2.2+)	1998 06 24	704	0.4−	0.7−	1999 12 08	704	0.6+	0.4−
1998 05 22	704	(0.2+	2.2+)	1999 10 05	704	1.5−	0.2+	1999 12 08	704	0.6+	0.3−
1998 05 22	704	0.6+	1.6+	1999 10 05	704	0.6−	0.5+	1999 12 08	704	1.3+	0.5−
1998 05 24	704	1.0−	0.7+	1999 10 05	704	0.2−	0.2+	1999 12 08	704	0.8+	0.3−
1998 05 24	704	0.3−	0.2−	1999 10 05	704	0.7−	0.1−	1999 12 12	703	1.1+	0.9−
1998 05 24	704	0.7−	1.2−	1999 11 03	704	0.6+	0.2+	1999 12 12	703	0.1+	0.5+
1998 05 24	704	0.2+	0.0	1999 11 03	704	0.8+	0.5−	1999 12 12	703	0.6−	0.3−
1998 05 24	704	1.2+	1.3−	1999 11 03	704	0.9+	0.5−	1999 12 12	703	0.6−	0.6−
1998 05 24	704	(2.4+	0.9−)	1999 11 03	704	1.0+	0.1−	2000 01 04	704	0.6−	0.4−
1998 05 24	704	1.1+	1.1−	1999 11 03	704	0.6+	0.1+	2000 01 04	704	1.6−	0.4−

1998 05 24	704	(0.8−	2.6+)	1999 11 10	703	0.0	0.1+	2000 01 04	704	0.3−	0.6+
1998 05 24	704	1.4−	1.0−	1999 11 10	703	0.3−	0.3+	2000 01 04	704	1.2+	0.3+
1998 06 01	809	0.1+	1.4−	1999 11 10	703	0.3+	0.6−	2000 01 04	704	0.4+	1.3−
1998 06 01	809	0.2−	1.1−	1999 11 10	703	1.2−	0.2+	2000 01 06	704	0.0	0.8+
1998 06 01	809	0.1−	1.5−	1999 12 04	703	0.5−	0.7−	2000 01 06	704	0.7−	0.7+
1998 06 02	809	1.2+	0.7+	1999 12 04	703	0.7−	0.5+	2000 01 06	704	0.2−	0.1+
1998 06 02	809	0.6−	1.7+	1999 12 04	703	0.9−	0.1+	2000 01 06	704	0.0	0.4−
1998 06 02	809	0.2+	1.1+	1999 12 04	703	1.2−	0.3+	2000 01 06	704	0.4+	0.5−
1998 06 24	704	0.1−	1.1−	1999 12 07	699	0.1+	0.3+				
1998 06 24	704	(2.4−	0.1+)	1999 12 07	699	0.4−	1.0+				

1999 XA₁₀₇ = 1998 KJ₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	190.85583		(2000.0)	Williams	
	P		Q		
<i>n</i>	0.30191157	ω	333.01544	−0.48060796	+0.87340736
<i>a</i>	2.2006427	Ω	268.16768	−0.78971541	−0.47002663
<i>e</i>	0.1213660	<i>i</i>	4.50953	−0.38126835	−0.12741487
<i>P</i>	3.26	<i>H</i>	14.9	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 05 01	704	0.4−	0.3+	1998 07 11	699	0.3+	0.1−	1999 12 08	704	1.1−	0.0
1998 05 01	704	0.1+	0.6+	1999 10 29	703	1.1−	0.2+	1999 12 08	704	0.3+	0.3+
1998 05 01	704	0.1+	0.6+	1999 10 29	703	0.3−	0.1−	1999 12 08	704	0.2+	0.5+
1998 05 01	704	0.7+	0.4−	1999 10 29	703	1.8+	1.5+	1999 12 08	704	0.3−	0.0
1998 05 05	699	0.1+	0.7+	1999 10 29	703	0.1−	0.9+	1999 12 12	703	0.7−	0.6+
1998 05 05	699	0.0	0.7+	1999 11 03	704	0.0	1.5−	1999 12 12	703	0.5+	1.1+
1998 05 05	699	0.1+	0.6+	1999 11 03	704	0.5−	0.6−	1999 12 12	703	0.4+	0.2+
1998 05 22	704	0.8+	0.3−	1999 11 03	704	0.1−	0.4−	1999 12 12	703	0.8+	0.5+
1998 05 22	704	0.1−	0.4−	1999 11 03	704	0.3+	0.2−	2000 01 04	704	1.1−	0.6−
1998 05 22	704	0.5+	0.7−	1999 11 03	704	0.6+	0.3+	2000 01 04	704	0.6−	0.0
1998 05 22	704	0.1+	0.0	1999 11 11	703	0.5+	0.5+	2000 01 04	704	0.1+	0.7−
1998 05 22	704	0.1−	0.1+	1999 11 11	703	0.2+	0.2+	2000 01 04	704	0.2+	0.2−
1998 05 24	704	0.0	0.1−	1999 11 11	703	0.9+	0.1−	2000 01 04	704	1.2−	0.6−
1998 05 24	704	0.2−	0.5+	1999 11 11	703	0.0	0.3+	2000 01 06	704	0.0	0.1−
1998 05 24	704	0.5−	0.9+	1999 12 04	703	0.0	1.7+	2000 01 06	704	0.0	0.1−
1998 05 24	704	0.6−	0.7+	1999 12 04	703	0.6−	0.2+	2000 01 06	704	0.1+	0.3+
1998 05 24	704	0.0	0.8+	1999 12 04	703	0.2−	0.3+	2000 01 06	704	0.8−	0.7+
1998 07 11	699	0.1−	0.6−	1999 12 04	703	0.7−	0.2−				
1998 07 11	699	0.1+	0.0	1999 12 08	704	0.2+	0.2−				

1999 XC₁₀₇ = 1988 XY₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	37.28569		(2000.0)	Williams	
	P		Q		
<i>n</i>	0.26460932	ω	326.28851	+0.87272984	−0.48551802
<i>a</i>	2.4028830	Ω	62.83812	+0.45964936	+0.78186950
<i>e</i>	0.2157829	<i>i</i>	3.29483	+0.16451470	+0.39109121
<i>P</i>	3.72	<i>H</i>	14.7	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1988 12 11	399	0.5+	1.8−	1999 11 04	704	0.2−	0.4−	1999 12 12	703	0.3−	0.5+
1988 12 11	399	0.4−	1.9−	1999 11 04	704	0.3−	0.4−	1999 12 12	703	0.6−	0.3+
1988 12 12	054	0.1+	1.8+	1999 11 04	704	0.4−	0.3−	1999 12 12	703	0.5−	0.3+
1988 12 13	054	0.3−	2.2+	1999 11 04	704	0.4−	0.2−	2000 01 04	704	0.5+	0.2−
1998 05 22	704	0.3+	1.0−	1999 11 10	695	1.6+	1.6+	2000 01 04	704	0.0	0.6−
1998 05 22	704	0.1−	0.6+	1999 11 10	695	1.0+	0.7+	2000 01 04	704	0.1−	1.1−
1998 05 22	704	0.3−	1.0−	1999 12 04	703	0.0	0.6+	2000 01 04	704	1.5+	0.6−
1998 05 22	704	0.7−	1.5−	1999 12 04	699	0.0	0.3+	2000 01 04	704	0.7+	0.5−
1998 05 22	704	(5.1−	1.2+)	1999 12 04	703	0.4−	0.4+	2000 01 06	704	0.5+	0.8−
1999 10 30	703	0.0	0.6−	1999 12 04	703	0.4−	0.5+	2000 01 06	704	0.1+	0.5−
1999 10 30	703	0.1−	0.5−	1999 12 04	703	0.3−	0.1+	2000 01 06	704	0.1−	0.4−
1999 10 30	703	0.0	0.2−	1999 12 04	699	0.0	0.4+	2000 01 06	704	0.2−	0.8−
1999 10 30	703	0.1−	0.5−	1999 12 04	699	0.4+	0.1+	2000 01 06	704	0.1+	0.9−
1999 11 04	704	0.1+	0.6−	1999 12 12	703	0.5−	0.5+				

2000 JAN. 24

M.P.C. 37935

1999 XD₁₀₇ = 1995 WH₃₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	159.93678	(2000.0)	P		Q	
<i>n</i>	0.23708174	ω	31.63615	-0.21502376	+0.92814541	
<i>a</i>	2.5854569	Ω	227.94033	-0.95949296	-0.25876132	
<i>e</i>	0.1403076	<i>i</i>	24.15607	-0.18203856	+0.26756061	
<i>P</i>	4.16	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1995 11 22	691	0.1+	0.2-	1999 11 04	704	0.0	0.8-	1999 11 16	704	0.7+	0.1-
1995 11 22	691	0.3-	0.4-	1999 11 04	704	0.6+	0.1-	1999 11 16	704	0.4+	0.2+
1995 11 22	691	0.4-	0.4-	1999 11 04	704	0.5+	0.1+	1999 12 04	703	0.0	0.3+
1995 11 28	691	1.3+	0.7-	1999 11 04	704	0.5+	0.5-	1999 12 04	703	1.1-	0.4+
1995 11 28	691	0.6-	0.4-	1999 11 04	704	0.4+	0.3+	1999 12 04	703	0.6-	0.7+
1995 11 28	691	0.6-	0.4-	1999 11 11	703	0.8-	0.1-	1999 12 04	703	1.6+	0.8+
1998 05 29	704	0.2-	0.3+	1999 11 11	703	0.6-	0.1+	1999 12 07	704	0.6-	0.0
1998 05 29	704	0.9+	0.0	1999 11 11	703	0.8-	0.0	1999 12 07	704	0.6+	0.1+
1998 05 29	704	0.6+	0.4-	1999 11 11	703	0.3-	0.2+	1999 12 07	704	0.0	0.3+
1998 05 29	704	0.3-	0.5-	1999 11 14	704	0.1+	0.6-	1999 12 12	703	0.8-	0.9-
1998 05 29	704	0.8-	0.1+	1999 11 14	704	0.5-	0.2-	1999 12 12	703	0.4-	0.4+
1999 10 29	703	1.9+	1.0+	1999 11 14	704	0.2+	0.4-	1999 12 12	703	0.0	0.6+
1999 10 29	703	0.4+	0.5+	1999 11 14	704	0.0	0.2-	1999 12 12	703	0.3-	0.2+
1999 10 29	703	0.9-	0.4-	1999 11 16	704	0.0	0.0				
1999 10 29	703	(2.1+	0.6+)	1999 11 16	704	0.1-	0.3+				

1999 XK₁₀₇ = 1992 EG₃₂ = 1998 MA₄₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	4.13812	(2000.0)	P		Q	
<i>n</i>	0.21705050	ω	173.92099	+0.42793444	-0.90332822	
<i>a</i>	2.7421772	Ω	250.73937	+0.82790736	+0.40488021	
<i>e</i>	0.0408329	<i>i</i>	1.79072	+0.36254866	+0.14166912	
<i>P</i>	4.54	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i> 3

Residuals in seconds of arc

1992 03 02	809	0.5-	1.3+	1999 11 04	704	1.1-	1.1-	1999 12 12	703	0.3+	0.4+
1992 03 05	809	0.6+	1.2-	1999 11 04	704	0.3+	0.2+	1999 12 12	703	0.4-	0.1-
1992 03 08	809	(3.8-	0.1-)	1999 11 04	704	0.0	0.7-	1999 12 12	703	0.3-	0.4-
1998 06 28	809	0.3-	0.7-	1999 11 04	704	0.3+	1.7+	1999 12 12	703	0.9-	0.7+
1998 06 28	809	0.6-	1.2-	1999 11 11	703	0.4-	0.0	2000 01 04	704	0.7-	0.6+
1998 06 28	809	0.1-	0.9-	1999 11 11	703	0.5+	0.6+	2000 01 04	704	0.1+	0.1+
1998 07 01	809	0.2+	1.0+	1999 11 11	703	0.9-	0.7+	2000 01 04	704	0.8+	0.3-
1998 07 01	809	0.7+	0.4+	1999 11 11	703	0.3-	0.2+	2000 01 04	704	1.0-	0.1-
1998 07 01	809	0.4+	0.1+	1999 11 14	704	0.7+	0.2+	2000 01 04	704	0.8+	0.6-
1999 10 06	704	0.8+	0.1+	1999 11 14	704	0.6+	0.1-	2000 01 07	704	0.5+	0.0
1999 10 06	704	0.6+	0.4+	1999 11 14	704	0.8+	0.3-	2000 01 07	704	0.2-	0.2-
1999 10 06	704	0.3+	0.0	1999 11 14	704	0.0	0.2+	2000 01 07	704	0.2-	1.4-
1999 10 06	704	0.5+	0.5+	1999 12 04	703	0.2-	0.4+	2000 01 07	704	0.1+	1.4-
1999 10 06	704	0.6-	0.1-	1999 12 04	703	0.6+	0.3+	2000 01 07	704	0.8-	0.3-
1999 10 29	703	1.8+	1.8+	1999 12 04	703	0.8-	0.0	2000 01 09	704	0.2+	0.6-
1999 10 29	703	0.0	1.4+	1999 12 04	703	0.4-	0.2+	2000 01 09	704	0.1+	0.1+
1999 10 29	703	0.6+	0.7+	1999 12 07	704	0.1+	0.8-	2000 01 09	704	0.5-	0.1-
1999 10 29	703	0.9-	1.0+	1999 12 07	704	0.3-	1.0-	2000 01 09	704	0.2+	0.2-
1999 11 04	704	0.2+	0.0	1999 12 07	704	0.3+	0.8-	2000 01 09	704	0.7+	0.3+
1999 11 04	704	0.3-	0.6-	1999 12 07	704	0.3-	0.8-				
1999 11 04	704	0.4-	1.8-	1999 12 07	704	0.8-	0.6-				

1999 XN₁₀₇ = 1999 XD₂ = 1978 VJ₅ = 1994 WU₁₀

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	54.33996	(2000.0)	P		Q	
<i>n</i>	0.18583119	ω	354.99439	+0.99942021	+0.03398778	
<i>a</i>	3.0412840	Ω	3.06006	-0.02977733	+0.90130148	
<i>e</i>	0.1637126	<i>i</i>	2.16906	-0.01650945	+0.43185700	
<i>P</i>	5.30	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1978 11 05	675	1.0-	0.7-	1999 11 14	704	0.8+	0.2-	1999 12 04	703	1.0-	0.8+
1978 11 06	675	1.1+	0.8-	1999 11 14	704	0.1+	0.4-	1999 12 04	703	0.2+	0.2+
1978 11 08	675	0.2+	0.9-	1999 11 14	704	0.4+	0.6-	1999 12 12	681	0.1-	0.1+
1994 11 27	010	(2.7+	0.1+)	1999 11 16	704	0.5+	0.1-	1999 12 12	681	0.3+	0.3-
1994 11 27	010	1.6-	0.2-	1999 11 16	704	0.1+	0.2-	1999 12 12	681	0.0	0.1-
1994 11 28	010	0.2-	0.3-	1999 11 16	704	0.5-	0.0	1999 12 12	703	0.2-	0.3+
1994 11 28	010	0.4-	0.8+	1999 11 16	704	0.8-	0.1+	1999 12 12	703	0.4-	0.0
1994 11 28	010	0.5+	1.0+	1999 11 16	704	0.5-	0.2+	1999 12 12	703	0.5+	0.9-
1994 11 29	010	1.4+	0.8+	1999 12 01	681	0.2-	0.1+	1999 12 12	703	0.4-	0.7+
1999 11 10	691	1.0+	0.5+	1999 12 01	681	1.7+	0.6+	1999 12 13	681	0.4+	0.2-
1999 11 10	691	1.1+	0.2+	1999 12 01	681	1.3-	0.4-	1999 12 13	681	0.2+	0.4-
1999 11 10	691	0.9+	0.6+	1999 12 01	681	0.5+	0.1+	2000 01 06	704	1.0-	1.1-
1999 11 12	699	0.5-	0.3+	1999 12 04	681	0.4+	0.2-	2000 01 06	704	0.1+	0.1-
1999 11 12	699	0.4-	0.2-	1999 12 04	681	0.1-	0.1+	2000 01 06	704	0.7+	0.0
1999 11 12	699	0.1-	0.8+	1999 12 04	681	0.1+	0.2-	2000 01 06	704	0.0	0.4-
1999 11 14	704	0.6-	0.5+	1999 12 04	703	1.5-	0.1+	2000 01 06	704	1.1+	0.1-
1999 11 14	704	0.4-	0.4-	1999 12 04	703	0.9-	0.4+				

1999 XE₁₀₉ = 1986 VP₄ = 1990 QD₁₂ = 1998 KM₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	94.11029	(2000.0)	P		Q	
<i>n</i>	0.23133160	ω	219.89264	+0.79642650	+0.59953452	
<i>a</i>	2.6281253	Ω	103.09370	-0.53204118	+0.75687260	
<i>e</i>	0.1584854	<i>i</i>	4.66058	-0.28746654	+0.26019651	
<i>P</i>	4.26	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i> 1

Residuals in seconds of arc

1986 11 07	010	1.1-	0.6-	1999 11 04	704	0.1-	0.4-	1999 12 04	703	0.3-	0.3+
1986 11 07	010	(3.7+	0.1+)	1999 11 04	704	0.1-	0.1-	1999 12 04	703	0.3-	0.7+
1990 08 26	675	1.0+	0.6+	1999 11 04	704	0.2+	0.1-	1999 12 04	703	0.4-	0.6+
1990 08 26	675	0.2+	0.1+	1999 11 04	704	0.2+	0.1+	1999 12 12	703	0.0	0.0
1997 02 04	566	0.5+	0.1+	1999 11 04	704	0.2-	0.5+	1999 12 12	703	0.8-	0.1+
1997 02 04	566	0.4-	0.3-	1999 11 05	704	0.3+	0.3-	1999 12 12	703	0.1+	0.3-
1997 02 04	566	0.6+	0.2-	1999 11 05	704	0.2+	0.3-	1999 12 12	703	0.2-	0.6+
1998 05 22	704	(0.4+	2.1+)	1999 11 05	704	0.4+	0.1+	1999 12 14	704	0.2-	1.0+
1998 05 22	704	0.7+	1.7+	1999 11 05	704	0.1+	0.2-	1999 12 14	704	0.1+	1.4+
1998 05 22	704	(1.1-	2.7+)	1999 11 05	704	0.0	0.2-	1999 12 14	704	0.0	0.9+
1998 05 22	704	0.3+	1.5+	1999 11 12	699	0.2+	0.4+	1999 12 14	704	0.0	0.3-
1998 05 24	704	1.2+	1.1-	1999 11 12	699	0.4+	0.0	1999 12 14	704	0.3-	0.5+
1998 05 24	704	1.2-	0.1+	1999 11 12	699	0.4+	0.2+	2000 01 05	704	0.2-	0.7-
1998 05 24	704	(0.3-	3.8+)	1999 11 15	704	0.5+	0.4-	2000 01 05	704	0.1-	0.4-
1998 05 24	704	0.5+	0.8+	1999 11 15	704	0.3+	0.8-	2000 01 05	704	0.1+	0.2+
1998 06 24	704	1.5-	1.4-	1999 11 15	704	0.3+	0.3-	2000 01 05	704	0.3-	0.5-
1998 06 24	704	0.4+	0.0	1999 11 15	704	0.1+	0.4-	2000 01 05	704	0.2+	1.2+
1998 06 24	704	0.5-	0.1-	1999 11 15	704	0.3+	0.2-	2000 01 07	704	0.8-	0.4-
1998 06 24	704	0.8-	0.5-	1999 11 17	704	0.4+	0.2+	2000 01 07	704	0.3+	0.5-
1998 06 24	704	(3.0+	0.0)	1999 11 17	704	0.1+	0.7-	2000 01 07	704	0.8+	0.7-
1999 11 01	703	0.3-	0.1+	1999 11 17	704	0.0	0.2+	2000 01 07	704	0.9-	0.6-
1999 11 01	703	0.3-	0.7+	1999 11 17	704	0.3-	0.2-	2000 01 07	704	0.0	0.3+
1999 11 01	703	0.6-	0.2-	1999 11 17	704	0.2-	0.2-				
1999 11 01	703	0.3-	0.1-	1999 12 04	703	0.3+	0.2+				

1999 XF₁₀₉ = 1998 HV₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	80.60981		(2000.0)	P	Q
n	0.26960075	ω	124.03162	+0.88478443	+0.46418418
a	2.3731325	Ω	208.37540	-0.45097085	+0.83068917
e	0.2475010	i	4.96174	-0.11739595	+0.30738988
P	3.66	H	15.4	G 0.15	U 4

1998 04 20	704	0.8+	0.4-	1999 11 04	704	0.2-	0.7+	1999 12 02	699	0.5-	0.7+
1998 04 20	704	0.1-	0.1-	1999 11 04	704	0.4-	0.4-	1999 12 04	703	0.4+	0.2+
1998 04 20	704	0.8-	0.2+	1999 11 04	704	0.2-	0.6+	1999 12 04	703	0.6-	0.3-
1998 04 20	704	1.8-	0.4+	1999 11 04	704	0.6-	0.4-	1999 12 04	703	0.3-	0.2-
1998 04 21	704	1.4+	0.3+	1999 11 04	704	0.2-	0.6+	1999 12 04	703	0.3-	0.0
1998 04 21	704	0.8+	0.3+	1999 11 12	699	0.9+	0.5+	1999 12 07	704	0.2-	0.9-
1998 04 21	704	0.0	1.5-	1999 11 12	699	0.1+	1.0+	1999 12 07	704	0.1+	0.4-
1998 04 21	704	(1.2-	2.9-)	1999 11 12	699	0.3-	1.2+	1999 12 07	704	0.5+	0.1-
1999 10 03	704	0.8+	1.8+	1999 11 15	704	0.4+	0.4+	1999 12 07	704	0.1-	1.7-
1999 10 03	704	1.1+	0.7+	1999 11 15	704	0.4+	0.0	1999 12 07	704	0.3-	0.7-
1999 10 03	704	0.8-	1.9-	1999 11 15	704	0.7-	0.4+	1999 12 12	703	0.0	0.1+
1999 11 01	703	0.0	0.2-	1999 11 15	704	1.0+	0.2-	1999 12 12	703	0.2-	0.3+
1999 11 01	703	0.0	0.4-	1999 11 15	704	0.9+	0.0	1999 12 12	703	0.3+	0.1-
1999 11 01	703	1.0-	0.4+	1999 11 17	704	0.2+	0.3-	1999 12 12	703	0.4-	0.2+
1999 11 01	703	0.3-	0.1+	1999 11 17	704	0.6+	0.1+				
1999 11 04	704	0.2+	0.3-	1999 11 17	704	0.2-	0.6-				

1999 XH₁₀₉ = 1997 LL₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		42.50553		(2000.0)		P		Q	
<i>n</i>		0.18369527		ω		290.32756		+0.89675679	-0.43055765
<i>a</i>		3.0648136		Ω		95.29144		+0.43457509	+0.81325447
<i>e</i>		0.0444678		<i>i</i>		5.89178		+0.08349704	+0.39145534
<i>P</i>		5.37		<i>H</i>		13.8		<i>G</i>	0.15
								<i>U</i>	5

Residuals in seconds of arc

1997 06 08	809	0.0	0.2+	1999 11 04	704	0.2-	0.3-	1999 12 04	703	0.5-	0.8-
1997 06 08	809	0.8-	0.6-	1999 11 04	704	0.1+	0.1+	1999 12 04	703	0.1-	0.2+
1997 06 08	809	0.2-	1.6-	1999 11 04	704	0.2+	0.1-	1999 12 12	703	0.5+	0.2+
1997 06 09	809	0.0	0.1-	1999 11 05	704	0.5+	1.4-	1999 12 12	703	0.1-	0.1+
1997 06 09	809	0.2+	0.4+	1999 11 05	704	0.3-	0.1+	1999 12 12	703	0.1+	0.9-
1997 06 09	809	0.3+	0.1-	1999 11 05	704	0.6+	0.0	1999 12 12	703	0.2-	0.2-
1999 11 01	703	0.7-	0.4+	1999 11 05	704	0.1+	0.8+	1999 12 14	704	0.9+	1.1-
1999 11 01	703	0.2+	0.4+	1999 12 02	699	0.3-	1.8+	1999 12 14	704	0.5-	1.6-
1999 11 01	703	0.6-	0.6+	1999 12 02	699	0.8+	0.5-	1999 12 14	704	0.4-	0.2+
1999 11 01	703	0.2-	0.3+	1999 12 02	699	0.4+	0.6+	1999 12 14	704	0.9+	0.5-
1999 11 04	704	0.2+	0.3-	1999 12 04	703	0.3-	0.1-	1999 12 14	704	0.6-	0.6-
1999 11 04	704	0.3+	0.4+	1999 12 04	703	0.1+	0.5+				

1999 XS₁₀₉ = 1991 PH₂₃ = 1991 RL₃₁ = 1997 EB₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		20.28296		(2000.0)		P		Q	
<i>n</i>		0.26585511		ω		325.81081		+0.44631562	-0.89214281
<i>a</i>		2.3953706		Ω		97.59288		+0.83598582	+0.38781044
<i>e</i>		0.1948384		<i>i</i>		4.04274		+0.31926489	+0.23169864
<i>P</i>		3.71		<i>H</i>		14.5		<i>G</i>	0.15
								<i>U</i>	2

Residuals in seconds of arc

1991 08 02	809	0.4-	1.7-	1999 11 12	699	0.7-	0.1+	1999 12 12	703	0.0	0.1+
1991 08 02	809	0.4-	0.0	1999 11 12	699	0.4-	0.7+	1999 12 14	704	0.9+	0.0
1991 08 02	809	1.7-	1.8-	1999 11 12	699	0.4-	0.4+	1999 12 14	704	0.9+	0.2+
1991 09 07	809	0.9+	0.9+	1999 11 17	704	0.1-	0.3-	1999 12 14	704	0.5+	0.0
1991 09 07	809	1.1+	1.3+	1999 11 17	704	0.1-	0.1-	1999 12 14	704	0.8+	0.5+
1991 09 07	809	1.5-	0.8+	1999 11 17	704	0.1+	0.3-	1999 12 14	704	0.0	0.4+
1995 08 30	809	1.2+	0.5+	1999 11 17	704	0.0	0.0	2000 01 04	106	0.0	0.4+
1995 08 31	809	1.8+	0.1-	1999 11 17	704	0.1+	0.7-	2000 01 04	106	0.4+	0.6+
1995 08 31	809	0.9+	0.9-	1999 12 02	699	0.1+	0.5+	2000 01 04	106	0.1-	0.2+
1995 09 01	809	0.1+	1.0-	1999 12 02	699	0.9+	0.7+	2000 01 05	704	0.2-	0.9-
1997 03 06	721	0.1+	0.2+	1999 12 02	699	0.0	0.2+	2000 01 05	704	0.3-	1.1-
1997 03 06	721	0.2-	0.0	1999 12 04	703	0.6-	0.2+	2000 01 05	704	0.3-	0.6-
1997 03 07	721	0.3+	1.5-	1999 12 04	703	1.1-	1.0-	2000 01 05	704	0.0	0.5-
1997 03 07	721	0.6-	1.8-	1999 12 04	703	0.8+	0.8-	2000 01 06	704	0.0	0.6-
1999 11 01	703	0.4-	0.1+	1999 12 04	703	0.3-	0.3+	2000 01 06	704	0.2+	0.3-
1999 11 01	703	0.5-	0.1-	1999 12 06	704	0.4+	0.2-	2000 01 06	704	0.5+	0.6-
1999 11 01	703	0.6-	0.2-	1999 12 06	704	0.3+	0.2-	2000 01 06	704	0.2-	0.5-
1999 11 01	703	0.6-	0.0	1999 12 06	704	0.0	0.0	2000 01 06	704	0.0	0.1+

1999 11 04	704	0.2-	0.1-	1999 12 06	704	0.1+	0.0	2000 01 06	699	0.1+	0.3+
1999 11 04	704	0.0	0.1-	1999 12 06	704	0.2-	0.3+	2000 01 06	699	0.1+	0.2+
1999 11 04	704	0.0	0.4-	1999 12 12	703	0.4-	0.3+	2000 01 06	699	0.1-	0.7+
1999 11 04	704	0.1-	0.0	1999 12 12	703	0.1-	0.1+				
1999 11 04	704	0.1-	0.1-	1999 12 12	703	0.1-	0.2+				

1999 XZ₁₀₉ = 1978 WW₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		141.67358		(2000.0)		P		Q	
<i>n</i>		0.18580398		ω		205.60044		+0.22642991	+0.95552427
<i>a</i>		3.0415810		Ω		77.95535		-0.85715681	+0.28761166
<i>e</i>		0.0749309		<i>i</i>		11.13991		-0.46261398	-0.06521425
<i>P</i>		5.30		<i>H</i>		12.9		<i>G</i>	0.15
								<i>U</i>	1

Residuals in seconds of arc

1978 11 29	675	0.1+	0.1+	1999 11 12	699	0.4-	0.0	1999 12 06	704	0.4+	0.2-
1978 11 30	675	0.1-	0.2-	1999 11 12	699	0.5-	0.5+	1999 12 06	704	0.2-	0.7-
1997 05 27	910	0.3+	0.7+	1999 11 17	704	0.2-	0.0	1999 12 06	704	0.2-	0.1-
1997 05 28	910	0.4+	0.8+	1999 11 17	704	0.4-	0.0	1999 12 12	703	0.2-	0.4+
1997 05 28	910	0.3+	0.6+	1999 11 17	704	0.3-	0.3-	1999 12 12	703	0.2-	0.1+
1998 12 08	704	0.8-	0.1-	1999 11 17	704	0.4-	0.0	1999 12 12	703	0.2-	0.9+
1998 12 08	704	1.0+	1.2+	1999 11 17	704	0.5-	0.1+	1999 12 12	703	0.1-	0.1+
1998 12 08	704	0.3-	1.2-	1999 12 02	699	0.5+	0.5+	1999 12 14	704	(0.0	2.7+)
1998 12 08	704	(2.9+	1.3-)	1999 12 02	699	0.2+	0.4+	1999 12 14	704	(2.0+	3.0+)
1998 12 08	704	(3.6-	0.5+)	1999 12 02	699	0.1+	0.9+	1999 12 14	704	(0.7+	2.9+)
1999 11 04	704	0.4+	0.5-	1999 12 04	703	0.4-	0.2-	1999 12 14	704	(1.0-	3.9+)
1999 11 04	704	0.2+	0.3-	1999 12 04	703	0.0	0.5+	1999 12 15	704	0.2+	0.0
1999 11 04	704	0.2+	0.3-	1999 12 04	703	0.0	0.4+	1999 12 15	704	0.3+	0.4-
1999 11 04	704	0.2-	0.9+	1999 12 04	703	0.1-	0.3-	1999 12 15	704	0.5+	0.5-
1999 11 04	704	0.2-	0.6+	1999 12 06	704	(2.1+	0.5-)	1999 12 15	704	0.9+	0.3+
1999 11 12	699	0.6-	0.2-	1999 12 06	704	0.4-	0.6-	1999 12 15	704	0.7+	0.2+

1999 XB₁₁₀ = 1984 BN₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		40.26328		(2000.0)		P		Q	
<i>n</i>		0.23911104		ω		273.42162		+0.84605531	-0.53016049
<i>a</i>		2.5708079		Ω		118.60186		+0.51088472	+0.77641232
<i>e</i>		0.1549661		<i>i</i>		3.64782		+0.15227349	+0.34075470
<i>P</i>		4.12		<i>H</i>		15.3		<i>G</i>	0.15
								<i>U</i>	4

Residuals in seconds of arc

1984 01 25	675	0.2-	0.1+	1999 11 12	699	0.1-	0.2-	1999 12 06	704	0.5-	0.1-
1984 01 26	675	0.2+	0.1-	1999 11 17	704	0.3-	0.1-	1999 12 06	704	0.7+	0.2-
1999 09 18	703	0.7+	0.9+	1999 11 17	704	0.4+	0.6-	1999 12 06	704	0.6+	0.4+
1999 09 18	703	0.1-	0.8+	1999 11 17	704	0.5-	0.5-	1999 12 06	704	0.3-	0.1-
1999 09 18	703	0.3-	0.4-	1999 11 17	704	0.3+	0.1+	1999 12 06	704	0.3+	0.6+
1999 09 18	703	0.4-	0.3-	1999 11 17	704	0.3-	0.3+	1999 12 12	703	0.1+	0.4-
1999 11 04	704	0.2-	0.9-	1999 12 02	699	0.7-	1.2+	1999 12 12	703	0.7-	0.2-
1999 11 04	704	0.3+	0.3-	1999 12 02	699	0.6+	1.6+	1999 12 12	703	0.6-	0.4-
1999 11 04	704	0.2+	0.5-	1999 12 02	699	1.5+	1.8+	1999 12 12	703	0.1+	0.1-
1999 11 04	704	0.6-	1.3-	1999 12 04	703	0.0	0.2-	1999 12 14	704	0.4+	0.3-
1999 11 04	704	0.4+	0.3-	1999 12 04	703	0.1+	1.5+	1999 12 14	704	0.2+	0.6-
1999 11 12	699	0.1-	0.8+	1999 12 04	703	0.3-	0.0	1999 12 14	704	0.1-	0.9-
1999 11 12	699	0.4-	0.2-	1999 12 04	703	0.4+	0.6-	1999 12 14	704	0.7-	0.3-

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Residuals in seconds of arc

1998 04 21	704	0.4−	0.2−	1998 05 16	704	(2.1+ 1.1−)	1999 12 04	703	0.2+ 0.8+
1998 04 21	704	0.7−	0.4+	1998 05 16	704	(2.3− 0.7+)	1999 12 04	703	0.3− 0.0
1998 04 21	704	0.4−	0.5−	1999 11 04	704	0.3− 0.6+	1999 12 04	703	0.2− 0.0
1998 04 21	704	0.6−	0.1−	1999 11 04	704	0.0 0.7−	1999 12 04	703	0.2− 0.8+
1998 04 21	704	0.4+	1.1+	1999 11 04	704	0.2+ 0.3−	1999 12 07	704	0.7+ 0.3−
1998 04 22	704	0.4−	0.1−	1999 11 04	704	0.0 0.8−	1999 12 07	704	0.7+ 0.1+
1998 04 22	704	0.2−	1.8+	1999 11 04	704	0.4+ 0.3−	1999 12 07	704	0.9+ 0.6+
1998 04 22	704	0.2−	0.7−	1999 11 04	691	0.4− 0.2−	1999 12 07	704	0.3+ 0.0
1998 04 22	704	0.8−	0.3−	1999 11 04	691	0.3− 0.0	1999 12 07	704	0.6+ 0.3−
1998 04 22	704	0.2−	0.1+	1999 11 04	691	0.4− 0.1−	1999 12 12	703	1.4− 0.2−
1998 05 16	704	0.4+ 0.7−	1999 11 09	691	0.3+ 0.2−	1999 12 12	703	0.3− 0.0	
1998 05 16	704	1.1+ 1.4−	1999 11 09	691	0.4+ 0.2−	1999 12 12	703	0.0 0.3−	
1998 05 16	704	1.7+ 0.8−	1999 11 09	691	0.3+ 0.2−	1999 12 12	703	0.8− 0.4+	

1999 XR₁₁₀ = 1970 EV₁ = 1985 UL₅ = 1998 MW₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	208.60759		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.28790238	ω	320.87458	−0.64319746	+0.76045768
a	2.2714641	Ω	268.90518	−0.67814800	−0.61999624
e	0.1236933	i	5.13285	−0.35554510	−0.19315481
P	3.42	H	14.3	G 0.15	U 2

Residuals in seconds of arc

1970 03 03	805	0.8−	1.3+	1999 10 03	703	0.4−	0.1+	1999 12 05	703	1.6−	0.7+
1970 03 03	805	0.4+	0.7+	1999 10 03	703	0.1−	0.7+	1999 12 05	703	0.4+	0.5+
1970 03 03	805	1.5+	0.7+	1999 10 03	703	0.2+	0.1+	1999 12 05	703	0.3+	0.3+
1985 10 18	095	(0.1−	3.4−)	1999 11 03	704	0.2+	0.2−	1999 12 05	703	0.2+	0.3−
1996 12 08	327	0.3−	1.0−	1999 11 03	704	0.2−	0.0	1999 12 08	704	0.5+	0.1−
1996 12 08	327	0.3−	1.0−	1999 11 03	704	0.5+	0.2+	1999 12 08	704	0.1−	0.3−
1996 12 08	327	0.1−	1.6−	1999 11 03	704	0.3−	0.0	1999 12 08	704	0.6−	0.5−
1998 06 24	704	0.5−	0.2−	1999 11 03	704	0.2−	0.3−	1999 12 08	704	0.1+	0.4+
1998 06 24	704	0.5+	0.5+	1999 11 09	699	0.3−	1.4+	1999 12 08	704	0.8−	0.0
1998 06 24	704	0.9+	0.3−	1999 11 09	699	0.4+	0.1−	1999 12 12	703	0.0	0.2−
1998 06 24	704	0.7−	0.2+	1999 11 09	699	0.6+	0.3−	1999 12 12	703	0.1−	0.2+
1998 06 26	704	0.1−	1.0+	1999 11 16	704	0.2−	0.3+	1999 12 12	703	0.2−	0.2−
1998 06 26	704	0.0	0.2−	1999 11 16	704	0.2−	0.1+	1999 12 12	703	0.4+	0.5−
1998 06 26	704	(2.7−	2.7+)	1999 11 16	704	0.0	0.2+	2000 01 04	704	(1.4−	2.7−)
1998 06 26	704	(0.3−	3.3+)	1999 11 16	704	0.2+	0.3−	2000 01 04	704	0.1+	1.5+
1999 10 03	703	0.5−	0.8+	1999 11 16	704	0.1−	0.7−	2000 01 04	704	1.0+	1.3+

1999 XT₁₁₀ = 1983 RN₇ = 1991 RS₃₆ = 1996 XS₃₀ = 1998 HQ₉₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	107.51758		(2000.0)	P	Q
n	0.25349722	ω	30.22987	+0.55636589	+0.82665897
a	2.4726003	Ω	273.69864	−0.77827351	+0.48291430
e	0.2111156	i	4.84092	−0.29111395	+0.28884031
P	3.89	H	14.6	G 0.15	U 1

Residuals in seconds of arc

1983 09 11	095	0.6−	0.4+	1998 04 22	704	0.3−	0.1+	1999 12 05	703	0.3−	0.5−
1991 09 14	675	1.4+	0.3+	1998 04 22	704	1.4+	0.0	1999 12 08	704	0.3−	0.1+
1991 09 14	675	0.5−	0.1+	1998 05 22	704	(1.5−	2.8+)	1999 12 08	704	0.5+	0.7+
1996 12 15	691	0.2+	0.4+	1998 05 22	704	1.1+	0.1−	1999 12 08	704	0.3−	0.5+
1996 12 15	691	0.3+	0.5−	1998 05 22	704	0.4+	1.2+	1999 12 08	704	0.8−	0.0
1996 12 15	691	0.2−	0.2+	1998 05 22	704	0.5+	0.2−	1999 12 12	703	0.7−	0.2+
1996 12 17	691	0.0	0.2+	1998 05 22	704	0.7+	1.7+	1999 12 12	703	0.1−	0.1+
1996 12 17	691	0.1−	0.0	1999 11 03	704	0.1+	0.2−	1999 12 12	703	0.5−	0.3+
1996 12 17	691	0.2−	0.0	1999 11 03	704	0.2−	0.1+	1999 12 12	703	0.1+	0.4+
1998 04 21	704	0.4−	0.4−	1999 11 03	704	0.3−	0.4−	2000 01 04	704	0.3+	0.3+
1998 04 21	704	0.2−	0.4+	1999 11 03	704	0.4+	0.0	2000 01 04	704	0.4−	0.5+
1998 04 21	704	0.3+	0.3+	1999 11 09	699	0.2+	0.0	2000 01 04	704	0.5−	0.2−
1998 04 21	704	0.7−	0.3+	1999 11 09	699	0.2−	0.5+	2000 01 04	704	0.7+	0.5−
1998 04 21	704	1.2−	0.5+	1999 11 09	699	0.2−	1.6+	2000 01 06	704	0.0	0.2+
1998 04 22	704	0.3+	0.6−	1999 12 05	703	0.3+	0.6+	2000 01 06	704	0.3+	1.0−

1998 04 22	704	0.9−	0.4−	1999 12 05	703	0.4−	0.2+	2000 01 06	704	0.7+ 0.4−
1998 04 22	704	0.4+	0.5+	1999 12 05	703	0.0	0.1+			

1999 XU₁₁₀ = 1979 OE₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	285.83333		(2000.0)	P	Q
n	0.25830975	ω	253.56096	−0.90761250	−0.40517702
a	2.4417931	Ω	262.42845	+0.41489942	−0.82582682
e	0.0496841	i	6.36345	+0.06401570	−0.39222653
P	3.82	H	13.9	G 0.15	U 3

Residuals in seconds of arc

1979 07 26	675	1.2−	0.2−	1999 11 09	699	0.5+ 0.6−	1999 12 08	704	0.2−	0.1−
1979 07 27	675	1.2+ 0.1+		1999 11 13	703	0.6+ 0.4+	1999 12 12	703	0.2+ 0.6+	
1998 06 24	704	0.5+ 1.0−		1999 11 13	703	0.0 0.0	1999 12 12	703	0.4−	0.1−
1998 06 24	704	0.2+ 0.3−		1999 11 13	703	0.1− 0.0	1999 12 12	703	0.4−	0.2+
1998 06 24	704	0.4− 1.5+		1999 11 13	703	0.1+ 0.1+	1999 12 12	703	0.5−	0.0
1998 06 24	704	(6.3− 1.8+)		1999 11 16	704	0.1− 0.3−	1999 12 15	704	0.0 0.3−	
1998 06 26	704	0.8− 0.7−		1999 11 16	704	0.5− 0.0	1999 12 15	704	0.1−	1.2−
1998 06 26	704	0.2+ 1.0+		1999 11 16	704	0.7− 0.1−	1999 12 15	704	0.0 0.7−	
1998 06 26	704	(3.0− 0.2+)		1999 11 16	704	0.4− 0.1−	1999 12 15	704	0.8−	0.7−
1998 06 26	704	(5.8− 0.7−)		1999 11 16	704	0.5− 0.3+	2000 01 04	704	0.6−	0.1+
1998 07 26	704	0.1− 0.1−		1999 12 05	703	0.2− 0.0	2000 01 04	704	0.6−	0.1−
1998 07 26	704	0.3+ 0.5+		1999 12 05	703	0.3− 0.1+	2000 01 04	704	0.2−	0.1−
1998 07 26	704	(3.7− 2.6−)		1999 12 05	703	0.9− 0.1+	2000 01 04	704	0.4+ 0.8+	
1998 07 26	704	(0.0 2.6−)		1999 12 05	703	0.2− 0.2+	2000 01 04	704	0.7+ 0.7+	
1999 11 03	704	0.1+ 0.4−		1999 12 07	699	(0.9+ 2.9+)	2000 01 06	704	0.4−	0.4+
1999 11 03	704	0.3− 0.3−		1999 12 07	699	(0.1− 2.8+)	2000 01 06	704	0.3+ 0.7+	
1999 11 03	704	0.1+ 0.1+		1999 12 07	699	0.4+ 1.4+	2000 01 06	704	0.6+ 0.8+	
1999 11 03	704	0.4+ 0.3+		1999 12 08	704	0.3+ 0.3−	2000 01 06	704	0.3+ 0.9+	
1999 11 03	704	0.3+ 0.4+		1999 12 08	704	0.1− 0.4−	2000 01 06	704	1.2+ 0.4+	
1999 11 09	699	0.2+ 0.6−		1999 12 08	704	0.2+ 1.0−				
1999 11 09	699	0.9+ 0.6−		1999 12 08	704	0.4+ 0.0				

1999 XY₁₁₀ = 1995 WX₁₈ = 1997 JC₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	304.87984		(2000.0)	P	Q
n	0.24586776	ω	318.36886	−0.83432598	−0.55115064
a	2.5234904	Ω	188.20912	+0.52473148	−0.78756903
e	0.1036279	i	4.63493	+0.16898827	−0.27562291
P	4.01	H	14.3	G 0.15	U 3

Residuals in seconds of arc

1995 11 17	691	0.0	0.2−	1999 11 04	704	1.0−	0.3+	1999 12 05	703	0.0	1.2−
1995 11 17	691	0.1+	0.1−	1999 11 04	704	0.7−	0.1−	1999 12 05	703	0.0	0.6+
1995 11 17	691	0.2+	0.2−	1999 11 04	704	0.6−	0.1+	1999 12 05	703	0.3−	0.4+
1995 11 22	691	0.3+	0.0	1999 11 04	704	1.0−	0.3−	1999 12 05	703	0.3+	0.4+
1995 11 22	691	0.2−	0.1−	1999 11 04	704	0.4−	0.1+	1999 12 06	704	0.5+	0.4−
1995 11 22	691	0.2−	0.1−	1999 11 15	704	0.1+	0.2−	1999 12 06	704	0.2−	0.1−
1997 04 01	809	0.2+	0.1+	1999 11 15	704	0.2+	0.0	1999 12 06	704	0.0	0.3−
1997 04 01	809	0.2−	0.1+	1999 11 15	704	0.3+	0.3+	1999 12 06	704	0.2−	0.2+
1997 04 01	809	0.5−	0.3−	1999 11 15	704	0.3+	0.3+	1999 12 06	704	0.4−	0.1+
1997 05 07	566	1.6−	1.1−	1999 11 15	704	0.7+	0.7+	1999 12 12	703	0.1+	0.4+
1997 05 07	566	0.4−	0.4+	1999 11 17	704	0.8−	0.8−	1999 12 12	703	0.7−	0.7+
1997 05 07	566	0.6−	0.8−	1999 11 17	704	0.2+	1.4−	1999 12 12	703	0.7−	1.1+
1997 05 10	540	0.6+	0.3+	1999 11 17	704	0.6−	0.3−	1999 12 12	703	0.3+	0.6+
1997 05 10	540	0.4+	0.3+	1999 11 17	704	0.4+	0.9−	1999 12 14	704	0.1+	0.3+
1997 05 10	540	0.8+	0.1+	1999 11 17	704	0.2+	0.5−	1999 12 14	704	0.7+	0.4−
1997 05 11	540	0.2+	0.3+	1999 12 02	699	1.0+	0.2−	1999 12 14	704	0.6+	0.4−
1997 05 11	540	1.0+	0.4+	1999 12 02	699	0.3+	0.8+	1999 12 14	704	0.8+	0.6+
1997 05 11	540	0.2+	0.1−	1999 12 02	699	0.9+	0.7+	1999 12 14	704	0.1−	0.4−

1999 XB₁₁₁ = 1998 KJ₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27723533	ω	269.86996	+0.98365736	−0.14306589		
<i>a</i>	2.3293621	Ω	98.35454	+0.17438191	+0.90814380		
<i>e</i>	0.0889642	<i>i</i>	6.34357	−0.04482350	+0.39345520		
<i>P</i>	3.56	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 05 22	704	0.9+	0.5−	1999 11 12	699	0.4−	0.3+
1998 05 22	704	0.6+	0.2−	1999 11 12	699	1.2+	0.1+
1998 05 22	704	0.5−	0.1−	1999 11 12	699	0.4+	0.1+
1998 05 22	704	0.3+	0.3+	1999 12 02	699	0.5+	0.3+
1998 05 24	704	0.1−	0.9+	1999 12 02	699	1.0+	0.0
1998 05 24	704	0.4−	1.4+	1999 12 02	699	0.6+	0.2−
1998 05 24	704	0.7−	1.6+	1999 12 05	703	0.6−	0.1+
1998 05 24	704	0.8−	0.2+	1999 12 05	703	0.2−	0.1+
1998 06 26	704	1.6+	1.1+	1999 12 05	703	0.0	0.0
1998 06 26	704	0.5+	0.8+	1999 12 05	703	0.0	0.1+
1998 06 26	704	0.3−	1.7−	1999 12 06	704	0.5+	0.4−
1998 06 26	704	(4.6−	0.4+)	1999 12 06	704	0.3−	0.0
1999 11 05	704	0.3−	0.7−	1999 12 06	704	0.8+	0.4−
1999 11 05	704	0.6−	0.5−	1999 12 06	704	0.1+	0.4−
1999 11 05	704	0.7−	0.2−	1999 12 06	704	0.8+	0.2−
1999 11 05	704	0.6−	0.2−	1999 12 12	703	0.2−	0.8+
1999 11 05	704	0.4−	0.3+	1999 12 12	703	1.5−	0.7+

1999 XR₁₁₁ = 1997 CZ₈ = 1997 JX₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29494376	ω	101.55391	−0.33120763	−0.94355530		
<i>a</i>	2.2351666	Ω	7.78925	+0.85920632	−0.30256749		
<i>e</i>	0.1465462	<i>i</i>	0.93605	+0.38995641	−0.13474536		
<i>P</i>	3.34	<i>H</i>	17.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 02 01	691	0.1+	0.1−	1997 05 08	709	0.4−	0.2−
1997 02 01	691	0.2+	0.2−	1997 05 08	709	1.6+	0.8−
1997 02 01	691	0.3+	0.2+	1997 05 08	709	0.0	0.6+
1997 02 06	691	0.2−	0.2+	1997 05 08	709	0.1−	0.1−
1997 02 06	691	0.2−	0.2+	1999 11 09	704	0.4+	2.1−
1997 02 06	691	0.1−	0.0	1999 11 09	704	0.0	1.5−
1997 05 08	709	0.6−	0.4+	1999 11 09	704	0.0	0.0
1997 05 08	709	1.2+	0.7−	1999 11 12	704	1.1+	1.0+
1997 05 08	709	2.2−	0.7−	1999 11 12	704	0.6−	0.1−
1997 05 08	709	0.0	0.0	1999 11 12	704	0.3+	0.6−

1999 XV₁₁₁ = 1998 HA₇₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28441663	ω	40.80469	+0.68555247	+0.72573409		
<i>a</i>	2.2899855	Ω	272.56017	−0.68206066	+0.61254308		
<i>e</i>	0.2308066	<i>i</i>	3.31039	−0.25458017	+0.31321082		
<i>P</i>	3.47	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 04 21	704	0.6−	0.3−	1999 11 14	704	1.0+	0.5−
1998 04 21	704	0.8−	0.4−	1999 11 14	704	0.3+	1.1−
1998 04 21	704	0.1−	0.4−	1999 11 14	704	0.7−	0.3−
1998 04 21	704	0.7+	1.0+	1999 11 14	704	0.2−	0.9−
1998 04 22	704	(2.0−	0.6+)	1999 11 16	704	0.2+	0.6+
1998 04 22	704	0.8+	0.2+	1999 11 16	704	1.1−	0.3−
1998 04 22	704	(1.2+	2.3−)	1999 11 16	704	0.9−	0.5+
1998 04 22	704	(2.5+	0.1−)	1999 11 16	704	1.4+	0.0
1999 11 03	704	0.1+	0.0	1999 12 07	704	0.5−	0.1−

1999 11 03	704	0.3+	1.1+	1999 12 07	704	0.0	0.0	1999 12 13	704	0.2+	1.2+
1999 11 03	704	0.4+	0.7+	1999 12 07	704	0.1+	0.1+	1999 12 13	704	0.6+	0.1+

1999 XW₁₁₁ = 1994 JB₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27732417	ω	355.91835	+0.58515382	−0.80913583		
<i>a</i>	2.3288646	Ω	58.25923	+0.74578626	+0.51091594		
<i>e</i>	0.1428985	<i>i</i>	3.62690	+0.31843030	+0.29028280		
<i>P</i>	3.55	<i>H</i>	16.4	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 05 05	691	0.2+	0.1+	1999 11 12	704	0.1+	0.5+
1994 05 05	691	0.2−	0.4+	1999 11 12	704	0.2+	0.7+
1994 05 05	691	0.4−	0.6+	1999 11 12	704	0.4−	0.9+
1994 05 11	691	0.6+	0.2−	1999 11 16	704	0.0	0.0
1994 05 11	691	0.1+	0.8−	1999 11 16	704	0.0	0.3−
1994 05 11	691	0.2+	0.6+	1999 11 16	704	0.6−	0.6+
1999 11 09	704	0.4−	0.1+	1999 12 07	704	0.2−	0.3−
1999 11 09	704	0.0	0.2−	1999 12 07	704	0.1−	0.2−
1999 11 09	704	0.2−	0.3−	1999 12 07	704	0.4−	0.1−
1999 11 09	704	0.2−	0.4−	1999 12 07	704	0.4+	0.4+
1999 11 09	704	0.3−	0.0	1999 12 07	704	0.0	0.3−
1999 11 12	704	0.4+	0.3+	1999 12 12	704	0.2+	0.7−

1999 XA₁₁₂ = 1998 SF₄₀

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17997391	ω	191.13477	−0.95477731	−0.29719816		
<i>a</i>	3.1069172	Ω	331.57128	+0.27415257	−0.86884573		
<i>e</i>	0.0751815	<i>i</i>	1.03217	+0.11506804	−0.39595500		
<i>P</i>	5.48	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1998 09 24	691	0.2+	0.1+	1999 11 09	704	0.3−	0.4+
1998 09 24	691	0.4+	0.1−	1999 11 09	704	0.4+	0.2+
1998 09 24	691	0.4+	0.0	1999 11 09	704	0.7+	0.1+
1998 09 28	691	0.4−	0.1−	1999 12 07	704	0.8+	0.5−
1998 09 28	691	0.2−	0.0	1999 12 07	704	0.1−	0.1+
1998 09 28	691	0.3−	0.1+	1999 12 07	704	0.0	0.3+
1999 11 09	704	0.6−	0.1−	1999 12 07	704	0.6−	0.2+
1999 11 09	704	0.5−	0.5+	1999 12 07	704	0.4+	0.2−

1999 XE₁₁₃ = 1997 GG₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22470513	ω	32.38188	+0.68045145	−0.72572496		
<i>a</i>	2.6795430	Ω	15.56887	+0.56552752	+0.43195455		
<i>e</i>	0.0582366	<i>i</i>	22.22828	+0.46600906	+0.53547974		
<i>P</i>	4.39	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1997 04 03	704	0.2+	0.5+	1999 11 04	704	0.0	0.5+
1997 04 03	704	0.6−	0.7−	1999 11 05	704	0.7+	0.0
1997 04 11	704	0.3+	0.4+	1999 11 05	704	0.0	0.2−
1997 04 11	704	0.2+	0.1−	1999 11 05	704	0.0	0.2−
1999 11 04	704	0.2+	0.5−	1999 11 05	704	0.3+	0.1−
1999 11 04	704	0.3−	0.1−	1999 11 05	704	0.4−	0.4+
1999 11 04	704	0.1+	0.2+	1999 12 11	704	0.2−	0.2−
1999 11 04	704	0.2−	0.3+	1999 12 11	704	0.7+	0.3+

2000 JAN. 24

M.P.C. 37939

1999 XM₁₁₃ = 1997 CF₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	123.49073		(2000.0)	P		Q	
<i>n</i>	0.23950337	ω	340.36983	+0.37797892	+0.91088212		
<i>a</i>	2.5679997	Ω	311.45409	-0.81715570	+0.24415356		
<i>e</i>	0.1523063	<i>i</i>	12.76547	-0.43518789	+0.33269025		
<i>P</i>	4.12	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1997 02 01	691	0.0	0.1+	1999 11 01	704	0.1-	0.2+
1997 02 01	691	0.1+	0.1+	1999 12 05	699	1.1-	0.6-
1997 02 01	691	0.2+	0.0	1999 12 05	699	0.3-	1.4+
1997 02 04	566	0.4+	0.0	1999 12 05	699	0.1-	1.1+
1997 02 04	566	1.0-	0.4+	1999 12 11	704	0.1-	0.4-
1997 02 04	566	0.5+	0.1-	1999 12 11	704	0.5+	0.2-
1999 09 03	704	0.3-	0.7-	1999 12 11	704	0.0	0.1-
1999 09 03	704	0.2-	0.5+	1999 12 11	704	0.6+	0.8-
1999 09 03	704	0.2-	0.8+	1999 12 12	704	0.3+	0.6-
1999 11 01	704	0.2-	0.3+	1999 12 12	704	0.5+	0.1-
1999 11 01	704	0.3+	0.0	1999 12 12	704	0.3+	0.4-
1999 11 01	704	0.5+	0.2+	1999 12 12	704	0.3+	0.7-
1999 11 01	704	0.1-	0.4+	1999 12 12	704	0.9+	0.1-

1999 XU₁₁₃ = 1994 NN₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	65.68674		(2000.0)	P		Q	
<i>n</i>	0.23084819	ω	64.74728	+0.97061612	+0.10531429		
<i>a</i>	2.6317930	Ω	288.59196	-0.19553036	+0.86925666		
<i>e</i>	0.1576207	<i>i</i>	13.19564	+0.14025769	+0.48301321		
<i>P</i>	4.27	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1994 07 11	809	1.2+	0.5+	1999 11 14	699	0.7-	0.0
1994 07 11	809	0.5-	0.1-	1999 11 14	699	0.8-	0.2-
1994 07 11	809	0.9+	0.5-	1999 12 06	703	0.5-	0.3-
1994 07 12	809	0.5-	0.1+	1999 12 06	703	0.9-	0.5+
1994 07 12	809	0.4-	0.6+	1999 12 06	703	1.4-	0.5+
1994 07 12	809	0.8-	0.2-	1999 12 06	703	0.4+	0.4+
1999 11 01	704	0.1-	0.3-	1999 12 11	704	0.2+	0.9+
1999 11 01	704	0.1-	0.1-	1999 12 11	704	0.6+	0.5-
1999 11 01	704	1.0+	0.2-	1999 12 11	704	0.4+	0.4-
1999 11 01	704	0.3+	0.2-	1999 12 12	704	0.3-	0.0
1999 11 01	704	0.2+	0.5-	1999 12 12	704	0.0	0.2-
1999 11 14	699	0.7+	0.5+	1999 12 12	704	0.1-	0.4-

1999 XR₁₁₄ = 1993 RX₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	9.38851		(2000.0)	P		Q	
<i>n</i>	0.17750646	ω	73.51938	+0.43834288	-0.89826760		
<i>a</i>	3.1356429	Ω	350.30456	+0.37844499	+0.37942227		
<i>e</i>	0.1581099	<i>i</i>	10.66196	+0.51326435	+0.22170716		
<i>P</i>	5.55	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1993 09 15	809	0.6+	0.4+	1999 12 07	703	1.4-	0.0
1993 09 15	809	0.0	0.6-	1999 12 07	703	(2.6-	1.8+)
1993 09 15	809	0.9-	0.3-	1999 12 07	703	(0.6-	2.5+)
1993 09 22	809	0.4+	0.4+	1999 12 11	704	0.6+	0.4-
1993 09 22	809	0.0	0.0	1999 12 11	704	0.8-	0.8-
1993 09 22	809	0.1-	0.0	1999 12 11	704	0.0	0.1-
1999 11 08	699	0.1-	0.3+	1999 12 11	704	0.7-	0.0
1999 11 08	699	0.3+	0.1-	1999 12 12	704	0.5+	0.1-
1999 11 08	699	0.6+	0.1+	1999 12 12	704	0.2+	0.0
1999 12 05	699	0.2+	0.4+	1999 12 12	704	0.4+	0.0
1999 12 05	699	0.1-	0.0	1999 12 12	704	0.1+	0.2+
				2000 01 02	704	0.0	0.8-

1999 12 05	699	0.4+	0.1+	1999 12 12	704	0.5-	0.1-
1999 12 07	703	1.1-	0.8+	1999 12 15	704	0.8+	0.0

1999 XG₁₁₅ = 1998 HE₇₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	72.83257		(2000.0)	P		Q	
<i>n</i>	0.30123314	ω	102.68880	+0.98988460	+0.10832067		
<i>a</i>	2.2039457	Ω	251.14896	-0.13469906	+0.92033425		
<i>e</i>	0.1361779	<i>i</i>	5.55597	+0.04454938	+0.37583441		
<i>P</i>	3.27	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 04 21	704	0.4-	0.8-	1999 11 11	703	0.2-	0.8-
1998 04 21	704	0.5-	0.1+	1999 11 14	704	0.9-	0.5+
1998 04 21	704	(2.4+	1.8-)	1999 11 14	704	0.0	0.0
1998 04 21	704	0.4+	1.1+	1999 11 14	704	0.2-	0.0
1998 04 22	704	1.0-	0.8-	1999 11 14	703	0.2-	0.2+
1998 04 22	704	1.6-	0.2+	1999 11 14	704	0.3+	0.2-
1998 04 22	704	1.8+	0.8+	1999 11 14	703	0.6-	1.0+
1998 04 22	704	1.1+	0.1-	1999 11 14	704	0.0	0.2+
1998 04 22	704	0.3+	0.5-	1999 11 14	703	0.3+	0.9+
1999 11 03	704	0.2+	0.6+	1999 11 14	703	0.1-	0.8+
1999 11 03	704	0.1+	0.1+	1999 11 16	704	0.8+	0.1+
1999 11 03	704	0.5+	0.2-	1999 11 16	704	0.3+	0.9-
1999 11 03	704	0.6+	0.5-	1999 11 16	704	0.5+	0.2+
1999 11 03	704	0.2+	0.0	1999 11 16	704	0.2-	0.4-
1999 11 11	703	0.8-	0.1-	1999 11 16	704	0.7+	1.2-
1999 11 11	703	0.6-	0.2+	1999 12 04	695	0.6-	0.5-
1999 11 11	703	0.9-	0.7+	1999 12 04	695	0.3-	0.1-

1999 XJ₁₁₅ = 1978 WW₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	54.02334		(2000.0)	P		Q	
<i>n</i>	0.28420823	ω	109.60447	+0.91280418	-0.40030178		
<i>a</i>	2.2911048	Ω	274.06155	+0.33768368	+0.85122067		
<i>e</i>	0.1698236	<i>i</i>	4.65280	+0.22969168	+0.33938452		
<i>P</i>	3.47	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1978 11 28	675	0.2-	0.1-	1999 11 16	704	0.1+	0.1+
1978 11 29	675	0.5+	0.3-	1999 11 16	704	0.3-	0.1-
1999 11 09	703	0.2-	0.0	1999 12 04	703	0.5-	0.2+
1999 11 09	703	0.4-	0.3-	1999 12 04	703	0.5+	0.0
1999 11 09	703	0.1+	0.0	1999 12 04	703	0.0	0.4+
1999 11 09	703	0.5+	0.3+	1999 12 04	703	0.1+	0.3+
1999 11 16	704	0.3+	0.6+	1999 12 10	704	(2.2+	1.1+)
1999 11 16	704	0.2-	0.0	1999 12 10	704	1.2+	1.3-
1999 11 16	704	0.2+	0.5+	1999 12 10	704	1.3+	0.3-

1999 XE₁₁₆ = 1998 MX₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	96.73250		(2000.0)	P		Q	
<i>n</i>	0.19693935	ω	33.30970	+0.48279706	+0.85549408		
<i>a</i>	2.9258207	Ω	266.19698	-0.83886879	+0.39042417		
<i>e</i>	0.2612294	<i>i</i>	10.81244	-0.25140833	+0.34014533		
<i>P</i>	5.00	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 05 24	704	1.0-	0.5-	1998 08 15	704	(2.3-	0.5-)
1998 05 24	704	0.4+	0.9+	1998 08 21	566	0.4+	0.3+
1998 05 24	704	(2.3-	0.0)	1998 08 21	566	0.6-	0.4+
1998 05 24	704	0.3+	0.7-	1998 08 21	566	0.7-	0.6+
1998 06 24	704	0.1-	0.5+	1999 10 05	704	0.1-	0.4-
1998 06 24	704	0.3+	0.3-	1999 10 05	704	0.4-	0.4-
1998 06 24	704	1.4+	1.0-	1999 10 05	704	0.2-	0.8-
				1999 12 13	703	0.7+	0.3+
				1999 12 13	703	0.1-	0.6+
				1999 12 13	703	0.0	0.1-
				1999 12 13	703	0.1-	0.7+
				1999 12 13	703	0.4+	0.1-
				1999 12 13	703	0.2+	0.4+
				1999 12 13	703	0.3-	0.1+

1998 06 24	704	0.9+	0.3-	1999 10 05	704	0.4+	0.0	1999 12 13	703	0.1-	0.8+
1998 06 24	704	0.8+	1.6-	1999 10 05	704	0.0	0.1+	1999 12 13	703	0.3-	0.2-
1998 06 26	704	0.2-	0.2+	1999 12 05	703	0.2+	0.5+	2000 01 04	704	0.7-	0.5-
1998 06 26	704	0.3-	0.4-	1999 12 05	703	0.1-	0.9+	2000 01 04	704	0.3-	0.4+
1998 06 26	704	0.7-	0.5+	1999 12 05	703	0.1-	0.6+	2000 01 04	704	0.8-	0.8-
1998 06 26	704	0.0	0.0	1999 12 05	703	0.1+	0.8+	2000 01 04	704	0.6-	0.7-
1998 06 26	704	0.3-	0.2-	1999 12 07	699	0.5+	1.7+	2000 01 04	704	0.6-	1.3-
1998 07 20	566	0.1+	0.3-	1999 12 07	699	(0.9+	2.4+)	2000 01 06	704	0.2-	1.1-
1998 07 20	566	0.1-	0.1+	1999 12 07	699	(0.1-	2.6+)	2000 01 06	704	1.0-	0.6-
1998 07 20	566	0.0	0.0	1999 12 08	704	1.0+	0.1+	2000 01 06	704	0.7-	0.9-
1998 08 15	704	0.1+	0.0	1999 12 08	704	1.4+	0.0	2000 01 06	704	1.1-	1.2-
1998 08 15	704	0.3-	0.1-	1999 12 08	704	1.4+	0.4-	2000 01 06	704	0.9-	1.6-
1998 08 15	704	1.4-	1.3+	1999 12 08	704	1.4+	0.1+				

1999 XO₁₁₆ = 1993 RD₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	7.97011		(2000.0)	P	Q		
<i>n</i>	0.17785771	ω	73.44932	+0.46720263	-0.88398580		
<i>a</i>	3.1315132	Ω	348.65182	+0.77455816	+0.41851680		
<i>e</i>	0.0828988	<i>i</i>	4.97179	+0.42635824	+0.20835739		
<i>P</i>	5.54	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1993 09 15	809	(2.5+	2.4+)	1996 03 21	566	0.2+	0.1+	1999 11 13	703	0.5-	0.2-
1993 09 15	809	(0.5+	3.2+)	1996 03 21	566	0.0	0.0	1999 11 13	703	0.5+	0.6-
1993 09 15	809	(0.1-	3.0+)	1998 08 17	704	0.8+	1.4-	1999 12 05	703	0.2+	0.4+
1993 09 16	809	0.5-	0.2+	1998 08 17	704	0.9+	0.8-	1999 12 05	703	0.2-	0.2-
1993 09 16	809	0.8-	0.2-	1998 08 17	704	0.4+	0.0	1999 12 05	703	0.9-	0.4-
1993 09 16	809	1.3-	0.2-	1998 08 17	704	0.8+	0.9-	1999 12 05	703	0.3+	0.2-
1993 09 17	809	1.0+	1.7+	1998 08 17	704	1.1-	1.1-	1999 12 07	699	0.8+	1.3+
1993 09 17	809	0.5-	1.8+	1999 10 03	703	0.3-	0.3-	1999 12 07	699	0.5-	0.8+
1993 09 17	809	0.1-	1.6+	1999 10 03	703	0.2-	0.2+	1999 12 07	699	0.3+	1.2+
1993 09 18	809	0.4-	0.2+	1999 10 03	703	0.4-	0.0	1999 12 08	704	0.9+	0.4-
1993 09 18	809	1.1-	0.8-	1999 10 03	703	0.1-	0.5-	1999 12 08	704	0.3+	0.2-
1993 09 18	809	(2.2-	0.3-)	1999 11 03	704	0.2+	0.4-	1999 12 08	704	0.1+	0.7-
1993 09 18	675	0.3+	0.4-	1999 11 03	704	0.1+	0.3-	1999 12 08	704	0.7+	0.2+
1993 09 18	675	0.6-	0.9+	1999 11 03	704	0.1+	1.1-	1999 12 08	704	0.1+	0.8+
1993 09 22	675	1.6+	0.2-	1999 11 03	704	0.7+	0.4-	1999 12 13	703	0.2-	0.9-
1993 09 22	675	0.1+	0.1+	1999 11 09	699	0.6+	1.0-	1999 12 13	703	0.7+	0.5-
1993 09 23	809	1.0+	0.4+	1999 11 09	699	0.8-	0.1-	1999 12 13	703	0.1-	0.4-
1993 09 23	809	0.8-	0.6+	1999 11 09	699	1.1-	0.7+	1999 12 13	703	0.4-	0.4+
1993 09 23	809	1.0-	0.3-	1999 11 13	703	0.4+	0.4-				
1996 03 21	566	0.3-	0.4-	1999 11 13	703	0.1-	0.3-				

1999 XX₁₁₆ = 1981 UZ₈ = 1988 RE₄ = 1998 HT₈₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	64.25672		(2000.0)	P	Q		
<i>n</i>	0.27364091	ω	17.17533	+0.99647596	+0.08224324		
<i>a</i>	2.3497160	Ω	338.08714	-0.08120944	+0.89676795		
<i>e</i>	0.2379589	<i>i</i>	2.53152	-0.02099259	+0.43479109		
<i>P</i>	3.60	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1981 10 30	381	0.3+	0.7-	1999 11 03	704	0.5+	0.4-	1999 12 08	704	0.7-	0.4-
1981 10 30	381	0.0	0.9-	1999 11 03	704	0.4+	0.3-	1999 12 08	704	0.1-	0.6-
1988 09 11	071	0.4+	0.1-	1999 11 03	704	0.7+	0.5-	1999 12 08	704	0.2-	0.0
1988 09 11	071	1.9+	0.5-	1999 11 03	704	0.7+	0.2-	1999 12 13	703	0.1-	0.1+
1988 09 12	675	1.1-	1.5-	1999 11 04	703	0.1-	0.0	1999 12 13	703	0.2+	0.4+
1988 09 12	675	1.8-	1.5-	1999 11 04	703	0.2-	0.0	1999 12 13	703	0.0	0.3+
1988 09 12	071	0.3+	1.1+	1999 11 04	703	0.3-	0.4-	1999 12 13	703	0.4-	0.2+
1988 09 12	071	0.9+	1.7+	1999 11 04	703	0.8-	0.1+	2000 01 04	704	0.2+	0.1-
1998 04 21	704	(2.4-	0.5-)	1999 11 12	699	0.1-	0.3-	2000 01 04	704	0.8-	0.1-
1998 04 21	704	0.1-	1.0-	1999 11 12	699	0.3+	0.5-	2000 01 04	704	0.7+	0.4-
1998 04 21	704	0.0	0.7+	1999 11 12	699	0.0	0.2-	2000 01 04	704	0.2-	0.3-
1998 04 21	704	1.6-	1.3-	1999 12 05	703	0.4-	0.1+	2000 01 06	704	0.5+	0.1+
1998 04 22	704	1.4-	1.6-	1999 12 05	703	0.9-	0.5-	2000 01 06	704	0.1+	0.3-

1998 04 22	704	(1.9+	2.5+)	1999 12 05	703	0.2-	0.6+	2000 01 06	704	0.6+	0.2+
1998 04 22	704	1.1+	2.0-	1999 12 05	703	1.0-	0.4+	2000 01 06	704	1.0+	0.7+
1998 04 22	704	(0.2+	2.2-)	1999 12 08	704	0.0	0.2+	2000 01 06	704	0.8+	0.2+
1999 11 03	704	0.7+	0.6-	1999 12 08	704	0.0	0.6+				

1999 XE₁₁₇ = 1996 XW₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	39.57235		(2000.0)	P	Q		
<i>n</i>	0.29657267	ω	82.63887	+0.78133129	-0.62177069		
<i>a</i>	2.2269748	Ω	315.78702	+0.53766983	+0.71456248		
<i>e</i>	0.1502492	<i>i</i>	4.44639	+0.31691097	+0.32062700		
<i>P</i>	3.32	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 12 09	691	0.1-	0.0	1999 12 05	703	0.2-	0.3+	1999 12 13	703	0.3-	0.1+
1996 12 09	691	0.2+	0.1-	1999 12 05	703	1.5+	1.0+	1999 12 13	703	0.2+	0.3-
1996 12 09	691	0.1+	0.0	1999 12 07	699	0.6+	0.6+	2000 01 03	704	0.7+	0.9+
1996 12 14	691	0.1-	0.1+	1999 12 07	699	0.8-	0.6+	2000 01 03	704	0.8+	0.2+
1996 12 14	691	0.1-	0.2+	1999 12 07	699	1.4+	0.3-	2000 01 03	704	0.5-	0.1-
1996 12 14	691	0.1+	0.0	1999 12 10	704	0.4-	0.4-	2000 01 03	704	(2.9-	0.4+)
1997 01 15	566	0.1+	0.1-	1999 12 10	704	0.8-	0.0	2000 01 04	704	0.5-	0.6-
1997 01 15	566	0.1-	0.2-	1999 12 10	704	0.7+	0.5-	2000 01 04	704	0.6-	0.6+
1997 01 15	566	0.1-	0.0	1999 12 10	704	0.1+	0.8-	2000 01 04	704	0.5+	0.2-
1999 12 05	703	0.8-	0.3-	1999 12 13	703	0.4-	0.1-	2000 01 04	704	0.7+	0.2+
1999 12 05	703	0.5-	0.3-	1999 12 13	703	0.4-	0.3-	2000 01 04	704	0.9-	0.2-

1999 XW₁₁₇ = 1970 EN₁ = 1970 EQ = 1987 AX = 1992 UV₈= 1994 CR₁₉Id. G. V. Williams, B. G. Marsden (d, *MPC* 9041)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	221.10889		(2000.0)	P	Q		
<i>n</i>	0.28732387	ω	211.48154	-0.68438032	+0.72867209		
<i>a</i>	2.2745120	Ω	15.38276	-0.64721976	-0.59089152		
<i>e</i>	0.2009948	<i>i</i>	5.56011	-0.33575314	-0.34624299		
<i>P</i>	3.43	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1970 03 02	805	1.0-	1.0-	1994 02 13	809	1.3+	1.8+	1999 11 04	703	0.3-	0.6+
1970 03 02	805	0.3-	0.3-	1994 02 13	809	0.3+	1.1+	1999 11 09	703	0.2+	0.0
1970 03 02	805	0.2+	0.3+	1994 02 13	809	0.5+	1.2+	1999 11 09	703	0.4-	0.2+
1970 03 07	095	(2.8+	4.4-)	1999 11 02	012	0.6+	0.2+	1999 11 09	703	0.8+	0.1+
1987 01 08	010	0.1+	1.3-	1999 11 02	012	0.3+	0.5-	1999 11 09	703	0.2-	0.3+
1987 01 08	010	0.2-	1.5-	1999 11 03	012	(6.4+	4.1+)	1999 12 05	703	0.3+	0.7-
1987 01 08	010	0.5-	1.3-	1999 11 03	012	(7.5+	5.0+)	1999 12 05	703	0.2-	0.3+
1992 10 31	033	1.0+	0.1-	1999 11 03	704	0.3+	0.4-	1999 12 05	703	0.7-	0.1-
1992 10 31	033	0.4+	0.2+	1999 11 03	704	0.7-	0.2-	1999 12 05	703	0.1-	1.0+
1992 11 01	033	0.5+	0.2+	1999 11 03	704	0.1+	0.5-	1999 12 13	703	0.1-	1.1+
1994 02 08	809	(4.1+	3.3+)	1999 11 04	703	0.6-	0.2+	1999 12 13	703	0.7-	0.2-
1994 02 08	809	(3.5+	3.5+)	1999 11 04	703	1.4-	0.0	1999 12 13	703	0.3+	0.2+
1994 02 08	809	(3.0+	3.0+)	1999 11 04	703	0.1-	0.5-	1999 12 13	703	0.4-	0.5+

1999 XZ₁₁₇ = 1995 WT₃

Id. B. G. Marsden

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

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2000 JAN. 24

M.P.C. 37941

1995 11 22	557	0.2−	0.5−	1999 11 15	704	0.0	0.3−	1999 12 11	012	0.3−	0.3−
1995 11 22	557	0.2+	0.3+	1999 11 15	704	0.2+	0.1+	1999 12 11	012	0.2−	0.7−
1999 11 09	703	0.1−	0.5+	1999 11 15	704	0.1−	0.2+	1999 12 11	012	0.2−	0.4−
1999 11 09	703	0.6−	0.1−	1999 11 15	704	0.3+	0.2+	1999 12 13	703	0.3+	0.2+
1999 11 09	703	0.0	0.5+	1999 11 15	704	0.4+	0.4+	1999 12 13	703	0.2−	0.0
1999 11 09	703	0.0	0.2−	1999 11 16	704	0.1+	0.5−	1999 12 13	703	0.0	0.1−
1999 11 12	699	0.4−	0.1+	1999 11 16	704	1.8+	1.6−	1999 12 13	703	0.3+	0.3+
1999 11 12	699	0.1+	0.5+	1999 11 16	704	0.1−	0.1−	1999 12 15	012	0.4+	0.2+
1999 11 12	699	0.3+	0.2−	1999 11 16	704	0.5−	0.4−	1999 12 15	012	0.0	0.5+
1999 11 14	704	0.1−	0.3−	1999 11 16	704	0.1+	0.3−	1999 12 15	012	0.3+	0.3+

1999 XC₁₁₈ = 1995 YY₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	111.34349		(2000.0)		P		Q
<i>n</i>	0.21967454	ω	38.96420	+0.76471433		+0.64075161	
<i>a</i>	2.7202964	Ω	281.05017	−0.60721511		+0.68116195	
<i>e</i>	0.0463847	<i>i</i>	3.98380	−0.21564279		+0.35419736	
<i>P</i>	4.49	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 12 22	566	0.1+	0.0	1999 11 04	703	1.1−	0.8+	1999 12 02	699	0.7+	0.7−
1995 12 22	566	0.1+	0.1−	1999 11 09	703	0.1−	1.0+	1999 12 02	699	0.7−	0.4+
1995 12 22	566	0.4−	0.0	1999 11 09	703	0.8−	0.2−	1999 12 05	703	0.7+	0.3+
1995 12 24	566	0.3−	0.1+	1999 11 09	703	0.4−	0.2+	1999 12 05	703	0.3−	0.3+
1995 12 24	566	0.2−	0.1+	1999 11 09	703	0.5−	0.2+	1999 12 05	703	0.5−	0.3−
1995 12 24	566	0.1+	0.2+	1999 11 15	704	0.3+	0.4−	1999 12 05	703	0.2−	0.1+
1995 12 25	566	0.4+	0.1+	1999 11 15	704	0.1−	0.0	1999 12 08	704	0.7−	0.9−
1995 12 25	566	0.1+	0.1−	1999 11 15	704	0.9+	0.5+	1999 12 08	704	0.1−	0.4−
1995 12 25	566	0.2+	0.1−	1999 11 15	704	0.4−	0.1−	1999 12 08	704	0.1+	0.3−
1999 11 03	704	0.4−	0.1+	1999 11 15	704	0.1−	0.1+	1999 12 08	704	0.2−	0.3−
1999 11 03	704	0.3−	0.0	1999 11 16	704	0.3+	0.4−	1999 12 08	704	0.4+	0.3−
1999 11 03	704	0.0	0.6+	1999 11 16	704	0.5+	0.8−	1999 12 13	703	0.4+	0.1−
1999 11 03	704	0.9+	0.1+	1999 11 16	704	0.5+	0.4−	1999 12 13	703	0.4+	0.9+
1999 11 04	703	0.9−	0.3−	1999 11 16	704	0.4+	0.7−	1999 12 13	703	0.0	0.2−
1999 11 04	703	0.6−	0.4+	1999 11 16	704	0.6+	0.4−	1999 12 13	703	0.3−	0.3+
1999 11 04	703	0.4+	0.2−	1999 12 02	699	1.1+	1.2+				

1999 XD₁₁₈ = 1994 AS₁₅ = 1998 HX₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	109.06297		(2000.0)		P		Q
<i>n</i>	0.30371936	ω	282.82897	+0.76984812		+0.63597180	
<i>a</i>	2.1919016	Ω	37.71771	−0.54630568		+0.70006770	
<i>e</i>	0.1389962	<i>i</i>	5.02706	−0.32997572		+0.32472309	
<i>P</i>	3.25	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 01 14	033	0.6−	0.6−	1998 04 22	704	0.6+	0.0	1999 11 09	703	0.4−	0.2+
1994 01 15	033	0.1+	1.3−	1998 04 25	699	0.5+	1.1+	1999 11 14	012	0.1−	0.2−
1994 01 15	033	0.2−	1.3−	1998 04 25	699	0.5+	0.6+	1999 11 14	012	(9.9+	0.1+)
1998 03 25	699	0.9+	0.8+	1998 04 25	699	0.1+	0.1+	1999 12 02	699	1.1+	0.4+
1998 03 25	699	0.4+	1.1+	1998 05 16	704	0.1+	0.5−	1999 12 02	699	1.1+	0.0
1998 03 25	699	0.6−	0.2+	1998 05 16	704	0.0	0.6+	1999 12 02	699	0.5+	0.3+
1998 03 29	704	0.2+	0.3−	1998 05 16	704	1.0−	0.4−	1999 12 05	703	0.0	0.5+
1998 03 29	704	0.4−	0.0	1998 05 16	704	0.4−	0.1−	1999 12 05	703	0.0	0.4+
1998 03 29	704	0.1−	0.8−	1999 11 03	704	0.1−	0.4+	1999 12 05	703	0.3+	0.2+
1998 03 29	704	0.2−	0.1+	1999 11 03	704	0.1+	0.3+	1999 12 05	703	0.1+	0.4+
1998 03 29	704	0.2+	1.0−	1999 11 03	704	0.0	0.5+	1999 12 08	704	0.4−	0.6−
1998 04 21	704	0.2+	0.2+	1999 11 03	704	0.2−	0.4+	1999 12 08	704	0.2−	0.1−
1998 04 21	704	0.0	0.6+	1999 11 03	704	0.3−	0.3+	1999 12 08	704	0.6−	0.6−
1998 04 21	704	0.3+	0.3−	1999 11 04	703	0.6−	0.2+	1999 12 08	704	0.5−	0.3−
1998 04 21	704	0.2−	0.4−	1999 11 04	703	0.0	0.6+	1999 12 08	704	0.7−	0.3−
1998 04 21	704	0.4−	1.4+	1999 11 04	703	0.3−	0.7+	1999 12 13	703	0.1+	0.6+
1998 04 22	704	0.5+	0.9+	1999 11 04	703	0.5−	0.4+	1999 12 13	703	0.2−	0.6+
1998 04 22	704	0.6+	0.6+	1999 11 09	703	0.0	0.0	1999 12 13	703	0.1+	0.5+
1998 04 22	704	0.5+	0.7+	1999 11 09	703	0.1−	0.5+	1999 12 13	703	0.1−	0.6+
1998 04 22	704	0.4+	0.3+	1999 11 09	703	0.3−	0.1+				

1999 XP₁₁₈ = 1995 SY₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.55085		(2000.0)		P		Q
<i>n</i>	0.26698047	ω	25.47681	+0.94813309		−0.31784118	
<i>a</i>	2.3886346	Ω	353.05096	+0.28484399		+0.85586943	
<i>e</i>	0.1981075	<i>i</i>	2.15128	+0.14109410		+0.40800060	
<i>P</i>	3.69	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 09 26	691	0.3+	0.6+	1999 11 05	704	0.7−	0.5+	1999 12 05	703	0.0	0.3+
1995 09 26	691	0.3+	0.7+	1999 11 09	703	0.1+	0.0	1999 12 05	703	0.8−	0.1+
1995 09 26	010	(0.4+	2.6−)	1999 11 09	703	0.1−	0.3+	1999 12 08	704	0.6+	0.2−
1995 09 26	010	0.6−	1.7−	1999 11 09	703	1.7−	1.7+	1999 12 08	704	0.7+	0.9−
1995 09 26	010	(0.7+	3.5−)	1999 11 09	703	0.0	0.3+	1999 12 08	704	0.2+	0.6−
1995 10 02	691	0.5+	0.4+	1999 11 14	704	0.1−	0.2−	1999 12 08	704	0.6+	0.4−
1995 10 02	691	0.4−	0.2+	1999 11 14	704	0.4+	0.6−	1999 12 08	704	0.3+	0.4−
1995 10 02	691	0.2−	0.1+	1999 11 14	704	0.2+	0.2−	1999 12 13	703	0.3−	0.2+
1999 11 03	704	0.5−	0.8−	1999 11 14	704	0.1+	0.4−	1999 12 13	703	0.2−	0.3+
1999 11 03	704	0.1−	0.2−	1999 11 14	704	0.2+	0.7−	1999 12 13	703	0.1−	0.8+
1999 11 03	704	0.3+	0.3+	1999 11 16	704	0.2+	0.7−	1999 12 13	703	0.8−	0.5+
1999 11 03	704	0.2+	0.3−	1999 11 16	704	0.2+	0.6−	1999 12 15	704	0.1+	0.5+
1999 11 03	704	1.8+	0.3+	1999 11 16	704	0.2−	0.4−	1999 12 15	704	0.0	0.2−
1999 11 05	704	0.1−	0.2−	1999 11 16	704	0.0	0.2−	1999 12 15	704	0.7−	1.2+
1999 11 05	704	0.0	0.0	1999 12 05	703	0.2+	0.1+	1999 12 15	704	0.6+	0.1+
1999 11 05	704	0.1+	0.2+	1999 12 05	703	0.5−	0.6+				

1999 XS₁₁₈ = 1980 VC

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	107.92880		(2000.0)		P		Q
<i>n</i>	0.21057280	ω	265.77015	+0.67645003		+0.72612420	
<i>a</i>	2.7981299	Ω	47.60384	−0.59213484		+0.63561773	
<i>e</i>	0.1574268	<i>i</i>	9.59709	−0.43794027		+0.26217122	
<i>P</i>	4.68	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 11 03	801	0.4−	0.8+	1999 11 16	704	0.6−	0.1−	1999 12 08	704	0.5+	0.1−
1980 11 06	801	0.0	0.2−	1999 11 16	704	0.5−	0.2+	1999 12 08	704	0.5+	0.1−
1997 03 18	599	0.1+	0.3−	1999 11 16	704	0.6−	0.2−	1999 12 08	704	1.1+	0.5+
1997 03 18	599	0.1+	0.6+	1999 11 16	704	0.6−	0.2+	1999 12 08	704	0.0	0.6+
1999 11 03	704	(2.2+	2.1−)	1999 11 16	704	0.6−	0.1+	1999 12 13	703	1.1−	0.2+
1999 11 03	704	0.9+	1.0−	1999 12 02	699	0.1−	1.1+	1999 12 13	703	0.5−	0.3−
1999 11 03	704	0.3−	0.9−	1999 12 02	699	0.5+	0.5+	1999 12 13	703	0.2−	0.3−
1999 11 03	704	0.5+	0.7−	1999 12 02	699	1.4+	0.9+	1999 12 13	703	0.1−	0.2+
1999 11 14	704	0.5+	0.3+	1999 12 05	703	0.2−	0.7+	1999 12 15	704	0.6−	0.8−
1999 11 14	704	0.1+	0.0	1999 12 05	703	0.1+	0.1+	1999 12 15	704	0.3−	1.0−
1999 11 14	704	0.5+	0.3+	1999 12 05	703	0.8−	0.0	1999 12 15	704	1.2−	1.6−
1999 11 14	704	0.5+	0.3+	1999 12 05	703	0.3−	0.1−				
1999 11 14	704	0.7+	0.3+	1999 12 08	704	0.9+	0.2−				

1999 XB₁₂₀ = 1997 EE₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	41.87797		(2000.0)		P	Q
n	0.27475585	ω	76.74601	+0.85252464		−0.52193622
a	2.3433550	Ω	314.70771	+0.46300603		+0.77896042
e	0.2527473	i	2.25834	+0.24254308		+0.34756761
P	3.59	H	16.1	G	0.15	U 4

1999 11 03	012	0.4−	0.9−	1999 12 05	703	(2.4+	1.4−)	2000 01 04	704	0.3+	0.6+
1999 11 03	704	0.4+	1.2+	1999 12 05	703	0.1+	0.1+	2000 01 04	704	1.0+	0.2+
1999 11 03	704	0.5+	0.0	1999 12 05	703	0.1+	0.4+	2000 01 04	704	0.5+	1.0+
1999 11 03	704	0.4+	0.4+	1999 12 05	703	0.5−	0.1+	2000 01 04	704	0.7+	0.4+
1999 11 03	704	0.3+	0.3+	1999 12 08	704	0.2+	0.1−	2000 01 06	704	0.1−	0.2+
1999 11 03	704	0.5+	0.2+	1999 12 08	704	0.1+	0.1+	2000 01 06	704	0.6−	0.1−
1999 11 09	703	0.2−	0.2+	1999 12 08	704	0.1−	0.5−	2000 01 06	704	0.1−	0.1−
1999 11 09	703	0.5−	0.1−	1999 12 08	704	0.6+	0.6−	2000 01 06	704	0.2−	0.0
1999 11 09	703	0.1+	0.1+	1999 12 08	704	0.0	0.6−	2000 01 06	704	0.4+	0.5+
1999 11 09	703	0.2+	0.5+	1999 12 13	703	0.1−	0.0				
1999 11 16	704	0.7+	0.6−	1999 12 13	703	0.8−	0.3−				

1999 XE₁₂₀ = 1998 QQ₇₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	253.96050		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.19110780	ω	287.94877	−0.98018732	+0.12212908
a	2.9850420	Ω	259.28781	−0.05757126	−0.92896217
e	0.0616490	i	9.13178	−0.18952143	−0.34944782
P	5.16	H	13.4	G 0.15	U 4

Residuals in seconds of arc

1998 08 19	704	1.0+	0.1+	1999 11 03	704	0.6−	0.2−	1999 12 08	704	0.4+	0.4−
1998 08 19	704	0.4−	0.3+	1999 11 12	699	0.0	0.1+	1999 12 08	704	0.1−	1.1−
1998 08 19	704	0.5+	0.8−	1999 11 12	699	0.1+	1.2+	1999 12 13	703	0.3−	0.3+
1998 08 19	704	1.1−	0.2−	1999 11 12	699	0.5−	0.6+	1999 12 13	703	0.1−	0.8−
1998 08 19	704	(2.4−	1.8+)	1999 11 16	704	0.5+	0.7−	1999 12 13	703	0.5+	0.3+
1998 08 24	704	0.1+	0.0	1999 11 16	704	0.5−	1.1−	1999 12 13	703	0.4−	0.6−
1998 08 24	704	0.3−	1.3−	1999 11 16	704	0.3+	0.9−	1999 12 15	704	1.0−	0.4−
1998 08 24	704	1.2−	1.9+	1999 11 16	704	1.1+	0.4+	1999 12 15	704	0.4+	0.4+
1998 08 24	704	0.3+	0.6+	1999 11 16	704	1.0−	0.0	1999 12 15	704	0.2−	1.2+
1998 08 24	704	(2.5−	1.1−)	1999 12 02	699	0.9−	0.6−	2000 01 04	704	0.9+	0.4+
1998 08 27	704	0.2−	0.1−	1999 12 02	699	0.5+	0.0	2000 01 04	704	0.0	0.5+
1998 08 27	704	0.1−	0.4−	1999 12 02	699	0.3−	0.9+	2000 01 04	704	1.0+	0.9−
1998 08 27	704	1.2+	0.8−	1999 12 05	703	(0.1+	2.1+)	2000 01 04	704	0.4+	0.0
1998 08 27	704	0.6+	0.6+	1999 12 05	703	0.7−	0.2−	2000 01 04	704	1.7−	0.9+
1998 08 27	704	0.5−	0.1+	1999 12 05	703	0.8+	0.2−	2000 01 06	704	0.2−	0.0
1999 11 03	704	1.0+	1.7+	1999 12 05	703	0.1−	0.2−	2000 01 06	704	0.3−	0.7+
1999 11 03	704	0.2+	0.0	1999 12 08	704	0.1−	0.5+	2000 01 06	704	0.1−	0.2−
1999 11 03	704	0.0	0.0	1999 12 08	704	1.7+	0.1−	2000 01 06	704	0.1−	0.5−
1999 11 03	704	0.4−	0.6−	1999 12 08	704	0.3−	0.3−				

1999 XF₁₂₀ = 1998 MT₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	48.20876		(2000.0)	P	Q
n	0.21887826	ω	116.30903	+0.89399146	−0.43739685
a	2.7268901	Ω	269.76289	+0.36856099	+0.84126442
e	0.0783614	i	5.58257	+0.25483733	+0.31773917
P	4.50	H	13.8	G 0.15	U 3

Residuals in seconds of arc

1998 06 26	809	0.1+	0.4−	1999 11 09	703	0.8−	0.6−	1999 12 08	704	0.0	0.3−
1998 06 26	809	0.0	0.0	1999 11 09	703	0.8−	0.5−	1999 12 08	704	0.2+	0.1−
1998 06 26	809	0.3+	0.1−	1999 11 16	704	0.6+	0.3−	1999 12 08	704	0.0	0.1+
1998 06 26	704	(2.7−	0.4−)	1999 11 16	704	0.4+	0.3−	1999 12 13	703	0.4−	0.1+
1998 06 26	704	0.8−	1.4+	1999 11 16	704	0.2+	1.0−	1999 12 13	703	0.6−	0.5+
1998 06 26	704	(2.4−	1.5−)	1999 11 16	704	0.0	0.5−	1999 12 13	703	0.5−	0.8+
1998 06 26	704	1.6−	1.6+	1999 11 16	704	0.4+	0.0	1999 12 13	703	0.5−	0.4+
1998 06 27	809	0.8+	0.3−	1999 12 02	699	0.4+	0.0	1999 12 15	704	0.6−	0.1+
1998 06 27	809	0.6+	1.0−	1999 12 02	699	0.1−	0.6+	1999 12 15	704	0.2−	0.3−
1998 06 27	809	0.5+	1.0−	1999 12 02	699	0.1−	0.3+	1999 12 15	704	0.0	0.3−
1999 11 03	704	1.3+	0.2+	1999 12 05	703	(0.5+	3.7−)	1999 12 15	704	0.3+	0.6+
1999 11 03	704	0.2−	0.1−	1999 12 05	703	0.3−	0.0	2000 01 04	704	0.3+	0.4+
1999 11 03	704	0.3+	0.5−	1999 12 05	703	0.2−	0.9+	2000 01 04	704	1.3+	0.6−
1999 11 03	704	0.6+	0.6+	1999 12 05	703	0.5−	0.1+	2000 01 04	704	(0.3−	2.5−)
1999 11 09	703	0.4+	0.7+	1999 12 08	704	0.0	0.5−				
1999 11 09	703	1.1−	0.1−	1999 12 08	704	0.1+	0.0				

1999 XJ₁₂₀ = 1987 WJ₂ = 1998 QK₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	254.23391		(2000.0)	P	Q
n	0.23794769	ω	294.03657	−0.94161079	+0.27622396
a	2.5791804	Ω	262.45729	−0.19202389	−0.91026092
e	0.1145382	i	11.19886	−0.27657900	−0.30842403
P	4.14	H	12.9	G 0.15	U 2

Residuals in seconds of arc

1987 11 26	033	0.1−	0.4−	1999 09 03	704	1.0+	0.2−	1999 12 13	703	0.0	0.4+
1987 11 26	033	0.2−	0.4−	1999 11 09	703	0.3−	0.2+	1999 12 15	704	0.0	0.4+
1991 12 07	675	0.4+	1.0+	1999 11 09	703	1.3−	0.0	1999 12 15	704	0.5+	0.3+
1991 12 07	675	0.0	1.0+	1999 11 09	703	0.8−	0.0	1999 12 15	704	0.2+	0.6−
1998 06 23	699	0.2−	0.4−	1999 11 09	703	0.4−	0.0	1999 12 15	704	0.5+	0.5+
1998 06 23	699	0.1−	1.0−	1999 11 10	704	0.1−	0.2+	2000 01 03	704	0.1+	0.4+
1998 06 23	699	0.8−	0.2−	1999 11 10	704	0.5−	0.6+	2000 01 03	704	0.7+	0.3−
1998 08 02	699	(2.3+	0.1+)	1999 11 10	704	0.6−	0.8+	2000 01 03	704	0.3+	0.2−
1998 08 02	699	0.5+	0.3+	1999 11 10	704	0.3−	0.8+	2000 01 03	704	0.1+	0.3−
1998 08 02	699	1.2+	0.3+	1999 11 10	704	0.6−	0.5+	2000 01 03	704	0.5−	1.0−
1998 08 24	704	0.1−	0.6+	1999 12 05	703	0.9−	0.6+	2000 01 04	704	0.1+	0.6+
1998 08 24	704	0.4+	0.5+	1999 12 05	703	0.8−	0.3+	2000 01 04	704	0.2+	0.1+
1998 08 24	704	0.4+	0.4+	1999 12 05	703	0.9−	1.5−	2000 01 04	704	0.6+	0.6−
1998 08 24	704	1.0−	0.4+	1999 12 05	703	1.0+	0.0	2000 01 04	704	1.1+	0.6−
1998 08 24	704	0.1+	1.1−	1999 12 10	704	0.4+	0.5+	2000 01 04	704	0.5−	1.6−
1998 08 27	704	0.6+	0.4+	1999 12 10	704	0.7+	0.1+	2000 01 06	704	0.3−	0.5+
1998 08 27	704	0.2−	0.5+	1999 12 10	704	0.1−	0.3−	2000 01 06	704	0.8+	0.5−
1998 08 27	704	0.9−	0.4−	1999 12 10	704	0.4+	0.2−	2000 01 06	704	0.0	0.7−
1998 08 27	704	0.6+	0.6−	1999 12 10	704	0.4+	0.8−	2000 01 06	704	0.5+	0.7−
1998 08 27	704	0.3−	0.5−	1999 12 13	703	0.3−	0.4+	2000 01 06	704	0.8+	1.0−
1999 09 03	704	0.5+	0.1+	1999 12 13	703	0.3−	0.3+				
1999 09 03	704	0.5+	0.0	1999 12 13	703	0.5−	0.4+				

1999 XO₁₂₀ = 1976 UV₁₁ = 1998 SK₁₄₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	259.87371		(2000.0)	P	Q
n	0.17491264	ω	147.93769	−0.98964749	+0.10241983
a	3.1665663	Ω	38.34132	−0.13961736	−0.84928140
e	0.1077679	i	9.32701	+0.03323914	−0.51791049
P	5.63	H	13.0	G 0.15	U 1

Residuals in seconds of arc

1976 10 22	381	0.1−	0.3+	1999 10 06	704	0.8+	0.9+	1999 12 10	704	0.1−	0.8−
1976 10 22	381	0.1−	1.1+	1999 10 06	704	0.4−	1.2+	1999 12 13	703	0.2−	0.1+
1976 10 24	381	0.2−	0.6−	1999 11 03	704	0.3+	0.8−	1999 12 13	703	0.0	0.2+
1996 03 26	566	0.1−	0.4−	1999 11 03	704	0.3+	0.1−	1999 12 13	703	0.3−	0.5+
1996 03 26	566	0.0	0.3−	1999 11 03	704	0.4−	0.5−	1999 12 13	703	0.4−	0.3+
1996 03 26	566	0.3−	0.2−	1999 11 03	704	0.2+	0.5−	1999 12 15	704	0.7+	0.3+
1998 09 24	699	0.6+	0.3−	1999 11 03	704	0.2+	0.6−	1999 12 15	704	0.5+	0.1−
1998 09 24	699	0.3−	0.8+	1999 11 09	703	0.0	0.6+	1999 12 15	704	0.1+	1.0−
1998 09 24	699	0.1−	0.0	1999 11 09	703	0.5−	0.5+	1999 12 15	704	1.2−	0.2+
1998 09 26	704	0.7−	1.3+	1999 11 09	703	0.7−	0.3+	1999 12 15	704	0.7−	0.1+
1998 09 26	704	0.1+	0.6−	1999 11 09	703	0.1+	0.2+	2000 01 03	704	0.7+	0.3+
1998 09 26	704	1.1+	1.8−	1999 11 16	704	0.4+	0.1−	2000 01 03	704	0.3+	0.1−
1998 09 26	704	(0.7+	2.2−)	1999 11 16	704	0.0	0.4−	2000 01 03	704	0.2+	0.1+
1998 09 27	704	0.1−	0.1−	1999 11 16	704	1.3−	0.6+	2000 01 03	704	0.8+	0.1−
1998 09 27	704	0.9+	0.1+	1999 11 16	704	1.8−	0.0	2000 01 03	704	1.0−	0.9−
1998 09 27	704	0.0	0.6+	1999 12 05	703	0.8−	0.4−	2000 01 04	704	0.5+	0.6−
1998 09 27	704	0.2+	0.5−	1999 12 05	703	0.6−	0.5+	2000 01 04	704	1.0−	0.1+
1998 09 27	704	0.8−	1.0−	1999 12 05	703	0.7−	0.4+	2000 01 04	704	0.8+	0.3+
1999 10 06	704	1.6+	0.9−	1999 12 05	703	0.1−	0.0	2000 01 04	704	0.5+	0.9−
1999 10 06	704	1.3+	1.0+	1999 12 10	704	1.8+	0.0	2000 01 04	704	0.2−	1.2−
1999 10 06	704	1.2+	0.8+	1999 12 10	704	0.5+	0.5−				

2000 JAN. 24

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1999 XS₁₂₁ = 1994 CL₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28732916	ω	237.86090	−0.14068692	+0.98984923		
<i>a</i>	2.2744841	Ω	24.07588	−0.89091650	−0.11769980		
<i>e</i>	0.1761771	<i>i</i>	2.83006	−0.43182749	−0.07965715		
<i>P</i>	3.43	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 02 07	809	1.9−	1.0−	1994 02 15	691	0.9+	0.1+	1999 12 05	703	0.9−	0.1−
1994 02 07	809	(2.5−	0.6−)	1994 02 15	675	0.3+	0.5−	1999 12 05	703	0.2−	0.5+
1994 02 07	809	(2.8−	2.9−)	1994 02 15	691	0.6+	0.1−	1999 12 07	704	0.8−	0.6−
1994 02 09	809	(2.5+	1.0+)	1994 02 15	675	0.0	0.6−	1999 12 07	704	0.0	0.7−
1994 02 09	809	1.1+	0.8+	1999 11 14	704	0.7+	0.2+	1999 12 07	704	0.7−	0.7−
1994 02 09	809	1.3−	1.4+	1999 11 14	704	0.4−	0.7−	1999 12 13	703	0.9+	0.0
1994 02 12	809	(0.5+	3.5+)	1999 11 14	704	0.6+	0.6+	1999 12 13	703	0.8+	0.0
1994 02 12	809	(0.2−	3.4+)	1999 11 14	704	0.2−	0.3+	1999 12 13	703	(1.1−	2.2+)
1994 02 12	809	(0.6−	3.1+)	1999 12 05	703	0.4−	0.7+	1999 12 13	703	0.6+	0.9+
1994 02 15	691	0.3+	0.1−	1999 12 05	703	0.1−	0.5−				

1999 XX₁₂₁ = 1987 YY₁ = 1995 YN₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23865980	ω	131.13677	+0.82953664	−0.51853391		
<i>a</i>	2.5740473	Ω	261.07227	+0.42853703	+0.82912699		
<i>e</i>	0.1806137	<i>i</i>	12.11572	+0.35808516	+0.20897615		
<i>P</i>	4.13	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1987 12 20	010	0.3+	0.1+	1999 11 10	703	0.2−	0.1+	1999 12 13	703	0.0	0.1−
1987 12 20	010	0.1+	0.3−	1999 11 10	703	0.3−	0.3+	1999 12 15	704	0.3+	0.1−
1987 12 20	010	0.5−	0.1+	1999 11 10	703	0.3−	0.0	1999 12 15	704	0.3+	0.3−
1995 12 17	399	0.8+	0.7−	1999 12 07	703	0.2+	0.2+	1999 12 15	704	0.2+	0.0
1995 12 17	399	0.1−	0.7−	1999 12 07	703	0.0	0.1+	1999 12 15	704	0.6−	0.8−
1995 12 19	399	0.0	0.5+	1999 12 07	703	0.1+	0.1+	1999 12 15	704	0.2+	0.3−
1995 12 19	399	0.7−	0.1−	1999 12 07	703	0.1+	0.1−	2000 01 04	704	0.1+	0.0
1999 07 23	704	0.2−	0.1−	1999 12 07	699	0.6+	1.0+	2000 01 04	704	0.1+	0.0
1999 07 23	704	0.0	0.1−	1999 12 07	699	0.2+	0.6+	2000 01 04	704	0.2−	0.1−
1999 07 23	704	0.2−	0.5−	1999 12 07	699	0.2+	0.7+	2000 01 04	704	0.1−	0.1+
1999 07 23	704	0.0	0.4−	1999 12 13	703	0.1+	0.1−	2000 01 04	704	0.0	0.1+
1999 07 23	704	0.2+	0.4−	1999 12 13	703	0.0	0.4−	2000 01 06	704	0.4+	0.2−
1999 09 04	703	0.1−	0.6+	1999 12 13	703	0.1−	0.1−	2000 01 06	704	0.0	0.2−
1999 09 04	703	0.2+	0.2−	1999 12 13	703	1.1−	0.5−	2000 01 06	704	0.0	0.1+
1999 09 04	703	0.3+	0.0	1999 12 13	703	0.4−	0.1+	2000 01 06	704	0.4−	0.2+
1999 09 04	703	0.9+	0.1−	1999 12 13	703	0.1−	0.4+	2000 01 06	704	0.1−	0.1−
1999 11 10	703	0.3−	0.2+	1999 12 13	703	0.0	0.5+				

1999 XB₁₂₂ = 1988 AC₁ = 1998 ML₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23874923	ω	161.43903	+0.27666678	−0.92954899		
<i>a</i>	2.5734045	Ω	271.92619	+0.84791280	+0.35548163		
<i>e</i>	0.1000569	<i>i</i>	14.11370	+0.45221608	−0.09783398		
<i>P</i>	4.13	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1988 01 11	033	0.3−	0.5−	1999 11 04	704	0.3+	0.1+	1999 12 13	703	0.5−	0.5+
1988 01 11	033	0.1−	0.7−	1999 11 04	704	0.1−	0.0	1999 12 13	703	0.5−	0.7+
1998 06 24	704	0.3+	0.9−	1999 12 07	703	0.3−	0.6+	1999 12 15	704	0.3+	0.2−
1998 06 24	704	1.3+	1.0−	1999 12 07	703	0.5−	0.8+	1999 12 15	704	0.4−	0.5−
1998 06 24	704	1.0−	0.0	1999 12 07	703	1.0−	0.6+	1999 12 15	704	0.2+	0.1−
1998 06 24	704	1.4−	1.1+	1999 12 07	703	0.4−	0.2+	1999 12 15	704	0.7+	0.3−
1998 06 24	704	1.8+	1.5−	1999 12 10	704	0.2+	0.1−	2000 01 03	704	0.2−	0.1+
1998 06 26	704	0.8+	0.2+	1999 12 10	704	0.3+	0.8−	2000 01 03	704	0.3+	0.1−
1998 06 26	704	2.0−	0.0	1999 12 10	704	0.3+	0.2−	2000 01 03	704	0.3−	0.1+

1998 06 26	704	0.6+	1.0+	1999 12 10	704	0.7+	0.5−	2000 01 03	704	0.1+	0.4+
1999 11 04	704	0.4+	0.1−	1999 12 10	704	0.3+	1.2−	2000 01 03	704	0.1+	0.2+
1999 11 04	704	0.1+	0.4−	1999 12 13	703	0.1−	0.5+				
1999 11 04	704	0.2+	0.1−	1999 12 13	703	0.2−	0.2+				

1999 XD₁₂₂ = 1994 PF₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21402418	ω	38.93868	+0.99625472	+0.01579165		
<i>a</i>	2.7679664	Ω	319.90531	−0.05536867	+0.87167909		
<i>e</i>	0.1896691	<i>i</i>	7.58498	+0.06641425	+0.48982261		
<i>P</i>	4.61	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 08 10	809	(2.5+	1.2+)	1999 09 04	703	0.3+	1.3−	1999 12 07	703	0.8−	1.0+
1994 08 10	809	1.3+	0.6+	1999 09 04	703	1.3+	0.3+	1999 12 07	703	0.7+	0.1−
1994 08 10	809	1.3+	1.7+	1999 09 04	703	0.0	1.1−	1999 12 07	703	0.2−	0.3−
1994 08 11	809	0.4−	0.3−	1999 09 04	703	0.2+	1.2+	1999 12 13	703	0.9−	0.8−
1994 08 11	809	0.6−	0.8−	1999 11 10	703	0.3−	0.3−	1999 12 13	703	0.6+	0.4−
1994 08 11	809	0.7−	0.4−	1999 11 10	703	0.0	0.3−	1999 12 13	703	0.6−	0.7−
1994 09 05	809	1.2+	0.0	1999 11 10	703	0.5−	0.4−	1999 12 13	703	0.4−	0.1−
1994 09 05	809	0.2−	0.6+	1999 11 10	703	0.7−	0.7+	2000 01 03	704	1.1+	0.5−
1994 09 05	809	0.3−	0.2+	1999 12 05	699	0.1+	1.3+	2000 01 03	704	0.7+	0.1+
1994 09 06	809	0.1−	0.1−	1999 12 05	699	0.0	0.6+	2000 01 03	704	0.9+	0.2+
1994 09 06	809	0.9−	0.5−	1999 12 05	699	0.6−	1.0+	2000 01 03	704	0.1+	1.1−
1994 09 06	809	0.6−	0.8−	1999 12 07	703	0.1−	0.2+				

1999 XD₁₂₃ = 1986 PU₆ = 1993 FA₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23694405	ω	21.69796	+0.98901467	+0.13531013		
<i>a</i>	2.5864585	Ω	330.33254	−0.14702389	+0.85881361		
<i>e</i>	0.0646761	<i>i</i>	6.90513	−0.01529580	+0.49409548		
<i>P</i>	4.16	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1986 08 12	095	0.9−	1.6+	1999 11 08	699	0.5−	0.3+	1999 12 10	704	0.9−	0.6−
1993 03 21	809	(2.8−	2.5+)	1999 11 08	699	0.3+	0.7+	1999 12 13	703	0.4−	0.0
1993 03 21	809	(4.3+	1.9+)	1999 12 05	699	0.0	0.6+	1999 12 13	703	0.4+	0.4+
1993 03 22	809	0.7+	1.3+	1999 12 05	699	0.0	0.5+	1999 12 13	703	0.0	0.1−
1993 03 26	809	(4.6+	0.8−)	1999 12 05	699	0.2+	0.2+	1999 12 13	703	0.2+	0.3+
1999 10 05	704	0.6+	0.8−	1999 12 07	703	0.6−	0.1+	1999 12 15	704	0.5+	0.9−
1999 10 05	704	1.0+	0.2−	1999 12 07	703	0.2−	0.6−	1999 12 15	704	0.0	0.0
1999 10 05	704	0.6−	0.9−	1999 12 07	703	0.0	0.2−	1999 12 15	704	0.1−	0.6+
1999 10 05	704	0.5+	0.6−	1999 12 07	703	0.0	0.3+	1999 12 31	699	0.2+	0.1+
1999 10 05	704	0.4+	0.0	1999 12 10	704	0.1+	0.5−	1999 12 31	699	1.1−	1.3+
1999 11 08	699	0.1−	0.2+	1999 12 10	704	0.0	0.7−	1999 12 31	699	0.2−	1.0+

1999 XT₁₂₃ = 1998 QV₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18426097	ω	99.33681	+0.96256136	−0.20767673		
<i>a</i>	3.0585375	Ω	272.79494	+0.12368514	+0.90835848		
<i>e</i>	0.0658706	<i>i</i>	10.04424	+0.24120035	+0.36298105		
<i>P</i>	5.35	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.0	1.4+	1999 12 07	703	0.1−	0.1−	2000 01 03	704	0.1+	0.6+
1998 08 24	704	0.1−	1.4+	1999 12 07	703	0.2−	0.1−	2000 01 03	704	0.2+	0.3−
1998 08 24	704	0.2+	1.5+	1999 12 07	703	0.1+	0.0	2000 01 03	704	0.3+	0.2+
1998 08 24	704	0.9−	0.7−	1999 12 10	704	0.3−	0.0	2000 01 03	704	1.2+	0.0
1998 08 24	704	0.5−	0.9+	1999 12 10	704	0.0	0.2−	2000 01 04	704	0.3+	0.5+
1998 08 27	704	0.2+	0.1−	1999 12 10	704	0.8+	0.1+	2000 01 04	704	0.3−	0.0
1998 08 27	704	0.2+	0.5−	1999 12 10	704	0.7+	0.3−	2000 01 04	704	1.0−	0.2−
1998 08 27	704	0.4+	0.9−	1999 12 13	703	0.2−	0.6+	2000 01 04	704	0.4−	0.0

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1998 08 27	704	0.9+	1.7-	1999 12 13	703	0.3-	0.1+	2000 01 04	704	0.4+	0.6-
1998 08 27	704	0.4-	1.3-	1999 12 13	703	0.4-	0.1-				
1999 12 07	703	0.2+	0.3-	1999 12 13	703	0.4-	0.2+				

1999 XV₁₂₃ = 1996 EU₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	232.48016		(2000.0)	P	Q	Williams					
<i>n</i>	0.18804949	ω	266.98577	-0.91397568	+0.38364994						
<i>a</i>	3.0173194	Ω	295.54244	-0.28908733	-0.84418225						
<i>e</i>	0.0304832	<i>i</i>	8.42150	-0.28474017	-0.37439158						
<i>P</i>	5.24	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1996 03 13	691	0.6+	0.2+	1998 08 23	704	0.7-	1.0+	1999 12 13	703	0.6-	0.3+
1996 03 13	691	0.7+	0.0	1998 08 23	704	0.4-	0.0	1999 12 13	703	0.6-	0.3+
1996 03 13	691	0.3+	0.3+	1998 08 23	704	0.1+	0.2+	1999 12 13	703	0.5-	0.2+
1996 03 27	691	0.5-	0.1-	1998 08 23	704	(5.2-	1.3+)	1999 12 13	703	0.4-	0.2+
1996 03 27	691	0.5-	0.2-	1999 11 13	703	0.5-	0.1+	2000 01 03	704	0.2-	0.3+
1996 03 27	691	0.6-	0.0	1999 11 13	703	0.6-	0.0	2000 01 03	704	0.1-	0.9+
1998 08 17	704	0.1-	0.4+	1999 11 13	703	0.2-	0.3-	2000 01 03	704	1.7+	1.5-
1998 08 17	704	0.3+	0.2-	1999 11 13	703	0.1-	0.6+	2000 01 04	704	0.8-	0.5-
1998 08 17	704	0.2+	0.6-	1999 12 07	703	0.1+	0.2+	2000 01 04	704	0.5+	0.2-
1998 08 17	704	0.1-	0.2-	1999 12 07	703	0.0	0.8-	2000 01 04	704	1.7+	0.1-
1998 08 17	704	1.4+	0.3+	1999 12 07	703	0.1+	0.3+	2000 01 04	704	0.8+	0.2-
1998 08 23	704	0.7-	0.9-	1999 12 07	703	0.0	0.1+				

1999 XW₁₂₃ = 1998 QQ₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	276.32129		(2000.0)	P	Q	Williams					
<i>n</i>	0.22340496	ω	260.42382	-0.97041700	-0.13982573						
<i>a</i>	2.6899292	Ω	271.35002	+0.20891373	-0.89494353						
<i>e</i>	0.1092500	<i>i</i>	11.35448	-0.12102023	-0.42370373						
<i>P</i>	4.41	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1998 08 24	704	1.1-	0.7+	1999 12 07	703	0.2+	0.0	1999 12 31	699	0.6-	0.2+
1998 08 24	704	(2.9+	0.5-)	1999 12 07	703	0.2+	0.0	1999 12 31	699	0.2-	0.2+
1998 08 24	704	1.6+	0.1-	1999 12 07	703	0.0	0.3-	1999 12 31	699	0.6+	0.7+
1998 08 24	704	0.6-	0.5-	1999 12 10	704	0.5-	0.6-	2000 01 03	704	0.3+	0.3+
1998 08 27	704	0.0	0.3+	1999 12 10	704	0.2+	0.5-	2000 01 03	704	0.8+	0.1-
1998 08 27	704	0.7+	0.3-	1999 12 10	704	0.4+	0.7+	2000 01 03	704	0.2+	0.2+
1998 08 27	704	1.5-	0.9-	1999 12 10	704	0.5+	0.9+	2000 01 03	704	0.9-	0.3-
1998 08 27	704	0.9+	0.8+	1999 12 10	704	0.5+	0.3-	2000 01 03	704	0.5+	1.2-
1999 12 05	699	0.0	0.0	1999 12 13	703	0.3-	0.1+	2000 01 04	704	0.1+	0.3-
1999 12 05	699	0.3-	0.3+	1999 12 13	703	0.5-	0.0	2000 01 04	704	0.1+	0.8+
1999 12 05	699	0.3+	0.0	1999 12 13	703	0.6-	0.0	2000 01 04	704	0.2-	0.3+
1999 12 07	703	0.2+	0.3-	1999 12 13	703	0.7-	0.5-	2000 01 04	704	0.5-	0.3-

1999 XR₁₂₄ = 1997 AE₁₆ = 1998 KK₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	136.41597		(2000.0)	P	Q	Williams					
<i>n</i>	0.27649138	ω	5.36872	+0.43416360	+0.89467008						
<i>a</i>	2.3335386	Ω	290.39862	-0.83062026	+0.35238311						
<i>e</i>	0.1281839	<i>i</i>	6.44448	-0.34867170	+0.27457531						
<i>P</i>	3.56	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1997 01 13	566	0.1+	0.5+	1998 05 24	704	0.2-	0.9-	1999 12 07	703	0.3-	0.5-
1997 01 13	566	0.3+	0.7+	1998 05 24	704	0.2-	0.4+	1999 12 07	703	0.3+	0.2+
1997 01 13	566	0.2-	0.5+	1998 05 24	704	0.1+	0.1+	1999 12 07	703	1.3-	0.7+
1997 01 14	566	0.4+	0.4-	1998 05 24	704	0.4-	0.1-	1999 12 13	703	0.3-	0.6+
1997 01 14	566	0.3+	0.2-	1998 06 18	704	1.2+	0.2+	1999 12 13	703	0.4+	0.5+
1997 01 14	566	0.2+	0.3-	1998 06 18	704	1.0+	0.3-	1999 12 13	703	0.2+	0.2+
1997 01 15	566	0.4-	0.4-	1998 06 18	704	0.7+	0.7+	1999 12 13	703	0.1-	0.7+
1997 01 15	566	0.4-	0.5-	1998 06 18	704	(2.2+	0.9-)	1999 12 15	704	0.3+	0.7+

2000 JAN. 24

1997 01 15	566	0.4-	0.5-	1998 06 18	704	(3.5-	1.7+)	1999 12 15	704	0.6+	0.1-
1998 05 22	704	0.6-	0.3+	1999 11 10	704	0.0	0.4-	1999 12 15	704	0.3+	0.4+
1998 05 22	704	1.7-	0.5-	1999 11 10	704	0.1+	0.7-	1999 12 15	704	0.4-	0.1+
1998 05 22	704	0.6+	1.5+	1999 11 10	704	0.0	0.0	1999 12 31	699	0.3-	0.9+
1998 05 22	704	(0.4+	2.2-)	1999 11 10	704	0.0	0.9-	1999 12 31	699	0.2-	0.9+
1998 05 22	704	0.6-	0.5+	1999 11 10	704	0.5+	0.2-	1999 12 31	699	0.7-	0.0
1998 05 24	704	0.5+	0.3+	1999 12 07	703	0.1-	0.1+				

1999 XX₁₂₄ = 1991 NH₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	154.97324		(2000.0)	P	Q	Williams					
<i>n</i>	0.27580349	ω	19.69137	+0.32369417	+0.93264995						
<i>a</i>	2.3374170	Ω	269.45599	-0.88804412	+0.24136344						
<i>e</i>	0.0119522	<i>i</i>	9.16844	-0.32649612	+0.26815622						
<i>P</i>	3.57	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1991 07 11	809	0.6-	0.6+	1991 07 16	809	1.3+	0.9-	1999 12 13	703	0.2-	0.1-
1991 07 11	809	0.2-	0.7+	1991 07 16	809	1.6+	0.8-	2000 01 03	704	0.7+	0.5-
1991 07 11	809	0.1+	0.9+	1999 12 07	703	0.6-	0.2+	2000 01 03	704	1.4+	0.0
1991 07 12	809	0.2+	0.3+	1999 12 07	703	0.5-	0.2-	2000 01 03	704	0.9-	0.0
1991 07 12	809	0.7+	0.3+	1999 12 07	703	0.5-	0.1-	2000 01 03	704	0.6-	0.7+
1991 07 12	809	1.4+	0.3+	1999 12 07	703	0.6-	0.2+	2000 01 03	704	0.7-	0.6-
1991 07 14	809	1.4-	0.2+	1999 12 10	704	0.2+	0.6-	2000 01 04	704	0.4+	0.4+
1991 07 14	809	1.0-	0.3+	1999 12 10	704	0.0	0.2-	2000 01 04	704	0.8+	0.2+
1991 07 14	809	0.3-	0.2+	1999 12 10	704	1.0+	0.2+	2000 01 04	704	0.4-	0.2+
1991 07 15	809	1.2-	0.4-	1999 12 10	704	0.6+	0.2-	2000 01 04	704	0.3-	0.6+
1991 07 15	809	0.8-	0.4-	1999 12 13	703	1.2+	0.0	2000 01 04	704	0.3-	0.0
1991 07 15	809	0.7-	0.5-	1999 12 13	703	0.6-	0.3+				
1991 07 16	809	0.9+	0.6-	1999 12 13	703	0.1-	0.2-				

1999 XC₁₂₅ = 1998 KJ₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	100.65951		(2000.0)	P	Q	Williams					
<i>n</i>	0.28762208	ω	324.94881	+0.91208470	+0.40962748						
<i>a</i>	2.2729396	Ω	10.91151	-0.35185651	+0.80395207						
<i>e</i>	0.0938134	<i>i</i>	5.30949	-0.21047206	+0.43112224						
<i>P</i>	3.43	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1998 05 22	704	1.0+	0.1+	1999 11 04	703	0.4+	0.5+	1999 12 07	703	0.2+	0.1-
1998 05 22	704	0.4+	0.8+	1999 11 04	703	0.5+	0.5+	1999 12 07	703	(1.7+	2.3-)
1998 05 22	704	1.0+	0.9-	1999 11 04	703	0.2+	0.4-	1999 12 07	703	0.7+	0.1+
1998 05 22	704	0.4-	0.1-	1999 11 04	703	1.2-	0.1-	1999 12 13	703	0.3+	0.3-
1998 05 22	704	0.4-	0.2+	1999 11 09	703	0.3+	0.3+	1999 12 13	703	0.0	0.2-
1998 05 24	704	0.7-	1.1+	1999 11 09	703	0.7-	0.1+	1999 12 13	703	0.3-	0.2+
1998 05 24	704	0.1-	0.7-	1999 11 09	703	0.0	0.2-	1999 12 13	703	0.2-	0.4+
1998 05 24	704	0.9+	0.0	1999 11 09	703	0.3+	0.7-				
1998 05 24	704	1.6-	0.5-	1999 12 07	703	0.5-	0.1+				

1999 XD₁₂₅ = 1982 BL₁₁ = 1992 GS₇ = 1992 HC₅ = 1998 SA₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	316.97638		(2000.0)	P	Q	Williams					
<i>n</i>	0.21363538	ω	103.75131	-0.69361511	-0.71542880						
<i>a</i>	2.7713238	Ω	30.70585	+0.58085449	-0.62446769						
<i>e</i>	0.1051030	<i>i</i>	9.47084	+0.42603537	-0.31337156						
<i>P</i>	4.61	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	1				

1992 04 25	809	0.8+	0.4-	1999 12 05	699	0.7+	0.2-	1999 12 15	704	0.3-	0.1+
1992 05 01	809	0.3+	1.0+	1999 12 05	699	0.1-	0.3+	1999 12 15	704	0.8-	0.3+
1992 05 01	809	0.5+	1.3+	1999 12 07	703	0.2+	0.1-	1999 12 15	704	0.3-	0.3+
1992 05 01	809	0.8+	1.3+	1999 12 07	703	0.2+	0.2-	1999 12 15	704	0.0	0.1+
1998 09 17	699	0.3-	0.4-	1999 12 07	703	0.0	0.1-	1999 12 31	699	0.4-	0.1+
1998 09 17	699	0.6-	0.5+	1999 12 07	703	0.0	0.3+	1999 12 31	699	0.3+	0.3+
1998 09 17	699	0.1-	0.3-	1999 12 10	704	0.1-	0.0	1999 12 31	699	0.1-	0.3+
1998 09 24	699	0.1-	0.0	1999 12 10	704	0.1+	0.2-				
1998 09 24	699	0.7+	0.6+	1999 12 10	704	0.7-	0.4-				

1999 XY₁₂₅ = 1998 MS₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	114.63774		(2000.0)	P		Q	
<i>n</i>	0.24237187	ω	14.91150	+0.61321517		+0.78462191	
<i>a</i>	2.5476978	Ω	292.99561	-0.73450735		+0.52385436	
<i>e</i>	0.2000004	<i>i</i>	5.69201	-0.29063054		+0.33157965	
<i>P</i>	4.07	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 06 24	704	0.1+	1.7-	1999 12 07	703	0.5+	0.3-	1999 12 31	699	0.6-	0.4+
1998 06 24	704	(2.0+	2.7-)	1999 12 13	703	0.4-	0.2-	2000 01 03	704	0.4-	0.3+
1998 06 24	704	0.1-	0.3-	1999 12 13	703	0.1-	0.3+	2000 01 03	704	0.4+	0.4-
1998 06 24	704	0.8-	0.2+	1999 12 13	703	0.3-	0.1-	2000 01 03	704	0.3+	0.3+
1998 06 24	704	0.8-	0.6+	1999 12 13	703	0.1+	0.4+	2000 01 03	704	0.1-	0.3+
1998 06 26	704	0.3-	0.5-	1999 12 15	704	0.9-	0.1-	2000 01 03	704	1.0+	0.6-
1998 06 26	704	0.9+	0.1+	1999 12 15	704	0.1-	0.0	2000 01 04	704	0.5-	0.1-
1998 06 26	704	0.1-	0.7+	1999 12 15	704	0.6+	0.3-	2000 01 04	704	0.1+	0.2+
1998 06 26	704	1.0+	1.0+	1999 12 15	704	0.4+	0.0	2000 01 04	704	1.2+	0.4-
1999 12 07	703	0.1-	0.5-	1999 12 15	704	0.2-	0.3+	2000 01 04	704	0.7+	0.4-
1999 12 07	703	0.1+	0.1-	1999 12 31	699	1.2-	1.2+	2000 01 04	704	0.3+	0.6-
1999 12 07	703	0.5+	0.1-	1999 12 31	699	1.3-	0.6+				

1999 XZ₁₂₅ = 1964 VQ₂ = 1978 VR₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	51.12263		(2000.0)	P		Q	
<i>n</i>	0.28200959	ω	16.10847	+0.89565787		-0.44456318	
<i>a</i>	2.3029975	Ω	10.31452	+0.39983612		+0.79241667	
<i>e</i>	0.1837961	<i>i</i>	4.05812	+0.19475128		+0.41765942	
<i>P</i>	3.49	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1964 11 12	330	(17.7-	4.9-)	1999 10 05	704	0.2+	0.6+	1999 12 10	704	0.7+	0.4+
1978 10 30	010	0.7+	0.4-	1999 11 16	704	0.4+	0.2+	1999 12 13	703	0.4-	0.4+
1978 11 01	010	0.7-	0.1-	1999 11 16	704	0.6+	0.4+	1999 12 13	703	0.3-	0.2+
1978 11 01	010	0.2+	0.4+	1999 11 16	704	0.5+	0.5+	1999 12 13	703	0.8-	0.2+
1978 11 02	010	0.1-	0.3+	1999 11 16	704	0.8+	0.6+	1999 12 13	703	0.0	0.1+
1978 11 02	010	0.0	0.8-	1999 11 16	704	0.0	0.4+	1999 12 15	704	0.2-	0.1-
1998 05 24	704	0.7-	0.2-	1999 12 07	703	0.4-	0.5+	1999 12 15	704	0.3-	0.3-
1998 05 24	704	0.4+	0.3-	1999 12 07	703	0.2-	0.2+	1999 12 15	704	0.1-	0.2-
1998 05 24	704	1.1+	1.7+	1999 12 07	703	0.3-	0.2+	1999 12 15	704	0.0	0.1-
1998 05 24	704	0.2-	1.2+	1999 12 07	703	0.4-	0.2+	1999 12 15	704	0.0	0.2-
1999 10 05	704	0.5-	0.1+	1999 12 10	704	0.3+	0.3-	2000 01 04	106	0.6-	0.0
1999 10 05	704	0.3-	0.4+	1999 12 10	704	0.1+	0.4-	2000 01 04	106	0.3-	0.1-
1999 10 05	704	0.1-	0.5-	1999 12 10	704	0.8+	0.6-	2000 01 04	106	0.9-	0.2+
1999 10 05	704	0.0	0.1-	1999 12 10	704	0.4+	0.1-				

1999 XP₁₂₆ = 1990 YF = 1998 MF₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	15.09908		(2000.0)	P		Q	
<i>n</i>	0.21436926	ω	160.15205	+0.31026488		-0.93790254	
<i>a</i>	2.7649952	Ω	271.52466	+0.84990070		+0.34678789	
<i>e</i>	0.2610905	<i>i</i>	8.92925	+0.42591607		-0.00877415	
<i>P</i>	4.60	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1990 12 19	403	1.1+	0.6-	1999 06 22	703	0.7-	1.1+	1999 12 10	704	0.8+	0.7-
1990 12 19	889	(0.1-	2.9+)	1999 06 22	703	1.1-	0.9-	1999 12 13	703	0.1-	1.2-
1990 12 19	403	(2.8+	1.7-)	1999 10 05	704	0.3-	0.9-	1999 12 13	703	0.7+	0.1-
1990 12 19	889	(0.7+	3.4+)	1999 10 05	704	0.4-	0.5-	1999 12 13	703	0.2-	0.3+
1990 12 23	886	0.5+	0.1-	Y 1999 10 05	704	0.7+	0.4-	1999 12 13	703	0.0	1.2-
1990 12 23	886	0.2-	1.2+	Y 1999 10 05	704	0.2+	0.0	1999 12 15	704	0.5-	0.2+
1990 12 23	889	1.2-	0.6+	1999 10 05	704	1.0+	0.3-	1999 12 15	704	0.3-	0.0
1990 12 23	889	0.9-	1.5+	1999 11 03	704	0.7+	0.6+	1999 12 15	704	0.4-	0.4+
1990 12 24	886	(2.8+	1.7-)	Y 1999 11 03	704	0.2-	0.3-	1999 12 15	704	0.8-	0.3+
1990 12 24	886	1.1+	0.4-	Y 1999 11 03	704	0.0	0.2-	1999 12 15	704	0.5-	0.5+
1991 01 07	889	(2.6-	0.5-)	1999 11 03	704	0.2+	0.5-	2000 01 03	704	0.1+	0.3+
1991 01 07	889	0.4+	0.0	1999 11 03	704	0.3-	0.6-	2000 01 03	704	0.3+	0.5+
1998 06 26	809	(3.3-	3.5-)	1999 12 07	703	0.2-	0.1+	2000 01 03	704	0.6+	0.6+
1998 06 26	809	(3.1-	3.8-)	1999 12 07	703	0.4-	0.2+	2000 01 03	704	0.0	0.1+
1998 06 26	809	(2.5-	4.1-)	1999 12 07	703	0.2-	0.0	2000 01 03	704	0.1-	0.2-
1998 06 27	809	0.6+	0.6+	1999 12 07	703	0.3-	0.2+	2000 01 04	704	0.3-	0.7+
1998 06 27	809	0.6-	1.3+	1999 12 10	704	0.6+	0.6-	2000 01 04	704	0.7-	0.3+
1998 06 27	809	0.3+	1.2+	1999 12 10	704	0.7+	0.3-	2000 01 04	704	0.9-	1.0+
1999 06 22	703	0.6-	0.6+	1999 12 10	704	0.8+	0.3-	2000 01 04	704	0.3-	0.8+
1999 06 22	703	0.2-	1.1+	1999 12 10	704	0.9+	0.3-	2000 01 04	704	0.3-	0.3+

1999 XQ₁₂₆ = 1991 PB₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	240.67796		(2000.0)	P		Q	
<i>n</i>	0.27797192	ω	206.99225	-0.81980391		+0.57249122	
<i>a</i>	2.3252452	Ω	7.97135	-0.50664453		-0.71434605	
<i>e</i>	0.0925033	<i>i</i>	5.47947	-0.26689487		-0.40244692	
<i>P</i>	3.55	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 06	675	0.2-	1.0-	1999 12 13	703	0.3-	0.2+	1999 12 31	699	1.6-	0.7+
1991 08 06	675	0.1+	0.4-	1999 12 13	703	0.3-	0.4+	2000 01 03	704	0.3+	0.1+
1991 08 10	675	0.3+	0.8+	1999 12 13	703	0.3-	0.5+	2000 01 03	704	0.2-	0.4-
1991 08 10	675	0.1+	0.1-	1999 12 15	704	0.1+	0.2-	2000 01 03	704	(0.3-	2.2-)
1998 08 17	704	2.0-	1.4+	1999 12 15	704	0.1+	0.2-	2000 01 03	704	0.9+	0.3-
1998 08 17	704	0.3-	0.1+	1999 12 15	704	0.2-	0.5+	2000 01 03	704	0.1+	0.7-
1998 08 17	704	1.5+	1.0+	1999 12 15	704	0.1-	0.4+	2000 01 04	704	0.4+	0.6-
1998 08 17	704	0.6+	2.0-	1999 12 15	704	0.4-	0.0	2000 01 04	704	1.0+	0.5-
1999 12 07	703	(3.1-	0.6-)	1999 12 31	699	0.0	0.2+	2000 01 04	704	0.1-	0.5-
1999 12 07	703	1.2+	0.3+	1999 12 31	699	0.4-	0.8+	2000 01 04	704	1.1+	1.5-
1999 12 07	703	0.5-	0.6-	1999 12 31	699	0.7-	0.7+	2000 01 04	704	0.1+	1.0-
1999 12 07	703	0.2+	0.3+	1999 12 31	699	0.3-	1.1+				
1999 12 13	703	0.2+	0.5-	1999 12 31	699	0.0	0.6+				

1999 XV₁₂₆ = 1995 UR₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	21.66412		(2000.0)	P		Q	
<i>n</i>	0.26648735	ω	30.41955	+0.36961812		-0.92663683	
<i>a</i>	2.3915804	Ω	38.00854	+0.82844369		+0.29513452	
<i>e</i>	0.0917751	<i>i</i>	6.41032	+0.42078914		+0.23289439	
<i>P</i>	3.70	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1995 10 20	691	0.2−	0.0	1999 11 03	704	0.0	0.5−	1999 12 07	703	0.5−	0.1−
1995 10 20	691	0.1−	0.1+	1999 11 03	704	0.9−	0.5−	1999 12 13	703	0.1+	0.6+
1995 10 20	691	0.0	0.2−	1999 11 03	704	0.6+	0.1−	1999 12 13	703	0.9−	0.6+
1995 10 26	691	0.0	0.1+	1999 11 16	704	0.2−	0.4−	1999 12 13	703	0.3−	0.0
1995 10 26	691	0.2+	0.0	1999 11 16	704	0.6+	0.2+	1999 12 13	703	0.2−	0.3−
1995 10 26	691	0.1+	0.0	1999 11 16	704	0.2+	0.4+	1999 12 15	704	0.3+	0.5−
1999 10 06	704	0.1+	0.3+	1999 11 16	704	0.5+	0.3+	1999 12 15	704	0.6+	0.4−
1999 10 06	704	0.4+	0.2+	1999 11 16	704	0.2+	0.4+	1999 12 15	704	0.1+	0.4−
1999 10 06	704	0.4−	0.0	1999 12 07	703	0.6−	0.8+	1999 12 15	704	1.2+	0.2−
1999 10 06	704	0.1−	0.6+	1999 12 07	703	0.8−	0.6+	1999 12 15	704	0.5+	0.4−
1999 11 03	704	0.4−	1.1−	1999 12 07	703	0.4−	0.1+				

1999 XB₁₂₇ = 1998 QG₆₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	113.63325		(2000.0)	P		Q	
<i>n</i>	0.18650949	ω	54.79476	+0.79719335	+0.56769580		
<i>a</i>	3.0339058	Ω	269.75522	-0.59883624	+0.70033761		
<i>e</i>	0.0412520	<i>i</i>	11.85517	-0.07666756	+0.43272245		
<i>P</i>	5.28	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.4+	0.1-	1999 12 07	703	0.5-	0.1+	1999 12 15	704	1.1+	1.0-
1998 08 24	704	0.8-	0.7+	1999 12 07	703	0.5-	0.1+	2000 01 03	704	0.2-	0.1-
1998 08 24	704	0.2+	0.2-	1999 12 07	703	0.6-	0.1+	2000 01 03	704	0.2-	0.0
1998 08 24	704	0.7-	0.2+	1999 12 07	703	0.3-	0.0	2000 01 03	704	0.2-	0.5-
1998 08 24	704	0.6-	0.3-	1999 12 13	703	0.7-	0.5+	2000 01 03	704	0.1-	0.8+
1998 08 27	704	0.0	0.1-	1999 12 13	703	0.8-	0.3+	2000 01 03	704	0.4-	0.4-
1998 08 27	704	0.1+	0.3+	1999 12 13	703	1.2+	0.5+	2000 01 04	704	0.0	0.5+
1998 08 27	704	1.2-	1.1+	1999 12 13	703	0.2-	0.0	2000 01 04	704	0.1-	0.2-
1998 08 27	704	1.4+	0.0	1999 12 15	704	0.2+	0.5+	2000 01 04	704	0.0	0.2+
1998 09 18	699	0.1+	0.2-	1999 12 15	704	0.7+	0.6+	2000 01 04	704	0.1-	0.5-
1998 09 18	699	0.7+	1.0-	1999 12 15	704	0.5+	1.0-				
1998 09 18	699	0.4+	0.5-	1999 12 15	704	1.3+	0.3-				

1999 XE₁₂₇ = 1998 KD₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	91.67339		(2000.0)	P		Q	
<i>n</i>	0.27345974	ω	326.43267	+0.87892235	+0.47685963		
<i>a</i>	2.3507536	Ω	5.11748	-0.40917457	+0.76463099		
<i>e</i>	0.1132921	<i>i</i>	6.44976	-0.24509524	+0.43352548		
<i>P</i>	3.60	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 22	704	1.6-	1.9-	1998 05 24	704	0.7+	0.6-	1999 12 08	704	0.6-	0.2-
1998 04 22	704	0.4+	0.8+	1998 05 24	704	1.1+	0.3-	1999 12 09	678	0.6+	0.1+
1998 04 22	704	0.5-	0.0	1998 05 24	704	1.2+	0.1-	1999 12 09	678	1.9-	0.4-
1998 04 22	704	0.4+	0.2+	1998 05 24	704	1.2+	1.5-	1999 12 13	678	0.6-	0.4+
1998 04 22	704	1.6-	0.8+	1999 10 03	704	1.2+	0.5-	1999 12 13	678	0.0	0.5+
1998 04 30	566	0.6-	0.2-	1999 10 03	704	0.8+	0.8-	2000 01 04	704	0.4-	1.1-
1998 04 30	566	0.3+	0.5-	1999 10 03	704	0.3-	0.2-	2000 01 04	704	0.3-	0.9-
1998 04 30	566	0.3+	0.2-	1999 11 03	704	0.2+	0.9+	2000 01 04	704	0.6+	1.4-
1998 05 05	699	0.4-	0.7+	1999 11 03	704	0.1-	0.4+	2000 01 04	704	0.7+	0.1-
1998 05 05	699	0.6+	1.0-	1999 11 03	704	0.4-	0.3+	2000 01 04	704	0.9-	1.3-
1998 05 05	699	0.1+	0.5+	1999 12 07	699	0.2-	1.2+	2000 01 06	704	0.3-	0.0
1998 05 22	704	1.0+	1.6+	1999 12 07	699	0.1-	0.9+	2000 01 06	704	0.2-	0.9+
1998 05 22	704	1.0-	0.7+	1999 12 07	699	0.4-	1.0+	2000 01 06	704	0.2-	0.2+
1998 05 22	704	0.1-	0.5-	1999 12 08	704	0.6+	0.5+	2000 01 06	704	0.1-	0.5+
1998 05 22	704	0.5-	1.5+	1999 12 08	704	0.0	0.4-	2000 01 06	704	0.1+	0.7+
1998 05 22	704	0.1-	0.9+	1999 12 08	704	0.3+	0.6-				
1998 05 24	704	0.4-	0.2+	1999 12 08	704	0.7+	0.0				

1999 XP₁₂₇ = 1998 QN₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	137.57512		(2000.0)	P		Q	
<i>n</i>	0.17896944	ω	25.93735	+0.45507814	+0.88278674		
<i>a</i>	3.1185314	Ω	271.32474	-0.83592070	+0.37841920		
<i>e</i>	0.1343132	<i>i</i>	6.69670	-0.30682319	+0.27836394		
<i>P</i>	5.51	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 19	704	0.9+	0.1-	1999 11 14	704	0.9+	0.3+	1999 12 07	704	0.4+	0.2+
1998 08 19	704	0.7+	0.7+	1999 11 14	704	0.2+	0.1+	1999 12 07	143	0.6-	0.7+
1998 08 19	704	1.5-	1.6+	1999 11 14	704	0.1-	0.3-	1999 12 07	143	0.0	0.3-
1998 08 19	704	0.3+	0.7+	1999 11 14	704	0.2-	0.0	1999 12 07	143	0.8+	0.2+
1998 08 19	704	1.4-	1.4-	1999 11 14	704	0.2-	0.2-	1999 12 13	704	0.5-	0.4-
1998 08 24	704	1.5+	1.7-	1999 11 16	704	0.1+	0.9-	1999 12 13	704	0.4-	0.1+
1998 08 24	704	0.1-	0.0	1999 11 16	704	1.7+	0.0	1999 12 13	704	0.3-	0.1-

1998 08 24	704	1.8-	1.9+	1999 11 16	704	0.2-	1.0+	1999 12 13	704	0.6+	0.4+
1998 08 24	704	1.0-	0.6-	1999 11 16	704	0.3+	0.3-	1999 12 13	704	0.2+	0.5+
1998 08 24	704	1.0-	1.3+	1999 12 06	143	(2.3+	0.4+)	1999 12 13	143	0.4-	0.4+
1998 08 30	699	0.5+	0.8-	1999 12 06	143	0.7-	1.2+	1999 12 14	704	0.4-	0.2-
1998 08 30	699	0.2+	0.4-	1999 12 06	143	0.1-	1.4-	1999 12 14	704	0.1+	0.8+
1998 08 30	699	0.7+	0.1+	1999 12 07	704	0.2+	0.4-	1999 12 14	704	0.8-	0.6+
1998 10 11	699	0.8+	1.5-	1999 12 07	704	0.4-	0.0	1999 12 14	704	1.1-	1.1-
1998 10 11	699	0.9+	0.2+	1999 12 07	704	0.4+	0.4-				
1998 10 11	699	0.4+	0.1-	1999 12 07	704	0.5+	0.1-				

1999 XT₁₂₇ = 1991 VO₁₃ = 1991 XO₃ = 1998 KW₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	82.35548		(2000.0)	P		Q	
<i>n</i>	0.24700733	ω	137.00135	+0.96324188	+0.25893209		
<i>a</i>	2.5157230	Ω	208.22796	-0.26860564	+0.92436773		
<i>e</i>	0.1239481	<i>i</i>	8.70068	-0.00401122	+0.28017579		
<i>P</i>	3.99	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 11 04	399	(3.2+	0.4-)	1998 06 19	704	0.4-	0.8-	1999 12 04	699	0.4+	0.0
1991 11 04	399	0.3+	0.2+	1998 07 26	910	0.1-	0.1-	1999 12 05	704	(1.3+	4.0-)
1991 12 04	399	0.5-	0.4-	1998 07 26	910	0.2-	0.1-	1999 12 05	704	1.1-	0.5-
1991 12 04	399	0.2+	0.5+	1998 07 26	910	0.0	0.2+	1999 12 05	704	0.5+	0.0
1998 05 23	704	0.4+	0.1-	1999 11 04	704	0.3+	0.8-	1999 12 05	704	(1.0-	4.3+)
1998 05 23	704	0.2+	0.4+	1999 11 04	704	0.4-	0.1-	1999 12 07	106	0.3-	0.0
1998 05 23	704	0.1+	0.2-	1999 11 04	704	0.4-	0.2-	1999 12 07	106	0.3-	0.4+
1998 05 23	704	0.2-	0.1-	1999 11 04	704	0.3-	0.2-	1999 12 07	106	0.0	0.2+
1998 05 26	704	0.2+	0.8+	1999 11 04	704	0.6-	0.3-	1999 12 13	106	0.1+	0.2+
1998 05 26	704	1.3+	0.1+	1999 11 12	699	0.4-	0.8+	1999 12 13	106	0.3+	0.1+
1998 05 26	704	0.2-	0.3+	1999 11 12	699	0.4-	1.0+	1999 12 13	106	0.0	0.6+
1998 05 26	704	0.1+	0.3+	1999 11 12	699	0.3+	0.4+	1999 12 14	704	0.2+	0.1-
1998 05 26	704	0.7-	0.1-	1999 11 17	704	0.4+	0.4-	1999 12 14	704	0.1-	0.3-
1998 06 03	704	0.0	0.0	1999 11 17	704	0.9+	0.6-	1999 12 14	704	0.3+	0.7-
1998 06 03	704	1.4-	0.5+	1999 11 17	704	0.3+	0.3+	1999 12 14	704	0.1-	0.8-
1998 06 03	704	0.1-	1.2-	1999 11 17	704	0.1-	0.3-	1999 12 14	704	0.9-	0.1+
1998 06 03	704	(1.8-	7.0-)	1999 12 02	699	0.2+	0.1+	1999 12 14	699	0.7-	0.3+
1998 06 19	704	0.2-	0.5-	1999 12 02	699	0.1-	0.1+	1999 12 14	699	0.3+	0.3-
1998 06 19	704	0.3-	0.3-	1999 12 02	699	0.2+	0.1+	1999 12 14	699	0.8+	0.8+
1998 06 19	704	0.3+	0.4+	1999 12 04	699	0.2+	0.3+				
1998 06 19	704	0.2+	0.9+	1999 12 04	699	0.4+	0.1+				

1999 XU₁₂₇ = 1989 AU₉ = 1998 QN₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	234.69332		(2000.0)	P		Q	
<i>n</i>	0.26017732	ω	61.17033	-0.77281456	+0.63363928		
<i>a</i>	2.4300941	Ω	158.08845	-0.61035920	-0.72678006		
<i>e</i>	0.0972441	<i>i</i>	5.45587	-0.17383697	-0.26512638		
<i>P</i>	3.79	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 01 09	033	0.1+	0.6-	1999 11 04	704	0.3-	0.7-	1999 12 14	704	1.0+	0.1-
1989 01 09	033	0.2-	0.3-	1999 12 06	704	0.3+	0.0	1999 12 14	704	0.0	0.2-
1998 08 17	704	0.4-	0.7-	1999 12 06	704	0.3+	0.1-	1999 12 14	704	0.3+	0.2+
1998 08 17	704	1.0-	0.4+	1999 12 06	704	0.3-	0.4-	1999 12 14	704	0.6-	0.3+
1998 08 17	704	1.4+	0.3-	1999 12 06	704	0.7-	0.3+	1999 12 14	704	0.6+	0.6-
1998 08 17	704	0.0	0.0	1999 12 06	704	0.2-	0.0	1999 12 15	704	0.1+	0.2-
1998 08 17	704	0.3-	0.4-	1999 12 07	106	0.7+	1.0+	1999 12 15	704	0.0	0.2+
1998 08 23	704	0.2+	1.3-	1999 12 07	106	0.5+	0.7-	1999 12 15	704	0.0	0.2-

2000 JAN. 24

M.P.C. 37947

1999 XN₁₂₈ = 1997 GH₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	15.34944		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26422233	ω	42.35363	+0.14607314	−0.98904193		
<i>a</i>	2.4052287	Ω	39.26108	+0.89833068	+0.12354651		
<i>e</i>	0.1534629	<i>i</i>	1.93939	+0.41432430	+0.08082277		
<i>P</i>	3.73	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 03	704	0.2−	0.3+	1999 12 07	704	0.1+	0.4+	1999 12 14	704	0.4+	0.4−
1997 04 03	704	0.9+	0.5−	1999 12 07	704	0.2+	0.3+	1999 12 14	704	0.3+	0.2+
1997 04 05	704	0.9−	0.1−	1999 12 07	704	0.3+	0.4+	1999 12 14	704	0.6−	0.3−
1997 04 05	704	0.3+	0.5+	1999 12 13	704	0.4+	0.4−	2000 01 03	704	0.5+	0.2+
1999 11 16	704	0.4−	0.5−	1999 12 13	704	0.0	0.3−	2000 01 03	704	0.3+	0.4−
1999 11 16	704	0.7−	0.0	1999 12 13	704	0.0	0.1−	2000 01 03	704	0.1−	0.6−
1999 11 16	704	0.3+	0.9+	1999 12 13	704	0.1+	0.5−	2000 01 03	704	0.3+	0.9+
1999 11 16	704	0.0	0.4+	1999 12 13	704	0.1−	0.7−	2000 01 03	704	1.2−	0.3+
1999 12 07	704	0.1+	0.4+	1999 12 14	704	0.2−	0.1+				

1999 XQ₁₂₈ = 1993 FK₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	118.60952		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23704068	ω	259.84393	+0.75944652	+0.64149745		
<i>a</i>	2.5857555	Ω	60.16310	−0.53727647	+0.71228824		
<i>e</i>	0.1279652	<i>i</i>	7.16994	−0.36684463	+0.28482711		
<i>P</i>	4.16	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1993 03 17	809	0.6+	0.8−	1999 11 14	704	0.4+	0.4−	1999 12 13	704	0.9−	1.1−
1993 03 18	809	0.9−	0.5+	1999 11 16	704	0.7+	1.7−	1999 12 13	704	0.4+	0.5−
1993 03 23	809	0.2+	0.3+	1999 11 16	704	0.4−	0.4+	1999 12 14	704	0.0	0.3−
1999 11 09	704	0.2−	1.6+	1999 11 16	704	0.0	0.8+	1999 12 14	704	0.1−	0.6−
1999 11 09	704	0.2−	0.8+	1999 12 07	704	0.6+	0.4+	1999 12 14	704	0.7+	0.7−
1999 11 09	704	0.6+	0.2−	1999 12 07	704	0.4+	1.3+	2000 01 04	704	0.3−	0.1+
1999 11 09	704	0.2+	0.2−	1999 12 07	704	0.6−	0.9+	2000 01 04	704	0.1+	0.1+
1999 11 14	704	0.2−	0.0	1999 12 07	704	0.0	1.8+	2000 01 04	704	0.7−	0.7−
1999 11 14	704	0.5+	1.1−	1999 12 13	704	0.3+	0.2+	2000 01 04	704	0.4−	0.5+
1999 11 14	704	0.2−	0.5−	1999 12 13	704	0.7−	0.2−				
1999 11 14	704	0.1+	0.5−	1999 12 13	704	0.1−	0.4−				

1999 XS₁₂₈ = 1990 SF₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	103.76809		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23446352	ω	30.50691	+0.87800840	+0.46801921		
<i>a</i>	2.6046689	Ω	301.25699	−0.45942675	+0.76526501		
<i>e</i>	0.1752317	<i>i</i>	6.73780	−0.13426951	+0.44195869		
<i>P</i>	4.20	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1990 09 17	675	0.0	0.0	1999 12 13	704	0.2−	0.1−	1999 12 15	704	0.2+	0.4+
1990 09 17	675	0.1−	0.5+	1999 12 13	704	0.4−	0.1+	1999 12 15	704	0.0	0.2+
1990 09 19	675	0.3+	0.2−	1999 12 14	704	0.3−	0.3+	2000 01 03	704	0.3+	0.5−
1990 09 19	675	0.3−	0.3−	1999 12 14	704	0.1−	0.2+	2000 01 03	704	0.1−	0.1−
1999 12 10	704	0.5+	0.1−	1999 12 14	704	0.7−	0.7+	2000 01 03	704	0.2+	0.2+
1999 12 10	704	0.4+	0.0	1999 12 14	704	0.0	0.2−	2000 01 04	704	0.3−	0.8+
1999 12 10	704	0.3+	0.1+	1999 12 14	704	0.4+	0.8−	2000 01 04	704	0.2+	0.7−
1999 12 13	704	0.0	0.1+	1999 12 15	704	0.1−	0.2+	2000 01 04	704	0.4+	0.4+
1999 12 13	704	0.2−	0.1−	1999 12 15	704	0.5+	1.0−	2000 01 04	704	0.3−	0.3−
1999 12 13	704	0.0	0.2+	1999 12 15	704	0.1−	0.1−	2000 01 04	704	0.5−	0.1+

1999 XG₁₂₉ = 1997 EJ₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	138.69186		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27446710	ω	331.05743	+0.62073358	+0.78273695		
<i>a</i>	2.3449982	Ω	337.22012	−0.69517953	+0.52303498		
<i>e</i>	0.0587986	<i>i</i>	6.65366	−0.36251239	+0.33727922		
<i>P</i>	3.59	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 04	704	0.5+	0.2−	1999 12 12	704	0.1+	0.0	1999 12 13	704	0.3+	0.2+
1997 03 04	704	0.4+	1.3+	1999 12 12	704	0.7+	0.1−	1999 12 13	704	0.1+	0.2+
1997 03 05	704	0.2+	0.9−	1999 12 12	704	0.2+	0.4+	1999 12 13	704	0.8+	0.3−
1997 03 05	704	0.4−	0.3+	1999 12 12	704	0.2+	0.1+	1999 12 15	704	0.2−	0.2+
1997 03 06	704	0.1+	0.7−	1999 12 13	704	0.4+	0.0	1999 12 15	704	0.2−	0.4−
1997 03 06	704	0.7−	0.3+	1999 12 13	704	0.0	0.2−	1999 12 15	704	0.6−	0.4+
1999 12 07	703	0.8−	0.2−	1999 12 13	704	0.2+	0.0	1999 12 15	704	0.2−	0.6−
1999 12 07	703	0.2−	0.1+	1999 12 13	704	0.2+	0.3−	2000 01 02	704	0.2−	0.8+
1999 12 07	703	0.6−	0.6+	1999 12 13	704	0.3+	0.3−	2000 01 02	704	0.1−	1.0−
1999 12 07	703	0.7−	1.4+	1999 12 13	704	0.4+	0.1−	2000 01 02	704	0.2−	0.7−
1999 12 12	704	0.1−	0.4−	1999 12 13	704	0.4+	0.0				

1999 XS₁₂₉ = 1997 HD₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	331.10415		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28432849	ω	121.47014	−0.73746473	−0.67402512		
<i>a</i>	2.2904587	Ω	16.28456	+0.55616592	−0.64205679		
<i>e</i>	0.1127109	<i>i</i>	8.78948	+0.38317782	−0.36531249		
<i>P</i>	3.47	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 28	704	0.5−	0.6+	1999 12 12	704	0.1−	0.1+	1999 12 15	704	1.8+	0.5+
1997 04 28	704	0.4−	0.2+	1999 12 12	704	0.0	1.0+	1999 12 15	704	0.3−	0.3−
1997 04 28	704	1.4−	0.1−	1999 12 12	704	0.2−	0.0	1999 12 15	704	0.1+	0.7−
1997 04 28	704	0.4−	1.3−	1999 12 12	704	0.1−	0.2+	1999 12 15	704	0.5+	0.7−
1997 04 29	704	1.2+	0.1+	1999 12 13	704	0.2−	0.3−	2000 01 02	704	0.1+	0.2+
1997 04 29	704	1.2+	0.2−	1999 12 13	704	0.3−	0.1−	2000 01 02	704	0.1+	0.3+
1997 04 29	704	1.1+	0.7−	1999 12 13	704	0.2−	0.1+	2000 01 02	704	0.4+	0.1+
1997 04 29	704	0.3+	0.9+	1999 12 13	704	0.6−	0.3+	2000 01 02	704	0.3−	0.5−
1997 04 29	704	1.1−	0.5+	1999 12 13	704	0.6−	0.1+	2000 01 02	704	0.3−	0.2−
1999 12 12	704	0.0	0.1+	1999 12 15	704	0.1+	0.4−				

1999 XY₁₂₉ = 3699 T-2 = 1998 QY₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	5.27479		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.08335622	ω	50.48968	+0.23171675	−0.97027081		
<i>a</i>	5.1901199	Ω	26.36337	+0.83724761	+0.16234651		
<i>e</i>	0.0818156	<i>i</i>	9.05277	+0.49530171	+0.17949418		
<i>P</i>	11.82	<i>H</i>	11.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1973 09 19	675	1.1−	0.9+	1998 08 25	910	0.2−	1.0+	1999 12 13	704	0.4+	0.1+
1973 09 19	675	0.7−	0.2+	1998 11 11	704	0.5+	0.5+	1999 12 13	704	0.0	0.0
1973 09 20	675	1.2+	0.1+	1998 11 11	704	0.1−	1.6−	1999 12 13	704	0.3−	0.1+
1973 09 24	675	1.7−	0.9+	1998 11 11	704	0.7−	0.8−	1999 12 15	704	0.1−	0.5+
1973 09 24	675	0.4+	0.5−	1998 11 11	704	(4.4− 0.5−)		1999 12 15	704	0.5−	0.7−
1973 09 25	675	2.0+	1.3−	1999 12 12	704	0.1+	0.1−	1999 12 15	704	0.0	0.0
1973 09 25	675	1.3+	2.4−	1999 12 12	704	0.3−	0.6−	1999 12 15	704	0.5+	0.3+
1998 08 24	910	0.2−	1.2+	1999 12 12	704	0.1−	0.4−	1999 12 15	704	0.3−	0.0
1998 08 24	910	0.4−	0.9+	1999 12 12	704	0.4+	0.1−	2000 01 04	704	0.4+	0.1+
1998 08 24	910	0.2−	1.1+	1999 12 12	704	0.0	0.3−	2000 01 04	704	0.6+	0.0
1998 08 25	910	0.3−	0.5+	1999 12 13	704	0.2+	0.0	2000 01 04	704	0.3−	0.6−
1998 08 25	910	0.0	0.6+	1999 12 13	704	0.2−	0.4+	2000 01 04	704	0.2−	0.1−

1999 XA₁₃₀ = 1991 RP₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	134.25742		(2000.0)			P		Q			
<i>n</i>	0.26644571	ω	344.53340			+0.65639861		+0.75202048			
<i>a</i>	2.3918295	Ω	326.42619			−0.68013262		+0.55544761			
<i>e</i>	0.1227821	<i>i</i>	6.23395			−0.32643604		+0.35488471			
<i>P</i>	3.70	<i>H</i>	14.1	<i>G</i>	0.15		<i>U</i>	1			
Residuals in seconds of arc											
1991 09 15	675	0.3−	0.6−	1999 12 12	704	0.1+	0.4−	1999 12 15	704	0.2−	0.0
1991 09 15	675	0.4+	0.2+	1999 12 12	704	0.9−	0.1+	1999 12 15	704	0.4−	0.9+
1991 09 17	675	0.2−	0.3−	1999 12 12	704	0.3−	0.7−	2000 01 02	704	0.7+	0.4+
1991 09 17	675	0.6+	0.1−	1999 12 12	704	0.0	0.4−	2000 01 02	704	0.3−	0.0
1997 02 03	566	0.3−	0.5−	1999 12 13	704	0.2+	0.0	2000 01 02	704	0.1−	0.0
1997 02 03	566	0.0	0.2−	1999 12 13	704	0.3+	0.1+	2000 01 02	704	0.1−	0.4−
1997 02 03	566	0.4−	0.3−	1999 12 13	704	0.2+	0.1+	2000 01 04	704	0.1−	0.3+
1998 05 29	704	(2.7+	1.0−)	1999 12 13	704	1.4+	0.4−	2000 01 04	704	0.7−	0.4+
1998 05 29	704	1.0+	0.4+	1999 12 13	704	0.1+	0.1−	2000 01 04	704	0.9−	0.5+
1998 05 29	704	0.7−	0.3−	1999 12 15	704	0.4+	0.7+	2000 01 04	704	0.9−	0.6+
1998 05 29	704	0.6−	1.1+	1999 12 15	704	0.5+	0.0				
1999 12 12	704	0.0	0.2−	1999 12 15	704	0.3+	0.3+				

1999 XO₁₃₀ = 1978 EQ₈ = 1995 WL₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	313.29822			(2000.0)			P		Q		
<i>n</i>	0.26272799	ω	125.11731				−0.95958202		−0.25782109		
<i>a</i>	2.4143403	Ω	40.28006				+0.16574041		−0.84173267		
<i>e</i>	0.2283476	<i>i</i>	10.05060				+0.22744770		−0.47435683		
<i>P</i>	3.75	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1978 03 03	033	1.1−	0.0	1999 12 07	703	2.0+	1.1−	1999 12 14	704	1.3+	1.0+
1978 03 04	033	2.7+	0.2−	1999 12 07	703	1.3−	1.6+	1999 12 15	704	0.1−	0.9+
1978 03 04	033	1.5−	0.2+	1999 12 12	704	0.6−	0.5+	1999 12 15	704	0.1−	0.0
1995 11 21	691	0.2−	0.3+	1999 12 12	704	0.3+	0.8−	1999 12 15	704	0.9−	0.4+
1995 11 21	691	0.2−	0.1+	1999 12 12	704	0.5−	2.2−	1999 12 15	704	0.2+	1.0+
1995 11 21	691	0.2−	0.0	1999 12 13	704	1.6+	0.9−	1999 12 15	704	0.4−	0.6−
1995 11 28	691	0.2+	0.0	1999 12 13	704	0.5−	0.1−	1999 12 15	704	0.1+	0.1−
1995 11 28	691	0.0	0.1+	1999 12 13	704	0.6−	0.9−	1999 12 15	704	0.2−	0.5+
1995 11 28	691	0.4+	0.2−	1999 12 13	704	0.2−	0.4−	2000 01 02	704	0.3+	0.4−
1999 12 07	703	1.5−	0.0	1999 12 14	704	0.1+	0.0	2000 01 02	704	0.4−	0.6+
1999 12 07	703	0.5−	0.2+	1999 12 14	704	1.8+	0.5+	2000 01 02	704	0.1+	0.0

1999 XR₁₃₀ = 1995 SS₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	268.54020		(2000.0)		P		Q				
<i>n</i>	0.27504923	ω	175.28086		−0.97643561		+0.21259974				
<i>a</i>	2.3416883	Ω	17.13085		−0.20189225		−0.83918530				
<i>e</i>	0.0753979	<i>i</i>	7.23164		−0.07624312		−0.50056905				
<i>P</i>	3.58	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1995 09 19	691	0.1−	0.1+	1999 12 12	704	0.5−	1.1−	1999 12 15	704	0.8−	0.3−
1995 09 19	691	0.1−	0.4+	1999 12 12	704	1.1−	1.0+	1999 12 15	704	0.0	0.1+
1995 09 19	691	0.1−	0.1+	1999 12 12	704	1.3+	1.3+	1999 12 16	704	0.8−	0.7−
1995 09 25	691	0.4+	0.3−	1999 12 12	704	1.0+	1.5+	1999 12 16	704	1.4−	0.4+
1995 09 25	691	0.0	0.3−	1999 12 13	704	0.2+	1.4−	1999 12 16	704	1.0+	0.3+
1999 12 07	703	0.6+	0.4−	1999 12 13	704	0.2+	0.0	1999 12 16	704	0.5−	1.4+
1999 12 07	703	0.4+	0.4−	1999 12 13	704	0.3+	0.6−	2000 01 02	704	0.4−	0.3+
1999 12 07	703	0.3+	0.6+	1999 12 13	704	0.1+	1.5−	2000 01 02	704	0.4+	0.5−
1999 12 07	703	1.3−	0.1−	1999 12 15	704	0.6+	1.3+	2000 01 02	704	0.4+	1.0−

1999 XZ₁₃₀ = 1986 UQ₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	43.43664	(2000.0)		P			Q		
n	0.30512938	ω	38.20198		+0.64533709		−0.76370855		
a	2.1851438	Ω	11.64037		+0.67849169		+0.56281417		
e	0.1387803	i	4.83559		+0.35098300		+0.31621110		
P	3.23	H	15.7	G	0.15		U	5	
Residuals in seconds of arc									
1986 10 31	675	2.0−	0.6−	1999 12 13	704	0.4+	1.2+	2000 01 02	704 0.1+ 0.1−
1986 10 31	675	1.2−	1.4−	1999 12 13	704	0.1+	1.4+	2000 01 02	704 0.8− 0.0
1986 11 05	675	(3.2+	1.0+)	1999 12 15	704	0.0	0.0	2000 01 02	704 0.4− 0.9+
1986 11 05	675	1.9+	1.3+	1999 12 15	704	0.3−	0.0	2000 01 02	704 0.1+ 0.1+
1999 12 12	704	0.8+	0.6−	1999 12 15	704	0.2−	0.2−	2000 01 04	704 0.7− 1.2−
1999 12 12	704	0.7+	1.0−	1999 12 15	704	0.5−	0.2+	2000 01 04	704 0.6+ 0.7−
1999 12 12	704	0.9+	1.0−	1999 12 15	704	0.1+	0.1+	2000 01 04	704 0.1+ 0.3−
1999 12 12	704	0.9+	1.0−	1999 12 16	704	0.6−	0.1+	2000 01 04	704 0.1+ 0.4+
1999 12 13	704	0.0	0.7+	1999 12 16	704	0.8−	0.2+	2000 01 04	704 0.6+ 1.0−
1999 12 13	704	0.1+	0.8+	1999 12 16	704	1.0−	0.5+		
1999 12 13	704	0.4+	0.4+	1999 12 16	704	0.8−	0.2+		

1999 XV₁₃₁ = 1998 QR₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	187.49680			(2000.0)	P		Q				
n	0.29196910	ω	283.98729		+0.37787556		+0.92570328				
a	2.2503226	Ω	8.27422		-0.79788621		+0.33481778				
e	0.1187487	i	6.71898		-0.46966759		+0.17598437				
P	3.38 <th>H</th> <td>14.6<th>G</th><td>0.15<th>U</th><td>4<td colspan="3"></td></td></td></td>	H	14.6 <th>G</th> <td>0.15<th>U</th><td>4<td colspan="3"></td></td></td>	G	0.15 <th>U</th> <td>4<td colspan="3"></td></td>	U	4 <td colspan="3"></td>				
Residuals in seconds of arc											
1998 08 23	704	0.3+	0.1+	1999 12 12	704	1.2-	0.0	1999 12 15	704	0.1-	1.0-
1998 08 23	704	0.6+	0.0	1999 12 13	704	1.0+	0.2+	2000 01 13	046	0.3+	0.5+
1998 08 23	704	0.6-	0.7-	1999 12 13	704	0.3+	0.8-	2000 01 13	046	0.4+	0.3+
1998 09 24	699	0.0	0.3-	1999 12 13	704	0.2+	0.1+	2000 01 13	046	0.3+	0.2+
1998 09 24	699	0.6-	0.8+	1999 12 13	704	0.4-	0.1-	2000 01 13	046	0.4+	0.5+
1998 09 24	699	0.1+	0.8+	1999 12 13	704	0.6+	0.9-	2000 01 13	046	0.3+	0.8+
1999 12 12	704	0.4+	0.2-	1999 12 15	704	0.9-	0.6-	2000 01 13	046	0.2+	0.8+
1999 12 12	704	0.3-	0.1+	1999 12 15	704	1.2-	0.6-	2000 01 13	046	0.1+	0.8+
1999 12 12	704	0.0	0.1+	1999 12 15	704	0.1-	0.7-	2000 01 13	046	0.4+	0.9+
1999 12 12	704	0.8-	0.4+	1999 12 15	704	0.1-	0.5-				

1999 XH₁₃₂ = 1978 WG₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	70.26141		(2000.0)		P		Q	
n	0.23680273	ω	313.12251		+0.92933994		−0.30113616	
a	2.5874874	Ω	65.45154		+0.36822130		+0.79854014	
e	0.1677003	i	13.58429		−0.02720951		+0.52120117	
P	4.16	H	14.2		G	0.15	U	4
Residuals in seconds of arc								
1978 11 29	675	0.3−	0.5−	1999 12 13	704	(0.5+ 2.6−)	1999 12 15	704 0.0 0.2+
1978 11 30	675	0.3+	0.5+	1999 12 13	704	0.1+ 0.2+	2000 01 08	704 0.3+ 0.1+
1999 12 12	704	0.1−	0.0	1999 12 13	704	0.3+ 0.1+	2000 01 08	704 0.5+ 0.1+
1999 12 12	704	0.2−	0.1−	1999 12 13	704	0.0 0.4+	2000 01 08	704 0.4− 0.5+
1999 12 12	704	0.0	0.2−	1999 12 15	704	0.1− 0.1−	2000 01 08	704 0.1− 0.2−
1999 12 12	704	0.1−	0.1−	1999 12 15	704	0.2+ 0.3−	2000 01 08	704 0.3− 0.6−
1999 12 12	704	0.3−	0.3−	1999 12 15	704	0.0 0.1−		
1999 12 13	704	0.2−	0.1−	1999 12 15	704	0.4+ 0.5+		

2000 JAN. 24

M.P.C. 37949

1999 XE₁₃₃ = 1981 TY₂ = 1995 XC₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27960552	ω	340.57060	+0.96415992	-0.25024399		
<i>a</i>	2.3161796	Ω	34.30891	+0.25939847	+0.81924164		
<i>e</i>	0.1684065	<i>i</i>	8.99928	+0.05575017	+0.51596616		
<i>P</i>	3.52	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1981 10 06	095	0.2+	0.4-	1999 12 12	704	0.6+	0.1-	1999 12 16	704	0.5-	0.1-
1995 12 14	327	0.0	0.6-	1999 12 13	704	0.1-	0.3-	1999 12 16	704	0.1+	0.4-
1995 12 14	327	0.4-	0.3-	1999 12 13	704	0.3+	0.3-	1999 12 16	704	0.1+	0.2-
1995 12 14	327	0.1+	0.3+	1999 12 13	704	0.3-	0.2+	1999 12 16	704	0.1+	0.0
1995 12 15	327	0.2-	0.2+	1999 12 13	704	1.0-	1.6+	1999 12 16	704	0.1-	0.3+
1995 12 15	327	0.2+	0.1-	1999 12 13	704	0.3-	0.6+	1999 12 16	704	0.1-	0.1+
1995 12 15	327	0.3-	0.2-	1999 12 15	704	0.1-	0.2-	1999 12 16	704	0.3-	0.0
1995 12 16	327	0.1-	0.7+	1999 12 15	704	0.6-	0.1-	2000 01 02	704	0.0	0.2-
1995 12 16	327	0.1+	0.6+	1999 12 15	704	0.3-	0.2-	2000 01 02	704	0.3+	0.3-
1995 12 16	327	0.1+	0.3+	1999 12 15	704	0.1+	0.5-	2000 01 02	704	0.8+	0.9+
1999 12 12	704	0.1+	0.3-	1999 12 15	704	1.2-	0.6-	2000 01 02	704	0.9+	1.0+
1999 12 12	704	0.3+	0.1+	1999 12 16	704	0.3-	0.1-	2000 01 02	704	0.8+	0.3+
1999 12 12	704	0.5+	0.4-	1999 12 16	704	0.5-	0.5-				
1999 12 12	704	0.7+	0.0	1999 12 16	704	0.0	0.2-				

1999 XH₁₃₃ = 1991 GE₆ = 1996 TF₆₈ = 1998 XE₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08302091	ω	169.08400	-0.99936548	-0.01198284		
<i>a</i>	5.2040850	Ω	10.40617	-0.00879648	-0.82950449		
<i>e</i>	0.0705703	<i>i</i>	10.70183	+0.03451458	-0.55837148		
<i>P</i>	11.87	<i>H</i>	10.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1991 04 08	809	0.4+	0.1+	1998 12 14	704	1.6+	1.4-	1999 12 13	704	0.0	0.3+
1991 04 08	809	0.8-	0.7-	1998 12 14	704	0.9-	0.3-	1999 12 13	704	0.1+	0.3+
1991 04 08	809	0.5-	1.4-	1998 12 17	704	0.8+	1.6+	1999 12 13	704	0.1-	0.3+
1991 04 10	809	0.6+	0.4+	1998 12 17	704	0.9+	0.2-	1999 12 15	704	0.1+	0.0
1991 04 10	809	0.1+	0.2+	1998 12 17	704	0.3-	0.4+	1999 12 15	704	0.9+	1.3-
1991 04 10	809	0.6-	0.1+	1998 12 17	704	0.9-	1.3-	1999 12 15	704	0.3-	0.6-
1996 09 13	809	0.9-	0.3+	1999 12 12	704	0.0	0.0	1999 12 15	704	0.1+	0.7-
1996 10 06	809	0.3-	0.2-	1999 12 12	704	0.3+	0.4-	1999 12 15	704	0.7-	0.9-
1996 10 06	809	0.8+	0.3+	1999 12 12	704	0.5+	0.1-	2000 01 02	704	1.1-	0.6+
1996 10 11	809	(0.6+ 2.5+)		1999 12 12	704	0.2+	0.7-	2000 01 02	704	0.4-	1.5+
1998 12 14	704	0.0	0.3+	1999 12 12	704	0.2+	1.0-	2000 01 02	704	0.2-	1.2+
1998 12 14	704	0.6-	1.3-	1999 12 13	704	0.2-	0.3+	2000 01 02	704	0.3+	1.8+
1998 12 14	704	0.7+	1.1-	1999 12 13	704	0.3+	0.0	2000 01 02	704	0.1+	1.9+

1999 XL₁₃₃ = 1980 FU₈ = 1998 SZ₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18887155	ω	91.14557	+0.12037904	-0.99242379		
<i>a</i>	3.0085577	Ω	351.81710	+0.82827127	+0.11405201		
<i>e</i>	0.0579990	<i>i</i>	9.94213	+0.54724364	+0.04568536		
<i>P</i>	5.22	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 03 23	809	0.0	0.1+	1998 09 27	704	0.3-	0.4+	1999 12 15	704	0.0	0.1+
1998 08 28	704	(0.6+ 2.8-)		1998 09 27	704	0.7-	0.0	1999 12 15	704	0.2+	0.3+
1998 08 28	704	0.6+	1.2+	1998 09 27	704	1.4-	0.2-	1999 12 15	704	0.1+	0.0
1998 08 28	704	0.9+	0.1-	1998 09 27	704	0.6-	1.0-	1999 12 15	704	0.5+	0.5+
1998 08 28	704	1.1+	0.0	1999 12 12	704	0.1+	0.0	1999 12 16	704	0.0	0.1-
1998 08 28	704	(6.2- 0.7+)		1999 12 12	704	0.0	0.1-	1999 12 16	704	0.8-	0.1-
1998 09 25	699	0.1+	1.5+	1999 12 12	704	0.1+	0.1-	1999 12 16	704	0.2-	0.0
1998 09 25	699	0.5-	0.8+	1999 12 12	704	0.0	0.3-	1999 12 16	704	0.9-	0.5+
1998 09 25	699	0.1-	0.7+	1999 12 12	704	0.3+	0.3-	1999 12 16	704	0.9-	0.4+

1998 09 26	704	0.3+	0.1-	1999 12 13	704	0.1+	0.1-	2000 01 02	704	0.6-	0.3+
1998 09 26	704	0.3+	1.1-	1999 12 13	704	0.4+	0.2-	2000 01 02	704	0.3-	0.4+
1998 09 26	704	0.3+	0.6-	1999 12 13	704	0.7+	0.3-	2000 01 02	704	0.4-	0.0
1998 09 26	704	0.3+	0.3-	1999 12 13	704	0.5+	0.3-	2000 01 02	704	0.1-	0.4-
1998 09 26	704	0.7+	0.8-	1999 12 13	704	0.7+	0.5-	2000 01 02	704	0.3+	0.2+
1998 09 27	704	0.9-	0.1-	1999 12 15	704	0.2+	0.1+				

1999 XW₁₃₃ = 1998 SW₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18473137	ω	116.42216	-0.68125553	-0.73006419		
<i>a</i>	3.0533432	Ω	16.87356	+0.58807053	-0.58957680		
<i>e</i>	0.0672158	<i>i</i>	10.68669	+0.43596324	-0.34555098		
<i>P</i>	5.34	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 20	327	1.1+	0.2-	1998 09 27	704	0.7-	0.8+	1999 12 15	704	0.1-	1.0-
1998 09 20	327	0.1+	1.2+	1998 09 27	704	0.5-	0.5+	1999 12 15	704	0.2+	0.8-
1998 09 20	327	0.8+	0.6-	1998 09 27	704	1.5-	0.3-	1999 12 30	704	0.6-	0.0
1998 09 20	327	0.1-	0.5+	1998 09 27	704	(3.0- 0.3+)		1999 12 30	704	1.6-	0.9-
1998 09 20	327	0.4-	0.1-	1999 12 12	704	0.3+	0.0	1999 12 30	704	0.9+	0.2+
1998 09 20	327	0.4-	0.2-	1999 12 12	704	0.4+	0.3+	1999 12 30	704	0.1+	0.5+
1998 09 20	327	0.5+	0.1+	1999 12 12	704	0.7+	0.8+	1999 12 30	704	0.3-	0.5+
1998 09 20	327	0.0	0.4+	1999 12 12	704	1.3+	0.6+	2000 01 21	704	0.5+	0.0
1998 09 25	327	0.4+	0.3+	1999 12 12	704	0.2+	0.5-	2000 01 21	704	0.1-	0.5+
1998 09 25	327	0.3+	0.1+	1999 12 13	704	0.1+	0.1+	2000 01 21	704	0.6-	0.2-
1998 09 25	327	0.7+	0.1+	1999 12 13	704	0.7-	0.1+	2000 01 21	704	0.4-	1.2+
1998 09 26	704	1.0+	0.5-	1999 12 13	704	0.6-	0.3-	2000 01 21	704	0.1-	0.0
1998 09 26	704	0.1-	0.5-	1999 12 13	704	1.1-	0.2+	2000 01 21	704	0.5+	0.0
1998 09 26	704	0.5-	0.6+	1999 12 13	704	1.0-	0.7+	2000 01 21	704	0.2+	0.4-
1998 09 26	704	0.3-	0.5-	1999 12 15	704	0.9+	0.5-	2000 01 21	704	1.1+	0.1-
1998 09 26	704	0.4-	1.7-	1999 12 15	704	0.1-	0.7-				

1999 XB₁₃₄ = 1998 SQ₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21452560	ω	180.02053	-0.58484008	-0.77797356		
<i>a</i>	2.7636516	Ω	305.77201	+0.74425463	-0.40209886		
<i>e</i>	0.2159453	<i>i</i>	16.43895	+0.32256337	-0.48277702		
<i>P</i>	4.59	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 27	704	1.0+	1.0+	1999 12 12	704	0.4-	0.8-	1999 12 15	704	0.1-	0.2-
1998 08 27	704	0.6+	0.9+	1999 12 13	704	0.1+	0.0	1999 12 15	704	0.8-	0.0
1998 08 27	704	0.7-	0.6-	1999 12 13	704	0.4+	0.0	1999 12 16	678	0.2-	0.0
1998 08 27	704	(4.9- 0.7+)		1999 12 13	704	0.1+	0.9-	1999 12 16	678	0.8-	0.1-
1998 09 19	704	1.1-	0.3-	1999 12 13	704	0.2+	0.1-	2000 01 02	704	0.2+	0.3-
1998 09 19	704	(2.4- 0.6-)		1999 12 13	704	0.2+	1.0-	2000 01 02	704	0.0	0.4-
1998 09 19	704	0.8+	0.9-	1999 12 13	704	0.1+	0.2+	2000 01 02	704	0.6+	0.3+
1998 09 19	704	0.3+	0.4-	1999 12 13	699	0.4+	1.0+	2000 01 02	704	0.6+	0.5+
1998 09 19	704	(4.0- 0.9+)		1999 12 13	704	0.4+	1.1-	2000 01 02	704	(2.7+ 0.8+)	
1998 09 23	704	0.0	0.4+	1999 12 13	704	0.2+	0.1+	2000 01 03	691	0.0	0.2+
1998 09 23	704	0.9-	0.2+	1999 12 13	699	0.2-	1.3+	2000 01 03	691	0.1+	0.2+
1998 09 23	704	(2.7- 0.1+)		1999 12 13	704	0.6-	1.7-	2000 01 03	691	0.0	0.2+
1999 12 03	699	0.1-	1.4+	1999 12 13	704	0.0	0.0	2000 01 04	704	0.0	0.3+
1999 12 03	699	0.2+	0.6+	1999 12 13	699	0.2-	1.1+	2000 01 04	704	0.5+	0.5+
1999 12 03	699	0.5-	1.5+	1999 12 15	678	0.1-	0.3+	2000 01 04	704	0.0	0.2+
1999 12 12	704	0.2+	0.5-	1999 12 15	678	1.0-	0.1-	2000 01 04	704	0.1+	0.2+
1999 12 12	704	0.2+	0.5-	1999 12 15	704	0.0	0.0	2000 01 04	704	0.1+	0.2+
1999 12 12	704	0.4+	0.6-	1999 12 15	704	0.1+	0.2+				
1999 12 12	704	0.2-	1.8-	1999 12 15	704	0.1-	0.0				

1999 XL₁₃₄ = 1996 FV₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	351.93508		(2000.0)	P			Q				
<i>n</i>	0.22812058	ω	169.78498	−0.72015224			−0.68506989				
<i>a</i>	2.6527302	Ω	326.12231	+0.62185849			−0.56713301				
<i>e</i>	0.1299094	<i>i</i>	11.36220	+0.30768941			−0.45720826				
<i>P</i>	4.32	<i>H</i>	15.1	<i>G</i>	0.15		<i>U</i>	4			
Residuals in seconds of arc											
1996 03 19	691	0.0	0.0	1999 12 12	704	0.1+	1.2+	1999 12 15	704	0.5−	0.8−
1996 03 19	691	0.2+	0.1+	1999 12 13	704	0.0	0.2+	1999 12 31	699	0.2−	1.5+
1996 03 19	691	0.7+	0.2+	1999 12 13	704	0.3+	0.2−	1999 12 31	699	0.0	1.2+
1996 03 27	691	0.4−	0.2−	1999 12 13	704	0.4+	0.1−	1999 12 31	699	0.2+	0.6+
1996 03 27	691	0.2−	0.0	1999 12 13	704	0.1−	0.2+	2000 01 02	704	0.6−	0.5+
1996 03 27	691	0.3−	0.2−	1999 12 13	704	0.4−	0.5−	2000 01 02	704	0.8−	0.2−
1999 12 12	704	0.7+	0.1+	1999 12 15	704	0.0	0.1−	2000 01 02	704	1.2+	1.3−
1999 12 12	704	0.1+	1.1−	1999 12 15	704	0.1+	0.5−	2000 01 02	704	0.3−	1.0−
1999 12 12	704	0.4−	1.9+	1999 12 15	704	0.3−	0.5−	2000 01 02	704	0.6+	0.9−

1999 XC₁₃₅ = 1982 UB₃ = 1995 KB₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	101.88558		(2000.0)	P			Q				
<i>n</i>	0.29364524	ω	197.44044		+0.82054532		+0.55860320				
<i>a</i>	2.2417512	Ω	127.98118		-0.50439251		+0.80732253				
<i>e</i>	0.3000208	<i>i</i>	8.83865		-0.26887465		+0.19024407				
<i>P</i>	3.36	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2				
Residuals in seconds of arc											
1982 10 18	807	0.1-	0.3+	1999 11 20	327	0.3+	0.6+	1999 12 14	704	0.1-	0.2-
1982 10 19	695	1.6-	1.5-	1999 11 20	327	0.1+	0.6+	1999 12 14	704	0.5+	0.6+
1982 10 20	695	0.4+	1.0-	1999 11 20	327	0.1+	0.2+	1999 12 14	704	0.1+	0.2+
1982 10 20	695	1.4+	1.8+	1999 11 21	327	0.4+	0.5+	2000 01 07	704	0.3-	0.2+
1995 05 29	675	0.5-	0.2-	1999 11 21	327	0.3-	0.3-	2000 01 07	704	0.5-	0.1+
1995 05 29	675	0.7-	0.4-	1999 11 21	327	0.2+	0.0	2000 01 07	704	0.2+	0.1+
1995 05 31	675	0.1+	1.1+	1999 12 06	704	0.1+	1.4+	2000 01 07	704	0.0	0.2-
1995 05 31	675	1.1+	0.8-	1999 12 06	704	0.3+	0.3+	2000 01 07	704	0.1-	0.4-
1999 11 05	704	0.3-	0.6-	1999 12 06	704	0.4+	0.5-	2000 01 11	704	0.1-	0.2-
1999 11 05	704	0.1+	0.0	1999 12 06	704	0.7+	0.6-	2000 01 11	704	0.1-	0.5-
1999 11 05	704	0.5-	0.4-	1999 12 06	704	0.1-	0.5-	2000 01 11	704	0.8-	0.6-
1999 11 05	704	0.3-	0.2-	1999 12 14	704	0.2+	0.1+	2000 01 11	704	0.2-	0.2-
1999 11 05	704	0.4-	0.2+	1999 12 14	704	0.1+	0.1-				

1999 XE₁₃₅ = 1998 HH₁₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	98.06876		(2000.0)	P		Q					
<i>n</i>	0.29936915	ω	200.08492	+0.93514920		+0.34609582					
<i>a</i>	2.2130846	Ω	139.41346	−0.30708284		+0.89834384					
<i>e</i>	0.2365669	<i>i</i>	6.67191	−0.17662418		+0.27054764					
<i>P</i>	3.29	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1998 04 21	704	0.2−	0.6+	1998 04 24	704	1.1+	0.8+	1999 12 14	704	0.9−	0.0
1998 04 21	704	0.4−	1.2−	1998 04 24	704	1.3−	0.6+	1999 12 14	704	0.2+	0.0
1998 04 21	704	0.5+	1.0−	1999 11 04	704	0.4+	0.5−	2000 01 05	704	0.2+	0.0
1998 04 21	704	0.5+	0.2−	1999 11 04	704	1.5−	0.1−	2000 01 05	704	0.1−	0.4−
1998 04 21	704	0.4−	0.4+	1999 11 04	704	0.6−	0.3−	2000 01 05	704	0.7+	0.6+
1998 04 23	704	0.6+	0.7+	1999 11 04	704	0.0	1.1+	2000 01 05	704	0.3+	0.4−
1998 04 23	704	0.3+	0.4−	1999 12 06	704	0.5+	1.1+	2000 01 05	704	0.3+	0.4−
1998 04 23	704	0.1−	0.2+	1999 12 06	704	0.2−	0.2−	2000 01 07	704	0.1+	0.5+
1998 04 23	704	0.4−	0.6+	1999 12 06	704	1.7+	0.0	2000 01 07	704	0.4+	0.0
1998 04 23	704	0.4−	1.0−	1999 12 06	704	0.1+	0.8+	2000 01 07	704	0.3+	0.3−
1998 04 24	704	0.3+	0.5+	1999 12 14	704	0.5−	1.0−	2000 01 07	704	0.6+	0.0
1998 04 24	704	0.3+	0.4+	1999 12 14	704	0.7−	0.2−	2000 01 07	704	0.1+	0.4+
1998 04 24	704	0.6−	0.8−	1999 12 14	704	1.3−	0.3−				

1999 XP₁₃₅ = 1998 HN₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	86.69930		(2000.0)			P		Q			
n	0.30941212	ω	222.00304			+0.99839339		+0.04490820			
a	2.1649332	Ω	135.38680			-0.02921596		+0.93048504			
e	0.2157370	i	2.81999			-0.04854963		+0.36356683			
P	3.19	H	15.4		G	0.15		U	5		
Residuals in seconds of arc											
1998 04 21	704	1.3-	0.2+	1999 12 08	704	0.5+	0.5-	2000 01 05	704	0.4+	0.1+
1998 04 21	704	0.6-	0.1+	1999 12 08	704	0.3-	0.1+	2000 01 05	704	0.4+	0.5-
1998 04 21	704	(0.0	2.6+)	1999 12 08	704	0.7+	0.1+	2000 01 05	704	0.4+	0.6-
1998 04 21	704	1.0+	0.8+	1999 12 14	704	0.1+	0.1-	2000 01 06	704	0.3-	0.2+
1998 04 21	704	(3.6-	0.3-)	1999 12 14	704	0.0	0.6+	2000 01 06	704	0.0	0.4+
1998 04 22	704	0.9+	1.1-	1999 12 14	704	0.1-	0.1+	2000 01 06	704	0.4-	0.2+
1998 04 22	704	(2.2+	1.4-)	1999 12 14	704	0.2-	0.5+	2000 01 06	704	0.3-	0.2-
1998 04 22	704	(0.7-	3.2-)	1999 12 14	704	0.9-	0.6-	2000 01 06	704	1.1-	0.0
1999 12 08	704	0.2+	0.2-	2000 01 05	704	0.4+	0.3+				
1999 12 08	704	0.1-	0.0	2000 01 05	704	0.6+	0.0				

1999 XX₁₃₅ = 1993 NG

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	32.83191		(2000.0)	P			Q				
n	0.36235242	ω	156.85404		+0.37403135		-0.87512067				
a	1.9485667	Ω	270.00365		+0.79564729		+0.47288506				
e	0.0786901	i	17.88004		+0.47649338		-0.10268170				
P	2.72	H	14.4	G	0.15	U	3				
Residuals in seconds of arc											
1993 07 15	675	0.6+	0.2-	1999 12 12	704	0.3+	0.2-	1999 12 15	704	0.3+	0.0
1993 07 15	675	0.8+	0.3-	1999 12 12	704	0.2+	0.2-	1999 12 15	704	0.2+	0.1+
1993 07 17	675	0.0	0.7-	1999 12 12	704	0.2+	0.1+	1999 12 15	704	0.3+	0.6-
1993 07 17	675	1.1-	0.5+	1999 12 13	704	0.1+	0.1-	1999 12 28	739	0.1+	0.6+
1999 09 27	704	0.4+	0.1-	1999 12 13	704	0.2+	0.1-	1999 12 28	739	0.4+	0.1+
1999 09 27	704	0.4-	1.2+	1999 12 13	704	0.2+	0.2-	2000 01 03	704	0.2-	0.2-
1999 09 27	704	0.4+	0.0	1999 12 13	704	0.0	0.1-	2000 01 03	704	0.0	0.1-
1999 09 27	704	0.1+	0.7+	1999 12 13	704	0.1+	0.3-	2000 01 03	704	0.0	0.1-
1999 11 01	704	0.6-	0.5-	1999 12 13	704	0.1+	0.1-	2000 01 03	704	0.1-	0.0
1999 11 01	704	0.0	0.1+	1999 12 13	704	0.1+	0.2-	2000 01 04	704	0.2-	0.0
1999 11 01	704	0.2-	0.0	1999 12 13	704	0.0	0.1-	2000 01 04	704	0.5-	0.1+
1999 11 01	704	0.0	0.1+	1999 12 13	704	0.3+	0.1+	2000 01 04	704	0.2-	0.2-
1999 11 01	704	0.6+	0.7-	1999 12 13	704	0.1-	0.0	2000 01 04	704	0.7-	1.1-
1999 12 07	703	0.3-	0.2+	1999 12 14	704	0.2+	0.6+	2000 01 04	704	0.3-	0.5-
1999 12 07	703	0.4-	0.1+	1999 12 14	704	1.3-	1.0+	2000 01 04	106	0.1-	0.4+
1999 12 07	703	0.1-	0.1-	1999 12 14	704	0.4+	0.1+	2000 01 04	106	0.1+	0.5+
1999 12 07	703	0.2-	0.3+	1999 12 14	704	0.2+	0.1-	2000 01 04	106	0.2-	0.4+
1999 12 12	704	0.1+	0.3-	1999 12 14	704	0.3+	0.1-				
1999 12 12	704	0.0	0.3-	1999 12 15	704	0.1+	0.1-				

1999 XQ₁₃₆ = 1981 BK = 1992 PH₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	332.47552		(2000.0)	P			Q				
n	0.21080974	ω	252.84297	-0.95661788		+0.21212507					
a	2.7960329	Ω	299.00459	-0.09034449		-0.86767478					
e	0.2088048	i	13.20010	-0.27698395		-0.44960365					
P	4.68	H	12.2	G	0.15	U	1				
Residuals in seconds of arc											
1981 01 30	688	0.8-	1.2-	1998 12 09	704	0.0	0.1-	1999 12 05	704	0.4+	0.6+
1981 01 30	688	0.2-	1.7-	1998 12 09	704	1.3+	0.3+	1999 12 09	699	0.2+	0.3+
1992 08 06	675	0.5-	1.3-	1998 12 09	704	0.7+	0.9+	1999 12 09	699	0.2-	0.3+
1992 08 06	675	0.2+	1.0-	1998 12 09	704	1.9+	0.7+	1999 12 09	699	0.1-	0.2+
1992 08 07	675	0.1+	1.2-	1999 01 09	699	0.3-	0.4-	1999 12 13	678	0.2-	0.4-
1992 08 07	675	0.3+	0.7-	1999 01 09	699	0.4-	0.3-	1999 12 13	678	0.1+	0.2-
1992 08 23	675	0.9+	1.0+	1999 01 09	699	0.4+	1.2-	1999 12 15	678	0.8-	0.1-

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1992 08 23	675	0.3+	0.6+	1999 11 05	703	1.7-	0.5-	1999 12 15	678	0.9-	0.2-
1998 11 14	704	1.3-	0.5+	1999 11 05	703	0.6+	0.4+	2000 01 05	704	0.4+	0.8+
1998 11 14	704	0.7-	0.3-	1999 11 05	703	0.4-	0.4+	2000 01 05	704	0.9+	0.2-
1998 11 14	704	0.6-	0.2-	1999 11 05	703	0.3+	0.6+	2000 01 05	704	0.0	0.2-
1998 11 14	704	1.1-	0.2+	1999 12 05	703	0.6+	0.2-	2000 01 05	704	0.0	0.4-
1998 11 14	704	0.5+	1.4-	1999 12 05	703	0.1+	0.2-	2000 01 05	704	0.4-	0.5-
1998 11 16	704	0.0	0.8+	1999 12 05	704	0.2-	0.6+	2000 01 08	704	(1.1-	2.6+)
1998 11 16	704	0.2+	0.7+	1999 12 05	703	0.5+	0.1-	2000 01 08	704	0.7+	0.3-
1998 11 16	704	0.4-	0.6+	1999 12 05	704	0.1-	0.5+	2000 01 08	704	0.6+	0.1+
1998 11 16	704	0.9-	0.8+	1999 12 05	703	0.0	0.1+	2000 01 08	704	1.1-	1.1-
1998 11 16	704	0.4-	0.4+	1999 12 05	704	0.3-	0.5+				
1998 12 09	704	1.6+	0.4-	1999 12 05	704	0.4+	0.3+				

1999 XT₁₃₆ = 1990 VR₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21928985	ω	294.51467		+0.87067717		-0.45632870
<i>a</i>	2.7234769	Ω	93.09124		+0.49090475		+0.78304538
<i>e</i>	0.1863413	<i>i</i>	10.59137		+0.03055799		+0.42261572
<i>P</i>	4.49	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 15	809	0.9+	0.0	1999 12 03	699	0.3+	0.2+	1999 12 30	699	0.1+	0.2+
1990 11 15	809	1.2+	0.2-	1999 12 03	699	0.2-	0.3+	1999 12 31	699	0.3+	0.7+
1990 11 15	809	1.3-	0.1+	1999 12 06	704	0.3-	0.1+	1999 12 31	699	0.4-	0.4+
1990 11 15	809	0.3-	1.3-	1999 12 06	704	0.6-	0.3+	1999 12 31	699	0.4+	0.4+
1990 11 15	809	0.7-	0.4-	1999 12 06	704	0.3-	0.0	2000 01 04	106	0.1+	0.7+
1990 11 15	809	1.5-	1.1-	1999 12 06	704	0.1+	0.6-	2000 01 04	106	0.6-	0.1-
1990 11 17	809	(2.2+ 0.8+)		1999 12 06	704	0.6-	0.1-	2000 01 04	106	0.2+	0.7+
1990 11 17	809	0.5+	0.2+	1999 12 13	699	0.1+	0.3+	2000 01 05	704	0.2-	0.7-
1990 11 17	809	0.1+	0.2+	1999 12 13	699	0.1+	0.5+	2000 01 05	704	0.1-	0.8-
1990 11 17	809	0.1+	0.9-	1999 12 13	699	0.2-	0.5+	2000 01 05	704	0.2+	0.4-
1990 11 17	809	0.7+	0.8-	1999 12 14	704	0.6-	0.1-	2000 01 05	704	0.5-	1.0-
1990 11 17	809	0.4+	1.4-	1999 12 14	704	0.1-	0.3+	2000 01 05	704	0.3-	0.0
1990 11 21	809	1.0+	0.1-	1999 12 14	704	0.1-	0.2+	2000 01 06	704	0.4+	0.6-
1990 11 21	809	1.0+	0.1-	1999 12 14	678	0.3+	0.6+	2000 01 06	704	0.4+	0.5-
1990 11 21	809	0.4-	0.9+	1999 12 14	704	0.3+	0.4+	2000 01 06	704	0.3-	0.7-
1999 11 05	704	0.1-	0.8+	1999 12 14	678	0.6+	0.1-	2000 01 06	704	0.4+	0.1-
1999 11 05	704	0.4-	0.4+	1999 12 14	704	0.0	0.6+	2000 01 06	704	0.0	0.3-
1999 11 05	704	0.2-	0.2+	1999 12 15	678	0.2-	0.3-	2000 01 11	691	0.1+	0.4+
1999 11 05	704	0.4-	0.6+	1999 12 15	678	0.7+	0.3+	2000 01 11	691	0.1-	0.6-
1999 11 05	704	0.5-	0.4+	1999 12 30	699	0.3+	0.3+	2000 01 11	691	0.0	0.0
1999 12 03	699	0.1-	0.5+	1999 12 30	699	0.2+	0.4+				

1999 XW₁₃₆ = 1998 HC₁₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27773658	ω	230.81987		+0.76448279		+0.62475704
<i>a</i>	2.3265586	Ω	89.92444		-0.53156325		+0.75037137
<i>e</i>	0.2506212	<i>i</i>	9.14224		-0.36470066		+0.21592000
<i>P</i>	3.55	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 03 24	704	0.0	0.9-	1998 05 16	704	0.3-	0.4-	1999 12 14	678	0.3+	0.9-
1998 03 24	704	0.5-	0.9-	1998 05 16	704	0.1-	0.9+	1999 12 14	678	0.3+	0.5-
1998 03 24	704	1.2-	0.0	1998 05 23	699	1.3+	0.2-	1999 12 15	678	0.5-	0.6-
1998 03 24	704	0.4+	0.8-	1998 05 23	699	0.5+	0.3+	1999 12 15	678	0.2+	0.4+
1998 03 24	704	0.3-	0.4+	1998 05 23	699	0.5-	0.3+	1999 12 31	703	1.1-	0.8+
1998 04 21	704	0.5+	0.2-	1998 05 28	704	0.2+	0.7-	1999 12 31	703	0.1-	0.4+
1998 04 21	704	0.1-	0.5-	1998 05 28	704	0.7+	1.4-	1999 12 31	703	0.4-	0.5+
1998 04 21	704	0.2-	0.2-	1998 05 28	704	0.3+	0.0	1999 11 04	704	0.3-	0.7+
1998 04 21	704	0.2-	0.6+	1998 05 28	704	1.0+	0.8-	2000 01 05	704	0.4-	0.3-
1998 04 21	704	0.2-	0.2+	1998 05 28	704	1.0+	0.4+	2000 01 05	704	0.9-	0.3+
1998 04 23	704	0.1+	0.3+	1999 11 04	704	0.6+	0.9-	2000 01 05	704	0.4-	0.7-
1998 04 23	704	0.7-	0.0	1999 11 04	704	0.0	0.6-	2000 01 05	704	0.6+	0.3+
1998 04 23	704	0.0	0.4+	1999 11 04	704	0.5-	1.0+	2000 01 05	704	0.6-	1.1+

1998 04 23	704	0.3-	0.3+	1999 11 04	704	0.6-	0.2-	2000 01 06	704	0.4+	0.1-
1998 04 23	704	0.4-	0.6+	1999 11 04	704	0.2-	0.2-	2000 01 06	704	0.1+	0.3-
1998 05 16	704	0.1-	0.4+	1999 12 13	699	0.9+	0.9+	2000 01 06	704	1.2+	0.6-
1998 05 16	704	1.5-	1.0+	1999 12 13	699	0.1-	0.6+	2000 01 06	704	1.0+	0.2-
1998 05 16	704	0.7+	0.8+	1999 12 13	699	0.5+	0.5+	2000 01 06	704	0.1-	1.0-

1999 XX₁₃₆ = 1998 KK₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27896682	ω	241.50085		+0.98544041		+0.06779927
<i>a</i>	2.3197135	Ω	114.24348		-0.01318316		+0.94475999
<i>e</i>	0.1258658	<i>i</i>	9.84589		-0.16950929		+0.32067401
<i>P</i>	3.53	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 23	704	0.8-	0.4-	1999 12 05	704	0.2-	0.2-	1999 12 20	294	0.3+	1.2+
1998 05 23	704	0.6+	0.2+	1999 12 05	704	0.4+	0.1-	1999 12 30	699	0.1+	0.1-
1998 05 23	704	1.1-	0.4+	1999 12 13	699	0.2+	0.1-	1999 12 30	699	0.2+	0.1-
1998 05 23	704	0.7-	0.9-	1999 12 13	699	0.6+	0.0	1999 12 30	699	0.3-	0.4-
1998 05 26	704	0.2+	0.4-	1999 12 13	699	0.6+	0.2+	2000 01 04	106	0.1+	0.4-
1998 05 26	704	0.9+	0.1+	1999 12 14	704	0.2-	0.0	2000 01 04	106	0.2-	0.3-
1998 05 26	704	0.0	0.5+	1999 12 14	704	0.2-	0.0	2000 01 04	106	0.3-	0.5+
1998 05 26	704	1.3+	0.4+	1999 12 14	704	0.3-	0.3+	2000 01 05	704	0.1-	0.1-
1998 05 26	704	0.3-	0.4+	1999 12 14	704	1.0-	0.1+	2000 01 05	704	0.9+	0.3-
1999 11 05	704	0.3+	0.0	1999 12 14	678	0.5-	0.0	2000 01 05	704	0.0	0.1+
1999 11 05	704	0.1+	0.1+	1999 12 14	704	1.0-	0.7-	2000 01 05	704	0.1+	0.3+
1999 11 05	704	0.3+	0.0	1999 12 14	678	0.7-	0.4+	2000 01 05	704	0.3-	0.0
1999 11 05	704	0.6+	0.0	1999 12 15	678	0.1-	0.1+	2000 01 07	704	0.4+	0.3-
1999 11 05	704	0.6-	0.6+	1999 12 15	678	0.8-	0.2-	2000 01 07	704	0.2+	0.3+
1999 12 02	699	0.4+	0.2-	1999 12 17	294	(2.2+ 1.4+)		2000 01 07	704	0.3+	0.2-
1999 12 02	699	1.1+	0.3-	1999 12 17	294	0.2-	0.4-	2000 01 07	704	0.8+	0.4+
1999 12 02	699	0.4+	0.7-	1999 12 17	294	1.4+	0.6+	2000 01 07	704	0.4+	0.2-
1999 12 05	704	0.3-	0.4-	1999 12 20	294	0.7-	0.4+				
1999 12 05	704	0.3-	0.3-	1999 12 20	294	1.6-	0.6+				

1999 XA₁₃₇ = 1997 MO₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19248947	ω	296.75218		+0.81900341		-0.54422012
<i>a</i>	2.9707406	Ω	96.73675		+0.56965086		+0.73321062
<i>e</i>	0.0881811	<i>i</i>	10.54935		+0.06878453		+0.40770903
<i>P</i>	5.12	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 06 28	691	0.5+	0.6+	1999 12 06	704	0.4-	1.0-	1999 12 30	699	0.6+	1.3+
1997 06 28	691	0.6+	0.8+	1999 12 06	704	0.3-	0.3+	1999 12 30	699	0.4+	0.9+
1997 06 28	691	0.5+	0.5+	1999 12 06	704	0.9-	1.0-	2000 01 01	106	1.2+	0.0
1997 07 05	691	0.4-	0.4+	1999 12 13	699	1.0+	0.0	2000 01 01	106	1.9-	2.0+
1997 07 05	691	0.0	0.4+	1999 12 13	699	0.4+	0.4+	2000 01 05	704	0.3+	0.1+
1997 07 05	691	0.1-	0.6+	1999 12 13	699	1.0+	0.5+	2000 01 05	704	0.4+	0.3+
1998 07 24	566	0.3-	0.0	1999 12 14	704	0.4+	0.2+	2000 01 05	704	0.3+	0.7-
1998 07 24	566	0.3-	0.2-	1999 12 14	704	0.2-	0.0	2000 01 05	704	0.5+	0.4+
1998 07 24	566	0.5+	1.1+	1999 12 14	704	0.2+	0.0	2000 01 05	704	0.4+	1.0+
1999 11 04	704	0.3-	0.8-	1999 12 14	704	0.4+	0.2-	2000 01 06	704	0.1+	0.8+
1999 11 04	704	0.3-	0.1+	1999 12 14	704	1.1-	0.7-	2000 01 06	704	0.0	0.3-
1999 11 04	704	0.2-	0.4-	1999 12 14	678	0.7-	0.0	2000 01 06	704	0.2+	0.4+
1999 11 04	704	0.2-	0.1-	1999 12 14	678	0.8-	0.6+	2000 01 06	704	0.1+	0.3+
1999 11 04	704	0.1+	0.5+	1999 12 15	678	0.2-	0.5+	2000 01 06	704	0.2-	0.6+
1999 12 06	704	0.1+	1.1-	1999 12 15	678	1.1-	0.2+				
1999 12 06	704	0.7-	1.0-	1999 12 30	699	0.6+	0.3-				

1999 XL₁₃₇ = 1980 PE₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	256.38091		(2000.0)	P		Q	
<i>n</i>	0.22274823	ω	288.14803	−0.67726464		+0.72325110	
<i>a</i>	2.6952137	Ω	298.44554	−0.60359779		−0.65109916	
<i>e</i>	0.0605913	<i>i</i>	8.83081	−0.42069266		−0.23016893	
<i>P</i>	4.42	<i>H</i>	12.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 08 06	809	0.0	0.1−	1999 12 15	684	0.0	0.1+	1999 12 19	900	0.0	0.1+
1980 08 07	809	0.3+	0.5−	1999 12 15	684	0.1−	0.1+	1999 12 19	900	0.2+	0.0
1998 08 23	699	0.7−	0.6−	1999 12 15	684	0.1−	0.1−	1999 12 21	900	0.7−	1.9+
1998 08 23	699	0.3−	0.2−	1999 12 15	903	0.5−	0.7−	1999 12 21	900	(0.8+ 2.3+)	
1998 08 23	699	0.6−	0.7−	1999 12 15	903	0.1+	0.4−	1999 12 22	900	0.2+	0.0
1998 09 19	699	0.1−	0.3+	1999 12 15	903	0.2−	0.0	1999 12 22	900	0.9+	0.5+
1998 09 19	699	0.2−	0.1+	1999 12 16	684	0.0	0.3+	2000 01 03	704	0.3−	0.6−
1998 09 19	699	0.3−	0.4−	1999 12 16	684	0.0	0.2+	2000 01 03	704	0.0	0.6−
1998 10 18	699	0.7+	0.6+	1999 12 16	903	(0.1− 3.1−)		2000 01 03	684	0.1+	0.3−
1998 10 18	699	0.8+	0.4+	1999 12 16	903	0.5−	1.0−	2000 01 03	684	0.1+	0.2−
1998 10 18	699	0.3+	0.1+	1999 12 16	903	0.3−	0.1−	2000 01 03	704	0.2−	0.2+
1998 11 20	699	0.4−	0.1−	1999 12 16	504	0.1+	0.3+	2000 01 03	704	0.4−	0.1−
1998 11 20	699	0.4+	0.3+	1999 12 16	504	0.5+	0.2+	2000 01 03	704	0.7−	0.1−
1998 11 20	699	0.0	0.4+	1999 12 16	504	0.4−	0.8+	2000 01 04	704	0.2−	0.4−
1999 12 10	704	0.1+	0.2−	1999 12 17	684	0.0	0.2+	2000 01 04	704	0.5+	0.2−
1999 12 10	704	0.4+	0.0	1999 12 17	684	0.2+	0.3+	2000 01 04	684	0.1−	0.2−
1999 12 10	704	0.3−	0.1−	1999 12 17	903	0.0	0.3−	2000 01 04	684	0.0	0.2−
1999 12 10	704	0.1−	0.4−	1999 12 17	903	0.3−	1.1+	2000 01 04	704	0.5+	0.2−
1999 12 10	704	0.4−	0.0	1999 12 17	903	0.4+	0.4+	2000 01 04	704	0.8+	0.4−
1999 12 15	704	0.1+	0.1+	1999 12 17	627	0.1+	0.1+	2000 01 04	704	0.9+	0.3−
1999 12 15	704	0.0	0.1+	1999 12 17	627	0.0	0.1+	2000 01 08	903	0.3+	0.5−
1999 12 15	704	0.1−	0.1+	1999 12 17	627	0.3+	0.1−	2000 01 08	903	0.1+	0.3−
1999 12 15	704	0.3−	0.1+	1999 12 17	627	0.5+	0.1−	2000 01 08	903	0.8−	0.2+
1999 12 15	704	0.5−	0.2−	1999 12 17	627	0.2−	0.4+				

1999 XH₁₃₉ = 1994 UC₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	68.87172		(2000.0)	P		Q	
<i>n</i>	0.19459123	ω	291.84046	+0.73993559		+0.66956260	
<i>a</i>	2.9493108	Ω	26.26240	−0.55053423		+0.65801151	
<i>e</i>	0.1738459	<i>i</i>	8.40306	−0.38653251		+0.34453850	
<i>P</i>	5.07	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 10 26	691	0.5−	0.2−	1999 11 09	704	0.1−	0.3+	1999 11 13	691	0.2+	0.4−
1994 10 26	691	0.4+	0.2+	1999 11 09	704	0.8−	0.3+	1999 11 13	691	0.2+	0.5−
1994 10 26	691	0.9−	0.5+	1999 11 09	691	0.2+	0.5−	1999 12 02	691	0.2+	0.7+
1994 11 01	691	0.5+	0.4−	1999 11 09	691	0.4+	0.5−	1999 12 02	691	0.3+	0.5+
1994 11 01	691	0.2+	0.0	1999 11 09	691	0.4+	0.5−	1999 12 02	691	0.6−	0.4+
1994 11 01	691	0.3+	0.1+	1999 11 12	704	0.2−	0.2+	1999 12 08	691	0.1+	0.2−
1999 11 09	704	0.1−	0.6+	1999 11 12	704	0.4+	0.1+	1999 12 08	691	0.1−	0.3−
1999 11 09	704	0.3+	0.0	1999 11 12	704	0.5−	0.5+	1999 12 08	691	0.1+	0.5−
1999 11 09	704	0.2−	0.1+	1999 11 13	691	0.1+	0.4−				

1999 XP₁₃₉ = 1995 YR₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	149.40510		(2000.0)	P		Q	
<i>n</i>	0.18914422	ω	205.38151	+0.10332557		+0.99377036	
<i>a</i>	3.0056657	Ω	70.57204	−0.90485404		+0.11134950	
<i>e</i>	0.1785493	<i>i</i>	2.53826	−0.41299272		+0.00466556	
<i>P</i>	5.21	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 22	691	0.1−	0.2−	1998 08 17	704	0.6−	0.3+	1999 12 02	691	0.3−	0.2−
1995 12 22	691	0.1+	0.1+	1998 08 17	704	(4.2− 1.2+)		1999 12 08	691	0.2+	0.0
1995 12 22	691	0.1−	0.0	1999 11 09	704	0.1+	1.0−	1999 12 08	691	0.1+	0.2+

1995 12 27	691	0.1+	0.0	1999 11 09	704	0.1−	0.6+	1999 12 08	691	0.4−	0.3−
1995 12 27	691	0.3+	0.3+	1999 11 09	704	0.2−	0.1+	2000 01 06	691	0.5−	0.4+
1995 12 27	691	0.1−	0.3+	1999 11 09	704	0.0	0.4+	2000 01 06	691	0.9+	0.0
1998 08 17	704	0.5+	0.7−	1999 12 02	691	0.2−	0.4−	2000 01 06	691	0.7+	0.2+
1998 08 17	704	0.0	0.9+	1999 12 02	691	0.1−	0.0				

1999 XR₁₃₉ = 1995 OM₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	64.02737		(2000.0)	P		Q	
<i>n</i>	0.27251015	ω	282.34015	+0.99943381		+0.00531801	
<i>a</i>	2.3562114	Ω	77.36207	+0.00857603		+0.91455035	
<i>e</i>	0.2528369	<i>i</i>	1.95118	−0.03253462		+0.40443711	
<i>P</i>	3.62	<i>H</i>	17.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 07 19	327	0.2+	0.2+	1999 11 09	704	0.2−	0.4−	1999 12 02	691	0.3+	0.1−
1995 07 19	327	0.3+	0.3+	1999 11 09	704	0.2−	0.3+	1999 12 08	691	0.0	0.3+
1995 07 19	327	1.1+	1.0−	1999 11 09	704	0.2+	0.5+	1999 12 08	691	0.1−	0.1+
1995 07 19	327	0.6−	0.1+	1999 11 09	704	0.8+	0.1−	1999 12 08	691	0.2−	0.4+
1995 07 19	327	0.2−	0.0	1999 11 10	704	1.3−	0.3−	2000 01 08	691	0.0	0.2−
1995 07 21	327	0.4−	1.3−	1999 11 10	704	0.5+	0.3+	2000 01 08	691	0.2+	0.1+
1995 07 21	327	0.4+	0.9+	1999 11 10	704	0.2−	0.0	2000 01 08	691	0.2−	0.3−
1995 07 21	327	1.6−	1.6+	1999 11 10	704	0.2+	0.1+	2000 01 10	691	0.0	0.3−
1995 07 21	327	0.8+	1.2−	1999 12 02	691	0.0	0.2−	2000 01 10	691	0.0	0.3−
1999 11 09	704	0.0	0.1−	1999 12 02	691	0.1+	0.2−	2000 01 10	691	0.4+	0.0

1999 XO₁₄₀ = 1998 ST₁₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	186.86371		(2000.0)	P		Q	
<i>n</i>	0.24234342	ω	28.88052	+0.43434250		+0.89992632	
<i>a</i>	2.5478971	Ω	266.88571	−0.83364362		+0.38544642	
<i>e</i>	0.1701891	<i>i</i>	2.20742	−0.34115232		+0.20387169	
<i>P</i>	4.07	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.4−	0.4−	1998 09 27	704	1.4+	0.6+	1999 12 15	691	0.1+	0.3+
1998 09 26	704	1.6+	0.5−	1999 12 02	691	0.8+	0.3+	1999 12 15	691	0.0	0.2+
1998 09 26	704	1.4−	1.0−	1999 12 02	691	0.3+	0.6+	1999 12 17	691	0.6−	0.1+
1998 09 26	704	0.5+	0.5+	1999 12 02	691	0.2−	0.1+	1999 12 17	691	0.5−	0.2+
1998 09 27	704	0.1−	0.4+	1999 12 08	691	0.4−	0.8−	1999 12 17	691	0.8−	0.3+
1998 09 27	704	0.6−	0.7−	1999 12 08	691	0.5+	0.6+	2000 01 07	691	0.1−	0.6−
1998 09 27	704	1.1−	0.8+	1999 12 08	691	0.8+	0.2+	2000 01 07	691	0.1+	0.8−
1998 09 27	704	0.1+	0.1+	1999 12 15	691	0.0	0.1+	2000 01 07	691	0.1+	0.6−

1999 XQ₁₄₀ = 1995 YB₁₉ = 1998 SQ₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	133.03274		(2000.0)	P		Q	
<i>n</i>	0.23380676	ω	220.94978	+0.86239415		+0.49638319	
<i>a</i>	2.6095443	Ω	109.02766	−0.43272939		+0.82471856	
<i>e</i>	0.2595667	<i>i</i>	6.03543	−0.26271963		+0.27100374	
<i>P</i>	4.22	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 22	691	0.1−	0.5−	1998 09 17	699	0.6+	0.2−	1999 12 08	691	0.1−	0.1−
1995 12 22	691	0.1+	0.4−	1998 09 17	699	0.5+	0.6−	2000 01 02	691	0.2−	0.2−
1995 12 22	691	0.1+	0.2+	1998 09 22	699	0.2−	0.5+	2000 01 02	691	0.6−	0.0
1995 12 27	691	0.2−	0.0	1998 09 22	699	1.4−	0.0	2000 01 02	691	0.1−	0.1−
1995 12 27	691	0.0	0.2−	1998 09 22	699	0.1−	0.8−	2000 01 06	691	0.9−	0.1−
1995 12 27	691	0.1−	0.3−	1999 12 02	691	0.4+	0.4−	2000 01 06	691	0.5−	0.0
1998 08 28	699	0.8+	0.9+	1999 12 02	691	0.2+	0.2−	2000 01 06	691	0.7−	0.1−
1998 08 28	699	0.7−	0.1+	1999 12 02	691	1.0+	0.1+	2000 01 11	691	0.3+	0.9+
1998 08 28	699	0.7−	0.1+	1999 12 08	691	0.3+	0.2−	2000 01 11	691	0.7+	0.9+
1998 09 17	699	1.1+	0.0	1999 12 08	691	0.2−	0.4−	2000 01 11	691	0.6+	0.9+

2000 JAN. 24

M.P.C. 37953

1999 XZ₁₄₀ = 1998 SF₆₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	63.28003		(2000.0)	P		Q		Williams	
<i>n</i>	0.18281361	ω	122.16441	+0.70392980		−0.69649775			
<i>a</i>	3.0746596	Ω	282.40759	+0.59420015		+0.68483637			
<i>e</i>	0.1249077	<i>i</i>	8.19359	+0.38911311		+0.21421959			
<i>P</i>	5.39	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 09 19	699	0.6−	0.7+	1999 12 08	691	0.0	0.1−	2000 01 05	704	0.1+	0.3−
1998 09 19	699	0.6−	0.1+	1999 12 08	691	0.1+	0.3−	2000 01 05	704	0.4−	0.2−
1998 09 19	699	0.4−	0.2−	1999 12 08	691	0.0	0.2−	2000 01 05	704	0.5+	0.5−
1998 09 25	699	0.1−	0.6+	2000 01 04	704	0.7+	1.6+	2000 01 05	704	1.0−	0.2−
1998 09 25	699	1.4+	0.9−	2000 01 04	704	0.2−	0.2−	2000 01 05	704	0.1−	0.5−
1998 09 25	699	0.3+	0.2−	2000 01 04	704	0.2+	1.6+	2000 01 05	704	1.1−	0.3−
1999 12 02	691	0.0	0.4+	2000 01 04	704	0.6+	0.5+	2000 01 05	704	0.8+	0.5−
1999 12 02	691	0.3+	0.1+	2000 01 04	704	0.5+	0.1+	2000 01 05	704	0.7−	0.3−
1999 12 02	691	0.0	0.2+	2000 01 05	704	0.7−	0.3−	2000 01 05	704	0.4+	0.3−

1999 XW₁₄₁ = 1990 BV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	40.38066		(2000.0)	P		Q		Williams	
<i>n</i>	0.39472663	ω	155.62719	−0.12944714		−0.82443603			
<i>a</i>	1.8405111	Ω	297.26667	+0.77722825		+0.26067575			
<i>e</i>	0.1439533	<i>i</i>	38.30336	+0.61575944		−0.50234788			
<i>P</i>	2.50	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1990 01 29	675	0.5−	1.5−	1999 12 15	704	0.4−	0.3+	2000 01 05	704	0.1+	0.3−
1990 01 29	675	1.5+	0.9+	1999 12 15	704	0.1−	0.4+	2000 01 05	704	0.3+	0.2−
1990 01 30	675	0.4−	0.8+	1999 12 15	704	0.3+	0.4+	2000 01 05	704	0.5+	0.5+
1990 01 30	675	0.6−	0.2−	1999 12 16	704	0.5−	0.5−	2000 01 07	704	0.1−	0.3+
1999 12 10	704	0.5+	0.1−	1999 12 16	704	0.0	0.1−	2000 01 07	704	0.3−	0.2+
1999 12 10	704	0.4+	0.2+	1999 12 16	704	0.3−	0.0	2000 01 07	704	0.1−	0.2+
1999 12 10	704	0.2+	0.0	1999 12 16	704	0.5−	0.1−	2000 01 07	704	0.2−	0.3−
1999 12 10	704	0.6+	0.1+	1999 12 16	704	0.4−	0.0	2000 01 07	704	0.3−	0.2−
1999 12 10	704	0.0	0.3−	2000 01 05	704	0.3+	0.1+				
1999 12 15	704	0.1−	0.2−	2000 01 05	704	0.3+	0.3−				

1999 XA₁₄₂ = 1992 WY₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	345.18301		(2000.0)	P		Q		Williams	
<i>n</i>	0.28573060	ω	79.28052	−0.70371929		−0.62073512			
<i>a</i>	2.2829596	Ω	61.37919	+0.39283829		−0.74531182			
<i>e</i>	0.2838259	<i>i</i>	23.18824	+0.59199430		−0.24330682			
<i>P</i>	3.45	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3		

Residuals in seconds of arc

1992 11 19	675	0.4+	0.6−	1999 12 12	704	0.0	0.2−	1999 12 16	704	0.1+	0.4+
1992 11 19	675	0.7−	0.2−	1999 12 12	704	1.8+	1.0−	1999 12 16	704	0.2−	0.1+
1992 11 21	675	1.2+	0.2−	1999 12 12	704	0.6+	0.6−	1999 12 30	704	0.1+	0.1−
1992 11 21	675	0.2−	0.1+	1999 12 13	704	0.0	0.0	1999 12 30	704	0.1−	0.2−
1999 11 03	704	0.1+	0.1+	1999 12 13	704	0.1−	0.1−	1999 12 30	704	0.1−	0.5−
1999 11 03	704	0.3−	0.3+	1999 12 13	704	0.4−	0.1+	1999 12 30	704	0.3−	0.4−
1999 11 03	704	0.2−	0.2+	1999 12 13	704	0.1+	0.0	1999 12 30	704	0.7−	1.2−
1999 11 03	704	0.4−	0.4+	1999 12 13	704	0.2−	0.2+	1999 12 31	704	0.2−	0.3+
1999 11 03	704	0.6−	0.4+	1999 12 15	704	0.1+	0.3−	1999 12 31	704	0.4−	0.3+
1999 11 16	704	0.2+	0.2−	1999 12 15	704	0.1−	0.1+	1999 12 31	704	0.1−	0.1+
1999 11 16	704	0.2−	0.3+	1999 12 15	704	0.0	0.1+	1999 12 31	704	0.1−	0.2+
1999 11 16	704	0.1+	0.1+	1999 12 15	704	0.1+	0.1+	1999 12 31	704	0.1−	0.1+
1999 11 16	704	0.3−	0.3+	1999 12 15	704	0.5−	0.3+	2000 01 21	704	0.2+	0.1+
1999 11 16	704	0.0	0.0	1999 12 16	704	0.2+	0.3+	2000 01 21	704	0.5+	0.4+
1999 12 12	704	0.2+	0.0	1999 12 16	704	0.2−	0.1+	2000 01 21	704	0.4+	0.0
1999 12 12	704	0.1+	0.2−	1999 12 16	704	0.2−	0.3+	2000 01 21	704	0.2+	0.9+

1999 XR₁₄₂ = 1998 KJ₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	96.83394		(2000.0)	P		Q		Williams	
<i>n</i>	0.36282697	ω	294.37929	+0.85326127		−0.31406411			
<i>a</i>	1.9468673	Ω	86.20739	+0.47881102		+0.78810443			
<i>e</i>	0.1079988	<i>i</i>	24.65905	−0.20660398		+0.52939129			
<i>P</i>	2.72	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4		

Residuals in seconds of arc

1998 05 23	704	0.7−	0.4+	1998 06 17	704	(2.7−	0.3+)	1999 12 30	704	0.6+	0.4−
1998 05 23	704	1.4−	0.7−	1998 06 17	704	(4.2−	0.9−)	1999 12 30	704	0.3+	0.5−
1998 05 23	704	0.8−	0.1+	1999 12 12	704	0.0	0.3−	1999 12 31	699	0.1+	0.0
1998 05 23	704	0.7−	0.4−	1999 12 12	704	0.3−	0.2−	1999 12 31	699	0.4+	0.5+
1998 05 23	704	0.3−	0.8−	1999 12 12	704	0.1−	0.2−	1999 12 31	699	0.1+	0.2+
1998 05 26	704	0.7+	0.1−	1999 12 12	704	0.8−	1.2−	2000 01 05	678	0.6−	0.4−
1998 05 26	704	1.4+	1.2+	1999 12 15	704	0.2+	0.7+	2000 01 05	678	0.8−	0.3+
1998 05 26	704	1.3+	0.1+	1999 12 15	704	0.0	0.3+	2000 01 06	678	0.4−	0.4+
1998 05 26	704	0.5+	0.0	1999 12 15	704	0.6+	0.7+	2000 01 06	678	0.7−	0.0
1998 05 26	704	0.4−	0.7+	1999 12 15	704	0.4+	0.7+	2000 01 11	699	0.3+	0.1−
1998 06 17	704	1.3−	1.1+	1999 12 15	704	0.1+	0.3+	2000 01 11	699	0.2+	0.0
1998 06 17	704	0.8+	0.8−	1999 12 30	704	0.0	0.5−	2000 01 11	699	0.2+	0.3+
1998 06 17	704	0.8+	0.8−	1999 12 30	704	0.1+	0.6−				

1999 XD₁₄₃ = 1956 TS = 1998 HK₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	41.31711		(2000.0)	P		Q		Williams	
<i>n</i>	0.29826626	ω	202.35068	+0.94871043		−0.31609500			
<i>a</i>	2.2185368	Ω	176.06302	+0.30116403		+0.89812065			
<i>e</i>	0.1755671	<i>i</i>	4.76084	+0.09617044		+0.30571758			
<i>P</i>	3.30	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1956 10 11	760	1.5−	2.4−	1999 08 13	699	0.4−	0.4+	1999 12 13	699	0.1−	0.5−
1956 10 11	760	2.3+	0.0	1999 08 13	699	0.1−	0.1+	1999 12 13	699	0.5+	0.3−
1998 04 21	704	0.6−	0.6+	1999 08 13	699	0.0	0.2+	1999 12 14	678	0.0	0.3+
1998 04 21	704	0.0	0.6−	1999 10 04	704	0.2+	0.6+	1999 12 14	678	0.9+	0.7−
1998 04 21	704	0.4−	0.2−	1999 10 04	704	0.8−	0.0	1999 12 16	678	0.7+	0.1+
1998 04 21	704	0.4+	0.4+	1999 10 04	704	0.1−	0.7+	1999 12 16	678	1.8−	0.6+
1998 04 21	704	0.4+	0.2+	1999 10 04	704	0.3+	0.4+	2000 01 05	704	0.2−	0.6+
1998 04 22	704	0.3−	0.0	1999 10 04	704	0.4−	0.3+	2000 01 05	704	0.6−	1.5+
1998 04 22	704	1.6+	0.0	1999 11 01	703	0.5−	0.3+	2000 01 05	704	0.2+	0.0
1998 04 22	704	(2.2−	1.6+)	1999 11 01	703	0.6−	0.5+	2000 01 05	704	0.2−	0.4+
1998 04 22	704	0.3+	0.4−	1999 11 01	703	0.5−	0.5+	2000 01 05	704	0.7−	1.1+
1998 04 22	704	0.8+	0.0	1999 11 01	703	0.1−	0.3+	2000 01 07	704	0.4−	0.3+
1998 05 01	704	0.4−	0.8+	1999 11 27	699	0.1−	0.3+	2000 01 07	704	0.7−	0.2−
1998 05 01	704	0.2+	0.4+	1999 11 27	699	0.5−	0.9+	2000 01 07	704	0.0	0.4−
1998 05 01	704	0.8−	1.5+	1999 11 27	699	0.2+	0.4+	2000 01 07	704	0.7+	0.1−
1998 05 01	704	1.5−	1.5+	1999 12 03	704	0.3−	0.4−	2000 01 07	704	0.1+	0.6+
1998 05 01	704	0.8−	0.1+	1999 12 03	704	0.4+	0.3+	2000 01 08	704	0.1+	0.2−
1998 05 16	704	1.0+	1.0−	1999 12 03	704	0.3+	0.1−	2000 01 08	704	0.2+	0.0
1998 05 16	704	0.8+	1.8+	1999 12 03	704	0.4+	0.1−	2000 01 08	704	0.9+	1.0−
1998 05 16	704	0.7+	0.1−	1999 12 03	704	0.9+	0.5+	2000 01 08	704	0.2+	1.3−
1998 05 16	704	0.2+	0.3+	1999 12 13	699	0.3−	0.3−	2000 01 08	704	0.0	0.8+

1999 XF₁₄₃ = 1990 TY₂ = 1998 MD₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	84.35280		(2000.0)	P		Q					
n	0.22793849	ω	210.87763	+0.95805876		+0.25237246					
a	2.6541427	Ω	133.84815	-0.20910248		+0.93958864					
e	0.1873565	i	10.85076	-0.19595808		+0.23126032					
P	4.32	H	13.4	G	0.15	U	2				
Residuals in seconds of arc											
1990 10 15	675	0.6-	0.2-	1999 10 31	703	0.1+	0.3+	1999 12 14	699	0.2-	0.0
1990 10 15	675	0.5+	0.3+	1999 10 31	703	0.0	0.2+	1999 12 15	678	0.5-	0.4+

1990 10 17	675	0.5−	0.4−	1999 10 31	703	0.3+	0.2+	1999 12 15	678	0.1+	0.7+
1990 10 17	675	0.6+	0.1−	1999 11 05	704	0.1+	0.3−	1999 12 16	678	1.3−	0.2+
1998 06 19	704	0.6−	0.0	1999 11 05	704	0.0	0.3−	1999 12 16	678	0.8−	0.8+
1998 06 19	704	0.7−	0.2+	1999 11 05	704	0.2+	0.5−	1999 12 27	678	0.0	0.6+
1998 06 19	704	0.2+	1.0+	1999 11 05	704	0.0	0.2−	1999 12 27	678	0.6+	0.9−
1998 06 19	704	0.7−	0.4+	1999 11 05	704	0.2−	0.4−	2000 01 07	704	0.7+	0.4−
1998 06 19	704	0.2+	0.5+	1999 12 02	699	0.1+	0.7+	2000 01 07	704	0.9+	0.1−
1998 06 22	703	(3.1+	1.5−)	1999 12 02	699	0.1+	1.0+	2000 01 07	704	1.2+	1.0−
1998 06 22	703	0.8+	1.8−	1999 12 02	699	0.8+	0.1+	2000 01 07	704	0.7+	0.6−
1998 06 22	703	1.8+	1.7−	1999 12 05	704	0.9−	0.2+	2000 01 07	704	1.1+	0.7−
1998 06 22	703	(2.3+	2.1−)	1999 12 05	704	0.8−	0.2−	2000 01 11	704	0.0	0.7−
1998 06 25	704	0.3−	0.1+	1999 12 05	704	0.6−	0.6−	2000 01 11	704	0.1−	0.7−
1998 06 25	704	0.4−	0.3+	1999 12 05	704	0.7−	0.0	2000 01 11	704	0.2−	0.8−
1998 06 25	704	0.1+	0.4−	1999 12 05	704	0.6−	0.3−	2000 01 11	704	0.0	0.6−
1998 06 25	704	0.5−	0.4+	1999 12 14	699	0.7+	1.7+	2000 01 11	704	0.2−	0.2−
1999 10 31	703	0.2+	0.4+	1999 12 14	699	0.0	0.4+				

1999 XG₁₄₃ = 1997 GM₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	41.41788		(2000.0)	P	Q
<i>n</i>	0.24190801	ω	218.61809	+0.76157829	−0.64806313
<i>a</i>	2.5509536	Ω	181.78962	+0.61931757	+0.72939499
<i>e</i>	0.1992226	<i>i</i>	6.55049	+0.19090379	+0.21908248
<i>P</i>	4.07	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 04 03	704	0.3−	0.4+	1999 12 05	704	0.3+	0.3−	1999 12 16	678	0.7−	0.2−
1997 04 03	704	0.7−	1.0−	1999 12 05	704	0.1−	0.4−	1999 12 16	678	0.3−	0.1−
1997 04 11	704	1.7+	0.2−	1999 12 14	704	0.1−	0.4−	2000 01 07	704	0.6+	0.7−
1997 04 11	704	0.7−	1.0+	1999 12 14	704	0.5−	0.0	2000 01 07	704	0.2+	0.4−
1999 11 04	704	0.1+	0.4+	1999 12 14	704	0.2−	0.1+	2000 01 07	704	0.1−	0.2−
1999 11 04	704	0.2+	0.0	1999 12 14	704	0.0	0.3+	2000 01 07	704	0.2+	0.1−
1999 11 04	704	0.1−	0.0	1999 12 14	704	0.7−	0.4−	2000 01 07	704	0.5−	0.8+
1999 11 04	704	0.1−	0.0	1999 12 14	699	0.2+	0.4+	2000 01 11	704	1.3+	1.4−
1999 11 04	704	0.1−	0.1−	1999 12 14	699	0.2+	0.2−	2000 01 11	704	(2.7+	0.4−)
1999 12 05	704	0.2+	0.3−	1999 12 14	699	0.1+	1.6+	2000 01 11	704	0.9−	1.0+
1999 12 05	704	0.1+	0.1−	1999 12 15	678	0.1+	0.1+				
1999 12 05	704	0.0	0.3−	1999 12 15	678	0.6+	0.7+				

1999 XH₁₄₃ = 1937 OC = 1970 NA = 1987 QK = 1989 YK₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	117.70783		(2000.0)	P	Q
<i>n</i>	0.17930815	ω	188.57109	+0.63453832	+0.73092202
<i>a</i>	3.1146030	Ω	121.23286	−0.69055715	+0.68214051
<i>e</i>	0.1981704	<i>i</i>	17.08605	−0.34711951	−0.02091205
<i>P</i>	5.50	<i>H</i>	11.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1937 07 30	078	(73.4+	35.3−)	X	1998 06 29	704	0.2+	1.4−	1999 12 15	678	0.6+	0.2+
1937 08 05	078	(8.0+	9.1−)	X	1998 06 29	704	(2.8+	0.5+)	1999 12 16	678	0.9−	0.2−
1970 07 03	095	(6.1−	4.8+)		1998 12 08	704	0.2−	0.6+	1999 12 16	678	0.4−	0.1+
1970 07 04	095	(1.1+	4.5−)		1998 12 08	704	0.8−	0.6+	1999 12 18	678	0.3−	1.0−
1970 07 14	095	0.1+	1.1+		1998 12 08	704	0.1−	0.0	1999 12 18	678	0.7−	0.4+
1987 08 24	675	(13.8+	1.2+)		1998 12 08	704	1.0+	0.5−	1999 12 31	678	0.5−	0.5+
1987 08 26	675	(3.1+	1.2+)		1998 12 08	704	(2.7−	1.2−)	1999 12 31	678	0.2−	0.3+
1989 12 30	413	0.1−	0.1−		1999 11 05	704	0.1+	0.4−	2000 01 08	704	0.4+	0.0
1989 12 30	413	0.3+	0.5+		1999 11 05	704	0.2−	0.5−	2000 01 08	704	0.5+	0.3+
1989 12 31	413	0.4−	0.8−		1999 11 05	704	0.3+	0.2−	2000 01 08	704	0.1−	0.6+
1989 12 31	413	0.1+	0.7+		1999 11 05	704	0.3−	0.4−	2000 01 08	704	0.3+	0.4+
1998 06 29	704	0.6−	0.9+		1999 12 05	704	(0.5+	3.3−)	2000 01 08	704	0.5+	0.8+
1998 06 29	704	1.4−	0.0		1999 12 05	704	0.8−	0.8−	2000 01 11	704	0.4+	0.3−
1998 06 29	704	(0.5−	2.2+)		1999 12 05	704	0.7−	0.1−	2000 01 11	704	0.4+	0.3−
1998 06 29	704	0.2+	0.2−		1999 12 05	704	0.3+	1.5+	2000 01 11	704	0.4+	0.1+
1998 06 29	704	1.1+	1.0−		1999 12 14	699	0.2+	0.1−	2000 01 11	704	0.5+	0.6+
1998 06 29	704	0.3+	0.8+		1999 12 14	699	0.1+	0.4+	2000 01 11	704	0.3+	0.3+

1998 06 29	704	0.2−	0.2−	1999 12 14	699	1.0+	1.7−
1998 06 29	704	0.5+	0.1+	1999 12 15	678	1.0−	0.1−

1999 XJ₁₄₃ = 1086 T-1 = 1998 MM₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	92.79280		(2000.0)	P	Q
<i>n</i>	0.22656465	ω	135.21747	+0.90290758	+0.42211076
<i>a</i>	2.6648613	Ω	200.24640	−0.42978765	+0.88379238
<i>e</i>	0.2090128	<i>i</i>	13.55687	−0.00636174	+0.20182548
<i>P</i>	4.35	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	2

Residuals in seconds of arc

1971 03 24	675	0.5+	1.9−	1999 11 02	703	0.4+	0.4+	1999 12 18	678	0.4+	0.1+
1971 03 25	675	0.1+	1.0+	1999 11 02	703	(2.5+	0.8−)	1999 12 18	678	0.5−	0.9+
1971 03 25	675	0.9−	1.0+	1999 11 05	704	0.0	0.2−	1999 12 27	678	0.3−	0.5−
1971 03 26	675	0.2+	0.7+	1999 11 05	704	0.2+	0.9−	1999 12 27	678	0.1+	0.3−
1971 03 27	675	0.4−	0.1−	1999 11 05	704	0.1+	0.6−	2000 01 07	699	0.1−	0.6+
1971 04 02	675	0.3+	1.6−	1999 11 05	704	0.2−	0.3−	2000 01 07	699	0.1+	0.1+
1998 06 19	704	0.3−	0.3−	1999 11 05	704	0.1−	0.1−	2000 01 07	699	0.2−	0.4+
1998 06 19	704	0.8+	0.5+	1999 12 05	704	0.5−	0.5−	2000 01 08	704	0.0	0.1−
1998 06 19	704	0.8−	0.4+	1999 12 05	704	0.5−	1.2−	2000 01 08	704	0.2+	0.3+
1998 06 19	704	0.5−	0.0	1999 12 05	704	0.1−	1.1−	2000 01 08	704	0.5−	0.4+
1998 06 19	704	0.3+	0.7−	1999 12 05	704	1.3+	0.8−	2000 01 08	699	0.1−	1.5+
1998 06 25	704	0.0	0.2+	1999 12 14	699	0.2−	0.2+	2000 01 08	704	0.3+	0.3+
1998 06 25	704	1.6+	0.0	1999 12 14	699	0.1−	0.2+	2000 01 08	704	0.2+	0.3+
1998 06 25	704	0.1+	0.6+	1999 12 14	699	0.7+	1.6−	2000 01 08	699	0.9+	0.2−
1998 06 25	704	0.1+	0.1−	1999 12 15	678	0.6−	0.3−	2000 01 08	699	0.1−	0.1+
1998 06 25	704	1.2−	0.7−	1999 12 15	678	0.7−	0.5−	2000 01 11	704	0.4−	1.6+
1999 11 02	703	0.4−	0.2+	1999 12 16	678	0.7+	0.6+	2000 01 11	704	0.3−	1.5+
1999 11 02	703	0.3−	0.4+	1999 12 16	678	0.7+	0.1+	2000 01 11	704	0.1−	0.9−

1999 XL₁₄₃ = 1996 FX₄

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Williams

<i>M</i>	353.49785		(2000.0)	P	Q
<i>n</i>	0.21402839	ω	291.95196	−0.25022236	−0.96796501
<i>a</i>	2.7679302	Ω	172.44785	+0.93641007	−0.24741179
<i>e</i>	0.1245468	<i>i</i>	9.10463	+0.24601819	−0.04279196
<i>P</i>	4.61	<i>H</i>	13.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1996 03 25	566	0.2+	0.6−	1999 11 05	704	0.0	0.4+	1999 12 14	699	0.9+	0.0
1996 03 25	566	0.0	0.8−	1999 11 05	704	0.2+	0.9−	1999 12 15	678	0.8−	0.1+
1996 03 25	566	0.1+	0.7−	1999 11 05	704	0.0	0.1+	1999 12 15	678	0.7−	0.1−
1996 03 26	566	0.3−	0.1−	1999 11 05	704	0.4+	0.3−	1999 12 16	678	0.0	0.5−
1996 03 26	566	0.5−	0.0	1999 11 05	704	0.1−	0.1−	1999 12 16	678	1.1+	0.5−
1996 03 26	566	0.1−	0.5−	1999 11 05	704	0.3+	0.2−	1999 12 18	678	0.5+	0.4−
1998 08 17	704	1.1+	0.4−	1999 11 05	704	0.1+	0.3+	1999 12 18	678	0.4+	0.6+
1998 08 17	704	(2.3−	0.1−)	1999 11 05	704	0.1+	0.2+	1999 12 31	678	1.2−	0.3−
1998 08 17	704	0.8−	1.2−	1999 12 05	704	0.2+	0.1−	1999 12 31	678	0.0	0.4+
1998 08 17	704	0.2+	1.0−	1999 12 05	704	0.3−	0.3−	2000 01 07	704	0.2−	0.0
1998 08 17	704	1.0−	1.0−	1999 12 05	704	0.3−	0.1−	2000 01 07	704	0.2−	0.6+
1998 08 23	699	0.0	0.2−	1999 12 05	704	0.3−	0.0	2000 01 07	704	0.1+	0.0

2000 JAN. 24

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1999 XF₁₄₄ = 1974 VN₁ = 1976 GU₈ = 1976 JZ₁ = 1978 XO

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	338.64375		(2000.0)		P		Q				
<i>n</i>	0.23912960	ω	82.94478	−0.83016453	−0.51651025						
<i>a</i>	2.5706749	Ω	65.75536	+0.37574686	−0.79643954						
<i>e</i>	0.1387371	<i>i</i>	13.30692	+0.41187517	−0.31448564						
<i>P</i>	4.12	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1974 11 12	095(15.3−	1.0+)	1999 12 12	704	0.2+	0.3−	1999 12 15	704	0.8+	0.1−	
1976 04 06	808	0.1−	0.2−	1999 12 12	704	0.2+	0.4−	1999 12 15	704	0.7+	0.4−
1976 04 06	808	1.0−	0.2+	1999 12 12	704	0.1+	0.7−	1999 12 16	678	0.3−	0.3+
1976 05 02	095	0.7+	0.6−	1999 12 13	699	0.1+	0.7+	1999 12 16	678	0.1+	0.1+
1978 12 03	675	1.0+	0.1−	1999 12 13	699	0.3+	0.6+	2000 01 02	704	0.6−	0.1+
1978 12 03	675	0.5−	0.5−	1999 12 13	699	0.1+	0.7+	2000 01 02	704	0.8−	0.4−
1978 12 05	675	0.4−	0.0	1999 12 15	678	0.6−	0.2−	2000 01 02	704	1.0−	0.3−
1978 12 06	675	1.0−	0.4−	1999 12 15	678	0.0	0.1+	2000 01 02	704	1.3−	0.9−
1978 12 06	675	1.3+	0.1+	1999 12 15	704	0.2+	0.3+	2000 01 13	611	0.3+	0.3+
1999 12 12	704	0.4+	0.1+	1999 12 15	704	0.5+	0.3+	2000 01 13	611	0.0	0.4+
1999 12 12	704	0.3+	0.1+	1999 12 15	704	0.4+	0.1−				

1999 XH₁₄₄ = 1997 LZ₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	56.07839		(2000.0)		P		Q				
<i>n</i>	0.22160891	ω	342.05876	+0.70751096			−0.66868962				
<i>a</i>	2.7044434	Ω	62.15232	+0.67594131			+0.54589573				
<i>e</i>	0.1917040	<i>i</i>	14.98710	+0.20623185			+0.50482873				
<i>P</i>	4.45	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>		4			
Residuals in seconds of arc											
1997 06 07	809	0.2−	0.1−	1999 12 12	704	0.4+	0.1−	1999 12 15	704	0.1−	0.2+
1997 06 07	809	0.4−	1.0−	1999 12 12	704	0.3+	0.1−	1999 12 15	704	0.2−	0.3−
1997 06 07	809	0.1+	0.2+	1999 12 12	704	0.3+	0.5−	1999 12 16	699	0.6−	0.7+
1997 06 08	809	(0.0	3.6+)	1999 12 12	704	0.5+	0.5−	1999 12 16	678	0.2+	0.8−
1997 06 08	809	(0.4+	2.8+)	1999 12 12	704	0.7+	0.5−	1999 12 16	699	0.3−	0.3+
1997 06 08	809	(0.3+	3.5+)	1999 12 13	699	0.3+	1.4+	1999 12 16	678	0.3−	0.5−
1999 09 18	703	0.7+	0.0	1999 12 13	699	0.3−	1.1+	1999 12 16	699	0.1+	0.2+
1999 09 18	703	0.3+	0.2−	1999 12 13	699	0.3+	1.3+	1999 12 30	704	0.2+	0.4+
1999 09 18	703	0.2+	0.3−	1999 12 15	678	0.0	0.7−	1999 12 30	704	0.2−	0.1−
1999 09 18	703	0.0	1.0−	1999 12 15	678	0.6−	0.3−	1999 12 30	704	0.1−	0.3−
1999 11 11	699	0.3+	0.3−	1999 12 15	704	0.3+	0.3+	1999 12 30	704	0.3−	0.2−
1999 11 11	699	0.7−	0.2−	1999 12 15	704	0.1−	0.2+				
1999 11 11	699	0.3−	0.7−	1999 12 15	704	0.3−	0.1+				

1999 XK₁₄₄ = 1977 RL₄ = 1990 BK₆ = 1993 TC₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	99.12079		(2000.0)		P		Q				
<i>n</i>	0.18996147	ω	40.40547	+0.99334195	−0.03276247						
<i>a</i>	2.9970389	Ω	321.04527	−0.02925849	+0.85552823						
<i>e</i>	0.1138755	<i>i</i>	10.11779	+0.11142583	+0.51671856						
<i>P</i>	5.19	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	3				
Residuals in seconds of arc											
1977 09 09	095	0.2−	0.2+	1999 12 12	704	0.6+	0.6+	1999 12 16	678	0.3−	0.1−
1990 01 29	372	0.1+	0.9+	1999 12 12	704	0.6+	0.6+	1999 12 16	678	0.1−	0.2+
1990 01 29	372	0.6+	0.2+	1999 12 12	704	0.9+	0.6+	2000 01 02	704	0.1−	0.0
1993 10 13	675	0.0	0.9+	1999 12 13	699	1.0+	0.7+	2000 01 02	704	0.3−	0.7−
1993 10 13	675	0.2+	0.3+	1999 12 13	699	0.4+	1.2+	2000 01 02	704	0.2−	0.4−
1993 10 15	675	0.2−	0.9−	1999 12 13	699	0.9+	1.1+	2000 01 02	704	0.8−	1.0−
1999 12 12	704	0.2+	0.3−	1999 12 15	678	0.1+	0.1−	2000 01 02	704	0.5−	1.7−
1999 12 12	704	0.3−	0.3−	1999 12 15	678	0.2−	0.0	2000 01 08	704	1.0+	0.2−
1999 12 12	704	0.4−	0.3−	1999 12 15	704	0.3−	0.2−	2000 01 08	704	0.8−	0.6+
1999 12 12	704	0.4−	0.3−	1999 12 15	704	0.1−	0.6−	2000 01 08	704	0.2+	0.2+
1999 12 12	704	0.6−	0.8−	1999 12 15	704	0.1−	0.4−	2000 01 08	704	0.1+	0.2+

1999 12 12	704	0.2+	0.3+	1999 12 15	704	0.2−	0.3−	2000 01 08	704	0.4−	0.1−
1999 12 12	704	0.3+	0.4+	1999 12 15	704	0.5−	0.2+				

1999 XP₁₄₄ = 1998 SZ₁₀₀

Id. T. Urata

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	253.49358		(2000.0)		P		Q				
<i>n</i>	0.17463931	ω	255.43541		−0.88768469		+0.45763605				
<i>a</i>	3.1698694	Ω	311.77115		−0.39185010		−0.80879868				
<i>e</i>	0.1161846	<i>i</i>	3.90906		−0.24180445		−0.36934257				
<i>P</i>	5.64	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1998 09 26	704	0.4+	0.1+	1999 12 05	703	0.2+	0.2−	1999 12 25	385	0.7+	0.5−
1998 09 26	704	1.9+	0.6−	1999 12 05	703	0.6+	1.0+	2000 01 03	704	0.3−	0.7+
1998 09 26	704	0.9−	1.4−	1999 12 15	704	0.6+	1.2+	2000 01 03	704	0.1−	1.2−
1998 09 26	704	1.0+	1.1−	1999 12 15	704	0.6+	0.9−	2000 01 03	704	0.4+	0.3−
1998 09 26	704	0.3+	1.0+	1999 12 15	704	0.3−	0.6−	2000 01 03	704	1.0−	1.5−
1998 09 27	704	0.3−	0.1+	1999 12 15	704	0.2+	0.6−	2000 01 04	704	0.1+	0.0
1998 09 27	704	0.8+	0.4−	1999 12 15	385	0.0	0.9−	2000 01 04	704	0.0	0.3+
1998 09 27	704	1.4−	0.5+	1999 12 15	385	0.4−	0.9−	2000 01 04	704	0.3+	0.4+
1998 09 27	704	1.7−	1.8+	1999 12 16	385	0.5−	0.5+	2000 01 04	704	0.4−	1.7+
1999 12 05	703	0.5−	0.6+	1999 12 16	385	0.4−	0.9+				
1999 12 05	703	0.8−	0.5+	1999 12 25	385	1.1+	0.1−				

1999 XQ₁₄₄ = 1998 QQ₅₃

Id. T. Urata

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	161.74299		(2000.0)			P		Q			
<i>n</i>	0.26014748	ω	13.46380		+0.35364193		+0.90626409				
<i>a</i>	2.4302799	Ω	277.63816		−0.87838110		+0.23665543				
<i>e</i>	0.0568443	<i>i</i>	13.51141		−0.32153388		+0.35025648				
<i>P</i>	3.79	<i>H</i>	14.1		<i>G</i>	0.15	<i>U</i>	3			
Residuals in seconds of arc											
1998 06 29	704	0.3−	1.1−	1999 12 13	704	0.3+	0.3+	1999 12 16	385	0.6+	0.2−
1998 06 29	704	(2.5+	0.6−)	1999 12 14	704	0.2−	0.1−	1999 12 26	385	0.4−	0.3−
1998 06 29	704	1.3+	0.0	1999 12 14	704	0.7+	0.5−	1999 12 26	385	0.4−	0.5−
1998 06 29	704	0.0	0.4+	1999 12 14	704	0.2+	0.4+	2000 01 03	704	0.1−	0.0
1998 06 29	704	1.5−	0.7+	1999 12 14	704	0.1+	0.3+	2000 01 03	704	0.1−	0.1−
1998 08 27	958	(3.0+	0.4+)	1999 12 14	704	0.4−	0.6+	2000 01 03	704	0.2+	0.4+
1998 08 27	958	0.5+	1.2+	1999 12 15	704	0.2−	0.7+	2000 01 03	704	0.3−	0.1+
1998 08 28	958	0.4−	0.5+	1999 12 15	704	0.3+	0.1−	2000 01 03	704	0.3+	0.4+
1998 08 28	958	0.3+	1.7−	1999 12 15	704	0.2+	0.2−	2000 01 04	704	0.4−	0.1+
1999 12 13	704	0.3+	0.1+	1999 12 15	704	0.1+	0.8+	2000 01 04	704	0.6−	0.3−
1999 12 13	704	0.5+	0.1−	1999 12 15	704	0.2−	0.0	2000 01 04	704	0.2−	0.1+
1999 12 13	704	0.6+	0.2−	1999 12 15	704	1.4+	0.2−	2000 01 04	704	0.2+	0.1+
1999 12 13	704	0.8−	0.0	1999 12 15	704	0.0	0.2−	2000 01 04	704	0.3−	0.2+
1999 12 13	704	1.5−	0.3−	1999 12 15	704	0.1+	0.4−	2000 01 07	888	0.4+	0.3−
1999 12 13	704	0.5−	0.8+	1999 12 15	704	0.1+	0.4−	2000 01 07	888	0.1+	0.6−
1999 12 13	704	0.0	0.4−	1999 12 15	385	0.0	0.1−	2000 01 07	888	0.3+	0.1−
1999 12 13	704	0.1+	0.3+	1999 12 15	385	0.1+	0.1+				
1999 12 13	704	0.2+	1.0−	1999 12 16	385	0.7−	0.5+				

1999 XO₁₄₇ = 1997 HD₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	102.03649		(2000.0)			P		Q			
n	0.20055981	ω	262.10116		+0.86207431		+0.50454495				
a	2.8905031	Ω	67.58653		-0.44233487		+0.79492657				
e	0.0570851	i	2.94918		-0.24732115		+0.33693641				
P	4.91	H	15.1		G	0.15	U	4			
Residuals in seconds of arc											
1997 04 30	704	0.0	0.2+	1999 11 09	704	0.0	0.1+	1999 11 12	704	0.3-	0.4+
1997 04 30	704	0.3-	0.2+	1999 11 09	704	0.8+	0.2+	1999 11 12	704	0.1-	0.9-

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1997 04 30	704	0.4−	0.1−	1999 11 09	704	0.1−	0.1+	1999 12 07	691	0.0	0.1+
1997 04 30	704	0.9+	0.8−	1999 11 09	704	0.0	0.6+	1999 12 07	691	0.2+	0.1−
1997 05 01	704	0.0	0.3+	1999 11 09	704	0.1+	0.6+	1999 12 07	691	0.3+	0.0
1997 05 01	704	0.1+	0.6+	1999 11 12	704	0.5−	1.0−	1999 12 13	691	0.2−	0.1+
1997 05 01	704	0.3−	0.4−	1999 11 12	704	0.8+	0.3+	1999 12 13	691	0.0	0.0
1997 05 01	704	(2.8−	0.6+)	1999 11 12	704	0.8−	0.7−	1999 12 13	691	0.3−	0.2+

1999 XC₁₄₈ = 1995 VM₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	93.30150		(2000.0)	P		Q	
<i>n</i>	0.26075807	ω	102.52025	+0.88917774		+0.45669631	
<i>a</i>	2.4264846	Ω	230.31280	−0.43272180		+0.81933284	
<i>e</i>	0.1677371	<i>i</i>	2.09503	−0.14871039		+0.34658647	
<i>P</i>	3.78	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 11 14	691	0.1−	0.1−	1999 11 09	704	0.2−	0.3−	1999 12 07	691	0.0	0.1+
1995 11 14	691	0.3+	0.2+	1999 11 09	704	0.5+	0.0	1999 12 07	691	0.0	0.0
1995 11 14	691	0.3−	0.2+	1999 11 12	704	0.5−	0.1+	1999 12 13	691	0.0	0.0
1995 11 19	691	0.0	0.5−	1999 11 12	704	0.3+	0.4−	1999 12 13	691	0.0	0.1+
1995 11 19	691	0.1+	0.1+	1999 11 12	704	0.5−	0.1+	1999 12 13	691	0.1+	0.0
1995 11 19	691	0.0	0.2+	1999 11 12	704	0.2−	0.4+				
1999 11 09	704	0.5+	0.0	1999 12 07	691	0.0	0.1+				

1999 XB₁₅₁ = 1998 KQ₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	35.48586		(2000.0)	P		Q	
<i>n</i>	0.24072972	ω	307.78306	+0.95519763		−0.21032978	
<i>a</i>	2.5592708	Ω	65.22898	+0.28676919		+0.83175769	
<i>e</i>	0.1941820	<i>i</i>	13.25754	−0.07321824		+0.51375142	
<i>P</i>	4.09	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 22	704	0.5+	1.3−	1999 09 30	704	0.2+	0.0	1999 12 13	699	0.4−	0.3+
1998 05 22	704	0.7+	1.1−	1999 09 30	704	0.4+	0.3+	1999 12 14	699	(0.7+ 2.4+)	
1998 05 22	704	0.6+	1.3−	1999 09 30	704	0.4−	0.3+	1999 12 14	699	0.5−	0.6+
1998 05 22	704	0.3−	0.9−	1999 11 08	703	0.4+	0.0	1999 12 14	699	0.0	0.1+
1998 05 22	699	0.8−	1.5+	1999 11 08	703	0.5+	0.6+	2000 01 08	704	0.6+	0.2−
1998 05 22	704	0.1−	0.2−	1999 11 08	703	0.8+	0.0	2000 01 08	704	0.8+	0.2+
1998 05 22	699	1.1−	0.7−	1999 11 08	703	0.4+	0.2−	2000 01 08	704	0.1−	0.4+
1998 05 22	699	1.1+	0.2−	1999 12 02	704	0.2−	1.1−	2000 01 08	704	0.9+	0.4−
1998 05 24	704	0.8+	0.5−	1999 12 02	704	0.3+	1.7−	2000 01 08	704	0.3+	0.0
1998 05 24	704	0.8−	0.3+	1999 12 02	704	0.1+	0.9−	2000 01 10	704	0.8−	0.8+
1998 05 24	704	1.2−	0.9+	1999 12 02	704	0.1−	1.0−	2000 01 10	704	0.8+	0.5−
1998 05 24	704	0.5−	1.7+	1999 12 09	699	0.2−	1.0+	2000 01 10	704	0.3−	0.1−
1998 05 24	704	(2.8−	1.6−)	1999 12 09	699	0.2+	0.2−	2000 01 10	704	0.4+	0.0
1999 09 13	704	0.0	1.0+	1999 12 09	699	0.1+	0.1+	2000 01 10	704	0.5−	0.2+
1999 09 13	704	0.6−	0.5+	1999 12 13	699	0.6−	0.2−	2000 01 10	704	0.3−	0.4−
1999 09 13	704	0.4−	0.0	1999 12 13	699	0.3−	0.1+	2000 01 10	704	0.1+	0.6+
1999 09 13	704	0.6−	1.8−	1999 12 13	699	0.4−	0.5−	2000 01 10	704	0.5+	0.1−
1999 09 30	704	0.3+	0.2+	1999 12 13	699	1.0−	0.2+	2000 01 10	704	0.1−	0.5−
1999 09 30	704	0.2+	0.6+	1999 12 13	699	0.1−	0.1−	2000 01 10	704	0.9+	0.1+

1999 XJ₁₅₁ = 1994 TP₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	10.36515		(2000.0)	P		Q	
<i>n</i>	0.21662029	ω	80.99281	−0.29969269		−0.95209825	
<i>a</i>	2.7458067	Ω	26.69147	+0.81352960		−0.28831050	
<i>e</i>	0.3390173	<i>i</i>	7.77557	+0.49835117		−0.10191160	
<i>P</i>	4.55	<i>H</i>	15.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 10 06	691	0.1+	0.3−	1999 12 03	699	0.7−	0.3+	1999 12 15	704	0.4+	0.2−
1994 10 06	691	0.0	0.0	1999 12 12	704	0.1−	0.3−	1999 12 15	704	0.5+	0.1+
1994 10 06	691	0.1−	0.1+	1999 12 12	704	0.1+	0.6−	1999 12 16	699	0.3+	0.2+

2000 JAN. 24

1994 10 12	691	0.3+	0.0	1999 12 12	704	0.1+	0.7−	1999 12 16	699	0.3−	0.4+
1994 10 12	691	0.2−	0.3+	1999 12 12	704	0.1−	0.9−	1999 12 16	699	0.0	0.4+
1994 10 12	691	0.1−	0.0	1999 12 13	699	0.6+	0.1−	1999 12 30	704	0.0	0.2+
1996 04 15	809(17.3+	1.8−)		1999 12 13	699	0.1−	0.9+	1999 12 30	704	0.3−	0.0
1996 04 15	809(17.5+	2.1−)		1999 12 13	699	0.5+	1.0+	1999 12 30	704	0.4−	0.1+
1996 04 15	809(17.8+	3.4−)		1999 12 15	704	0.2+	0.0	1999 12 30	704	0.3−	0.1−
1999 12 03	699	0.4−	1.1+	1999 12 15	704	0.3+	0.3−	1999 12 30	704	0.2−	0.0
1999 12 03	699	0.3−	1.2−	1999 12 15	704	0.3+	0.2−				

1999 XT₁₅₁ = 1998 UJ₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	20.07601		(2000.0)	P		Q	
<i>n</i>	0.17992964	ω	159.37043	−0.18741679		−0.97538679	
<i>a</i>	3.1074268	Ω	301.26869	+0.88110550		−0.11465583	
<i>e</i>	0.0563716	<i>i</i>	7.81140	+0.43419817		−0.18834713	
<i>P</i>	5.48	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 10 19	327	0.1+	0.2−	1999 12 07	691	0.1+	0.2+	2000 01 08	691	0.1+	0.3+
1998 10 19	327	0.4−	0.6+	1999 12 07	691	0.2+	0.1+	2000 01 08	691	0.0	0.2−
1998 10 19	327	0.5+	0.5+	1999 12 07	691	0.1−	0.2+	2000 01 08	691	0.2+	0.8−
1998 10 23	327	0.1−	0.2+	1999 12 14	691	0.3−	0.2−	2000 01 11	691	0.6−	0.7+
1998 10 23	327	0.3−	0.6−	1999 12 14	691	0.1−	0.3−	2000 01 11	691	0.2+	0.0
1998 10 23	327	0.2+	0.6−	1999 12 14	691	0.1−	0.2−	2000 01 11	691	0.3+	0.1+

1999 XX₁₅₁ = 1998 QV₄₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	333.81435		(2000.0)	P		Q	
<i>n</i>	0.26962408	ω	201.96854	−0.94339207		−0.33117110	
<i>a</i>	2.3729956	Ω	318.67721	+0.30829828		−0.85512817	
<i>e</i>	0.1492353	<i>i</i>	1.59340	+0.12232572		−0.39885025	
<i>P</i>	3.66	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	1.4+	1998 09 18	704	0.4−	0.3−	1999 12 18	699	0.1+	0.7+
1998 08 17	704	0.3−	1.5+	1999 11 16	704	0.1−	0.5−	1999 12 18	699	0.7+	1.4+
1998 08 17	704	0.8−	0.6−	1999 11 16	704	0.2−	0.4−	1999 12 18	699	0.4+	1.6+
1998 08 17	704	1.3−	1.5+	1999 11 16	704	0.3+	0.3+	2000 01 03	704	0.2−	0.0
1998 08 17	704	1.0−	1.6+	1999 11 16	704	0.7−	0.5+	2000 01 03	704	0.4−	0.2+
1998 08 23	704	0.6+	1.0+	1999 11 16	704	0.2+	0.2+	2000 01 03	704	0.3−	0.1−
1998 08 23	704	(2.4+ 2.6−)		1999 12 07	704	(2.3+ 1.5−)		2000 01 03	704	0.2−	0.7−
1998 08 23	704	0.9+	0.9−	1999 12 07	704	0.4+	0.6−	2000 01 03	704	0.7−	0.9−
1998 08 23	704	(0.5+ 2.4−)		1999 12 07	704	0.3+	0.6−	2000 01 04	704	0.1−	0.0
1998 08 26	699	0.7−	0.5+	1999 12 07	704	0.3+	1.1+	2000 01 04	704	0.3+	0.2+
1998 08 26	699	0.1−	1.1−	1999 12 07	691	0.2−	0.1−	2000 01 04	704	0.0	0.2−
1998 08 26	699	0.2−	0.5−	1999 12 07	691	0.1−	0.3−	2000 01 04	704	0.0	0.4−
1998 09 14	704	1.0+	0.8−	1999 12 07	691	0.3−	0.1−	2000 01 04	704	0.2+	0.7−
1998 09 14	704	0.8+	0.2+	1999 12 08	704	1.8+	0.1+	2000 01 08	704	0.7+	0.4+
1998 09 14	704	0.5+	0.2−	1999 12 08	704	0.2+	0.4+	2000 01 08	704	0.7−	0.7+
1998 09 14	704	0.2−	1.6−	1999 12 08	704	0.7+	0.5+	2000 01 08	704	0.0	0.1+
1998 09 18	704	1.3+	0.4−	1999 12 08	704	1.4−	1.1−	2000 01 08	704	0.2−	0.2−
1998 09 18	704	0.4−	0.7−	1999 12 14	691	0.1−	0.2−	2000 01 08	704	0.0	0.5−
1998 09 18	704	0.2+	0.3+	1999 12 14	691	0.3−	0.3−				
1998 09 18	704	0.3−	0.9−	1999 12 14	691	0.3−	0.2−				

1999 XK₁₅₂ = 1981 UP₂₃

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M.P.C. 37957

Residuals in seconds of arc

1981 10 24	675	0.7−	0.1−	1999 11 07	704	0.3+	0.6−	1999 12 14	699	0.0	0.0
1981 10 25	675	0.8+	0.3−	1999 11 07	704	0.2−	0.7−	1999 12 14	699	1.0−	0.3+
1999 09 14	704	0.4+	0.3+	1999 11 07	704	1.1−	0.2−	1999 12 14	699	0.2+	0.3+
1999 09 14	704	0.4+	0.0	1999 11 27	699	0.8+	0.4+	2000 01 08	704	0.0	0.2−
1999 09 14	704	0.4+	0.2−	1999 11 27	699	0.3+	0.0	2000 01 08	704	0.9+	0.1+
1999 09 14	704	0.2+	0.4−	1999 11 27	699	1.2+	0.8+	2000 01 08	704	0.6+	0.7−
1999 09 14	704	0.4−	0.7−	1999 12 03	704	0.2+	0.4+	2000 01 08	704	0.0	0.0
1999 09 21	699	0.1−	0.0	1999 12 03	704	0.0	0.5+	2000 01 08	704	0.6+	0.1+
1999 09 21	699	0.3+	1.0+	1999 12 03	704	0.3−	0.4+	2000 01 10	704	0.5+	0.9−
1999 09 21	699	0.6+	0.0	1999 12 03	704	0.1+	0.3+	2000 01 10	704	0.4+	0.3+
1999 10 02	704	0.1+	0.0	1999 12 03	704	0.1−	1.1+	2000 01 10	704	0.5+	0.4−
1999 10 02	704	0.0	0.1−	1999 12 13	699	1.1−	0.2−	2000 01 10	704	0.0	0.7−
1999 10 02	704	0.1−	0.1−	1999 12 13	699	0.9−	0.5+	2000 01 10	704	0.1−	0.6−
1999 10 02	704	1.0−	0.1−	1999 12 13	699	0.3−	0.4−	2000 01 10	704	0.1+	0.2−
1999 10 02	704	0.4−	0.0	1999 12 13	699	1.1−	0.5+	2000 01 10	704	0.0	0.5−
1999 11 07	704	0.6+	0.6−	1999 12 13	699	0.9−	0.9+	2000 01 10	704	0.3−	0.0
1999 11 07	704	0.8+	0.2−	1999 12 13	699	0.8−	0.7+				

1999 XN₁₅₃ = 1998 QH₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	54.39709		(2000.0)	P	Q
<i>n</i>	0.21617784	ω	151.50282	+0.63888261	−0.75653190
<i>a</i>	2.7495520	Ω	258.43247	+0.67601760	+0.63870359
<i>e</i>	0.1750031	<i>i</i>	8.19227	+0.36719098	+0.14041795
<i>P</i>	4.56	<i>H</i>	13.7	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 07 31	699	0.7+	0.5+	1998 09 17	699	0.3−	0.8+	1999 12 14	704	0.4−	0.1+
1998 07 31	699	0.1−	0.6+	1998 09 17	699	0.7−	0.3−	1999 12 14	704	0.2−	0.3+
1998 07 31	699	0.2−	0.4+	1999 11 12	703	0.5+	0.1−	1999 12 14	704	0.3−	0.0
1998 08 24	704	0.3−	0.3+	1999 11 12	703	0.2−	0.0	2000 01 05	704	0.1−	0.0
1998 08 24	704	0.1+	0.1+	1999 11 12	703	0.5+	0.1−	2000 01 05	704	0.4−	0.1+
1998 08 24	704	0.1−	0.2+	1999 11 12	703	0.2+	0.3+	2000 01 05	704	0.4−	0.1+
1998 08 24	704	0.2−	0.6+	1999 12 07	704	0.6+	0.6+	2000 01 05	704	0.2−	0.3+
1998 08 27	704	0.4+	0.1−	1999 12 07	704	0.1+	0.2−	2000 01 05	704	0.9+	1.3+
1998 08 27	704	0.4−	0.1−	1999 12 07	704	0.4−	0.5−	2000 01 10	428	0.4+	0.4−
1998 08 27	704	0.5+	0.5−	1999 12 07	704	0.0	0.3−	2000 01 10	428	0.8−	0.1+
1998 08 27	704	0.0	0.9−	1999 12 07	704	1.1−	0.2−	2000 01 11	428	1.1+	0.0
1998 08 27	704	1.3+	1.0−	1999 12 14	704	0.0	0.2−	2000 01 11	428	0.1+	0.8−
1998 09 17	699	0.9−	0.3−	1999 12 14	704	0.3−	0.0	2000 01 11	428	0.5+	0.3−

1999 XT₁₅₃ = 1998 QS₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.33790		(2000.0)	P	Q
<i>n</i>	0.22357479	ω	128.93564	+0.64789659	−0.73828686
<i>a</i>	2.6885668	Ω	279.61981	+0.62671714	+0.65657986
<i>e</i>	0.1938512	<i>i</i>	10.96394	+0.43296147	+0.15438715
<i>P</i>	4.41	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 07 31	699	0.7+	0.6+	1998 08 27	704	(2.7−	2.1−)	1999 12 15	703	0.8−	0.2−
1998 07 31	699	0.2−	0.1−	1999 12 07	704	0.1−	0.1+	2000 01 05	704	0.2+	0.2+
1998 07 31	699	0.2−	0.2+	1999 12 07	704	1.7+	0.1+	2000 01 05	704	0.3+	0.1−
1998 08 24	704	1.7+	0.9−	1999 12 07	704	0.1+	0.2−	2000 01 05	704	0.3−	0.3−
1998 08 24	704	0.9−	0.9+	1999 12 07	704	0.1−	0.5−	2000 01 05	704	0.2+	0.1−
1998 08 24	704	0.9−	1.6+	1999 12 07	704	0.9+	0.9−	2000 01 05	704	0.0	0.6−
1998 08 24	704	0.3−	0.2+	1999 12 14	704	0.3−	0.2−	2000 01 07	704	0.5−	0.1−
1998 08 24	704	0.3+	1.1−	1999 12 14	704	0.5−	0.2+	2000 01 07	704	0.3−	0.2−
1998 08 27	704	0.5+	0.1+	1999 12 14	704	0.7+	0.5+	2000 01 07	704	0.0	0.2+
1998 08 27	704	0.9+	0.7−	1999 12 15	703	0.7+	0.7+	2000 01 07	704	0.5−	0.1−
1998 08 27	704	1.1−	0.5−	1999 12 15	703	0.3+	0.5+	2000 01 07	704	0.0	0.1+
1998 08 27	704	0.4−	0.3−	1999 12 15	703	1.3−	0.9+				

1999 XH₁₅₄ = 1998 QZ₇₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	322.34165		(2000.0)	P	Q
<i>n</i>	0.21394007	ω	268.65649	−0.78410929	−0.60877850
<i>a</i>	2.7686919	Ω	233.82691	+0.61210118	−0.72647416
<i>e</i>	0.1300425	<i>i</i>	8.59712	+0.10249279	−0.31878524
<i>P</i>	4.61	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 08 19	704	(2.0+	2.6−)	1998 08 27	704	0.8+	1.7+	1999 12 14	704	0.9+	0.0
1998 08 19	704	1.0+	0.3−	1998 08 27	704	0.7−	0.4−	1999 12 14	704	1.3−	0.6−
1998 08 19	704	0.0	1.6+	1999 11 03	704	0.6−	0.2−	1999 12 14	704	0.3−	0.0
1998 08 19	704	0.8−	0.3+	1999 11 03	704	0.4+	0.1−	2000 01 05	704	1.1−	0.1+
1998 08 19	704	(5.0−	0.1−)	1999 11 03	704	0.0	0.3+	2000 01 05	704	0.2−	0.2+
1998 08 24	704	0.1+	0.4−	1999 11 03	704	0.0	0.2−	2000 01 05	704	0.5+	0.4+
1998 08 24	704	0.8−	0.7−	1999 12 08	704	0.0	0.3+	2000 01 05	704	0.5+	0.2+
1998 08 24	704	1.2+	1.2−	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.1+	0.3−
1998 08 24	704	0.7+	1.5−	1999 12 08	704	0.2+	0.2+	2000 01 06	704	0.2−	0.5−
1998 08 24	704	0.0	1.7−	1999 12 08	704	0.2−	0.3+	2000 01 06	704	0.1+	0.2−
1998 08 27	704	0.0	0.1+	1999 12 08	704	0.5+	0.7+	2000 01 06	704	0.2+	0.2+
1998 08 27	704	0.8−	1.2+	1999 12 14	704	0.0	0.9−	2000 01 06	704	0.0	0.1+
1998 08 27	704	0.8−	1.5+	1999 12 14	704	0.6+	0.2−				

1999 XJ₁₅₄ = 1998 QC₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	43.38885		(2000.0)	P	Q
<i>n</i>	0.19184270	ω	165.05654	+0.75369362	−0.64370324
<i>a</i>	2.9774138	Ω	235.79086	+0.58534700	+0.74922066
<i>e</i>	0.0966516	<i>i</i>	9.22912	+0.29885585	+0.15593122
<i>P</i>	5.14	<i>H</i>	14.1	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1998 08 24	704	(2.7−	0.2+)	1999 11 17	704	0.7−	0.1−	1999 12 14	704	0.3+	0.6+
1998 08 24	704	0.1−	0.3+	1999 11 17	704	0.1−	0.4−	1999 12 14	704	0.0	0.7−
1998 08 24	704	1.0+	0.4+	1999 11 17	704	0.1−	0.9−	2000 01 05	704	0.3+	0.4+
1998 08 24	704	(6.2−	1.6−)	1999 12 08	704	0.1+	0.9+	2000 01 05	704	0.0	0.2+
1998 08 27	704	0.9−	0.1−	1999 12 08	704	0.2−	0.5+	2000 01 05	704	0.3+	0.1+
1998 08 27	704	0.4−	0.6+	1999 12 08	704	0.2−	0.2+	2000 01 05	704	0.3+	0.5−
1998 08 27	704	0.4+	1.3−	1999 12 08	704	0.0	0.4+	2000 01 06	704	1.0−	0.8−
1998 08 27	704	(0.9−	2.4−)	1999 12 08	704	0.2−	0.4+	2000 01 06	704	0.4+	0.3+
1999 11 17	704	0.6+	0.3−	1999 12 14	704	0.7+	0.7+	2000 01 06	704	0.1+	0.6−
1999 11 17	704	0.1+	0.2+	1999 12 14	704	0.4−	0.2−	2000 01 06	704	0.5−	0.3−

1999 XF₁₅₅ = 1995 SK₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	36.31058		(2000.0)	P	Q
<i>n</i>	0.27475769	ω	266.36093	+0.55724792	−0.83007921
<i>a</i>	2.3433445	Ω	149.74308	+0.77745353	+0.51267889
<i>e</i>	0.1943932	<i>i</i>	2.39473	+0.29161750	+0.21938292
<i>P</i>	3.59	<i>H</i>	16.5	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1995 09 25	691	0.0	0.0	1999 12 08	704	0.6+	0.5+	2000 01 05	704	0.1−	0.1+
1995 09 25	691	0.2+	0.1−	1999 12 08	704	1.0+	0.1−	2000 01 05	704	0.2+	0.4+
1995 09 25	691	0.0	0.1−	1999 12 14	704	0.1−	0.0	2000 01 05	704	0.2+	0.1+
1995 10 01	691	0.0	0.2+	1999 12 14	704	0.8−	0.2+	2000 01 06	704	0.0	0.4+
1995 10 01	691	0.3−	0.0	1999 12 14	704	0.7−	1.2−	2000 01 06	704	0.4−	0.2−
1995 10 01	691	0.1+	0.2+	1999 12 14	704	0.0	0.6−	2000 01 06	704	0.8+	0.9+
1999 12 08	704	0.0	0.4−	1999 12 14	704	0.1−	0.1−	2000 01 06	704	0.2−	0.2+
1999 12 08	704	(2.3+	0.3−)	2000 01 05	704	0.1−	0.7−	2000 01 06	704	0.4−	0.4−
1999 12 08	704	0.1+	0.3+	2000 01 05	704	0.1−	0.9+				

1999 XH₁₅₅ = 1975 PJ

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	349.82338		(2000.0)	P		Q	
<i>n</i>	0.17531367	ω	261.85907	−0.36718626	−0.92962759		
<i>a</i>	3.1617354	Ω	209.74260	+0.87617246	−0.33446404		
<i>e</i>	0.1521737	<i>i</i>	3.59337	+0.31224360	−0.15468146		
<i>P</i>	5.62	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 08 14	805(67.6+ 5.8+)	1999 12 14	704 0.6+ 0.9+	2000 01 05	704 0.2+ 0.3−
1975 08 15	805 0.0 0.0	1999 12 14	704 0.4+ 0.8+	2000 01 05	704 0.4+ 0.1−
1975 08 16	805(71.8− 9.3−)	1999 12 14	704 0.4+ 0.1−	2000 01 06	704 0.4+ 0.1+
1999 12 08	704 0.4− 0.6−	1999 12 14	704 0.0 0.2+	2000 01 06	704 1.2− 0.4−
1999 12 08	704 0.9− 0.6−	1999 12 14	704 0.6+ 0.5+	2000 01 06	704 0.5− 0.2+
1999 12 08	704 0.3− 0.2−	2000 01 05	704 0.2+ 0.4+	2000 01 06	704 0.1+ 0.3−
1999 12 08	704 0.1+ 0.2−	2000 01 05	704 0.4+ 0.0	2000 01 06	704 0.2− 0.4−
1999 12 08	704 0.5− 0.1+	2000 01 05	704 0.1+ 0.0		

1999 XL₁₅₅ = 1998 KC₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	115.80280		(2000.0)	P		Q	
<i>n</i>	0.27263822	ω	84.10460	+0.72275896	+0.68063643		
<i>a</i>	2.3554735	Ω	232.92930	−0.67849884	+0.66588321		
<i>e</i>	0.2498865	<i>i</i>	8.63581	−0.13137275	+0.30550547		
<i>P</i>	3.62	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 04 22	704	0.2+	0.1−	1998 05 22	699	0.1−	0.4+	1999 12 08	704	0.1−	0.5+
1998 04 22	704	0.9+	0.5+	1998 05 22	699	1.6−	0.0	1999 12 14	704	0.5−	0.8−
1998 04 22	704	0.7−	0.9+	1998 05 22	699	0.7+	0.9−	1999 12 14	704	0.7−	1.1−
1998 04 22	704	0.3+	0.6−	1998 05 23	704	0.7−	0.6+	1999 12 14	704	0.4−	0.6−
1998 04 25	699	0.0	0.2+	1998 05 23	704	0.5+	1.0+	1999 12 14	704	0.1+	0.9−
1998 04 25	699	1.0−	0.0	1998 05 23	704	0.6+	0.4−	1999 12 14	704	0.5−	0.7−
1998 04 25	699	1.4−	0.6−	1998 05 23	704	0.3−	0.7+	2000 01 05	704	0.5−	0.3+
1998 05 01	704	0.2−	0.2+	1998 05 23	704	0.3−	0.0	2000 01 05	704	0.8−	0.1−
1998 05 01	704	0.3+	0.1−	1998 05 24	704	0.3+	0.0	2000 01 05	704	0.1+	0.3+
1998 05 01	704	0.4+	0.5−	1998 05 24	704	0.4−	0.6−	2000 01 05	704	0.1−	0.2+
1998 05 01	704	(2.8−	0.1+)	1998 05 24	704	0.6+	0.1+	2000 01 05	704	0.2+	0.3−
1998 05 22	704	0.8−	0.0	1998 05 24	704	0.5+	0.9−	2000 01 06	704	0.8+	0.1+
1998 05 22	704	0.4+	0.2+	1998 05 24	704	0.2−	1.2−	2000 01 06	704	0.0	0.4−
1998 05 22	704	0.5+	0.8+	1999 12 08	704	0.3+	0.0	2000 01 06	704	0.5−	0.6−
1998 05 22	704	0.9+	0.5−	1999 12 08	704	1.3+	1.3+	2000 01 06	704	0.2+	0.8+
1998 05 22	704	0.7+	0.5+	1999 12 08	704	0.6+	1.3+	2000 01 06	704	0.7+	0.8+

1999 XJ₁₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	64.80015		(2000.0)	P		Q	
<i>n</i>	0.08347126	ω	154.16781	+0.94213461	−0.32516918		
<i>a</i>	5.1853501	Ω	225.06511	+0.28414368	+0.90362851		
<i>e</i>	0.0549226	<i>i</i>	6.61355	+0.17788969	+0.27878402		
<i>P</i>	11.81	<i>H</i>	10.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 10 05	809	0.3−	0.3−	1999 11 15	704	0.3+	0.4−	1999 12 14	704	0.1−	0.3−
1997 10 05	809	0.1−	0.1−	1999 11 17	704	0.9+	0.7+	2000 01 05	704	0.1−	0.4+
1997 10 06	809	0.2+	0.0	1999 11 17	704	0.7+	0.5+	2000 01 05	704	0.2−	0.4+
1997 10 06	809	0.3+	0.3+	1999 11 17	704	0.5−	0.6−	2000 01 05	704	0.1−	0.1−
1999 11 04	704	0.4+	0.4+	1999 11 17	704	0.6−	1.7−	2000 01 05	704	0.1+	0.4+
1999 11 04	704	0.6+	0.8+	1999 12 08	704	0.0	0.2−	2000 01 05	704	0.2+	0.6+
1999 11 04	704	0.1+	0.1−	1999 12 08	704	0.9−	0.7−	2000 01 06	704	0.5+	0.4+
1999 11 04	704	0.0	0.2+	1999 12 08	704	0.2−	0.5−	2000 01 06	704	0.2+	0.4−
1999 11 04	704	0.1−	0.5+	1999 12 08	704	1.3−	0.7−	2000 01 06	704	0.3+	0.1−
1999 11 15	704	0.2+	0.7+	1999 12 14	704	0.2+	0.4+	2000 01 06	704	0.2−	0.1−
1999 11 15	704	0.0	0.2+	1999 12 14	704	0.2+	0.0	2000 01 06	704	0.1+	0.6−

1999 11 15	704	0.4−	0.2+	1999 12 14	704	0.2−	0.5−
1999 11 15	704	0.3−	0.5+	1999 12 14	704	0.1+	0.1−

1999 XN₁₅₆ = 1998 RQ₃₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	244.46043		(2000.0)	P		Q	
<i>n</i>	0.20928674	ω	29.15949	−0.82846306	+0.56000825		
<i>a</i>	2.8095811	Ω	184.91091	−0.52704292	−0.78340187		
<i>e</i>	0.0064864	<i>i</i>	4.22171	−0.18940620	−0.26957796		
<i>P</i>	4.71	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 08 14	010	(2.9−	2.5−)	1998 09 18	704	1.8+	0.4+	1999 12 14	704	0.0	0.3+
1993 08 14	010	(3.8−	4.3−)	1998 09 18	704	0.6−	1.3−	1999 12 15	704	0.2+	0.3+
1993 08 14	010	(2.5−	5.3−)	1998 09 18	704	1.5+	1.5+	1999 12 15	704	0.4+	0.8−
1993 08 15	010	(2.4+	6.4+)	1999 11 04	704	0.3−	0.5+	1999 12 15	704	0.4−	0.0
1993 08 18	010	0.0	0.6+	1999 11 04	704	0.6−	1.0+	1999 12 15	704	0.5+	0.5−
1993 08 18	010	0.1−	1.2+	1999 11 04	704	0.6−	0.6+	2000 01 05	704	0.3−	0.0
1993 08 18	010	0.7−	1.3+	1999 11 04	704	0.2−	0.4+	2000 01 05	704	0.1+	0.2−
1998 08 17	704	0.2+	1.3−	1999 12 08	704	0.6−	0.1−	2000 01 05	704	0.1−	0.5−
1998 08 17	704	1.1−	0.6−	1999 12 08	704	0.1+	1.1+	2000 01 05	704	0.1−	0.1−
1998 08 17	704	(2.4−	1.8−)	1999 12 08	704	0.7+	0.2+	2000 01 05	704	0.4+	0.2−
1998 08 17	704	0.6−	0.1−	1999 12 08	704	0.7−	1.0+	2000 01 06	704	0.2−	0.7−
1998 09 14	704	0.2−	0.9−	1999 12 08	704	0.2−	0.2+	2000 01 06	704	0.2+	0.2−
1998 09 14	704	0.4−	0.5+	1999 12 14	704	0.1+	0.0	2000 01 06	704	(2.2+	0.3−)
1998 09 14	704	1.4+	0.4+	1999 12 14	704	0.7−	0.2+	2000 01 06	704	1.3+	0.3−
1998 09 14	704	1.1−	1.7−	1999 12 14	704	0.2+	0.0	2000 01 06	704	1.0+	0.4−
1998 09 18	704	0.2+	0.0	1999 12 14	704	0.2−	0.0				

1999 XO₁₅₆ = 1998 QL₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	97.55682		(2000.0)	P		Q	
<i>n</i>	0.21738416	ω	210.73434	+0.97150761	+0.23022404		
<i>a</i>	2.7393706	Ω	135.84005	−0.19769494	+0.91819029		
<i>e</i>	0.1251888	<i>i</i>	4.63546	−0.13072746	+0.32237166		
<i>P</i>	4.53	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	(3.9+	3.8+)	1998 08 30	699	0.0	0.6+	1999 12 14	704	0.3−	0.4−
1998 08 17	704	1.1+	0.9−	1999 11 04	704	0.2+	0.0	1999 12 14	704	0.6−	0.2−
1998 08 17	704	1.0+	0.8−	1999 11 04	704	0.3+	1.0−	1999 12 14	704	0.5−	0.1−
1998 08 17	704	1.3−	0.3−	1999 11 04	704	0.3+	0.6+	2000 01 04	688	0.2−	0.2+
1998 08 17	704	1.1−	0.9+	1999 11 04	704	0.7+	0.2+	2000 01 04	688	0.0	0.0
1998 08 23	704	0.3+	0.6+	1999 11 04	704	0.3−	0.1−	2000 01 05	704	0.0	1.3+
1998 08 23	704	0.3−	0.3−	1999 11 17	704	0.0	0.3+	2000 01 05	704	0.9+	0.4+
1998 08 23	704	1.5+	0.9−	1999 11 17	704	0.2+	0.2−	2000 01 05	704	0.1+	0.1−
1998 08 23	704	0.3−	0.8−	1999 11 17	704	0.2+	0.4−	2000 01 05	704	0.1−	0.2−
1998 08 23	704	(4.3−	1.5+)	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.0	0.2+
1998 08 27	699	0.6−	1.7+	1999 12 08	704	0.8−	0.5−	2000 01 06	704	0.0	0.2−
1998 08 27	699	1.0+	0.2+	1999 12 08	704	0.1+	0.0	2000 01 06	704	0.0	0.3−
1998 08 27	699	0.1+	0.3+	1999 12 08	704	0.0	0.4+	2000 01 06	704	0.2−	0.2−
1998 08 30	699	0.3−	0.3−	1999 12 08	704	0.5−	0.4+	2000 01 06	704	0.3+	0.3+
1998 08 30	699	1.2−	0.1+	1999 12 14	704	0.4+	0.4−				

1999 XR₁₅₆ = 1978 WB₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	344.43701		(2000.0)	P	Q
n	0.28314940	ω	260.03201	−0.56201814	−0.82515162
a	2.2968129	Ω	224.32307	+0.78728739	−0.51250650
e	0.0655091	i	4.68761	+0.25360240	−0.23761713
P	3.48	H	15.2	G 0.15	U 3

2000 JAN. 24

M.P.C. 37959

1997 04 28	704	0.9+	0.3-	1999 12 08	704	0.0	1.2-	2000 01 05	704	0.2-	0.2+
1997 04 28	704	0.6+	0.3+	1999 12 14	704	0.0	0.4+	2000 01 05	704	0.6+	0.2-
1997 04 28	704	0.3-	0.7+	1999 12 14	704	0.2-	0.9+	2000 01 06	704	0.6+	0.1+
1997 04 28	704	0.5+	1.6-	1999 12 14	704	0.4-	0.3+	2000 01 06	704	0.9-	0.5+
1997 04 28	704	1.6-	0.9+	1999 12 14	704	0.5-	0.1-	2000 01 06	704	0.7+	0.3-
1999 12 08	704	0.5+	0.8-	1999 12 14	704	0.5-	0.5+	2000 01 06	704	0.1+	0.1-
1999 12 08	704	0.2-	0.3-	2000 01 05	704	0.2-	0.4-				

1999 XE₁₅₇ = 6764 P-L = 1998 RP₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	6.89292		(2000.0)	P		Q	
<i>n</i>	0.18025077	ω	293.31442	-0.08669293		-0.99612121	
<i>a</i>	3.1037350	Ω	161.63993	+0.93060728		-0.08636943	
<i>e</i>	0.1392468	<i>i</i>	2.74083	+0.35560432		-0.01681825	
<i>P</i>	5.47	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1960 09 24	675	0.7-	0.4-	1998 09 14	704	1.8+	0.1-	1999 12 14	704	0.7-	0.8+
1960 09 24	675	0.4-	1.0-	1998 09 14	704	1.2-	0.5+	1999 12 14	704	0.3-	0.5+
1960 09 26	675	0.0	0.8+	1998 09 18	704	0.8-	0.5+	1999 12 14	704	0.2-	0.1-
1960 09 26	675	0.2-	1.3-	1998 09 18	704	1.0+	0.2+	2000 01 05	704	0.0	0.1+
1960 09 27	675	1.6+	1.3+	1998 09 18	704	1.2-	0.1+	2000 01 05	704	0.0	0.4+
1960 09 27	675	0.9+	0.1-	1999 11 17	704	0.3+	0.0	2000 01 05	704	0.1-	0.2+
1960 09 28	675	0.2-	0.8+	1999 11 17	704	1.5+	0.4-	2000 01 05	704	0.1+	0.1+
1960 09 28	675	0.4-	1.0-	1999 11 17	704	0.2-	0.4+	2000 01 05	704	0.0	0.4+
1996 04 18	809	(0.8+	2.7+)	1999 12 08	704	0.4-	0.3+	2000 01 06	704	1.3-	0.1-
1996 04 18	809	0.4+	1.5+	1999 12 08	704	0.3+	0.4+	2000 01 06	704	0.6+	0.8-
1996 04 18	809	(1.1+	2.4+)	1999 12 08	704	0.0	0.3-	2000 01 06	704	0.2+	0.1-
1998 09 14	704	0.8-	1.2+	1999 12 08	704	0.1-	0.1-	2000 01 06	704	0.5+	0.8-
1998 09 14	704	0.5+	0.5-	1999 12 08	704	0.2-	0.3+				

1999 XF₁₅₇ = 1981 NO = 1990 SP₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	91.44331		(2000.0)	P		Q	
<i>n</i>	0.23316197	ω	231.69956	+0.99767720		-0.00704827	
<i>a</i>	2.6143530	Ω	128.59979	+0.03016502		+0.93750711	
<i>e</i>	0.0971183	<i>i</i>	4.97345	-0.06107601		+0.34789474	
<i>P</i>	4.23	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1981 07 02	805	0.1-	0.4+	1998 08 17	704	0.0	1.6-	1999 12 14	704	1.3+	1.5-
1981 07 02	805	0.1-	0.3+	1998 08 27	699	0.1-	1.0+	1999 12 14	704	0.1+	0.2-
1990 09 18	675	0.5-	0.1+	1998 08 27	699	0.7-	0.4+	2000 01 05	704	0.2+	0.2+
1990 09 18	675	0.2-	0.4+	1998 08 27	699	0.7-	0.1+	2000 01 05	704	0.1-	0.5+
1990 09 20	675	0.7+	0.3-	1999 12 08	704	0.0	1.7-	2000 01 05	704	0.3+	0.0
1990 09 20	675	0.1-	0.3+	1999 12 08	704	0.2-	0.4-	2000 01 05	704	0.5+	0.3+
1998 07 02	699	0.1-	0.2+	1999 12 08	704	0.1+	0.3+	2000 01 05	704	0.3-	0.6+
1998 07 02	699	0.9+	0.1-	1999 12 08	704	1.9-	1.2+	2000 01 06	704	0.1-	0.2-
1998 07 02	699	0.6+	0.1-	1999 12 08	704	0.3-	0.4+	2000 01 06	704	0.2+	0.0
1998 08 17	704	0.5-	0.3+	1999 12 14	704	0.2-	0.6+	2000 01 06	704	0.5+	0.3-
1998 08 17	704	(2.4+	1.4-)	1999 12 14	704	0.2+	0.6-				
1998 08 17	704	0.9+	1.2-	1999 12 14	704	0.4-	0.5+				

1999 XK₁₅₇ = 1991 LV₆ = 1998 ML₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	167.40009		(2000.0)	P		Q	
<i>n</i>	0.29157072	ω	191.27501	+0.46854898		+0.87184605	
<i>a</i>	2.2523719	Ω	106.80074	-0.79850908		+0.48702418	
<i>e</i>	0.0281865	<i>i</i>	8.56901	-0.37794854		+0.05188364	
<i>P</i>	3.38	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 06 06	809	0.7+	0.5+	1999 12 08	704	0.1+	0.1+	2000 01 05	704	0.5+	0.3-
1991 06 06	809	0.5-	0.5-	1999 12 08	704	0.2+	0.1+	2000 01 05	704	0.0	0.7-
1991 06 06	809	0.4-	0.7-	1999 12 08	704	0.2+	0.2+	2000 01 05	704	0.4+	0.4-

1998 06 24	704	0.0	0.5+	1999 12 08	704	0.0	0.4+	2000 01 05	704	0.3+	0.9-
1998 06 24	704	0.2-	1.0-	1999 12 08	704	0.0	0.3+	2000 01 06	704	0.3+	0.1-
1998 06 24	704	0.6-	0.1+	1999 12 14	704	0.3-	0.6+	2000 01 06	704	0.4+	0.5-
1998 06 24	704	0.2-	0.5+	1999 12 14	704	0.1-	0.2-	2000 01 06	704	0.2+	0.4-
1998 06 26	704	0.4+	1.0-	1999 12 14	704	0.1+	0.2+	2000 01 06	704	1.9-	0.8-
1998 06 26	704	0.4+	0.1+	1999 12 14	704	0.3+	0.1+	2000 01 06	704	0.6-	0.1-
1998 06 26	704	0.6+	0.5-	1999 12 14	704	0.1+	0.1+				
1998 06 26	704	0.2-	0.4-	2000 01 05	704	0.4+	0.3-				

1999 XL₁₅₇ = 1993 BF₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	207.70079		(2000.0)	P		Q	
<i>n</i>	0.26561179	ω	139.39268	-0.18701892		+0.97775220	
<i>a</i>	2.3968332	Ω	119.63073	-0.92722353		-0.14375449	
<i>e</i>	0.0594501	<i>i</i>	6.27436	-0.32446948		-0.15275892	
<i>P</i>	3.71	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 01 27	010	0.8-	1.4+	1998 08 23	704	0.4-	0.6-	1999 12 14	704	0.3-	0.2+
1993 01 27	010	0.8-	1.2+	1998 08 23	704	0.5+	0.4+	1999 12 14	704	0.2+	0.2-
1993 01 27	010	1.0-	0.4+	1998 08 23	704	1.2+	1.2+	1999 12 14	704	0.1-	0.6+
1993 01 28	010	2.0+	0.7-	1998 08 23	704	(5.3-	0.8+)	1999 12 14	704	0.1+	0.0
1993 01 28	010	0.8+	1.6-	1998 08 27	699	0.2+	0.7-	2000 01 05	704	0.1+	0.6-
1993 01 28	010	(1.3+	2.4-)	1998 08 27	699	0.8+	0.5-	2000 01 05	704	0.3+	0.2-
1998 07 31	699	0.1-	0.8+	1998 08 27	699	0.7+	0.6-	2000 01 05	704	0.3+	0.1+
1998 07 31	699	0.5-	0.8+	1998 09 14	699	0.2-	1.8+	2000 01 05	704	0.1+	0.5-
1998 07 31	699	0.0	1.2+	1998 09 14	699	0.9-	0.2+	2000 01 05	704	0.2+	0.4-
1998 08 17	704	0.8-	0.8-	1998 09 14	699	0.8-	0.4+	2000 01 06	704	0.2+	0.7-
1998 08 17	704	0.3-	0.2-	1999 12 08	704	0.0	0.0	2000 01 06	704	0.0	0.1-
1998 08 17	704	0.4+	0.1+	1999 12 08	704	0.3-	0.1+	2000 01 06	704	0.4+	0.2+
1998 08 17	704	0.2+	1.1-	1999 12 08	704	0.4-	0.2+	2000 01 06	704	0.1-	0.1-
1998 08 17	704	0.4+	1.0-	1999 12 08	704	0.1+	0.0	2000 01 06	704	0.6-	0.4+
1998 08 23	704	0.7-	0.6-	1999 12 14	704	0.0	0.5+				

1999 XM₁₅₇ = 1997 ED₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	75.70751		(2000.0)	P		Q	
<i>n</i>	0.28007633	ω	160.76056	+0.96786663		-0.24860071	
<i>a</i>	2.3135831	Ω	213.70631	+0.22085322		+0.91232235	
<i>e</i>	0.1573555	<i>i</i>	3.90993	+0.12024160		+0.32536997	
<i>P</i>	3.52	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 10	704	0.2-	1.5-	1999 11 03	704	0.5-	0.5+	2000 01 05	704	0.0	0.3+
1997 03 10	704	0.5+	0.4+	1999 12 08	704	0.5-	0.1+	2000 01 05	704	0.7+	0.0
1997 03 11	704	0.4+	0.1+	1999 12 08	704	0.5-	0.2+	2000 01 05	704	0.5+	0.7-
1997 03 11	704	0.3+	0.4-	1999 12 08	704	0.5-	0.6+	2000 01 05	704	0.3+	0.8-
1997 03 12	704	0.3+	0.6+	1999 12 08	704	0.1-	0.8+	2000 01 05	704	0.4+	0.5-
1997 03 12	704	0.6-	1.1+	1999 12 14	704	0.2-	0.0	2000 01 06	704	0.9+	0.1-
1999 11 03	704	1.3+	0.4-	1999 12 14	704	0.0	0.1+	2000 01 06	704	0.4-	0.4-
1999 11 03	704	0.3+	0.7-	1999 12 14	704	0.6+	0.2+	2000 01 06	704	0.5+	0.2+
1999 11 03	704	0.4-	0.3+	1999 12 14	704	0.3-	0.0	2000 01 06	704	0.1-	0.5-
1999 11 03	704	0.2-	0.1+	1999 12 14	704	0.1+	0.6+	2000 01 06	704	1.8-	0.0

1999 XS₁₅₇ = 1994 RQ₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	35.00669		(2000.0)	P	Q
n	0.22853904	ω	194.68256	+0.48301970	-0.87408266
a	2.6494910	Ω	226.46523	+0.81037307	+0.46861093
e	0.1682192	i	4.08841	+0.33164358	+0.12799725
P	4.31	H	15.5	G 0.15	U 4

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1994 09 05	809	0.1+	0.6−	1999 12 08	704	0.0	0.1+	2000 01 06	704	0.9−	0.4−
1994 09 06	809	0.5−	0.0	1999 12 14	704	0.6+	0.4+	2000 01 06	704	0.5−	1.1−
1994 09 06	809	1.1−	0.5−	1999 12 14	704	0.1−	0.2−	2000 01 06	704	0.9+	0.7+
1994 09 06	809	0.6−	0.4+	1999 12 14	704	0.1+	0.3−	2000 01 06	704	0.7+	0.0
1999 12 08	704	0.3−	0.3+	2000 01 05	704	0.2−	0.1−	2000 01 06	704	0.2+	0.0
1999 12 08	704	0.3+	1.1−	2000 01 05	704	0.8−	0.1+				

1999 XT₁₅₇ = 1998 QY₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	82.75055		(2000.0)	P		Q	
<i>n</i>	0.18430095	<i>ω</i>	124.29467	+0.96595025		−0.20125622	
<i>a</i>	3.0580952	<i>Ω</i>	247.79040	+0.13882712		+0.93347317	
<i>e</i>	0.0644244	<i>i</i>	10.11483	+0.21832807		+0.29685650	
<i>P</i>	5.35	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 08 19	704	0.0	0.5+	1998 08 27	704	1.3+	1.2+	1999 12 14	704	0.1+	0.1+
1998 08 19	704	0.3−	1.5−	1998 08 27	704	0.6+	0.5+	1999 12 14	704	0.3+	0.1+
1998 08 19	704	0.8+	1.1−	1998 09 18	699	0.3−	0.4+	1999 12 14	704	0.3−	0.4+
1998 08 19	704	0.6+	0.9−	1998 09 18	699	0.0	0.8+	1999 12 14	704	0.7+	0.5+
1998 08 19	704	(2.4−	0.6−)	1998 09 18	699	1.1−	0.2+	2000 01 05	704	0.6−	0.0
1998 08 24	704	0.3−	0.6−	1998 12 09	704	0.5+	0.3−	2000 01 05	704	0.1−	0.2+
1998 08 24	704	0.1+	0.7+	1998 12 09	704	(2.3−	3.5+)	2000 01 05	704	0.2−	0.5−
1998 08 24	704	0.4+	0.8−	1998 12 09	704	0.5−	1.7+	2000 01 05	704	0.3+	0.4+
1998 08 24	704	0.4−	1.0−	1998 12 09	704	(3.3−	0.7−)	2000 01 06	704	0.2−	0.0
1998 08 24	704	1.3−	0.3+	1999 12 08	704	0.3+	0.1+	2000 01 06	704	0.1−	0.3+
1998 08 27	704	0.1+	0.1+	1999 12 08	704	0.4+	1.1−	2000 01 06	704	0.1−	0.3+
1998 08 27	704	0.7+	0.5+	1999 12 08	704	0.1−	1.3−	2000 01 06	704	0.2−	0.2+
1998 08 27	704	0.7−	0.5−	1999 12 14	704	0.2−	0.3−	2000 01 06	704	0.1−	0.1−

1999 XA₁₅₈ = 1997 EL₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	287.55683		(2000.0)	P		Q	
<i>n</i>	0.28996275	<i>ω</i>	46.98880	−0.98622096		+0.15898064	
<i>a</i>	2.2606912	<i>Ω</i>	142.09140	−0.16498447		−0.92481964	
<i>e</i>	0.0633244	<i>i</i>	4.27066	−0.01217955		−0.34559195	
<i>P</i>	3.40	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 01	358	1.9+	0.8−	1999 12 08	704	0.3+	0.6+	2000 01 05	704	0.3−	1.3+
1997 03 01	358	0.3+	1.6−	1999 12 14	704	0.4−	0.7−	2000 01 05	704	0.0	0.8+
1997 03 03	358	0.5−	0.7+	1999 12 14	704	0.6−	0.6−	2000 01 06	704	0.1−	0.5−
1997 03 03	358	1.6−	1.7+	1999 12 14	704	0.2−	0.1+	2000 01 06	704	0.8+	0.5−
1999 12 08	704	0.6+	0.2+	1999 12 14	704	0.3+	0.3−	2000 01 06	704	0.8−	0.7+
1999 12 08	704	0.6+	0.3+	1999 12 14	704	0.7−	0.6−	2000 01 06	704	0.3+	1.0−
1999 12 08	704	0.1−	0.3+	2000 01 05	704	0.1+	0.0				

1999 XF₁₅₈ = 1997 HD₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	343.89583		(2000.0)	P		Q	
<i>n</i>	0.29225293	<i>ω</i>	249.61178	−0.67674879		−0.73142498	
<i>a</i>	2.2488654	<i>Ω</i>	243.26668	+0.70562190		−0.61192295	
<i>e</i>	0.0781522	<i>i</i>	5.38631	+0.21002098		−0.30094484	
<i>P</i>	3.37	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 04 28	704	(2.8−	0.2−)	1999 11 03	704	0.3−	0.8+	2000 01 05	704	0.2−	0.1+
1997 04 28	704	1.8−	0.8−	1999 11 03	704	0.3+	0.6−	2000 01 05	704	0.2+	0.0
1997 04 28	704	0.8−	0.3+	1999 11 03	704	0.7−	0.2+	2000 01 05	704	0.2−	0.1−
1997 04 28	704	1.1−	0.6+	1999 12 08	704	0.0	0.5+	2000 01 06	704	0.3−	0.6−
1997 04 29	704	0.8−	1.4−	1999 12 08	704	0.4+	0.1−	2000 01 06	704	0.0	0.2+
1997 04 29	704	1.9+	0.7+	1999 12 08	704	0.2+	0.1+	2000 01 06	704	0.1−	0.1+
1997 04 29	704	0.2+	1.2+	1999 12 08	704	0.5+	0.2−	2000 01 07	704	0.0	0.0
1997 04 29	704	1.9+	1.2−	1999 12 08	704	0.6+	0.1−	2000 01 07	704	0.3−	0.2−
1997 04 29	704	0.8+	0.0	1999 12 14	704	0.3+	0.4+	2000 01 07	704	0.3+	0.3+

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1998 08 17	704	(2.2+	0.3+)	1999 12 14	704	0.0	0.3+	2000 01 07	704	0.5−	0.3+
1998 08 17	704	(1.0+	2.5−)	1999 12 14	704	0.9+	0.5+	2000 01 07	704	0.1−	0.2−
1998 08 17	704	0.4−	1.3+	1999 12 14	704	0.4+	0.8−	2000 01 07	704	0.3−	0.2+
1998 08 17	704	(2.5+	0.5+)	1999 12 14	704	0.4+	0.0	2000 01 07	704	0.1+	0.1−
1998 08 17	704	(5.4−	0.2+)	2000 01 05	704	0.3−	0.0	2000 01 07	704	0.2−	0.1+
1999 11 03	704	0.2−	0.3−	2000 01 05	704	1.0−	0.2+				

1999 XG₁₅₈ = 1997 HZ₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	21.77404		(2000.0)	P		Q	
<i>n</i>	0.25999594	<i>ω</i>	238.74232	+0.32054266		−0.94716827	
<i>a</i>	2.4312242	<i>Ω</i>	192.57675	+0.88557581		+0.30384017	
<i>e</i>	0.1567258	<i>i</i>	2.93934	+0.33616646		+0.10272988	
<i>P</i>	3.79	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 03	704	1.4+	0.4+	1999 11 15	704	0.2−	0.2+	1999 12 14	704	0.2+	0.6−
1997 04 03	704	0.3+	0.7−	1999 11 15	704	0.1+	0.1−	1999 12 14	704	0.1+	0.4−
1997 04 28	691	0.3−	0.2+	1999 11 15	704	0.1+	0.3−	1999 12 14	704	0.0	0.3−
1997 04 28	691	0.2−	0.4+	1999 11 15	704	0.5+	0.7+	2000 01 05	704	0.5+	0.1−
1997 04 28	691	0.5−	0.1−	1999 11 15	704	0.5−	0.0	2000 01 05	704	0.1−	0.5+
1997 05 03	691	0.3−	0.4−	1999 11 17	704	0.6+	0.3−	2000 01 05	704	0.8−	0.2+
1997 05 03	691	0.6−	0.2−	1999 11 17	704	1.2+	0.1−	2000 01 05	704	1.1−	0.5−
1997 05 03	691	0.3−	0.4−	1999 11 17	704	0.1−	0.1+	2000 01 06	704	0.4+	0.0
1999 11 04	704	0.1−	0.1+	1999 12 08	704	0.4−	0.1−	2000 01 06	704	0.2+	0.3−
1999 11 04	704	0.4+	0.1+	1999 12 08	704	0.1−	0.3+	2000 01 06	704	0.2+	0.8+
1999 11 04	704	0.6−	0.9−	1999 12 08	704	0.2+	0.5+	2000 01 06	704	0.1+	0.5+
1999 11 04	704	0.7+	1.0−	1999 12 08	704	0.7−	0.5+				
1999 11 04	704	0.9−	0.2+	1999 12 14	704	0.2+	0.2−				

1999 XH₁₅₈ = 1992 EB₃₂ = 1998 QU₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	118.10234		(2000.0)	P		Q	
<i>n</i>	0.21685543	<i>ω</i>	127.84893	+0.81439084		+0.58002297	
<i>a</i>	2.7438214	<i>Ω</i>	196.72449	−0.55055018		+0.76216747	
<i>e</i>	0.0996839	<i>i</i>	3.67870	−0.18347221		+0.28753103	
<i>P</i>	4.54	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1992 03 01	809	0.5−	1.6+	1998 08 23	704	1.2+	1.2−	1999 12 14	704	0.1−	0.0
1992 03 03	809	0.2+	0.9−	1999 12 05	120	0.2+	0.3+	1999 12 14	704	0.2+	0.1+
1992 03 06	809	0.3+	0.7−	1999 12 05	120	0.1−	0.2+	1999 12 14	704	0.2−	1.0−
1998 08 17	704	0.5−	0.2+	1999 12 08	704	0.3−	1.1+	1999 12 14	704	0.4−	0.5−
1998 08 17	704	0.8−	0.7−	1999 12 08	704	0.1+	0.1−	2000 01 05	704	0.7−	0.2+
1998 08 17	704	0.1−	1.0+	1999 12 08	704	0.0	0.5+	2000 01 05	704	0.4−	0.2+
1998 08 17	704	0.3−	0.1−	1999 12 08	704	0.1+	0.3−	2000 01 05	704	1.2−	0.5−
1998 08 23	704	0.9+	0.8+	1999 12 13	120	1.8+	0.3−	2000 01 06	704	0.2+	0.7−
1998 08 23	704	0.2+	0.3+	1999 12 13	120	1.9+	0.0	2000 01 06	704	0.3−	0.4−
1998 08 23	704	0.4−	0.5−	1999 12 14	704	0.5+	0.6+	2000 01 06	704	1.6−	0.3+

1999 XA₁₅₉ = 1998 RN₄₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	312.26928		(2000.0)	P		Q	
<i>n</i>	0.22241909	<i>ω</i>	41.90743	−0.91316833		−0.39563924	
<i>a</i>	2.6978720	<i>Ω</i>	114.54097	+0.33947564		−0.87128216	
<i>e</i>	0.0323623	<i>i</i>	6.18110	+0.22556571		−0.29040831	
<i>P</i>	4.43	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

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1993 07 20	809	0.7+	0.5+	1999 12 08	704	0.4+	0.9+	2000 01 05	704	0.2-	0.6-
1993 07 20	809	0.2-	1.3+	1999 12 14	704	0.1+	0.2+	2000 01 05	704	0.1+	1.3-
1993 07 20	809	0.2-	1.4+	1999 12 14	704	0.4-	0.2+	2000 01 06	704	0.6-	0.6-
1998 09 14	704	1.0+	0.0	1999 12 14	704	0.5+	0.7+	2000 01 06	704	0.1-	0.1-
1998 09 14	704	0.8-	0.5-	1999 12 14	704	0.1+	0.6-	2000 01 06	704	0.1-	1.0-
1998 09 14	704	0.2-	0.9-	1999 12 14	704	0.1-	0.2-				
1998 09 14	704	0.2+	0.7+	1999 12 16	704	0.0	0.1+				

1999 XQ₁₅₉ = 1998 MC₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27656921	ω	244.04264	+0.98506095	+0.12319400		
<i>a</i>	2.3331007	Ω	108.68694	-0.07282140	+0.93117865		
<i>e</i>	0.1348173	<i>i</i>	7.29750	-0.15605114	+0.34311743		
<i>P</i>	3.56	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 24	704	(0.8+ 3.4+)	1999 12 08	704	0.8-	0.5-	2000 01 05	704	0.1-	0.0
1998 06 24	704	0.5+ 0.3-	1999 12 08	704	0.7-	0.3-	2000 01 05	704	0.3-	0.2-
1998 06 24	704	0.1- 0.7-	1999 12 08	704	0.6+	0.1+	2000 01 05	704	0.3-	0.1+
1998 06 26	704	1.9+ 0.5-	1999 12 08	704	1.0+	0.0	2000 01 05	704	0.4+	0.4-
1998 06 26	704	0.8- 0.3-	1999 12 14	704	0.3+	0.0	2000 01 06	704	0.2+	0.2+
1998 06 26	704	0.8+ 0.1-	1999 12 14	704	0.3-	0.8+	2000 01 06	704	0.1+	0.2+
1998 06 26	704	1.4- 1.6+	1999 12 14	704	0.0	0.2+	2000 01 06	704	0.1+	0.1+
1998 06 26	704	0.8- 0.3+	1999 12 14	704	0.2+	1.0+				
1999 12 08	704	0.1- 1.0-	2000 01 05	704	0.2-	0.3-				

1999 XR₁₅₉ = 1998 QR₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21834585	ω	266.56795	+0.89996531	-0.42714719		
<i>a</i>	2.7313211	Ω	118.70221	+0.42896535	+0.83192085		
<i>e</i>	0.1225475	<i>i</i>	5.70697	+0.07778922	+0.35419342		
<i>P</i>	4.51	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 05 07	704	0.1-	0.9-	1998 08 23	704	0.3+	0.5+	1999 12 14	704	0.0	0.1-
1997 05 07	704	0.4-	0.0	1998 08 23	704	0.1-	0.4-	1999 12 14	704	0.3+	0.3-
1997 05 07	704	0.1+	0.3-	1998 08 23	704	0.6-	0.4-	2000 01 05	704	0.2+	0.3-
1997 05 07	704	(3.1- 0.3-)		1998 09 24	699	(0.5- 2.8+)		2000 01 05	704	1.1-	0.8+
1998 07 31	699	0.3+	0.4+	1998 09 24	699	(0.2- 2.7+)		2000 01 05	704	0.1+	0.3-
1998 07 31	699	0.6+	0.7+	1998 09 24	699	0.3-	1.3+	2000 01 05	704	0.9+	0.3-
1998 07 31	699	0.9+	0.9+	1999 12 08	704	0.2+	0.1+	2000 01 06	704	0.3+	0.5-
1998 08 17	704	0.5-	0.4-	1999 12 08	704	0.3-	0.1-	2000 01 06	704	0.2+	0.5-
1998 08 17	704	0.2-	0.2-	1999 12 08	704	0.2-	0.1-	2000 01 06	704	0.4+	1.1-
1998 08 17	704	0.1-	0.5-	1999 12 08	704	0.1+	0.2+	2000 01 07	704	0.0	0.5-
1998 08 17	704	0.0	0.6-	1999 12 08	704	0.3-	0.1+	2000 01 07	704	0.3-	0.2-
1998 08 17	704	0.5-	0.3-	1999 12 14	704	0.3+	0.5+	2000 01 07	704	0.1-	0.2-
1998 08 23	704	0.9+	1.2-	1999 12 14	704	0.3-	0.3+	2000 01 07	704	0.9+	0.8+
1998 08 23	704	0.3-	0.7+	1999 12 14	704	0.8-	0.3-	2000 01 07	704	0.2-	0.1+

1999 XU₁₅₉ = 1990 TB₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22952925	ω	210.89367	+0.03352523	-0.99510149		
<i>a</i>	2.6418654	Ω	237.33678	+0.93805062	+0.06343892		
<i>e</i>	0.1945238	<i>i</i>	6.34244	+0.34487256	-0.07581907		
<i>P</i>	4.29	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 10	033	0.5+	0.4+	1999 12 08	704	0.7-	0.1+	2000 01 05	704	0.2+	0.0
1990 10 11	033	0.6-	0.3+	1999 12 08	704	0.5-	0.2-	2000 01 05	704	0.5+	0.1+
1990 10 11	033	0.5+	0.1+	1999 12 14	704	0.3-	0.0	2000 01 05	704	0.7+	0.2-
1990 10 12	033	0.2-	0.3+	1999 12 14	704	0.4+	0.1+	2000 01 06	704	0.9-	0.3+
1990 10 13	033	0.2+	0.2-	1999 12 14	704	0.0	0.2+	2000 01 06	704	0.2+	0.4-

1990 10 14	033	0.4-	0.9-	1999 12 14	704	0.1-	0.1+	2000 01 06	704	0.1+	0.1-
1999 12 08	704	1.0+	0.5-	2000 01 05	704	1.0-	0.5-				
1999 12 08	704	0.2+	0.2+	2000 01 05	704	0.3+	0.7+				

1999 XB₁₆₀ = 1998 RD₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.20486907	ω	286.53425	-0.57787338	-0.81588385		
<i>a</i>	2.8498267	Ω	198.80823	+0.77034524	-0.53724425		
<i>e</i>	0.1934834	<i>i</i>	3.53830	+0.26950058	-0.21378063		
<i>P</i>	4.81	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	(2.3+ 0.3-)	1998 09 18	704	0.2+ 0.7+	1999 12 15	704	0.2- 0.1-
1998 08 17	704	1.0+ 0.6-	1998 09 18	704	0.4+ 0.9+	1999 12 15	704	0.1+ 0.0
1998 08 17	704	(2.9- 0.8-)	1999 12 08	704	0.3+ 0.8+	1999 12 15	704	0.0 0.3-
1998 08 17	704	0.0 0.8-	1999 12 08	704	0.2+ 0.1-	1999 12 15	704	0.2+ 0.7-
1998 08 17	704	0.2- 1.3-	1999 12 08	704	0.0 0.4+	2000 01 05	704	0.1+ 0.2+
1998 09 14	704	1.6- 0.2+	1999 12 08	704	0.0 0.2-	2000 01 05	704	0.2- 0.2+
1998 09 14	704	0.3+ 1.0-	1999 12 14	704	0.1- 1.0-	2000 01 05	704	0.2- 0.2+
1998 09 14	704	0.4+ 1.0+	1999 12 14	704	0.2+ 0.1-	2000 01 05	704	0.1- 0.2+
1998 09 14	704	0.4+ 0.0	1999 12 14	704	0.1- 0.1-	2000 01 05	704	0.1+ 0.2+
1998 09 18	704	0.4- 0.2+	1999 12 14	704	0.3- 0.3-	2000 01 06	704	0.3- 0.3+
1998 09 18	704	0.4- 0.3+	1999 12 14	704	0.3- 0.7-	2000 01 06	704	0.5+ 0.2+
1998 09 18	704	0.1- 0.5+	1999 12 15	704	0.4+ 0.1+	2000 01 06	704	0.3- 0.4+

1999 XE₁₆₀ = 1997 CF₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29370602	ω	239.58899	+0.99401592	-0.07657975		
<i>a</i>	2.2414419	Ω	124.69543	+0.09901849	+0.93280593		
<i>e</i>	0.1660570	<i>i</i>	5.43653	-0.04612695	+0.35214859		
<i>P</i>	3.36	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 02 04	566	0.4+	0.2+	1999 12 08	704	0.4-	0.2-	2000 01 05	704	0.2-	0.8-
1997 02 04	566	0.5+	0.3+	1999 12 08	704	0.3-	0.4-	2000 01 05	704	0.3-	0.4+
1997 02 04	566	0.3+	0.5+	1999 12 08	704	0.3+	0.1+	2000 01 05	704	0.4+	0.0
1997 02 06	566	0.5-	0.2-	1999 12 14	704	0.5-	0.3-	2000 01 05	704	0.1+	0.0
1997 02 06	566	0.3-	0.3-	1999 12 14	704	0.2-	0.4+	2000 01 06	704	0.3-	0.3+
1997 02 06	566	0.5-	0.5-	1999 12 14	704	0.1+	0.0	2000 01 06	704	0.3-	0.1-
1999 12 08	704	0.3-	0.3+	1999 12 14	704	2.0+	0.3+	2000 01 06	704	0.0	0.1+
1999 12 08	704	0.2-	0.1+	2000 01 05	704	0.3+	0.1-				

1999 XF₁₆₀ = 1995 UU₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28614208	ω	137.99394	+0.99726615	-0.04844615		
<i>a</i>	2.2807704	Ω	224.87710	+0.02626724	+0.93819110		
<i>e</i>	0.1829922	<i>i</i>	4.53553	+0.06906708	+0.34271042		
<i>P</i>	3.44	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 17	608	0.1-	0.5-	1999 12 08	704	0.2-	0.8-	2000 01 05	704	0.0	0.0
1995 10 17	608	0.6-	0.1-	1999 12 14	704	0.7+	0.1-	2000 01 07	704	0.2-	0.7+
1995 10 17	608	0.1-	0.1+	1999 12 14	704	0.5-	0.2+	2000 01 07	704	0.5+	0.4+
1995 10 17	608	0.0	0.2-	1999 12 14	704	0.2-	0.2+	2000 01 07	704	0.3+	0.5+
1995 10 18	608	0.2-	0.2-	2000 01 05	704	0.5-	0.2-	2000 01 07	704	0.1+	0.1+
1995 10 18	608	0.1+	0.8+	2000 01 05	704	1.0-	0.1+	2000 01 09	704	0.1+	0.5-
1999 12 08	704	0.0	1.3+	2000 01 05	704	1.0+	1.5-	2000 01 09	704	0.4-	0.1+
1999 12 08	704	0.0	0.9-	2000 01 05	704	0.0	0.5-	2000 01 09	704	0.6+	0.8+

1999 XL₁₆₀ = 1998 RQ₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	246.79368		(2000.0)	P		Q	
<i>n</i>	0.26514848	ω	107.71361	−0.58118730		+0.80902751	
<i>a</i>	2.3996245	Ω	126.42992	−0.78182744		−0.52521360	
<i>e</i>	0.0679678	<i>i</i>	6.25954	−0.22575913		−0.26386578	
<i>P</i>	3.72	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 23	704	0.8+	1.7−	1998 09 18	704	0.0	0.9+	2000 01 07	704	0.8−	0.5−
1998 08 23	704	0.7+	0.2−	1999 12 08	704	0.1+	0.2−	2000 01 07	704	0.2−	0.1−
1998 08 23	704	0.2+	1.7−	1999 12 08	704	0.8−	0.3+	2000 01 07	704	0.1+	0.1−
1998 08 23	704	1.0+	0.2−	1999 12 08	704	0.0	0.3−	2000 01 07	704	0.2−	0.3−
1998 08 23	704	1.6−	0.4+	1999 12 08	704	0.2+	1.2+	2000 01 07	704	0.0	0.4−
1998 08 30	699	0.1−	0.1+	1999 12 14	704	0.9+	0.3−	2000 01 07	704	0.3−	0.2−
1998 08 30	699	0.7−	0.7+	1999 12 14	704	0.4+	0.4+	2000 01 07	704	0.1+	0.1−
1998 08 30	699	0.1−	0.4+	1999 12 14	704	0.4+	1.1+	2000 01 07	704	0.4+	0.1−
1998 09 14	704	0.0	0.3−	2000 01 05	704	0.1+	0.0	2000 01 07	704	0.1+	0.1−
1998 09 14	704	0.3+	0.5+	2000 01 05	704	0.1−	0.0	2000 01 07	704	0.3+	0.1−
1998 09 14	704	0.8−	1.2+	2000 01 05	704	0.1−	0.0	2000 01 07	704	0.2+	0.2+
1998 09 14	704	0.0	0.6−	2000 01 05	704	0.5−	0.0	2000 01 07	704	0.2+	0.1+
1998 09 18	704	0.2+	0.3−	2000 01 05	704	0.3−	0.4−	2000 01 07	704	0.1+	0.5−
1998 09 18	704	0.3−	0.1+	2000 01 06	704	0.2−	0.4−	2000 01 07	704	0.6+	0.1+
1998 09 18	704	0.4+	0.1−	2000 01 06	704	0.4−	0.1−	2000 01 07	704	0.1+	0.1+
1998 09 18	704	0.1+	0.3+	2000 01 06	704	0.2−	0.2+				

1999 XR₁₆₀ = 1998 RY₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	62.39888		(2000.0)	P		Q	
<i>n</i>	0.18280450	ω	143.51632	+0.70870270		−0.68949134	
<i>a</i>	3.0747617	Ω	260.80191	+0.60618462		+0.70349935	
<i>e</i>	0.0774989	<i>i</i>	8.70923	+0.36094416		+0.17230889	
<i>P</i>	5.39	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 07 02	704	0.1−	0.0	1999 12 08	120	1.5+	0.4−	1999 12 14	704	0.1−	0.4−
1997 07 02	704	0.8+	0.0	1999 12 08	704	0.3−	0.4+	2000 01 05	704	0.0	0.2−
1997 07 02	704	0.0	1.2−	1999 12 08	704	0.2+	0.4+	2000 01 05	704	0.1−	0.2−
1997 07 02	704	0.2+	0.3−	1999 12 08	704	0.3−	0.8+	2000 01 05	704	0.4+	0.2−
1997 07 02	704	0.7−	0.1+	1999 12 08	704	0.3−	0.5+	2000 01 05	704	1.9+	0.9−
1998 09 14	703	0.3+	0.1−	1999 12 08	704	0.0	0.2+	2000 01 06	704	0.2−	0.4−
1998 09 14	703	0.8+	0.2+	1999 12 14	704	0.4−	0.4−	2000 01 06	704	0.2−	0.5−
1998 09 14	703	0.0	0.1−	1999 12 14	704	0.3−	0.2−	2000 01 06	704	0.3+	0.7−
1998 09 15	703	0.9−	0.2−	1999 12 14	704	0.3−	0.2+				
1999 12 08	120	1.6−	1.6+	1999 12 14	704	0.5−	0.6−				

1999 XT₁₆₀ = 1977 DL₆ = 1996 RD₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.98574		(2000.0)	P		Q	
<i>n</i>	0.08097931	ω	277.53873	+0.63817893		−0.76227130	
<i>a</i>	5.2911898	Ω	132.21819	+0.75130793		+0.58597527	
<i>e</i>	0.0863240	<i>i</i>	8.38753	+0.16811914		+0.27490989	
<i>P</i>	12.17	<i>H</i>	11.2	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1977 02 19	381	0.2+	0.3+	1998 12 16	699	0.5−	1.9+	1999 12 15	704	1.0+	0.1−
1977 02 19	381	0.2−	0.1−	1998 12 22	704	0.0	0.2+	1999 12 15	704	0.2+	0.7−
1996 09 15	809	0.7−	0.6−	1998 12 22	704	1.5+	0.4−	1999 12 15	704	1.2+	1.3−
1996 09 17	809	0.7+	0.2+	1998 12 22	704	0.7+	0.6−	2000 01 05	704	0.3−	0.9+
1996 10 07	809	0.3+	0.3+	1998 12 22	704	1.3−	0.8−	2000 01 05	704	0.1+	0.2−
1997 10 27	809	0.3−	0.7−	1999 12 08	704	0.0	0.3+	2000 01 05	704	0.4+	0.5+
1997 10 27	809	0.0	0.2−	1999 12 08	704	0.0	0.1+	2000 01 05	704	0.1+	0.5−
1997 11 07	809	0.0	0.2−	1999 12 08	704	0.2−	0.1+	2000 01 05	704	0.1−	0.2−
1997 11 07	809	0.1−	0.4+	1999 12 08	704	0.7−	0.1+	2000 01 06	704	0.6+	0.2+
1998 12 15	704	0.3+	0.1−	1999 12 14	704	0.2+	0.1+	2000 01 06	704	0.1+	0.4+

1998 12 15	704	1.9−	0.0	1999 12 14	704	0.2+	0.2+	2000 01 06	704	0.0	0.2−
1998 12 15	704	0.7+	0.2+	1999 12 14	704	0.3−	0.0	2000 01 07	704	0.7−	0.2+
1998 12 15	704	(3.5−	0.5+)	1999 12 14	704	1.1−	0.4−	2000 01 07	704	0.1+	0.2−
1998 12 16	699	0.6+	0.9+	1999 12 14	704	0.1+	0.7+	2000 01 07	704	0.1+	0.2−
1998 12 16	699	0.3+	0.3+	1999 12 15	704	0.2−	0.3−	2000 01 07	704	1.2−	0.8−

1999 XW₁₆₀ = 1998 RJ₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	62.75714		(2000.0)	P		Q	
<i>n</i>	0.17309120	ω	154.20668	+0.83110238		−0.55196826	
<i>a</i>	3.1887420	Ω	239.46109	+0.49563068		+0.79048829	
<i>e</i>	0.1640588	<i>i</i>	4.51647	+0.25222821		+0.26544169	
<i>P</i>	5.69	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.6−	0.2−	1998 09 18	704	0.6−	0.9+	1999 12 14	704	0.5+	0.6−
1998 08 17	704	(1.2+	2.7−)	1998 09 18	704	1.2+	0.7+	1999 12 14	704	0.7+	0.5−
1998 08 17	704	1.0+	0.9−	1998 09 18	704	1.3+	0.5+	1999 12 14	704	0.6−	0.2−
1998 08 17	704	0.4−	0.6+	1998 09 18	704	0.7+	0.5+	1999 12 14	704	0.1+	0.8−
1998 08 17	704	(2.3−	2.3+)	1998 09 18	704	0.6+	0.4+	2000 01 05	704	0.3+	0.3+
1998 09 14	704	0.3−	0.0	1998 09 27	699	0.1−	0.2−	2000 01 05	704	0.7−	0.9+
1998 09 14	704	0.5−	0.8−	1998 09 27	699	0.8+	1.3−	2000 01 05	704	0.4+	0.5−
1998 09 14	704	1.2−	0.2−	1998 09 27	699	0.1+	0.9−	2000 01 05	704	0.6+	0.1−
1998 09 14	704	0.7−	0.7+	1999 12 08	704	0.7−	1.1+	2000 01 05	704	1.1−	0.7−
1998 09 14	704	(2.3−	0.2−)	1999 12 08	704	0.5+	0.3+	2000 01 06	704	0.5−	0.1+
1998 09 16	699	0.1+	0.1−	1999 12 08	704	0.3+	1.2+	2000 01 06	704	0.2+	0.2+
1998 09 16	699	0.9−	0.1−	1999 12 08	704	0.5−	0.2−	2000 01 06	704	0.1−	0.5−
1998 09 16	699	0.3−	0.2+	1999 12 14	704	0.6+	0.1+				

1999 XY₁₆₀ = 1998 SZ₁₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	279.25125		(2000.0)	P		Q	
<i>n</i>	0.27884436	ω	92.01622	−0.76490347		+0.63886279	
<i>a</i>	2.3203926	Ω	127.70210	−0.62460239		−0.70437382	
<i>e</i>	0.1777201	<i>i</i>	5.97230	−0.15746279		−0.30937332	
<i>P</i>	3.53	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.9−	0.6−	1999 12 08	704	0.2+	0.2+	2000 01 05	704	0.3−	0.2+
1998 09 26	704	0.6−	0.3+	1999 12 08	704	0.4−	0.2+	2000 01 05	704	0.4−	0.2+
1998 09 26	704	0.1+	0.4−	1999 12 08	704	0.6−	0.6+	2000 01 05	704	0.6+	0.0
1998 09 26	704	0.6+	1.0+	1999 12 08	704	1.0+	0.5+	2000 01 05	704	0.1−	0.5+
1998 09 27	704	0.1+	0.7+	1999 12 14	704	0.3+	0.2+	2000 01 07	704	0.7+	0.5+
1998 09 27	704	1.5+	0.2−	1999 12 14	704	0.9+	0.4+	2000 01 07	704	0.6+	0.0
1998 09 27	704	1.0+	1.7−	1999 12 14	704	1.0−	1.4−	2000 01 07	704	0.4−	0.9−
1998 09 27	704	0.8−	0.7+	1999 12 14	704	0.2−	1.2−				
1998 09 27	704	0.9−	0.3+	2000 01 05	704	0.8−	0.0				

1999 XJ₁₆₁ = 1998 RQ₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	108.11805		(2000.0)	P		Q	
<i>n</i>	0.22662309	ω	29.85766	+0.97785852		+0.15651088	
<i>a</i>	2.6644032	Ω	320.36681	−0.20734816		+0.81432389	
<i>e</i>	0.1913509	<i>i</i>	12.57854	+0.02827476		+0.55891050	
<i>P</i>	4.35	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 13	699	0.2+	0.5−	1999 12 12	704	0.2+	0.4−	1999 12 15	704	0.1+	0.1−
1998 09 13	699	0.2−	0.4−	1999 12 12	704	0.1+	0.3−	1999 12 15	704	0.2+	0.1+
1998 09 13	699	0.3−	0.3+	1999 12 12	704	0.4−	0.1−	1999 12 15	704	0.2−	0.4−
1998 09 22	699	0.4+	0.3+	1999 12 12	704	0.1−	0.2−	2000 01 02	704	0.4+	0.1+
1998 09 22	699	0.0	0.1+	1999 12 12	704	0.5−	0.1+	2000 01 02	704	0.4−	0.6−
1998 09 22	699	0.1+	0.1+	1999 12 12	704	0.4−	0.0	2000 01 02	704	0.1+	0.4−
1999 12 03	699	0.1+	0.1−	1999 12 14	704	0.3+	0.2−	2000 01 08	704	0.2−	0.5+
1999 12 03	699	0.1+	0.9+	1999 12 14	704	0.1+	0.5+	2000 01 08	704	0.0	0.1−

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1999 12 03	699	1.0+	1.3+	1999 12 14	704	0.2-	0.5-	2000 01 08	704	0.1-	0.1-
1999 12 12	704	0.0	0.0	1999 12 14	704	0.0	0.3+	2000 01 08	704	0.1-	0.2-
1999 12 12	704	0.2-	0.3-	1999 12 14	704	0.3-	0.3-	2000 01 08	704	0.1+	0.1-
1999 12 12	704	0.2+	0.3-	1999 12 15	704	0.3+	1.1+				
1999 12 12	704	0.2+	0.4-	1999 12 15	704	0.1-	0.2+				

1999 XN₁₆₁ = 1978 UK₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	13.56168						
<i>n</i>	0.23884370	ω	122.80135	+0.17876185	-0.98341767		
<i>a</i>	2.5727259	Ω	316.86755	+0.88710019	+0.17453218		
<i>e</i>	0.0682213	<i>i</i>	2.56188	+0.42555546	+0.04927683		
<i>P</i>	4.13	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 10 27	675	0.5+	0.7+	1999 12 13	704	0.3-	0.0	1999 12 15	704	0.6-	1.3+
1978 10 28	675	1.8-	1.1-	1999 12 13	704	0.3-	0.3+	2000 01 03	704	0.5-	0.3-
1978 10 29	675	1.0+	1.0+	1999 12 13	704	0.7+	0.1+	2000 01 03	704	0.6-	0.1+
1999 11 14	704	1.1-	0.8-	1999 12 13	704	0.3+	0.4+	2000 01 03	704	0.4-	0.0
1999 11 14	704	0.0	0.2-	1999 12 13	704	0.9+	0.2+	2000 01 03	704	0.4+	0.3+
1999 11 14	704	0.2+	0.5-	1999 12 14	704	0.1+	0.3+	2000 01 03	704	0.4+	0.3+
1999 11 16	704	0.4-	1.1-	1999 12 14	704	0.4-	0.3+	2000 01 04	704	0.0	0.2+
1999 11 16	704	0.8+	0.2-	1999 12 14	704	0.0	0.0	2000 01 04	704	0.2+	0.1-
1999 11 16	704	0.1-	0.1+	1999 12 15	704	0.0	0.1-	2000 01 04	704	0.1+	1.1-
1999 11 16	704	0.5+	1.2-	1999 12 15	704	0.3+	0.9+	2000 01 04	704	0.1+	0.4-
1999 11 16	704	0.3+	0.3-	1999 12 15	704	1.3-	0.3+	2000 01 04	704	0.8+	0.4+

1999 XU₁₆₁ = 1996 XX₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	210.23459						
<i>n</i>	0.29670123	ω	289.47940	-0.31089770	+0.94904674		
<i>a</i>	2.2263314	Ω	322.28377	-0.83739451	-0.29914939		
<i>e</i>	0.1193421	<i>i</i>	4.82974	-0.44956985	-0.09909560		
<i>P</i>	3.32	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 12 08	691	0.2-	0.3-	1998 07 03	699	0.1+	0.3-	1999 12 15	704	0.4-	0.5+
1996 12 08	691	0.3-	0.0	1998 07 03	699	0.0	0.8+	1999 12 15	704	0.7+	0.4+
1996 12 08	691	0.2-	0.1+	1999 12 13	704	0.3+	0.1+	1999 12 15	704	0.4+	0.0
1996 12 13	691	0.0	0.4+	1999 12 13	704	0.9-	0.4-	1999 12 15	704	0.1+	1.1+
1996 12 13	691	0.4+	0.2-	1999 12 13	704	0.1+	0.1+	1999 12 15	704	0.1+	1.0+
1996 12 13	691	0.2+	0.2-	1999 12 13	704	0.0	0.1+	2000 01 03	704	0.3-	0.2-
1998 06 26	704	0.3+	0.1-	1999 12 13	704	0.3-	0.2+	2000 01 03	704	0.3-	0.1-
1998 06 26	704	0.8+	0.4-	1999 12 14	704	0.6+	0.8-	2000 01 03	704	0.4+	1.0+
1998 06 26	704	0.2+	0.0	1999 12 14	704	0.4+	0.8-	2000 01 04	704	0.1-	0.4-
1998 06 26	704	0.2-	0.1+	1999 12 14	704	0.5-	0.6-	2000 01 04	704	0.3-	0.7-
1998 07 03	699	1.1-	0.4-	1999 12 14	704	0.4-	0.7-	2000 01 04	704	0.3+	0.2+

1999 XG₁₆₃ = 1995 UZ₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	331.85930						
<i>n</i>	0.27331208	ω	49.61054	-0.95667976	-0.28574874		
<i>a</i>	2.3516002	Ω	113.71994	+0.24524352	-0.89418501		
<i>e</i>	0.1505759	<i>i</i>	3.49306	+0.15690584	-0.34464594		
<i>P</i>	3.61	<i>H</i>	16.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 25	691	0.2+	0.3-	1999 12 15	691	0.6+	0.1+	2000 01 07	704	0.4-	0.2-
1995 10 25	691	0.0	0.2-	1999 12 15	691	0.5+	0.1+	2000 01 07	704	0.2-	0.5+
1995 10 25	691	0.3-	0.0	1999 12 15	691	0.8+	0.1-	2000 01 07	704	0.1+	0.2+
1995 10 28	691	0.3-	0.2-	2000 01 05	704	0.2+	0.1+	2000 01 09	704	0.6+	0.2+
1995 10 28	691	0.4+	0.5+	2000 01 05	704	0.1-	0.2-	2000 01 09	704	0.2-	0.3-
1995 10 28	691	0.0	0.1-	2000 01 05	704	0.0	0.3-	2000 01 09	704	0.1-	0.2+
1999 12 08	691	0.4-	0.5+	2000 01 05	704	0.4-	0.7-	2000 01 09	704	0.5+	0.1-

1999 12 08	691	0.1-	0.0	2000 01 05	704	0.2-	0.0
1999 12 08	691	0.9-	0.5+	2000 01 07	704	0.4-	0.4-

1999 XW₁₆₃ = 1998 QG₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	30.15676						
<i>n</i>	0.23881449	ω	147.00480	-0.07771967	-0.98575407		
<i>a</i>	2.5729357	Ω	307.01296	+0.86946896	+0.00619052		
<i>e</i>	0.1819392	<i>i</i>	10.76608	+0.48783540	-0.16807911		
<i>P</i>	4.13	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.6+	0.7-	1999 12 08	703	0.1+	0.2+	1999 12 15	704	0.1+	0.6+
1998 08 17	704	0.5-	1.0-	1999 12 08	704	0.7-	0.2-	1999 12 15	704	0.3-	0.8-
1998 08 17	704	1.6+	0.4+	1999 12 08	703	0.2-	0.3+	2000 01 04	704	0.2+	0.5-
1998 08 17	704	0.7+	1.2+	1999 12 08	704	0.2+	0.3-	2000 01 04	704	0.2-	0.5-
1998 08 17	704	0.2+	0.2-	1999 12 08	703	0.7+	0.4+	2000 01 04	704	0.3-	0.9-
1998 08 23	704	0.6-	0.6-	1999 12 08	704	0.2+	0.9-	2000 01 04	704	0.2-	0.7-
1998 08 23	704	0.4+	0.9-	1999 12 08	703	0.6+	0.5-	2000 01 04	704	0.2-	0.5-
1998 08 23	704	1.2-	0.6+	1999 12 08	704	0.1-	0.5-	2000 01 05	699	0.1-	0.9+
1998 08 23	704	1.1+	1.7+	1999 12 15	703	0.1+	0.1+	2000 01 05	699	0.2-	1.1+
1998 08 23	704	1.8-	1.2-	1999 12 15	703	0.4+	0.1+	2000 01 05	699	0.7+	0.6+
1999 11 11	703	0.1-	0.5+	1999 12 15	704	0.1+	0.9+	2000 01 06	704	0.8-	0.6-
1999 11 11	703	0.9+	0.1+	1999 12 15	703	0.4+	0.3+	2000 01 06	704	0.4-	0.4-
1999 11 11	703	0.8-	0.1-	1999 12 15	703	0.3+	0.5+	2000 01 06	704	0.5-	0.4-
1999 11 11	703	0.3+	0.5+	1999 12 15	704	0.1-	0.4+	2000 01 06	704	0.2-	0.4-
1999 12 08	704	0.7-	0.2+	1999 12 15	704	0.9+	0.3+	2000 01 06	704	0.0	0.2-

1999 XB₁₆₄ = 1997 GO₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	16.80487						
<i>n</i>	0.27142821	ω	280.69044	+0.09137375	-0.99575637		
<i>a</i>	2.3624687	Ω	164.05456	+0.92852801	+0.08121769		
<i>e</i>	0.1733332	<i>i</i>	2.28617	+0.35984242	+0.04327753		
<i>P</i>	3.63	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	0.2+	0.9-	1999 12 08	704	0.0	0.3-	2000 01 05	704	0.1+	1.1+
1997 04 03	704	0.3-	0.4+	1999 12 15	704	0.2-	0.4+	2000 01 05	704	0.3+	0.3+
1997 04 07	704	0.1-	0.5+	1999 12 15	704	0.2-	0.2-	2000 01 05	704	0.4-	0.9-
1997 04 07	704	0.2+	0.0	1999 12 15	704	0.3-	0.0	2000 01 06	704	0.8+	0.4+
1999 12 08	704	0.8+	0.2+	1999 12 15	704	0.0	0.8+	2000 01 06	704	0.2+	0.7-
1999 12 08	704	0.3-	0.4-	1999 12 15	704	0.0	0.3+	2000 01 06	704	0.6-	0.9-

1999 XE₁₆₄ = 1977 XH₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams				Williams			
(2000.0)				(2000.0)			
P				Q			
<i>M</i>	38.00296						
<i>n</i>	0.22677155	ω	27.89974	+0.16246346	-0.98595078		
<i>a</i>	2.6632402	Ω	52.77607	+0.89597771	+0.13093115		
<i>e</i>	0.2634623	<i>i</i>	2.79410	+0.41331534	+0.10372124		
<i>P</i>	4.35	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 12 07	675	0.6+	0.7-	1999 12 08	704

1999 XJ₁₆₄ = 1990 JN

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	300.20499		(2000.0)			Williams				<i>P</i>	<i>Q</i>
<i>n</i>	0.27628216	ω	282.75289	−0.71719884	+0.60843111						
<i>a</i>	2.3347165	Ω	295.79182	−0.39652207	−0.75723242						
<i>e</i>	0.2546831	<i>i</i>	22.16978	−0.57305853	−0.23750927						
<i>P</i>	3.57	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1990 05 03	413	0.2−	0.5−	1999 12 15	704	0.7−	0.6+	2000 01 04	704	0.1−	1.5−
1990 05 04	413	0.1+	0.5+	1999 12 15	704	0.7+	0.1−	2000 01 04	704	0.1−	0.5−
1999 12 08	704	0.3+	0.4+	1999 12 15	704	0.6−	0.4−	2000 01 04	704	0.2+	0.4+
1999 12 08	704	0.2+	0.7−	1999 12 18	699	0.6+	0.8+	2000 01 04	704	0.0	0.1+
1999 12 08	704	0.8+	1.0−	1999 12 18	699	0.4+	1.1+	2000 01 04	704	0.2+	0.0
1999 12 08	704	0.7−	0.1−	1999 12 18	699	0.4−	0.1+	2000 01 06	704	0.1+	0.2+
1999 12 08	704	0.1−	0.2−	1999 12 30	699	0.6+	0.7+	2000 01 06	704	0.2−	0.6−
1999 12 15	704	0.3−	0.8−	1999 12 30	699	0.8−	1.0+	2000 01 06	704	0.1+	0.5−
1999 12 15	704	0.2−	0.2−	1999 12 30	699	0.4+	1.9+	2000 01 06	704	0.4−	0.7−

1999 XL₁₆₄ = 1998 ML₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	97.68197		(2000.0)			Williams				<i>P</i>	<i>Q</i>
<i>n</i>	0.27795103	ω	279.20937	+0.98517324	−0.08607310						
<i>a</i>	2.3253617	Ω	85.83057	+0.13976126	+0.90434300						
<i>e</i>	0.2462639	<i>i</i>	8.55753	−0.09950118	+0.41803728						
<i>P</i>	3.55	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	5				

Residuals in seconds of arc

1998 06 24	704	0.1−	0.0	1999 11 11	703	0.6−	0.1+	1999 12 15	704	1.1−	0.2+
1998 06 24	704	1.8+	1.0−	1999 11 11	703	0.2−	0.0	2000 01 03	704	0.2+	0.2−
1998 06 24	704	0.1+	1.0+	1999 12 08	704	0.3+	0.4−	2000 01 03	704	0.3+	0.8−
1998 06 24	704	0.5−	1.6+	1999 12 08	704	0.8+	0.1−	2000 01 03	704	0.0	0.4−
1998 06 26	704	0.3+	0.7+	1999 12 08	704	1.0−	1.0+	2000 01 03	704	0.6−	0.8−
1998 06 26	704	0.3−	0.6+	1999 12 08	704	1.1+	0.1−	2000 01 03	704	0.1−	0.5−
1998 06 26	704	0.9−	0.9+	1999 12 08	704	0.2+	0.8+	2000 01 04	704	0.1+	0.1+
1998 06 26	704	0.5−	1.4−	1999 12 15	704	0.3+	0.6+	2000 01 04	704	0.3−	0.2−
1998 06 26	704	0.1+	1.9−	1999 12 15	704	0.5+	0.6+	2000 01 04	704	0.1+	0.1−
1999 11 11	703	0.3−	0.2+	1999 12 15	704	0.3+	0.4+	2000 01 04	704	0.2−	0.1+
1999 11 11	703	0.1−	0.0	1999 12 15	704	0.1+	0.0	2000 01 04	704	0.1+	0.3+

1999 XW₁₆₄ = 1995 XN₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	31.39157		(2000.0)			Williams				<i>P</i>	<i>Q</i>
<i>n</i>	0.26738104	ω	1.45707	−0.14304761	−0.97931485						
<i>a</i>	2.3862483	Ω	96.78243	+0.90658259	−0.18766231						
<i>e</i>	0.1745357	<i>i</i>	8.28611	+0.39704582	+0.07566565						
<i>P</i>	3.69	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1995 12 14	691	0.1−	0.2+	1999 12 08	704	0.2+	0.4+	2000 01 04	704	0.2−	0.0
1995 12 14	691	0.2−	0.3+	1999 12 08	704	0.1−	0.0	2000 01 06	704	0.4+	0.0
1995 12 14	691	0.2+	0.2−	1999 12 08	704	0.1+	0.3−	2000 01 06	704	0.0	0.3−
1995 12 20	691	0.1−	0.2+	1999 12 15	704	0.6−	0.3−	2000 01 06	704	0.3+	0.3−
1995 12 20	691	0.1+	0.0	1999 12 15	704	0.2−	0.4+	2000 01 06	699	0.1+	1.0+
1995 12 20	691	0.0	0.1−	1999 12 15	704	0.5+	0.7−	2000 01 06	704	0.5+	0.5−
1995 12 27	691	0.1−	0.1−	1999 12 15	704	0.2+	0.2+	2000 01 06	704	0.0	0.0
1995 12 27	691	0.2+	0.1−	2000 01 04	704	0.0	0.1−	2000 01 06	699	0.1−	0.1+
1995 12 27	691	0.1−	0.1−	2000 01 04	704	0.2−	0.0	2000 01 06	699	0.6−	0.7+
1999 12 08	704	0.5−	0.4−	2000 01 04	704	0.1−	0.0				
1999 12 08	704	0.4+	0.1−	2000 01 04	704	0.1−	0.2+				

1999 XY₁₆₄ = 1998 RL₅₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	0.71354		(2000.0)			Williams				<i>P</i>	<i>Q</i>
<i>n</i>	0.26023307	ω	120.68976	−0.78910460	−0.61387299						
<i>a</i>	2.4297470	Ω	21.46417	+0.54126398	−0.71165105						
<i>e</i>	0.1191045	<i>i</i>	3.41055	+0.29042594	−0.34163246						
<i>P</i>	3.79	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				

Residuals in seconds of arc

1998 09 14	704	0.0	0.2+	1998 09 27	704	0.2−	1.7−	2000 01 04	704	1.0−	0.7−
1998 09 14	704	0.0	0.4−	1999 11 16	704	0.9−	0.4+	2000 01 04	704	0.4−	0.3−
1998 09 14	704	0.2+	0.6−	1999 11 16	704	0.1+	0.1−	2000 01 04	704	0.4+	0.9+
1998 09 17	699	0.7−	0.8+	1999 11 16	704	0.2−	1.2−	2000 01 04	704	0.1−	1.1+
1998 09 17	699	0.5+	0.2+	1999 11 16	704	0.2−	0.3−	2000 01 06	704	0.1+	0.4−
1998 09 17	699	0.5−	0.3+	1999 12 04	703	1.3+	1.4+	2000 01 06	704	0.1−	0.5−
1998 09 18	704	0.2−	0.2−	1999 12 04	703	0.1−	0.1+	2000 01 06	704	0.3−	0.2+
1998 09 18	704	0.5+	0.7−	1999 12 04	703	1.6−	1.1−	2000 01 06	699	0.3+	0.4+
1998 09 18	704	0.3+	1.2−	1999 12 04	703	0.7+	1.1+	2000 01 06	704	0.4−	0.1+
1998 09 18	704	0.6+	1.6−	1999 12 08	704	0.2−	0.5−	2000 01 06	704	0.3−	0.2+
1998 09 18	704	(0.5−	2.1−)	1999 12 08	704	0.1+	0.0	2000 01 06	699	0.1+	0.3+
1998 09 26	704	1.7−	0.3+	1999 12 08	704	0.4+	0.3−	2000 01 06	699	0.4+	0.3+
1998 09 26	704	1.1−	0.5+	1999 12 08	704	0.8+	0.7+	2000 01 08	704	0.1−	0.4−
1998 09 26	704	0.6+	0.9+	1999 12 08	704	0.4+	0.0	2000 01 08	704	0.6+	0.0
1998 09 26	704	1.5+	1.2+	1999 12 15	704	0.0	0.4+	2000 01 08	704	0.2−	0.2+
1998 09 27	704	0.3−	0.1+	1999 12 15	704	0.1−	0.3−	2000 01 08	704	0.2+	0.3−
1998 09 27	704	0.4+	0.7+	1999 12 15	704	0.2+	0.8−	2000 01 08	704	0.1+	0.0
1998 09 27	704	1.7+	1.1+	1999 12 15	704	0.3+	0.4−				
1998 09 27	704	1.5−	0.1+	2000 01 04	704	0.2−	0.5−				

1999 XD₁₆₅ = 1996 DM₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	49.67779		(2000.0)			Williams				<i>P</i>	<i>Q</i>
<i>n</i>	0.24488362	ω	107.71903	+0.30722331	−0.94226718						
<i>a</i>	2.5302468	Ω	323.51988	+0.76596817	+0.32791757						
<i>e</i>	0.2155490	<i>i</i>	12.94782	+0.56471815	+0.06784274						
<i>P</i>	4.02	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3				

Residuals in seconds of arc

1996 02 16	010	0.1+	0.6+	1998 08 17	704	(2.9−	2.1−)	1999 12 15	704	0.1+	1.1−
1996 02 16	010	0.2−	0.3+	1999 12 08	704	0.1−	0.3+	2000 01 04	704	0.4−	0.3−
1996 02 16	010	0.2−	0.6+	1999 12 08	704	0.3+	0.4+	2000 01 04	704	0.4−	0.5−
1996 02 17	010	(2.6+	2.5+)	1999 12 08	704	0.3−	0.2+	2000 01 04	704	0.1−	0.5−
1996 02 17	010	(1.2+	2.9+)	1999 12 08	704	0.4+	0.9+	2000 01 04	704	0.1−	0.7−
1996 02 17	010	(2.2+	3.1+)	1999 12 08	704	0.9+	0.4−	2000 01 04	704	0.2−	0.9−
1996 02 20	566	0.3+	0.5−	1999 12 09	703	1.4+	0.2+	2000 01 06	704	0.1+	0.3−
1996 02 20	566	0.2+	0.3−	1999 12 09	703	0.4−	1.2+	2000 01 06	704	0.4−	0.5−
1996 02 20	566	0.1+	0.2−	1999 12 09	703	0.5−	1.3+	2000 01 06	704	0.7−	0.5−
1998 08 17	704	0.1+	0.5−	1999 12 15	704	0.8−	0.1−	2000 01 06	704	0.6−	0.5−
1998 08 17	704	0.8+	1.1−	1999 12 15	704	0.4−	0.7+	2000 01 06	704	0.3+	0.7−
1998 08 17	704	(2.6+	2.3−)	1999 12 15	704	0.9+	0.5+				

1999 XE₁₆₅ = 1987 SU₂₅ = 1987 SN₁₅ = 1998 RS₃₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	89.03315		(2000.0)			P		Q	
<i>n</i>	0.26276009	ω	43.02645	+0.67801805	−0.73501154				
<i>a</i>	2.4141437	Ω	4.30219	+0.64635839	+0.59162415				
<i>e</i>	0.0648542	<i>i</i>	5.38438	+0.35001765	+0.33126861				
<i>P</i>	3.75	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2		

Residuals in seconds of arc

1987 09 24	095	(4.1+	0.6−)	1998 09 18	704	0.3−	0.5+	1999 12 04	703	0.2+	0.5+
1987 09 25	095	0.4−	0.9+	1998 10 20	699	0.2+	1.1−	1999 12 08	704	0.0	0.3−
1998 06 29	704	0.0	0.3+	1998 10 20	699	0.2−	0.5−	1999 12 08	704	0.3+	0.8+
1998 06 29	704	0.7−	1.3+	1998 10 20	699	0.0	0.9−	1999 12 08	704	0.3+	0.1+
1998 06 29	704	(2.7−	0.7+)	1998 11 15	699	0.3+	0.1+	1999 12 08	704	0.2−	0.6−

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1998 06 29	704	0.3+	1.3-	1998 11 15	699	0.3-	0.4+	1999 12 08	704	0.9+	0.3-
1998 06 29	704	(4.3-	1.1-)	1998 11 15	699	0.4-	0.0	1999 12 15	704	0.1-	0.6-
1998 08 23	704	0.6-	0.5-	1998 11 25	699	0.5-	0.0	1999 12 15	704	0.1-	0.6+
1998 08 23	704	0.6+	0.9-	1998 11 25	699	0.2+	0.2-	1999 12 15	704	0.5+	0.7-
1998 08 23	704	0.1-	1.3-	1998 11 25	699	0.6-	0.1-	2000 01 04	704	0.5+	0.7-
1998 08 23	704	0.9-	0.7+	1998 12 09	704	1.2+	0.9-	2000 01 04	704	0.1+	0.0
1998 08 23	704	(3.1-	0.3+)	1998 12 09	704	1.8+	0.8+	2000 01 04	704	0.2-	0.4-
1998 09 14	704	0.7+	0.4+	1998 12 09	704	1.3+	1.6-	2000 01 04	704	0.2+	0.2-
1998 09 14	704	0.2-	0.2+	1998 12 09	704	(2.8-	2.2-)	2000 01 04	704	0.4-	0.4+
1998 09 14	704	0.1+	0.1+	1999 11 08	699	0.3-	0.5+	2000 01 06	704	0.1+	0.7-
1998 09 14	704	0.8-	0.1+	1999 11 08	699	0.0	0.2-	2000 01 06	704	0.4+	0.0
1998 09 18	704	0.2+	0.6+	1999 11 08	699	0.6-	0.4+	2000 01 06	704	0.3+	0.1+
1998 09 18	704	1.1+	0.6+	1999 12 04	703	0.6-	1.0+	2000 01 06	704	0.2-	0.1+
1998 09 18	704	0.0	1.2+	1999 12 04	703	0.4-	0.7+	2000 01 06	704	0.1-	0.2+
1998 09 18	704	1.1-	0.8+	1999 12 04	703	0.3-	0.7+				

1999 XJ₁₆₅ = 1998 RM₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	53.41569		(2000.0)	P		Q	
<i>n</i>	0.24010999	ω	111.13261	+0.23336175		-0.96491238	
<i>a</i>	2.5636726	Ω	324.67518	+0.79695277		+0.26070775	
<i>e</i>	0.1688382	<i>i</i>	12.01444	+0.55714323		+0.03123412	
<i>P</i>	4.10	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 26	699	0.4-	1.8+	1998 09 21	699	0.8-	0.8+	1999 12 15	704	0.8+	1.1+
1998 08 26	699	0.6-	1.5+	1998 09 21	699	1.0-	0.1+	1999 12 15	704	0.3+	1.4-
1998 08 26	699	0.4-	0.5+	1999 12 04	703	0.5-	0.5+	2000 01 04	704	0.1-	0.3+
1998 09 14	704	0.3+	0.8-	1999 12 04	703	1.0-	0.3-	2000 01 04	704	0.3+	0.1-
1998 09 14	704	1.2+	0.3+	1999 12 04	703	0.2+	0.4-	2000 01 04	704	0.2+	0.4-
1998 09 14	704	1.1+	0.7-	1999 12 04	703	0.5-	0.2+	2000 01 04	704	0.1+	0.0
1998 09 14	704	1.4+	0.2-	1999 12 08	704	0.4-	0.6-	2000 01 04	704	0.4-	0.5-
1998 09 14	704	(2.6+	1.4+)	1999 12 08	704	0.4+	0.6-	2000 01 06	704	0.6+	0.4+
1998 09 18	704	1.1+	1.8-	1999 12 08	704	0.5+	0.0	2000 01 06	704	0.2+	1.7+
1998 09 18	704	0.5-	0.9-	1999 12 08	704	0.6+	1.0-	2000 01 06	704	0.2+	0.5+
1998 09 18	704	0.1+	0.7-	1999 12 08	704	0.7-	1.4-	2000 01 06	704	0.0	0.0
1998 09 18	704	1.4-	0.1+	1999 12 15	704	0.1+	1.5+	2000 01 06	704	0.4-	1.3+
1998 09 21	699	0.7-	1.0+	1999 12 15	704	0.0	0.5-				

1999 XK₁₆₅ = 1996 CS

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	40.63640		(2000.0)	P		Q	
<i>n</i>	0.24096632	ω	32.94373	-0.09578451		-0.99219071	
<i>a</i>	2.5575953	Ω	62.66544	+0.89270595		-0.12113134	
<i>e</i>	0.1411841	<i>i</i>	5.15989	+0.44034238		+0.02974543	
<i>P</i>	4.09	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 02 01	327	0.1-	0.1+	1999 12 08	704	0.1+	0.4+	2000 01 04	704	0.2-	0.4+
1996 02 01	327	0.4-	0.1+	1999 12 08	704	0.4-	0.4+	2000 01 06	704	0.9-	0.1-
1996 02 01	327	0.4-	0.1-	1999 12 15	704	1.1+	0.4-	2000 01 06	704	0.6+	0.0
1996 02 02	327	0.7+	0.9-	1999 12 15	704	0.1-	0.2-	2000 01 06	704	0.8-	0.2+
1996 02 02	327	0.2+	0.6+	1999 12 15	704	0.9-	0.7+	2000 01 06	699	0.0	0.3-
1996 02 02	327	0.0	0.1+	2000 01 04	704	0.3+	0.4-	2000 01 06	704	0.7+	1.1+
1999 12 08	704	0.1-	0.1-	2000 01 04	704	0.9+	0.5-	2000 01 06	699	0.1+	0.5-
1999 12 08	704	0.4+	0.6-	2000 01 04	704	0.6-	0.4+	2000 01 06	699	0.2-	0.5-
1999 12 08	704	0.0	0.3-	2000 01 04	704	0.3+	0.3+				

1999 XN₁₆₅ = 1998 SX₁₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	1.75051		(2000.0)	P		Q	
<i>n</i>	0.25278831	ω	63.95284	-0.81794850		-0.54532318	
<i>a</i>	2.4772208	Ω	82.48613	+0.43929090		-0.79772954	
<i>e</i>	0.0665064	<i>i</i>	10.65201	+0.37146166		-0.25739117	
<i>P</i>	3.90	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 09 21	699	0.4+	0.1+	1999 11 16	703	0.1+	0.2+	1999 12 15	704	0.6-	0.3+
1998 09 21	699	0.4+	0.1-	1999 11 16	703	1.0+	0.5+	1999 12 15	704	0.1+	0.0
1998 09 21	699	0.6+	0.1+	1999 11 16	703	1.0+	0.7+	1999 12 15	704	0.0	2.0-
1998 09 27	699	0.4+	0.3+	1999 11 16	703	0.3+	0.6+	2000 01 03	704	0.1-	0.2-
1998 09 27	699	0.4-	0.1+	1999 12 08	704	0.6-	0.7-	2000 01 03	704	0.0	0.1+
1998 09 27	699	0.3-	0.1+	1999 12 08	704	0.4-	0.1-	2000 01 03	704	0.3+	0.2-
1998 12 18	699	0.4-	0.6-	1999 12 08	704	0.2-	0.0	2000 01 03	704	0.2-	0.2+
1998 12 18	699	0.3-	0.2-	1999 12 08	704	0.2-	0.2+	2000 01 03	704	0.0	0.5+
1998 12 18	699	0.9-	0.3-	1999 12 08	704	0.2-	0.2+				

1999 XS₁₆₅ = 1992 YK₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	0.29759		(2000.0)	P		Q	
<i>n</i>	0.28950879	ω	59.57529	-0.76629602		-0.63916946	
<i>a</i>	2.2630538	Ω	80.61334	+0.56447488		-0.71825024	
<i>e</i>	0.1095009	<i>i</i>	3.78994	+0.30685260		-0.27491635	
<i>P</i>	3.40	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 12 18	010	0.8-	1.2-	1999 12 08	704	0.2+	0.8+	2000 01 04	704	0.4+	0.3+
1992 12 19	010	0.0	0.6-	1999 12 08	704	0.4-	0.4+	2000 01 04	704	0.3+	0.4-
1992 12 19	010	0.3+	1.2-	1999 12 09	699	0.1+	0.4+	2000 01 04	704	0.3-	0.5-
1992 12 19	010	0.6+	0.6+	1999 12 09	699	0.4+	0.1+	2000 01 04	704	0.1+	0.6+
1992 12 19	010	0.3+	0.1+	1999 12 09	699	0.1-	0.1+	2000 01 06	704	0.1+	0.1+
1992 12 20	010	0.5-	0.8+	1999 12 15	704	0.3-	0.2+	2000 01 06	704	0.1-	0.0
1998 08 17	704	0.2-	1.0+	1999 12 15	704	0.5+	0.9-	2000 01 06	704	0.2-	0.4+
1998 08 17	704	0.5+	0.4+	1999 12 15	704	0.5+	0.1+	2000 01 06	704	0.3-	0.3+
1998 08 17	704	0.8-	0.3-	1999 12 15	704	0.2-	0.2-	2000 01 06	704	0.5-	0.0
1998 08 17	704	(3.8-	1.8-)	1999 12 15	704	0.9+	0.5-				
1999 12 08	704	0.3-	0.6+	2000 01 04	704	0.1-	0.2+				

1999 XU₁₆₅ = 1990 EG₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	7.73699		(2000.0)	P		Q	
<i>n</i>	0.29181365	ω	155.30530	-0.69752284		-0.71560712	
<i>a</i>	2.2511217	Ω	338.85979	+0.63921168		-0.59806771	
<i>e</i>	0.1342724	<i>i</i>	5.88700	+0.32383687		-0.36086211	
<i>P</i>	3.38	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1990 03 05	809	0.2+	0.4-	1999 11 11	703	0.1+	0.4+	2000 01 04	704	0.6-	1.0-
1990 03 05	809	0.5+	0.2-	1999 11 11	703	0.3+	0.2+	2000 01 04	704	0.6-	0.3-
1990 03 05	809	0.7+	0.1-	1999 11 11	703	0.3+	0.4+	2000 01 04	704	0.9-	0.5-
1990 03 07	809	0.7-	0.4+	1999 12 08	704	0.7+	1.2-	2000 01 06	704	0.3+	0.8-
1990 03 07	809	0.5-	0.3+	1999 12 08	704	0.6-	0.3+	2000 01 06	704	0.6+	0.3-
1990 03 07	809	0.2-	0.0	1999 12 08	704	1.0+	0.1+	2000 01 06	704	0.2-	0.3-
1998 08 17	704	0.4-	0.2-	1999 12 08	704	0.0	0.1-	2000 01 06	704	0.3-	0.6-
1998 08 17	704	0.0	0.3-	1999 12 15	704	(0.0	2.5+)	2000 01 06	699	1.1+	1.3+
1998 08 17	704	0.4+	0.2-	1999 12 15	704	0.5+	1.5+	2000 01 06	704	1.3-	0.3-
1998 08 17	704	(0.4+	2.5-)	1999 12 15	704	0.2+	0.4-	2000 01 06	699	0.1-	1.1+
1998 08 17	704	0.5+	0.3-	2000 01 04	704	0.3+	0.2-	2000 01 06	699	0.5+	0.3+
1999 11 11	703	1.1-	0.8+	2000 01 04	704	0.5-	0.7-				

1999 XE₁₆₆ = 1975 RV = 1989 PN = 1994 TS₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	58.04505		(2000.0)	P		Q	
<i>n</i>	0.20928111	ω	35.49848	+0.98855609		+0.12936751	
<i>a</i>	2.8096315	Ω	316.86064	-0.15071457		+0.86906533	
<i>e</i>	0.2411685	<i>i</i>	6.51594	+0.00647934		+0.47748246	
<i>P</i>	4.71	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1975 09 03	095	0.1-	2.4+	1999 12 07	703	0.2-	0.2+	1999 12 15	704	0.2-	0.9-
1975 09 06	095	1.8-	1.3+	1999 12 07	703	0.1-	0.2-	1999 12 15	704	0.7-	0.8-

1989 07 29	675	1.4+	1.3-	1999 12 07	703	0.1-	0.1+	1999 12 15	704	0.2+	0.5-
1989 07 29	675	(7.6+	1.9+)	1999 12 07	699	0.1-	0.2+	1999 12 31	699	0.6-	0.2+
1989 08 01	675	0.5-	0.5+	1999 12 07	699	0.2-	0.9+	1999 12 31	699	0.1+	0.8+
1989 08 01	675	0.5-	0.7-	1999 12 07	699	0.0	0.5+	1999 12 31	699	0.9-	0.5+
1994 10 04	033	0.0	0.4-	1999 12 10	704	0.5+	0.3-	2000 01 03	704	0.2-	0.0
1994 10 06	033	0.6+	0.8-	1999 12 10	704	0.0	0.0	2000 01 03	704	0.4+	0.4+
1994 10 07	033	0.8+	0.9-	1999 12 10	704	0.4+	0.7-	2000 01 03	704	1.1+	1.7+
1999 09 26	699	0.2-	0.0	1999 12 10	704	0.3+	0.0	2000 01 03	704	1.0+	0.1+
1999 09 26	699	0.6-	0.4-	1999 12 10	704	0.1+	0.7-	2000 01 04	704	0.4-	0.2-
1999 09 26	699	0.8+	1.0+	1999 12 13	703	0.0	0.3+	2000 01 04	704	0.0	0.1+
1999 10 05	704	0.6+	0.5-	1999 12 13	703	1.2-	0.5+	2000 01 04	704	0.5+	0.5-
1999 10 05	704	0.2-	0.7-	1999 12 13	703	0.5-	0.4+	2000 01 04	704	0.7+	0.5+
1999 10 05	704	0.1-	0.8-	1999 12 13	703	0.3-	0.4-	2000 01 04	704	0.7+	0.5+
1999 10 05	704	1.1-	0.8-	1999 12 15	704	0.2+	0.6+				
1999 12 07	703	0.0	0.2+	1999 12 15	704	0.3+	0.2-				

1999 XF₁₆₆ = 1993 XH₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	74.25687		(2000.0)	P	Q		
<i>n</i>	0.17400383	ω	53.13572	+0.74944685	+0.62297968		
<i>a</i>	3.1775826	Ω	267.20222	-0.65608422	+0.65343868		
<i>e</i>	0.2809160	<i>i</i>	12.96633	-0.08878579	+0.43001652		
<i>P</i>	5.66	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 12 02	493	0.4-	0.4+	1999 12 07	699	0.2+	0.9+	2000 01 04	704	0.1-	0.6-
1993 12 04	493	0.2-	0.2-	1999 12 10	704	0.2-	0.6-	2000 01 04	704	0.9-	0.4-
1993 12 06	493	0.1-	0.0	1999 12 10	704	0.1-	0.1-	2000 01 04	704	0.6+	0.3-
1993 12 06	493	0.6+	0.1-	1999 12 10	704	1.0+	0.8+	2000 01 04	704	0.7-	0.4+
1993 12 06	493	0.1+	0.1-	1999 12 10	704	0.2+	0.1-	2000 01 08	704	0.0	0.7+
1999 11 08	699	0.7-	0.2-	1999 12 10	704	0.6-	0.6-	2000 01 08	704	1.1-	0.6+
1999 11 08	699	0.3+	0.3-	1999 12 15	704	0.9+	0.5-	2000 01 08	704	0.5+	0.6+
1999 11 08	699	0.2-	0.6+	1999 12 15	704	0.9+	0.9-	2000 01 08	704	0.4+	0.4+
1999 12 06	703	0.9-	0.2-	1999 12 15	704	0.9+	0.8-	2000 01 08	704	0.5+	0.0
1999 12 06	703	0.6-	0.5-	1999 12 15	704	1.4+	1.0-	2000 01 08	704	1.0-	0.4-
1999 12 06	703	1.4-	0.2+	2000 01 03	704	0.7-	0.5+	2000 01 08	704	0.8+	0.2+
1999 12 06	703	0.1-	0.0	2000 01 03	704	0.1+	0.4-	2000 01 08	704	0.5-	0.5+
1999 12 07	699	0.3+	1.4+	2000 01 03	704	0.6+	0.4-	2000 01 08	704	0.6+	0.6-
1999 12 07	699	0.2+	1.1+	2000 01 03	704	0.2+	0.3-	2000 01 08	704	0.8-	0.3+

1999 XP₁₆₆ = 1980 TA₅ = 1998 MN₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	42.76140		(2000.0)	P	Q		
<i>n</i>	0.21122045	ω	88.94953	+0.86331144	-0.49209837		
<i>a</i>	2.7924071	Ω	300.52025	+0.39573403	+0.79775379		
<i>e</i>	0.1529950	<i>i</i>	7.46694	+0.31318994	+0.34846533		
<i>P</i>	4.67	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1980 10 07	675	0.1-	1.3-	1998 08 15	704	0.1+	0.7+	1999 12 15	704	0.5+	0.3+
1980 10 08	675	0.8+	0.4+	1998 08 15	704	0.5-	0.4-	1999 12 15	704	0.1+	0.6+
1980 10 09	675	0.4-	0.5-	1998 08 15	704	0.3+	1.4+	1999 12 15	704	0.6+	0.5+
1980 10 10	675	0.7+	0.6-	1998 08 15	704	(6.5-	0.3-)	2000 01 03	704	0.2-	0.4+
1998 06 24	704	0.3+	0.7+	1999 12 07	703	1.9-	1.0+	2000 01 03	704	0.3+	0.6-
1998 06 24	704	0.3-	0.3-	1999 12 07	703	(0.1-	2.4+)	2000 01 03	704	0.2-	0.2-
1998 06 24	704	0.4+	0.7-	1999 12 07	703	0.1-	0.9+	2000 01 03	704	0.4-	0.4-
1998 06 24	704	0.8-	0.6-	1999 12 07	703	0.3-	0.6+	2000 01 03	704	0.5-	1.4-
1998 06 26	704	(2.2+	2.5-)	1999 12 10	704	0.7+	0.4+	2000 01 04	704	0.3+	0.5+
1998 06 26	704	0.8-	1.5-	1999 12 10	704	0.4+	0.3+	2000 01 04	704	0.2+	0.7-
1998 06 26	704	0.2+	1.4-	1999 12 10	704	0.3-	0.6+	2000 01 04	704	0.6-	0.5-
1998 07 21	704	1.3+	0.8+	1999 12 10	704	0.1-	0.2+	2000 01 04	704	0.7+	0.7-
1998 07 21	704	0.2+	1.0+	1999 12 10	704	0.3-	0.1+	2000 01 04	704	0.2-	1.7-
1998 07 21	704	0.6-	1.5+	1999 12 15	704	0.5+	0.4+				
1998 07 21	704	(3.3+	1.6+)	1999 12 15	704	0.5+	0.9+				

1999 XU₁₆₆ = 1950 TH₁ = 1990 DG₁ = 1998 MW₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	334.77295		(2000.0)	P	Q		
<i>n</i>	0.28343235	ω	137.24158	-0.55662264	-0.83044522		
<i>a</i>	2.2952840	Ω	346.52740	+0.73297920	-0.47784740		
<i>e</i>	0.0985217	<i>i</i>	5.68145	+0.39104057	-0.28639588		
<i>P</i>	3.48	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1950 10 13	024	0.2+	0.5-	1998 06 26	704	1.1+	0.5-	1999 12 10	704	0.2-	0.0
1990 02 20	046	0.5-	1.5-	1998 06 26	704	0.8+	1.7-	1999 12 10	704	0.1-	0.8-
1990 02 20	046	1.3-	1.1-	1999 09 03	704	0.5+	0.2+	1999 12 10	704	0.0	0.0
1990 02 21	046	0.0	1.3-	1999 09 03	704	0.8-	0.5+	1999 12 10	704	0.3+	0.4-
1990 02 21	046	1.0-	0.4-	1999 09 03	704	0.6-	0.3+	1999 12 15	704	0.1+	0.4-
1990 02 22	046	0.7+	0.4-	1999 10 05	704	0.0	0.4-	1999 12 15	704	0.4+	0.6-
1990 02 22	046	0.8+	1.1+	1999 10 05	704	0.7-	0.4+	1999 12 15	704	0.7+	0.8-
1995 08 19	809	1.1+	0.1+	1999 10 05	704	0.0	0.3+	1999 12 15	704	0.1-	1.3-
1995 08 20	809	0.2+	0.1-	1999 10 05	704	0.0	0.3+	1999 12 15	704	0.4+	0.9-
1995 08 22	809	0.3+	0.2-	1999 10 05	704	0.4+	0.1+	2000 01 03	704	0.4-	1.3+
1995 08 26	809	0.2+	0.2+	1999 11 03	704	0.9-	0.2+	2000 01 03	704	0.8+	0.5+
1995 08 27	809	0.6-	0.5+	1999 11 03	704	0.2+	0.8-	2000 01 03	704	1.0+	0.6+
1995 09 17	809	0.3-	0.6-	1999 11 03	704	0.3-	0.4-	2000 01 03	704	0.1-	0.6-
1998 06 24	704	0.6+	1.6-	1999 11 03	704	0.0	0.4-	2000 01 04	704	0.1+	1.4+
1998 06 24	704	0.7+	0.6-	1999 11 03	704	0.2-	0.2-	2000 01 04	704	1.8+	0.9+
1998 06 24	704	0.3-	0.2+	1999 12 07	703	1.2-	0.2-	2000 01 04	704	0.8+	0.5+
1998 06 24	704	1.1-	0.9-	1999 12 07	703	0.0	0.0	2000 01 04	704	0.3+	0.3+
1998 06 24	704	(3.1-	0.4+)	1999 12 07	703	0.3-	0.1+	2000 01 04	704	0.2-	1.0-
1998 06 26	704	0.2+	0.3-	1999 12 07	703	0.6-	0.3+				
1998 06 26	704	0.6-	0.0	1999 12 10	704	0.6-	0.3-				

1999 XN₁₆₇ = 1982 SJ₆ = 1982 UM₃ = 1986 OR = 1993 FY₅₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	81.94869		(2000.0)	P	Q		
<i>n</i>	0.23820817	ω	353.51580	+0.98229235	+0.18731333		
<i>a</i>	2.5772999	Ω	355.68222	-0.16946369	+0.87934701		
<i>e</i>	0.1754502	<i>i</i>	2.99317	-0.07989868	+0.43779281		
<i>P</i>	4.14	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1982 09 16	095	(2.2-	3.4+)	1999 11 14	704	0.4-	0.4-	1999 12 15	704	0.4+	0.1+
1982 10 19	033	0.1-	0.9+	1999 11 14	704	0.4-	0.4-	1999 12 31	703	0.4+	0.1+
1982 10 19	033	0.6-	0.6+	1999 11 14	704	0.4-	0.4-	1999 12 31	703	1.1-	0.2+
1986 07 27	413	0.1-	0.3-	1999 12 10	704	0.8-	0.2+	1999 12 31	703	0.1-	0.2-
1986 07 27	413	0.8+	0.6+	1999 12 10	704	0.3+	0.0	1999 12 31	703	0.4-	0.3+
1986 08 01	413	1.7-	1.2-	1999 12 10	704	1.0+	0.1+	2000 01 04	704	0.2-	0.5+
1986 08 01	413	1.1+	0.8+	1999 12 10	704	0.0	0.1+	2000 01 04	704	0.1+	0.2+
1993 03 19	809	0.6+	1.2+	1999 12 15	704	0.7+	0.1-	2000 01 04	704	0.2-	0.6+
1999 11 14	704	0.3-	0.2-	1999 12 15	704	0.4+	0.1+	2000 01 04	704	0.7+	0.2-
1999 11 14	704	0.5-	0.4-	1999 12 15	704	0.7+	0.4-				

1999 XU₁₆₇ = 1997 JN₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	68.82035		(2000.0)	P	Q		
<i>n</i>	0.17688102	ω	299.83343	+0.97508545	+0.12785170		
<i>a</i>	3.1430302	Ω	53.41649	-0.01769419	+0.85942557		
<i>e</i>	0.2294586	<i>i</i>	13.04734	-0.22112278	+0.49501679		
<i>P</i>	5.57	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	3

2000 JAN. 24

M.P.C. 37967

1997 05 01	910	0.2+	0.0	1999 12 10	704	0.5+	0.5+	2000 01 03	704	0.2+	0.3-
1997 05 02	910	0.0	0.2-	1999 12 10	704	0.2+	0.8-	2000 01 04	704	0.7-	0.8+
1997 05 02	910	0.1-	0.2-	1999 12 10	704	0.1+	0.6+	2000 01 04	704	0.7-	0.6-
1997 05 03	910	0.0	0.3-	1999 12 10	704	0.6-	0.2+	2000 01 04	704	0.1+	0.2-
1999 11 03	704	0.5-	0.7-	1999 12 15	704	0.3+	0.1+	2000 01 04	704	0.3-	0.0
1999 11 03	704	0.2+	0.3-	1999 12 15	704	0.5+	0.3-	2000 01 04	704	0.3+	0.0
1999 11 03	704	0.7-	0.4+	1999 12 15	704	0.7+	0.0				

1999 XV₁₆₇ = 1998 QU₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	0.19183426	ω	111.50231					+0.83283371				-0.53175631			
<i>a</i>	2.9775011	Ω	280.92254					+0.43202126				+0.79805076			
<i>e</i>	0.1120020	<i>i</i>	9.00579					+0.34604283				+0.28346112			
<i>P</i>	5.14	<i>H</i>	13.6					<i>G</i>	0.15			<i>U</i>	4		

Residuals in seconds of arc

1998 08 17	704	0.2+	0.0	1999 12 10	704	0.3-	0.1+	2000 01 03	704	0.2-	0.2+
1998 08 17	704	0.1+	0.5-	1999 12 10	704	1.0-	0.7+	2000 01 03	704	0.2+	0.4+
1998 08 17	704	0.3-	0.4+	1999 12 10	704	1.2-	0.4+	2000 01 03	704	0.0	0.4-
1998 08 17	704	1.2+	1.4-	1999 12 15	704	0.4+	0.3+	2000 01 03	704	0.3+	0.2+
1998 08 23	704	0.5-	0.4-	1999 12 15	704	0.5+	0.2-	2000 01 03	704	0.1+	0.2-
1998 08 23	704	1.2-	1.1+	1999 12 15	704	1.5+	0.3-	2000 01 04	704	0.2-	0.6+
1998 08 23	704	0.9+	0.6+	1999 12 15	704	0.5+	0.5-	2000 01 04	704	0.0	0.4-
1998 08 23	704	0.5-	0.1+	1999 12 15	704	0.0	0.7-	2000 01 04	704	0.3-	0.2+
1999 12 10	704	0.5-	0.4+	1999 12 15	385	0.3+	0.7+	2000 01 04	704	0.1-	0.1-
1999 12 10	704	0.1-	0.6+	1999 12 15	385	0.5+	1.7-	2000 01 04	704	0.4-	0.4-

1999 XA₁₆₈ = 1987 DW₂ = 1998 QQ₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	0.21655670	ω	6.67612					+0.66250496				+0.74682121			
<i>a</i>	2.7463442	Ω	304.83322					-0.69046430				+0.57892132			
<i>e</i>	0.0133734	<i>i</i>	4.04064					-0.29042421				+0.32727387			
<i>P</i>	4.55	<i>H</i>	13.7					<i>G</i>	0.15			<i>U</i>	4		

Residuals in seconds of arc

1987 02 23	010	(1.1+	8.5-)	1999 11 14	704	0.7+	0.1+	1999 12 15	704	0.5-	0.9-
1987 02 23	010	1.0-	0.3-	1999 11 14	704	0.7+	0.3+	1999 12 15	704	0.2-	0.0
1987 02 23	010	0.7+	0.4-	1999 11 14	704	1.0+	0.5+	2000 01 03	704	0.0	0.1-
1998 08 17	704	0.4+	0.4-	1999 11 14	704	1.2+	0.6+	2000 01 03	704	0.1+	0.4+
1998 08 17	704	0.6+	0.7-	1999 12 05	703	0.2-	0.0	2000 01 03	704	0.4-	1.0-
1998 08 17	704	1.1+	0.8-	1999 12 05	703	0.5-	0.2-	2000 01 03	704	0.2-	0.0
1998 08 17	704	0.2+	0.6+	1999 12 05	703	0.8-	0.0	2000 01 03	704	1.4-	0.5+
1998 08 17	704	1.5-	0.2+	1999 12 05	703	0.3-	0.0	2000 01 04	704	0.2+	0.3+
1998 08 23	704	0.8+	0.6-	1999 12 10	704	0.2-	0.2-	2000 01 04	704	0.3+	0.6+
1998 08 23	704	1.3+	0.1-	1999 12 10	704	0.3-	0.7+	2000 01 04	704	0.7+	0.3+
1998 08 23	704	0.1-	0.2-	1999 12 10	704	0.3+	0.3-	2000 01 04	704	0.3+	1.0+
1998 08 23	704	1.5-	0.7+	1999 12 15	704	0.0	0.5-	2000 01 04	704	0.1+	0.4-
1998 08 23	704	1.0-	0.7+	1999 12 15	704	0.5-	1.2-				
1999 11 14	704	0.3+	0.3-	1999 12 15	704	0.2-	0.4-				

1999 XE₁₆₈ = 1972 AO = 1996 JV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	0.17342026	ω	147.26557					-0.88906754				+0.41182173			
<i>a</i>	3.1847071	Ω	58.31962					-0.45403581				-0.73757457			
<i>e</i>	0.1128278	<i>i</i>	13.58619					-0.05839859				-0.53515103			
<i>P</i>	5.68	<i>H</i>	12.1					<i>G</i>	0.15			<i>U</i>	4		

Residuals in seconds of arc

1972 01 14	029	0.0	0.6-	1999 12 15	704	0.1-	0.3+	2000 01 03	704	0.2+	1.1-
1972 01 16	029	1.1-	0.5+	1999 12 15	704	0.1+	0.2+	2000 01 03	704	0.4-	0.9+
1972 01 17	029	1.0+	0.4-	1999 12 15	704	0.2+	0.5-	2000 01 03	704	0.5+	0.2+
1996 05 12	894	0.0	1.9+	1999 12 15	704	0.1+	0.1+	2000 01 04	704	0.1+	0.1+

1996 05 12	894	1.1+	0.0	1999 12 15	704	0.2+	0.3+	2000 01 04	704	0.0	0.1-
1996 05 15	894	0.1+	0.4-	2000 01 02	704	0.1-	0.3-	2000 01 04	704	0.4+	0.4-
1996 05 15	894	1.0-	1.2-	2000 01 02	704	0.7-	0.1+	2000 01 04	704	0.4+	0.4+
1999 12 10	704	0.9-	0.3-	2000 01 02	704	0.8-	0.4+	2000 01 04	704	0.0	0.1+
1999 12 10	704	0.3+	0.1+	2000 01 02	704	0.2+	1.1+	2000 01 04	704	0.4+	0.1+
1999 12 10	704	0.1-	0.2+	2000 01 02	704	1.5-	0.6+	2000 01 04	704	0.3+	0.4-
1999 12 10	704	0.5-	0.5-	2000 01 03	704	0.2-	0.0	2000 01 04	704	0.6+	0.0
1999 12 10	704	0.4+	0.1-	2000 01 03	704	0.1-	0.5-	2000 01 04	704	0.8+	0.1-

1999 XL₁₆₈ = 1992 CO₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	0.22448060	ω	197.81773					-0.98283053				-0.17587425			
<i>a</i>	2.6813294	Ω	331.86914					+0.18039597				-0.85243830			
<i>e</i>	0.0648539	<i>i</i>	6.79547					+0.03874846				-0.49235880			
<i>P</i>	4.39	<i>H</i>	13.3					<i>G</i>	0.15			<i>U</i>	3		

Residuals in seconds of arc

1992 02 12	303	0.7+	0.1+	1999 09 03	704	0.9+	1.2-	1999 12 10	704	1.8-	0.5-
1992 02 13	303	0.3-	0.7+	1999 09 03	704	0.2-	0.1+	1999 12 15	704	0.0	0.3-
1998 08 17	704	0.3-	0.3+	1999 09 03	704	0.1-	1.0+	1999 12 15	704	0.1-	0.7-
1998 08 17	704	0.4+	1.0+	1999 12 05	699	0.5+	0.1+	1999 12 15	704	0.5-	0.0
1998 08 17	704	0.3-	0.3-	1999 12 05	699	0.2+	0.5+	1999 12 15	704	0.2+	0.3-
1998 08 17	704	0.5-	0.4-	1999 12 05	699	0.2-	0.4+	1999 12 31	699	0.0	0.8+
1998 08 17	704	0.4-	0.4+	1999 12 07	703	0.2-	0.3+	1999 12 31	699	0.1-	0.4+
1998 08 23	699	0.2+	0.4+	1999 12 07	703	0.6-	0.4+	1999 12 31	699	0.1-	0.4+
1998 08 23	699	0.2+	0.3+	1999 12 07	703	0.4-	0.3+	2000 01 03	704	0.9+	0.4+
1998 08 23	699	0.4+	0.5-	1999 12 07	703	0.2-	0.2+	2000 01 03	704	0.3+	1.0-
1998 09 21	699	0.1+	0.3-	1999 12 10	704	0.4+	0.7+	2000 01 03	704	0.2-	0.5-
1998 09 21	699	0.1-	0.1+	1999 12 10	704	1.5+	1.2+	2000 01 03	704	0.7+	0.9-
1998 09 21	699	0.1-	0.3-	1999 12 10	704	0.2-	0.4-	2000 01 03	704	0.2-	1.6-

1999 XY₁₆₈ = 1998 QB₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>				(2000.0)				P				Q			
<i>n</i>	0.22582520	ω	210.52367					-0.53844751				-0.81599630			
<i>a</i>	2.6706755	Ω	272.83095					+0.80941136				-0.43142782			
<i>e</i>	0.1135540	<i>i</i>	12.15475					+0.23436622				-0.38473378			
<i>P</i>	4.36	<i>H</i>	13.5					<i>G</i>	0.15			<i>U</i>	3		

Residuals in seconds of arc

1998 08 24	704	0.3+	0.4-	1999 10 05	704	0.1-	0.3+	2000 01 03	704	0.1-	0.1+
1998 08 24	704	0.0	0.1-	1999 10 05	704	0.0	0.9+	2000 01 03	704	0.0	0.1-
1998 08 24	704	0.3-	0.4-	1999 11 16	704	0.3-	0.3+	2000 01 03	704	0.0	0.2-
1998 08 24	704	0.9-	0.6-	1999 11 16	704	0.1-	0.2+	2000 01 03	704	0.1+	0.0
1998 08 24	704	1.1-	0.9-	1999 11 16	704	0.3-	0.0	2000 01 03	704	0.0	0.4-
1998 08 27	704	0.5+	0.2-	1999 11 16	704	0.3-	0.4-	2000 01 04	704	0.1+	0.4-
1998 08 27	704	1.1+	0.4-	1999 12 10	704	0.2-	0.9+	2000 01 04	704	0.5+	0.6-
1998 08 27	704	0.5+	1.7+	1999 12 10	704	0.5+	0.1+	2000 01 04	704	0.4-	1.0-
1998 08 27	704	0.3+	0.2+	1999 12 10	704	(0.0	3.0+)	2000 01 04	704	1.2-	1.9-
1998 08 27	704	0.2-	0.9+	1999 12 15	704	0.2-	0.2+	2000 01 04	704	0.2-	0.2-
1999 09 15	848	0.5+	0.2+	1999 12 15	704	(2.3+	1.2+)	2000 01 04	704	1.2+	0.8+
1999 09 15	848	0.6+	0.9-	1999 12 15	704	0.2-	0.4+	2000 01 04	704	0.9+	0.8+
1999 10 05	704	0.0	0.4-	1999 12 15	704	0.1+	0.8+	2000 01 04	704	0.2-	0.0
1999 10 05	704	0.1-	0.4-	1999 12 15	704	0.1-	0.8+	2000 01 04	704	0.3-	0.2-

Residuals in seconds of arc

1976 05 02	809	0.5+	1.4+	1999 12 10	704	0.5+	0.1+	2000 01 02	704	0.8-	1.0+
1997 03 08	809	1.9-	0.2-	1999 12 10	704	0.1+	0.4-	2000 01 02	704	0.2-	1.2+
1997 03 08	809	1.8-	0.2-	1999 12 15	704	0.2+	0.0	2000 01 04	704	0.0	0.1-
1997 03 08	809	(2.4-	0.4-)	1999 12 15	704	0.1-	0.2+	2000 01 04	704	1.0-	0.1-
1997 03 09	809	1.1+	0.4-	1999 12 15	704	0.1+	0.2-	2000 01 04	704	0.3-	0.4-
1997 03 09	809	1.0+	0.1+	1999 12 15	704	0.1+	0.6-	2000 01 04	704	0.2-	0.4-
1997 03 09	809	1.0+	0.4-	1999 12 15	704	0.0	0.3-	2000 01 04	704	0.4-	0.4-
1999 12 10	704	0.9+	0.7+	2000 01 02	704	0.8+	0.9-				
1999 12 10	704	0.4+	0.3-	2000 01 02	704	0.4-	1.7+				

1999 XC₁₆₉ = 1976 EY

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	3.63871		(2000.0)	P	Q
n	0.24351529	ω	82.68075	-0.19654281	-0.98039940
a	2.5397164	Ω	18.67113	+0.88184705	-0.18286343
e	0.1196388	i	2.45434	+0.42862187	-0.07333475
P	4.05	H	14.3	G 0.15	U 3

Residuals in seconds of arc

1976 03 01	033	1.2-	0.7+	1999 11 16	704	0.2+	0.8-	1999 12 15	704	0.3-	0.4+
1976 03 02	033	0.9+	1.1-	1999 11 16	704	0.3-	0.7-	1999 12 15	704	0.2-	1.7+
1976 03 03	033	(4.1-	1.5+)	1999 11 16	704	0.1-	0.4-	1999 12 15	704	0.2-	1.1+
1976 03 03	033	0.3+	0.5+	1999 11 16	704	0.8-	0.8-	1999 12 15	703	0.1+	0.3+
1998 08 17	704	0.9-	0.3+	1999 11 16	704	0.4-	0.7-	1999 12 15	703	0.1-	0.5+
1998 08 17	704	(1.4-	3.2+)	1999 11 16	704	0.9-	0.5-	1999 12 15	703	2.0-	1.7+
1998 08 17	704	0.4+	0.6+	1999 11 16	704	0.2-	1.0-	1999 12 15	703	1.7+	1.1+
1998 08 17	704	0.2+	0.0	1999 11 16	704	0.3-	0.6-	2000 01 03	704	0.6+	0.4-
1999 10 05	704	1.0+	0.2-	1999 11 16	704	0.1-	0.7-	2000 01 03	704	0.8+	0.9-
1999 10 05	704	0.3+	0.5+	1999 11 16	704	0.8-	0.3-	2000 01 03	704	0.1+	0.3-
1999 10 05	704	0.2-	0.2+	1999 12 10	704	0.1-	1.9+	2000 01 03	704	0.5+	0.0
1999 10 05	704	1.2+	0.6+	1999 12 10	704	0.8+	0.8+	2000 01 03	704	0.4+	0.5-
1999 11 14	704	0.7-	1.0-	1999 12 10	704	0.0	0.9+	2000 01 04	704	0.1+	0.8-
1999 11 14	704	0.6-	0.7-	1999 12 10	704	0.1+	0.2+	2000 01 04	704	0.4+	0.1-
1999 11 14	704	0.7-	0.7-	1999 12 10	704	0.0	0.9+	2000 01 04	704	0.6+	0.6-
1999 11 14	704	0.2-	0.5-	1999 12 15	704	0.2+	1.0+	2000 01 04	704	0.6+	0.3-
1999 11 14	704	0.4-	0.6-	1999 12 15	704	0.0	0.7+	2000 01 04	704	0.1+	0.2-

1999 XG₁₆₉ = 1978 VY₁ = 1985 WM = 1994 JS₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	41.90977		(2000.0)	P	Q
n	0.28352761	ω	24.13859	+0.56085494	-0.82712572
a	2.2947699	Ω	31.78156	+0.74800393	+0.48753774
e	0.1531946	i	3.93263	+0.35486880	+0.27958896
P	3.48	H	14.8	G 0.15	U 3

Residuals in seconds of arc

1978 11 01	010	0.2-	1.0-	1999 11 14	704	0.9+	0.6-	1999 12 15	704	0.3-	0.6+
1978 11 01	010	0.6+	0.5-	1999 11 14	704	0.5+	0.0	1999 12 15	704	0.3-	0.5+
1985 11 20	095	(1.8+	3.8+)	1999 11 14	704	0.7+	0.4+	2000 01 02	704	0.2-	0.1-
1994 05 04	474	0.4+	0.5+	1999 11 14	704	0.0	1.0+	2000 01 02	704	0.2+	0.1-
1994 05 04	474	0.5+	0.7+	1999 12 10	704	0.3+	0.0	2000 01 02	704	0.3+	0.1+
1994 05 05	474	0.0	0.5-	1999 12 10	704	0.4+	0.0	2000 01 02	704	0.7-	1.5-
1994 05 05	474	0.8-	0.8-	1999 12 10	704	0.3+	0.4-	2000 01 02	704	0.1-	0.0
1999 10 05	704	0.3-	0.4-	1999 12 10	704	0.4-	0.5-	2000 01 04	704	0.5-	0.1-
1999 10 05	704	0.1-	0.1-	1999 12 10	704	0.2+	0.7-	2000 01 04	704	0.2-	0.5-
1999 10 05	704	0.0	1.2+	1999 12 15	704	0.1-	0.2-	2000 01 04	704	0.1+	0.0
1999 10 05	704	0.1-	1.2+	1999 12 15	704	0.2-	0.1+	2000 01 04	704	0.0	1.2+
1999 10 05	704	0.6-	0.6+	1999 12 15	704	0.2-	0.2+	2000 01 04	704	0.2+	0.2+

1999 XJ₁₆₉ = 1989 SG₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	3.01277		(2000.0)	P	Q
n	0.20867790	ω	59.74918	-0.19625663	-0.97800170
a	2.8150433	Ω	41.75888	+0.85923110	-0.20625824
e	0.1155220	i	6.09229	+0.47244603	-0.03114816
P	4.72	H	14.1	G 0.15	U 3

Residuals in seconds of arc

1989 09 26	809	1.5+	0.2+	1998 08 17	704	1.3-	1.8+	1999 12 10	704	0.5+	0.0
1989 09 26	809	(3.2+	0.3-)	1998 08 17	704	(7.1-	0.2+)	1999 12 10	704	(2.8+	0.4+)
1989 09 26	809	(3.1+	1.2-)	1998 09 22	699	(2.5-	0.0)	1999 12 10	704	0.1+	0.6+
1989 09 28	809	1.0+	1.7+	1998 09 22	699	0.4-	0.7-	1999 12 15	704	0.3+	0.3+
1989 09 28	809	0.3-	1.5+	1998 09 22	699	0.2+	0.2+	1999 12 15	704	0.3+	0.4-
1989 09 28	809	0.1-	0.2+	1999 11 14	704	0.3+	0.3+	1999 12 15	704	0.6-	0.0
1989 09 29	675	0.8-	0.7-	1999 11 14	704	0.1+	0.2+	1999 12 15	704	0.3-	0.4+
1989 09 29	675	0.6-	1.6-	1999 11 14	704	0.1+	0.1-	2000 01 02	704	0.3+	0.3+
1989 10 07	809	0.8+	0.9-	1999 11 14	704	0.0	0.6+	2000 01 02	704	0.2+	0.0
1989 10 07	809	0.4+	0.5-	1999 11 14	704	0.1+	0.5+	2000 01 02	704	0.1+	0.0
1989 10 07	809	0.0	1.3-	1999 11 16	704	0.7+	0.3+	2000 01 02	704	0.4-	0.7-
1989 10 08	809	0.3+	0.4+	1999 11 16	704	0.3+	0.4+	2000 01 02	704	1.3-	0.4-
1989 10 08	809	0.6-	0.4-	1999 11 16	704	0.5+	0.4+	2000 01 04	704	0.3-	0.1+
1989 10 08	809	0.4-	0.9-	1999 11 16	704	0.0	0.1+	2000 01 04	704	0.5-	0.2-
1998 08 17	704	1.1+	1.2-	1999 11 16	704	0.2-	0.2+	2000 01 04	704	0.2-	0.2+
1998 08 17	704	1.3-	0.3+	1999 12 10	704	0.5+	1.4-	2000 01 04	704	0.5-	0.0
1998 08 17	704	0.5+	1.7+	1999 12 10	704	0.4+	0.2-	2000 01 04	704	0.4-	0.2+

1999 XK₁₆₉ = 1998 QU₆₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	50.12658		(2000.0)	P	Q
n	0.19257225	ω	114.44979	+0.74133602	-0.64706232
a	2.9698892	Ω	286.39160	+0.52866885	+0.72652962
e	0.1201156	i	10.70076	+0.41343700	+0.23122513
P	5.12	H	13.0	G 0.15	U 2

Residuals in seconds of arc

1995 01 02	010	(1.1+	2.2+)	1999 12 10	704	0.3+	0.1-	2000 01 04	704	0.2+	0.1-
1995 01 02	010	0.2+	1.0+	1999 12 10	704	0.1-	0.4-	2000 01 04	704	0.2+	0.0
1998 06 30	699	0.2-	0.7+	1999 12 10	704	0.3+	0.5-	2000 01 04	704	0.5+	0.3+
1998 06 30	699	0.6-	1.2+	1999 12 10	704	0.1+	0.4-	2000 01 04	704	0.3+	0.2+
1998 06 30	699	0.5-	0.0	1999 12 15	704	0.5+	0.2+	2000 01 08	704	0.6-	0.3+
1998 08 24	704	0.2+	0.6-	1999 12 15	704	(3.6-	1.1+)	2000 01 08	704	0.5-	0.1+
1998 08 24	704	0.6+	0.1-	1999 12 15	704	0.9-	0.6+	2000 01 08	704	0.8+	1.6+
1998 08 24	704	0.7+	0.1+	1999 12 15	704	0.7-	0.4+	2000 01 08	704	0.8-	0.5+
1998 08 24	704	0.2-	0.7-	1999 12 15	704	0.9-	0.3+	2000 01 08	704	0.3-	0.3+
1998 08 24	704	0.9-	1.1-	2000 01 03	704	0.5+	0.2+	2000 01 10	704	0.2+	0.3-
1998 08 27	704	0.0	0.7-	2000 01 03	704	0.3+	0.3+	2000 01 10	704	0.1+	0.5-
1998 08 27	704	0.3-	0.1+	2000 01 03	704	0.5+	0.1-	2000 01 10	704	0.2-	0.9-
1998 08 27	704	0.0	1.0+	2000 01 03	704	0.6+	0.2-	2000 01 10	704	0.3-	0.1-
1998 08 27	704	0.7+	1.0+	2000 01 03	704	0.5+	0.2-	2000 01 10	704	0.2+	0.1-
1999 12 10	704	1.0-	1.8-	2000 01 04	704	0.0	0.2+				

1999 XP₁₆₉ = 1974 WV = 1978 TM₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	30.92621		(2000.0)	P	Q
n	0.23800012	ω	26.97975	+0.40594953	-0.91261769
a	2.5788016	Ω	39.12228	+0.82405979	+0.34267726
e	0.2505821	i	4.39115	+0.39513344	+0.22293777
P	4.14	H	14.8	G 0.15	U 2

Residuals in seconds of arc

1974 11 18	095	0.6-	1.9+	1999 12 10	704	0.1-	0.2+	2000 01 03	704	0.2+	0.2+
1978 10 03	095	0.1-	0.5-	1999 12 15	704	0.4-	0.1-	2000 01 03	704	0.3+	0.3+
1978 10 07	095	0.3+	0.1+	1999 12 15	704	0.3-	0.3-	2000 01 03	704	0.3+	0.2-
1999 11 14	704	0.3-	0.8-	1999 12 15	704	0.2-	0.1+	2000 01 03	704	0.4+	0.0

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1999 11 14	704	0.8+	1.0-	1999 12 15	704	0.1-	0.2-	2000 01 03	704	0.2-	0.3-
1999 11 14	704	0.5+	0.3-	2000 01 02	704	0.2+	0.3+	2000 01 04	704	0.2+	0.3+
1999 11 14	704	0.0	0.1-	2000 01 02	704	0.5+	0.4+	2000 01 04	704	0.4+	0.0
1999 12 10	704	0.2+	0.6-	2000 01 02	704	0.1+	0.0	2000 01 04	704	0.2+	0.3+
1999 12 10	704	0.7-	1.2-	2000 01 02	704	0.6-	0.1-	2000 01 04	704	0.2-	0.3+
1999 12 10	704	0.6-	0.0	2000 01 02	704	0.6-	0.0	2000 01 04	704	0.0	0.6+

1999 XS₁₆₉ = 1995 XZ = 1998 OO₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	334.88725		(2000.0)	P	Q
<i>n</i>	0.28660543	ω	185.33305	-0.87119147	-0.48927772
<i>a</i>	2.2783115	Ω	325.27992	+0.45301401	-0.76943552
<i>e</i>	0.1320294	<i>i</i>	4.06817	+0.18921874	-0.41058043
<i>P</i>	3.44	<i>H</i>	14.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1995 12 12	608	0.4-	0.2-	1998 07 27	809	1.1-	0.0	1999 12 15	704	0.0	0.0
1995 12 12	608	0.0	0.2-	1998 07 27	809	0.9-	0.2-	1999 12 15	704	0.2-	0.0
1995 12 13	608	0.5-	0.2-	1998 08 17	704	1.7+	0.1-	1999 12 15	704	0.3+	0.2+
1995 12 13	608	0.1-	0.4-	1998 08 17	704	1.4-	0.5+	1999 12 15	704	0.6+	0.2-
1995 12 14	608	0.6+	0.3+	1998 08 17	704	0.7+	1.1+	2000 01 03	704	0.0	0.2-
1995 12 14	608	0.6+	0.4+	1998 08 17	704	1.2+	0.7-	2000 01 03	704	0.2-	0.8-
1995 12 14	608	0.5-	0.0	1998 08 17	704	1.3+	1.0-	2000 01 03	704	0.3+	0.2+
1995 12 16	608	0.5-	0.5-	1998 08 23	699	1.2+	1.3+	2000 01 03	704	1.5-	0.7+
1995 12 16	608	1.1-	0.0	1998 08 23	699	0.4-	0.6+	2000 01 03	704	0.0	0.5-
1996 01 13	608	1.5+	0.5+	1998 08 23	699	0.7+	0.5+	2000 01 04	704	0.0	0.4-
1996 01 13	608	0.4+	0.9+	1999 12 10	704	0.2-	0.6-	2000 01 04	704	0.0	0.2-
1998 07 26	809	0.3-	0.7-	1999 12 10	704	1.7-	0.0	2000 01 04	704	0.0	0.1-
1998 07 26	809	0.9-	0.8-	1999 12 10	704	0.7+	0.4+	2000 01 04	704	0.1+	0.0
1998 07 26	809	1.1-	1.4-	1999 12 10	704	0.0	0.4+	2000 01 04	704	1.7+	0.9+
1998 07 27	809	0.5-	0.2+	1999 12 15	704	0.0	0.0				

1999 XT₁₆₉ = 1989 ER₁ = 1993 GS

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	0.99335		(2000.0)	P	Q
<i>n</i>	0.26178184	ω	75.88099	-0.50374882	-0.86176399
<i>a</i>	2.4201542	Ω	44.53287	+0.75590015	-0.47335466
<i>e</i>	0.1979481	<i>i</i>	4.90781	+0.41815319	-0.18247793
<i>P</i>	3.76	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1989 03 10	372	0.9+	0.4+	1999 11 13	703	0.4+	0.2+	1999 12 15	704	0.2-	0.2+
1989 03 10	372	(3.6+	1.5+)	1999 11 13	703	0.0	0.6+	1999 12 15	704	0.0	0.4+
1989 03 11	372	(3.6-	0.5+)	1999 11 13	703	0.2+	0.5+	2000 01 02	704	0.2-	0.2+
1989 03 11	372	1.2-	2.4+	1999 11 13	703	0.5-	0.4-	2000 01 02	704	0.2+	0.9+
1989 03 14	372	1.0+	1.5-	1999 12 10	704	0.1-	0.1-	2000 01 02	704	0.5+	0.1+
1989 03 14	372	0.9-	1.8-	1999 12 10	704	0.3-	0.6-	2000 01 02	704	0.3+	0.4+
1993 04 15	399	0.8-	0.4+	1999 12 10	704	0.4+	0.4-	2000 01 02	704	0.2+	1.0+
1993 04 15	399	0.1-	0.2+	1999 12 10	704	0.0	0.2-	2000 01 04	704	0.0	0.1+
1993 04 16	399	0.7-	0.9+	1999 12 10	704	0.3-	0.4-	2000 01 04	704	0.7-	1.3-
1993 04 16	399	1.1+	0.1-	1999 12 15	704	0.0	0.4-	2000 01 04	704	0.4-	0.2-
1993 04 20	400	0.7+	0.9-	1999 12 15	704	0.1-	0.1+	2000 01 04	704	0.1+	0.1-
1993 04 20	400	(2.5+	1.3-)	1999 12 15	704	0.3-	0.2+	2000 01 04	704	0.6+	0.7-

1999 XU₁₆₉ = 1991 LO₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	104.80651		(2000.0)	P	Q
<i>n</i>	0.17131255	ω	272.27004	+0.95393110	+0.19694674
<i>a</i>	3.2107755	Ω	76.43333	-0.08127169	+0.89580422
<i>e</i>	0.1441372	<i>i</i>	13.46382	-0.28880853	+0.39843040
<i>P</i>	5.75	<i>H</i>	12.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1991 06 06	809	0.1-	0.8+	1999 12 10	704	1.0-	0.7-	2000 01 02	704	0.2+	0.1+
1991 06 06	809	0.5+	0.5-	1999 12 10	704	0.1+	0.7-	2000 01 02	704	0.4+	0.4-

1991 06 06	809	0.4-	0.8+	1999 12 10	704	0.6+	0.7+	2000 01 02	704	0.2-	0.1+
1991 06 08	809	0.1+	0.9-	1999 12 10	704	1.0+	1.0+	2000 01 02	704	0.0	0.8-
1991 06 08	809	0.3-	0.2-	1999 12 15	704	0.1-	0.0	2000 01 04	704	0.3+	0.1+
1991 06 08	809	0.2+	0.1-	1999 12 15	704	0.0	0.1+	2000 01 04	704	0.1+	0.2+
1999 11 13	703	0.3+	0.6-	1999 12 15	704	0.0	0.2-	2000 01 04	704	0.1+	0.2+
1999 11 13	703	0.5-	0.5+	1999 12 15	704	0.3-	0.2-	2000 01 04	704	0.3-	0.1-
1999 11 13	703	0.4+	0.1+	1999 12 15	704	0.2-	0.4-	2000 01 04	704	0.3+	0.1+
1999 11 13	703	0.1-	0.2+	2000 01 02	704	1.0-	0.8+				

1999 XZ₁₆₉ = 1981 JJ₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	276.61191		(2000.0)	P	Q
<i>n</i>	0.24500739	ω	153.68877	-0.98845409	+0.14598400
<i>a</i>	2.5293947	Ω	34.78055	-0.14851749	-0.88039580
<i>e</i>	0.0604096	<i>i</i>	4.07994	-0.03001764	-0.45121160
<i>P</i>	4.02	<i>H</i>	14.5	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1981 05 08	675	1.2+	0.7+	1999 12 05	703	0.8-	0.9+	2000 01 03	704	0.6+	0.9-
1981 05 09	675	1.1-	0.3-	1999 12 10	704	0.7-	0.6-	2000 01 03	704	0.0	0.1-
1999 11 14	704	0.9-	0.0	1999 12 10	704	0.1-	0.3-	2000 01 03	704	0.5-	0.8+
1999 11 14	704	0.8+	0.3-	1999 12 10	704	0.3+	0.4+	2000 01 03	704	0.0	0.9-
1999 11 14	704	1.7-	0.2+	1999 12 10	704	0.4+	0.0	2000 01 04	704	0.2-	1.4+
1999 11 14	704	0.2+	0.1+	1999 12 15	704	0.5+	0.5+	2000 01 04	704	0.2-	0.1+
1999 11 14	704	0.1+	0.4+	1999 12 15	704	0.6+	0.8+	2000 01 04	704	0.4-	0.6-
1999 12 05	703	0.3-	0.3+	1999 12 15	704	0.2+	0.1+	2000 01 04	704	0.0	0.4-
1999 12 05	703	0.5+	0.1+	1999 12 15	704	0.5+	0.5-	2000 01 04	704	0.2+	0.4-
1999 12 05	703	0.9+	0.5+	2000 01 03	704	0.0	1.1-				

1999 XA₁₇₀ = 1977 UZ₁ = 1981 SZ₅ = 1981 ST₂ = 1994 RY₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	95.95020		(2000.0)	P	Q
<i>n</i>	0.22655894	ω	17.74860	+0.90650382	+0.42047273
<i>a</i>	2.6649061	Ω	317.32242	-0.39385906	+0.80967729
<i>e</i>	0.2298111	<i>i</i>	3.22413	-0.15207192	+0.40942078
<i>P</i>	4.35	<i>H</i>	13.9	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1977 10 20	033	0.7+	0.0	1994 09 04	809	(1.0+	2.2+)	1999 12 10	704	0.0	0.4+
1981 09 28	095	0.6+	0.1+	1994 09 04	809	0.6+	1.8+	1999 12 10	704	0.0	0.0
1981 09 29	511	1.0+	0.5-	1994 09 04	809	0.8+	1.8+	1999 12 15	704	0.3+	1.7+
1981 09 29	511	0.1-	1.1-	1994 09 09	399	1.4-	0.8-	1999 12 15	704	0.2-	0.5+
1981 09 29	511	0.7-	1.5-	1994 09 09	399	1.8-	1.8-	1999 12 15	704	0.0	0.6+
1994 08 10	809	1.0+	1.1+	1999 11 14	704	0.2-	0.3-	1999 12 15	704	0.6-	0.5-
1994 08 10	809	0.6+	1.3+	1999 11 14	704	0.8+	0.5-	2000 01 03	704	0.4-	0.7+
1994 08 10	809	0.1-	1.3+	1999 11 14	704	1.8+	0.6+	2000 01 03	704	0.0	0.5-
1994 08 11	809	(1.9-	3.6-)	1999 11 14	704	0.9-	0.2-	2000 01 03	704	0.1+	0.0
1994 08 11	809	(2.1-	2.9-)	1999 11 14	704	0.8+	0.1-	2000 01 03	704	0.4+	1.4-
1994 08 11	809	(2.0-	2.7-)	1999 12 05	703	0.5-	0.4+	2000 01 03	704	0.1+	0.2-
1994 09 01	399	0.6-	1.6-	1999 12 05	703	0.4-	1.3+	2000 01 04	704	0.4-	0.0
1994 09 01	399	(1.5-	2.8-)	1999 12 05	703	0.9-	0.5+	2000 01 04	704	0.1-	0.3-
1994 09 03	809	(3.1+	3.0+)	1999 12 05	703	0.1+	0.4+	2000 01 04	704	0.1-	0.0
1994 09 03	809	(1.6+	3.0+)	1999 12 10	704	0.6-	0.6-	2000 01 04	704	0.1+	0.2-
1994 09 03	809	(2.2+	2.7+)	1999 12 10	704	0.3+	0.7-	2000 01 04	704	0.3+	0.2-

1999 XR₁₇₀ = 1989 EW₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	38.13282		(2000.0)	P	Q
n	0.08097068	ω	125.66491	+0.57875390	-0.76948637
a	5.2915656	Ω	286.72170	+0.62694676	+0.63161240
e	0.0991826	i	16.37892	+0.52151864	+0.09463877
P	12.17	H	11.3	G 0.15	U 2

Residuals in seconds of arc

1989 03 02	809	0.4+	0.7+	1998 11 16	704	0.5+	0.2+	1999 12 15	704	0.4-	1.1+
1989 03 02	809	0.3+	0.2+	1998 11 16	704	1.2-	0.4+	1999 12 15	704	0.2-	0.6+
1989 03 02	809	1.1+	0.1-	1999 11 16	704	0.6+	0.2-	1999 12 15	704	0.1+	0.3+
1989 03 03	809	1.0-	0.1-	1999 11 16	704	0.1-	0.5-	1999 12 15	704	0.3+	0.2+
1989 03 03	809	0.4-	0.2+	1999 11 16	704	0.4+	0.7-	1999 12 16	704	0.3+	0.4+
1989 03 03	809	0.4-	0.9-	1999 11 16	704	0.6+	0.1+	1999 12 16	704	0.3-	1.0-
1998 11 14	704	1.0-	0.4-	1999 11 16	704	0.4-	0.9+	1999 12 16	704	0.5-	0.8-
1998 11 14	704	0.1+	0.2-	1999 11 16	704	0.1+	0.7-	1999 12 16	704	0.4+	0.3-
1998 11 14	704	1.3+	0.0	1999 11 16	704	0.1+	0.4+	2000 01 04	704	0.3-	0.2-
1998 11 14	704	(3.0+	0.1-)	1999 11 16	704	0.0	0.2+	2000 01 04	704	0.0	0.4-
1998 11 14	704	0.1-	0.0	1999 12 10	704	0.6+	0.9-	2000 01 04	704	0.3-	0.2+
1998 11 16	704	0.5-	0.0	1999 12 10	704	0.4+	0.4-	2000 01 04	704	0.4-	0.5+
1998 11 16	704	0.8+	0.1+	1999 12 10	704	0.6-	0.5+	2000 01 04	704	0.0	0.6+

1999 XH₁₇₁ = 1996 GR₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	332.98159		(2000.0)	P	Q
<i>n</i>	0.22430880	ω	89.22856	-0.89994264	-0.42936541
<i>a</i>	2.6826984	Ω	65.34144	+0.35945749	-0.82905252
<i>e</i>	0.1453587	<i>i</i>	4.78559	+0.24676620	-0.35821399
<i>P</i>	4.39	<i>H</i>	14.3	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1996 04 09	327	0.2+	0.0	1999 12 15	704	0.1+	0.3-	2000 01 04	704	0.3-	0.3-
1996 04 09	327	0.1+	0.1-	1999 12 15	704	0.2+	0.4+	2000 01 04	704	0.1+	0.6-
1996 04 09	327	0.0	0.2-	1999 12 15	704	0.0	0.3-	2000 01 08	704	0.1-	0.6+
1996 04 10	327	0.5+	0.0	1999 12 15	704	0.7+	0.2+	2000 01 08	704	0.2+	0.3+
1996 04 10	327	0.5-	0.4-	1999 12 15	704	0.2-	0.4+	2000 01 08	704	0.1+	0.6+
1996 04 10	327	0.3-	0.7+	2000 01 03	704	0.2-	0.3-	2000 01 08	704	0.2-	0.1+
1999 12 10	704	0.0	0.1+	2000 01 03	704	0.0	0.0	2000 01 08	704	0.4+	0.6+
1999 12 10	704	0.2+	0.1-	2000 01 03	704	0.5-	0.7-	2000 01 10	704	0.0	0.2-
1999 12 10	704	0.0	0.2+	2000 01 03	704	0.2-	1.1-	2000 01 10	704	0.2-	0.4+
1999 12 10	704	0.2-	0.3-	2000 01 04	704	0.3+	0.3+	2000 01 10	704	0.3+	0.0
1999 12 10	704	0.1-	0.1-	2000 01 04	704	0.6-	0.0	2000 01 10	704	0.1+	0.2+

1999 XM₁₇₁ = 1988 AQ₁ = 1991 YQ₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	30.09816		(2000.0)	P	Q
<i>n</i>	0.24520832	ω	143.21845	+0.17118487	-0.98024297
<i>a</i>	2.5280127	Ω	296.73277	+0.87545556	+0.19747756
<i>e</i>	0.1656822	<i>i</i>	6.37022	+0.45196605	-0.01123992
<i>P</i>	4.02	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1988 01 13	046	0.8+	0.6+	1999 12 10	704	0.0	0.0	2000 01 04	704	0.6-	0.0
1988 01 13	046	1.1-	1.3-	1999 12 10	704	0.4+	0.5+	2000 01 04	704	0.1-	0.2+
1991 12 27	691	0.1+	0.1+	1999 12 10	704	0.0	0.8+	2000 01 04	704	0.2+	0.1+
1991 12 27	691	0.2-	0.3+	1999 12 15	704	0.7+	0.1-	2000 01 04	704	0.2+	0.1+
1991 12 27	691	0.1-	0.4+	1999 12 15	704	0.3+	0.3-	2000 01 04	120	1.1-	0.0
1992 01 01	691	0.3+	0.9-	1999 12 15	704	0.3+	0.6-	2000 01 04	120	1.4+	0.2+
1992 01 01	691	0.2-	0.2-	1999 12 15	704	0.7+	0.4-	2000 01 05	120	0.4-	0.1+
1992 01 01	691	0.1-	0.1-	1999 12 15	704	0.1+	0.8-	2000 01 05	120	0.1-	0.4+
1999 11 12	703	1.1-	0.4+	2000 01 03	704	0.3-	0.1+	2000 01 08	704	0.5+	0.6+
1999 11 12	703	0.2-	0.2+	2000 01 03	704	0.7-	0.3-	2000 01 08	704	0.6+	0.3+
1999 11 12	703	0.2+	0.1+	2000 01 03	704	0.6+	0.1+	2000 01 08	704	1.1-	0.1-
1999 11 12	703	0.3+	1.2-	2000 01 03	704	0.0	0.3-	2000 01 08	704	0.7+	0.0
1999 12 10	704	0.1-	0.4+	2000 01 03	704	0.3-	0.1-				
1999 12 10	704	0.1-	0.3-	2000 01 04	704	1.1-	0.8+				

1999 XA₁₇₂ = 1981 KR₁ = 1992 WT₈ = 1997 EZ₄₁

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Williams

<i>M</i>	88.70259		(2000.0)	P	Q
<i>n</i>	0.29459460	ω	63.00742	+0.94946610	-0.30298633
<i>a</i>	2.2369324	Ω	314.50083	+0.23150668	+0.85230594
<i>e</i>	0.1142919	<i>i</i>	6.59657	+0.21194054	+0.42634946
<i>P</i>	3.35	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1981 05 28	809	0.1-	0.2-	1999 12 03	699	0.1-	1.2+	1999 12 15	704	0.3+	0.3-
1992 11 25	675	0.3-	0.3+	1999 12 03	699	0.3-	1.1+	1999 12 15	704	0.4+	0.2-
1992 11 25	675	0.2-	0.9+	1999 12 03	699	0.3-	0.5+	2000 01 03	704	0.0	0.2+
1992 11 28	675	0.3-	0.7-	1999 12 10	704	0.0	0.3-	2000 01 03	704	0.2-	0.1-
1992 11 28	675	1.2+	1.4-	1999 12 10	704	0.0	0.1+	2000 01 03	704	0.2-	0.4-
1997 03 10	704	0.2+	0.1+	1999 12 10	704	0.7+	0.2+	2000 01 03	704	0.1+	0.4-
1997 03 10	704	0.0	0.8-	1999 12 10	704	0.5-	0.2+	2000 01 03	704	0.0	0.9-
1997 03 11	704	0.2-	0.2-	1999 12 10	704	0.1+	0.0	2000 01 04	704	0.4-	0.2-
1997 03 11	704	0.2-	0.1-	1999 12 15	704	0.3+	0.5+	2000 01 04	704	0.0	0.2-
1997 03 12	704	0.1+	0.0	1999 12 15	704	0.1-	0.0	2000 01 04	704	0.0	0.3-
1997 03 12	704	0.1+	0.8+	1999 12 15	704	0.6+	0.1+				

1999 XT₁₇₂ = 1998 UJ₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	260.04995		(2000.0)	P	Q
<i>n</i>	0.22654442	ω	158.68809	-0.60095525	+0.77161743
<i>a</i>	2.6650200	Ω	73.77448	-0.76113357	-0.47284781
<i>e</i>	0.1344131	<i>i</i>	12.53975	-0.24398459	-0.42546621
<i>P</i>	4.35	<i>H</i>	13.6	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 08 01	566	0.3-	0.5+	1998 11 13	704	0.3-	1.1-	1999 12 10	704	0.2-	0.2-
1997 08 01	566	0.5+	0.5+	1998 11 13	704	(2.5-	1.4-)	1999 12 10	704	0.3-	0.3-
1997 08 01	566	0.1-	0.8+	1998 11 13	704	1.6-	1.1-	1999 12 10	704	0.1-	0.3-
1998 10 17	699	0.5+	0.7+	1998 11 16	566	1.0-	0.0	1999 12 10	704	0.3-	0.0
1998 10 17	699	0.8+	0.9-	1998 11 16	566	0.9-	0.5-	1999 12 15	704	0.2-	0.1-
1998 10 17	699	1.5+	0.5+	1998 11 16	566	1.2-	0.2-	1999 12 15	704	0.0	0.1-
1998 10 20	699	0.3+	0.5+	1999 12 03	699	0.2-	1.0+	1999 12 15	704	0.1+	0.1+
1998 10 20	699	1.2+	1.3+	1999 12 03	699	0.2-	1.1+	1999 12 15	704	0.3+	0.0
1998 10 20	699	1.3+	0.6+	1999 12 03	699	0.7+	0.5+	1999 12 15	704	0.5+	0.4+
1998 11 13	704	0.5-	0.3-	1999 12 10	704	0.3-	0.1+				

1999 XW₁₇₂ = 1997 OO

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	25.52709		(2000.0)	P	Q
<i>n</i>	0.17188857	ω	154.31477	+0.00740997	-0.96630157
<i>a</i>	3.2035983	Ω	294.33954	+0.86186875	+0.13665273
<i>e</i>	0.0825832	<i>i</i>	16.40389	+0.50707726	-0.21814517
<i>P</i>	5.73	<i>H</i>	13.1	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1997 07 26	910	0.1-	0.2+	1999 12 06	703	0.8-	1.6+	1999 12 15	704	0.4+	1.3-
1997 07 26	910	0.0	0.2+	1999 12 06	703	0.7-	0.4+	2000 01 03	704	0.1+	0.0
1997 07 27	910	0.1-	0.1+	1999 12 10	704	0.2+	0.5-	2000 01 03	704	0.2+	0.2+
1997 07 28	910	0.0	0.1+	1999 12 10	704	0.1+	0.8-	2000 01 03	704	0.0	0.1+
1997 07 28	910	0.1+	0.2-	1999 12 10	704	0.1+	0.5-	2000 01 03	704	0.3+	1.4+
1997 07 28	910	0.1+	0.3-	1999 12 10	704	0.3+	0.6-	2000 01 03	704	0.3-	0.1-
1999 12 03	699	1.1-	0.8+	1999 12 10	704	0.0	0.3-	2000 01 04	704	0.3+	0.6-
1999 12 03	699	0.2-	0.9+	1999 12 15	704	0.2+	0.7-	2000 01 04	704	0.0	0.1-
1999 12 03	699	0.2-	1.3+	1999 12 15	704	0.2-	0.9-	2000 01 04	704	0.1+	0.5+
1999 12 06	703	1.1+	0.2+	1999 12 15	704	0.1-	1.2-	2000 01 04	704	0.9-	0.6+
1999 12 06	703	0.8+	0.2+	1999 12 15	704	0.3+	0.8-	2000 01 04	704	0.1-	0.3+

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1999 XJ₁₇₃ = 1998 SY₆₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	322.34293		(2000.0)	P	Q
<i>n</i>	0.22732288	ω	204.67022	-0.95770277	-0.26867884
<i>a</i>	2.6589324	Ω	319.30081	+0.28322093	-0.81675373
<i>e</i>	0.0681627	<i>i</i>	9.09167	+0.05090497	-0.51061240
<i>P</i>	4.34	<i>H</i>	13.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 20	699	0.2+	0.5-	1998 12 09	704	(2.9-	0.1-)	1999 12 31	699	0.6+	0.4+
1998 08 20	699	0.2+	0.4-	1998 12 09	704	1.5+	1.2+	2000 01 02	704	0.1+	0.1-
1998 08 20	699	0.9+	0.7-	1998 12 09	704	(1.1+	2.6-)	2000 01 02	704	0.1+	0.2-
1998 08 28	704	0.9+	0.7-	1999 12 03	699	0.1-	0.4+	2000 01 02	704	0.4-	0.2-
1998 08 28	704	0.6+	1.1+	1999 12 03	699	0.1-	0.4+	2000 01 02	704	0.3-	0.5-
1998 08 28	704	0.9-	1.7-	1999 12 03	699	0.2-	0.6+	2000 01 02	704	0.1+	0.1-
1998 08 28	704	1.1-	1.1+	1999 12 10	704	0.0	0.2+	2000 01 04	704	0.1-	0.1+
1998 08 28	704	0.9-	0.4+	1999 12 10	704	0.1+	0.4+	2000 01 04	704	0.4-	0.3-
1998 09 18	699	0.0	0.2+	1999 12 10	704	0.0	0.7+	2000 01 04	704	0.4-	0.1+
1998 09 18	699	0.2+	0.3-	1999 12 10	704	0.6-	0.0	2000 01 04	704	0.3-	0.1-
1998 09 18	699	0.2+	0.3+	1999 12 10	704	0.3-	0.7+	2000 01 04	704	0.7-	0.1+
1998 09 25	699	0.3+	0.1-	1999 12 15	704	0.4+	0.3-	2000 01 08	704	0.2-	0.0
1998 09 25	699	0.9+	0.3-	1999 12 15	704	0.5+	0.1+	2000 01 08	704	0.1+	0.7-
1998 09 25	699	0.0	0.5+	1999 12 15	704	0.0	0.6-	2000 01 08	704	0.1+	0.4-
1998 10 15	699	0.6-	0.0	1999 12 15	704	0.5+	0.2-	2000 01 08	704	0.1+	0.2-
1998 10 15	699	0.9-	0.3-	1999 12 15	704	0.4+	0.3-	2000 01 08	704	0.4+	0.6-
1998 10 15	699	0.3+	0.6+	1999 12 31	699	0.0	0.1+				
1998 12 09	704	1.5-	0.7-	1999 12 31	699	0.4+	0.6+				

1999 XK₁₇₃ = 1977 EJ₈ = 1998 QK₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	14.18864		(2000.0)	P	Q
<i>n</i>	0.25237502	ω	125.40518	-0.29583597	-0.95469242
<i>a</i>	2.4799246	Ω	341.72097	+0.83963190	-0.24375805
<i>e</i>	0.1065123	<i>i</i>	5.91147	+0.45552097	-0.17071732
<i>P</i>	3.91	<i>H</i>	14.7	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1977 03 12	381	0.7-	1.1+	1998 08 23	704	0.6-	0.8-	1999 12 10	704	0.0	0.3-
1977 03 12	381	0.2-	0.4+	1998 08 23	699	0.3+	0.4+	1999 12 10	704	0.0	0.1+
1977 03 14	381	0.9+	0.6+	1998 08 23	704	1.5+	1.3-	1999 12 10	704	0.1+	0.1-
1977 03 14	381	1.1+	0.7-	1998 08 23	704	0.1+	1.1+	1999 12 15	704	0.4-	0.2+
1977 03 15	381	0.7+	0.3-	1998 08 23	699	0.4+	1.1+	1999 12 15	704	0.5-	0.0
1977 03 15	381	1.3-	0.2-	1998 08 23	704	0.1-	1.0-	1999 12 15	704	0.6-	0.2-
1996 01 20	566	0.3-	0.4-	1999 11 12	703	0.8-	0.4-	1999 12 15	704	0.3-	0.4+
1996 01 20	566	1.3+	0.2+	1999 11 12	703	0.7-	0.1+	1999 12 15	704	0.1-	0.1-
1996 01 20	566	0.5-	0.2-	1999 11 12	703	0.0	0.8+	2000 01 04	704	0.3+	0.3-
1998 08 17	704	0.5-	0.1-	1999 11 12	703	1.8-	0.5-	2000 01 04	704	0.2+	0.3+
1998 08 17	704	1.3-	0.9+	1999 12 03	699	1.0+	0.6+	2000 01 04	704	0.6+	0.1-
1998 08 17	704	0.2+	0.8+	1999 12 03	699	0.1+	1.0+	2000 01 04	704	0.8+	0.6-
1998 08 17	704	1.0-	0.0	1999 12 03	699	0.4+	0.0	2000 01 04	704	0.8-	0.3+
1998 08 23	699	0.3+	0.4+	1999 12 10	704	0.6+	0.3-				
1998 08 23	704	(2.4+	2.0-)	1999 12 10	704	1.1+	0.5+				

1999 XN₁₇₃ = 1998 RF₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	61.05138		(2000.0)	P	Q
<i>n</i>	0.21907090	ω	357.62906	+0.61266288	-0.78691213
<i>a</i>	2.7252913	Ω	54.57867	+0.72660441	+0.52417996
<i>e</i>	0.0891933	<i>i</i>	5.18015	+0.31095053	+0.32558357
<i>P</i>	4.50	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.9+	0.3-	1999 12 10	704	0.0	0.2-	2000 01 03	704	0.2+	0.3-
1998 09 14	704	0.7+	0.4-	1999 12 10	704	0.1-	0.7-	2000 01 03	704	0.2+	0.2+
1998 09 14	704	0.3-	0.6-	1999 12 10	704	0.3-	0.6-	2000 01 03	704	0.7+	0.5+

1998 09 14	704	0.8-	0.2+	1999 12 15	704	0.3-	0.8+	2000 01 03	704	0.1-	0.1+
1998 09 18	704	0.7-	0.0	1999 12 15	704	0.1+	0.0	2000 01 03	704	0.4+	0.4+
1998 09 18	704	1.2-	0.2-	1999 12 15	704	0.5+	0.3+	2000 01 04	704	0.1-	0.3-
1998 09 18	704	0.4+	1.1-	1999 12 15	704	0.1-	0.7+	2000 01 04	704	0.4+	0.5-
1998 09 18	704	1.5+	1.9+	1999 12 15	704	0.2-	1.2+	2000 01 04	704	0.8-	1.1-
1998 09 18	704	0.7-	0.4+	1999 12 31	699	0.2+	0.4+	2000 01 04	704	0.2-	0.1-
1999 12 10	704	0.4-	1.0-	1999 12 31	699	0.4-	0.2-				
1999 12 10	704	0.8+	0.3-	1999 12 31	699	0.4-	0.6+				

1999 XV₁₇₃ = 1997 HX₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	345.70080		(2000.0)	P	Q
<i>n</i>	0.26926472	ω	74.67613	-0.82502725	-0.54320649
<i>a</i>	2.3751065	Ω	72.19008	+0.43508900	-0.78649181
<i>e</i>	0.1320485	<i>i</i>	9.41507	+0.36059341	-0.29386621
<i>P</i>	3.66	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 04 30	691	0.1-	0.3+	1997 06 07	809	0.0	0.7+	1999 12 10	704	0.0	0.4+
1997 04 30	691	0.1-	0.2+	1997 06 08	809	(3.8-	1.6-)	1999 12 15	704	0.5-	0.2-
1997 04 30	691	0.3-	0.1+	1997 06 08	809	(2.9-	1.9-)	1999 12 15	704	0.7-	0.1-
1997 05 04	809	(1.5+	3.4+)	1997 06 08	809	(3.1-	1.0-)	1999 12 15	704	0.5-	0.3+
1997 05 04	809	(2.2+	3.4+)	1997 06 08	809	(3.3+	0.4+)	1999 12 15	704	0.4-	0.1-
1997 05 04	809	(3.1+	3.0+)	1997 06 08	809	(3.0+	0.0)	1999 12 15	704	0.8-	0.1-
1997 05 05	691	0.4-	0.1-	1997 06 08	809	(2.8+	0.9+)	1999 12 31	699	0.1+	0.4+
1997 05 05	691	0.1-	0.0	1999 11 12	703	0.1+	1.2+	1999 12 31	699	0.2+	0.5+
1997 05 05	691	0.4-	0.2-	1999 11 12	703	(1.6-	2.3+)	1999 12 31	699	0.6+	0.1+
1997 06 07	809	(4.8-	2.1-)	1999 11 12	703	0.5-	1.4+	2000 01 02	704	0.3+	0.5-
1997 06 07	809	(3.9-	2.1-)	1999 11 12	703	1.1-	1.3+	2000 01 02	704	0.2+	1.2-
1997 06 07	809	(3.4-	1.1-)	1999 12 10	704	0.8+	0.7-	2000 01 02	704	0.4+	0.5-
1997 06 07	809	1.4+	0.4+	1999 12 10	704	0.2+	0.6+	2000 01 02	704	0.4+	0.3-
1997 06 07	809	0.6+	0.4-	1999 12 10	704	0.2+	0.4+	2000 01 02	704	0.5+	0.7-

1999 XY₁₇₃ = 1998 RS₁₇

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Williams

<i>M</i>	35.18712		(2000.0)	P	Q
<i>n</i>	0.21847757	ω	112.47102	+0.21663002	-0.97256010
<i>a</i>	2.7302232	Ω	324.67813	+0.83307345	+0.22946848
<i>e</i>	0.1523757	<i>i</i>	8.43827	+0.50897943	+0.03835443
<i>P</i>	4.51	<i>H</i>	14.6	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 26	699	0.5-	1.4+	1999 12 03	699	0.5+	1.0+	1999 12 31	699	0.1-	0.7+
1998 08 26	699	1.2-	0.3+	1999 12 10	704	1.0+	0.7-	2000 01 02	704	0.0	1.8-
1998 08 26	699	0.3+	0.1+	1999 12 10	704	0.2+	0.9-	2000 01 02	704	1.1-	0.1+
1998 09 14	704	0.1+	0.9+	1999 12 10	704	0.4+	0.2+	2000 01 02	704	0.2-	0.0
1998 09 14	704	0.2+	0.6-	1999 12 10	704	0.4+	0.6-	2000 01 02	704	0.6-	0.4-
1998 09 14	704	1.8+	0.4+	1999 12 10	704	0.4-	0.4-	2000 01 04	704	0.2+	0.3-
1998 09 14	704	0.4+	1.1-	1999 12 15	704	0.1+	0.4-	2000 01 04	704	0.6+	1.0+
1998 09 18	704	1.4-	0.6-	1999 12 15	704	0.3-	0.1+	2000 01 04	704	1.0+	0.8+
1998 09 18	704	0.1-	0.0	1999 12 15	704	0.1-	0.6-	2000 01 04	704	(1.3-	2.7+)
1998 09 18	704	(1.7-	2.3+)	1999 12 15	704	0.3-	0.6+	2000 01 05	678	(2.6-	0.9+)
1998 09 18	704	0.3+	0.8-	1999 12 15	704	0.2-	1.4+	2000 01 05	678	0.7-	0.6-
1999 12 03	699	0.1-	1.1-	1999 12 31	699	0.8+	0.2+	2000 01 06	678	1.1-	0.1-
1999 12 03	699	0.3-	0.9+	1999 12 31	699	0.2+	0.4+	2000 01 06	678	0.1+	0.5+

1999 XA₁₇₄ = 1976 JL₁ = 1983 EG₂ = 1991 RW₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	154.97303		(2000.0)	P	Q
<i>n</i>	0.27649508	ω	296.73173	+0.78469804	+0.61803255
<i>a</i>	2.3335178	Ω	25.18390	-0.52132248	+0.69969086
<i>e</i>	0.1305120	<i>i</i>	6.44963	-0.33536825	+0.35

Residuals in seconds of arc

1976 05 02	095	0.2+	0.4+	1998 11 20	699	0.9−	0.5+	1999 12 15	704	0.2+	0.2+
1983 03 11	381	0.2−	0.7+	1998 12 08	704	0.7−	0.1+	1999 12 15	704	0.3−	0.3−
1983 03 11	381	0.6+	0.3−	1998 12 08	704	0.4−	0.8+	1999 12 15	704	0.4−	0.0
1991 09 09	095	(3.9−	1.8−)	1998 12 08	704	1.3+	1.3+	1999 12 15	704	0.3−	0.1−
1991 09 09	095	(3.0+	2.1−)	1998 12 08	704	1.6−	1.4+	1999 12 15	704	0.6−	0.5+
1991 09 15	675	0.1+	0.0	1998 12 08	704	(5.2−	0.7+)	1999 12 31	699	0.4+	0.6+
1991 09 15	675	0.6+	0.0	1999 11 12	703	0.2+	0.7+	1999 12 31	699	0.2+	0.7+
1991 09 15	095	(7.9+	2.8−)	1999 11 12	703	0.9+	0.8+	1999 12 31	699	0.4+	0.5+
1991 09 15	095	(6.9+	3.5−)	1999 11 12	703	0.5−	0.6+	2000 01 02	704	0.3+	0.0
1991 09 17	675	0.6+	0.7−	1999 11 12	703	0.4+	0.3+	2000 01 02	704	0.2+	0.0
1991 09 17	675	0.2+	0.5−	1999 12 10	704	0.3−	0.6−	2000 01 02	704	0.1+	0.6−
1991 09 17	095	0.7−	0.4−	1999 12 10	704	0.5+	0.5−	2000 01 02	704	0.0	0.3−
1991 09 17	095	(2.9+	1.2−)	1999 12 10	704	0.2−	0.4−	2000 01 02	704	0.1+	0.4−
1998 11 20	699	0.9+	0.5−	1999 12 10	704	0.5−	0.6−				
1998 11 20	699	0.3−	0.4+	1999 12 10	704	1.1−	0.7−				

1999 XR₁₇₄ = 1985 QN₅ = 1985 SV = 1997 EH₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	85.73540		(2000.0)	P	Q
<i>n</i>	0.29131426	ω	44.34404	+0.96965105	−0.24042491
<i>a</i>	2.2536937	Ω	329.48543	+0.19287039	+0.86383509
<i>e</i>	0.2339171	<i>i</i>	5.01826	+0.15025930	+0.44270171
<i>P</i>	3.38	<i>H</i>	14.8	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1985 08 23	095	(5.7+	11.5+)	1999 12 08	703	0.3−	1.0+	1999 12 15	704	0.4+	0.1−
1985 09 19	046	0.5+	1.1−	1999 12 08	703	0.3−	0.7+	2000 01 03	704	0.2−	0.7−
1985 09 19	046	0.4+	0.6−	1999 12 10	704	0.1−	0.1+	2000 01 03	704	0.7−	0.4−
1997 03 03	691	0.2−	0.5−	1999 12 10	704	0.0	0.7+	2000 01 03	704	1.0−	0.0
1997 03 03	691	0.0	0.2−	1999 12 10	704	1.3+	0.6+	2000 01 03	704	0.5−	0.8−
1997 03 03	691	0.2−	0.2−	1999 12 10	704	0.3+	0.6+	2000 01 03	704	0.4−	0.7−
1997 03 10	691	0.3−	0.5−	1999 12 10	704	0.5+	0.3−	2000 01 04	704	0.3−	0.9−
1997 03 10	691	0.3−	0.3−	1999 12 15	704	0.3+	0.8+	2000 01 04	704	0.1+	0.2+
1997 03 10	691	0.2−	0.5−	1999 12 15	704	0.7+	0.2+	2000 01 04	704	0.7−	0.5−
1999 12 08	703	0.4+	0.5+	1999 12 15	704	0.8+	0.3+	2000 01 04	704	0.4−	1.1−
1999 12 08	703	0.6+	0.2+	1999 12 15	704	0.3+	0.1+	2000 01 04	704	0.1+	0.2+

1999 XS₁₇₄ = 1988 BC₁ = 1990 OX₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	132.41061		(2000.0)	P	Q
<i>n</i>	0.25123232	ω	277.37053	+0.96289268	+0.25569190
<i>a</i>	2.4874387	Ω	67.84557	−0.19583547	+0.88215694
<i>e</i>	0.0951708	<i>i</i>	5.35073	−0.18570447	+0.39550068
<i>P</i>	3.92	<i>H</i>	13.3	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1988 01 21	511	(5.1−	2.2−)	1999 12 10	704	1.0+	0.5−	2000 01 03	704	0.6+	0.3−
1988 01 21	511	0.4−	1.6+	1999 12 10	704	0.2+	0.0	2000 01 03	704	0.1−	0.3−
1988 01 22	511	0.9−	1.7+	1999 12 10	704	0.2+	0.3−	2000 01 03	704	0.2+	0.3−
1988 01 22	511	1.1+	1.9−	1999 12 10	704	0.6−	0.0	2000 01 03	704	0.0	0.1+
1990 07 26	675	0.4+	0.3−	1999 12 15	704	0.0	0.1+	2000 01 04	704	0.4+	0.1−
1990 07 26	675	0.2−	0.4−	1999 12 15	704	0.1+	0.1−	2000 01 04	704	0.0	0.3−
1999 12 08	703	0.7−	0.1+	1999 12 15	704	0.0	0.4−	2000 01 04	704	0.5+	0.1+
1999 12 08	703	0.5−	0.4+	1999 12 15	704	0.2−	0.0	2000 01 04	704	0.4+	0.0
1999 12 08	703	0.3−	0.2+	1999 12 15	704	1.3−	0.2−	2000 01 04	704	0.0	0.1+
1999 12 08	703	0.2−	0.0	2000 01 03	704	0.3−	0.5−				

1999 XT₁₇₄ = 1995 EV₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	86.18041		(2000.0)	P	Q
<i>n</i>	0.18490451	ω	66.12752	+0.87996661	−0.46432943
<i>a</i>	3.0514368	Ω	321.32745	+0.35613855	+0.78455584
<i>e</i>	0.0951739	<i>i</i>	9.23526	+0.31436302	+0.41093833
<i>P</i>	5.33	<i>H</i>	13.8	<i>G</i>	0.15
				<i>U</i>	3

Residuals in seconds of arc

1995 03 02	691	0.2−	0.1+	1998 11 20	699	0.5+	0.3+	1999 12 15	704	0.6−	0.6−
1995 03 02	691	0.2−	0.1+	1999 12 10	704	0.2−	0.4−	1999 12 15	704	0.1−	0.2−
1995 03 02	691	0.2+	0.0	1999 12 10	704	0.4+	0.3−	1999 12 15	704	0.8−	0.6−
1995 03 10	691	0.4+	0.2−	1999 12 10	704	0.6−	0.3−	2000 01 03	704	1.1+	1.0+
1995 03 10	691	0.6−	0.3−	1999 12 10	704	0.4−	1.5−	2000 01 03	704	0.4+	0.4+
1995 03 10	691	0.2+	0.2−	1999 12 15	704	0.8−	1.0−	2000 01 03	704	0.3+	0.8+
1998 10 12	699	0.3−	0.1−	1999 12 15	704	1.0−	0.4+	2000 01 03	704	0.3+	0.9+
1998 10 12	699	0.2+	0.4−	1999 12 15	704	0.9−	0.9−	2000 01 03	704	0.7+	0.2+
1998 10 12	699	0.5+	0.5−	1999 12 15	704	0.4+	0.4−	2000 01 04	704	0.4+	0.3+
1998 11 20	699	0.1+	0.2+	1999 12 15	704	0.3−	0.3−	2000 01 04	704	(0.2−	2.3+)
1998 11 20	699	1.1−	0.7+	1999 12 15	704	0.3−	0.7+	2000 01 04	704	1.8+	1.7+

1999 XH₁₇₅ = 1998 SQ₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	5.88591		(2000.0)	P	Q
<i>n</i>	0.20364883	ω	179.73209	−0.53120870	−0.82444579
<i>a</i>	2.8611993	Ω	302.34783	+0.77689802	−0.38207949
<i>e</i>	0.2995617	<i>i</i>	13.35988	+0.33800411	−0.41749779
<i>P</i>	4.84	<i>H</i>	14.2	<i>G</i>	0.15
				<i>U</i>	4

Residuals in seconds of arc

1998 09 19	704	1.8−	0.3+	1999 12 15	704	0.2+	0.6−	2000 01 03	704	0.3+	0.7+
1998 09 19	704	0.6+	0.6+	1999 12 15	704	0.3−	0.1+	2000 01 03	704	0.1+	0.3+
1998 09 19	704	(0.2+	4.1+)	1999 12 15	704	0.2+	0.4−	2000 01 04	704	0.2−	0.3+
1998 09 19	704	(2.6−	2.2+)	1999 12 15	704	0.2−	0.6−	2000 01 04	704	0.3−	0.3−
1998 09 23	704	(3.3+	0.4−)	2000 01 01	732	0.1−	0.2+	2000 01 04	704	0.1−	0.3+
1998 09 23	704	0.3+	0.3+	2000 01 01	732	0.4−	0.2+	2000 01 04	704	0.1−	0.4−
1998 09 23	704	0.9+	1.2−	2000 01 01	732	0.6−	0.0	2000 01 04	704	(2.1+	0.4+)
1999 12 10	704	0.3+	0.5+	2000 01 02	732	0.4+	0.5+	2000 01 04	704	0.1+	0.5−
1999 12 10	704	0.7+	0.1+	2000 01 02	732	0.4+	0.4+	2000 01 04	704	0.1+	0.5−
1999 12 10	704	0.3−	0.0	2000 01 02	732	0.1+	0.3+	2000 01 13	691	0.0	0.4−
1999 12 10	704	0.4+	0.1−	2000 01 03	704	0.0	0.0	2000 01 13	691	0.0	0.3−
1999 12 10	704	0.5−	0.0	2000 01 03	704	0.1+	0.1−	2000 01 13	691	0.0	0.3−
1999 12 15	704	0.3−	0.3+	2000 01 03	704	0.0	0.2+				

1999 XK₁₇₅ = 1994 JT₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	81.98563		(2000.0)	P	Q
<i>n</i>	0.27789960	ω	336.17786	+0.92425794	−0.37516511
<i>a</i>	2.3256487	Ω	46.05354	+0.36414676	+0.81073252
<i>e</i>	0.2077789	<i>i</i>	5.63524	+0.11464900	+0.44940396
<i>P</i>	3.55	<i>H</i>	15.0	<i>G</i>	0.15
				<i>U</i>	5

Residuals in seconds of arc

1994 05 04	691	1.0+	0.5−	1999 12 10	704	0.5+	0.1−	1999 12 15	704	0.3−	1.1−
1994 05 04	691	0.1−	0.1+	1999 12 10	704	1.1+	0.3+	2000 01 03	704	0.3+	0.9−
1994 05 04	691	0.5−	0.2−	1999 12 10	704	0.5+	0.1−	2000 01 03	704	0.7−	0.5−
1994 05 17	691	0.3+	0.2+	1999 12 10	704	1.0+	0.5+	2000 01 03	704	0.3−	0.4−
1994 05 17	691	0.7−	0.4+	1999 12 10	704	0.5+	0.1+	2000 01 03	704	0.6+	0.7+
1999 12 08	703	0.9−	0.8+	1999 12 15	704	0.4+	0.3−	2000 01 04	704	0.0	0.3+
1999 12 08	703	0.3+	0.9+	1999 12 15	704	0.3−	0.8−	2000 01 04	704	0.4−	0.4+
1999 12 08	703	0.5−	0.3+	1999 12 15	704	1.0−	0.7−	2000 01 04	704	0.5+	0.6+
1999 12 08	703	1.4−	0.5+	1999 12 15	704	0.4+	0.9−	2000 01 04	704	0.1−	0.6+

2000 JAN. 24

M.P.C. 37973

1999 XL₁₇₅ = 1994 GL₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	183.00796		(2000.0)	P		Q	
<i>n</i>	0.28647787	ω	241.07946	+0.53584928	+0.83944118		
<i>a</i>	2.2789878	Ω	61.60022	-0.73436592	+0.51631605		
<i>e</i>	0.2224170	<i>i</i>	5.91014	-0.41662003	+0.16957667		
<i>P</i>	3.44	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1994 04 14	675	0.4-	0.5+	1998 12 08	704	1.0+	0.2-	1999 12 15	704	0.2-	0.9+
1994 04 14	675	0.6+	0.1-	1998 12 08	704	0.3+	1.5-	1999 12 15	704	0.2-	1.4+
1994 04 15	675	0.4-	1.5-	1998 12 08	704	(5.0-	1.8-)	2000 01 03	704	0.5-	0.5-
1994 04 15	675	0.9-	1.3-	1998 12 16	699	1.0-	0.9-	2000 01 03	704	0.2+	0.5-
1998 06 29	704	0.5+	0.5+	1998 12 16	699	0.3+	1.8-	2000 01 03	704	0.1+	0.6-
1998 06 29	704	1.0-	0.9-	1998 12 16	699	0.0	0.8-	2000 01 03	704	0.3+	0.8-
1998 06 29	704	0.0-	0.6+	1999 12 10	704	0.1+	0.6+	2000 01 03	704	0.2+	0.9-
1998 06 29	704	0.5-	0.4+	1999 12 10	704	0.4+	0.2+	2000 01 04	704	0.4+	0.1+
1998 06 29	704	0.2-	0.9+	1999 12 10	704	0.5+	0.3+	2000 01 04	704	0.0	0.4-
1998 11 23	699	0.5+	0.7-	1999 12 10	704	0.6-	0.4+	2000 01 04	704	0.2-	0.1-
1998 11 23	699	0.6+	0.5-	1999 12 10	704	0.8+	0.6+	2000 01 04	704	0.1-	0.0
1998 11 23	699	0.5+	0.3+	1999 12 15	704	0.1-	0.7-	2000 01 04	704	0.8-	0.2-
1998 12 08	704	0.1-	0.1-	1999 12 15	704	1.0+	1.2+				
1998 12 08	704	0.5+	1.7+	1999 12 15	704	0.7-	0.7+				

1999 XH₁₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	228.43431		(2000.0)	P		Q	
<i>n</i>	0.22578452	ω	308.91029	+0.05669605	+0.99420381		
<i>a</i>	2.6709963	Ω	324.02087	-0.86112846	+0.00239713		
<i>e</i>	0.1913068	<i>i</i>	8.94507	-0.50521612	+0.10748509		
<i>P</i>	4.37	<i>H</i>	12.9	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 11 14	704	0.2+	0.5+	1999 12 15	704	0.3-	0.3-	2000 01 04	704	0.1-	0.4-
1998 11 14	704	0.9+	0.2+	1999 12 15	704	0.2-	0.2-	2000 01 04	704	0.1-	0.1+
1998 11 14	704	0.8+	0.9-	1999 12 15	704	0.1-	1.8+	2000 01 04	704	0.3+	0.0
1998 11 14	704	1.8-	0.2+	2000 01 03	704	1.0-	0.2+	2000 01 04	704	0.1+	0.0
1999 12 10	704	0.4+	0.9-	2000 01 03	704	0.4-	0.3-	2000 01 06	699	0.5+	0.1+
1999 12 10	704	0.4+	0.1+	2000 01 03	704	0.2-	0.4-	2000 01 06	699	0.2+	0.1+
1999 12 10	704	0.8+	0.3+	2000 01 03	704	0.0	0.1-	2000 01 06	699	0.1+	0.4+
1999 12 10	704	0.4-	0.3+	2000 01 03	704	0.1+	0.0				
1999 12 15	704	0.0	0.1-	2000 01 04	704	0.0	0.5-				

1999 XD₁₇₇ = 1994 LA₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	9.14543		(2000.0)	P		Q	
<i>n</i>	0.29350224	ω	62.22948	-0.58586819	-0.80384150		
<i>a</i>	2.2424793	Ω	64.00573	+0.69738741	-0.56478429		
<i>e</i>	0.0994372	<i>i</i>	6.57647	+0.41280656	-0.18670177		
<i>P</i>	3.36	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1994 06 03	809	0.0	1.1+	1999 11 16	704	0.3-	0.4+	1999 12 15	704	0.1+	0.4-
1994 06 03	809	1.0+	1.9+	1999 11 16	704	0.0	0.7+	1999 12 15	704	0.1-	0.3+
1994 06 03	809	1.0+	0.3+	1999 11 16	704	0.0	0.4+	2000 01 03	704	0.4-	0.1-
1994 06 04	809	0.1-	0.2-	1999 12 10	704	0.3-	0.1+	2000 01 03	704	0.0	0.0
1994 06 04	809	1.1-	0.6-	1999 12 10	704	0.1-	0.1-	2000 01 03	704	0.5-	0.3+
1994 06 04	809	0.3-	0.4-	1999 12 10	704	0.4-	0.1-	2000 01 03	704	0.4-	0.2-
1996 02 09	327	0.7-	0.3+	1999 12 10	704	0.3-	0.1-	2000 01 03	704	0.0	0.1+
1996 02 09	327	0.4-	0.2+	1999 12 10	704	0.2+	0.5+	2000 01 06	699	0.2+	0.3-
1996 02 09	327	0.7+	0.5+	1999 12 15	703	0.1+	0.4+	2000 01 06	699	0.5+	0.1-
1999 11 11	703	0.1+	0.5+	1999 12 15	703	0.2+	0.4+	2000 01 06	699	0.5-	0.5-
1999 11 11	703	0.7+	0.9+	1999 12 15	704	0.2+	0.5-	2000 01 07	691	0.2+	0.2-
1999 11 11	703	0.4+	0.3+	1999 12 15	703	0.1-	0.3+	2000 01 07	691	0.8+	0.7-
1999 11 11	703	0.1-	0.2+	1999 12 15	704	0.5-	0.3-	2000 01 07	691	0.5+	0.4-

1999 11 16	704	0.1+	0.3+	1999 12 15	703	0.0	0.7+
1999 11 16	704	0.5-	0.6+	1999 12 15	704	0.3+	0.6-

1999 XM₁₇₇ = 1998 RV₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	353.58518		(2000.0)	P		Q	
<i>n</i>	0.22943781	ω	77.49743	-0.61072556	-0.78975374		
<i>a</i>	2.6425673	Ω	50.29658	+0.69440202	-0.56904286		
<i>e</i>	0.0688386	<i>i</i>	4.28423	+0.38055238	-0.22908352		
<i>P</i>	4.30	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	1.8+	0.8+	1999 12 15	704	0.5-	0.1+	2000 01 04	704	(2.6-	0.1+)
1998 09 14	704	0.7-	1.6-	1999 12 15	704	0.1-	0.7+	2000 01 07	704	0.0	0.1-
1998 09 14	704	1.3+	0.6+	1999 12 15	704	0.4+	0.9+	2000 01 07	704	0.2+	0.3-
1998 09 14	704	1.0-	0.2-	1999 12 15	704	0.1+	0.0	2000 01 07	704	0.1-	0.5-
1998 09 18	704	0.2-	1.1+	1999 12 15	704	0.0	0.6+	2000 01 07	704	0.4-	0.1+
1998 09 18	704	1.2+	0.3+	2000 01 03	704	0.3+	1.2+	2000 01 07	704	0.4-	0.1+
1998 09 18	704	1.9-	0.3-	2000 01 03	704	0.1-	0.5+	2000 01 08	704	0.1-	0.4-
1998 09 18	704	0.4-	0.7-	2000 01 03	704	0.1+	1.2+	2000 01 08	704	0.3-	0.3+
1999 12 10	704	0.2-	1.3-	2000 01 03	704	0.1+	0.6+	2000 01 08	704	0.0	0.7-
1999 12 10	704	0.1+	0.8-	2000 01 03	704	0.2+	1.1+	2000 01 08	704	0.6-	0.6-
1999 12 10	704	0.5-	0.1-	2000 01 04	704	1.6+	1.0-	2000 01 08	704	0.3-	1.2-
1999 12 10	704	0.0	0.0	2000 01 04	704	0.5+	0.7-				

1999 XE₁₇₈ = 1998 QG₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	52.11649		(2000.0)	P		Q	
<i>n</i>	0.17439409	ω	82.91551	+0.77892145	-0.61013606		
<i>a</i>	3.1728403	Ω	314.55106	+0.46444633	+0.71657352		
<i>e</i>	0.2810636	<i>i</i>	11.73739	+0.42139172	+0.33801831		
<i>P</i>	5.65	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 26	809	0.2+	0.0	1998 08 28	699	0.2-	0.2-	1999 12 29	411	0.5-	0.2+
1998 07 26	809	0.4+	0.9+	1998 08 28	699	0.4-	0.4+	1999 12 31	699	0.5+	1.2+
1998 07 26	809	0.6+	0.9+	1999 12 10	704	0.2+	0.2-	1999 12 31	699	0.0	0.6+
1998 08 17	704	0.2-	0.6-	1999 12 10	704	0.1+	0.5-	1999 12 31	699	0.3+	0.0
1998 08 17	704	0.5-	0.4+	1999 12 10	704	0.4+	0.7-	2000 01 02	704	0.4+	0.4-
1998 08 17	704	0.1-	0.3+	1999 12 10	704	0.7-	0.7-	2000 01 02	704	0.3+	0.1+
1998 08 17	704	0.6-	0.4+	1999 12 15	704	0.3-	0.3-	2000 01 02	704	0.2-	0.1+
1998 08 17	704	0.2-	0.2+	1999 12 15	704	0.3-	0.3-	2000 01 02	704	0.3+	0.6+
1998 08 23	704	1.8-	0.3+	1999 12 15	704	0.7-	0.6-	2000 01 02	704	0.3-	0.2-
1998 08 23	704	1.4+	0.3+	1999 12 15	704	0.4-	0.5-	2000 01 04	704	0.6+	0.5-
1998 08 23	704	0.2+	0.8-	1999 12 15	704	0.7-	0.6-	2000 01 04	704	0.8+	0.2+
1998 08 23	704	1.5+	0.3-	1999 12 27	411	0.0	0.0	2000 01 04	704	0.2+	0.3+
1998 08 23	704	1.1-	2.0-	1999 12 27	411	1.0-	1.0+	2000 01 04	704	0.6+	0.3+
1998 08 28	699	0.3+	0.5+	1999 12 29	411	0.0	0.4+	2000 01 04	704	0.2+	0.8+

1999 XJ₁₇₈ = 1973 QS₁ = 1991 PB₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	95.95224		(2000.0)	P		Q	
<i>n</i>	0.27181275	ω	57.87140	+0.99352994	-0.06722408		
<i>a</i>	2.3602400	Ω	305.82486	+0.01820961	+0.88986473		
<i>e</i>	0.2066543	<i>i</i>	6.48233	+0.11210117	+0.45124460		
<i>P</i>	3.63	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1973 08 29	095	0.3-	0.6+	1999 12 03	699	0.0	0.5+	2000 01 03	704	0.2+	0.0
1991 08 03	809	0.6-	0.6-	1999 12 10	704	0.6+	0.4+	2000 01 03	704	0.2-	0.6-
1991 08 03	809	1.1-	0.1+	1999 12 10	704	0.2+	0.7+	2000 01 03	704	0.2+	0.9-
1991 08 03	809	1.2-	0.2-	1999 12 10	704	0.1+	0.1+	2000 01 03	704	0.3+	0.2-
1991 08 04	809	0.4-	0.6-	1999 12 10	704	1.0-	0.4-	2000 01 04	704	0.0	0.1-

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1991 08 05	675	0.9+	1.0-	1999 12 15	704	0.1-	0.0	2000 01 04	704	0.1-	0.1+
1991 08 05	809	0.0	1.0+	1999 12 15	704	0.1-	0.2-	2000 01 04	704	0.7-	0.1-
1991 08 05	675	1.7+	0.6+	1999 12 15	704	0.4-	0.4-	2000 01 05	678	0.3-	0.6+
1991 08 07	675	1.3+	1.5-	1999 12 31	699	0.4+	0.5+	2000 01 05	678	0.6-	0.4-
1991 08 07	675	0.4+	0.5-	1999 12 31	699	1.1+	0.1+	2000 01 06	678	0.3-	0.0
1999 12 03	699	0.1+	0.3-	1999 12 31	699	0.7+	0.2+	2000 01 06	678	0.7-	0.1-
1999 12 03	699	0.0	0.8+	2000 01 03	704	0.6+	0.0				

1999 XK₁₇₈ = 1997 EO₃₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.30713602	ω	333.60001	+0.98995236	+0.14035325		
<i>a</i>	2.1756159	Ω	18.35602	-0.11815846	+0.88785163		
<i>e</i>	0.0688680	<i>i</i>	3.12792	-0.07767171	+0.43820139		
<i>P</i>	3.21	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 04	704	1.1-	0.1-	1999 12 10	704	0.7+	0.8-	2000 01 03	704	0.1-	1.0-
1997 03 04	704	0.1-	0.3-	1999 12 10	704	0.2+	0.2+	2000 01 03	704	0.6-	0.1-
1997 03 05	704	0.0	0.2+	1999 12 10	704	0.0	0.1+	2000 01 03	704	0.4+	0.4+
1997 03 05	704	0.1+	0.1+	1999 12 10	704	0.2+	0.4-	2000 01 03	704	0.5+	0.7+
1997 03 06	704	1.1+	0.1+	1999 12 15	704	0.5-	0.5+	2000 01 04	704	0.4-	0.5-
1997 03 06	704	0.0	0.2+	1999 12 15	704	0.0	0.5-	2000 01 04	704	0.2-	0.3+
1999 12 08	703	0.2-	0.4-	1999 12 15	704	0.2+	1.4+	2000 01 04	704	0.6-	0.4+
1999 12 08	703	1.1-	0.5-	1999 12 15	704	0.9+	0.2-	2000 01 04	704	0.1+	1.0-
1999 12 08	703	0.5+	0.6+	1999 12 15	704	0.1-	0.4-	2000 01 04	704	0.4+	0.8+
1999 12 08	703	0.4-	1.4+	2000 01 03	704	0.0	1.1-				

1999 XQ₁₇₉ = 1998 TQ₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17524154	ω	183.20788	-0.84507020	+0.53373518		
<i>a</i>	3.1626029	Ω	29.11873	-0.48909132	-0.74803187		
<i>e</i>	0.0936586	<i>i</i>	3.69433	-0.21597695	-0.39443007		
<i>P</i>	5.62	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 10 15	691	0.8-	0.2-	1999 12 10	704	0.4+	1.1+	2000 01 03	704	0.2+	1.5+
1998 10 15	691	0.8-	0.2-	1999 12 15	704	0.4+	0.2-	2000 01 04	704	0.2+	0.2-
1998 10 15	691	0.5-	0.2-	1999 12 15	704	1.3+	0.8+	2000 01 04	704	0.6+	0.8-
1998 10 20	691	0.7+	0.1+	1999 12 15	704	0.2-	0.3-	2000 01 04	704	0.9+	0.5+
1998 10 20	691	0.3+	0.3+	1999 12 15	704	0.1+	0.2+	2000 01 04	704	1.7-	0.8-
1998 10 20	691	1.1+	0.2+	1999 12 15	704	0.1-	1.4-	2000 01 06	704	0.0	0.7-
1999 12 10	704	0.2-	1.1+	2000 01 03	704	(1.1+	2.7-)	2000 01 06	704	0.3+	0.7-
1999 12 10	704	0.5-	0.2-	2000 01 03	704	0.9-	0.0	2000 01 06	704	0.6-	0.3+

1999 XU₁₇₉ = 1998 SX₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27573995	ω	221.51709	-0.83700674	+0.54700530		
<i>a</i>	2.3377761	Ω	351.60866	-0.47261848	-0.73587267		
<i>e</i>	0.1331743	<i>i</i>	5.62944	-0.27577435	-0.39909474		
<i>P</i>	3.57	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 28	691	0.3+	0.1-	1999 12 10	704	1.0-	0.3-	2000 01 04	704	0.0	0.2-
1998 09 28	691	0.2+	0.1+	1999 12 10	704	0.8+	0.3+	2000 01 04	704	0.4+	0.2+
1998 09 28	691	0.2+	0.1+	1999 12 10	704	0.2+	0.0	2000 01 04	704	0.3-	0.1+
1998 10 01	691	0.2-	0.4-	1999 12 15	704	0.2+	0.5+	2000 01 08	704	0.3-	0.4-
1998 10 01	691	0.6-	0.2+	1999 12 15	704	0.1+	0.9+	2000 01 08	704	0.4+	0.4-
1998 10 01	691	0.7-	0.7+	1999 12 15	704	0.1+	0.6-	2000 01 08	704	0.7-	0.5-
1998 10 01	327	0.6+	0.3+	1999 12 15	704	0.1-	0.6+	2000 01 08	704	0.5+	0.3+
1998 10 01	327	0.5+	0.2-	1999 12 15	704	0.3-	1.0-				
1998 10 01	327	0.3-	0.8-	2000 01 04	704	0.0	0.5+				

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1999 XD₁₈₀ = 1998 SJ₁₆₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27237733	ω	147.13460	-0.94384913	+0.30618517		
<i>a</i>	2.3569774	Ω	51.19828	-0.32693548	-0.81155174		
<i>e</i>	0.1476082	<i>i</i>	9.16247	-0.04756066	-0.49762879		
<i>P</i>	3.62	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.8-	0.1-	1999 12 08	703	0.7-	0.2+	1999 12 30	106	0.5-	0.1-
1998 09 26	704	0.4+	0.2-	1999 12 08	703	0.5+	0.5+	1999 12 31	106	0.3-	0.1+
1998 09 26	704	0.1+	0.5-	1999 12 10	704	0.1+	0.5-	1999 12 31	106	0.4+	0.5-
1998 09 26	704	0.3-	0.8-	1999 12 10	704	0.5+	0.1+	1999 12 31	106	0.8+	0.5+
1998 09 26	704	0.3+	1.1-	1999 12 10	704	0.4-	0.3+	2000 01 03	704	0.6-	0.3+
1998 09 27	704	0.6+	0.1-	1999 12 10	704	0.1+	0.3+	2000 01 03	704	0.2-	0.0
1998 09 27	704	1.1+	0.7+	1999 12 15	704	0.4-	0.5-	2000 01 03	704	0.4+	0.0
1998 09 27	704	0.7-	0.9+	1999 12 15	704	0.1+	1.0-	2000 01 03	704	0.4-	0.2+
1998 09 27	704	0.7-	1.2+	1999 12 15	704	0.2+	1.1-	2000 01 03	704	0.2+	0.3-
1999 12 08	703	0.2-	0.4+	1999 12 15	704	0.2+	0.0				
1999 12 08	703	0.0	0.9+	1999 12 30	106	0.2+	0.4+				

1999 XL₁₈₁ = 1993 RT₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.18622831	ω	343.74833	+0.81741218	+0.57334687		
<i>a</i>	3.0369589	Ω	340.94487	-0.50767770	+0.67125115		
<i>e</i>	0.1410423	<i>i</i>	9.83635	-0.27221441	+0.46978215		
<i>P</i>	5.29	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 09 14	809	0.4+	0.7+	1998 09 24	699	0.4+	0.3+	1999 12 15	704	0.3+	0.5+
1993 09 14	809	0.4+	0.2+	1998 09 24	699	0.4+	1.1+	1999 12 15	704	1.1+	0.6+
1993 09 14	809	0.0	0.4-	1998 09 24	699	0.4+	0.1-	1999 12 15	704	0.1-	0.0
1993 09 19	809	0.1-	0.8-	1999 11 01	704	0.9-	1.4+	2000 01 02	704	0.8+	0.5+
1993 09 19	809	0.6+	0.5-	1999 11 01	704	0.0	1.1+	2000 01 02	704	0.1+	1.5-
1993 09 19	809	0.3-	0.8-	1999 11 01	704	0.7-	0.4+	2000 01 02	704	0.1-	1.6-
1998 08 23	704	1.7-	0.2+	1999 11 01	704	0.3-	0.2+	2000 01 02	704	0.5-	1.2-
1998 08 23	704	0.9-	0.3-	1999 12 12	704	0.0	0.4+	2000 01 03	704	0.2-	0.0
1998 08 23	704	(2.4-	0.7-)	1999 12 12	704	0.2-	0.6+	2000 01 03	704	1.1+	0.4+
1998 08 23	704	(6.6-	0.8+)	1999 12 12	704	0.7-	0.7+	2000 01 03	704	0.1+	0.5-
1998 09 14	699	0.3+	0.2-	1999 12 12	704	0.5-	0.3+	2000 01 03	704	0.2+	0.8-
1998 09 14	699	0.6+	0.3-	1999 12 12	704	0.9-	0.1+	2000 01 03	704	1.7+	0.3-
1998 09 14	699	0.3+	0.6+	1999 12 15	704	0.0	0.1-				

1999 XP₁₈₁ = 1975 GU

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22614856	ω	164.99801	-0.96711964	+0.23000673		
<i>a</i>	2.6681290	Ω	29.00005	-0.25024716	-0.78456567		
<i>e</i>	0.1225083	<i>i</i>	12.93464	-0.04534278	-0.57580692		
<i>P</i>	4.36	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1975 04 15	805	0.2+	0.4-	1999 12 07	703	0.2-	0.1+	1999 12 15	704	0.6-	0.6-
1975 04 20	805	0.1-	0.6+	1999 12 07	703	0.1-	0.6+	1999 12 15	704	0.5+	0.9-
1999 11 03	704	0.6-	0.6+	1999 12 07	703	0.6-	0.4+	1999 12 15	704	1.4+	0.2+
1999 11 03	704	0.5+	0.1-	1999 12 07	703	0.1+	0.9+	2000 01 02	704	0.0	1.1-
1999 11 03	704	1.0-	1.1-	1999 12 12	704	0.4-	0.1+	2000 01 02	704	0.1-	0.5-
1999 11 03	704	0.3+	1.0-	1999 12 12	704	0.0	0.1-	2000 01 02	704	0.4+	0.4+
1999 11 14	049	0.3+	0.6+	1999 12 12	704	0.4-	0.2+	2000 01 02	704	0.3-	0.0
1999 11 14	049	0.8+	0.7+	1999 12 12	704	0.2-	0.1+	2000 01 02	704	0.0	0.4-
1999 11 14	049	0.3+	0.7+	1999 12 12	704	0.2-	0.2+				

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1999 XJ₁₈₂ = 1992 SZ₉ = 1997 EZ₃₂
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29444914	ω	67.33194	+0.23302821	−0.97233177		
<i>a</i>	2.2376691	Ω	9.23826	+0.85054141	+0.19560884		
<i>e</i>	0.1248961	<i>i</i>	5.86134	+0.47146279	+0.12770321		
<i>P</i>	3.35	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 09 27	691	0.8−	0.0	1997 03 06	704	0.7−	0.8+	1999 12 16	704	0.3−	0.1−
1992 09 27	691	0.6−	0.2−	1999 12 12	704	0.2−	0.2−	1999 12 16	704	0.2+	0.0
1992 09 27	691	1.3+	0.3−	1999 12 12	704	0.2+	0.2+	1999 12 16	704	0.1+	0.4+
1992 10 04	691	0.0	0.3+	1999 12 12	704	0.4−	0.2−	1999 12 16	704	0.3+	0.2−
1992 10 04	691	0.2−	0.5+	1999 12 12	704	0.4−	0.4−	1999 12 16	704	0.2+	0.1−
1992 10 04	691	0.3−	0.6+	1999 12 12	704	0.3−	0.7−	2000 01 02	704	0.1+	0.1−
1997 03 04	704	0.0	0.0	1999 12 15	704	0.2+	0.1+	2000 01 02	704	0.6+	0.2−
1997 03 04	704	0.0	0.7−	1999 12 15	704	0.1+	0.2+	2000 01 02	704	0.2+	0.2+
1997 03 05	704	1.4+	0.6+	1999 12 15	704	0.4−	0.1+	2000 01 02	704	0.1−	0.2−
1997 03 05	704	0.0	0.0	1999 12 15	704	0.4+	0.2+				
1997 03 06	704	0.4−	0.2+	1999 12 15	704	0.2−	0.3+				

1999 XR₁₈₂ = 1978 UN₆ = 1993 RN₁₅ = 1998 RT₃₈
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19341164	ω	180.10941	−0.99981779	+0.01897394		
<i>a</i>	2.9612902	Ω	0.98511	−0.01742008	−0.86205893		
<i>e</i>	0.0559906	<i>i</i>	6.99335	−0.00780595	−0.50645275		
<i>P</i>	5.10	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1978 10 27	675	0.1+	0.9+	1998 09 14	704	0.9+	0.6+	1999 12 15	704	0.0	0.4+
1978 10 28	675	0.3−	0.6+	1998 09 14	704	0.3+	0.6+	1999 12 16	704	1.4+	0.4−
1978 10 29	675	0.5−	0.5+	1998 09 14	704	0.0	0.5+	1999 12 16	704	0.2+	0.1+
1993 09 15	809	(1.8+	2.4−)	1998 09 14	704	0.8+	0.5+	1999 12 16	704	0.4−	0.1−
1993 09 15	809	0.1−	1.4−	1998 09 18	704	(1.4+	2.8−)	1999 12 16	704	0.2+	0.9−
1993 09 15	809	(0.9−	2.2−)	1998 09 18	704	1.0+	0.6−	1999 12 16	704	0.2−	0.2−
1993 09 19	675	0.5+	0.7−	1998 09 18	704	1.3−	0.3+	2000 01 02	704	1.0−	0.4+
1993 09 19	675	1.1+	0.2−	1998 09 18	704	0.3−	1.5−	2000 01 02	704	0.6+	0.2−
1993 09 20	691	0.5−	0.7+	1999 12 12	704	0.0	0.4+	2000 01 02	704	0.4+	1.2−
1993 09 20	691	0.3−	0.4+	1999 12 12	704	0.2−	0.0	2000 01 04	704	0.3−	0.3+
1993 09 20	691	0.2−	0.4+	1999 12 12	704	0.3−	1.5−	2000 01 04	704	0.1−	0.6−
1993 09 22	809	0.5−	0.3−	1999 12 12	704	0.1−	0.2+	2000 01 04	704	0.2+	0.1−
1993 09 22	809	0.7−	1.5−	1999 12 12	704	0.5+	0.4+	2000 01 04	704	0.7−	0.1−
1993 09 22	809	0.3−	1.4−	1999 12 15	704	0.3−	0.5−	2000 01 04	704	0.0	0.1−
1993 09 23	675	0.6+	0.9+	1999 12 15	704	0.0	1.1+				
1993 09 23	675	0.4−	1.3+	1999 12 15	704	0.2+	1.5+				

1999 XE₁₈₇ = 1998 QX₆₃
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27081840	ω	71.51448	+0.93342600	−0.08228068		
<i>a</i>	2.3660138	Ω	291.96203	−0.11036254	+0.86029816		
<i>e</i>	0.0320134	<i>i</i>	22.11900	+0.34137372	+0.50310731		
<i>P</i>	3.64	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 07 16	699	0.4+	0.6+	1999 12 12	704	0.1−	0.1−	1999 12 15	704	0.4−	0.4+
1998 07 16	699	0.8+	1.1+	1999 12 12	704	0.3+	0.2+	1999 12 15	704	0.5+	1.0+
1998 07 16	699	0.3−	0.5+	1999 12 12	704	0.2+	0.4−	1999 12 15	704	0.2+	0.0
1998 08 24	704	0.9+	1.7−	1999 12 12	704	0.2+	0.3−	1999 12 15	704	0.1−	0.2+
1998 08 24	704	1.0−	0.3+	1999 12 12	704	0.4+	0.6−	2000 01 02	704	0.1+	0.9+
1998 08 24	704	0.9−	1.4−	1999 12 12	704	0.3−	0.0	2000 01 02	704	0.2+	0.6+
1998 08 24	704	(1.2+	2.4−)	1999 12 12	704	0.0	0.1−	2000 01 02	704	0.4+	0.0
1998 08 27	704	1.6+	0.6−	1999 12 12	704	0.1−	0.6−	2000 01 04	704	0.8−	0.6+
1998 08 27	704	0.6−	0.2+	1999 12 12	704	0.2+	0.1−	2000 01 04	704	0.2−	0.0

1998 08 27 704 0.4− 0.8+ 1999 12 12 704 0.4− 1.2− 2000 01 04 704 0.5+ 0.1+
 1998 08 27 704 1.0− 0.8+ 1999 12 15 704 0.6− 0.9− 2000 01 04 704 0.0 0.9+

1999 XY₁₈₇ = 1987 YM₃ = 1998 VR₃₇
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08326921	ω	35.38600	+0.29409190	−0.93756443		
<i>a</i>	5.1937346	Ω	38.49239	+0.79373947	+0.13134709		
<i>e</i>	0.0509015	<i>i</i>	17.35848	+0.53243554	+0.32205727		
<i>P</i>	11.84	<i>H</i>	10.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1987 12 20	010	0.1−	1.2−	1998 11 11	704	0.8+	0.1+	1999 12 12	704	0.1+	0.8+
1987 12 20	010	0.3+	0.8+	1998 11 11	704	0.1+	1.3+	1999 12 12	704	0.5+	0.5+
1998 11 10	704	0.2+	0.4+	1999 11 01	704	0.1+	0.0	1999 12 15	704	0.2+	0.2+
1998 11 10	704	0.7+	0.3−	1999 11 01	704	0.2+	0.1−	1999 12 15	704	0.8−	0.1−
1998 11 10	704	0.1+	0.6+	1999 11 01	704	0.3−	0.0	1999 12 15	704	0.3+	0.1+
1998 11 10	704	0.5−	0.4+	1999 11 01	704	0.2+	0.0	2000 01 02	704	0.5−	0.2+
1998 11 10	704	0.9−	2.0−	1999 11 01	704	0.7−	0.9−	2000 01 02	704	0.4−	0.2−
1998 11 11	704	0.5−	0.1+	1999 12 12	704	0.3−	0.0	2000 01 02	704	0.4+	0.1−
1998 11 11	704	0.1+	0.8−	1999 12 12	704	0.3+	0.3+	2000 01 02	704	0.3−	0.5−
1998 11 11	704	0.1−	0.3+	1999 12 12	704	0.0	0.8+	2000 01 02	704	0.7+	0.9−

1999 XF₁₈₈ = 1998 QY₂₁
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19297715	ω	95.59647	+0.61712564	−0.77984682		
<i>a</i>	2.9657335	Ω	315.72083	+0.64933095	+0.57998556		
<i>e</i>	0.0904081	<i>i</i>	8.63799	+0.44443814	+0.23549034		
<i>P</i>	5.11	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.2+	1.0+	1998 09 15	699	0.3−	0.0	1999 12 15	704	0.6+	0.3−
1998 08 17	704	1.0−	0.4−	1998 09 15	699	0.6−	0.0	2000 01 02	704	0.7−	0.4−
1998 08 17	704	0.0	0.9+	1998 09 15	699	1.7−	0.3+	2000 01 02	704	0.6+	0.7−
1998 08 17	704	(2.1+	3.0+)	1999 12 12	704	0.1−	0.1+	2000 01 02	704	1.0+	0.1+
1998 08 17	704	0.3−	0.4+	1999 12 12	704	0.3−	0.1+	2000 01 02	704	0.4+	0.8+
1998 08 23	704	1.1+	1.6−	1999 12 12	704	0.6−	0.3+	2000 01 02	704	0.7+	1.0+
1998 08 23	704	0.5+	0.2−	1999 12 12	704	0.5−	0.1−	2000 01 04	704	0.3+	1.2−
1998 08 23	704	0.1+	1.3+	1999 12 12	704	0.7−	0.0	2000 01 04	704	0.7−	0.1+
1998 08 23	704	0.9+	1.6−	1999 12 15	704	0.0	0.3−	2000 01 04	704	0.5+	0.6+
1998 08 23	704	1.1+	0.2−	1999 12 15	704	0.3−	0.0	2000 01 04	704	0.1−	0.1−

1999 XG₁₈₈ = 1989 SK₁₃ = 1991 BP₃ = 1991 CL₆ = 1998 RS₂₇
 Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	322.29309		(2000.0)		P		Q				
<i>n</i>	0.21127967	ω	198.10929		−0.79410713		−0.59636340				
<i>a</i>	2.7918854	Ω	304.70863		+0.57377308		−0.67198128				
<i>e</i>	0.0998201	<i>i</i>	8.19915		+0.20044529		−0.43908070				
<i>P</i>	4.66	<i>H</i>	13.4		<i>G</i>	0.15	<i>U</i>	2			
Residuals in seconds of arc											
1989 09 28	493	1.4−	0.6+	1998 08 30	699	0.1−	0.9+	1999 12 12	704	0.3+	0.1−
1989 09 28	493	0.1−	2.3+	1998 08 30	699	0.3+	0.3+	1999 12 12	704	0.4−	0.1−
1989 10 03	493	(6.5+	2.1+)	1998 08 30	699	0.3+	1.0+	1999 12 12	704	0.1+	0.2+
1989 10 03	493	(6.5+	3.8+)	1998 09 14	704	0.4+	0.2−	1999 12 15	704	0.0	0.2−
1991 01 19	046	0.5+	1.1+	1998 09 14	704	0.3−	0.6+	1999 12 15	704	0.4−	0.0
1991 01 19	046	(2.5+	0.0)	1998 09 14	704	0.9−	0.2+	1999 12 15	704	0.7−	0.8−
1991 02 11	511	(6.2−	2.7−)	1998 09 14	704	0.7+	0.7−	1999 12 15	704	0.5−	0.9−
1991 02 11	511	(5.3−	3.3−)	1998 09 14	704	0.1+	0.6−	1999 12 15	704	0.1−	1.0−
1991 02 14	511	(4.8−	1.2−)	1998 09 16	699	0.2+	0.1+	2000 01 02	704	0.1+	0.9−
1991 02 14	511	(3.0−	0.9−)	1998 09 16	699	0.0	0.4+	2000 01 02	704	0.1+	0.5+
1993 08 18	010	(1.3−	3.9−)	1998 09 16	699	0.3+	0.0	2000 01 02	704	0.7+	0.7+
1993 08 18	010	(2.0−	3.7−)	1998 09 18	704	0.8−	0.2−	2000 01 02	704	0.8+	0.9+
1993 08 18	010	(2.9−	1.8−)	1998 09 18	704	1.3−	0.1−	2000 01 02	704	0.1−	0.9+

1998 08 23	704	0.8+	1.6−	1998 09 18	704	0.3+	0.6−	2000 01 04	704	0.0	0.1+
1998 08 23	704	1.5+	0.1−	1998 09 18	704	0.2−	0.7+	2000 01 04	704	0.1+	0.2−
1998 08 23	704	(0.7+	2.5−)	1998 09 18	704	1.3−	0.1−	2000 01 04	704	0.1−	0.1−
1998 08 23	704	0.1−	1.7−	1999 12 12	704	0.1−	0.6−	2000 01 04	704	0.0	0.3−
1998 08 23	704	1.2+	0.2−	1999 12 12	704	0.2+	0.2−	2000 01 04	704	0.1−	0.3−

1999 XK₁₈₈ = 1997 CB₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	75.09095	(2000.0)		P	Q		
<i>n</i>	0.28363662	ω	66.92882	+0.97152163	−0.21950363		
<i>a</i>	2.2941819	Ω	305.63799	+0.15646501	+0.87711883		
<i>e</i>	0.1374546	<i>i</i>	6.30410	+0.17794500	+0.42717762		
<i>P</i>	3.47	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1997 02 03	566	0.4−	0.2+	1999 12 12	704	0.3+	0.2+	2000 01 02	704	0.0	0.8−
1997 02 03	566	0.5−	0.2+	1999 12 12	704	0.3+	0.2−	2000 01 02	704	0.4−	0.7+
1997 02 03	566	0.1+	0.1+	1999 12 15	704	0.2−	0.7−	2000 01 02	704	0.2+	0.8+
1997 02 06	566	0.4+	0.1−	1999 12 15	704	0.4−	0.1−	2000 01 04	704	0.1+	0.4+
1997 02 06	566	0.1+	0.2−	1999 12 15	704	0.0	0.2−	2000 01 04	704	0.3+	0.3+
1997 02 06	566	0.2+	0.1−	1999 12 15	704	0.1−	0.5+	2000 01 04	704	0.9−	0.2+
1999 12 12	704	0.2−	0.3+	1999 12 15	704	0.0	0.7+	2000 01 04	704	0.0	0.7−
1999 12 12	704	0.2+	0.2+	2000 01 02	704	0.5+	0.1−	2000 01 04	704	0.1+	0.9−
1999 12 12	704	0.1+	0.5−	2000 01 02	704	(1.6+	2.2−)				

1999 XU₁₈₈ = 1997 EP₃₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	80.51364	(2000.0)		P	Q		
<i>n</i>	0.28281419	ω	18.14230	+0.99542248	+0.08731695		
<i>a</i>	2.2986275	Ω	336.74367	−0.09524569	+0.87274261		
<i>e</i>	0.2419986	<i>i</i>	5.64759	−0.00789551	+0.48030833		
<i>P</i>	3.49	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 04	704	0.2−	0.5−	1999 12 15	704	0.1−	0.5−	2000 01 04	704	0.3+	0.7−
1997 03 04	704	1.4+	0.5+	1999 12 15	704	0.2−	0.3−	2000 01 06	732	0.6+	0.6+
1997 03 06	704	1.3−	0.1+	2000 01 02	704	0.1+	0.2−	2000 01 06	732	0.1+	0.6+
1997 03 06	704	0.1+	0.1−	2000 01 02	704	0.0	0.5−	2000 01 06	732	0.1+	0.1+
1999 12 12	704	0.2+	0.4+	2000 01 02	704	0.1+	1.2−	2000 01 07	732	0.6+	0.4+
1999 12 12	704	0.2−	0.5+	2000 01 02	704	0.3+	0.1−	2000 01 07	732	0.5−	0.3+
1999 12 12	704	0.1−	1.2−	2000 01 02	704	1.1−	1.8−	2000 01 07	732	0.7−	0.6+
1999 12 12	704	0.1+	0.5+	2000 01 04	704	0.1−	0.6−	2000 01 08	732	0.2−	0.6+
1999 12 15	704	0.2+	0.3+	2000 01 04	704	0.4+	0.6+	2000 01 08	732	0.5−	0.3+
1999 12 15	704	0.4+	0.3−	2000 01 04	704	0.6+	0.2−	2000 01 08	732	0.2−	0.7+
1999 12 15	704	0.7−	1.3+	2000 01 04	704	0.5+	0.5−				

1999 XC₁₈₉ = 1993 QX₃ = 1998 UQ₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	38.90059	(2000.0)		P	Q		
<i>n</i>	0.19284504	ω	63.26826	+0.60877939	−0.79274459		
<i>a</i>	2.9670878	Ω	349.06871	+0.65811781	+0.52625956		
<i>e</i>	0.0848271	<i>i</i>	9.32266	+0.44302212	+0.30758233		
<i>P</i>	5.11	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 08 18	010	(1.4+	4.0−)	1993 09 20	010	1.3−	0.5+	1999 12 12	704	0.1+	0.5−
1993 08 19	010	(0.9+	4.6−)	1993 09 20	010	1.0−	0.6+	1999 12 12	704	0.3+	0.2+
1993 08 19	010	(1.0+	4.2−)	1998 10 20	010	0.2+	0.9−	1999 12 12	704	0.5+	0.1+
1993 08 19	010	(0.4−	4.6−)	1998 10 20	910	0.3+	0.7−	1999 12 12	704	1.0+	1.1+
1993 08 20	809	(3.0+	1.8+)	1998 10 20	910	0.5+	0.5−	1999 12 15	704	0.3+	0.3+
1993 08 20	809	1.8+	0.6+	1998 10 21	910	0.2+	0.6−	1999 12 15	704	0.1+	0.3−
1993 08 20	809	0.8+	1.5+	1998 10 21	910	0.3+	0.7−	1999 12 15	704	0.5+	0.1−
1993 08 24	809	(1.9+	2.4+)	1998 10 21	910	0.6+	0.2−	1999 12 15	704	0.5+	0.8−
1993 08 24	809	(1.2+	2.5+)	1999 11 01	704	0.7+	0.8−	2000 01 02	704	1.6−	0.1−
1993 08 24	809	(1.8+	2.4+)	1999 11 01	704	1.1+	0.3−	2000 01 02	704	1.3−	0.1+

1993 09 19	010	0.1−	0.9+	1999 11 01	704	0.3+	0.7+	2000 01 02	704	0.7−	0.4+
1993 09 19	010	0.4−	0.2−	1999 11 01	704	0.6+	0.1−	2000 01 02	704	0.4−	0.0
1993 09 20	010	1.8−	0.7−	1999 12 12	704	0.1+	0.4+	2000 01 02	704	1.9−	0.9−

1999 XO₁₉₀ = 1997 HT₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	146.07370	(2000.0)		P	Q		
<i>n</i>	0.25840175	ω	294.05587	+0.60343366	+0.79715382		
<i>a</i>	2.4412134	Ω	13.12026	−0.69520895	+0.53841262		
<i>e</i>	0.1236167	<i>i</i>	5.14018	−0.39057949	+0.27323550		
<i>P</i>	3.81	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 04 28	704	(1.1−	2.8+)	1998 08 17	704	0.6−	0.1+	1999 12 15	704	1.0+	0.7−
1997 04 28	704	0.5−	0.2−	1998 08 17	704	0.1+	0.1−	2000 01 02	704	0.2−	0.6+
1997 04 28	704	1.5−	0.6+	1999 12 12	704	0.0	0.0	2000 01 02	704	0.4−	0.1−
1997 04 28	704	0.2−	0.1+	1999 12 12	704	0.0	0.3+	2000 01 02	704	1.2+	1.2+
1997 04 29	704	1.8+	0.9−	1999 12 12	704	0.0	0.1−	2000 01 04	704	0.2+	0.3−
1997 04 29	704	0.9+	1.1+	1999 12 12	704	0.1−	0.6+	2000 01 04	704	0.3+	0.4+
1997 04 29	704	0.6+	0.5−	1999 12 12	704	0.2+	0.7+	2000 01 04	704	0.8−	0.5−
1997 04 29	704	1.2−	0.3−	1999 12 15	704	0.1−	0.1−	2000 01 04	704	0.3−	0.3−
1998 08 17	704	1.0+	0.2−	1999 12 15	704	0.1+	0.4−	2000 01 04	704	0.6−	0.8−
1998 08 17	704	0.3+	0.4+	1999 12 15	704	0.2−	0.5−				
1998 08 17	704	0.6−	0.4−	1999 12 15	704	0.3−	0.3−				

1999 XJ₁₉₁ = 1993 UA₇ = 1996 LA₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	23.87900	(2000.0)		P	Q		
<i>n</i>	0.18012337	ω	18.63729	+0.29059917	−0.92559249		
<i>a</i>	3.1051983	Ω	55.16902	+0.83603958	+0.12232386		
<i>e</i>	0.1053738	<i>i</i>	17.18694	+0.46539225	+0.35821142		
<i>P</i>	5.47	<i>H</i>	13.4	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1993 10 10	809	0.2−	0.7−	1996 06 10	809	0.4+	1.2+	1999 12 15	704	0.2−	0.1+
1993 10 10	809	1.6−	0.5−	1996 06 10	809	0.3−	0.5−	1999 12 30	704	0.2+	0.1−
1993 10 10	809	0.6−	1.2−	1998 09 28	699	(1.8−	3.5+)	1999 12 30	704	0.2−	0.1−
1993 10 20	809	1.0+	0.3−	1998 09 28	699	0.9−	1.6+	1999 12 30	704	0.2−	0.7−
1993 10 20	809	0.6+	0.9−	1998 09 28	699	(2.0−	2.3+)	1999 12 30	704	0.3−	0.7−
1993 10 20	809	0.1−	0.4−	1999 12 12	704	0.0	0.7+	1999 12 30	704	0.4+	2.0−
1993 10 21	809	0.9+	1.1+	1999 12 12	704	0.1−	0.6+	2000 01 21	704	0.3+	0.2+
1993 10 21	809	0.0	1.1+	1999 12 12	704	0.1−	0.8+	2000 01 21	704	1.4+	0.1−
1993 10 21	809	0.0	1.5+	1999 12 12	704	0.0	1.1+	2000 01 21	704	0.4−	0.8+
1996 06 08	809	0.5+	0.1−	1999 12 12	704	0.0	1.3+	2000 01 21	704	0.6+	0.5−
1996 06 08	809	0.1−	0.3−	1999 12 15	704	0.4−	0.7+	2000 01 21	704	0.0	0.2+
1996 06 08	809	0.0	0.6+	1999 12 15	704	0.1−	0.4+				
1996 06 10	809	1.3+	1.6+	1999 12 15	704	0.7−	0.6−				

1999 XW₁₉₁ = 1979 WF₈ = 1998 KO₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	99.97498	(2000.0)		P	Q		
<i>n</i>	0.29878041	ω	329.63621	+0.96322650	+0.26772704		
<i>a</i>	2.2159909	Ω	14.88645	−0.22528262	+0.85083312		
<i>e</i>	0.2063430	<i>i</i>	5.07745	−0.14643244	+0.45211198		
<i>P</i>	3.30	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1979 11 22	675	0.6+	0.9+	1998 05 22	704</

2000 JAN. 24

1998 05 01	704	0.7−	0.9+	1998 05 24	704	0.8+	1.0+	2000 01 04	704	(2.5−	1.6+)
1998 05 01	704	1.8−	0.4+	1999 12 12	704	0.6+	0.2−	2000 01 04	704	(1.6−	2.3+)
1998 05 01	704	0.1+	0.1−	1999 12 12	704	0.2+	0.1+	2000 01 04	704	0.5−	1.2+
1998 05 01	704	0.7+	1.2−	1999 12 12	704	0.3+	0.4−	2000 01 04	704	(1.0−	3.7+)
1998 05 01	704	0.1−	1.1−	1999 12 12	704	0.2−	0.7−				

1999 XS₁₉₂ = 1995 QS₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	23.26350		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27763895	ω	92.08624	+0.10877033	−0.99391334		
<i>a</i>	2.3271040	Ω	351.60885	+0.85781232	+0.10272885		
<i>e</i>	0.0787115	<i>i</i>	6.87665	+0.50232166	+0.03978768		
<i>P</i>	3.55	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 08 20	691	0.1−	0.0	1999 12 12	704	0.2−	1.2−	2000 01 02	704	0.1+	0.1+
1995 08 20	691	0.1+	0.3−	1999 12 15	704	0.5+	0.7+	2000 01 02	704	0.2−	0.4−
1995 08 20	691	0.1−	0.0	1999 12 15	704	0.2−	0.2+	2000 01 08	704	0.2+	0.1+
1995 08 28	691	0.1+	0.0	1999 12 15	704	0.1+	0.2+	2000 01 08	704	0.2+	0.8−
1995 08 28	691	0.0	0.3+	1999 12 15	704	0.0	0.1+	2000 01 08	704	0.1+	0.0
1999 12 12	704	0.3+	0.0	2000 01 02	704	0.3−	0.3+	2000 01 08	704	0.2+	0.9+
1999 12 12	704	0.4−	0.2−	2000 01 02	704	0.3−	0.2+				
1999 12 12	704	0.1+	0.3−	2000 01 02	704	0.3−	0.1−				

1999 XX₁₉₂ = 1998 SM₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	353.94096		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18313814	ω	144.99319	−0.37144801	−0.92310774		
<i>a</i>	3.0710261	Ω	326.49211	+0.80541651	−0.26706119		
<i>e</i>	0.0845035	<i>i</i>	10.38261	+0.46187727	−0.27667748		
<i>P</i>	5.38	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.5+	0.3+	1999 11 01	704	1.3−	0.6+	1999 12 15	704	0.1+	0.3−
1998 09 26	704	0.7−	1.2−	1999 11 01	704	0.7+	0.1+	1999 12 15	704	0.2+	0.2−
1998 09 26	704	0.9+	0.4+	1999 11 01	704	0.2−	0.6+	1999 12 15	704	0.1−	0.1+
1998 09 26	704	1.2+	0.6−	1999 11 01	704	0.9+	1.7+	2000 01 02	704	0.5+	1.2+
1998 09 27	704	0.7+	1.0+	1999 12 12	704	0.3+	0.3−	2000 01 02	704	0.8−	0.9−
1998 09 27	704	1.1−	1.3−	1999 12 12	704	0.4+	0.3−	2000 01 02	704	0.6−	0.0
1998 09 27	704	(0.5−	3.0+)	1999 12 12	704	0.3+	0.6−	2000 01 02	704	0.1−	1.0+
1998 09 27	704	1.1−	0.1−	1999 12 12	704	0.1+	0.5−	2000 01 02	704	0.1−	0.7−
1998 09 27	704	0.1−	1.1+	1999 12 12	704	0.1−	1.1−				

1999 XA₁₉₃ = 1997 EM₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	276.60410		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.26965818	ω	211.20897	−0.94881634	+0.31463703		
<i>a</i>	2.3727955	Ω	347.04316	−0.25868755	−0.82400309		
<i>e</i>	0.0591255	<i>i</i>	7.02081	−0.18118581	−0.47119258		
<i>P</i>	3.66	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 03 05	809	0.2−	0.4+	1998 08 17	704	0.1−	1.7+	2000 01 02	704	0.1+	0.0
1997 03 05	809	0.1+	0.2+	1999 12 12	704	(2.4−	0.7+)	2000 01 02	704	0.1−	0.2+
1997 03 05	809	0.3+	0.0	1999 12 12	704	0.3−	0.3−	2000 01 02	704	0.4+	0.8+
1997 03 06	809	0.4+	0.3−	1999 12 12	704	0.4−	0.3−	2000 01 02	704	0.7−	0.8+
1997 03 06	809	0.3−	0.3−	1999 12 12	704	0.6+	1.1−	2000 01 03	704	0.5+	0.3+
1997 03 06	809	0.3−	0.1−	1999 12 15	704	0.2+	0.4−	2000 01 03	704	0.0	0.1+
1998 08 17	704	0.9+	0.4−	1999 12 15	704	1.3−	0.4−	2000 01 03	704	0.4+	0.8+
1998 08 17	704	0.0	0.3−	1999 12 15	704	0.3−	0.2−	2000 01 03	704	0.1−	0.3−
1998 08 17	704	0.4−	0.8−	1999 12 15	704	0.3+	0.5−	2000 01 03	704	0.2+	0.6+
1998 08 17	704	0.4−	0.0	1999 12 15	704	0.1+	0.1−				

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1999 XE₁₉₃ = 1987 QY₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	99.42303		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.25978054	ω	34.33713	+0.94749365	+0.29729474		
<i>a</i>	2.4325679	Ω	307.92898	−0.31653054	+0.81961950		
<i>e</i>	0.2205689	<i>i</i>	8.58739	−0.04543335	+0.48973433		
<i>P</i>	3.79	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1987 08 22	809	0.9+	0.5−	1987 08 26	809	0.2+	0.7+	2000 01 02	704	0.3+	0.6+
1987 08 22	809	0.1−	0.6−	1987 08 26	095(14.0−	12.1+)		2000 01 02	704	1.0−	0.1+
1987 08 22	809	0.4+	0.4−	1999 12 12	704	0.8−	0.3−	2000 01 02	704	0.8+	0.1−
1987 08 24	809	1.3+	0.6−	1999 12 12	704	0.2−	0.2+	2000 01 02	704	0.4+	0.5−
1987 08 24	809	(3.7+	0.9−)	1999 12 12	704	0.4−	0.3+	2000 01 02	704	0.9+	0.8−
1987 08 24	809	(4.2+	0.4−)	1999 12 12	704	0.1+	0.8−	2000 01 04	704	0.0	0.6+
1987 08 25	809	0.7−	0.0	1999 12 12	704	0.1+	0.1+	2000 01 04	704	0.5+	1.5−
1987 08 25	809	0.7−	0.2−	1999 12 15	704	0.7−	0.3+	2000 01 04	704	0.2−	0.5+
1987 08 25	809	1.8−	0.2+	1999 12 15	704	0.1−	0.2−	2000 01 04	704	0.3+	0.6+
1987 08 26	809	0.0	0.4+	1999 12 15	704	0.1−	0.2+				
1987 08 26	809	0.4+	1.1+	1999 12 15	704	0.0	0.8+				

1999 XP₁₉₃ = 1982 XS₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	69.63153		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23533530	ω	306.46717	+0.93441924	−0.25252914		
<i>a</i>	2.5982324	Ω	69.37194	+0.34580499	+0.81214653		
<i>e</i>	0.2023659	<i>i</i>	15.56810	−0.08532050	+0.52597247		
<i>P</i>	4.19	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1982 12 13	381	0.3+	0.2−	1999 12 12	704	0.0	0.2−	2000 01 02	704	0.2−	0.2−
1982 12 14	381	0.3+	0.4+	1999 12 12	704	1.3+	0.0	2000 01 02	704	(2.7−	0.1−)
1982 12 14	381	0.5−	0.2−	1999 12 12	704	0.5−	0.8+	2000 01 02	704	0.2+	0.3−
1999 11 03	704	0.4+	0.4−	1999 12 12	704	0.1−	0.0	2000 01 02	704	1.4−	0.1−
1999 11 03	704	0.1+	0.3+	1999 12 15	704	0.2+	0.1−	2000 01 03	704	0.2−	1.0+
1999 11 03	704	0.0	0.1−	1999 12 15	704	1.1+	0.5−	2000 01 03	704	0.3+	0.7+
1999 11 03	704	0.5−	0.4+	1999 12 15	704	0.1+	0.1−	2000 01 03	704	0.3−	0.3+
1999 11 03	704	0.4−	0.2+	1999 12 15	704	0.3+	0.4−	2000 01 03	704	0.4−	0.5−
1999 12 12	704	0.1−	0.3−	2000 01 02	704	0.3−	0.2−	2000 01 03	704	0.3+	0.2−

1999 XP₁₉₄ = 1997 UX₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	63.26369		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.08266669	ω	1.91505	+0.89474486	−0.44379850		
<i>a</i>	5.2189404	Ω	24.62205	+0.40812354	+0.76739090		
<i>e</i>	0.0914829	<i>i</i>	6.85732	+0.18129205	+0.46276786		
<i>P</i>	11.92	<i>H</i>	11.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 10 06	809	0.2+	0.1+	1999 12 12	704	0.2−	0.1−	2000 01 02	704	0.1+	0.4+
1997 10 06	809	0.6+	0.4−	1999 12 12	704	0.4−	0.3−	2000 01 02	704	0.1−	0.1−
1997 10 07	809	0.5−	0.3+	1999 12 12	704	0.9+	1.0+	2000 01 02	704	0.3+	0.3+
1997 10 07	809	0.3−	0.2−	1999 12 12	704	0.2+	0.1+	2000 01 04	704	1.3−	0.7−
1997 10 30	688	0.0	0.5+	1999 12 15	704	0.5−	0.5−	2000 01 04	704	0.2−	0.4−
1997 10 30	688	0.1−	0.1+	1999 12 15	704	0.0	0.3−	2000 01 04	704	0.1+	0.3+
1997 10 31	688	0.3−	0.0	1999 12 15	704	0.2−	0.8−	2000 01 04	704	0.9+	1.3+
1997 10 31	688	0.3+	0.3−	2000 01 02	704	0.1+	0.0	2000 01 04	704	0.2+	0.3−

1999 XK₁₉₅ = 1998 SX₈₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	21.40398		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18255857	ω	54.85950	+0.13510617	−0.98747152		
<i>a</i>	3.0775224	Ω	27.71612	+0.84248902	+0.07118377		
<i>e</i>	0.0788067	<i>i</i>	10.09543	+0.52149647	+0.14082925		
<i>P</i>	5.40	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	0.9−	1.4+	1999 12 12	704	0.1−	0.8−	1999 12 16	704	0.0	0.2+
1998 09 26	704	0.0	0.5−	1999 12 12	704	0.1+	0.2−	1999 12 16	704	0.1+	0.1−
1998 09 26	704	(0.4+	2.3−)	1999 12 12	704	0.1−	0.4−	1999 12 16	704	0.7+	0.2+
1998 09 26	704	0.7+	0.3+	1999 12 12	704	0.6−	0.4+	1999 12 16	704	0.1−	0.1+
1998 09 26	704	1.1+	1.5−	1999 12 12	704	0.0	0.3−	1999 12 16	704	0.3−	0.1+
1998 09 27	704	0.2+	0.8−	1999 12 15	704	0.5+	0.0	2000 01 02	704	0.6−	0.6−
1998 09 27	704	0.7−	0.2−	1999 12 15	704	0.2−	0.4+	2000 01 02	704	0.8+	1.1+
1998 09 27	704	0.1−	0.9+	1999 12 15	704	0.1+	0.1−	2000 01 02	704	0.3−	0.8−
1998 09 27	704	0.2−	0.7−	1999 12 15	704	0.2−	0.2+				
1998 09 27	704	0.1+	1.1+	1999 12 15	704	0.2+	0.7+				

1999 XC₁₉₆ = 1995 BQ₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	47.51924		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.18325729	ω	87.43748	+0.67528204	−0.73141589		
<i>a</i>	3.0696949	Ω	319.54149	+0.60508279	+0.62302757		
<i>e</i>	0.1589583	<i>i</i>	8.41847	+0.42174518	+0.27724978		
<i>P</i>	5.38	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 01 31	691	0.1+	0.4−	1999 12 12	704	0.0	0.0	2000 01 02	704	0.2−	0.8+
1995 01 31	691	0.5+	0.6+	1999 12 12	704	0.0	0.6+	2000 01 02	704	0.3−	0.6−
1995 02 05	691	0.2−	0.3+	1999 12 15	704	0.3−	0.5+	2000 01 02	704	0.1+	0.2+
1995 02 05	691	0.2−	0.2−	1999 12 15	704	0.3−	0.2+	2000 01 02	704	0.4−	0.0
1995 02 05	691	0.2−	0.3−	1999 12 15	704	0.2+	0.1−	2000 01 04	704	0.2+	0.5+
1999 12 12	704	0.1−	0.1−	1999 12 15	704	0.2+	0.5−	2000 01 04	704	1.3+	1.7−
1999 12 12	704	0.2+	0.8−	1999 12 15	704	0.2+	0.1+	2000 01 04	704	0.1−	0.3+
1999 12 12	704	0.0	0.2−	2000 01 02	704	0.6−	0.4+	2000 01 04	704	0.4−	0.5+

1999 XD₁₉₆ = 1997 MB₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	312.73554		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21412498	ω	224.51752	−0.95798771	−0.24025556		
<i>a</i>	2.7670977	Ω	300.97273	+0.28639314	−0.83073609		
<i>e</i>	0.0823883	<i>i</i>	10.52660	−0.01544408	−0.50215019		
<i>P</i>	4.60	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 28	704	0.9−	0.1+	1997 07 02	704	1.0−	0.9−	1999 12 15	704	0.5+	0.4−
1997 06 28	704	0.8+	0.7−	1997 07 02	704	0.6−	0.0	2000 01 02	704	0.2+	0.3+
1997 06 28	704	0.3−	1.1+	1997 07 02	704	0.1+	0.3+	2000 01 02	704	0.4+	0.5+
1997 06 28	704	0.6+	0.8−	1997 07 02	704	0.6+	0.5−	2000 01 02	704	0.2−	0.3+
1997 06 28	704	1.0−	0.8+	1997 07 02	704	1.6−	0.0	2000 01 02	704	0.7+	0.3+
1997 06 28	704	0.8+	0.2−	1997 07 02	704	1.0−	0.7+	2000 01 02	704	0.4+	0.8+
1997 07 02	704	0.9+	0.2−	1999 12 12	704	0.0	0.1+	2000 01 04	704	0.1+	0.1+
1997 07 02	704	0.2+	0.9−	1999 12 12	704	0.2−	0.1+	2000 01 04	704	0.0	0.5−
1997 07 02	704	0.1−	0.5+	1999 12 12	704	0.1+	0.1−	2000 01 04	704	0.4−	0.3−
1997 07 02	704	0.4+	0.5+	1999 12 12	704	0.5−	0.2+	2000 01 04	704	0.5−	0.6−
1997 07 02	704	0.8+	0.7−	1999 12 12	704	0.7−	0.0	2000 01 04	704	0.4−	0.8−
1997 07 02	704	0.6+	0.1−	1999 12 15	704	0.6+	0.0				
1997 07 02	704	0.8+	0.7+	1999 12 15	704	0.0	0.1+				

1999 XJ₁₉₇ = 1997 LS₁₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	270.06809		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23674994	ω	133.19467	−0.83045323	+0.41206584		
<i>a</i>	2.5878721	Ω	74.45360	−0.55272711	−0.69350087		
<i>e</i>	0.0292105	<i>i</i>	22.90075	+0.06957134	−0.59098079		
<i>P</i>	4.16	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1997 06 08	809	0.5+	0.9+	1999 12 12	704	0.1−	0.1−	1999 12 31	704	0.0	0.1−
1997 06 08	809	0.3−	1.0+	1999 12 15	704	0.0	0.4−	1999 12 31	704	0.2+	0.2+
1997 06 08	809	0.9+	1.1+	1999 12 15	704	0.1+	0.3−	1999 12 31	704	0.2+	0.2−
1997 06 09	809	0.3−	1.1−	1999 12 15	704	0.4+	0.2+	1999 12 31	704	0.2+	0.1−
1997 06 09	809	0.3−	1.2−	1999 12 15	704	0.4+	0.3+	1999 12 31	704	0.3+	0.1+
1997 06 09	809	0.5−	0.7−	1999 12 15	704	(2.7+	0.4+)	2000 01 21	704	0.5+	0.3−
1999 12 12	704	0.1+	0.4−	1999 12 30	704	0.2−	0.0	2000 01 21	704	0.0	0.1−
1999 12 12	704	0.0	0.0	1999 12 30	704	0.1−	0.0	2000 01 21	704	0.2+	0.4−
1999 12 12	704	0.2−	0.0	1999 12 30	704	0.7−	0.6+	2000 01 21	704	0.2−	0.2−
1999 12 12	704	0.1−	0.1−	1999 12 30	704	1.2−	0.9+	2000 01 21	704	0.3+	0.5+

1999 XU₁₉₇ = 1998 SL₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	353.70592		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17965690	ω	97.35949	−0.56437116	−0.82192598		
<i>a</i>	3.1105709	Ω	27.44574	+0.67613365	−0.51371611		
<i>e</i>	0.1743630	<i>i</i>	9.61199	+0.47363327	−0.24603544		
<i>P</i>	5.49	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 26	704	1.1+	1.5+	1999 12 12	704	0.1−	0.3−	1999 12 15	704	0.0	0.2+
1998 09 26	704	0.0	0.4+	1999 12 12	704	0.1−	0.3−	1999 12 15	704	0.4+	0.6+
1998 09 26	704	0.8+	0.0	1999 12 12	704	0.3+	0.1+	1999 12 16	699	0.1−	0.8+
1998 09 26	704	0.9−	0.9+	1999 12 12	704	0.1+	0.1−	1999 12 16	699	0.6+	0.2−
1998 09 27	704	0.3+	0.1−	1999 12 12	704	0.2+	0.2+	1999 12 16	699	0.2−	0.3+
1998 09 27	704	0.3−	0.8−	1999 12 15	704	0.3−	0.3−	2000 01 21	704	0.2−	0.3+
1998 09 27	704	1.0−	1.9−	1999 12 15	704	0.6−	1.1−	2000 01 21	704	0.4+	0.1−
1998 09 27	704	(1.7−	2.7−)	1999 12 15	704	0.4−	0.1+	2000 01 21	704	0.1−	0.3−

1999 XM₁₉₈ = 1994 EQ₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	271.34659		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.30342807	ω	166.87317	−0.94378203	+0.32354347		
<i>a</i>	2.1933043	Ω	32.25925	−0.31360699	−0.81148705		
<i>e</i>	0.0679980	<i>i</i>	7.29636	−0.10452816	−0.48662962		
<i>P</i>	3.25	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 03 09	010	0.9+	0.1−	1999 12 12	704	0.7−	0.4+	2000 01 02	704	0.1−	0.2−
1994 03 09	010	1.3−	0.1−	1999 12 12	704	0.4+	0.2−	2000 01 02	704	0.2+	0.2+
1994 03 09	010	0.4−	0.7−	1999 12 15	704	0.1−	0.1+	2000 01 02	704	0.5+	0.2−
1994 03 10	010	0.4+	0.0	1999 12 15	704	0.0	0.2−	2000 01 04	704	0.0	0.1−
1994 03 10	010	0.1−	0.4+	1999 12 15	704	0.2−	0.3−	2000 01 04	704	0.3−	0.4−
1994 03 10	010	0.6+	0.4+	1999 12 15	704	0.7+	0.3+	2000 01 04	704	0.5+	0.1−
1999 12 12	704	0.1+	0.1−	2000 01 02	704	1.0−	0.0	2000 01 04	704	0.2+	0.7+

1999 XU₁₉₉ = 1259 T-1 = 1992 ET₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	348.43955		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23251999	ω	130.25196	−0.51336603	−0.85789974		
<i>a</i>	2.6191630	Ω	350.56405	+0.74210878	−0.43120099		
<i>e</i>	0.1217281	<i>i</i>	7.54458	+0.43096390	−0.27941678		
<i>P</i>	4.24	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	3

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Residuals in seconds of arc

1971 03 24	675	1.8+	1.7-	1992 03 08	809	0.0	0.3+	2000 01 02	704	0.0	0.3-
1971 03 25	675	0.6+	0.3+	1992 03 09	809	1.1+	0.7-	2000 01 02	704	0.0	0.1-
1971 03 25	675	0.2-	1.0-	1999 12 12	704	0.2-	0.2+	2000 01 02	704	0.3-	0.9-
1971 03 26	675	1.8-	1.6+	1999 12 12	704	0.2+	0.1-	2000 01 02	704	1.3-	0.8-
1971 03 27	675	(3.1-	1.2+)	1999 12 12	704	0.0	0.4+	2000 01 03	704	0.4-	0.6+
1971 04 02	675	0.9+	0.1+	1999 12 12	704	0.4-	1.1-	2000 01 03	704	0.6+	0.3+
1971 04 16	675	1.1-	0.6-	1999 12 15	704	0.6-	0.2-	2000 01 03	704	0.9+	0.1+
1971 04 16	675	0.6-	0.8+	1999 12 15	704	0.5-	0.7+	2000 01 03	704	1.1+	0.2-
1992 03 06	809	0.7-	1.0+	1999 12 15	704	0.3+	0.7+	2000 01 03	704	0.5+	0.6+

1999 XX₂₀₀ = 1993 PO₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	227.53980		(2000.0)		P		Q
<i>n</i>	0.21451362	ω	280.61991	-0.37088072		+0.92539171	
<i>a</i>	2.7637545	Ω	327.26603	-0.78557885		-0.35746474	
<i>e</i>	0.1131333	<i>i</i>	8.30306	-0.49529120		-0.12597278	
<i>P</i>	4.59	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 08 13	675	1.3-	0.5+	1998 10 12	699	0.1+	0.1-	2000 01 02	704	0.3+	0.6+
1993 08 13	675	1.0-	0.1-	1998 10 12	699	0.0	0.4+	2000 01 02	704	0.5+	0.7+
1993 08 15	010	0.1-	0.6+	1999 12 12	704	0.5-	0.7-	2000 01 02	704	0.2-	0.7+
1993 08 15	010	0.0	0.7+	1999 12 12	704	0.9+	0.7-	2000 01 02	704	0.3-	0.7+
1993 08 15	010	0.4-	0.7+	1999 12 12	704	0.9-	1.5-	2000 01 04	704	0.7-	0.3+
1993 08 17	010	0.9-	0.6+	1999 12 15	704	0.4-	0.1-	2000 01 04	704	0.6-	0.2+
1993 08 17	010	(0.6-	2.4-)	1999 12 15	704	0.0	0.3+	2000 01 04	704	0.1-	0.6-
1993 08 19	010	1.8+	0.9-	1999 12 15	704	0.3+	0.5+	2000 01 04	704	0.1-	0.4-
1993 08 19	010	0.9+	1.2-	1999 12 15	704	0.3+	0.2+	2000 01 04	704	1.1+	0.6-
1993 08 19	010	1.1+	1.1-	1999 12 15	704	0.5+	0.2-				
1998 10 12	699	0.3-	0.0	2000 01 02	704	0.1-	0.5+				

1999 XH₂₀₁ = 1998 SO₁₁₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	145.98765		(2000.0)		P		Q
<i>n</i>	0.18078327	ω	301.18524	+0.68920071		+0.72417807	
<i>a</i>	3.0976372	Ω	12.47102	-0.62153356		+0.60778723	
<i>e</i>	0.1070958	<i>i</i>	6.33919	-0.37242237		+0.32582329	
<i>P</i>	5.45	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 09 26	704	0.0	0.5+	1998 09 27	704	1.5+	1.0-	1999 12 15	704	1.0-	0.4-
1998 09 26	704	0.9+	1.1-	1998 09 27	704	1.2-	1.9+	2000 01 02	704	0.4+	1.3-
1998 09 26	704	0.4-	0.3-	1999 12 12	704	0.5-	0.5-	2000 01 02	704	0.3-	0.2-
1998 09 26	704	0.7-	1.0-	1999 12 12	704	0.6-	0.8+	2000 01 02	704	0.0	0.9-
1998 09 26	704	0.9-	0.7+	1999 12 12	704	1.1+	0.3-	2000 01 04	704	0.6+	0.4+
1998 09 27	704	1.0+	0.7+	1999 12 15	704	0.9+	1.0+	2000 01 04	704	0.7-	1.5+
1998 09 27	704	0.0	0.5-	1999 12 15	704	0.1+	0.3-	2000 01 04	704	0.1-	0.2+
1998 09 27	704	(2.3+	1.4+)	1999 12 15	704	0.1+	0.1-	2000 01 04	704	(1.4+	2.4+)

1999 XD₂₀₃ = 1998 QV₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	347.04716		(2000.0)		P		Q
<i>n</i>	0.23342662	ω	179.19492	-0.71236862		-0.68137657	
<i>a</i>	2.6123767	Ω	316.20927	+0.64252871		-0.53687065	
<i>e</i>	0.1317576	<i>i</i>	14.05817	+0.28229029		-0.49748958	
<i>P</i>	4.22	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.4+	0.1+	1999 11 01	704	0.2+	0.2+	1999 12 15	704	0.2-	0.2+
1998 08 24	704	0.2-	0.1+	1999 11 01	704	0.2-	0.3+	1999 12 15	704	0.9+	0.7+
1998 08 24	704	(1.4+	2.6+)	1999 12 03	699	0.5-	0.2+	1999 12 15	704	0.2-	0.3-
1998 08 24	704	1.4-	0.3+	1999 12 03	699	0.6-	0.6-	1999 12 16	699	0.4+	0.2+
1998 08 24	704	(2.5-	0.5+)	1999 12 03	699	0.0	0.2-	1999 12 16	699	0.3+	0.4+
1998 08 27	704	0.0	1.2+	1999 12 12	704	0.3-	0.3-	1999 12 16	699	0.4+	0.6+

1998 08 27	704	1.1+	0.5-	1999 12 12	704	0.3-	0.5-	2000 01 06	106	0.3+	0.1+
1998 08 27	704	1.2+	0.6+	1999 12 12	704	0.3-	0.0	2000 01 06	106	0.3-	0.0
1998 08 27	704	1.2-	1.6-	1999 12 12	704	0.1+	0.0	2000 01 06	106	0.2+	0.2+
1998 08 27	704	(2.7-	0.5-)	1999 12 12	704	0.1+	0.6-	2000 01 08	106	0.2-	0.3+
1999 11 01	704	0.3-	1.0-	1999 12 15	704	0.0	0.6+	2000 01 08	106	0.1-	0.2+
1999 11 01	704	0.0	0.2+	1999 12 15	704	0.1-	0.8-	2000 01 08	106	0.1+	0.0

1999 XY₂₀₄ = 1999 AY₃₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	246.84424		(2000.0)		P		Q
<i>n</i>	0.22837878	ω	197.92445	-0.40868173		+0.89805270	
<i>a</i>	2.6507304	Ω	48.29982	-0.80841869		-0.27344246	
<i>e</i>	0.1370026	<i>i</i>	12.58859	-0.42360178		-0.34457301	
<i>P</i>	4.32	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1999 01 15	691	0.1-	0.0	1999 12 12	704	0.1+	0.4-	1999 12 15	704	0.1-	0.5+
1999 01 15	691	0.1-	0.4-	1999 12 12	704	0.0	0.3+	1999 12 15	704	0.4+	0.0
1999 01 15	691	0.4+	0.1-	1999 12 12	704	0.6-	0.3-	1999 12 31	699	0.1-	0.4+
1999 01 19	691	0.0	0.1+	1999 12 12	704	0.1+	0.5-	1999 12 31	699	0.4+	0.6-
1999 01 19	691	0.0	0.4+	1999 12 15	704	0.2+	0.5+	1999 12 31	699	0.3-	0.1+
1999 01 19	691	0.1-	0.1+	1999 12 15	704	0.7+	0.3+				
1999 12 12	704	0.3-	0.0	1999 12 15	704	0.5-	0.4-				

1999 XF₂₀₅ = 1997 FL₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	51.32364		(2000.0)		P		Q
<i>n</i>	0.27559736	ω	41.18391	+0.44840618		-0.89281941	
<i>a</i>	2.3385824	Ω	22.27541	+0.78791171		+0.37237738	
<i>e</i>	0.1064375	<i>i</i>	6.43600	+0.42205099		+0.25339413	
<i>P</i>	3.58	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 10 25	033	0.5-	0.4+	1999 11 16	703	0.9+	0.1+	1999 12 13	699	0.3+	0.1-
1995 10 25	033	0.5-	1.3+	1999 11 16	703	1.0+	0.3-	1999 12 15	704	1.1-	0.2+
1997 03 31	704	1.1+	1.7+	1999 11 16	703	0.4+	0.0	1999 12 15	704	0.2+	0.1-
1997 03 31	704	0.8+	0.1-	1999 11 16	703	0.2-	0.0	1999 12 15	704	0.2+	0.3-
1997 04 03	704	1.1+	0.1-	1999 12 12	704	0.4-	0.1+	1999 12 15	704	0.8+	0.3+
1997 04 03	704	0.5+	0.0	1999 12 12	704	0.1-	0.4-	2000 01 02	704	0.3-	0.7+
1997 04 05	704	0.1-	0.6-	1999 12 12	704	0.2+	0.4-	2000 01 02	704	0.3-	0.1+
1997 04 05	704	0.8+	0.4+	1999 12 12	704	0.4+	0.3-	2000 01 02	704	1.0-	0.1+
1997 04 06	566	1.1-	0.6+	1999 12 12	704	0.2-	0.3-	2000 01 02	704	0.1+	0.1+
1997 04 06	566	1.3-	0.2-	1999 12 13	699	0.6+	0.1+	2000 01 02	704	1.1-	0.7-
1997 04 06	566	0.8-	0.0	1999 12 13	699	0.1-	0.2+				

1999 XE₂₀₆ = 1998 SD₆₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	357.19203		(2000.0)		P		Q
<i>n</i>	0.18362565	ω	74.93321	-0.60668874		-0.77930811	
<i>a</i>	3.0655882	Ω	53.50073	+0.63360108		-0.59322279	
<i>e</i>	0.0668600	<i>i</i>	11.25306	+0.48008171		-0.20190491	
<i>P</i>	5.37	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 20	809	0.9+	0.5+	1999 12 12	704	0.2+	0.7+	2000 01 02	704	0.2-	0.3-
1998 09 20	809	0.5-	0.6+	1999 12 12	704	0.6-	0.7+	2000 01 02	704	0.1+	0.5-
1998 09 20	809	1.0-	0.8-	1999 12 12	704	0.2+	0.8+	2000 01 02	704	0.7+	2.0-
1998 09 21	809	1.5+	1.3+	1999 12 12	704	0.0	1.1+	2000 01 02	704	0.2-	1.0-
1998 09 21	809	0.0	1.1+	1999 12 12	704	0.1-	1.7+	2000 01 02	704	0.2+	1.2-
1998 09 21	809	0.0	0.7+	1999 12 15	704	0.2+	0.3-	2000 01 03	704	0.0	0.8+
1998 10 20	699	0.3+	0.7-	1999 12 15	704	0.2-	0.4-	2000 01 03	704	0.1+	0.2-
1998 10 20	699	0.8-	1.1-	1999 12 15	704	0.0	0.6+	2000 01 03	704	0.0	0.5+
1998 10 20	699	0.2-	1.7-	1999 12 15	704	0.3-	0.4-				

1999 XK₂₀₆ = 1998 SL₁₄₅ = 1998 UF₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	63.11719		(2000.0)	P	Q
<i>n</i>	0.18071937	ω	22.48931	+0.54444385	-0.83141981
<i>a</i>	3.0983674	Ω	34.80829	+0.73696153	+0.41093678
<i>e</i>	0.0424143	<i>i</i>	11.21322	+0.40058532	+0.37399474
<i>P</i>	5.45	<i>H</i>	13.6	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 09 20	809	1.1+	0.3+	1998 10 29	704	0.4-	0.9-	1999 12 15	704	1.2+	0.5-
1998 09 20	809	1.0+	0.3+	1998 10 29	704	1.4+	0.8+	1999 12 15	704	0.2+	1.1-
1998 09 20	809	0.5-	0.8+	1998 10 29	704	0.2-	0.1-	1999 12 15	704	0.1+	0.6-
1998 09 21	809	0.2-	0.4+	1998 10 29	704	0.2-	0.6-	2000 01 02	704	0.2+	0.1+
1998 09 21	809	1.2-	0.6+	1998 11 10	704	0.8-	0.0	2000 01 02	704	0.2-	0.0
1998 09 21	809	0.9-	0.5+	1998 11 10	704	0.9-	1.6+	2000 01 02	704	0.2+	0.1-
1998 10 10	699	0.8-	1.0-	1998 11 10	704	0.6-	0.7+	2000 01 02	704	0.9-	0.1-
1998 10 10	699	0.3-	1.3-	1998 11 10	704	(2.3-	3.0+)	2000 01 03	704	0.2-	1.2+
1998 10 10	699	(0.7+	3.6-)	1999 12 12	704	0.2-	0.7+	2000 01 03	704	0.0	0.1-
1998 10 28	704	0.9+	0.4+	1999 12 12	704	0.5+	0.2+	2000 01 03	704	0.3+	0.4-
1998 10 28	704	1.2+	1.6-	1999 12 12	704	0.4-	0.3+	2000 01 03	704	0.7-	1.1-
1998 10 28	704	0.6+	1.0-	1999 12 12	704	0.1-	1.6+	2000 01 03	704	1.0-	0.3-
1998 10 28	704	0.8+	0.2+	1999 12 12	704	0.6+	1.0+				
1998 10 29	704	(2.0+	2.1+)	1999 12 15	704	0.6+	0.8-				

1999 XX₂₀₆ = 1997 GS₄₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	140.53237		(2000.0)	P	Q
<i>n</i>	0.23125383	ω	288.29994	+0.89636985	+0.41626811
<i>a</i>	2.6287145	Ω	47.41617	-0.28635142	+0.80621680
<i>e</i>	0.2027123	<i>i</i>	11.94990	-0.33841388	+0.42039902
<i>P</i>	4.26	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1997 04 11	809	0.6+	0.4+	1998 12 08	704	(0.1+	5.0+)	1999 12 12	704	0.5-	0.5-
1997 04 11	809	0.5+	0.4-	1998 12 08	704	(0.5-	7.2+)	1999 12 15	704	0.4+	0.6-
1997 04 11	809	0.5+	0.1-	1998 12 08	704	(0.6+	4.7+)	1999 12 15	704	0.4+	0.2-
1997 04 12	809	0.2+	0.8+	1998 12 08	704	(0.4-	7.1+)	1999 12 15	704	0.2-	0.9-
1997 04 12	809	0.1-	0.7+	1999 12 12	703	0.1-	1.0+	1999 12 15	704	0.3-	0.6-
1997 04 12	809	0.1-	1.3+	1999 12 12	703	0.6-	1.7+	2000 01 02	704	0.4-	0.1+
1998 09 19	824	0.6+	0.8-	1999 12 12	703	0.4+	1.2+	2000 01 02	704	0.1-	0.0
1998 09 19	824	0.3+	0.7-	1999 12 12	703	0.8+	1.6+	2000 01 02	704	1.0-	0.4+
1998 09 19	824	0.2+	0.8-	1999 12 12	704	0.8+	0.2+	2000 01 02	704	0.3-	0.0
1998 10 18	699	0.8-	1.5+	1999 12 12	704	0.1-	0.2+	2000 01 03	704	0.3+	0.4-
1998 10 18	699	0.7-	1.9+	1999 12 12	704	0.4+	0.5-	2000 01 03	704	0.1+	1.0-
1998 10 18	699	0.9-	0.9+	1999 12 12	704	1.4+	0.2+	2000 01 03	704	1.0-	1.5-

1999 XJ₂₀₉ = 1998 QA₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	92.30713		(2000.0)	P	Q
<i>n</i>	0.19153112	ω	336.19881	+0.99290613	+0.10380938
<i>a</i>	2.9806420	Ω	18.12971	-0.05460018	+0.83121511
<i>e</i>	0.1004109	<i>i</i>	10.73759	-0.10562305	+0.54617310
<i>P</i>	5.15	<i>H</i>	13.2	<i>G</i> 0.15	<i>U</i> 3

Residuals in seconds of arc

1998 08 19	699	0.3-	0.2+	1998 12 08	704	(3.2-	1.3-)	1999 12 13	704	0.5+	0.8+
1998 08 19	699	0.5+	0.1+	1998 12 08	704	(4.4-	1.8-)	1999 12 15	704	0.0	0.4+
1998 08 19	699	1.0+	0.4-	1999 11 01	704	0.8+	0.4+	1999 12 15	704	0.2+	0.4-
1998 08 28	699	0.3-	0.5+	1999 11 01	704	0.3-	0.6+	1999 12 15	704	0.2-	0.0
1998 08 28	699	0.8-	0.8+	1999 11 01	704	0.2-	0.2+	1999 12 15	704	0.4-	0.7-
1998 08 28	699	0.8-	0.6+	1999 11 01	704	0.2-	0.1-	1999 12 15	704	0.7-	0.6-
1998 09 16	699	0.2+	1.3-	1999 11 01	704	0.1+	0.4+	1999 12 30	704	0.0	0.3+
1998 09 16	699	0.1+	0.2-	1999 12 13	704	0.4+	0.2-	1999 12 30	704	0.3-	0.1-
1998 09 16	699	(0.8-	2.5+)	1999 12 13	704	0.5+	0.6+	1999 12 30	704	0.1-	0.4-

1998 12 08	704	0.5-	0.3+	1999 12 13	704	0.6+	0.1+	1999 12 30	704	0.0	1.0-
1998 12 08	704	1.2+	1.0-	1999 12 13	704	0.1+	0.4+	1999 12 30	704	0.5-	0.1-

1999 XR₂₀₉ = 1998 SD₆₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	5.35316		(2000.0)	P	Q
<i>n</i>	0.18019456	ω	153.66587	-0.13120415	-0.96215317
<i>a</i>	3.1043804	Ω	302.98396	+0.85189407	+0.01379289
<i>e</i>	0.1589439	<i>i</i>	16.54317	+0.50701278	-0.27215994
<i>P</i>	5.47	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 27	704	0.6-	0.3+	1998 09 23	704	0.7-	1.5+	1999 12 31	704	0.1-	0.1-
1998 08 27	704	(2.1+	0.5+)	1998 09 23	704	1.3-	1.0-	1999 12 31	704	0.2-	0.1-
1998 08 27	704	1.9+	0.9+	1999 12 13	704	0.2+	0.7+	1999 12 31	704	0.2+	0.3-
1998 08 27	704	(1.0+	3.1-)	1999 12 13	704	0.3-	0.1+	1999 12 31	704	0.3-	1.1-
1998 08 27	704	(3.0-	1.3-)	1999 12 13	704	0.1-	0.0	1999 12 31	704	0.2-	1.1-
1998 09 19	704	0.7+	0.1-	1999 12 13	704	0.2-	0.2-	2000 01 02	704	0.7+	0.7+
1998 09 19	704	0.5+	0.6-	1999 12 13	704	0.1-	0.1+	2000 01 02	704	0.5+	0.2+
1998 09 19	704	1.2-	1.1-	1999 12 15	704	0.5+	0.1-	2000 01 02	704	0.3+	0.8+
1998 09 19	704	0.1+	1.6-	1999 12 15	704	0.4-	0.1+	2000 01 02	704	0.8+	0.5+
1998 09 23	704	0.4-	0.6+	1999 12 15	704	0.5-	0.2-				
1998 09 23	704	1.0+	1.1+	1999 12 15	704	0.7-	0.0				

1999 XW₂₁₁ = 1974 TR₁ = 1996 RM₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	66.71706		(2000.0)	P	Q
<i>n</i>	0.08481936	ω	65.56211	+0.81824645	-0.54970634
<i>a</i>	5.1302603	Ω	327.03175	+0.34796480	+0.70652258
<i>e</i>	0.0576247	<i>i</i>	18.00599	+0.45759506	+0.44570034
<i>P</i>	11.62	<i>H</i>	10.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1974 10 11	033	0.4+	0.7-	1999 12 13	704	0.2+	0.1-	1999 12 16	699	0.9-	1.2+
1996 09 10	809	(3.1-	1.9-)	1999 12 13	704	0.3+	0.4-	1999 12 30	704	1.1-	0.1+
1996 09 11	809	0.1+	0.4+	1999 12 15	704	0.6+	0.8-	1999 12 30	704	0.9+	0.1+
1996 09 15	809	0.6-	0.1+	1999 12 15	704	0.2-	0.2-	1999 12 30	704	1.1-	0.8-
1999 12 13	704	0.2+	0.5-	1999 12 15	704	0.2+	0.1-	1999 12 30	704	0.2-	0.6+
1999 12 13	704	0.2+	0.2-	1999 12 16	699	0.7+	0.2+	1999 12 30	704	0.6+	0.9+
1999 12 13	704	0.4+	0.8-	1999 12 16	699	0.6-	1.2+				

1999 XG₂₁₂ = 1998 HK₁₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	65.08173		(2000.0)	P	Q
<i>n</i>	0.28932309	ω	251.97747	+0.99158597	+0.05968072
<i>a</i>	2.2640221	Ω	104.47960	-0.01336105	+0.92982813
<i>e</i>	0.1940705	<i>i</i>	6.81362	-0.12875849	+0.36312237
<i>P</i>	3.41	<i>H</i>	14.3	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 04 21	704	0.1+	0.1+	1999 12 05	704	0.1+	0.3-	1999 12 15	704	0.2-	0.1-
1998 04 21	704	0.9-	0.3-	1999 12 05	704	0.1-	0.4-	1999 12 15	704	0.4-	0.8-
1998 04 21	704	0.2-	1.7+	1999 12 05	704	0.2+	0.6-	2000 01 05	704	0.5-	0.0
1998 04 21	704	0.2-	0.8+	1999 12 05	704	0.3+	0.3+	2000 01 05	704	0.4-	0.6-
1998 04 21	704	0.1+	1.3+	1999 12 05	704	0.2+	0.3+	2000 01 05	704	0.7-	0.4-
1998 04 23	704	1.0+	1.5-	1999 12 14	704	0.9+	0.3-	2000 01 05	704	0.1-	0.4+
1998 04 23	704	0.2-	0.5-	1999 12 14	704	0.1+	0.3+	2000 01 05	704	0.2+	0.6-
1998 04 23	704	0.3+	0.1+	1999 12 14	704	0.2+	0.7-	2000 01 06	699	0.0	0.7+
1998 04 23	704	0.4-	0.1-	1999 12 14	704	0.0	0.2-	2000 01 06	699	0.4-	0.6+
1998 04 23	704	1.2+	1.0-	1999 12 14	704	0.1+	0.3+	2000 01 06	699	0.0	0.2+
1998 04 24	704	0.2-	0.2+	1999 12 14	699	0.7-	0.3-	2000 01 07	704	0.5-	0.4+
1998 04 24	704	0.1-	0.1+	1999 12 14	699	0.5+	0.5+	2000 01 07	704	0.5+	0.2-
1998 04 24	704	0.2+	0.6-	1999 12 14	699	0.5+	0.6+	2000 01 07	704	0.4+	0.0
1998 04 24	704	0.1+	0.7-	1999 12 15	704	0.2+	0.2-	2000 01 07	704	0.5-	0.3+
1998 04 24	704	1.0-	0.4-	1999 12 15	704	0.3-	0.4-	2000 01 07	704	0.2+	0.7+

2000 JAN. 24

M.P.C. 37981

1999 XK₂₁₂ = 1992 DV₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21577650	ω	254.53594	+0.95663515	−0.28103171		
<i>a</i>	2.7529603	Ω	121.73081	+0.28964058	+0.88978463		
<i>e</i>	0.1050546	<i>i</i>	5.16839	+0.03094384	+0.35958934		
<i>P</i>	4.57	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1992 02 29	809	1.0−	0.9+	1999 12 04	699	0.6+	0.0
1992 03 03	809	0.2−	0.3+	1999 12 04	699	0.2−	0.8−
1992 03 07	809	1.2+	1.1−	1999 12 05	704	0.1+	0.1+
1999 11 05	704	0.0	0.0	1999 12 05	704	0.3−	0.2+
1999 11 05	704	0.1−	0.3+	1999 12 05	704	0.6+	0.3+
1999 11 05	704	0.3+	0.1−	1999 12 05	704	0.3−	0.5−
1999 11 05	704	0.0	0.2+	1999 12 14	704	0.1+	0.7−
1999 11 05	704	0.1−	0.4+	1999 12 14	704	0.4+	0.8+
1999 12 04	699	0.2−	0.4+	1999 12 14	704	0.3+	0.3−

1999 XN₂₁₂ = 1998 MH₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23335586	ω	219.89495	+0.40729364	+0.88048383		
<i>a</i>	2.6129047	Ω	75.38978	−0.76087803	+0.47405822		
<i>e</i>	0.1734346	<i>i</i>	14.52002	−0.50514999	−0.00412754		
<i>P</i>	4.22	<i>H</i>	13.1	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1998 05 22	704	0.1+	0.8−	1999 11 05	704	0.4−	0.2−
1998 05 22	704	0.6−	0.8+	1999 12 04	699	0.0	0.2+
1998 05 22	704	0.6−	1.0+	1999 12 04	699	0.5−	0.1−
1998 05 22	704	(5.4−	0.6+)	1999 12 04	699	0.2+	0.2+
1998 06 24	704	1.1+	0.1+	1999 12 05	704	0.6+	0.3+
1998 06 24	704	0.5−	0.1−	1999 12 05	704	0.2−	0.2−
1998 06 24	704	1.0+	0.3−	1999 12 05	704	0.6+	0.1−
1998 06 24	704	1.7−	0.7−	1999 12 05	704	0.1−	0.2−
1998 06 26	704	(0.1−	2.4−)	1999 12 05	704	0.2+	0.9−
1998 06 26	704	1.2+	1.3+	1999 12 14	704	0.4+	0.0
1998 06 26	704	0.1−	0.6+	1999 12 14	704	0.4+	0.1−
1998 06 26	704	0.9+	0.3−	1999 12 14	704	0.6+	0.7−
1998 06 26	704	0.8−	0.9−	1999 12 14	704	0.5+	0.7−
1999 11 05	704	0.2−	0.1−	1999 12 14	704	0.1+	0.5−
1999 11 05	704	0.2−	0.1−	1999 12 15	704	0.2+	0.9+
1999 11 05	704	0.4−	0.2−	1999 12 15	704	0.1+	0.5+
1999 11 05	704	0.1−	0.2−	1999 12 15	704	0.3−	0.5−

1999 XA₂₁₃ = 1996 EV₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.21539528	ω	291.91429	+0.03301796	−0.99764824		
<i>a</i>	2.7562076	Ω	155.95679	+0.96276013	+0.01561322		
<i>e</i>	0.1663307	<i>i</i>	8.47776	+0.26833328	+0.06673985		
<i>P</i>	4.58	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 03 12	691	0.4+	0.1+	1999 12 05	704	0.4+	0.1−
1996 03 12	691	0.1+	0.1−	1999 12 05	704	0.9+	0.3−
1996 03 12	691	0.1+	0.1−	1999 12 14	704	0.1−	0.7−
1996 03 17	691	0.4−	0.0	1999 12 14	704	0.3−	0.3−
1996 03 17	691	0.3−	0.3−	1999 12 14	704	0.9−	0.9−
1996 03 17	691	0.1+	0.1+	1999 12 14	704	0.1−	0.3+
1999 11 05	704	1.2+	0.3−	1999 12 14	704	0.9+	0.4−
1999 11 05	704	0.8−	0.8+	1999 12 15	704	0.3−	0.0
1999 11 05	704	0.9+	0.1−	1999 12 15	704	0.3+	0.1+
1999 11 05	704	0.4+	0.5+	1999 12 15	704	0.9−	0.1−

1999 12 05	704	0.3−	0.4+	1999 12 15	704	0.3−	0.5−	2000 01 11	704	0.7+	1.0+
1999 12 05	704	0.6+	0.8−	1999 12 15	704	0.0	0.9−				
1999 12 05	704	0.5−	0.7+	2000 01 04	699	1.1+	0.3+				

1999 XO₂₁₃ = 1996 GT₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.12644220	ω	244.31616	+0.98147629	−0.14485929		
<i>a</i>	3.9313468	Ω	123.77437	+0.17793620	+0.93182503		
<i>e</i>	0.2568060	<i>i</i>	8.67537	−0.07101410	+0.33274298		
<i>P</i>	7.79	<i>H</i>	13.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 04 11	691	0.2−	0.2+	1999 12 14	704	0.2+	0.4−
1996 04 11	691	0.6−	0.0	1999 12 14	704	0.7+	1.4−
1996 04 11	691	0.1−	0.2−	1999 12 14	704	0.5+	0.2−
1996 04 15	691	0.8+	0.2+	1999 12 15	704	0.1+	0.2−
1996 04 15	691	0.1+	0.2−	1999 12 15	704	0.0	0.2−
1999 12 06	704	(2.1−	2.8+)	1999 12 15	704	0.2+	0.1+
1999 12 06	704	(1.1−	2.8+)	1999 12 15	704	0.3+	0.7+
1999 12 06	704	1.1−	0.3+	1999 12 15	704	0.1−	1.0+
1999 12 14	704	0.3−	0.1+	2000 01 05	704	0.4+	1.1+

1999 XR₂₁₃ = 1996 RO₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.08215915	ω	2.43113	−0.39858413	−0.90295426		
<i>a</i>	5.2404119	Ω	111.09550	+0.83852013	−0.42973506		
<i>e</i>	0.0391901	<i>i</i>	9.91437	+0.37150328	+0.00117970		
<i>P</i>	12.00	<i>H</i>	11.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1996 09 11	809	0.9+	1.1−	1999 12 14	704	0.7+	0.5+
1996 09 12	809	0.5−	0.3+	1999 12 14	704	1.2+	0.6−
1996 09 12	809	0.4−	0.3+	1999 12 14	704	0.3−	0.4−
1996 09 13	809	0.4−	0.9+	1999 12 15	704	0.4−	0.1+
1996 09 13	809	0.3−	0.9+	1999 12 15	704	0.3+	0.5−
1996 09 14	809	0.7+	1.2−	1999 12 15	704	0.4+	0.3−
1999 11 17	704	0.8−	1.9+	1999 12 15	704	0.3+	0.7−
1999 11 17	704	0.4−	0.3−	2000 01 05	704	0.6+	0.5−
1999 11 17	704	0.1−	0.1−	2000 01 05	704	0.7+	1.0+
1999 11 17	704	0.1+	0.2−	2000 01 05	704	0.1−	0.2+
1999 12 14	704	0.1−	0.4−	2000 01 05	704	0.1−	0.1−

1999 XW₂₁₃ = 1995 LO

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28771883	ω	240.02380	+0.92332984	−0.38166362		
<i>a</i>	2.2724301	Ω	142.36740	+0.37188587	+0.86122309		
<i>e</i>	0.1481554	<i>i</i>	3.97866	+0.09572310	+0.33560045		
<i>P</i>	3.43	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1995 06 03	691	0.2−	0.0	1999 12 14	704	0.0	0.1−
1995 06 03	691	0.5−	0.1−	1999 12 14	704	0.3+	0.7+
1995 06 03	691	0.2−	0.0	1999 12 14	704	0.1−	0.2−
1995 06 06	691	0.6+	0.6−	1999 12 14	704	0.4−	0.0
1995 06 06	691	0.2+	0.6−	1999 12 14	704	0.3−	0.2+
1995 06 06	691	0.3+	0.6+	1999 12 15	704	0.2−	0.0
1999 12 06	704	0.1+	0.4−	1999 12 15	704	0.4−	0.8+
1999 12 06	704	0.6+	0.5−	1999 12 15	704	0.4−	0.0
1999 12 06	704	(2.9+	0.7−)	1999 12 15	704	0.3+	0.8+
1999 12 06	704	0.5+	0.7+	1999 12 15	704	0.8−	0.1−

1999 XZ₂₁₃ = 1990 VT₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22453829	ω	238.63907	+0.98696118	-0.13214934		
<i>a</i>	2.6808701	Ω	128.79125	+0.15527125	+0.93209781		
<i>e</i>	0.0534637	<i>i</i>	6.77070	-0.04240827	+0.33723912		
<i>P</i>	4.39	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 11 15	809	0.8-	0.1-	1998 08 17	704	1.0-	0.3-	1999 12 15	704	0.4-	0.5-
1990 11 15	809	0.1-	0.0	1998 08 17	704	0.5-	0.5-	1999 12 15	704	0.4+	0.3+
1990 11 15	809	1.8-	0.4-	1998 08 27	699	0.7+	1.3+	1999 12 15	704	0.2+	0.3+
1990 11 17	809	1.7+	1.0+	1998 08 27	699	0.4+	0.7+	2000 01 05	704	0.1+	0.4-
1990 11 17	809	0.8+	0.9+	1998 08 27	699	1.2+	1.2-	2000 01 05	704	0.1-	0.0
1990 11 17	809	0.7+	1.2+	1999 12 14	704	0.1+	0.3-	2000 01 05	704	0.3+	0.0
1990 11 21	809	0.4-	0.1-	1999 12 14	704	0.9+	0.5-	2000 01 05	704	0.4+	0.3+
1990 11 21	809	0.1-	1.4-	1999 12 14	704	0.4-	0.6-	2000 01 05	704	0.5+	0.4+
1990 11 21	809	0.2-	0.3-	1999 12 14	704	0.2-	0.3+	2000 01 06	704	0.6-	0.4-
1998 08 17	704	0.5+	0.8-	1999 12 14	704	0.5+	0.4+	2000 01 06	704	0.2-	0.2+
1998 08 17	704	0.3-	0.1+	1999 12 15	704	0.4-	0.3+	2000 01 06	704	0.2+	0.2-
1998 08 17	704	1.0-	0.2+	1999 12 15	704	0.5-	0.9-	2000 01 06	704	0.7-	0.3+

1999 XM₂₁₄ = 1993 ST₆ = 1995 BK₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.17839934	ω	59.32631	+0.33745428	-0.94129855		
<i>a</i>	3.1251717	Ω	10.96309	+0.84659453	+0.29927802		
<i>e</i>	0.2067567	<i>i</i>	2.72337	+0.41158513	+0.15617204		
<i>P</i>	5.52	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1993 09 17	809	0.6+	0.2+	1995 02 05	691	0.1-	0.0	1999 12 15	704	1.0-	0.8+
1993 09 17	809	0.5-	0.7-	1995 02 05	691	0.1-	0.1-	1999 12 15	704	0.0	0.2+
1993 09 17	809	0.1-	0.2+	1995 02 05	691	0.0	0.1+	1999 12 15	704	0.5+	0.8+
1993 09 18	809	0.5+	0.4+	1999 11 16	704	0.7-	0.4+	1999 12 15	704	0.5-	0.6+
1993 09 18	809	0.2-	0.4+	1999 11 16	704	0.1-	0.0	2000 01 03	704	0.3+	0.5+
1993 09 18	809	0.2-	0.0	1999 11 16	704	0.2+	0.1-	2000 01 03	704	0.2+	0.6-
1993 09 18	691	(3.4+, 2.4-)		1999 11 16	704	1.2-	0.6-	2000 01 03	704	0.1-	0.9-
1993 09 18	691	0.2-	0.0	1999 12 14	704	0.9-	0.5-	2000 01 03	704	0.3+	1.8-
1993 09 18	691	0.1-	0.0	1999 12 14	704	0.4+	0.8+	2000 01 04	704	1.2+	0.2+
1995 01 31	691	0.2+	1.0+	1999 12 14	704	0.6+	1.2+	2000 01 04	704	0.1+	0.2+
1995 01 31	691	0.1+	0.0	1999 12 14	704	0.4+	0.4-	2000 01 04	704	0.2+	1.0-
1995 01 31	691	0.3+	0.1+	1999 12 14	704	0.4+	0.4+	2000 01 04	704	0.1+	1.3-

1999 XJ₂₁₅ = 1997 EY₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29005031	ω	14.18646	-0.94370101	-0.32541346		
<i>a</i>	2.2602362	Ω	146.63349	+0.29199010	-0.90388701		
<i>e</i>	0.0930585	<i>i</i>	6.20553	+0.15546766	-0.27765872		
<i>P</i>	3.40	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 03 07	358	1.0+	1.8+	1998 08 23	704	0.6+	1.4+	2000 01 05	704	0.1-	0.1+
1997 03 07	358	0.2-	1.5+	1998 08 23	704	0.9-	1.5+	2000 01 06	704	0.3-	0.7+
1997 03 08	358	0.1+	0.6-	1999 12 14	704	0.3+	0.1-	2000 01 06	704	0.0	0.7+
1997 03 08	358	1.8+	0.2+	1999 12 14	704	0.7-	1.0-	2000 01 06	704	0.1+	0.7+
1997 03 18	358	0.5-	0.8-	1999 12 14	704	(2.8- 1.3+)		2000 01 09	704	0.6-	0.5+
1997 03 18	358	1.4-	0.1+	1999 12 15	704	0.0	0.5-	2000 01 09	704	0.5+	0.5+
1997 04 01	358	(4.1+ 1.5-)		1999 12 15	704	0.2+	0.8-	2000 01 09	704	0.5+	0.4-
1997 04 01	358	(0.2+ 2.8+)		1999 12 15	704	0.1-	1.3-	2000 01 09	704	0.1+	0.6+
1998 08 23	704	1.5-	1.0+	2000 01 05	704	0.1+	0.8+	2000 01 09	704	0.3+	0.2+
1998 08 23	704	0.9+	0.2-	2000 01 05	704	0.4-	0.7+				

1999 XK₂₁₅ = 1997 EW₁₆ = 1998 QU₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28955065	ω	44.91685	-0.07469368	+0.99426942		
<i>a</i>	2.2628357	Ω	220.98105	-0.94454860	-0.09513378		
<i>e</i>	0.1200678	<i>i</i>	6.69703	-0.31976365	+0.04876363		
<i>P</i>	3.40	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 08	691	0.0	0.1-	1998 08 27	704	0.1-	0.1-	1999 12 14	704	1.0+	0.3-
1997 03 08	691	0.3-	0.6+	1998 08 27	704	0.2+	0.4-	1999 12 15	704	0.4-	0.6+
1997 03 08	691	0.0	0.1-	1998 08 30	699	0.8-	0.0	1999 12 15	704	0.3+	0.0
1997 03 10	691	0.1+	0.6-	1998 08 30	699	0.1+	0.1-	1999 12 15	704	0.4-	0.3-
1997 03 10	691	0.1-	0.4-	1998 08 30	699	0.0	0.6+	1999 12 15	704	0.9-	0.7-
1997 03 10	691	0.1+	0.3-	1998 09 18	699	0.2+	0.4+	1999 12 15	704	0.8-	0.4-
1998 08 19	704	0.4+	0.8+	1998 09 18	699	0.3+	0.4-	2000 01 07	704	0.2+	0.4-
1998 08 19	704	0.0	0.6+	1998 09 18	699	0.1+	0.2+	2000 01 07	704	0.0	0.2-
1998 08 19	704	0.6+	0.2-	1998 10 14	699	0.3+	0.1-	2000 01 07	704	0.2-	0.2-
1998 08 19	704	0.4-	0.7+	1998 10 14	699	0.8+	0.4+	2000 01 07	704	0.1+	0.1-
1998 08 19	704	0.4-	0.3+	1998 10 14	699	0.2-	0.0	2000 01 07	704	0.5+	0.4-
1998 08 24	704	0.2-	0.9-	1999 12 06	704	0.9-	0.0	2000 01 11	704	0.1-	0.1+
1998 08 24	704	0.7-	0.8-	1999 12 06	704	0.3-	0.0	2000 01 11	704	0.2+	0.1+
1998 08 24	704	0.5-	1.0-	1999 12 06	704	1.4+	0.5+	2000 01 11	704	0.0	0.4+
1998 08 27	704	0.2+	0.6-	1999 12 06	704	0.6-	0.1+	2000 01 11	704	0.2-	0.9+
1998 08 27	704	0.0	0.1-	1999 12 14	704	0.4-	0.4+	2000 01 11	704	0.9+	0.4+
1998 08 27	704	0.4+	0.1+	1999 12 14	704	0.6+	0.3-				

1999 XL₂₁₅ = 1998 KA₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.29023643	ω	127.60453	+0.49207934	+0.87041730		
<i>a</i>	2.2592698	Ω	171.83020	-0.82866316	+0.47368885		
<i>e</i>	0.2088035	<i>i</i>	6.14831	-0.26678698	+0.13413650		
<i>P</i>	3.40	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 05 23	699	0.4-	0.1-	1998 09 14	699	0.0	0.0	1999 12 14	704	0.4-	1.0+
1998 05 23	699	0.1-	0.5-	1998 09 14	699	0.1+	0.2+	1999 12 14	704	0.1+	0.0
1998 05 23	699	0.6-	0.4-	1998 10 19	699	0.7+	0.4-	1999 12 14	704	0.3-	0.3+
1998 05 24	699	0.4-	0.2-	1998 10 19	699	0.0	0.7+	1999 12 15	704	0.1-	0.6+
1998 05 24	699	0.5-	0.0	1998 10 19	699	0.4+	0.3+	1999 12 15	704	0.5+	0.0
1998 05 24	699	0.1-	1.3-	1998 11 06	699	0.2-	0.2+	1999 12 15	704	0.2+	0.3-
1998 06 04	699	0.2-	0.4-	1998 11 06	699	1.2-	1.1-	1999 12 15	704	0.2+	0.0
1998 06 04	699	0.2-	0.0	1998 11 06	699	0.9-	0.6-	1999 12 15	704	0.3+	0.7-
1998 06 04	699	1.1-	0.0	1998 12 08	704	0.6-	0.2-	2000 01 05	704	0.3-	0.7-
1998 07 16	699	0.6+	0.0	1998 12 08	704	0.7-	0.4+	2000 01 05	704	0.1-	0.7-
1998 07 16	699	0.4+	0.1-	1998 12 08	704	0.7+	0.6-	2000 01 05	704	0.4-	0.6-
1998 07 16	699	0.4+	0.0	1998 12 08	704	(3.6+ 2.0+)		2000 01 05	704	0.2-	0.2-
1998 08 23	704	1.2+	1.3+	1998 12 08	704	0.4-	0.9-	2000 01 07	704	0.3-	0.4+
1998 08 23	704	0.6-	0.7+	1999 12 06	704	0.6+	0.1+	2000 01 07	704	0.4-	0.3-
1998 08 23	704	0.9+	0.1-	1999 12 06	704	1.4+	0.7-	2000 01 07	704	0.3-	0.3-
1998 08 23	704	0.4+	0.5-	1999 12 06	704	1.0+	1.3+	2000 01 07	704	0.2+	0.4-
1998 09 14	699	0.2+	0.1-	1999 12 14	704	0.6-	0.1-	2000 01 07	704	0.7-	0.3-

1999 XS₂₁₅ = 1991 JA₅ = 1998 VF₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	137.02018		(2000.0)		P		Q		
n	0.18598651	ω	164.56536		+0.95774097		+0.28760955		
a	3.0395906	Ω	178.70309		-0.27787513		+0.92841609		
e	0.0533219	i	9.16301		-0.07428089		+0.23521119		
P	5.30	H	13.3		G	0.15	U	4	

Residuals in seconds of arc

1991 05 13	809	1.7+	0.1-	1998 11 10	704	0.2-	0.2-	1999 12 15	704	0.3+	0.5+
1991 05 13	809	0.9+	1.1+	1998 11 10	704	0.6+	0.2+	1999 12 15	704	0.1+	1.2-

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1991 05 13	809	0.3-	1.3+	1998 11 11	704	0.0	0.8-	1999 12 15	704	1.1+	0.3-
1991 05 17	809	1.0-	0.1+	1998 11 11	704	0.0	0.1-	2000 01 07	704	0.4-	0.6+
1991 05 17	809	0.2-	0.1-	1998 11 11	704	0.4+	0.9+	2000 01 07	704	0.3-	0.6+
1991 05 17	809	0.8-	0.2-	1998 11 11	704	0.6-	0.2-	2000 01 07	704	0.2-	0.0
1998 09 18	699	0.5-	0.1+	1998 11 11	704	0.8-	0.9+	2000 01 07	704	0.8-	1.1+
1998 09 18	699	0.5-	0.1+	1999 12 14	704	0.3+	0.5+	2000 01 07	704	0.1+	1.7+
1998 09 18	699	0.2-	0.2-	1999 12 14	704	0.2+	0.1+	2000 01 11	704	0.1+	0.4-
1998 10 12	699	0.4+	1.1+	1999 12 14	704	0.3+	0.1+	2000 01 11	704	0.9+	0.0
1998 10 12	699	0.2-	0.6+	1999 12 14	704	0.1+	0.3+	2000 01 11	704	0.2+	0.7-
1998 10 12	699	0.4+	1.4+	1999 12 14	704	0.2-	0.1-	2000 01 11	704	0.7-	0.5-
1998 11 10	704	0.0	1.1-	1999 12 15	704	0.4-	0.4-				
1998 11 10	704	0.6+	0.9-	1999 12 15	704	0.5-	0.7-				

1999 XT₂₁₅ = 1998 QT₇₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	54.57763		(2000.0)	P	Q
n	0.21517058	ω	188.22608	+0.46202145	-0.87669959
a	2.7581261	Ω	234.35894	+0.82277710	+0.48007790
e	0.1029460	i	9.48474	+0.33101966	+0.03038161
P	4.58	H	14.4	G 0.15	U 3

Residuals in seconds of arc

1998 08 19	704	0.2-	0.7+	1998 09 19	699	0.5-	1.2-	1999 12 15	704	0.3+	0.5-
1998 08 19	704	1.6+	1.6-	1998 09 19	699	(2.6+	1.7+)	1999 12 15	704	0.5-	0.7-
1998 08 19	704	1.0+	1.7+	1998 10 18	699	(2.4-	0.3-)	1999 12 15	704	0.2-	1.1-
1998 08 19	704	0.5-	0.5+	1998 10 18	699	1.5-	0.9+	1999 12 15	704	0.9-	1.1-
1998 08 24	704	0.2-	0.1-	1998 10 18	699	0.4-	1.0-	1999 12 15	704	(0.7-	2.2-)
1998 08 24	704	0.0	0.1+	1999 12 05	704	0.1+	1.0+	2000 01 08	704	0.1-	0.3+
1998 08 24	704	(4.2-	0.5+)	1999 12 05	704	0.7-	0.5+	2000 01 08	704	0.7+	0.3+
1998 08 24	704	0.3+	1.5-	1999 12 05	704	0.1-	0.1-	2000 01 08	704	0.1-	0.3-
1998 08 24	704	0.3-	1.1+	1999 12 05	704	0.2-	0.1+	2000 01 08	704	0.2+	0.0
1998 08 27	704	0.4+	0.3-	1999 12 05	704	0.0	0.6+	2000 01 08	704	0.3+	0.3+
1998 08 27	704	(2.6-	1.8+)	1999 12 14	704	0.2-	0.2-	2000 01 11	704	0.3+	0.1+
1998 08 27	704	1.1-	1.0+	1999 12 14	704	0.4-	0.3-	2000 01 11	704	0.4-	0.4+
1998 08 27	704	0.2+	1.3-	1999 12 14	704	0.3+	0.5-	2000 01 11	704	0.5+	0.8+
1998 08 27	704	0.4-	0.0	1999 12 14	704	0.4+	0.3-	2000 01 11	704	0.4+	0.6+
1998 09 19	699	1.5+	1.4+	1999 12 14	704	0.2-	1.0-	2000 01 11	704	0.4+	1.2+

1999 XU₂₁₅ = 1982 VY₁ = 1998 QH₆₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	164.22357		(2000.0)	P	Q
n	0.23521213	ω	359.77003	+0.10375517	+0.97019288
a	2.5991394	Ω	276.17977	-0.91217824	+0.00505629
e	0.1350918	i	12.72543	-0.39644132	+0.24228124
P	4.19	H	13.5	G 0.15	U 4

Residuals in seconds of arc

1982 11 14	033	0.0	0.1-	1999 12 07	703	0.8-	0.0	1999 12 17	704	0.5+	0.3+
1998 08 24	704	0.2+	0.2-	1999 12 07	703	0.7-	0.1+	2000 01 03	704	0.5+	0.7+
1998 08 24	704	0.6+	0.5-	1999 12 07	703	0.1-	0.2-	2000 01 03	704	0.3-	0.4-
1998 08 24	704	1.6-	0.8+	1999 12 15	704	0.1+	0.5+	2000 01 03	704	0.4+	0.6+
1998 08 24	704	1.5-	0.0	1999 12 15	704	0.6+	0.2-	2000 01 03	704	0.3-	0.5-
1998 08 24	704	0.9+	0.2-	1999 12 15	704	0.7+	0.5-	2000 01 03	704	1.2-	1.2-
1998 08 27	704	0.2+	0.0	1999 12 15	704	0.4+	0.1-	2000 01 04	704	0.0	0.7+
1998 08 27	704	0.7+	0.4-	1999 12 15	704	0.0	0.4-	2000 01 04	704	0.2+	0.2-
1998 08 27	704	0.2-	0.5+	1999 12 17	704	1.0+	0.1+	2000 01 04	704	0.2+	0.1-
1998 08 27	704	0.6+	0.1-	1999 12 17	704	0.2-	0.5+	2000 01 04	704	0.3-	0.2+
1998 08 27	704	0.2+	0.2+	1999 12 17	704	0.2+	0.6+	2000 01 04	704	0.5-	1.1-
1999 12 07	703	0.5-	0.1-	1999 12 17	704	0.1+	0.8+				

1999 XU₂₁₆ = 1995 WQ₂₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	354.89508		(2000.0)	P	Q
n	0.27868825	ω	30.04013	-0.65952844	-0.74628370
a	2.3212590	Ω	101.38162	+0.67010319	-0.63792184
e	0.0697026	i	5.26190	+0.34056418	-0.19004306
P	3.54	H	15.0	G 0.15	U 4

Residuals in seconds of arc

1995 11 19	691	0.3+	0.2+	1999 12 07	704	0.0	0.0	2000 01 03	704	0.5+	0.1-
1995 11 19	691	0.1+	0.2+	1999 12 07	704	0.1+	0.3-	2000 01 03	704	0.3-	0.5+
1995 11 19	691	0.2-	0.3+	1999 12 13	691	0.3-	0.4+	2000 01 03	704	0.1+	0.1+
1995 11 25	691	0.3-	0.1-	1999 12 13	691	0.3-	0.4+	2000 01 04	704	0.4-	0.1+
1995 11 25	691	0.2+	0.2-	1999 12 13	691	0.2-	0.4+	2000 01 04	704	0.1-	0.0
1995 11 25	691	0.1-	0.1-	1999 12 16	691	0.1-	0.4+	2000 01 04	704	0.1-	0.3-
1999 12 07	704	0.4+	0.3-	1999 12 16	691	0.1-	0.3+	2000 01 04	704	0.1-	0.1+
1999 12 07	704	0.2-	1.7-	1999 12 16	691	0.1-	0.4+	2000 01 04	704	0.3+	0.3-
1999 12 07	704	0.7+	0.9-	2000 01 03	704	0.1+	0.3+				

1999 XD₂₁₇ = 1986 PJ₂ = 1998 VK₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	160.70927		(2000.0)	P	Q
n	0.17681314	ω	330.13690	+0.67457640	+0.73820342
a	3.1438346	Ω	342.28421	-0.67627731	+0.61714352
e	0.1767133	i	0.29176	-0.29596568	+0.27237766
P	5.57	H	13.7	G 0.15	U 5

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

1986 08 01	675	(0.26-	0.09-)	1998 11 18	704	0.9-	0.4-	1999 12 27	691	0.2+	0.2-
1986 08 01	675	(0.26-	0.09-)	1998 11 18	704	0.9+	1.6-	1999 12 27	691	0.0	0.1-
1986 08 02	675	(0.26-	0.09-)	1998 11 19	910	0.2+	0.9+	2000 01 02	691	0.4+	0.3-
1986 08 02	675	(0.26-	0.09-)	1998 11 19	910	0.1+	0.9+	2000 01 02	691	0.4+	0.3-
1998 11 10	910	1.0+	0.3-	1998 11 19	910	0.2+	0.9+	2000 01 02	691	0.2+	0.4-
1998 11 11	910	1.0+	0.4-	1999 12 13	691	0.4-	0.0	2000 01 04	704	0.3+	0.4+
1998 11 11	910	0.9+	0.5-	1999 12 13	691	0.8-	0.2+	2000 01 04	704	0.3-	0.8+
1998 11 11	910	0.6-	0.4+	1999 12 13	691	0.1+	0.4-	2000 01 04	704	1.1+	0.2-
1998 11 11	910	0.4-	0.4+	1999 12 16	691	0.1-	0.0	2000 01 11	120	0.1-	0.9+
1998 11 11	910	0.3-	0.5+	1999 12 16	691	0.2-	0.1+	2000 01 11	120	0.8-	0.7-
1998 11 18	704	0.4-	0.5+	1999 12 16	691	0.2-	0.0				
1998 11 18	704	1.8-	1.2-	1999 12 27	691	0.1+	0.1+				

1999 XJ₂₁₇ = 1994 TN₇ = 1996 EP₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	49.91232		(2000.0)	P	Q
n	0.21658001	ω	62.02594	+0.74349875	-0.66873556
a	2.7461471	Ω	339.94349	+0.61197026	+0.68130976
e	0.3068781	i	0.25663	+0.26963312	+0.29767391
P	4.55	H	15.7	G 0.15	U 4

Residuals in seconds of arc

1994 10 06	691	0.2+	0.1-	1996 03 18	691	0.6+	0.1-	2000 01 02	691	0.5+	0.5-
1994 10 06	691	0.3+	0.0	1999 12 13	691	0.2+	0.2+	2000 01 02	691	0.4+	0.0
1994 10 06	691	0.1+	0.1+	1999 12 13	691	0.0	0.2+	2000 01 04	704	0.2-	0.6+
1994 10 11	691	0.1-	0.4-	1999 12 13	691	0.2-	0.3-	2000 01 04	704	0.6+	0.9-
1994 10 11	691	0.2-	0.2+	1999 12 16	691	0.2+	0.1+	2000 01 04	704	0.3+	0.0
1994 10 11	691	0.4-	0.3+	1999 12 16	691	0.0	0.2+	2000 01 04	704	0.1+	0.5+
1996 03 11	691	0.4-	0.1+	1999 12 16	691	0.0	0.0	2000 01 11	120	0.8-	0.9-
1996 03 11	691	0.8-	0.2+	1999 12 27	691	0.3-	0.2+	2000 01 11	120	0.3-	0.6+
1996 03 11	691	0.7-	0.0	1999 12 27	691	0.2-	0.1+	2000 01 11	120	0.1-	0.0
1996 03 18	691	0.6+	0.1+	1999 12 27	691	0.4-	0.1+				
1996 03 18	691	0.8+	0.0	2000 01 02	691	0.5+	0.3-				

1999 XO₂₁₇ = 1984 DN₂ = 1991 PU₂₆ = 1998 VS₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	258.12362		(2000.0)	P		Q	
<i>n</i>	0.18031722	ω	142.17250	−0.54170870	+0.83944098		
<i>a</i>	3.1029724	Ω	94.98777	−0.78146071	−0.48388934		
<i>e</i>	0.1315737	<i>i</i>	2.50149	−0.30963016	−0.24736601		
<i>P</i>	5.47	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4

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

1984 02 26	095	0.3+	0.7+	1999 12 13	691	0.2+	0.5+	2000 01 04	704	0.3−	0.0
1991 08 05	809	(0.07−	0.01−)	1999 12 16	691	0.1+	0.7+	2000 01 04	704	0.1−	0.6−
1991 08 05	809	(0.07−	0.01−)	1999 12 16	691	0.2+	0.6+	2000 01 04	704	0.2+	0.2−
1991 08 05	809	(0.07−	0.01−)	1999 12 16	691	0.2+	0.6+	2000 01 04	704	0.3−	0.3−
1998 11 14	691	0.3−	0.1+	1999 12 31	691	0.4−	0.4−	2000 01 04	704	0.6+	0.5+
1998 11 14	691	0.1−	0.1−	1999 12 31	691	0.4−	0.4−	2000 01 06	691	0.2+	0.1−
1998 11 14	691	0.0	0.2+	1999 12 31	691	0.1+	0.3−	2000 01 06	691	0.3+	0.1−
1998 11 16	691	0.2+	0.0	2000 01 04	704	1.4−	0.1−	2000 01 06	691	0.4+	0.2−
1998 11 16	691	0.1−	0.1+	2000 01 04	704	0.1+	0.0	2000 01 11	691	0.2+	0.2−
1998 11 16	691	0.2+	0.2+	2000 01 04	704	0.0	0.9−	2000 01 11	691	0.2+	0.1−
1999 12 13	691	0.0	0.4+	2000 01 04	704	0.2+	0.5+	2000 01 11	691	0.2+	0.2−
1999 12 13	691	0.1+	0.5+	2000 01 04	704	0.5−	0.6−				

1999 XV₂₁₈ = 1997 GQ₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	34.26005		(2000.0)	P		Q	
<i>n</i>	0.27750442	ω	176.88503	+0.01097180	−0.99950788		
<i>a</i>	2.3278560	Ω	272.48498	+0.91678985	+0.02178857		
<i>e</i>	0.0449480	<i>i</i>	1.68561	+0.39921922	−0.02256690		
<i>P</i>	3.55	<i>H</i>	16.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 04 03	704	1.0−	0.4+	1999 12 16	691	0.0	0.5−	1999 12 18	691	0.0	0.2+
1997 04 03	704	0.1+	0.0	1999 12 16	691	0.2−	0.2−	1999 12 18	691	0.1−	0.0
1997 04 07	704	0.4+	0.0	1999 12 16	691	0.3−	0.0	2000 01 05	704	0.2−	0.2−
1997 04 07	704	0.5+	0.3−	1999 12 17	691	0.2−	0.1+	2000 01 05	704	0.2−	0.6−
1999 12 08	691	0.3+	0.3+	1999 12 17	691	0.2−	0.1+	2000 01 05	704	0.9−	0.4−
1999 12 08	691	0.2−	0.4+	1999 12 17	691	0.1−	0.1+	2000 01 05	704	0.1+	0.2+
1999 12 08	691	0.2+	0.0	1999 12 17	691	0.2−	0.1−	2000 01 05	704	0.1−	0.3−
1999 12 15	691	0.3+	0.1+	1999 12 17	691	0.3−	0.3−	2000 01 07	691	0.4+	0.7+
1999 12 15	691	0.3+	0.1+	1999 12 17	691	0.1+	0.1−	2000 01 07	691	0.6+	0.1+
1999 12 15	691	0.3+	0.2−	1999 12 18	691	0.0	0.1+	2000 01 07	691	0.6+	0.3+

1999 XU₂₂₀ = 1998 QW₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	330.84934		(2000.0)	P		Q	
<i>n</i>	0.21528887	ω	307.62779	−0.80436305	−0.59391940		
<i>a</i>	2.7571158	Ω	195.95713	+0.56191516	−0.75164516		
<i>e</i>	0.1105167	<i>i</i>	3.36137	+0.19300631	−0.28686112		
<i>P</i>	4.58	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 30	691	0.3+	0.1+	1999 12 14	704	0.6+	0.2−	2000 01 05	704	0.0	0.5+
1998 08 30	691	0.3+	0.1−	1999 12 14	704	0.1−	0.2−	2000 01 05	704	0.5−	0.4−
1998 08 30	691	0.1+	0.1+	1999 12 16	704	0.3−	0.1+	2000 01 05	704	0.4+	0.0
1998 08 31	691	0.4−	0.1−	1999 12 16	704	0.2−	0.1+	2000 01 05	704	0.3+	0.2−
1998 08 31	691	0.3−	0.0	1999 12 16	704	0.1−	0.2+	2000 01 06	704	0.0	0.2+
1999 12 14	704	0.4+	0.0	1999 12 16	704	0.0	0.0	2000 01 06	704	0.3−	0.1−
1999 12 14	704	0.0	0.4+	1999 12 16	704	0.4−	0.0	2000 01 06	704	0.3−	0.1+
1999 12 14	704	0.0	0.2−	2000 01 05	704	0.6+	0.3−				

1999 XO₂₂₁ = 1990 TX₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	353.85399		(2000.0)	P		Q	
<i>n</i>	0.22998285	ω	132.97274	−0.20386656	−0.97853426		
<i>a</i>	2.6383905	Ω	328.75286	+0.88044842	−0.16979048		
<i>e</i>	0.0555416	<i>i</i>	3.33227	+0.42807594	−0.11679855		
<i>P</i>	4.29	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 10 10	033	0.1−	0.7+	1999 12 15	704	0.2−	0.0	1999 12 16	704	0.1+	0.3+
1990 10 11	033	0.3−	0.1+	1999 12 15	704	0.9−	0.2+	1999 12 16	704	0.1−	0.2+
1990 10 11	033	0.2+	0.5+	1999 12 15	704	0.4+	0.7−	2000 01 03	704	0.2+	0.4+
1990 10 12	033	0.3+	0.4−	1999 12 15	704	0.9−	0.5−	2000 01 03	704	0.5+	0.6+
1990 10 13	033	0.5+	0.4−	1999 12 15	704	0.4−	0.3−	2000 01 03	704	0.4−	0.4+
1990 10 14	033	0.7−	0.2−	1999 12 15	704	0.1+	0.6−	2000 01 03	704	0.8+	0.4+
1998 08 17	704	0.8−	0.4+	1999 12 15	704	0.5+	0.0	2000 01 03	704	(0.4+	2.3+)
1998 08 17	704	1.0+	0.1−	1999 12 15	704	0.5+	0.1+	2000 01 04	704	0.2+	0.8−
1998 08 17	704	0.9+	0.2+	1999 12 16	704	0.3−	0.1+	2000 01 04	704	0.6+	0.2+
1998 08 17	704	1.0−	0.7−	1999 12 16	704	0.1+	0.1+	2000 01 04	704	0.2−	0.4+
1999 12 15	704	0.3−	0.6−	1999 12 16	704	0.1−	0.2−	2000 01 04	704	0.0	0.4+

1999 XX₂₂₃ = 1987 OZ = 1998 RP₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	173.51924		(2000.0)	P		Q	
<i>n</i>	0.27274481	ω	202.12172	+0.55206253	+0.83167153		
<i>a</i>	2.3548598	Ω	101.43382	−0.75560578	+0.52922051		
<i>e</i>	0.2161899	<i>i</i>	3.48479	−0.35254344	+0.16807180		
<i>P</i>	3.61	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1987 07 28	010	0.5−	0.2+	1998 09 14	704	0.3−	1.2+	2000 01 03	704	1.0−	0.4+
1987 07 28	010	0.7+	0.6−	1998 09 14	704	0.1−	0.7+	2000 01 03	704	0.1−	1.2−
1987 07 28	010	0.1−	0.0	1998 09 14	704	0.4+	0.8+	2000 01 03	704	0.5+	0.6−
1998 06 29	704	1.0+	0.5−	1998 09 18	704	0.9+	0.0	2000 01 03	704	0.4+	0.5+
1998 06 29	704	0.8−	1.6+	1998 09 18	704	0.8+	0.4−	2000 01 04	704	0.1+	0.3+
1998 06 29	704	1.8+	0.9−	1998 09 18	704	0.4−	0.5−	2000 01 04	704	1.3−	0.2−
1998 06 29	704	0.1−	0.8+	1998 09 18	704	1.4+	0.7−	2000 01 04	704	0.3−	0.1+
1998 06 29	704	1.7−	0.1+	1998 09 18	704	0.6−	0.3−	2000 01 04	704	0.4+	0.2+
1998 08 23	704	0.5+	0.1−	1999 12 13	691	0.3+	0.3+	2000 01 04	704	0.3+	0.4+
1998 08 23	704	0.9−	0.5+	1999 12 13	691	0.3+	0.1+	2000 01 04	704	0.2−	0.3+
1998 08 23	704	0.4−	0.9−	1999 12 13	691	0.5+	0.3+	2000 01 04	704	0.3−	0.6−
1998 08 23	704	0.7−	0.1−	1999 12 17	691	0.2+	0.2+	2000 01 04	704	0.2+	0.8+
1998 08 23	704	1.3−	0.5−	1999 12 17	691	0.1+	0.0	2000 01 04	704	0.1−	0.0
1998 09 14	704	0.2+	0.2−	1999 12 17	691	0.7+	1.1−	2000 01 04	704	0.5−	0.0

1999 XG₂₂₄ = 1998 RS₄₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	77.85262		(2000.0)	P		Q	
<i>n</i>	0.21066480	ω	97.94550	+0.84297706	−0.53760609		
<i>a</i>	2.7973152	Ω	294.57724	+0.48485942	+0.77477472		
<i>e</i>	0.0834132	<i>i</i>	1.21097	+0.23302580	+0.33272185		
<i>P</i>	4.68	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.8−	1.4−	1999 12 13	691	0.1−	0.0	2000 01 04	704	0.2−	0.1−
1998 09 14	704	(0.5−	3.1−)	1999 12 17	691	0.4+	0.3+	2000 01 04	704	0.3−	0.4−
1998 09 14	704	1.0+	1.4−	1999 12 17	691	0.7+	0.5+	2000 01 04	704	0.1−	0.8−
1998 09 14	704	0.2−	0.6+	1999 12 17	691	0.4+	0.5+	2000 01 07	704	0.2−	0.1+
1998 09 18	704	(2.7+	1.7−)	2000 01 03	704	0.0	0.3−	2000 01 07	704	0.2+	0.3−
1998 09 18	704	1.2−	0.7−	2000 01 03	704	0.5+	0.3+	2000 01 07	704	0.3−	0.0
1998 09 18	704	0.4−	1.4+	2000 01 03	704	0.0	0.4+	2000 01 07	704	0.7+	0.4−
1998 09 18	704	0.5+	0.9+	2000 01 03	704	0.3−	0.0	2000 01 07	704	0.3−	0.3−
1998 09 18	704	1.2+	0.4+	2000 01 03	704	0.8−	0.5−	2000 01 09	704	0.3+	0.7+
1999 12 13	691	0.2−	0.1−	2000 01 04	704	0.6−	0.3+	2000 01 09	704	0.2−	0.2−
1999 12 13	691	0.4−	0.1−	2000 01 04	704	0.4+	0.3+	2000 01 09	704	0.2+	0.3+

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1999 XM₂₂₄ = 1998 RQ₅₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	300.56177		(2000.0)		P		Q
<i>n</i>	0.27538129	ω	269.39485	−0.94739391			+0.31311609
<i>a</i>	2.3398055	Ω	288.85078	−0.25863701			−0.87105151
<i>e</i>	0.1361006	<i>i</i>	4.02069	−0.18855153			−0.37845420
<i>P</i>	3.58	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.9+	1.6+	1998 09 26	327	1.0+	0.3−	1999 12 27	691	1.6+	0.5+
1998 09 14	704	0.7−	0.7−	1998 09 26	327	0.1+	0.5+	1999 12 27	691	1.7+	0.5+
1998 09 14	704	1.3+	0.7−	1998 10 19	327	0.0	0.2+	1999 12 27	691	1.7+	0.5+
1998 09 14	704	1.6−	1.3+	1998 10 19	327	0.1−	0.1+	2000 01 04	704	1.2−	1.8+
1998 09 14	704	(2.4−	1.5+)	1998 10 19	327	0.5+	1.0−	2000 01 04	704	0.1−	1.2−
1998 09 14	704	1.0−	0.7−	1999 12 04	691	0.5−	0.5−	2000 01 04	704	0.5−	0.1+
1998 09 14	704	(2.7−	1.2+)	1999 12 04	691	0.2−	0.4−	2000 01 04	704	1.3−	0.4−
1998 09 14	704	0.3−	1.2+	1999 12 04	691	0.3−	0.2−	2000 01 04	704	0.1−	0.7+
1998 09 14	704	(0.1+	3.2+)	1999 12 13	691	0.2−	0.4−	2000 01 04	704	0.3−	0.5+
1998 09 18	704	1.3−	0.6−	1999 12 13	691	0.2−	0.2+	2000 01 04	704	0.3+	1.0+
1998 09 18	704	1.1−	0.9−	1999 12 13	691	0.0	0.1−	2000 01 05	704	0.5−	0.4−
1998 09 18	704	0.4+	0.4+	1999 12 17	691	0.2+	0.1−	2000 01 05	704	0.7+	0.6−
1998 09 18	704	0.8+	1.1−	1999 12 17	691	0.2+	0.2+	2000 01 05	704	1.0−	0.9−
1998 09 26	327	1.0+	0.7+	1999 12 17	691	0.0	0.1−	2000 01 05	704	0.1−	0.7−

1999 XY₂₂₅ = 1992 OD₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	53.53260		(2000.0)		P		Q
<i>n</i>	0.19272000	ω	129.72937	+0.39670964			−0.90894236
<i>a</i>	2.9683710	Ω	296.45407	+0.79229179			+0.40959907
<i>e</i>	0.0410232	<i>i</i>	8.23521	+0.46356788			+0.07779707
<i>P</i>	5.11	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1992 07 26	809	0.8−	1.2+	1999 12 13	691	0.2+	0.1−	2000 01 02	691	0.1+	0.2+
1992 07 26	809	0.1+	1.2+	1999 12 13	691	0.3+	0.0	2000 01 04	704	0.1−	0.3+
1992 07 26	809	0.2+	1.4+	1999 12 17	691	0.0	0.2−	2000 01 04	704	0.1+	0.3+
1992 07 27	809	0.8−	0.1+	1999 12 17	691	0.1+	0.4−	2000 01 04	704	0.1−	0.7+
1992 07 27	809	0.4−	0.1+	1999 12 17	691	0.2+	0.4−	2000 01 04	704	0.2−	0.1+
1992 07 27	809	0.0	0.0	1999 12 18	699	0.6+	1.1+	2000 01 04	704	0.1−	1.8+
1998 10 12	699	0.1+	0.5+	1999 12 18	699	0.1+	0.3+	2000 01 06	704	0.2−	0.1−
1998 10 12	699	0.3−	0.5−	1999 12 18	699	0.1+	0.3+	2000 01 06	704	0.1−	0.4+
1998 10 12	699	0.3+	0.5−	1999 12 27	691	0.1+	0.1−	2000 01 06	704	0.8−	0.1+
1999 12 08	704	0.4+	0.4+	1999 12 27	691	0.0	0.2−	2000 01 10	691	0.2+	0.3+
1999 12 08	704	1.4+	0.9−	1999 12 27	691	0.0	0.2−	2000 01 10	691	0.2+	0.4+
1999 12 08	704	1.0−	1.2−	2000 01 02	691	0.1+	0.3+	2000 01 10	691	0.2+	0.4+
1999 12 13	691	0.2+	0.1−	2000 01 02	691	0.0	0.4+				

1999 XM₂₂₆ = 1995 YG₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	359.88454		(2000.0)		P		Q
<i>n</i>	0.26512364	ω	49.69494	−0.63744054			−0.76869846
<i>a</i>	2.3997744	Ω	79.98621	+0.68970998			−0.59973059
<i>e</i>	0.1586129	<i>i</i>	3.06486	+0.34346717			−0.22231933
<i>P</i>	3.72	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1995 12 19	566	0.7+	0.5+	1999 12 17	691	0.0	0.5−	2000 01 03	704	0.2+	0.5−
1995 12 19	566	0.8+	0.7+	1999 12 17	691	0.2−	0.7−	2000 01 03	704	0.1−	0.3−
1995 12 19	566	0.3+	0.8+	1999 12 18	699	0.1+	1.0+	2000 01 03	704	0.4+	0.2+
1995 12 20	566	0.6−	0.7−	1999 12 18	699	1.4+	0.1+	2000 01 04	704	0.2−	0.6−
1995 12 20	566	0.7−	0.7−	1999 12 18	699	0.8+	1.3+	2000 01 04	704	0.3+	0.2−
1995 12 20	566	0.5−	0.5−	1999 12 30	699	0.0	1.6+	2000 01 04	704	1.0−	0.7−
1999 12 14	691	0.6−	0.8−	1999 12 30	699	(0.2+	2.5+)	2000 01 04	704	0.2−	0.4−
1999 12 14	691	0.4−	0.9−	1999 12 30	699	0.6−	1.9+	2000 01 04	704	0.0	0.3−

1999 12 14	691	0.6−	1.0−	2000 01 03	704	1.1+	1.2+
1999 12 17	691	0.0	0.4−	2000 01 03	704	0.5−	0.4−

1999 XL₂₂₇ = 1997 EF₃₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	172.43013		(2000.0)		P		Q
<i>n</i>	0.30112441	ω	203.49000	+0.61228655			+0.78386366
<i>a</i>	2.2044762	Ω	104.42466	−0.70744059			+0.60148335
<i>e</i>	0.1932975	<i>i</i>	6.12067	−0.35303398			+0.15419318
<i>P</i>	3.27	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 04	704	0.5+	0.5−	1998 08 17	704	0.8+	0.1+	1999 12 27	691	0.2−	0.2+
1997 03 04	704	0.7+	0.0	1998 08 17	704	0.5+	0.4+	1999 12 27	691	0.2−	0.2+
1997 03 05	704	1.6−	0.6+	1998 08 17	704	0.6−	0.8+	1999 12 27	691	0.2−	0.3+
1997 03 05	704	0.8+	1.3+	1998 08 17	704	0.5+	0.1+	1999 12 31	691	0.4−	0.2−
1997 03 06	704	1.0+	0.1+	1999 12 15	691	0.0	0.5+	1999 12 31	691	0.1−	0.3−
1997 03 06	704	1.0−	1.1+	1999 12 15	691	0.0	0.8+	1999 12 31	691	0.3−	0.2−
1998 06 24	699	0.6−	0.5−	1999 12 15	691	0.3+	0.8+	2000 01 04	704	0.2+	0.3+
1998 06 24	699	0.2−	0.1−	1999 12 17	691	0.1+	0.3+	2000 01 04	704	0.3+	0.2−
1998 06 24	699	0.4−	1.1+	1999 12 17	691	0.3+	0.3+	2000 01 04	704	0.1−	0.3−
1998 08 17	704	0.5−	0.8+	1999 12 17	691	0.2+	0.4+	2000 01 04	704	0.4+	0.8−

1999 XU₂₂₇ = 1997 LE₈ = 1998 RA₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	332.78195		(2000.0)		P		Q
<i>n</i>	0.25966155	ω	45.14323	−0.91688370			−0.39618677
<i>a</i>	2.4333110	Ω	111.46090	+0.34992018			−0.85637310
<i>e</i>	0.0608626	<i>i</i>	2.99234	+0.19204203			−0.33115126
<i>P</i>	3.80	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1997 06 07	809	0.6−	0.3+	1998 09 18	704	0.0	1.4+	2000 01 04	704	1.0−	0.5−
1997 06 07	809	0.8−	0.0	1998 09 18	704	1.7+	0.5+	2000 01 04	704	0.3−	0.2+
1997 06 07	809	1.0−	0.1+	1999 12 15	691	0.4+	0.1+	2000 01 04	704	0.1−	0.8+
1997 06 08	809	1.4+	0.4+	1999 12 15	691	0.1+	0.1+	2000 01 04	704	0.8−	0.4−
1997 06 08	809	1.1+	0.3+	1999 12 15	691	0.3+	0.1+	2000 01 07	691	0.1−	0.3+
1997 06 08	809	0.6+	1.2+	1999 12 18	691	0.9+	0.1+	2000 01 07	691	0.1−	0.3+
1998 09 14	704	0.9−	0.5+	1999 12 18	691	0.8+	0.0	2000 01 07	691	0.1+	0.3+
1998 09 14	704	0.7−	0.3+	1999 12 18	691	0.8+	0.1+	2000 01 10	691	0.0	0.0
1998 09 14	704	1.4−	0.3−	1999 12 30	699	0.1+	0.1+	2000 01 10	691	0.2−	0.1+
1998 09 14	704	1.3−	0.0	1999 12 30	699	0.1+	0.3−	2000 01 10	691	0.1−	0.5+
1998 09 18	704	1.4+	1.5−	1999 12 30	699	0.5+	0.2+				
1998 09 18	704	0.5+	1.1+	2000 01 04	704	0.8−	0.3+				

1999 XZ₂₂₇ = 1978 WY₁₀ = 1998 HX₁₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	68.50054		(2000.0)		P		Q
<i>n</i>	0.23064466	ω	254.22888	+0.78807071			+0.56851266
<i>a</i>	2.6333411	Ω	70.55407	−0.42388453			+0.77927105
<i>e</i>	0.2236412	<i>i</i>	14.49946	−0.44639272			+0.26368538
<i>P</i>	4.27	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1978 11 29	675	0.2+	0.1+	1999 09 14	704	0.2−	0.5+	1999 12 13	699	0.5−	0.5+
1978 11 30	675	0.0	0.5−	1999 09 14	704	0.2+	0.2+	1999 12 13	699	0.0	0.7+
1998 04 23	704	0.5+	0.8−	1999 09 14	704	0.3−	0.2+	1999 12 13	699	0.5−	0.8+
1998 04 23	704	0.9+	0.6+	1999 10 02	704	0.1+	0.5+	2000 01 05	704	0.1−	0.5+
1998 04 23	704	0.0	0.5−	1999 10 02	704	0.7+	0.2+	2000 01 05	704	0.2+	0.2−
1998 04 23	704	0.0	1.8−	1999 10 02	704	0.5+	1.1−	2000 01 05	704	0.4+	0.9−
1998 04 23	704	0.4−	0.8−	1999 10 02	704	0.4+	0.3−	2000 01 05	704	0.1+	0.6−
1998 04 24	704	0.2+	0.1+	1999 12 02	704	0.2−	0.3−	2000 01 05	704	0.2+	0.6−
1998 04 24	704	0.6−	0.1−	1999 12 02	704	0.8+	0.4−	2000 01 08	704	0.2+	0.3−
1998 04 24	704	1.2−	0.5+	1999 12 02	704	0.3−	0.6−	2000 01 08	704	0.0	0.5+
1998 04 24	704	0.3−	0.6+	1999 12 02	704	0.4−	0.1+	2000 01 08	704	0.4+	0.7−

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1998 04 24	704	0.0	0.6+	1999 12 09	699	0.4−	0.3−	2000 01 08	704	0.2−	0.7+
1999 09 14	704	0.7+	0.2+	1999 12 09	699	0.8−	0.6−				
1999 09 14	704	0.5+	0.5−	1999 12 09	699	1.0−	0.0				

1999 XA₂₂₈ = 1993 BA₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	347.29348		(2000.0)	P		Q	
<i>n</i>	0.26573967	ω	350.62612	+0.12822937		−0.98369636	
<i>a</i>	2.3960642	Ω	91.93144	+0.91788631		+0.06957117	
<i>e</i>	0.1142546	<i>i</i>	7.24785	+0.37555553		+0.16583523	
<i>P</i>	3.71	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 01 16	010	0.2+	0.2−	1999 11 07	704	0.1+	1.2−	1999 12 14	699	0.6−	0.8+
1993 01 16	010	0.9−	0.6−	1999 11 07	704	1.0−	1.5−	2000 01 05	704	0.5+	0.2−
1993 01 16	010	0.3−	1.0−	1999 11 07	704	0.0	0.3−	2000 01 05	704	0.7+	0.1+
1993 01 17	010	0.3+	0.9+	1999 12 03	704	1.2+	0.0	2000 01 05	704	0.2+	0.3−
1993 01 17	010	0.5−	0.5+	1999 12 03	704	0.6+	0.8−	2000 01 05	704	0.8+	0.1+
1993 01 17	010	1.2+	0.0	1999 12 03	704	0.9+	1.3−	2000 01 05	704	0.0	0.5−
1999 11 02	703	0.4+	0.3+	1999 12 13	699	0.5−	0.6−	2000 01 08	704	0.5−	1.5+
1999 11 02	703	0.5+	0.8+	1999 12 13	699	0.4−	0.4+	2000 01 08	704	0.4−	0.6−
1999 11 02	703	0.4+	0.4+	1999 12 13	699	0.2−	1.4+	2000 01 08	704	0.6−	0.3+
1999 11 02	703	0.3+	0.6+	1999 12 14	699	0.8−	0.9+	2000 01 08	704	0.0	0.4−
1999 11 07	704	0.6−	0.4−	1999 12 14	699	0.2−	1.4+	2000 01 08	704	1.1−	0.2−

1999 XB₂₂₈ = 1998 MK₂₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	75.41101		(2000.0)	P		Q	
<i>n</i>	0.17633390	ω	205.16723	+0.72177480		+0.68414552	
<i>a</i>	3.1495282	Ω	111.24251	−0.61447452		+0.70309943	
<i>e</i>	0.1564889	<i>i</i>	6.45686	−0.31853131		+0.19389713	
<i>P</i>	5.59	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1998 06 24	704	0.7−	0.0	1999 10 04	703	0.5+	0.1−	1999 12 14	699	0.1+	0.7+
1998 06 24	704	0.5−	1.8+	1999 10 04	703	0.0	0.1+	1999 12 14	699	0.4−	1.0+
1998 06 24	704	0.3−	0.1+	1999 10 04	703	0.6+	0.2+	2000 01 08	704	0.0	0.4−
1998 06 26	704	0.1+	0.1+	1999 10 04	703	0.3+	0.0	2000 01 08	704	0.0	0.4−
1998 06 26	704	1.5+	0.7−	1999 11 02	703	0.3−	0.5−	2000 01 08	704	0.3+	0.2+
1998 06 26	704	0.1−	0.3−	1999 11 02	703	0.3+	0.2+	2000 01 08	704	0.2−	0.6+
1998 06 26	704	0.1+	0.6−	1999 11 02	703	0.2+	0.3+	2000 01 08	704	1.1+	1.1+
1999 10 02	704	0.2−	0.5−	1999 11 02	703	0.1+	0.1−	2000 01 10	704	0.7−	0.0
1999 10 02	704	0.3−	0.5−	1999 12 13	699	0.2−	0.2+	2000 01 10	704	0.4+	0.2+
1999 10 02	704	0.1+	0.3−	1999 12 13	699	0.3−	1.7+	2000 01 10	704	0.1+	1.1−
1999 10 02	704	0.1−	0.4−	1999 12 13	699	1.3−	0.3−	2000 01 10	704	0.4−	0.5−
1999 10 02	704	0.4−	0.3−	1999 12 14	699	0.5+	0.1+	2000 01 10	704	0.2−	0.5−

1999 YH = 1998 KF₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	288.28420		(2000.0)	P		Q	
<i>n</i>	0.37062082	ω	67.54168	−0.92670081		+0.09399134	
<i>a</i>	1.9194767	Ω	116.15959	−0.17615599		−0.96390207	
<i>e</i>	0.0808771	<i>i</i>	23.91489	+0.33195582		−0.24911529	
<i>P</i>	2.66	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 27	704	0.1−	0.4−	1999 11 08	704	0.3−	0.5−	2000 01 07	699	0.7+	0.0
1998 05 27	704	0.9+	0.5−	1999 11 08	704	0.5+	0.6+	2000 01 07	699	0.8+	0.1+
1998 05 27	704	0.2−	1.3+	1999 11 08	704	0.5−	0.6+	2000 01 07	699	1.1+	0.6−
1998 05 27	704	0.3−	0.7−	1999 12 16	704	0.2+	0.1−	2000 01 08	704	0.7−	0.4+
1998 05 27	704	0.2−	1.0−	1999 12 16	704	0.1−	0.2+	2000 01 08	704	(2.1−	0.4+)
1998 06 04	704	1.2−	0.4+	1999 12 16	704	0.1+	0.4+	2000 01 08	704	0.7−	0.4+
1998 06 04	704	0.9−	0.9+	1999 12 16	704	0.0	0.1+	2000 01 08	699	(2.0+	0.1−)
1998 06 04	704	0.2−	0.2−	1999 12 17	704	0.3+	0.3+	2000 01 08	704	0.5−	1.0+
1998 06 04	704	0.7+	0.9+	1999 12 17	704	0.0	0.0	2000 01 08	699	0.8+	0.1+

1998 06 04	704	0.8+	0.6−	1999 12 17	704	0.1−	0.2−	2000 01 08	699	0.9+	0.3−
1998 06 23	704	1.0+	0.2+	1999 12 17	704	0.6+	0.7−	2000 01 10	704	0.4+	0.6+
1998 06 23	704	0.1−	0.2−	1999 12 17	704	0.3−	0.0	2000 01 10	704	0.2−	0.5+
1998 06 23	704	0.1+	0.4+	2000 01 02	683	1.1−	0.8−	2000 01 10	704	0.5−	0.0
1998 06 23	704	(2.8+	1.0−)	2000 01 02	683	0.9−	0.5−	2000 01 10	704	0.1+	0.2−
1999 11 08	704	0.0	0.6−	2000 01 02	683	0.9−	0.6−	2000 01 10	704	0.0	0.2+

1999 YJ = 1996 AK₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	10.00223		(2000.0)	P		Q	
<i>n</i>	0.23610197	ω	337.03503	−0.08969452		−0.86578765	
<i>a</i>	2.5926047	Ω	114.85912	+0.97711185		−0.17222676	
<i>e</i>	0.2142830	<i>i</i>	32.85949	+0.19289201		+0.46984006	
<i>P</i>	4.17	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 01 10	114	(3.4+	3.6−)	1999 11 10	704	(2.4−	1.4−)	2000 01 09	704	0.1+	0.0
1996 01 11	114	0.6+	0.1−	1999 12 16	704	0.8+	0.3+	2000 01 09	704	0.2−	0.4−
1996 01 11	114	(2.1+	0.1+)	1999 12 16	704	0.5+	0.5+	2000 01 09	704	0.4−	0.3−
1996 01 12	114	(1.2−	3.7+)	1999 12 16	704	0.7+	0.6+	2000 01 09	704	0.1+	0.2−
1996 01 13	114	(3.0−	4.5+)	1999 12 16	704	0.6+	0.6+	2000 01 09	704	0.3−	0.1−
1996 01 14	114	(1.3−	3.6+)	1999 12 16	704	0.2+	0.4+	2000 01 11	704	0.2−	0.2−
1996 01 16	114	0.3−	0.3−	1999 12 17	704	0.2+	0.5+	2000 01 11	704	0.0	0.1−
1996 01 22	114	0.5−	0.6+	1999 12 17	704	0.2+	0.2+	2000 01 11	704	0.0	0.3−
1999 11 10	704	1.2−	1.5−	1999 12 17	704	0.2+	0.6+	2000 01 11	704	0.3+	1.0−
1999 11 10	704	0.3−	0.6−	1999 12 17	704	0.2+	0.4+				
1999 11 10	704	1.8−	0.3−	1999 12 17	704	0.0	0.2+				

1999 YY = 1998 KV₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	58.17758		(2000.0)	P		Q	
<i>n</i>	0.28375064	ω	215.00704	+0.93979125		−0.34057698	
<i>a</i>	2.2935673	Ω	164.82853	+0.33300533		+0.89400750	
<i>e</i>	0.1754435	<i>i</i>	6.20331	+0.07681050		+0.29113212	
<i>P</i>	3.47	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 22	704	0.2+	1.0+	1999 12 05	704	0.7−	0.8−	1999 12 17	678	1.0−	0.1+
1998 05 22	704	0.3+	0.3+	1999 12 05	704	0.3−	0.8−	2000 01 04	699	0.1−	0.2+
1998 05 22	704	0.4+	0.3+	1999 12 05	704	0.1−	1.0−	2000 01 04	699	0.1−	0.3+
1998 05 22	704	0.6+	0.7−	1999 12 05	704	0.3−	1.2−	2000 01 04	699	0.3−	0.5+
1998 05 24	704	0.2−	0.4+	1999 12 14	704	0.2−	0.6+	2000 01 07	704	0.2−	0.5−
1998 05 24	704	(2.1−	1.0+)	1999 12 14	704	0.1+	0.4+	2000 01 07	704	0.4+	0.1+
1998 05 24	704	0.2−	0.9+	1999 12 14	704	0.2+	0.6+	2000 01 07	704	0.5+	0.4+
1998 05 24	704	(1.3+	2.8−)	1999 12 14	704	0.4+	0.2+	2000 01 07	704	0.2+	0.4−
1998 05 24	704	0.9−	0.8−	1999 12 14	704	0.4−	0.0	2000 01 07	704	0.0	0.2+
1999 11 05	704	0.5+	0.4+	1999 12 14	699	0.7+	0.7+	2000 01 11	704	0.1+	0.9−
1999 11 05	704	0.2+	0.3+	1999 12 14	699	0.3−	0.7+	2000 01 11	704	1.6+	0.4−
1999 11 05	704	0.4+	0.4+	1999 12 14	699	0.2+	0.6+	2000 01 11	704	0.1+	0.1−
1999 11 05	704	0.2+	0.0	1999 12 16	678	0.5−	0.2+	2000 01 11	704	0.4+	0.5−
1999 11 05	704	0.3+	0.1−	1999 12 16	678	0.7−	0.6+	2000 01 11	704	0.7+	0.2+
1999 12 05	704	0.0	0.2−	1999 12 17	678	1.3−	0.2+				

1999 YZ = 1998 KH₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	59.38144		(2000.0)	P	Q
n	0.27758827	ω	224.20504	+0.96765659	−0.24499070
a	2.3273872	Ω	149.82319	+0.25161900	+0.92016314
e	0.1244392	i	6.87468	+0.01812717	+0.30541668
P	3.55	H	14.6	G 0.15	U 2

1998 05 23	704	0.1−	0.2+	1999 11 13	699	0.2−	0.4+	2000 01 05	704	0.2+	0.5−
1998 05 23	704	0.8+	0.8+	1999 11 13	699	0.2−	0.4+	2000 01 05	704	0.9+	0.4−
1998 05 23	704	0.7+	0.6−	1999 11 13	699	0.2−	0.1+	2000 01 05	704	0.0	0.2−
1998 05 23	704	1.1−	0.1−	1999 12 04	699	0.0	0.2+	2000 01 05	704	0.1−	0.7−
1998 05 23	704	1.7−	0.4+	1999 12 04	699	0.0	0.2+	2000 01 05	704	0.0	1.0−
1998 05 26	704	0.8+	1.0−	1999 12 04	699	0.0	0.1+	2000 01 06	699	0.1+	0.0
1998 05 26	704	1.4+	1.0+	1999 12 05	704	0.2+	0.0	2000 01 06	699	1.7−	1.1+
1998 05 26	704	0.2−	0.6−	1999 12 05	704	0.1−	0.2−	2000 01 06	699	0.8−	0.3+
1998 05 26	704	1.4−	0.1+	1999 12 05	704	0.4+	0.6−	2000 01 07	704	0.0	0.2+
1998 05 26	704	(0.5+ 2.2+)		1999 12 05	704	0.5−	0.3−	2000 01 07	704	0.0	0.8−
1998 06 19	704	1.2+	0.0	1999 12 05	704	0.6−	0.3−	2000 01 07	704	0.1−	0.7−
1998 06 19	704	0.2+	0.8+	1999 12 14	704	0.1−	0.2+	2000 01 07	704	0.3−	1.0−
1998 06 19	704	1.2−	0.5−	1999 12 14	704	0.4−	0.6+	2000 01 07	704	0.2+	1.3−
1998 06 19	704	0.5+	1.9−	1999 12 14	704	0.4+	1.1+	2000 01 11	704	0.6+	0.4−
1999 10 31	703	0.4−	0.4−	1999 12 14	704	0.9−	0.3+	2000 01 11	704	0.6−	0.2+
1999 10 31	703	1.0−	0.1+	1999 12 14	704	0.2−	1.6+	2000 01 11	704	0.7+	0.2−
1999 10 31	703	0.0	0.1−	1999 12 14	699	1.5+	0.8+	2000 01 11	704	0.7+	0.3−
1999 10 31	703	0.3+	0.2−	1999 12 14	699	0.6+	0.3−	2000 01 11	704	0.5+	0.3+
1999 11 05	704	0.4+	0.5−	1999 12 14	699	0.0	0.2+				
1999 11 05	704	0.3+	0.5−	1999 12 16	678	0.4+	0.4−				

1999 YO₁ = 1974 FM = 1989 YZ₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	38.22673		(2000.0)	$\mathbf{P}$	$\mathbf{Q}$
n	0.29634656	ω	95.39344	+0.43025789	−0.90203211
a	2.2281074	Ω	329.04781	+0.79904510	+0.39854053
e	0.1038563	i	3.88800	+0.42000604	+0.16584184
P	3.33	H	14.3	G 0.15	U 4

Residuals in seconds of arc

1974 03 22	805	0.2+	1.1−	1999 12 15	704	0.0	0.4−	1999 12 25	900	0.2−	0.0
1974 03 23	805	0.2+	1.7+	1999 12 15	704	0.1+	0.0	1999 12 27	900	0.0	0.6+
1989 12 28	511	0.8−	0.3−	1999 12 15	704	0.0	0.1+	1999 12 27	900	0.9−	0.7+
1989 12 28	511	0.7+	0.9+	1999 12 15	704	0.6+	1.5−	1999 12 31	900	0.1+	0.3+
1989 12 29	511	0.3−	1.4+	1999 12 19	900	0.1−	0.3+	1999 12 31	900	0.1−	0.3+
1989 12 29	511	0.2+	0.4−	1999 12 19	900	0.0	0.1+	2000 01 02	704	0.1−	0.6−
1999 11 16	704	0.8+	0.1−	1999 12 19	900	0.5−	0.6+	2000 01 02	704	0.1−	0.5−
1999 11 16	704	0.9+	0.3+	1999 12 21	900	0.5−	1.0+	2000 01 02	704	0.2−	0.5−
1999 11 16	704	0.4−	0.9+	1999 12 21	900	0.4−	0.1+	2000 01 02	704	0.8+	0.4+
1999 11 16	704	0.3+	0.0	1999 12 22	900	1.6−	0.8+	2000 01 02	704	0.6−	0.4−
1999 11 16	704	0.4−	0.5+	1999 12 22	900	0.6+	0.4−	2000 01 04	704	0.1+	0.8−
1999 12 10	704	0.5+	0.4+	1999 12 24	402	0.2+	0.4−	2000 01 04	704	0.3+	0.5−
1999 12 10	704	0.2+	0.1+	1999 12 24	402	0.2+	0.6−	2000 01 04	688	0.0	0.1−
1999 12 10	704	0.8+	0.0	1999 12 24	402	0.1−	0.6−	2000 01 04	704	0.0	0.8−
1999 12 10	704	0.6+	0.2+	1999 12 24	900	0.3−	0.2+	2000 01 04	704	0.4−	0.2−
1999 12 10	704	0.6+	0.1+	1999 12 24	900	0.5−	0.1+	2000 01 04	704	0.1−	0.8−
1999 12 15	704	0.2+	0.1−	1999 12 25	900	0.2−	0.3−	2000 01 04	688	0.1+	0.2−

1999 YP₁ = 1992 DU₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	12.05546		(2000.0)		P	Q	
n	0.22936085	ω	282.29758		+0.25723753	−0.96038656	
a	2.6431584	Ω	152.07499		+0.95148950	+0.23234548	
e	0.2417606	i	13.22952		+0.16880930	+0.15386109	
P	4.30	H	15.3	G	0.15	U	4

Residuals in seconds of arc

1992 02 29	809	1.0+	1.6−	1999 12 09	699	2.0+	0.7+	1999 12 17	704	0.2+	0.7−
1992 03 03	809	1.0−	1.5+	1999 12 09	699	0.3−	1.0+	1999 12 17	704	0.1−	0.9−
1999 11 02	703	0.1−	0.0	1999 12 09	699	0.2+	0.1−	2000 01 09	704	0.4+	0.3+
1999 11 02	703	0.4−	0.3−	1999 12 16	704	0.1+	0.2−	2000 01 09	704	0.1−	0.4+
1999 11 02	703	0.5+	0.7+	1999 12 16	704	0.4+	0.0	2000 01 09	704	0.4−	0.2−
1999 11 02	703	0.1−	0.8+	1999 12 16	704	0.2+	0.3−	2000 01 09	704	1.1−	0.2−
1999 11 07	704	0.2−	0.5−	1999 12 16	704	0.3−	0.0	2000 01 09	704	0.3+	0.3+

1999 11 07	704	0.6−	0.7−	1999 12 16	704	0.6−	0.3+
1999 11 07	704	0.0	0.7−	1999 12 17	704	0.1+	0.3+

1999 YV₄ = 1978 WL₂₁ = 1998 RJ₃₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	303.01934		(2000.0)		P		Q
n	0.29143285	ω	261.48274		-0.96145418		+0.27243936
a	2.2530822	Ω	294.32004		-0.23349159		-0.88035504
e	0.0983810	i	2.33860		-0.14521545		-0.38826769
P	3.38	H	15.1	G	0.15	U	4

Residuals in seconds of arc

1978 11 28	675	0.2+	0.6−	1999 12 28	734	(2.2− 0.4−)	1999 12 31	734	0.5+	0.1+	
1978 11 29	675	0.0	0.2+	1999 12 28	734	1.9− 0.4−	2000 01 04	704	0.0	0.5+	
1998 09 14	704	0.3−	0.5−	1999 12 28	734	0.1+	1.1−	2000 01 04	704	0.2+	0.6+
1998 09 14	704	0.4+	0.4−	1999 12 29	734	0.6− 0.9−	2000 01 04	704	0.2+	0.1+	
1998 09 14	704	0.2+	0.5−	1999 12 29	734	0.6− 0.9−	2000 01 04	704	0.0	0.1−	
1998 09 14	704	1.1−	1.1−	1999 12 29	734	1.2− 1.2−	2000 01 04	704	0.0	0.0	
1998 09 18	704	0.2+	0.3+	1999 12 29	734	0.0	0.6−	2000 01 15	120	0.2−	1.7+
1998 09 18	704	1.3−	1.0+	1999 12 29	734	0.6− 0.3−	2000 01 15	120	0.6−	0.4+	
1998 09 18	704	1.2+	0.5−	1999 12 30	699	0.7+	1.7+	2000 01 16	739	0.4+	0.9−
1998 09 18	704	0.6−	0.7+	1999 12 30	699	(0.1+ 2.3+)	2000 01 16	739	0.3−	0.4−	
1998 09 18	704	1.3+	1.2+	1999 12 30	699	0.3+	1.0+	2000 01 16	739	0.4+	0.8−
1999 12 18	699	0.4+	1.8+	1999 12 31	734	0.6+	0.4−	2000 01 16	739	0.0	0.5−
1999 12 18	699	0.4−	1.2+	1999 12 31	734	0.7+	0.0				
1999 12 18	699	1.7+	0.0	1999 12 31	734	0.4+	0.2−				

1999 YA₅ = 1988 XU = 1993 BB₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	74.71864		(2000.0)		P		Q
n	0.27256713	ω	317.87736		+0.93488851		−0.35085570
a	2.3558830	Ω	62.73601		+0.33964129		+0.84034945
e	0.2249009	i	3.46346		+0.10308865		+0.41317439
P	3.62	H	13.9	G	0.15	U	4

Residuals in seconds of arc

1988 12 06	881	1.0+	0.3+	1999 12 10	704	0.2−	0.7−	2000 01 07	704	0.1−	0.4+
1988 12 06	881	1.9+	0.3+	1999 12 10	704	0.0	0.4+	2000 01 07	704	0.1−	0.2+
1988 12 06	872	(4.1+ 0.8−)		1999 12 10	704	0.0	0.2−	2000 01 07	704	0.1+	0.4+
1988 12 07	881	(4.7+ 1.3−)		1999 12 10	704	0.2+	0.2+	2000 01 07	704	0.1−	0.3+
1988 12 07	881	2.1+	0.8−	1999 12 10	704	0.1+	0.6+	2000 01 07	704	0.3−	0.4+
1988 12 07	881	0.4−	1.2−	1999 12 28	684	0.2−	0.6+	2000 01 07	704	0.2−	0.2+
1988 12 07	399	1.6−	2.0+	1999 12 28	684	0.3−	0.6+	2000 01 07	704	0.2−	0.4+
1988 12 07	399	1.7−	0.4+	1999 12 30	684	0.1−	0.4+	2000 01 07	704	0.1−	0.4+
1988 12 07	399	1.2+	0.3+	1999 12 30	684	0.1−	0.5+	2000 01 07	704	0.2+	0.4−
1988 12 07	399	0.3+	1.3−	1999 12 31	684	0.1−	0.4+	2000 01 07	704	0.1−	0.1−
1988 12 11	399	1.8+	2.4−	1999 12 31	684	0.1−	0.4+	2000 01 07	704	0.0	1.4−
1988 12 11	399	(2.1− 2.8−)		1999 12 31	684	0.1−	0.3+	2000 01 07	704	0.1−	0.3−
1988 12 11	399	0.8−	1.0−	2000 01 03	704	0.0	0.2−	2000 01 07	704	0.3+	0.5−
1988 12 11	399	1.3−	0.1+	2000 01 03	704	0.1+	0.4−	2000 01 07	704	0.3−	0.6+
1988 12 12	872	2.3−	1.6+	2000 01 03	704	0.6+	0.1−	2000 01 07	704	0.3+	0.6−
1988 12 12	872	0.2+	1.2−	2000 01 03	704	0.6+	0.1−	2000 01 07	704	0.2−	0.6+
1993 01 25	372	0.4−	0.4−	2000 01 03	704	0.1+	0.1−	2000 01 07	704	0.4+	0.6−
1993 01 26	372	0.0	1.5+	2000 01 04	704	0.1+	0.2−	2000 01 07	704	0.4−	1.0+
1993 01 26	372	(0.9+ 4.6−)		2000 01 04	704	0.2+	0.3−	2000 01 08	704	0.1−	0.0
1993 01 28	372	0.8−	1.6−	2000 01 04	704	0.2+	0.4−	2000 01 08	704	0.1−	0.1−
1993 01 28	372	0.6+	1.5−	2000 01 04	704	0.5+	0.2+	2000 01 08	704	0.1−	0.1+
1999 12 03	699	0.3−	0.7+	2000 01 04	704	0.5+	0.1+	2000 01 08	704	0.0	0.4−
1999 12 03	699	0.1−	0.8+	2000 01 07	704	0.0	0.5+	2000 01 08	704	0.1−	0.4−
1999 12 03	699	0.3+	0.4+	2000 01 07	704	0.0	0.0				

1999 YD₅ = 1995 OK₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	93.61918		(2000.0)	P		Q					
<i>n</i>	0.30158521	<i>ω</i>	235.31734	+0.90738757		−0.41921163					
<i>a</i>	2.2022301	<i>Ω</i>	149.43535	+0.40240657		+0.84581899					
<i>e</i>	0.1311408	<i>i</i>	3.39982	+0.12131261		+0.32992702					
<i>P</i>	3.27	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1995 07 22	691	0.2+	0.0	1999 12 29	747	0.2−	0.3+	2000 01 05	704	0.3−	0.3+
1995 07 22	691	0.0	0.1−	1999 12 30	747	0.0	0.1−	2000 01 05	704	0.0	0.7−
1995 07 22	691	0.0	0.0	1999 12 30	747	0.7+	0.8+	2000 01 05	704	0.8+	0.6+
1995 07 27	691	0.1−	0.0	1999 12 30	747	0.0	0.6−	2000 01 06	704	0.3−	0.6+
1995 07 27	691	0.1−	0.0	2000 01 02	747	0.8+	0.3+	2000 01 06	704	0.8+	0.7+
1995 07 27	691	0.1−	0.0	2000 01 02	747	0.2−	0.5−	2000 01 06	704	0.4−	0.1+
1999 12 29	747	0.0	0.2−	2000 01 02	747	0.5−	0.6−	2000 01 06	704	0.9−	0.8−
1999 12 29	747	0.1−	0.2+	2000 01 05	704	0.0	0.5−				

1999 YH₇ = 1995 VV₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	25.44318		(2000.0)	P			Q				
<i>n</i>	0.27401602	ω	56.63151	-0.78436087		-0.59975231					
<i>a</i>	2.3475710	Ω	86.01656	+0.50323745		-0.76450194					
<i>e</i>	0.1154222	<i>i</i>	9.13348	+0.36267078		-0.23629211					
<i>P</i>	3.60	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1995 11 04	327	0.1+	0.2-	1999 12 28	725	0.9+	0.3-	2000 01 07	704	0.3+	1.2-
1995 11 04	327	0.0	0.4+	1999 12 31	725	0.6-	0.2+	2000 01 10	725	0.4+	0.3+
1995 11 04	327	0.4-	0.4-	1999 12 31	725	0.2+	0.0	2000 01 10	725	0.5-	0.1+
1995 11 05	327	0.2-	0.1+	2000 01 07	704	0.5+	0.1-	2000 01 10	725	0.1-	0.4+
1995 11 05	327	0.3+	0.1-	2000 01 07	704	0.1-	0.4+	2000 01 11	725	0.4-	0.3-
1995 11 05	327	0.7-	0.2+	2000 01 07	704	0.5+	0.3+	2000 01 11	725	0.2-	0.0
1999 12 28	725	0.9-	0.1+	2000 01 07	704	0.0	0.0				

1999 YZ₈ = 1990 TJ₆ = 1998 OB₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	68.16506		(2000.0)	P			Q				
n	0.24120751	ϖ	100.97573	+0.72010858		-0.69109038					
a	2.5558901	Ω	302.77525	+0.60436527		+0.66858209					
e	0.1216723	i	4.22532	+0.34086104		+0.27457617					
P	4.09	H	14.1	G	0.15	U	3				
Residuals in seconds of arc											
1990 10 09	413	1.1-	0.3-	1999 12 31	691	0.2+	0.8-	2000 01 03	704	0.2-	0.6-
1990 10 11	413	1.1+	0.3+	1999 12 31	691	0.3+	1.0-	2000 01 04	704	0.3-	0.6+
1998 07 26	809	0.1+	0.8+	2000 01 01	165	0.2+	0.3+	2000 01 04	704	0.2-	0.3-
1998 07 26	809	0.3-	0.2-	2000 01 01	165	0.0	0.7+	2000 01 04	704	0.1+	0.5+
1998 07 26	809	0.1-	0.5+	2000 01 01	165	0.2+	0.3+	2000 01 04	704	0.3-	0.2+
1998 07 27	809	0.6+	0.4-	2000 01 01	165	1.0-	0.5+	2000 01 08	176	1.4+	1.2+
1998 07 27	809	0.0	0.2-	2000 01 02	165	0.7+	0.2+	2000 01 08	176	0.2+	0.1+
1998 07 27	809	0.4-	0.3-	2000 01 02	678	1.1-	0.1+	2000 01 08	176	(3.0-	1.2-
1999 12 29	165	0.3+	0.2+	2000 01 02	678	1.6-	0.4+	2000 01 08	691	0.1-	0.2-
1999 12 29	165	0.2-	0.7+	2000 01 03	678	0.5+	0.1-	2000 01 08	691	0.2-	0.2-
1999 12 30	165	0.3-	0.9+	2000 01 03	678	0.0	1.1-	2000 01 08	691	0.2-	0.1-
1999 12 30	699	0.0	0.3-	2000 01 03	704	0.2-	0.5-	2000 01 11	691	0.0	0.1+
1999 12 30	699	0.6+	0.2-	2000 01 03	704	0.7+	0.0	2000 01 11	691	0.0	0.1+
1999 12 30	699	0.2+	0.4+	2000 01 03	704	0.0	0.4-	2000 01 11	691	0.1-	0.5-
1999 12 31	691	0.2+	0.9-	2000 01 03	704	0.4+	0.5-				

1999 YC₉ = 1992 OU₁ = 1997 PH₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	191.49735		(2000.0)	P		Q					
<i>n</i>	0.19346545	ω	297.67702	+0.40699125		+0.91343032					
<i>a</i>	2.9607412	Ω	356.33757	-0.82793880		+0.36807505					
<i>e</i>	0.0765845	<i>i</i>	1.59630	-0.38584384		+0.17368306					
<i>P</i>	5.09	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1992 07 26	809	1.1+	0.4-	1997 08 02	566	0.0	0.8+	2000 01 03	704	0.3-	1.3-
1992 07 26	809	0.1-	1.0-	1997 08 02	566	0.1+	0.1-	2000 01 03	704	0.1+	0.3-
1992 07 26	809	0.4+	0.5-	1999 12 29	734	0.7-	0.9+	2000 01 04	704	0.0	0.4-
1992 07 30	809	0.5-	0.4+	1999 12 29	734	0.5-	0.5+	2000 01 04	704	0.4-	0.7+
1992 07 30	809	0.5-	0.7+	1999 12 29	734	0.4-	0.3+	2000 01 04	704	0.4+	0.0
1992 07 30	809	0.4-	0.9+	1999 12 29	734	0.6-	0.9+	2000 01 08	691	0.1+	0.2+
1997 08 01	566	0.3-	0.3-	1999 12 31	691	0.5-	1.2-	2000 01 08	691	0.0	0.2+
1997 08 01	566	0.2-	1.0-	1999 12 31	734	0.7+	0.5-	2000 01 08	691	0.1-	0.1+
1997 08 01	566	0.6+	0.3-	1999 12 31	691	0.4-	1.3-	2000 01 11	704	0.5+	0.8+
1997 08 02	566	0.5-	0.2+	1999 12 31	734	0.6+	0.0	2000 01 11	704	(2.6-	1.4+)
1997 08 02	566	0.1+	0.0	1999 12 31	734	0.6+	0.1-	2000 01 11	691	0.0	0.2+
1997 08 02	566	0.6+	0.4+	1999 12 31	734	1.0+	0.0	2000 01 11	704	0.1+	0.8+
1997 08 02	566	0.7-	0.2+	1999 12 31	691	1.1-	1.2-	2000 01 11	691	0.0	0.3+
1997 08 02	566	0.3+	0.1-	2000 01 03	704	0.4+	0.3-	2000 01 11	704	0.2-	0.5+
1997 08 02	566	0.2+	0.4-	2000 01 03	704	0.7+	0.2+	2000 01 11	691	0.0	0.3+
1997 08 02	566	0.3-	0.6+	2000 01 03	704	0.1+	0.0				

1999 YE₉ = 1981 RD = 1988 DV₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	174.34831		(2000.0)	P				Q			
<i>n</i>	0.23769983	ω	27.36425			+0.66042530		+0.72213450			
<i>a</i>	2.5809731	Ω	284.74984			−0.72197113		+0.53533336			
<i>e</i>	0.2022898	<i>i</i>	12.28821			−0.20638826		+0.43810952			
<i>P</i>	4.15	<i>H</i>	13.0	<i>G</i>	0.15		<i>U</i>	3			
Residuals in seconds of arc											
1981 09 03	688	0.4−	0.8−	1999 12 07	704	1.3+	0.1−	2000 01 05	704	0.5−	0.2+
1981 09 03	688	0.7+	0.4−	1999 12 07	704	1.3+	0.4−	2000 01 05	704	0.4−	0.0
1988 02 23	413	0.0	0.5−	1999 12 07	704	1.4+	0.9−	2000 01 05	704	0.1−	0.1−
1988 02 23	413	0.2+	0.9+	1999 12 07	704	1.0+	0.7−	2000 01 05	704	0.8−	0.0
1988 02 25	413	1.1−	0.0	1999 12 30	120	0.2−	0.2+	2000 01 05	704	0.6−	0.1−
1988 02 25	413	0.8+	0.4−	1999 12 31	120	0.4−	0.2+	2000 01 07	704	0.2−	0.1−
1999 12 05	699	(1.4+	2.5+)	2000 01 01	120	1.5−	0.7−	2000 01 07	704	0.2−	0.1−
1999 12 05	699	0.6+	1.5+	2000 01 01	120	0.5−	0.5−	2000 01 07	704	0.2−	0.1+
1999 12 05	699	0.5+	0.6+	2000 01 03	120	0.2−	0.2−	2000 01 07	704	0.2+	0.4−
1999 12 07	704	1.0+	0.6+	2000 01 04	120	0.8−	0.3+	2000 01 07	704	0.2−	0.0

1999 YR₉ = 1998 RK₅₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	36.13005		(2000.0)			P			Q		
n	0.21597876	ω	1.27386			+0.05177478			-0.99346590		
a	2.7512413	Ω	85.76497			+0.91534727			+0.00648458		
e	0.1311794	i	5.85368			+0.39932286			+0.11394499		
P	4.56	H	14.3	G	0.15	U	5				
Residuals in seconds of arc											
1998 09 14	704	0.3+	0.2+	1999 12 31	411	0.3+	0.6-	2000 01 04	704	0.0	0.4-
1998 09 14	704	0.7-	0.6-	2000 01 01	411	0.1-	0.2+	2000 01 04	704	0.1+	0.1+
1998 09 14	704	1.3+	2.0-	2000 01 01	411	0.9-	1.3+	2000 01 04	704	0.0	0.0
1998 09 18	704	1.0+	0.6+	2000 01 03	704	0.2-	0.6-	2000 01 04	704	0.6+	0.4+
1998 09 18	704	0.8+	0.5+	2000 01 03	704	0.3-	0.6-	2000 01 05	699	0.5+	0.2+
1998 09 18	704	1.7-	0.5+	2000 01 03	704	0.2-	0.5-	2000 01 05	699	0.2-	0.1+
1998 09 18	704	0.8-	0.5+	2000 01 03	704	0.4+	0.1-	2000 01 05	699	0.2-	0.2-
1998 09 18	704	0.2-	0.3+	2000 01 03	704	0.4+	0.9+				
1999 12 31	411	0.1+	0.1-	2000 01 04	704	0.2-	0.1-				

2000 JAN. 24

M.P.C. 37989

1999 YD₁₀ = 1995 SK₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	28.35605		(2000.0)	P	Q
<i>n</i>	0.26285319	ω	290.00290	+0.54154212	-0.83974316
<i>a</i>	2.4135736	Ω	127.14554	+0.78865847	+0.49118473
<i>e</i>	0.1625876	<i>i</i>	2.84343	+0.29111845	+0.23144974
<i>P</i>	3.75	<i>H</i>	17.9	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1995 09 25	691	0.3+	0.4-	1995 09 30	691	0.4-	0.0	2000 01 02	691	0.2+	0.1+
1995 09 25	691	0.1+	0.0	1999 12 27	691	0.2-	0.1+	2000 01 02	691	0.0	0.4-
1995 09 25	691	0.1+	0.3-	1999 12 27	691	0.3-	0.1+	2000 01 12	691	0.0	0.1+
1995 09 30	691	0.1-	0.4+	1999 12 27	691	0.3-	0.0	2000 01 12	691	0.3-	0.2-
1995 09 30	691	0.0	0.3+	2000 01 02	691	0.9+	0.2+	2000 01 12	691	0.0	0.0

1999 YQ₁₀ = 1998 MD₂₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	174.32290		(2000.0)	P	Q
<i>n</i>	0.29336247	ω	71.86679	+0.00748441	+0.99980914
<i>a</i>	2.2431915	Ω	198.58988	-0.93752668	+0.00073853
<i>e</i>	0.1442379	<i>i</i>	3.24511	-0.34783288	+0.01952258
<i>P</i>	3.36	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 06 24	704	0.5+	1.2+	1998 06 26	704	0.0	1.1+	2000 01 02	691	0.0	0.1+
1998 06 24	704	0.2+	0.1+	1998 06 26	704	0.3+	0.1+	2000 01 02	691	0.3+	0.4-
1998 06 24	704	0.4-	0.3-	1999 12 27	691	0.1+	0.0	2000 01 11	691	0.1-	0.2-
1998 06 24	704	1.0-	0.4+	1999 12 27	691	0.2-	0.3+	2000 01 11	691	0.2+	0.3-
1998 06 26	704	1.1+	0.7-	1999 12 27	691	0.1-	0.3+	2000 01 11	691	0.0	0.1-
1998 06 26	704	0.6-	1.9-	2000 01 02	691	0.2-	0.1+				

1999 YX₁₀ = 1993 HE₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	128.57962		(2000.0)	P	Q
<i>n</i>	0.22524612	ω	187.00629	+0.48079677	+0.87304914
<i>a</i>	2.6752508	Ω	111.75963	-0.80016742	+0.47481055
<i>e</i>	0.1930582	<i>i</i>	5.02574	-0.35856181	+0.11108620
<i>P</i>	4.38	<i>H</i>	15.9	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1993 04 20	691	0.0	0.0	1993 04 24	691	0.3+	0.6-	2000 01 02	691	0.3-	0.1-
1993 04 20	691	0.7+	0.2+	1993 04 24	691	0.8+	0.6-	2000 01 02	691	0.0	0.2-
1993 04 22	691	0.5-	0.5+	1999 12 27	691	0.2-	0.3+	2000 01 11	691	0.2-	0.3-
1993 04 22	691	0.4-	0.3+	1999 12 27	691	0.0	0.1+	2000 01 11	691	0.1+	0.2-
1993 04 22	691	0.5-	0.1+	1999 12 27	691	0.0	0.2+	2000 01 11	691	0.6+	0.1+
1993 04 24	691	0.4-	0.1+	2000 01 02	691	0.1+	0.0				

1999 YR₁₃ = 1933 OG = 1979 HY = 1990 RK₁₈ = 1993 DL₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	270.17092		(2000.0)	P	Q
<i>n</i>	0.27610989	ω	332.36357	-0.25791181	+0.96469716
<i>a</i>	2.3356875	Ω	282.65016	-0.87605815	-0.25676512
<i>e</i>	0.2142635	<i>i</i>	3.13139	-0.40743541	-0.05857520
<i>P</i>	3.57	<i>H</i>	13.4	<i>G</i> 0.15	<i>U</i> 2

Residuals in seconds of arc

1933 07 24	024	0.2-	0.4+	1993 02 22	511	(2.9-	1.5+)	2000 01 03	120	0.5-	0.3+
1979 04 28	688	0.1-	0.2+	1993 02 24	511	1.1+	1.8+	2000 01 05	704	0.2+	0.1+
1979 04 28	688	0.3+	0.4+	1993 02 25	511	(3.4+	4.5+)	2000 01 05	704	0.2-	0.3-
1990 09 09	413	0.1+	0.6-	1993 02 25	511	0.0	0.7+	2000 01 05	704	0.2-	0.2+
1990 09 11	413	(0.1-	2.6-)	1993 02 25	511	0.2+	1.9-	2000 01 05	704	0.1-	0.4-
1993 02 19	511	(2.0-	0.9+)	1999 12 30	120	0.8+	0.2+	2000 01 05	704	0.3-	0.4-
1993 02 19	511	0.0	0.2-	1999 12 30	120	0.2+	0.1-	2000 01 07	704	0.0	0.5+
1993 02 19	511	1.5-	0.4-	1999 12 30	120	0.0	0.3+	2000 01 07	704	0.0	0.2-

1993 02 19	511	(3.2+	0.3+)	1999 12 30	120	0.7+	0.0	2000 01 07	704	0.1-	0.2+
1993 02 20	511	(5.6+	3.1-)	1999 12 30	120	1.1+	0.3+	2000 01 07	704	0.1+	0.2-
1993 02 20	511	(1.2-	2.3-)	1999 12 31	120	0.5+	0.0	2000 01 07	704	0.1-	0.5-
1993 02 21	511	(0.3-	2.3-)	1999 12 31	120	0.0	0.6+	2000 01 16	120	1.0-	0.1+
1993 02 22	511	(1.6-	2.3-)	2000 01 01	120	0.4-	0.6+	2000 01 17	120	0.3-	0.4+
1993 02 22	511	0.5-	1.5-	2000 01 03	120	0.4+	0.5-				

1999 YQ₁₄ = 1995 YY₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	323.66485		(2000.0)	P	Q
<i>n</i>	0.27321159	ω	79.32448	-0.99750525	-0.04948014
<i>a</i>	2.3521769	Ω	97.82575	+0.02590741	-0.92006246
<i>e</i>	0.1492796	<i>i</i>	2.91315	+0.06566649	-0.38863452
<i>P</i>	3.61	<i>H</i>	16.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1995 12 22	691	0.3-	0.5+	2000 01 03	684	0.0	0.4+	2000 01 06	704	0.9-	0.1-
1995 12 22	691	0.3+	0.1+	2000 01 03	684	0.2-	0.3+	2000 01 08	684	0.3+	0.2-
1995 12 22	691	0.1+	0.3-	2000 01 04	704	0.3+	0.5-	2000 01 08	684	0.1+	0.0
1995 12 28	691	0.0	0.0	2000 01 04	704	0.3-	0.6+	2000 01 11	691	0.2+	0.3-
1995 12 28	691	0.2-	0.0	2000 01 04	704	0.4+	0.1+	2000 01 11	691	0.3+	0.4-
1995 12 28	691	0.1+	0.4-	2000 01 04	704	0.2-	0.7+	2000 01 11	691	0.3+	0.6-
1999 12 31	684	0.2+	0.4+	2000 01 06	704	0.0	0.3-				
1999 12 31	684	0.1-	0.2+	2000 01 06	704	0.3-	0.4-				

1999 YS₁₄ = 1998 MA₂₅

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	122.41128		(2000.0)	P	Q
<i>n</i>	0.28964692	ω	114.79929	+0.98190145	+0.17965467
<i>a</i>	2.2623342	Ω	234.90479	-0.18915344	+0.91433822
<i>e</i>	0.2589806	<i>i</i>	4.20172	-0.00951442	+0.36291847
<i>P</i>	3.40	<i>H</i>	14.4	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1998 06 24	704	0.0	0.1-	2000 01 02	461	0.5-	0.5+	2000 01 03	413	0.1+	0.5+
1998 06 24	704	(0.4-	2.1-)	2000 01 02	461	0.0	0.4+	2000 01 03	413	0.2+	0.4+
1998 06 24	704	(0.3+	2.1+)	2000 01 02	461	0.3+	0.5+	2000 01 03	954	1.3-	0.7-
1998 06 24	704	0.7-	0.4+	2000 01 02	046	0.1-	0.3-	2000 01 03	954	1.0-	0.9-
1998 06 26	704	0.7+	0.2+	2000 01 02	046	1.5-	0.8-	2000 01 04	402	0.4+	0.6-
1998 06 26	704	0.4+	1.3+	2000 01 02	046	0.7+	0.3+	2000 01 04	402	0.5+	0.1-
1998 06 26	704	0.1+	0.7-	2000 01 02	046	0.2-	1.1+	2000 01 04	402	0.9+	0.6-
1998 06 26	704	0.2-	0.9-	2000 01 02	046	1.0+	0.1+	2000 01 04	402	0.7+	0.1-
1998 06 26	704	0.3-	0.2-	2000 01 02	046	0.7-	0.9+	2000 01 07	704	0.1-	0.3+
1999 12 31	699	0.2-	0.3+	2000 01 02	954	0.5-	0.3-	2000 01 07	704	0.4+	0.4+
1999 12 31	699	0.6+	0.2+	2000 01 02	954	0.4-	0.5-	2000 01 07	704	0.4+	0.5+
1999 12 31	699	0.4+	0.1-	2000 01 02	954	0.4-	0.3-	2000 01 07	704	0.6+	0.2-
2000 01 01	739	0.8+	0.8+	2000 01 03	422	0.9-	1.6-	2000 01 07	704	0.4+	0.3-
2000 01 01	739	0.2+	0.3+	2000 01 03	900	1.9-	0.4+				
2000 01 01	739	0.4+	0.0	2000 01 03	900	0.7+	0.3-				

2000 AB = 1980 TK₁ = 1998 WU₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	240.36594		(2000.0)	P	Q
<i>n</i>	0.17352773	ω	119.61294	-0.25990940	+0.96304643
<i>a</i>	3.1833921	Ω	135.13942	-0.91697083	-0.22322356
<i>e</i>	0.1106885	<i>i</i>	5.74670	-0.30267410	-0.15070774
<i>P</i>	5.68	<i>H</i>	12.5	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1980 10 05	809	0.0	0.1-	1999 12 31	699	0.1-	0.5+	2000 01 05	704	0.2+	0.3-
1998 11 21	704	1.0+	0.5+	1999 12 31	699	0.1-	0.3+	2000 01 06	704	1.0+	1.5+
1998 11 21	704	1.2+	0.9-	1999 12 31	699	0.1-	0.4+	2000 01 06	704	0.4+	0.1+
1998 11 21	704	0.0	0.0	2000 01 01	120	0.3-	0.1+	2000 01 06	704	0.1-	0.4+
1998 11 21	704	0.4+	0.2-	2000 01 01	120	0.8-	1.2-	2000 01 06	704	0.1+	0.9+

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1998 11 21	704	1.3−	0.1−	2000 01 02	120	0.8+	0.2+	2000 01 15	120	0.1+	0.0
1998 11 24	704	0.5+	0.5+	2000 01 02	120	1.0+	0.1−	2000 01 15	120	0.1+	0.4−
1998 11 24	704	0.1+	0.4−	2000 01 03	120	0.3−	0.5−	2000 01 16	120	0.1−	0.4−
1998 11 24	704	0.7−	0.0	2000 01 04	120	0.4+	0.1+	2000 01 16	120	1.7−	0.4−
1998 11 24	704	0.5−	0.0	2000 01 05	704	0.3−	0.3−	2000 01 16	120	0.5+	0.8−
1998 11 24	704	0.7−	0.6+	2000 01 05	704	0.2−	0.3−	2000 01 16	120	1.2−	0.1−
1999 12 30	120	0.9+	0.3−	2000 01 05	704	0.1+	0.3+	2000 01 16	120	0.4+	0.0
1999 12 30	120	0.2−	0.3−	2000 01 05	704	0.5−	0.5+				

2000 AG = 1998 MF₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27785283	<i>ω</i>	28.23119	−0.82942452	−0.54864388		
<i>a</i>	2.3259096	<i>Ω</i>	118.11456	+0.48748716	−0.80275408		
<i>e</i>	0.0532351	<i>i</i>	6.84327	+0.27278423	−0.23361461		
<i>P</i>	3.55	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 24	704	1.2−	0.5+	1999 12 06	704	0.2+	0.1+	2000 01 03	678	0.6−	0.1+
1998 06 24	704	0.1−	1.1−	1999 12 06	704	0.0	0.0	2000 01 03	678	1.4−	0.4+
1998 06 24	704	1.0+	0.2−	1999 12 06	704	0.4+	0.2−	2000 01 05	704	0.6+	0.0
1998 06 24	704	0.8−	1.1−	1999 12 06	704	0.6+	0.2−	2000 01 05	704	1.2+	1.1+
1998 06 24	704	0.7+	0.3−	1999 12 06	704	0.3+	0.1−	2000 01 05	704	0.1+	0.1−
1998 06 26	704	0.8−	0.8−	1999 12 14	704	0.0	0.4+	2000 01 05	704	0.4+	0.6−
1998 06 26	704	0.1+	1.0+	1999 12 14	704	0.6−	0.1+	2000 01 05	704	0.5−	0.5−
1998 06 26	704	1.2−	0.6+	1999 12 14	704	0.1+	0.5−	2000 01 07	704	0.2+	0.5−
1998 06 26	704	0.1−	1.6+	1999 12 14	704	0.5−	0.2−	2000 01 07	704	0.2+	0.3−
1998 06 28	809	(2.3+ 2.3+)		1999 12 14	704	0.7−	0.2+	2000 01 07	704	0.6+	0.2+
1998 06 28	809	(2.3+ 1.1+)		1999 12 30	699	0.1+	0.0	2000 01 07	704	0.1−	0.2−
1998 06 28	809	(2.9+ 2.1+)		1999 12 30	699	0.3−	0.3+	2000 01 07	704	0.1−	0.2−
1998 07 01	809	0.3+	0.1−	1999 12 30	699	0.2+	0.0	2000 01 11	678	0.1−	0.4+
1998 07 01	809	0.7+	0.1−	2000 01 02	678	0.0	0.3−	2000 01 11	678	0.5−	0.0
1998 07 01	809	1.3+	0.1−	2000 01 02	678	0.1+	0.5+				

2000 AM = 1980 VG₄ = 1998 OM₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26422161	<i>ω</i>	180.51974	−0.32068316	−0.94595699		
<i>a</i>	2.4052330	<i>Ω</i>	288.18518	+0.86920978	−0.27366252		
<i>e</i>	0.1670427	<i>i</i>	2.91088	+0.37634648	−0.17399481		
<i>P</i>	3.73	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 11 01	675	0.1+	0.1+	2000 01 02	678	1.0−	0.4+	2000 01 06	704	0.1+	0.1−
1980 11 02	675	0.0	0.4−	2000 01 02	678	0.6+	0.7−	2000 01 07	691	0.4−	0.2−
1998 07 26	809	0.3+	0.6+	2000 01 03	678	0.2−	0.3+	2000 01 07	691	0.4−	0.2−
1998 07 26	809	1.0−	0.1+	2000 01 03	678	0.6−	0.3−	2000 01 07	691	0.4−	0.2−
1998 07 26	809	1.0−	0.4−	2000 01 04	704	0.7+	0.1−	2000 01 11	678	0.1+	0.1−
1998 07 27	809	0.8+	0.4+	2000 01 04	704	0.2−	0.7+	2000 01 11	678	0.6+	0.0
1998 07 27	809	0.2+	0.2−	2000 01 04	704	0.4+	0.0	2000 01 16	691	0.3−	0.5−
1998 07 27	809	0.6+	0.2−	2000 01 04	704	0.7+	0.0	2000 01 16	691	0.6−	0.2−
1999 12 30	699	0.6+	0.2+	2000 01 04	704	0.3+	0.1−	2000 01 16	691	0.6−	0.1−
1999 12 30	699	0.4+	0.4+	2000 01 06	704	0.3+	0.6−				
1999 12 30	699	0.4−	1.7+	2000 01 06	704	0.3+	0.0				

2000 AT = 1998 WB₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26362027	<i>ω</i>	7.11915	+0.24617607	+0.96874768		
<i>a</i>	2.4088893	<i>Ω</i>	277.13561	−0.89075109	+0.21376192		
<i>e</i>	0.1839989	<i>i</i>	1.75671	−0.38204691	+0.12583229		
<i>P</i>	3.74	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 11 17	691	0.3−	0.1+	2000 01 02	691	0.4−	0.4+	2000 01 03	691	0.2+	0.2+
1998 11 17	691	0.4−	0.3−	2000 01 02	691	0.1−	0.0	2000 01 13	691	0.2+	0.3−
1998 11 19	691	0.3+	0.1−	2000 01 02	691	0.1−	0.2+	2000 01 13	691	0.1+	0.4−
1998 11 19	691	0.1+	0.1+	2000 01 03	691	0.5+	0.1−	2000 01 13	691	0.6−	0.3+
1998 11 19	691	0.3+	0.2+	2000 01 03	691	0.3+	0.3−				

2000 AQ₁ = 1983 AL

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.22622748	<i>ω</i>	115.47599	+0.53108233	−0.83277989		
<i>a</i>	2.6675085	<i>Ω</i>	301.55852	+0.69654296	+0.53412098		
<i>e</i>	0.1928888	<i>i</i>	10.56938	+0.48247224	+0.14557620		
<i>P</i>	4.36	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1983 01 09	688	0.5+	0.3−	2000 01 03	704	0.1+	0.2−	2000 01 06	046	0.3−	0.1+
1983 01 09	688	2.0−	0.2+	2000 01 03	046	0.0	0.0	2000 01 07	699	0.3−	0.6−
1983 01 16	688	0.0	0.2−	2000 01 03	046	0.4−	0.2−	2000 01 07	699	0.9−	0.0
1983 01 16	688	1.6+	0.4+	2000 01 03	046	0.2+	0.2+	2000 01 07	699	0.1−	0.1+
2000 01 02	046	0.2−	0.2+	2000 01 03	046	0.1−	0.1−	2000 01 09	046	0.2−	0.1−
2000 01 02	046	0.1−	0.5+	2000 01 03	046	0.0	0.3−	2000 01 09	046	0.1+	0.2−
2000 01 02	046	0.0	0.3+	2000 01 03	046	0.1−	0.2−	2000 01 12	046	0.2+	0.1+
2000 01 02	046	0.1−	0.3+	2000 01 05	046	0.0	0.1+	2000 01 12	046	0.0	0.1−
2000 01 02	046	0.3+	0.0	2000 01 05	046	0.1+	0.1−	2000 01 12	046	0.1+	0.0
2000 01 03	704	0.2+	0.1−	2000 01 05	046	0.1−	0.1−	2000 01 13	046	0.3+	0.1+
2000 01 03	704	0.7+	0.1+	2000 01 06	046	0.2−	0.2+	2000 01 13	046	0.2+	0.1+
2000 01 03	704	0.6+	0.2−	2000 01 06	046	0.2−	0.1+	2000 01 13	046	0.3+	0.0

2000 AU₁ = 1998 SC₁₄₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.19881486	<i>ω</i>	328.18278	−0.02191075	−0.99515071		
<i>a</i>	2.9073913	<i>Ω</i>	122.90672	+0.93954899	−0.05327896		
<i>e</i>	0.1644086	<i>i</i>	6.55839	+0.34171278	+0.08268260		
<i>P</i>	4.96	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.6−	0.5−	1998 09 27	704	0.4−	0.7+	2000 01 06	704	0.4+	0.2−
1998 09 26	704	0.5−	1.3+	1998 09 27	704	0.9−	0.3+	2000 01 06	704	0.6−	0.8+
1998 09 26	704	0.1−	1.5−	2000 01 02	120	1.2+	0.9−	2000 01 06	704	0.8−	0.9−
1998 09 26	704	1.9−	0.2+	2000 01 02	120	0.1−	0.2−	2000 01 06	704	0.1−	0.3−
1998 09 27	704	0.1+	0.5−	2000 01 04	120	0.6+	0.1+	2000 01 06	704	0.4−	0.1−
1998 09 27	704	0.4+	0.7+	2000 01 04	120	1.3−	0.3+	2000 01 16	120	0.5+	0.1−
1998 09 27	704	1.7+	1.3+	2000 01 04	704	(1.3+ 2.8+)		2000 01 16	120	0.2+	0.5+
1998 09 27	704	0.6+	1.2−	2000 01 04	704	0.4+	0.5+	2000 01 16	120	0.6−	0.1+
1998 09 27	704	0.9+	1.6−	2000 01 04	704	1.2+	0.0				
1998 09 27	704	0.5+	0.8+	2000 01 04	704	0.4−	0.5+				

2000 AX₁ = 1998 MB₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.28234488	<i>ω</i>	292.18401	+0.52711120	−0.84574911		
<i>a</i>	2.3011739	<i>Ω</i>	125.74052	+0.81242836	+0.47294374		
<i>e</i>	0.1200485	<i>i</i>	5.85776	+0.24922669	+0.24704788		
<i>P</i>	3.49	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 06 21	691	0.3+	0.2−	1999 12 31	699	0.2−	0.5+	2000 01 06	704	0.1−	0.0
1998 06 21	691	0.3+	0.1+	2000 01 02	120	0.1−	0.3−	2000 01 06	704	0.4+	0.2−
1998 06 21	691	0.3+	0.2+	2000 01 03	120	0.1−	1.9+	2000 01 06	704	0.4+	0.2−
1998 06 25	691	0.8−	0.3−	2000 01 04	120	1.4+	0.8−	2000 01 09	704	0.3−	0.0
1998 06 25	691	0.7−	0.3+	2000 01 04	120	0.3+	1.6−	2000 01 09	704	0.1+	0.2−
1998 06 25	691	0.9−	0.4+	2000 01 05	704	0.7−	0.1−	2000 01 09	704	0.1+	0.1+

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1998 07 01	691	0.6+	0.3−	2000 01 05	704	0.2+	0.1+	2000 01 09	704	0.5−	0.5+
1998 07 01	691	0.3+	0.0	2000 01 05	704	0.0	0.1−	2000 01 16	120	0.2−	0.5+
1998 07 01	691	0.5+	0.5−	2000 01 05	704	0.1−	0.5−	2000 01 16	120	0.6−	0.3−
1999 12 31	699	0.5−	0.6+	2000 01 05	704	0.1+	0.2+				
1999 12 31	699	0.2+	0.2−	2000 01 06	704	0.0	0.2−				

2000 AZ₁ = 1980 NQ

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	274.11648	(2000.0)		P	Q		
<i>n</i>	0.28491905	ω	110.85599	−0.53337680	+0.84109834		
<i>a</i>	2.2872926	Ω	126.59074	−0.81170206	−0.47906587		
<i>e</i>	0.1609659	<i>i</i>	6.42104	−0.23801042	−0.25109653		
<i>P</i>	3.46	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1980 07 11	805	0.4−	0.3−	2000 01 02	120	0.7−	0.5+	2000 01 06	704	0.9−	0.3−
1980 07 12	805	0.2+	0.2+	2000 01 03	120	0.4+	0.1−	2000 01 06	704	0.1−	0.2+
1980 07 12	805	0.2+	0.7+	2000 01 04	120	0.0	0.1−	2000 01 06	704	0.0	0.6+
1998 10 17	699	0.2−	0.5−	2000 01 04	120	0.6−	0.6−	2000 01 06	704	0.3−	0.2+
1998 10 17	699	0.5+	0.3+	2000 01 05	704	0.5−	0.2−	2000 01 09	704	0.3+	0.1+
1998 10 17	699	0.4−	0.4+	2000 01 05	704	0.4+	0.6−	2000 01 09	704	0.7+	0.3+
1999 12 31	699	0.2+	0.2+	2000 01 05	704	0.1−	0.1−	2000 01 09	704	0.7+	0.1+
1999 12 31	699	0.3−	0.2+	2000 01 05	704	0.1+	0.0	2000 01 09	704	0.5+	0.1−
1999 12 31	699	0.0	0.2+	2000 01 05	704	0.3+	0.1+				

2000 AG₂ = 1995 WX₃₉

Id. S. Nakano

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	62.81958	(2000.0)		P	Q		
<i>n</i>	0.26333619	ω	247.21117	+0.77610583	−0.63018752		
<i>a</i>	2.4106215	Ω	151.83693	+0.59488848	+0.71963268		
<i>e</i>	0.1981447	<i>i</i>	2.77842	+0.20920668	+0.29153473		
<i>P</i>	3.74	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1995 11 23	691	0.0	0.2−	2000 01 03	888	0.4−	0.1−	2000 01 05	704	0.1−	0.4+
1995 11 23	691	0.1−	0.1−	2000 01 03	888	0.4−	0.1−	2000 01 05	704	0.2+	0.0
1995 11 30	691	0.5−	0.0	2000 01 03	888	0.4−	0.4−	2000 01 07	888	0.7−	0.0
1995 11 30	691	0.2+	0.1−	2000 01 04	888	0.3−	0.1+	2000 01 07	888	0.3+	0.1−
1995 11 30	691	0.4+	0.3+	2000 01 04	888	0.4−	0.1+	2000 01 07	888	0.3+	0.3−
1999 12 18	699	0.5+	0.7+	2000 01 05	704	0.2−	0.6−	2000 01 14	888	0.6+	0.6+
1999 12 18	699	0.9+	0.8+	2000 01 05	704	0.4−	0.3−	2000 01 14	888	0.4+	0.0
1999 12 18	699	0.7−	0.1−	2000 01 05	704	0.1+	0.4−	2000 01 14	888	0.9+	0.0

2000 AO₂ = 1998 MX₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	62.79178	(2000.0)		P	Q		
<i>n</i>	0.28765543	ω	0.19261	+0.52942482	−0.84638214		
<i>a</i>	2.2727639	Ω	57.84124	+0.77826080	+0.45740855		
<i>e</i>	0.1782068	<i>i</i>	3.91831	+0.33766773	+0.27279056		
<i>P</i>	3.43	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 28	809	0.3−	0.0	1999 12 08	704	0.2−	0.6−	2000 01 04	704	0.2+	0.4−
1998 06 28	809	1.1−	1.1−	1999 12 08	704	0.6+	1.2−	2000 01 04	704	0.0	0.4+
1998 06 28	809	1.0−	0.7−	1999 12 08	704	0.8+	0.4−	2000 01 04	704	0.6−	0.3−
1998 07 01	809	1.0+	0.7+	1999 12 09	699	0.1−	0.9+	2000 01 04	704	0.1−	0.2−
1998 07 01	809	1.4+	0.8+	1999 12 09	699	0.7−	1.5+	2000 01 04	704	0.8−	0.6+
1998 07 01	809	(2.9+	1.0+)	1999 12 09	699	0.6−	0.1+	2000 01 04	411	0.2+	0.0
1999 12 08	704	0.6−	0.3−	2000 01 03	411	0.5+	0.4−	2000 01 04	411	0.5+	0.1−
1999 12 08	704	0.5+	0.4−	2000 01 03	411	0.3+	0.5+				

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2000 AW₂ = 1986 RL₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	143.99255	(2000.0)		P	Q		
<i>n</i>	0.17215148	ω	32.81890	+0.92314396	+0.37424425		
<i>a</i>	3.2003358	Ω	304.95718	−0.37181638	+0.81087127		
<i>e</i>	0.0507578	<i>i</i>	6.16483	−0.09776402	+0.44992112		
<i>P</i>	5.73	<i>H</i>	11.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1986 09 08	095	0.7−	0.3+	2000 01 04	704	0.2+	0.5−	2000 01 06	704	0.1−	0.2−
1986 09 11	095	0.7+	0.3−	2000 01 04	704	0.2−	0.6−	2000 01 10	691	0.1+	0.4+
2000 01 01	104	0.5−	0.1−	2000 01 05	104	0.2+	0.0	2000 01 10	691	0.1+	0.4+
2000 01 01	104	0.4−	0.5−	2000 01 06	104	0.5+	0.3+	2000 01 10	691	0.0	0.4+
2000 01 01	104	0.5+	0.3+	2000 01 06	104	0.2−	0.9+	2000 01 15	104	0.5+	0.0
2000 01 01	104	0.2+	0.1+	2000 01 06	704	0.2−	0.0	2000 01 15	104	1.3−	0.3+
2000 01 04	704	0.0	0.1−	2000 01 06	704	0.2+	0.1+	2000 01 15	104	0.2−	0.3−
2000 01 04	704	0.1−	0.1−	2000 01 06	704	0.5+	0.1−				
2000 01 04	704	0.0	0.4−	2000 01 06	704	0.2+	0.2−				

2000 AY₂ = 1977 DJ₇ = 1997 GY₄₀ = 1997 HO₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	47.57294	(2000.0)		P	Q		
<i>n</i>	0.25503478	ω	322.49202	+0.37815650	−0.92429258		
<i>a</i>	2.4626524	Ω	105.23604	+0.86181922	+0.33107087		
<i>e</i>	0.1574571	<i>i</i>	3.07617	+0.33803149	+0.18993500		
<i>P</i>	3.86	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 02 19	381	0.1−	0.2−	1997 05 05	704	0.4−	1.1−	2000 01 04	704	0.0	0.6−
1977 02 19	381	0.1+	0.1+	1997 05 05	704	0.1−	0.8−	2000 01 04	704	0.1+	0.4−
1997 04 07	809	0.4−	1.7+	1997 05 05	704	1.4−	1.3−	2000 01 04	704	0.1+	0.6−
1997 04 07	809	(0.9−	2.0+)	1997 05 05	704	(2.2−	2.0−)	2000 01 06	704	0.1−	1.0−
1997 04 07	809	1.1+	1.1+	1999 12 30	699	1.1+	1.2+	2000 01 06	704	0.4−	0.4−
1997 04 08	809	0.9+	0.6+	1999 12 30	699	0.4+	1.4+	2000 01 06	704	0.5−	1.5−
1997 04 08	809	1.0−	0.9+	1999 12 30	699	0.9+	1.1+	2000 01 06	704	0.6−	0.1+
1997 04 08	809	0.2+	0.6−	2000 01 01	104	0.2−	0.2−	2000 01 06	704	0.2+	0.2+
1997 04 30	704	(2.8−	0.2−)	2000 01 01	104	0.1+	0.4−	2000 01 15	104	0.6−	0.7+
1997 04 30	704	0.9+	0.4−	2000 01 01	104	0.4+	0.3−	2000 01 15	104	0.6−	0.9+
1997 04 30	704	0.1+	0.0	2000 01 01	104	0.0	0.8−	2000 01 15	104	0.3−	0.8+
1997 04 30	704	0.4+	0.2+	2000 01 04	704	0.2+	0.6−	2000 01 15	104	0.1−	0.3+
1997 05 05	704	0.4−	0.3−	2000 01 04	704	0.1+	0.8−	2000 01 15	104	0.0	0.7+

2000 AZ₂ = 1998 RT₄₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	62.65271	(2000.0)		P	Q		
<i>n</i>	0.18550584	ω	75.34158	+0.71128606	−0.70200212		
<i>a</i>	3.0448389	Ω	329.22108	+0.61519364	+0.64621163		
<i>e</i>	0.1751501	<i>i</i>	3.98575	+0.34001313	+0.29933852		
<i>P</i>	5.31	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.6+	0.8−	2000 01 01	104	0.4−	1.1+	2000 01 06	104	0.6+	0.3+
1998 09 14	704	0.7−	0.7−	2000 01 02	104	1.2+	0.8−	2000 01 06	104	0.4−	0.6+
1998 09 14	704	0.9+	0.5−	2000 01 03	104	0.1+	0.5−	2000 01 07	104	0.2+	0.1+
1998 09 14	704	0.3+	0.3−	2000 01 03	104	0.6+	0.0	2000 01 07	104	0.4+	0.5+
1998 09 18	704	0.5+	0.1−	2000 01 03	104	0.2−	0.1−	2000 01 16	104	0.7+	0.4−
1998 09 18	704	(2.7−	2.6+)	2000 01 04	704	(2.1−	0.1−)	2000 01 16	104	0.4−	0.4−
1998 09 18	704	0.4+	1.1+	2000 01 04	704	0.9−	0.5+	2000 01 16	104	0.5−	0.9−
1998 09 18	704	0.9−	0.5−	2000 01 04	704	0.7−	0.4+				
1998 09 18	704	1.1−	1.8+	2000 01 04	704	0.3−	0.4−				

2000 AA₄ = 1980 JZ = 1997 MW₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	317.06056	ω	73.96576	-0.92424675	-0.00796935		
<i>a</i>	2.5704019	Ω	104.33722	-0.10578903	-0.95529118		
<i>e</i>	0.1334818	<i>i</i>	23.20257	+0.36684687	-0.29555922		
<i>P</i>	4.12	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3
Residuals in seconds of arc							
1980 05 12	033	0.8-	0.7-	1997 07 02	704	0.2+	0.3-
1980 05 12	033	1.0+	1.0+	1997 07 02	704	0.1-	0.6+
1997 06 28	704	0.8-	0.7-	1999 12 30	699	0.1+	0.1-
1997 06 28	704	0.8-	0.1-	1999 12 30	699	1.0+	0.5+
1997 06 28	704	0.0	0.7-	1999 12 30	699	1.4+	0.7+
1997 06 29	704	0.4+	0.2-	2000 01 03	704	0.3-	0.3-
1997 06 29	704	0.1-	0.3+	2000 01 03	704	0.2-	0.1-
1997 06 29	704	0.5+	0.5-	2000 01 03	704	0.1+	0.0
1997 06 29	704	(3.4-	1.7-)	2000 01 03	704	0.9-	0.1-
1997 07 02	704	0.1-	0.2-	2000 01 03	704	0.4-	0.3-
1997 07 02	704	0.1+	0.1+	2000 01 04	704	0.7+	1.0-

2000 AW₄ = 1984 BC₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	17.98470	ω	5.94519	-0.24550961	-0.96838435		
<i>a</i>	3.0620617	Ω	98.27282	+0.88754991	-0.24289873		
<i>e</i>	0.1319441	<i>i</i>	2.56202	+0.38984637	-0.05685038		
<i>P</i>	5.36	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1984 01 25	675	0.1-	0.0	2000 01 04	104	0.1+	0.2+
1984 01 26	675	0.1+	0.2-	2000 01 04	104	0.2-	0.2-
1999 12 30	699	1.2+	0.4+	2000 01 04	704	0.6-	0.3-
1999 12 30	699	0.2-	0.2-	2000 01 04	704	0.5-	0.5-
1999 12 30	699	1.0+	0.6+	2000 01 04	704	1.5-	0.0
2000 01 01	104	0.2-	0.9-	2000 01 04	704	0.0	0.9-
2000 01 01	104	0.4+	0.3+	2000 01 04	704	0.9-	0.6-
2000 01 01	104	0.3-	0.5-	2000 01 06	704	0.3-	0.6+
2000 01 01	104	0.3-	0.1-	2000 01 06	704	0.2+	0.1-
2000 01 04	104	0.1+	0.3+	2000 01 06	704	0.7-	0.1+

2000 AY₄ = 1995 YH₂₄ = 1998 SS₁₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	292.92285	ω	95.77444	-0.91442114	+0.40211285		
<i>a</i>	2.4460417	Ω	107.94297	-0.38794298	-0.83807983		
<i>e</i>	0.0621609	<i>i</i>	2.78661	-0.11547389	-0.36868342		
<i>P</i>	3.83	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1995 12 21	566	1.0+	0.1+	1998 09 27	704	0.6-	1.4+
1995 12 21	566	0.5+	0.1-	1998 09 27	704	1.1-	1.3-
1995 12 21	566	1.1+	0.4-	1998 09 27	704	0.4-	1.4+
1995 12 25	566	0.6-	0.3-	1998 09 27	704	0.5+	0.0
1995 12 25	566	0.9-	0.2-	1998 09 29	704	0.7-	0.6+
1995 12 25	566	1.0-	0.2-	1998 09 29	704	0.3-	0.8+
1998 08 31	704	0.9+	0.6+	1998 09 29	704	0.6+	1.0+
1998 08 31	704	0.6+	1.1-	1998 09 29	704	1.0+	1.2+
1998 08 31	704	0.2+	1.1+	1998 09 29	704	0.4-	0.4+
1998 08 31	704	0.5-	1.1-	1998 09 29	704	0.4+	0.7-
1998 09 17	699	1.5+	0.5-	1998 09 29	704	0.1+	0.8+
1998 09 17	699	0.9+	1.3-	1998 09 29	704	0.7+	1.3-
1998 09 17	699	1.0+	1.1-	1998 09 29	704	0.7+	0.7-
1998 09 26	704	1.1-	0.1+	1999 12 18	699	0.3-	0.2+
1998 09 26	704	0.9-	0.3-	1999 12 18	699	0.4+	1.3+

1998 09 26	704	1.3-	0.0	1999 12 18	699	0.4-	1.8+	2000 01 10	104	0.4-	0.1-
1998 09 26	704	0.6-	0.1+	1999 12 30	699	0.1-	1.5+	2000 01 10	104	2.0-	0.2-
1998 09 26	704	0.7-	0.1+	1999 12 30	699	(0.2-	2.1+)				
1998 09 27	704	0.3-	0.4-	1999 12 30	699	0.2+	2.0+				

2000 AA₅ = 1998 NE₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	41.12599	ω	114.97208	+0.27811403	-0.95865014		
<i>a</i>	2.6702981	Ω	318.73057	+0.84499987	+0.27405290		
<i>e</i>	0.1762428	<i>i</i>	5.24988	+0.45675793	+0.07671325		
<i>P</i>	4.36	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 07 15	691	0.3-	0.5+	2000 01 03	104	0.0	0.2+
1998 07 15	691	0.6-	0.3-	2000 01 03	704	0.1+	0.7+
1998 07 15	691	0.8-	0.4-	2000 01 03	704	0.3-	0.6+
1998 07 26	691	0.4+	0.4+	2000 01 03	704	0.2+	0.0
1998 07 26	691	0.5+	0.7+	2000 01 03	704	0.1-	0.3-
1998 07 26	691	0.5+	0.4+	2000 01 03	704	0.1-	0.0
1998 08 17	704	1.0+	0.5+	2000 01 03	104	0.5+	0.4-
1998 08 17	704	0.3-	0.7-	2000 01 03	104	0.2+	0.1-
1998 08 17	704	0.5-	1.0-	2000 01 03	104	0.4+	0.1-
1998 08 17	704	(0.5+	2.6+)	2000 01 03	104	0.3-	0.2+
2000 01 03	104	0.5+	0.1+	2000 01 04	704	0.0	0.2-

2000 AL₅ = 1996 DZ₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	52.54143	ω	113.89160	+0.50906368	-0.85938932		
<i>a</i>	2.6423730	Ω	305.42076	+0.76673304	+0.47810725		
<i>e</i>	0.0878137	<i>i</i>	3.37689	+0.39111969	+0.18128279		
<i>P</i>	4.30	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1996 02 16	010	0.4-	0.2+	2000 01 03	704	0.3-	0.2-
1996 02 16	010	0.0	0.5+	2000 01 04	704	0.1+	0.2+
1996 02 16	010	1.3+	1.3-	2000 01 04	704	0.2+	0.1-
1996 02 17	010	0.6-	1.0-	2000 01 04	704	0.8+	0.1-
1996 02 17	010	0.5+	0.6+	2000 01 04	704	0.2+	0.6-
1996 02 17	010	0.8-	1.0+	2000 01 04	704	0.7+	0.8-
2000 01 03	704	0.5-	0.0	2000 01 04	120	0.8-	0.6+
2000 01 03	704	0.6-	0.1+	2000 01 04	120	0.4-	0.4-
2000 01 03	704	0.6-	0.8+	2000 01 05	120	0.6+	0.4-

2000 AO₈ = 1998 SO₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	65.13728	ω	326.18340	+0.91335971	-0.39559441		
<i>a</i>	3.1568645	Ω	57.40633	+0.39427702	+0.80033403		
<i>e</i>	0.1832698	<i>i</i>	6.56524	+0.10158577	+0.45052247		
<i>P</i>	5.61	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 09 17	699	0.8+	0.5-	1999 12 15	704	0.2-	0.1+
1998 09 17	699	0.8-	0.9-	1999 12 15	704	0.5+	0.2+
1998 09 17	699	0.3+	0.4+	2000 01 02	704	0.5+	0.4-
1998 09 22	699	0.5-	1.2+	2000 01 02	704	0.2+	0.2+
1998 09 22	699	0.3+	0.8-	2000 01 02	704	0.1-	1.0-
1998 09 22	699	0.1-	0.7+	2000 01 02	704	1.6-	0.6+
1999 12 15	704	0.1+	0.1-	2000 01 02	704	0.0	0.0
1999 12 15	704	0.2+	0.1+	2000 01 04	704	0.3-	0.1-
1999 12 15	704	0.2-	0.7-	2000 01 04	704	0.1+	0.1+

2000 JAN. 24

M.P.C. 37993

2000 AP₁₄ = 1997 BW₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Marsden

<i>M</i>	88.94000		(2000.0)	P	Q
<i>n</i>	0.29219449	ω	86.30780	+0.99716051	+0.05766750
<i>a</i>	2.2491653	Ω	270.38192	-0.07220982	+0.91471020
<i>e</i>	0.1842442	<i>i</i>	2.77593	+0.02136961	+0.39997463
<i>P</i>	3.37	<i>H</i>	15.7	<i>G</i> 0.15	<i>U</i> 6

Residuals in seconds of arc

1997 01 31	691	0.3-	0.5+	2000 01 03	704	0.8-	0.6-	2000 01 12	046	0.0	0.2+
1997 01 31	691	0.1-	0.1+	2000 01 04	704	0.4+	0.7+	2000 01 12	046	0.2+	0.5+
1997 01 31	691	0.1+	0.4+	2000 01 04	704	0.1-	0.1-	2000 01 12	046	0.1+	0.4+
1997 02 06	566	0.0	0.4-	2000 01 04	704	0.3+	0.6-	2000 01 12	046	0.1-	0.4+
1997 02 06	566	0.2+	0.7-	2000 01 04	704	1.0+	0.5-	2000 01 12	046	0.1+	0.7+
1997 02 06	566	0.1+	0.2-	2000 01 04	704	0.5-	0.7-	2000 01 13	046	0.0	0.7+
2000 01 03	704	0.1+	1.0-	2000 01 12	046	0.1-	0.2+	2000 01 13	046	0.4+	0.8+
2000 01 03	704	0.8-	0.3-	2000 01 12	046	0.3+	0.3+	2000 01 13	046	0.1-	0.3+
2000 01 03	704	0.5-	0.0	2000 01 12	046	0.2+	0.1+	2000 01 13	046	0.0	0.1+
2000 01 03	704	0.6-	1.3-	2000 01 12	046	0.1-	0.1+	2000 01 13	046	0.4+	0.1-

2000 AK₁₅ = 1998 MO₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	204.40920		(2000.0)	P	Q
<i>n</i>	0.30987732	ω	317.65201	-0.07623548	+0.99604472
<i>a</i>	2.1627659	Ω	307.92462	-0.89860916	-0.08846930
<i>e</i>	0.1092844	<i>i</i>	3.31694	-0.43207607	+0.00825173
<i>P</i>	3.18	<i>H</i>	15.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 06 24	704	0.9+	0.3-	1998 07 01	809	0.5+	1.2+	2000 01 03	704	0.3+	0.3+
1998 06 24	704	1.2+	0.1-	1998 07 01	809	0.9+	0.6+	2000 01 04	704	0.1+	0.6+
1998 06 24	704	0.4+	0.4+	1999 12 07	704	0.3-	0.4-	2000 01 04	704	0.3+	0.1+
1998 06 24	704	0.9+	0.7-	1999 12 07	704	0.1+	0.9-	2000 01 04	704	0.5+	0.4-
1998 06 24	704	0.6-	0.8+	1999 12 07	704	0.1-	0.3-	2000 01 04	704	1.0+	0.4+
1998 06 28	809	1.3-	0.6-	2000 01 03	704	0.1+	0.3+	2000 01 10	704	1.0-	0.3-
1998 06 28	809	1.3-	0.8-	2000 01 03	704	0.2-	0.9+	2000 01 10	704	0.2-	0.4+
1998 06 28	809	1.5-	0.6-	2000 01 03	704	0.3+	0.1+	2000 01 10	704	0.7-	0.1+
1998 07 01	809	0.5+	0.7+	2000 01 03	704	0.1-	0.4-				

2000 AT₂₇ = 1998 ST₁₀₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	340.67835		(2000.0)	P	Q
<i>n</i>	0.18208771	ω	182.71461	-0.78309203	-0.61675203
<i>a</i>	3.0828256	Ω	318.85120	+0.57285057	-0.66533307
<i>e</i>	0.1052437	<i>i</i>	6.97426	+0.24209315	-0.42065286
<i>P</i>	5.41	<i>H</i>	14.0	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 26	704	0.8-	1.1+	2000 01 03	704	0.6+	0.3+	2000 01 07	704	0.0	0.1-
1998 09 26	704	0.7+	1.2-	2000 01 03	704	0.1+	0.7+	2000 01 07	704	0.3+	0.5+
1998 09 26	704	0.7-	1.6-	2000 01 03	704	0.9-	0.1+	2000 01 07	704	0.1+	0.1+
1998 09 26	704	0.8+	0.5+	2000 01 03	704	0.0	0.0	2000 01 07	704	0.1+	0.6+
1998 09 27	704	1.5+	1.7-	2000 01 03	704	0.1+	0.2+	2000 01 07	704	0.1+	0.1+
1998 09 27	704	(0.1+	2.8-)	2000 01 04	704	0.0	0.0	2000 01 07	704	0.6-	0.2-
1998 09 27	704	0.8-	1.4+	2000 01 04	704	0.7+	0.2+	2000 01 08	704	0.2-	0.1+
1998 09 27	704	0.7-	1.5+	2000 01 04	704	0.5+	0.1-	2000 01 08	704	0.2+	0.5-
1998 09 27	704	(3.1-	0.6-)	2000 01 04	704	0.3+	0.6-	2000 01 08	704	0.3-	0.3+
1999 12 15	704	0.3-	0.3+	2000 01 04	704	0.6-	0.1+	2000 01 08	704	0.7-	0.7-
1999 12 15	704	0.2-	0.2+	2000 01 07	704	0.1+	0.0	2000 01 08	704	0.1-	0.4-
1999 12 15	704	0.4+	0.0	2000 01 07	704	0.2-	0.2-				
1999 12 15	704	0.0	0.9-	2000 01 07	704	0.6+	0.2-				

2000 AU₂₇ = 1998 WJ₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	25.67448		(2000.0)	P	Q
<i>n</i>	0.08377159	ω	73.03080	+0.26377534	-0.96458230
<i>a</i>	5.1729491	Ω	1.67846	+0.85869712	+0.23392873
<i>e</i>	0.2053710	<i>i</i>	3.69027	+0.43938801	+0.12189477
<i>P</i>	11.77	<i>H</i>	11.8	<i>G</i> 0.15	<i>U</i> 4

Residuals in seconds of arc

1997 09 29	809	(3.4-	0.7+)	2000 01 03	704	0.4-	0.1-	2000 01 07	704	0.1+	0.3-
1997 09 29	809	0.6+	0.6+	2000 01 03	704	(0.1+	2.3-)	2000 01 07	651	0.1+	0.4+
1997 10 01	809	0.9-	0.1+	2000 01 03	704	0.9+	0.4-	2000 01 07	704	0.3+	0.0
1997 10 01	809	0.8-	0.1+	2000 01 03	704	(0.1+	3.3-)	2000 01 07	704	0.0	0.0
1997 10 05	809	0.2+	0.3-	2000 01 03	704	0.4+	0.3-	2000 01 07	704	0.2+	0.4+
1997 10 05	809	0.1+	0.3-	2000 01 03	704	0.9-	0.3-	2000 01 07	704	0.3+	0.3+
1997 10 06	809	0.1+	0.4+	2000 01 04	704	0.5+	0.1-	2000 01 07	704	0.1+	0.2-
1997 10 06	809	0.1+	0.3+	2000 01 04	704	0.1+	0.3-	2000 01 07	704	0.1+	0.3+
1998 11 18	704	0.1-	0.3+	2000 01 04	704	0.4+	0.2+	2000 01 07	704	0.1-	0.1+
1998 11 18	704	0.6+	1.1-	2000 01 04	704	0.9-	0.3+	2000 01 07	704	0.1+	0.3-
1998 11 18	704	0.6-	0.7-	2000 01 04	704	0.5-	0.0	2000 01 07	704	0.1-	0.0
1998 11 18	704	0.3+	0.7-	2000 01 07	704	0.2+	0.2+	2000 01 07	704	0.3+	0.1-
1998 11 18	704	0.2+	1.3+	2000 01 07	704	0.0	0.1+	2000 01 07	704	0.1+	0.1-
1998 11 21	704	0.0	0.1+	2000 01 07	704	0.2+	0.3-	2000 01 07	704	0.3-	0.0
1998 11 21	704	1.2-	0.6-	2000 01 07	651	0.1-	0.3+	2000 01 07	704	0.1-	0.1-
1998 11 21	704	1.2+	0.0	2000 01 07	651	0.1+	0.5+	2000 01 07	704	0.4-	0.2-
2000 01 03	704	1.0-	0.8+	2000 01 07	704	0.5+	0.2+				
2000 01 03	704	(2.2-	1.3-)	2000 01 07	704	0.1-	0.0				

2000 AU₂₈ = 1990 TA₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	54.97823		(2000.0)	P	Q
<i>n</i>	0.22937664	ω	7.77242	+0.69516583	-0.71737992
<i>a</i>	2.6430371	Ω	38.20556	+0.65547121	+0.60634178
<i>e</i>	0.1890291	<i>i</i>	4.25980	+0.29513042	+0.34309721
<i>P</i>	4.30	<i>H</i>	15.5	<i>G</i> 0.15	<i>U</i> 7

Residuals in seconds of arc

1990 10 14	033	0.8+	0.3-	2000 01 03	704	0.3+	0.1+	2000 01 07	704	0.5+	0.8+
1990 10 14	033	0.6-	0.1-	2000 01 03	704	0.0	0.1-	2000 01 07	704	0.5-	1.5+
1990 10 14	033	0.3-	0.5+	2000 01 04	704	0.0	0.0	2000 01 07	704	0.9-	0.7-
2000 01 03	704	0.3-	0.3+	2000 01 04	704	0.0	1.3-	2000 01 07	704	0.0	0.4-
2000 01 03	704	0.7-	0.1-	2000 01 04	704	1.6+	0.3+				
2000 01 03	704	0.2-	0.5-	2000 01 07	704	0.2+	0.2+				

2000 AE₂₉ = 1998 SQ₈₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	296.64505		(2000.0)	P	Q
<i>n</i>	0.27745900	ω	260.16712	-0.92446325	+0.37350156
<i>a</i>	2.3281100	Ω	301.72818	-0.30492160	-0.84485051
<i>e</i>	0.1400427	<i>i</i>	5.16556	-0.22888974	-0.38304595
<i>P</i>	3.55	<i>H</i>	15.1	<i>G</i> 0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 26	704	1.2+	1.0+	1999 12 07	704	0.5+	0.8-	2000 01 04	704	0.1-	0.1+
1998 09 26	704	(3.1+	0.1+)	1999 12 07	704	0.1-	0.4-	2000 01 04	704	0.5-	0.1+
1998 09 26	704	0.4-	1.2-	1999 12 07	704	1.0-	0.2-	2000 01 04	704	0.0	0.6+
1998 09 26	704	0.1+	0.1-	2000 01 03	704	0.1-	0.4+	2000 01 04	704	0.7+	0.1+
1998 09 27	704	1.3+	0.6-	2000 01 03	704	0.4-	0.2-	2000 01 08	704	0.2+	0.2+
1998 09 27	704	0.6-	0.5+	2000 01 03	704	0.2-	0.6-	2000 01 08	704	1.3-	0.5+
1998 09 27	704	0.1-	0.1+	2000 01 03	704	0.5+	0.2+	2000 01 08	704	0.2+	0.4-
1998 09 27	704	1.6-	0.4+	2000 01 03	704	0.6+	0.2-	2000 01 08	704	0.1+	0.9-
1999 12 07	704	0.2+	1.0+	2000 01 04	704	0.3+	0.5+				

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2000 JAN. 24

2000 AB₃₀ = 1995 UG₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	314.57319		(2000.0)		P		Q				
<i>n</i>	0.27994935	ω	100.50044		−0.99703362		+0.00134872				
<i>a</i>	2.3142827	Ω	79.60831		−0.03284075		−0.91171627				
<i>e</i>	0.0950187	<i>i</i>	4.48733		+0.06960919		−0.41081825				
<i>P</i>	3.52	<i>H</i>	15.6		<i>G</i>	0.15	<i>U</i>	6			
Residuals in seconds of arc											
1995 10 17	691	0.1−	0.1−	2000 01 03	704	0.5−	0.4+	2000 01 04	704	1.4−	0.6+
1995 10 17	691	0.2−	0.2−	2000 01 03	704	0.3+	0.4−	2000 01 08	704	0.1−	0.7+
1995 10 17	691	0.2−	0.3+	2000 01 03	704	0.6+	0.3+	2000 01 08	704	0.3−	0.1+
1995 10 23	691	0.1+	0.0	2000 01 04	704	0.5−	0.3−	2000 01 08	704	0.1−	0.1+
1995 10 23	691	0.3+	0.0	2000 01 04	704	1.1+	0.8−	2000 01 08	704	0.1+	0.4+
2000 01 03	704	0.9+	0.6−	2000 01 04	704	0.0	0.1+	2000 01 08	704	0.1−	0.7−

2000 AQ₃₄ = 1992 HB₁ = 1998 SW₉₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	37.27114		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.22176764	ω	37.98844		+0.01865794		−0.99747494				
a	2.7031528	Ω	51.04916		+0.89439875		−0.01398170				
e	0.0721635	i	5.05508		+0.44688115		+0.06962935				
P	4.44	H	14.3		G	0.15	U	3			
Residuals in seconds of arc											
1992 04 24	691	0.6+	0.0	1998 09 26	704	0.2+	0.6−	2000 01 03	704	0.1+	0.1−
1992 04 24	691	0.2−	0.8−	1998 09 27	704	0.6−	0.4−	2000 01 04	704	0.2−	0.3−
1992 04 24	691	0.1−	0.2+	1998 09 27	704	0.6−	0.4−	2000 01 04	704	0.1−	0.1−
1992 05 08	691	0.1+	0.7+	1998 09 27	704	0.8+	0.7+	2000 01 04	704	0.0	0.2+
1992 05 08	691	0.1−	0.4−	1998 09 27	704	1.1+	0.4+	2000 01 04	704	0.0	0.1+
1992 05 08	691	0.3−	0.3+	1998 09 27	704	0.5−	0.5+	2000 01 04	704	0.4+	0.7+
1998 09 26	704	1.1−	0.9+	2000 01 03	704	0.3−	0.2−	2000 01 06	699	0.3−	0.6−
1998 09 26	704	0.3+	0.6−	2000 01 03	704	0.1+	0.3−	2000 01 06	699	0.3+	0.3+
1998 09 26	704	0.4+	0.6−	2000 01 03	704	0.2−	0.0	2000 01 06	699	0.2+	0.2+

2000 AN₃₆ = 1998 SN₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	306.28455		(2000.0)		$\mathbf{P}$		$\mathbf{Q}$				
n	0.27389587	ω	180.17148		−0.99968785		+0.02495451				
a	2.3482576	Ω	1.26039		−0.02285616		−0.89377697				
e	0.0864710	i	3.17238		−0.01008988		−0.44781692				
P	3.60	H	15.5		G	0.15	U	5			
Residuals in seconds of arc											
1998 09 20	691	0.3+	0.6+	1999 12 15	704	0.6−	0.1−	2000 01 08	704	0.1+	0.0
1998 09 20	691	0.3+	0.3+	2000 01 03	704	0.2−	0.6+	2000 01 08	704	0.4+	0.1+
1998 09 20	691	0.8−	0.5−	2000 01 03	704	0.4−	0.5−	2000 01 08	704	0.1−	0.6+
1998 09 21	691	0.2−	0.1+	2000 01 03	704	0.1+	0.9+	2000 01 08	704	0.0	1.0+
1998 09 21	691	0.1+	0.1+	2000 01 03	704	1.0−	0.3−	2000 01 10	704	0.8+	0.2−
1998 09 21	691	0.1+	0.4−	2000 01 04	704	0.7−	0.3−	2000 01 10	704	0.6+	0.2−
1999 12 15	704	0.5+	0.4−	2000 01 04	704	0.4−	0.2+	2000 01 10	704	1.0+	0.2−
1999 12 15	704	0.2+	1.6−	2000 01 04	704	0.4−	0.2+	2000 01 10	704	0.1+	0.3+
1999 12 15	704	0.5+	0.6−	2000 01 04	704	0.9−	0.0	2000 01 10	704	0.4+	0.4+

2000 AY₃₇ = 1998 SO₁₀₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.26108461	ω	298.60589	−0.21812646	+0.97558563				
<i>a</i>	2.4244610	Ω	318.76953	−0.88129901	−0.20816217				
<i>e</i>	0.1193586	<i>i</i>	2.22290	−0.41920509	−0.07000853				
<i>P</i>	3.78	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	5		

Residuals in seconds of arc

1998 09 26	704	0.2+	0.3+	2000 01 03	704	0.7−	0.8−	2000 01 08	691	0.0	0.0
1998 09 26	704	0.3+	1.9−	2000 01 03	704	0.0	0.5+	2000 01 11	691	0.4+	0.2+
1998 09 26	704	0.4+	0.3−	2000 01 03	704	0.3+	0.6−	2000 01 11	691	0.2+	0.2−
1998 09 26	704	0.9−	0.3+	2000 01 03	704	0.9−	0.5−	2000 01 11	691	0.4+	0.2+
1998 09 27	704	0.4−	0.1−	2000 01 04	704	2.0+	0.4+	2000 01 13	691	0.2−	0.0
1998 09 27	704	0.4+	0.7+	2000 01 04	704	0.0	0.4+	2000 01 13	691	0.3−	0.1+
1998 09 27	704	0.2−	0.1−	2000 01 04	704	0.7−	0.5+	2000 01 13	691	0.4−	0.0
1998 09 27	704	0.4−	0.2+	2000 01 08	691	0.1+	0.1−				
1998 09 27	704	0.7+	0.9+	2000 01 08	691	0.0	0.1−				

2000 AH₄₂ = 1992 ES₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	16.64793		(2000.0)			P		Q			
<i>n</i>	0.23714864	ω	201.02085			−0.28188735		−0.95914587			
<i>a</i>	2.5849707	Ω	265.35825			+0.88368389		−0.24978054			
<i>e</i>	0.1442978	<i>i</i>	1.38302			+0.37368744		−0.13284911			
<i>P</i>	4.16	<i>H</i>	14.9			<i>G</i>	0.15	<i>U</i>	6		
Residuals in seconds of arc											
1992 03 01	809	0.1+	0.4+	2000 01 05	704	0.5−	0.1+	2000 01 06	143	0.2+	0.9−
1992 03 03	809	0.7−	0.5−	2000 01 05	704	0.6+	0.1−	2000 01 06	143	0.4−	0.3−
1992 03 06	809	0.7+	0.2+	2000 01 05	704	0.0	0.0	2000 01 07	691	0.7−	0.4+
1999 12 30	699	0.8−	0.0	2000 01 05	143	0.7+	0.6−	2000 01 07	691	1.3−	0.6+
1999 12 30	699	0.6+	0.7+	2000 01 05	143	1.0+	0.4−	2000 01 07	691	0.7−	0.3+
1999 12 30	699	0.4+	0.2+	2000 01 05	143	0.5+	0.3−	2000 01 10	143	0.0	0.3−
2000 01 04	143	0.7+	0.3+	2000 01 05	143	0.7+	0.4−	2000 01 10	143	0.1+	0.3+
2000 01 04	143	0.3−	0.2+	2000 01 06	704	0.2−	0.4+	2000 01 10	143	0.0	0.4+
2000 01 04	143	0.7−	0.1+	2000 01 06	704	0.5+	0.1−	2000 01 10	143	0.3+	0.2+
2000 01 05	704	0.6−	0.0	2000 01 06	704	0.1−	0.1+				
2000 01 05	704	0.3+	0.1+	2000 01 06	143	0.2−	1.1−				

2000 AU₄₄ = 1998 RO₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

M	169.19521	(2000.0)		P			Q				
n	0.26783232	ω	243.83080	+0.66081700			+0.74970059				
a	2.3835671	Ω	67.57851	−0.67411886			+0.61373111				
e	0.1917627	i	2.20931	−0.32997674			+0.24755434				
P	3.68	H	15.7	G	0.15	U	5				
Residuals in seconds of arc											
1998 09 14	704	1.2−	0.0	2000 01 06	691	0.5−	0.1+	2000 01 13	691	0.3−	0.2−
1998 09 14	704	0.2−	1.4+	2000 01 06	691	0.0	0.1+	2000 01 13	691	0.1−	0.0
1998 09 14	704	1.8+	0.8−	2000 01 08	691	0.4+	0.1−	2000 01 14	691	0.5+	0.1−
1998 09 18	704	0.5+	1.7−	2000 01 08	691	0.2+	0.2+	2000 01 14	691	0.3−	0.1+
1998 09 18	704	1.0−	0.7+	2000 01 08	691	0.5+	0.2−	2000 01 14	691	0.2+	0.4−
1998 09 18	704	0.1−	0.9+	2000 01 12	691	0.2+	0.0	2000 01 15	691	0.4+	0.3−
1998 09 18	704	0.2−	0.3+	2000 01 12	691	0.1−	0.0	2000 01 15	691	0.2+	0.2−
1998 09 18	704	0.5+	0.9−	2000 01 12	691	0.1+	0.0	2000 01 15	691	0.1+	0.3−
2000 01 05	691	0.1+	0.5+	2000 01 13	691	0.0	0.0	2000 01 15	691	0.6−	0.1+
2000 01 05	691	0.0	0.2+	2000 01 13	691	0.3−	0.2+	2000 01 15	691	0.3+	0.8−
2000 01 05	691	0.1+	0.5+	2000 01 13	691	0.4−	0.2+	2000 01 15	691	0.6−	0.3+
2000 01 06	691	0.3−	0.4+	2000 01 13	691	0.4+	0.3−				

2000 AN₄₈ = 1996 AE₈ = 1997 GK₃₀

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Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams	
<i>n</i>	0.26784436	ω	251.03351	+0.90314477	−0.42913986				
<i>a</i>	2.3834957	Ω	134.37704	+0.40042482	+0.83103497				
<i>e</i>	0.2205946	<i>i</i>	1.04062	+0.15488541	+0.35386419				
<i>P</i>	3.68	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4		

2000 JAN. 24

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Residuals in seconds of arc

1996 01 13	691	0.3+	0.8-	2000 01 05	704	0.1-	0.4-	2000 01 07	691	0.1-	0.4+
1996 01 13	691	0.1+	0.1-	2000 01 05	704	0.0	0.3-	2000 01 07	691	0.0	0.5+
1996 01 13	691	0.1+	0.2-	2000 01 05	704	0.1+	0.7-	2000 01 07	691	0.3+	0.6+
1996 01 24	691	0.3-	0.8-	2000 01 05	704	0.1-	0.8-	2000 01 07	504	0.1+	0.8+
1996 01 24	691	0.2+	0.0	2000 01 05	504	0.8-	0.1-	2000 01 07	504	0.3-	0.3-
1996 01 24	691	0.1+	0.1-	2000 01 05	504	(3.3+	3.1-)	2000 01 07	504	1.2-	0.4+
1997 04 07	691	0.3-	0.0	2000 01 05	504	1.0-	2.0-	2000 01 07	627	0.9-	0.9+
1997 04 07	691	0.2-	0.5+	2000 01 05	504	1.2+	0.1+	2000 01 07	627	0.2-	0.1+
1997 04 07	691	0.1-	0.2+	2000 01 05	132	0.5+	0.4-	2000 01 08	046	0.0	0.3+
1997 04 16	691	0.0	0.2-	2000 01 05	132	1.1-	0.2+	2000 01 08	046	0.0	0.4+
1997 04 16	691	0.1+	0.6-	2000 01 05	132	1.1+	0.3-	2000 01 08	046	0.2-	0.3+
1997 04 16	691	0.5+	0.2-	2000 01 06	958	0.9+	0.4-	2000 01 08	046	0.3-	0.5+
1999 12 07	704	0.8+	0.6-	2000 01 06	958	0.1-	0.4+	2000 01 08	046	0.2-	0.3+
1999 12 07	704	0.5+	0.4+	2000 01 06	958	0.8+	0.2-	2000 01 08	046	0.3-	0.6+
1999 12 07	704	0.8+	1.1+	2000 01 06	704	0.2+	0.3-	2000 01 13	504	0.0	0.2-
1999 12 07	704	0.3+	1.2+	2000 01 06	704	0.7+	0.8-	2000 01 13	504	0.6-	0.4-
1999 12 07	704	0.6-	0.5+	2000 01 06	704	0.2+	0.5-	2000 01 13	504	0.0	0.4-
1999 12 18	699	0.3+	1.9+	2000 01 06	046	0.0	0.4+	2000 01 16	691	0.2-	0.8-
1999 12 18	699	0.0	0.3+	2000 01 06	046	0.2-	0.4+	2000 01 16	691	0.1-	0.9-
1999 12 18	699	0.1+	0.5+	2000 01 06	046	0.1+	0.3+	2000 01 16	691	0.0	0.8-
2000 01 05	704	0.3+	0.6-	2000 01 06	046	0.2-	0.3+				

2000 AD₅₀ = 1990 HN₅ = 1998 SW₁₁₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	219.45762		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.26457201	ω	186.98548	-0.06045271	+0.99597462		
<i>a</i>	2.4031089	Ω	79.56429	-0.91251775	-0.02827191		
<i>e</i>	0.1789464	<i>i</i>	3.85863	-0.40454521	-0.08506032		
<i>P</i>	3.73	<i>H</i>	14.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1990 04 29	413	0.0	0.9-	1999 12 10	704	0.6+	0.5-	2000 01 06	120	0.3+	0.2+
1990 05 01	413	0.0	0.7-	1999 12 10	704	0.4-	0.6-	2000 01 06	120	(2.5+	1.0-)
1990 05 02	413	(4.6-	0.0)	1999 12 10	704	0.0	0.1-	2000 01 08	704	1.0+	0.1+
1998 09 26	704	0.9-	0.5+	2000 01 03	704	0.6-	0.3+	2000 01 08	704	0.1-	0.3-
1998 09 26	704	0.8+	0.8-	2000 01 03	704	0.3+	1.1+	2000 01 08	704	0.9-	0.1-
1998 09 26	704	0.0	0.3-	2000 01 03	704	0.1-	0.5+	2000 01 08	704	0.1+	0.4+
1998 09 26	704	0.5+	0.7-	2000 01 04	704	0.8-	0.7-	2000 01 08	704	0.1+	0.4-
1998 09 27	704	0.0	0.7-	2000 01 04	704	0.6-	0.0	2000 01 10	120	0.5+	0.2-
1998 09 27	704	0.7-	0.4+	2000 01 04	704	0.0	0.5-	2000 01 10	120	0.2+	0.5+
1998 09 27	704	0.1-	0.7+	2000 01 04	704	0.1+	0.6-	2000 01 11	120	0.1-	0.2+
1998 09 27	704	0.1+	0.6+	2000 01 04	704	0.8+	1.6-	2000 01 11	120	0.5+	0.5-
1998 09 27	704	0.5+	0.2-	2000 01 05	120	0.9-	0.3+	2000 01 11	120	1.0-	1.9+
1999 12 10	704	0.5+	0.9-	2000 01 05	120	0.6+	0.1-				

2000 AX₅₀ = 1998 RO₃₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Marsden			
<i>M</i>	108.40809		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.24398945	ω	330.04469	+0.96763002	-0.24690492		
<i>a</i>	2.5364250	Ω	44.34995	+0.24384773	+0.86132846		
<i>e</i>	0.0885456	<i>i</i>	4.28662	+0.06504169	+0.44401717		
<i>P</i>	4.04	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 14	704	0.7-	0.3+	2000 01 07	046	0.1+	0.4-	2000 01 13	046	0.7+	0.1+
1998 09 14	704	0.3+	0.2+	2000 01 07	046	1.0+	0.6-	2000 01 13	046	0.1+	0.7+
1998 09 14	704	0.3+	1.8-	2000 01 08	046	0.6-	0.1-	2000 01 13	046	0.9+	0.2-
1998 09 14	704	0.1-	0.7-	2000 01 08	046	0.2-	0.1+	2000 01 14	046	0.1-	0.2-
1998 09 18	704	0.4-	0.3-	2000 01 08	046	0.6-	0.3-	2000 01 14	046	0.3-	0.1-
1998 09 18	704	0.0	0.1-	2000 01 08	046	0.2-	0.5-	2000 01 14	046	0.4-	0.0
1998 09 18	704	1.4+	1.1+	2000 01 08	046	0.1+	0.1-	2000 01 14	046	0.1+	0.0
1998 09 18	704	1.0-	0.5-	2000 01 09	046	0.5-	0.1+	2000 01 15	046	0.2+	0.2+
1998 09 18	704	0.3+	1.9+	2000 01 09	046	0.2-	0.0	2000 01 15	046	0.1+	0.4+
2000 01 07	046	0.0	0.3-	2000 01 12	046	0.2-	0.1+	2000 01 15	046	0.2-	0.7+

2000 01 07	046	0.3-	0.2-	2000 01 12	046	0.7+	0.3+	2000 01 15	046	0.1-	0.4+
2000 01 07	046	0.1-	0.0	2000 01 12	046	0.1+	0.3-				

2000 AZ₅₀ = 1988 VM₁₁ = 1998 QM₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	145.69067		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.28435116	ω	261.24091	+0.89165779	+0.45254586		
<i>a</i>	2.2903369	Ω	71.85118	-0.41014663	+0.81893166		
<i>e</i>	0.1625236	<i>i</i>	0.73510	-0.19164061	+0.35292094		
<i>P</i>	3.47	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1988 11 03	327	0.5+	0.0	1998 08 23	704	1.2+	0.4-	2000 01 07	684	0.1+	1.0-
1988 11 03	327	0.6-	0.5+	1998 08 23	704	0.7-	1.9-	2000 01 08	684	0.2-	0.6-
1988 11 04	327	(1.6+	8.6-)	2000 01 04	704	0.4-	0.7-	2000 01 08	684	0.3-	0.6-
1998 08 17	704	0.1-	0.5+	2000 01 04	704	0.4+	0.5-	2000 01 15	120	0.0	0.6+
1998 08 17	704	0.0	0.1+	2000 01 04	704	0.3+	0.2-	2000 01 15	120	0.7-	0.7+
1998 08 17	704	0.2+	0.0	2000 01 04	704	0.6-	0.1-	2000 01 16	120	0.2-	1.6+
1998 08 17	704	0.2-	0.2+	2000 01 04	704	0.3+	0.7-	2000 01 16	120	0.2+	0.4+
1998 08 17	704	0.6+	0.2-	2000 01 06	704	0.8+	0.2-	2000 01 16	120	0.5-	1.0+
1998 08 23	704	0.3+	0.1+	2000 01 06	704	0.3+	1.0-	2000 01 16	120	0.0	0.6+
1998 08 23	704	0.8-	1.9+	2000 01 06	704	0.8+	0.4-	2000 01 16	120	0.3+	0.7+
1998 08 23	704	0.2-	0.9-	2000 01 07	684	0.9-	0.6-				

2000 AZ₅₃ = 1992 OD₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	98.50344		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.18559272	ω	73.85120	+0.94301545	-0.30857472		
<i>a</i>	3.0438886	Ω	303.96475	+0.21777205	+0.85525842		
<i>e</i>	0.0787374	<i>i</i>	8.63432	+0.25158932	+0.41631079		
<i>P</i>	5.31	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1992 07 26	809	0.2-	0.5+	2000 01 04	704	0.5+	0.6-	2000 01 15	104	0.1-	0.4-
1992 07 26	809	0.4-	0.4-	2000 01 04	704	0.2+	0.5+	2000 01 15	104	0.2-	0.1+
1992 07 26	809	0.5+	0.6-	2000 01 06	704	0.0	0.6+	2000 01 15	104	0.4+	0.2+
1992 07 30	809	0.7+	0.2+	2000 01 06	704	0.1+	0.5+	2000 01 15	104	0.1-	0.5+
1992 07 30	809	0.1+	0.0	2000 01 06	704	0.7+	0.5-	2000 01 15	104	0.9-	0.1+
1992 07 30	809	0.8-	0.3+	2000 01 06	704	0.6+	0.5+	2000 01 15	104	0.6-	0.4+
2000 01 04	704	0.0	0.4-	2000 01 11	691	0.2-	0.7-	2000 01 15	104	0.4+	0.7+
2000 01 04	704	0.3-	0.1+	2000 01 11	691	0.3-	0.7-				
2000 01 04	704	0.0	0.2-	2000 01 11	691	0.2-	0.7-				

2000 AA₅₈ = 1998 SJ₇₉

Id. B. G. Marsden

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	267.36148		(2000.0)	<i>P</i>	<i>Q</i>		
<i>n</i>	0.26779337	ω	119.04425	-0.66152481	+0.74358320		
<i>a</i>	2.3837983	Ω	109.20285	-0.71889224	-0.59185012		
<i>e</i>	0.0141127	<i>i</i>	5.91436	-0.21349209	-0.31112289		
<i>P</i>	3.68	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 09 26	704	0.7+	0.2+	1998 09 27	704	0.2+	0.3-	2000 01 05	699	0.5+	0.9+
1998 09 26	704	0.6+	0.6-	1998 09 27	699	1.6-	1.7+	2000 01 05	699	0.3+	0.5+
1998 09 26	704	1.3+	0.6-	1998 09 27	704	0.7+	0.2+	2000 01 06	704	0.4+	0.3+
1998 09 26	704	0.3+	1.2-	1998 09 27	699	1.0+	0.1-	2000 01 06	704	0.2-	0.1-
1998 09 26	704	1.6+	1.0-	1998 09 27	699	0.8+	1.4+	2000 01 06	704	0.3-	0.3-
1998 09 26	327	1.6-	0.2-	2000 01 04	704	0.3-	0.1+	2000 01 06	704	0.1-	0.1+
1998 09 26	327	1.6-	0.3-	2000 01 04	704	0.5-	0.0	2000 01 06	704	0.4+	0.4+
1998 09 26	327	1.5-	0.2-	2000 01 04	704	0.9+	2.0-	2000 01 09	684	0.0	0.6-
1998 09 27	704	0.0	0.9+	2000 01 04	704	1.0-	0.3+	2000 01 09	684	0.1+	0.3-
1998 09 27	704	(1.9-	2.1+)	2000 01 04	704	0.1-	0.2+				
1998 09 27	704	0.8-	0.3+	2000 01 05	699	0.0	0.6+				

2000 AT₅₈ = 1997 EW₅₇ = 1998 QS₉₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	252.56738		(2000.0)	Williams		P	Q
<i>n</i>	0.28588655	ω	217.51880	-0.39711557	+0.91756905		
<i>a</i>	2.2821293	Ω	29.09755	-0.83221520	-0.35122699		
<i>e</i>	0.0523514	<i>i</i>	2.25544	-0.38693292	-0.18629719		
<i>P</i>	3.45	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1997 03 10	809	0.6+	0.5-	1998 08 27	809	0.2-	0.2+	2000 01 06	704	0.4+	0.1-
1997 03 10	809	0.2-	0.8+	1998 08 27	809	0.3+	0.1-	2000 01 06	704	0.3+	0.4-
1997 03 10	809	0.2-	0.4+	2000 01 04	704	0.3-	0.2+	2000 01 06	704	0.1+	1.3-
1997 03 11	809	0.6+	0.1+	2000 01 04	704	0.7-	0.7+	2000 01 06	704	0.0	0.6-
1997 03 11	809	0.4-	0.0	2000 01 04	704	0.2-	1.4+	2000 01 09	704	0.1+	0.7-
1997 03 11	809	0.4-	0.6-	2000 01 04	704	0.2+	0.9+	2000 01 09	704	0.1-	0.5-
1998 08 26	809	0.1+	0.2+	2000 01 04	704	0.5-	0.7+	2000 01 09	704	0.1-	0.6-
1998 08 26	809	0.2-	0.1-	2000 01 05	699	0.8+	0.3-	2000 01 09	704	0.5-	0.0
1998 08 26	809	0.4+	0.3-	2000 01 05	699	0.4+	0.3-				
1998 08 27	809	0.5-	0.1+	2000 01 05	699	0.2+	0.9+				

2000 AP₆₀ = 1984 WL₅ = 1991 SC₄ = 1998 MP₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	85.00278		(2000.0)	Williams		P	Q
<i>n</i>	0.27023571	ω	85.42864	+0.86250619	-0.49702894		
<i>a</i>	2.3694137	Ω	304.34607	+0.40650398	+0.79243388		
<i>e</i>	0.2004898	<i>i</i>	6.61463	+0.30139273	+0.35356864		
<i>P</i>	3.65	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1984 11 21	010	0.4-	1.3+	1998 06 28	809	0.4+	0.2+	2000 01 06	704	0.2-	0.3+
1991 09 10	675	0.3+	0.4+	1998 07 01	809	0.8+	1.1+	2000 01 06	704	0.4+	0.5+
1991 09 10	675	0.4-	0.3-	1998 07 01	809	1.4+	1.6+	2000 01 06	704	0.1+	0.6+
1991 09 16	675	0.7+	0.5-	1998 07 01	809	1.0+	1.7+	2000 01 09	691	0.1-	0.1+
1991 09 16	675	0.1-	0.1+	2000 01 04	704	0.1-	0.2-	2000 01 09	691	0.1-	0.2+
1998 06 26	704	0.6-	0.7-	2000 01 04	704	0.3-	0.3+	2000 01 09	691	0.1-	0.2+
1998 06 26	704	1.7-	0.9+	2000 01 04	704	0.5+	0.5-	2000 01 16	691	0.2-	0.0
1998 06 26	704	0.8-	0.5-	2000 01 04	704	0.3+	0.0	2000 01 16	691	0.2-	0.1+
1998 06 26	704	1.6-	0.5-	2000 01 04	704	0.7+	0.3-	2000 01 16	691	0.2-	0.0
1998 06 28	809	0.3+	0.1-	2000 01 06	704	0.5+	0.9+				
1998 06 28	809	0.9-	0.1-	2000 01 06	704	0.3+	0.4+				

2000 AT₆₁ = 1994 NX₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	8.69542		(2000.0)	Williams		P	Q
<i>n</i>	0.27951829	ω	6.99283	-0.64447569	-0.76300448		
<i>a</i>	2.3166614	Ω	123.14705	+0.69862051	-0.61404099		
<i>e</i>	0.1294222	<i>i</i>	3.40661	+0.31077399	-0.20193520		
<i>P</i>	3.53	<i>H</i>	15.0	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1994 07 11	809	0.1-	0.2-	2000 01 04	704	0.0	0.0	2000 01 09	691	0.5-	0.0
1994 07 11	809	0.2-	0.5-	2000 01 04	704	0.0	0.2+	2000 01 13	120	0.1-	0.1-
1994 07 11	809	0.1-	0.2+	2000 01 06	704	0.2-	0.2-	2000 01 13	120	0.3-	0.2+
1994 07 12	809	0.1+	1.1+	2000 01 06	704	0.2+	0.0	2000 01 15	120	0.7+	0.4+
1994 07 12	809	0.4-	0.5-	2000 01 06	704	0.3+	0.5-	2000 01 15	120	0.8-	0.4-
1994 07 12	809	0.6+	0.0	2000 01 06	704	0.0	0.5+	2000 01 16	120	0.6+	0.2-
2000 01 04	704	0.2+	0.1-	2000 01 06	704	0.1-	0.1+	2000 01 16	120	0.4+	0.2+
2000 01 04	704	0.3+	0.4-	2000 01 09	691	0.3-	0.1-				
2000 01 04	704	0.1+	0.5+	2000 01 09	691	0.3-	0.0				

2000 AJ₆₅ = 1991 RP₃₇ = 1998 RE₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	350.01672		(2000.0)	Williams		P	Q
<i>n</i>	0.28712165	ω	60.86077	-0.90364998	-0.42273003		
<i>a</i>	2.2755799	Ω	94.05929	+0.36511967	-0.84423913		
<i>e</i>	0.0297716	<i>i</i>	3.94772	+0.22384000	-0.32948386		
<i>P</i>	3.43	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1991 09 15	675	0.3+	0.7-	1998 09 18	704	0.1+	0.3-	2000 01 04	704	0.2-	0.1-
1991 09 15	675	0.3+	0.9-	1999 12 07	704	0.2-	0.2+	2000 01 04	704	0.7-	0.8-
1998 09 14	704	0.0	0.0	1999 12 07	704	0.3+	0.1+	2000 01 04	704	0.1-	0.6-
1998 09 14	704	0.3-	0.2+	1999 12 07	704	0.1-	0.2+	2000 01 04	704	0.5-	0.4-
1998 09 14	704	0.8-	0.9-	1999 12 07	704	0.5+	0.8+	2000 01 06	704	0.7+	0.4-
1998 09 14	704	0.5-	0.3-	1999 12 07	704	0.4-	0.5+	2000 01 06	704	0.2-	0.7-
1998 09 18	704	0.7+	0.4-	1999 12 09	699	0.1+	0.0	2000 01 06	704	0.2-	0.5-
1998 09 18	704	0.3+	0.7+	1999 12 09	699	0.0	1.4+	2000 01 06	704	0.4+	0.1-
1998 09 18	704	0.1-	0.8+	1999 12 09	699	0.0	0.7+				
1998 09 18	704	0.4+	0.6+	2000 01 04	704	0.2+	0.7-				

2000 AX₇₉ = 1991 PV₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	155.12393		(2000.0)	Marsden		P	Q
<i>n</i>	0.27814324	ω	180.87320	+0.66750896	+0.74067543		
<i>a</i>	2.3242903	Ω	131.00644	-0.68254385	+0.64964016		
<i>e</i>	0.1799898	<i>i</i>	5.80800	-0.29759985	+0.17136968		
<i>P</i>	3.54	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1991 08 06	809	0.6-	0.1-	1999 12 08	704	0.3+	0.6-	2000 01 06	704	1.3-	0.4-
1991 08 06	809	0.2-	0.3+	1999 12 14	704	0.6+	0.3-	2000 01 06	704	0.1-	0.8-
1991 08 06	809	0.0	0.4-	1999 12 14	704	0.3-	0.5+	2000 01 06	704	0.8-	0.1-
1991 08 14	809	0.2+	0.1+	1999 12 14	704	0.5-	0.8+	2000 01 06	118	0.1+	0.4+
1991 08 14	809	0.4+	0.1+	1999 12 14	704	0.1+	0.2+	2000 01 06	118	0.0	0.6+
1991 08 14	809	0.2+	0.0	2000 01 05	704	1.1+	0.1+	2000 01 06	118	0.2+	0.4+
1999 12 08	704	0.7-	0.0	2000 01 05	704	0.4+	0.5-	2000 01 12	118	0.2-	0.1+
1999 12 08	704	1.0-	0.2-	2000 01 05	704	0.2-	0.2-	2000 01 12	118	0.8+	0.8+
1999 12 08	704	0.3-	0.0	2000 01 05	704	0.5+	0.6-	2000 01 12	118	1.2+	0.0

2000 AW₈₂ = 1998 MA₂₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	92.60006		(2000.0)	Williams		P	Q
<i>n</i>	0.24440115	ω	221.44809	+0.99691385	-0.05667649		
<i>a</i>	2.5335757	Ω	141.69839	+0.07160168	+0.94015260		
<i>e</i>	0.1988140	<i>i</i>	5.02782	-0.03218659	+0.33600724		
<i>P</i>	4.03	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 06 24	704	0.0	0.6+	1999 12 14	704	0.2-	0.1+	2000 01 07	704	0.2-	0.2+
1998 06 24	704	0.3+	0.5+	1999 12 14	704	0.8+	0.6-	2000 01 07	704	0.4-	0.3-
1998 06 24	704	1.6-	0.2-	2000 01 05	704	0.1+	0.4+	2000 01 09	704	0.1+	0.1-
1998 06 24	704	1.1+	0.4+	2000 01 05	704	0.0	0.4+	2000 01 09	704	0.0	0.7-
1998 06 24	704	0.8-	0.6-	2000 01 05	704	0.0	0.0	2000 01 09	704	0.2-	0.3-
1998 06 26	704	1.4-	0.0	2000 01 05	704	0.0	0.1+	2000 01 09	704	0.6-	0.3-
1998 06 26	704	1.0+	0.6-	2000 01 06	704	0.3-	0.2+	2000 01 09	704	0.0	0.2-
1998 06 26	704	0.0	0.7-	2000 01 06	704	0.0	0.5+	2000 01 10	704	0.5+	0.2-
1998 06 26	704	1.3+	0.5+	2000 01 06	704	0.1-	0.5+	2000 01 10	704	0.2+	0.1+
1999 12 14	704	0.0	0.6+	2000 01 07	704	0.1-	0.2+	2000 01 10	704	0.4+	0.2+
1999 12 14	704	0.5-	0.4-	2000 01 07	704	0.2-	0.0	2000 01 10	704	0.8+	0.5-
1999 12 14	704	0.4+	0.0	2000 01 07	704	0.3-	0.1-				

2000 JAN. 24

M.P.C. 37997

2000 AX₈₅ = 1995 YW₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	330.13983		(2000.0)	P		Q	
<i>n</i>	0.24434821	ω	40.04935	-0.93390167	-0.29091899		
<i>a</i>	2.5339416	Ω	121.85031	+0.23189052	-0.93531606		
<i>e</i>	0.0602623	<i>i</i>	14.16242	+0.27212950	-0.20137031		
<i>P</i>	4.03	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5
Residuals in seconds of arc							
1995 12 25	691	0.0	0.3+	1999 12 31	699	0.7+	0.2+
1995 12 25	691	0.1-	0.3-	2000 01 05	704	0.6-	0.1+
1995 12 25	691	0.6-	0.2-	2000 01 05	704	0.7-	0.1-
1995 12 29	691	0.5+	0.1-	2000 01 05	704	0.5-	0.3+
1995 12 29	691	0.2-	0.0	2000 01 05	704	0.5-	0.2+
1995 12 29	691	0.4+	0.3+	2000 01 05	704	0.1+	0.6+
1999 12 31	699	0.1-	0.5-	2000 01 06	704	0.4+	0.0
1999 12 31	699	0.6+	0.0	2000 01 06	704	0.8+	0.3+
2000 01 06	704	0.7+	0.2+	2000 01 06	704	0.0	0.3-
2000 01 06	704	0.6-	0.1+	2000 01 06	704	0.1+	0.0
2000 01 06	704	0.7-	0.1-	2000 01 06	704	0.0	0.1-
2000 01 08	704	0.5-	0.3+	2000 01 08	704	0.0	0.0
2000 01 08	704	0.5-	0.2+	2000 01 08	704	0.1-	0.0
2000 01 08	704	0.4-	0.2-	2000 01 08	704	0.4-	0.2-
2000 01 08	704	0.0	0.3-	2000 01 08	704	0.0	0.3-
2000 01 08	704	0.2+	0.1-	2000 01 08	704	0.2+	0.1-

2000 AP₈₆ = 1997 EX = 1998 SP₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	272.69588		(2000.0)	P		Q	
<i>n</i>	0.29640852	ω	55.26002	-0.62939780	+0.77708129		
<i>a</i>	2.2277969	Ω	175.73302	-0.72045357	-0.58268216		
<i>e</i>	0.1226302	<i>i</i>	1.35258	-0.29121309	-0.23796255		
<i>P</i>	3.33	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1997 03 03	684	0.3-	0.3+	1998 09 27	704	0.2+	0.7+
1997 03 03	684	0.0	0.0	1998 09 27	704	0.6+	1.0-
1997 03 03	684	0.1-	0.0	1998 09 27	704	1.3-	1.4+
1997 03 04	684	0.3+	0.4+	1998 09 27	704	0.7+	0.5+
1997 03 04	684	0.4+	0.2+	1998 09 27	704	(2.4-	1.1-)
1998 09 26	704	0.9+	0.6-	2000 01 05	704	0.0	0.0
1998 09 26	704	0.0	0.2-	2000 01 05	704	0.1+	0.3+
1998 09 26	704	1.4-	0.1+	2000 01 05	704	1.2+	0.7+
1998 09 26	704	(2.6+	0.3-)	2000 01 05	704	0.0	0.6-
2000 01 06	704	0.2+	0.7+	2000 01 06	704	0.1-	0.3+
2000 01 06	704	0.6-	1.0-	2000 01 06	704	0.6-	0.1+
2000 01 06	704	0.3-	0.3+	2000 01 06	704	0.3-	0.3+
2000 01 06	704	0.2+	0.8-	2000 01 06	704	0.2+	0.8-
2000 01 15	120	1.0-	0.0	2000 01 15	120	1.0-	0.0
2000 01 15	120	0.2-	0.8-	2000 01 16	120	(2.2-	1.1+)
2000 01 16	120	0.4+	0.4+	2000 01 16	120	0.4+	0.4+
2000 01 16	120	0.2+	0.1-	2000 01 16	120	0.2+	0.1-

2000 AE₉₂ = 1998 SH₇₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	36.20850		(2000.0)	P		Q	
<i>n</i>	0.22741751	ω	195.32675	-0.08409978	-0.99070198		
<i>a</i>	2.6581947	Ω	259.58615	+0.92528386	-0.03780892		
<i>e</i>	0.1897290	<i>i</i>	6.24235	+0.36983374	-0.13069072		
<i>P</i>	4.33	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 08 27	704	0.6-	0.6-	1999 12 05	704	0.0	0.9-
1998 08 27	704	0.4-	1.5+	1999 12 05	704	0.5+	0.6+
1998 08 27	704	(2.8-	0.4+)	1999 12 05	704	0.3+	0.3-
1998 08 27	704	0.7+	0.5-	1999 12 05	704	0.2+	0.0
1998 08 27	704	0.8-	1.5-	1999 12 05	704	0.1+	0.2+
1998 08 30	699	1.1+	0.2-	1999 12 14	704	0.4+	0.2+
1998 08 30	699	0.9+	0.3+	1999 12 14	704	0.2-	0.9+
1998 08 30	699	0.1+	0.3+	1999 12 14	704	1.0-	1.3+
1998 09 19	704	0.1+	0.1+	2000 01 05	704	0.7+	0.2-
1998 09 19	704	0.8-	0.6-	2000 01 05	704	0.0	0.2-
1998 09 19	704	1.0-	1.0+	2000 01 05	704	0.5+	0.1+
1998 09 19	704	1.4-	0.0	2000 01 05	704	0.6+	0.0
1998 09 19	704	0.2+	0.3-	2000 01 05	704	0.2-	0.5-
1998 09 23	704	1.0+	0.2+	2000 01 06	704	0.4+	0.1+
1998 09 23	704	(3.4+	0.2+)	2000 01 06	704	0.1+	0.0
1998 09 23	704	1.1+	0.1-	2000 01 06	704	0.1-	0.3-
1999 11 05	703	1.0-	0.5+	2000 01 06	704	0.3+	0.4-
1999 11 05	703	0.2-	0.2-	2000 01 06	704	0.9-	0.2+
2000 01 07	704	0.5-	0.1-	2000 01 07	704	0.5-	0.5-
2000 01 07	704	0.3-	0.5-	2000 01 07	704	0.3-	0.1-
2000 01 07	704	0.1+	0.4+	2000 01 08	704	0.3-	0.1+
2000 01 08	704	0.4-	0.6-	2000 01 08	704	0.2-	0.6-
2000 01 08	704	0.4-	0.0	2000 01 08	704	0.4-	0.0
2000 01 08	704	0.5+	0.5-	2000 01 08	704	0.5+	0.5-
2000 01 08	704	0.9-	1.2+	2000 01 08	704	0.3-	0.3+
2000 01 10	704	0.1+	0.1-	2000 01 10	704	0.3+	0.3+
2000 01 10	704	0.2+	0.5-	2000 01 10	704	0.2+	0.5-
2000 01 10	704	0.3+	0.3+	2000 01 10	704	0.4+	0.0
2000 01 10	704	0.1-	0.1-	2000 01 10	704	0.1-	0.1-
2000 01 10	704	0.1+	0.6+	2000 01 10	704	0.1+	0.6+
2000 01 10	704	0.0	0.2-	2000 01 10	704	0.0	0.2-

1999 11 05	703	(0.2+	2.5+)	2000 01 07	704	0.1+	0.2-
1999 11 05	703	1.3+	0.7-	2000 01 07	704	0.1+	0.0

2000 AJ₉₇ = 1998 VZ₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	331.27413		(2000.0)	P		Q	
<i>n</i>	0.25814327	ω	95.11586	-0.95118102	+0.30357622		
<i>a</i>	2.4428427	Ω	102.56517	-0.30091859	-0.87214896		
<i>e</i>	0.1402128	<i>i</i>	3.26811	-0.06857599	-0.38366350		
<i>P</i>	3.82	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	6
Residuals in seconds of arc							
1998 11 10	704	1.2-	0.0	1998 11 11	704	1.8-	1.5-
1998 11 10	704	0.7+	0.1+	2000 01 04	704	0.0	0.0
1998 11 10	704	0.4-	0.1+	2000 01 04	704	0.3-	0.3-
1998 11 10	704	0.1+	0.2+	2000 01 04	704	0.1-	0.3-
1998 11 10	704	0.4+	0.1+	2000 01 04	704	0.4+	0.1-
1998 11 11	704	1.1+	0.7+	2000 01 07	704	0.3-	0.4-
1998 11 11	704	1.1+	0.3+	2000 01 07	704	0.3+	0.4+
2000 01 07	704	1.8-	1.5-	2000 01 07	704	0.0	0.3-
2000 01 07	704	0.1+	0.7+	2000 01 07	704	0.4-	0.7-
2000 01 07	704	0.4-	0.7-	2000 01 10	699	0.2+	0.1+
2000 01 10	699	0.3-	0.1+	2000 01 10	699	0.3-	0.1+
2000 01 10	699	0.5+	0.6+	2000 01 10	699	0.5+	0.6+

2000 AV₉₇ = 1998 QJ₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

<i>M</i>	82.90875		(2000.0)	P		Q	
<i>n</i>	0.29825854	ω	313.16743	+0.46701301	-0.88077756		
<i>a</i>	2.2185751	Ω	108.83858	+0.83339317	+0.40882960		
<i>e</i>	0.1436648	<i>i</i>	4.74516	+0.29555823	+0.23893357		
<i>P</i>	3.30	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4
Residuals in seconds of arc							
1998 08 17	704	0.7+	0.4-	1999 12 05	699	0.1-	0.5+
1998 08 17	704	0.2-	0.3-	1999 12 05	704	0.4-	0.5-
1998 08 17	704	0.0	0.4+	1999 12 05	699	0.2+	0.3-
1998 08 17	704	0.2+	0.1-	1999 12 05	699	0.8-	0.6+
1998 08 17	704	0.1-	0.6-	1999 12 18	699	0.3-	0.7+
1998 08 23	704	0.6-	0.3+	1999 12 18	699	0.4+	0.7+
1998 08 23	704	0.3+	0.2-	1999 12 18	699	0.2-	1.1+
1998 08 23	704	0.3-	0.0	2000 01 04	704	1.0-	0.3-
1998 08 23	704	0.0	0.9+	2000 01 04	704	0.4-	0.9-
1999 12 05	704	0.5+	0.8-	2000 01 04	704	1.1-	0.4-
1999 12 05	704	0.5+	0.0	2000 01 04	704	0.9-	0.9+
1999 12 05	704	0.1-	0.0	2000 01 04	704	0.2-	0.7-
1999 12 05	704	0.6+	1.1-	2000 01 07	704	0.1-	0.5-
2000 01 07	704	0.5-	0.1-	2000 01 07	704	0.5+	0.2-
2000 01 07	704	0.2-	0.1+	2000 01 07	704	0.4+	0.4+
2000 01 07	704	0.5+	0.3+	2000 01 10	704	1.0-	0.0
2000 01 10	704	0.2-	0.4+	2000 01 10	699	0.2-	0.4+
2000 01 10	704	0.3+	0.0	2000 01 10	704	0.8+	1.7-
2000 01 10	704	0.3+	0.0	2000 01 10	704	0.3+	0.6+
2000 01 10	704	0.3+	0.5+	2000 01 10	704	0.3+	0.5+
2000 01 10	704	0.5+	0.7+	2000 01 10	704	1.2+	0.0

2000 AZ₉₇ = 1994 NW₉ = 1998 QV₁₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

Williams

M	73.54821		(2000.0)	P		Q					
n	0.28255529	ω	342.67398	+0.19345084		-0.97618762					
a	2.3000314	Ω	96.08731	+0.91144021		+0.14178446					
e	0.0892397	i	5.66501	+0.36311640		+0.16417948					
P	3.49	H	13.8	G	0.15	U	3				
Residuals in seconds of arc											
1994 07 08	809	0.5+	0.6+	1998 08 25	809	0.3-	0.5-	2000 01 04	704	1.0+	0.4-
1994 07 08	809	0.3-	0.1+	1998 08 26	809	0.3+	0.7+	2000 01 07	704	0.3-	0.2+
1994 07 08	809	0.8+	0.1+	1998 08 26	809	0.0	0.8+	2000 01 07	704	0.0	0.6+
1994 07 09	809	(3.4-	0.1+)	1998 08 26	809	0.1+	0.3+	2000 01 07	704	0.4-	1.2+
1994 07 09	809	0.4-	0.1+	2000 01 04	704	0.7+	0.5+	2000 01 07	704	0.3+	1.1-
1994 07 09	809	0.6-	0.3-	2000 01 04	704	0.3+	0.0	2000 01 10	699	0.7-	0.2-
1998 08 25	809	0.4-	0.7-	2000 01 04	704	0.3+	0.3+	2000 01 10	699	0.9-	0.1-
1998 08 25	809	0.2-	0.5+	2000 01 04	704	1.1+	0.9+	2000 01 10	699	0.6-	0.1-

2000 AM₁₀₆ = 1998 QX₈₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	338.02935		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23957531	ω	243.25371	-0.66023733	-0.71704013		
<i>a</i>	2.5674855	Ω	249.92871	+0.74544839	-0.58933172		
<i>e</i>	0.0373433	<i>i</i>	13.76397	+0.09161527	-0.37221175		
<i>P</i>	4.11	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 24	704	0.4-	0.1+	1999 12 14	704	0.2-	0.3+	2000 01 05	704	0.1-	0.3-
1998 08 24	704	0.7+	0.3+	1999 12 14	704	0.4+	0.4+	2000 01 07	704	0.7+	0.4+
1998 08 24	704	0.4+	0.8-	1999 12 14	704	0.5-	0.3-	2000 01 07	704	0.3+	0.2+
1998 08 24	704	0.0+	1.8-	1999 12 14	704	0.1+	0.0	2000 01 07	704	0.3+	0.1-
1998 08 24	704	(4.5-	1.0-)	1999 12 14	704	0.0	0.1-	2000 01 07	704	0.3+	0.1-
1998 08 27	704	0.8+	0.8+	2000 01 05	704	0.3+	0.3-	2000 01 07	704	0.1-	0.2-
1998 08 27	704	1.1-	0.7+	2000 01 05	704	0.1+	0.3-	2000 01 11	704	0.6-	0.5+
1998 08 27	704	0.9+	0.2+	2000 01 05	704	0.0	0.3-	2000 01 11	704	0.3-	0.8+
1998 08 27	704	1.4-	0.5+	2000 01 05	704	0.1+	0.5-	2000 01 11	704	0.7-	0.2-

2000 AM₁₁₀ = 1994 GJ₇ = 1997 EU₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	132.62929		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.28075661	ω	132.61109	+0.87170016	+0.48983407		
<i>a</i>	2.3098444	Ω	198.07368	-0.46193228	+0.81168979		
<i>e</i>	0.1906890	<i>i</i>	2.62195	-0.16357690	+0.31815447		
<i>P</i>	3.51	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1994 04 11	691	0.1+	0.2-	2000 01 05	704	0.3-	0.2-	2000 01 07	704	0.1+	0.2-
1994 04 11	691	0.1-	0.4-	2000 01 05	704	0.4+	0.0	2000 01 07	704	0.1-	0.3-
1994 04 11	691	0.3-	0.5-	2000 01 05	704	0.0	1.4+	2000 01 09	704	0.2+	0.7-
1994 04 19	691	0.0	0.2-	2000 01 07	704	0.4-	0.3+	2000 01 09	704	0.3-	0.1-
1994 04 19	691	0.1-	0.0	2000 01 07	704	0.4+	0.2-	2000 01 09	704	0.2+	0.0
1994 04 19	691	0.0	0.2+	2000 01 07	704	0.1-	0.2+	2000 01 09	704	0.3+	0.1-
1997 03 11	704	0.7+	0.2+	2000 01 07	704	0.2+	0.5-	2000 01 10	704	0.0	0.2-
1997 03 11	704	0.2-	0.5+	2000 01 07	704	0.3-	0.2+	2000 01 10	704	0.2+	0.1-
1997 03 12	704	0.2-	0.4+	2000 01 07	704	0.2-	0.4-	2000 01 10	704	0.5-	0.6-
1997 03 12	704	0.1+	0.4+	2000 01 07	704	0.3-	0.0				
2000 01 05	704	0.8+	0.5+	2000 01 07	704	0.5-	0.1-				

2000 AX₁₁₁ = 1998 RU₁₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	345.34609		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27874126	ω	267.83092	-0.78246821	-0.61774876		
<i>a</i>	2.3209647	Ω	234.00668	+0.60284135	-0.72002073		
<i>e</i>	0.0833041	<i>i</i>	5.55312	+0.15596733	-0.31615915		
<i>P</i>	3.54	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	1.7-	1.1+	1998 09 18	704	1.4-	1.6+	2000 01 05	704	0.2-	0.1-
1998 08 17	704	1.4+	1.1-	1998 09 18	704	(1.3+	2.7-)	2000 01 05	704	0.3-	0.0
1998 08 17	704	1.3+	0.6+	1998 09 18	704	0.6-	0.4+	2000 01 05	704	0.2-	0.0
1998 08 17	704	0.8-	0.3-	1998 09 18	704	0.6-	0.9-	2000 01 05	704	0.2+	0.6+
1998 08 17	704	1.0+	0.3-	1999 11 13	703	0.4+	0.7-	2000 01 05	704	0.7+	0.4+
1998 08 23	704	0.7-	1.5-	1999 11 13	703	0.3+	0.1+	2000 01 07	704	0.1-	0.3-
1998 08 23	704	1.0+	1.8-	1999 11 13	703	0.0	0.3+	2000 01 07	704	0.4+	0.1-
1998 08 23	704	(1.3+	2.2-)	1999 11 13	703	1.5-	0.5-	2000 01 07	704	0.1+	0.2+
1998 08 23	704	0.4+	1.9+	1999 12 06	704	0.8+	0.3+	2000 01 07	704	0.2+	0.3+
1998 08 23	704	(2.9-	1.4+)	1999 12 06	704	0.4+	0.7-	2000 01 07	704	0.2+	0.2-
1998 09 14	704	0.1+	0.1+	1999 12 06	704	0.3+	0.3-	2000 01 09	704	0.0	0.1-
1998 09 14	704	0.6-	0.5-	1999 12 06	704	0.1+	0.7-	2000 01 09	704	(2.8+	0.6-)
1998 09 14	704	0.1-	0.6+	1999 12 06	704	0.3+	0.9-	2000 01 09	704	(2.6-	0.5-)
1998 09 14	704	(0.7+	2.1+)	1999 12 14	704	0.2-	0.5+	2000 01 09	704	0.2-	0.1-
1998 09 14	704	1.1+	1.2-	1999 12 14	704	1.3-	1.5+				
1998 09 18	704	0.3+	1.4+	1999 12 14	704	0.6-	0.2+				

2000 AA₁₁₄ = 1989 CW₆ = 1994 VB₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	315.80321		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.17675601	ω	349.06809	-0.99474934	+0.09746549		
<i>a</i>	3.1445120	Ω	196.62170	-0.08372578	-0.95042371		
<i>e</i>	0.1942714	<i>i</i>	6.26431	-0.05885351	-0.29528842		
<i>P</i>	5.58	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1989 02 04	809	0.2-	0.8-	1994 11 10	691	0.7+	0.7-	2000 01 07	704	0.2+	0.6+
1989 02 04	809	0.5-	0.5+	1999 12 14	704	0.2+	0.2-	2000 01 07	704	0.5-	0.0
1989 02 04	809	0.0	0.2+	1999 12 14	704	0.0	0.3-	2000 01 07	704	0.7+	0.1-
1989 03 03	809	0.8+	0.4+	1999 12 14	704	0.3-	0.4-	2000 01 07	704	0.1+	0.5+
1989 03 03	809	0.6+	0.2-	2000 01 05	704	0.1+	0.1+	2000 01 11	704	0.4-	0.0
1989 03 03	809	0.4-	1.0+	2000 01 05	704	0.1-	0.2-	2000 01 11	704	0.5-	0.2-
1994 11 06	691	0.5-	0.3-	2000 01 05	704	0.4-	0.0	2000 01 11	704	0.6-	0.8-
1994 11 06	691	1.6-	0.3+	2000 01 05	704	0.0	0.2-	2000 01 11	704	1.1+	0.3+
1994 11 10	691	0.3+	0.5-	2000 01 05	704	0.1-	0.2+	2000 01 11	704	0.3-	0.3+
1994 11 10	691	0.5+	0.6-	2000 01 07	704	0.8+	0.2+				

2000 AA₁₁₇ = 1998 QD₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	32.93401		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21509029	ω	292.46672	+0.24663845	-0.96206967		
<i>a</i>	2.7588125	Ω	142.63619	+0.94470822	+0.21185850		
<i>e</i>	0.2737058	<i>i</i>	11.07553	+0.21609222	+0.17186599		
<i>P</i>	4.58	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 08 17	704	0.2+	0.2+	1999 12 14	704	0.7+	0.3+	2000 01 07	704	0.3-	0.4+
1998 08 17	704	0.2+	0.6+	1999 12 14	704	1.2-	1.0-	2000 01 07	704	0.1+	0.4+
1998 08 17	704	0.4+	0.4+	1999 12 14	704	1.1-	0.3-	2000 01 07	704	0.2-	0.6+
1998 08 17	704	0.8+	0.1+	2000 01 05	704	0.2+	0.6+	2000 01 11	704	0.1-	0.1-
1998 08 17	704	0.5+	0.7+	2000 01 05	704	0.2+	0.3+	2000 01 11	704	0.1+	0.1-
1998 08 23	704	0.4-	1.3-	2000 01 05	704	0.2+	0.4+	2000 01 11	704	0.1-	0.5-
1998 08 23	704	0.4-	0.7-	2000 01 05	704	0.2+	0.3+	2000 01 11	704	0.2-	0.3-
1998 08 23	704	(3.2+	0.0)	2000 01 05	704	0.1+	0.1+	2000 01 11	704	0.4+	0.7-
1998 08 23	704	1.5-	0.7+	2000 01 07	704	0.0	0.5+				
1999 12 14	704	1.4+	1.1-	2000 01 07	704	0.4-	0.5+				

2000 AC₁₁₇ = 1998 RU₅₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	249.08129		(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.27648911	ω	17.56750	-0.36751783	+0.92604999		
<i>a</i>	2.3335513	Ω	230.95825	-0.86598824	-0.37439618		
<i>e</i>	0.0889471	<i>i</i>	6.34254	-0.33910915	-0.04752804		
<i>P</i>	3.56	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 09 14	704	0.7-	0.2+	1998 09 27	704	0.1+	0.2-	1999 12 14	704	0.6+	0.9+
1998 09 14	704	1.6-	0.8+	1998 09 27	704	0.9-	1.3+	1999 12 14	704	0.5-	0.9-
1998 09 14	704	0.5-	1.5+	1998 09 27	704	0.8+	0.3-	1999 12 14	704	0.9+	1.4+
1998 09 14	704	0.5+	1.2+	1998 09 27	704	0.6-	1.1+	2000 01 04	699	0.2+	0.8+
1998 09 14	704	1.1+	0.7+	1998 09 27	704	0.4+	0.5-	2000 01 04	699	1.0+	0.3-
1998 09 18	704	0.5+	0.2-	1998 09 27	704	0.5-	0.5+	2000 01 04	699	0.5+	0.0
1998 09 18	704	0.8+	0.9-	1998 09 27	704	0.5+	0.8-	2000 01 05	704	1.1-	0.1-
1998 09 18	704	0.3-	1.0-	1998 09 27	704	0.8-	0.1-	2000 01 05	704	0.1-	0.6+
1998 09 18	704	1.0-	0.3+	1998 09 27	704	0.2+	0.4+	2000 01 05	704	0.6+	0.0
1998 09 18	704	1.7-	0.0	1999 12 06	704	0.2-	0.3-	2000 01 05	704	0.1-	0.2-
1998 09 26	704	0.1+	0.1-	1999 12 06	704	0.3-	0.4+	2000 01 05	704	0.6-	0.2-
1998 09 26	704	0.4+	0.7-	1999 12 06	704	0.5-	0.4-	2000 01 07	704	0.3-	0.3+
1998 09 26	704	0.0	0.6-	1999 12 06	704	0.3-	1.0+	2000 01 07	704	0.7-	0.0
1998 09 26	704	0.8+	1.3-	1999 12 06	704	0.5-	0.2+	2000 01 07	704	0.3+	0.1+
1998 09 26	704	0.4+	1.0-	1999 12 14	704	0.0	1.7-	2000 01 11	704	0.4+	0.1+
1998 09 26	704	0.3+	0.5-	1999 12 14	704	1.5+	1.0-	2000 01 11	704	0.3-	0.2-

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1998 09 26	704	1.1+	1.2-	1999 12 14	704	0.3+	0.2-	2000 01 11	704	0.1+	1.0-
1998 09 26	704	0.2-	0.1-	1999 12 14	704	0.4-	1.1+				
1998 09 27	704	1.0+	1.5+	1999 12 14	704	0.6-	0.2-				

2000 AD₁₁₈ = 1999 AT₂₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.17515669	ω	344.35633	-0.62000087	+0.77324411						
<i>a</i>	3.1636242	Ω	247.13718	-0.70348731	-0.62292572						
<i>e</i>	0.0457133	<i>i</i>	8.29986	-0.34742557	-0.11856263						
<i>P</i>	5.63	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1999 01 13	910	0.1-	0.2+	2000 01 04	699	0.9-	0.4+	2000 01 07	704	0.3-	0.1+
1999 01 13	910	0.1-	0.0	2000 01 04	699	0.2+	0.2-	2000 01 07	704	0.6-	0.5-
1999 01 13	910	0.1+	0.1+	2000 01 05	704	0.4+	0.3-	2000 01 07	704	0.1+	0.2+
1999 01 14	910	0.0	0.0	2000 01 05	704	0.4+	0.6-	2000 01 07	704	0.6+	0.5+
1999 01 14	910	0.0	0.2-	2000 01 05	704	0.1-	0.2-	2000 01 07	704	0.1-	0.1-
1999 01 14	910	0.1+	0.1-	2000 01 05	704	0.2+	0.0				
2000 01 04	699	0.2+	0.5+	2000 01 05	704	0.1+	0.3+				

2000 AQ₁₃₄ = 1992 GG₅ = 1998 SG₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.22829446	ω	275.76576	-0.08260953	+0.99650626						
<i>a</i>	2.6513830	Ω	349.47201	-0.88567253	-0.07906230						
<i>e</i>	0.0484595	<i>i</i>	3.85546	-0.45690243	-0.02691515						
<i>P</i>	4.32	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1992 04 03	033	1.7-	0.2-	1998 09 27	704	0.1+	0.8+	2000 01 04	704	0.7-	0.0
1992 04 03	033	1.3+	0.6-	2000 01 03	704	(3.1-	0.2-)	2000 01 08	704	0.7+	0.1-
1998 09 26	704	0.4-	1.4-	2000 01 03	704	(2.7-	0.8+)	2000 01 08	704	0.6+	0.2+
1998 09 26	704	0.5-	1.7-	2000 01 03	704	1.9-	0.4+	2000 01 08	704	0.9+	1.0-
1998 09 26	704	1.1+	1.9-	2000 01 03	704	(2.5-	0.1-)	2000 01 08	704	0.4+	0.2+
1998 09 26	704	(1.3+	2.2-)	2000 01 03	704	1.4-	1.4-	2000 01 10	704	(2.5+	0.1+)
1998 09 27	704	0.6+	0.8+	2000 01 04	704	0.1-	0.4+	2000 01 10	704	0.7+	0.4-
1998 09 27	704	0.7-	0.8+	2000 01 04	704	1.3-	1.3+	2000 01 10	704	(2.3+	0.0)
1998 09 27	704	0.6+	1.0+	2000 01 04	704	1.0-	0.6+	2000 01 10	704	1.7+	0.3-
1998 09 27	704	0.4-	0.9+	2000 01 04	704	(2.7-	1.1+)	2000 01 10	704	1.4+	0.2+

2000 AM₁₃₆ = 1997 PV₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.19098063	ω	58.26545	-0.96989302	-0.13657111						
<i>a</i>	2.9863670	Ω	113.20336	+0.06937849	-0.94859795						
<i>e</i>	0.0973382	<i>i</i>	12.67250	+0.23343984	-0.28550002						
<i>P</i>	5.16	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	5				
Residuals in seconds of arc											
1997 08 11	684	0.0	0.0	2000 01 04	704	0.0	0.5-	2000 01 06	699	0.5+	0.6-
1997 08 11	684	0.3-	0.3+	2000 01 04	704	0.1-	0.5+	2000 01 08	704	0.4+	0.9+
1997 08 12	684	0.0	0.3-	2000 01 04	704	0.1-	0.3-	2000 01 08	704	0.8-	0.3+
1997 08 12	684	0.0	0.3-	2000 01 04	704	0.3+	0.1+	2000 01 08	704	0.6+	0.5+
1997 08 12	684	0.1-	0.1-	2000 01 04	704	0.4+	0.1+	2000 01 08	704	0.8-	0.2+
1997 08 13	684	0.1+	0.2-	2000 01 06	699	0.6-	0.3-	2000 01 08	704	0.1-	0.5-
1997 08 13	684	0.3+	0.6+	2000 01 06	699	0.3+	0.5-				

M.P.C. 37999

2000 AH₁₃₇ = 1990 EL₆ = 1998 SH₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.29953231	ω	223.26548	+0.99130698	+0.10095126						
<i>a</i>	2.2122809	Ω	130.74289	-0.06796115	+0.94201535						
<i>e</i>	0.2044539	<i>i</i>	6.39406	-0.11265764	+0.32002488						
<i>P</i>	3.29	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1990 03 02	809	0.5-	0.7+	1998 09 22	699	0.2+	0.1+	2000 01 06	699	(1.3+	2.5-)
1990 03 02	809	0.4-	0.6+	1998 09 22	699	0.2-	0.1-	2000 01 06	699	0.3+	1.5-
1990 03 02	809	0.1-	0.2+	1998 09 22	699	0.0	0.4+	2000 01 06	699	0.8+	0.2-
1990 03 03	809	1.0+	0.2-	1998 09 24	699	0.1-	0.1-	2000 01 08	704	(2.1-	0.7-)
1990 03 03	809	1.1+	0.2-	1998 09 24	699	0.1+	0.1+	2000 01 08	704	0.2-	0.6-
1990 03 03	809	1.3+	0.0	1998 09 24	699	0.0	0.5-	2000 01 08	704	0.2+	0.0
1990 03 04	809	1.4-	0.4-	2000 01 04	704	0.2-	0.9+	2000 01 08	704	0.1-	0.2+
1990 03 04	809	0.8-	0.4-	2000 01 04	704	1.0-	0.2-	2000 01 08	704	0.4+	0.7+
1990 03 04	809	0.3-	0.4-	2000 01 04	704	0.2-	0.8+				

2000 AL₁₃₇ = 1997 TH₂₀ = 1998 XT₄₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.17839510	ω	203.55145	-0.72187418	+0.69128894						
<i>a</i>	3.1252213	Ω	20.28773	-0.61940347	-0.62488117						
<i>e</i>	0.1234307	<i>i</i>	5.27785	-0.30860493	-0.36282658						
<i>P</i>	5.52	<i>H</i>	12.7	<i>G</i>	0.15	<i>U</i>	4				
Residuals in seconds of arc											
1997 10 03	691	0.0	0.0	1998 12 17	704	0.8+	0.3+	2000 01 08	704	0.1+	0.0
1997 10 03	691	0.1+	0.0	1998 12 17	704	0.0	1.1-	2000 01 08	704	1.2-	0.2-
1997 10 03	691	0.0	0.1-	1998 12 17	704	0.4-	0.5-	2000 01 08	704	0.4+	0.5+
1997 10 10	691	0.0	0.3+	1998 12 17	704	0.1-	0.8-	2000 01 08	704	0.0	0.2+
1997 10 10	691	0.0	0.0	1998 12 17	704	(2.8-	0.1-)	2000 01 10	699	0.6+	0.5+
1997 10 10	691	0.0	0.2-	2000 01 04	704	0.3-	0.1+	2000 01 10	699	0.2+	0.7+
1998 12 14	704	1.2-	1.5+	2000 01 04	704	0.0	1.4-	2000 01 10	699	0.6+	0.4+
1998 12 14	704	0.4-	0.1-	2000 01 04	704	0.6-	1.3-				
1998 12 14	704	1.3+	0.7+	2000 01 08	704	0.1+	0.4+				

2000 AO₁₃₇ = 1998 QY₁₀₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.23431272	ω	96.79439	-0.10079748	-0.99490062						
<i>a</i>	2.6057863	Ω	358.97041	+0.81673294	-0.08070577						
<i>e</i>	0.2356357	<i>i</i>	11.40675	+0.56814362	-0.06049247						
<i>P</i>	4.21	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	6				
Residuals in seconds of arc											
1998 08 26	809	0.4-	1.4-	2000 01 04	704	0.4+	0.3+	2000 01 08	704	0.4+	0.0
1998 08 26	809	0.8-	0.5-	2000 01 04	704	0.2-	0.1+	2000 01 08	704	0.3-	0.5-
1998 08 26	809	0.6-	0.4-	2000 01 04	704	0.0	0.1-	2000 01 08	704	0.2-	0.4-
1998 08 27	809	0.5+	0.5+	2000 01 04	704	0.1-	0.5+	2000 01 10	699	0.4+	0.9+
1998 08 27	809	0.8+	0.7+	2000 01 08	704	0.0	0.6-	2000 01 10	699	0.0	0.1+
1998 08 27	809	0.6+	1.1+	2000 01 08	704	0.5-	0.2-	2000 01 10	699	0.1+	0.0

2000 AE₁₄₀ = 1998 MD₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q		Williams			
<i>n</i>	0.19492879	ω	245.42167	+0.95258177	+0.21695495						
<i>a</i>	2.9459049	Ω	101.47360	-0.13325250	+0.92778637						
<i>e</i>	0.2446978	<i>i</i>	12.57405	-0.27355392	+0.30355067						
<i>P</i>	5.06	<i>H</i>	13.6	<i>G</i>	0.15	<i>U</i>	4				

M.P.C. 38000

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Residuals in seconds of arc

1998 06 24	704	1.0−	0.8+	1999 12 14	704	0.4+	0.0	2000 01 06	699	0.0	0.1+
1998 06 24	704	0.4+	0.0	1999 12 14	704	0.2−	0.5−	2000 01 08	704	0.3+	0.2−
1998 06 24	704	1.1+	0.4−	1999 12 14	704	0.3+	0.4+	2000 01 08	704	0.4+	0.1−
1998 06 24	704	1.4+	0.9−	2000 01 05	704	0.0	0.1−	2000 01 08	704	0.4+	0.2+
1998 06 26	704	0.3+	0.7+	2000 01 05	704	0.4−	0.3−	2000 01 08	704	0.3−	1.1−
1998 06 26	704	0.2+	0.3−	2000 01 05	704	0.2+	0.4−	2000 01 11	704	1.1−	0.3+
1998 06 26	704	1.8−	0.1+	2000 01 05	704	0.2+	0.4−	2000 01 11	704	0.4+	0.2+
1998 06 26	704	0.6−	0.1−	2000 01 05	704	0.0	0.5−	2000 01 11	704	0.5−	0.4+
1999 12 14	704	0.8−	0.6+	2000 01 06	699	0.6+	0.1+	2000 01 11	704	0.5+	0.6+
1999 12 14	704	0.2+	0.1−	2000 01 06	699	1.0−	0.3−	2000 01 11	704	0.3+	0.6+

2000 AT₁₄₂ = 1985 DD₁ = 1989 GP₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	334.74085		(2000.0)	P	Q		
<i>n</i>	0.26321714	ω	247.07905	−0.98363672	+0.07399759		
<i>a</i>	2.4113483	Ω	296.82345	+0.01151105	−0.88408351		
<i>e</i>	0.1494891	<i>i</i>	10.60700	−0.17979516	−0.46143332		
<i>P</i>	3.74	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1985 02 25	688	0.6+	0.2−	1999 12 05	704	0.6+	0.2+	2000 01 10	704	0.0	0.4+
1985 02 25	688	0.9−	0.2+	1999 12 05	704	0.1+	0.0	2000 01 10	704	0.0	0.3+
1985 03 18	688	0.1+	0.1−	1999 12 05	704	0.0	0.1+	2000 01 10	704	0.5−	0.5−
1985 03 18	688	0.8+	1.1+	2000 01 05	704	(0.7−	2.3+)	2000 01 10	704	0.5−	0.4−
1989 04 14	808	0.2−	0.0	2000 01 05	704	0.3+	0.5+	2000 01 10	704	0.4−	0.1+
1989 04 14	808	0.1+	0.1−	2000 01 05	704	0.2+	0.4+	2000 01 11	704	0.0	0.4+
1999 12 05	703	0.0	0.2−	2000 01 05	704	0.8+	0.4+	2000 01 11	704	0.0	0.1−
1999 12 05	703	0.2−	0.4+	2000 01 05	704	0.8−	0.0	2000 01 11	704	0.3+	0.4−
1999 12 05	704	0.3+	0.5+	2000 01 08	704	0.5−	0.5−	2000 01 11	704	0.1+	0.2+
1999 12 05	703	0.1−	0.5−	2000 01 08	704	0.2+	0.6−	2000 01 11	704	0.2−	1.0−
1999 12 05	703	0.1+	0.6+	2000 01 08	704	0.1−	1.0−				

2000 AE₁₄₆ = 1998 KE₅₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	244.83236		(2000.0)	P	Q		
<i>n</i>	0.35741561	ω	118.59252	−0.63943349	+0.65514956		
<i>a</i>	1.9664687	Ω	105.61862	−0.76585074	−0.58890507		
<i>e</i>	0.0420156	<i>i</i>	24.69577	+0.06780456	−0.47325456		
<i>P</i>	2.76	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 05 27	704	0.6−	0.2−	1999 12 03	704	0.2+	0.9−	2000 01 09	704	0.0	0.7−
1998 05 27	704	0.1+	0.1+	1999 12 03	704	0.0	0.7+	2000 01 09	704	0.6−	0.1+
1998 05 27	704	0.9+	1.2+	1999 12 03	704	0.5+	0.5+	2000 01 09	704	0.1−	0.2−
1998 05 27	704	0.1+	1.6−	2000 01 07	704	0.5−	0.6−	2000 01 11	704	0.8−	0.5+
1998 05 27	704	1.2−	0.7−	2000 01 07	704	0.2+	0.3−	2000 01 11	704	0.3−	0.2+
1998 06 04	704	0.0	0.3−	2000 01 07	704	0.1−	0.1+	2000 01 11	704	0.1+	0.0
1998 06 04	704	0.1+	0.2−	2000 01 07	704	0.3−	0.3−	2000 01 11	704	1.3+	0.1+
1998 06 04	704	1.7+	0.6+	2000 01 07	704	0.5+	0.1+	2000 01 11	704	0.4−	0.2+
1998 06 04	704	0.9−	1.1+	2000 01 09	704	0.2+	0.6+				

2000 AN₁₄₆ = 1998 XF₅₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	334.61567		(2000.0)	P	Q		
<i>n</i>	0.08309453	ω	252.26297	−0.81341035	−0.50370331		
<i>a</i>	5.2010107	Ω	256.58779	+0.57862502	−0.75192460		
<i>e</i>	0.0503100	<i>i</i>	17.40345	−0.05963799	−0.42531443		
<i>P</i>	11.86	<i>H</i>	10.1	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 12 15	704	0.8−	1.0−	1999 12 05	704	(0.3+	2.6−)	2000 01 08	704	0.3+	0.0
1998 12 15	704	1.3+	0.9−	1999 12 05	704	(1.2+	2.8−)	2000 01 08	704	0.1−	0.7−
1998 12 15	704	0.2+	0.4−	1999 12 14	704	0.4+	1.1+	2000 01 08	704	0.3+	0.3−
1998 12 15	704	1.0−	0.1+	1999 12 14	704	0.8−	1.0+	2000 01 08	704	0.3+	0.5−

1998 12 15	704	0.5−	1.4−	1999 12 14	704	0.6−	0.6+	2000 01 08	704	0.0	0.7−
1998 12 16	704	0.7+	0.9−	1999 12 14	704	0.4−	0.5+	2000 01 11	704	0.1+	0.1−
1998 12 16	704	0.1+	0.7+	1999 12 14	704	1.5−	0.4+	2000 01 11	704	0.2+	0.3−
1998 12 16	704	0.3+	1.8+	2000 01 07	704	0.0	0.1+	2000 01 11	704	0.3+	0.1−
1998 12 16	704	0.3−	1.8+	2000 01 07	704	0.1+	0.3−	2000 01 11	704	0.5+	0.9+
1999 12 05	704	(0.2−	2.2+)	2000 01 07	704	0.6−	0.1+	2000 01 11	704	0.2−	0.2+
1999 12 05	704	0.9+	0.2−	2000 01 07	704	0.3−	0.0				
1999 12 05	704	1.7+	1.9−	2000 01 07	704	0.4−	0.4+				

2000 AY₁₄₆ = 1993 MM₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	128.25755		(2000.0)	P	Q		
<i>n</i>	0.37046037	ω	84.49551	+0.93264994	+0.09745932		
<i>a</i>	1.9200309	Ω	269.56761	−0.23201109	+0.89934773		
<i>e</i>	0.1597728	<i>i</i>	20.32713	+0.27628780	+0.42623390		
<i>P</i>	2.66	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1993 06 23	675	0.2+	0.4−	1999 12 14	704	0.1−	0.2+	2000 01 08	704	0.0	0.3−
1993 06 23	675	1.3−	0.6+	1999 12 14	704	0.1+	0.0	2000 01 09	704	0.2+	0.8−
1993 06 26	675	1.4+	0.0	1999 12 14	704	0.0	0.4−	2000 01 09	704	0.2+	0.1+
1993 06 26	675	0.3−	0.4−	1999 12 14	704	0.1−	0.3+	2000 01 09	704	0.1−	0.5+
1999 12 05	704	0.4−	0.3−	1999 12 14	704	0.0	0.1+	2000 01 10	704	0.2−	0.2−
1999 12 05	704	0.2−	0.4−	2000 01 08	704	0.3−	0.4+	2000 01 10	704	0.2−	0.1−
1999 12 05	704	0.0	0.8+	2000 01 08	704	0.2−	0.3−	2000 01 10	704	0.2−	0.1−
1999 12 05	704	0.6+	0.4−	2000 01 08	704	0.0	0.2+	2000 01 10	704	0.3−	0.0
1999 12 05	704	(2.4+	0.9−)	2000 01 08	704	0.4−	0.1−	2000 01 10	704	1.4+	0.6+

2000 AW₁₄₈ = 1994 PX₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	42.00667		(2000.0)	P	Q		
<i>n</i>	0.21718913	ω	243.87909	+0.84736788	−0.52480733		
<i>a</i>	2.7410103	Ω	147.59436	+0.52496551	+0.80503314		
<i>e</i>	0.2984825	<i>i</i>	8.68255	+0.07986801	+0.27658436		
<i>P</i>	4.54	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1994 08 10	809	0.2+	0.3−	2000 01 04	699	0.7−	0.2+	2000 01 09	704	0.4−	0.5−
1994 08 10	809	0.3+	0.4−	2000 01 07	704	0.3−	0.0	2000 01 09	704	0.9−	0.4−
1994 08 10	809	0.3−	0.0	2000 01 07	704	0.0	0.1−	2000 01 11	704	0.8−	0.6+
1994 08 11	809	0.3+	0.3−	2000 01 07	704	0.6+	0.2+	2000 01 11	704	0.0	0.4+
1994 08 11	809	0.6−	0.2−	2000 01 07	704	0.2+	0.0	2000 01 11	704	0.3+	1.0+
1994 08 11	809	0.1+	1.3+	2000 01 07	704	0.9+	0.2−	2000 01 11	704	0.3−	0.1+
2000 01 04	699	0.4+	0.3−	2000 01 09	704	0.2+	0.5+				
2000 01 04	699	0.6+	0.5−	2000 01 09	704	0.4+	0.9−				

2000 AZ₁₄₈ = 1998 QM₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	314.29124		(2000.0)	P	Q		
<i>n</i>	0.27128440	ω	10.46022	−0.86594718	−0.48384836		
<i>a</i>	2.3633035	Ω	139.79256	+0.44353920	−0.85990847		
<i>e</i>	0.0504601	<i>i</i>	11.30909	+0.23110269	−0.16262902		
<i>P</i>	3.63	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1998 08 17	704	0.3−	0.6+	1999 12 05	704	0.2+	0.1−	2000 01 09	704	0.2+	0.1−
1998 08 17	704	0.2+	1.3−	1999 12 05	704	0.3−	0.0	2000 01 09	704	0.2+	0.2−
1998 08 17	704	1.3+	0.1−	1999 12 05	704	0.3+	0.0	2000 01 09	704	0.2+	0.4+
1998 08 17	704	0.5+	0.9−	1999 12 05	704	0.2+	0.2+	2000 01 11	704	0.1−	0.2−
1998 08 17	704	1.8−	0.5+	2000 01 07	704	0.1−	0.0	2000 01 11	704	0.1−	0.3−
1998 08 23	704	0.7−	0.2−	2000 01 07	704	0.4−	0.4−	2000 01 11	704	0.6+	0.3+
1998 08 23	704	0.5−	0.9+	2000 01 07	704	0.2−	0.1−	2000 01 11	704	0.2+	0.1+
1998 08 23	704	1.3+	1.6+	2000 01 07	704	0.2−	0.4−	2000 01 11	704	0.1−	0.4+
1998 08 23	704	0.0	1.1−	2000 01 07	704	0.3−	0.3−				
1999 12 05	704	0.2−	0.4+	2000 01 09	704	0.1+	0.0				

2000 JAN. 24

M.P.C. 38001

2000 AA₁₄₉ = 1998 RB₁₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	88.59730	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.19359168	ω	218.83204	+0.98954359	+0.05017756	
<i>a</i>	2.9594540	Ω	137.67852	-0.01441516	+0.96724693	
<i>e</i>	0.0744945	<i>i</i>	11.58618	-0.14351198	+0.24882844	
<i>P</i>	5.09	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 09 14	704	0.5+	0.0	1999 12 05	704	0.3-	0.8-	2000 01 07	704	0.5+	0.1-
1998 09 14	704	0.4-	0.4-	1999 12 05	704	0.2-	0.5-	2000 01 07	704	0.1-	0.6+
1998 09 14	704	0.1-	0.4-	1999 12 05	704	0.1+	0.3+	2000 01 07	704	0.5-	0.4+
1998 09 14	704	0.3-	0.8-	1999 12 05	704	0.1+	0.4-	2000 01 09	704	0.3+	1.1+
1998 09 14	704	0.6-	0.3-	1999 12 14	704	0.3+	0.9+	2000 01 09	704	0.3-	0.0
1998 09 18	704	(2.7+	3.1-)	1999 12 14	704	0.1-	0.3+	2000 01 09	704	0.3-	1.1-
1998 09 18	704	0.7+	1.6+	1999 12 14	704	0.2+	0.1+	2000 01 09	704	0.6-	0.5-
1998 09 18	704	0.8-	0.4+	1999 12 14	704	0.1+	0.3+	2000 01 09	704	0.2-	0.3+
1998 09 18	704	1.0+	0.2-	1999 12 14	704	0.2-	0.3+	2000 01 11	704	0.8+	0.2-
1998 09 18	704	(3.0+	1.3-)	2000 01 07	704	0.3-	0.1-	2000 01 11	704	0.2-	0.1-
1999 12 05	704	0.3+	0.1-	2000 01 07	704	0.1-	0.1-	2000 01 11	704	0.6+	0.5-

2000 AF₁₄₉ = 1986 VX₇ = 1994 PN₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	117.08338	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23348575	ω	189.08355	+0.79766943	+0.58176691	
<i>a</i>	2.6119356	Ω	134.09258	-0.53849949	+0.80573080	
<i>e</i>	0.1896237	<i>i</i>	12.78756	-0.27155437	+0.11110869	
<i>P</i>	4.22	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1986 11 07	033	0.1-	0.2-	1999 12 05	704	0.4+	0.2-	2000 01 09	704	0.0	0.2-
1986 11 07	033	0.3+	0.3-	1999 12 05	704	0.5-	0.1+	2000 01 09	704	0.1+	0.1+
1994 08 09	675	1.0+	0.5-	2000 01 07	704	0.1-	0.3+	2000 01 09	704	0.0	0.1-
1994 08 09	675	0.8+	0.2+	2000 01 07	704	0.1+	0.5+	2000 01 09	704	0.3-	0.1+
1994 08 11	675	1.8-	0.5-	2000 01 07	704	0.3-	0.0	2000 01 11	704	0.3-	0.5-
1994 08 11	675	0.1-	1.1+	2000 01 07	704	0.1+	0.7+	2000 01 11	704	1.3+	0.0
1999 12 05	704	0.3-	0.4+	2000 01 07	704	0.2+	0.1+	2000 01 11	704	0.1+	0.3+
1999 12 05	704	0.3-	0.2-	2000 01 09	704	0.2-	0.2-	2000 01 11	704	0.2-	0.7-

2000 AW₁₄₉ = 1998 SV₁₅₉

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	319.30045	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21016322	ω	359.43167	-0.97837109	-0.20441347	
<i>a</i>	2.8017641	Ω	168.62303	+0.19041652	-0.94984979	
<i>e</i>	0.0823174	<i>i</i>	9.24867	+0.08081810	-0.23664427	
<i>P</i>	4.69	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 5

Residuals in seconds of arc

1998 09 26	704	0.3+	0.4-	1999 12 05	704	0.9-	0.5+	2000 01 09	704	0.6-	0.0
1998 09 26	704	1.4+	1.4-	1999 12 05	704	0.3+	0.2-	2000 01 09	704	1.2+	0.5+
1998 09 26	704	0.1+	0.8+	1999 12 05	704	0.1+	0.6-	2000 01 09	704	1.0-	0.1-
1998 09 26	704	0.4-	0.9-	1999 12 05	704	0.0	0.1+	2000 01 09	704	0.4-	0.2+
1998 09 26	704	0.6+	1.2+	2000 01 07	704	0.0	0.2-	2000 01 11	704	0.2-	0.5+
1998 09 27	704	(2.4-	0.7+)	2000 01 07	704	0.1+	0.2+	2000 01 11	704	0.0	0.1-
1998 09 27	704	2.0-	0.8+	2000 01 07	704	0.3+	0.1-	2000 01 11	704	0.3+	0.5+
1998 09 27	704	(5.6-	0.4+)	2000 01 07	704	0.0	0.6-	2000 01 11	704	0.1+	0.0
1999 12 05	704	0.4+	0.4-	2000 01 07	704	0.0	0.1-	2000 01 11	704	0.3+	0.2-

2000 AJ₁₅₀ = 1998 QA₈₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	103.13358	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21952847	ω	100.79609	+0.96939149	+0.14074862	
<i>a</i>	2.7215030	Ω	251.34686	-0.20181222	+0.92343580	
<i>e</i>	0.2045015	<i>i</i>	12.25860	+0.13982833	+0.35701000	
<i>P</i>	4.49	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704	0.2-	0.2+	1998 08 27	704	0.6+	0.3-	2000 01 09	704	0.0	0.6+
1998 08 24	704	0.6-	0.6+	1998 08 27	704	0.8+	0.7-	2000 01 09	704	0.1-	0.4+
1998 08 24	704	0.7+	0.2+	1999 12 14	704	0.7-	0.3+	2000 01 09	704	0.4+	0.7+
1998 08 24	704	1.1-	0.8+	1999 12 14	704	0.4+	0.2+	2000 01 09	704	0.3-	0.7-
1998 08 24	704	0.4-	0.0	1999 12 14	704	0.1+	0.2-	2000 01 11	704	0.3-	0.0
1998 08 27	704	0.0	0.1+	2000 01 07	704	0.0	0.3-	2000 01 11	704	0.2+	0.3-
1998 08 27	704	0.0	0.3-	2000 01 07	704	0.5+	0.3-	2000 01 11	704	0.5+	0.4-
1998 08 27	704	0.4+	0.8-	2000 01 07	704	0.1+	0.3+	2000 01 11	704	0.7-	0.2-

2000 AL₁₅₀ = 1998 QB₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	46.06632	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.21456984	ω	186.47214	+0.36298653	-0.92270451	
<i>a</i>	2.7632718	Ω	242.31046	+0.86134453	+0.38541854	
<i>e</i>	0.1357886	<i>i</i>	8.43151	+0.35542423	+0.00830320	
<i>P</i>	4.59	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1998 08 24	704	0.8+	0.1+	1999 12 14	704	0.3-	0.2-	2000 01 09	704	0.2-	0.3+
1998 08 24	704	0.5+	1.6+	1999 12 14	704	0.3-	0.1+	2000 01 09	704	0.0	0.6+
1998 08 24	704	1.2-	1.1-	1999 12 14	704	0.6+	0.3-	2000 01 09	704	0.2-	1.3-
1998 08 24	704	0.9+	0.1-	1999 12 14	704	0.3-	0.5+	2000 01 11	704	0.1-	0.1+
1998 08 27	704	0.5-	0.1-	2000 01 07	704	0.1+	0.4-	2000 01 11	704	0.4-	0.2+
1998 08 27	704	1.4-	0.3-	2000 01 07	704	0.3+	0.1-	2000 01 11	704	0.3+	1.0+
1998 08 27	704	1.1+	0.1-	2000 01 07	704	0.7+	0.5-	2000 01 11	704	0.0	0.2+

2000 AV₁₅₀ = 1988 SV₂ = 1991 EL₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	160.02528	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.20380844	ω	158.98616	+0.82967398	+0.55653896	
<i>a</i>	2.8597053	Ω	166.92297	-0.53575362	+0.81577761	
<i>e</i>	0.0703283	<i>i</i>	11.12365	-0.15687304	+0.15738896	
<i>P</i>	4.84	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1988 09 16	807	0.0	0.2+	2000 01 04	699	0.0	0.8+	2000 01 10	704	0.2-	0.3-
1988 09 18	807	0.1-	0.1+	2000 01 08	704	0.0	0.3-	2000 01 10	704	0.6-	0.1+
1991 03 11	809	0.4-	0.7+	2000 01 08	704	0.3+	0.2+	2000 01 10	704	0.6+	0.1-
1991 03 11	809	0.4-	0.8+	2000 01 08	704	0.2+	0.1-	2000 01 10	704	0.2+	0.0
1991 03 11	809	0.3-	0.8+	2000 01 08	704	0.3-	0.0	2000 01 11	704	0.1-	0.2-
1991 03 13	809	0.0	0.6-	2000 01 08	704	0.7+	0.3-	2000 01 11	704	0.5-	0.2-
1991 03 13	809	0.4+	0.7-	2000 01 09	704	0.2-	0.3+	2000 01 11	704	0.6-	0.7-
1991 03 13	809	0.8+	0.6-	2000 01 09	704	1.6+	1.0-	2000 01 11	704	0.0	0.4-
2000 01 04	699	0.2+	1.0+	2000 01 09	704	0.6+	0.1+				
2000 01 04	699	1.3-	1.0+	2000 01 09	704	0.6-	0.3+				

2000 AV₁₅₈ = 1996 DX₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	39.49757	(2000.0)	Williams		<i>P</i>	<i>Q</i>
<i>n</i>	0.23467602	ω	141.00604	+0.12543228	-0.97305798	
<i>a</i>	2.6030963	Ω	300.98396	+0.84438510	+0.20707800	
<i>e</i>	0.0542159	<i>i</i>	13.04130	+0.52084600	-0.10137487	
<i>P</i>	4.20	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i> 4

Residuals in seconds of arc

1996 02 24	557	0.2−	0.2−	1999 12 08	703	0.4+	0.2−	2000 01 03	704	0.1−	0.0
1996 02 24	557	0.6−	0.1+	1999 12 10	704	0.6+	0.1−	2000 01 03	704	0.3−	0.5−
1996 02 24	557	1.0+	0.2−	1999 12 10	704	0.2+	0.3−	2000 01 04	704	0.4−	0.2+
1996 02 25	557	0.1−	0.3−	1999 12 10	704	0.2−	0.3−	2000 01 04	704	0.1−	0.2−
1996 02 25	557	0.1−	0.7+	1999 12 10	704	0.6−	0.0	2000 01 04	704	0.3+	0.3−
1996 02 25	557	0.1−	0.0	1999 12 10	704	0.8−	0.1−	2000 01 04	704	0.2+	0.2+
1999 12 08	703	0.3+	0.6+	2000 01 03	704	0.2−	0.8+	2000 01 04	704	0.6+	0.0
1999 12 08	703	0.9−	1.4+	2000 01 03	704	0.2+	0.3+				
1999 12 08	703	1.0+	0.9−	2000 01 03	704	0.2−	0.4−				

2000 AD₁₇₆ = 1996 AU₁₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	291.59839		(2000.0)	P		Q	
<i>n</i>	0.21937935	ω	51.37367	−0.98078165		+0.08245106	
<i>a</i>	2.7227361	Ω	132.58284	−0.12374265		−0.96358732	
<i>e</i>	0.1745812	<i>i</i>	13.89608	+0.15084797		−0.25436450	
<i>P</i>	4.49	<i>H</i>	14.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 01 14	327	0.4−	0.7−	2000 01 04	699	0.3−	0.3−	2000 01 07	704	0.0	0.1−
1996 01 14	327	0.6+	0.3+	2000 01 04	699	0.1+	0.6+	2000 01 11	704	0.8−	0.5−
1996 01 14	327	0.0	0.1−	2000 01 04	699	0.9+	0.2+	2000 01 11	704	0.3+	0.2−
1996 01 18	327	0.0	0.0	2000 01 07	704	0.4−	0.5−	2000 01 11	704	1.3+	0.1−
1996 01 18	327	0.4−	0.2+	2000 01 07	704	0.6−	0.1−	2000 01 11	704	1.8−	1.2+
1996 01 18	327	0.7−	0.3+	2000 01 07	704	0.0	0.2−	2000 01 11	704	1.1+	0.0

2000 AK₁₈₅ = 1986 WJ₁₀ = 1998 QJ₈₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	28.54487		(2000.0)	P		Q	
<i>n</i>	0.23390050	ω	188.95630	−0.10165013		−0.97887478	
<i>a</i>	2.6088470	Ω	267.02034	+0.92337767		−0.02647975	
<i>e</i>	0.1822105	<i>i</i>	10.23245	+0.37019040		−0.20273874	
<i>P</i>	4.21	<i>H</i>	14.3	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1986 11 30	381	1.0+	1.1+	1998 08 27	704	0.2+	0.5+	2000 01 07	704	0.4+	0.9+
1986 11 30	381	1.4−	0.9−	1998 08 27	704	0.5+	0.3−	2000 01 07	704	0.1−	0.3+
1986 12 01	381	0.4+	0.7−	1998 08 27	704	0.4−	0.3−	2000 01 07	704	0.0	0.2+
1986 12 01	381	0.0	0.2+	1998 08 27	704	0.5+	0.2+	2000 01 11	704	0.7−	0.1−
1998 08 24	704	0.4−	1.9−	2000 01 04	699	0.8+	0.7+	2000 01 11	704	0.2−	0.8−
1998 08 24	704	0.5−	1.0+	2000 01 04	699	1.0+	0.6+	2000 01 11	704	0.1−	0.5−
1998 08 24	704	0.5−	0.6−	2000 01 04	699	0.4+	0.3+	2000 01 11	704	0.8−	0.9−
1998 08 24	704	0.6−	1.1+	2000 01 07	704	0.1−	0.4+	2000 01 11	704	0.5−	0.9−
1998 08 24	704	1.1+	0.6+	2000 01 07	704	0.0	0.3+				

2000 AA₁₉₄ = 1998 SP₉₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	26.46342		(2000.0)	P		Q	
<i>n</i>	0.17588157	ω	292.01853	−0.01995577		−0.99567380	
<i>a</i>	3.1549259	Ω	158.51814	+0.98413792		−0.03556565	
<i>e</i>	0.1942877	<i>i</i>	14.34791	+0.17627909		+0.08584152	
<i>P</i>	5.60	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1998 09 26	704	0.1+	0.4−	1998 09 27	704	1.5−	1.4+	2000 01 08	704	0.1−	0.0
1998 09 26	704	1.4+	0.5−	2000 01 04	699	0.2+	0.7−	2000 01 11	704	0.3+	0.0
1998 09 26	704	1.8−	0.5−	2000 01 04	699	0.6+	0.8+	2000 01 11	704	0.1+	0.1−
1998 09 26	704	0.8+	0.3−	2000 01 04	699	0.2−	0.3+	2000 01 11	704	0.2+	0.8+
1998 09 26	704	0.5+	0.9−	2000 01 08	704	0.3−	0.1−	2000 01 11	704	0.5−	1.1−
1998 09 27	704	0.0	0.1+	2000 01 08	704	0.3−	0.3+	2000 01 11	704	0.2+	0.2−
1998 09 27	704	0.8+	0.4+	2000 01 08	704	0.3+	0.3−				
1998 09 27	704	0.2−	0.7+	2000 01 08	704	0.4−	0.3+				

2000 AB₁₉₄ = 1977 UF₃ = 1998 VW₂₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	228.95184		(2000.0)	P		Q	
<i>n</i>	0.19004439	ω	63.35411	−0.11867716		+0.99095656	
<i>a</i>	2.9961670	Ω	200.12636	−0.96339099		−0.13018531	
<i>e</i>	0.0530103	<i>i</i>	10.48490	−0.24040286		+0.03250978	
<i>P</i>	5.19	<i>H</i>	12.6	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 10 18	675	0.3−	0.4−	1998 11 11	704	0.1−	1.0−	2000 01 08	704	0.1−	0.1+
1977 10 19	675	0.4+	0.4+	2000 01 04	699	0.4+	0.0	2000 01 11	704	0.1−	0.2+
1998 11 10	704	0.1+	0.0	2000 01 04	699	0.7+	0.2−	2000 01 11	704	0.0	0.0
1998 11 10	704	0.4+	1.0−	2000 01 04	699	0.3+	0.6−	2000 01 11	704	0.5−	0.4+
1998 11 10	704	0.5−	1.4+	2000 01 08	704	0.2−	0.3+	2000 01 11	704	0.2−	0.1−
1998 11 10	704	0.9−	1.7+	2000 01 08	704	0.2−	0.1−	2000 01 11	704	0.4+	0.1−
1998 11 11	704	0.4+	0.5−	2000 01 08	704	0.2−	0.0				
1998 11 11	704	0.6+	0.4−	2000 01 08	704	0.2−	0.3+				

2000 AR₁₉₄ = 1990 TT₂ = 1997 LB₁₃ = 1998 QZ₇₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	69.15423		(2000.0)	P		Q	
<i>n</i>	0.23805078	ω	186.75919	+0.62722186		−0.77162651	
<i>a</i>	2.5784357	Ω	224.46486	+0.72145493		+0.62678420	
<i>e</i>	0.1109494	<i>i</i>	8.68398	+0.29342037		+0.10832400	
<i>P</i>	4.14	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1990 10 11	033	0.8+	1.3−	1998 08 24	704	0.5−	0.2+	2000 01 04	699	1.0+	0.4+
1990 10 11	033	0.9+	0.8−	1998 08 24	704	0.6+	0.5−	2000 01 08	704	0.1+	0.1+
1990 10 12	033	0.3−	0.6−	1998 08 24	704	1.3+	0.0	2000 01 08	704	0.0	0.4−
1990 10 13	033	0.4−	1.2+	1998 08 24	704	0.0	0.6+	2000 01 08	704	0.6−	0.6+
1990 10 14	033	0.6−	0.2+	1998 08 24	704	1.5−	1.2+	2000 01 08	704	0.3+	0.1−
1997 06 07	809	0.2+	0.1−	1998 08 27	704	0.4−	0.5−	2000 01 08	704	0.1−	0.1+
1997 06 07	809	0.4+	0.4−	1998 08 27	704	0.1−	0.1+	2000 01 11	704	0.7−	0.4−
1997 06 07	809	0.1+	0.1+	1998 08 27	704	0.2−	1.1+	2000 01 11	704	0.1−	0.4+
1997 06 08	809	0.1+	0.3−	1998 08 27	704	(1.1+	2.7+)	2000 01 11	704	0.5−	0.6+
1997 06 08	809	0.4−	0.7+	2000 01 04	699	1.0+	0.5−	2000 01 11	704	0.4+	0.1−
1997 06 08	809	0.3−	0.1+	2000 01 04	699	0.9+	0.6+	2000 01 11	704	1.2−	0.3+

2000 AO₁₉₅ = 1996 MR₁ = 1998 VM₁₂

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	9.66976		(2000.0)	P		Q	
<i>n</i>	0.19040590	ω	289.25240	−0.55449654		−0.83109062	
<i>a</i>	2.9923734	Ω	194.65963	+0.81274708		−0.52980980	
<i>e</i>	0.0440470	<i>i</i>	9.71007	+0.17881767		−0.16908567	
<i>P</i>	5.18	<i>H</i>	13.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1996 06 17	691	0.0	0.1−	1998 11 11	704	0.4−	0.5−	2000 01 08	704	0.2+	0.1+
1996 06 17	691	0.3+	0.1+	1998 11 11	704	0.1−	0.6+	2000 01 08	704	0.1+	0.2−
1996 06 17	691	0.1+	0.1−	1998 11 11	704	0.0	0.5+	2000 01 08	704	0.1+	0.7−
1996 06 23	691	0.3−	0.2−	1998 11 11	704	0.3−	0.6−	2000 01 11	704	0.5+	0.4+
1996 06 23	691	0.0	0.1+	1998 11 11	704	0.1−	0.9−	2000 01 11	704	0.2−	0.2+
1996 06 23	691	0.0	0.2+	2000 01 04	699	0.3−	0.4+	2000 01 11	704	0.0	0.0
1998 11 10	704	0.1+	0.0	2000 01 04	699	0.1−	0.0	2000 01 11	704	0.7−	0.2+
1998 11 10	704	0.2−	0.1+	2000 01 04	699	0.1−	0.4+	2000 01 11	704	0.0	0.0
1998 11 10	704	0.5−	0.1+	2000 01 08	704	0.1+	0.9−				
1998 11 10	704	1.6+	0.7+	2000 01 08	704	0.3+	0.1+				

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2000 AP₁₉₆ = 1996 LB₁ = 1998 VR₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	326.26156	ω	284.24284	-0.98173903	-0.11286886		
<i>a</i>	2.9795860	Ω	249.45525	+0.15955815	-0.92687577		
<i>e</i>	0.0422196	<i>i</i>	9.41196	-0.10358412	-0.35799710		
<i>P</i>	5.14	<i>H</i>	13.7	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1996 06 13	566	0.0	0.1-	1998 11 10	704	0.2+	1.4-	2000 01 08	704	0.5-	0.0
1996 06 13	566	0.0	0.5-	1998 11 11	704	0.2-	0.4-	2000 01 08	704	0.2-	0.6-
1996 06 13	566	0.4+	0.3-	1998 11 11	704	0.7-	0.7-	2000 01 08	704	0.1-	0.2-
1996 06 14	566	0.1-	0.2-	1998 11 11	704	1.0-	0.7-	2000 01 08	704	0.1+	0.3-
1996 06 14	566	0.3-	0.5-	1998 11 11	704	0.7+	1.5-	2000 01 08	704	0.0	0.4-
1996 06 14	566	0.0	1.1-	1998 11 11	704	1.7+	1.0-	2000 01 11	704	0.3-	0.1-
1996 06 14	566	0.3-	0.6-	1998 11 15	699	0.0	0.4+	2000 01 11	704	0.0	0.4-
1996 06 14	566	0.4+	0.9-	1998 11 15	699	0.5-	0.5+	2000 01 11	704	0.5+	0.4+
1996 06 14	566	0.5-	0.2-	1998 11 15	699	0.3+	0.6+	2000 01 11	704	0.2+	0.3+
1998 11 10	704	0.4-	0.5+	2000 01 05	699	0.4+	0.1+	2000 01 11	704	0.3-	0.3-
1998 11 10	704	0.0	0.2+	2000 01 05	699	0.0	0.1-				
1998 11 10	704	0.7+	0.6-	2000 01 05	699	0.1-	0.1+				

2000 AD₂₀₄ = 1993 OZ₁₀

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	348.27713	ω	208.34989	-0.89399222	-0.43473303		
<i>a</i>	2.5786494	Ω	305.47415	+0.43216398	-0.77254089		
<i>e</i>	0.1144311	<i>i</i>	7.66052	+0.11837317	-0.46280423		
<i>P</i>	4.14	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1993 07 20	809	0.3+	0.1-	2000 01 07	120	0.3-	0.2-	2000 01 16	691	1.3+	0.6+
1993 07 20	809	0.1-	0.1-	2000 01 12	120	1.2-	0.4+	2000 01 16	691	0.7+	0.2+
1993 07 20	809	0.9-	0.9+	2000 01 13	120	0.7-	1.0-	2000 01 16	691	0.7+	0.1+
1993 07 24	809	0.8+	1.3-	2000 01 16	120	0.4+	0.1-				
2000 01 07	120	1.6-	0.1-	2000 01 16	120	0.2+	0.3-				

2000 AA₂₀₅ = 1998 SJ₁₂₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	89.61576	ω	32.65908	+0.87244441	-0.48857629		
<i>a</i>	3.0296720	Ω	356.52629	+0.39729153	+0.72283280		
<i>e</i>	0.0908749	<i>i</i>	11.01285	+0.28460534	+0.48867776		
<i>P</i>	5.27	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1998 09 26	704	0.4+	0.3+	1998 09 27	704	0.9-	0.2-	2000 01 10	905	0.3-	0.3+
1998 09 26	704	0.4+	0.1-	1998 09 27	704	0.1-	0.6+	2000 01 14	888	0.7+	1.1-
1998 09 26	704	0.6+	0.3+	1998 09 27	704	0.7-	0.9-	2000 01 14	888	0.2-	0.4+
1998 09 26	704	0.0	0.2-	2000 01 08	905	0.7+	0.4-	2000 01 14	888	0.2+	0.1+
1998 09 27	704	0.3-	0.2+	2000 01 08	905	0.0	0.4-				
1998 09 27	704	0.7+	0.0	2000 01 10	905	1.0-	1.0+				

2050 P-L = 1997 UQ₂₅

Id. G. V. Williams; 2050 P-L = 1975 WT (*MPC* 15570) is invalid

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	229.49632	ω	136.26836	+0.97299250	-0.23006362		
<i>a</i>	2.3937001	Ω	237.04149	+0.20512118	+0.89921288		
<i>e</i>	0.2239044	<i>i</i>	1.28910	+0.10588151	+0.37213831		
<i>P</i>	3.70	<i>H</i>	15.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.8-	0.2+	1960 10 17	675	0.8-	0.0	1997 10 25	809	0.2-	0.2+
1960 09 26	675	0.2+	0.0	1960 10 22	675	0.3-	0.0	1997 10 25	809	0.3+	0.8+
1960 09 28	675	0.1-	0.3+	1960 10 25	675	0.6+	0.1+	1997 10 27	809	0.2+	1.3-
1960 09 29	675	0.9+	0.1-	1960 10 26	675	0.3-	0.8+	1997 10 27	809	0.3+	1.0-

2188 P-L = 1999 VN₇₈

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	28.36268	ω	112.94017	+0.76903116	-0.63819243		
<i>a</i>	2.3218810	Ω	286.73672	+0.57180053	+0.71206048		
<i>e</i>	0.1706531	<i>i</i>	2.15896	+0.28571878	+0.29271196		
<i>P</i>	3.54	<i>H</i>	16.6	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1960 09 24	675	1.6-	0.2-	1999 11 04	691	0.6-	0.1+	1999 11 05	704	0.2-	0.4-
1960 09 26	675	0.5-	0.1-	1999 11 04	704	0.3+	0.1-	1999 11 05	704	0.4+	0.2-
1960 09 28	675	0.9-	0.8-	1999 11 04	704	0.7-	0.8-	1999 11 05	704	0.3+	0.5-
1960 09 29	675	0.2+	0.9-	1999 11 04	691	0.5-	0.0	1999 11 05	704	0.4-	0.0
1960 10 17	675	2.0-	0.3-	1999 11 04	703	0.1+	0.1+	1999 11 05	704	0.3+	0.6+
1960 10 22	675	2.1-	1.4-	1999 11 04	704	0.6+	0.5-	1999 11 10	691	0.3+	0.3+
1960 10 25	675	0.0	0.7+	1999 11 04	703	0.3+	0.6+	1999 11 10	691	0.2+	0.2+
1960 10 26	675	0.9-	0.1+	1999 11 04	704	0.4-	1.3-	1999 11 10	691	0.3+	0.4+
1999 11 04	691	0.4-	0.0	1999 11 04	703	0.2-	0.9+				
1999 11 04	704	0.6+	0.2-	1999 11 04	703	0.3-	0.5+				

2224 P-L = 1999 XK₄₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	31.74541	ω	109.58874	+0.51287758	-0.85816066		
<i>a</i>	2.1845763	Ω	309.53448	+0.77616387	+0.47486204		
<i>e</i>	0.0849342	<i>i</i>	1.68922	+0.36677818	+0.19510594		
<i>P</i>	3.23	<i>H</i>	16.5	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.6+	0.2+	1999 11 14	704	0.4-	0.1+	1999 12 08	704	1.3+	1.5-
1960 09 24	675	0.1+	0.0	1999 11 14	704	0.3-	0.0	1999 12 08	704	0.3-	1.1-
1960 09 26	675	1.0-	1.3-	1999 11 16	704	0.1-	0.1-	1999 12 08	704	1.2+	0.2-
1960 09 26	675	0.3-	0.3+	1999 11 16	704	0.5+	0.1+	1999 12 08	704	0.7+	0.2+
1960 09 28	675	0.6+	1.0+	1999 11 16	704	0.1+	0.1+	1999 12 13	703	1.7-	0.6+
1960 09 28	675	0.0	0.6+	1999 11 16	704	0.5-	0.0	1999 12 13	703	0.3+	0.4+
1960 10 17	675	1.6-	1.8-	1999 11 16	704	0.2+	0.8+	1999 12 13	703	0.2-	0.3-
1960 10 22	675	1.6+	1.2+	1999 12 07	704	0.2+	0.4+	1999 12 13	703	0.1-	0.1-
1960 10 26	675	0.1+	0.4-	1999 12 07	704	0.5-	0.6+	1999 12 15	691	0.3-	0.1+
1999 11 14	704	0.1+	0.1+	1999 12 07	704	0.2-	0.4-	1999 12 15	691	0.2+	0.2+
1999 11 14	704	0.1+	0.1+	1999 12 07	704	0.3-	0.5+	1999 12 15	691	0.4-	0.2-
1999 11 14	704	0.3-	0.4-	1999 12 08	704	0.6+	0.1+				

2512 P-L = 2000 AM₂₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		<i>P</i>		<i>Q</i>	
<i>n</i>	168.80012	ω	315.38597	+0.56496354	+0.82510175		
<i>a</i>	2.6185035	Ω	349.01080	-0.74977704	+0.51092681		
<i>e</i>	0.0276290	<i>i</i>	1.45137	-0.34445696	+0.24116571		
<i>P</i>	4.24	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	1.1-	0.2-	1996 02 15	566	0.2-	0.2-	2000 01 03	704	0.1-	0.9-
1960 09 26	675	0.3+	2.1-	1996 02 15	566	0.6+	0.1+	2000 01 03	704	0.1+	0.3-
1960 09 28	675	0.4+	1.6+	1996 02 15	566	0.4-	0.1-	2000 01 03	704	0.5+	0.5-
1960 09 29	675	0.2+	0.5-	1999 12 07	704	1.5+	1.8+	2000 01 04	704	0.2-	0.1+
1960 10 17	675	0.1-	0.0	1999 12 07	704	(1.0+ 2.3+)		2000 01 04	704	0.2+	0.3-
1960 10 22	675	0.1-	0.9+	1999 12 07	704	0.9-	0.6+	2000 01 04	704	0.3+	0.5-
1960 10 22	675	0.2+	0.8-	1999 12 07	704	0.9-	1.1+	2000 01 04	704	0.1+	0.3-

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1960 10 25	675	0.3+	1.2+	1999 12 07	704	1.0-	0.0	2000 01 04	704	0.1-	0.1+
1960 10 25	675	0.1+	0.7-	2000 01 03	704	0.0	0.5-				
1960 10 26	675	0.1-	0.4+	2000 01 03	704	0.5+	0.2-				

2513 P-L = 2000 AL₂₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	36.99136		(2000.0)	P	Q		
<i>n</i>	0.17955083	ω	66.29547	+0.48963559	-0.87192213		
<i>a</i>	3.1117959	Ω	354.38520	+0.78853902	+0.44425665		
<i>e</i>	0.2334204	<i>i</i>	1.73599	+0.37210645	+0.20588302		
<i>P</i>	5.49	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.9-	1.5+	2000 01 03	704	0.0	0.2-	2000 01 04	704	0.0	0.1+
1960 09 26	675	0.4+	0.3-	2000 01 03	704	0.9-	0.7+	2000 01 06	120	1.0+	0.2-
1960 09 28	675	0.6+	1.4-	2000 01 03	704	0.6-	0.3+	2000 01 06	120	0.4+	0.6+
1960 10 17	675	0.1-	0.5-	2000 01 03	704	0.1-	0.7+	2000 01 08	704	0.1-	0.1+
1960 10 22	675	0.2+	0.2-	2000 01 04	704	0.0	0.4-	2000 01 08	704	0.4+	0.6+
1960 10 26	675	0.2-	1.8+	2000 01 04	704	0.0	0.6-	2000 01 08	704	0.2-	0.1-
1960 10 26	675	0.0	0.8-	2000 01 04	704	0.1+	0.6-	2000 01 08	704	0.3+	0.3+
2000 01 03	704	0.5-	0.1-	2000 01 04	704	0.2+	1.1-				

2567 P-L = 2000 AJ₂₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	81.33165		(2000.0)	P	Q		
<i>n</i>	0.20682141	ω	4.66521	+0.91110396	-0.41196565		
<i>a</i>	2.8318639	Ω	19.67935	+0.37688657	+0.81971807		
<i>e</i>	0.0719363	<i>i</i>	2.24406	+0.16687147	+0.39792787		
<i>P</i>	4.77	<i>H</i>	13.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1960 09 24	675	0.4+	0.3-	1999 12 07	704	0.4+	0.1+	2000 01 03	704	0.3-	0.1-
1960 09 26	675	0.5+	0.4-	1999 12 07	704	0.6+	0.0	2000 01 03	704	0.0	0.3-
1960 09 28	675	0.5+	0.6-	1999 12 07	704	0.2+	0.2+	2000 01 03	704	0.6+	0.2+
1960 09 29	675	1.7+	0.4-	1999 12 07	704	0.0	0.1+	2000 01 03	704	0.1-	0.1-
1960 10 17	675	0.8-	1.4+	1999 12 15	704	1.8-	0.8-	2000 01 04	704	0.2+	0.1-
1960 10 22	675	1.6-	0.2+	1999 12 15	704	(2.4-	1.4+)	2000 01 04	704	0.2+	0.3+
1960 10 25	675	0.0	0.5+	1999 12 15	704	0.3-	0.7+	2000 01 04	704	0.2+	0.1+
1960 10 26	675	1.0-	0.5-	1999 12 15	704	0.1-	0.0	2000 01 04	704	0.6+	0.1+
1999 12 07	704	0.1+	0.0	2000 01 03	704	0.5-	0.5-				

2802 P-L = 1999 XB₁₄₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	32.97978		(2000.0)	P	Q		
<i>n</i>	0.22967566	ω	45.35355	+0.47838911	-0.87574123		
<i>a</i>	2.6407426	Ω	16.41698	+0.72653147	+0.35315083		
<i>e</i>	0.2506534	<i>i</i>	13.29010	+0.49325033	+0.32918352		
<i>P</i>	4.29	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1960 09 24	675	0.5+	0.6-	1999 11 01	704	0.0	0.2+	1999 12 13	704	0.6+	0.5-
1960 09 26	675	0.5+	0.5-	1999 11 01	704	0.9-	0.6+	1999 12 13	704	0.9+	0.6-
1960 09 28	675	0.3+	1.0+	1999 11 01	704	0.6+	0.3-	1999 12 17	704	0.1+	0.1-
1960 09 29	675	0.2+	0.4+	1999 12 13	704	0.7+	0.5+	1999 12 17	704	0.7-	0.1+
1960 10 17	675	0.6-	0.2-	1999 12 13	704	0.6+	0.2-	1999 12 17	704	0.9-	0.6-
1960 10 26	675	0.9-	0.1-	1999 12 13	704	0.3-	0.2-	1999 12 17	704	0.8-	1.0+

3047 P-L = 1999 XO₂₀₅

Id. G. V. Williams, E. Bowell (1954 observations)

2000 JAN. 24

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	268.56587		(2000.0)	P	Q		
<i>n</i>	0.18558076	ω	257.90042	-0.61968466	+0.77776670		
<i>a</i>	3.0440194	Ω	332.92121	-0.59969311	-0.55569936		
<i>e</i>	0.1697977	<i>i</i>	13.36356	-0.50631916	-0.29372978		
<i>P</i>	5.31	<i>H</i>	12.8	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1954 08 04	675	0.8+	0.0	1960 09 28	675	1.4+	0.4-	1999 12 15	704	0.2+	0.3+
1954 08 04	675	1.3-	0.7+	1960 09 29	675	(2.7-	0.6+)	1999 12 15	704	0.4-	0.8+
1960 09 24	675	0.8+	0.8-	1960 10 24	675	0.1-	0.1+	1999 12 15	704	0.3-	0.8+
1960 09 24	675	0.4-	0.8+	1998 11 14	704	0.4+	0.1-	1999 12 15	704	0.0	0.7+
1960 09 25	675	1.3-	0.1-	1998 11 14	704	0.3+	0.3-	1999 12 15	704	0.5+	1.6+
1960 09 25	675	1.8+	0.4-	1998 11 14	704	0.3+	0.4-	2000 01 02	704	0.5+	0.8-
1960 09 26	675	0.4+	0.1-	1998 11 14	704	1.5-	0.4-	2000 01 02	704	0.4+	0.8-
1960 09 26	675	0.5+	0.9-	1998 11 14	704	0.6+	0.9+	2000 01 02	704	0.2+	1.1-
1960 09 26	675	0.3-	0.3-	1999 12 12	704	0.2-	0.0	2000 01 02	704	0.2+	1.1-
1960 09 27	675	1.0-	1.1+	1999 12 12	704	0.2+	0.5+	2000 01 02	704	0.9+	0.7-
1960 09 27	675	0.2+	0.6+	1999 12 12	704	0.3-	0.3+	2000 01 05	106	0.1-	0.4+
1960 09 28	675	1.7-	0.5+	1999 12 12	704	0.9-	0.2-	2000 01 05	106	0.1-	0.2+
1960 09 28	675	0.1+	0.1-	1999 12 12	704	0.2-	0.2+	2000 01 05	106	0.1-	0.2+

3567 P-L = 1991 PN₂₃ = 1991 PD₃₀ = 1999 XO₉₅

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	2.45123		(2000.0)	P	Q		
<i>n</i>	0.28190147	ω	153.09078	-0.38358031	-0.92004926		
<i>a</i>	2.3035863	Ω	319.32706	+0.82371761	-0.30175867		
<i>e</i>	0.0545490	<i>i</i>	7.03716	+0.41755891	-0.24990209		
<i>P</i>	3.50	<i>H</i>	14.9	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1960 10 22	675	0.4-	0.7+	1999 12 07	411	0.7+	0.2+	1999 12 16	704	0.1+	0.1+
1960 10 24	675	1.7-	0.1-	1999 12 09	411	0.6-	0.1-	1999 12 19	411	1.2-	0.7-
1960 10 24	675	0.4+	0.7+	1999 12 09	411	0.1-	0.7-	1999 12 19	411	0.6+	0.8+
1960 10 26	675	0.8+	0.0	1999 12 12	704	0.3+	0.4-	2000 01 02	704	0.0	0.5+
1991 08 02	809	1.2+	0.4-	1999 12 12	704	0.4+	0.2-	2000 01 02	704	0.1+	1.0+
1991 08 02	809	0.0	0.4+	1999 12 12	704	0.6+	0.8-	2000 01 02	704	0.3+	0.6+
1991 08 02	809	1.0-	0.4+	1999 12 12	704	0.5+	0.3-	2000 01 02	704	0.2+	1.7+
1991 08 14	809	1.6+	0.4-	1999 12 12	704	0.2+	0.8-	2000 01 02	704	0.1+	1.0+
1991 08 14	809	(2.8+	0.7-)	1999 12 15	704	0.0	0.6-	2000 01 04	704	0.0	0.0
1991 08 14	809	0.3-	0.9-	1999 12 15	704	0.1+	1.0-	2000 01 04	704	0.9-	0.2-
1998 08 17	704	1.0-	0.9-	1999 12 15	704	0.1-	0.8-	2000 01 04	704	0.3-	0.5-
1998 08 17	704	0.4-	0.1+	1999 12 15	704	0.4+	0.1-	2000 01 04	704	0.0	0.9-
1998 08 17	704	0.1+	1.1+	1999 12 15	704	0.3+	0.2+	2000 01 04	704	0.7-	0.8-
1998 08 17	704	0.5+	0.0	1999 12 16	704	0.6-	0.5-	2000 01 04	106	0.2-	1.1+
1998 08 17	704	0.0	0.7-	1999 12 16	704	0.0	0.0	2000 01 05	106	0.4-	0.9+
1999 12 07	411	0.2-	0.3-	1999 12 16	704	0.2+	0.1-				

4617 P-L = 1999 XN₁₃₀

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

				Williams			
<i>M</i>	46.25165		(2000.0)	P	Q		
<i>n</i>	0.27988051	ω	30.21273	+0.80990676	-0.58646411		
<i>a</i>	2.3146622	Ω	5.72782	+0.51482817	+0.70214567		
<i>e</i>	0.1979221	<i>i</i>	6.05658	+0.28107471	+0.40379613		
<i>P</i>	3.52	<i>H</i>	15.7	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.1-	0.6-	1999 12 07	703	0.1+	0.5+	1999 12 13	704	0.2+	0.6+
1960 09 24	675	0.3+	0.4-	1999 12 12	704	0.3-	0.1+	1999 12 13	704	0.5+	0.8+
1960 09 25	675	0.1+	1.0+	1999 12 12	704	0.2+	0.6-	1999 12 15	704	0.3-	0.9-
1960 09 26	675	0.4-	0.4+	1999 12 12	704	0.5-	1.1-	1999 12 15	704	0.8+	0.2+
1960 09 26	675	0.3+	0.2-	1999 12 12	704	0.2-	1.0-	1999 12 15	704	1.4-	0.1-
1960 09 27	675	0.4+	0.4+	1999 12 13	704	0.2-	0.2+	1999 12 15	704	0.2-	0.3+

2000 JAN. 24

M.P.C. 38005

1960 09 28	675	0.3−	0.1+	1999 12 13	704	0.0	0.3+	1999 12 15	704	0.0	0.0
1960 09 28	675	0.1−	0.7−	1999 12 13	704	0.2+	0.2+	2000 01 02	704	0.6−	0.1−
1960 10 17	675	0.2−	0.0	1999 12 13	704	0.4+	0.7+	2000 01 02	704	0.5+	0.3−
1960 10 22	675	0.2+	0.4−	1999 12 13	704	0.3+	0.1−	2000 01 02	704	0.2+	1.0−
1999 12 07	703	(1.2+	2.5+)	1999 12 13	704	0.1+	0.5+	2000 01 02	704	0.1−	0.5−
1999 12 07	703	0.6−	0.5+	1999 12 13	704	0.5+	0.6+	2000 01 02	704	0.4+	0.7−
1999 12 07	703	0.3−	0.2+	1999 12 13	704	0.3+	0.6+				

6572 P-L = 1999 XB₂₀₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	54.64479		(2000.0)		P		Q
<i>n</i>	0.28056504	ω	29.54054	+0.75635439		−0.65365289	
<i>a</i>	2.3108957	Ω	11.38868	+0.57163352		+0.64123860	
<i>e</i>	0.2749699	<i>i</i>	7.50920	+0.31806156		+0.40193402	
<i>P</i>	3.51	<i>H</i>	15.8	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	0.1+	0.4+	1999 12 12	704	1.0−	0.2−	1999 12 15	704	0.4+	0.5+
1960 09 26	675	0.1+	0.1−	1999 12 12	704	0.1+	0.1−	1999 12 15	704	0.2−	0.1−
1960 09 27	675	0.1+	0.2−	1999 12 12	704	0.4−	1.0−	1999 12 15	704	0.6+	0.2+
1960 09 28	675	0.8+	0.4−	1999 12 12	704	0.1−	0.3−	2000 01 02	704	0.5+	0.4−
1960 10 17	675	0.9−	0.3−	1999 12 13	699	0.1+	0.4+	2000 01 02	704	0.0	0.3+
1960 10 22	675	0.6−	0.6−	1999 12 13	699	1.0+	0.4+	2000 01 02	704	0.2−	0.3−
1960 10 24	675	0.0	1.9+	1999 12 13	699	0.6+	0.2+	2000 01 02	704	0.5−	0.5+
1960 10 26	675	0.1+	0.6−	1999 12 15	704	0.5−	0.0	2000 01 02	704	0.2−	0.3+
1999 12 12	704	0.3−	0.2+	1999 12 15	704	0.0	0.7−				

6639 P-L = 1998 RJ₃₅ = 1999 XQ₈₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	16.37023		(2000.0)		P		Q
<i>n</i>	0.18044476	ω	308.07349	+0.04382938		−0.99853499	
<i>a</i>	3.1015101	Ω	139.37953	+0.93118610		+0.02932639	
<i>e</i>	0.1572537	<i>i</i>	2.79362	+0.36189975		+0.04547347	
<i>P</i>	5.46	<i>H</i>	13.9	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1960 09 24	675	1.2−	0.4−	1998 09 18	704	0.9−	0.7+	2000 01 05	704	0.3−	0.3+
1960 09 26	675	1.7+	0.9−	1998 09 18	704	1.9−	0.3−	2000 01 05	704	0.4−	0.3+
1960 09 27	675	0.5+	1.3−	1999 12 07	704	0.2−	0.1+	2000 01 05	704	0.4−	0.7+
1960 09 28	675	0.1+	1.1−	1999 12 07	704	0.3+	0.7−	2000 01 06	704	0.2+	0.3+
1960 10 17	675	0.3+	0.6−	1999 12 07	704	0.1−	0.2−	2000 01 06	704	0.3+	0.2−
1960 10 22	675	1.5−	0.3+	1999 12 07	704	1.4+	0.4−	2000 01 06	704	0.1−	0.2−
1960 10 24	675	0.0	1.0+	1999 12 08	704	0.0	0.4−	2000 01 07	704	0.6+	0.1+
1960 10 26	675	1.3+	0.1+	1999 12 08	704	0.1+	0.2+	2000 01 07	704	0.4+	0.1−
1998 09 14	704	1.6+	0.3−	1999 12 08	704	0.7−	0.7+	2000 01 07	704	0.3−	0.0
1998 09 14	704	0.4+	0.3+	1999 12 08	704	0.6−	0.1−	2000 01 07	704	0.4+	0.4+
1998 09 14	704	1.3+	1.6+	1999 12 08	704	0.9−	0.3−	2000 01 07	704	0.2−	0.3+
1998 09 18	704	0.8−	0.8+	2000 01 05	704	0.3+	0.1−				
1998 09 18	704	1.0−	0.4+	2000 01 05	704	0.0	0.2−				

3204 T-1 = 1999 XQ₁₆₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	35.99623		(2000.0)		P		Q
<i>n</i>	0.26353014	ω	56.08958	+0.66922669		−0.74291171	
<i>a</i>	2.4094386	Ω	351.85367	+0.64273008		+0.58872027	
<i>e</i>	0.0957738	<i>i</i>	5.97854	+0.37287221		+0.31857595	
<i>P</i>	3.74	<i>H</i>	14.5	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1971 03 24	675	1.2−	0.1+	1997 04 28	704	(0.4−	3.8−)	1999 12 15	704	0.5−	0.9+
1971 03 25	675	(3.3+	1.4−)	1997 04 28	704	(2.8−	1.3−)	1999 12 15	704	0.5−	0.2−
1971 03 26	675	0.8+	2.0−	1999 10 05	704	0.0	1.4−	1999 12 15	704	0.4−	0.3+
1971 03 26	675	0.1+	2.2−	1999 10 05	704	0.9+	0.9−	1999 12 15	704	1.2−	0.5−
1971 03 27	675	1.3+	0.1+	1999 10 05	704	0.0	0.9−	1999 12 29	106	1.3−	1.0+
1971 04 02	675	0.1+	0.1+	1999 10 05	704	0.3+	0.6−	1999 12 29	106	0.8+	0.5+

1971 04 16	675	1.0−	1.9+	1999 10 05	704	1.0+	0.7−	1999 12 29	106	0.0	0.3+
1971 04 16	675	0.5−	0.9+	1999 12 05	699	0.2−	1.2+	1999 12 31	699	0.5+	0.4+
1971 04 16	675	0.4−	0.5+	1999 12 05	699	0.4−	0.0	1999 12 31	699	0.7+	0.7+
1971 04 16	675	0.3−	0.5−	1999 12 05	699	0.4+	0.2−	1999 12 31	699	0.7+	0.5+
1971 05 13	675	0.4+	0.2+	1999 12 10	704	0.6+	0.2+	2000 01 03	704	0.5+	1.2+
1971 05 14	675	0.2−	0.2−	1999 12 10	704	0.2−	1.1−	2000 01 03	704	0.0	0.3−
1997 04 28	704	0.5−	0.9+	1999 12 10	704	0.8+	0.6−	2000 01 03	704	0.9−	1.5+
1997 04 28	704	0.3+	0.0	1999 12 10	704	0.2−	1.4−	2000 01 03	704	0.0	0.1+
1997 04 28	704	0.3−	1.7−	1999 12 10	704	0.9−	0.5−	2000 01 03	704	0.0	1.0−

3256 T-1 = 2000 AU₁₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	303.37793		(2000.0)		P		Q
<i>n</i>	0.26641817	ω	147.07125	−0.99577306		−0.08936229	
<i>a</i>	2.3919944	Ω	27.82513	+0.07132920		−0.89796029	
<i>e</i>	0.1619295	<i>i</i>	2.60594	+0.05786334		−0.43090800	
<i>P</i>	3.70	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	0.5+	1.1+	1971 05 16	675	0.2+	0.3+	2000 01 04	704	0.3−	0.3+
1971 03 25	675	0.6+	1.3+	1999 12 07	704	0.8−	0.1+	2000 01 04	704	0.1+	0.1+
1971 03 26	675	(0.2−	2.9+)	1999 12 07	704	1.1−	0.6−	2000 01 04	704	0.2+	0.6−
1971 03 26	675	2.0−	1.0−	1999 12 07	704	0.5−	0.0	2000 01 04	704	0.1−	0.0
1971 03 26	675	0.5+	1.7+	1999 12 07	704	0.3+	0.2−	2000 01 04	704	0.3+	0.2+
1971 03 26	675	1.9−	1.8−	1999 12 07	704	0.1−	0.3+	2000 01 04	704	0.6−	0.5+
1971 03 27	675	0.6+	1.7+	2000 01 03	704	0.3−	0.5−	2000 01 04	704	0.9+	0.5−
1971 03 27	675	0.2+	1.2−	2000 01 03	704	0.1−	0.1−	2000 01 04	704	1.1+	0.1+
1971 04 02	675	0.2−	0.3−	2000 01 03	704	0.8−	0.1+	2000 01 04	704	0.1−	0.2+
1971 04 16	675	1.1+	0.5−	2000 01 03	704	0.2−	0.3−	2000 01 04	704	0.4+	0.3−
1971 04 16	675	1.2+	1.1−	2000 01 04	704	0.6+	0.4+	2000 01 04	704	0.2+	0.3−
1971 05 13	675	0.1−	0.2+	2000 01 04	704	0.7+	0.1−	2000 01 04	704	0.4+	0.4+
1971 05 14	675	0.7−	0.6−	2000 01 04	704	0.1−	0.9+				

4131 T-1 = 2000 AE₅₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	295.35012		(2000.0)		P		Q
<i>n</i>	0.26852714	ω	165.37816	−0.86027793		+0.50864293	
<i>a</i>	2.3794537	Ω	45.24996	−0.47252532		−0.76993197	
<i>e</i>	0.1417879	<i>i</i>	2.80082	−0.19142024		−0.38534029	
<i>P</i>	3.67	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1971 03 24	675	0.8+	0.8−	1971 04 16	675	0.4+	1.5−	2000 01 03	704	0.1−	0.2+
1971 03 26	675	0.5−	0.1−	1971 05 13	675	1.1−	0.3−	2000 01 03	704	0.1+	0.2+
1971 03 26	675	0.5−	0.3−	1971 05 14	675	0.3+	0.1+	2000 01 06	704	0.2−	0.2+
1971 03 27	675	0.4−	0.1−	1971 05 16	675	0.3+	0.4+	2000 01 06	704	0.1+	0.2−
1971 04 02	675	0.9+	1.1+	2000 01 03	704	0.5+	0.3−	2000 01 06	704	0.2+	0.4−
1971 04 02	675	0.9−	1.9+	2000 01 03	704	0.2+	0.1−	2000 01 06	704	0.2−	0.2−
1971 04 16	675	0.6+	0.5−	2000 01 03	704	0.2+	0.4+	2000 01 06	704	0.7−	0.1+

4225 T-1 = 1999 XR₂₀₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	130.12441		(2000.0)		P		Q
<i>n</i>	0.26612976	ω	312.96799	+0.96759863		+0.23985698	
<i>a</i>	2.3937222	Ω	33.38240	−0.16899507		+0.84731027	
<i>e</i>	0.0302065	<i>i</i>	8.24195	−0.18759947		+0.47385012	
<i>P</i>	3.70	<i>H</i>	14.4	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1971 03 24	675	2.5+	1.1−	1971 05 13	675	0.8−	0.6+	1999 12 12	704	0.7−	0.4−
1971 03 26	675	(0.3+	4.1+)	1971 05 14	675	1.5−	1.2−	1999 12 15	704	1.6+	1.9+
1971 03 26	675	(0.5−	3.4+)	1997 04 16	327	0.3−	0.4+	1999 12 15	704	0.3−	0.1−
1971 03 27	675	1.7−	0.7+	1997 04 16	327	0.3+	0.9+	1999 12 15	704	0.2+	0.7−
1971 04 02	675	(3.1−	3.1+)	1997 04 16	327	0.7+	0.1−	1999 12 15	704	0.6−	0.5−
1971 04 16	675	(3.5+	0.7−)	1999 12 12	704	0.9−	0.2−	2000 01 02	704	0.5−	0.0

1971 04 16	675	0.5+	1.1+	1999 12 12	704	0.4−	0.1−	2000 01 02	704	0.4+	1.0−
1971 04 16	675	(3.8+	1.7−)	1999 12 12	704	0.5−	0.4−	2000 01 02	704	0.7+	0.6+
1971 04 16	675	0.3−	1.6−	1999 12 12	704	0.4−	0.3−	2000 01 02	704	1.2+	1.2+

1186 T-2 = 1996 KP₄ = 1998 RB₃₈ = 1999 XE₃₉

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.15629412	ω	251.00568	+0.17887547	−0.98376023		
<i>a</i>	3.4132986	Ω	188.72994	+0.93540977	+0.17471187		
<i>e</i>	0.0527112	<i>i</i>	5.60015	+0.30497889	+0.04112870		
<i>P</i>	6.31	<i>H</i>	13.0	<i>G</i>	0.15	<i>U</i>	1

Residuals in seconds of arc

1973 09 19	675	1.8−	1.0−	1998 08 17	704	1.6+	0.8−	1999 12 03	699	0.2+	0.5−
1973 09 19	675	0.2−	1.2−	1998 08 17	704	(3.0−	0.4+)	1999 12 03	699	0.6+	0.7−
1973 09 20	675	0.4+	1.9−	1998 09 14	704	0.5−	1.7+	1999 12 03	699	0.7+	0.5−
1973 09 24	675	0.7+	0.7−	1998 09 14	704	0.7+	0.1+	1999 12 06	704	0.2−	0.1−
1973 09 24	675	0.8−	1.5−	1998 09 14	704	0.4+	1.3−	1999 12 06	704	0.1+	0.0
1973 09 25	675	(2.3−	2.6−)	1998 09 14	704	1.2+	0.1+	1999 12 06	704	0.1+	0.1−
1973 09 25	675	1.6−	1.2−	1998 09 18	704	1.2−	1.1+	1999 12 06	704	0.1+	0.6+
1973 09 29	675	0.8+	0.5−	1998 09 18	704	1.1−	1.1+	1999 12 06	704	0.7+	0.2−
1973 09 29	675	1.5+	0.8−	1998 09 18	704	0.7+	0.9+	1999 12 08	704	0.2−	0.1−
1973 09 30	675	0.9+	0.7+	1998 09 18	704	0.5−	1.0+	1999 12 08	704	0.1−	0.1+
1973 09 30	675	0.9+	0.3+	1998 09 18	704	1.9−	0.9+	1999 12 08	704	0.5−	0.4+
1973 10 04	675	0.8+	1.0+	1999 11 04	704	0.4−	1.1−	1999 12 08	704	0.6−	0.2+
1973 10 04	675	0.2−	1.0+	1999 11 04	704	0.7−	0.9−	1999 12 08	704	1.1−	0.1+
1973 10 05	675	0.3+	0.5+	1999 11 04	704	0.4−	0.6−	1999 12 14	704	0.4−	1.3+
1973 10 05	675	(2.7+	1.5+)	1999 11 04	704	0.4+	0.2+	1999 12 14	704	0.3−	1.2+
1996 05 22	809	(2.7+	2.9+)	1999 11 04	704	0.1−	0.2+	1999 12 14	704	0.2−	1.4+
1996 05 22	809	(2.0+	2.3+)	1999 11 17	704	1.0+	0.7−	1999 12 30	699	0.2−	1.3+
1996 05 22	809	(2.2+	2.2+)	1999 11 17	704	0.4+	1.1−	1999 12 30	699	0.0	1.7+
1996 05 24	809	0.4+	0.6+	1999 11 17	704	0.4+	0.2−	2000 01 07	704	1.3−	1.2+
1996 05 24	809	0.6+	0.8+	1999 11 17	704	0.2−	0.2−	2000 01 07	704	0.4−	0.1+
1996 05 24	809	0.4−	0.8+	1999 11 17	704	0.4+	0.3+	2000 01 07	704	1.2−	0.5+
1998 08 17	704	0.0	0.7+	1999 11 28	049	1.7+	0.6−	2000 01 07	704	1.3−	0.2+
1998 08 17	704	0.5−	0.6+	1999 11 28	049	(2.1+	0.7−)				
1998 08 17	704	1.4−	0.6+	1999 11 28	049	1.8+	0.5−				

1305 T-2 = 1999 YV₁₄

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27343628	ω	353.84001	+0.99504917	+0.09937917		
<i>a</i>	2.3508881	Ω	0.45987	−0.08531148	+0.85907140		
<i>e</i>	0.1323708	<i>i</i>	6.87213	−0.05098131	+0.50211564		
<i>P</i>	3.60	<i>H</i>	15.2	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1973 09 19	675	0.2+	0.2−	1973 09 30	675	1.8−	1.4+	1998 08 17	704	0.7+	0.4+
1973 09 19	675	0.8−	1.2+	1973 09 30	675	0.7−	1.9+	1998 08 29	699	1.2−	0.5+
1973 09 24	675	0.2−	0.8+	1973 10 04	675	0.1−	1.2−	1998 08 29	699	0.7+	0.1−
1973 09 24	675	0.2−	0.1+	1973 10 04	675	0.1−	0.9−	1998 08 29	699	0.2+	0.7−
1973 09 25	675	1.1−	1.3−	1973 10 05	675	0.1−	1.0−	1999 12 31	461	0.2−	0.1+
1973 09 25	675	1.4+	1.3−	1973 10 05	675	0.5−	0.2−	1999 12 31	461	0.3−	0.1+
1973 09 25	675	0.6+	0.6−	1998 08 17	704	0.3−	0.3+	1999 12 31	461	0.3−	0.0
1973 09 25	675	0.9+	0.9−	1998 08 17	704	0.1+	0.2−	2000 01 02	461	0.1+	0.2−
1973 09 29	675	0.8+	0.9+	1998 08 17	704	0.5−	0.9+	2000 01 02	461	0.3+	0.2−
1973 09 29	675	1.5+	1.4+	1998 08 17	704	0.4+	1.4−	2000 01 02	461	0.2+	0.0

2192 T-2 = 2000 AS₁₈₁

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.27110826	ω	207.79148	+0.86887792	−0.49500825		
<i>a</i>	2.3643270	Ω	181.89475	+0.47464130	+0.83550041		
<i>e</i>	0.1708012	<i>i</i>	7.36989	+0.14059443	+0.23854958		
<i>P</i>	3.64	<i>H</i>	15.5	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1973 09 19	675	2.1+	0.4+	1973 09 30	675	(1.1+	2.7+)	1999 12 14	704	0.3−	0.3−
1973 09 19	675	0.9−	0.6+	1973 09 30	675	0.3+	0.4+	1999 12 14	704	0.5+	0.4+
1973 09 20	675	1.2−	1.0−	1973 09 30	675	2.1+	2.2+	1999 12 14	704	0.2+	0.2+
1973 09 24	675	1.0−	0.8+	1973 10 04	675	0.2−	0.2+	2000 01 07	704	0.0	0.2−
1973 09 24	675	1.4−	0.8+	1973 10 04	675	(1.3−	3.7+)	2000 01 07	704	0.0	0.5−
1973 09 25	675	(0.7+	2.7−)	1973 10 04	675	0.6−	0.4+	2000 01 07	704	0.4+	0.0
1973 09 25	675	0.4+	1.0−	1973 10 04	675	1.7−	2.4+	2000 01 07	704	0.1+	0.1+
1973 09 29	675	0.8−	0.5+	1973 10 05	675	0.5−	1.3−	2000 01 07	704	0.0	0.0
1973 09 29	675	2.0+	0.5−	1973 10 05	675	(3.0−	1.8+)	2000 01 11	704	0.1−	0.4−
1973 09 29	675	1.7−	0.6−	1973 10 05	675	0.4+	2.0−	2000 01 11	704	0.2+	0.3−
1973 09 29	675	1.6+	0.9−	1973 10 05	675	(2.9−	0.4+)	2000 01 11	704	0.4−	0.4+
1973 09 30	675	1.0+	1.5−	1999 12 14	704	0.5−	0.6+				

3035 T-2 = 1999 RD₁₅₇ = 1999 SH₅Id. A. Doppler (*MPC* 37251), M. E. Sansaturio (d)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.26440388	ω	263.48573	+0.66615316	−0.74528503		
<i>a</i>	2.4041275	Ω	144.69119	+0.70205521	+0.61390136		
<i>e</i>	0.1893152	<i>i</i>	2.78769	+0.25171103	+0.26014486		
<i>P</i>	3.73	<i>H</i>	16.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1973 09 19	675	0.6+	0.0	1997 02 04	566	0.3+	1.8+	1999 09 13	704	0.2−	0.0
1973 09 19	675	0.6+	0.8−	1999 08 12	699	0.8−	0.0	1999 09 13	704	(2.2+	0.4−)
1973 09 20	675	1.3+	0.6−	1999 08 12	699	0.0	0.5+	1999 09 30	704	0.3−	1.5+
1973 09 24	675	0.3+	2.3−	1999 08 12	699	0.3−	0.2+	1999 09 30	704	0.5−	1.4+
1973 09 24	675	0.9−	1.6−	1999 09 07	704	0.6+	0.4+	1999 09 30	704	0.5−	1.7+
1973 09 25	675	(1.0+	2.8−)	1999 09 07	704	0.2+	0.1−	1999 09 30	704	0.3+	1.9+
1973 09 25	675	(3.3+	2.2−)	1999 09 07	704	0.6−	0.2+	1999 09 30	704	1.3−	1.3+
1973 09 29	675	0.4+	0.8−	1999 09 07	704	0.4−	0.0	1999 10 01	704	0.4+	1.4+
1973 09 29	675	0.2−	0.6+	1999 09 07	704	0.2−	0.0	1999 10 01	704	0.1+	0.4+
1973 09 30	675	0.3−	1.2−	1999 09 09	704	0.3+	0.4+	1999 10 01	704	0.1+	0.2−
1973 09 30	675	0.8−	1.8−	1999 09 09	704	0.1−	1.1+	1999 10 01	704	0.1+	0.3−
1973 10 04	675	(3.0+	0.2+)	1999 09 09	704	0.4+	1.0+	1999 10 01	704	0.7−	0.4+
1973 10 04	675	2.0+	1.0−	1999 09 09	704	0.1−	0.4+	1999 10 01	704	0.2+	0.0
1973 10 05	675	0.0	0.7−	1999 09 09	704	0.7−	0.6+	1999 10 01	704	1.3−	0.7+
1973 10 05	675	1.1+	0.4−	1999 09 13	704	0.3+	1.0+	1999 10 01	704	0.4−	0.3+
1997 02 04	566	0.6+	1.8+	1999 09 13	704	0.1+	0.0				
1997 02 04	566	0.2+	1.7+	1999 09 13	704	0.2−	0.8−				

3356 T-2 = 1983 AU = 1999 XU₇

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>		(2000.0)		P		Q	
<i>n</i>	0.23150744	ω	83.09144	−0.11591303	−0.99307104		
<i>a</i>	2.6267944	Ω	13.61045	+0.87576143	−0.11136875		
<i>e</i>	0.3037124	<i>i</i>	4.71450	+0.46862148	−0.03750877		
<i>P</i>	4.26	<i>H</i>	14.7	<i>G</i>	0.15	<i>U</i>	2

Residuals in seconds of arc

1973 09 19	675	1.4+	0.4−	1999 12 03	699	0.5−	0.6+	1999 12 15	704	0.4+	0.1+
1973 09 19	675	0.3−	0.6+	1999 12 03	699	0.4−	0.7+	1999 12 15	704	0.5−	0.7+
1973 09 20	675	1.3+	0.1−	1999 12 03	699	0.5−	0.9+	1999 12 31	699	0.0	0.0
1973 09 24	675	1.2−	0.6−	1999 12 04	678	0.8−	0.2−	1999 12 31	699	0.0	0.1+
1973 09 24	675	0.2+	0.7−	1999 12 04	678	0.6−	0.2+	1999 12 31	699	0.1+	0.4+

2000 JAN. 24

M.P.C. 38007

1973 09 25	675	0.7+	0.5-	1999 12 05	678	0.1-	0.8+	2000 01 01	739	0.1+	0.8-
1973 09 25	675	0.1-	0.2-	1999 12 05	678	0.8-	0.1-	2000 01 01	739	0.1+	0.7-
1973 09 29	675	0.8-	0.1+	1999 12 10	704	1.0+	1.0-	2000 01 01	739	0.1+	0.7-
1973 10 04	675	0.6+	0.3-	1999 12 10	704	1.6+	0.2-	2000 01 02	704	0.1-	0.3-
1973 10 04	675	0.9-	0.4+	1999 12 10	704	1.0+	0.1+	2000 01 02	704	0.0	0.6-
1983 01 12	688	(0.0	3.2-)	1999 12 10	704	1.5+	0.8-	2000 01 02	704	0.0	0.8-
1983 01 12	688	0.4-	1.6-	1999 12 10	704	0.2+	1.7+	2000 01 02	704	0.3+	0.5-
1996 03 22	566	(0.8-	4.3-)	1999 12 13	699	0.2-	0.3+	2000 01 02	704	0.3+	0.8-
1996 03 22	566	(1.4-	4.8-)	1999 12 13	699	0.5-	0.7+	2000 01 05	106	0.5-	0.4+
1996 03 22	566	(0.8+	6.2-)	1999 12 13	699	0.3-	0.4+	2000 01 05	106	0.2-	0.1+
1999 11 11	699	0.8-	0.9+	1999 12 15	704	0.3+	0.7-	2000 01 05	106	0.9-	0.2+
1999 11 11	699	0.2+	0.8+	1999 12 15	704	1.0+	0.3+				
1999 11 11	699	0.1+	0.6+	1999 12 15	704	0.5-	0.5-				

4079 T-2 = 2000 AX₇

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	122.15061		(2000.0)		P		Q
<i>n</i>	0.23400340	ω	312.39476	+0.85081945		+0.52488105	
<i>a</i>	2.6080822	Ω	15.99501	-0.45203504		+0.75501751	
<i>e</i>	0.1710418	<i>i</i>	5.12606	-0.26790031		+0.39299929	
<i>P</i>	4.21	<i>H</i>	14.6	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 19	675	0.6-	1.1-	1973 09 25	675	(1.6+	3.0-)	1998 08 17	704	0.2-	1.1+
1973 09 19	675	0.7+	0.8-	1973 09 25	675	0.5+	0.1-	1998 08 17	704	0.4-	0.4+
1973 09 19	675	0.3+	2.0-	1973 09 29	675	(2.3+	3.5-)	1998 08 29	699	0.4+	1.4-
1973 09 19	675	(3.1-	0.3+)	1973 09 29	675	(3.2+	3.0-)	1998 08 29	699	0.3+	1.2-
1973 09 20	675	0.9+	2.2+	1973 09 30	675	0.8+	0.6+	1998 08 29	699	(0.1+	2.5-)
1973 09 20	675	0.1-	1.3+	1973 09 30	675	2.3+	0.1-	2000 01 02	704	0.3-	0.1+
1973 09 24	675	0.1+	0.8-	1973 10 04	675	1.3-	0.8+	2000 01 02	704	0.1-	0.2+
1973 09 24	675	0.0	0.1-	1973 10 04	675	1.2-	2.0+	2000 01 02	704	0.0	1.0+
1973 09 24	675	0.7-	0.7-	1973 10 05	675	0.5-	0.4-	2000 01 04	704	0.2-	0.0
1973 09 24	675	0.8-	0.2+	1973 10 05	675	1.6-	0.2-	2000 01 04	704	0.1-	0.5-
1973 09 25	675	(1.1+	3.4-)	1998 08 17	704	(2.6+	2.8-)	2000 01 04	704	0.2-	1.0-
1973 09 25	675	1.2+	0.7-	1998 08 17	704	0.0	0.8+	2000 01 04	704	0.7+	0.2-

5167 T-2 = 1998 XP₃₈ = 2000 AG₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	27.86697		(2000.0)		P		Q
<i>n</i>	0.08487385	ω	142.50496	-0.07687304		-0.98738691	
<i>a</i>	5.1280641	Ω	311.45310	+0.86422137		+0.00324034	
<i>e</i>	0.0407735	<i>i</i>	10.64200	+0.49720415		-0.15829274	
<i>P</i>	11.61	<i>H</i>	11.3	<i>G</i>	0.15	<i>U</i>	4

Residuals in seconds of arc

1973 09 20	675	0.2+	0.2-	1998 12 14	704	1.4-	0.8-	2000 01 03	587	0.3+	0.1-
1973 09 20	675	2.4+	1.1-	1998 12 14	704	0.3+	0.0	2000 01 03	587	0.6+	0.4-
1973 09 24	675	1.3+	0.2-	1998 12 17	704	0.1+	0.7+	2000 01 04	704	0.1+	0.8-
1973 09 24	675	0.4-	1.2-	1998 12 17	704	0.4-	0.7-	2000 01 04	704	0.9-	0.5+
1973 09 25	675	1.4-	0.7+	1998 12 17	704	1.1+	0.0	2000 01 04	704	0.6-	0.9+
1973 09 25	675	2.0-	0.2-	1998 12 17	704	0.5-	0.7-	2000 01 04	704	0.1-	0.6-
1973 09 29	675	1.0-	0.7-	1999 12 07	704	1.5+	1.3+	2000 01 04	704	0.5-	0.4-
1973 09 29	675	0.7-	0.5+	1999 12 07	704	0.1+	0.2+	2000 01 05	587	0.0	0.9+
1973 09 30	675	0.1-	0.1+	1999 12 07	704	0.1-	1.0+	2000 01 05	587	0.3-	0.4-
1973 09 30	675	0.3-	0.5+	1999 12 18	699	0.9+	1.1+	2000 01 05	587	0.3+	0.1+
1973 10 04	675	0.3+	0.0	1999 12 18	699	0.4-	1.4+	2000 01 07	587	0.1+	0.5-
1973 10 04	675	0.4+	1.0+	1999 12 18	699	0.7+	1.3+	2000 01 07	587	0.0	0.3-
1973 10 05	675	0.1-	1.5+	2000 01 03	704	0.1+	0.5+	2000 01 11	587	0.2+	0.1-
1973 10 05	675	0.4+	0.9+	2000 01 03	704	0.1+	0.1-	2000 01 11	587	0.2+	0.2-
1998 12 14	704	0.4+	0.4-	2000 01 03	704	0.2-	0.3-	2000 01 15	587	0.1+	0.7-
1998 12 14	704	0.2-	0.1-	2000 01 03	704	0.4-	0.0	2000 01 15	587	0.2+	0.7-
1998 12 14	704	0.4+	1.5-	2000 01 03	704	0.5-	0.2-				

1041 T-3 = 1999 XV₁₈₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	65.15714		(2000.0)		P		Q
<i>n</i>	0.22752765	ω	36.93626	+0.98862534		-0.13670606	
<i>a</i>	2.6573367	Ω	330.73440	+0.08783342		+0.86320881	
<i>e</i>	0.1996536	<i>i</i>	7.36902	+0.12208694		+0.48598560	
<i>P</i>	4.33	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 11	675	0.1+	0.7-	1977 10 17	675	1.2+	0.5+	1999 12 15	704	(0.2+	2.2+)
1977 10 11	675	0.0	0.1+	1977 10 22	675	2.0+	0.0	1999 12 15	704	0.2+	0.6+
1977 10 12	675	0.9-	0.1+	1977 10 22	675	0.3-	1.7-	1999 12 15	704	0.6-	1.3+
1977 10 12	675	0.2-	1.2+	1999 12 12	704	0.8+	0.2+	1999 12 15	704	1.7-	1.1+
1977 10 16	675	1.2-	0.3-	1999 12 12	704	0.5+	0.5-	2000 01 02	704	0.4+	0.8-
1977 10 16	675	0.7-	0.1+	1999 12 12	704	0.8+	0.7-	2000 01 02	704	0.3-	0.1-
1977 10 17	675	0.3+	0.6+	1999 12 12	704	0.2+	0.7-	2000 01 02	704	0.4-	0.3-

1085 T-3 = 1998 QJ₈₈ = 1999 XG₃₂

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	199.44710		(2000.0)		P		Q
<i>n</i>	0.27979264	ω	20.62902	+0.36347207		+0.92501354	
<i>a</i>	2.3151468	Ω	270.81764	-0.86948745		+0.29420112	
<i>e</i>	0.1176197	<i>i</i>	6.35202	-0.33448413		+0.24040725	
<i>P</i>	3.52	<i>H</i>	14.0	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 10 07	675	0.2+	1.0-	1998 08 24	704	0.0	0.1+	1999 12 07	704	0.6+	1.0-
1977 10 11	675	0.3-	1.1+	1998 08 27	704	0.5+	0.0	1999 12 07	704	0.5+	1.3-
1977 10 11	675	0.1-	0.6+	1998 08 27	704	0.2+	0.4-	1999 12 07	704	0.5+	0.5-
1977 10 12	675	0.5+	0.6+	1998 08 27	704	0.1+	0.5-	1999 12 31	699	0.7+	0.2+
1977 10 12	675	0.8-	0.7+	1998 08 27	704	0.4-	0.5-	1999 12 31	699	0.4-	0.8+
1977 10 16	675	0.6-	2.2-	1998 08 27	704	0.3+	1.4-	1999 12 31	699	0.1-	1.2+
1977 10 16	675	0.5-	0.4-	1998 09 18	699	0.8+	0.6-	2000 01 05	704	0.4-	0.1+
1977 10 17	675	0.6+	0.9+	1998 09 18	699	0.2+	0.1-	2000 01 05	704	0.2-	0.2+
1977 10 17	675	0.8+	0.4+	1998 09 18	699	0.0	0.8-	2000 01 05	704	0.2-	0.3+
1977 10 22	675	(0.5-	3.1-)	1998 12 09	704	0.3-	1.1+	2000 01 05	704	0.1+	0.4-
1977 10 22	675	(0.6+	5.0-)	1998 12 09	704	0.2-	0.3-	2000 01 05	704	0.5-	0.3-
1998 06 30	704	0.4+	0.4+	1998 12 09	704	1.4-	1.7+	2000 01 06	704	0.9-	0.9-
1998 06 30	704	1.1-	0.3+	1998 12 09	704	0.6+	0.2-	2000 01 06	704	1.3-	0.1-
1998 06 30	704	0.1+	0.4-	1998 12 09	704	(2.6-	1.0-)	2000 01 06	704	0.2-	0.1+
1998 06 30	704	(2.3-	1.2-)	1999 12 05	699	0.6+	0.1+	2000 01 06	704	0.0	0.3+
1998 08 19	704	0.1+	0.2+	1999 12 05	699	0.4+	0.9+	2000 01 06	704	0.4-	0.0
1998 08 19	704	0.7-	0.7+	1999 12 05	699	0.3-	0.7+	2000 01 06	704	0.1+	0.4+
1998 08 19	704	0.8-	0.0	1999 12 06	704	0.3+	0.9+	2000 01 06	704	0.3-	0.1-
1998 08 19	704	0.5+	0.2+	1999 12 06	704	0.5+	0.3-	2000 01 06	704	0.5-	0.0
1998 08 19	704	1.6-	0.0	1999 12 06	704	0.2-	1.3-	2000 01 06	704	0.5-	0.3-
1998 08 24	704	0.7+	0.1-	1999 12 06	704	0.0	1.2+	2000 01 06	704	0.2+	0.3-
1998 08 24	704	0.2+	0.7+	1999 12 06	704	0.5+	0.2-	2000 01 07	106	0.1-	0.1+
1998 08 24	704	1.1+	0.0	1999 12 07	704	0.9+	1.1-	2000 01 07	106	0.0	0.0
1998 08 24	704	0.7+	0.1-	1999 12 07	704	0.6+	0.7-	2000 01 07	106	0.5+	0.4-

3326 T-3 = 1998 MZ₁₀ = 1999 XP₁₃

Id. M. E. Sansaturio

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	151.04779		(2000.0)		P		Q
<i>n</i>	0.27477108	ω	96.43522	+0.40634450		+0.91231972	
<i>a</i>	2.3432684	Ω	197.80281	-0.89002252		+0.38267755	
<i>e</i>	0.1641577	<i>i</i>	9.51970	-0.20674635		+0.14570735	
<i>P</i>	3.59	<i>H</i>	14.8	<i>G</i>	0.15	<i>U</i>	3

Residuals in seconds of arc

1977 10 07	675	0.2+	0.9-	1998 06 19	704	0.8-	0.2-	1999 12 06	704	0.1-	0.7+</

1977 10 12	675	1.2+	0.3+	1998 06 25	704	1.1−	1.2−	1999 12 07	704	0.1−	0.1−
1977 10 12	675	0.5+	1.1−	1998 06 25	704	0.1−	0.1+	1999 12 07	704	0.1+	0.2−
1977 10 16	675	1.0−	0.5+	1998 06 25	704	0.6+	0.8−	1999 12 14	704	0.8+	1.2+
1977 10 16	675	0.0	0.6+	1998 06 25	704	0.3−	0.9+	1999 12 14	704	0.6+	0.5−
1977 10 17	675	1.0+	1.4−	1998 06 25	704	1.1+	0.2−	1999 12 14	704	0.8+	0.9−
1977 10 17	675	0.4+	0.1+	1999 12 05	704	1.8−	0.9+	1999 12 14	704	(1.2−	2.6−)
1977 10 21	675	(0.4−	2.8+)	1999 12 05	704	0.3−	0.3−	2000 01 07	704	0.4−	0.6−
1977 10 21	675	1.5−	1.8+	1999 12 05	704	0.4+	0.6−	2000 01 07	704	0.6−	0.1−
1977 10 22	675	1.5+	0.8−	1999 12 06	704	0.6+	1.6−	2000 01 07	704	1.2+	0.5+
1998 06 19	704	0.4−	0.8+	1999 12 06	704	0.3−	0.2+	2000 01 07	704	1.6−	1.8+
1998 06 19	704	0.7−	1.9+	1999 12 06	704	0.2−	0.3−				

3337 T-3 = 2000 AF₄₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	74.00640		(2000.0)	P	Q		
<i>n</i>	0.23052827	ω	289.15992	+0.86452028	−0.50196738		
<i>a</i>	2.6342273	Ω	100.97734	+0.47022202	+0.79013332		
<i>e</i>	0.0902586	<i>i</i>	1.46907	+0.17747097	+0.35173581		
<i>P</i>	4.28	<i>H</i>	15.1	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 07	675	0.8−	1.3−	1977 10 17	675	3.0−	0.8+	2000 01 03	704	0.8+	0.5−
1977 10 11	675	2.1−	0.8+	1977 10 21	675	1.0−	0.3+	2000 01 05	704	0.8+	0.6−
1977 10 11	675	2.2−	1.9+	1977 10 21	675	2.6−	1.0+	2000 01 05	704	0.1−	0.4−
1977 10 12	675	0.8−	1.4−	1977 10 22	675	0.4+	1.3−	2000 01 05	704	0.6−	0.6+
1977 10 12	675	1.0+	1.6−	1977 10 22	675	0.5−	2.2−	2000 01 05	704	0.1−	0.3+
1977 10 16	675	0.2−	1.1−	2000 01 03	704	0.4−	0.9+	2000 01 05	704	0.7+	0.2+
1977 10 16	675	2.0−	1.1−	2000 01 03	704	0.1−	0.5+				
1977 10 17	675	1.1−	0.8−	2000 01 03	704	1.0−	1.0−				

3500 T-3 = 1999 XZ₁₉₆

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	123.34293		(2000.0)	P	Q		
<i>n</i>	0.27574233	ω	308.29244	+0.92237451	+0.38195671		
<i>a</i>	2.3377627	Ω	29.38355	−0.30739762	+0.81626558		
<i>e</i>	0.1355255	<i>i</i>	6.75866	−0.23394865	+0.43338156		
<i>P</i>	3.57	<i>H</i>	15.3	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.8+	1.2−	1977 10 17	675	1.1−	0.1−	1999 12 12	704	0.1+	0.3+
1977 10 11	675	0.5−	1.0+	1977 10 21	675	0.5+	0.4−	1999 12 12	704	0.9+	0.3−
1977 10 11	675	1.1−	0.2+	1977 10 21	675	0.4−	0.1−	1999 12 15	704	1.4−	1.1−
1977 10 12	675	0.4−	0.4+	1977 10 22	675	1.3+	0.2−	1999 12 15	704	0.8+	0.4+
1977 10 12	675	1.3−	0.0	1977 10 22	675	(2.9+	0.3−)	1999 12 15	704	0.5+	0.2+
1977 10 16	675	0.9−	0.5−	1999 12 12	704	0.4−	0.1−	1999 12 15	704	0.3−	0.2+
1977 10 16	675	0.3−	0.2−	1999 12 12	704	0.4+	0.2+				
1977 10 17	675	0.8−	1.2−	1999 12 12	704	0.6−	0.2+				

3524 T-3 = 1999 RC₁₆

Id. M. E. Sansaturio

Object	<i>H</i>	<i>G</i>	Epoch	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	<i>a</i>	Obs.	Opp. & Arc	rms Perts	<i>U</i>	Computer	<i>MPC</i>	Object
(151)	9.24	0.15	20000226	162.51474	133.17833	39.13188	6.45265	0.0352293	2.5908485	176	41 1875–1999	0.55	M-v 0	Goffin	16844	(151)
(155)	11.39	0.15	20000226	22.65273	45.61528	41.13355	11.39501	0.2736145	2.7588875	89	16 1875–1999	0.54	M-v 0	Goffin	22573	(155)
(264)	8.42	0.15	20000226	73.59653	339.15375	49.81566	10.43698	0.1366841	2.7967372	75	30 1893–1999	1.06	M-v 1	Williams	22573	(264)
(413)	10.18	0.15	20000226	99.38416	252.17797	104.22931	18.72762	0.3460548	2.5808883	160	24 1917–1999	0.54	M-v 0	Goffin	36496	(413)

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	9.20396		(2000.0)	P	Q		
<i>n</i>	0.26688022	ω	189.40296	+0.81333982	−0.58148652		
<i>a</i>	2.3892327	Ω	206.17992	+0.53650553	+0.76211320		
<i>e</i>	0.1670211	<i>i</i>	2.43642	+0.22503368	+0.28470492		
<i>P</i>	3.69	<i>H</i>	16.1	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	(0.5+	5.8−)	1999 09 07	704	0.2−	0.1+	1999 09 10	704	0.9−	0.1+
1977 10 11	675	0.6+	1.6+	1999 09 08	704	0.3+	0.2−	1999 09 10	704	0.5+	0.1−
1977 10 11	675	0.2−	0.6+	1999 09 08	704	0.2−	0.2−	1999 09 10	704	0.4−	0.9−
1977 10 12	675	0.4−	0.3+	1999 09 08	704	0.1+	0.5−	1999 09 10	704	0.1−	0.2+
1977 10 12	675	0.7+	0.0	1999 09 08	704	0.2−	0.3−	1999 09 10	704	1.0−	0.2−
1977 10 16	675	0.2+	0.4+	1999 09 09	704	0.3+	0.2−	1999 09 14	704	1.0+	1.1+
1977 10 16	675	0.3−	1.4−	1999 09 09	704	0.1+	0.0	1999 09 14	704	0.6+	0.4+
1977 10 17	675	1.4−	0.9−	1999 09 09	704	0.0	0.5−	1999 09 14	704	0.1+	0.2−
1977 10 17	675	0.7−	0.8−	1999 09 09	704	0.4+	0.0	1999 09 14	704	0.7−	0.2+
1977 10 22	675	0.5+	0.6−	1999 09 09	704	0.2+	0.0	1999 10 06	704	0.1−	0.3+
1977 10 22	675	1.2+	0.6+	1999 09 09	704	0.1+	0.1+	1999 10 06	704	0.7−	0.7+
1999 09 07	704	0.5−	0.1+	1999 09 09	704	0.4+	0.9−	1999 10 06	704	0.1+	0.1−
1999 09 07	704	0.2+	0.7+	1999 09 09	704	0.0	0.3−	1999 10 06	704	0.0	0.1+
1999 09 07	704	0.1−	0.8+	1999 09 09	704	0.1+	1.2−	1999 10 06	704	0.3+	0.3+
1999 09 07	704	0.3+	0.7+	1999 09 10	704	0.1+	0.1+				

4213 T-3 = 2000 AU₃₅

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	90.52359		(2000.0)	P	Q		
<i>n</i>	0.27450412	ω	292.96314	+0.98605737	−0.13343795		
<i>a</i>	2.3447874	Ω	74.82099	+0.16317285	+0.89254191		
<i>e</i>	0.1541167	<i>i</i>	5.91300	−0.03264182	+0.43077053		
<i>P</i>	3.59	<i>H</i>	15.4	<i>G</i>	0.15	<i>U</i>	5

Residuals in seconds of arc

1977 10 07	675	0.4+	0.0	1977 10 17	675	1.5+	1.2−	2000 01 03	704	0.1+	0.4−
1977 10 11	675	0.4−	0.1+	1977 10 17	675	0.1−	0.9−	2000 01 03	704	0.1+	0.1−
1977 10 11	675	0.2+	0.6+	1977 10 21	675	0.4+	0.3−	2000 01 03	704	0.6+	0.1−
1977 10 12	675	0.1−	0.3+	1977 10 21	675	0.1+	0.1+	2000 01 04	704	0.7−	0.1+
1977 10 12	675	0.3−	0.9−	1977 10 22	675	0.6−	0.1+	2000 01 04	704	0.4−	0.4+
1977 10 16	675	1.4−	0.7+	1977 10 22	675	0.2+	0.6+	2000 01 04	704	0.0	0.4+
1977 10 16	675	0.1+	0.9+	2000 01 03	704	0.3+	0.4+	2000 01 04	704	0.1−	0.7−

5155 T-3 = 2000 AR₆₃

Epoch 2000 Feb. 26.0 TT = JDT 2451600.5

<i>M</i>	91.60778		(2000.0)	P	Q		
<i>n</i>	0.18883591	ω	284.67391	+0.79444067	−0.58119802		
<i>a</i>	3.0089363	Ω	111.16135	+0.60410595	+0.72627209		
<i>e</i>	0.1040895	<i>i</i>	10.89567	+0.06261007	+0.36706637		
<i>P</i>	5.22	<i>H</i>	13.3	<i>G</i>	0.15	<i>U</i>	6

Residuals in seconds of arc

1977 10 11	675	0.9−	0.4+	1977 10 21	675	0.5+	0.8−	2000 01 04	704	0.2−	1.3+
1977 10 11	675	0.9−	1.3+	1977 10 21	675	0.6+	0.4+	2000 01 06	704	0.1−	1.2−
1977 10 12	675	1.3−	0.1−	1977 10 22	675	0.8+	0.4−	2000 01 06	704	0.3+	0.8−
1977 10 12	675	0.1+	0.0	2000 01 04	704	0.8−	1.0+	2000 01 06	704	0.3+	1.1−
1977 10 16	675	0.5+	0.5−	2000 01 04	704	0.1−	0.1+				
1977 10 16	675	0.6+	0.4−	2000 01 04	704	0.5+	0.8+				

(640)	8.99	0.15	20000226	217.66901	35.96774	235.09270	13.38797	0.0801660	3.1567946	143	23	1907-1999	0.82	M-v	1	Williams	16390	(640)
(645)	9.94	0.15	20000226	15.88462	81.54908	0.77761	7.02872	0.1577186	3.2010667	118	26	1910-1999	1.01	M-v	1	Williams	18085	(645)
(648)	9.68	0.15	20000226	27.56368	172.48289	291.77742	9.77323	0.1918071	3.2137211	77	28	1907-1999	1.03	M-v	1	Williams	25187	(648)
(658)	10.54	0.15	20000226	95.62494	58.65987	351.44445	1.51271	0.0615868	2.8538148	144	32	1906-1999	0.91	M-v	1	Williams	16390	(658)
(721)	9.26	0.15	20000226	53.36841	356.47188	38.83590	8.34819	0.1101400	3.5540029	195	31	1911-1999	0.73	M-v	0	Williams	16392	(721)
(732)	10.7	0.15	20000226	264.22053	66.12059	173.46988	10.97755	0.0435731	2.4560554	143	27	1913-2000	0.88	M-v	1	Williams	27543	(732)
(792)	10.33	0.15	20000226	2.24744	227.61307	265.40283	8.60660	0.1318052	2.6213003	120	22	1915-1999	0.84	M-v	1	Williams	22666	(792)
(1016)	12.0	0.15	20000226	68.95700	52.62307	9.04817	6.04067	0.1277018	2.2191505	122	23	1924-1999	0.96	M-v	1	Williams	25188	(1016)
(1037)	13.6	0.15	20000226	109.70387	169.21822	200.88319	5.89533	0.1911147	2.2544400	51	11	1924-2000	0.89	M-v	2	Williams	36496	(1037)
(1177)	9.30	0.15	20000226	55.83564	221.96453	252.45384	15.10068	0.0256824	3.3501895	108	31	1930-1999	0.80	M-v	1	Williams	17798	(1177)
(1191)	10.6	0.15	20000226	331.20481	57.49768	134.92157	18.48222	0.0494765	2.8914009	67	16	1931-1999	0.94	M-v	1	Williams	19984	(1191)
(1192)	12.92	0.15	20000226	5.65176	130.82904	1.56309	23.85345	0.2571841	2.3670773	58	9	1931-1999	0.99	M-v	2	Williams	27544	(1192)
(1217)	12.5	0.15	20000226	247.79147	91.86770	148.52712	5.14750	0.1553350	2.3519314	121	13	1925-2000	0.66	M-v	1	Williams	25036	(1217)
(1218)	12.9	0.15	20000226	4.18658	69.06095	63.92706	3.16114	0.1082415	2.2629122	129	16	1932-2000	0.78	M-v	1	Williams	26379	(1218)
(1277)	11.05	0.15	20000226	333.48840	45.83788	247.67110	6.99437	0.2406050	2.6970961	140	18	1933-1999	0.80	M-v	1	Williams	16556	(1277)
(1280)	10.33	0.15	20000226	144.05911	96.69724	293.41052	6.45699	0.0631007	3.4115072	127	19	1933-1999	0.90	M-v	1	Williams	17601	(1280)
(1320)	10.4	0.15	20000226	248.96821	205.49847	72.24991	19.85787	0.2351827	2.9836835	59	16	1934-1999	0.93	M-v	1	Williams	17408	(1320)
(1329)	10.90	0.15	20000226	188.10799	165.29290	132.29545	14.47921	0.1729167	2.6164934	68	20	1933-1999	1.05	M-v	1	Williams	1989	(1329)
(1355)	13.05	0.15	20000226	266.13461	340.37485	225.35124	22.82726	0.0447412	1.8533558	71	12	1935-1999	0.80	M-v	2	Williams	24717	(1355)
(1388)	8.9	0.15	20000226	157.80229	258.44015	54.58432	11.19466	0.0970940	3.0150235	131	18	1935-1999	0.77	M-v	1	Williams	30067	(1388)
(1404)	9.0	0.15	20000226	73.14082	59.81156	332.98147	18.01779	0.1145093	5.2950014	85	19	1936-1999	0.99	M-v	0	Williams	16556	(1404)
(1424)	9.5	0.15	20000226	166.57889	302.68236	43.20689	9.20400	0.0696409	3.1845115	84	25	1918-1999	1.07	M-v	1	Williams	14764	(1424)
(1440)	11.8	0.15	20000226	45.92750	350.41903	47.04231	2.28967	0.2019071	3.1430926	86	10	1937-1999	0.92	M-v	1	Williams	36497	(1440)
(1460)	13.1	0.15	20000226	129.85061	358.16233	74.43759	6.69343	0.1883797	2.5428827	72	10	1937-1999	0.89	M-v	1	Williams	24371	(1460)
(1476)	12.9	0.15	20000226	169.99944	349.39290	330.74210	6.32655	0.1901637	2.2803644	93	13	1936-2000	0.81	M-v	1	Williams	17409	(1476)
(1528)	12.4	0.15	20000226	309.06797	59.89252	139.45603	8.50946	0.1423815	2.4146936	76	17	1940-1999	0.87	M-v	1	Williams	17409	(1528)
(1636)	13.1	0.15	20000226	75.83162	238.82851	168.53760	4.43136	0.1275667	2.2343217	139	23	1950-2000	0.87	M-v	1	Williams	27887	(1636)
(1647)	10.3	0.15	20000226	286.54622	288.29718	240.40637	5.64129	0.0242818	5.2441056	139	20	1951-1999	0.69	M-v	0	Williams	25409	(1647)
(1677)	11.9	0.15	20000226	317.43434	316.46013	338.11725	14.82217	0.1088357	2.5318660	99	16	1916-1999	0.79	M-v	1	Williams	22200	(1677)
(1757)	13.36	0.15	20000226	313.39230	149.73032	39.61314	3.97860	0.1251048	2.3513796	136	15	1939-1999	0.88	M-v	1	Williams	24086	(1757)
(1825)	11.8	0.15	20000226	70.86539	142.63017	289.03496	4.03237	0.1137248	2.6771871	124	18	1934-1999	0.86	M-v	1	Williams	24220	(1825)
(1868)	9.3	0.15	20000226	105.17063	169.70842	197.81035	16.77550	0.1099625	5.2973321	90	14	1954-2000	0.78	M-v	0	Williams	28277	(1868)
(1970)	12.0	0.15	20000226	349.57739	193.62093	312.62755	7.06619	0.1581584	2.7799754	113	15	1949-1999	0.73	M-v	1	Williams	23112	(1970)
(2004)	12.6	0.15	20000226	46.38589	57.69809	4.71918	2.50062	0.0792272	2.1718324	107	16	1938-2000	0.95	M-v	1	Williams	15535	(2004)
(2037)	13.5	0.15	20000226	229.46635	345.79968	9.72080	4.25708	0.1313462	2.3018152	84	8	1973-1999	0.72	M-v	1	Williams	27290	(2037)
(2083)	13.27	0.15	20000226	30.86706	228.78642	259.28989	18.45445	0.0510333	1.8719793	62	12	1950-1999	0.83	M-v	2	Williams	13923	(2083)
(2092)	11.9	0.15	20000226	235.01258	205.85539	72.49693	3.08030	0.0308109	2.8472974	99	15	1966-1999	0.80	M-v	1	Williams	27887	(2092)
(2104)	10.3	0.15	20000226	330.76664	293.03698	252.62836	18.36827	0.1140603	3.1904633	65	11	1951-2000	0.67	M-v	1	Williams	15537	(2104)
(2139)	12.80	0.15	20000226	223.08338	65.64804	256.80384	2.18763	0.1883581	2.4609185	51	13	1924-2000	1.03	M-v	1	Williams	25038	(2139)
(2194)	12.6	0.15	20000226	352.78864	103.07055	47.32162	8.53367	0.0408559	2.3274864	97	12	1940-2000	0.78	M-v	1	Williams	29888	(2194)
(2260)	9.31	0.15	20000226	50.52929	321.82919	86.57051	17.78262	0.0451547	5.1890204	100	11	1951-2000	0.79	M-v	0	Williams	22667	(2260)
(2301)	10.8	0.15	20000226	36.03093	3.52250	79.63005	11.77048	0.2204135	3.1668356	75	12	1955-2000	0.72	M-v	1	Williams	23325	(2301)
(2308)	11.8	0.15	20000226	7.86128	232.36937	34.68798	14.20216	0.1752302	2.5466283	97	10	1967-1999	0.85	M-v	1	Williams	20609	(2308)
(2321)	11.5	0.15	20000226	61.83040	358.52192	46.00275	7.81241	0.0654426	3.0035689	128	11	1957-2000	0.73	M-v	1	Williams	32736	(2321)
(2360)	12.4	0.15	20000226	199.71519	2.48631	38.49772	3.39359	0.1929240	2.6739025	120	10	1949-1999	0.77	M-v	1	Williams	25190	(2360)
(2396)	11.6	0.15	20000226	344.90958	49.50806	158.74148	12.60797	0.0738122	2.7937001	34	8	1939-1999	1.15	M-v	2	Williams	33329	(2396)
(2399)	13.2	0.15	20000226	174.58974	159.38917	146.37722	5.12418	0.1699074	2.2389264	96	9	1950-2000	0.73	M-v	1	Williams	28815	(2399)
(2401)	12.2	0.15	20000226	36.67086	37.96324	51.05013	4.33424	0.0570633	2.7696677	107	12	1954-2000	0.73	M-v	1	Williams	18602	(2401)
(2418)	12.5	0.15	20000226	43.06450	29.71423	31.77659	1.32753	0.1683383	3.1162934	141	17	1951-2000	0.62	M-v	0	Williams	29073	(2418)
(2430)	12.24	0.15	20000226	85.56651	309.22535	46.08261	23.42885	0.2148449	2.3621060	48	8	1977-1999	0.78	M-v	1	Williams	31412	(2430)
(2472)	13.1	0.15	20000226	337.44065	159.96912	344.86018	5.10946	0.0931822	2.2648615	57	9	1973-2000	0.73	M-v	2	Williams	16008	(2472)
(2476)	10.9	0.15	20000226	76.22082	267.19592	82.49434	10.83311	0.1211738	3.0215299	77	9	1939-2000	0.82	M-v	1	Williams	25515	(2476)
(2491)	13.68	0.15	20000226	22.48020	357.81228	125.39605	22.86413	0.0540642	1.8776024	96	8	1977-2000	0.67	M-v	1	Williams	30249	(2491)

(2505)	11.3	0.15	20000226	218.91096	209.23098	59.30078	2.08216	0.1735403	3.1403407	175	21	1950-2000	0.75	M-v	1	Williams	18398	(2505)
(2532)	12.7	0.15	20000226	124.93138	7.61287	345.28623	4.34138	0.1712944	2.3718332	82	10	1953-2000	0.68	M-v	1	Williams	32295	(2532)
(2539)	14.3	0.15	20000226	120.99521	214.87040	193.50827	3.97755	0.1687645	2.2624271	71	7	1964-1999	0.82	M-v	2	Williams	30249	(2539)
(2546)	12.0	0.15	20000226	323.99601	233.33907	315.61800	10.36776	0.1912138	2.5999776	109	9	1937-2000	0.73	M-v	2	Williams	24221	(2546)
(2582)	10.5	0.15	20000226	177.94493	242.98272	56.51294	18.17558	0.0656868	3.1980591	95	10	1938-1999	0.90	M-v	1	Williams	33063	(2582)
(2614)	13.3	0.15	20000226	125.55436	227.49675	105.70413	6.92375	0.1684556	2.3373673	76	9	1977-2000	0.88	M-v	1	Williams	18776	(2614)
(2641)	12.7	0.15	20000226	319.93317	165.25310	27.88199	9.02492	0.1329064	2.3778071	101	9	1949-2000	0.75	M-v	1	Williams	29888	(2641)
(2643)	15.0	0.15	20000226	46.04608	65.69717	348.68141	22.95442	0.2745004	2.3772504	54	6	1973-1999	0.66	M-v	1	Williams	25515	(2643)
(2669)	12.6	0.15	20000226	41.07144	94.92537	292.82354	7.77753	0.2221298	2.7776692	42	7	1976-2000	0.82	M-v	1	Williams	36056	(2669)
(2680)	13.5	0.15	20000226	179.10165	335.81675	3.23713	2.43322	0.2136752	2.4029759	97	13	1950-1999	0.71	M-v	1	Williams	20611	(2680)
(2718)	11.7	0.15	20000226	314.02857	259.30031	45.23409	1.50360	0.1597014	3.1145931	129	16	1951-1999	0.85	M-v	1	Williams	18089	(2718)
(2728)	12.4	0.15	20000226	167.80318	97.22517	201.52183	2.59832	0.1685048	2.4553954	98	14	1929-2000	0.85	M-v	1	Williams	24087	(2728)
(2767)	11.6	0.15	20000226	163.37735	253.08920	66.13817	10.88417	0.0887531	3.0180768	76	8	1967-2000	0.76	M-v	1	Williams	33063	(2767)
(2802)	11.0	0.15	20000226	342.91783	62.17658	129.56997	9.61300	0.1210421	3.1135827	80	15	1939-2000	0.72	M-v	1	Williams	18777	(2802)
(2877)	12.1	0.15	20000226	254.39714	231.21764	81.12702	2.34135	0.1936456	3.1105328	57	15	1933-1999	0.83	M-v	1	Williams	22474	(2877)
(2906)	10.0	0.15	20000226	104.79412	295.10071	84.63609	30.69352	0.1156885	3.1599371	59	11	1957-1999	0.76	M-v	1	Williams	17801	(2906)
(2916)	13.4	0.15	20000226	290.37729	245.01257	311.20074	3.59531	0.0983918	2.2345300	94	10	1977-2000	0.72	M-v	1	Williams	18603	(2916)
(2948)	12.5	0.15	20000226	40.23313	245.62785	209.03735	12.32868	0.1039111	2.8632175	81	8	1969-2000	0.85	M-v	1	Williams	32736	(2948)
(2960)	14.2	0.15	20000226	21.07400	333.39003	130.89230	4.50374	0.1126637	2.2206656	93	10	1947-2000	0.71	M-v	1	Williams	20127	(2960)
(3051)	12.8	0.15	20000226	71.18281	92.72737	280.55752	13.33961	0.2595510	2.5920509	61	9	1953-2000	0.65	M-v	1	Williams	16855	(3051)
(3062)	10.8	0.15	20000226	151.94621	267.99264	110.74166	11.32373	0.1121368	3.0194448	76	14	1942-2000	0.88	M-v	1	Williams	23227	(3062)
(3072)	14.0	0.15	20000226	193.04209	139.53286	152.65093	5.63947	0.1803854	2.2378839	114	10	1954-2000	0.86	M-v	1	Williams	22387	(3072)
(3078)	11.6	0.15	20000226	313.37495	141.50504	32.81433	7.10708	0.0937619	3.1512806	108	14	1956-2000	0.76	M-v	1	Williams	24887	(3078)
(3087)	12.8	0.15	20000226	67.06311	78.71957	338.90068	19.83320	0.1121937	3.0764288	49	8	1954-2000	0.79	M-v	1	Williams	21239	(3087)
(3094)	12.0	0.15	20000226	273.01540	49.81322	172.67229	14.58691	0.0731658	2.6467325	66	9	1949-2000	0.75	M-v	1	Williams	24887	(3094)
(3128)	11.5	0.15	20000226	200.93094	190.03697	102.50666	2.93770	0.1640915	3.1075458	85	16	1942-2000	0.88	M-v	1	Williams	16210	(3128)
(3150)	11.0	0.15	20000226	259.19499	274.98578	350.48146	22.08659	0.1193792	3.1981425	86	9	1979-2000	0.86	M-v	1	Williams	35674	(3150)
(3152)	11.3	0.15	20000226	324.66554	290.19576	301.69786	11.33176	0.0890870	2.6266678	42	8	1980-1999	0.90	M-v	1	Williams	21907	(3152)
(3158)	12.5	0.15	20000226	228.54902	228.63726	187.74257	14.56609	0.1028914	2.5491097	84	7	1951-1999	0.76	M-v	2	Williams	20782	(3158)
(3166)	13.0	0.15	20000226	321.12425	118.89073	72.05557	5.24216	0.1171505	2.2374286	131	15	1940-2000	0.83	M-v	1	Williams	33330	(3166)
(3179)	11.9	0.15	20000226	62.38216	274.71343	179.84771	1.75300	0.1511895	3.0971971	77	13	1953-2000	0.81	M-v	1	Williams	13442	(3179)
(3180)	14.6	0.15	20000226	59.91754	44.09422	354.37274	5.27535	0.1480308	2.2299274	45	9	1962-2000	0.74	M-v	1	Williams	21762	(3180)
(3262)	10.9	0.15	20000226	341.08526	58.06757	73.12666	9.45570	0.0587956	3.0092049	115	11	1967-2000	0.91	M-v	1	Williams	25517	(3262)
(3276)	12.1	0.15	20000226	30.32004	340.34471	71.32591	2.68132	0.1736306	3.1168827	126	15	1974-2000	0.74	M-v	1	Williams	25517	(3276)
(3290)	11.8	0.15	20000226	299.63639	112.75850	75.28479	2.77097	0.1263085	3.9647651	140	13	1954-2000	0.75	M-v	1	Williams	28815	(3290)
(3296)	12.2	0.15	20000226	217.13943	268.97288	113.20901	13.93344	0.1934484	2.6559906	68	9	1971-1999	0.67	M-v	1	Williams	27431	(3296)
(3346)	11.1	0.15	20000226	196.82519	7.03313	2.92337	21.54134	0.0472334	3.1849375	63	7	1951-1999	0.75	M-v	1	Williams	27431	(3346)
(3355)	13.6	0.15	20000226	55.62747	299.41692	140.98626	4.06262	0.0659277	2.1861116	114	12	1945-2000	0.72	M-v	1	Williams	17184	(3355)
(3364)	13.8	0.15	20000226	266.85199	108.07801	146.15628	5.54722	0.1048188	2.1984863	108	8	1938-1999	0.76	M-v	1	Williams	36057	(3364)
(3370)	14.0	0.15	20000226	45.44420	300.37390	144.75831	7.10771	0.1089600	2.2154348	97	12	1934-2000	0.73	M-v	1	Williams	33331	(3370)
(3402)	15.2	0.15	20000226	355.72272	303.07034	358.21458	4.85101	0.2783473	2.1319394	58	8	1977-1999	0.93	M-v	2	Williams	24720	(3402)
(3410)	13.2	0.15	20000226	358.59770	155.87522	339.85549	4.73350	0.0963280	2.2598988	106	11	1974-2000	0.75	M-v	1	Williams	18778	(3410)
(3443)	13.3	0.15	20000226	227.75824	111.36260	185.06917	12.66977	0.3088448	2.3906653	47	9	1938-2000	0.94	M-v	1	Williams	17604	(3443)
(3445)	12.2	0.15	20000226	306.42861	200.27832	334.43276	11.29310	0.1256008	2.6868765	106	6	1983-2000	0.69	M-v	2	Williams	32507	(3445)
(3545)	12.1	0.15	20000226	335.24835	255.92810	61.55649	2.97907	0.0543447	2.8695034	91	11	1970-1999	0.72	M-v	1	Williams	29582	(3545)
(3556)	12.5	0.15	20000226	128.89558	141.70645	241.38812	9.24151	0.2278883	3.1535720	31	7	1964-1998	0.76	M-v	1	Williams	22202	(3556)
(3572)	12.7	0.15	20000226	79.40510	164.28133	232.91045	3.40242	0.1347339	2.7002549	101	8	1954-2000	0.74	M-v	1	Williams	18090	(3572)
(3603)	12.9	0.15	20000226	238.88153	347.55807	278.31559	5.22925	0.1249390	2.5691326	99	9	1955-2000	0.78	M-v	1	Williams	33331	(3603)
(3721)	11.7	0.15	20000226	53.25212	150.60474	314.37558	8.77135	0.0781638	3.0208803	65	10	1951-2000	0.86	M-v	1	Williams	33737	(3721)
(3733)	13.0	0.15	20000226	10.59163	210.32164	286.56678	5.87431	0.1917109	2.3992328	117	10	1953-2000	0.75	M-v	2	Williams	24088	(3733)
(3745)	14.2	0.15	20000226	133.89602	328.91505	356.63320	9.02998	0.2495694	2.4284731	49	9	1949-2000	0.75	M-v	1	Williams	33331	(3745)
(3782)	12.5	0.15	20000226	314.53473	334.20609	271.51222	5.25735	0.0958131	2.4149724	58	12	1970-2000	0.77	M-v	1	Williams	23114	(3782)
(3790)	12.4	0.15	20000226	24.42834	95.98566	320.80929	0.48418	0.1775238	3.1542131	88	10	1937-2000	0.80	M-v	1	Williams	12955	(3790)

(3792)	13.4	0.15	20000226	164.15211	51.05036	63.41842	23.68991	0.2198705	2.2922241	102	5	1980-1999	0.78	M-v	2	Williams	24222	(3792)
(3795)	13.2	0.15	20000226	224.42322	197.60744	66.22080	9.82292	0.1826717	2.3890588	51	6	1975-2000	0.81	M-v	1	Williams	20130	(3795)
(3806)	14.6	0.15	20000226	6.99158	187.92408	199.64013	10.04490	0.3134249	2.5414083	85	8	1981-2000	0.70	M-v	2	Williams	29074	(3806)
(3815)	12.4	0.15	20000226	327.67469	9.90444	197.41307	8.61857	0.1037232	2.5710759	69	12	1955-2000	0.82	M-v	1	Williams	33063	(3815)
(3896)	11.3	0.15	20000226	353.31314	320.68281	233.10712	9.66943	0.0461322	3.0053119	75	9	1950-1999	1.00	M-v	2	Williams	30891	(3896)
(3916)	12.2	0.15	20000226	325.06474	79.61170	28.34146	1.95842	0.1447541	3.2310463	201	8	1978-2000	0.71	M-v	0	Williams	36057	(3916)
(3921)	12.7	0.15	20000226	189.83856	215.09237	155.62998	12.05938	0.2830846	2.6498589	44	7	1954-1999	0.74	M-v	2	Williams	30684	(3921)
(3935)	12.1	0.15	20000226	335.18558	103.59398	300.87020	8.72744	0.2335524	2.5404178	79	9	1951-1999	0.68	M-v	1	Williams	22035	(3935)
(3986)	12.9	0.15	20000226	32.34500	163.33383	281.80179	4.94724	0.1327518	2.2535272	70	10	1929-2000	0.72	M-v	2	Williams	32296	(3986)
(4058)	11.4	0.15	20000226	153.82755	252.31389	61.94952	10.79942	0.1000238	3.0081870	101	7	1981-2000	0.69	M-v	1	Williams	33063	(4058)
(4078)	11.3	0.15	20000226	248.25508	224.63860	83.61992	11.63027	0.1089510	3.0167038	80	9	1976-2000	0.76	M-v	1	Williams	28057	(4078)
(4086)	9.1	0.15	20000226	71.53188	356.05244	54.94394	21.76196	0.1232020	5.2068230	43	8	1956-1999	0.88	M-v	1	Williams	27890	(4086)
(4125)	13.5	0.15	20000226	265.59173	33.55279	276.16445	20.44166	0.1178720	1.9215977	58	6	1979-1999	0.76	M-v	2	Williams	32507	(4125)
(4154)	13.5	0.15	20000226	250.76308	244.42059	358.84619	6.74974	0.1971302	2.5389165	100	7	1956-2000	0.70	M-v	1	Williams	29075	(4154)
(4214)	12.8	0.15	20000226	53.51516	82.93114	14.13821	3.54705	0.1299331	2.4185636	116	12	1953-2000	0.70	M-v	1	Williams	24721	(4214)
(4240)	13.7	0.15	20000226	111.66000	21.02188	321.59311	1.15242	0.1113637	2.9346247	109	11	1954-2000	0.85	M-v	1	Williams	15391	(4240)
(4241)	14.9	0.15	20000226	77.07644	119.15905	247.39138	0.97241	0.0772587	2.9452734	70	6	1971-2000	0.81	M-v	1	Williams	15391	(4241)
(4258)	12.0	0.15	20000226	173.31912	272.14114	62.51881	3.95817	0.0714274	2.9575602	100	9	1980-2000	0.72	M-v	1	Williams	15397	(4258)
(4259)	12.6	0.15	20000226	48.99529	13.51196	59.87404	2.91978	0.0464241	2.8908193	157	9	1954-2000	0.68	M-v	0	Williams	29583	(4259)
(4261)	12.5	0.15	20000226	237.79013	101.37513	266.08282	2.65797	0.1104261	2.7947387	71	9	1978-1999	0.71	M-v	1	Williams	29583	(4261)
(4295)	13.4	0.15	20000226	112.23144	28.42342	316.14770	2.34823	0.1583600	2.4492236	73	7	1960-2000	0.65	M-v	1	Williams	32296	(4295)
(4303)	14.1	0.15	20000226	66.49713	14.94936	32.59161	2.41824	0.1318487	2.1723068	90	8	1973-2000	0.67	M-v	1	Williams	15678	(4303)
(4306)	12.5	0.15	20000226	119.78762	176.41657	153.32829	1.79460	0.1700342	3.1260742	107	12	1937-2000	0.78	M-v	1	Williams	32737	(4306)
(4307)	13.2	0.15	20000226	133.63126	309.02555	24.39970	5.17689	0.0786216	2.4114083	58	9	1976-2000	0.76	M-v	1	Williams	36058	(4307)
(4404)	13.2	0.15	20000226	357.92843	64.32079	145.81658	30.35351	0.3147690	2.6450787	51	10	1979-1999	0.71	M-v	1	Williams	24888	(4404)
(4417)	11.5	0.15	20000226	344.49821	223.09920	356.57967	9.04002	0.1056924	2.7587470	47	9	1931-1999	0.95	M-v	1	Williams	25040	(4417)
(4441)	13.6	0.15	20000226	171.57581	243.23210	62.44602	2.31119	0.0468100	2.9556471	129	10	1978-2000	0.74	M-v	1	Williams	30891	(4441)
(4457)	12.2	0.15	20000226	332.63154	340.10531	187.30526	13.83646	0.1293317	2.6607072	121	9	1954-2000	0.69	M-v	1	Williams	35674	(4457)
(4485)	11.7	0.15	20000226	33.64959	138.86014	316.73960	10.13438	0.0666423	3.0086780	79	11	1953-2000	0.75	M-v	1	Williams	30432	(4485)
(4491)	13.1	0.15	20000226	176.13222	71.20240	313.81235	3.67356	0.0284590	2.1737246	99	7	1980-1999	0.90	M-v	1	Williams	16414	(4491)
(4518)	13.8	0.15	20000226	225.65707	97.61830	168.11222	6.99588	0.1000281	2.3162446	124	8	1952-2000	0.71	M-v	1	Williams	20315	(4518)
(4531)	14.9	0.15	20000226	334.20735	143.30863	15.19497	23.97957	0.0403731	1.8619782	56	7	1975-1999	0.77	M-v	2	Williams	35674	(4531)
(4581)	20.4	0.15	20000226	270.46103	255.04816	180.51977	4.90691	0.3570930	1.0223967	33	2	1989-1990	0.56	M-v	5	Williams	16864	(4581)
(4636)	12.9	0.15	20000226	62.60785	202.21293	177.17177	13.79799	0.1612167	2.6124133	75	9	1931-2000	0.83	M-v	1	Williams	17192	(4636)
(4675)	12.8	0.15	20000226	311.94858	294.75851	294.60729	4.47518	0.1765719	2.4106975	83	12	1955-2000	0.66	M-v	1	Williams	22476	(4675)
(4755)	14.1	0.15	20000226	288.35020	275.60226	102.25978	3.08499	0.2499459	2.2838814	94	7	1931-1999	0.68	M-v	2	Williams	21908	(4755)
(4757)	12.9	0.15	20000226	321.28235	92.70260	86.21210	0.17642	0.0819930	3.9410494	85	10	1951-2000	0.64	M-v	1	Williams	22035	(4757)
(4844)	12.4	0.15	20000226	13.19213	355.43715	248.46703	5.97463	0.2218414	2.5523047	56	7	1963-1999	0.69	M-v	1	Williams	34571	(4844)
(4873)	11.8	0.15	20000226	198.15513	155.35971	146.19065	10.80441	0.0966539	3.0200336	73	8	1955-2000	0.59	M-v	1	Williams	31413	(4873)
(4889)	11.9	0.15	20000226	0.98734	271.36569	186.83901	13.91346	0.1939702	3.0937771	104	8	1979-2000	0.75	M-v	1	Williams	32737	(4889)
(4897)	11.6	0.15	20000226	157.79309	109.74849	188.64200	11.06790	0.1257561	3.0527548	127	11	1950-2000	0.71	M-v	0	Williams	27695	(4897)
(4906)	15.2	0.15	20000226	130.01303	198.86860	120.04809	1.65022	0.2157540	2.1760123	78	10	1954-2000	0.60	M-v	1	Williams	31413	(4906)
(4925)	11.6	0.15	20000226	181.71605	136.87987	244.38494	8.25101	0.2427014	3.0547684	58	8	1954-1999	0.86	M-v	1	Williams	18786	(4925)
(4929)	13.5	0.15	20000226	288.69309	89.79133	127.58611	2.48510	0.0590554	2.2101361	129	10	1949-2000	0.77	M-v	1	Williams	22576	(4929)
(4930)	11.0	0.15	20000226	26.50249	351.85646	122.53697	15.49216	0.0428413	3.1237232	73	8	1950-2000	0.64	M-v	1	Williams	18788	(4930)
(4932)	12.0	0.15	20000226	101.44535	254.91188	141.97553	12.90868	0.0164917	3.1108509	70	7	1984-2000	0.65	M-v	1	Williams	33063	(4932)
(4938)	13.2	0.15	20000226	28.62064	194.57055	222.56784	4.56229	0.0768533	2.3524417	153	7	1986-1999	0.57	M-v	1	Williams	36058	(4938)
(4946)	9.9	0.15	20000226	209.75332	204.08028	59.03519	21.87574	0.0484524	5.3016404	68	9	1950-1999	0.90	M-v	1	Williams	22576	(4946)
(4978)	13.2	0.15	20000226	49.11998	242.80969	155.93351	6.03049	0.2120405	2.6271298	96	8	1971-2000	0.74	M-v	1	Williams	19008	(4978)
(4987)	13.4	0.15	20000226	268.79170	273.08770	313.31324	7.58278	0.0648480	2.2714019	87	7	1980-2000	0.64	M-v	1	Williams	19278	(4987)
(4988)	13.9	0.15	20000226	81.20074	185.35358	185.87562	2.12490	0.2137548	2.4054821	103	9	1971-2000	0.90	M-v	1	Williams	35411	(4988)
(4995)	13.0	0.15	20000226	86.85633	88.66062	322.28254	20.59054	0.3131438	2.3404495	92	5	1971-2000	0.75	M-v	1	Williams	19281	(4995)
(5016)	13.0	0.15	20000226	252.84005	96.89616	187.41887	3.64235	0.1323431	2.2954919	103	8	1976-2000	0.65	M-v	1	Williams	33331	(5016)

(5028)	9.9	0.15	20000226	52.14772	10.69452	44.02804	21.51515	0.1317362	5.2413834	76	9	1988-1999	0.76	M-v	0	Williams	28566	(5028)
(5041)	10.5	0.15	20000226	340.44041	103.00552	29.86884	10.61156	0.0362166	5.1393791	72	10	1953-2000	0.81	M-v	0	Williams	29584	(5041)
(5105)	12.6	0.15	20000226	50.12684	189.16277	226.86920	11.64025	0.1569528	2.5953499	81	7	1982-2000	0.62	M-v	1	Williams	26548	(5105)
(5114)	12.6	0.15	20000226	298.65345	215.31245	24.56867	4.16633	0.0134726	2.4707494	75	8	1986-1999	0.79	M-v	1	Williams	30684	(5114)
(5124)	13.8	0.15	20000226	355.22434	280.67488	323.41085	0.87903	0.0802074	2.2643571	109	10	1982-1999	0.84	M-v	1	Williams	24722	(5124)
(5147)	12.4	0.15	20000226	236.68328	274.98251	346.56754	8.33580	0.2037895	2.6187845	70	10	1950-2000	0.78	M-v	1	Williams	19851	(5147)
(5162)	11.5	0.15	20000226	200.25474	3.63599	68.31799	11.24336	0.0639598	3.0196530	116	9	1952-1999	0.77	M-v	1	Williams	19994	(5162)
(5168)	13.0	0.15	20000226	318.07936	201.72327	339.14403	23.46505	0.2051530	2.3400921	73	8	1979-1999	0.67	M-v	1	Williams	33538	(5168)
(5177)	13.9	0.15	20000226	320.84671	284.28094	301.35582	2.67944	0.1328473	2.3378115	78	8	1980-2000	0.75	M-v	1	Williams	20000	(5177)
(5181)	12.9	0.15	20000226	349.58395	112.50180	65.70795	3.15375	0.1344170	2.4092048	100	9	1981-2000	0.78	M-v	1	Williams	20001	(5181)
(5186)	11.8	0.15	20000226	68.39968	74.64243	334.02560	14.91827	0.0834355	2.5777612	121	8	1959-2000	0.69	M-v	1	Williams	32507	(5186)
(5188)	12.9	0.15	20000226	61.76301	281.56838	143.84626	13.53476	0.1353718	2.5802650	85	10	1938-2000	0.72	M-v	1	Williams	20004	(5188)
(5200)	13.8	0.15	20000226	315.22462	208.41279	18.72216	5.95638	0.1454871	2.2434613	66	12	1951-2000	0.82	M-v	1	Williams	20132	(5200)
(5253)	13.7	0.15	20000226	11.52449	69.16000	71.38876	28.78005	0.2243620	1.9739211	89	7	1978-1999	0.73	M-v	1	Williams	20490	(5253)
(5284)	9.9	0.15	20000226	18.07996	342.21552	102.74017	20.23423	0.0851898	5.2095589	83	7	1953-2000	0.72	M-v	0	Williams	24223	(5284)
(5285)	9.8	0.15	20000226	75.49544	257.38406	144.30969	25.22497	0.0513336	5.1243692	66	8	1956-2000	0.90	M-v	1	Williams	28817	(5285)
(5345)	14.1	0.15	20000226	193.86443	73.41206	304.74095	6.45738	0.2354139	2.7642560	59	6	1978-1999	0.92	M-v	1	Williams	31002	(5345)
(5367)	11.9	0.15	20000226	106.55099	137.20986	251.84972	10.72862	0.1226916	3.0410886	103	7	1961-2000	0.67	M-v	1	Williams	33064	(5367)
(5393)	13.6	0.15	20000226	0.04410	136.28896	349.02393	5.29133	0.1257518	2.3366566	97	6	1986-2000	0.60	M-v	1	Williams	32508	(5393)
(5411)	11.8	0.15	20000226	295.11788	231.67641	318.24037	5.63030	0.0380431	3.0726434	85	7	1973-2000	0.61	M-v	1	Williams	25192	(5411)
(5465)	12.0	0.15	20000226	293.83843	182.30979	124.70624	3.19454	0.0655769	2.9169614	72	9	1971-1999	0.75	M-v	1	Williams	21770	(5465)
(5470)	12.3	0.15	20000226	88.54414	145.66006	305.34188	18.21976	0.1408025	3.2053903	33	6	1977-1999	0.66	M-v	1	Williams	21772	(5470)
(5488)	11.3	0.15	20000226	290.25264	215.86351	96.98180	11.30011	0.0722097	3.0367840	66	8	1951-1999	0.60	M-v	1	Williams	21779	(5488)
(5506)	13.2	0.15	20000226	353.13658	134.19260	18.83501	5.24475	0.1674108	2.3760619	92	8	1971-2000	0.66	M-v	1	Williams	21914	(5506)
(5569)	13.4	0.15	20000226	225.09642	283.21444	353.88487	5.26614	0.1615674	2.4334211	111	7	1974-2000	0.76	M-v	1	Williams	22204	(5569)
(5599)	12.5	0.15	20000226	18.73749	196.05949	266.03436	6.45725	0.1331471	2.4196355	93	7	1987-2000	0.69	M-v	1	Williams	35411	(5599)
(5646)	14.3	0.15	20000226	7.88598	335.44937	14.26758	7.91398	0.4375582	2.1424210	127	7	1990-1999	0.72	M-v	2	Williams	25041	(5646)
(5733)	11.9	0.15	20000226	17.76837	336.41125	80.34436	1.97858	0.1671335	3.1964874	147	10	1982-1999	0.60	M-v	1	Williams	22676	(5733)
(5759)	12.4	0.15	20000226	223.30617	238.60853	57.86242	2.99622	0.0335179	2.8858366	54	8	1954-1999	0.74	M-v	1	Williams	22800	(5759)
(5793)	12.6	0.15	20000226	242.53267	259.44309	78.50413	13.44441	0.1758668	2.6544786	49	7	1975-1999	0.77	M-v	2	Williams	22935	(5793)
(5815)	11.8	0.15	20000226	118.85168	236.56910	98.49816	22.86977	0.0425748	3.1853551	66	8	1982-2000	0.70	M-v	1	Williams	22940	(5815)
(5828)	16.3	0.15	20000226	7.66566	152.55184	125.60274	30.03215	0.6954211	1.6978890	56	6	1991-1997	0.56	M-v	3	Williams	26380	(5828)
(5849)	10.2	0.15	20000226	178.93091	181.74548	129.94082	22.50357	0.0097719	3.1795927	73	7	1984-2000	0.70	M-v	1	Williams	23118	(5849)
(5854)	11.3	0.15	20000226	251.79424	166.85352	69.43319	2.50120	0.1405004	3.1671685	73	11	1976-2000	0.89	M-v	1	Williams	33064	(5854)
(5863)	15.5	0.15	20000226	8.37283	114.82211	169.46726	19.42693	0.5057558	2.2223532	102	5	1983-1999	0.70	M-v	1	Williams	26886	(5863)
(5936)	11.9	0.15	20000226	328.61626	186.99240	58.07133	10.79909	0.0531990	3.0015667	66	8	1979-1999	0.65	M-v	1	Williams	23499	(5936)
(5985)	13.1	0.15	20000226	152.04920	58.53810	285.25826	5.84530	0.2300118	2.2158523	93	6	1942-2000	0.66	M-v	1	Williams	26886	(5985)
(6022)	13.9	0.15	20000226	35.96168	2.18323	74.56337	4.62644	0.0559910	2.2357172	86	7	1978-2000	0.74	M-v	1	Williams	32296	(6022)
(6030)	12.5	0.15	20000226	291.25679	204.11292	172.61579	5.29348	0.0502229	3.1544448	107	9	1978-1999	0.61	M-v	1	Williams	23771	(6030)
(6046)	13.8	0.15	20000226	203.98277	92.90441	200.79912	6.93364	0.1468780	2.2988533	112	5	1955-2000	0.65	M-v	1	Williams	32296	(6046)
(6065)	13.0	0.15	20000226	177.14848	47.52138	271.86360	23.85999	0.2087722	2.3414491	77	7	1987-1999	0.72	M-v	1	Williams	23854	(6065)
(6073)	12.1	0.15	20000226	7.81961	270.06824	212.26900	12.20528	0.1291287	2.6186666	103	9	1939-2000	0.78	M-v	1	Williams	23960	(6073)
(6094)	12.5	0.15	20000226	160.15786	56.69546	222.90830	12.14281	0.1389675	2.6380197	104	6	1971-2000	0.57	M-v	1	Williams	23965	(6094)
(6134)	13.3	0.15	20000226	174.76475	90.24028	183.89267	13.10311	0.1486821	2.5569703	73	7	1989-2000	0.66	M-v	1	Williams	32296	(6134)
(6135)	12.7	0.15	20000226	301.86652	271.48983	291.64676	11.33655	0.1243784	2.4298996	98	8	1970-2000	0.67	M-v	1	Williams	24095	(6135)
(6155)	12.5	0.15	20000226	163.41410	339.25561	4.19543	4.09689	0.1799108	2.5272592	96	8	1988-2000	0.71	M-v	1	Williams	27088	(6155)
(6178)	15.1	0.15	20000226	336.95213	127.15596	64.83276	4.30749	0.5855897	2.8113377	179	5	1977-2000	0.81	M-v	1	Williams	27434	(6178)
(6199)	12.0	0.15	20000226	351.89122	174.09654	308.95770	12.13267	0.1201340	2.5930900	85	9	1950-2000	0.67	M-v	1	Williams	24382	(6199)
(6201)	13.1	0.15	20000226	184.36997	178.27769	98.51064	5.01117	0.1720153	2.5822869	115	8	1978-2000	0.66	M-v	1	Williams	24382	(6201)
(6228)	12.6	0.15	20000226	33.68166	342.94576	142.52371	14.41491	0.1115027	2.6863871	72	7	1982-2000	0.68	M-v	1	Williams	24725	(6228)
(6231)	13.4	0.15	20000226	280.16439	32.94151	162.86004	9.41273	0.1395175	2.4741921	132	8	1985-2000	0.78	M-v	1	Williams	24726	(6231)
(6238)	12.5	0.15	20000226	199.92918	215.64959	99.17399	8.36291	0.1607358	2.5610739	94	10	1955-2000	0.73	M-v	1	Williams	24727	(6238)
(6292)	13.6	0.15	20000226	200.37802	285.64061	134.91240	7.59119	0.0893176	2.3388555	87	7	1986-1999	0.76	M-v	1	Williams	25046	(6292)

(6323)	13.1	0.15	20000226	47.65223	133.76012	11.16508	5.20659	0.1351152	2.6359042	51	6	1970-1999	0.76	M-v	2	Williams	25053	(6323)
(6450)	12.6	0.15	20000226	15.27521	148.53160	129.59960	8.46181	0.2469431	2.5354082	72	7	1951-1999	0.66	M-v	2	Williams	25321	(6450)
(6488)	13.4	0.15	20000226	311.25236	262.70917	96.22935	11.81568	0.0923419	2.4897326	89	7	1986-1999	0.66	M-v	1	Williams	25418	(6488)
(6493)	13.1	0.15	20000226	95.50198	240.51247	142.46346	24.71752	0.0833681	1.9488643	77	6	1982-2000	0.60	M-v	1	Williams	31779	(6493)
(6532)	11.7	0.15	20000226	82.30806	235.71290	103.03544	5.08425	0.1086629	3.1730685	152	10	1984-2000	0.64	M-v	0	Williams	25525	(6532)
(6554)	14.3	0.15	20000226	107.24313	145.54476	194.26693	4.11993	0.2176333	2.1906624	109	7	1989-2000	0.69	M-v	1	Williams	25630	(6554)
(6585)	14.3	0.15	20000226	54.59317	60.09413	0.84631	22.37541	0.3592282	2.3703419	31	6	1971-2000	0.74	M-v	2	Williams	25719	(6585)
(6618)	13.3	0.15	20000226	179.75776	110.51151	334.75494	23.82917	0.0442164	1.8750699	99	4	1936-1999	0.71	M-v	1	Williams	25939	(6618)
(6638)	13.6	0.15	20000226	11.32167	218.66979	216.97678	1.90281	0.1613894	2.4363513	125	7	1980-2000	0.68	M-v	1	Williams	25943	(6638)
(6650)	12.1	0.15	20000226	305.71910	91.31476	347.59598	12.50146	0.1724630	2.5964120	81	6	1987-1999	0.68	M-v	1	Williams	25946	(6650)
(6726)	13.7	0.15	20000226	73.30678	145.79853	277.85359	4.30174	0.0934199	2.2869353	100	7	1953-2000	0.68	M-v	1	Williams	26159	(6726)
(6754)	13.9	0.15	20000226	39.18148	242.38142	170.69851	2.47491	0.1838539	2.4404275	92	7	1970-2000	0.71	M-v	1	Williams	29892	(6754)
(6789)	13.7	0.15	20000226	74.89653	283.46003	138.18191	6.16188	0.1409678	2.3377903	83	8	1982-2000	0.65	M-v	1	Williams	26389	(6789)
(6811)	14.8	0.15	20000226	138.84496	84.07001	225.22021	1.65179	0.2167305	2.3932693	65	9	1950-2000	0.71	M-v	1	Williams	26549	(6811)
(6856)	13.6	0.15	20000226	317.38861	301.25186	293.99525	1.32933	0.1735182	2.3714506	56	7	1978-1998	0.76	M-v	1	Williams	26730	(6856)
(6857)	13.6	0.15	20000226	316.26717	301.40123	307.65110	9.18668	0.1978789	2.3125548	52	9	1982-1998	0.72	M-v	1	Williams	26730	(6857)
(6858)	12.6	0.15	20000226	55.73592	73.29274	344.08401	13.64991	0.1864659	2.5854101	52	7	1986-2000	0.71	M-v	1	Williams	33064	(6858)
(6863)	13.6	0.15	20000226	74.24267	166.29086	251.53533	4.18398	0.0767933	2.2960590	96	6	1958-2000	0.67	M-v	1	Williams	26732	(6863)
(6870)	13.9	0.15	20000226	251.16772	251.22441	146.98608	24.90586	0.1129257	1.9271667	47	6	1989-1999	0.63	M-v	2	Williams	26733	(6870)
(6901)	13.9	0.15	20000226	238.15621	124.68747	285.42579	23.14182	0.1116006	1.9426780	52	5	1989-1999	0.72	M-v	2	Williams	26890	(6901)
(6926)	12.9	0.15	20000226	45.81012	64.67242	345.23482	12.85444	0.1720492	2.6563758	49	6	1981-1999	0.83	M-v	1	Williams	26896	(6926)
(6960)	12.2	0.15	20000226	161.37473	279.48945	26.20109	1.40179	0.1448917	3.1903307	90	9	1981-2000	0.56	M-v	1	Williams	27093	(6960)
(6981)	13.2	0.15	20000226	258.06552	254.39750	22.24492	13.32373	0.1559566	2.6725910	53	7	1974-1999	0.70	M-v	1	Williams	27097	(6981)
(6989)	11.4	0.15	20000226	27.91251	129.44764	293.03470	9.38043	0.0988227	3.0073509	87	6	1981-2000	0.65	M-v	1	Williams	27099	(6989)
(6993)	12.0	0.15	20000226	45.32511	284.90362	128.50666	2.38807	0.0900235	3.1050315	104	10	1954-2000	0.70	M-v	1	Williams	29076	(6993)
(7048)	13.5	0.15	20000226	45.42515	70.20701	351.16242	1.74701	0.0182986	2.9064206	131	9	1951-2000	0.75	M-v	1	Williams	27435	(7048)
(7127)	13.7	0.15	20000226	302.52108	32.67831	209.63113	8.64827	0.2315087	3.0752887	47	5	1989-1998	0.53	M-v	1	Williams	27702	(7127)
(7152)	9.9	0.15	20000226	31.12002	307.00801	113.07006	3.70942	0.0649720	5.1724714	148	7	1973-2000	0.62	M-v	0	Williams	27893	(7152)
(7176)	12.4	0.15	20000226	93.91273	173.29931	247.01854	7.93308	0.1375722	2.7617217	89	7	1987-2000	0.71	M-v	1	Williams	27899	(7176)
(7179)	12.7	0.15	20000226	60.91435	209.40475	201.23596	1.11663	0.1277825	2.9349530	117	7	1978-2000	0.71	M-v	1	Williams	36059	(7179)
(7188)	14.0	0.15	20000226	84.23801	329.83194	61.04495	3.95076	0.1548566	2.1919257	73	8	1937-2000	0.66	M-v	1	Williams	27901	(7188)
(7323)	12.8	0.15	20000226	184.66950	352.22725	43.51796	2.59262	0.2476478	3.2088559	52	7	1979-1999	0.73	M-v	1	Williams	28568	(7323)
(7357)	13.7	0.15	20000226	139.89745	194.09938	148.20925	4.10207	0.1824340	2.2671135	60	6	1971-2000	0.69	M-v	1	Williams	32041	(7357)
(7363)	12.4	0.15	20000226	36.62058	273.78217	188.57875	8.93400	0.1186714	2.7581325	114	7	1975-2000	0.77	M-v	1	Williams	28579	(7363)
(7488)	14.9	0.15	20000226	315.05929	54.91769	138.74719	24.10178	0.0482474	1.9586853	69	6	1989-2000	0.66	M-v	1	Williams	29087	(7488)
(7537)	12.9	0.15	20000226	75.58181	317.24062	76.72398	1.83773	0.1687546	3.1183732	112	8	1982-2000	0.74	M-v	1	Williams	32737	(7537)
(7572)	13.6	0.15	20000226	63.59126	92.35641	325.81295	3.75131	0.0880656	2.1581540	111	7	1989-2000	0.75	M-v	1	Williams	29594	(7572)
(7594)	13.0	0.15	20000226	228.30340	126.18196	113.81554	3.79080	0.1836184	2.4168285	86	7	1978-2000	0.64	M-v	1	Williams	29599	(7594)
(7645)	14.4	0.15	20000226	22.80509	212.05221	248.92616	0.39208	0.1605717	2.3720261	118	7	1989-2000	0.66	M-v	1	Williams	29898	(7645)
(7649)	13.7	0.15	20000226	58.69036	279.49222	139.58921	5.88739	0.0963685	2.5660817	87	6	1990-2000	0.64	M-v	1	Williams	29899	(7649)
(7680)	13.1	0.15	20000226	72.24458	172.89713	210.68593	8.70284	0.2120678	2.6977338	78	5	1993-2000	0.63	M-v	1	Williams	29907	(7680)
(7698)	15.3	0.15	20000226	343.76470	9.24570	122.65118	3.27856	0.1522979	2.4105895	58	7	1989-2000	0.66	M-v	1	Williams	30069	(7698)
(7722)	14.4	0.15	20000226	292.33089	175.71770	16.42846	7.08552	0.0758208	2.3510261	75	7	1973-2000	0.83	M-v	1	Williams	30074	(7722)
(7735)	12.3	0.15	20000226	124.96297	94.55691	237.38658	8.25786	0.1672448	2.7557134	92	8	1962-2000	0.64	M-v	1	Williams	30253	(7735)
(7773)	12.8	0.15	20000226	195.08480	245.08344	36.27803	5.72139	0.1421824	2.7211600	113	9	1951-2000	0.66	M-v	1	Williams	30263	(7773)
(7807)	12.8	0.15	20000226	223.62175	55.12663	200.92328	13.23515	0.0947542	3.1706086	68	6	1975-2000	0.57	M-v	1	Williams	30433	(7807)
(7830)	14.3	0.15	20000226	254.87684	127.94764	128.18696	2.99212	0.1637322	2.3851102	77	7	1986-2000	0.78	M-v	1	Williams	33064	(7830)
(7831)	13.6	0.15	20000226	315.37323	326.68138	220.54487	7.78434	0.1363212	2.3980594	119	8	1976-2000	0.75	M-v	1	Williams	30439	(7831)
(7855)	13.3	0.15	20000226	250.12797	355.77642	180.65958	13.16137	0.0947732	2.6761471	84	9	1977-1999	0.90	M-v	1	Williams	30445	(7855)
(7864)	12.7	0.15	20000226	41.38179	24.80121	110.18930	9.35698	0.0444685	2.7022466	73	7	1982-2000	0.68	M-v	1	Williams	30635	(7864)
(7885)	15.0	0.15	20000226	333.12659	86.38528	131.45054	24.09059	0.2522179	2.3445985	27	5	1989-2000	0.69	M-v	1	Williams	30640	(7885)
(7902)	13.5	0.15	20000226	61.36401	296.97466	143.92278	2.66405	0.0379823	2.8711203	109	7	1984-2000	0.68	M-v	1	Williams	30645	(7902)
(7903)	13.9	0.15	20000226	55.34743	213.38561	218.13945	7.71550	0.0239011	3.0276793	70	7	1990-2000	0.72	M-v	1	Williams	33064	(7903)

(7906)	12.6	0.15	20000226	152.36274	132.95112	228.39779	9.99019	0.1500028	3.0467175	38	7	1955-1999	0.65	M-v	1	Williams	30646	(7906)
(7965)	12.0	0.15	20000226	318.04190	280.80297	310.12687	25.02027	0.2902498	2.4367593	66	7	1978-2000	0.62	M-v	1	Williams	30750	(7965)
(7971)	13.9	0.15	20000226	334.73847	11.03600	199.75144	13.98006	0.1069902	2.5751779	43	7	1960-2000	0.55	M-v	1	Williams	30752	(7971)
(8045)	11.8	0.15	20000226	33.00969	248.09946	295.65402	11.99340	0.1356605	2.6003604	74	7	1949-1999	0.67	M-v	2	Williams	30863	(8045)
(8095)	12.0	0.15	20000226	210.94472	279.19070	23.40175	1.11973	0.1710827	3.1419460	46	8	1975-2000	0.87	M-v	1	Williams	30965	(8095)
(8108)	14.0	0.15	20000226	308.54214	6.63063	314.68827	6.73493	0.1224193	2.3695923	59	7	1984-1999	0.77	M-v	1	Williams	30968	(8108)
(8117)	12.7	0.15	20000226	291.85005	289.50235	21.68533	10.44945	0.1147883	3.0323239	77	7	1974-1999	0.66	M-v	1	Williams	30970	(8117)
(8209)	12.9	0.15	20000226	327.73222	189.29670	72.89107	10.02632	0.1669031	2.6081181	58	5	1993-1999	0.61	M-v	1	Williams	31089	(8209)
(8229)	12.5	0.15	20000226	259.28765	188.79667	186.74299	13.52657	0.1918377	3.0957381	81	7	1979-1999	0.73	M-v	1	Williams	31093	(8229)
(8376)	11.5	0.15	20000226	339.46993	259.81853	50.58170	3.53114	0.2047992	3.9712297	111	7	1978-1999	0.69	M-v	1	Williams	31360	(8376)
(8405)	9.0	0.15	20000226	348.54691	290.31607	6.11771	17.64071	0.6194423	17.9585524	145	5	1995-1999	0.60	M-v	1	Williams	31366	(8405)
(8567)	15.3	0.15	20000226	28.82103	176.83307	177.27143	8.42663	0.4488561	2.0461848	183	5	1980-1999	0.65	M-v	2	Williams	31512	(8567)
(8936)	14.6	0.15	20000226	112.79774	221.97826	110.29937	3.51534	0.1219652	2.2076888	97	5	1984-2000	0.63	M-v	1	Williams	31931	(8936)
(8992)	13.9	0.15	20000226	132.58559	132.82955	188.84811	7.90745	0.2121466	2.3881814	58	6	1954-2000	0.64	M-v	1	Williams	32172	(8992)
(8999)	14.7	0.15	20000226	87.44453	186.48406	169.09051	1.86999	0.1842061	2.2218689	86	5	1981-2000	0.67	M-v	1	Williams	32174	(8999)
(9049)	14.5	0.15	20000226	114.27616	212.54173	111.13297	4.61793	0.2238283	2.4302292	65	5	1991-2000	0.60	M-v	1	Williams	32185	(9049)
(9069)	14.4	0.15	20000226	63.57902	170.83926	248.02058	19.57276	0.1182114	1.9129410	65	5	1991-2000	0.77	M-v	2	Williams	32189	(9069)
(9082)	13.9	0.15	20000226	90.72955	280.92258	51.79113	30.35524	0.4263205	2.7357006	188	5	1994-1999	0.69	M-v	1	Williams	32192	(9082)
(9095)	14.0	0.15	20000226	149.97874	67.53962	279.38516	2.72373	0.1810920	2.2505339	79	6	1961-2000	0.84	M-v	2	Williams	32195	(9095)
(9148)	14.3	0.15	20000226	353.71582	132.83940	358.24784	4.75102	0.1606590	2.2333743	68	6	1977-2000	0.62	M-v	1	Williams	32412	(9148)
(9151)	15.3	0.15	20000226	48.55835	288.14337	132.56925	3.74693	0.1250854	2.4301262	56	6	1979-2000	0.65	M-v	1	Williams	32412	(9151)
(9159)	14.3	0.15	20000226	97.88297	183.21196	207.81827	6.39357	0.1147011	2.3446666	90	6	1954-2000	0.67	M-v	1	Williams	32414	(9159)
(9164)	13.0	0.15	20000226	46.09280	65.88641	325.31351	3.69487	0.1605383	3.1748883	89	7	1953-2000	0.66	M-v	0	Williams	32416	(9164)
(9171)	12.9	0.15	20000226	135.49622	272.13706	34.42157	14.86058	0.1274453	2.5863294	58	6	1986-2000	0.65	M-v	1	Williams	32417	(9171)
(9182)	13.9	0.15	20000226	48.80478	156.72213	271.26363	3.72772	0.0889219	2.2854086	88	5	1991-2000	0.67	M-v	1	Williams	32420	(9182)
(9185)	13.1	0.15	20000226	192.55185	278.14672	0.35501	6.66076	0.1131445	2.3242272	73	5	1962-2000	0.59	M-v	1	Williams	32420	(9185)
(9193)	12.6	0.15	20000226	45.63164	189.40524	241.35489	13.40441	0.1437012	2.6062281	94	6	1990-2000	0.62	M-v	1	Williams	32422	(9193)
(9199)	12.2	0.15	20000226	134.99690	307.69323	49.55111	7.87965	0.1327967	2.4003113	56	7	1986-2000	0.76	M-v	1	Williams	32424	(9199)
(9211)	14.8	0.15	20000226	186.53171	266.39170	14.75559	2.40569	0.1510951	2.2515832	46	6	1977-2000	0.61	M-v	1	Williams	32426	(9211)
(9213)	13.9	0.15	20000226	7.65589	156.07894	297.23921	6.30283	0.0722017	2.3867841	58	7	1980-2000	0.64	M-v	1	Williams	32427	(9213)
(9233)	13.9	0.15	20000226	166.00145	130.56112	142.92302	7.58293	0.2531987	2.5552960	67	5	1986-2000	0.61	M-v	1	Williams	35414	(9233)
(9240)	12.6	0.15	20000226	44.55021	279.98967	109.85182	7.24903	0.2169545	3.1202574	73	7	1984-2000	0.59	M-v	1	Williams	32433	(9240)
(9241)	13.0	0.15	20000226	133.82398	232.62075	121.80901	12.41439	0.1297698	3.0463872	70	5	1980-2000	0.61	M-v	1	Williams	32433	(9241)
(9252)	13.6	0.15	20000226	85.86056	85.03912	266.10588	3.19874	0.1713522	3.0902160	87	6	1960-2000	0.63	M-v	1	Williams	32435	(9252)
(9255)	13.6	0.15	20000226	182.20832	314.34143	0.87817	9.59664	0.0735178	2.3863766	79	5	1971-2000	0.76	M-v	2	Williams	32436	(9255)
(9260)	14.7	0.15	20000226	145.60446	148.04325	214.84825	5.09254	0.2291928	2.2900053	89	4	1953-1999	0.73	M-v	2	Williams	32595	(9260)
(9265)	15.4	0.15	20000226	189.15047	328.37080	338.55269	4.01814	0.1659945	2.2271709	84	6	1978-2000	0.70	M-v	2	Williams	32596	(9265)
(9267)	14.2	0.15	20000226	98.41513	212.88768	131.83562	2.92843	0.1022485	2.9262742	92	5	1978-2000	0.70	M-v	1	Williams	32597	(9267)
(9268)	14.4	0.15	20000226	39.70952	22.76829	67.40733	1.66532	0.0827492	2.5675694	54	8	1978-2000	0.81	M-v	1	Williams	32597	(9268)
(9269)	14.5	0.15	20000226	66.37346	176.93453	243.17362	13.11911	0.1507890	2.5670586	46	6	1978-2000	0.73	M-v	1	Williams	32597	(9269)
(9272)	14.0	0.15	20000226	156.68306	147.30151	176.14684	5.19794	0.1193640	2.6776691	102	7	1976-2000	0.67	M-v	1	Williams	32598	(9272)
(9284)	14.4	0.15	20000226	48.36278	230.20835	167.48007	9.41452	0.0260242	2.9403273	104	8	1971-2000	0.83	M-v	1	Williams	32601	(9284)
(9287)	14.3	0.15	20000226	86.33207	97.19009	279.81087	0.92418	0.0965758	2.9152958	81	8	1978-2000	0.82	M-v	1	Williams	32602	(9287)
(9295)	14.3	0.15	20000226	181.21863	321.28521	0.31384	6.27954	0.1407301	2.3892779	74	7	1950-2000	0.74	M-v	2	Williams	32604	(9295)
(9296)	13.8	0.15	20000226	139.09356	180.07126	175.53463	13.39661	0.1207293	2.4103623	107	5	1989-2000	0.68	M-v	2	Williams	32604	(9296)
(9308)	14.2	0.15	20000226	161.39808	28.52821	291.57357	7.39866	0.2201769	2.3875200	87	7	1950-2000	0.75	M-v	2	Williams	32607	(9308)
(9311)	14.4	0.15	20000226	134.49746	24.27262	329.49083	1.83734	0.1412117	2.4130092	69	6	1976-2000	0.73	M-v	1	Williams	32608	(9311)
(9324)	13.7	0.15	20000226	293.75063	232.23821	328.26721	2.04823	0.1535200	2.4152279	95	6	1989-2000	0.75	M-v	1	Williams	32611	(9324)
(9345)	14.6	0.15	20000226	177.81916	45.84591	264.22661	5.40866	0.0676143	2.3360942	75	5	1980-2000	0.67	M-v	2	Williams	32616	(9345)
(9359)	13.6	0.15	20000226	59.24986	61.02406	349.93606	8.51527	0.0810971	2.6171047	85	6	1977-2000	0.77	M-v	1	Williams	32619	(9359)
(9361)	14.4	0.15	20000226	149.82909	118.77190	207.36577	6.18146	0.0961050	2.6319209	74	6	1990-2000	0.61	M-v	2	Williams	32620	(9361)
(9373)	14.3	0.15	20000226	144.46024	300.17734	352.56189	2.38867	0.1314236	2.5973397	46	5	1993-1999	0.69	M-v	1	Williams	32623	(9373)
(9375)	13.8	0.15	20000226	328.90268	35.95921	129.93149	3.47202	0.1270119	2.4132500	93	7	1979-2000	0.77	M-v	1	Williams	32624	(9375)

(9380)	13.6	0.15	20000226	0.34509	293.23148	171.02501	2.10514	0.0268272	2.8665878	98	5	1991-2000	0.69	M-v	1	Williams	32625	(9380)
(9381)	13.1	0.15	20000226	2.44634	91.36092	356.67960	1.14230	0.0573333	3.0003522	118	7	1975-2000	0.81	M-v	1	Williams	32625	(9381)
(9383)	13.9	0.15	20000226	146.93441	155.77739	126.35162	2.21554	0.1620699	3.0514827	81	5	1977-2000	0.77	M-v	1	Williams	32626	(9383)
(9385)	13.7	0.15	20000226	106.49901	110.14766	188.71149	14.44883	0.2439874	3.1604676	58	5	1987-1999	0.67	M-v	1	Williams	32626	(9385)
(9389)	14.7	0.15	20000226	180.51915	163.17647	114.77325	4.95648	0.1168914	2.2424893	69	5	1982-2000	0.69	M-v	2	Williams	32627	(9389)
(9404)	13.3	0.15	20000226	19.46491	66.84205	21.60194	4.98541	0.0901466	2.7452972	81	6	1989-2000	0.65	M-v	1	Williams	32631	(9404)
(9409)	13.1	0.15	20000226	31.41063	6.33394	60.00304	1.74409	0.2135350	3.1172990	81	6	1971-2000	0.75	M-v	1	Williams	32632	(9409)
(9416)	15.0	0.15	20000226	118.58876	102.33952	272.13066	3.86822	0.1685245	2.2949687	50	6	1981-2000	0.74	M-v	1	Williams	32633	(9416)
(9420)	14.4	0.15	20000226	348.54838	335.36851	197.72539	4.77690	0.0898033	2.2699251	99	7	1978-2000	0.60	M-v	1	Williams	32634	(9420)
(9423)	12.2	0.15	20000226	128.30310	218.74457	106.36293	8.83493	0.1012473	2.6928227	79	9	1974-2000	0.61	M-v	1	Williams	32635	(9423)
(9429)	13.3	0.15	20000226	92.37315	20.22379	330.28157	1.55802	0.0834986	3.0231630	103	8	1972-2000	0.70	M-v	1	Williams	32636	(9429)
(9434)	15.0	0.15	20000226	216.18027	220.37192	54.20011	2.72278	0.1426522	2.2717135	50	5	1978-2000	0.77	M-v	1	Williams	32638	(9434)
(9437)	14.1	0.15	20000226	37.52709	335.95144	111.52029	5.47600	0.0166426	2.2692458	98	5	1981-2000	0.62	M-v	1	Williams	32638	(9437)
(9442)	13.1	0.15	20000226	81.52552	270.02428	113.11667	14.12593	0.1886908	2.5920911	104	5	1990-2000	0.66	M-v	1	Williams	32639	(9442)
(9449)	12.2	0.15	20000226	288.37310	310.92587	293.31366	8.91079	0.0634298	2.9892191	64	5	1989-2000	0.80	M-v	1	Williams	32641	(9449)
(9468)	14.5	0.15	20000226	98.99060	158.48025	197.48903	9.99755	0.1437108	2.3198977	42	6	1981-2000	0.59	M-v	1	Williams	32645	(9468)
(9471)	13.5	0.15	20000226	39.11681	107.50331	310.66275	2.43482	0.0834921	2.7899130	64	7	1979-2000	0.77	M-v	1	Williams	32646	(9471)
(9472)	13.5	0.15	20000226	117.54047	130.96975	178.41634	1.04952	0.1631423	3.0569324	97	5	1976-2000	0.80	M-v	1	Williams	32646	(9472)
(9473)	14.3	0.15	20000226	21.49344	291.41619	139.92771	4.17877	0.0269255	2.7628294	73	5	1993-2000	0.81	M-v	1	Williams	32647	(9473)
(9476)	14.0	0.15	20000226	170.73364	96.80364	204.33317	4.47508	0.1113515	2.4515392	74	5	1979-2000	0.76	M-v	1	Williams	32647	(9476)
(9486)	14.4	0.15	20000226	9.26873	294.24613	193.39215	4.20857	0.1033958	2.4392208	65	6	1949-2000	0.78	M-v	2	Williams	32650	(9486)
(9489)	14.5	0.15	20000226	189.70367	78.66894	199.74200	4.74452	0.0968121	2.6342138	84	5	1971-2000	0.65	M-v	1	Williams	32650	(9489)
(9491)	15.3	0.15	20000226	224.42546	263.01492	350.60089	5.05247	0.1341746	2.2136919	44	5	1971-2000	0.87	M-v	2	Williams	32651	(9491)
(9499)	13.7	0.15	20000226	36.21131	118.88573	295.59012	0.95235	0.0029846	2.9396844	128	8	1971-2000	0.80	M-v	1	Williams	32653	(9499)
(9502)	15.1	0.15	20000226	224.77150	75.32810	186.13302	4.75944	0.1998833	2.3347044	77	6	1973-2000	0.76	M-v	1	Williams	32654	(9502)
(9508)	14.3	0.15	20000226	337.33331	346.18107	179.08568	4.68701	0.0496861	2.3190366	104	9	1949-2000	0.77	M-v	1	Williams	32655	(9508)
(9509)	14.7	0.15	20000226	226.81713	72.49232	187.66506	6.68502	0.1517372	2.3154819	105	6	1977-2000	0.77	M-v	1	Williams	32656	(9509)
(9510)	13.9	0.15	20000226	202.35845	81.25174	143.17678	10.09477	0.0089099	3.0857639	61	5	1977-1999	0.86	M-v	1	Williams	32656	(9510)
(9512)	12.9	0.15	20000226	333.90667	359.13934	149.67108	14.02982	0.1079614	2.6416505	73	5	1966-2000	0.81	M-v	1	Williams	32866	(9512)
(9521)	15.3	0.15	20000226	241.28255	68.05732	194.27030	4.10313	0.1461705	2.2602200	63	6	1980-2000	0.73	M-v	1	Williams	32869	(9521)
(9543)	13.3	0.15	20000226	66.59681	110.18253	313.71844	8.54360	0.0701105	2.9995118	90	5	1983-2000	0.69	M-v	1	Williams	32874	(9543)
(9544)	12.6	0.15	20000226	279.46595	111.27302	57.04106	5.89319	0.0882541	3.1946184	122	6	1984-2000	0.64	M-v	1	Williams	36061	(9544)
(9573)	13.1	0.15	20000226	133.91868	312.94998	39.29164	2.54047	0.0933536	2.9140664	113	9	1953-2000	0.75	M-v	1	Williams	35676	(9573)
(9577)	15.4	0.15	20000226	271.49347	270.90596	308.86173	1.83662	0.1259354	2.4161247	70	5	1989-2000	0.74	M-v	1	Williams	32883	(9577)
(9579)	14.3	0.15	20000226	333.55873	224.49697	308.69779	1.75776	0.1140199	2.4269424	95	6	1976-2000	0.70	M-v	1	Williams	32884	(9579)
(9587)	13.5	0.15	20000226	203.91256	80.40392	194.76419	13.79862	0.1627045	2.5769771	60	5	1988-2000	0.82	M-v	1	Williams	32886	(9587)
(9588)	14.1	0.15	20000226	183.42769	90.36441	202.41182	13.19099	0.2112681	2.5895083	73	7	1955-2000	0.69	M-v	1	Williams	32886	(9588)
(9589)	14.3	0.15	20000226	29.32760	345.07919	133.57054	4.15879	0.0570910	2.5938659	79	6	1971-1999	0.78	M-v	1	Williams	32886	(9589)
(9594)	14.1	0.15	20000226	316.61109	344.79989	228.29974	3.90997	0.0953475	2.2380820	107	8	1985-2000	0.80	M-v	1	Williams	32887	(9594)
(9614)	14.4	0.15	20000226	316.71914	80.33061	122.57560	2.12615	0.1000159	2.2891396	77	6	1976-1999	0.76	M-v	1	Williams	32892	(9614)
(9632)	14.6	0.15	20000226	101.26460	261.92160	93.22223	3.44189	0.2972213	2.9947051	63	6	1972-2000	0.72	M-v	1	Williams	32896	(9632)
(9635)	13.6	0.15	20000226	21.28794	25.93249	82.78141	2.57232	0.1828674	3.1230699	72	6	1989-2000	0.60	M-v	1	Williams	32897	(9635)
(9640)	14.4	0.15	20000226	234.91713	218.54222	23.97352	2.82904	0.1550611	2.4288110	62	5	1993-2000	0.83	M-v	1	Williams	32898	(9640)
(9641)	14.8	0.15	20000226	197.73903	60.96886	222.31607	4.74762	0.1345275	2.4515920	64	5	1991-2000	0.72	M-v	1	Williams	32898	(9641)
(9652)	13.0	0.15	20000226	325.35580	244.32144	319.10783	5.96728	0.1667674	2.4172649	77	5	1986-2000	0.66	M-v	2	Williams	32901	(9652)
(9662)	13.7	0.15	20000226	119.08659	182.71405	190.63163	9.32399	0.1754622	2.7646629	81	5	1992-2000	0.65	M-v	1	Williams	32904	(9662)
(9664)	13.0	0.15	20000226	251.24071	89.83163	115.07082	2.32428	0.1059949	3.2022136	88	6	1981-2000	0.74	M-v	1	Williams	32904	(9664)
(9666)	14.2	0.15	20000226	158.72114	290.57801	31.02782	12.36087	0.1912393	2.6390428	85	5	1985-2000	0.62	M-v	1	Williams	32905	(9666)
(9667)	13.7	0.15	20000226	187.43231	120.17529	196.70139	2.38210	0.1795132	2.4400406	73	5	1993-2000	0.64	M-v	1	Williams	32905	(9667)
(9675)	13.2	0.15	20000226	133.92738	125.13904	166.72040	13.76482	0.1086667	3.1613805	74	6	1981-2000	0.66	M-v	1	Williams	32907	(9675)
(9682)	15.4	0.15	20000226	246.30527	18.75616	260.90042	2.76546	0.0220525	2.1557828	48	5	1960-2000	0.69	M-v	1	Williams	32909	(9682)
(9685)	14.4	0.15	20000226	318.22452	303.96186	258.99216	1.27546	0.1307881	2.4233338	58	6	1960-1999	0.89	M-v	2	Williams	32909	(9685)
(9705)	13.5	0.15	20000226	67.05462	11.16717	24.95597	10.75178	0.1343709	3.0420951	90	5	1977-1999	0.61	M-v	1	Williams	32915	(9705)

(9728)	14.6	0.15	20000226	200.30129	31.26573	272.73475	7.23564	0.1873170	2.4770142	28	7	1954–2000	0.81	M-v	2	Williams	33194	(9728)
(9734)	14.1	0.15	20000226	311.43269	285.86428	299.35816	4.66532	0.1195038	2.2863548	72	6	1986–2000	0.66	M-v	1	Williams	33195	(9734)
(9745)	13.6	0.15	20000226	95.22331	200.56699	200.31056	1.74841	0.1058093	2.9230311	78	5	1988–2000	0.66	M-v	1	Williams	33198	(9745)
(9772)	13.5	0.15	20000226	199.77872	63.24699	203.72131	13.28666	0.1869135	2.6745740	92	5	1949–2000	0.63	M-v	1	Williams	33204	(9772)
(9776)	13.4	0.15	20000226	24.39947	35.90237	92.09505	3.38046	0.0180429	2.9075686	70	5	1990–1999	0.62	M-v	1	Williams	33205	(9776)
(9789)	12.5	0.15	20000226	336.35992	130.81927	44.94323	1.90439	0.1287604	3.1424977	109	9	1976–2000	0.71	M-v	1	Williams	33209	(9789)
(9795)	13.9	0.15	20000226	169.62706	151.09786	181.23145	1.83505	0.0720558	2.9045388	64	4	1995–1998	0.71	M-v	1	Williams	33210	(9795)
(9800)	14.1	0.15	20000226	204.35482	170.39150	119.35096	3.07497	0.2026937	2.3711602	93	5	1979–2000	0.62	M-v	1	Williams	33211	(9800)
(9801)	14.6	0.15	20000226	143.00526	104.53022	223.68226	2.25588	0.3384875	2.6452195	82	6	1971–2000	0.76	M-v	2	Williams	33211	(9801)
(9802)	14.7	0.15	20000226	164.76280	303.81207	24.60203	4.41470	0.1798212	2.5270072	66	5	1990–2000	0.62	M-v	1	Williams	33212	(9802)
(9803)	14.4	0.15	20000226	205.21818	275.32423	24.38841	4.73844	0.1623607	2.4431179	81	6	1990–2000	0.59	M-v	1	Williams	33212	(9803)
(9809)	15.2	0.15	20000226	115.86040	323.73371	37.00715	3.15983	0.1764645	2.6125407	47	5	1960–2000	0.56	M-v	1	Williams	33213	(9809)
(9825)	12.9	0.15	20000226	103.94548	63.66932	326.83834	9.11742	0.0941766	3.0004149	66	5	1977–2000	0.77	M-v	1	Williams	33217	(9825)
(9826)	13.1	0.15	20000226	158.68641	111.09698	215.91434	8.93922	0.0952621	2.9892595	71	5	1977–2000	0.63	M-v	1	Williams	33217	(9826)
(9862)	13.9	0.15	20000226	173.15126	235.72306	54.65717	5.53191	0.2023920	2.3509123	64	6	1973–2000	0.68	M-v	1	Williams	33460	(9862)
(9903)	14.4	0.15	20000226	151.04039	139.34911	196.29188	1.68441	0.2467540	3.0717643	34	4	1976–1998	0.55	M-v	1	Williams	33469	(9903)
(9906)	13.2	0.15	20000226	120.31583	326.21015	13.74383	13.40634	0.1816690	2.6186696	64	5	1960–1999	0.64	M-v	1	Williams	33470	(9906)
(9908)	13.2	0.15	20000226	60.72614	20.93563	43.25203	2.49116	0.0525032	2.8985536	62	5	1971–2000	0.62	M-v	1	Williams	33470	(9908)
(9926)	15.7	0.15	20000226	129.68540	242.13798	203.42031	2.13852	0.1678151	2.3833339	30	4	1981–1999	0.69	M-v	2	Williams	33654	(9926)
(9955)	14.6	0.15	20000226	153.78815	24.09701	343.27321	4.98745	0.1787660	2.2736946	60	5	1967–2000	0.68	M-v	2	Williams	33660	(9955)
(9989)	13.2	0.15	20000226	56.29592	314.61284	187.67584	1.81516	0.0115874	2.8552769	58	5	1990–1999	0.51	M-v	1	Williams	33668	(9989)
(9992)	14.4	0.15	20000226	342.95426	234.15443	43.27505	2.60185	0.2929584	2.1706749	45	5	1974–1999	0.77	M-v	2	Williams	33669	(9992)
(10001)	13.9	0.15	20000226	92.13100	357.56850	40.38024	7.42287	0.1335700	2.3765674	45	7	1954–2000	0.74	M-v	1	Williams	33858	(10001)
(10007)	11.6	0.15	20000226	13.19912	243.48798	250.94933	13.39034	0.1033783	3.1492205	79	5	1976–2000	0.71	M-v	1	Williams	33859	(10007)
(10008)	13.7	0.15	20000226	274.59196	209.77862	56.96274	1.45858	0.0357441	3.17395912	40	4	1977–1999	0.61	M-v	1	Williams	33860	(10008)
(10018)	13.2	0.15	20000226	325.00485	81.55962	162.44019	1.66415	0.1407783	3.0962934	53	4	1979–1999	0.73	M-v	1	Williams	33862	(10018)
(10069)	12.1	0.15	20000226	250.05699	39.01201	257.42728	9.01972	0.0650255	2.9991539	41	5	1989–2000	0.95	M-v	2	Williams	33874	(10069)
(10085)	12.5	0.15	20000226	330.55912	250.10367	352.26345	15.04593	0.0663634	3.1971695	63	4	1971–1999	0.69	M-v	1	Williams	33878	(10085)
(10100)	14.5	0.15	20000226	88.58023	11.30295	47.65514	1.92938	0.1768582	2.4131794	51	6	1983–2000	0.77	M-v	1	Williams	33882	(10100)
(10112)	12.7	0.15	20000226	138.38886	101.47102	240.46978	15.04451	0.1104383	3.0366735	69	5	1982–2000	0.68	M-v	1	Williams	33884	(10112)
(10116)	12.4	0.15	20000226	28.09147	325.36589	168.26042	10.92123	0.0508887	3.0009815	62	5	1990–2000	0.68	M-v	1	Williams	33885	(10116)
(10172)	13.4	0.15	20000226	258.38856	298.82587	10.59128	5.45803	0.0606946	2.7406406	49	4	1983–1999	0.73	M-v	2	Williams	33899	(10172)
(10204)	13.7	0.15	20000226	89.98999	294.32959	143.35352	6.90705	0.0788878	2.8033932	51	5	1990–2000	0.50	M-v	1	Williams	33907	(10204)
(10232)	13.3	0.15	20000226	232.16923	166.56369	143.98155	1.81256	0.2412029	3.1707369	55	4	1985–1999	0.80	M-v	2	Williams	33914	(10232)
(10240)	13.0	0.15	20000226	105.41307	188.23016	211.88401	1.37560	0.0648084	2.8659200	39	5	1989–1999	0.70	M-v	2	Williams	33916	(10240)
(10379)	13.2	0.15	20000226	2.89237	13.99652	126.66251	6.53115	0.0267031	3.4988470	78	5	1995–2000	0.70	M-v	1	Williams	34155	(10379)
(10514)	13.5	0.15	20000226	132.71368	4.80813	348.65002	2.96022	0.0983177	2.7089819	102	4	1989–2000	0.67	M-v	2	Williams	34440	(10514)
(10635)	13.6	0.15	20000226	89.16360	168.12177	165.88592	12.34499	0.1227243	3.0436344	56	5	1982–2000	0.73	M-v	1	Williams	34472	(10635)
(10637)	12.6	0.15	20000226	338.22732	89.99921	24.89043	13.68526	0.0212758	3.1780239	87	6	1976–1999	0.70	M-v	1	Williams	36499	(10637)
(10937)	12.7	0.15	20000226	72.18405	174.47745	210.01403	4.70653	0.0352776	3.2186998	86	6	1964–2000	0.61	M-v	1	Williams	34807	(10937)
(11254)	14.5	0.15	20000226	31.30056	314.09385	140.88335	5.59958	0.1826748	2.4571183	77	5	1977–2000	0.69	M-v	1	Williams	35555	(11254)
(11369)	14.8	0.15	20000226	39.13469	233.59224	227.34492	3.39095	0.1134872	2.3179280	56	5	1993–2000	0.70	M-v	1	Williams	35583	(11369)
(11370)	15.2	0.15	20000226	111.11813	291.76978	63.82500	0.44199	0.1061865	2.6320743	74	6	1971–2000	0.72	M-v	1	Williams	35583	(11370)
(11377)	12.9	0.15	20000226	8.57671	8.72889	95.78880	2.56775	0.1259092	3.2296288	93	6	1981–2000	0.65	M-v	1	Williams	35584	(11377)
(11737)	13.7	0.15	20000226	356.90590	280.02079	201.84314	3.86689	0.0261124	2.4292165	66	5	1982–2000	0.69	M-v	2	Williams	35894	(11737)
(11779)	14.3	0.15	20000226	113.18979	289.79255	69.79963	4.67822	0.1128163	2.6210564	78	5	1977–2000	0.74	M-v	1	Williams	35905	(11779)
A913 CF	14.5	0.15	20000226	116.06017	155.53029	192.92850	9.17554	0.0768341	2.9769596	32	4	1913–1999	0.72	M-v	2	Williams	33064	A913 CF
1934 JP	15.6	0.15	20000226	325.89698	16.37447	138.60884	1.57895	0.2275120	2.3054809	45	5	1934–2000	0.70	M-v	3	Williams	37254	1934 JP
1953 GJ	14.3	0.15	20000226	281.99360	62.86616	173.21335	4.80291	0.1723959	2.2532236	32	4	1953–2000	0.80	M-v	2	Williams	35275	1953 GJ
1955 RE ₁	14.1	0.15	20000226	51.19254	22.33150	319.74845	7.25191	0.2548550	2.3782396	94	3	1955–2000	0.57	M-v	2	Williams	37254	1955 RE ₁
1971 UR	12.9	0.15	20000226	333.91773	52.92769	47.00656	5.90424	0.1020979	3.1540423	95	5	1971–1999	0.65	M-v	2	Williams	37254	1971 UR
1973 QO ₁	13.6	0.15	20000226	81.40849	35.98073	317.72461	7.83217	0.2944108	2.6191579	45	5	1956–2000	0.65	M-v	2	Williams	37254	1973 QO ₁
1973 SX	11.5	0.15	20000226	339.80891	121.42999	353.51840	7.93833	0.0765844	5.1870369	55	8	1973–1999	0.78	M-v	1	Williams	37254	1973 SX

1973 SZ	11.8	0.15	20000226	56.45503	277.16593	143.60379	5.77665	0.0885669	5.1186979	38	5	1973-2000	0.96	M-v	1	Williams	35676	1973 SZ
1973 SR ₁	12.4	0.15	20000226	355.98846	48.69092	40.54548	8.87875	0.0589552	5.2105271	33	3	1973-1999	0.47	M-v	3	Williams	33538	1973 SR ₁
1973 SS ₁	11.5	0.15	20000226	8.44250	54.00189	27.97067	9.20195	0.0201997	5.1579249	25	6	1973-1999	0.88	M-v	1	Williams	37255	1973 SS ₁
1973 SX ₂	12.6	0.15	20000226	140.08708	186.69062	201.65879	14.67377	0.1144899	2.5676595	63	4	1973-2000	0.69	M-v	3	Williams	35676	1973 SX ₂
1974 QF	15.0	0.15	20000226	119.55387	109.13751	256.08224	2.29568	0.2109910	2.2832603	32	4	1974-2000	0.65	M-v	1	Williams	32508	1974 QF
1975 TE	14.2	0.15	20000226	105.48251	325.55620	24.40273	4.34168	0.2174407	2.2436495	53	3	1985-2000	0.69	M-v	2	Williams	37255	1975 TE
1975 TJ ₃	13.6	0.15	20000226	75.46394	33.64372	35.64870	8.23617	0.2989797	2.7731818	71	5	1975-2000	0.66	M-v	1	Williams	34280	1975 TJ ₃
1975 TU ₃	13.3	0.15	20000226	16.67248	10.23415	44.90684	8.81361	0.0505600	2.2701500	105	4	1975-2000	0.56	M-v	2	Williams	37255	1975 TU ₃
1975 VW ₅	13.4	0.15	20000226	161.83661	269.98811	68.16224	8.46660	0.1449706	2.4473959	56	4	1975-2000	0.72	M-v	2	Williams	37255	1975 VW ₅
1975 VZ ₈	12.9	0.15	20000226	138.65326	71.25468	302.80908	11.66282	0.1743752	2.7561367	33	3	1975-2000	0.73	M-v	3	Williams	35676	1975 VZ ₈
1976 DB ₁	15.4	0.15	20000226	82.28935	83.26783	321.64545	18.72165	0.1152582	1.9223364	30	4	1976-2000	0.75	M-v	2	Williams	35056	1976 DB ₁
1976 YN ₇	13.1	0.15	20000226	143.24586	273.04543	100.42164	13.53073	0.1878872	2.6957266	27	4	1976-2000	0.65	M-v	1	Williams	36872	1976 YN ₇
1977 DL ₄	14.6	0.15	20000226	172.02226	213.66864	356.36779	4.45659	0.2343708	2.5748995	63	4	1977-1999	0.70	M-v	4	Williams	36872	1977 DL ₄
1977 QN ₁	12.8	0.15	20000226	150.63069	308.83174	343.59111	12.92239	0.1811625	2.6179910	49	3	1977-2000	0.63	M-v	3	Williams	37255	1977 QN ₁
1977 QO ₃	14.4	0.15	20000226	57.94278	91.58559	276.28864	1.12006	0.2364565	2.3599628	87	3	1977-2000	0.54	M-v	2	Williams	37255	1977 QO ₃
1977 TU ₃	12.7	0.15	20000226	77.66927	174.82042	215.23382	14.75667	0.1971929	3.0442934	66	3	1977-1999	0.69	M-v	2	Williams	36873	1977 TU ₃
1977 TO ₆	14.3	0.15	20000226	165.70020	256.31995	84.35450	6.98136	0.1880080	2.3064649	41	5	1977-2000	1.00	M-v	2	Williams	33539	1977 TO ₆
1977 TQ ₆	13.2	0.15	20000226	63.17412	297.58277	53.46322	13.05762	0.1925056	2.6720358	103	4	1977-2000	0.52	M-v	2	Williams	37255	1977 TQ ₆
1977 UA	13.8	0.15	20000226	358.85968	134.77675	276.79983	9.31883	0.1898890	2.3840905	54	3	1977-2000	0.58	M-v	2	Marsden	37112	1977 UA
1977 XF ₂	12.7	0.15	20000226	355.70870	336.88131	82.22308	8.22652	0.1453454	3.1640419	21	3	1977-2000	0.75	M-v	3	Williams	37112	1977 XF ₂
1978 NF	14.1	0.15	20000226	104.49686	194.03199	111.74045	14.36202	0.1657867	2.5531204	63	3	1978-2000	0.57	M-v	2	Williams	37255	1978 NF
1978 PX ₃	15.1	0.15	20000226	160.40006	30.83879	309.60097	5.30371	0.2187839	2.2286975	59	6	1955-2000	0.76	M-v	2	Williams	33539	1978 PX ₃
1978 PG ₄	14.4	0.15	20000226	158.23744	36.92417	303.05487	6.11979	0.2217789	2.2324303	78	3	1978-2000	0.61	M-v	2	Williams	33539	1978 PG ₄
1978 RD ₂	14.3	0.15	20000226	51.88600	328.84401	34.48751	4.76529	0.2308750	2.5861753	103	3	1978-2000	0.53	M-v	2	Williams	37255	1978 RD ₂
1978 SF ₅	15.0	0.15	20000226	107.04485	307.64450	32.34487	6.49023	0.1986335	2.2759157	34	3	1978-2000	0.66	M-v	2	Williams	37255	1978 SF ₅
1978 SJ ₇	13.5	0.15	20000226	129.99057	329.10874	1.39726	14.56436	0.1404486	2.9263056	63	4	1978-1999	0.66	M-v	3	Williams	37255	1978 SJ ₇
1978 ST ₇	13.8	0.15	20000226	334.51932	136.59517	322.12281	5.65054	0.1262582	2.3041107	85	5	1978-2000	0.64	M-v	2	Williams	37255	1978 ST ₇
1978 UJ ₅	15.4	0.15	20000226	24.45970	103.04722	303.84764	1.69147	0.1251009	2.2997173	44	4	1978-2000	0.62	M-v	2	Williams	36873	1978 UJ ₅
1978 UN ₅	14.7	0.15	20000226	145.32764	301.36989	11.00652	5.16824	0.2569777	2.5364258	62	7	1954-2000	0.71	M-v	2	Williams	33539	1978 UN ₅
1978 VA	14.1	0.15	20000226	18.79294	43.62424	59.40449	25.00972	0.3373774	2.5928478	28	2	1978-1999	0.43	M-v	2	Williams	36785	1978 VA
1978 VO ₂	13.7	0.15	20000226	335.43667	212.45528	244.06138	7.00377	0.0998247	2.6186432	81	2	1978-2000	0.57	M-v	4	Williams	37255	1978 VO ₂
1978 VB ₃	12.7	0.15	20000226	31.48583	295.98304	58.13618	13.19650	0.0842623	3.0957090	40	3	1978-1999	0.55	M-v	3	Williams	37255	1978 VB ₃
1978 VL ₃	14.5	0.15	20000226	145.09382	273.54456	47.84691	3.51580	0.1558636	2.2825835	36	3	1978-2000	0.58	M-v	3	Williams	32208	1978 VL ₃
1978 VV ₃	12.9	0.15	20000226	301.67185	80.95313	63.01876	12.26533	0.0936038	3.0390331	62	3	1978-1999	0.46	M-v	4	Williams	37112	1978 VV ₃
1978 VB ₄	15.3	0.15	20000226	57.10748	144.81967	252.12546	4.74152	0.1598556	2.2979333	30	2	1978-2000	0.61	M-v	5	Williams	37112	1978 VB ₄
1978 VL ₄	16.5	0.15	20000226	22.81149	202.32838	230.24984	4.09353	0.2307624	2.3041805	40	2	1978-1999	0.52	M-v	3	Williams	37112	1978 VL ₄
1978 VX ₄	14.8	0.15	20000226	64.42769	269.65064	66.05382	4.27247	0.1474329	2.3315211	79	4	1978-2000	0.72	M-v	2	Williams	37255	1978 VX ₄
1978 VH ₅	13.3	0.15	20000226	359.62094	195.84352	249.05478	8.94212	0.0137198	3.0243861	65	3	1978-2000	0.64	M-v	3	Williams	37255	1978 VH ₅
1978 VE ₈	13.8	0.15	20000226	332.03799	63.52409	60.55132	3.18788	0.0612800	3.0180608	37	2	1978-2000	0.49	M-v	4	Williams	37113	1978 VE ₈
1978 VZ ₈	15.0	0.15	20000226	22.78592	353.50889	59.06287	3.80735	0.1254323	2.6144369	55	3	1978-2000	0.59	M-v	3	Williams	37113	1978 VZ ₈
1978 VC ₉	14.5	0.15	20000226	358.87586	209.66168	268.42678	1.40018	0.1167300	2.5876521	20	2	1978-2000	0.32	M-v	4	Williams	37113	1978 VC ₉
1978 VP ₉	15.1	0.15	20000226	79.91392	83.75208	237.48918	6.36806	0.1350122	2.3336755	65	3	1978-2000	0.63	M-v	2	Williams	37255	1978 VP ₉
1978 VQ ₉	13.7	0.15	20000226	153.61680	250.55000	67.95562	13.26983	0.2087029	2.5607353	45	3	1978-2000	0.80	M-v	4	Williams	37255	1978 VQ ₉
1978 VN ₁₀	14.8	0.15	20000226	329.46230	259.50735	208.20952	2.93083	0.1511469	3.0581710	28	2	1978-1999	0.75	M-v	5	Williams	37113	1978 VN ₁₀
1978 VM ₁₁	14.6	0.15	20000226	338.76834	94.09317	74.36390	5.61413	0.2111752	2.5704434	48	4	1978-2000	0.63	M-v	2	Williams	37255	1978 VM ₁₁
1978 WU	14.4	0.15	20000226	140.49534	106.42084	240.36901	8.59054	0.2060404	2.5431029	39	4	1978-2000	0.66	M-v	3	Williams	33539	1978 WU
1979 HN ₅	12.3	0.15	20000226	257.90138	203.58232	101.41837	7.56990	0.2419842	3.0787130	37	6	1979-2000	0.72	M-v	1	Williams	36062	1979 HN ₅
1979 MZ ₁	14.8	0.15	20000226	115.82710	209.24121	136.78733	5.75944	0.0784614	2.7802027	23	3	1979-2000	0.81	M-v	4	Williams	32657	1979 MZ ₁
1979 MO ₂	15.5	0.15	20000226	147.36734	66.52475	226.42886	4.04332	0.1832168	2.1798686	45	3	1979-2000	0.63	M-v	3	Williams	37255	1979 MO ₂
1979 MS ₄	15.7	0.15	20000226	219.69266	117.12309	144.99060	3.44426	0.1633508	2.3995832	27	4	1971-2000	0.85	M-v	3	Williams	32738	1979 MS ₄
1979 MD ₈	13.7	0.15	20000226	346.07848	231.49536	257.55964	7.67431	0.1023652	2.7606826	71	4	1979-2000	0.69	M-v	3	Williams	37255	1979 MD ₈
1979 QT ₁	14.5	0.15	20000226	315.14475	68.74880	169.42426	1.33326	0.1746455	2.3532688	25	4	1979-2000	0.56	M-v	2	Williams	30468	1979 QT ₁
1979 QA ₂	14.2	0.15	20000226	282.25539	204.11622	21.17047	1.29619	0.1425283	2.3908511	37	4	1979-2000	0.64	M-v	2	Williams	33065	1979 QA ₂

1980 CJ	13.0	0.15	20000226	201.54172	210.71869	316.98510	13.57406	0.0285076	3.1419120	36	3	1980-1999	0.66	M-v	3	Williams	36873	1980 CJ
1980 FQ ₁	13.7	0.15	20000226	88.66034	217.25705	183.81095	10.72044	0.1070564	2.9674617	39	3	1980-2000	0.51	M-v	3	Williams	35276	1980 FQ ₁
1980 FH ₄	15.9	0.15	20000226	213.86093	70.67346	179.79648	1.00168	0.1695477	2.2905212	29	4	1980-2000	0.52	M-v	1	Williams	32738	1980 FH ₄
1980 LC ₁	13.0	0.15	20000226	228.53566	232.34857	99.31312	13.55245	0.2713003	2.5769747	31	5	1980-2000	0.92	M-v	2	Williams	34002	1980 LC ₁
1980 RC	14.2	0.15	20000226	5.66223	240.76482	170.74764	11.03078	0.2652477	2.4293755	68	3	1980-1999	0.70	M-v	2	Williams	37255	1980 RC
1980 SF	14.5	0.15	20000226	112.75814	216.46950	156.62966	2.42785	0.2128176	2.3702506	37	4	1980-2000	0.83	M-v	2	Marsden	35276	1980 SF
1980 TZ ₅	12.2	0.15	20000226	14.35050	0.63355	13.28960	13.34150	0.1541622	2.8482946	49	3	1980-1999	0.60	M-v	2	Williams	37255	1980 TZ ₅
1981 DN	15.8	0.15	20000226	351.82144	212.30900	306.49332	7.05333	0.2119555	2.4494945	28	3	1977-2000	1.00	M-v	2	Williams	22696	1981 DN
1981 DR	13.9	0.15	20000226	49.00199	105.80598	304.71022	10.95185	0.0450260	2.9283505	50	3	1981-2000	0.82	M-v	2	Williams	32738	1981 DR
1981 DF ₁	13.7	0.15	20000226	164.92434	340.56400	318.12641	11.51730	0.0601954	2.9361588	38	3	1981-2000	0.77	M-v	3	Williams	37255	1981 DF ₁
1981 DN ₁	13.8	0.15	20000226	53.92824	53.11542	307.37888	9.92313	0.2061854	2.5566360	68	2	1981-2000	0.68	M-v	3	Williams	37255	1981 DN ₁
1981 EK ₁	14.5	0.15	20000226	37.89785	130.37981	352.04390	8.28745	0.1090359	2.4264707	40	3	1981-2000	0.60	M-v	3	Williams	33219	1981 EK ₁
1981 EO ₂	13.3	0.15	20000226	170.10283	16.03940	237.29062	8.40561	0.0311078	2.9862834	113	3	1981-2000	0.66	M-v	3	Williams	37255	1981 EO ₂
1981 EP ₂	13.0	0.15	20000226	54.16172	125.63831	214.94979	15.27990	0.1184666	3.0321979	94	3	1981-2000	0.69	M-v	2	Williams	37255	1981 EP ₂
1981 EV ₂	13.6	0.15	20000226	92.07718	77.89841	249.99604	9.29487	0.0329793	2.9903260	66	3	1981-2000	0.68	M-v	3	Williams	37113	1981 EV ₂
1981 EU ₃	15.1	0.15	20000226	274.19782	310.72401	228.43284	9.36841	0.1167741	2.5098317	37	2	1981-1999	0.72	M-v	4	Williams	37113	1981 EU ₃
1981 ER ₄	13.5	0.15	20000226	342.99617	240.87576	211.91956	10.06469	0.1150795	2.9466103	95	3	1981-2000	0.64	M-v	3	Williams	37255	1981 ER ₄
1981 EU ₄	12.6	0.15	20000226	138.12398	30.71047	261.33734	9.01334	0.0746307	2.9846566	88	3	1981-2000	0.66	M-v	3	Williams	37255	1981 EU ₄
1981 EN ₅	15.1	0.15	20000226	0.35457	230.30133	245.02267	5.16004	0.0948324	2.4803192	36	4	1979-2000	0.77	M-v	2	Williams	37256	1981 EN ₅
1981 EM ₆	14.2	0.15	20000226	33.93247	131.83788	214.76415	13.08351	0.1283640	2.5921313	74	3	1981-1999	0.71	M-v	3	Williams	37256	1981 EM ₆
1981 EY ₆	14.0	0.15	20000226	25.21433	83.06155	307.93141	10.49782	0.1589981	2.9894336	29	2	1981-1999	0.55	M-v	4	Williams	37113	1981 EY ₆
1981 EB ₈	14.8	0.15	20000226	51.90954	113.64380	319.78592	7.63953	0.1614097	2.4605724	42	3	1981-2000	0.83	M-v	3	Williams	37256	1981 EB ₈
1981 ED ₉	15.2	0.15	20000226	6.83912	184.62667	256.10640	4.38262	0.1063145	2.2051806	51	2	1981-2000	0.66	M-v	4	Williams	37114	1981 ED ₉
1981 ES ₁₁	15.5	0.15	20000226	233.10572	11.65982	259.36714	4.57725	0.1512764	2.4765945	29	8	1981-2000	0.90	M-v	1	Williams	34823	1981 ES ₁₁
1981 EJ ₁₃	14.4	0.15	20000226	18.54392	147.28725	320.12085	7.94435	0.0984017	2.4717124	66	3	1981-2000	0.83	M-v	3	Williams	36501	1981 EJ ₁₃
1981 EN ₁₃	14.8	0.15	20000226	265.04529	271.03652	261.16004	4.36398	0.0812970	2.2234471	62	2	1981-2000	0.62	M-v	4	Williams	37256	1981 EN ₁₃
1981 EP ₁₄	14.7	0.15	20000226	202.49290	19.43745	228.27216	5.21260	0.1300416	2.2240216	57	2	1981-2000	0.63	M-v	4	Williams	37256	1981 EP ₁₄
1981 EA ₁₆	14.6	0.15	20000226	215.18331	283.52335	333.20095	6.57909	0.1186671	2.2085180	38	5	1981-2000	0.76	M-v	2	Williams	32509	1981 EA ₁₆
1981 EF ₁₆	14.4	0.15	20000226	6.17280	216.94702	197.35442	10.85708	0.1995057	2.5278569	89	3	1981-2000	0.58	M-v	2	Williams	37256	1981 EF ₁₆
1981 EL ₁₆	14.8	0.15	20000226	157.77258	343.96452	334.60627	7.07292	0.1324104	2.2021328	34	3	1981-2000	0.78	M-v	4	Williams	29608	1981 EL ₁₆
1981 EK ₁₇	14.2	0.15	20000226	233.74685	75.93841	206.42234	5.67496	0.1236801	2.4638154	25	3	1981-2000	0.76	M-v	3	Williams	33540	1981 EK ₁₇
1981 EA ₁₉	14.6	0.15	20000226	12.22640	44.77932	7.49435	2.60708	0.1585390	2.5189107	107	4	1981-2000	0.59	M-v	2	Williams	37256	1981 EA ₁₉
1981 EZ ₁₉	15.2	0.15	20000226	129.30954	316.23136	342.41698	3.67694	0.0899064	2.5412222	43	3	1981-1999	0.68	M-v	3	Williams	37256	1981 EZ ₁₉
1981 EN ₂₂	15.4	0.15	20000226	272.35203	194.40103	341.24706	4.41240	0.0604513	2.5140869	33	4	1981-1999	0.83	M-v	4	Williams	37256	1981 EN ₂₂
1981 ER ₂₄	14.9	0.15	20000226	165.62521	81.74349	205.94513	1.76329	0.0944637	2.2176810	33	3	1978-2000	0.74	M-v	4	Williams	37256	1981 ER ₂₄
1981 EB ₂₅	13.6	0.15	20000226	123.73812	136.36382	178.86899	11.57593	0.2386105	2.9835821	84	5	1981-2000	0.82	M-v	1	Williams	33065	1981 EB ₂₅
1981 EP ₂₅	14.2	0.15	20000226	328.52879	277.31322	233.12282	1.49420	0.0904981	2.8938771	37	5	1978-2000	0.80	M-v	2	Williams	37256	1981 EP ₂₅
1981 EK ₂₇	14.6	0.15	20000226	356.17622	73.57653	354.24330	5.39636	0.0841165	2.2268355	113	3	1981-2000	0.71	M-v	3	Williams	37256	1981 EK ₂₇
1981 EJ ₂₉	13.8	0.15	20000226	282.68929	276.09940	197.91491	9.68201	0.0472855	3.0215483	52	4	1981-1999	0.74	M-v	3	Williams	36501	1981 EJ ₂₉
1981 EN ₃₀	13.0	0.15	20000226	7.72276	279.86347	59.12497	1.94540	0.1712907	3.1099099	45	3	1981-1999	0.63	M-v	3	Williams	35678	1981 EN ₃₀
1981 EQ ₃₀	14.0	0.15	20000226	78.24681	316.92014	1.68884	12.65449	0.2647540	2.5912299	62	3	1981-2000	0.68	M-v	2	Williams	37256	1981 EQ ₃₀
1981 EH ₃₁	15.5	0.15	20000226	51.11218	251.71391	169.81186	8.61744	0.2051347	2.4715446	22	3	1979-2000	0.75	M-v	4	Williams	21967	1981 EH ₃₁
1981 EA ₃₂	14.8	0.15	20000226	18.49443	161.31627	236.72510	10.26242	0.1119171	2.9886884	22	2	1981-1999	0.63	M-v	4	Williams	37256	1981 EA ₃₂
1981 EH ₃₂	15.8	0.15	20000226	171.73729	12.60197	226.57853	10.89861	0.0711904	3.0256904	17	2	1981-1999	0.52	M-v	5	Williams	37114	1981 EH ₃₂
1981 ES ₃₃	14.7	0.15	20000226	83.60747	13.97728	319.88036	6.50605	0.1640906	2.5533688	23	2	1981-2000	0.68	M-v	4	Williams	37256	1981 ES ₃₃
1981 EB ₃₆	15.3	0.15	20000226	17.91118	108.86623	3.95169	2.12842	0.1623240	2.4580564	56	3	1977-2000	0.77	M-v	3	Williams	37256	1981 EB ₃₆
1981 EE ₃₆	14.6	0.15	20000226	11.80873	79.01394	326.35015	9.33649	0.0677985	2.9955585	29	3	1981-1999	0.71	M-v	3	Williams	36786	1981 EE ₃₆
1981 EP ₃₆	14.0	0.15	20000226	83.71971	104.11027	248.65577	8.72698	0.1067517	2.9624840	42	3	1981-2000	0.74	M-v	3	Williams	37256	1981 EP ₃₆
1981 EM ₃₇	15.2	0.15	20000226	105.69335	116.68663	262.58901	2.96374	0.1583896	2.1811657	19	4	1981-2000	0.84	M-v	2	Williams	27909	1981 EM ₃₇
1981 EN ₄₂	15.2	0.15	20000226	174.03678	79.84154	207.51062	1.08918	0.1663322	2.2191787	26	5	1981-2000	0.90	M-v	2	Williams	32299	1981 EN ₄₂
1981 EV ₄₅	15.1	0.15	20000226	222.10521	338.14939	294.59262	2.64560	0.1657120	2.9067352	16	3	1981-2000	1.07	M-v	5	Williams	20811	1981 EV ₄₅
1981 EF ₄₇	15.2	0.15	20000226	344.89925	112.43144	7.17554	3.24088	0.0747426	2.9101243	15	5	1979-1999	0.74	M-v	2	Williams	18421	1981 EF ₄₇
1981 ER ₄₇	14.2	0.15	20000226	63.56862	343.71467	36.18683	2.48101	0.1756188	2.5140543	63	6	1951-2000	0.62	M-v	3	Williams	37256	1981 ER ₄₇

1981 QJ ₃	13.2	0.15	20000226	132.96067	200.26007	140.03371	2.62776	0.1881602	3.1129799	93	5	1981-2000	0.57	M-v	1	Williams	35678	1981 QJ ₃
1981 QD ₄	12.9	0.15	20000226	241.12906	281.13001	328.79789	13.70702	0.0553177	2.5804867	24	4	1981-2000	0.33	M-v	1	Williams	37256	1981 QD ₄
1981 SD ₂	13.7	0.15	20000226	345.18827	345.76412	35.16581	6.39879	0.1306506	2.3847054	70	4	1981-1999	0.68	M-v	1	Williams	36063	1981 SD ₂
1981 SE ₇	13.0	0.15	20000226	105.59054	270.43551	67.54446	6.55347	0.1196201	2.6727953	29	3	1981-2000	0.56	M-v	3	Williams	37256	1981 SE ₇
1981 UA	15.1	0.15	20000226	61.09925	21.34402	17.61059	26.99928	0.3303123	2.3279514	19	4	1981-1999	0.76	M-v	2	Williams	25972	1981 UA
1981 UQ ₂₂	14.5	0.15	20000226	137.74941	166.44913	130.80450	3.64798	0.0850733	2.3414948	42	3	1981-2000	0.67	M-v	3	Williams	37256	1981 UQ ₂₂
1981 UB ₂₃	13.6	0.15	20000226	42.28824	264.16479	129.72583	3.12071	0.1922310	2.7122206	62	4	1963-2000	0.60	M-v	3	Williams	37256	1981 UB ₂₃
1981 UZ ₂₄	14.4	0.15	20000226	158.46515	269.33538	45.51842	8.35851	0.1270898	2.3002638	48	4	1981-2000	0.75	M-v	3	Williams	37256	1981 UZ ₂₄
1981 UT ₂₉	12.5	0.15	20000226	271.89253	49.88862	224.06527	9.20695	0.0940069	3.0402529	39	6	1981-2000	0.76	M-v	1	Williams	35678	1981 UT ₂₉
1981 VN	12.8	0.15	20000226	101.41053	16.48795	39.90796	15.90850	0.1051461	2.6213879	78	4	1981-2000	0.74	M-v	2	Williams	34282	1981 VN
1982 KH ₁	12.7	0.15	20000226	279.93729	189.92223	76.67498	10.29295	0.1327629	2.7732230	36	5	1982-2000	0.78	M-v	2	Williams	35678	1982 KH ₁
1982 ST ₇	14.3	0.15	20000226	65.43661	57.19449	332.41805	3.99898	0.2901236	2.5695546	57	4	1982-2000	0.55	M-v	2	Williams	37256	1982 ST ₇
1982 TJ	15.0	0.15	20000226	62.41519	273.87284	99.75269	2.17584	0.3913336	2.5876590	45	2	1982-2000	0.46	M-v	3	Williams	37114	1982 TJ
1982 TK ₁	12.0	0.15	20000226	94.76201	176.34062	244.14629	9.78951	0.0857567	3.0101731	38	5	1930-2000	0.83	M-v	1	Williams	33540	1982 TK ₁
1982 UD ₄	14.6	0.15	20000226	104.11379	2.03856	4.93272	1.99390	0.2355427	2.5400332	40	6	1978-2000	0.83	M-v	3	Williams	35058	1982 UD ₄
1982 UA ₆	15.1	0.15	20000226	30.53551	35.49908	341.08834	3.91614	0.2933386	2.6317249	72	3	1982-2000	0.60	M-v	2	Williams	37256	1982 UA ₆
1982 UO ₆	12.8	0.15	20000226	172.69189	98.19765	238.30798	9.13695	0.1202489	3.0082417	36	4	1982-2000	0.74	M-v	2	Williams	36874	1982 UO ₆
1982 US ₆	13.5	0.15	20000226	129.93365	323.18418	46.71688	8.06639	0.1573970	2.5351790	91	7	1982-1999	0.75	M-v	2	Williams	34282	1982 US ₆
1982 UH ₉	14.3	0.15	20000226	52.15277	343.81312	9.36027	7.88180	0.3413268	2.6214902	77	3	1982-2000	0.58	M-v	2	Williams	37256	1982 UH ₉
1982 UE ₁₂	13.5	0.15	20000226	93.86828	84.97327	328.66563	9.79311	0.0210067	2.5170510	102	8	1982-2000	0.75	M-v	2	Williams	37256	1982 UE ₁₂
1982 VU ₂	12.7	0.15	20000226	154.51153	209.24451	54.98930	14.31501	0.1416439	2.6342841	92	3	1982-2000	0.53	M-v	3	Williams	37256	1982 VU ₂
1982 VN ₃	15.1	0.15	20000226	54.73963	327.30160	88.38226	3.70397	0.2294492	2.5851109	17	3	1982-2000	0.70	M-v	4	Williams	24227	1982 VN ₃
1982 VP ₃	12.4	0.15	20000226	299.15568	200.06007	61.78203	13.57480	0.0582778	2.9441580	40	4	1982-2000	0.80	M-v	1	Williams	34003	1982 VP ₃
1982 VY ₃	13.8	0.15	20000226	132.91745	198.26070	67.40197	6.53456	0.1357489	2.2921269	65	3	1982-1999	0.58	M-v	2	Williams	37256	1982 VY ₃
1982 VG ₄	14.9	0.15	20000226	278.06234	300.49110	209.14858	3.57166	0.1129542	2.2859937	52	3	1982-2000	0.63	M-v	2	Williams	37256	1982 VG ₄
1983 AA	13.8	0.15	20000226	317.07327	202.58472	295.57764	24.18920	0.2414642	2.2971537	40	3	1983-2000	0.85	M-v	3	Williams	37256	1983 AA
1983 RL ₃	14.8	0.15	20000226	39.30260	67.24947	295.11357	3.06720	0.1429545	2.1703334	136	4	1976-1999	0.68	M-v	2	Williams	37257	1983 RL ₃
1983 XE	14.2	0.15	20000226	16.55503	192.49370	237.55827	6.24470	0.1808969	2.5239267	105	6	1951-1999	0.63	M-v	3	Williams	37257	1983 XE
1984 BZ ₆	14.6	0.15	20000226	62.45010	260.99200	135.28166	1.50549	0.2329638	3.0700849	34	4	1984-2000	0.60	M-v	1	Williams	35678	1984 BZ ₆
1984 CE	14.2	0.15	20000226	40.41833	292.73231	107.32571	13.31414	0.2437274	2.5651980	41	3	1984-2000	0.58	M-v	3	Williams	37257	1984 CE
1984 EQ	12.6	0.15	20000226	46.88913	96.41593	346.58791	13.66689	0.1857926	3.0723072	30	4	1984-1999	0.79	M-v	2	Williams	37257	1984 EQ
1984 QB	12.8	0.15	20000226	260.43462	354.12666	310.56810	10.19929	0.2190147	2.6180474	43	7	1950-2000	0.80	M-v	2	Williams	34003	1984 QB
1984 SS	13.0	0.15	20000226	143.04510	113.94918	220.16219	23.28358	0.2957983	2.3212158	35	3	1984-2000	0.55	M-v	2	Williams	33333	1984 SS
1984 SO ₄	13.5	0.15	20000226	198.80309	54.57272	286.56961	4.97674	0.1172843	2.2767033	63	5	1984-2000	0.71	M-v	2	Williams	35678	1984 SO ₄
1984 ST ₅	14.5	0.15	20000226	43.34564	35.27128	342.66597	1.76064	0.1886991	2.3977339	90	3	1984-2000	0.62	M-v	2	Williams	37114	1984 ST ₅
1984 SZ ₅	14.5	0.15	20000226	197.09691	273.70737	13.34301	8.22413	0.2400198	2.3026115	124	5	1984-1999	0.70	M-v	2	Williams	37257	1984 SZ ₅
1984 SG ₆	13.7	0.15	20000226	328.86704	238.92921	169.96411	12.85893	0.1864460	2.9718832	58	2	1984-1999	0.60	M-v	4	Williams	36325	1984 SG ₆
1984 UR	13.5	0.15	20000226	131.07287	306.81333	48.62718	7.23961	0.1834433	2.3331746	42	5	1984-2000	0.83	M-v	2	Williams	37257	1984 UR
1984 UJ ₁	14.4	0.15	20000226	105.00966	350.81996	28.84807	6.26013	0.2409722	2.3439146	45	5	1984-2000	0.81	M-v	2	Marsden	30468	1984 UJ ₁
1984 WJ ₁	13.3	0.15	20000226	146.24357	351.41747	34.58831	10.75736	0.2045743	2.3202076	62	4	1984-2000	0.77	M-v	2	Williams	35679	1984 WJ ₁
1984 YE ₄	13.9	0.15	20000226	93.99238	348.42949	74.49273	6.51916	0.1436083	2.3560103	39	6	1984-2000	0.65	M-v	2	Williams	33541	1984 YE ₄
1985 CD ₂	13.6	0.15	20000226	255.71686	284.61532	281.15874	0.56352	0.1939545	3.0426340	65	3	1985-1999	0.57	M-v	4	Williams	37257	1985 CD ₂
1985 PH	13.8	0.15	20000226	32.58727	67.82930	316.65313	12.49674	0.2819728	2.7489878	48	3	1985-2000	0.60	M-v	2	Williams	37257	1985 PH
1985 PT	13.5	0.15	20000226	115.59294	201.16953	139.64129	12.89509	0.2012894	2.6631919	58	4	1985-2000	0.75	M-v	2	Williams	33541	1985 PT
1985 RA	13.1	0.15	20000226	53.00337	110.10654	276.25640	7.72580	0.1752814	2.7334552	46	3	1985-2000	0.53	M-v	3	Williams	37114	1985 RA
1985 RP	14.4	0.15	20000226	34.43544	225.97437	166.91971	8.00892	0.2300162	2.2927250	75	5	1978-2000	0.64	M-v	2	Williams	37257	1985 RP
1985 RD ₃	14.9	0.15	20000226	129.12289	272.21879	117.19570	2.42717	0.1209833	2.1908054	84	5	1969-2000	0.67	M-v	2	Williams	33541	1985 RD ₃
1985 RF ₃	14.0	0.15	20000226	132.55174	213.63895	122.72859	6.03230	0.2494985	2.6461022	52	5	1985-2000	0.69	M-v	2	Williams	37257	1985 RF ₃
1985 SX ₂	13.6	0.15	20000226	119.94408	78.07190	323.70787	3.67402	0.1400672	2.6215614	61	4	1981-2000	0.69	M-v	2	Williams	34574	1985 SX ₂
1985 TS	14.3	0.15	20000226	61.66347	359.31341	5.39423	3.78784	0.1247586	2.2939791	104	5	1978-2000	0.57	M-v	3	Williams	37257	1985 TS
1985 UA ₅	13.0	0.15	20000226	108.94424	336.83888	59.10369	15.43241	0.2046402	2.6686347	43	4	1985-2000	0.64	M-v	2	Williams	35679	1985 UA ₅
1986 EK ₁	13.1	0.15	20000226	28.90403	107.84618	6.49370	23.33218	0.2312174	2.3210979	30	5	1986-2000	0.87	M-v	2	Williams	33541	1986 EK ₁
1986 PX	15.2	0.15	20000226	128.02359	152.43367	195.64704	2.75599	0.1784726	2.1147041	56	8	1980-2000	0.75	M-v	2	Williams	32300	1986 PX

1986 PY	14.8	0.15	20000226	54.40444	195.43310	146.18678	7.97622	0.2472812	2.1889987	114	3	1986-2000	0.66	M-v	2	Williams	37257	1986 PY
1986 PE ₁	13.5	0.15	20000226	151.83047	244.91507	138.69940	8.39657	0.0963381	2.4358602	78	4	1986-2000	0.57	M-v	2	Williams	35679	1986 PE ₁
1986 PL ₁	12.8	0.15	20000226	134.73013	183.47872	128.32600	6.30231	0.1516246	3.2098748	80	3	1986-2000	0.75	M-v	4	Williams	37257	1986 PL ₁
1986 QO ₂	12.8	0.15	20000226	168.21927	201.60291	120.87435	1.86024	0.1756006	3.1201554	45	4	1986-2000	0.64	M-v	1	Williams	27324	1986 QO ₂
1986 QQ ₃	14.1	0.15	20000226	65.21835	324.48020	45.88059	3.60018	0.1469335	2.5859627	64	2	1986-2000	0.59	M-v	4	Williams	37114	1986 QQ ₃
1986 QS ₃	12.6	0.15	20000226	259.13319	148.19163	141.05628	11.25033	0.0683113	3.0087843	60	8	1986-2000	0.60	M-v	1	Williams	33541	1986 QS ₃
1986 TR	13.6	0.15	20000226	42.77718	89.66891	251.53075	9.76705	0.3058960	2.6720972	124	3	1986-2000	0.50	M-v	2	Williams	37257	1986 TR
1986 TG ₁	13.3	0.15	20000226	115.45897	357.35426	359.09388	14.94004	0.1264226	2.5642033	56	5	1986-2000	0.58	M-v	2	Williams	37257	1986 TG ₁
1986 TQ ₅	13.7	0.15	20000226	137.38309	217.90696	145.21054	1.91545	0.2037491	3.1974783	44	5	1986-2000	0.70	M-v	1	Williams	34827	1986 TQ ₅
1986 TV ₆	13.5	0.15	20000226	154.85457	355.93884	325.85419	7.44331	0.1903733	2.5568377	101	4	1986-2000	0.63	M-v	2	Williams	37257	1986 TV ₆
1986 WZ	13.9	0.15	20000226	30.91627	129.19774	256.13153	2.66253	0.1174322	2.6924288	67	2	1990-2000	0.44	M-v	3	Williams	37257	1986 WZ
1987 BF	14.2	0.15	20000226	196.05129	302.00405	293.32463	5.07152	0.1286183	2.2793527	48	3	1987-2000	0.82	M-v	4	Williams	37257	1987 BF
1987 BX ₁	13.3	0.15	20000226	282.80778	261.41497	241.58231	6.61422	0.1685739	2.7967738	57	3	1987-2000	0.60	M-v	3	Williams	37115	1987 BX ₁
1987 QH	14.4	0.15	20000226	157.77281	6.62391	318.58974	8.25062	0.2887582	2.3643996	55	3	1987-2000	0.73	M-v	2	Williams	33541	1987 QH
1987 RR	13.1	0.15	20000226	85.03443	208.77706	156.60697	12.88236	0.1880883	3.1046631	109	3	1987-2000	0.69	M-v	2	Williams	37257	1987 RR
1987 RG ₁	13.7	0.15	20000226	106.18506	347.75379	348.78615	1.22932	0.1859556	2.4357335	62	5	1987-2000	0.65	M-v	1	Williams	37257	1987 RG ₁
1987 SJ ₂	14.4	0.15	20000226	161.65774	171.12301	140.00889	2.70041	0.1770750	2.3988027	76	4	1972-2000	0.71	M-v	2	Williams	37257	1987 SJ ₂
1987 SL ₃	12.4	0.15	20000226	24.65133	87.89678	317.77866	9.96476	0.0914079	3.1677777	80	4	1982-2000	0.60	M-v	2	Williams	37257	1987 SL ₃
1987 SX ₁₀	14.2	0.15	20000226	240.66788	11.40033	41.23735	8.20563	0.0971337	2.7150352	29	3	1987-1999	0.66	M-v	4	Williams	37115	1987 SX ₁₀
1987 SP ₁₁	15.7	0.15	20000226	127.52914	207.70899	145.88418	3.02825	0.1829003	2.3998147	29	3	1987-2000	0.60	M-v	3	Williams	32740	1987 SP ₁₁
1987 UA ₁	13.6	0.15	20000226	169.73512	122.69582	235.90572	11.37523	0.1406401	2.3618848	85	3	1987-2000	0.78	M-v	3	Williams	34004	1987 UA ₁
1987 VG	14.3	0.15	20000226	69.84633	27.06648	350.27982	5.10087	0.1984001	2.4832393	27	4	1977-2000	0.79	M-v	3	Williams	37257	1987 VG
1987 VR	12.7	0.15	20000226	83.17702	219.13984	212.51809	9.00626	0.0753722	3.0606950	88	5	1987-1999	0.56	M-v	1	Williams	34004	1987 VR
1987 WD	13.7	0.15	20000226	176.61997	307.73562	13.78012	8.94374	0.1563245	2.3987991	85	4	1987-2000	0.78	M-v	2	Williams	33740	1987 WD
1988 BG	12.7	0.15	20000226	348.41490	126.48802	293.34999	12.35225	0.1613089	2.6243986	75	2	1988-1999	0.75	M-v	3	Williams	37257	1988 BG
1988 BO ₃	14.0	0.15	20000226	344.62578	263.82723	195.05669	8.30551	0.1254114	2.5760402	70	4	1988-2000	0.68	M-v	3	Williams	37257	1988 BO ₃
1988 BY ₃	14.1	0.15	20000226	31.80971	297.90915	164.22041	6.98953	0.1095509	2.5156354	83	7	1978-2000	0.67	M-v	2	Williams	37257	1988 BY ₃
1988 BF ₅	14.1	0.15	20000226	231.95259	330.18196	243.98263	10.69681	0.1365280	2.6628506	58	3	1988-1999	0.70	M-v	2	Williams	37257	1988 BF ₅
1988 BG ₅	14.0	0.15	20000226	172.82225	35.86892	240.70736	12.56922	0.1465972	2.6662816	55	3	1988-2000	0.67	M-v	3	Williams	37257	1988 BG ₅
1988 BH ₅	13.5	0.15	20000226	313.03460	268.51348	264.91442	11.61930	0.1162033	2.5795360	54	7	1984-2000	0.73	M-v	2	Williams	37257	1988 BH ₅
1988 BL ₅	14.0	0.15	20000226	79.68313	145.61004	282.93268	11.83714	0.1196476	2.5211882	18	5	1984-2000	0.86	M-v	3	Williams	33542	1988 BL ₅
1988 CF	14.2	0.15	20000226	326.65549	149.79270	356.71912	5.38210	0.2269631	2.5757608	55	4	1988-2000	0.85	M-v	3	Williams	37257	1988 CF
1988 CB ₄	15.2	0.15	20000226	9.13047	126.47753	277.58831	6.70105	0.0842079	2.1727615	46	2	1988-1999	0.71	M-v	5	Williams	37115	1988 CB ₄
1988 CO ₇	15.4	0.15	20000226	65.92596	288.32415	88.73979	1.06163	0.0670884	2.1205913	110	4	1988-1999	0.59	M-v	3	Williams	37257	1988 CO ₇
1988 DE	13.2	0.15	20000226	311.34383	174.30956	352.91556	13.27874	0.0968988	2.5806455	80	4	1988-2000	0.68	M-v	2	Williams	37257	1988 DE
1988 DG ₂	15.1	0.15	20000226	327.66317	319.83124	132.37385	9.69467	0.1340351	2.6228859	32	3	1988-1999	0.57	M-v	4	Williams	36503	1988 DG ₂
1988 FD ₃	14.3	0.15	20000226	200.12244	269.56781	327.87782	4.22132	0.0995143	2.1915637	78	3	1988-2000	0.64	M-v	3	Williams	37257	1988 FD ₃
1988 FE ₃	13.4	0.15	20000226	193.42229	317.55846	248.55656	1.48972	0.1000993	2.7930589	61	4	1988-1999	0.59	M-v	1	Williams	36875	1988 FE ₃
1988 GQ	13.1	0.15	20000226	273.48335	102.85588	121.80760	11.71581	0.2399859	2.6056891	49	4	1988-2000	0.56	M-v	2	Marsden	37257	1988 GQ
1988 PE	14.3	0.15	20000226	108.42800	321.50123	338.32633	9.18686	0.2647848	2.3142369	73	3	1988-2000	0.69	M-v	2	Williams	37257	1988 PE
1988 PU	12.6	0.15	20000226	254.71631	20.90816	251.54175	11.62407	0.1389833	2.7005183	38	3	1988-2000	0.74	M-v	3	Williams	33542	1988 PU
1988 PV ₁	14.4	0.15	20000226	90.80456	79.92718	289.26032	4.57466	0.1674085	2.2906961	43	3	1988-2000	0.67	M-v	3	Williams	37257	1988 PV ₁
1988 QR	14.0	0.15	20000226	135.65582	31.06674	270.06229	4.09270	0.1616243	2.9116885	55	4	1988-2000	0.84	M-v	4	Williams	32741	1988 QR
1988 RN ₃	16.1	0.15	20000226	91.78828	180.16324	176.74252	3.99015	0.1465542	2.3133066	32	3	1988-2000	0.79	M-v	4	Williams	31416	1988 RN ₃
1988 RF ₄	14.9	0.15	20000226	136.81473	336.52006	341.94286	4.72183	0.1748939	2.2729618	49	4	1988-2000	0.86	M-v	3	Williams	37258	1988 RF ₄
1988 RH ₆	14.3	0.15	20000226	121.99679	52.25553	318.79515	7.00574	0.1304957	2.2450772	63	6	1958-2000	0.83	M-v	2	Williams	37258	1988 RH ₆
1988 RJ ₆	15.3	0.15	20000226	11.78990	70.10332	326.47577	4.20194	0.2387182	2.3814694	102	3	1988-1999	0.68	M-v	2	Williams	36875	1988 RJ ₆
1988 RO ₆	14.2	0.15	20000226	21.76588	32.41738	350.00871	6.20856	0.1346393	2.3592585	133	2	1988-1999	0.54	M-v	3	Williams	37258	1988 RO ₆
1988 RU ₉	13.2	0.15	20000226	333.93495	244.03992	167.68772	15.61581	0.0885643	3.1140281	77	3	1988-1999	0.54	M-v	3	Williams	37258	1988 RU ₉
1988 RL ₁₂	14.4	0.15	20000226	13.12325	195.71814	203.65696	0.38387	0.1819818	3.0765403	69	2	1988-1999	0.64	M-v	4	Williams	37258	1988 RL ₁₂
1988 RV ₁₂	11.8	0.15	20000226	23.09041	307.77293	186.33867	16.22638	0.1669928	3.9898033	24	5	1988-1999	0.71	M-v	1	Williams	33542	1988 RV ₁₂
1988 SU ₁	13.2	0.15	20000226	230.33181	149.00456	41.37506	11.52430	0.0368361	3.0004417	67	2	1988-2000	0.52	M-v	3	Williams	37115	1988 SU ₁
1988 SB ₂	13.8	0.15	20000226	123.08745	248.78799	111.60432	6.70935	0.1333604	2.2628748	59	3	1988-2000	0.62	M-v	2	Williams	36876	1988 SB ₂

1988 TA	20.8	0.15	20000226	10.97920	104.57844	195.20475	2.53944	0.4785076	1.5411491	36	1	63 days	0.59	M-v	5	Williams	29941	1988 TA
1988 TJ	14.3	0.15	20000226	63.15282	40.35479	354.51947	5.69441	0.1420711	2.3239289	24	3	1988-2000	0.81	M-v	3	Williams	26419	1988 TJ
1988 TS ₁	13.5	0.15	20000226	18.23344	223.27658	174.18814	1.57794	0.2206610	3.1322917	63	4	1949-2000	0.62	M-v	2	Williams	36504	1988 TS ₁
1988 TV ₁	15.3	0.15	20000226	45.39220	167.70157	231.88848	2.42870	0.2415770	2.3477486	59	2	1988-2000	0.74	M-v	4	Williams	37115	1988 TV ₁
1988 TR ₂	13.1	0.15	20000226	27.40845	38.30036	26.47717	15.61066	0.2702055	3.0440206	64	3	1988-2000	0.78	M-v	2	Williams	37258	1988 TR ₂
1988 UF	12.6	0.15	20000226	86.99702	325.29256	24.69962	11.02251	0.1194066	3.0289697	49	4	1988-2000	0.88	M-v	3	Williams	37258	1988 UF
1988 VV	14.5	0.15	20000226	50.69566	177.88802	225.20705	4.18004	0.1465920	2.3468334	72	3	1988-2000	0.76	M-v	2	Williams	37258	1988 VV
1988 VE ₁	13.2	0.15	20000226	241.68462	267.34528	45.59449	8.31283	0.1435801	2.7748073	28	4	1988-2000	0.77	M-v	2	Williams	34284	1988 VE ₁
1988 VC ₂	13.3	0.15	20000226	19.19235	341.27212	46.55824	6.06379	0.1819492	3.1546387	116	3	1988-2000	0.66	M-v	2	Williams	37258	1988 VC ₂
1988 VL ₂	13.1	0.15	20000226	321.18289	221.82161	236.27961	10.45489	0.0959309	2.4241238	104	4	1988-2000	0.74	M-v	2	Williams	37258	1988 VL ₂
1988 VR ₂	13.6	0.15	20000226	73.00643	0.62705	88.19376	13.23024	0.2724550	2.9357379	60	4	1988-2000	0.82	M-v	2	Williams	34284	1988 VR ₂
1988 VX ₂	12.4	0.15	20000226	86.11178	87.73462	223.13599	14.18997	0.0833307	3.1721393	90	4	1988-2000	0.59	M-v	2	Williams	37258	1988 VX ₂
1988 VA ₅	14.8	0.15	20000226	99.55436	324.94551	35.15836	1.93935	0.2220820	2.3258532	63	4	1977-2000	0.75	M-v	2	Williams	37258	1988 VA ₅
1988 VN ₇	15.3	0.15	20000226	101.93355	327.46228	62.31695	8.18520	0.1700803	2.2956345	26	4	1981-2000	0.66	M-v	4	Williams	29941	1988 VN ₇
1988 XV ₁	12.2	0.15	20000226	56.48108	301.20079	73.14604	19.35051	0.2385810	3.1097732	52	2	1988-2000	0.58	M-v	4	Williams	37258	1988 XV ₁
1988 XY ₄	12.8	0.15	20000226	116.25096	296.05387	65.63000	10.36945	0.0933591	2.9852618	42	3	1988-2000	0.49	M-v	3	Williams	37258	1988 XY ₄
1989 AB ₃	12.4	0.15	20000226	103.17273	300.34705	113.71396	11.13197	0.0998522	3.0146160	31	5	1955-2000	0.89	M-v	2	Williams	34284	1989 AB ₃
1989 AF ₃	14.3	0.15	20000226	35.36132	29.13657	110.74771	6.73213	0.1853082	2.3261437	38	5	1988-2000	0.76	M-v	1	Williams	36876	1989 AF ₃
1989 AG ₆	13.7	0.15	20000226	300.31207	71.52340	102.54130	2.69695	0.1199390	3.1839681	25	2	1989-2000	0.52	M-v	5	Williams	37115	1989 AG ₆
1989 AD ₇	12.9	0.15	20000226	127.50198	263.48047	140.36119	10.96376	0.1192726	3.0026720	30	3	1988-2000	0.75	M-v	4	Williams	35059	1989 AD ₇
1989 BH	13.3	0.15	20000226	0.82524	47.79640	109.32313	10.03074	0.1722555	2.3608592	57	3	1989-2000	0.62	M-v	2	Williams	37115	1989 BH
1989 CR	13.4	0.15	20000226	174.24251	115.87888	111.12894	24.89951	0.2553936	2.5653934	28	4	1989-1999	0.83	M-v	2	Williams	36504	1989 CR
1989 CB ₆	15.2	0.15	20000226	9.66796	7.35204	113.35136	2.26059	0.1385656	2.3923741	30	3	1989-2000	0.64	M-v	4	Williams	23514	1989 CB ₆
1989 DB	13.7	0.15	20000226	341.98106	150.79339	35.40485	3.33376	0.1738891	2.3730913	84	4	1978-2000	0.80	M-v	3	Williams	37258	1989 DB
1989 DC	13.5	0.15	20000226	4.23612	157.44025	27.41366	7.23819	0.0745440	2.3369960	28	6	1975-2000	0.86	M-v	2	Williams	35680	1989 DC
1989 EE	13.1	0.15	20000226	6.15194	322.19636	163.54095	29.32055	0.2715371	3.1465852	24	4	1989-2000	0.89	M-v	2	Williams	30686	1989 EE
1989 GB	13.5	0.15	20000226	328.28479	171.85395	40.90131	13.63243	0.0659927	2.3911656	30	3	1989-2000	0.98	M-v	4	Williams	35680	1989 GB
1989 GM ₁	13.5	0.15	20000226	78.71320	130.32238	219.54413	11.78425	0.2087124	2.6094867	58	3	1989-2000	0.66	M-v	1	Williams	37258	1989 GM ₁
1989 GH ₃	14.5	0.15	20000226	9.80956	301.64990	216.78095	7.75073	0.1267880	2.3915519	44	3	1989-2000	0.78	M-v	4	Williams	33223	1989 GH ₃
1989 GN ₃	12.9	0.15	20000226	6.96917	306.34586	186.86262	12.13714	0.1860999	3.1941324	47	3	1989-2000	0.72	M-v	3	Williams	37258	1989 GN ₃
1989 GU ₃	14.2	0.15	20000226	210.65857	20.04511	260.39768	4.11941	0.0983068	2.4741085	69	5	1989-2000	0.62	M-v	1	Williams	33067	1989 GU ₃
1989 HC	12.2	0.15	20000226	185.39961	263.84891	82.67536	22.60292	0.0149168	3.2051068	33	4	1989-2000	0.82	M-v	2	Williams	34489	1989 HC
1989 OL	13.9	0.15	20000226	223.50701	249.75451	46.87545	13.05962	0.1365455	2.5379031	34	6	1977-2000	0.75	M-v	2	Williams	33543	1989 OL
1989 PU	13.7	0.15	20000226	213.39036	193.96458	138.04940	29.66735	0.2447979	2.5391783	41	5	1989-2000	0.70	M-v	2	Williams	33741	1989 PU
1989 QH	14.8	0.15	20000226	105.90907	28.41090	306.88022	2.78501	0.1507556	2.1714284	43	3	1989-2000	0.70	M-v	3	Williams	32301	1989 QH
1989 RX	12.8	0.15	20000226	113.33820	131.54936	237.14640	7.16962	0.2002080	2.6892530	76	3	1989-2000	0.67	M-v	2	Williams	37258	1989 RX
1989 RD ₁	13.3	0.15	20000226	135.75441	261.09808	87.02618	13.28333	0.1933069	2.6658430	49	4	1989-2000	0.72	M-v	1	Williams	33741	1989 RD ₁
1989 RY ₁	13.9	0.15	20000226	131.96436	147.79460	156.72936	15.25255	0.2793520	2.7599858	55	3	1989-2000	0.73	M-v	2	Williams	34575	1989 RY ₁
1989 SD	14.4	0.15	20000226	103.00756	343.41869	30.22795	2.35923	0.1490731	2.1517604	53	4	1989-2000	0.56	M-v	2	Williams	36876	1989 SD
1989 SR	12.8	0.15	20000226	4.55803	130.43890	240.14430	8.88612	0.0991149	2.9894711	90	4	1989-2000	0.70	M-v	2	Williams	37258	1989 SR
1989 SB ₁	14.1	0.15	20000226	310.51316	120.27181	355.38039	6.39696	0.0906565	2.2420448	96	2	1989-2000	0.64	M-v	4	Williams	37258	1989 SB ₁
1989 SM ₁	14.1	0.15	20000226	37.91936	238.23373	135.75774	3.53982	0.1695875	2.9026920	48	2	1989-2000	0.63	M-v	4	Williams	37258	1989 SM ₁
1989 ST ₄	13.7	0.15	20000226	198.87285	228.58956	47.42161	6.57158	0.0793830	2.7424595	61	3	1989-2000	0.85	M-v	4	Williams	33334	1989 ST ₄
1989 SZ ₄	14.5	0.15	20000226	28.27911	22.83761	55.25602	3.70834	0.0706548	2.1827185	44	3	1989-2000	0.58	M-v	2	Williams	37258	1989 SZ ₄
1989 TZ	13.1	0.15	20000226	196.40728	91.05031	231.04684	12.86294	0.2203311	2.5915339	19	3	1989-2000	0.85	M-v	3	Williams	33676	1989 TZ
1989 TH ₁	13.1	0.15	20000226	111.99299	45.68826	344.10285	8.20736	0.2916981	2.7171284	77	5	1962-2000	0.79	M-v	2	Williams	37258	1989 TH ₁
1989 TN ₁	14.5	0.15	20000226	81.31917	56.38704	342.27505	11.15378	0.2344435	2.7469361	53	3	1989-2000	0.66	M-v	2	Williams	33543	1989 TN ₁
1989 TR ₂	12.3	0.15	20000226	353.37407	28.96584	51.95477	13.84278	0.1289732	2.9031425	77	2	1989-2000	0.53	M-v	3	Williams	37258	1989 TR ₂
1989 TA ₄	14.7	0.15	20000226	49.45868	4.64986	55.74466	5.13862	0.0896467	2.7869043	35	3	1989-2000	1.07	M-v	3	Williams	32921	1989 TA ₄
1989 TF ₁₄	13.6	0.15	20000226	267.43175	200.90905	72.07639	3.34624	0.0769912	2.5713988	34	5	1989-2000	0.60	M-v	2	Williams	33543	1989 TF ₁₄
1989 TN ₁₆	14.5	0.15	20000226	270.38854	325.65743	190.64054	2.28725	0.0807993	2.2228487	105	4	1989-2000	0.52	M-v	1	Williams	37258	1989 TN ₁₆
1989 UA ₁	14.5	0.15	20000226	69.59165	0.41853	4.43109	5.26728	0.1862478	2.2068718	46	3	1989-1999	0.72	M-v	3	Williams	37258	1989 UA ₁
1989 VM ₁	16.2	0.15	20000226	76.18876	231.92522	142.22488	5.81403	0.1751869	2.2015252	29	3	1989-2000	0.56	M-v	4	Williams	28843	1989 VM ₁

1989 WU	14.0	0.15	20000226	15.92502	174.26235	270.37651	4.95827	0.1547841	2.2317978	81	3	1989–2000	0.65	M-v	3	Williams	37116	1989 WU
1989 WA ₁	13.7	0.15	20000226	310.01425	59.97768	69.72915	9.88019	0.0634045	2.2553833	52	5	1967–2000	0.60	M-v	2	Williams	37258	1989 WA ₁
1989 WB ₃	13.3	0.15	20000226	68.79762	278.87391	67.96314	10.46695	0.0567852	2.9906215	85	4	1989–2000	0.66	M-v	2	Williams	37258	1989 WB ₃
1989 YC ₆	14.9	0.15	20000226	45.36187	223.15335	160.33538	5.65373	0.1710001	2.2799329	75	4	1989–2000	0.56	M-v	2	Williams	37258	1989 YC ₆
1989 YE ₆	14.2	0.15	20000226	13.48015	193.38107	256.27373	7.37193	0.0774413	2.2554053	61	3	1989–2000	0.64	M-v	3	Williams	37258	1989 YE ₆
1990 BA ₂	12.6	0.15	20000226	328.19176	190.21299	302.20455	10.52818	0.1461073	3.0417170	64	3	1990–2000	0.76	M-v	3	Williams	37258	1990 BA ₂
1990 CE	14.8	0.15	20000226	331.91276	335.02682	160.25872	5.38001	0.0949273	2.2785155	36	3	1990–2000	0.54	M-v	4	Williams	37259	1990 CE
1990 DW	12.8	0.15	20000226	339.25846	98.01801	331.67826	6.39158	0.0588955	2.3903472	75	2	1990–2000	0.60	M-v	4	Williams	37259	1990 DW
1990 DZ	13.2	0.15	20000226	329.80022	218.72966	338.00698	9.58908	0.1724911	2.9381599	26	4	1990–1999	0.68	M-v	3	Williams	37259	1990 DZ
1990 DU ₄	14.3	0.15	20000226	342.42419	269.58135	186.80730	2.63720	0.1438800	2.3384980	40	3	1990–2000	0.58	M-v	2	Williams	37259	1990 DU ₄
1990 EJ	12.5	0.15	20000226	272.15556	213.36028	345.75573	8.84886	0.1549058	3.1046605	61	3	1990–2000	0.70	M-v	3	Williams	37259	1990 EJ
1990 EV ₁	14.0	0.15	20000226	285.83064	329.88716	189.05225	9.16540	0.1321810	2.3477809	63	3	1990–2000	0.62	M-v	3	Williams	37259	1990 EV ₁
1990 EL ₂	15.5	0.15	20000226	312.60377	358.77995	213.54911	5.69633	0.1046545	2.2440848	37	5	1990–2000	0.78	M-v	2	Williams	33068	1990 EL ₂
1990 EU ₄	14.7	0.15	20000226	308.96583	178.76015	337.92697	3.94344	0.0786536	2.3187069	45	4	1981–2000	0.70	M-v	3	Williams	36876	1990 EU ₄
1990 ES ₆	13.0	0.15	20000226	123.11152	195.06956	204.28728	1.42601	0.0551262	2.9017195	36	4	1978–2000	0.67	M-v	3	Williams	35912	1990 ES ₆
1990 FD ₃	12.2	0.15	20000226	190.97297	98.82239	158.47746	15.67734	0.0364618	3.1444305	57	3	1990–2000	0.68	M-v	3	Williams	37259	1990 FD ₃
1990 GD	14.4	0.15	20000226	153.43596	253.41562	351.16753	7.48965	0.1042597	2.4504468	78	3	1990–1999	0.48	M-v	2	Williams	37259	1990 GD
1990 GN	14.9	0.15	20000226	285.06386	174.71749	357.51086	1.70735	0.1618945	2.3343052	85	6	1976–1999	0.64	M-v	3	Williams	37259	1990 GN
1990 HE	14.3	0.15	20000226	159.18082	255.78731	35.61345	24.80367	0.1153870	1.9406187	50	3	1990–1999	0.68	M-v	2	Williams	37259	1990 HE
1990 KD	14.2	0.15	20000226	127.97994	164.34299	101.57136	13.77535	0.2518935	2.5462591	58	3	1990–1999	0.62	M-v	2	Williams	36505	1990 KD
1990 KR	14.3	0.15	20000226	130.38039	83.64422	182.03850	11.69192	0.2285547	2.5451351	67	3	1990–2000	0.65	M-v	2	Williams	36877	1990 KR
1990 MR	14.2	0.15	20000226	272.87561	7.05670	248.47422	6.89147	0.2185879	2.3415325	47	6	1980–2000	0.66	M-v	2	Williams	33335	1990 MR
1990 OX ₁	13.6	0.15	20000226	172.88094	280.19303	86.98792	5.73258	0.1184599	2.3974944	61	5	1989–2000	0.67	M-v	2	Williams	33742	1990 OX ₁
1990 OB ₅	13.1	0.15	20000226	45.06528	67.04276	259.67017	11.75878	0.1889238	2.6887292	110	3	1990–2000	0.51	M-v	2	Williams	37259	1990 OB ₅
1990 QE ₄	13.9	0.15	20000226	101.29705	181.15118	157.41862	14.36466	0.2821575	2.5852948	35	3	1990–2000	0.62	M-v	2	Williams	36877	1990 QE ₄
1990 QB ₅	13.9	0.15	20000226	120.11915	337.22289	67.03365	5.92320	0.1816031	2.4628037	69	5	1990–2000	0.63	M-v	2	Williams	35682	1990 QB ₅
1990 QY ₅	13.9	0.15	20000226	43.37964	26.20604	332.77163	12.53466	0.1885333	2.6828818	73	2	1990–1999	0.61	M-v	3	Williams	37259	1990 QY ₅
1990 QE ₇	14.0	0.15	20000226	22.24972	319.45736	142.95698	2.13640	0.1208823	2.5339980	100	5	1990–2000	0.69	M-v	2	Williams	37259	1990 QE ₇
1990 QN ₇	14.2	0.15	20000226	270.09043	225.98863	37.84306	2.72424	0.1913133	2.3784006	42	5	1990–2000	0.67	M-v	2	Williams	35682	1990 QN ₇
1990 QP ₁₀	12.4	0.15	20000226	243.27087	311.99327	6.34306	6.60727	0.1150955	3.2384913	36	7	1973–2000	0.86	M-v	1	Williams	35682	1990 QP ₁₀
1990 RT ₂	13.2	0.15	20000226	37.14945	15.28867	356.83403	12.02196	0.1725193	2.7000498	89	5	1981–2000	0.55	M-v	2	Williams	37259	1990 RT ₂
1990 RY ₂	13.1	0.15	20000226	85.44673	69.61216	278.30382	2.35654	0.2696601	3.9237160	72	5	1990–2000	0.56	M-v	1	Williams	35682	1990 RY ₂
1990 RO ₇	14.5	0.15	20000226	113.90795	190.00685	162.08622	3.26197	0.0454285	2.5528458	70	4	1990–2000	0.69	M-v	3	Williams	37259	1990 RO ₇
1990 RN ₈	14.4	0.15	20000226	8.08453	220.38335	168.37724	3.09363	0.0903434	2.7116585	79	4	1990–1999	0.63	M-v	1	Williams	37259	1990 RN ₈
1990 RP ₉	13.4	0.15	20000226	259.74460	43.91226	247.47191	5.61700	0.1147946	2.3597046	48	6	1971–2000	0.68	M-v	1	Williams	33544	1990 RP ₉
1990 SE ₁	14.1	0.15	20000226	173.30489	304.51128	346.57339	13.02853	0.1737662	2.5464748	30	3	1990–1999	0.68	M-v	3	Williams	37259	1990 SE ₁
1990 SQ ₁	13.6	0.15	20000226	64.34133	8.82648	344.64768	11.75326	0.1965745	2.6702574	26	2	1990–2000	0.79	M-v	4	Williams	37116	1990 SQ ₁
1990 SS ₃	13.6	0.15	20000226	39.05671	34.77356	2.55814	11.36423	0.3117180	2.6751481	41	4	1933–2000	0.58	M-v	1	Williams	37259	1990 SS ₃
1990 SX ₃	13.5	0.15	20000226	96.80163	60.17376	308.31422	12.31883	0.2179638	2.5847846	70	3	1990–2000	0.55	M-v	2	Williams	37259	1990 SX ₃
1990 SY ₃	13.2	0.15	20000226	65.28896	85.46099	275.18115	11.10640	0.2006290	2.6661605	50	3	1990–2000	0.45	M-v	3	Williams	37259	1990 SY ₃
1990 SE ₄	13.4	0.15	20000226	282.11317	278.49304	213.54948	1.24158	0.0063686	2.7029914	84	3	1990–2000	0.50	M-v	2	Williams	37259	1990 SE ₄
1990 SF ₄	13.9	0.15	20000226	165.09711	55.95356	230.44531	10.60075	0.2228230	2.5436968	60	4	1990–2000	0.72	M-v	3	Williams	33544	1990 SF ₄
1990 SE ₅	12.7	0.15	20000226	80.81661	291.23423	52.37238	4.49251	0.1747389	3.9875018	63	3	1990–2000	0.59	M-v	4	Williams	37259	1990 SE ₅
1990 SN ₆	14.0	0.15	20000226	255.27108	182.09310	122.30458	4.85947	0.0799355	2.3814225	38	5	1990–2000	0.81	M-v	1	Williams	33742	1990 SN ₆
1990 SX ₆	14.8	0.15	20000226	168.36861	214.27690	94.85519	4.53242	0.1360847	2.5246732	68	3	1990–2000	0.71	M-v	4	Marsden	37259	1990 SX ₆
1990 ST ₇	14.5	0.15	20000226	45.25934	350.27969	58.92345	3.98005	0.1701791	2.6169884	31	2	1990–2000	0.54	M-v	5	Williams	37116	1990 ST ₇
1990 SC ₈	15.1	0.15	20000226	120.08065	199.06349	147.96457	7.69828	0.1721852	2.5530260	38	4	1990–2000	0.80	M-v	3	Williams	32742	1990 SC ₈
1990 SW ₈	13.8	0.15	20000226	3.55580	206.00317	160.68834	12.06024	0.1362596	2.7897106	70	3	1990–1999	0.65	M-v	3	Williams	37259	1990 SW ₈
1990 SX ₈	12.8	0.15	20000226	299.55507	281.84794	168.51153	17.25528	0.1058530	2.7713944	76	4	1985–1999	0.62	M-v	2	Williams	37259	1990 SX ₈
1990 SG ₁₂	14.7	0.15	20000226	105.77028	158.19511	212.73923	3.99939	0.2124185	2.5497110	55	6	1986–2000	0.69	M-v	1	Williams	33544	1990 SG ₁₂
1990 ST ₁₄	14.4	0.15	20000226	47.11918	342.24249	50.71428	6.82292	0.2390079	2.6639260	45	3	1990–2000	0.47	M-v	3	Williams	36877	1990 ST ₁₄
1990 SP ₁₅	11.8	0.15	20000226	305.08523	71.02307	193.13909	15.65580	0.0766779	3.2242421	29	4	1990–2000	0.68	M-v	1	Williams	35282	1990 SP ₁₅
1990 SU ₁₆	13.8	0.15	20000226	197.33767	175.16571	110.12149	6.22247	0.1287960	2.4717451	48	3	1990–2000	0.47	M-v	3	Williams	37116	1990 SU ₁₆

1990 SK ₂₈	13.8	0.15	20000226	132.86332	19.15331	346.90788	2.50678	0.1561578	2.5232672	80	5	1990–2000	0.60	M-v	2	Williams	34576	1990 SK ₂₈
1990 TT	13.5	0.15	20000226	3.04480	23.34756	12.46108	8.50361	0.0592111	2.7697036	74	4	1986–1999	0.69	M-v	2	Williams	37259	1990 TT
1990 TZ ₁	13.7	0.15	20000226	35.09449	95.35170	279.18837	2.27969	0.0886692	2.7222437	115	3	1990–1999	0.53	M-v	3	Williams	37259	1990 TZ ₁
1990 TG ₂	14.5	0.15	20000226	9.12959	27.07118	9.78626	12.89747	0.1935338	2.7482045	61	2	1990–2000	0.62	M-v	3	Williams	37259	1990 TG ₂
1990 TO ₄	14.0	0.15	20000226	68.11514	5.68576	83.06256	10.40639	0.1649211	2.5458109	27	4	1982–2000	0.77	M-v	2	Williams	33544	1990 TO ₄
1990 TF ₆	14.6	0.15	20000226	3.60741	87.45442	328.57762	8.78953	0.3429939	2.7205685	57	2	1990–2000	0.50	M-v	3	Williams	37259	1990 TF ₆
1990 TF ₈	13.9	0.15	20000226	55.50085	247.92182	217.01898	13.90110	0.1373575	2.5447859	37	4	1953–2000	0.72	M-v	1	Williams	35061	1990 TF ₈
1990 TS ₉	14.1	0.15	20000226	259.04240	181.25874	344.96792	7.17756	0.1425831	2.7261764	31	2	1990–1999	0.70	M-v	5	Williams	36788	1990 TS ₉
1990 TW ₁₁	15.1	0.15	20000226	57.24424	65.04884	346.00646	2.44606	0.2404275	2.6121998	44	4	1990–2000	0.69	M-v	2	Williams	32302	1990 TW ₁₁
1990 TD ₁₂	14.4	0.15	20000226	14.67921	171.99547	252.27569	2.90124	0.1994122	2.6832278	93	4	1985–2000	0.46	M-v	1	Williams	37259	1990 TD ₁₂
1990 UA ₁	12.3	0.15	20000226	6.09560	220.34947	236.76345	12.08147	0.1272425	2.6721318	80	3	1990–2000	0.60	M-v	2	Williams	37260	1990 UA ₁
1990 UO ₁	14.2	0.15	20000226	107.50695	258.35434	126.62216	5.18191	0.1554479	2.5721639	71	5	1990–2000	0.65	M-v	1	Marsden	33544	1990 UO ₁
1990 UU ₁	14.4	0.15	20000226	129.75599	174.28346	192.40957	13.59404	0.1768330	2.5527445	82	5	1990–2000	0.55	M-v	1	Williams	33544	1990 UU ₁
1990 UE ₄	13.5	0.15	20000226	216.10453	303.28295	132.02798	6.18598	0.1497391	3.1495367	36	6	1979–1999	0.72	M-v	1	Williams	35061	1990 UE ₄
1990 UJ ₄	13.4	0.15	20000226	289.23977	192.79205	63.68190	11.13760	0.1240587	2.4453548	27	4	1989–2000	0.68	M-v	3	Williams	33678	1990 UJ ₄
1990 UK ₅	14.7	0.15	20000226	72.77911	301.46383	112.73211	6.01906	0.2289957	2.5986222	26	3	1990–2000	0.79	M-v	2	Williams	37260	1990 UK ₅
1990 VE	12.8	0.15	20000226	9.00320	345.13847	70.56135	6.93156	0.1810182	2.7628399	90	3	1990–2000	0.57	M-v	2	Williams	37260	1990 VE
1990 VL ₁	13.9	0.15	20000226	138.85856	111.59548	239.13430	8.45052	0.2166186	2.5565795	78	5	1990–2000	0.74	M-v	1	Williams	34286	1990 VL ₁
1990 VM ₂	13.7	0.15	20000226	64.50850	285.10282	103.09008	4.65108	0.1976715	2.6698003	59	3	1990–2000	0.64	M-v	2	Williams	37260	1990 VM ₂
1990 VV ₂	13.0	0.15	20000226	10.69928	176.40514	227.13012	8.60693	0.1587238	2.7683792	78	2	1990–2000	0.57	M-v	3	Williams	37260	1990 VV ₂
1990 VM ₃	13.8	0.15	20000226	103.45101	291.45194	78.22929	18.01829	0.2983542	2.5999761	47	5	1990–2000	0.62	M-v	1	Williams	37260	1990 VM ₃
1990 VE ₄	13.8	0.15	20000226	8.05281	16.03040	53.55055	12.51595	0.2177651	2.7452274	68	3	1990–2000	0.57	M-v	3	Williams	37116	1990 VE ₄
1990 VS ₄	14.4	0.15	20000226	144.40749	138.60032	206.89732	11.91789	0.1931730	2.5676526	87	5	1990–2000	0.60	M-v	1	Williams	33544	1990 VS ₄
1990 VC ₆	13.4	0.15	20000226	243.67145	51.47993	204.41502	12.47013	0.1695800	2.5882969	46	5	1972–2000	0.68	M-v	1	Williams	35682	1990 VC ₆
1990 VP ₆	12.8	0.15	20000226	172.69390	122.39360	203.20000	12.74104	0.0608192	2.5894857	109	4	1990–2000	0.60	M-v	2	Williams	34286	1990 VP ₆
1990 VT ₆	14.4	0.15	20000226	63.90982	214.41528	174.93268	3.59731	0.1241036	2.6496527	35	3	1990–2000	0.69	M-v	4	Williams	25649	1990 VT ₆
1990 VD ₈	14.4	0.15	20000226	56.04696	85.41024	290.15189	3.43245	0.2820409	2.6838473	43	2	1990–2000	0.56	M-v	4	Williams	37260	1990 VD ₈
1990 VU ₈	13.3	0.15	20000226	70.14401	188.39057	131.12124	9.85174	0.1449534	2.7934767	70	3	1990–2000	0.58	M-v	2	Williams	37260	1990 VU ₈
1990 VW ₈	13.6	0.15	20000226	41.00589	238.65737	222.89718	12.96068	0.1635543	2.5887084	49	3	1990–2000	0.65	M-v	2	Williams	34286	1990 VW ₈
1990 WZ	13.9	0.15	20000226	339.05213	244.19218	190.62306	8.91229	0.0574988	2.7939060	87	4	1990–2000	0.48	M-v	2	Williams	37260	1990 WZ
1990 WG ₁	13.9	0.15	20000226	19.30463	3.76816	69.02598	22.88847	0.0385405	2.6912282	56	2	1990–2000	0.53	M-v	3	Williams	37116	1990 WG ₁
1990 WP ₁	14.3	0.15	20000226	35.77406	255.11134	101.22042	10.19996	0.1705873	2.7996895	57	3	1990–1999	0.84	M-v	3	Williams	37260	1990 WP ₁
1990 WS ₁	13.4	0.15	20000226	297.52810	324.74833	206.18491	12.48833	0.1186319	2.6839158	66	3	1990–2000	0.62	M-v	3	Williams	37260	1990 WS ₁
1990 WO ₄	14.7	0.15	20000226	9.45325	270.83905	202.15929	4.62431	0.2360414	2.6846330	41	3	1990–2000	0.67	M-v	3	Williams	36877	1990 WO ₄
1990 YP	14.2	0.15	20000226	2.47781	175.34710	303.01267	13.31340	0.2643921	2.7544778	51	3	1990–2000	0.63	M-v	3	Williams	37260	1990 YP
1991 AF ₂	14.5	0.15	20000226	62.45926	246.23119	184.96000	12.23829	0.1593869	2.6215499	40	3	1990–2000	0.68	M-v	2	Williams	32743	1991 AF ₂
1991 AG ₂	13.9	0.15	20000226	39.33802	242.86259	153.97417	14.76158	0.3025159	2.7142140	51	4	1981–2000	0.68	M-v	2	Williams	36877	1991 AG ₂
1991 BK	13.7	0.15	20000226	48.77095	48.26241	67.24717	5.73176	0.2800691	2.6290822	71	5	1991–2000	0.71	M-v	1	Williams	33545	1991 BK
1991 BZ	13.8	0.15	20000226	16.97860	126.75815	288.96711	5.99335	0.2455229	2.8076364	86	3	1980–2000	0.59	M-v	2	Williams	37260	1991 BZ
1991 CL	12.4	0.15	20000226	320.07773	50.42038	128.66114	13.92956	0.1574931	2.7648026	45	5	1989–2000	0.72	M-v	2	Williams	37260	1991 CL
1991 EM	13.2	0.15	20000226	87.74267	28.18566	280.68326	20.16667	0.1337110	3.2046349	40	3	1991–2000	0.74	M-v	3	Williams	36878	1991 EM
1991 ED ₂	14.2	0.15	20000226	234.52244	342.95350	162.20627	4.70026	0.0958333	2.2662579	96	3	1991–1999	0.60	M-v	3	Williams	36506	1991 ED ₂
1991 EF ₂	13.9	0.15	20000226	244.33475	18.52018	175.91951	5.42318	0.0560639	2.1969857	108	3	1991–2000	0.59	M-v	3	Williams	37260	1991 EF ₂
1991 EK ₄	15.0	0.15	20000226	251.16291	37.83292	185.89177	2.83464	0.0800835	2.1481887	50	3	1991–2000	0.62	M-v	3	Williams	37260	1991 EK ₄
1991 EL ₄	13.5	0.15	20000226	303.96487	86.40754	181.56041	12.81914	0.1686347	2.6730893	38	5	1991–2000	0.62	M-v	1	Williams	30895	1991 EL ₄
1991 EO ₅	13.2	0.15	20000226	5.82298	222.04556	167.73212	10.46122	0.1134323	3.0567706	61	4	1991–1999	0.65	M-v	1	Williams	37260	1991 EO ₅
1991 FG	13.8	0.15	20000226	347.77506	326.01658	204.41927	13.57990	0.3428700	2.7505089	59	5	1987–2000	0.77	M-v	2	Williams	36878	1991 FG
1991 FU ₃	14.9	0.15	20000226	240.60609	191.28370	16.03877	4.75385	0.0759155	2.1957883	56	2	1991–1999	0.53	M-v	4	Williams	37117	1991 FU ₃
1991 FW ₃	13.5	0.15	20000226	227.63286	136.18114	172.85334	5.29125	0.0150963	2.7482883	38	4	1991–2000	0.57	M-v	1	Williams	33743	1991 FW ₃
1991 GT ₄	14.5	0.15	20000226	100.26169	134.87418	190.67481	4.97380	0.1970566	2.2857911	75	3	1991–1999	0.60	M-v	2	Williams	37260	1991 GT ₄
1991 GS ₆	14.1	0.15	20000226	345.99470	44.60495	23.57678	9.83798	0.0962449	2.2627390	50	3	1991–1999	0.79	M-v	3	Williams	37260	1991 GS ₆
1991 GR ₇	14.3	0.15	20000226	267.04750	283.03761	230.97431	5.01121	0.0684263	2.2581161	87	3	1991–2000	0.61	M-v	2	Williams	37260	1991 GR ₇
1991 GF ₈	13.9	0.15	20000226	49.99808	106.70611	8.02942	9.09902	0.1174904	2.7737454	34	4	1991–2000	0.78	M-v	1	Williams	35683	1991 GF ₈

1991 LR	14.0	0.15	20000226	100.93461	189.25916	116.18047	14.96452	0.2330840	2.3810962	80	3	1991-2000	0.69	M-v	1	Williams	37260	1991 LR
1991 LU ₁	14.1	0.15	20000226	204.21801	60.46173	221.36948	5.47918	0.0575559	3.0383223	37	4	1991-2000	0.83	M-v	1	Williams	33545	1991 LU ₁
1991 LY ₁	13.6	0.15	20000226	196.87799	159.95978	81.55570	2.60785	0.1200479	3.1873075	44	2	1991-2000	0.61	M-v	4	Williams	37117	1991 LY ₁
1991 LF ₂	13.1	0.15	20000226	102.69353	230.84263	186.73890	1.81386	0.0953098	2.9292278	24	5	1980-2000	0.65	M-v	1	Williams	34577	1991 LF ₂
1991 LL ₂	13.7	0.15	20000226	156.50709	88.78453	212.15743	1.85632	0.1372040	3.1724503	39	5	1990-2000	0.84	M-v	1	Williams	35683	1991 LL ₂
1991 LJ ₃	15.9	0.15	20000226	224.67439	70.40522	202.45202	2.83251	0.1489226	2.2020070	26	4	1991-2000	0.90	M-v	2	Williams	35284	1991 LJ ₃
1991 NM	12.5	0.15	20000226	200.81392	28.87505	249.77267	16.60117	0.2090611	3.1325867	30	3	1991-2000	0.68	M-v	3	Williams	34493	1991 NM
1991 NB ₁	13.9	0.15	20000226	71.52958	71.54114	238.03791	7.65656	0.2444669	2.4735533	96	3	1991-1999	0.57	M-v	2	Williams	37260	1991 NB ₁
1991 NC ₁	14.6	0.15	20000226	206.54919	139.87238	126.22335	5.68706	0.2133442	2.2801044	63	3	1991-2000	0.67	M-v	3	Williams	33336	1991 NC ₁
1991 NG ₅	14.8	0.15	20000226	125.31635	358.96226	292.78166	4.34527	0.2265371	2.3815723	57	3	1991-1999	0.73	M-v	3	Williams	37260	1991 NG ₅
1991 OO	14.9	0.15	20000226	151.87408	108.83419	231.65384	3.38483	0.2014874	2.2936010	79	4	1991-2000	0.59	M-v	2	Marsden	33069	1991 OO
1991 OV	15.0	0.15	20000226	187.96022	145.94897	166.10379	5.16234	0.1898331	2.2656871	65	3	1991-2000	0.69	M-v	3	Williams	33545	1991 OV
1991 PG ₁	14.6	0.15	20000226	91.82481	194.44332	127.70242	12.44724	0.2755879	2.4285244	58	3	1991-2000	0.81	M-v	2	Williams	37260	1991 PG ₁
1991 PE ₂	15.7	0.15	20000226	76.16435	328.07185	12.76071	2.04910	0.2343509	2.4275058	68	5	1991-1999	0.67	M-v	2	Williams	37260	1991 PE ₂
1991 PG ₃	13.3	0.15	20000226	288.20724	136.67299	91.44684	2.76996	0.1547222	3.0396453	28	5	1990-2000	0.75	M-v	1	Williams	33336	1991 PG ₃
1991 PK ₃	14.2	0.15	20000226	13.44308	288.90848	57.89603	2.38785	0.1078439	2.5396797	62	4	1991-1999	0.81	M-v	1	Williams	35420	1991 PK ₃
1991 PM ₄	14.4	0.15	20000226	184.83945	331.52961	315.81280	4.77206	0.1525770	2.2958783	50	4	1991-2000	0.66	M-v	2	Williams	35683	1991 PM ₄
1991 PA ₅	15.3	0.15	20000226	180.54142	0.04675	307.88595	3.15939	0.1645740	2.2781879	46	3	1991-2000	0.56	M-v	3	Williams	33743	1991 PA ₅
1991 PF ₅	14.6	0.15	20000226	257.05172	295.88296	312.43425	4.62195	0.1215564	2.2336880	69	3	1991-2000	0.74	M-v	2	Williams	36878	1991 PF ₅
1991 PQ ₅	15.2	0.15	20000226	187.11716	163.30773	142.49218	6.62554	0.1322983	2.2716266	53	4	1991-2000	0.78	M-v	2	Williams	33545	1991 PQ ₅
1991 PX ₅	14.1	0.15	20000226	126.98765	341.76253	340.75086	5.68613	0.0418503	2.3591931	37	3	1991-2000	0.70	M-v	4	Williams	37260	1991 PX ₅
1991 PX ₆	15.1	0.15	20000226	135.58880	250.48372	41.46617	1.85449	0.1835725	2.3842336	59	3	1991-1999	0.71	M-v	4	Williams	37260	1991 PX ₆
1991 PG ₇	11.7	0.15	20000226	320.51139	65.88157	345.39275	9.27111	0.2098374	4.0016305	47	2	1991-1999	0.62	M-v	3	Williams	37260	1991 PG ₇
1991 PE ₈	14.8	0.15	20000226	90.58657	223.56518	124.10658	2.18211	0.1988725	2.3895508	44	3	1991-2000	0.65	M-v	3	Williams	37117	1991 PE ₈
1991 PT ₉	13.7	0.15	20000226	184.23869	357.50786	286.96673	24.76736	0.2186538	2.2855025	66	3	1991-2000	0.60	M-v	2	Williams	37260	1991 PT ₉
1991 PD ₁₁	14.3	0.15	20000226	253.70051	135.09936	141.62443	6.34458	0.1990373	2.2076120	40	3	1991-2000	0.81	M-v	3	Williams	37260	1991 PD ₁₁
1991 PW ₁₁	13.9	0.15	20000226	116.82765	101.29139	187.71211	7.26512	0.1872802	2.4380887	74	3	1991-2000	0.68	M-v	2	Williams	37260	1991 PW ₁₁
1991 PF ₁₂	14.7	0.15	20000226	114.12915	37.64149	281.54418	6.95145	0.2369497	2.4030117	54	4	1991-2000	0.76	M-v	1	Williams	36878	1991 PF ₁₂
1991 PX ₁₄	14.5	0.15	20000226	123.06128	69.38483	260.79122	5.45632	0.1507346	2.3651379	22	4	1951-2000	0.71	M-v	3	Williams	29659	1991 PX ₁₄
1991 PJ ₁₅	14.8	0.15	20000226	199.09124	167.36591	118.82782	3.04501	0.1439606	2.2941861	65	4	1981-2000	0.59	M-v	2	Williams	37260	1991 PJ ₁₅
1991 PM ₁₆	13.9	0.15	20000226	209.88338	142.78633	154.94176	21.82123	0.2354875	2.2621235	29	4	1991-2000	0.79	M-v	2	Williams	32743	1991 PM ₁₆
1991 PU ₁₆	14.3	0.15	20000226	134.73564	302.86353	21.15809	3.26137	0.1234064	2.3704649	46	4	1991-2000	0.63	M-v	2	Williams	32303	1991 PU ₁₆
1991 PH ₁₈	14.2	0.15	20000226	104.01867	150.27198	156.16604	12.35483	0.2142021	2.4417701	58	3	1991-2000	0.65	M-v	1	Williams	37260	1991 PH ₁₈
1991 PO ₁₈	13.9	0.15	20000226	227.61895	290.67509	345.34058	5.66235	0.2136088	2.2487424	53	3	1991-2000	0.56	M-v	3	Williams	36878	1991 PO ₁₈
1991 PY ₁₈	14.9	0.15	20000226	98.06652	26.24580	323.32119	3.58556	0.2093464	2.3869519	31	4	1991-2000	0.56	M-v	2	Williams	36878	1991 PY ₁₈
1991 RA	14.6	0.15	20000226	174.38416	310.34090	356.88016	21.12280	0.0411546	1.8531285	52	3	1991-1999	0.52	M-v	3	Williams	37260	1991 RA
1991 RE ₁	13.8	0.15	20000226	47.55873	173.87550	312.87434	4.36186	0.0955252	2.2415488	45	5	1991-1999	0.79	M-v	2	Williams	35683	1991 RE ₁
1991 RC ₂	14.1	0.15	20000226	86.00307	82.98451	333.26548	7.38221	0.1267339	2.3200415	53	3	1991-2000	0.65	M-v	2	Williams	37260	1991 RC ₂
1991 RS ₂	13.9	0.15	20000226	64.19707	242.77349	210.29633	6.48385	0.0637155	2.3059921	111	4	1991-2000	0.67	M-v	1	Williams	35062	1991 RS ₂
1991 RU ₂	14.6	0.15	20000226	3.38594	271.93572	254.91306	4.47447	0.0922622	2.2777849	53	4	1991-2000	0.72	M-v	2	Williams	35683	1991 RU ₂
1991 RY ₂	14.9	0.15	20000226	73.91639	61.33478	280.03252	3.83754	0.1378881	2.4808307	58	2	1991-2000	0.50	M-v	4	Williams	37260	1991 RY ₂
1991 RK ₃	13.6	0.15	20000226	10.13517	56.34626	345.48841	13.08144	0.1653221	2.5229486	46	5	1977-2000	0.66	M-v	2	Williams	37117	1991 RK ₃
1991 RO ₃	15.1	0.15	20000226	223.40274	290.75174	329.05021	6.29498	0.0760455	2.3376443	36	3	1991-2000	0.75	M-v	4	Williams	35683	1991 RO ₃
1991 RA ₄	13.9	0.15	20000226	175.42360	28.37784	214.12190	7.72185	0.1159541	2.4727260	107	4	1991-2000	0.66	M-v	3	Williams	36879	1991 RA ₄
1991 RG ₄	15.7	0.15	20000226	106.29055	57.72997	279.49715	1.51455	0.2252915	2.4150536	34	5	1987-2000	0.70	M-v	1	Williams	37261	1991 RG ₄
1991 RN ₄	14.2	0.15	20000226	83.58782	226.72648	159.20625	6.27903	0.2318923	2.3806563	47	3	1991-2000	0.72	M-v	3	Williams	36879	1991 RN ₄
1991 RQ ₄	13.9	0.15	20000226	352.20916	119.11349	318.56219	3.83335	0.0661188	2.4887833	49	3	1991-2000	0.78	M-v	2	Williams	37261	1991 RQ ₄
1991 RQ ₅	14.2	0.15	20000226	163.23285	231.79559	24.84240	6.48808	0.1015637	2.4592245	72	2	1991-2000	0.59	M-v	4	Williams	37261	1991 RQ ₅
1991 RC ₆	14.0	0.15	20000226	25.89937	339.38254	20.79973	13.66045	0.1957274	2.5567429	52	3	1991-2000	0.70	M-v	2	Williams	37261	1991 RC ₆
1991 RG ₇	14.7	0.15	20000226	48.87576	149.20457	262.30739	3.73869	0.1790943	2.4529903	53	6	1983-2000	0.72	M-v	2	Williams	37261	1991 RG ₇
1991 RY ₈	14.4	0.15	20000226	144.01838	9.94204	8.59738	3.75433	0.1381320	2.2920079	75	4	1991-2000	0.63	M-v	2	Williams	33743	1991 RY ₈
1991 RL ₉	14.7	0.15	20000226	81.49732	149.71161	212.46787	2.00031	0.1779958	2.4355964	43	4	1968-2000	0.52	M-v	2	Williams	37117	1991 RL ₉
1991 RQ ₉	14.5	0.15	20000226	112.64962	4.27948	314.80439	1.66344	0.2232239	2.4195736	64	4	1991-2000	0.58	M-v	3	Williams	37261	1991 RQ ₉

1991 RF ₁₁	14.3	0.15	20000226	55.53567	74.58877	323.74170	4.61646	0.2159178	2.4406442	44	3	1991-2000	0.54	M-v	3	Williams	36508	1991 RF ₁₁
1991 RJ ₁₁	13.0	0.15	20000226	207.97381	190.69174	105.83365	2.42518	0.1151838	3.1279812	33	4	1989-2000	0.76	M-v	2	Williams	30290	1991 RJ ₁₁
1991 RS ₁₃	14.3	0.15	20000226	242.36382	3.79288	288.07179	4.36113	0.1430505	2.2356174	31	4	1991-2000	0.76	M-v	2	Williams	35683	1991 RS ₁₃
1991 RA ₁₄	13.2	0.15	20000226	17.89202	37.76784	338.96429	7.85380	0.2665610	3.9651788	43	2	1991-2000	0.54	M-v	3	Williams	37118	1991 RA ₁₄
1991 RG ₁₄	14.7	0.15	20000226	10.85613	37.61652	341.89639	13.05161	0.1899681	2.5507156	60	4	1991-1999	0.64	M-v	2	Williams	36879	1991 RG ₁₄
1991 RH ₁₄	14.4	0.15	20000226	47.94854	121.16437	326.35950	6.56211	0.0734509	2.3386541	59	3	1991-2000	0.72	M-v	3	Williams	37261	1991 RH ₁₄
1991 RA ₁₅	13.3	0.15	20000226	238.74765	133.95727	145.93249	0.08412	0.1539046	3.1646426	48	8	1984-2000	0.79	M-v	1	Williams	33546	1991 RA ₁₅
1991 RR ₁₆	12.4	0.15	20000226	165.88815	288.88808	23.77434	8.06332	0.0816392	3.4002914	33	4	1985-2000	0.63	M-v	2	Williams	37261	1991 RR ₁₆
1991 RG ₁₇	14.6	0.15	20000226	131.39547	233.43979	127.75347	3.40907	0.1177747	2.3344790	62	3	1991-2000	0.74	M-v	3	Williams	36879	1991 RG ₁₇
1991 RX ₁₇	14.0	0.15	20000226	160.84469	148.16440	177.73921	4.36066	0.1437372	2.3168452	88	3	1991-2000	0.81	M-v	3	Williams	37261	1991 RX ₁₇
1991 RD ₁₈	14.0	0.15	20000226	154.39659	109.03360	157.91930	3.88618	0.0438319	2.4471296	70	3	1991-2000	0.60	M-v	3	Williams	36789	1991 RD ₁₈
1991 RB ₁₉	14.3	0.15	20000226	7.54791	45.53837	334.89929	10.56404	0.1099860	2.5447015	82	5	1987-1999	0.77	M-v	3	Williams	36879	1991 RB ₁₉
1991 RJ ₂₀	15.0	0.15	20000226	89.44676	228.68920	131.84510	3.05590	0.2283082	2.4088401	39	4	1991-2000	0.59	M-v	3	Williams	37261	1991 RJ ₂₀
1991 RW ₂₁	14.3	0.15	20000226	45.88682	71.44896	341.12527	9.86983	0.2550727	2.4229259	38	3	1991-1999	0.50	M-v	3	Williams	37261	1991 RW ₂₁
1991 RJ ₂₉	12.8	0.15	20000226	176.81678	92.21770	293.82691	12.54306	0.2038074	3.1585856	27	3	1991-1999	0.56	M-v	2	Williams	37118	1991 RJ ₂₉
1991 SA	15.0	0.15	20000226	159.29489	56.32015	267.68605	5.65520	0.2583820	2.3275527	60	3	1991-2000	0.80	M-v	2	Williams	33546	1991 SA
1991 SB	13.7	0.15	20000226	62.01827	179.63251	216.63833	2.48504	0.1328824	2.4205760	53	4	1984-2000	0.61	M-v	1	Williams	37261	1991 SB
1991 SG	12.8	0.15	20000226	181.56868	187.31328	157.64225	9.87530	0.0873126	3.1696061	26	5	1977-2000	0.61	M-v	1	Williams	33546	1991 SG
1991 ST	13.5	0.15	20000226	236.40367	228.83424	79.71863	6.85564	0.2203945	2.2006621	36	6	1952-2000	0.78	M-v	2	Williams	33744	1991 ST
1991 SZ	13.8	0.15	20000226	123.80236	261.77050	52.94598	7.23611	0.1509969	2.3975866	51	3	1991-2000	0.58	M-v	3	Williams	36879	1991 SZ
1991 SE ₁	15.0	0.15	20000226	98.71635	274.12523	95.47035	7.47249	0.1368008	2.3680548	44	3	1991-2000	0.55	M-v	3	Williams	37118	1991 SE ₁
1991 SV ₁	14.2	0.15	20000226	135.20876	317.15819	17.79642	6.82300	0.1518313	2.3751398	35	3	1984-2000	0.75	M-v	4	Williams	37118	1991 SV ₁
1991 SE ₂	14.8	0.15	20000226	139.25525	144.97942	168.28335	2.41242	0.2315334	2.3591570	29	4	1991-2000	0.74	M-v	1	Williams	32303	1991 SE ₂
1991 TK	14.0	0.15	20000226	320.87342	46.66247	107.83083	5.12460	0.0629054	2.3916406	80	4	1991-2000	0.78	M-v	3	Williams	37261	1991 TK
1991 TS	14.3	0.15	20000226	127.24738	192.56659	130.52943	6.33977	0.1062989	2.4145555	36	3	1991-2000	0.69	M-v	3	Williams	37261	1991 TS
1991 TY	14.7	0.15	20000226	95.04427	239.75969	126.91060	23.20326	0.2917000	2.4003435	33	5	1976-2000	0.64	M-v	1	Williams	32303	1991 TY
1991 TQ ₁	13.2	0.15	20000226	118.40207	6.90156	21.25143	24.65354	0.2170090	2.3289530	19	3	1991-2000	0.56	M-v	2	Williams	33932	1991 TQ ₁
1991 TC ₂	14.7	0.15	20000226	351.54846	55.17276	26.93547	24.97561	0.1198282	1.9211592	60	3	1991-2000	0.59	M-v	2	Williams	37261	1991 TC ₂
1991 TG ₂	14.4	0.15	20000226	356.95457	1.73274	45.70775	6.01535	0.3077818	2.5728098	26	3	1991-1999	0.53	M-v	3	Williams	36879	1991 TG ₂
1991 TQ ₂	14.9	0.15	20000226	41.86559	164.76423	270.63555	2.76166	0.2186078	2.4175211	73	4	1991-2000	0.58	M-v	2	Williams	37261	1991 TQ ₂
1991 TD ₄	13.9	0.15	20000226	22.26417	160.54846	174.89545	17.91386	0.2667750	2.6134938	53	3	1991-1999	0.89	M-v	3	Williams	35421	1991 TD ₄
1991 TU ₅	15.1	0.15	20000226	11.40609	103.77345	344.89394	3.29181	0.0893658	2.4335758	34	3	1991-2000	0.42	M-v	3	Williams	29915	1991 TU ₅
1991 UR	14.2	0.15	20000226	169.14567	331.24210	10.69456	6.92587	0.1280093	2.3185939	72	3	1991-1999	0.63	M-v	3	Williams	33744	1991 UR
1991 UR ₁	14.4	0.15	20000226	98.49259	9.57267	41.92233	1.93382	0.1530493	2.3624842	61	5	1980-2000	0.75	M-v	1	Williams	33546	1991 UR ₁
1991 UE ₂	13.6	0.15	20000226	319.48798	52.49793	47.25739	3.67224	0.0878106	2.5599615	124	4	1987-2000	0.49	M-v	1	Williams	37261	1991 UE ₂
1991 UJ ₂	13.9	0.15	20000226	221.07055	264.75733	31.52735	5.33654	0.1578044	2.3052378	66	3	1991-2000	0.59	M-v	3	Williams	36879	1991 UJ ₂
1991 UY ₃	15.0	0.15	20000226	51.06241	178.61203	212.08895	3.50635	0.2483026	2.4798278	50	4	1987-2000	0.62	M-v	3	Williams	36879	1991 UY ₃
1991 VY	13.5	0.15	20000226	42.43540	356.97727	68.48143	5.85354	0.0922092	2.4531869	65	4	1991-2000	0.57	M-v	3	Williams	37261	1991 VY
1991 VD ₁	13.7	0.15	20000226	28.83738	3.29831	32.44801	16.03618	0.0936319	2.5316530	129	5	1987-2000	0.51	M-v	2	Williams	37261	1991 VD ₁
1991 VQ ₁	13.5	0.15	20000226	168.61732	297.52172	71.85646	7.34551	0.2068240	2.2813303	90	4	1991-2000	0.72	M-v	2	Williams	34007	1991 VQ ₁
1991 VY ₁	13.8	0.15	20000226	122.29991	91.52800	274.17421	22.07721	0.2802839	2.3675835	30	3	1991-2000	0.65	M-v	3	Williams	33070	1991 VY ₁
1991 VE ₂	12.9	0.15	20000226	355.10259	210.10434	228.37521	14.71178	0.0992302	2.5500873	116	4	1991-2000	0.49	M-v	2	Williams	37261	1991 VE ₂
1991 VE ₃	14.3	0.15	20000226	17.23309	296.85968	118.50456	4.52564	0.2890300	2.5431165	83	3	1991-2000	0.47	M-v	3	Williams	37261	1991 VE ₃
1991 VO ₃	14.5	0.15	20000226	50.84421	36.46781	59.65317	4.17246	0.1511225	2.3839833	44	3	1991-2000	0.67	M-v	2	Williams	36879	1991 VO ₃
1991 VP ₃	14.0	0.15	20000226	21.91639	81.07205	49.72994	7.87820	0.0899533	2.3669525	40	4	1978-2000	0.72	M-v	2	Williams	35684	1991 VP ₃
1991 VJ ₄	13.4	0.15	20000226	226.54329	278.20856	42.60571	7.02687	0.1487635	2.2864618	31	4	1956-2000	0.60	M-v	3	Williams	34008	1991 VJ ₄
1991 VY ₄	13.8	0.15	20000226	36.33963	334.12831	98.59170	3.73438	0.1502001	2.4595985	80	4	1991-2000	0.65	M-v	1	Williams	37261	1991 VY ₄
1991 VC ₅	13.5	0.15	20000226	76.40681	24.42278	52.18392	7.66621	0.0955926	2.3601059	51	5	1973-2000	0.76	M-v	1	Williams	33546	1991 VC ₅
1991 VM ₅	13.6	0.15	20000226	168.49894	267.29231	70.06704	6.34625	0.2112667	2.3240593	83	4	1977-2000	0.69	M-v	3	Williams	37261	1991 VM ₅
1991 VH ₆	14.0	0.15	20000226	87.93400	187.29957	172.27434	7.80734	0.1572082	2.4751528	49	4	1991-2000	0.75	M-v	1	Williams	37261	1991 VH ₆
1991 XD	14.0	0.15	20000226	21.53790	11.32514	65.44790	22.71101	0.1012899	1.9372018	118	3	1991-2000	0.63	M-v	2	Williams	37261	1991 XD
1991 YC	13.3	0.15	20000226	333.34940	24.71301	109.14898	14.93874	0.2107738	2.5782460	68	5	1988-2000	0.56	M-v	2	Williams	37261	1991 YC
1992 AJ ₁	13.1	0.15	20000226	285.44042	306.30945	272.81525	5.06675	0.1070588	2.5216564	76	4	1992-2000	0.65	M-v	3	Williams	37261	1992 AJ ₁

1992 AV ₁	14.2	0.15	20000226	23.18153	328.98832	110.65187	24.76889	0.0732718	1.9463094	63	3	1992–2000	0.60	M-v	2	Williams	37261	1992 AV ₁
1992 AO ₂	14.1	0.15	20000226	348.35967	72.27129	118.12524	8.56460	0.1420504	2.4387068	33	5	1992–2000	0.82	M-v	2	Williams	36880	1992 AO ₂
1992 AT ₂	13.9	0.15	20000226	227.68090	330.92105	293.21423	3.72353	0.1849885	2.5394075	55	4	1984–2000	0.63	M-v	3	Williams	37261	1992 AT ₂
1992 BD	14.8	0.15	20000226	19.86698	21.17447	79.16803	28.98983	0.0650450	1.8965029	71	4	1975–1999	0.48	M-v	2	Williams	37261	1992 BD
1992 BP ₂	14.4	0.15	20000226	43.11728	244.30777	217.12068	5.53777	0.0867627	2.4768595	50	4	1992–2000	0.65	M-v	2	Williams	37261	1992 BP ₂
1992 BQ ₂	13.9	0.15	20000226	347.49661	283.53956	236.52735	4.34720	0.0642177	2.4890131	33	4	1992–2000	0.66	M-v	3	Williams	37261	1992 BQ ₂
1992 BT ₂	12.5	0.15	20000226	339.29916	305.43198	146.68994	13.87209	0.1369152	2.6487382	92	3	1992–2000	0.60	M-v	3	Williams	37261	1992 BT ₂
1992 BM ₄	15.4	0.15	20000226	335.22132	74.90309	29.97788	2.85147	0.0573465	2.6408718	24	2	1992–1999	0.37	M-v	5	Williams	36790	1992 BM ₄
1992 CH	13.2	0.15	20000226	348.07770	168.70994	311.80783	12.62184	0.1097115	2.6299719	71	5	1992–2000	0.63	M-v	2	Williams	37261	1992 CH
1992 CN ₂	14.4	0.15	20000226	326.95588	221.93971	277.62157	10.71938	0.1272800	2.5842476	41	2	1992–2000	0.50	M-v	4	Williams	37118	1992 CN ₂
1992 CS ₂	13.9	0.15	20000226	262.75966	331.90588	261.31326	4.55750	0.0667609	2.5192513	62	4	1992–2000	0.74	M-v	2	Williams	37262	1992 CS ₂
1992 CG ₃	13.8	0.15	20000226	97.73238	257.29635	176.30122	6.24248	0.0984978	2.4147356	66	4	1992–2000	0.76	M-v	2	Williams	34288	1992 CG ₃
1992 DD ₄	15.7	0.15	20000226	345.79450	297.72071	156.38719	4.17189	0.0667927	2.7074628	16	3	1992–1999	0.58	M-v	4	Williams	31381	1992 DD ₄
1992 DU ₅	14.1	0.15	20000226	96.20896	233.72316	148.33202	10.18033	0.2164474	2.5813795	61	5	1990–2000	0.58	M-v	1	Williams	34578	1992 DU ₅
1992 DZ ₅	15.4	0.15	20000226	4.23986	313.12832	147.47868	3.48056	0.1949497	2.6151278	29	4	1971–2000	0.58	M-v	2	Williams	37262	1992 DZ ₅
1992 DC ₇	14.1	0.15	20000226	60.85398	207.56838	121.24276	3.15055	0.0702871	2.9003104	39	2	1992–1999	0.55	M-v	4	Williams	37262	1992 DC ₇
1992 DD ₈	14.1	0.15	20000226	77.52440	91.04928	253.77116	4.84940	0.1051206	2.7618830	39	2	1992–1999	0.59	M-v	5	Williams	37118	1992 DD ₈
1992 DF ₈	14.6	0.15	20000226	120.77845	172.69047	200.79614	7.49144	0.0354068	2.5674841	49	4	1992–2000	0.67	M-v	2	Williams	35684	1992 DF ₈
1992 DJ ₈	15.2	0.15	20000226	325.73588	343.11341	210.19310	4.08842	0.1586857	2.5366232	26	5	1992–2000	0.57	M-v	2	Williams	33744	1992 DJ ₈
1992 DM ₉	15.1	0.15	20000226	170.20887	127.20447	187.56862	9.06332	0.0220280	2.5983265	30	3	1992–2000	0.75	M-v	4	Williams	33338	1992 DM ₉
1992 EO	12.4	0.15	20000226	101.93190	252.52276	10.32775	14.27722	0.2722798	3.0999554	102	4	1976–1999	0.60	M-v	1	Williams	37262	1992 EO
1992 EX	13.6	0.15	20000226	305.14603	25.72900	136.85655	10.23514	0.0890290	2.6580294	49	3	1992–2000	0.66	M-v	3	Williams	37262	1992 EX
1992 EB ₄	13.9	0.15	20000226	5.68003	319.12942	138.86105	10.44232	0.0806552	2.6250269	34	3	1992–2000	0.64	M-v	4	Williams	37262	1992 EB ₄
1992 ED ₄	13.6	0.15	20000226	169.13526	10.11821	114.00327	2.68817	0.1389802	3.1868628	50	2	1992–1998	0.46	M-v	4	Williams	32048	1992 ED ₄
1992 EJ ₆	14.1	0.15	20000226	29.78367	273.07191	120.22993	6.16020	0.0286813	2.7705121	18	3	1992–2000	0.79	M-v	5	Williams	32226	1992 EJ ₆
1992 ES ₆	14.1	0.15	20000226	11.56642	302.87831	113.23668	7.04479	0.2144691	2.6947563	63	4	1992–2000	0.52	M-v	2	Williams	37262	1992 ES ₆
1992 EP ₇	14.0	0.15	20000226	209.52352	143.99688	138.15767	13.58024	0.2254925	2.6563704	28	5	1988–2000	0.71	M-v	3	Williams	30471	1992 EP ₇
1992 EW ₇	13.9	0.15	20000226	258.03476	52.87018	239.52135	1.18304	0.1612529	2.4735429	50	5	1982–2000	0.68	M-v	1	Williams	34496	1992 EW ₇
1992 EA ₈	14.1	0.15	20000226	282.00236	281.76915	193.32171	1.60664	0.0345360	2.8405520	17	3	1992–1999	0.69	M-v	4	Williams	25650	1992 EA ₈
1992 EX ₉	14.3	0.15	20000226	45.78836	240.81824	181.81853	3.71957	0.1903566	2.5838783	49	5	1992–2000	0.65	M-v	1	Williams	36880	1992 EX ₉
1992 EP ₁₀	14.2	0.15	20000226	314.76434	39.63346	163.10688	14.77775	0.0489920	2.5332747	36	4	1992–1999	0.53	M-v	3	Williams	34008	1992 EP ₁₀
1992 EG ₁₁	13.8	0.15	20000226	196.53440	105.02690	159.01820	13.10033	0.1562394	2.7142842	51	3	1992–2000	0.65	M-v	3	Williams	35685	1992 EG ₁₁
1992 ER ₁₁	13.7	0.15	20000226	322.01103	89.77723	148.14249	4.90931	0.1671288	2.4711881	22	4	1992–2000	0.59	M-v	1	Williams	33745	1992 ER ₁₁
1992 EZ ₁₁	13.6	0.15	20000226	125.87740	191.40307	133.43122	5.49817	0.1412850	2.7062076	70	3	1992–2000	0.68	M-v	3	Williams	37262	1992 EZ ₁₁
1992 EN ₁₂	14.2	0.15	20000226	13.45580	28.93102	97.89892	3.08564	0.0727491	2.5555654	53	3	1992–2000	0.78	M-v	3	Williams	37262	1992 EN ₁₂
1992 EO ₁₂	14.1	0.15	20000226	36.97921	258.48360	117.63384	4.49140	0.1071110	2.7851956	25	2	1992–2000	0.48	M-v	4	Williams	37119	1992 EO ₁₂
1992 EQ ₁₃	14.3	0.15	20000226	58.06300	96.73652	280.34022	4.14711	0.0845881	2.7262676	37	3	1992–1999	0.60	M-v	4	Williams	37262	1992 EQ ₁₃
1992 ED ₁₄	13.1	0.15	20000226	160.80994	170.66113	174.99393	8.18035	0.2072366	2.5516368	34	4	1992–2000	0.74	M-v	3	Williams	35685	1992 ED ₁₄
1992 EK ₁₄	13.7	0.15	20000226	145.39012	19.03200	336.31220	3.59891	0.2559833	2.5504201	64	5	1980–2000	0.66	M-v	2	Williams	34288	1992 EK ₁₄
1992 EW ₁₆	13.6	0.15	20000226	208.89312	333.13764	327.24786	4.06528	0.1215844	2.5822110	40	4	1992–2000	0.68	M-v	3	Williams	37262	1992 EW ₁₆
1992 EW ₁₇	14.1	0.15	20000226	249.88677	74.53978	179.51539	13.90000	0.1233296	2.5817046	21	3	1992–2000	0.87	M-v	3	Williams	37262	1992 EW ₁₇
1992 EA ₂₆	14.7	0.15	20000226	347.61843	157.40660	346.89931	10.50043	0.1538935	2.5772599	38	3	1992–2000	0.72	M-v	3	Williams	37262	1992 EA ₂₆
1992 EZ ₂₈	14.1	0.15	20000226	263.73530	84.54787	168.91157	13.40719	0.1243897	2.5592860	14	4	1989–2000	0.70	M-v	2	Williams	32928	1992 EZ ₂₈
1992 EV ₃₂	14.2	0.15	20000226	16.18146	194.15558	209.35543	3.43130	0.1102876	2.7583363	35	3	1992–1999	0.58	M-v	4	Williams	37262	1992 EV ₃₂
1992 GA	13.5	0.15	20000226	306.89039	248.06011	309.95446	11.66761	0.1197574	2.6348146	63	5	1992–2000	0.60	M-v	2	Williams	36880	1992 GA
1992 GE ₅	13.8	0.15	20000226	89.56270	286.41450	49.42874	2.83583	0.0790023	2.9239435	63	3	1992–1999	0.60	M-v	4	Williams	37119	1992 GE ₅
1992 HC ₂	13.6	0.15	20000226	77.49658	229.41337	130.29337	3.12166	0.1007622	2.9036017	40	2	1992–2000	0.34	M-v	4	Williams	37119	1992 HC ₂
1992 HD ₄	14.1	0.15	20000226	333.35853	340.82837	213.12908	7.15386	0.1368940	2.5791296	48	3	1992–2000	0.75	M-v	3	Williams	35685	1992 HD ₄
1992 JG	17.1	0.15	20000226	70.39693	239.35030	58.95201	5.56756	0.4251158	2.2659981	68	2	1992–1999	0.49	M-v	2	Williams	36509	1992 JG
1992 JQ	13.4	0.15	20000226	296.50912	54.07256	184.69738	12.34624	0.1831690	2.6176890	54	5	1992–1999	0.72	M-v	2	Williams	34288	1992 JQ
1992 JL ₁	13.8	0.15	20000226	202.57449	269.54381	26.67901	2.82084	0.1599597	2.7594793	42	5	1992–2000	0.79	M-v	1	Williams	35685	1992 JL ₁
1992 JB ₂	13.0	0.15	20000226	149.33580	149.35821	218.44705	11.07802	0.0632921	2.6436969	67	5	1970–2000	0.79	M-v	1	Williams	34498	1992 JB ₂
1992 JU ₂	14.8	0.15	20000226	68.93103	125.59076	211.71529	5.19229	0.2302292	2.1857890	127	3	1992–1999	0.70	M-v	2	Williams	37262	1992 JU ₂

1992 LE	13.5	0.15	20000226	190.10929	136.48179	152.94429	14.71038	0.2991293	2.8850290	28	5	1987–2000	0.70	M-v	2	Williams	34841	1992 LE
1992 LQ	12.8	0.15	20000226	136.98918	212.30032	75.45805	11.48334	0.0734864	2.9967455	71	2	1992–2000	0.60	M-v	4	Williams	37119	1992 LQ
1992 NS	13.5	0.15	20000226	272.09285	64.09801	218.35374	10.89455	0.1799507	2.6640850	37	5	1992–2000	0.85	M-v	1	Williams	33547	1992 NS
1992 OB	13.0	0.15	20000226	158.97398	232.45591	49.44656	17.69997	0.2050593	3.0927413	30	3	1992–2000	0.58	M-v	2	Williams	37262	1992 OB
1992 OL ₃	13.8	0.15	20000226	109.13929	167.51272	153.29735	2.14318	0.1438016	3.2152103	54	3	1992–2000	0.67	M-v	4	Williams	37262	1992 OL ₃
1992 OY ₇	13.4	0.15	20000226	181.04661	50.78785	278.48871	8.75427	0.2704486	2.8730686	61	4	1992–2000	0.77	M-v	2	Williams	37262	1992 OY ₇
1992 OB ₉	13.1	0.15	20000226	247.92334	171.06485	116.08719	12.00147	0.1813683	2.7621371	42	6	1950–2000	0.77	M-v	2	Williams	33547	1992 OB ₉
1992 OT ₉	13.2	0.15	20000226	183.83394	248.55996	103.27084	7.69311	0.0521807	2.7947558	39	4	1989–2000	0.80	M-v	1	Williams	35685	1992 OT ₉
1992 PF	14.8	0.15	20000226	97.73033	135.68898	181.35125	2.34564	0.2047141	2.2272509	120	3	1992–2000	0.57	M-v	3	Williams	37262	1992 PF
1992 PU ₁	13.6	0.15	20000226	185.60254	74.57335	170.69144	4.01474	0.1300010	3.1532145	39	3	1992–1999	0.81	M-v	4	Williams	37262	1992 PU ₁
1992 PA ₂	15.1	0.15	20000226	58.49574	42.16250	307.20010	5.67731	0.2172158	2.2614727	76	3	1992–2000	0.60	M-v	2	Williams	37262	1992 PA ₂
1992 PB ₂	13.3	0.15	20000226	116.03172	83.68397	248.12281	5.49184	0.1539977	3.1540309	84	3	1992–2000	0.56	M-v	4	Williams	37262	1992 PB ₂
1992 PK ₂	13.2	0.15	20000226	197.53137	6.05866	235.94944	5.88839	0.1470507	3.1109177	96	3	1992–2000	0.64	M-v	3	Williams	37262	1992 PK ₂
1992 PM ₂	15.4	0.15	20000226	71.15707	72.51460	244.11028	4.70706	0.1874240	2.2823739	67	3	1992–1999	0.62	M-v	2	Williams	37262	1992 PM ₂
1992 PC ₃	12.3	0.15	20000226	145.46282	61.50630	273.48485	11.60673	0.1611660	3.0485740	73	3	1992–2000	0.72	M-v	3	Williams	37262	1992 PC ₃
1992 PE ₃	14.7	0.15	20000226	67.09854	112.47632	238.93164	5.52096	0.1961095	2.2500696	119	3	1992–2000	0.55	M-v	2	Williams	37262	1992 PE ₃
1992 PZ ₃	14.1	0.15	20000226	48.35118	53.58688	323.15558	6.73751	0.1822170	2.2447142	61	4	1972–2000	0.53	M-v	1	Williams	37119	1992 PZ ₃
1992 PR ₆	13.1	0.15	20000226	129.13173	25.79511	330.63033	9.64672	0.2988845	3.0561066	41	5	1987–2000	0.75	M-v	1	Williams	35686	1992 PR ₆
1992 RU	15.4	0.15	20000226	26.05928	226.89466	150.86025	3.92982	0.2563820	2.3225758	67	3	1953–1999	0.69	M-v	2	Williams	36881	1992 RU
1992 RD ₁	13.2	0.15	20000226	180.53015	333.71271	359.50866	13.68059	0.1014552	2.9932573	39	6	1976–2000	0.78	M-v	1	Williams	33548	1992 RD ₁
1992 RE ₂	13.8	0.15	20000226	90.10932	88.35622	348.28933	1.23648	0.0804782	2.9352525	24	3	1992–2000	0.67	M-v	6	Williams	35686	1992 RE ₂
1992 RH ₃	15.6	0.15	20000226	130.64917	133.02081	214.57662	1.12561	0.1339734	2.1490695	26	3	1992–2000	0.42	M-v	4	Williams	29100	1992 RH ₃
1992 RO ₃	14.4	0.15	20000226	200.02076	81.00262	199.32471	0.43644	0.1380454	3.0278266	29	4	1992–2000	0.72	M-v	2	Williams	33548	1992 RO ₃
1992 RP ₅	15.9	0.15	20000226	82.60782	270.67503	79.08921	2.82176	0.2301472	2.2383664	39	3	1992–1999	0.62	M-v	3	Williams	37120	1992 RP ₅
1992 RX ₆	12.9	0.15	20000226	114.17242	22.36199	8.39577	9.52729	0.0925653	3.0415129	54	4	1992–2000	0.78	M-v	2	Williams	33548	1992 RX ₆
1992 RJ ₇	13.6	0.15	20000226	168.25636	130.10943	157.23834	5.57707	0.1483266	3.1631010	38	3	1992–2000	0.94	M-v	4	Williams	32929	1992 RJ ₇
1992 SO	14.3	0.15	20000226	74.58170	79.18854	244.51265	5.75684	0.1649792	2.3202546	107	3	1992–2000	0.60	M-v	2	Williams	37262	1992 SO
1992 SB ₁	12.0	0.15	20000226	130.83833	346.04392	1.95248	17.05532	0.1667442	3.1673308	52	4	1992–2000	0.67	M-v	2	Williams	33338	1992 SB ₁
1992 SQ ₁	15.0	0.15	20000226	44.91365	148.10843	190.98271	5.33053	0.2234836	2.3412362	46	2	1992–1999	0.53	M-v	2	Williams	36881	1992 SQ ₁
1992 SF ₁₁	13.6	0.15	20000226	4.31461	304.93217	176.08677	1.53138	0.1174488	3.1890422	68	4	1992–2000	0.65	M-v	1	Williams	33338	1992 SF ₁₁
1992 SY ₁₂	14.2	0.15	20000226	21.86522	24.57814	5.17443	9.83248	0.2104342	2.3225500	102	3	1992–2000	0.49	M-v	2	Williams	37262	1992 SY ₁₂
1992 SB ₁₃	13.6	0.15	20000226	307.61560	84.80215	47.09654	3.57566	0.0938069	2.2851522	91	3	1992–2000	0.49	M-v	3	Williams	37262	1992 SB ₁₃
1992 SG ₁₃	14.8	0.15	20000226	32.97337	355.52456	18.52113	5.66312	0.2542585	2.3379973	110	3	1992–2000	0.51	M-v	2	Williams	37262	1992 SG ₁₃
1992 SA ₁₇	15.1	0.15	20000226	313.56509	249.86050	223.75053	0.69036	0.0783202	2.2786323	91	2	1992–2000	0.54	M-v	4	Williams	37262	1992 SA ₁₇
1992 SY ₁₇	14.2	0.15	20000226	84.94200	71.48690	239.90840	8.41940	0.2809946	2.2897321	90	4	1985–2000	0.60	M-v	2	Williams	37262	1992 SY ₁₇
1992 SQ ₂₃	14.5	0.15	20000226	77.29255	101.45641	219.98895	7.82474	0.3105249	2.3070902	142	4	1981–2000	0.52	M-v	2	Williams	37262	1992 SQ ₂₃
1992 SM ₂₆	15.0	0.15	20000226	34.08475	349.57441	41.90834	7.21304	0.1218180	2.3051833	35	2	1992–2000	0.53	M-v	3	Williams	37263	1992 SM ₂₆
1992 UH ₁	14.8	0.15	20000226	49.92411	61.08813	0.54744	3.56749	0.1605393	2.2385828	44	4	1972–2000	0.57	M-v	2	Williams	37263	1992 UH ₁
1992 US ₁	14.5	0.15	20000226	63.89950	317.37309	46.88396	7.81849	0.1346195	2.2850978	147	4	1964–2000	0.56	M-v	2	Williams	37263	1992 US ₁
1992 UT ₂	14.2	0.15	20000226	84.46127	260.15477	71.51543	6.93038	0.2107860	2.2761524	106	4	1978–2000	0.55	M-v	2	Williams	37263	1992 UT ₂
1992 UW ₂	14.3	0.15	20000226	80.95308	284.74314	54.05600	5.93519	0.2154426	2.2805426	128	3	1992–2000	0.56	M-v	2	Williams	37263	1992 UW ₂
1992 UH ₃	14.5	0.15	20000226	77.20369	41.30217	13.00685	5.98689	0.1105962	2.1866492	41	6	1979–1999	0.76	M-v	1	Williams	37263	1992 UH ₃
1992 UR ₄	15.6	0.15	20000226	25.96872	140.44346	291.24970	1.61517	0.2344585	2.2812507	44	2	1992–2000	0.67	M-v	3	Williams	37120	1992 UR ₄
1992 UJ ₅	15.2	0.15	20000226	45.71975	190.00431	234.82452	0.52313	0.1995858	2.2510403	74	4	1992–2000	0.52	M-v	2	Williams	36881	1992 UJ ₅
1992 UU ₅	14.2	0.15	20000226	18.47814	346.74457	71.33574	3.24586	0.2278793	2.3172727	95	3	1985–2000	0.66	M-v	3	Williams	37263	1992 UU ₅
1992 UZ ₅	12.7	0.15	20000226	86.42752	14.87318	66.22198	14.44685	0.0986273	3.1275069	34	4	1992–2000	0.82	M-v	1	Williams	33745	1992 UZ ₅
1992 UC ₆	14.6	0.15	20000226	58.17336	143.75965	240.74908	7.00226	0.1125956	2.2923240	69	3	1991–2000	0.58	M-v	3	Williams	37120	1992 UC ₆
1992 UE ₆	14.0	0.15	20000226	54.79312	354.05632	64.12780	8.01754	0.1401294	2.2504965	63	3	1992–2000	0.76	M-v	2	Williams	37263	1992 UE ₆
1992 UG ₇	16.5	0.15	20000226	72.43817	301.18953	33.70763	1.26356	0.1660228	2.3078017	24	2	1992–1999	0.53	M-v	5	Williams	37120	1992 UG ₇
1992 UR ₈	13.8	0.15	20000226	215.05456	187.26627	22.70954	7.60021	0.0677268	2.3292492	81	4	1985–2000	0.49	M-v	3	Williams	37263	1992 UR ₈
1992 UM ₉	13.1	0.15	20000226	135.87601	161.55299	186.52448	6.46025	0.1306192	3.1867047	68	5	1992–2000	0.71	M-v	1	Williams	33548	1992 UM ₉
1992 VN	14.1	0.15	20000226	50.37673	152.52843	259.42769	7.66180	0.1247225	2.2561828	29	3	1992–2000	0.60	M-v	3	Williams	37263	1992 VN
1992 WM	14.1	0.15	20000226	345.58294	66.14064	50.92924	7.55349	0.0774072	2.2802602	36	2	1992–2000	0.69	M-v	4	Williams	36790	1992 WM

1992 WR	14.7	0.15	20000226	359.51608	33.84906	56.00477	5.66007	0.1361613	2.3100160	94	3	1978–2000	0.40	M-v	3	Williams	37263	1992 WR
1992 WZ	14.0	0.15	20000226	50.66916	351.99977	58.44400	5.84730	0.1315775	2.2718233	71	4	1985–2000	0.64	M-v	3	Williams	36881	1992 WZ
1992 WE ₁	14.6	0.15	20000226	78.96747	263.84330	89.36201	4.90532	0.2019775	2.2899963	59	4	1978–2000	0.62	M-v	3	Williams	37120	1992 WE ₁
1992 WF ₁	12.1	0.15	20000226	176.27933	262.71254	101.76488	11.06507	0.1006941	3.0302219	63	4	1992–2000	0.63	M-v	1	Williams	35064	1992 WF ₁
1992 WK ₁	12.3	0.15	20000226	119.54713	324.68439	76.37053	18.17965	0.2071462	3.1544857	58	4	1990–2000	0.70	M-v	3	Williams	35064	1992 WK ₁
1992 WL ₃	12.4	0.15	20000226	107.73206	201.25180	204.53903	10.91513	0.0442915	3.2202988	33	7	1975–1999	0.68	M-v	1	Williams	35686	1992 WL ₃
1992 WR ₅	12.6	0.15	20000226	170.22018	107.70150	262.09147	9.52340	0.1410546	3.0602229	37	5	1976–2000	0.68	M-v	2	Williams	35686	1992 WR ₅
1992 WC ₉	13.9	0.15	20000226	345.37969	32.04607	56.44657	7.25231	0.0895807	2.3381817	79	3	1992–2000	0.51	M-v	1	Williams	37263	1992 WC ₉
1992 XK	14.5	0.15	20000226	4.67579	118.05979	283.20026	1.16664	0.2114428	2.4002314	93	3	1992–1999	0.70	M-v	2	Williams	37263	1992 XK
1992 YC	14.3	0.15	20000226	53.56365	129.64287	264.88650	24.56811	0.2828965	2.2825298	52	2	1992–2000	0.64	M-v	3	Williams	37120	1992 YC
1992 YK	13.5	0.15	20000226	351.70189	81.92172	9.88483	6.93948	0.0665732	2.3692020	70	3	1992–2000	0.58	M-v	4	Williams	37263	1992 YK
1992 YY ₁	14.3	0.15	20000226	94.12847	277.65562	89.97475	5.05340	0.1508804	2.2903616	40	3	1992–2000	0.84	M-v	2	Williams	37121	1992 YY ₁
1992 YR ₂	14.4	0.15	20000226	205.40237	170.73697	69.31953	5.14552	0.0604542	2.3747904	68	3	1992–1999	0.64	M-v	4	Williams	37263	1992 YR ₂
1993 BD	14.8	0.15	20000226	8.22152	6.96148	112.93841	6.94843	0.1377820	2.3291113	58	3	1993–2000	0.58	M-v	3	Williams	37121	1993 BD
1993 BJ ₂	13.1	0.15	20000226	181.28018	159.14326	122.63696	6.98323	0.1370892	2.4056477	56	3	1993–2000	0.57	M-v	3	Williams	37263	1993 BJ ₂
1993 BQ ₅	14.9	0.15	20000226	286.89393	73.24635	110.47735	2.28041	0.1434861	2.4009288	49	2	1993–2000	0.73	M-v	4	Williams	37121	1993 BQ ₅
1993 BT ₁₄	14.7	0.15	20000226	327.18947	314.04069	230.11104	2.55354	0.1236493	2.3106493	38	4	1991–2000	0.63	M-v	3	Williams	37263	1993 BT ₁₄
1993 DX ₂	14.7	0.15	20000226	151.20411	195.94624	130.79703	7.51356	0.1354166	2.3538654	37	3	1993–2000	0.70	M-v	3	Williams	37263	1993 DX ₂
1993 EJ	14.6	0.15	20000226	280.36024	163.53782	49.64610	7.05200	0.0767147	2.4146765	42	4	1993–2000	0.79	M-v	1	Williams	32745	1993 EJ
1993 FL ₁	13.7	0.15	20000226	304.02398	179.81702	38.90614	7.26881	0.0590168	2.3364476	45	3	1993–2000	0.76	M-v	4	Williams	34009	1993 FL ₁
1993 FQ ₁	13.6	0.15	20000226	245.04677	123.06045	138.57846	6.84822	0.1010348	2.3935982	42	3	1993–2000	0.68	M-v	2	Williams	36511	1993 FQ ₁
1993 FV ₁	13.2	0.15	20000226	289.64300	331.82222	158.66593	12.87508	0.1020627	2.5732275	33	3	1978–2000	0.50	M-v	2	Williams	36790	1993 FV ₁
1993 FG ₅	14.2	0.15	20000226	154.33975	101.58754	62.02912	2.82548	0.0597767	2.9327882	35	2	1993–1998	0.68	M-v	5	Williams	32049	1993 FG ₅
1993 FH ₇	14.7	0.15	20000226	232.07505	200.25309	88.66696	3.52017	0.2034928	2.3885836	56	4	1993–2000	0.79	M-v	2	Williams	33548	1993 FH ₇
1993 FT ₇	14.8	0.15	20000226	129.17467	215.41745	155.85221	6.41822	0.1179158	2.3806878	63	5	1991–2000	0.73	M-v	2	Williams	36881	1993 FT ₇
1993 FE ₈	14.4	0.15	20000226	143.95992	248.03618	85.25418	4.20967	0.1691061	2.4675905	50	3	1993–2000	0.51	M-v	3	Williams	32745	1993 FE ₈
1993 FK ₉	15.0	0.15	20000226	74.53196	37.60373	37.51786	5.75410	0.0881610	2.3434275	34	3	1993–2000	0.92	M-v	2	Williams	33548	1993 FK ₉
1993 FW ₉	14.2	0.15	20000226	202.52876	222.24026	67.95266	3.08281	0.1647127	2.4518137	55	3	1993–2000	0.69	M-v	4	Williams	34289	1993 FW ₉
1993 FM ₁₀	15.4	0.15	20000226	252.19393	171.87729	75.19370	2.50821	0.1401568	2.4242690	43	5	1960–2000	0.60	M-v	1	Williams	32745	1993 FM ₁₀
1993 FP ₁₀	15.0	0.15	20000226	37.85801	304.30816	134.36053	3.22594	0.1446636	2.4100747	31	4	1993–2000	0.50	M-v	1	Williams	36881	1993 FP ₁₀
1993 FP ₁₁	14.0	0.15	20000226	227.70258	13.44657	78.14372	3.22907	0.0278843	2.9339976	27	2	1993–1998	0.63	M-v	5	Williams	32050	1993 FP ₁₁
1993 FR ₁₁	13.8	0.15	20000226	150.51520	128.86765	171.97755	13.77063	0.1651923	2.5638057	42	5	1989–2000	0.67	M-v	2	Williams	33548	1993 FR ₁₁
1993 FS ₁₁	14.4	0.15	20000226	45.55072	307.42398	160.90340	6.84610	0.0619195	2.3441411	41	3	1993–2000	0.74	M-v	3	Williams	35687	1993 FS ₁₁
1993 FE ₁₂	14.5	0.15	20000226	13.54288	345.19033	101.01501	3.66947	0.1530527	2.4488274	60	4	1991–2000	0.57	M-v	2	Williams	37263	1993 FE ₁₂
1993 FS ₁₂	15.1	0.15	20000226	48.26347	322.16698	117.29359	3.30873	0.1741436	2.3781193	33	3	1993–2000	0.69	M-v	4	Williams	37263	1993 FS ₁₂
1993 FY ₁₂	12.9	0.15	20000226	121.18332	67.10958	164.74045	9.45603	0.0745017	2.8478320	105	4	1990–1999	0.66	M-v	2	Williams	37263	1993 FY ₁₂
1993 FC ₁₃	14.7	0.15	20000226	315.03665	89.09444	91.39265	3.42697	0.1315555	2.3956325	56	3	1993–2000	0.61	M-v	2	Williams	37121	1993 FC ₁₃
1993 FR ₁₃	15.0	0.15	20000226	27.73266	46.63407	50.66885	6.16012	0.1200499	2.3922958	39	3	1993–2000	0.62	M-v	3	Williams	37263	1993 FR ₁₃
1993 FV ₁₃	13.8	0.15	20000226	60.24298	330.34437	23.71642	15.20894	0.1492943	2.6267328	78	2	1993–1999	0.47	M-v	4	Williams	37263	1993 FV ₁₃
1993 FL ₁₄	13.9	0.15	20000226	166.76631	172.12694	108.75278	4.58138	0.0818511	2.5487420	60	3	1993–2000	0.56	M-v	3	Williams	37263	1993 FL ₁₄
1993 FD ₁₆	14.2	0.15	20000226	105.27688	251.50674	53.15586	8.00887	0.1677053	2.6922970	40	3	1993–1999	0.59	M-v	3	Williams	37121	1993 FD ₁₆
1993 FH ₁₆	14.3	0.15	20000226	350.41660	39.32121	106.60128	3.27778	0.1208550	2.3849987	13	3	1993–2000	0.50	M-v	4	Williams	30451	1993 FH ₁₆
1993 FZ ₁₈	13.8	0.15	20000226	261.69569	211.74543	71.54328	6.14763	0.1511104	2.3350111	40	5	1989–2000	0.66	M-v	1	Williams	33746	1993 FZ ₁₈
1993 FE ₂₀	14.6	0.15	20000226	42.48357	339.05197	104.25379	5.32901	0.0619931	2.4191581	20	3	1993–2000	0.69	M-v	3	Williams	32663	1993 FE ₂₀
1993 FJ ₂₀	15.7	0.15	20000226	321.91652	286.72010	244.66957	1.59044	0.1330315	2.3951116	25	2	1993–2000	0.64	M-v	4	Williams	37121	1993 FJ ₂₀
1993 FX ₂₁	14.7	0.15	20000226	158.20728	81.00330	200.47283	3.06830	0.0411054	2.5758190	45	3	1993–1999	0.68	M-v	4	Williams	37263	1993 FX ₂₁
1993 FB ₂₂	15.2	0.15	20000226	44.55807	74.13870	8.16883	1.17922	0.1565310	2.3962914	22	3	1991–2000	0.74	M-v	4	Williams	29137	1993 FB ₂₂
1993 FO ₂₃	14.0	0.15	20000226	195.31539	16.89699	200.93336	11.99164	0.1122211	2.6595866	40	2	1993–1999	0.68	M-v	4	Williams	36882	1993 FO ₂₃
1993 FP ₂₃	14.8	0.15	20000226	52.31607	110.92715	308.13311	1.93141	0.1598263	2.4446778	22	3	1993–2000	0.67	M-v	3	Williams	26400	1993 FP ₂₃
1993 FS ₂₆	13.6	0.15	20000226	290.28567	287.97131	285.80435	2.60517	0.0853901	2.3973638	80	4	1993–2000	0.71	M-v	3	Williams	37263	1993 FS ₂₆
1993 FM ₂₈	15.3	0.15	20000226	344.73011	179.83109	293.47070	1.68395	0.1517969	2.4571559	66	3	1993–1999	0.56	M-v	4	Williams	37263	1993 FM ₂₈
1993 FP ₂₉	12.9	0.15	20000226	225.20498	3.93537	202.51982	13.18063	0.1141294	2.5792705	51	2	1993–2000	0.62	M-v	3	Williams	37263	1993 FP ₂₉
1993 FS ₃₁	14.4	0.15	20000226	214.12158	240.68644	51.88209	4.62325	0.0746347	2.4052891	59	3	1993–2000	0.74	M-v	3	Williams	37263	1993 FS ₃₁

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1993 FJ ₃₃	14.0	0.15	20000226	81.09575	308.47661	48.03966	4.15892	0.1120939	2.5767426	43	3	1993-2000	0.37	M-v	3	Williams	37263	1993 FJ ₃₃
1993 FL ₃₃	14.5	0.15	20000226	78.95831	340.35737	49.98342	4.37218	0.1760388	2.4617902	24	3	1979-2000	0.63	M-v	4	Williams	23526	1993 FL ₃₃
1993 FV ₃₃	13.7	0.15	20000226	353.62288	266.39004	162.19934	7.24212	0.1667850	2.5635855	36	2	1993-2000	0.42	M-v	3	Williams	37121	1993 FV ₃₃
1993 FH ₃₄	15.0	0.15	20000226	335.10525	49.20351	39.88596	5.90375	0.0239857	2.6001908	25	2	1993-1999	0.86	M-v	5	Williams	36791	1993 FH ₃₄
1993 FY ₃₄	14.9	0.15	20000226	241.57852	85.71738	172.24766	6.25125	0.1002214	2.4254141	29	5	1993-2000	0.51	M-v	1	Williams	33071	1993 FY ₃₄
1993 FC ₃₇	15.2	0.15	20000226	275.01870	45.43489	178.78463	6.05194	0.1105748	2.4164923	22	4	1993-2000	0.59	M-v	1	Williams	35687	1993 FC ₃₇
1993 FD ₃₇	14.2	0.15	20000226	334.33321	290.86681	173.51872	2.99188	0.1064795	2.5275525	44	3	1993-2000	0.62	M-v	2	Williams	37263	1993 FD ₃₇
1993 FX ₃₇	13.5	0.15	20000226	92.74008	271.39046	43.30881	2.84030	0.0814804	2.6863221	51	3	1981-2000	0.49	M-v	2	Williams	36882	1993 FX ₃₇
1993 FP ₄₀	15.8	0.15	20000226	7.65700	58.12552	45.69453	2.65899	0.1771015	2.4163435	26	3	1993-2000	0.47	M-v	4	Williams	37264	1993 FP ₄₀
1993 FY ₄₁	15.1	0.15	20000226	31.98872	67.66168	15.54946	1.90372	0.1187468	2.4219893	36	5	1993-2000	0.65	M-v	1	Williams	37264	1993 FY ₄₁
1993 FZ ₄₁	14.2	0.15	20000226	277.04509	128.93618	6.95902	13.99089	0.1087903	2.6025209	110	3	1993-2000	0.62	M-v	3	Williams	37264	1993 FZ ₄₁
1993 FQ ₄₃	15.2	0.15	20000226	348.76936	42.86747	14.54730	3.30682	0.2222621	2.5814696	45	3	1991-2000	0.63	M-v	2	Williams	36512	1993 FQ ₄₃
1993 FV ₄₅	14.4	0.15	20000226	160.68006	139.10269	170.15231	5.62465	0.2732042	2.5404334	68	4	1993-2000	0.58	M-v	2	Williams	35687	1993 FV ₄₅
1993 FP ₄₈	14.8	0.15	20000226	155.78319	24.93631	243.99629	0.91657	0.0823384	2.6104437	31	2	1993-1999	0.46	M-v	5	Williams	37122	1993 FP ₄₈
1993 FN ₄₉	14.6	0.15	20000226	202.08266	234.39881	6.14072	0.96267	0.0623187	2.5517963	36	2	1993-1999	0.57	M-v	5	Williams	37264	1993 FN ₄₉
1993 FU ₄₉	14.6	0.15	20000226	332.91948	208.97847	237.29430	1.56720	0.0666698	2.5785716	51	2	1993-2000	0.55	M-v	4	Williams	37264	1993 FU ₄₉
1993 FW ₄₉	14.7	0.15	20000226	112.83319	337.93392	336.06352	1.72000	0.0827849	2.5982832	49	2	1993-1999	0.61	M-v	5	Williams	37122	1993 FW ₄₉
1993 FL ₅₀	15.9	0.15	19930314	358.00899	238.02910	305.44853	1.30937	0.1666663	2.2238148	3	1	5 days	0.00			Williams		1993 FL ₅₀
1993 FN ₆₂	14.6	0.15	20000226	14.75837	345.25650	57.02662	5.14250	0.2399631	2.5737398	53	3	1991-2000	0.44	M-v	2	Williams	37122	1993 FN ₆₂
1993 FD ₆₇	14.2	0.15	20000226	49.30203	72.77378	277.17473	1.74403	0.2075531	2.6933858	56	3	1993-2000	0.72	M-v	2	Williams	37122	1993 FD ₆₇
1993 FG ₇₆	14.5	0.15	20000226	87.53605	125.04808	192.98400	8.72058	0.2023900	2.7297951	41	3	1993-1999	0.66	M-v	2	Williams	36882	1993 FG ₇₆
1993 FX ₇₉	13.9	0.15	20000226	173.96336	121.94454	195.52429	1.81974	0.1300582	2.4495010	113	4	1993-2000	0.67	M-v	2	Williams	36512	1993 FX ₇₉
1993 FV ₈₀	14.7	0.15	20000226	76.58535	281.94980	45.69627	2.58772	0.1820050	2.6817197	62	3	1993-1999	0.71	M-v	3	Williams	36882	1993 FV ₈₀
1993 GB	13.8	0.15	20000226	293.39990	171.99678	25.37345	9.83645	0.1908352	2.4404841	59	3	1993-2000	0.77	M-v	4	Williams	37264	1993 GB
1993 GC	13.0	0.15	20000226	183.54735	20.90544	200.46165	12.29841	0.1076120	2.6953570	93	3	1993-2000	0.60	M-v	3	Williams	37264	1993 GC
1993 GN	14.5	0.15	20000226	344.34309	155.31972	46.33554	6.88701	0.1465964	2.3145366	52	5	1991-2000	0.77	M-v	2	Williams	36069	1993 GN
1993 GK ₁	15.0	0.15	20000226	323.31071	211.35636	324.73513	1.93584	0.1620599	2.4011823	59	4	1993-2000	0.77	M-v	3	Williams	37264	1993 GK ₁
1993 HW	14.0	0.15	20000226	277.05183	180.73185	82.65189	3.03431	0.1855010	2.3707468	30	6	1989-2000	0.71	M-v	2	Williams	35688	1993 HW
1993 HR ₁	14.2	0.15	20000226	289.73457	116.60542	110.31589	3.04469	0.1694509	2.3402855	26	6	1990-2000	0.76	M-v	2	Williams	33071	1993 HR ₁
1993 HW ₁	13.6	0.15	20000226	319.21712	176.64715	76.02216	12.51738	0.2053850	2.2990390	29	5	1989-2000	0.65	M-v	2	Williams	33549	1993 HW ₁
1993 HZ ₅	15.1	0.15	20000226	327.75310	68.03041	68.12515	26.23305	0.1014074	1.8520367	79	3	1993-2000	0.71	M-v	1	Williams	37264	1993 HZ ₅
1993 KW ₁	15.0	0.15	20000226	171.17289	41.40977	210.87330	20.68634	0.0458089	1.9468805	76	3	1993-2000	0.56	M-v	2	Williams	37264	1993 KW ₁
1993 KX ₁	12.9	0.15	20000226	290.23864	191.47564	93.77187	25.62404	0.2006277	2.3430418	24	3	1993-2000	0.69	M-v	3	Williams	33746	1993 KX ₁
1993 KZ ₁	13.4	0.15	20000226	307.77425	169.26201	89.94641	25.56286	0.2007058	2.3474389	42	4	1993-2000	0.76	M-v	3	Williams	33549	1993 KZ ₁
1993 LF	12.2	0.15	20000226	205.06167	183.50546	119.55709	15.58916	0.1097674	2.5526720	47	3	1993-2000	0.51	M-v	2	Williams	37122	1993 LF
1993 LC ₁	16.0	0.15	20000226	100.79982	274.03384	38.70400	21.58673	0.0803670	1.9544435	24	2	1993-1999	0.67	M-v	4	Williams	36791	1993 LC ₁
1993 MK	13.7	0.15	20000226	116.18993	236.73847	112.44289	24.49678	0.0922146	1.9437354	45	4	1992-2000	0.59	M-v	1	Williams	37264	1993 MK
1993 MZ	14.0	0.15	20000226	104.64661	352.17271	345.88688	13.00932	0.1912414	2.6922109	33	5	1985-1999	0.74	M-v	1	Williams	37264	1993 MZ
1993 NB	12.8	0.15	20000226	238.25317	204.82917	130.16597	14.18931	0.2257572	2.4416973	45	5	1955-2000	0.80	M-v	2	Williams	35066	1993 NB
1993 NS ₁	13.9	0.15	20000226	15.14652	271.77405	117.38983	8.68495	0.2751054	3.0857510	27	3	1989-2000	0.81	M-v	3	Williams	37264	1993 NS ₁
1993 NW ₁	14.0	0.15	20000226	120.75107	79.89343	215.51638	1.52726	0.0385134	2.8997966	49	2	1993-1999	0.66	M-v	5	Williams	37264	1993 NW ₁
1993 NA ₂	13.6	0.15	20000226	83.76248	301.00924	123.69775	9.61331	0.1774626	2.6320161	42	5	1991-2000	0.85	M-v	1	Williams	33549	1993 NA ₂
1993 OC ₂	14.0	0.15	20000226	276.61366	225.01803	334.70090	18.40304	0.0541496	1.9340973	46	3	1993-2000	0.64	M-v	3	Williams	36512	1993 OC ₂
1993 OX ₂	15.4	0.15	20000226	144.45807	214.56967	145.00158	5.87317	0.1743627	2.7640848	35	3	1979-2000	0.56	M-v	3	Williams	30291	1993 OX ₂
1993 OQ ₅	14.2	0.15	20000226	94.93472	77.94983	294.52680	5.81745	0.2333178	2.8104638	69	5	1981-2000	0.65	M-v	1	Williams	34289	1993 OQ ₅
1993 OM ₈	13.6	0.15	20000226	49.78269	136.40330	203.19520	1.90174	0.1272122	3.0602854	76	4	1993-1999	0.70	M-v	2	Williams	37264	1993 OM ₈
1993 OY ₉	13.2	0.15	20000226	338.78939	126.02328	300.10909	9.24335	0.0954220	2.9888611	67	3	1993-2000	0.54	M-v	2	Williams	37264	1993 OY ₉
1993 PF	13.9	0.15	20000226	104.34264	138.83482	281.90975	14.00240	0.0583676	2.5706046	26	3	1993-1998	0.67	M-v	3	Williams	37122	1993 PF
1993 PA ₃	12.3	0.15	20000226	148.54202	257.30298	307.32721	17.94789	0.1169976	3.2256035	28	3	1991-1999	0.66	M-v	3	Williams	36882	1993 PA ₃
1993 PU ₅	14.0	0.15	20000226	167.84412	117.79192	181.30083	4.19742	0.0896151	2.8031149	43	3	1993-2000	0.79	M-v	4	Williams	35688	1993 PU ₅
1993 PV ₅	12.9	0.15	20000226	51.74307	47.92684	317.63806	9.71042	0.1243260	3.0675708	72	4	1988-2000	0.55	M-v	1	Williams	37264	1993 PV ₅
1993 QN ₃	13.4	0.15	20000226	212.41078	133.68577	159.88641	4.82766	0.0575578	2.6993907	44	3	1993-2000	0.77	M-v	2	Williams	37264	1993 QN ₃
1993 QP ₃	14.1	0.15	20000226	67.11539	203.10404	177.92304	2.02393	0.1626041	2.9844447	50	3	1993-2000	0.68	M-v	3	Williams	37264	1993 QP ₃

1993 QH ₄	13.6	0.15	20000226	32.89590	248.11667	128.40730	2.20264	0.2273566	3.1800235	57	3	1993-2000	0.68	M-v	3	Williams	37123	1993 QH ₄
1993 QO ₄	13.8	0.15	20000226	59.46129	211.78970	149.77894	1.78837	0.2202107	3.0934497	46	3	1993-1999	0.75	M-v	3	Williams	37264	1993 QO ₄
1993 QX ₄	13.2	0.15	20000226	70.30767	323.02742	160.37874	15.32918	0.0505318	2.5628412	46	6	1975-2000	0.77	M-v	2	Williams	34289	1993 QX ₄
1993 QL ₇	14.5	0.15	20000226	145.98102	174.17201	140.73365	3.27695	0.0180508	2.8837160	37	5	1982-2000	0.79	M-v	2	Williams	34189	1993 QL ₇
1993 QP ₉	14.4	0.15	20000226	102.66460	255.11005	134.30824	5.20597	0.0776410	2.7951727	18	3	1993-2000	0.81	M-v	4	Marsden	32932	1993 QP ₉
1993 QS ₉	14.1	0.15	20000226	99.16660	189.87071	154.84909	11.48750	0.1059488	2.9642929	39	3	1993-2000	0.80	M-v	3	Williams	37264	1993 QS ₉
1993 RS	14.5	0.15	20000226	144.81404	45.57109	351.61682	22.48385	0.0475110	1.8834164	31	3	1993-2000	0.72	M-v	2	Williams	34010	1993 RS
1993 RD ₂	12.9	0.15	20000226	217.43194	152.72266	174.81053	15.33135	0.1238838	2.6053985	32	3	1993-2000	0.70	M-v	3	Williams	31139	1993 RD ₂
1993 RC ₅	13.6	0.15	20000226	21.54897	181.58699	212.91730	2.89387	0.1078777	3.1957662	49	2	1993-2000	0.49	M-v	3	Williams	37123	1993 RC ₅
1993 RA ₈	12.6	0.15	20000226	35.39821	156.30435	192.05670	8.07407	0.0272402	3.3544092	134	4	1993-1999	0.53	M-v	1	Williams	37264	1993 RA ₈
1993 SA ₆	14.0	0.15	20000226	340.55630	323.11926	151.87338	1.80557	0.1313176	3.0557738	42	3	1993-1999	0.70	M-v	3	Williams	37264	1993 SA ₆
1993 SQ ₁₄	15.1	0.15	20000226	120.67015	156.33607	231.32870	20.61281	0.1192414	1.9302345	24	4	1985-1999	0.82	M-v	2	Williams	32307	1993 SQ ₁₄
1993 TJ	13.0	0.15	20000226	278.36164	317.08151	205.83938	9.65611	0.0481439	3.0193962	88	3	1993-1999	0.62	M-v	3	Williams	37264	1993 TJ
1993 TJ ₂	13.6	0.15	20000226	36.50286	0.20479	35.49687	2.59904	0.1966137	3.1896672	58	3	1993-2000	0.54	M-v	3	Williams	37264	1993 TJ ₂
1993 TN ₂	13.3	0.15	20000226	296.55521	229.52597	38.70029	14.11296	0.1410194	2.5890449	41	6	1979-2000	0.62	M-v	1	Williams	34581	1993 TN ₂
1993 TV ₁₂	13.3	0.15	20000226	75.47752	47.13403	43.03834	9.67349	0.1407397	2.7979066	59	3	1993-2000	0.76	M-v	2	Williams	35688	1993 TV ₁₂
1993 TZ ₁₃	14.3	0.15	20000226	62.27131	191.17444	186.10577	10.46308	0.2136031	3.0913079	25	4	1982-2000	0.79	M-v	1	Williams	32933	1993 TZ ₁₃
1993 TH ₁₄	13.3	0.15	20000226	328.93483	68.65921	157.24179	3.59973	0.1929111	2.5908366	31	5	1989-2000	0.79	M-v	2	Williams	33549	1993 TH ₁₄
1993 TX ₁₄	14.8	0.15	20000226	57.80790	221.12402	142.06336	1.41374	0.1848495	3.1636877	45	3	1993-1999	0.68	M-v	4	Williams	37264	1993 TX ₁₄
1993 TM ₁₅	14.3	0.15	20000226	121.32928	269.42932	73.08775	3.08758	0.0783511	2.9560851	29	3	1993-2000	0.74	M-v	5	Williams	33072	1993 TM ₁₅
1993 TU ₁₅	14.0	0.15	20000226	0.50253	255.11113	197.79023	1.33587	0.1237756	3.0994960	40	3	1993-2000	0.70	M-v	4	Williams	37264	1993 TU ₁₅
1993 TW ₁₆	14.6	0.15	20000226	155.90100	141.84077	146.90370	2.88751	0.1580759	2.9852474	51	5	1993-2000	0.67	M-v	1	Williams	35689	1993 TW ₁₆
1993 TK ₁₇	13.9	0.15	20000226	58.41436	322.90693	24.78209	22.30394	0.0622704	3.2561891	42	2	1993-1999	0.61	M-v	4	Williams	36791	1993 TK ₁₇
1993 TL ₁₇	14.3	0.15	20000226	357.63805	357.62110	183.70819	9.66870	0.1701471	3.27105299	24	5	1991-2000	0.88	M-v	2	Williams	34290	1993 TL ₁₇
1993 TH ₁₉	14.2	0.15	20000226	172.44993	158.92992	123.82847	0.51581	0.0804280	2.9861450	31	4	1993-2000	0.63	M-v	1	Williams	35689	1993 TH ₁₉
1993 TV ₁₉	13.1	0.15	20000226	186.69064	213.30483	84.10366	3.43905	0.0182333	2.8896209	78	3	1993-2000	0.61	M-v	3	Williams	37264	1993 TV ₁₉
1993 TC ₂₀	14.2	0.15	20000226	198.12058	267.23745	39.35803	4.25624	0.0846659	2.7840604	41	5	1993-2000	0.78	M-v	1	Williams	35066	1993 TC ₂₀
1993 TY ₂₂	13.3	0.15	20000226	147.91112	119.41380	187.43496	9.74376	0.0806094	2.9941647	38	3	1993-2000	0.64	M-v	4	Williams	35689	1993 TY ₂₂
1993 TN ₂₄	13.1	0.15	20000226	210.46013	84.49382	122.02699	1.78933	0.1009305	3.2385526	49	4	1992-1999	0.73	M-v	2	Williams	36883	1993 TN ₂₄
1993 TJ ₂₇	14.3	0.15	20000226	349.67390	300.94839	184.48781	10.50484	0.0396032	2.9704090	23	3	1993-2000	0.63	M-v	4	Williams	33072	1993 TJ ₂₇
1993 TD ₂₈	13.9	0.15	20000226	126.44955	147.00193	173.60403	3.90007	0.0626756	3.0539522	36	4	1992-2000	0.77	M-v	1	Williams	37264	1993 TD ₂₈
1993 TL ₂₈	14.1	0.15	20000226	359.09746	357.51639	122.38689	2.41116	0.1632423	3.0231548	21	3	1993-2000	0.69	M-v	4	Williams	25068	1993 TL ₂₈
1993 TQ ₂₉	14.6	0.15	20000226	32.72945	256.00335	179.28695	5.17148	0.1925831	3.0658506	27	4	1982-2000	0.84	M-v	2	Williams	32935	1993 TQ ₂₉
1993 TU ₂₉	13.6	0.15	20000226	104.64642	256.21183	117.87296	3.28037	0.0570705	2.9360512	34	3	1993-2000	0.76	M-v	5	Williams	33339	1993 TU ₂₉
1993 TZ ₂₉	13.8	0.15	20000226	331.32135	73.79700	81.42583	3.24322	0.0123743	2.9130653	37	3	1993-2000	0.79	M-v	5	Williams	33237	1993 TZ ₂₉
1993 TN ₃₀	14.0	0.15	20000226	159.76044	201.06706	106.69455	4.43126	0.1964617	2.8973814	25	4	1982-2000	0.67	M-v	2	Williams	33339	1993 TN ₃₀
1993 TJ ₃₁	13.5	0.15	20000226	84.65127	249.61653	115.49726	5.19600	0.0525657	3.0653783	53	3	1993-2000	0.56	M-v	3	Williams	37264	1993 TJ ₃₁
1993 TM ₃₁	13.8	0.15	20000226	58.91500	316.33427	115.20267	3.04291	0.0335869	2.9072414	48	3	1993-2000	0.86	M-v	3	Williams	36883	1993 TM ₃₁
1993 TD ₃₇	13.4	0.15	20000226	37.40940	230.60169	163.09978	8.26681	0.0392361	3.1890790	37	3	1993-1999	0.74	M-v	3	Williams	37264	1993 TD ₃₇
1993 TK ₃₇	14.0	0.15	20000226	74.74617	211.66452	181.04640	11.49144	0.1461684	3.0121248	48	4	1972-2000	0.72	M-v	2	Williams	37264	1993 TK ₃₇
1993 TU ₃₈	14.2	0.15	20000226	58.37849	4.13699	98.47468	5.52387	0.0247488	2.7977884	44	6	1988-2000	0.79	M-v	1	Williams	33550	1993 TU ₃₈
1993 TX ₃₈	13.7	0.15	20000226	132.91772	212.01501	105.95235	6.99550	0.0564673	3.0591461	29	3	1993-2000	0.66	M-v	4	Williams	37264	1993 TX ₃₈
1993 UK	12.7	0.15	20000226	164.93269	254.92492	80.70247	3.32545	0.0667409	2.8536107	79	3	1993-2000	0.70	M-v	3	Williams	37264	1993 UK
1993 UY ₂	12.5	0.15	20000226	59.60020	295.91197	52.42514	23.65081	0.1781775	3.1691989	58	2	1993-2000	0.43	M-v	3	Williams	37123	1993 UY ₂
1993 UV ₄	14.1	0.15	20000226	22.01920	270.49036	173.45514	10.73420	0.0632809	3.0543621	28	3	1993-2000	0.80	M-v	4	Williams	32936	1993 UV ₄
1993 UW ₆	13.4	0.15	20000226	128.41727	234.45456	97.88375	6.17001	0.1139615	3.0052463	43	3	1993-2000	0.60	M-v	4	Williams	37265	1993 UW ₆
1993 UZ ₇	13.1	0.15	20000226	36.24060	264.38383	144.16201	7.32486	0.1418908	3.1605196	75	3	1993-2000	0.72	M-v	2	Williams	37265	1993 UZ ₇
1993 VU ₁	13.3	0.15	20000226	123.39922	113.91426	243.33358	10.28364	0.1623104	2.9607114	33	4	1976-2000	0.49	M-v	2	Williams	34290	1993 VU ₁
1993 VF ₂	15.3	0.15	20000226	343.33340	325.91110	74.34892	3.86722	0.1665971	2.1947991	39	3	1993-1999	0.55	M-v	3	Williams	35425	1993 VF ₂
1993 XG	12.6	0.15	20000226	130.23235	295.25702	98.37252	13.82278	0.1234433	2.8687939	52	4	1993-2000	0.67	M-v	2	Williams	35689	1993 XG
1993 XM	12.8	0.15	20000226	19.75513	37.67614	107.67002	16.70914	0.1527228	3.0512539	46	4	1993-2000	0.79	M-v	1	Williams	33747	1993 XM
1993 YF	14.0	0.15	20000226	69.02459	306.78702	113.34438	2.56705	0.1710296	3.1178037	36	5	1976-2000	0.79	M-v	2	Williams	33340	1993 YF
1994 AC	14.4	0.15	20000226	4.33356	160.54832	255.32200	3.15462	0.0931119	2.1784688	114	4	1991-1999	0.53	M-v	2	Williams	37265	1994 AC

1994 AM	13.0	0.15	20000226	292.46795	313.79825	277.32992	14.64292	0.2032127	3.1243173	27	3	1994-2000	0.71	M-v	5	Williams	34504	1994 AM
1994 AW ₁	17.4	0.15	20000226	237.07658	37.10966	290.44537	24.09984	0.0752674	1.1046997	183	2	1994-1999	0.62	M-v	2	Williams	37123	1994 AW ₁
1994 AU ₆	13.3	0.15	20000226	155.93171	207.10028	123.41936	2.46798	0.1845992	3.1830811	27	3	1994-2000	0.55	M-v	4	Williams	32233	1994 AU ₆
1994 AN ₉	12.8	0.15	20000226	87.87917	326.19056	113.12004	25.42185	0.0719417	3.0500126	32	3	1994-2000	0.80	M-v	3	Williams	35689	1994 AN ₉
1994 AV ₁₀	15.3	0.15	20000226	356.36848	67.09191	341.21311	4.31963	0.1335786	2.2451566	42	3	1994-1999	0.69	M-v	3	Williams	37265	1994 AV ₁₀
1994 AY ₁₀	15.6	0.15	20000226	149.96351	234.54712	45.40714	3.13878	0.2079182	2.2527414	66	3	1994-1999	0.59	M-v	3	Williams	37265	1994 AY ₁₀
1994 BP	12.1	0.15	19940108	211.37044	315.00552	336.40117	17.56264	0.1087773	3.1332541	6	1	7 days	0.66		E	Williams		1994 BP
1994 BC ₁	12.4	0.15	20000226	282.22236	300.38870	314.09814	12.41032	0.1851785	3.1800193	44	5	1994-2000	0.70	M-v	1	Williams	37265	1994 BC ₁
1994 BD ₁	15.0	0.15	20000226	15.89689	45.13623	7.65888	6.46954	0.1452882	2.1984206	68	2	1994-2000	0.64	M-v	4	Williams	37265	1994 BD ₁
1994 BJ ₄	13.3	0.15	20000226	328.76362	290.26529	276.08099	8.44995	0.0450478	3.0717611	33	5	1991-2000	0.73	M-v	1	Williams	33747	1994 BJ ₄
1994 CG ₁	14.5	0.15	20000226	143.58057	286.20544	11.18902	5.00558	0.1987390	2.2523678	50	3	1994-2000	0.61	M-v	3	Williams	36883	1994 CG ₁
1994 CY ₁	13.8	0.15	20000226	167.54018	300.30722	300.75680	7.97315	0.0850326	2.3301310	64	3	1988-2000	0.57	M-v	2	Williams	37265	1994 CY ₁
1994 CF ₂	13.1	0.15	20000226	48.73796	357.16853	122.28964	2.24392	0.1553811	3.1771164	44	5	1971-2000	0.71	M-v	1	Williams	34582	1994 CF ₂
1994 CU ₁₀	14.9	0.15	20000226	323.99336	323.01457	127.71873	6.30971	0.0297837	2.2961960	56	3	1994-1999	0.62	M-v	3	Williams	37265	1994 CU ₁₀
1994 CG ₁₄	13.8	0.15	20000226	11.46821	313.59674	41.87128	6.85814	0.0919660	2.4411059	37	3	1994-1999	0.75	M-v	4	Williams	36070	1994 CG ₁₄
1994 CD ₁₈	14.7	0.15	20000226	72.21539	20.57507	358.38601	8.13637	0.1915443	2.1920981	38	3	1989-1999	0.69	M-v	4	Williams	37265	1994 CD ₁₈
1994 EL	15.3	0.15	20000226	201.24005	1.36774	210.27210	2.38326	0.1559989	2.3234104	39	3	1994-1999	0.59	M-v	4	Williams	36883	1994 EL
1994 EK ₁	14.3	0.15	20000226	210.72654	187.43293	25.44411	7.42861	0.0600356	2.3439893	38	2	1994-1999	0.40	M-v	4	Williams	36791	1994 EK ₁
1994 EL ₁	13.6	0.15	20000226	39.94485	317.14588	112.79046	4.93123	0.1381318	2.1884532	55	3	1994-2000	0.64	M-v	2	Williams	37265	1994 EL ₁
1994 EC ₂	13.6	0.15	20000226	359.11502	39.10864	13.67556	25.24031	0.2551396	2.2918587	35	3	1968-2000	0.69	M-v	2	Williams	37265	1994 EC ₂
1994 ER ₅	15.3	0.15	20000226	246.26146	159.50343	35.51974	3.83494	0.1214358	2.2652860	50	2	1994-1999	0.68	M-v	4	Williams	37265	1994 ER ₅
1994 EJ ₆	15.3	0.15	20000226	18.95081	353.96546	74.39599	4.96620	0.0473175	2.2240350	81	3	1994-2000	0.56	M-v	3	Williams	37265	1994 EJ ₆
1994 EZ ₆	14.6	0.15	20000226	106.50616	222.41986	97.16699	5.96203	0.1523876	2.3102591	80	3	1994-1999	0.61	M-v	2	Williams	37265	1994 EZ ₆
1994 EC ₇	15.1	0.15	20000226	318.88882	78.74804	36.49857	5.79109	0.1122990	2.2489656	63	2	1994-2000	0.70	M-v	4	Williams	37124	1994 EC ₇
1994 FB	14.9	0.15	20000226	351.88106	258.93233	193.59531	2.28073	0.0505186	2.2435622	107	5	1991-2000	0.65	M-v	2	Williams	37265	1994 FB
1994 FY	13.9	0.15	20000226	239.40964	136.86967	41.49985	12.05028	0.1070649	2.3660189	57	4	1976-2000	0.63	M-v	2	Williams	37265	1994 FY
1994 GN	14.1	0.15	20000226	189.07169	203.46851	71.99133	5.54965	0.1407919	2.2681571	52	4	1994-2000	0.66	M-v	3	Williams	37265	1994 GN
1994 GB ₁	13.5	0.15	20000226	204.16764	238.23030	40.38572	5.52001	0.1978571	2.2700004	58	3	1994-2000	0.65	M-v	3	Williams	36514	1994 GB ₁
1994 GK ₉	14.4	0.15	20000226	258.62610	337.38587	226.80234	5.86327	0.1300532	2.2550584	75	3	1994-2000	0.56	M-v	2	Williams	37265	1994 GK ₉
1994 GU ₉	13.4	0.15	20000226	191.87884	124.40262	125.70688	21.96319	0.1220146	2.3002633	51	4	1990-2000	0.58	M-v	2	Williams	37265	1994 GU ₉
1994 JB	14.8	0.15	20000226	99.32922	223.03803	65.94431	3.15985	0.1887615	2.5485278	47	3	1994-1999	0.61	M-v	2	Williams	37265	1994 JB
1994 JC	15.0	0.15	20000226	346.50021	137.55646	37.63748	30.97673	0.5142970	3.3748706	51	2	1994-1999	0.82	M-v	2	Williams	36792	1994 JC
1994 JU	14.8	0.15	20000226	207.04000	62.92863	204.19092	6.30650	0.1918043	2.3271916	54	4	1991-2000	0.68	M-v	1	Williams	33072	1994 JU
1994 JV ₄	15.7	0.15	20000226	341.42120	302.30366	176.44316	0.88217	0.1745775	2.2641060	60	2	1994-2000	0.50	M-v	4	Williams	37124	1994 JV ₄
1994 JJ ₅	13.6	0.15	20000226	8.38380	292.05040	45.66005	6.79467	0.1560862	2.7246609	27	2	1994-1998	0.62	M-v	5	Williams	32234	1994 JJ ₅
1994 JU ₈	13.6	0.15	20000226	109.39405	58.63068	231.27132	15.79098	0.1228867	2.5239549	97	3	1994-2000	0.68	M-v	2	Williams	37265	1994 JU ₈
1994 LC	14.2	0.15	20000226	162.61251	108.85770	128.79963	9.85495	0.1781295	2.5338515	55	3	1994-1999	0.68	M-v	3	Williams	36883	1994 LC
1994 LB ₈	13.1	0.15	20000226	136.40845	13.59095	253.97521	16.58183	0.0979117	2.5495012	63	4	1994-1999	0.62	M-v	2	Williams	37124	1994 LB ₈
1994 NA	14.5	0.15	20000226	187.69951	154.79240	113.33391	7.20442	0.1101115	2.4467366	55	3	1994-1999	0.59	M-v	3	Williams	37265	1994 NA
1994 NB	13.3	0.15	20000226	218.52875	95.24612	126.91585	73.76659	0.2753794	2.3666815	47	3	1994-2000	0.75	M-v	2	Williams	36883	1994 NB
1994 NF ₁	13.9	0.15	20000226	246.16410	198.98554	99.23730	8.19635	0.1396907	2.2173193	40	5	1994-2000	0.61	M-v	2	Williams	36883	1994 NF ₁
1994 PG	14.1	0.15	20000226	336.19479	14.48903	157.69921	12.45403	0.0925186	2.3919103	49	3	1994-2000	0.71	M-v	3	Williams	35690	1994 PG
1994 PJ ₁	14.4	0.15	20000226	164.90438	136.79155	142.09108	13.93923	0.1365935	2.5499730	51	3	1994-2000	0.65	M-v	3	Williams	36883	1994 PJ ₁
1994 PN ₁	13.0	0.15	20000226	18.26760	307.36371	108.96121	24.65486	0.1964420	2.7923812	37	3	1994-2000	0.65	M-v	3	Williams	37265	1994 PN ₁
1994 PC ₂	14.3	0.15	20000226	219.94227	283.87691	359.91696	2.04962	0.2274542	2.3551428	50	4	1994-2000	0.78	M-v	2	Williams	35690	1994 PC ₂
1994 PE ₂	14.3	0.15	20000226	77.35684	14.82472	335.78901	5.31100	0.3017505	2.7021869	37	3	1994-2000	0.70	M-v	3	Williams	26744	1994 PE ₂
1994 PL ₃	14.8	0.15	20000226	69.80608	91.54113	315.96949	2.23152	0.1186068	2.5306059	32	3	1994-2000	0.75	M-v	3	Williams	32747	1994 PL ₃
1994 PL ₄	14.4	0.15	20000226	183.36046	153.37626	152.34855	8.66859	0.1321822	2.4308543	52	3	1994-2000	0.55	M-v	3	Williams	35690	1994 PL ₄
1994 PJ ₇	14.6	0.15	20000226	76.28471	168.15031	152.11371	3.25500	0.0696936	2.7956999	35	2	1994-1999	0.71	M-v	5	Williams	36884	1994 PJ ₇
1994 PK ₈	14.6	0.15	20000226	262.68592	350.13285	258.05089	1.03006	0.1540323	2.3378418	47	3	1994-2000	0.71	M-v	3	Williams	33747	1994 PK ₈
1994 PC ₉	14.5	0.15	20000226	35.86994	213.95831	190.89452	0.27983	0.0747826	2.6536360	70	2	1994-1999	0.60	M-v	4	Williams	37265	1994 PC ₉
1994 PX ₉	15.6	0.15	20000226	132.44935	313.14420	17.28672	1.27708	0.1343219	2.5378616	29	4	1994-2000	0.69	M-v	2	Williams	36071	1994 PX ₉
1994 PJ ₁₁	14.6	0.15	20000226	219.08301	310.59304	309.00994	1.52191	0.1898031	2.4264742	43	4	1989-2000	0.91	M-v	3	Williams	32938	1994 PJ ₁₁

1994 PL ₁₁	14.6	0.15	20000226	185.60843	13.19372	302.68901	5.34756	0.1091342	2.4105795	35	3	1994-2000	0.88	M-v	3	Williams	33072	1994 PL ₁₁
1994 PJ ₁₂	15.2	0.15	20000226	77.68154	117.45559	244.57150	1.55121	0.2060522	2.6679483	27	2	1994-2000	0.59	M-v	4	Williams	37124	1994 PJ ₁₂
1994 PL ₁₂	14.3	0.15	20000226	327.86632	268.41300	260.64752	1.48471	0.1333655	2.4264802	27	3	1994-2000	0.74	M-v	5	Williams	33072	1994 PL ₁₂
1994 PC ₁₃	14.9	0.15	20000226	141.80832	90.24322	238.38693	1.32843	0.0904608	2.5194552	42	4	1978-2000	0.67	M-v	4	Williams	37265	1994 PC ₁₃
1994 PK ₁₄	15.0	0.15	20000226	61.37470	63.06820	319.51009	7.02906	0.1824449	2.6742216	31	3	1994-2000	0.76	M-v	4	Williams	37265	1994 PK ₁₄
1994 PP ₁₅	14.6	0.15	20000226	57.89934	196.60078	193.22015	2.11219	0.0106490	2.6145042	47	3	1994-2000	0.69	M-v	4	Williams	37125	1994 PP ₁₅
1994 PQ ₁₅	14.5	0.15	20000226	185.28552	5.80585	312.21812	3.03008	0.2272982	2.3975735	41	5	1992-2000	0.66	M-v	2	Williams	34582	1994 PQ ₁₅
1994 PC ₁₆	15.3	0.15	20000226	208.97116	84.01592	202.46138	2.67436	0.1543447	2.4065340	32	4	1994-2000	0.88	M-v	2	Williams	35690	1994 PC ₁₆
1994 PE ₁₆	15.0	0.15	20000226	66.28340	97.50473	311.86088	4.17854	0.1231387	2.5576942	39	3	1994-2000	0.92	M-v	3	Williams	32747	1994 PE ₁₆
1994 PD ₁₈	14.2	0.15	20000226	226.21149	120.56602	158.88721	6.68832	0.1178580	2.3825168	80	4	1971-2000	0.79	M-v	2	Williams	34291	1994 PD ₁₈
1994 PG ₁₈	14.0	0.15	20000226	333.96667	2.81776	157.19237	6.42795	0.0658624	2.4539512	79	3	1994-2000	0.64	M-v	3	Williams	36884	1994 PG ₁₈
1994 PH ₁₈	16.0	0.15	20000226	267.12374	73.22724	166.77849	2.52688	0.1700909	2.3540377	46	4	1991-2000	0.77	M-v	2	Williams	30092	1994 PH ₁₈
1994 PG ₁₉	14.7	0.15	20000226	93.46228	53.93648	335.24737	4.60989	0.1478419	2.5324312	42	4	1994-2000	0.75	M-v	3	Williams	35426	1994 PG ₁₉
1994 PY ₁₉	14.3	0.15	20000226	283.85739	258.42165	309.51972	2.10325	0.1233587	2.4299007	50	5	1974-2000	0.64	M-v	1	Williams	35691	1994 PY ₁₉
1994 PK ₂₀	13.8	0.15	20000226	257.88133	329.32781	169.60334	2.05278	0.0276115	2.8398173	94	3	1994-1999	0.64	M-v	3	Williams	37265	1994 PK ₂₀
1994 PT ₂₀	15.6	0.15	20000226	100.52981	73.21381	314.69602	1.80017	0.2208987	2.5317878	41	3	1994-2000	1.02	M-v	4	Williams	32747	1994 PT ₂₀
1994 PM ₂₁	14.6	0.15	20000226	100.11750	219.14534	154.90635	7.45513	0.2490018	2.5707868	35	6	1990-2000	0.73	M-v	2	Williams	35691	1994 PM ₂₁
1994 PY ₂₁	14.5	0.15	20000226	246.39679	118.60118	142.60619	3.22784	0.1337587	2.3710571	24	4	1994-2000	0.82	M-v	2	Williams	33073	1994 PY ₂₁
1994 PA ₂₃	14.4	0.15	20000226	261.76745	136.51474	52.73710	1.30145	0.0738314	2.5962421	50	4	1994-1999	0.56	M-v	2	Williams	37125	1994 PA ₂₃
1994 PL ₂₃	14.5	0.15	20000226	32.97421	59.46541	36.23880	1.22693	0.1488575	2.5362837	61	5	1988-2000	0.83	M-v	2	Williams	37265	1994 PL ₂₃
1994 PY ₂₅	14.7	0.15	20000226	118.35601	212.21012	118.86236	1.32152	0.1068579	2.5822156	27	4	1994-2000	0.59	M-v	2	Williams	37265	1994 PY ₂₅
1994 PL ₂₆	14.6	0.15	20000226	262.22374	162.03288	107.12482	1.91153	0.0515638	2.3106895	49	5	1991-2000	0.76	M-v	2	Williams	35691	1994 PL ₂₆
1994 PW ₂₆	14.1	0.15	20000226	23.22137	261.65245	143.66704	9.22745	0.2603360	2.7740056	26	3	1994-2000	0.76	M-v	3	Williams	29138	1994 PW ₂₆
1994 PO ₂₈	15.3	0.15	20000226	117.44796	320.94298	35.47916	1.89214	0.1684042	2.5252334	20	3	1994-2000	0.80	M-v	4	Williams	32459	1994 PO ₂₈
1994 PU ₂₉	14.5	0.15	20000226	80.89335	227.87288	166.76923	11.20454	0.1815043	2.5625009	42	5	1988-2000	0.73	M-v	1	Williams	32517	1994 PU ₂₉
1994 PO ₃₀	14.1	0.15	20000226	36.65589	151.75189	204.84511	4.59419	0.1240516	2.8525311	85	3	1994-1999	0.61	M-v	3	Williams	37265	1994 PO ₃₀
1994 PG ₃₁	16.2	0.15	20000226	140.36164	40.21918	260.32630	3.93539	0.2355272	2.5805052	26	3	1994-2000	0.77	M-v	3	Williams	35691	1994 PG ₃₁
1994 PX ₃₁	14.3	0.15	20000226	339.75143	258.70589	300.23406	6.17804	0.0452900	2.3118889	29	4	1994-2000	0.86	M-v	2	Williams	33340	1994 PX ₃₁
1994 PD ₃₂	14.4	0.15	20000226	259.50997	320.55851	234.29325	3.52786	0.1425628	2.5524964	80	3	1994-1999	0.62	M-v	3	Williams	37125	1994 PD ₃₂
1994 PS ₃₂	14.5	0.15	20000226	136.47558	28.03085	303.25180	4.86900	0.1378891	2.5337138	43	4	1990-2000	0.78	M-v	4	Williams	32747	1994 PS ₃₂
1994 PL ₃₅	15.1	0.15	20000226	75.31740	196.90822	204.25584	2.84244	0.1272705	2.5290704	33	3	1994-2000	0.70	M-v	3	Williams	32748	1994 PL ₃₅
1994 PA ₃₆	14.8	0.15	20000226	104.82839	155.62522	166.06831	2.22416	0.0915371	2.6556739	53	2	1994-1999	0.70	M-v	5	Williams	37125	1994 PA ₃₆
1994 PN ₃₇	14.7	0.15	20000226	225.47399	126.34808	157.42918	6.09501	0.1843701	2.3432745	34	3	1994-2000	0.93	M-v	3	Williams	33551	1994 PN ₃₇
1994 PV ₃₇	14.6	0.15	20000226	198.86432	118.92421	172.15577	2.35860	0.1832521	2.4053752	72	5	1979-2000	0.71	M-v	2	Williams	37266	1994 PV ₃₇
1994 PA ₃₉	15.5	0.15	20000226	252.50724	40.98787	217.56789	2.39255	0.1913201	2.3236675	41	6	1973-2000	0.85	M-v	1	Williams	33073	1994 PA ₃₉
1994 PV ₃₉	14.6	0.15	20000226	245.48523	330.30379	275.31486	1.30671	0.1824225	2.3785448	40	4	1990-2000	0.65	M-v	2	Williams	33340	1994 PV ₃₉
1994 QC	18.7	0.15	20000226	281.65207	94.19783	162.58945	13.87146	0.1180939	1.3244523	244	3	1994-2000	0.60	M-v	2	Williams	30689	1994 QC
1994 QV	13.2	0.15	20000226	88.87696	6.21668	354.02559	13.66733	0.2890382	2.6437534	54	5	1971-2000	0.63	M-v	2	Williams	37266	1994 QV
1994 RL ₁	14.3	0.15	20000226	136.93686	153.75048	188.39468	12.94259	0.2085914	2.5439213	84	5	1986-2000	0.65	M-v	2	Williams	37266	1994 RL ₁
1994 RY ₁	13.6	0.15	20000226	95.41695	180.72627	169.77028	16.42664	0.2894726	2.6267099	42	3	1994-1999	0.74	M-v	2	Williams	36884	1994 RY ₁
1994 RN ₅	15.0	0.15	20000226	245.21026	61.98566	199.42018	2.83705	0.1047824	2.4300757	36	4	1994-2000	0.67	M-v	2	Williams	33073	1994 RN ₅
1994 RO ₆	16.4	0.15	20000226	293.96593	180.71214	304.59089	2.54922	0.0368237	2.8077069	21	2	1994-1999	0.39	M-v	6	Williams	36792	1994 RO ₆
1994 RL ₇	14.0	0.15	20000226	316.20733	170.10522	322.88250	1.87469	0.2046277	2.7604665	112	3	1994-2000	0.50	M-v	3	Williams	37266	1994 RL ₇
1994 RN ₇	14.3	0.15	20000226	323.07747	123.11942	343.11491	3.31711	0.0448428	2.7805286	51	3	1992-2000	0.43	M-v	3	Williams	36884	1994 RN ₇
1994 RR ₁₁	14.0	0.15	20000226	43.42434	157.48412	238.79412	7.62793	0.1657946	2.7365707	79	5	1983-2000	0.63	M-v	1	Williams	37266	1994 RR ₁₁
1994 RW ₁₇	15.6	0.15	20000226	207.56476	345.83989	284.80504	0.82324	0.1386386	2.4560989	36	4	1994-1999	0.72	M-v	1	Williams	33073	1994 RW ₁₇
1994 ST ₇	15.0	0.15	20000226	240.85562	128.00643	158.46412	2.63007	0.1620289	2.3595895	30	5	1976-2000	0.66	M-v	1	Williams	35293	1994 ST ₇
1994 SS ₈	15.1	0.15	20000226	315.63379	316.05465	179.47131	0.63280	0.1235238	2.7321309	50	3	1994-1999	0.52	M-v	4	Williams	37125	1994 SS ₈
1994 SZ ₉	16.1	0.15	20000226	128.40138	261.69248	28.25229	2.79137	0.0746452	2.7933416	34	3	1994-1999	0.42	M-v	3	Williams	36515	1994 SZ ₉
1994 SH ₁₁	14.1	0.15	20000226	327.21810	202.48700	21.43680	6.61767	0.0603357	2.3315311	41	5	1993-2000	0.74	M-v	2	Williams	33551	1994 SH ₁₁
1994 TA ₁	13.7	0.15	20000226	87.62231	329.39305	18.75160	36.68295	0.1857199	2.7362058	36	3	1994-1999	0.84	M-v	3	Williams	36515	1994 TA ₁
1994 TH ₁	13.0	0.15	20000226	38.31420	322.49118	42.26282	13.28765	0.1168002	2.9352205	59	3	1979-2000	0.55	M-v	3	Williams	37266	1994 TH ₁
1994 TQ ₁	13.5	0.15	20000226	255.72548	233.43559	55.55203	7.10089	0.1469466	2.3478749	43	5	1976-2000	0.61	M-v	1	Williams	35691	1994 TQ ₁

1994 TO ₂	12.9	0.15	20000226	82.14877	319.61527	31.62356	9.64496	0.1632024	2.7560772	26	3	1994–2000	0.63	M-v	3	Williams	37266	1994 TO ₂
1994 TB ₃	13.9	0.15	20000226	100.31388	12.39316	14.62442	14.60098	0.1501761	2.6003328	56	3	1994–2000	0.69	M-v	2	Williams	37266	1994 TB ₃
1994 TD ₃	12.8	0.15	20000226	92.16369	325.50099	18.31226	8.74856	0.1063570	2.7789056	51	3	1980–2000	0.53	M-v	4	Williams	37125	1994 TD ₃
1994 TK ₁₁	14.2	0.15	20000226	174.36036	95.06178	235.80465	2.15274	0.0710410	2.4710758	104	5	1977–2000	0.59	M-v	2	Williams	37266	1994 TK ₁₁
1994 TO ₁₅	13.9	0.15	20000226	286.04733	204.16129	22.61724	8.31773	0.2456654	2.4410674	50	6	1989–2000	0.71	M-v	2	Williams	37266	1994 TO ₁₅
1994 TS ₁₆	13.5	0.15	20000226	200.28438	147.14617	189.60127	5.96558	0.1358380	2.3920561	27	6	1982–2000	0.78	M-v	2	Williams	35067	1994 TS ₁₆
1994 UQ	13.2	0.15	20000226	226.13503	197.27417	61.53082	13.77962	0.1291685	2.6779586	45	3	1994–2000	0.56	M-v	3	Williams	37266	1994 UQ
1994 UM ₁	13.8	0.15	20000226	165.17094	69.46491	250.46931	3.38736	0.1987482	2.5655014	98	7	1932–2000	0.67	M-v	2	Williams	33748	1994 UM ₁
1994 UP ₁	13.8	0.15	20000226	74.83059	50.38538	34.21516	13.78779	0.1360407	2.5530711	60	6	1976–2000	0.82	M-v	2	Williams	35692	1994 UP ₁
1994 UQ ₁	13.8	0.15	20000226	148.93443	134.20111	201.89311	3.54137	0.1969335	2.5699594	118	6	1980–2000	0.63	M-v	1	Williams	33748	1994 UQ ₁
1994 UZ ₁	12.7	0.15	20000226	353.33410	28.51167	51.32406	13.28472	0.0751087	2.9054362	98	3	1989–2000	0.66	M-v	4	Williams	37266	1994 UZ ₁
1994 UE ₈	14.8	0.15	20000226	229.58845	339.60465	262.33764	3.31761	0.1898728	2.6306430	24	3	1994–2000	0.52	M-v	4	Williams	32942	1994 UE ₈
1994 VR	13.6	0.15	20000226	87.46398	315.52513	45.92811	11.19846	0.1863711	2.8025698	31	5	1975–2000	0.48	M-v	1	Williams	37266	1994 VR
1994 VH ₁	13.6	0.15	20000226	3.69251	54.28608	87.12639	4.10960	0.0596808	2.6347471	103	3	1994–2000	0.61	M-v	3	Williams	37266	1994 VH ₁
1994 VS ₁	14.1	0.15	20000226	355.67343	18.90390	39.13234	5.03134	0.1782986	3.0790943	99	2	1994–2000	0.54	M-v	3	Williams	37266	1994 VS ₁
1994 VA ₂	14.0	0.15	20000226	120.07444	324.34257	71.38327	14.03070	0.1655108	2.5319376	31	4	1978–2000	0.65	M-v	3	Williams	33748	1994 VA ₂
1994 VF ₂	13.3	0.15	20000226	32.58674	68.42239	55.58661	13.10038	0.2244271	2.6293688	50	6	1970–2000	0.79	M-v	1	Williams	34292	1994 VF ₂
1994 VH ₂	14.1	0.15	20000226	49.99265	62.60530	49.21115	15.90051	0.0582189	2.5902409	40	3	1994–2000	0.50	M-v	2	Williams	33552	1994 VH ₂
1994 VR ₂	13.1	0.15	20000226	353.78458	123.86102	42.44133	12.91441	0.0946855	2.5459003	38	3	1994–2000	0.78	M-v	3	Williams	33341	1994 VR ₂
1994 VU ₆	13.6	0.15	20000226	119.97232	144.25992	209.77702	13.05119	0.2123445	2.6357401	68	3	1994–2000	0.79	M-v	2	Williams	37266	1994 VU ₆
1994 VD ₇	12.4	0.15	20000226	74.29411	73.07045	234.93972	20.78092	0.1069054	3.1697910	58	3	1994–2000	0.67	M-v	2	Williams	37266	1994 VD ₇
1994 VP ₇	13.1	0.15	20000226	356.80168	7.93272	57.68641	13.48539	0.1833210	2.9948867	42	3	1989–2000	0.57	M-v	3	Williams	37126	1994 VP ₇
1994 WO	14.2	0.15	20000226	49.27497	312.88065	48.80874	7.27160	0.2591315	2.9750325	64	2	1994–1999	0.43	M-v	3	Williams	37266	1994 WO
1994 WF ₁	13.7	0.15	20000226	79.15361	96.94318	268.14722	0.96499	0.0927491	2.8987434	65	3	1994–2000	0.53	M-v	3	Williams	37266	1994 WF ₁
1994 WS ₁	13.5	0.15	20000226	6.53310	154.88625	281.39828	8.88611	0.1611694	3.0137061	34	3	1989–2000	0.73	M-v	4	Williams	37266	1994 WS ₁
1994 WC ₂	12.4	0.15	20000226	106.54248	247.99807	89.49151	10.28978	0.1710811	2.7763410	40	2	1994–2000	0.57	M-v	4	Williams	37126	1994 WC ₂
1994 WF ₂	12.5	0.15	20000226	127.43245	290.55124	87.44135	13.99513	0.1974256	2.5887472	35	4	1994–1999	0.77	M-v	2	Williams	35692	1994 WF ₂
1994 WB ₃	14.0	0.15	20000226	351.05996	305.35535	110.63878	2.38372	0.1934939	3.1088734	64	3	1994–1999	0.73	M-v	3	Williams	37266	1994 WB ₃
1994 WA ₄	13.4	0.15	20000226	35.69196	252.34627	209.10294	11.71371	0.0833933	2.7032183	66	3	1994–2000	0.59	M-v	2	Williams	33552	1994 WA ₄
1994 WE ₄	12.7	0.15	20000226	93.28928	268.38880	66.00905	11.09067	0.1144558	3.0012338	70	4	1978–2000	0.61	M-v	1	Williams	37266	1994 WE ₄
1994 WP ₁₃	13.4	0.15	20000226	109.13890	248.54200	139.81961	12.71271	0.2108686	2.6007515	44	4	1994–2000	0.81	M-v	1	Williams	36071	1994 WP ₁₃
1994 XM ₂	12.5	0.15	20000226	47.92768	261.66948	84.69262	8.47803	0.0376278	3.1479091	58	3	1994–1999	0.50	M-v	3	Williams	36884	1994 XM ₂
1994 XQ ₄	13.9	0.15	20000226	105.72634	311.95343	77.77052	4.13270	0.1190105	2.7463701	67	4	1994–2000	0.64	M-v	2	Williams	35692	1994 XQ ₄
1994 YG	14.5	0.15	20000226	357.69047	34.59846	31.40464	0.98370	0.2482477	3.0514885	88	3	1978–1999	0.60	M-v	2	Williams	37266	1994 YG
1994 YL	13.8	0.15	20000226	342.47295	34.01514	52.56656	12.52282	0.0723539	3.0422824	88	2	1994–2000	0.46	M-v	4	Williams	37126	1994 YL
1994 YU	13.5	0.15	20000226	107.74086	59.32161	286.94616	9.80117	0.1220778	2.9779161	45	3	1994–2000	0.69	M-v	3	Williams	37266	1994 YU
1994 YF ₁	13.4	0.15	20000226	3.51009	163.23623	291.01609	8.94179	0.0268752	2.9912693	49	3	1994–2000	0.66	M-v	3	Williams	36515	1994 YF ₁
1994 YA ₂	13.4	0.15	20000226	70.31916	97.81010	358.29119	22.07750	0.0447442	2.6521740	36	6	1989–2000	0.70	M-v	1	Williams	33341	1994 YA ₂
1994 YC ₂	13.8	0.15	20000226	98.68924	119.37992	271.75410	11.23667	0.1825347	2.6571944	43	3	1994–2000	0.57	M-v	3	Williams	33074	1994 YC ₂
1994 YK ₂	13.9	0.15	20000226	357.99808	70.75998	74.34232	7.62432	0.1390584	2.8370371	26	3	1994–2000	0.66	M-v	3	Williams	37126	1994 YK ₂
1995 AB	13.0	0.15	19950103	161.16482	184.72459	52.33082	16.42479	0.1325960	2.5609324	12	1	31 days	0.43			Williams		1995 AB
1995 BD	11.9	0.15	20000226	129.61040	182.59598	91.63896	10.05509	0.1153839	3.4183456	76	4	1995–2000	0.57	M-v	1	Williams	37266	1995 BD
1995 BL	14.5	0.15	20000226	317.14195	177.78956	309.66406	17.98523	0.0654955	1.9450082	45	2	1995–2000	0.60	M-v	4	Williams	37266	1995 BL
1995 BT	12.9	0.15	20000226	31.70221	87.43783	316.67326	21.08592	0.1137481	3.2285501	57	3	1995–1999	0.57	M-v	2	Williams	36884	1995 BT
1995 BW	13.9	0.15	20000226	129.03506	7.33774	29.02346	2.95348	0.0850458	2.7358417	35	5	1995–2000	0.67	M-v	1	Williams	33552	1995 BW
1995 BX	13.6	0.15	20000226	39.42605	19.28543	34.28410	1.47792	0.1926677	3.0605581	62	3	1995–2000	0.64	M-v	2	Williams	37266	1995 BX
1995 BZ	13.6	0.15	20000226	338.48302	99.78064	115.41041	10.30228	0.1656827	2.7386066	35	3	1994–2000	0.51	M-v	4	Williams	35692	1995 BZ
1995 BQ ₂	13.1	0.15	20000226	339.66236	239.90611	226.64190	25.49313	0.1999761	3.1441722	71	2	1995–2000	0.47	M-v	2	Williams	37266	1995 BQ ₂
1995 BY ₂	12.9	0.15	20000226	115.33222	295.35825	115.38549	13.72219	0.1637089	2.6865786	28	3	1995–2000	0.58	M-v	3	Williams	34292	1995 BY ₂
1995 BQ ₈	14.0	0.15	20000226	56.37241	330.76960	95.11229	3.16509	0.0463035	2.9859111	35	4	1995–2000	0.49	M-v	1	Williams	33074	1995 BQ ₈
1995 BU ₈	15.0	0.15	20000226	1.53960	63.93741	53.54847	1.96915	0.1101010	3.0110176	29	3	1995–2000	0.66	M-v	4	Williams	33248	1995 BU ₈
1995 BJ ₁₁	13.8	0.15	20000226	207.63161	156.57214	138.27808	4.22920	0.1389066	3.0238967	18	3	1995–2000	0.23	M-v	4	Williams	33553	1995 BJ ₁₁
1995 CB	13.7	0.15	20000226	13.92942	296.69310	131.11099	10.28061	0.2189633	3.1110878	62	3	1995–2000	0.49	M-v	3	Williams	37126	1995 CB

1995 CC	13.3	0.15	20000226	34.06157	339.19084	89.56392	3.91163	0.0706361	3.1511697	32	3	1995-2000	0.70	M-v	3	Williams	32944	1995 CC
1995 CG	14.2	0.15	20000226	153.70660	163.06869	137.74358	24.48542	0.0754328	1.9606332	40	3	1995-2000	0.54	M-v	2	Williams	36884	1995 CG
1995 CJ	12.7	0.15	20000226	273.19921	115.10255	126.76111	14.50768	0.2140283	3.0534693	36	5	1991-2000	0.53	M-v	1	Williams	37266	1995 CJ
1995 DG	12.4	0.15	20000226	24.03212	291.81174	148.96661	17.00527	0.2125513	3.1298862	67	3	1995-2000	0.64	M-v	2	Williams	36884	1995 DG
1995 DL	12.8	0.15	20000226	292.31135	202.51711	348.81626	4.27885	0.0944007	3.1717968	51	3	1995-2000	0.70	M-v	4	Williams	34583	1995 DL
1995 DN ₁	12.9	0.15	20000226	201.53256	262.39005	24.51233	7.10199	0.1060513	3.1415502	39	4	1995-2000	0.65	M-v	1	Williams	35692	1995 DN ₁
1995 DA ₃	15.7	0.15	20000226	197.58078	41.95353	227.35414	20.44430	0.0407148	1.9457233	44	3	1995-2000	0.71	M-v	3	Williams	37266	1995 DA ₃
1995 DZ ₃	12.5	0.15	20000226	130.50277	13.87327	321.31829	16.92305	0.2679377	3.0995765	54	4	1992-2000	0.57	M-v	2	Williams	35693	1995 DZ ₃
1995 DR ₁₃	13.2	0.15	20000226	302.46994	63.43453	125.62417	1.76991	0.1449131	3.1144776	32	3	1995-2000	0.60	M-v	4	Williams	37127	1995 DR ₁₃
1995 EP ₁	12.7	0.15	20000226	348.00601	209.02648	350.07691	11.89392	0.1075117	2.8610690	41	4	1990-2000	0.66	M-v	3	Williams	34292	1995 EP ₁
1995 EY ₇	13.2	0.15	20000226	88.93367	254.51112	206.77017	8.06199	0.0915798	2.8082944	43	4	1995-2000	0.69	M-v	1	Williams	34583	1995 EY ₇
1995 FM ₃	13.5	0.15	20000226	277.95059	155.17440	47.47467	4.04272	0.0308638	3.2140650	44	4	1992-2000	0.50	M-v	2	Williams	35693	1995 FM ₃
1995 FA ₈	13.8	0.15	20000226	68.49811	288.21740	136.42071	7.58555	0.0763280	3.1631288	23	4	1992-2000	0.45	M-v	2	Williams	35693	1995 FA ₈
1995 FM ₁₁	15.8	0.15	20000226	113.91035	104.62298	184.66150	3.75682	0.1385471	2.1553519	67	4	1992-1999	0.51	M-v	3	Williams	37267	1995 FM ₁₁
1995 GW ₂	15.2	0.15	20000226	339.92808	138.92283	29.19208	14.20135	0.2187735	3.0911769	28	3	1995-2000	0.38	M-v	2	Williams	37267	1995 GW ₂
1995 GC ₇	12.8	0.15	20000226	79.76846	73.80204	3.33518	9.95143	0.0928489	3.0230628	36	5	1987-2000	0.68	M-v	1	Williams	35693	1995 GC ₇
1995 KZ ₁	12.2	0.15	20000226	302.73165	18.81268	224.51265	16.10269	0.0904995	3.2032230	39	5	1985-2000	0.98	M-v	1	Williams	33750	1995 KZ ₁
1995 LK	13.8	0.15	20000226	102.75763	20.22800	301.71167	25.97959	0.2185381	2.3171981	54	3	1995-1999	0.51	M-v	2	Williams	36885	1995 LK
1995 MB	12.5	0.15	20000226	82.42878	11.08877	280.04701	26.26999	0.2208596	2.4135719	96	2	1995-2000	0.56	M-v	2	Williams	37267	1995 MB
1995 OR	14.9	0.15	20000226	99.00530	268.48062	63.61857	4.82588	0.2230966	2.2867370	59	3	1995-2000	0.52	M-v	3	Williams	37267	1995 OR
1995 PA	15.8	0.15	20000226	57.00532	316.19635	59.91396	3.50836	0.2049272	2.3383507	99	2	1995-1999	0.54	M-v	3	Williams	37267	1995 PA
1995 QH	14.1	0.15	20000226	55.01634	137.52093	272.78936	4.35952	0.1574141	2.2828546	42	2	1995-2000	0.57	M-v	3	Williams	37127	1995 QH
1995 QS	14.5	0.15	20000226	161.13098	213.76878	59.21447	5.18197	0.1591115	2.2496926	138	3	1995-1999	0.58	M-v	3	Williams	37267	1995 QS
1995 QB ₂	14.6	0.15	20000226	93.72248	77.48143	302.74243	3.55564	0.1839933	2.2375192	42	4	1955-2000	0.64	M-v	3	Williams	36885	1995 QB ₂
1995 QN ₂	14.9	0.15	20000226	35.11672	253.90168	150.62800	6.78476	0.1002016	2.3273380	67	3	1995-2000	0.59	M-v	3	Williams	37267	1995 QN ₂
1995 QV ₃	14.1	0.15	20000226	47.81686	318.28279	61.94008	27.00057	0.2720326	2.3518059	64	3	1995-2000	0.41	M-v	2	Williams	37127	1995 QV ₃
1995 RA	13.2	0.15	20000226	75.89854	58.20521	303.21992	22.98822	0.2324405	2.3444016	54	3	1995-1999	0.37	M-v	2	Williams	36516	1995 RA
1995 RD	14.6	0.15	20000226	47.29907	335.63329	84.00423	8.02782	0.1055933	2.2772660	40	2	1995-2000	0.48	M-v	5	Williams	37127	1995 RD
1995 SP	14.8	0.15	20000226	63.87141	37.46175	13.38099	9.24846	0.1899158	2.3228703	73	3	1995-2000	0.60	M-v	2	Williams	36885	1995 SP
1995 SA ₁	13.8	0.15	20000226	348.90866	220.28164	265.53199	22.62357	0.1563062	2.3244962	43	2	1995-2000	0.54	M-v	3	Williams	37127	1995 SA ₁
1995 SE ₁	15.0	0.15	20000226	28.75079	188.70049	217.29894	4.06304	0.1267821	2.3563295	69	2	1995-2000	0.52	M-v	3	Williams	37127	1995 SE ₁
1995 SJ ₁	15.0	0.15	20000226	12.52812	62.46989	351.84795	4.07224	0.2007442	2.4804452	137	3	1995-2000	0.46	M-v	2	Williams	37267	1995 SJ ₁
1995 SQ ₁	13.7	0.15	20000226	25.29500	121.88906	313.78498	23.71538	0.2222610	2.3673619	46	3	1991-2000	0.65	M-v	2	Williams	37267	1995 SQ ₁
1995 SX ₂	14.2	0.15	20000226	85.50124	280.65208	42.10220	3.50772	0.1925580	2.4247378	123	3	1995-2000	0.63	M-v	2	Williams	37267	1995 SX ₂
1995 SU ₃	13.5	0.15	20000226	168.45867	317.04536	329.85020	6.62706	0.1911755	2.2478388	40	4	1981-2000	0.62	M-v	3	Williams	37267	1995 SU ₃
1995 SG ₄	15.1	0.15	20000226	108.33892	41.76601	312.74045	21.69994	0.2268052	2.2850921	27	3	1995-2000	0.69	M-v	3	Williams	37267	1995 SG ₄
1995 SO ₁₆	16.8	0.15	20000226	49.07559	73.80738	300.82571	0.27585	0.2051020	2.4286704	51	2	1995-1999	0.46	M-v	3	Williams	37127	1995 SO ₁₆
1995 SM ₂₁	15.5	0.15	20000226	88.32279	7.49082	350.86738	7.08759	0.1304329	2.3007922	31	3	1988-1999	0.63	M-v	2	Williams	37267	1995 SM ₂₁
1995 SZ ₂₉	15.5	0.15	20000226	32.84679	326.75786	31.07372	6.46085	0.3363913	2.5614900	38	2	1995-1999	0.62	M-v	2	Williams	37128	1995 SZ ₂₉
1995 SY ₃₀	15.7	0.15	20000226	332.69189	308.23463	160.06395	7.09284	0.0648092	2.3324213	38	3	1995-1999	0.56	M-v	4	Williams	35693	1995 SY ₃₀
1995 SB ₃₁	14.8	0.15	20000226	197.52508	253.94688	356.83455	5.52811	0.1099430	2.2468385	40	4	1974-2000	0.50	M-v	2	Williams	37267	1995 SB ₃₁
1995 SH ₃₂	15.3	0.15	20000226	15.35458	136.82040	337.55210	3.42797	0.0942916	2.1810750	43	3	1995-2000	0.47	M-v	4	Williams	29109	1995 SH ₃₂
1995 SW ₃₄	16.2	0.15	20000226	27.89018	13.46378	6.62683	1.34549	0.1866835	2.5402818	33	2	1995-1999	0.63	M-v	4	Williams	36794	1995 SW ₃₄
1995 SV ₅₀	15.7	0.15	20000226	64.76367	41.02815	350.95661	2.07198	0.2024178	2.3638368	35	3	1995-2000	0.62	M-v	4	Williams	37267	1995 SV ₅₀
1995 SU ₅₂	14.3	0.15	20000226	130.91903	41.40790	288.11998	5.25696	0.1567638	2.2654005	22	2	1995-2000	0.64	M-v	4	Williams	37128	1995 SU ₅₂
1995 SV ₅₂	12.8	0.15	20000226	252.83763	259.08235	141.75628	7.09374	0.1460497	3.1543725	49	4	1992-1999	0.64	M-v	1	Williams	35068	1995 SV ₅₂
1995 SD ₅₃	15.0	0.15	20000226	42.05450	206.40100	178.96729	5.41958	0.1505819	2.4185748	43	3	1995-2000	0.61	M-v	3	Williams	37267	1995 SD ₅₃
1995 SE ₅₃	15.3	0.15	20000226	35.84498	211.19478	183.31110	1.92141	0.2069405	2.4290466	57	3	1991-2000	0.49	M-v	3	Williams	37128	1995 SE ₅₃
1995 ST ₅₃	13.8	0.15	20000226	79.23838	261.71792	40.99164	13.61789	0.2945756	2.6202505	77	3	1995-2000	0.53	M-v	2	Williams	37267	1995 ST ₅₃
1995 SO ₅₄	14.5	0.15	20000226	79.46780	268.93591	127.64883	3.43675	0.1749850	2.2922591	41	4	1988-2000	0.50	M-v	2	Williams	37267	1995 SO ₅₄
1995 SM ₅₅	4.8	0.15	20000226	311.73043	66.23831	21.01351	26.97097	0.1025247	42.0744695	43	2	1995-1999	0.51	M-v	4	Marsden	36885	1995 SM ₅₅
1995 TB	15.8	0.15	20000226	26.71671	78.72260	2.56429	4.75660	0.1855556	2.3475565	62	3	1995-2000	0.56	M-v	3	Marsden	37267	1995 TB
1995 TD	14.9	0.15	20000226	146.38011	142.35574	186.72898	6.39112	0.1566929	2.2276204	57	5	1992-2000	0.51	M-v	1	Williams	32309	1995 TD

1995 TR	13.9	0.15	20000226	142.11831	84.16082	219.03349	5.48787	0.1159262	2.3787619	65	5	1983–2000	0.54	M-v	1	Williams	37267	1995 TR
1995 TN ₇	16.2	0.15	20000226	28.59400	139.61672	280.44028	1.25108	0.1783851	2.4577653	40	2	1995–1999	0.31	M-v	3	Williams	37267	1995 TN ₇
1995 TE ₈	14.1	0.15	20000226	109.40539	171.30802	178.99205	7.52895	0.2185148	2.3118404	59	3	1995–2000	0.56	M-v	2	Williams	37267	1995 TE ₈
1995 UM	16.1	0.15	20000226	13.00635	192.34684	231.94623	5.40017	0.1170289	2.4631073	38	2	1995–1999	0.62	M-v	4	Williams	37267	1995 UM
1995 UR	14.2	0.15	20000226	49.01643	155.15032	297.85812	25.31776	0.2059573	2.3011674	33	3	1995–2000	0.73	M-v	3	Williams	33074	1995 UR
1995 UA ₁	15.0	0.15	20000226	329.81681	180.38426	334.35276	6.45380	0.0518121	2.3083645	35	3	1995–2000	0.84	M-v	4	Williams	32464	1995 UA ₁
1995 UQ ₁	14.8	0.15	20000226	69.41927	182.49837	214.24329	4.57839	0.2316445	2.3608220	60	3	1995–2000	0.43	M-v	2	Williams	36885	1995 UQ ₁
1995 UG ₂	16.2	0.15	20000226	78.97207	324.57155	30.44033	2.14713	0.1899492	2.4183114	30	2	1995–1999	0.58	M-v	4	Williams	37128	1995 UG ₂
1995 UJ ₂	14.6	0.15	20000226	79.03915	3.23782	12.22235	3.35655	0.2187848	2.3665136	69	3	1995–2000	0.38	M-v	2	Williams	36885	1995 UJ ₂
1995 UW ₂	14.8	0.15	20000226	49.52725	130.77833	261.01068	1.48873	0.1958571	2.4402067	111	4	1991–2000	0.46	M-v	2	Williams	37267	1995 UW ₂
1995 UO ₃	14.7	0.15	20000226	55.66661	200.60161	258.07330	3.64137	0.0952971	2.2497690	51	4	1992–2000	0.70	M-v	2	Williams	33074	1995 UO ₃
1995 UP ₃	14.1	0.15	20000226	120.65030	330.24513	7.97661	4.39602	0.1576107	2.3372216	39	5	1977–2000	0.66	M-v	1	Williams	36517	1995 UP ₃
1995 UQ ₃	14.1	0.15	20000226	260.56104	12.00582	242.95004	2.14674	0.0729864	2.1822983	95	3	1995–2000	0.59	M-v	2	Williams	37267	1995 UQ ₃
1995 UX ₃	14.1	0.15	20000226	76.05670	356.11555	18.28032	6.65905	0.1289106	2.4069595	27	3	1991–2000	0.59	M-v	3	Williams	37267	1995 UX ₃
1995 UD ₄	15.0	0.15	20000226	150.50520	342.40701	28.56270	5.49164	0.1644638	2.1601992	83	4	1995–2000	0.71	M-v	2	Williams	33553	1995 UD ₄
1995 UG ₆	14.6	0.15	20000226	43.99267	14.70318	7.84119	2.72574	0.1680145	2.5198286	87	3	1995–2000	0.62	M-v	3	Williams	37267	1995 UG ₆
1995 UG ₇	14.6	0.15	20000226	116.81754	277.88181	34.72511	6.57567	0.1294386	2.4356645	33	3	1991–1999	0.58	M-v	4	Williams	37128	1995 UG ₇
1995 UL ₇	14.0	0.15	20000226	81.78016	341.41828	25.19014	2.39600	0.2193417	2.4030181	35	3	1991–2000	0.52	M-v	3	Williams	37268	1995 UL ₇
1995 UP ₇	13.4	0.15	20000226	5.25774	249.97155	175.83683	5.48919	0.1145576	2.5607682	74	4	1993–2000	0.55	M-v	2	Williams	37268	1995 UP ₇
1995 UB ₈	14.4	0.15	20000226	31.98321	27.40286	65.53980	4.14746	0.1225416	2.3332604	66	3	1995–2000	0.65	M-v	2	Williams	36886	1995 UB ₈
1995 UL ₈	15.2	0.15	20000226	40.14837	44.03120	41.97787	2.82964	0.1718460	2.3570092	58	3	1995–2000	0.56	M-v	4	Williams	37268	1995 UL ₈
1995 UN ₈	14.4	0.15	20000226	148.84202	290.38682	28.58259	6.79933	0.2078908	2.2991571	41	3	1995–2000	0.50	M-v	4	Williams	37268	1995 UN ₈
1995 UV ₈	14.1	0.15	20000226	1.61856	7.09939	68.55330	3.09273	0.2540667	2.5588203	77	2	1995–2000	0.59	M-v	3	Williams	37268	1995 UV ₈
1995 UY ₈	14.8	0.15	20000226	14.53877	7.57097	64.75776	4.34468	0.1613795	2.4651356	94	2	1995–2000	0.49	M-v	4	Williams	37268	1995 UY ₈
1995 UU ₁₄	15.8	0.15	20000226	300.48814	222.25680	309.49725	1.54853	0.1349674	2.3849976	43	3	1995–2000	0.60	M-v	4	Williams	37268	1995 UU ₁₄
1995 UK ₂₈	14.2	0.15	20000226	83.13988	293.84519	40.50083	5.70405	0.1432536	2.4460289	139	3	1995–2000	0.57	M-v	2	Williams	37268	1995 UK ₂₈
1995 UY ₄₀	16.3	0.15	20000226	57.38881	156.04811	222.06019	4.80190	0.2043030	2.4079665	28	2	1995–1999	0.62	M-v	3	Williams	37128	1995 UY ₄₀
1995 UO ₄₄	13.9	0.15	20000226	36.76805	347.45927	16.07412	15.82371	0.1345677	2.5899714	44	2	1995–2000	0.56	M-v	3	Williams	37129	1995 UO ₄₄
1995 UP ₄₄	14.0	0.15	20000226	147.55282	64.78712	239.08992	5.79967	0.1273507	2.3385331	47	3	1995–2000	0.58	M-v	3	Williams	37129	1995 UP ₄₄
1995 UQ ₄₄	13.7	0.15	20000226	69.08571	303.74393	17.28878	12.98085	0.1696142	2.5791216	118	3	1995–2000	0.62	M-v	2	Williams	37268	1995 UQ ₄₄
1995 UY ₄₄	14.7	0.15	20000226	61.99142	332.44196	34.97023	10.02586	0.2066545	2.4879298	96	4	1991–1999	0.53	M-v	3	Williams	37268	1995 UY ₄₄
1995 UA ₄₅	14.7	0.15	20000226	96.06872	355.49347	70.36899	5.91476	0.1343570	2.1975925	35	4	1992–2000	0.54	M-v	2	Williams	35694	1995 UA ₄₅
1995 UC ₄₇	14.6	0.15	20000226	18.63397	355.93655	30.32056	5.64194	0.3058059	2.5899280	75	3	1993–1999	0.57	M-v	2	Williams	37268	1995 UC ₄₇
1995 VA	14.8	0.15	20000226	16.36394	184.59697	226.49942	14.44147	0.0920409	2.5545728	63	2	1995–2000	0.54	M-v	3	Williams	37129	1995 VA
1995 VD	15.0	0.15	20000226	42.29127	88.15914	7.39509	2.72929	0.1074329	2.3440213	56	3	1995–2000	0.69	M-v	4	Williams	32749	1995 VD
1995 VN	15.2	0.15	20000226	69.02217	197.59465	179.93410	2.15935	0.2115914	2.4388593	30	4	1991–2000	0.50	M-v	3	Williams	37268	1995 VN
1995 VP ₁	14.0	0.15	20000226	123.56764	276.01474	89.36010	5.93907	0.2178218	2.2738611	27	4	1988–2000	0.72	M-v	2	Williams	36886	1995 VP ₁
1995 VW ₁	14.0	0.15	20000226	63.28521	188.93954	273.41667	7.99961	0.1476642	2.3530771	53	4	1989–2000	0.67	M-v	2	Williams	34013	1995 VW ₁
1995 VH ₂	14.8	0.15	20000226	87.56728	220.00924	149.62436	2.89348	0.2179175	2.3892186	50	4	1980–2000	0.55	M-v	1	Williams	37268	1995 VH ₂
1995 VJ ₂	14.1	0.15	20000226	48.80824	334.09956	67.47417	15.38472	0.1147048	2.4691705	89	3	1995–2000	0.58	M-v	2	Williams	37268	1995 VJ ₂
1995 VZ ₆	16.0	0.15	20000226	29.30800	206.58384	216.87659	1.75298	0.1799100	2.4791655	38	2	1995–2000	0.56	M-v	3	Williams	37129	1995 VZ ₆
1995 VG ₁₀	17.2	0.15	20000226	205.33369	51.18167	178.83970	0.93081	0.1435114	2.4381207	21	2	1995–1999	0.36	M-v	5	Williams	37129	1995 VG ₁₀
1995 VY ₁₀	15.8	0.15	20000226	354.78075	10.18436	105.61000	3.58987	0.1245640	2.3919278	26	2	1995–2000	0.41	M-v	4	Williams	37129	1995 VY ₁₀
1995 VQ ₁₂	15.5	0.15	20000226	97.76685	196.08503	201.97091	7.48276	0.1132878	2.2551691	30	5	1978–2000	0.76	M-v	1	Williams	32518	1995 VQ ₁₂
1995 VF ₁₃	15.7	0.15	20000226	113.84529	176.19442	134.20212	2.93299	0.2030610	2.4299924	30	4	1976–1999	0.64	M-v	1	Williams	37129	1995 VF ₁₃
1995 VP ₁₇	15.7	0.15	20000226	9.44763	47.40666	44.64707	2.21297	0.0423597	2.4443100	27	3	1995–2000	0.56	M-v	4	Williams	29627	1995 VP ₁₇
1995 WE	13.6	0.15	20000226	38.08590	52.44924	68.95649	6.81827	0.1543096	2.2846948	51	5	1988–2000	0.56	M-v	2	Williams	36886	1995 WE
1995 WO	15.1	0.15	20000226	109.22500	138.73233	198.11574	8.20292	0.2784271	2.3798297	51	5	1991–2000	0.65	M-v	1	Williams	32310	1995 WO
1995 WQ	14.6	0.15	20000226	21.67764	27.77176	26.30558	3.26558	0.2283310	2.5602003	87	3	1995–2000	0.51	M-v	2	Williams	37268	1995 WQ
1995 WJ ₁	15.1	0.15	20000226	48.29777	317.36729	34.57483	5.33533	0.2502060	2.5754447	64	3	1995–1999	0.57	M-v	2	Williams	37129	1995 WJ ₁
1995 WK ₁	14.1	0.15	20000226	338.37447	53.23372	43.39825	4.87905	0.1329828	2.6220880	72	2	1995–2000	0.50	M-v	4	Williams	37268	1995 WK ₁
1995 WQ ₁	14.5	0.15	20000226	55.68437	132.11820	264.91649	3.77209	0.2328716	2.5383542	51	2	1995–2000	0.46	M-v	4	Williams	37268	1995 WQ ₁
1995 WZ ₁	14.2	0.15	20000226	18.65406	153.31125	250.38876	8.54807	0.1285943	2.5690116	57	2	1995–2000	0.48	M-v	3	Williams	37130	1995 WZ ₁

1995 WA ₂	15.1	0.15	20000226	23.17013	255.34748	216.33123	3.12071	0.1921172	2.3514629	43	3	1995–2000	0.58	M-v	3	Williams	37130	1995 WA ₂
1995 WD ₂	14.8	0.15	20000226	28.85558	262.90250	223.08526	2.32839	0.1629363	2.3282455	30	7	1977–2000	0.75	M-v	1	Williams	32749	1995 WD ₂
1995 WG ₂	13.6	0.15	20000226	289.43576	258.17399	247.63359	10.68262	0.1086805	2.6667315	73	5	1985–2000	0.56	M-v	2	Williams	37268	1995 WG ₂
1995 WX ₂	15.4	0.15	20000226	341.68694	287.61259	228.23596	4.32045	0.0788381	2.2887737	39	3	1995–2000	0.76	M-v	4	Williams	35694	1995 WX ₂
1995 WA ₃	15.4	0.15	20000226	233.40253	148.28260	63.14100	10.50336	0.0981323	2.5482607	28	2	1995–1999	0.64	M-v	5	Williams	37130	1995 WA ₃
1995 WE ₃	14.5	0.15	20000226	250.73630	131.93713	65.68471	4.39491	0.0934549	2.5405241	58	2	1995–1999	0.45	M-v	5	Williams	37268	1995 WE ₃
1995 WO ₃	14.4	0.15	20000226	76.78836	157.71676	232.79451	1.64959	0.1955452	2.3862923	38	5	1980–2000	0.51	M-v	1	Williams	29946	1995 WO ₃
1995 WP ₃	15.9	0.15	20000226	55.59736	138.33327	225.85266	1.63917	0.1699868	2.5668495	50	2	1995–1999	0.51	M-v	4	Williams	37130	1995 WP ₃
1995 WK ₄	15.4	0.15	20000226	64.50686	291.94188	106.88279	3.29461	0.1749661	2.4269738	50	2	1995–2000	0.56	M-v	4	Williams	37130	1995 WK ₄
1995 WM ₄	13.9	0.15	20000226	81.49343	236.08190	100.21576	4.26777	0.1585334	2.5889657	95	3	1995–2000	0.49	M-v	2	Williams	37268	1995 WM ₄
1995 WN ₄	15.2	0.15	20000226	25.30096	284.63866	114.50360	4.49691	0.1812305	2.5998572	54	2	1995–2000	0.65	M-v	3	Williams	37268	1995 WN ₄
1995 WX ₄	14.9	0.15	20000226	64.06160	177.32478	225.58897	4.04999	0.1926860	2.4186223	33	5	1976–2000	0.66	M-v	2	Williams	36886	1995 WX ₄
1995 WB ₅	14.0	0.15	20000226	58.52718	96.66163	253.75974	12.79114	0.1555619	2.6327676	100	3	1995–2000	0.63	M-v	2	Williams	37268	1995 WB ₅
1995 WE ₅	14.6	0.15	20000226	91.50963	1.74761	55.61595	5.74463	0.1115818	2.2775621	19	3	1995–2000	0.71	M-v	3	Williams	32671	1995 WE ₅
1995 WG ₅	14.1	0.15	20000226	35.96026	243.02347	198.52754	5.74290	0.0801688	2.3793898	40	3	1991–2000	0.47	M-v	3	Williams	37268	1995 WG ₅
1995 WK ₅	14.6	0.15	20000226	115.75900	341.50275	42.41841	3.45810	0.1237424	2.3112147	68	3	1995–2000	0.63	M-v	3	Williams	37268	1995 WK ₅
1995 WL ₅	14.9	0.15	20000226	113.51642	118.38703	256.89147	6.92874	0.1535840	2.3365187	41	4	1994–2000	0.67	M-v	1	Williams	32518	1995 WL ₅
1995 WE ₆	14.9	0.15	20000226	46.78893	15.84434	21.97327	2.25257	0.2083283	2.3958984	97	4	1991–2000	0.56	M-v	2	Marsden	37268	1995 WE ₆
1995 WT ₆	14.9	0.15	20000226	14.02139	145.54637	313.05990	5.23774	0.1139116	2.3954059	38	2	1995–2000	0.50	M-v	4	Williams	37130	1995 WT ₆
1995 WS ₇	14.5	0.15	20000226	2.55593	86.51572	90.27223	1.13173	0.0674691	2.2321293	55	5	1990–2000	0.80	M-v	2	Williams	33750	1995 WS ₇
1995 WT ₇	13.0	0.15	20000226	270.92228	95.43044	75.22035	12.68801	0.1447537	2.6737294	51	3	1988–2000	0.63	M-v	3	Williams	37268	1995 WT ₇
1995 WU ₇	15.1	0.15	20000226	48.53451	48.84406	69.67765	3.89492	0.0629021	2.2677291	27	3	1995–2000	0.68	M-v	4	Williams	33342	1995 WU ₇
1995 WV ₇	13.1	0.15	20000226	353.07671	31.41540	73.92894	11.43434	0.1078591	2.5414683	70	3	1991–2000	0.52	M-v	3	Williams	37268	1995 WV ₇
1995 WP ₈	14.1	0.15	20000226	195.55392	273.75994	59.15501	5.50713	0.1796773	2.1638198	69	4	1994–2000	0.83	M-v	2	Williams	33750	1995 WP ₈
1995 WT ₈	15.3	0.15	20000226	224.83569	31.07748	248.28354	4.70741	0.1630511	2.2337574	33	4	1978–2000	0.64	M-v	2	Williams	35694	1995 WT ₈
1995 WB ₉	13.5	0.15	20000226	328.81617	244.17074	228.93149	26.32984	0.1347178	2.6279246	121	2	1995–2000	0.45	M-v	3	Williams	37268	1995 WB ₉
1995 WL ₁₃	13.6	0.15	20000226	43.33990	274.87027	134.91327	4.15857	0.0783127	2.4655027	53	3	1995–2000	0.48	M-v	3	Williams	37268	1995 WL ₁₃
1995 WP ₁₇	14.9	0.15	20000226	52.96679	317.40037	18.06140	3.97628	0.2982807	2.5724320	105	3	1995–2000	0.52	M-v	2	Williams	37268	1995 WP ₁₇
1995 WR ₁₇	16.6	0.15	20000226	359.17869	140.48880	0.98825	2.63080	0.1736292	2.3163879	26	3	1995–2000	0.34	M-v	4	Williams	32671	1995 WR ₁₇
1995 WW ₁₇	15.4	0.15	20000226	293.70850	212.36073	21.94822	4.12362	0.0807835	2.1582927	70	4	1995–2000	0.78	M-v	2	Williams	33074	1995 WW ₁₇
1995 WP ₂₂	14.8	0.15	20000226	157.29515	13.07932	253.79942	1.66547	0.1959573	2.4165728	61	3	1995–1999	0.62	M-v	4	Williams	37268	1995 WP ₂₂
1995 WO ₄₁	14.0	0.15	20000226	212.35373	1.59818	286.67858	5.69094	0.1934179	2.5616202	49	3	1995–2000	0.57	M-v	3	Williams	33250	1995 WO ₄₁
1995 WY ₄₁	14.6	0.15	20000226	85.88017	123.79202	278.27098	3.71465	0.2085271	2.3247892	27	5	1970–2000	0.89	M-v	2	Williams	36887	1995 WY ₄₁
1995 WZ ₄₁	13.7	0.15	20000226	92.44501	148.97045	237.10480	23.42358	0.2820183	2.3399536	40	3	1995–1999	0.87	M-v	2	Williams	37268	1995 WZ ₄₁
1995 WA ₄₂	14.9	0.15	20000226	64.00090	213.51439	207.11020	4.39101	0.0588513	2.3343135	40	4	1995–2000	0.70	M-v	1	Williams	36887	1995 WA ₄₂
1995 WL ₄₂	14.0	0.15	20000226	260.52439	46.89675	137.35864	1.06652	0.1227356	2.8951335	61	3	1995–1999	0.65	M-v	3	Williams	37268	1995 WL ₄₂
1995 WX ₄₂	13.4	0.15	20000226	26.32102	315.98128	97.19635	14.69031	0.1374713	2.5570681	49	4	1987–2000	0.50	M-v	3	Williams	37268	1995 WX ₄₂
1995 XA	15.3	0.15	20000226	176.12074	59.25159	244.46582	5.73264	0.1315741	2.3267717	50	3	1995–2000	0.50	M-v	3	Williams	32750	1995 XA
1995 XE	13.2	0.15	20000226	269.62966	278.08475	278.44236	13.92917	0.0480975	2.5722683	54	3	1995–2000	0.60	M-v	3	Williams	36518	1995 XE
1995 XV	14.7	0.15	20000226	45.97826	297.81296	97.66723	3.73223	0.1974961	2.5380108	44	2	1995–2000	0.46	M-v	4	Williams	37131	1995 XV
1995 XG ₁	13.7	0.15	20000226	244.58323	303.34147	276.43098	12.78162	0.1323287	2.5551026	62	3	1995–2000	0.66	M-v	3	Williams	36887	1995 XG ₁
1995 XK ₁	14.1	0.15	20000226	33.67198	116.31912	270.82531	11.59952	0.1881547	2.6359501	56	2	1995–2000	0.73	M-v	3	Williams	37268	1995 XK ₁
1995 XT ₁	15.3	0.15	20000226	15.89728	163.72959	277.70810	3.91842	0.2399232	2.5734869	59	2	1995–2000	0.50	M-v	3	Williams	37268	1995 XT ₁
1995 YB	13.6	0.15	20000226	71.17521	239.31810	96.92474	13.05984	0.2369290	2.6501447	87	3	1995–2000	0.53	M-v	2	Williams	37269	1995 YB
1995 YJ	14.4	0.15	20000226	335.85687	233.77613	241.32840	3.86697	0.1752412	2.6219976	56	2	1995–2000	0.51	M-v	4	Williams	37131	1995 YJ
1995 YR	13.9	0.15	20000226	301.56755	138.04960	66.69963	9.45968	0.0771515	2.2967684	34	4	1995–2000	0.63	M-v	2	Williams	36887	1995 YR
1995 YT	15.2	0.15	20000226	94.20742	205.41760	165.06679	2.07169	0.2575268	2.4023529	43	4	1976–2000	0.66	M-v	3	Williams	29946	1995 YT
1995 YU	14.6	0.15	20000226	110.38843	270.75085	92.20269	5.67157	0.2173482	2.4199889	53	4	1987–2000	0.79	M-v	2	Williams	32518	1995 YU
1995 YY	14.2	0.15	20000226	244.36390	171.90867	109.12105	5.70515	0.0661823	2.2707180	37	3	1995–2000	0.69	M-v	3	Williams	37269	1995 YY
1995 YF ₁	13.4	0.15	20000226	171.47532	356.46696	267.88549	8.17040	0.1143890	2.7810230	61	3	1995–2000	0.63	M-v	3	Williams	37269	1995 YF ₁
1995 YH ₁	14.3	0.15	20000226	147.10312	100.78388	277.11826	3.49382	0.1310872	2.2837838	81	4	1991–2000	0.72	M-v	2	Williams	35694	1995 YH ₁
1995 YJ ₁	13.2	0.15	20000226	37.69183	235.68898	128.91047	2.95993	0.0896134	2.8957657	73	5	1977–2000	0.64	M-v	2	Williams	37269	1995 YJ ₁
1995 YP ₁	13.2	0.15	20000226	153.37051	11.28513	265.28496	5.51360	0.0184424	2.7948175	80	3	1995–2000	0.64	M-v	3	Williams	37269	1995 YP ₁

1995 YY ₁	14.2	0.15	20000226	309.21954	137.90673	105.43048	6.21612	0.1305637	2.2754080	28	5	1993–2000	0.73	M-v	2	Williams	33553	1995 YY ₁
1995 YS ₂	15.2	0.15	20000226	27.66503	220.91894	263.23664	0.51616	0.1195696	2.3946043	51	4	1994–2000	0.72	M-v	2	Williams	32947	1995 YS ₂
1995 YT ₂	15.7	0.15	20000226	23.17533	342.20113	78.90919	5.27317	0.2804135	2.5831731	72	2	1995–2000	0.51	M-v	3	Williams	37131	1995 YT ₂
1995 YO ₃	14.7	0.15	20000226	66.18320	221.97932	215.19732	0.59762	0.1606701	2.3976950	70	4	1976–2000	0.63	M-v	1	Williams	33553	1995 YO ₃
1995 YV ₃	14.2	0.15	20000226	11.25969	276.33437	119.24378	29.79980	0.4414716	2.7896235	120	3	1995–2000	0.50	M-v	2	Williams	36887	1995 YV ₃
1995 YX ₃	13.9	0.15	20000226	50.13069	253.79638	106.06481	13.48665	0.1482212	2.7861463	60	3	1995–2000	0.62	M-v	2	Williams	37269	1995 YX ₃
1995 YM ₄	14.3	0.15	20000226	19.76606	320.73848	102.35762	5.02440	0.2740303	2.5789636	54	2	1995–2000	0.44	M-v	3	Williams	37131	1995 YM ₄
1995 YD ₇	16.5	0.15	20000226	30.61256	231.88689	226.45674	6.41596	0.1257009	2.3756099	21	3	1995–2000	0.31	M-v	3	Williams	32672	1995 YD ₇
1995 YO ₇	14.4	0.15	20000226	20.09335	174.78231	237.50673	12.52468	0.1585648	2.5718895	65	2	1995–2000	0.37	M-v	3	Williams	37269	1995 YO ₇
1995 YK ₂₀	14.5	0.15	20000226	181.76213	351.80968	283.19110	5.56528	0.0723923	2.7059860	31	3	1995–2000	0.63	M-v	5	Williams	35428	1995 YK ₂₀
1995 YS ₂₁	13.4	0.15	20000226	87.22480	239.63018	107.46631	4.83214	0.1028625	2.7324819	72	4	1992–2000	0.66	M-v	2	Williams	37269	1995 YS ₂₁
1996 AP	13.7	0.15	20000226	55.44974	288.56406	109.43503	13.48870	0.1728675	2.5921861	56	3	1996–2000	0.60	M-v	2	Williams	37269	1996 AP
1996 AZ	13.6	0.15	20000226	359.13943	327.57829	99.75858	4.18608	0.0823766	2.8141673	43	2	1996–2000	0.62	M-v	4	Williams	37131	1996 AZ
1996 AS ₁	18.3	0.15	20000226	118.61901	357.30602	296.75062	14.36303	0.3611584	1.7497120	41	3	1996–2000	0.53	M-v	4	Williams	31107	1996 AS ₁
1996 AX ₁	15.8	0.15	20000226	36.86142	149.23040	268.49290	10.66725	0.4317350	2.4588984	95	2	1996–2000	0.58	M-v	2	Williams	37269	1996 AX ₁
1996 AP ₂	13.9	0.15	20000226	38.21680	130.11343	310.13258	11.05271	0.1236106	2.5667326	79	3	1995–2000	0.60	M-v	3	Williams	33075	1996 AP ₂
1996 AR ₂	13.7	0.15	20000226	60.14419	67.11923	315.29979	12.00411	0.2058834	2.6908441	35	3	1994–2000	0.59	M-v	3	Williams	37269	1996 AR ₂
1996 AP ₃	13.4	0.15	20000226	168.01351	65.73865	273.59507	6.82818	0.1931885	2.2872632	80	4	1988–2000	0.58	M-v	2	Williams	37269	1996 AP ₃
1996 AX ₃	13.5	0.15	20000226	241.30937	265.49101	332.20450	5.33546	0.0757911	2.6550839	65	3	1995–2000	0.65	M-v	3	Williams	33075	1996 AX ₃
1996 AW ₄	14.8	0.15	20000226	353.75296	116.58093	75.54725	3.27830	0.1665497	2.3578735	27	4	1942–2000	0.81	M-v	2	Williams	33553	1996 AW ₄
1996 AU ₆	14.5	0.15	20000226	31.12297	349.52050	65.80414	3.47767	0.0677636	2.7183936	53	3	1996–2000	0.45	M-v	4	Williams	37269	1996 AU ₆
1996 AH ₉	14.3	0.15	20000226	268.13139	318.19745	229.06008	1.67187	0.1051147	2.7619850	64	5	1992–2000	0.50	M-v	1	Williams	37269	1996 AH ₉
1996 AF ₁₁	15.9	0.15	20000226	319.14640	276.86501	259.03144	2.48542	0.1890683	2.5814044	18	4	1984–2000	0.39	M-v	4	Williams	33251	1996 AF ₁₁
1996 AE ₁₈	15.0	0.15	20000226	119.12758	197.67226	147.31171	5.56008	0.2483791	2.5612934	40	4	1994–2000	0.62	M-v	2	Williams	32750	1996 AE ₁₈
1996 AF ₁₈	15.3	0.15	20000226	37.80854	170.71070	235.08543	2.02207	0.1946253	2.6621941	40	2	1996–2000	0.44	M-v	4	Williams	37131	1996 AF ₁₈
1996 BU	14.8	0.15	20000226	109.41972	116.40170	277.13885	7.02569	0.1175128	2.4006334	30	3	1995–2000	0.60	M-v	3	Williams	32750	1996 BU
1996 BZ	14.7	0.15	20000226	2.94745	26.93731	120.95319	6.42770	0.1379102	2.4440777	53	3	1996–2000	0.67	M-v	3	Williams	37269	1996 BZ
1996 BB ₁	14.6	0.15	20000226	58.65830	164.36017	236.48405	3.81047	0.1845445	2.5590615	71	3	1996–2000	0.58	M-v	2	Williams	37269	1996 BB ₁
1996 BE ₁	13.8	0.15	20000226	331.94164	5.23099	80.48395	4.96635	0.1323578	2.8518266	57	4	1992–2000	0.68	M-v	2	Williams	37269	1996 BE ₁
1996 BF ₁	14.5	0.15	20000226	97.09766	14.05087	305.19014	3.77231	0.1177993	2.7457646	44	2	1996–1999	0.66	M-v	6	Williams	37131	1996 BF ₁
1996 BB ₂	14.7	0.15	20000226	39.48743	160.42164	319.05278	10.24949	0.1714012	2.4151779	33	5	1983–2000	0.68	M-v	2	Williams	33075	1996 BB ₂
1996 BG ₂	12.7	0.15	20000226	345.68239	127.01234	329.49310	21.45004	0.0575545	2.6725728	56	4	1992–2000	0.74	M-v	3	Williams	36887	1996 BG ₂
1996 BH ₂	13.3	0.15	20000226	61.67426	105.96187	320.84047	8.36203	0.0368952	2.5971678	80	3	1996–2000	0.60	M-v	1	Williams	37269	1996 BH ₂
1996 BO ₃	14.0	0.15	20000226	342.56756	334.86921	136.52141	12.98898	0.0962509	2.7499892	40	2	1996–2000	0.44	M-v	4	Williams	37132	1996 BO ₃
1996 BP ₃	13.3	0.15	20000226	340.95154	83.94777	349.64484	9.64025	0.0992342	3.0057186	64	3	1994–2000	0.53	M-v	2	Williams	37269	1996 BP ₃
1996 BJ ₄	13.4	0.15	20000226	110.07993	244.38673	102.32587	13.43699	0.2085384	2.6394615	60	2	1996–2000	0.55	M-v	4	Williams	37132	1996 BJ ₄
1996 BM ₅	14.4	0.15	20000226	255.17435	276.62085	357.33512	3.40973	0.0614486	2.3777383	30	4	1994–2000	0.46	M-v	1	Williams	35694	1996 BM ₅
1996 BM ₁₇	14.5	0.15	20000226	34.57069	50.11545	43.76702	4.92830	0.1307041	2.5206068	66	3	1996–2000	0.65	M-v	2	Williams	37269	1996 BM ₁₇
1996 CQ	14.1	0.15	20000226	292.02057	223.14575	33.85941	5.98917	0.1271396	2.4468379	44	6	1986–2000	0.62	M-v	1	Williams	34196	1996 CQ
1996 CK ₁	14.0	0.15	20000226	7.51029	67.67873	25.60175	5.11089	0.1709437	2.7151798	42	3	1992–2000	0.70	M-v	3	Williams	37269	1996 CK ₁
1996 CD ₂	13.2	0.15	20000226	217.65149	323.60691	304.60282	12.31507	0.1358258	2.6893246	40	3	1996–2000	0.68	M-v	2	Williams	37132	1996 CD ₂
1996 CO ₂	12.6	0.15	20000226	136.14655	164.25335	128.04641	10.84922	0.0670184	2.9949014	79	3	1996–2000	0.64	M-v	3	Williams	37269	1996 CO ₂
1996 CP ₂	13.8	0.15	20000226	291.10424	169.96522	32.81556	9.58423	0.2100247	2.7416222	26	3	1996–1999	0.66	M-v	3	Williams	37269	1996 CP ₂
1996 CE ₃	13.2	0.15	20000226	53.59214	79.91721	358.36099	21.91871	0.0536729	2.6685832	99	3	1996–1999	0.61	M-v	1	Williams	37269	1996 CE ₃
1996 CW ₃	13.8	0.15	20000226	49.70373	110.33812	317.12159	11.18870	0.0163360	2.6457948	68	3	1996–2000	0.59	M-v	2	Williams	37269	1996 CW ₃
1996 CE ₅	14.5	0.15	20000226	55.57691	109.79993	314.58924	21.70249	0.1180474	2.5701199	29	3	1996–2000	0.55	M-v	2	Williams	34861	1996 CE ₅
1996 CJ ₇	14.5	0.15	20000226	307.12503	120.50207	135.81913	7.45271	0.0931096	2.3510623	38	4	1996–2000	0.81	M-v	2	Williams	33554	1996 CJ ₇
1996 CX ₈	14.2	0.15	20000226	111.80093	11.52345	10.33256	6.88907	0.0449671	2.5952035	74	3	1996–2000	0.69	M-v	3	Williams	33075	1996 CX ₈
1996 DH	16.7	0.15	20000226	225.14229	351.32403	309.39164	17.22960	0.2767062	1.5869950	119	3	1996–2000	0.50	M-v	3	Williams	31791	1996 DH
1996 DO	14.3	0.15	20000226	357.67710	146.40915	350.30787	3.47226	0.1163017	2.6288784	50	3	1996–2000	0.57	M-v	3	Williams	36888	1996 DO
1996 DT	13.1	0.15	20000226	211.74441	84.13347	151.71974	10.62488	0.0528053	2.9931274	59	3	1996–2000	0.78	M-v	3	Williams	37269	1996 DT
1996 DD ₁	14.6	0.15	20000226	351.94418	343.79931	115.44571	22.79846	0.0656312	2.6739332	72	3	1996–2000	0.61	M-v	2	Williams	37269	1996 DD ₁
1996 DE ₁	14.5	0.15	20000226	21.48200	281.52242	161.50576	3.03493	0.1420905	2.6780943	36	3	1996–2000	0.64	M-v	3	Williams	37269	1996 DE ₁

1996 DH ₁	13.2	0.15	20000226	353.42872	253.55899	147.12735	13.02464	0.1187293	3.1545909	40	5	1987–1999	0.63	M-v	1	Williams	37132	1996 DH ₁
1996 DL ₁	15.1	0.15	20000226	12.74363	168.31594	317.36946	4.63042	0.1548074	2.5316993	87	4	1994–2000	0.61	M-v	2	Marsden	37269	1996 DL ₁
1996 DV ₁	14.5	0.15	20000226	311.78794	209.97895	317.43056	4.41677	0.0308178	2.7605075	36	3	1996–2000	0.71	M-v	3	Williams	32949	1996 DV ₁
1996 DH ₂	14.2	0.15	20000226	258.29043	255.57337	5.00931	10.32475	0.1620329	2.6400905	27	4	1993–2000	0.70	M-v	1	Williams	34293	1996 DH ₂
1996 DM ₂	13.6	0.15	20000226	264.79218	117.48603	106.41043	5.81579	0.0526451	2.7370855	76	3	1996–2000	0.59	M-v	3	Williams	37269	1996 DM ₂
1996 DQ ₂	13.7	0.15	20000226	288.11230	144.91628	97.81891	5.14114	0.0509294	2.5251102	60	5	1980–2000	0.53	M-v	3	Williams	37269	1996 DQ ₂
1996 DY ₂	13.5	0.15	20000226	45.53676	332.89522	70.42748	3.07669	0.0733068	2.8857679	65	3	1996–2000	0.64	M-v	3	Williams	37269	1996 DY ₂
1996 DB ₃	14.3	0.15	20000226	316.03178	199.18177	320.88109	13.88587	0.0780524	2.5820791	51	3	1996–1999	0.70	M-v	3	Williams	37269	1996 DB ₃
1996 EB	13.7	0.15	20000226	53.79929	345.91453	73.47592	14.73440	0.1461453	2.6021823	59	4	1996–2000	0.75	M-v	2	Williams	37269	1996 EB
1996 EW	14.6	0.15	20000226	345.62924	2.66229	163.59756	13.69393	0.1182823	2.5509049	39	4	1988–2000	0.70	M-v	3	Williams	34013	1996 EW
1996 EB ₁	13.9	0.15	20000226	75.26277	40.18238	2.51669	3.77282	0.1007825	2.7621240	98	3	1996–2000	0.71	M-v	2	Williams	36888	1996 EB ₁
1996 EH ₁	12.8	0.15	20000226	221.43804	43.00111	197.72004	14.70114	0.1584072	3.1650381	46	5	1979–2000	0.76	M-v	1	Williams	33343	1996 EH ₁
1996 EL ₁	13.6	0.15	20000226	40.63829	120.01909	340.90172	13.23092	0.1494356	2.5826067	76	3	1996–2000	0.75	M-v	2	Williams	35695	1996 EL ₁
1996 EG ₂	13.5	0.15	20000226	250.92039	113.64570	165.90705	12.31963	0.0396540	2.5386995	31	7	1976–2000	0.79	M-v	1	Williams	34584	1996 EG ₂
1996 ED ₄	13.4	0.15	20000226	120.64925	325.30722	359.28176	10.11139	0.0721656	3.0306575	57	3	1996–2000	0.52	M-v	3	Williams	37269	1996 ED ₄
1996 EK ₆	13.7	0.15	20000226	205.33455	121.91546	173.63689	7.41830	0.1067827	2.7036462	38	4	1993–2000	0.80	M-v	3	Williams	35695	1996 EK ₆
1996 EK ₉	14.0	0.15	20000226	160.84765	193.17693	65.34500	1.16864	0.0430117	3.1547042	43	2	1996–1999	0.61	M-v	5	Williams	37132	1996 EK ₉
1996 FA ₄	13.9	0.15	20000226	29.99891	77.83482	41.57936	13.24120	0.1112288	2.6495383	58	4	1981–2000	0.72	M-v	1	Williams	33343	1996 FA ₄
1996 FJ ₅	12.7	0.15	20000226	133.84079	16.00354	12.90520	15.51281	0.1239795	2.5744270	57	5	1977–2000	0.74	M-v	2	Williams	34013	1996 FJ ₅
1996 GV ₁	13.3	0.15	20000226	17.95334	101.85779	39.09432	13.23437	0.1198260	2.6367682	38	5	1983–2000	0.71	M-v	1	Williams	33751	1996 GV ₁
1996 GL ₃	14.4	0.15	20000226	49.82569	356.83592	92.33870	3.84072	0.0346998	2.7384192	31	3	1996–2000	0.69	M-v	2	Williams	33343	1996 GL ₃
1996 GE ₆	13.6	0.15	20000226	6.16945	13.82613	62.53308	6.70470	0.1449097	3.0646237	60	3	1979–1999	0.44	M-v	3	Williams	37269	1996 GE ₆
1996 GN ₇	13.9	0.15	20000226	36.74164	253.08749	150.81848	2.06336	0.1673886	3.1980930	45	2	1996–2000	0.41	M-v	4	Williams	37132	1996 GN ₇
1996 GV ₁₇	13.5	0.15	20000226	208.97339	73.80030	210.18988	12.39884	0.1044368	2.9842892	26	3	1996–2000	0.66	M-v	3	Williams	33253	1996 GV ₁₇
1996 GA ₁₈	14.2	0.15	20000226	332.29101	10.51470	205.26906	7.23598	0.1428741	2.5806311	27	4	1971–2000	0.92	M-v	2	Williams	34014	1996 GA ₁₈
1996 GT ₁₉	13.3	0.15	20000226	20.70741	248.96359	196.67345	9.06295	0.0634200	3.0635639	67	3	1996–2000	0.79	M-v	3	Williams	37269	1996 GT ₁₉
1996 GE ₂₀	13.6	0.15	20000226	204.88586	259.46916	67.94854	4.61778	0.0567442	2.7047011	35	4	1993–2000	0.82	M-v	3	Williams	33554	1996 GE ₂₀
1996 GM ₂₀	13.4	0.15	20000226	241.17589	177.44747	59.29938	0.82799	0.1578473	3.0738347	41	4	1990–2000	0.68	M-v	1	Williams	33343	1996 GM ₂₀
1996 GR ₂₀	13.5	0.15	20000226	221.42594	167.62787	79.67729	3.02221	0.1820338	3.1811665	22	5	1991–2000	0.69	M-v	2	Williams	33751	1996 GR ₂₀
1996 HX	13.7	0.15	20000226	188.35081	316.39480	2.71659	6.22295	0.1689472	3.0173675	59	4	1996–2000	0.46	M-v	1	Williams	33554	1996 HX
1996 HY	13.9	0.15	20000226	354.10761	122.74093	63.03456	12.45044	0.1298304	2.6406086	52	3	1996–2000	0.72	M-v	3	Williams	35695	1996 HY
1996 HC ₁	13.0	0.15	20000226	32.04574	86.67040	56.61808	13.81491	0.1131209	2.5939776	94	4	1996–2000	0.59	M-v	1	Williams	34014	1996 HC ₁
1996 HA ₂	13.3	0.15	20000226	246.51056	48.66173	180.93607	8.38054	0.2389125	3.1419384	60	3	1996–2000	0.59	M-v	3	Williams	37270	1996 HA ₂
1996 HM ₂	13.8	0.15	20000226	359.23837	100.00050	48.91893	2.68367	0.1416217	2.6792062	36	3	1996–1999	0.66	M-v	4	Williams	37270	1996 HM ₂
1996 HR ₁₀	13.2	0.15	20000226	92.73489	343.39734	38.85360	0.44973	0.2171899	3.1473057	58	5	1976–2000	0.71	M-v	1	Williams	36888	1996 HR ₁₀
1996 HY ₁₀	13.7	0.15	20000226	248.30209	186.29880	40.96724	9.99068	0.0391467	3.0676597	31	3	1996–1999	0.65	M-v	3	Williams	37270	1996 HY ₁₀
1996 HF ₁₁	14.1	0.15	20000226	237.27977	181.39188	79.60554	2.58443	0.1728972	2.9838690	56	4	1992–2000	0.67	M-v	2	Williams	34014	1996 HF ₁₁
1996 HB ₁₂	12.2	0.15	20000226	211.74174	248.07246	41.31380	13.64277	0.1405312	2.9866411	51	3	1996–2000	0.74	M-v	3	Williams	37270	1996 HB ₁₂
1996 HC ₁₂	14.6	0.15	20000226	3.49017	273.80590	220.69195	1.09748	0.0132551	2.8939228	33	4	1971–2000	0.79	M-v	1	Williams	35695	1996 HC ₁₂
1996 HF ₁₄	14.2	0.15	20000226	52.99216	37.98897	36.95271	2.46157	0.0710510	2.9470365	32	3	1996–2000	0.77	M-v	3	Williams	33254	1996 HF ₁₄
1996 HT ₁₅	13.6	0.15	20000226	74.74442	255.28632	161.53519	2.21261	0.0782676	2.9409486	34	3	1996–2000	0.79	M-v	3	Williams	37270	1996 HT ₁₅
1996 HP ₁₈	13.0	0.15	20000226	107.62436	329.58992	46.58633	22.76794	0.2222316	3.1433723	44	4	1992–2000	0.73	M-v	2	Williams	34584	1996 HP ₁₈
1996 HQ ₁₉	13.6	0.15	20000226	220.93742	91.06812	154.82530	0.61951	0.1067900	3.2106547	26	3	1996–2000	0.71	M-v	3	Williams	33751	1996 HQ ₁₉
1996 HL ₂₀	13.4	0.15	20000226	287.03418	90.53809	70.36477	2.46826	0.1155913	3.2268084	63	2	1996–1999	0.46	M-v	4	Williams	37270	1996 HL ₂₀
1996 HZ ₂₁	14.6	0.15	20000226	336.17378	142.87583	37.82916	14.98653	0.0878154	2.6243987	33	3	1996–2000	0.61	M-v	3	Williams	37270	1996 HZ ₂₁
1996 HD ₂₂	14.2	0.15	20000226	3.22985	107.66677	40.96610	13.43095	0.1097109	2.6184485	53	4	1992–2000	0.76	M-v	3	Williams	35696	1996 HD ₂₂
1996 HR ₂₄	13.1	0.15	20000226	177.36652	225.42089	85.97821	4.59586	0.1773316	3.1822886	31	5	1991–2000	0.55	M-v	1	Williams	33343	1996 HR ₂₄
1996 HC ₂₅	14.5	0.15	20000226	270.64750	91.99445	152.98373	2.55124	0.0335410	2.8378949	23	3	1996–2000	0.71	M-v	4	Williams	33495	1996 HC ₂₅
1996 JC	13.8	0.15	20000226	268.16929	137.32028	35.64002	0.90013	0.1374668	3.0924824	34	2	1996–1999	0.40	M-v	4	Williams	37133	1996 JC
1996 JE	14.5	0.15	20000226	337.83417	125.01888	61.53046	15.63180	0.0634149	2.6738326	34	3	1996–2000	0.63	M-v	4	Williams	35696	1996 JE
1996 JJ ₁	13.4	0.15	20000226	206.44340	120.39877	176.98519	9.33805	0.0469987	2.9635983	44	6	1972–2000	0.62	M-v	1	Williams	37270	1996 JJ ₁
1996 JS ₅	13.8	0.15	20000226	188.31034	118.49173	168.62632	3.74479	0.1041381	3.1446144	42	5	1995–2000	0.61	M-v	1	Williams	33343	1996 JS ₅
1996 JH ₁₄	14.0	0.15	20000226	127.27788	289.53812	54.79855	10.22914	0.0526595	3.0582540	25	3	1996–1999	0.54	M-v	3	Williams	35929	1996 JH ₁₄

1996 LF	12.9	0.15	20000226	274.94175	98.09276	77.50666	16.35715	0.1356165	3.1777312	58	3	1990–2000	0.60	M-v	3	Williams	37270	1996 LF
1996 LS ₂	12.6	0.15	20000226	199.94361	203.49213	103.99453	9.85177	0.1951115	3.0763918	23	3	1996–2000	0.51	M-v	3	Williams	35696	1996 LS ₂
1996 OO ₁	13.1	0.15	20000226	324.22859	268.59629	326.76054	8.11501	0.0938924	3.0431234	48	4	1996–2000	0.57	M-v	2	Williams	34294	1996 OO ₁
1996 PA	16.1	0.15	20000226	140.28639	153.11655	143.89012	19.33089	0.2992740	1.9039704	221	5	1983–2000	0.57	M-v	2	Williams	31142	1996 PA
1996 PF ₃	15.4	0.15	20000226	0.59270	305.89796	146.98547	23.08800	0.0947590	1.9287142	50	3	1996–1999	0.57	M-v	2	Williams	37270	1996 PF ₃
1996 PM ₄	12.9	0.15	20000226	339.74128	165.27724	34.48286	1.46974	0.1328694	3.1901323	50	5	1988–2000	0.75	M-v	1	Williams	37270	1996 PM ₄
1996 RN ₂	14.5	0.15	20000226	134.61428	40.79118	283.12716	18.36818	0.0530417	1.9249576	41	2	1996–2000	0.49	M-v	3	Williams	37133	1996 RN ₂
1996 RH ₁₀	12.2	0.15	20000226	318.25326	339.95074	158.76842	17.58968	0.0795295	5.1744544	17	3	1995–2000	0.36	M-v	4	Williams	31545	1996 RH ₁₀
1996 RD ₁₂	12.4	0.15	20000226	18.05606	77.48608	3.71974	9.55698	0.0815700	5.2371767	34	3	1996–1999	0.43	M-v	3	Williams	37270	1996 RD ₁₂
1996 RC ₂₄	12.7	0.15	20000226	338.30297	66.00230	164.67985	7.57683	0.1097632	3.1367150	38	3	1996–2000	0.78	M-v	4	Williams	35696	1996 RC ₂₄
1996 RA ₃₃	11.0	0.15	20000226	281.02111	144.99299	29.55251	9.35010	0.0131342	5.2024145	36	6	1983–1999	0.87	M-v	1	Williams	37270	1996 RA ₃₃
1996 SZ ₄	8.2	0.15	20000226	344.68290	29.60615	15.96681	4.72792	0.2655286	40.0119683	33	4	1996–1999	0.59	M-v	4	Marsden	33076	1996 SZ ₄
1996 TG ₆	14.6	0.15	20000226	197.25312	221.63263	350.58882	5.73204	0.1283197	2.2709702	87	4	1994–2000	0.65	M-v	3	Williams	36888	1996 TG ₆
1996 TJ ₁₀	14.6	0.15	20000226	137.84302	307.64695	12.34749	19.01345	0.0807227	1.9571115	48	3	1996–1999	0.68	M-v	2	Williams	36888	1996 TJ ₁₀
1996 TB ₁₅	15.3	0.15	20000226	341.35806	138.51266	347.24792	19.90410	0.0513183	1.9230819	28	4	1977–1999	0.65	M-v	3	Williams	36888	1996 TB ₁₅
1996 TN ₄₉	11.9	0.15	20000226	30.91219	243.04158	206.85849	10.74548	0.0987166	5.1594847	75	4	1996–2000	0.76	M-v	2	Williams	35697	1996 TN ₄₉
1996 UZ	14.3	0.15	20000226	294.02988	249.47925	219.30401	3.91503	0.1093390	2.2972359	91	3	1996–1999	0.75	M-v	3	Williams	37270	1996 UZ
1996 UA ₁	12.9	0.15	20000226	179.84669	235.83657	231.74988	16.52094	0.1334996	3.0480858	44	3	1996–1999	0.60	M-v	3	Williams	34867	1996 UA ₁
1996 UX ₃	11.4	0.15	20000226	29.51251	234.50971	211.17641	19.99083	0.1631759	5.1758383	47	4	1996–1999	0.67	M-v	2	Williams	33555	1996 UX ₃
1996 VO ₄	14.8	0.15	20000226	146.30724	288.98838	52.59491	23.08054	0.0872824	1.9270303	51	3	1996–2000	0.56	M-v	2	Williams	37270	1996 VO ₄
1996 VN ₆	13.8	0.15	20000226	72.74130	359.77083	346.92273	15.49035	0.1476580	2.5241062	46	3	1996–2000	0.53	M-v	2	Williams	37270	1996 VN ₆
1996 VU ₆	14.3	0.15	20000226	308.17945	306.31625	70.30655	7.71214	0.3075772	2.5541511	44	1	115 days	0.41	M-v	4	Williams	29308	1996 VU ₆
1996 VA ₈	13.9	0.15	20000226	289.38342	238.38591	144.33532	4.86447	0.2456149	2.6289260	27	3	1996–1999	0.82	M-v	4	Williams	34868	1996 VA ₈
1996 VZ ₈	15.1	0.15	20000226	18.49606	223.62243	144.17095	1.97966	0.1615348	2.2668270	81	4	1994–1999	0.74	M-v	2	Williams	36888	1996 VZ ₈
1996 VC ₉	14.2	0.15	20000226	5.41308	314.18209	75.99701	6.97221	0.1843504	2.2580347	52	3	1996–1999	0.67	M-v	3	Williams	36074	1996 VC ₉
1996 VU ₁₇	15.9	0.15	20000226	110.56934	209.78866	87.19596	1.53863	0.0926402	2.1781906	73	3	1996–1999	0.58	M-v	3	Williams	36888	1996 VU ₁₇
1996 VP ₃₀	13.7	0.15	20000226	299.94374	154.89985	233.42478	11.89819	0.2473616	2.5880744	52	3	1996–1999	0.82	M-v	4	Williams	36520	1996 VP ₃₀
1996 WA ₁	14.4	0.15	20000226	310.37673	188.69919	286.13737	2.48587	0.0852619	2.2668588	100	3	1996–2000	0.62	M-v	3	Williams	36888	1996 WA ₁
1996 WL ₃	16.5	0.15	20000226	54.07377	339.25363	0.67073	5.64234	0.2329765	2.2047135	35	2	1996–1999	0.46	M-v	3	Williams	36797	1996 WL ₃
1996 XK	15.9	0.15	20000226	88.46716	287.52223	8.20675	6.42213	0.2138594	2.2312578	82	3	1995–1999	0.54	M-v	2	Williams	37270	1996 XK
1996 XH ₁	14.8	0.15	20000226	13.90981	90.12926	78.23557	24.63364	0.1583261	1.8885348	14	3	1987–2000	0.86	M-v	3	Williams	29308	1996 XH ₁
1996 XJ ₁	14.3	0.15	20000226	49.52977	249.98205	79.09874	3.61736	0.1902285	2.4508258	55	3	1996–1999	0.58	M-v	2	Williams	37270	1996 XJ ₁
1996 XL ₁	14.2	0.15	20000226	350.72468	337.19530	87.99389	7.65006	0.0752105	2.3277279	67	3	1996–1999	0.62	M-v	3	Williams	37270	1996 XL ₁
1996 XT ₁	13.6	0.15	20000226	334.48976	271.90172	79.82976	3.23189	0.0773858	2.8753321	63	3	1994–1998	0.66	M-v	3	Williams	32056	1996 XT ₁
1996 XM ₂	14.2	0.15	20000226	84.34184	248.91412	82.74498	5.01080	0.2406211	2.2118890	127	3	1996–2000	0.49	M-v	2	Williams	37270	1996 XM ₂
1996 XD ₃	14.8	0.15	20000226	231.27952	77.34821	131.13111	2.21674	0.0666153	2.2701189	70	4	1991–2000	0.57	M-v	2	Williams	37270	1996 XD ₃
1996 XM ₅	14.0	0.15	20000226	219.63140	291.84642	292.99291	3.89914	0.1097363	2.2633758	68	3	1996–1999	0.51	M-v	4	Williams	37270	1996 XM ₅
1996 XQ ₅	14.6	0.15	20000226	333.75434	39.33759	75.41921	2.68130	0.1001215	2.2011793	102	3	1991–2000	0.53	M-v	4	Williams	37270	1996 XQ ₅
1996 XJ ₁₂	15.6	0.15	20000226	268.12700	122.01051	56.92596	3.11056	0.1650658	2.3372699	27	2	1996–1999	0.44	M-v	5	Williams	36797	1996 XJ ₁₂
1996 XY ₁₄	14.1	0.15	20000226	183.96332	344.09559	285.92264	5.58072	0.1644365	2.2086715	45	3	1996–2000	0.67	M-v	4	Williams	37270	1996 XY ₁₄
1996 XC ₁₅	14.2	0.15	20000226	292.54109	78.85764	69.34801	0.90152	0.1137917	2.2858835	85	3	1987–2000	0.52	M-v	3	Williams	37270	1996 XC ₁₅
1996 XD ₁₉	14.1	0.15	20000226	247.01183	296.79564	222.57571	4.23363	0.1265244	2.4533385	60	3	1996–1999	0.64	M-v	3	Williams	37271	1996 XD ₁₉
1996 XG ₁₉	14.5	0.15	20000226	304.13795	345.60404	153.25995	3.31438	0.1068917	2.2481036	69	4	1992–2000	0.50	M-v	2	Williams	37271	1996 XG ₁₉
1996 XT ₁₉	15.0	0.15	20000226	305.84646	261.13883	244.43756	2.04818	0.0548166	2.1975664	89	3	1992–1999	0.59	M-v	4	Williams	37271	1996 XT ₁₉
1996 XE ₃₁	14.3	0.15	20000226	208.84518	303.90888	272.05804	10.88992	0.1275962	2.4188819	49	3	1996–2000	0.67	M-v	3	Williams	37271	1996 XE ₃₁
1996 XX ₃₁	13.4	0.15	20000226	122.37599	296.43846	349.63746	12.32848	0.1444914	2.3781609	77	4	1995–2000	0.53	M-v	1	Williams	37271	1996 XX ₃₁
1996 XZ ₃₁	14.8	0.15	20000226	223.47157	137.26378	91.02250	7.11997	0.0904505	2.2203784	34	3	1996–1999	0.65	M-v	4	Williams	37271	1996 XZ ₃₁
1996 XH ₃₃	15.1	0.15	20000226	20.55681	325.41015	91.53601	7.28247	0.1563217	2.2788104	59	2	1996–2000	0.43	M-v	3	Williams	37133	1996 XH ₃₃
1996 YP	14.4	0.15	20000226	327.34698	168.35709	296.21535	6.23848	0.0541905	2.3034658	59	2	1996–2000	0.54	M-v	4	Williams	37133	1996 YP
1996 YR	15.2	0.15	20000226	32.13288	297.99562	100.27595	7.05238	0.1676900	2.2378944	68	4	1989–2000	0.61	M-v	2	Williams	37271	1996 YR
1996 YW	15.0	0.15	20000226	25.77832	1.92327	72.26798	4.16867	0.0907209	2.1578279	61	2	1996–2000	0.46	M-v	3	Williams	37133	1996 YW
1996 YX	14.1	0.15	20000226	2.87799	147.91067	276.11283	6.99611	0.0806034	2.3103166	80	2	1996–2000	0.55	M-v	3	Williams	37271	1996 YX
1996 YE ₂	14.2	0.15	20000226	356.14747	135.49462	298.13386	4.66149	0.0927347	2.3174570	46	2	1996–2000	0.57	M-v	4	Williams	36797	1996 YE ₂

1997 AE	13.3	0.15	20000226	50.84070	356.75466	311.78701	7.45886	0.1235725	2.7197709	104	3	1997-1999	0.54	M-v	2	Williams	37271	1997 AE
1997 AQ	15.0	0.15	20000226	20.55491	300.19812	118.35928	7.92225	0.1229764	2.2564871	72	3	1996-2000	0.56	M-v	3	Williams	37271	1997 AQ
1997 AS	14.2	0.15	20000226	130.84441	174.77083	114.20790	5.68499	0.1929684	2.4472632	86	3	1997-1999	0.60	M-v	3	Williams	37271	1997 AS
1997 AV	14.7	0.15	20000226	354.27514	126.63316	319.25318	3.93437	0.1238125	2.2702220	79	2	1997-2000	0.59	M-v	4	Williams	37271	1997 AV
1997 AN ₁	14.2	0.15	20000226	215.50890	233.30387	299.84904	12.18047	0.1051698	2.6672307	28	2	1997-1999	0.56	M-v	3	Williams	36344	1997 AN ₁
1997 AW ₁	14.2	0.15	20000226	351.34966	24.11253	56.14930	4.90213	0.1181879	2.2963758	58	2	1997-2000	0.56	M-v	4	Williams	37134	1997 AW ₁
1997 AD ₂	14.1	0.15	20000226	179.65428	225.22149	33.97405	5.10549	0.0632216	2.3257683	64	3	1997-1999	0.55	M-v	3	Williams	37271	1997 AD ₂
1997 AJ ₂	14.1	0.15	20000226	353.93275	344.32672	106.50312	4.73482	0.0735138	2.2865654	65	2	1996-2000	0.55	M-v	3	Williams	37134	1997 AJ ₂
1997 AN ₂	14.3	0.15	20000226	40.44345	51.14737	331.47492	6.37929	0.1220370	2.3142473	47	3	1985-2000	0.65	M-v	3	Williams	37134	1997 AN ₂
1997 AS ₂	14.9	0.15	20000226	65.72270	61.92558	305.24572	24.81171	0.2017164	2.2652677	31	2	1997-1999	0.54	M-v	3	Williams	36797	1997 AS ₂
1997 AT ₂	15.1	0.15	20000226	90.81450	344.95481	17.80876	4.49421	0.1715028	2.1491925	33	3	1964-2000	0.53	M-v	4	Williams	37134	1997 AT ₂
1997 AZ ₂	14.3	0.15	20000226	33.12100	38.94203	329.99796	9.29004	0.2337386	2.3615713	101	2	1997-2000	0.47	M-v	2	Williams	37271	1997 AZ ₂
1997 AJ ₄	14.2	0.15	20000226	249.70615	307.29225	279.68023	5.94841	0.1210375	2.2177462	78	3	1996-2000	0.56	M-v	2	Williams	37271	1997 AJ ₄
1997 AK ₅	15.2	0.15	20000226	248.63764	229.68994	337.19038	5.55857	0.0731670	2.2979804	42	3	1997-2000	0.50	M-v	2	Williams	32472	1997 AK ₅
1997 AN ₅	14.8	0.15	20000226	30.77965	349.81185	62.12427	5.65190	0.1263168	2.2548947	73	2	1997-2000	0.35	M-v	3	Williams	37271	1997 AN ₅
1997 AV ₅	14.7	0.15	20000226	259.31087	249.91072	304.45446	3.47236	0.0935031	2.3105228	38	2	1996-1999	0.53	M-v	5	Williams	37134	1997 AV ₅
1997 AX ₅	15.4	0.15	20000226	20.12730	121.14296	299.88765	5.27722	0.1778884	2.2458587	71	2	1997-2000	0.53	M-v	3	Williams	37271	1997 AX ₅
1997 AO ₆	16.2	0.15	20000226	326.17822	38.15313	90.09169	3.96045	0.1270591	2.2077318	48	2	1996-1999	0.61	M-v	4	Williams	37271	1997 AO ₆
1997 AQ ₆	14.3	0.15	20000226	83.63347	7.36640	68.27528	24.38275	0.0296744	1.8252184	43	3	1997-2000	0.61	M-v	3	Williams	36889	1997 AQ ₆
1997 AR ₆	15.0	0.15	20000226	330.09548	197.01244	271.04256	7.86040	0.1184023	2.1989473	54	3	1986-2000	0.68	M-v	3	Williams	37271	1997 AR ₆
1997 AM ₇	15.3	0.15	20000226	282.65937	209.11242	328.57305	3.46723	0.0922778	2.2903872	37	3	1989-1999	0.70	M-v	4	Williams	37271	1997 AM ₇
1997 AN ₇	14.3	0.15	20000226	323.76296	263.56279	223.10190	2.45019	0.1204879	2.2872566	82	2	1996-2000	0.38	M-v	3	Williams	37271	1997 AN ₇
1997 AG ₈	14.2	0.15	20000226	214.03883	332.73376	279.81710	3.66589	0.1175387	2.2682923	54	3	1997-2000	0.60	M-v	3	Williams	37271	1997 AG ₈
1997 AA ₁₀	15.7	0.15	20000226	86.66279	114.73512	203.43650	1.41261	0.1152887	2.5441441	43	2	1997-1999	0.57	M-v	4	Williams	36890	1997 AA ₁₀
1997 AU ₁₀	14.6	0.15	20000226	242.71770	234.11993	334.68793	6.70460	0.0701969	2.3125760	37	3	1997-2000	0.62	M-v	2	Williams	37271	1997 AU ₁₀
1997 AU ₁₂	14.2	0.15	20000226	343.16295	135.64443	323.17810	6.17634	0.0398015	2.3023072	51	2	1997-2000	0.54	M-v	4	Williams	37271	1997 AU ₁₂
1997 AC ₁₃	14.7	0.15	20000226	347.76430	147.60449	293.90487	3.03764	0.1225448	2.2880670	82	2	1997-2000	0.60	M-v	3	Williams	37271	1997 AC ₁₃
1997 AD ₁₃	12.9	0.15	20000226	201.84952	124.78206	93.65831	12.11870	0.2495790	2.5974552	45	4	1977-2000	0.76	M-v	2	Williams	37271	1997 AD ₁₃
1997 AM ₁₃	14.4	0.15	20000226	276.60687	104.93159	54.62426	7.17735	0.0416765	2.3622574	68	2	1997-2000	0.52	M-v	4	Williams	37271	1997 AM ₁₃
1997 AS ₁₃	15.7	0.15	20000226	66.99883	34.06882	325.74112	5.00621	0.1613475	2.2056863	53	2	1997-2000	0.50	M-v	4	Williams	37134	1997 AS ₁₃
1997 AQ ₁₅	15.0	0.15	20000226	77.16400	286.90538	67.27296	3.99197	0.2107317	2.2356647	91	3	1996-2000	0.64	M-v	3	Williams	37271	1997 AQ ₁₅
1997 AA ₁₇	15.4	0.15	20000226	151.17367	129.64689	185.43700	0.65647	0.1512424	2.1522808	29	3	1997-2000	0.58	M-v	5	Williams	37272	1997 AA ₁₇
1997 AR ₁₇	15.1	0.15	20000226	232.66117	321.37264	262.03100	1.92574	0.1226372	2.2590599	67	3	1997-2000	0.61	M-v	3	Williams	37272	1997 AR ₁₇
1997 AY ₁₇	15.6	0.15	20000226	351.76049	54.14965	21.63693	3.19164	0.2268014	2.3182355	62	2	1997-1999	0.62	M-v	4	Williams	37272	1997 AY ₁₇
1997 AZ ₁₇	14.0	0.15	20000226	320.55119	77.75131	55.49592	2.98736	0.1068594	2.2920470	125	3	1997-1999	0.49	M-v	3	Williams	37272	1997 AZ ₁₇
1997 AB ₁₈	14.0	0.15	20000226	344.83636	93.74304	350.70152	6.59252	0.0754058	2.3922754	66	2	1997-2000	0.51	M-v	4	Williams	37272	1997 AB ₁₈
1997 AR ₂₂	14.5	0.15	20000226	39.55803	5.36084	33.28205	5.51653	0.1239225	2.2899125	94	4	1985-2000	0.52	M-v	3	Williams	37272	1997 AR ₂₂
1997 AS ₂₂	13.6	0.15	20000226	267.10259	160.74069	14.95438	6.79475	0.0478880	2.3560187	71	2	1997-1999	0.55	M-v	4	Williams	37134	1997 AS ₂₂
1997 AN ₂₃	15.3	0.15	20000226	19.28104	117.32638	309.65631	3.99019	0.0840677	2.2355118	43	2	1997-2000	0.57	M-v	4	Williams	37135	1997 AN ₂₃
1997 BR	17.6	0.15	20000226	275.47212	133.68879	116.76043	17.24080	0.3058454	1.3354116	416	4	1980-2000	0.59	M-v	1	Williams	30903	1997 BR
1997 BJ ₂	15.1	0.15	20000226	217.39179	120.34935	121.31580	6.50635	0.0841384	2.3017261	35	3	1997-2000	0.65	M-v	3	Williams	37272	1997 BJ ₂
1997 BX ₂	15.1	0.15	20000226	327.19642	352.95423	116.07761	8.36171	0.0683164	2.3822977	38	3	1994-2000	0.54	M-v	4	Williams	36890	1997 BX ₂
1997 BC ₃	14.4	0.15	20000226	264.37292	190.42976	351.51752	6.45146	0.0441713	2.3649122	44	3	1991-1999	0.64	M-v	4	Williams	37272	1997 BC ₃
1997 BD ₃	15.1	0.15	20000226	344.73345	335.23999	140.45238	2.53440	0.0800237	2.2632730	47	2	1997-2000	0.57	M-v	5	Williams	37135	1997 BD ₃
1997 BG ₃	15.2	0.15	20000226	304.62133	57.33220	103.87399	7.27047	0.0525186	2.2614818	38	3	1997-2000	0.62	M-v	4	Williams	37135	1997 BG ₃
1997 BK ₃	15.4	0.15	20000226	284.08224	120.64465	50.72730	1.40348	0.1489330	2.3334569	66	2	1997-1999	0.59	M-v	5	Williams	37272	1997 BK ₃
1997 BO ₃	13.5	0.15	20000226	289.30719	44.00053	83.11859	3.64280	0.0775590	2.5294544	68	4	1989-2000	0.45	M-v	2	Williams	37272	1997 BO ₃
1997 BV ₃	14.8	0.15	20000226	290.03504	89.77459	108.53980	4.27751	0.1080048	2.2370804	52	3	1997-2000	0.57	M-v	3	Williams	37272	1997 BV ₃
1997 BM ₈	14.2	0.15	20000226	125.97639	32.23454	306.63730	4.42320	0.1558340	2.2165018	40	3	1995-2000	0.46	M-v	3	Williams	36523	1997 BM ₈
1997 BU ₈	14.8	0.15	20000226	46.23252	192.10073	155.73178	1.70727	0.0275548	2.6359239	49	3	1997-1999	0.77	M-v	4	Williams	36523	1997 BU ₈
1997 BV ₈	15.3	0.15	20000226	130.15962	194.15643	140.44894	6.03617	0.1900167	2.2150426	39	4	1995-2000	0.70	M-v	2	Williams	32751	1997 BV ₈
1997 CB	14.0	0.15	20000226	110.75799	191.20340	156.58357	11.34226	0.2793686	2.3478294	71	3	1997-2000	0.46	M-v	2	Williams	36523	1997 CB
1997 CS	12.7	0.15	20000226	146.41365	236.48255	349.03011	10.05653	0.0891211	3.0062936	75	3	1992-2000	0.55	M-v	2	Williams	37272	1997 CS

1997 CX	15.1	0.15	20000226	292.32427	86.73922	109.48363	4.28110	0.1430911	2.2332381	28	2	1997-2000	0.40	M-v	4	Williams	37135	1997 CX
1997 CO ₁	14.6	0.15	20000226	264.99244	246.01829	310.05769	1.55491	0.1550354	2.3559880	60	3	1997-2000	0.49	M-v	3	Williams	37135	1997 CO ₁
1997 CW ₁	14.9	0.15	20000226	284.75326	31.78500	114.14348	7.98084	0.0827741	2.4249260	48	2	1997-1999	0.44	M-v	4	Williams	37272	1997 CW ₁
1997 CZ ₂	15.3	0.15	20000226	270.74063	95.23845	101.34151	3.15060	0.1613352	2.3459927	26	3	1997-2000	0.56	M-v	4	Williams	37136	1997 CZ ₂
1997 CD ₄	14.6	0.15	20000226	102.10104	144.90601	208.63252	2.32820	0.1352907	2.3232974	35	2	1997-2000	0.43	M-v	4	Williams	37136	1997 CD ₄
1997 CK ₄	14.3	0.15	20000226	225.83041	172.82011	64.56034	7.48903	0.0629714	2.3234219	45	2	1997-2000	0.55	M-v	4	Williams	37136	1997 CK ₄
1997 CM ₄	15.3	0.15	20000226	54.01749	39.11122	359.25902	4.90765	0.1051751	2.2461300	48	2	1997-2000	0.44	M-v	4	Williams	37272	1997 CM ₄
1997 CJ ₅	15.3	0.15	20000226	214.58690	306.79016	290.74144	0.43731	0.1504603	2.3887150	38	3	1997-2000	0.60	M-v	4	Williams	37136	1997 CJ ₅
1997 CT ₅	14.3	0.15	20000226	348.35285	130.86705	325.13839	6.95633	0.0552268	2.2726997	70	2	1997-2000	0.39	M-v	2	Williams	37272	1997 CT ₅
1997 CU ₅	15.6	0.15	20000226	282.79313	22.79679	137.02570	5.39523	0.0906269	2.3507956	50	2	1997-1999	0.45	M-v	3	Williams	36799	1997 CU ₅
1997 CE ₆	16.2	0.15	20000226	82.63048	154.67418	198.82863	0.27605	0.0409483	2.3660531	33	2	1997-1999	0.58	M-v	5	Williams	37136	1997 CE ₆
1997 CD ₇	15.3	0.15	20000226	285.26751	158.01227	355.52819	2.61960	0.1116077	2.3939021	45	2	1997-1999	0.67	M-v	4	Williams	37136	1997 CD ₇
1997 CT ₁₆	15.2	0.15	20000226	244.80037	135.27659	128.85438	4.59759	0.1679064	2.1859959	41	5	1991-2000	0.82	M-v	2	Williams	35698	1997 CT ₁₆
1997 CZ ₁₆	15.2	0.15	20000226	23.89720	134.12045	310.73183	6.25026	0.0469783	2.2802379	32	2	1997-2000	0.56	M-v	4	Williams	37136	1997 CZ ₁₆
1997 CC ₁₇	14.9	0.15	20000226	239.94087	234.98973	31.36724	2.12034	0.1877753	2.2134323	68	4	1994-2000	0.85	M-v	3	Williams	33076	1997 CC ₁₇
1997 CH ₁₇	16.7	0.15	20000226	63.18569	102.10072	271.70735	2.67926	0.2060277	2.2727250	31	2	1997-1999	0.55	M-v	4	Williams	37137	1997 CH ₁₇
1997 CG ₁₉	16.7	0.15	20000226	312.76509	130.73050	359.58534	2.28874	0.1460899	2.3669598	23	2	1997-1999	0.49	M-v	4	Williams	37137	1997 CG ₁₉
1997 CS ₁₉	14.3	0.15	20000226	234.88965	134.59953	77.62741	5.37695	0.1212169	2.4740298	59	4	1996-1999	0.51	M-v	1	Williams	37137	1997 CS ₁₉
1997 CV ₁₉	13.9	0.15	20000226	202.42355	133.66281	126.96891	6.69416	0.0918170	2.3899468	64	3	1997-2000	0.60	M-v	3	Williams	37272	1997 CV ₁₉
1997 CX ₁₉	14.9	0.15	20000226	312.20819	156.57767	0.23902	4.72434	0.1338724	2.3016806	35	3	1990-2000	0.68	M-v	3	Williams	29948	1997 CX ₁₉
1997 CL ₂₀	14.8	0.15	20000226	221.47151	219.71346	54.16730	3.04894	0.2408981	2.3052384	48	3	1997-2000	0.61	M-v	3	Williams	32956	1997 CL ₂₀
1997 CD ₂₂	15.2	0.15	20000226	300.22393	36.45244	124.61135	3.05381	0.1376458	2.3509473	43	2	1997-1999	0.65	M-v	4	Williams	37137	1997 CD ₂₂
1997 CB ₂₆	14.0	0.15	20000226	10.43179	112.17024	321.03375	5.94897	0.0676588	2.3532811	62	2	1997-2000	0.48	M-v	3	Williams	37272	1997 CB ₂₆
1997 CG ₂₆	14.8	0.15	20000226	275.52632	133.25490	46.93795	4.72880	0.1084085	2.3940145	51	3	1997-1999	0.72	M-v	3	Williams	37272	1997 CG ₂₆
1997 CK ₂₆	14.3	0.15	20000226	256.61379	140.25724	62.98473	6.46102	0.0548078	2.3706705	56	3	1995-2000	0.46	M-v	3	Williams	37272	1997 CK ₂₆
1997 CL ₂₆	14.8	0.15	20000226	288.85463	92.85310	73.51527	5.10520	0.1513721	2.3867426	49	2	1997-1999	0.54	M-v	4	Williams	37137	1997 CL ₂₆
1997 CB ₂₇	15.9	0.15	20000226	296.93516	142.57945	25.12372	6.92146	0.2179859	2.4096816	27	3	1995-1999	0.51	M-v	3	Williams	36891	1997 CB ₂₇
1997 CY ₂₇	12.9	0.15	20000226	175.81754	234.48437	320.58227	16.09535	0.0306822	2.8564897	46	2	1997-1999	0.64	M-v	3	Williams	36891	1997 CY ₂₇
1997 CF ₂₉	14.2	0.15	20000226	314.05775	15.32758	170.13671	2.29959	0.1321117	2.2969628	52	3	1997-2000	0.56	M-v	3	Williams	36891	1997 CF ₂₉
1997 CK ₂₉	14.9	0.15	20000226	350.78270	123.63233	331.98586	1.17638	0.2066248	2.3028949	90	4	1990-2000	0.63	M-v	1	Williams	37272	1997 CK ₂₉
1997 CS ₂₉	5.2	0.15	20000226	345.77651	188.03529	304.35790	2.24048	0.0092499	43.9950525	67	4	1997-1999	0.41	M-v	4	Marsden	37272	1997 CS ₂₉
1997 CU ₂₉	6.5	0.15	20000226	210.32766	277.24726	350.23554	1.45530	0.0305796	43.5905897	31	4	1997-2000	0.26	M-v	5	Marsden	33752	1997 CU ₂₉
1997 DL	15.6	0.15	20000226	337.75295	157.76219	326.83769	4.96697	0.1584843	2.2552647	61	3	1997-2000	0.48	M-v	3	Williams	37272	1997 DL
1997 DQ	15.0	0.15	20000226	339.18607	100.45485	2.37372	8.30828	0.1481402	2.3637873	51	2	1997-2000	0.64	M-v	4	Williams	36891	1997 DQ
1997 DW	14.2	0.15	20000226	158.73482	265.43741	338.17615	8.28538	0.1098228	2.7721640	38	2	1997-1999	0.63	M-v	4	Williams	36799	1997 DW
1997 EF	14.2	0.15	20000226	254.32315	128.00133	72.63471	3.90421	0.1364825	2.4428309	73	3	1997-2000	0.54	M-v	3	Williams	37272	1997 EF
1997 EH	14.7	0.15	20000226	302.86606	64.86422	79.25794	3.52387	0.1173212	2.4200963	46	2	1997-2000	0.66	M-v	4	Williams	37137	1997 EH
1997 EM	14.3	0.15	20000226	150.67302	197.99997	71.03352	3.75618	0.1463280	2.7330733	52	3	1990-1999	0.62	M-v	4	Williams	37272	1997 EM
1997 EB ₁	15.2	0.15	20000226	199.65072	347.74888	277.27033	6.00975	0.0852247	2.3550435	37	4	1973-2000	0.73	M-v	1	Williams	37272	1997 EB ₁
1997 ET ₁	13.5	0.15	20000226	294.89431	305.50925	84.87070	3.19339	0.0859486	2.8423067	88	5	1981-1998	0.60	M-v	3	Williams	32058	1997 ET ₁
1997 EQ ₂	14.6	0.15	20000226	68.87234	277.97082	127.41568	5.95287	0.1061021	2.3010113	47	3	1997-2000	0.70	M-v	2	Williams	37272	1997 EQ ₂
1997 ER ₂	14.0	0.15	20000226	45.94949	5.29438	55.96814	4.55005	0.0560311	2.3338555	54	4	1988-2000	0.63	M-v	1	Williams	36891	1997 ER ₂
1997 EY ₂	14.9	0.15	20000226	352.04542	30.15040	118.67663	3.20106	0.0657318	2.1897085	49	3	1997-2000	0.59	M-v	3	Williams	37272	1997 EY ₂
1997 EZ ₃	14.4	0.15	20000226	130.86701	245.78297	359.71942	4.20289	0.0914621	3.1896181	31	2	1997-1999	0.56	M-v	4	Williams	36891	1997 EZ ₃
1997 EN ₄	14.4	0.15	20000226	112.14950	328.05918	2.38836	12.08887	0.1987217	2.6347348	31	3	1997-1999	0.47	M-v	3	Williams	37273	1997 EN ₄
1997 ER ₅	14.8	0.15	20000226	45.52121	231.97958	165.04150	2.24641	0.1425706	2.4808654	56	2	1997-2000	0.55	M-v	4	Williams	37137	1997 ER ₅
1997 EK ₆	13.7	0.15	20000226	35.16237	277.55529	85.45165	15.56760	0.1697971	2.5956757	80	3	1997-2000	0.56	M-v	2	Williams	36891	1997 EK ₆
1997 ED ₇	15.5	0.15	20000226	30.72256	139.54371	257.79496	5.59792	0.1233942	2.4361924	46	2	1997-2000	0.47	M-v	3	Williams	37273	1997 ED ₇
1997 EE ₇	13.9	0.15	20000226	338.79709	189.14703	181.73859	15.19839	0.1021087	3.0690694	30	4	1989-1999	0.55	M-v	1	Williams	35431	1997 EE ₇
1997 EG ₇	15.8	0.15	20000226	15.01282	64.73246	317.71523	15.94801	0.2178305	2.5933096	52	2	1997-1999	0.55	M-v	4	Williams	36891	1997 EG ₇
1997 EO ₇	13.0	0.15	20000226	63.77306	321.45608	330.19768	9.20327	0.1712877	3.1632471	109	3	1997-2000	0.66	M-v	2	Williams	37273	1997 EO ₇
1997 EL ₁₁	13.1	0.15	20000226	112.63091	270.58477	55.29941	15.44126	0.1497489	2.6101355	65	3	1986-2000	0.58	M-v	2	Williams	37273	1997 EL ₁₁
1997 ER ₁₁	15.3	0.15	20000226	252.76334	225.54909	4.39461	1.29272	0.1899637	2.3435685	84	3	1997-2000	0.72	M-v	3	Williams	33076	1997 ER ₁₁

1997 EX ₁₃	15.2	0.15	20000226	29.46157	96.94360	308.49359	2.14453	0.1589031	2.3756813	90	2	1997–2000	0.54	M-v	3	Williams	37273	1997 EX ₁₃
1997 EK ₁₆	15.9	0.15	20000226	31.61777	228.23624	184.66801	1.86389	0.1960848	2.4110342	50	2	1997–1999	0.54	M-v	3	Williams	37137	1997 EK ₁₆
1997 EO ₁₇	14.2	0.15	20000226	95.33814	320.26354	63.69815	7.47804	0.1670496	2.2813762	37	3	1997–2000	0.57	M-v	2	Williams	37273	1997 EO ₁₇
1997 ES ₁₇	14.0	0.15	20000226	168.41172	5.88891	292.86872	3.74850	0.2355540	2.4337248	80	3	1997–2000	0.63	M-v	2	Williams	37273	1997 ES ₁₇
1997 EE ₂₃	13.8	0.15	20000226	9.54632	0.55067	99.35671	7.82425	0.0728661	2.3912377	85	3	1997–2000	0.52	M-v	3	Williams	37273	1997 EE ₂₃
1997 EF ₂₃	14.4	0.15	20000226	18.32395	79.94519	331.92650	6.79125	0.0929289	2.2422233	43	2	1997–2000	0.50	M-v	3	Williams	37138	1997 EF ₂₃
1997 EP ₂₅	14.4	0.15	20000226	343.60608	121.25717	352.16006	2.24010	0.0889534	2.2707498	45	2	1997–1999	0.38	M-v	3	Williams	37273	1997 EP ₂₅
1997 EC ₂₆	17.2	0.15	19970313	343.06373	28.51941	154.91572	0.40959	0.1883802	2.6928342	23	1	17 days	0.33			Williams		1997 EC ₂₆
1997 EL ₂₈	15.0	0.15	20000226	13.46578	23.32739	4.20242	9.42935	0.1916257	2.7737545	98	2	1997–1999	0.58	M-v	3	Williams	37273	1997 EL ₂₈
1997 EE ₂₉	15.1	0.15	20000226	286.37866	228.21121	303.93773	0.49836	0.1240377	2.4255774	60	3	1997–1999	0.57	M-v	4	Williams	37273	1997 EE ₂₉
1997 EO ₃₀	13.7	0.15	20000226	20.84195	312.03428	110.83619	7.06594	0.0878301	2.3591304	59	2	1997–2000	0.42	M-v	3	Williams	37138	1997 EO ₃₀
1997 EE ₃₂	15.5	0.15	20000226	282.44218	351.63307	183.38473	2.22658	0.1301351	2.4390191	56	3	1997–1999	0.60	M-v	4	Williams	37138	1997 EE ₃₂
1997 EP ₃₅	16.1	0.15	20000226	351.86737	96.85418	331.28995	6.36009	0.1339019	2.4015511	18	2	1997–1999	0.84	M-v	6	Williams	37138	1997 EP ₃₅
1997 EM ₃₆	15.1	0.15	20000226	338.24342	318.50816	148.54687	6.02108	0.1852664	2.2908955	51	2	1997–2000	0.68	M-v	4	Williams	37273	1997 EM ₃₆
1997 EK ₄₁	15.3	0.15	20000226	237.76504	8.75807	239.90979	3.36376	0.1210447	2.2538672	32	5	1994–2000	0.77	M-v	1	Williams	37273	1997 EK ₄₁
1997 ET ₄₁	15.9	0.15	20000226	11.00698	165.87294	277.31049	1.89193	0.1434241	2.2792378	44	2	1997–1999	0.60	M-v	4	Williams	37138	1997 ET ₄₁
1997 EX ₄₅	13.7	0.15	20000226	312.00820	19.87975	110.07995	3.30342	0.0973888	2.5316964	27	3	1993–2000	0.44	M-v	4	Williams	29646	1997 EX ₄₅
1997 EY ₄₅	14.4	0.15	20000226	334.57751	43.57381	81.83382	3.24504	0.1517176	2.3873888	73	3	1995–1999	0.44	M-v	2	Williams	37273	1997 EY ₄₅
1997 EE ₄₆	15.5	0.15	20000226	231.14313	45.69771	203.26490	7.88314	0.1148928	2.3096514	34	3	1997–1999	0.76	M-v	3	Williams	32752	1997 EE ₄₆
1997 EF ₄₆	14.9	0.15	20000226	290.00190	96.89428	90.79841	7.24829	0.0578750	2.3797801	30	3	1996–2000	0.55	M-v	4	Williams	37138	1997 EF ₄₆
1997 EU ₄₆	14.5	0.15	20000226	223.48574	9.17452	247.05109	1.53565	0.1477215	2.4668022	40	3	1997–2000	0.77	M-v	3	Williams	37273	1997 EU ₄₆
1997 EB ₅₄	14.1	0.15	20000226	190.07065	298.55470	1.29848	2.31021	0.1989844	2.4192211	55	5	1979–2000	0.75	M-v	1	Williams	33555	1997 EB ₅₄
1997 EK ₅₄	13.2	0.15	20000226	102.09927	242.26196	36.31563	1.63121	0.0763070	3.2188565	58	3	1991–1999	0.67	M-v	2	Williams	37273	1997 EK ₅₄
1997 EB ₅₇	13.8	0.15	20000226	53.82631	199.57101	148.81492	2.55585	0.1081573	2.9555511	41	2	1997–2000	0.82	M-v	3	Williams	37139	1997 EB ₅₇
1997 FB	15.4	0.15	20000226	270.90565	68.78036	181.16249	3.91530	0.1595707	2.1775383	57	4	1995–2000	0.59	M-v	2	Marsden	33076	1997 FB
1997 FM	13.5	0.15	20000226	180.05241	160.96143	120.14406	13.67734	0.1331427	2.6856604	40	3	1997–2000	0.64	M-v	2	Williams	33076	1997 FM
1997 FC ₁	14.7	0.15	20000226	304.01172	51.30835	127.17661	7.14509	0.0921132	2.3447780	41	3	1997–2000	0.57	M-v	3	Williams	37273	1997 FC ₁
1997 FF ₁	15.2	0.15	20000226	252.15890	201.71636	36.53318	3.81120	0.1275247	2.3426534	23	3	1997–2000	0.66	M-v	4	Williams	35699	1997 FF ₁
1997 FN ₁	14.4	0.15	20000226	258.71838	9.26326	231.39454	4.23430	0.2331999	2.3408669	43	3	1997–2000	0.47	M-v	3	Williams	37273	1997 FN ₁
1997 FQ ₁	15.2	0.15	20000226	251.92129	292.71128	315.51315	3.46196	0.1236636	2.3404825	54	3	1997–2000	0.55	M-v	3	Williams	32958	1997 FQ ₁
1997 FT ₁	14.2	0.15	20000226	47.34885	287.36997	114.66462	12.44104	0.1502079	2.6231663	40	3	1995–2000	0.43	M-v	3	Williams	37273	1997 FT ₁
1997 FY ₁	14.3	0.15	20000226	147.92374	288.98299	12.43985	13.25746	0.2021920	2.7282583	33	3	1997–1999	0.76	M-v	3	Williams	37273	1997 FY ₁
1997 FU ₂	13.0	0.15	20000226	57.69940	341.30660	358.81599	10.76713	0.0979696	3.0510565	59	3	1988–2000	0.66	M-v	3	Williams	37273	1997 FU ₂
1997 FY ₂	15.0	0.15	20000226	267.15964	235.88980	355.08405	5.48696	0.0984757	2.3070818	52	3	1997–2000	0.67	M-v	4	Williams	33344	1997 FY ₂
1997 FB ₃	14.1	0.15	20000226	178.29958	8.35976	198.15042	10.57798	0.0211529	3.1147059	30	2	1997–1999	0.59	M-v	3	Williams	36891	1997 FB ₃
1997 FC ₃	14.0	0.15	20000226	28.68499	155.36627	218.21996	0.86051	0.1348743	2.9309571	90	4	1992–2000	0.62	M-v	2	Williams	37273	1997 FC ₃
1997 FM ₃	14.4	0.15	20000226	329.56158	72.00101	18.97627	12.64503	0.1456496	2.6319019	55	2	1997–1999	0.52	M-v	4	Williams	37139	1997 FM ₃
1997 FZ ₃	14.2	0.15	20000226	65.73571	148.04319	194.92811	1.57548	0.1248511	2.9463687	50	3	1996–1999	0.51	M-v	4	Williams	36891	1997 FZ ₃
1997 FB ₄	13.8	0.15	20000226	118.14472	268.68617	18.16006	10.15144	0.0791949	2.9900554	90	3	1992–1999	0.58	M-v	2	Williams	36891	1997 FB ₄
1997 FD ₄	15.3	0.15	20000226	71.84756	245.08408	180.96856	6.49359	0.0490961	2.2510869	43	3	1997–2000	0.86	M-v	2	Williams	37273	1997 FD ₄
1997 FG ₄	14.3	0.15	20000226	100.52399	137.82165	195.95652	4.52571	0.0327817	2.6837198	76	3	1997–1999	0.66	M-v	3	Williams	37273	1997 FG ₄
1997 FM ₄	14.3	0.15	20000226	336.12443	257.83534	202.59055	12.39370	0.1473175	2.5366083	70	2	1997–2000	0.59	M-v	3	Williams	37139	1997 FM ₄
1997 FR ₄	14.9	0.15	20000226	285.91467	171.42606	2.30307	2.34610	0.1296459	2.4605849	55	3	1997–1999	0.60	M-v	4	Williams	37139	1997 FR ₄
1997 GB	15.1	0.15	20000226	315.19463	127.77832	29.12681	6.50783	0.0831059	2.3652874	55	3	1997–2000	0.70	M-v	3	Williams	37273	1997 GB
1997 GH ₁	14.7	0.15	20000226	78.78679	179.37561	181.31924	2.98570	0.1834254	2.5815543	41	3	1993–2000	0.38	M-v	4	Williams	37273	1997 GH ₁
1997 GT ₁	15.5	0.15	20000226	55.24432	177.17221	202.42588	1.64528	0.0699240	2.5738061	40	2	1997–1999	0.50	M-v	4	Williams	37273	1997 GT ₁
1997 GT ₃	13.4	0.15	20000226	106.72152	275.75057	17.53919	9.58753	0.0819113	3.0691011	66	2	1997–2000	0.67	M-v	3	Williams	36800	1997 GT ₃
1997 GU ₃	13.4	0.15	20000226	86.75964	305.82681	34.67429	6.49539	0.0654642	2.7751745	54	2	1997–1999	0.47	M-v	4	Williams	37139	1997 GU ₃
1997 GV ₃	15.1	0.15	20000226	299.49507	171.08078	26.46526	7.37292	0.0652388	2.2923771	35	3	1997–2000	0.68	M-v	4	Williams	37273	1997 GV ₃
1997 GX ₅	16.1	0.15	20000226	306.78041	66.59626	103.84101	2.12934	0.1184036	2.4294643	33	4	1993–2000	0.60	M-v	1	Williams	29931	1997 GX ₅
1997 GW ₆	14.1	0.15	20000226	110.49364	128.33777	218.26559	16.92950	0.1414919	2.7492203	57	3	1997–2000	0.68	M-v	3	Williams	37273	1997 GW ₆
1997 GZ ₆	15.9	0.15	20000226	323.87329	128.15568	44.71735	3.46362	0.0988238	2.3326709	33	4	1995–1999	0.52	M-v	1	Williams	36891	1997 GZ ₆
1997 GB ₇	14.5	0.15	20000226	264.01460	186.32918	47.22889	3.30953	0.0124111	2.3756611	78	3	1997–2000	0.64	M-v	3	Williams	36891	1997 GB ₇

1997 GE ₇	14.7	0.15	20000226	120.35543	138.27466	206.71373	12.20998	0.1419265	2.6809677	53	4	1994–2000	0.65	M-v	1	Williams	35699	1997 GE ₇
1997 GH ₇	15.2	0.15	20000226	296.88267	66.09276	83.69574	3.22810	0.0388190	2.6787329	51	2	1997–1999	0.60	M-v	4	Williams	37140	1997 GH ₇
1997 GQ ₇	12.6	0.15	20000226	26.84614	2.41305	46.35212	15.94591	0.1587516	2.7730126	107	4	1985–2000	0.56	M-v	2	Williams	37273	1997 GQ ₇
1997 GZ ₇	13.6	0.15	20000226	64.15424	297.59733	41.39695	13.85427	0.0277101	3.1710874	57	3	1988–1999	0.69	M-v	3	Williams	37273	1997 GZ ₇
1997 GE ₈	15.3	0.15	20000226	350.36160	227.12640	255.68092	0.40026	0.1345786	2.4290069	49	4	1991–2000	0.44	M-v	1	Williams	30473	1997 GE ₈
1997 GH ₈	15.4	0.15	20000226	256.31493	26.81560	223.79125	4.02067	0.0619880	2.3452649	39	4	1994–2000	0.52	M-v	2	Williams	35699	1997 GH ₈
1997 GK ₈	14.1	0.15	20000226	193.72717	215.35694	354.87337	1.37769	0.1017154	3.1219064	60	4	1993–1999	0.60	M-v	1	Williams	36892	1997 GK ₈
1997 GF ₉	14.7	0.15	20000226	302.70321	282.93594	203.32223	13.36826	0.1011579	2.6256111	48	2	1997–2000	0.62	M-v	4	Williams	36892	1997 GF ₉
1997 GZ ₉	15.9	0.15	20000226	349.62061	81.49661	21.22776	5.48399	0.1732269	2.4127064	36	2	1997–2000	0.81	M-v	4	Williams	37140	1997 GZ ₉
1997 GV ₁₀	16.0	0.15	20000226	333.63761	281.09440	190.66577	1.99259	0.1608363	2.4686975	27	2	1997–1999	0.43	M-v	5	Williams	36801	1997 GV ₁₀
1997 GL ₁₁	15.1	0.15	20000226	229.26091	275.93041	1.81208	6.11570	0.0829829	2.2807603	80	4	1991–2000	0.64	M-v	1	Williams	33077	1997 GL ₁₁
1997 GP ₁₂	14.3	0.15	20000226	112.58385	318.41080	49.73099	3.17599	0.2138418	2.3843426	17	3	1991–2000	0.53	M-v	4	Williams	33258	1997 GP ₁₂
1997 GP ₁₃	14.8	0.15	20000226	269.94353	11.19634	205.22914	3.54259	0.0504818	2.3514295	45	3	1997–2000	0.62	M-v	4	Williams	37273	1997 GP ₁₃
1997 GA ₁₄	14.8	0.15	20000226	132.31353	63.79525	287.07640	1.60474	0.2002512	2.4279711	54	4	1994–2000	0.64	M-v	2	Williams	34296	1997 GA ₁₄
1997 GF ₁₄	15.1	0.15	20000226	10.18009	162.45947	281.71540	1.99226	0.1470084	2.4352991	46	2	1997–1999	0.62	M-v	4	Williams	37140	1997 GF ₁₄
1997 GL ₁₄	15.6	0.15	20000226	220.06761	345.62786	299.83157	2.72876	0.1394404	2.3282147	30	3	1997–2000	0.72	M-v	3	Williams	33344	1997 GL ₁₄
1997 GE ₁₅	16.0	0.15	20000226	303.55435	187.62985	333.98594	1.55196	0.1514992	2.4103757	31	2	1997–1999	0.57	M-v	5	Williams	37140	1997 GE ₁₅
1997 GT ₁₅	14.5	0.15	20000226	176.99138	189.09289	62.50406	1.43835	0.0524146	2.7477036	50	2	1997–1999	0.53	M-v	4	Williams	37140	1997 GT ₁₅
1997 GX ₁₅	15.5	0.15	20000226	146.06710	152.30457	171.68036	3.84837	0.0526575	2.4600447	27	3	1997–2000	0.61	M-v	3	Williams	35699	1997 GX ₁₅
1997 GK ₁₆	14.0	0.15	20000226	76.05323	225.21588	120.73291	1.50399	0.2071207	2.8860808	54	4	1989–2000	0.53	M-v	1	Williams	37273	1997 GK ₁₆
1997 GS ₁₆	13.5	0.15	20000226	284.60119	304.87651	172.16469	1.97359	0.0212423	2.9337344	48	2	1997–1999	0.68	M-v	4	Williams	37273	1997 GS ₁₆
1997 GD ₁₇	14.9	0.15	20000226	31.51705	148.96772	276.17442	1.74091	0.1856663	2.4175911	63	4	1980–2000	0.60	M-v	2	Williams	37273	1997 GD ₁₇
1997 GE ₁₇	15.7	0.15	20000226	8.72625	139.32795	358.17903	5.22947	0.0524092	2.2216124	31	4	1977–1999	0.93	M-v	2	Williams	32752	1997 GE ₁₇
1997 GF ₁₇	14.4	0.15	20000226	288.61240	9.12758	213.87138	5.24232	0.1351083	2.2492577	68	3	1997–2000	0.55	M-v	3	Williams	37273	1997 GF ₁₇
1997 GK ₁₇	15.1	0.15	20000226	61.32848	118.79288	330.55991	2.23005	0.0926311	2.1800730	49	5	1987–2000	0.71	M-v	1	Williams	37273	1997 GK ₁₇
1997 GL ₁₇	14.5	0.15	20000226	280.40116	219.80421	331.29703	2.01103	0.1459914	2.4206144	61	3	1997–2000	0.67	M-v	4	Williams	37273	1997 GL ₁₇
1997 GC ₁₉	15.0	0.15	20000226	172.82381	317.62382	356.30061	6.98535	0.1205850	2.4217661	59	3	1997–2000	0.66	M-v	3	Williams	35699	1997 GC ₁₉
1997 GR ₂₀	15.6	0.15	20000226	146.26595	293.73568	28.84071	1.16791	0.1449350	2.5171298	39	5	1990–2000	0.78	M-v	2	Williams	32752	1997 GR ₂₀
1997 GR ₂₁	14.7	0.15	20000226	183.40745	76.30568	210.01271	11.90434	0.1710842	2.6725187	57	3	1997–2000	0.63	M-v	3	Williams	33077	1997 GR ₂₁
1997 GX ₂₁	13.2	0.15	20000226	70.83099	261.66719	99.13458	3.65630	0.0740651	2.8969925	65	3	1997–1999	0.60	M-v	3	Williams	37274	1997 GX ₂₁
1997 GJ ₂₂	15.6	0.15	20000226	249.79102	5.21577	219.62370	4.98220	0.0790041	2.5237371	30	3	1997–2000	0.55	M-v	4	Williams	32679	1997 GJ ₂₂
1997 GL ₂₂	14.2	0.15	20000226	95.20345	312.51850	25.73933	3.35707	0.2285392	3.0933893	57	3	1997–2000	0.68	M-v	3	Williams	37274	1997 GL ₂₂
1997 GQ ₂₂	13.2	0.15	20000226	63.38805	131.05761	218.29194	12.91990	0.1470007	3.2081347	102	4	1987–2000	0.52	M-v	2	Williams	37274	1997 GQ ₂₂
1997 GS ₂₂	14.5	0.15	20000226	285.74281	103.73927	48.11701	3.74642	0.0233258	2.7799439	64	2	1997–1999	0.48	M-v	4	Williams	37274	1997 GS ₂₂
1997 GT ₂₂	13.2	0.15	20000226	144.16864	239.82614	40.99201	10.78463	0.0738719	2.9856578	94	2	1997–1999	0.46	M-v	3	Williams	37274	1997 GT ₂₂
1997 GW ₂₂	14.7	0.15	20000226	6.61238	21.76082	76.32764	3.02469	0.0975152	2.5186609	58	3	1997–2000	0.63	M-v	4	Williams	37141	1997 GW ₂₂
1997 GX ₂₂	14.8	0.15	20000226	241.14128	115.82372	147.62563	1.70532	0.1534894	2.4028264	59	5	1991–2000	0.82	M-v	1	Williams	33344	1997 GX ₂₂
1997 GB ₂₃	14.8	0.15	20000226	330.54966	39.75460	67.74265	4.74639	0.2228435	2.5969963	71	3	1995–2000	0.56	M-v	2	Williams	37274	1997 GB ₂₃
1997 GJ ₂₃	14.5	0.15	20000226	175.08599	265.01691	42.37400	13.14287	0.1753235	2.6043940	72	3	1997–2000	0.57	M-v	2	Williams	37274	1997 GJ ₂₃
1997 GK ₂₃	14.4	0.15	20000226	150.76243	101.87857	176.35925	2.09137	0.0261820	2.9022543	43	3	1992–1999	0.69	M-v	4	Williams	37274	1997 GK ₂₃
1997 GR ₂₃	14.4	0.15	20000226	139.91434	266.60066	33.37676	6.67653	0.2135662	3.0082578	65	4	1996–1999	0.57	M-v	1	Williams	32752	1997 GR ₂₃
1997 GD ₂₄	15.3	0.15	20000226	296.94053	349.33143	192.74281	6.53144	0.0926804	2.4435070	19	4	1960–2000	0.60	M-v	2	Williams	30767	1997 GD ₂₄
1997 GP ₂₄	14.1	0.15	20000226	120.46761	253.36147	50.39702	10.68579	0.0612715	2.9894303	58	2	1997–1999	0.58	M-v	3	Williams	37274	1997 GP ₂₄
1997 GR ₂₄	13.8	0.15	20000226	156.50074	126.25689	195.27211	12.18641	0.1921716	2.6904988	107	3	1997–2000	0.51	M-v	2	Williams	37274	1997 GR ₂₄
1997 GK ₂₅	14.9	0.15	20000226	242.02117	51.41126	193.63365	2.12759	0.1752369	2.3756343	47	4	1993–2000	0.66	M-v	2	Williams	35699	1997 GK ₂₅
1997 GR ₂₅	14.3	0.15	20000226	211.66916	216.49981	70.14631	3.62643	0.1762783	2.4225363	32	3	1997–2000	0.81	M-v	3	Williams	35699	1997 GR ₂₅
1997 GA ₂₆	14.4	0.15	20000226	280.41811	191.57571	51.68338	7.19796	0.1560131	2.2354483	116	3	1997–2000	0.58	M-v	3	Williams	37274	1997 GA ₂₆
1997 GC ₃₃	15.0	0.15	20000226	51.51801	92.20278	346.56739	2.74350	0.1234722	2.2674565	37	3	1997–2000	0.81	M-v	3	Williams	37141	1997 GC ₃₃
1997 GM ₃₃	14.4	0.15	20000226	147.35146	113.30568	197.54655	13.30262	0.1140152	2.5986949	38	3	1997–2000	0.73	M-v	3	Williams	36525	1997 GM ₃₃
1997 GL ₃₄	14.2	0.15	20000226	294.34350	130.19249	45.24152	2.95582	0.1216788	2.4122315	67	3	1997–2000	0.70	M-v	4	Williams	37141	1997 GL ₃₄
1997 GQ ₃₄	14.9	0.15	20000226	27.02336	10.84580	20.57765	12.91581	0.0978234	2.7895839	40	2	1997–1999	0.70	M-v	3	Williams	37141	1997 GQ ₃₄
1997 GF ₃₆	15.9	0.15	20000226	289.37327	176.61342	39.47136	3.15029	0.1706367	2.3345696	27	4	1991–2000	0.51	M-v	1	Williams	30086	1997 GF ₃₆
1997 GH ₃₆	13.6	0.15	20000226	301.23734	102.43708	37.59438	13.65734	0.1026987	2.6932447	78	2	1997–2000	0.58	M-v	4	Williams	37274	1997 GH ₃₆

1997 GP ₃₆	13.1	0.15	20000226	263.81727	323.69353	215.93588	12.26012	0.2107990	2.6495340	99	3	1997-2000	0.54	M-v	3	Williams	37274	1997 GP ₃₆
1997 GT ₃₇	14.5	0.15	20000226	90.86072	193.62693	195.67979	2.31937	0.1771496	2.3695183	33	3	1991-2000	0.71	M-v	5	Williams	37274	1997 GT ₃₇
1997 GM ₄₀	13.6	0.15	20000226	0.62305	54.59031	66.33314	8.50304	0.1915162	2.3213486	46	3	1953-2000	0.61	M-v	2	Williams	37141	1997 GM ₄₀
1997 GP ₄₀	14.1	0.15	20000226	63.13653	206.24093	152.94866	1.70760	0.1230987	3.0440317	67	3	1993-1999	0.68	M-v	4	Williams	37142	1997 GP ₄₀
1997 GM ₄₁	12.6	0.15	20000226	186.96528	160.00099	48.08750	10.02468	0.0276006	3.1698187	43	2	1997-1999	0.82	M-v	4	Williams	37142	1997 GM ₄₁
1997 GD ₄₂	14.4	0.15	20000226	310.95797	357.32022	177.09165	5.77129	0.0768762	2.3956217	49	3	1997-2000	0.75	M-v	3	Williams	37274	1997 GD ₄₂
1997 HQ	13.9	0.15	20000226	44.80208	217.03122	210.86871	5.93321	0.0936262	2.4637439	52	3	1997-2000	0.46	M-v	2	Williams	37274	1997 HQ
1997 HO ₁	15.0	0.15	20000226	357.42177	194.58011	231.51516	1.10560	0.1536942	2.6154238	83	3	1995-2000	0.62	M-v	3	Williams	37274	1997 HO ₁
1997 HQ ₁	14.8	0.15	20000226	248.53635	243.27930	15.27493	3.95015	0.1307765	2.2894508	74	5	1983-2000	0.71	M-v	1	Williams	33077	1997 HQ ₁
1997 HP ₂	15.2	0.15	20000226	227.72493	82.88914	174.92760	1.19099	0.1102857	2.5312972	61	3	1997-2000	0.72	M-v	4	Williams	37274	1997 HP ₂
1997 HY ₆	13.3	0.15	20000226	127.19078	227.61575	52.77031	10.18013	0.0239704	3.0898422	52	2	1997-1999	0.54	M-v	3	Williams	37274	1997 HY ₆
1997 HR ₇	15.2	0.15	20000226	162.71104	305.37685	351.39373	3.07692	0.0853516	2.6971914	37	6	1992-2000	0.69	M-v	1	Williams	35700	1997 HR ₇
1997 HW ₇	14.7	0.15	20000226	99.19996	121.68422	240.42283	2.44545	0.1895773	2.7267333	51	5	1992-1999	0.62	M-v	1	Williams	37274	1997 HW ₇
1997 HX ₇	14.4	0.15	20000226	164.99183	88.34267	223.57526	14.30094	0.1215613	2.5981954	37	5	1990-2000	0.73	M-v	1	Williams	33344	1997 HX ₇
1997 HD ₉	15.7	0.15	20000226	204.68382	13.90857	266.97507	1.74949	0.1591343	2.5473708	34	3	1997-1999	0.48	M-v	3	Williams	37274	1997 HD ₉
1997 HA ₁₀	15.0	0.15	20000226	133.97296	251.66929	81.77043	3.78266	0.1903220	2.7246088	44	3	1997-1999	0.54	M-v	3	Williams	37274	1997 HA ₁₀
1997 HP ₁₁	13.9	0.15	20000226	349.12379	103.81561	327.65872	1.45996	0.0815798	2.9246940	88	4	1993-2000	0.53	M-v	1	Williams	36892	1997 HP ₁₁
1997 HV ₁₁	15.0	0.15	20000226	96.20291	17.68098	35.87451	6.80702	0.1055956	2.3050257	35	3	1997-2000	0.56	M-v	3	Williams	33556	1997 HV ₁₁
1997 HS ₁₂	14.5	0.15	20000226	252.08302	315.44496	235.60016	1.16923	0.1403689	2.6975892	61	3	1997-1999	0.58	M-v	4	Williams	37274	1997 HS ₁₂
1997 HD ₁₃	15.2	0.15	20000226	337.83491	154.25129	352.22417	0.48003	0.1485015	2.3717663	33	2	1997-2000	0.45	M-v	5	Williams	37142	1997 HD ₁₃
1997 HS ₁₃	13.8	0.15	20000226	118.96393	112.00716	211.30889	12.44030	0.2638154	3.0653713	40	3	1997-2000	0.52	M-v	3	Williams	33077	1997 HS ₁₃
1997 JL	14.9	0.15	20000226	206.84092	162.56329	127.66728	3.32521	0.0818372	2.4723243	28	3	1997-2000	0.91	M-v	3	Williams	33344	1997 JL
1997 JR	13.8	0.15	20000226	164.69151	280.99414	58.97634	13.68152	0.2587070	2.4216728	78	3	1997-2000	0.70	M-v	2	Williams	34015	1997 JR
1997 JU ₃	15.0	0.15	20000226	226.82668	155.07765	56.51443	8.93475	0.1512905	2.8129929	48	3	1997-1999	0.66	M-v	3	Williams	37274	1997 JU ₃
1997 JU ₇	14.3	0.15	20000226	99.40388	208.99239	202.27707	14.44690	0.1783931	2.3853572	53	3	1997-2000	0.63	M-v	2	Williams	33556	1997 JU ₇
1997 JV ₇	14.5	0.15	20000226	12.59308	330.84258	169.61202	6.69292	0.0886401	2.2989234	72	3	1997-2000	0.65	M-v	3	Williams	37274	1997 JV ₇
1997 JZ ₇	13.3	0.15	20000226	206.14182	59.27260	207.13970	12.87363	0.1696223	2.6857410	43	3	1997-2000	0.53	M-v	3	Williams	33344	1997 JZ ₇
1997 JH ₁₀	15.4	0.15	20000226	342.52886	324.70921	202.99235	2.37392	0.0871063	2.3075286	35	3	1997-2000	0.74	M-v	5	Williams	32966	1997 JH ₁₀
1997 JA ₁₁	13.1	0.15	20000226	65.22640	233.24314	149.91116	14.97144	0.3090117	3.1378454	72	3	1997-2000	0.61	M-v	2	Williams	36892	1997 JA ₁₁
1997 JN ₁₂	12.5	0.15	20000226	146.43710	221.30020	55.72418	10.73975	0.0630169	3.0153735	93	2	1997-1999	0.49	M-v	3	Williams	37274	1997 JN ₁₂
1997 JH ₁₃	14.3	0.15	20000226	176.47244	229.32170	51.05346	9.26209	0.1234013	2.7665440	35	4	1989-2000	0.78	M-v	1	Williams	37274	1997 JH ₁₃
1997 JY ₁₃	14.4	0.15	20000226	354.29165	353.58205	138.03005	1.33017	0.1492571	2.3754319	45	2	1997-2000	0.53	M-v	4	Williams	37142	1997 JY ₁₃
1997 JD ₁₄	13.7	0.15	20000226	112.71923	162.98625	208.71636	14.04627	0.0158598	2.5450601	53	3	1997-2000	0.57	M-v	3	Williams	36892	1997 JD ₁₄
1997 JS ₁₄	14.9	0.15	20000226	143.11068	173.95561	171.35883	2.38177	0.0843296	2.5357169	75	5	1994-2000	0.74	M-v	1	Williams	33077	1997 JS ₁₄
1997 JD ₁₅	14.7	0.15	20000226	15.48712	67.64502	84.69495	3.66702	0.0871429	2.2069569	44	4	1995-2000	0.88	M-v	2	Williams	35700	1997 JD ₁₅
1997 JJ ₁₅	14.3	0.15	20000226	241.69485	84.05257	211.66065	5.48631	0.1366457	2.2783878	33	3	1997-2000	0.79	M-v	3	Williams	35700	1997 JJ ₁₅
1997 JT ₁₅	12.8	0.15	20000226	114.41523	207.14915	116.02905	3.09909	0.0353850	2.9150212	105	3	1997-2000	0.50	M-v	3	Williams	37274	1997 JT ₁₅
1997 JN ₁₆	13.7	0.15	20000226	143.43942	151.19798	196.81567	4.17246	0.1785303	2.6092076	56	3	1997-2000	0.75	M-v	3	Marsden	33344	1997 JN ₁₆
1997 JE ₁₈	15.1	0.15	20000226	277.95922	99.11626	125.34947	2.94825	0.1651996	2.46016358	28	3	1993-2000	0.97	M-v	4	Williams	33698	1997 JE ₁₈
1997 JH ₁₈	14.7	0.15	20000226	202.62610	173.96594	121.61076	5.03800	0.1996531	2.5714249	24	4	1981-2000	0.67	M-v	2	Williams	33344	1997 JH ₁₈
1997 KA	12.6	0.15	20000226	198.85194	62.83294	254.34881	12.90708	0.1505778	2.6535752	50	3	1997-2000	0.64	M-v	3	Williams	35700	1997 KA
1997 KC	13.7	0.15	20000226	255.76970	140.50192	97.98923	14.46215	0.2018160	2.4404503	91	3	1997-2000	0.64	M-v	2	Williams	37274	1997 KC
1997 KG	13.8	0.15	20000226	77.43133	280.67849	95.48472	3.32851	0.0869702	2.8864329	94	3	1997-2000	0.58	M-v	3	Williams	37274	1997 KG
1997 KH	14.4	0.15	20000226	171.80020	120.30436	194.91419	2.03251	0.0899713	2.6235773	80	4	1992-2000	0.67	M-v	1	Marsden	33077	1997 KH
1997 KU ₂	13.6	0.15	20000226	308.34727	27.64763	130.56637	13.80147	0.1106418	2.5973869	64	3	1997-2000	0.67	M-v	3	Williams	37274	1997 KU ₂
1997 KH ₄	13.7	0.15	20000226	348.39883	73.20767	103.46848	6.32226	0.0794869	2.2606259	44	3	1997-2000	0.48	M-v	3	Williams	37274	1997 KH ₄
1997 LB ₁	13.7	0.15	20000226	18.49253	318.58708	97.21269	15.94843	0.1422344	2.9885709	41	2	1997-2000	0.48	M-v	3	Williams	37142	1997 LB ₁
1997 LU ₁	13.2	0.15	20000226	243.58170	345.87434	199.54730	12.78310	0.0519749	3.0002890	72	3	1997-2000	0.53	M-v	3	Williams	37274	1997 LU ₁
1997 LO ₃	14.6	0.15	20000226	283.04394	91.97440	142.17243	2.82721	0.2052859	2.3300048	40	3	1979-2000	0.78	M-v	3	Williams	33949	1997 LO ₃
1997 LE ₄	13.0	0.15	20000226	72.93978	102.44782	237.63983	21.12935	0.0792895	3.2294045	55	2	1997-2000	0.46	M-v	3	Williams	37274	1997 LE ₄
1997 LZ ₄	14.5	0.15	20000226	118.19501	140.48992	227.77648	4.57781	0.1687814	2.6895418	63	3	1997-2000	0.53	M-v	3	Marsden	33345	1997 LZ ₄
1997 LH ₉	14.9	0.15	20000226	204.39227	101.06518	183.46252	3.75457	0.0987235	2.5416457	27	4	1994-1999	1.04	M-v	2	Williams	36353	1997 LH ₉
1997 MG ₁	13.0	0.15	20000226	45.77081	206.55547	189.86336	10.56327	0.1110849	2.9989922	70	3	1997-2000	0.48	M-v	2	Williams	37274	1997 MG ₁

1997 MJ ₂	14.6	0.15	20000226	44.55203	6.06301	94.91930	7.76999	0.0691152	2.3862713	61	4	1980–2000	0.46	M-v	1	Williams	33556	1997 MJ ₂
1997 MZ ₂	14.2	0.15	20000226	201.75311	316.34437	346.88530	2.98353	0.0826055	2.6557521	44	5	1994–2000	0.73	M-v	1	Williams	35700	1997 MZ ₂
1997 MA ₄	13.9	0.15	20000226	345.49767	145.23142	346.56817	1.38897	0.0127842	2.8535618	47	4	1993–2000	0.62	M-v	1	Williams	35700	1997 MA ₄
1997 MQ ₄	14.2	0.15	20000226	152.39307	290.88594	89.96031	13.42446	0.1864110	2.5648283	50	4	1995–2000	0.79	M-v	1	Williams	33752	1997 MQ ₄
1997 MR ₈	14.5	0.15	20000226	288.47311	89.87357	131.67091	12.87791	0.2177807	2.5979097	35	3	1996–2000	0.54	M-v	2	Williams	30474	1997 MR ₈
1997 NK ₁	13.6	0.15	20000226	116.07989	128.10754	245.81067	2.12421	0.0937314	3.1378348	49	4	1996–2000	0.63	M-v	1	Williams	35700	1997 NK ₁
1997 NE ₃	13.9	0.15	20000226	350.55032	247.84824	293.58297	6.55653	0.1550980	2.3966196	57	3	1997–2000	0.63	M-v	3	Williams	33345	1997 NE ₃
1997 NG ₆	13.3	0.15	20000226	97.19365	242.63950	108.23575	11.68634	0.0740857	2.9917849	48	3	1997–2000	0.44	M-v	3	Williams	37142	1997 NG ₆
1997 NJ ₆	19.1	0.15	20000226	69.51292	130.19469	254.53887	18.69309	0.2323129	1.5000108	60	2	1997–1999	0.73	M-v	3	Williams	37142	1997 NJ ₆
1997 NU ₆	13.6	0.15	20000226	252.09051	355.53241	237.74899	8.37701	0.0934007	2.8049312	82	3	1997–2000	0.63	M-v	3	Williams	37274	1997 NU ₆
1997 NE ₁₁	12.8	0.15	20000226	180.05341	58.34970	273.65857	13.91907	0.1823268	2.8078644	42	4	1984–2000	0.75	M-v	1	Williams	34296	1997 NE ₁₁
1997 OJ	13.4	0.15	20000226	174.49039	229.30996	58.65127	1.26681	0.1672161	3.1703072	75	3	1997–2000	0.58	M-v	3	Williams	37275	1997 OJ
1997 OZ ₁	13.1	0.15	20000226	288.70709	88.57705	155.69809	14.85094	0.0861546	2.5760212	46	5	1992–2000	0.77	M-v	1	Williams	34586	1997 OZ ₁
1997 PY	15.0	0.15	20000226	234.79482	62.35995	203.64732	1.50145	0.0588689	2.9253053	28	5	1995–2000	0.49	M-v	1	Williams	36077	1997 PY
1997 PY ₁	14.1	0.15	20000226	239.84046	285.17350	344.93852	10.12759	0.0695782	2.9873982	66	4	1995–2000	0.44	M-v	1	Marsden	35700	1997 PY ₁
1997 PE ₂	13.8	0.15	20000226	206.46092	184.43035	143.36543	18.57754	0.3093747	2.6117991	41	4	1993–2000	0.49	M-v	2	Williams	37275	1997 PE ₂
1997 PG ₃	13.5	0.15	20000226	138.71076	199.11943	148.29334	2.84059	0.1083328	3.1818204	57	4	1995–2000	0.64	M-v	1	Williams	33557	1997 PG ₃
1997 PV ₃	12.8	0.15	20000226	193.36577	47.38823	253.66040	8.39444	0.0819154	3.0581592	58	5	1987–2000	0.58	M-v	1	Williams	35700	1997 PV ₃
1997 PA ₄	13.2	0.15	20000226	100.70721	93.92627	308.48759	24.26666	0.2628175	3.1663475	51	3	1997–2000	0.55	M-v	3	Williams	33951	1997 PA ₄
1997 QF	13.4	0.15	20000226	240.89389	137.62973	139.23228	14.08417	0.0675585	2.8718475	80	3	1997–2000	0.55	M-v	3	Williams	35701	1997 QF
1997 QK	13.3	0.15	20000226	165.45116	38.35331	296.63874	9.14465	0.1415442	3.0283877	107	3	1997–2000	0.44	M-v	2	Marsden	33753	1997 QK
1997 QG ₄	12.9	0.15	20000226	237.00710	118.25910	147.93689	12.21291	0.1439867	2.9882579	36	5	1991–2000	0.65	M-v	1	Williams	35701	1997 QG ₄
1997 QS ₄	13.6	0.15	20000226	149.95034	153.32746	200.92313	1.24814	0.1901449	3.1042293	27	4	1992–2000	0.79	M-v	2	Williams	33557	1997 QS ₄
1997 RF	13.6	0.15	20000226	53.34059	297.31742	170.82782	23.51404	0.1924464	3.2243966	28	4	1988–2000	0.51	M-v	1	Williams	33503	1997 RF
1997 RB ₇	12.4	0.15	20000226	251.60282	43.09349	211.59550	8.91560	0.0711102	3.0176484	44	4	1992–2000	0.57	M-v	1	Williams	33557	1997 RB ₇
1997 RJ ₇	13.6	0.15	20000226	186.27305	351.95404	322.14671	5.68767	0.1571502	3.1421321	46	4	1986–2000	0.45	M-v	1	Williams	33557	1997 RJ ₇
1997 RO ₇	13.1	0.15	20000226	228.70394	132.87086	138.97289	10.25906	0.0582229	3.1617240	40	4	1991–2000	0.65	M-v	1	Williams	33345	1997 RO ₇
1997 RQ ₈	15.7	0.15	19970929	4.78140	99.14800	258.50174	1.81190	0.1933718	2.5361362	12	1	52 days	0.12			Williams		1997 RQ ₈
1997 RG ₉	12.9	0.15	20000226	231.90848	327.93080	299.62083	15.57009	0.1684270	3.1216780	69	4	1991–2000	0.53	M-v	1	Williams	33753	1997 RG ₉
1997 SD ₁	13.3	0.15	20000226	314.64183	3.50511	224.03661	11.57911	0.1367595	2.6487064	35	4	1996–2000	0.78	M-v	2	Williams	34016	1997 SD ₁
1997 SN ₁	14.0	0.15	20000226	273.06994	299.30706	336.63206	12.26597	0.1678825	2.6877661	37	3	1997–2000	0.30	M-v	3	Williams	33753	1997 SN ₁
1997 SM ₃	13.1	0.15	20000226	312.94454	265.47748	325.65138	14.70116	0.0918531	2.6353534	34	3	1997–2000	0.70	M-v	3	Williams	35701	1997 SM ₃
1997 SG ₇	14.4	0.15	20000226	312.55986	170.07749	19.88568	1.21331	0.1162829	3.1465047	32	3	1997–2000	0.52	M-v	4	Williams	33557	1997 SG ₇
1997 SN ₁₀	12.9	0.15	20000226	219.30536	91.15838	194.01571	4.66009	0.1573941	3.1268501	24	4	1991–2000	0.49	M-v	1	Williams	35701	1997 SN ₁₀
1997 SL ₁₆	13.7	0.15	20000226	310.13285	109.06024	147.67300	12.32233	0.1046069	2.5686069	74	4	1983–2000	0.68	M-v	1	Williams	34017	1997 SL ₁₆
1997 SA ₂₀	17.1	0.15	19970929	14.46573	341.55441	356.46681	3.33806	0.2693962	2.5628739	10	1	29 days	0.26			Williams		1997 SA ₂₀
1997 SG ₂₅	14.2	0.15	20000226	313.93196	197.22540	68.73251	3.04640	0.1845257	2.4054152	28	4	1985–2000	0.73	M-v	2	Williams	34017	1997 SG ₂₅
1997 SF ₂₈	12.3	0.15	20000226	40.28944	79.38254	344.90514	6.75013	0.0979364	5.1243132	23	3	1997–2000	0.53	M-v	3	Williams	33701	1997 SF ₂₈
1997 SS ₃₁	13.2	0.15	20000226	78.01017	192.40231	238.49952	4.32020	0.1655247	5.1846019	49	3	1997–2000	0.59	M-v	3	Williams	37275	1997 SS ₃₁
1997 SY ₃₂	12.2	0.15	20000226	72.69599	7.52873	21.88915	6.80352	0.0911423	5.2522000	23	4	1977–1999	0.52	M-v	1	Williams	35701	1997 SY ₃₂
1997 SM ₃₅			19970929	277.92439	97.98615	20.81693	7.35392	0.2344236	5.1636464	6	1	6 days	0.62		E	Williams		1997 SM ₃₅
1997 TK ₁	14.6	0.15	20000226	58.27753	153.52197	329.74527	4.02136	0.0958267	2.6471882	29	4	1993–2000	0.72	M-v	2	Williams	33754	1997 TK ₁
1997 TY ₅	14.6	0.15	19970929	68.52526	213.32696	85.08836	3.24312	0.0564755	2.9169523	14	1	27 days	0.82			Williams		1997 TY ₅
1997 TB ₁₂	11.8	0.15	20000226	43.27992	194.77869	219.17221	9.89021	0.0699520	5.2371804	67	3	1997–2000	0.47	M-v	2	Marsden	33558	1997 TB ₁₂
1997 TW ₁₅	14.1	0.15	20000226	275.94465	44.76999	230.47838	1.72475	0.1869345	2.5896483	37	5	1992–2000	0.66	M-v	1	Williams	36077	1997 TW ₁₅
1997 TS ₁₇	12.7	0.15	20000226	206.50115	127.58111	209.77461	9.26805	0.1076903	2.9795099	37	4	1992–2000	0.73	M-v	2	Williams	33754	1997 TS ₁₇
1997 TR ₁₈	12.6	0.15	20000226	36.69323	293.89574	200.33334	9.46205	0.0429920	2.9872184	34	4	1992–2000	0.49	M-v	1	Williams	35702	1997 TR ₁₈
1997 TA ₂₈			19970929	3.38665	335.81484	38.18976	10.57487	0.0913401	5.1993183	15	1	29 days	0.75			Williams		1997 TA ₂₈
1997 TM ₂₈			19970929	204.20642	345.02208	189.19842	11.68165	0.0436292	5.1167685	9	1	22 days	0.73			Williams		1997 TM ₂₈
1997 TV ₂₈			19970929	334.11480	17.08398	33.25911	15.65203	0.0945868	5.2260327	10	1	22 days	0.49			Williams		1997 TV ₂₈
1997 UJ	12.0	0.15	20000226	51.78048	205.07070	224.13326	11.10931	0.0638196	5.1139751	38	3	1997–2000	0.72	M-v	3	Williams	33558	1997 UJ
1997 UT ₂	12.8	0.15	20000226	210.00408	265.81068	23.26675	16.99629	0.2226662	3.1607690	35	5	1974–1999	0.69	M-v	2	Williams	37275	1997 UT ₂
1997 UK ₅	14.2	0.15	20000226	233.99220	30.12851	320.50452	13.49730	0.2196626	2.5527971	51	5	1989–1999	0.58	M-v	2	Williams	34298	1997 UK ₅

1997 US ₉	17.3	0.15	20000226	243.07541	357.23755	212.29617	20.01955	0.2816348	1.0521093	246	3	1997–1999	0.58	M-v	3	Williams	36893	1997 US ₉
1997 UW ₁₈	12.4	0.15	20000226	28.47980	91.78472	62.72115	9.24379	0.0122877	3.4017663	47	3	1997–2000	0.65	M-v	3	Williams	35702	1997 UW ₁₈
1997 UY ₂₀	13.4	0.15	20000226	206.92649	84.41013	206.45586	11.63674	0.2371695	3.0827753	31	4	1991–2000	0.51	M-v	1	Williams	31148	1997 UY ₂₀
1997 UC ₂₂	11.9	0.15	20000226	153.21559	51.45053	292.73942	17.63527	0.1536715	3.2077273	81	3	1997–2000	0.64	M-v	3	Williams	37275	1997 UC ₂₂
1997 UZ ₂₃	11.2	0.15	19970929	230.90363	313.79995	189.64547	28.49331	0.0266384	5.1483477	16	1	32 days	0.42			Williams		1997 UZ ₂₃
1997 VW ₁	17.7	0.15	19971108	3.84461	186.71687	211.73694	1.66336	0.2198310	2.3856141	11	1	30 days	0.49			Williams		1997 VW ₁
1997 WW ₇	10.4	0.15	20000226	83.09892	163.71433	249.83870	5.66291	0.0715317	5.1847652	53	4	1989–2000	0.76	M-v	1	Williams	35703	1997 WW ₇
1997 WQ ₁₁	13.4	0.15	20000226	325.31953	170.29157	53.44271	1.49147	0.1183971	3.1694819	34	3	1997–2000	0.82	M-v	3	Williams	34018	1997 WQ ₁₁
1997 WU ₂₂	15.3	0.15	20000226	299.68803	334.14603	260.90647	15.98231	0.4424310	1.4674753	170	3	1990–2000	0.52	M-v	3	Williams	37275	1997 WU ₂₂
1997 WB ₃₇	11.8	0.15	20000226	332.73140	144.29522	86.67075	11.86822	0.0981596	3.2174659	88	3	1997–2000	0.51	M-v	2	Williams	35073	1997 WB ₃₇
1997 WK ₅₇			19971108	105.78559	102.71933	178.66247	15.09391	0.1319541	3.3073202	5	1	2 days	0.25			E Williams		1997 WK ₅₇
1997 WL ₅₇			19971108	8.36678	245.70554	140.85146	3.73492	0.2183387	2.7212527	5	1	2 days	0.49			E Williams		1997 WL ₅₇
1997 XW ₃	14.4	0.15	20000226	265.17996	305.19464	91.66650	3.68427	0.1648197	2.4451897	22	2	1997–1999	0.54	M-v	4	Williams	37143	1997 XW ₃
1997 XA ₉	13.6	0.15	20000226	237.36134	309.47843	128.82813	2.99237	0.0673761	2.8989273	59	4	1990–1999	0.66	M-v	2	Williams	35433	1997 XA ₉
1998 AH ₅	13.1	0.15	20000226	143.16460	355.07640	140.95307	2.63165	0.1243913	3.1182147	42	5	1990–1999	0.64	M-v	1	Williams	34890	1998 AH ₅
1998 BV ₁₈	15.0	0.15	20000226	119.98726	127.86339	72.34563	3.53746	0.2496444	3.0413379	32	1	96 days	0.49	M-v	4	Williams	35704	1998 BV ₁₈
1998 BE ₃₃	14.5	0.15	20000226	242.43912	257.47666	167.82117	10.28156	0.2867421	2.6941260	44	3	1983–1998	0.72	M-v	3	Williams	32059	1998 BE ₃₃
1998 CE ₂	15.6	0.15	20000226	121.53333	323.67259	293.99719	4.74861	0.2474966	2.2539384	44	2	1998–1999	0.57	M-v	5	Williams	36893	1998 CE ₂
1998 CB ₄	15.5	0.15	20000226	158.70495	185.80452	46.79965	1.95938	0.1301486	2.1787886	50	2	1998–1999	0.65	M-v	4	Williams	36526	1998 CB ₄
1998 DU	15.0	0.15	20000226	348.58134	110.45421	309.69592	18.07677	0.0924142	1.9526296	58	3	1980–1999	0.78	M-v	1	Williams	36893	1998 DU
1998 DT ₇	14.5	0.15	20000226	137.75573	296.58576	301.22377	3.83966	0.1502421	2.2839297	50	3	1992–1999	0.59	M-v	2	Williams	37275	1998 DT ₇
1998 DQ ₁₃	13.5	0.15	20000226	146.86443	56.57157	107.86401	2.48405	0.1136503	3.0353052	64	4	1980–1999	0.51	M-v	1	Williams	35076	1998 DQ ₁₃
1998 DJ ₂₀	15.0	0.15	20000226	105.88682	282.37772	357.03065	5.87192	0.1220355	2.2376305	86	2	1998–1999	0.69	M-v	4	Williams	36893	1998 DJ ₂₀
1998 DO ₂₃	15.6	0.15	20000226	29.25088	52.88380	10.36927	19.84180	0.0859497	1.9129359	54	3	1991–1999	0.59	M-v	3	Williams	37275	1998 DO ₂₃
1998 DQ ₂₃	16.1	0.15	20000226	343.00862	95.82088	10.19211	21.23359	0.0767532	1.9227638	33	2	1998–2000	0.68	M-v	4	Williams	36802	1998 DQ ₂₃
1998 DB ₂₄	14.8	0.15	20000226	172.08898	299.11592	314.13424	17.21466	0.0556244	1.9625438	75	2	1998–1999	0.53	M-v	3	Williams	37275	1998 DB ₂₄
1998 DQ ₂₇	15.5	0.15	20000226	96.56438	292.42606	15.97295	4.88795	0.1799622	2.2177496	61	2	1998–1999	0.68	M-v	4	Williams	37143	1998 DQ ₂₇
1998 DE ₃₄	13.5	0.15	20000226	154.61359	138.76794	2.26853	1.00247	0.1585348	3.0461997	44	3	1993–1998	0.74	M-v	3	Williams	32315	1998 DE ₃₄
1998 DC ₃₅	14.3	0.15	20000226	212.93272	359.69858	156.30566	4.83016	0.0728576	2.3254686	79	2	1998–1999	0.60	M-v	3	Williams	37275	1998 DC ₃₅
1998 DB ₃₆	14.0	0.15	20000226	90.55482	288.51100	7.23184	11.46953	0.2173122	2.3403179	123	3	1991–2000	0.63	M-v	2	Williams	37275	1998 DB ₃₆
1998 DN ₃₇	14.1	0.15	19980308	200.79539	217.87621	127.88645	3.80508	0.1225571	2.9347267	11	1	51 days	1.21			Williams		1998 DN ₃₇
1998 EL ₂	15.2	0.15	20000226	106.68254	156.54070	157.14422	2.70128	0.1903103	2.2811912	81	2	1998–1999	0.67	M-v	4	Williams	37143	1998 EL ₂
1998 EQ ₂	16.1	0.15	20000226	191.82783	197.27030	10.54066	6.31523	0.0927909	2.2939793	35	3	1996–1999	0.71	M-v	3	Williams	36893	1998 EQ ₂
1998 EP ₃	13.5	0.15	20000226	61.68511	300.77559	6.83228	9.41790	0.1766346	2.6533451	98	3	1996–2000	0.51	M-v	2	Williams	37275	1998 EP ₃
1998 EQ ₆	15.5	0.15	20000226	91.49148	331.66709	320.16446	1.82404	0.2034481	2.3809985	30	2	1998–1999	0.69	M-v	4	Williams	37144	1998 EQ ₆
1998 EW ₆	15.7	0.15	20000226	295.36340	141.63269	12.65873	20.89693	0.0867241	1.9367074	46	2	1998–2000	0.60	M-v	4	Williams	36802	1998 EW ₆
1998 EB ₈	15.9	0.15	20000226	157.63215	183.08763	65.34951	1.51819	0.1162778	2.2001947	69	3	1996–1999	0.53	M-v	3	Williams	36893	1998 EB ₈
1998 EP ₈	18.2	0.15	20000226	57.51515	221.00226	169.30852	24.52824	0.2725569	1.7512393	61	2	1998–1999	0.61	M-v	3	Williams	37275	1998 EP ₈
1998 EA ₉	14.4	0.15	20000226	115.37661	158.37130	111.64933	9.03125	0.2357650	2.5686055	82	2	1998–1999	0.58	M-v	3	Williams	37275	1998 EA ₉
1998 EE ₁₀	14.0	0.15	20000226	109.99526	269.06663	22.70523	4.51189	0.1515641	2.2642472	136	3	1981–2000	0.60	M-v	2	Williams	37275	1998 EE ₁₀
1998 EQ ₁₀	14.2	0.15	20000226	63.48658	249.39993	70.17220	4.45151	0.1842349	2.2975223	34	3	1995–1999	0.70	M-v	3	Williams	37275	1998 EQ ₁₀
1998 EZ ₁₀	14.1	0.15	20000226	71.35164	287.74208	19.48604	7.16075	0.1508199	2.3440127	35	2	1998–1999	0.54	M-v	4	Williams	37144	1998 EZ ₁₀
1998 ET ₁₁	14.5	0.15	20000226	78.30315	288.08823	23.86971	7.40089	0.2089488	2.2917170	85	2	1998–1999	0.61	M-v	4	Williams	37275	1998 ET ₁₁
1998 EW ₁₂	15.1	0.15	20000226	111.37723	290.55613	3.58607	5.57630	0.1744961	2.2158074	83	2	1998–2000	0.59	M-v	4	Williams	37275	1998 EW ₁₂
1998 FO	14.1	0.15	20000226	208.35953	99.03078	17.85398	8.10370	0.1350382	2.7216308	55	3	1971–1998	0.63	M-v	4	Williams	32316	1998 FO
1998 FK ₂	14.7	0.15	20000226	75.43096	177.09062	182.46075	22.18194	0.0824100	1.9312019	77	3	1990–2000	0.69	M-v	3	Williams	36894	1998 FK ₂
1998 FM ₂	15.9	0.15	19980308	324.26928	235.18896	1.28090	31.31214	0.2577054	2.6295256	36	1	50 days	0.97			Williams		1998 FM ₂
1998 FA ₅	15.5	0.15	20000226	186.85810	157.72108	6.22676	11.40421	0.1241924	2.5351018	49	2	1998–1999	0.63	M-v	3	Williams	35705	1998 FA ₅
1998 FB ₅	15.6	0.15	20000226	322.20545	275.79491	196.05933	22.37389	0.0939762	1.9568907	95	2	1998–2000	0.60	M-v	3	Williams	37275	1998 FB ₅
1998 FM ₈	15.1	0.15	20000226	49.81548	318.33462	28.01785	6.10239	0.2100384	2.2766784	68	2	1998–1999	0.52	M-v	3	Williams	37275	1998 FM ₈
1998 FW ₉	15.8	0.15	20000226	140.74322	62.74505	194.86781	12.68563	0.1808308	2.3234089	79	3	1991–1999	0.76	M-v	3	Williams	36894	1998 FW ₉
1998 FP ₁₀	15.5	0.15	20000226	95.06285	274.76075	357.54445	12.62980	0.2116713	2.6838118	51	2	1998–1999	0.75	M-v	4	Williams	36894	1998 FP ₁₀
1998 FV ₁₀	15.0	0.15	20000226	72.89935	42.57551	277.32783	1.43096	0.1027578	2.3135139	145	2	1998–1999	0.60	M-v	3	Williams	37275	1998 FV ₁₀

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1998 FA ₁₁	15.2	0.15	20000226	88.49940	206.88447	145.40561	5.50352	0.1910301	2.2470843	47	3	1997–2000	0.56	M-v	2	Williams	37145	1998 FA ₁₁
1998 FZ ₁₁	16.2	0.15	19980308	99.70248	4.26584	61.72382	4.30548	0.1188979	2.3303162	28	1	50 days	1.02			Williams		1998 FZ ₁₁
1998 FB ₁₂	14.3	0.15	20000226	76.62595	357.08664	334.23967	1.53621	0.1796102	2.1490416	82	2	1998–2000	0.50	M-v	3	Williams	37275	1998 FB ₁₂
1998 FC ₁₂	14.7	0.15	20000226	126.77553	150.64841	157.98000	4.47577	0.2455894	2.0782012	45	3	1980–2000	0.60	M-v	3	Williams	37275	1998 FC ₁₂
1998 FL ₁₂	15.2	0.15	20000226	272.00842	162.07342	21.25068	21.76111	0.0878027	1.9293541	54	2	1998–1999	0.55	M-v	3	Williams	37275	1998 FL ₁₂
1998 FM ₁₂	14.3	0.15	20000226	74.54820	138.89181	159.38763	3.98505	0.2105598	2.5686462	96	3	1995–1999	0.54	M-v	2	Williams	37276	1998 FM ₁₂
1998 FW ₁₄	15.1	0.15	20000226	95.08628	89.52790	205.17374	6.24832	0.1075123	2.3584944	94	3	1992–1999	0.58	M-v	2	Williams	36894	1998 FW ₁₄
1998 FV ₁₅	14.9	0.15	20000226	60.97799	336.45639	5.33370	4.74097	0.1214141	2.2151539	151	3	1996–1999	0.58	M-v	2	Williams	37276	1998 FV ₁₅
1998 FF ₁₆	14.6	0.15	20000226	127.98258	106.62845	161.19026	2.47912	0.1860250	2.3963699	128	3	1995–1999	0.61	M-v	3	Williams	37276	1998 FF ₁₆
1998 FG ₃₀	14.9	0.15	20000226	82.45190	332.85504	331.34553	4.37609	0.2369411	2.3861039	40	2	1998–1999	0.74	M-v	4	Williams	37145	1998 FG ₃₀
1998 FY ₃₅	14.5	0.15	20000226	129.01277	269.59979	13.32816	5.80155	0.1805613	2.2003439	125	3	1989–2000	0.52	M-v	1	Williams	37276	1998 FY ₃₅
1998 FY ₄₁	15.2	0.15	20000226	61.44174	353.11038	339.58282	5.25845	0.1890090	2.2730692	94	3	1992–1999	0.59	M-v	2	Williams	37276	1998 FY ₄₁
1998 FN ₄₃	15.1	0.15	20000226	49.90256	352.01531	356.63690	6.77941	0.1929925	2.2120424	100	3	1986–1999	0.62	M-v	2	Williams	37276	1998 FN ₄₃
1998 FM ₄₅	12.7	0.15	20000226	295.24977	206.18324	132.27329	5.17541	0.0588654	3.8987177	25	4	1982–1999	0.78	M-v	2	Williams	36803	1998 FM ₄₅
1998 FP ₄₅	15.7	0.15	19980308	41.25090	353.05531	130.65537	3.31674	0.1360406	2.4280835	19	1	50 days	0.76			Williams		1998 FP ₄₅
1998 FS ₄₅	13.9	0.15	19980308	181.82712	280.33952	76.87385	3.62654	0.1236192	2.7665978	24	1	50 days	0.96			Williams		1998 FS ₄₅
1998 FT ₄₅	15.3	0.15	19980308	44.85615	96.20253	13.57703	12.02516	0.2269126	2.6896079	12	1	20 days	1.55			Williams		1998 FT ₄₅
1998 FR ₄₆	14.5	0.15	19980308	200.16541	342.02345	3.22812	27.21035	0.1845524	2.7164472	32	1	50 days	0.80			Williams		1998 FR ₄₆
1998 FZ ₄₆	15.7	0.15	20000226	140.81680	280.96803	352.68307	3.96262	0.1264966	2.1674046	73	2	1998–1999	0.61	M-v	4	Williams	36894	1998 FZ ₄₆
1998 FX ₄₇	14.4	0.15	20000226	69.51327	110.54536	203.59954	5.73201	0.1949881	2.4269923	125	3	1991–1999	0.54	M-v	2	Williams	37276	1998 FX ₄₇
1998 FR ₄₈	15.2	0.15	20000226	53.48131	95.59632	256.24688	2.14746	0.1778321	2.1701163	64	2	1998–1999	0.66	M-v	3	Williams	37276	1998 FR ₄₈
1998 FE ₄₉	14.9	0.15	20000226	101.20975	100.42730	190.73354	7.74245	0.1977457	2.3975881	78	2	1998–1999	0.61	M-v	4	Williams	37276	1998 FE ₄₉
1998 FL ₄₉	14.5	0.15	20000226	115.04617	312.72643	345.05276	2.01384	0.1470920	2.1957908	148	3	1976–2000	0.46	M-v	2	Williams	37276	1998 FL ₄₉
1998 FO ₄₉	14.2	0.15	20000226	354.90239	25.05549	358.08608	7.83403	0.1043344	2.3054216	76	4	1982–1999	0.62	M-v	2	Williams	36894	1998 FO ₄₉
1998 FQ ₄₉	14.3	0.15	20000226	53.84383	355.75013	332.84692	1.66445	0.2116590	2.4398351	117	3	1976–1999	0.58	M-v	2	Williams	37276	1998 FQ ₄₉
1998 FK ₅₀	14.7	0.15	19980308	237.95633	298.22391	9.87814	10.00986	0.0709778	2.9663767	13	1	22 days	1.31			Williams		1998 FK ₅₀
1998 FU ₅₀	14.6	0.15	19980308	229.50201	310.29704	8.83727	13.74200	0.1113862	2.6129505	19	1	50 days	1.23			Williams		1998 FU ₅₀
1998 FA ₅₁	15.3	0.15	19980308	277.56956	261.36501	9.02777	15.09196	0.0853636	2.5760902	34	1	51 days	0.51			Williams		1998 FA ₅₁
1998 FB ₅₁	14.8	0.15	19980308	311.15676	228.89502	11.27759	12.90545	0.1321443	3.0718131	25	1	51 days	0.65			Williams		1998 FB ₅₁
1998 FC ₅₁	14.9	0.15	19980308	0.90891	53.93237	123.68740	2.50810	0.1304763	3.1247316	17	1	27 days	0.81			Williams		1998 FC ₅₁
1998 FE ₅₁	14.6	0.15	19980308	318.70342	215.61794	12.33130	12.54301	0.0998321	2.7556908	22	1	50 days	0.67			Williams		1998 FE ₅₁
1998 FJ ₅₁	14.4	0.15	19980308	55.65563	90.48141	22.00812	6.85617	0.1136539	3.1234293	13	1	22 days	0.80			Williams		1998 FJ ₅₁
1998 FK ₅₁	14.0	0.15	20000226	124.04099	177.29130	11.17640	15.80339	0.1317505	3.0643525	48	2	1995–1998	0.52	M-v	3	Williams	32320	1998 FK ₅₁
1998 FL ₅₁	14.1	0.15	19980308	70.34942	339.42316	108.92413	2.75832	0.1786036	3.0997992	38	1	50 days	0.80			Williams		1998 FL ₅₁
1998 FM ₅₁	14.6	0.15	19980308	55.69071	318.39924	151.19810	5.62653	0.1344864	3.0668980	31	1	51 days	1.14			Williams		1998 FM ₅₁
1998 FN ₅₁	16.8	0.15	19980308	353.02579	142.07427	43.58748	3.52363	0.1447610	2.2904202	31	1	50 days	0.73			Williams		1998 FN ₅₁
1998 FP ₅₁	15.5	0.15	19980308	258.53895	242.80425	55.19767	3.35367	0.1661878	2.3741598	21	1	29 days	0.79			Williams		1998 FP ₅₁
1998 FS ₅₁	14.9	0.15	20000226	39.50025	150.68856	152.78391	6.54306	0.0371506	2.7110144	31	2	1994–1998	0.62	M-v	4	Williams	35706	1998 FS ₅₁
1998 FT ₅₁	15.7	0.15	20000226	290.82968	322.08747	134.10016	3.93072	0.0782783	2.2022551	38	4	1995–1999	0.74	M-v	1	Williams	36079	1998 FT ₅₁
1998 FA ₅₂	14.6	0.15	19980308	322.61506	121.41054	105.61911	2.96065	0.1220042	3.1549500	17	1	50 days	1.17			Williams		1998 FA ₅₂
1998 FC ₅₂	15.5	0.15	19980308	298.24743	205.15852	56.54158	3.05848	0.1909594	2.3849723	23	1	50 days	0.65			Williams		1998 FC ₅₂
1998 FE ₅₂	14.9	0.15	19980308	60.00386	321.17818	144.99478	2.29687	0.1280538	2.8211184	12	1	20 days	0.70			Williams		1998 FE ₅₂
1998 FN ₅₂	15.7	0.15	19980328	348.73406	187.17326	16.54566	4.92984	0.2276646	2.5774127	27	1	55 days	1.00			Williams		1998 FN ₅₂
1998 FD ₅₅	14.3	0.15	19980308	83.55322	76.45529	15.22210	8.67195	0.0541644	2.9991818	23	1	51 days	1.25			Williams		1998 FD ₅₅
1998 FE ₅₅	14.5	0.15	19980308	44.37632	118.79584	11.73670	11.37574	0.0754910	3.0987403	22	1	51 days	1.07			Williams		1998 FE ₅₅
1998 FG ₅₅	14.2	0.15	19980308	230.80731	281.67821	41.48667	3.67359	0.1664389	2.5673087	14	1	22 days	0.95			Williams		1998 FG ₅₅
1998 FP ₅₅	16.4	0.15	19980308	341.37995	119.66835	83.52074	2.33078	0.1347565	2.3970718	26	1	51 days	0.69			Williams		1998 FP ₅₅
1998 FU ₅₅	16.2	0.15	19980308	54.95270	42.03108	65.11636	3.42177	0.1615057	2.4080911	17	1	28 days	2.04			Williams		1998 FU ₅₅
1998 FV ₅₅	15.8	0.15	19980308	75.28531	8.19537	76.00925	3.29250	0.1745921	2.3368131	16	1	28 days	1.52			Williams		1998 FV ₅₅
1998 FX ₅₅	14.8	0.15	20000226	358.53671	270.00806	115.82924	3.60404	0.1665473	2.2338190	44	4	1976–1999	0.76	M-v	2	Williams	35437	1998 FX ₅₅
1998 FZ ₅₅	14.3	0.15	20000226	111.56639	245.37216	51.88390	4.30910	0.1587919	2.2382678	43	2	1998–1999	0.48	M-v	4	Williams	37145	1998 FZ ₅₅
1998 FS ₅₇	14.8	0.15	20000226	75.84364	322.66952	350.55924	8.49279	0.3147459	2.5858134	41	2	1998–1999	0.73	M-v	4	Williams	36804	1998 FS ₅₇
1998 FT ₅₇	14.9	0.15	20000226	75.34101	105.25478	208.68080	7.10963	0.1303444	2.3840428	90	2	1998–1999	0.69	M-v	3	Williams	37276	1998 FT ₅₇

1998 FG ₅₈	14.7	0.15	20000226	77.63779	312.67731	0.92420	7.11792	0.1213113	2.3590178	123	2	1997–1999	0.61	M-v	3	Williams	37276	1998 FG ₅₈
1998 FD ₆₁	14.3	0.15	20000226	179.59192	48.26238	185.99134	4.87340	0.1218589	2.1715209	126	3	1996–2000	0.58	M-v	3	Williams	37276	1998 FD ₆₁
1998 FG ₆₁	15.3	0.15	20000226	63.35199	76.96610	270.21854	1.30667	0.1186448	2.1731979	60	2	1998–1999	0.66	M-v	3	Williams	37145	1998 FG ₆₁
1998 FO ₆₁	15.3	0.15	20000226	139.89552	28.80577	219.19918	2.73603	0.1239462	2.3914670	72	3	1977–1999	0.81	M-v	3	Williams	36529	1998 FO ₆₁
1998 FS ₆₂	15.3	0.15	20000226	137.75414	46.63541	200.31094	6.07469	0.1127370	2.4250804	65	2	1998–1999	0.55	M-v	3	Williams	36895	1998 FS ₆₂
1998 FS ₆₃	14.7	0.15	20000226	43.53634	330.34613	29.58705	7.60864	0.1483320	2.2009031	74	4	1986–1999	0.53	M-v	2	Williams	37276	1998 FS ₆₃
1998 FZ ₆₃	14.2	0.15	20000226	80.29762	276.69519	37.73725	6.78349	0.1235772	2.3412315	70	3	1992–1999	0.64	M-v	2	Williams	37146	1998 FZ ₆₃
1998 FQ ₆₄	14.1	0.15	20000226	94.39115	289.10016	15.71879	6.45233	0.1241993	2.3217923	141	3	1991–2000	0.55	M-v	2	Williams	37276	1998 FQ ₆₄
1998 FK ₆₅	15.0	0.15	20000226	138.94211	64.30304	216.33084	4.84089	0.1780025	2.2294371	105	2	1998–2000	0.55	M-v	3	Williams	37276	1998 FK ₆₅
1998 FS ₆₅	15.3	0.15	20000226	184.22284	317.68526	253.85984	2.36150	0.1085939	2.2887846	112	2	1998–1999	0.63	M-v	3	Williams	37276	1998 FS ₆₅
1998 FT ₆₅	14.9	0.15	20000226	136.14669	288.10713	355.48472	6.27680	0.1522405	2.2098320	110	3	1992–2000	0.65	M-v	2	Williams	37276	1998 FT ₆₅
1998 FK ₆₇	14.5	0.15	20000226	87.85468	168.68827	148.84969	5.99184	0.1668264	2.2984736	53	2	1998–2000	0.65	M-v	4	Williams	37146	1998 FK ₆₇
1998 FS ₆₈	14.4	0.15	20000226	123.90776	36.52844	250.09723	3.13619	0.1148976	2.2596256	156	3	1994–2000	0.60	M-v	2	Williams	37276	1998 FS ₆₈
1998 FA ₆₉	14.6	0.15	20000226	126.97908	301.50029	355.06648	2.94325	0.1848517	2.2220214	96	2	1998–1999	0.51	M-v	4	Williams	37276	1998 FA ₆₉
1998 FQ ₆₉	14.0	0.15	20000226	24.25300	179.03518	182.41401	11.82004	0.2516230	2.4150170	116	3	1994–2000	0.60	M-v	2	Williams	37276	1998 FQ ₆₉
1998 FA ₇₀	15.3	0.15	20000226	96.32971	255.03276	63.00832	4.07997	0.2691320	2.3463421	79	2	1998–1999	0.62	M-v	4	Williams	37276	1998 FA ₇₀
1998 FM ₇₀	14.2	0.15	20000226	78.31393	271.48061	50.11283	2.66065	0.2112300	2.4119875	103	4	1969–1999	0.58	M-v	2	Williams	37276	1998 FM ₇₀
1998 FN ₇₀	14.7	0.15	20000226	68.91803	292.72765	30.94267	6.52001	0.1520523	2.4148606	108	3	1984–1999	0.66	M-v	2	Williams	37276	1998 FN ₇₀
1998 FC ₇₁	15.5	0.15	20000226	154.54213	58.20902	199.74324	2.44884	0.1143717	2.2373231	62	2	1998–1999	0.69	M-v	4	Williams	37276	1998 FC ₇₁
1998 FZ ₇₁	15.1	0.15	20000226	113.68327	316.06591	323.99357	2.01199	0.1758820	2.3899407	58	2	1998–1999	0.61	M-v	4	Williams	37277	1998 FZ ₇₁
1998 FB ₇₂	16.6	0.15	19980308	320.71811	192.67110	38.74058	3.15880	0.1589425	2.3740361	16	1	29 days	1.24			Williams		1998 FB ₇₂
1998 FR ₇₂	15.1	0.15	20000226	108.30269	286.27678	23.55949	2.76525	0.2216068	2.2948513	63	2	1998–1999	0.70	M-v	4	Williams	37277	1998 FR ₇₂
1998 FV ₇₂	14.3	0.15	19980328	102.29311	268.92709	165.57314	10.51295	0.0685436	3.0031656	42	1	53 days	0.82			Williams		1998 FV ₇₂
1998 FF ₇₃	15.7	0.15	20000226	79.16143	358.91734	5.29650	19.56558	0.0879653	1.9390211	64	3	1971–1999	0.75	M-v	3	Williams	37277	1998 FF ₇₃
1998 FE ₇₄	15.7	0.15	19980308	352.84375	54.77870	134.88189	2.90607	0.1672086	2.7425053	27	1	51 days	1.34			Williams		1998 FE ₇₄
1998 FF ₇₄	13.2	0.15	20000226	281.11265	299.43850	78.70945	3.11469	0.1453473	3.2470971	39	3	1997–1999	0.61	M-v	4	Williams	34913	1998 FF ₇₄
1998 FG ₇₅	14.9	0.15	20000226	82.70479	129.12107	189.97629	6.04395	0.1344068	2.3630531	124	2	1998–2000	0.68	M-v	3	Williams	37277	1998 FG ₇₅
1998 FG ₇₇	13.9	0.15	20000226	78.05091	245.50268	76.44413	6.87157	0.1807841	2.3673514	79	2	1998–2000	0.61	M-v	3	Williams	37277	1998 FG ₇₇
1998 FM ₇₈	15.1	0.15	20000226	108.04751	246.91669	71.05286	4.34857	0.1568347	2.1816445	74	2	1998–1999	0.59	M-v	4	Williams	37277	1998 FM ₇₈
1998 FS ₇₈	14.9	0.15	20000226	18.54157	262.14141	114.63757	4.64360	0.1543807	2.3134721	35	2	1998–1999	0.83	M-v	4	Williams	36895	1998 FS ₇₈
1998 FV ₇₈	14.3	0.15	20000226	131.76266	209.37642	80.34771	5.22232	0.1639058	2.2355577	65	2	1998–1999	0.46	M-v	4	Williams	37146	1998 FV ₇₈
1998 FT ₇₉	14.6	0.15	20000226	89.73588	117.33308	178.87901	12.80098	0.1428996	2.6084815	48	2	1998–1999	0.66	M-v	3	Williams	37146	1998 FT ₇₉
1998 FB ₈₀	14.7	0.15	20000226	214.29073	2.81917	101.32003	4.12956	0.1614801	2.7395134	30	3	1973–1998	0.85	M-v	4	Williams	32324	1998 FB ₈₀
1998 FE ₈₀	15.6	0.15	19980308	312.55226	98.32972	141.35069	5.15641	0.1491570	2.2876201	23	1	51 days	0.52			Williams		1998 FE ₈₀
1998 FF ₈₀	13.5	0.15	19980308	206.26046	222.30536	117.06500	5.61681	0.1132318	3.2296407	17	1	51 days	1.08			Williams		1998 FF ₈₀
1998 FG ₈₀	15.6	0.15	20000226	174.08918	131.34696	83.36857	3.70406	0.1318319	2.3032208	38	2	1998–1999	0.80	M-v	4	Williams	36530	1998 FG ₈₀
1998 FJ ₈₀	14.3	0.15	19980308	43.50981	345.09901	130.64378	5.74572	0.2099444	3.0105959	21	1	49 days	0.80			Williams		1998 FJ ₈₀
1998 FV ₉₀	14.7	0.15	20000226	77.84164	217.16744	96.35901	5.06950	0.2530722	2.3298761	37	3	1995–1999	0.74	M-v	3	Williams	37146	1998 FV ₉₀
1998 FO ₁₀₃	14.6	0.15	20000226	106.70495	335.27015	320.56758	5.09580	0.1759761	2.3052737	47	2	1998–1999	0.70	M-v	4	Williams	36805	1998 FO ₁₀₃
1998 FU ₁₀₈	14.3	0.15	20000226	7.23950	57.08963	318.33238	5.77539	0.1403295	2.3296326	57	2	1998–1999	0.63	M-v	3	Williams	36530	1998 FU ₁₀₈
1998 FN ₁₀₉	14.5	0.15	20000226	165.53825	319.96502	282.75830	4.47743	0.0363088	2.1782077	56	2	1998–1999	0.49	M-v	3	Williams	36805	1998 FN ₁₀₉
1998 FT ₁₁₀	14.7	0.15	20000226	55.13166	87.06750	231.33741	10.50735	0.2021169	2.6335080	50	2	1998–1999	0.68	M-v	3	Williams	37277	1998 FT ₁₁₀
1998 FP ₁₁₃	14.2	0.15	20000226	86.02840	340.26149	324.46830	6.99720	0.1374223	2.4311398	66	2	1998–2000	0.53	M-v	3	Williams	36805	1998 FP ₁₁₃
1998 FS ₁₁₃	14.6	0.15	20000226	108.08980	55.25016	253.68350	5.72880	0.2050249	2.2675899	57	2	1998–2000	0.56	M-v	4	Williams	37146	1998 FS ₁₁₃
1998 FK ₁₁₅	14.2	0.15	20000226	34.29897	123.50323	248.07320	5.93302	0.1486480	2.2957974	75	2	1998–1999	0.52	M-v	3	Williams	37277	1998 FK ₁₁₅
1998 FD ₁₁₆	13.9	0.15	20000226	90.12283	328.10913	331.05870	5.94265	0.1304396	2.4297912	71	2	1998–2000	0.51	M-v	3	Williams	37277	1998 FD ₁₁₆
1998 FC ₁₁₇	14.6	0.15	20000226	80.24910	92.32946	234.20899	5.69136	0.1343697	2.2929494	121	2	1998–1999	0.67	M-v	3	Williams	37277	1998 FC ₁₁₇
1998 FB ₁₁₈	15.0	0.15	20000226	117.06821	306.47876	350.56728	6.19915	0.1240349	2.2867604	46	2	1998–2000	0.62	M-v	4	Williams	36806	1998 FB ₁₁₈
1998 FC ₁₁₈	14.5	0.15	20000226	30.81820	136.46350	240.32259	6.13153	0.1753950	2.2551009	105	4	1987–1999	0.59	M-v	2	Williams	37277	1998 FC ₁₁₈
1998 FN ₁₁₈	14.3	0.15	20000226	34.17986	140.59258	206.15987	22.04487	0.0418110	2.4228851	72	2	1998–1999	0.66	M-v	3	Williams	36896	1998 FN ₁₁₈
1998 FW ₁₁₈	14.8	0.15	20000226	87.23810	80.75939	247.36687	4.56914	0.1554464	2.2569818	73	3	1982–2000	0.74	M-v	3	Williams	37147	1998 FW ₁₁₈
1998 FU ₁₂₀	15.2	0.15	20000226	87.64596	93.35165	236.16709	1.11969	0.1751493	2.1265131	77	3	1996–2000	0.72	M-v	3	Williams	37277	1998 FU ₁₂₀
1998 FK ₁₂₁	12.9	0.15	19980308	244.44039	273.10292	40.35217	5.66031	0.1437826	3.9561990	26	1	49 days	1.39			Williams		1998 FK ₁₂₁

1998 FT ₁₂₁	14.9	0.15	20000226	145.76358	76.23030	185.45143	5.02399	0.1480249	2.2632944	74	2	1998–1999	0.69	M-v	4	Williams	37277	1998 FT ₁₂₁
1998 FQ ₁₂₂	14.5	0.15	20000226	76.83918	282.71026	24.10390	10.64049	0.2677075	2.6290903	70	2	1998–1999	0.61	M-v	4	Williams	37277	1998 FQ ₁₂₂
1998 FN ₁₂₆	14.7	0.15	20000226	136.15725	1.00358	292.71549	2.72763	0.1599836	2.1563910	117	3	1976–1999	0.64	M-v	2	Williams	37277	1998 FN ₁₂₆
1998 FP ₁₂₆	14.8	0.15	20000226	105.88391	45.37895	161.42376	8.02395	0.1179625	3.1459308	30	2	1994–1998	0.60	M-v	4	Williams	32754	1998 FP ₁₂₆
1998 FC ₁₂₇	15.0	0.15	20000226	112.29558	220.64724	58.49426	7.29197	0.0924892	2.3153475	77	3	1984–1999	0.66	M-v	2	Williams	37277	1998 FC ₁₂₇
1998 FP ₁₃₀	16.0	0.15	19980308	203.62420	247.18323	88.90624	2.60650	0.0320598	2.2856190	23	1	29 days	1.17			Williams		1998 FP ₁₃₀
1998 FS ₁₄₄	6.7	0.15	20000226	90.11775	205.92397	228.77304	9.87948	0.0416771	41.8369522	14	3	1998–2000	0.32	M-v	5	Marsden	35439	1998 FS ₁₄₄
1998 GF	14.9	0.15	20000226	283.75962	122.21829	35.26947	22.40662	0.0313677	1.9403988	98	3	1990–2000	0.56	M-v	2	Williams	37277	1998 GF
1998 GK	14.8	0.15	20000226	216.85175	211.96166	33.90017	24.78510	0.1589343	1.9326894	64	3	1980–1999	0.56	M-v	2	Williams	37277	1998 GK
1998 GK ₁	13.4	0.15	20000226	76.93226	331.92610	331.97495	8.27881	0.1805312	2.5734025	93	3	1970–2000	0.48	M-v	2	Williams	37277	1998 GK ₁
1998 GN ₁	15.9	0.15	19980328	41.79867	41.26341	91.62230	2.53997	0.1161744	2.4246896	24	1	55 days	0.60			Williams		1998 GN ₁
1998 GO ₁	14.3	0.15	20000226	193.12162	73.44178	146.64431	8.76241	0.1415945	2.2998590	95	2	1998–2000	0.46	M-v	3	Williams	37277	1998 GO ₁
1998 HX	13.6	0.15	20000226	91.84565	194.50549	113.31637	4.33255	0.1012820	2.3930194	90	2	1998–2000	0.56	M-v	3	Williams	37278	1998 HX
1998 HU ₂	16.2	0.15	20000226	48.62556	249.36874	110.16747	5.00584	0.2466341	2.6068688	25	2	1998–1999	0.46	M-v	4	Williams	37147	1998 HU ₂
1998 HX ₂	15.1	0.15	20000226	356.34747	245.09549	202.08340	21.22877	0.1513799	1.9469322	99	2	1998–2000	0.55	M-v	3	Williams	37278	1998 HX ₂
1998 HF ₄	15.2	0.15	20000226	36.90897	282.76193	76.09305	6.91862	0.1351138	2.4027228	33	2	1998–1999	0.64	M-v	4	Williams	36807	1998 HF ₄
1998 HH ₄	14.9	0.15	20000226	61.50633	275.96644	75.41515	7.56651	0.1295451	2.4186583	62	2	1998–2000	0.74	M-v	3	Williams	37278	1998 HH ₄
1998 HT ₄	14.4	0.15	20000226	141.73621	225.64872	47.93398	5.89764	0.0610192	2.2581142	95	2	1998–2000	0.63	M-v	3	Williams	37147	1998 HT ₄
1998 HU ₅	14.4	0.15	20000226	54.50351	299.94052	65.52222	6.21163	0.1938467	2.2148529	83	2	1998–2000	0.48	M-v	3	Williams	37147	1998 HU ₅
1998 HU ₆	14.9	0.15	20000226	98.58519	244.20372	87.38753	6.47209	0.1937805	2.3960923	64	2	1998–2000	0.57	M-v	3	Williams	37147	1998 HU ₆
1998 HL ₇	15.4	0.15	20000226	274.32367	115.75283	56.61751	23.02479	0.0572703	1.9774726	34	2	1998–1999	0.62	M-v	4	Williams	37148	1998 HL ₇
1998 HD ₈	15.3	0.15	20000226	219.40302	38.56438	162.09855	4.28884	0.0587632	2.2044415	74	2	1998–1999	0.70	M-v	4	Williams	36896	1998 HD ₈
1998 HE ₈	13.9	0.15	20000226	145.21552	37.37103	210.98467	6.80860	0.0734238	2.4432783	113	4	1991–1999	0.63	M-v	2	Williams	37278	1998 HE ₈
1998 HT ₈	14.0	0.15	20000226	21.17788	322.19423	60.47288	7.72858	0.1198974	2.2690090	52	3	1989–1999	0.62	M-v	3	Williams	37148	1998 HT ₈
1998 HB ₁₁	14.1	0.15	20000226	92.80695	259.09378	41.23974	17.78555	0.2059596	2.5681756	80	2	1998–2000	0.57	M-v	3	Williams	37148	1998 HB ₁₁
1998 HW ₁₃	13.9	0.15	20000226	68.81239	311.26956	347.79471	13.25077	0.2357156	2.6597945	122	3	1986–1999	0.57	M-v	2	Williams	37278	1998 HW ₁₃
1998 HY ₁₃	15.9	0.15	20000226	108.05733	231.66253	91.23371	4.58599	0.1480635	2.1863439	60	2	1998–1999	0.60	M-v	4	Williams	37148	1998 HY ₁₃
1998 HQ ₁₉	14.5	0.15	20000226	83.48793	113.84762	210.36138	7.41653	0.1749070	2.2698414	146	3	1992–2000	0.56	M-v	2	Williams	37278	1998 HQ ₁₉
1998 HS ₁₉	14.1	0.15	20000226	294.55822	327.91569	118.84245	6.30404	0.1228017	2.4429186	58	3	1996–1999	0.58	M-v	3	Williams	36896	1998 HS ₁₉
1998 HQ ₂₃	15.0	0.15	20000226	126.51132	61.26325	229.96919	22.26530	0.1108097	2.4091865	58	2	1998–2000	0.64	M-v	3	Williams	37278	1998 HQ ₂₃
1998 HG ₂₆	15.0	0.15	20000226	64.14955	233.52609	127.54775	3.74122	0.2014292	2.3598154	65	3	1997–2000	0.54	M-v	2	Williams	37148	1998 HG ₂₆
1998 HO ₂₇	13.3	0.15	20000226	60.17582	256.74585	98.38035	6.10271	0.0777127	2.3793910	92	3	1954–2000	0.48	M-v	2	Williams	37278	1998 HO ₂₇
1998 HQ ₂₇	14.3	0.15	20000226	82.33512	94.06013	234.01640	4.94222	0.2297603	2.2840033	110	3	1992–2000	0.53	M-v	2	Williams	37278	1998 HQ ₂₇
1998 HF ₃₀	15.2	0.15	20000226	80.38294	196.50829	125.72636	3.42161	0.2118379	2.3766360	47	3	1994–2000	0.62	M-v	3	Williams	37278	1998 HF ₃₀
1998 HO ₃₀	14.4	0.15	20000226	102.45921	254.80685	75.87539	3.39314	0.2064716	2.1388131	81	2	1998–2000	0.53	M-v	4	Williams	37149	1998 HO ₃₀
1998 HD ₃₂	14.9	0.15	20000226	62.21669	125.09379	221.89228	4.12933	0.1905441	2.2787024	97	3	1997–1999	0.67	M-v	2	Williams	37149	1998 HD ₃₂
1998 HE ₃₂	14.9	0.15	20000226	131.83813	53.03300	238.81383	1.69065	0.1795104	2.2262881	77	2	1998–1999	0.57	M-v	4	Williams	37278	1998 HE ₃₂
1998 HN ₃₂	15.1	0.15	20000226	104.08130	104.14024	195.38226	6.19386	0.1257776	2.3245263	64	2	1998–1999	0.66	M-v	4	Williams	37278	1998 HN ₃₂
1998 HU ₃₂	15.0	0.15	20000226	116.15198	253.86805	40.17052	2.54897	0.1614287	2.3116750	79	2	1998–1999	0.62	M-v	4	Williams	36897	1998 HU ₃₂
1998 HK ₃₃	14.9	0.15	20000226	84.91394	319.01347	0.98504	6.37692	0.1403648	2.3312413	86	3	1981–2000	0.67	M-v	3	Williams	37278	1998 HK ₃₃
1998 HO ₃₃	13.9	0.15	20000226	80.62354	116.49269	211.22790	23.43143	0.1937873	2.3281631	122	2	1998–2000	0.59	M-v	3	Williams	37278	1998 HO ₃₃
1998 HL ₃₄	15.4	0.15	20000226	105.72548	257.20605	53.01918	4.09160	0.1564254	2.2561424	71	2	1998–1999	0.68	M-v	4	Williams	37278	1998 HL ₃₄
1998 HR ₃₄	14.6	0.15	20000226	78.71293	221.24730	106.70354	3.20015	0.2257087	2.3629104	65	2	1998–2000	0.71	M-v	4	Williams	37149	1998 HR ₃₄
1998 HC ₃₆	15.3	0.15	20000226	63.08867	241.73896	114.22315	2.30384	0.1273648	2.1630508	65	2	1998–1999	0.72	M-v	4	Williams	37278	1998 HC ₃₆
1998 HK ₃₆	14.3	0.15	20000226	76.33286	287.32969	50.16183	4.03053	0.2067841	2.2863764	115	4	1978–2000	0.59	M-v	2	Williams	37278	1998 HK ₃₆
1998 HY ₃₇	15.5	0.15	20000226	136.84931	25.55629	270.06649	2.75523	0.1623226	2.1694833	64	2	1998–1999	0.70	M-v	4	Williams	37149	1998 HY ₃₇
1998 HE ₃₈	14.3	0.15	20000226	126.45898	52.82702	234.80673	3.66213	0.1558203	2.3004966	106	2	1998–2000	0.54	M-v	3	Williams	37278	1998 HE ₃₈
1998 HO ₃₈	15.6	0.15	20000226	117.08907	76.75510	237.69339	1.89483	0.0968915	2.1285815	96	3	1993–2000	0.63	M-v	2	Williams	37278	1998 HO ₃₈
1998 HC ₄₂	15.7	0.15	20000226	98.40943	263.53856	67.24808	7.16374	0.2064532	2.2418698	44	2	1998–1999	0.64	M-v	5	Williams	37149	1998 HC ₄₂
1998 HO ₄₂	13.5	0.15	20000226	224.97311	5.58771	99.32553	10.02649	0.1120545	2.7845128	43	8	1956–1999	0.82	M-v	1	Williams	34917	1998 HO ₄₂
1998 HU ₄₃	13.9	0.15	20000226	345.71385	16.92153	38.00943	7.22516	0.1381469	2.1951280	71	4	1978–2000	0.61	M-v	2	Williams	37278	1998 HU ₄₃
1998 HK ₄₅	14.4	0.15	20000226	100.41328	293.36086	8.58621	9.88306	0.1873463	2.4456032	99	3	1971–2000	0.63	M-v	1	Williams	37278	1998 HK ₄₅
1998 HN ₄₉	14.9	0.15	20000226	169.87376	35.87098	215.77129	3.46200	0.1154348	2.3041064	104	2	1998–2000	0.53	M-v	3	Williams	37278	1998 HN ₄₉

1998 HW ₅₀	14.6	0.15	20000226	107.54215	329.26281	350.37700	4.04332	0.1940663	2.2464891	51	2	1998–1999	0.58	M-v	4	Williams	37150	1998 HW ₅₀
1998 HE ₅₁	15.0	0.15	20000226	126.37693	105.16133	213.41346	3.89008	0.1762264	2.1706749	75	3	1973–2000	0.79	M-v	3	Williams	37278	1998 HE ₅₁
1998 HJ ₅₁	14.0	0.15	20000226	52.77455	251.84835	103.46893	6.59361	0.1445533	2.3846751	109	3	1997–2000	0.57	M-v	2	Williams	37278	1998 HJ ₅₁
1998 HR ₅₁	15.3	0.15	20000226	171.09878	167.32061	82.17550	2.89199	0.1217326	2.1668473	49	2	1998–1999	0.59	M-v	4	Williams	36808	1998 HR ₅₁
1998 HS ₅₁	14.1	0.15	20000226	134.01975	240.85183	47.02157	7.06080	0.1325410	2.2621065	76	2	1998–2000	0.54	M-v	3	Williams	37150	1998 HS ₅₁
1998 HT ₅₁	14.6	0.15	20000226	104.48193	250.56734	65.93210	3.87063	0.1490754	2.2903524	93	3	1996–2000	0.53	M-v	2	Williams	37278	1998 HT ₅₁
1998 HU ₅₁	14.2	0.15	20000226	111.66810	248.71940	59.30875	5.18645	0.2108984	2.3616729	70	2	1998–1999	0.47	M-v	4	Williams	37278	1998 HU ₅₁
1998 HH ₅₂	14.4	0.15	20000226	77.45128	327.21942	35.81097	7.11685	0.2383403	2.1549617	41	3	1983–2000	0.57	M-v	3	Williams	37278	1998 HH ₅₂
1998 HO ₅₂	14.8	0.15	20000226	144.93363	222.08605	74.24627	4.28974	0.1824432	2.2069937	56	2	1998–2000	0.64	M-v	4	Williams	37150	1998 HO ₅₂
1998 HG ₅₃	14.5	0.15	20000226	113.30922	69.07886	229.56616	2.44023	0.2029713	2.3658337	100	2	1998–1999	0.53	M-v	3	Williams	37278	1998 HG ₅₃
1998 HP ₆₄	15.5	0.15	20000226	137.12603	37.32910	203.47829	3.45348	0.1926897	2.6137596	30	2	1998–1999	0.56	M-v	4	Williams	37150	1998 HP ₆₄
1998 HR ₆₇	14.6	0.15	20000226	155.98381	249.91785	20.05057	7.30715	0.1459840	2.2122378	94	2	1998–2000	0.58	M-v	3	Williams	37278	1998 HR ₆₇
1998 HX ₇₈	14.7	0.15	20000226	97.58377	52.65918	251.54284	4.89716	0.1096729	2.4237933	90	3	1980–1999	0.58	M-v	2	Williams	37279	1998 HX ₇₈
1998 HL ₇₉	15.5	0.15	20000226	298.48287	231.26243	243.39228	4.84386	0.0247626	2.2075637	56	2	1998–1999	0.49	M-v	4	Williams	36897	1998 HL ₇₉
1998 HH ₈₀	14.1	0.15	20000226	59.29583	339.32931	20.66360	5.88661	0.1889651	2.2939188	107	4	1971–2000	0.48	M-v	2	Williams	37279	1998 HH ₈₀
1998 HB ₈₇	15.4	0.15	20000226	132.67850	16.84563	278.52203	2.20223	0.2309142	2.3152165	56	2	1998–1999	0.59	M-v	4	Williams	37150	1998 HB ₈₇
1998 HB ₈₈	14.5	0.15	20000226	125.23827	55.33011	234.38625	8.28158	0.2529482	2.4509246	99	3	1995–1999	0.54	M-v	2	Williams	37279	1998 HB ₈₈
1998 HA ₉₃	14.6	0.15	20000226	75.52413	329.65869	9.32108	2.13559	0.2094459	2.4261353	117	3	1995–2000	0.53	M-v	2	Williams	37279	1998 HA ₉₃
1998 HL ₉₃	14.9	0.15	20000226	136.79551	46.73661	248.62938	3.42801	0.1742848	2.2505431	64	2	1998–2000	0.68	M-v	4	Williams	37279	1998 HL ₉₃
1998 HY ₉₃	13.2	0.15	20000226	62.36421	276.01979	7.23823	5.04603	0.1071509	3.1873009	67	2	1998–1999	0.54	M-v	3	Williams	36898	1998 HY ₉₃
1998 HK ₉₄	14.9	0.15	20000226	63.00022	102.68436	247.62504	1.71516	0.1785009	2.3923185	73	2	1998–2000	0.58	M-v	3	Williams	37279	1998 HK ₉₄
1998 HV ₉₅	15.1	0.15	20000226	73.06478	262.84345	85.86269	5.29950	0.1782634	2.3174472	71	3	1997–2000	0.66	M-v	3	Williams	37279	1998 HV ₉₅
1998 HV ₉₇	14.3	0.15	20000226	65.41554	23.46953	316.70980	3.89280	0.2660716	2.6096320	79	3	1997–2000	0.65	M-v	2	Williams	37279	1998 HV ₉₇
1998 HA ₉₈	14.3	0.15	20000226	79.02707	298.37566	19.78424	11.65051	0.1988846	2.6421902	82	3	1995–2000	0.62	M-v	2	Williams	37279	1998 HA ₉₈
1998 HC ₉₉	14.6	0.15	20000226	106.49934	264.21820	65.26801	4.46134	0.1831933	2.2469978	64	3	1996–2000	0.58	M-v	3	Williams	37279	1998 HC ₉₉
1998 HQ ₁₀₀	14.6	0.15	20000226	168.18586	173.50932	85.56641	2.60107	0.0421953	2.1827544	88	3	1973–2000	0.63	M-v	3	Williams	37279	1998 HQ ₁₀₀
1998 HY ₁₀₀	15.1	0.15	20000226	166.79391	203.87717	53.72778	3.20345	0.1178832	2.2447748	58	2	1998–1999	0.54	M-v	4	Williams	37279	1998 HY ₁₀₀
1998 HW ₁₀₁	14.3	0.15	20000226	210.38207	181.25403	31.62762	6.49208	0.0543083	2.2152539	141	3	1986–2000	0.52	M-v	3	Williams	37279	1998 HW ₁₀₁
1998 HZ ₁₀₁	15.9	0.15	20000226	164.70109	23.88390	230.41510	5.89728	0.0867467	2.3098648	27	2	1998–1999	0.65	M-v	4	Williams	36810	1998 HZ ₁₀₁
1998 HF ₁₀₂	15.1	0.15	20000226	193.99726	330.31782	275.86540	1.69446	0.1203831	2.1474305	75	2	1998–1999	0.56	M-v	3	Williams	37279	1998 HF ₁₀₂
1998 HO ₁₀₂	14.9	0.15	20000226	185.83110	23.05120	216.17487	4.19410	0.1303232	2.2510654	61	3	1994–1999	0.56	M-v	4	Williams	37279	1998 HO ₁₀₂
1998 HS ₁₀₂	14.3	0.15	20000226	58.51852	301.89639	18.23195	2.30953	0.2087341	3.0483528	63	2	1998–1999	0.53	M-v	3	Williams	37279	1998 HS ₁₀₂
1998 HE ₁₀₃	14.9	0.15	20000226	170.60244	230.32281	41.78028	6.64887	0.1824227	2.2017624	60	2	1998–1999	0.65	M-v	4	Williams	37279	1998 HE ₁₀₃
1998 HT ₁₀₇	15.0	0.15	20000226	134.01808	201.68321	72.01018	6.78633	0.0536223	2.2740446	61	3	1996–1999	0.68	M-v	3	Williams	37279	1998 HT ₁₀₇
1998 HO ₁₁₇	14.2	0.15	20000226	39.70745	282.80397	93.73203	7.21423	0.1789949	2.2785814	69	3	1992–2000	0.68	M-v	2	Williams	37279	1998 HO ₁₁₇
1998 HN ₁₁₉	14.5	0.15	20000226	92.16078	112.52901	185.45161	11.61730	0.1617597	2.6380800	90	2	1998–1999	0.61	M-v	3	Williams	37279	1998 HN ₁₁₉
1998 HA ₁₂₀	13.5	0.15	20000226	10.00179	217.38250	123.92943	12.18646	0.1170628	3.0727446	27	2	1998–1999	0.63	M-v	4	Williams	36810	1998 HA ₁₂₀
1998 HE ₁₂₃	14.3	0.15	20000226	116.58689	213.29548	80.75897	7.84787	0.1148511	2.4031450	56	2	1998–2000	0.55	M-v	3	Williams	37279	1998 HE ₁₂₃
1998 HK ₁₂₄	14.4	0.15	20000226	52.16773	250.43385	126.97643	6.20697	0.1191536	2.2142344	88	3	1984–2000	0.56	M-v	2	Williams	37279	1998 HK ₁₂₄
1998 HQ ₁₃₂	14.8	0.15	20000226	134.52525	141.95867	112.29922	3.33005	0.1714792	2.3914227	32	1	60 days	0.62	M-v	5	Williams	36898	1998 HQ ₁₃₂
1998 HA ₁₃₄	13.7	0.15	19980308	95.33640	279.66434	157.82112	10.20703	0.0818795	3.0545047	13	1	51 days	0.89			Williams		1998 HA ₁₃₄
1998 HS ₁₃₅	15.1	0.15	19980308	53.30764	324.24418	157.07176	10.91882	0.0559444	2.6362653	19	1	56 days	0.63			Williams		1998 HS ₁₃₅
1998 HP ₁₃₉	14.9	0.15	20000226	199.45469	233.45608	340.40775	3.62952	0.0763795	2.1975369	80	2	1998–2000	0.64	M-v	3	Williams	36810	1998 HP ₁₃₉
1998 HY ₁₄₇	15.4	0.15	20000226	192.13165	205.30536	45.55189	1.58131	0.1237149	2.1446676	73	2	1998–1999	0.69	M-v	4	Williams	37279	1998 HY ₁₄₇
1998 HA ₁₄₈	14.4	0.15	20000226	309.15804	238.04904	239.77707	3.54358	0.0806323	2.1752243	92	3	1991–2000	0.58	M-v	2	Williams	37150	1998 HA ₁₄₈
1998 HK ₁₄₈	15.3	0.15	20000226	170.17718	192.19293	62.77041	3.66209	0.1641948	2.3031001	46	3	1991–1999	0.67	M-v	3	Williams	32331	1998 HK ₁₄₈
1998 HO ₁₄₈	15.2	0.15	20000226	157.44995	263.14899	31.01653	2.29817	0.1051047	2.1372211	58	3	1983–2000	0.66	M-v	3	Williams	37279	1998 HO ₁₄₈
1998 HS ₁₄₈	15.3	0.15	20000226	117.22944	282.91001	7.50563	0.81256	0.1457399	2.5456194	35	2	1998–1999	0.74	M-v	4	Williams	36811	1998 HS ₁₄₈
1998 HU ₁₄₈	14.7	0.15	20000226	124.95925	49.32927	240.33731	3.06126	0.2548223	2.55566363	62	2	1998–1999	0.81	M-v	4	Williams	37279	1998 HU ₁₄₈
1998 HW ₁₄₈	14.9	0.15	20000226	54.27697	4.59252	338.43299	0.58354	0.0894591	2.6401151	38	2	1998–1999	0.75	M-v	3	Williams	37150	1998 HW ₁₄₈
1998 HD ₁₄₉	14.3	0.15	20000226	112.62842	52.29914	230.36453	1.50594	0.0902402	2.6349840	37	2	1998–1999	0.64	M-v	3	Williams	37151	1998 HD ₁₄₉
1998 HT ₁₄₉	13.5	0.15	20000226	84.32354	264.54785	43.73999	9.43909	0.1508672	2.7774978	88	2	1998–2000	0.60	M-v	3	Williams	37279	1998 HT ₁₄₉
1998 JE	14.4	0.15	20000226	66.26531	238.36570	99.90912	3.80086	0.0913469	2.3207271	60	2	1998–2000	0.63	M-v	3	Williams	37280	1998 JE

1998 JQ	14.0	0.15	20000226	105.35959	306.19208	7.50130	7.44519	0.1425561	2.3211154	80	3	1994-2000	0.54	M-v	2	Williams	37280	1998 JQ
1998 JS	14.4	0.15	20000226	116.25549	44.62966	266.83612	4.58462	0.1604075	2.2691586	56	2	1998-1999	0.50	M-v	4	Williams	37151	1998 JS
1998 JT	14.4	0.15	20000226	97.36348	86.00083	251.32499	6.11780	0.2205335	2.2539909	81	3	1985-2000	0.52	M-v	2	Williams	37280	1998 JT
1998 JX	15.2	0.15	20000226	161.48710	34.65362	225.82434	5.08295	0.1748126	2.2693458	67	2	1998-1999	0.60	M-v	4	Williams	37280	1998 JX
1998 JJ ₁	15.3	0.15	20000226	30.80340	201.23522	229.27836	19.89564	0.0929304	1.9328694	67	2	1998-2000	0.41	M-v	3	Williams	37280	1998 JJ ₁
1998 JO ₁	13.2	0.15	20000226	60.76728	229.13095	59.82677	2.10421	0.1327915	3.2400560	69	4	1982-1999	0.59	M-v	2	Williams	36083	1998 JO ₁
1998 JP ₁	15.3	0.15	20000226	123.53236	233.43136	63.77423	3.43297	0.1894717	2.3880965	63	3	1991-1999	0.60	M-v	3	Williams	37151	1998 JP ₁
1998 JT ₁	14.5	0.15	20000226	107.02045	207.27990	107.08989	3.35459	0.2070247	2.4191038	82	3	1991-1999	0.47	M-v	2	Williams	37151	1998 JT ₁
1998 JY ₁	13.6	0.15	20000226	15.08277	74.78509	303.31621	6.08615	0.1257417	2.6400885	81	3	1984-1999	0.60	M-v	3	Williams	37280	1998 JY ₁
1998 JZ ₁	15.1	0.15	20000226	172.79430	246.56818	41.34702	5.81822	0.2912392	2.1556861	47	3	1976-2000	0.71	M-v	3	Williams	36898	1998 JZ ₁
1998 JB ₂	14.2	0.15	20000226	112.47440	245.39075	61.15399	5.53894	0.1024052	2.3873980	84	3	1995-2000	0.62	M-v	2	Williams	37151	1998 JB ₂
1998 JO ₂	14.8	0.15	20000226	238.75199	87.71250	81.21621	9.62266	0.0632750	2.2893928	64	3	1996-1999	0.59	M-v	3	Williams	36898	1998 JO ₂
1998 JQ ₂	14.1	0.15	20000226	77.61069	164.90120	154.95507	8.16473	0.1976037	2.6866672	53	3	1990-2000	0.69	M-v	2	Williams	37280	1998 JQ ₂
1998 JE ₄	14.6	0.15	20000226	121.90509	22.57310	235.57351	12.99035	0.1588847	2.7211860	59	2	1998-1999	0.76	M-v	3	Williams	36535	1998 JE ₄
1998 JK ₄	14.3	0.15	20000226	141.19992	72.14349	221.28042	3.52711	0.1553947	2.2655023	106	3	1991-1999	0.65	M-v	3	Williams	37280	1998 JK ₄
1998 KB	15.3	0.15	20000226	85.81911	129.19474	194.78214	0.99322	0.1313642	2.5416336	56	2	1998-1999	0.54	M-v	3	Williams	37280	1998 KB
1998 KZ	15.3	0.15	20000226	118.75690	306.28183	49.03676	22.94386	0.0666257	1.9460857	44	3	1996-1999	0.69	M-v	2	Williams	36899	1998 KZ
1998 KP ₁	14.5	0.15	20000226	94.74450	120.63356	191.65390	1.23100	0.1784807	2.5324004	87	2	1998-2000	0.55	M-v	3	Williams	37280	1998 KP ₁
1998 KS ₁	14.6	0.15	20000226	121.64041	83.81654	233.70150	4.71294	0.1715034	2.2268402	88	3	1992-2000	0.59	M-v	3	Williams	37280	1998 KS ₁
1998 KK ₂	13.9	0.15	20000226	99.96444	254.54445	80.64995	14.73321	0.2821903	2.4578955	64	2	1998-2000	0.56	M-v	3	Williams	37152	1998 KK ₂
1998 KL ₂	15.2	0.15	20000226	121.84629	220.07477	73.85246	13.83319	0.2831651	2.5796487	58	2	1998-2000	0.60	M-v	4	Williams	37152	1998 KL ₂
1998 KQ ₂	13.9	0.15	20000226	183.67497	359.12399	249.45659	22.93888	0.1091707	2.2696414	64	3	1989-2000	0.71	M-v	3	Williams	37280	1998 KQ ₂
1998 KP ₃	14.8	0.15	20000226	104.15678	104.54803	228.81387	5.81742	0.1370904	2.3561549	64	3	1995-2000	0.56	M-v	2	Williams	37280	1998 KP ₃
1998 KA ₄	15.1	0.15	20000226	150.86688	207.45707	80.69316	7.96706	0.1575853	2.2436662	71	2	1998-2000	0.56	M-v	3	Williams	37152	1998 KA ₄
1998 KS ₄	14.0	0.15	20000226	43.73246	294.74266	79.24162	7.98576	0.1235384	2.4465601	91	3	1993-2000	0.66	M-v	2	Williams	37280	1998 KS ₄
1998 KU ₄	14.4	0.15	20000226	93.84274	272.39951	75.30359	7.73239	0.1510849	2.2900185	88	2	1998-2000	0.52	M-v	3	Williams	37280	1998 KU ₄
1998 KW ₄	15.5	0.15	20000226	195.88117	12.42894	213.20421	4.56712	0.1411824	2.2852422	48	3	1996-1999	0.58	M-v	4	Williams	36899	1998 KW ₄
1998 KB ₅	15.6	0.15	20000226	166.86173	31.28045	253.08610	4.99419	0.1496496	2.1697485	85	3	1991-2000	0.61	M-v	3	Williams	37280	1998 KB ₅
1998 KC ₅	13.0	0.15	20000226	359.14873	243.16093	137.73804	2.74563	0.1273887	2.9331191	116	6	1974-1999	0.55	M-v	3	Williams	37280	1998 KC ₅
1998 KD ₅	12.9	0.15	20000226	95.76330	274.70042	42.38055	10.12987	0.0891858	3.0720293	108	3	1997-1999	0.54	M-v	2	Williams	37280	1998 KD ₅
1998 KE ₅	12.7	0.15	20000226	58.72777	183.81199	176.13488	14.75676	0.2130216	3.1414471	62	3	1993-2000	0.54	M-v	1	Williams	37280	1998 KE ₅
1998 KZ ₅	14.2	0.15	20000226	87.65703	132.68420	200.71034	2.55288	0.2619787	3.2297549	44	3	1997-2000	0.65	M-v	3	Williams	37280	1998 KZ ₅
1998 KA ₆	14.2	0.15	20000226	100.48958	183.52093	144.97704	5.06135	0.1788463	2.9869222	35	2	1998-1999	0.67	M-v	3	Williams	37152	1998 KA ₆
1998 KT ₆	15.5	0.15	20000226	137.22106	207.64077	92.41581	6.24580	0.1485388	2.2880657	46	4	1994-2000	0.65	M-v	2	Williams	36899	1998 KT ₆
1998 KX ₆	15.0	0.15	20000226	115.05146	203.89069	131.85088	2.95024	0.1912072	2.2560416	48	3	1997-2000	0.59	M-v	3	Williams	37280	1998 KX ₆
1998 KC ₈	14.8	0.15	20000226	293.13621	218.12512	261.76845	5.58794	0.0723150	2.3155157	51	3	1978-1999	0.63	M-v	2	Williams	37280	1998 KC ₈
1998 KK ₈	13.5	0.15	20000226	73.33015	91.52565	202.03492	10.31579	0.0753951	3.0018428	87	2	1998-1999	0.55	M-v	3	Williams	37280	1998 KK ₈
1998 KT ₈	14.3	0.15	20000226	105.04225	163.81654	117.66338	9.13650	0.1899813	2.8029257	55	2	1998-1999	0.51	M-v	3	Williams	37280	1998 KT ₈
1998 KK ₉	15.0	0.15	20000226	137.27946	196.55292	100.38047	3.50593	0.1430506	2.3241400	96	2	1998-2000	0.55	M-v	3	Williams	37152	1998 KK ₉
1998 KD ₁₀	14.7	0.15	20000226	74.54811	272.62468	58.61130	8.48185	0.1368139	2.4711211	54	2	1998-1999	0.77	M-v	4	Williams	37153	1998 KD ₁₀
1998 KJ ₁₀	15.2	0.15	20000226	18.53347	248.96945	148.01357	5.97371	0.0432709	2.3127296	36	2	1998-1999	0.69	M-v	4	Williams	37153	1998 KJ ₁₀
1998 KK ₁₇	16.4	0.15	20000226	61.50044	333.87607	141.46814	11.14686	0.5244666	1.4255177	144	3	1992-1999	0.58	M-v	2	Williams	36535	1998 KK ₁₇
1998 KZ ₂₆	15.1	0.15	20000226	59.37713	304.53818	43.76291	9.56616	0.1336598	2.5591055	58	3	1995-2000	0.69	M-v	3	Williams	37280	1998 KZ ₂₆
1998 KF ₂₈	14.6	0.15	20000226	150.97771	356.92784	287.58706	5.38478	0.1689511	2.2765314	41	2	1998-1999	0.63	M-v	4	Williams	37153	1998 KF ₂₈
1998 KH ₃₂	14.8	0.15	20000226	79.08359	101.26279	238.92048	1.97095	0.1942017	2.5354844	85	3	1995-1999	0.56	M-v	3	Williams	37280	1998 KH ₃₂
1998 KJ ₃₃	15.3	0.15	20000226	108.80919	78.61566	252.06201	4.88143	0.1637396	2.3201282	59	2	1998-2000	0.56	M-v	4	Williams	37280	1998 KJ ₃₃
1998 KU ₃₃	14.2	0.15	20000226	44.98842	260.48363	94.28585	1.81372	0.1774799	2.7462732	57	3	1997-2000	0.55	M-v	2	Williams	37153	1998 KU ₃₃
1998 KZ ₃₃	14.6	0.15	20000226	66.87818	283.20203	67.04749	13.64958	0.2248399	2.6031755	70	3	1978-2000	0.65	M-v	2	Williams	37153	1998 KZ ₃₃
1998 KF ₃₅	13.3	0.15	20000226	80.35379	271.89558	71.97706	7.02207	0.1541355	2.4481544	105	4	1989-2000	0.49	M-v	1	Williams	37280	1998 KF ₃₅
1998 KG ₃₅	15.0	0.15	20000226	83.32188	263.44021	76.14853	5.64141	0.2004849	2.5216467	86	2	1998-2000	0.64	M-v	4	Williams	37154	1998 KG ₃₅
1998 KL ₃₅	14.7	0.15	20000226	348.22346	3.83476	70.32987	5.98570	0.1127496	2.2815140	61	3	1982-2000	0.59	M-v	3	Williams	37280	1998 KL ₃₅
1998 KQ ₃₅	15.2	0.15	20000226	119.19066	64.82223	241.57867	5.78741	0.1131174	2.3794286	58	2	1998-1999	0.67	M-v	4	Williams	37280	1998 KQ ₃₅
1998 KF ₃₆	14.1	0.15	20000226	68.69984	19.76778	304.47902	2.53056	0.0974777	2.7539801	53	3	1997-1999	0.79	M-v	3	Williams	37280	1998 KF ₃₆

1998 KT ₃₆	14.5	0.15	20000226	210.52629	315.39905	256.58194	3.69866	0.1042134	2.2710505	91	3	1996–2000	0.62	M-v	3	Williams	37281	1998 KT ₃₆
1998 KL ₃₇	14.1	0.15	20000226	336.51796	238.83951	206.46316	5.91910	0.0700599	2.2907630	106	3	1992–2000	0.55	M-v	2	Williams	37281	1998 KL ₃₇
1998 KX ₃₇	14.2	0.15	20000226	125.59472	169.33093	89.20216	9.26480	0.1461283	2.7735604	56	3	1995–1999	0.63	M-v	3	Williams	37281	1998 KX ₃₇
1998 KD ₃₈	13.1	0.15	20000226	34.86937	284.35729	78.02035	14.76509	0.2305655	2.8950521	47	2	1998–2000	0.62	M-v	3	Williams	37154	1998 KD ₃₈
1998 KK ₃₈	12.6	0.15	20000226	349.54668	145.48006	239.76049	8.74576	0.1011248	2.9947536	48	3	1984–2000	0.57	M-v	2	Williams	37281	1998 KK ₃₈
1998 KZ ₃₈	13.3	0.15	20000226	135.25797	6.18811	261.92437	13.27570	0.1402479	2.5747750	80	2	1998–2000	0.59	M-v	3	Williams	37281	1998 KZ ₃₈
1998 KM ₃₉	15.4	0.15	20000226	181.95290	54.53916	204.69819	0.69485	0.1529068	2.2086824	69	4	1992–1999	0.61	M-v	2	Williams	37281	1998 KM ₃₉
1998 KE ₄₀	14.0	0.15	20000226	353.54157	307.42949	126.53014	4.41336	0.1266281	2.2658978	74	3	1982–2000	0.69	M-v	3	Williams	37281	1998 KE ₄₀
1998 KS ₄₃	14.5	0.15	20000226	111.00113	226.38400	83.00186	19.11907	0.3054241	2.6642960	41	2	1998–2000	0.61	M-v	4	Williams	37154	1998 KS ₄₃
1998 KH ₄₄	13.5	0.15	20000226	94.98762	48.70791	245.02740	11.74983	0.2073106	2.9351339	53	2	1998–2000	0.63	M-v	3	Williams	37154	1998 KH ₄₄
1998 KQ ₄₄	15.1	0.15	20000226	180.84897	13.84609	218.76679	5.51378	0.1029146	2.4028008	58	2	1998–1999	0.70	M-v	4	Williams	37281	1998 KQ ₄₄
1998 KT ₄₄	14.2	0.15	20000226	79.92247	132.27594	199.35884	6.90716	0.1919686	2.6878655	81	4	1992–2000	0.62	M-v	2	Williams	37281	1998 KT ₄₄
1998 KQ ₄₅	14.5	0.15	20000226	196.74191	164.64468	66.19090	2.88133	0.1053105	2.2850388	65	2	1998–2000	0.67	M-v	4	Williams	37154	1998 KQ ₄₅
1998 KX ₄₅	15.7	0.15	20000226	145.57540	178.84275	121.69424	2.82835	0.1727199	2.2764153	18	2	1998–1999	0.68	M-v	6	Williams	37155	1998 KX ₄₅
1998 KM ₄₆	14.1	0.15	20000226	357.11264	242.77331	190.80562	6.16233	0.0761018	2.2920806	81	4	1992–2000	0.48	M-v	2	Williams	37281	1998 KM ₄₆
1998 KS ₄₆	14.4	0.15	20000226	110.85019	124.54191	216.66608	6.63425	0.1954611	2.3071147	58	3	1991–2000	0.60	M-v	2	Williams	37281	1998 KS ₄₆
1998 KW ₄₆	12.6	0.15	20000226	55.68531	74.71882	245.11219	11.53649	0.0842065	3.1036608	83	3	1978–2000	0.54	M-v	2	Williams	37281	1998 KW ₄₆
1998 KX ₄₆	14.6	0.15	20000226	218.00199	329.37523	227.80613	1.40429	0.1356989	2.3355991	59	3	1994–1999	0.78	M-v	4	Williams	36900	1998 KX ₄₆
1998 KZ ₄₆	12.9	0.15	20000226	13.90301	136.61420	258.74265	13.97954	0.1175350	2.6040784	103	3	1991–2000	0.56	M-v	2	Williams	37281	1998 KZ ₄₆
1998 KD ₄₇	14.9	0.15	20000226	165.30204	50.41795	229.35907	3.98465	0.1474519	2.2455123	60	2	1998–2000	0.64	M-v	4	Williams	37281	1998 KD ₄₇
1998 KE ₄₇	15.1	0.15	20000226	174.39470	31.18580	228.56584	3.23192	0.1417643	2.2934525	71	3	1988–1999	0.55	M-v	3	Williams	37281	1998 KE ₄₇
1998 KJ ₄₇	14.3	0.15	20000226	159.11867	30.16464	207.05205	4.28699	0.1256029	2.6201478	67	2	1998–1999	0.62	M-v	4	Williams	36900	1998 KJ ₄₇
1998 KK ₄₇	15.1	0.15	20000226	169.64604	179.34951	90.44604	7.47354	0.1715412	2.2743785	47	2	1998–2000	0.56	M-v	3	Williams	37155	1998 KK ₄₇
1998 KR ₄₇	14.2	0.15	20000226	99.25536	101.00478	223.35191	10.05545	0.2734419	2.6749735	56	3	1990–2000	0.69	M-v	2	Williams	37281	1998 KR ₄₇
1998 KS ₄₇	14.4	0.15	20000226	213.30749	28.04600	148.08789	4.51861	0.0749780	2.6573902	40	5	1980–1999	0.75	M-v	1	Williams	36536	1998 KS ₄₇
1998 KV ₄₇	14.2	0.15	20000226	320.08598	238.51475	218.97338	5.05280	0.1006323	2.3863325	104	3	1977–1999	0.68	M-v	3	Williams	37281	1998 KV ₄₇
1998 KW ₄₇	13.1	0.15	20000226	164.51871	33.80399	208.09854	2.75438	0.1390102	2.5254305	108	3	1995–2000	0.53	M-v	3	Williams	37281	1998 KW ₄₇
1998 KX ₄₇	13.9	0.15	20000226	225.44145	124.13794	71.27394	8.66505	0.0536530	2.3638682	69	3	1981–2000	0.65	M-v	3	Williams	37281	1998 KX ₄₇
1998 KL ₄₈	14.7	0.15	20000226	91.52175	244.64836	116.48105	7.05539	0.1451661	2.2745972	47	5	1991–2000	0.63	M-v	1	Williams	37281	1998 KL ₄₈
1998 KV ₅₀	14.1	0.15	20000226	124.79056	82.27826	194.24816	13.02015	0.1522390	2.6062345	44	2	1998–2000	0.65	M-v	3	Williams	37281	1998 KV ₅₀
1998 KB ₅₁	13.4	0.15	20000226	160.95262	60.69355	178.98515	8.51056	0.1067637	2.5193303	102	6	1982–2000	0.51	M-v	3	Williams	37281	1998 KB ₅₁
1998 KG ₅₁	14.5	0.15	20000226	88.96009	183.62386	163.01561	6.05158	0.1368847	2.3365468	66	3	1981–2000	0.53	M-v	2	Williams	37281	1998 KG ₅₁
1998 KS ₅₁	13.8	0.15	20000226	101.06946	139.32236	178.69304	10.96374	0.1890551	2.5436885	75	3	1978–2000	0.63	M-v	2	Williams	37281	1998 KS ₅₁
1998 KL ₅₂	14.1	0.15	20000226	117.06173	58.28297	209.49430	12.25426	0.1133722	2.8027849	60	2	1998–1999	0.66	M-v	3	Williams	36900	1998 KL ₅₂
1998 KO ₅₃	13.5	0.15	20000226	234.93398	31.87268	117.76504	14.12090	0.1005023	2.5941204	35	3	1975–1999	0.52	M-v	3	Williams	36813	1998 KO ₅₃
1998 KP ₅₄	13.5	0.15	20000226	71.62612	232.88706	97.62030	13.87641	0.1535140	2.7772244	66	3	1990–2000	0.53	M-v	2	Williams	37281	1998 KP ₅₄
1998 KR ₅₄	13.8	0.15	20000226	34.71536	288.29236	104.44951	14.04218	0.1210590	2.3974777	75	3	1982–2000	0.66	M-v	2	Williams	37281	1998 KR ₅₄
1998 KT ₅₅	12.8	0.15	20000226	108.80876	218.14082	91.39879	17.52863	0.2335457	2.6564663	70	3	1980–2000	0.62	M-v	2	Williams	37155	1998 KT ₅₅
1998 KU ₅₅	13.3	0.15	20000226	19.05849	263.96798	138.35017	8.12290	0.1731370	2.5588981	70	4	1983–2000	0.63	M-v	3	Williams	37281	1998 KU ₅₅
1998 KC ₅₆	13.6	0.15	20000226	343.00659	273.81844	172.60865	12.29264	0.1319965	2.3481811	66	2	1998–2000	0.51	M-v	3	Williams	37281	1998 KC ₅₆
1998 KD ₅₈	14.9	0.15	20000226	13.11764	194.72092	218.69521	15.07771	0.1126863	2.5369825	46	2	1998–2000	0.43	M-v	3	Williams	36813	1998 KD ₅₈
1998 KJ ₅₈	15.5	0.15	20000226	332.03371	211.36107	237.84017	4.96773	0.0702593	2.2805232	51	2	1998–1999	0.59	M-v	4	Williams	37281	1998 KJ ₅₈
1998 KG ₆₄	14.8	0.15	20000226	159.19566	127.98489	140.17713	2.26219	0.1496296	2.3321012	65	3	1995–1999	0.61	M-v	3	Williams	37281	1998 KG ₆₄
1998 KK ₆₄	14.8	0.15	20000226	173.93696	209.34290	27.67123	3.04399	0.1209799	2.4264417	48	2	1998–1999	0.70	M-v	4	Williams	36813	1998 KK ₆₄
1998 LP ₂	14.9	0.15	20000226	126.29907	73.79450	223.96485	13.47906	0.1087506	2.5274270	46	2	1998–1999	0.69	M-v	3	Williams	37155	1998 LP ₂
1998 MC	14.3	0.15	20000226	197.17976	157.09120	49.26043	6.12397	0.0933301	2.5896005	55	3	1991–1999	0.52	M-v	3	Williams	37281	1998 MC
1998 MD	15.0	0.15	20000226	104.45116	70.57398	288.48342	5.62368	0.2855649	2.5180491	49	4	1994–2000	0.66	M-v	3	Williams	32755	1998 MD
1998 MR ₂	15.4	0.15	20000226	97.78576	240.70335	106.74250	27.97212	0.4642601	2.6113350	42	3	1994–1999	0.72	M-v	2	Williams	33969	1998 MR ₂
1998 MF ₃	15.3	0.15	20000226	301.60153	170.08355	359.88412	3.03578	0.0656303	2.1509657	57	4	1991–2000	0.51	M-v	2	Williams	36900	1998 MF ₃
1998 MA ₅	15.3	0.15	20000226	83.44124	66.81027	292.80484	4.22603	0.0634324	2.6516526	34	3	1977–1999	0.69	M-v	3	Williams	36900	1998 MA ₅
1998 MN ₇	14.2	0.15	20000226	52.44068	336.88099	26.06895	0.64679	0.2142930	3.1511337	76	3	1993–1999	0.52	M-v	3	Williams	37281	1998 MN ₇
1998 MA ₈	13.2	0.15	20000226	123.38973	53.53973	253.14309	15.90800	0.0974883	2.8956969	60	3	1977–2000	0.51	M-v	3	Williams	37281	1998 MA ₈
1998 MD ₉	13.6	0.15	20000226	16.76437	240.19941	154.89769	13.30530	0.1656002	2.6941998	50	2	1998–2000	0.66	M-v	3	Williams	37282	1998 MD ₉

1998 MQ ₁₁	10.5	0.15	20000226	348.27325	202.10757	137.53666	30.82910	0.1122737	5.2748432	54	2	1998–1999	0.69	M-v	3	Williams	36084	1998 MQ ₁₁
1998 MW ₁₅	13.9	0.15	20000226	105.56386	193.94048	118.02960	26.52308	0.2627887	3.0070164	53	2	1998–2000	0.53	M-v	3	Williams	37155	1998 MW ₁₅
1998 MA ₁₆	16.3	0.15	20000226	86.63115	111.81740	236.65545	4.07067	0.2107115	2.4126367	21	2	1998–1999	0.57	M-v	5	Williams	37155	1998 MA ₁₆
1998 ML ₁₆	14.3	0.15	20000226	286.03674	150.85454	335.01532	1.09014	0.0847822	3.0550903	39	2	1998–1999	0.53	M-v	4	Williams	37282	1998 ML ₁₆
1998 MN ₁₆	13.8	0.15	20000226	74.73616	271.80611	115.30042	14.21367	0.1757870	2.5900467	59	3	1995–2000	0.71	M-v	1	Williams	37282	1998 MN ₁₆
1998 MZ ₂₃	13.4	0.15	20000226	95.68627	79.70205	293.52909	5.55545	0.1494212	2.4677655	87	3	1994–2000	0.64	M-v	2	Williams	37282	1998 MZ ₂₃
1998 MP ₂₄	14.8	0.15	20000226	78.40077	74.29354	301.08094	2.19527	0.1741330	2.5145577	25	3	1993–2000	0.50	M-v	3	Williams	32286	1998 MP ₂₄
1998 MS ₂₄	14.1	0.15	20000226	145.67026	137.54907	145.33637	15.25218	0.3354300	2.6088141	77	3	1997–2000	0.57	M-v	2	Williams	37282	1998 MS ₂₄
1998 MS ₂₈	13.8	0.15	20000226	91.89245	82.54332	264.13821	10.76399	0.2447816	2.7609641	32	2	1998–2000	0.57	M-v	4	Williams	37156	1998 MS ₂₈
1998 ME ₂₉	15.1	0.15	20000226	215.21376	99.35266	149.72152	0.98349	0.1772652	2.1430674	35	2	1998–2000	0.51	M-v	4	Williams	37156	1998 ME ₂₉
1998 ML ₃₁	15.1	0.15	20000226	155.42151	206.39732	106.06800	6.56220	0.2179434	2.2953185	31	3	1997–2000	0.65	M-v	3	Williams	33508	1998 ML ₃₁
1998 MF ₃₂	12.9	0.15	20000226	330.50315	351.37351	98.50545	10.15942	0.0089564	2.7640531	73	3	1995–2000	0.58	M-v	3	Williams	37282	1998 MF ₃₂
1998 MP ₃₂	14.7	0.15	20000226	189.26354	158.99420	116.93705	5.00847	0.1488806	2.2184235	55	4	1994–2000	0.71	M-v	3	Williams	37282	1998 MP ₃₂
1998 MT ₃₂	14.2	0.15	20000226	212.46446	356.13553	243.78234	4.17293	0.1002497	2.2912550	73	3	1994–2000	0.65	M-v	4	Williams	37282	1998 MT ₃₂
1998 MP ₃₃	13.8	0.15	20000226	321.56183	17.99068	104.49631	8.27895	0.1117714	2.4611097	53	4	1970–2000	0.54	M-v	3	Williams	37156	1998 MP ₃₃
1998 MR ₃₃	13.1	0.15	20000226	113.98307	184.37654	96.39193	5.87638	0.1946423	3.1325373	56	2	1998–2000	0.65	M-v	3	Williams	37282	1998 MR ₃₃
1998 MN ₃₅	15.0	0.15	20000226	172.38575	183.88177	105.68917	2.73141	0.0580951	2.3077529	50	2	1998–2000	0.63	M-v	4	Williams	37156	1998 MN ₃₅
1998 MR ₃₅	13.4	0.15	20000226	82.10666	284.69294	54.01959	3.06205	0.0835321	2.8961773	74	3	1989–1999	0.60	M-v	3	Williams	37282	1998 MR ₃₅
1998 MM ₃₆	15.0	0.15	20000226	152.92790	31.00568	308.19026	6.09660	0.1964453	2.2043603	35	5	1959–2000	0.70	M-v	2	Williams	32973	1998 MM ₃₆
1998 MF ₃₇	13.2	0.15	20000226	104.78538	187.07916	133.20132	13.50346	0.1834652	2.8796160	70	3	1995–2000	0.56	M-v	2	Williams	37282	1998 MF ₃₇
1998 MR ₃₇	14.0	0.15	20000226	156.49537	245.17595	64.82000	4.21318	0.2129406	2.3434728	43	4	1991–2000	0.61	M-v	2	Williams	37282	1998 MR ₃₇
1998 MU ₃₇	14.5	0.15	20000226	183.16654	180.37900	95.30720	5.51898	0.0800262	2.3328099	43	3	1992–2000	0.63	M-v	4	Williams	37157	1998 MU ₃₇
1998 MV ₃₇	13.8	0.15	20000226	108.87295	248.98518	103.37433	14.45943	0.1607738	2.4732022	52	3	1994–2000	0.63	M-v	2	Williams	37282	1998 MV ₃₇
1998 MZ ₃₇	14.9	0.15	20000226	145.12716	211.32577	103.91900	6.48075	0.1149955	2.3623801	28	3	1997–2000	0.72	M-v	4	Williams	37282	1998 MZ ₃₇
1998 MB ₃₈	13.2	0.15	20000226	178.85976	318.64310	301.26588	10.74031	0.0596389	2.7267148	67	4	1972–2000	0.61	M-v	3	Williams	37282	1998 MB ₃₈
1998 MZ ₄₁	14.2	0.15	20000226	91.85748	256.19049	83.02975	13.50471	0.1849925	2.5992670	56	2	1998–2000	0.53	M-v	3	Williams	37282	1998 MZ ₄₁
1998 MV ₄₂	14.0	0.15	20000226	12.06775	177.37581	276.20679	4.05134	0.1247018	2.2768285	59	3	1992–2000	0.79	M-v	3	Williams	37282	1998 MV ₄₂
1998 MC ₄₅	13.4	0.15	20000226	30.20291	186.44269	208.48001	13.30708	0.1637170	2.6089315	103	3	1995–2000	0.47	M-v	2	Williams	37282	1998 MC ₄₅
1998 MY ₄₅	14.8	0.15	20000226	144.38508	64.83753	242.52854	3.91469	0.1985828	2.4215641	35	3	1997–2000	0.67	M-v	3	Williams	32289	1998 MY ₄₅
1998 NA	13.1	0.15	20000226	116.86317	37.81106	334.09397	9.18602	0.1773257	2.5779514	104	3	1992–2000	0.66	M-v	2	Williams	37282	1998 NA
1998 NF	14.3	0.15	20000226	182.60183	163.29889	76.14308	3.54127	0.1338576	2.4168607	48	2	1998–1999	0.58	M-v	3	Williams	37282	1998 NF
1998 NH	13.9	0.15	20000226	23.34662	289.39212	124.78896	12.25799	0.1303085	2.7730275	45	2	1998–2000	0.43	M-v	3	Williams	37157	1998 NH
1998 NT	15.2	0.15	20000226	139.69028	242.47736	132.06128	28.90961	0.0292920	1.9327138	29	3	1982–2000	0.82	M-v	3	Williams	32488	1998 NT
1998 NV	14.8	0.15	20000226	8.74150	289.59981	108.10765	8.86931	0.3138325	2.6965342	30	2	1998–1999	0.45	M-v	4	Williams	36814	1998 NV
1998 OM	13.7	0.15	20000226	159.05926	37.48182	242.46450	13.40501	0.1567255	2.6119346	60	2	1998–2000	0.55	M-v	3	Williams	37282	1998 OM
1998 OQ	15.2	0.15	20000226	341.02505	230.94655	235.94249	4.25929	0.1331294	2.5324284	77	4	1993–1999	0.47	M-v	1	Williams	37282	1998 OQ
1998 OR	15.5	0.15	20000226	64.48846	188.14391	233.22281	3.60432	0.1541177	2.2692985	46	4	1995–2000	0.53	M-v	1	Williams	37282	1998 OR
1998 OS	15.3	0.15	20000226	298.58632	222.82468	264.86260	6.09815	0.0710943	2.7629163	36	2	1998–1999	0.50	M-v	4	Williams	37282	1998 OS
1998 OH ₂	14.9	0.15	20000226	207.65664	107.72081	151.42920	1.70100	0.1403008	2.4285952	54	2	1998–2000	0.65	M-v	4	Williams	37157	1998 OH ₂
1998 OJ ₂	14.8	0.15	20000226	189.03858	139.67237	151.17078	5.95604	0.0514563	2.4114597	55	2	1998–2000	0.57	M-v	4	Williams	37157	1998 OJ ₂
1998 OJ ₃	16.2	0.15	20000226	354.64027	208.07209	226.56260	3.86508	0.0408983	2.7725968	27	2	1998–1999	0.44	M-v	4	Williams	37157	1998 OJ ₃
1998 OY ₃	16.0	0.15	20000226	79.29580	109.31065	253.71396	3.29217	0.0872973	2.7811595	22	2	1998–1999	0.52	M-v	4	Williams	37158	1998 OY ₃
1998 OB ₄	16.1	0.15	20000226	46.53903	242.63436	202.97845	2.50736	0.0899009	2.2182673	37	4	1994–2000	0.54	M-v	2	Williams	35709	1998 OB ₄
1998 OQ ₄	15.5	0.15	20000226	204.05571	1.97512	264.88100	1.97216	0.1223545	2.2680128	43	3	1997–2000	0.50	M-v	3	Williams	37282	1998 OQ ₄
1998 OY ₄	14.3	0.15	20000226	56.56704	196.17118	231.86839	8.10467	0.1774458	2.5541927	50	3	1990–2000	0.53	M-v	2	Williams	32757	1998 OY ₄
1998 OZ ₄	13.9	0.15	20000226	28.43285	209.53488	206.67271	10.18155	0.1365149	3.1333224	65	3	1993–2000	0.56	M-v	2	Williams	37282	1998 OZ ₄
1998 OW ₅	12.6	0.15	20000226	276.11996	4.17962	142.47141	14.95975	0.1000264	3.1677152	69	2	1998–2000	0.56	M-v	3	Williams	37282	1998 OW ₅
1998 OE ₆	14.1	0.15	20000226	105.42167	104.83763	264.89837	4.33834	0.2383097	2.6297986	74	3	1997–2000	0.61	M-v	2	Williams	36901	1998 OE ₆
1998 OE ₇	13.9	0.15	20000226	89.56273	87.25993	310.76656	12.05698	0.2067325	2.5364917	70	4	1986–2000	0.60	M-v	2	Williams	37282	1998 OE ₇
1998 OG ₇	12.9	0.15	20000226	252.96378	315.81406	217.08550	5.39951	0.0988797	3.1873551	104	2	1998–2000	0.66	M-v	3	Williams	37158	1998 OG ₇
1998 OP ₇	15.4	0.15	20000226	136.73441	118.10816	223.70295	1.57409	0.2113541	2.3948139	33	4	1976–2000	0.70	M-v	2	Williams	33559	1998 OP ₇
1998 OL ₈	12.9	0.15	20000226	46.38573	237.40163	145.59057	9.65899	0.1144515	3.2242863	56	2	1998–2000	0.49	M-v	3	Williams	37158	1998 OL ₈
1998 OR ₈	13.4	0.15	20000226	35.00701	180.64415	200.34883	2.31146	0.2517026	3.9557196	96	2	1998–1999	0.60	M-v	3	Williams	37282	1998 OR ₈

1998 OG ₉	13.9	0.15	20000226	58.27962	228.00551	154.20521	2.46887	0.0507966	2.8921357	57	3	1991–2000	0.63	M-v	3	Williams	37282	1998 OG ₉
1998 ON ₁₁	13.3	0.15	20000226	22.46866	178.31890	237.54289	1.08088	0.0167083	2.9104106	93	2	1998–1999	0.58	M-v	4	Williams	37282	1998 ON ₁₁
1998 OW ₁₁	13.7	0.15	20000226	356.77229	327.01282	93.52189	11.65978	0.0935839	2.9779852	45	3	1986–2000	0.55	M-v	3	Williams	37282	1998 OW ₁₁
1998 OA ₁₂	14.7	0.15	20000226	54.28610	80.55554	314.85884	13.84513	0.2383380	2.7600387	40	2	1998–2000	0.61	M-v	4	Williams	37158	1998 OA ₁₂
1998 OG ₁₂	14.2	0.15	20000226	187.89247	261.80268	343.30761	9.15650	0.0908201	2.6291793	73	4	1986–2000	0.66	M-v	2	Williams	37282	1998 OG ₁₂
1998 OV ₁₂	13.3	0.15	20000226	122.97760	177.42602	145.02692	4.99462	0.0669639	2.7865531	75	3	1995–2000	0.66	M-v	3	Williams	37282	1998 OV ₁₂
1998 ON ₁₃	13.9	0.15	20000226	139.15946	35.68866	318.18497	9.52801	0.0681539	2.2635455	80	3	1981–2000	0.62	M-v	2	Williams	37282	1998 ON ₁₃
1998 OR ₁₃	14.5	0.15	20000226	117.67802	221.68670	150.14951	1.55506	0.1947439	2.4076842	69	4	1987–2000	0.72	M-v	2	Williams	33559	1998 OR ₁₃
1998 OB ₁₄	14.0	0.15	20000226	231.68877	243.38860	325.95324	18.21760	0.0877224	2.7488601	60	5	1983–1999	0.72	M-v	1	Williams	37282	1998 OB ₁₄
1998 PF	14.9	0.15	20000226	279.37460	53.56602	152.47456	41.95814	0.2876689	2.0082010	107	2	1998–2000	0.58	M-v	3	Williams	36901	1998 PF
1998 PH	13.9	0.15	20000226	348.10760	203.15795	278.41607	13.90654	0.1932847	2.6441989	68	3	1995–2000	0.45	M-v	2	Williams	37282	1998 PH
1998 PL	14.8	0.15	20000226	133.09611	213.86218	125.22730	6.95919	0.1696473	2.2740515	59	3	1997–2000	0.56	M-v	2	Williams	37282	1998 PL
1998 PO	13.2	0.15	20000226	53.72960	142.32561	256.89137	4.38704	0.0707018	2.7461225	74	2	1998–2000	0.53	M-v	3	Williams	37158	1998 PO
1998 PQ	13.9	0.15	20000226	182.72854	80.02339	160.97217	1.16749	0.1315955	3.0844071	55	4	1993–1999	0.66	M-v	1	Williams	37283	1998 PQ
1998 PR	14.3	0.15	20000226	71.90974	56.10910	334.35334	4.24866	0.0650168	2.7574442	43	2	1998–2000	0.40	M-v	3	Williams	37158	1998 PR
1998 PS	15.3	0.15	20000226	61.15539	229.04873	161.94463	1.30574	0.1901516	3.1256248	26	3	1996–2000	0.52	M-v	3	Williams	37283	1998 PS
1998 PA ₁	13.6	0.15	20000226	7.72024	196.19956	238.69084	5.63857	0.1284788	3.0447770	103	4	1991–2000	0.54	M-v	1	Williams	37283	1998 PA ₁
1998 QB	14.2	0.15	20000226	268.49545	266.78850	315.76422	6.03018	0.0741509	2.3366053	67	3	1997–2000	0.63	M-v	4	Williams	35709	1998 QB
1998 QE	14.2	0.15	20000226	33.83141	94.33769	341.76764	2.32108	0.0499583	2.6611710	70	2	1998–2000	0.51	M-v	3	Williams	37159	1998 QE
1998 QH	14.8	0.15	20000226	197.61597	300.46388	335.64431	7.44065	0.1082245	2.4023486	59	2	1998–2000	0.64	M-v	4	Marsden	37159	1998 QH
1998 QR	14.3	0.15	20000226	309.16792	340.42494	176.63416	4.17865	0.0987543	2.3321811	62	3	1981–2000	0.61	M-v	3	Williams	37283	1998 QR
1998 QT	14.8	0.15	20000226	210.93227	293.07767	327.04738	4.62654	0.1772053	2.2418336	60	5	1984–2000	0.66	M-v	2	Williams	36901	1998 QT
1998 QW	13.5	0.15	20000226	134.18249	109.50299	212.39053	14.41424	0.1527514	2.6024669	60	3	1990–2000	0.64	M-v	2	Williams	37283	1998 QW
1998 QY	14.5	0.15	20000226	141.44559	161.42981	148.11134	14.08127	0.1663727	2.5654118	51	2	1998–2000	0.58	M-v	3	Williams	37159	1998 QY
1998 QK ₁	14.8	0.15	20000226	143.73396	39.24506	310.70377	6.45225	0.1397689	2.2964951	54	3	1991–2000	0.67	M-v	4	Williams	32690	1998 QK ₁
1998 QN ₁	13.4	0.15	20000226	98.81845	103.65052	232.41852	1.14689	0.1245868	3.0713628	78	3	1993–2000	0.64	M-v	4	Williams	37283	1998 QN ₁
1998 QP ₁	15.6	0.15	20000226	178.85651	326.60786	338.62119	7.22751	0.1841926	2.2562809	48	3	1997–2000	0.60	M-v	3	Williams	34591	1998 QP ₁
1998 QR ₁	14.3	0.15	20000226	291.27295	291.01883	261.08100	5.50548	0.0873803	2.4559665	64	3	1995–2000	0.59	M-v	3	Williams	37283	1998 QR ₁
1998 QV ₁	13.8	0.15	20000226	86.60019	205.42478	139.81717	6.34563	0.1587445	3.1186394	28	3	1993–2000	0.69	M-v	4	Williams	35709	1998 QV ₁
1998 QJ ₂	14.3	0.15	20000226	129.93545	239.32956	128.84791	4.69594	0.1296163	2.2136769	48	4	1977–2000	0.63	M-v	2	Williams	37283	1998 QJ ₂
1998 QN ₂	14.5	0.15	20000226	178.24963	40.95934	265.96841	5.75728	0.1983915	2.2276568	60	4	1968–2000	0.74	M-v	3	Williams	37283	1998 QN ₂
1998 QU ₂	13.7	0.15	20000226	105.81642	202.73397	162.73072	15.62714	0.2106683	2.5649388	58	3	1994–2000	0.59	M-v	2	Williams	36901	1998 QU ₂
1998 QF ₃	14.4	0.15	20000226	84.70001	87.67637	331.67038	20.43900	0.2214760	2.2723353	30	4	1981–2000	0.59	M-v	1	Williams	33080	1998 QF ₃
1998 QE ₄	13.4	0.15	20000226	114.27828	217.15547	113.35803	10.74030	0.0907963	2.9902376	48	2	1998–2000	0.49	M-v	3	Williams	37283	1998 QE ₄
1998 QJ ₄	15.1	0.15	20000226	89.07912	359.84136	60.68098	3.47868	0.2060352	2.3665287	61	3	1991–2000	0.65	M-v	2	Williams	33559	1998 QJ ₄
1998 QN ₄	14.3	0.15	20000226	274.86243	196.43869	13.30386	6.45588	0.0841092	2.3340988	56	3	1997–2000	0.67	M-v	3	Williams	33080	1998 QN ₄
1998 QK ₅	15.4	0.15	20000226	306.19136	300.56712	238.99822	3.70331	0.0763292	2.2939773	36	3	1960–2000	0.56	M-v	4	Williams	37283	1998 QK ₅
1998 QT ₅	13.6	0.15	20000226	5.18056	110.98664	340.67357	9.94267	0.0922066	2.9538391	56	3	1993–2000	0.53	M-v	3	Williams	37283	1998 QT ₅
1998 QN ₇	12.1	0.15	20000226	84.35540	349.47688	324.05807	17.02503	0.1093998	3.4072220	60	3	1996–2000	0.67	M-v	3	Williams	37283	1998 QN ₇
1998 QV ₇	14.1	0.15	20000226	158.81944	146.09786	145.16183	3.11040	0.1673261	2.4689741	58	3	1997–2000	0.63	M-v	2	Williams	37283	1998 QV ₇
1998 QC ₈	14.4	0.15	20000226	114.82291	79.36875	246.43307	5.72586	0.2298598	2.7554145	39	3	1993–2000	0.67	M-v	3	Williams	37159	1998 QC ₈
1998 QK ₈	13.9	0.15	20000226	123.62138	182.14769	143.09423	14.56230	0.1501878	2.6120782	47	2	1998–2000	0.58	M-v	3	Williams	37159	1998 QK ₈
1998 QQ ₈	13.1	0.15	20000226	82.89143	231.76004	121.29107	6.86266	0.0743316	2.7993479	62	3	1997–2000	0.58	M-v	3	Williams	37283	1998 QQ ₈
1998 QM ₉	14.1	0.15	20000226	86.40266	117.20887	224.17841	4.95865	0.1568801	3.0515697	60	3	1997–2000	0.67	M-v	3	Williams	37283	1998 QM ₉
1998 QS ₉	13.3	0.15	20000226	86.94400	46.74263	325.10855	12.01524	0.1670410	2.6529569	52	5	1968–2000	0.65	M-v	1	Williams	37160	1998 QS ₉
1998 QV ₉	14.6	0.15	20000226	146.21190	323.31804	332.49289	9.15238	0.1944823	2.5838778	30	3	1994–1999	0.66	M-v	4	Williams	37283	1998 QV ₉
1998 QO ₁₀	14.6	0.15	20000226	157.83350	126.50197	198.84449	4.35915	0.1777195	2.2759467	56	3	1995–2000	0.53	M-v	2	Williams	37283	1998 QO ₁₀
1998 QT ₁₀	14.3	0.15	20000226	102.17918	215.41989	139.85740	14.31151	0.1905796	2.6578591	33	5	1992–2000	0.61	M-v	2	Williams	35710	1998 QT ₁₀
1998 QU ₁₀	13.2	0.15	20000226	123.63418	323.39444	321.79979	5.54522	0.0508352	3.2525215	44	2	1998–2000	0.63	M-v	4	Williams	37283	1998 QU ₁₀
1998 QY ₁₀	14.6	0.15	20000226	127.00467	270.79122	60.17134	2.72206	0.1332206	2.5246644	30	4	1982–2000	0.73	M-v	2	Williams	32496	1998 QY ₁₀
1998 QE ₁₁	12.8	0.15	20000226	97.99690	346.62661	329.81960	22.05787	0.1049189	3.1695656	41	3	1981–1999	0.56	M-v	3	Williams	37283	1998 QE ₁₁
1998 QS ₁₁	14.4	0.15	20000226	324.68502	237.70416	273.26802	4.30979	0.0642694	2.3160242	45	3	1995–2000	0.64	M-v	3	Williams	37283	1998 QS ₁₁
1998 QZ ₁₁	14.1	0.15	20000226	73.79811	105.55223	297.03067	10.77508	0.1847545	2.5701315	49	3	1990–2000	0.52	M-v	1	Williams	37283	1998 QZ ₁₁

1998 QE ₁₂	12.4	0.15	20000226	306.42834	275.51857	193.01957	9.28825	0.1023734	3.4216222	39	3	1996–2000	0.64	M-v	3	Williams	37160	1998 QE ₁₂
1998 QV ₁₂	14.6	0.15	20000226	96.84434	81.51272	298.28379	5.59115	0.0841739	2.4169536	44	4	1983–2000	0.63	M-v	1	Williams	37283	1998 QV ₁₂
1998 QE ₁₃	14.1	0.15	20000226	72.31851	297.88345	135.29377	5.70977	0.2620752	2.3277961	30	6	1977–1999	0.73	M-v	2	Williams	35710	1998 QE ₁₃
1998 QJ ₁₃	13.3	0.15	20000226	156.09376	130.68220	129.03071	7.29143	0.1509932	2.9348270	44	3	1994–1999	0.64	M-v	4	Williams	37283	1998 QJ ₁₃
1998 QS ₁₃	15.8	0.15	20000226	146.94316	344.87531	336.40690	0.70759	0.2271399	2.4178790	31	3	1979–2000	0.61	M-v	2	Williams	36002	1998 QS ₁₃
1998 QU ₁₃	14.5	0.15	20000226	99.39377	78.61591	320.81022	5.83314	0.1405337	2.2673691	40	4	1981–2000	0.62	M-v	2	Williams	37283	1998 QU ₁₃
1998 QY ₁₃	15.6	0.15	20000226	179.87409	96.75248	182.69844	3.25176	0.1436668	2.4141971	28	4	1995–2000	0.66	M-v	2	Williams	37283	1998 QY ₁₃
1998 QZ ₁₃	13.6	0.15	20000226	122.69833	120.23006	200.73811	3.48055	0.0921318	2.7489545	61	2	1998–2000	0.48	M-v	3	Williams	37160	1998 QZ ₁₃
1998 QE ₁₄	13.6	0.15	20000226	112.50166	149.73253	162.23976	11.89456	0.1343099	3.0498560	55	2	1998–2000	0.61	M-v	3	Williams	37160	1998 QE ₁₄
1998 QF ₁₄	14.9	0.15	20000226	276.44269	300.78411	261.53520	3.55738	0.0938390	2.2485219	41	4	1974–2000	0.52	M-v	1	Williams	37160	1998 QF ₁₄
1998 QW ₁₅	14.2	0.15	20000226	88.98524	138.16184	224.65279	0.97674	0.1475727	2.9848348	54	4	1978–2000	0.83	M-v	2	Williams	37283	1998 QW ₁₅
1998 QJ ₁₆	12.9	0.15	20000226	4.61814	173.21562	284.13300	7.21545	0.1855216	2.7915692	57	4	1949–2000	0.51	M-v	2	Williams	36902	1998 QJ ₁₆
1998 QK ₁₆	14.1	0.15	20000226	124.51722	26.75084	305.62247	12.80617	0.1781426	2.6401739	56	3	1993–2000	0.58	M-v	3	Williams	37283	1998 QK ₁₆
1998 QP ₁₆	13.9	0.15	20000226	133.90156	128.58125	170.01958	9.52051	0.0465909	2.9633419	43	3	1971–1999	0.70	M-v	4	Williams	37283	1998 QP ₁₆
1998 QT ₁₆	14.7	0.15	20000226	100.75507	33.32569	341.88436	3.28745	0.2030474	2.5483929	39	4	1986–2000	0.53	M-v	2	Williams	36902	1998 QT ₁₆
1998 QC ₁₇	13.7	0.15	20000226	282.64269	59.43567	127.79165	6.91532	0.0533505	2.3922063	55	3	1982–2000	0.63	M-v	3	Williams	37283	1998 QC ₁₇
1998 QP ₁₇	15.7	0.15	20000226	196.27627	240.15010	14.60353	0.09638	0.2451561	2.3753597	31	3	1995–1999	0.48	M-v	3	Williams	36002	1998 QP ₁₇
1998 QU ₁₇	14.3	0.15	20000226	73.08713	65.35638	295.54456	5.57445	0.1643274	3.1908281	25	3	1993–1999	0.58	M-v	4	Williams	32694	1998 QU ₁₇
1998 QV ₁₇	15.4	0.15	20000226	181.08617	107.89974	188.83353	3.77880	0.1021081	2.3170471	29	4	1977–2000	0.59	M-v	2	Williams	33267	1998 QV ₁₇
1998 QL ₁₈	13.5	0.15	20000226	34.65604	68.20979	340.73316	4.38073	0.1654537	3.1546582	63	4	1993–2000	0.55	M-v	1	Williams	37283	1998 QL ₁₈
1998 QT ₁₈	14.1	0.15	20000226	179.22193	63.34268	238.16230	2.85273	0.1489782	2.2856086	65	3	1981–2000	0.62	M-v	3	Williams	37283	1998 QT ₁₈
1998 QA ₁₉	15.6	0.15	20000226	176.70105	266.44513	26.62442	3.89021	0.1893535	2.3248694	40	5	1977–2000	0.92	M-v	2	Williams	35710	1998 QA ₁₉
1998 QK ₁₉	13.7	0.15	20000226	164.19481	181.48666	122.27452	7.71661	0.1137105	2.4174585	50	4	1983–2000	0.51	M-v	2	Williams	37283	1998 QK ₁₉
1998 QL ₁₉	14.1	0.15	20000226	142.83112	277.16357	52.13115	3.39010	0.1831219	2.4295581	58	4	1987–2000	0.71	M-v	2	Williams	37283	1998 QL ₁₉
1998 QV ₁₉	13.8	0.15	20000226	162.10316	127.24890	163.24061	4.95556	0.1138976	2.5993122	69	3	1997–2000	0.62	M-v	3	Williams	37283	1998 QV ₁₉
1998 QY ₁₉	14.7	0.15	20000226	33.15984	302.10889	162.92078	7.84956	0.1292255	2.3058265	40	3	1993–2000	0.88	M-v	3	Williams	37283	1998 QY ₁₉
1998 QZ ₁₉	14.8	0.15	20000226	104.23089	160.05531	189.20388	5.07788	0.0719699	2.7447795	36	4	1994–2000	0.52	M-v	1	Williams	35710	1998 QZ ₁₉
1998 QM ₂₀	12.5	0.15	20000226	301.10923	325.93834	169.62935	11.65850	0.0354233	3.0274959	92	3	1996–2000	0.52	M-v	3	Williams	37283	1998 QM ₂₀
1998 QD ₂₁	14.8	0.15	20000226	10.65300	287.29631	182.59522	1.99408	0.0475542	2.4065239	39	2	1998–2000	0.68	M-v	4	Williams	37160	1998 QD ₂₁
1998 QG ₂₁	14.7	0.15	20000226	84.56276	201.97762	155.59509	0.12100	0.1972951	3.0391136	41	2	1998–2000	0.57	M-v	3	Williams	37161	1998 QG ₂₁
1998 QX ₂₁	14.1	0.15	20000226	214.72412	298.65270	317.46569	5.40868	0.1100180	2.3586332	52	4	1951–2000	0.57	M-v	2	Williams	36902	1998 QX ₂₁
1998 QS ₂₂	13.4	0.15	20000226	137.76299	249.20616	65.33908	4.45544	0.1060521	2.6430295	59	2	1998–2000	0.60	M-v	3	Williams	37161	1998 QS ₂₂
1998 QW ₂₂	14.3	0.15	20000226	50.11509	70.33484	14.26026	3.87145	0.0902719	2.2999664	69	3	1997–2000	0.68	M-v	2	Williams	37283	1998 QW ₂₂
1998 QB ₂₃	13.5	0.15	20000226	33.07293	23.35974	25.92932	5.78510	0.1523811	3.1694724	57	2	1998–2000	0.54	M-v	3	Williams	37161	1998 QB ₂₃
1998 QE ₂₃	14.1	0.15	20000226	44.91102	30.21377	59.06122	3.26013	0.1696391	2.4038904	45	3	1980–2000	0.82	M-v	3	Williams	37283	1998 QE ₂₃
1998 QL ₂₃	13.9	0.15	20000226	59.86816	32.96135	352.42533	5.17541	0.1997492	3.1409595	75	3	1993–2000	0.59	M-v	1	Williams	37283	1998 QL ₂₃
1998 QN ₂₅	13.9	0.15	20000226	144.99600	335.67975	338.24262	13.40530	0.1480157	2.5641542	52	4	1990–2000	0.51	M-v	3	Williams	37283	1998 QN ₂₅
1998 QS ₂₅	13.6	0.15	20000226	77.84376	287.01637	81.69011	3.26356	0.0476085	2.8732478	60	2	1998–2000	0.63	M-v	3	Williams	37161	1998 QS ₂₅
1998 QA ₂₆	13.4	0.15	20000226	79.78457	218.15042	154.65692	5.67841	0.0862819	3.0274753	59	4	1994–2000	0.70	M-v	1	Williams	37283	1998 QA ₂₆
1998 QB ₂₆	14.7	0.15	20000226	155.71227	348.29144	337.64424	1.92618	0.2333360	2.3976171	72	4	1993–2000	0.70	M-v	2	Williams	35630	1998 QB ₂₆
1998 QF ₂₆	14.5	0.15	20000226	219.18985	100.95365	156.93986	2.53936	0.2075526	2.3601660	59	3	1997–2000	0.73	M-v	3	Williams	37284	1998 QF ₂₆
1998 QK ₂₆	14.1	0.15	20000226	50.57091	186.62012	206.00091	0.40899	0.2149748	3.1343634	50	3	1982–2000	0.48	M-v	2	Williams	37284	1998 QK ₂₆
1998 QL ₂₆	14.7	0.15	20000226	72.47089	265.26247	126.73068	4.33513	0.1233762	2.6495932	50	3	1997–2000	0.55	M-v	3	Williams	37161	1998 QL ₂₆
1998 QX ₂₇	14.2	0.15	20000226	78.28118	51.40960	316.19297	7.97376	0.1523062	3.0440900	39	2	1998–2000	0.67	M-v	4	Williams	37161	1998 QX ₂₇
1998 QL ₂₉	15.2	0.15	20000226	223.44028	341.86989	257.77143	4.26894	0.1905744	2.3496014	30	2	1998–1999	0.52	M-v	5	Williams	37162	1998 QL ₂₉
1998 QM ₂₉	15.9	0.15	20000226	22.78977	257.41266	200.56538	6.08261	0.0702160	2.4459709	23	3	1997–2000	0.58	M-v	3	Williams	32500	1998 QM ₂₉
1998 QL ₃₀	14.4	0.15	20000226	131.31167	233.66591	129.92794	4.96746	0.1370760	2.3364095	70	5	1986–2000	0.60	M-v	2	Williams	37284	1998 QL ₃₀
1998 QM ₃₀	14.8	0.15	20000226	136.71443	356.59957	347.83978	5.24144	0.1577269	2.4423674	79	3	1997–2000	0.44	M-v	3	Williams	33081	1998 QM ₃₀
1998 QN ₃₀	15.1	0.15	20000226	177.27730	157.37732	164.59244	1.95576	0.2067483	2.1845604	72	4	1981–2000	0.48	M-v	2	Williams	33559	1998 QN ₃₀
1998 QT ₃₂	14.3	0.15	20000226	83.01236	137.96464	232.86618	1.06254	0.0823989	2.8454130	34	2	1998–2000	0.63	M-v	4	Williams	37162	1998 QT ₃₂
1998 QW ₃₂	13.7	0.15	20000226	90.12251	198.40749	162.11208	11.64344	0.0877361	2.8715202	45	4	1993–2000	0.70	M-v	1	Williams	37284	1998 QW ₃₂
1998 QX ₃₂	13.7	0.15	20000226	77.54083	177.53491	196.87641	2.23128	0.0650674	2.8613742	57	2	1998–2000	0.63	M-v	3	Williams	37162	1998 QX ₃₂
1998 QL ₃₃	13.8	0.15	20000226	210.92272	292.37882	316.75463	11.35741	0.1014993	2.5287681	52	4	1986–2000	0.72	M-v	3	Williams	36902	1998 QL ₃₃

1998 QS ₃₃	13.5	0.15	20000226	59.58207	137.73103	247.23739	5.26101	0.0681957	3.0549245	64	2	1998–2000	0.66	M-v	3	Williams	37284	1998 QS ₃₃
1998 QK ₃₄	13.4	0.15	20000226	118.75375	13.50795	334.82384	14.52871	0.1275497	2.5950706	64	2	1998–2000	0.62	M-v	3	Williams	37162	1998 QK ₃₄
1998 QW ₃₄	13.0	0.15	20000226	137.82740	130.25051	175.58634	14.82946	0.2005908	2.7709141	50	3	1992–2000	0.72	M-v	3	Williams	37284	1998 QW ₃₄
1998 QY ₃₄	15.1	0.15	20000226	147.81998	44.75100	291.23447	6.45626	0.1312188	2.3912498	41	3	1994–2000	0.59	M-v	3	Williams	32975	1998 QY ₃₄
1998 QB ₃₅	14.1	0.15	20000226	1.53765	163.25789	317.42070	13.10437	0.1193166	2.5341706	49	3	1988–2000	0.61	M-v	3	Williams	37284	1998 QB ₃₅
1998 QE ₃₅	15.4	0.15	20000226	111.17956	243.00395	141.71312	3.47961	0.1790866	2.3917303	32	5	1991–2000	0.64	M-v	2	Williams	35710	1998 QE ₃₅
1998 QO ₃₅	13.5	0.15	20000226	78.18602	268.42168	103.67240	3.02348	0.0526437	2.8744547	64	3	1996–2000	0.58	M-v	3	Williams	37162	1998 QO ₃₅
1998 QL ₃₆	13.6	0.15	20000226	137.77818	70.29905	242.95468	3.39864	0.0590611	2.8023968	54	3	1992–2000	0.64	M-v	4	Williams	37284	1998 QL ₃₆
1998 QT ₃₆	14.4	0.15	20000226	212.78487	0.95292	254.47398	4.16944	0.0835362	2.4758732	44	2	1998–2000	0.63	M-v	4	Williams	37162	1998 QT ₃₆
1998 QK ₃₇	15.0	0.15	20000226	189.92225	58.69423	230.35220	3.00296	0.1645079	2.3105635	78	3	1995–2000	0.62	M-v	4	Williams	32764	1998 QK ₃₇
1998 QL ₃₇	14.5	0.15	20000226	300.27101	345.71327	206.32348	4.29955	0.0898792	2.2572365	53	4	1978–2000	0.75	M-v	2	Williams	37284	1998 QL ₃₇
1998 QD ₃₈	13.8	0.15	20000226	79.69895	270.01827	103.37739	2.59817	0.0612158	2.8511322	55	3	1996–2000	0.57	M-v	3	Williams	37163	1998 QD ₃₈
1998 QF ₃₈	15.2	0.15	20000226	163.72393	188.41145	136.89450	8.07988	0.1526581	2.2893515	37	3	1991–2000	0.58	M-v	3	Williams	32703	1998 QF ₃₈
1998 QK ₃₈	13.3	0.15	20000226	132.23389	328.39647	324.05352	0.32938	0.1319980	3.1734921	82	4	1988–2000	0.55	M-v	1	Williams	37284	1998 QK ₃₈
1998 QL ₃₈	15.4	0.15	20000226	134.98919	36.74832	331.85175	5.57395	0.1544735	2.2774681	33	3	1991–2000	0.60	M-v	3	Williams	32703	1998 QL ₃₈
1998 QQ ₃₈	14.7	0.15	20000226	216.14112	355.33599	250.76791	2.73905	0.1733511	2.4323774	46	3	1990–2000	0.70	M-v	4	Williams	37284	1998 QQ ₃₈
1998 QV ₃₈	14.5	0.15	20000226	62.28660	203.14518	249.02812	4.42067	0.1375141	2.2655069	43	4	1978–2000	0.77	M-v	2	Williams	35710	1998 QV ₃₈
1998 QA ₃₉	13.8	0.15	20000226	146.34149	349.71331	319.75443	12.87961	0.1663102	2.6707963	42	3	1989–2000	0.71	M-v	3	Williams	37284	1998 QA ₃₉
1998 QE ₃₉	13.9	0.15	20000226	78.98930	352.38112	19.56901	0.46459	0.2134354	3.0786285	73	3	1982–2000	0.56	M-v	3	Williams	37284	1998 QE ₃₉
1998 QK ₃₉	14.9	0.15	20000226	107.06467	248.88501	117.93770	5.87978	0.1526329	2.5935732	47	5	1990–2000	0.82	M-v	2	Williams	35710	1998 QK ₃₉
1998 QR ₃₉	15.0	0.15	20000226	209.62752	263.01586	1.29751	6.15190	0.1094717	2.3661666	42	3	1997–2000	0.81	M-v	3	Williams	37284	1998 QR ₃₉
1998 QZ ₃₉	13.8	0.15	20000226	164.61289	306.84274	334.26976	6.12698	0.1083817	2.7926244	57	3	1996–2000	0.58	M-v	3	Williams	37284	1998 QZ ₃₉
1998 QB ₄₀	13.8	0.15	20000226	118.56769	178.59051	161.60287	10.04230	0.1874366	2.7394217	52	4	1971–2000	0.69	M-v	2	Williams	37284	1998 QB ₄₀
1998 QD ₄₀	14.2	0.15	20000226	165.24809	343.59878	303.99725	3.34780	0.0366399	2.7876655	50	3	1996–2000	0.78	M-v	4	Williams	37284	1998 QD ₄₀
1998 QF ₄₀	13.8	0.15	20000226	305.34732	288.88801	226.87199	2.71438	0.0242842	2.7358159	50	2	1998–2000	0.68	M-v	4	Williams	37163	1998 QF ₄₀
1998 QJ ₄₀	14.4	0.15	20000226	135.65026	170.47085	188.59135	6.81797	0.1348730	2.3484766	60	4	1991–2000	0.67	M-v	2	Williams	33348	1998 QJ ₄₀
1998 QM ₄₁	14.2	0.15	20000226	105.16574	189.55798	155.54362	2.24004	0.0380281	2.9016881	36	2	1998–2000	0.63	M-v	5	Williams	37163	1998 QM ₄₁
1998 QN ₄₁	13.9	0.15	20000226	302.06304	174.73506	335.19377	1.58102	0.0156304	2.8762140	49	2	1998–2000	0.74	M-v	5	Williams	37163	1998 QN ₄₁
1998 QS ₄₁	13.6	0.15	20000226	175.74991	195.41292	84.79939	1.68152	0.0467729	2.7150797	72	3	1997–2000	0.67	M-v	3	Williams	37284	1998 QS ₄₁
1998 QT ₄₁	15.0	0.15	20000226	140.85467	325.67106	355.79812	4.21561	0.1597677	2.6088623	47	5	1977–2000	0.83	M-v	2	Williams	35711	1998 QT ₄₁
1998 QB ₄₂	13.5	0.15	20000226	99.68711	329.28426	4.17663	8.97742	0.0907598	3.1653188	29	3	1981–1999	0.85	M-v	4	Williams	32707	1998 QB ₄₂
1998 QD ₄₂	15.0	0.15	20000226	97.65443	325.34917	88.76734	4.73318	0.0839442	2.1941650	34	5	1982–2000	0.73	M-v	2	Williams	34925	1998 QD ₄₂
1998 QM ₄₂	15.4	0.15	20000226	249.64309	30.83309	212.34123	2.23165	0.0470048	2.2812633	42	4	1996–2000	0.75	M-v	1	Williams	35711	1998 QM ₄₂
1998 QN ₄₂	13.8	0.15	20000226	123.71728	9.94819	326.33915	8.52102	0.1845960	2.7248185	74	3	1996–2000	0.71	M-v	2	Williams	36539	1998 QN ₄₂
1998 QP ₄₂	16.1	0.15	20000226	176.04444	359.86604	304.89334	3.44317	0.1911050	2.3342339	36	3	1991–1999	0.68	M-v	4	Williams	32708	1998 QP ₄₂
1998 QB ₄₃	13.9	0.15	20000226	19.95662	249.50446	218.34364	7.72735	0.2370915	2.7405503	63	3	1996–2000	0.65	M-v	2	Williams	37284	1998 QB ₄₃
1998 QK ₄₃	14.1	0.15	20000226	158.88877	194.33134	120.86006	6.37235	0.1475845	2.4352944	47	2	1998–2000	0.64	M-v	4	Williams	37163	1998 QK ₄₃
1998 QP ₄₃	12.8	0.15	20000226	336.00831	111.47442	356.83312	16.92072	0.0976255	3.1554342	53	3	1993–1999	0.71	M-v	3	Williams	37284	1998 QP ₄₃
1998 QR ₄₃	15.3	0.15	20000226	221.47318	249.67105	19.87886	4.94730	0.1178544	2.2028768	35	4	1995–2000	0.69	M-v	2	Williams	32709	1998 QR ₄₃
1998 QU ₄₃	15.4	0.15	20000226	218.19170	144.34639	117.57642	6.97268	0.1483938	2.2715031	44	4	1991–2000	0.69	M-v	2	Williams	34591	1998 QU ₄₃
1998 QB ₄₄	12.9	0.15	20000226	126.41099	309.34520	358.90331	10.09866	0.1157997	3.0570125	53	3	1993–2000	0.55	M-v	3	Williams	37284	1998 QB ₄₄
1998 QH ₄₄	15.5	0.15	20000226	178.74618	177.96214	142.99875	7.41695	0.1770835	2.1936126	34	3	1985–2000	0.76	M-v	4	Williams	33083	1998 QH ₄₄
1998 QJ ₄₄	13.5	0.15	20000226	147.01612	251.54696	23.87949	3.35099	0.1445972	3.1818272	49	3	1991–1999	0.71	M-v	4	Williams	37163	1998 QJ ₄₄
1998 QL ₄₄	13.6	0.15	20000226	130.41774	191.95467	126.51737	3.13585	0.0523324	2.8971380	60	4	1996–2000	0.56	M-v	1	Williams	37164	1998 QL ₄₄
1998 QQ ₄₄	14.1	0.15	20000226	62.92396	240.31882	150.12184	3.99742	0.1346815	3.0605885	39	3	1993–2000	0.66	M-v	3	Williams	32710	1998 QQ ₄₄
1998 QS ₄₄	12.6	0.15	20000226	243.03771	241.42895	329.63615	6.15338	0.0773674	2.7640313	65	3	1996–2000	0.53	M-v	2	Williams	37284	1998 QS ₄₄
1998 QD ₄₅	14.6	0.15	20000226	108.53111	112.95929	283.58713	5.61863	0.1263190	2.3378299	50	3	1991–2000	0.67	M-v	2	Williams	34301	1998 QD ₄₅
1998 QJ ₄₅	14.5	0.15	20000226	93.15555	214.83890	178.51403	13.58546	0.1957658	2.6180264	44	3	1977–2000	0.78	M-v	3	Williams	33083	1998 QJ ₄₅
1998 QS ₄₅	15.0	0.15	20000226	151.39324	65.40478	268.50098	3.96928	0.1188370	2.4226445	29	4	1982–2000	0.49	M-v	2	Williams	34925	1998 QS ₄₅
1998 QU ₄₅	15.2	0.15	20000226	208.02645	97.36731	199.18624	5.12672	0.1150513	2.1536519	47	5	1991–2000	0.56	M-v	2	Williams	35711	1998 QU ₄₅
1998 QU ₄₆	14.6	0.15	20000226	101.31332	105.84679	296.27862	5.85692	0.1258170	2.3808787	28	1	114 days	0.59	M-v	4	Williams	35711	1998 QU ₄₆
1998 QF ₄₇	15.1	0.15	20000226	316.25444	172.65425	356.05590	13.79674	0.1168522	2.3745290	30	5	1951–2000	0.57	M-v	3	Williams	37284	1998 QF ₄₇
1998 QU ₄₇	13.6	0.15	20000226	28.99937	243.46957	189.74311	1.69902	0.0417387	2.8548889	56	3	1992–2000	0.63	M-v	4	Williams	37164	1998 QU ₄₇

1998 QV ₄₇	14.4	0.15	20000226	127.53177	131.76018	177.57242	7.30013	0.1566004	3.0502685	28	3	1993-1999	0.74	M-v	4	Williams	37284	1998 QV ₄₇
1998 QY ₄₇	15.1	0.15	20000226	77.98544	248.77744	178.41862	6.28780	0.0704635	2.3187203	26	3	1997-1999	0.76	M-v	3	Williams	33083	1998 QY ₄₇
1998 QF ₄₈	14.2	0.15	20000226	192.39571	356.29644	298.59196	6.37902	0.1315114	2.3248398	51	2	1998-2000	0.64	M-v	4	Williams	37164	1998 QF ₄₈
1998 QL ₄₈	13.3	0.15	20000226	125.68343	72.91109	238.26935	3.43913	0.1466930	3.1138524	66	2	1998-2000	0.56	M-v	4	Williams	37164	1998 QL ₄₈
1998 QW ₄₈	14.0	0.15	20000226	206.99803	80.27645	164.47619	12.42005	0.1423012	2.6935371	51	2	1998-2000	0.71	M-v	4	Williams	37164	1998 QW ₄₈
1998 QE ₄₉	13.7	0.15	20000226	77.58213	346.82832	41.22153	1.57721	0.0712224	2.7802873	60	4	1992-2000	0.65	M-v	2	Williams	37284	1998 QE ₄₉
1998 QF ₄₉	13.6	0.15	20000226	65.55075	270.40203	148.24934	8.71983	0.2283719	2.7651703	57	3	1977-2000	0.53	M-v	1	Williams	37284	1998 QF ₄₉
1998 QB ₅₀	14.5	0.15	20000226	203.41378	258.06339	10.79119	8.09540	0.1093087	2.4164704	38	2	1998-2000	0.55	M-v	4	Williams	37164	1998 QB ₅₀
1998 QN ₅₀	14.3	0.15	20000226	221.93840	141.22313	118.58420	5.28854	0.1405692	2.2896713	41	4	1983-2000	0.70	M-v	3	Williams	37284	1998 QN ₅₀
1998 QO ₅₀	13.1	0.15	20000226	102.67944	201.03578	145.33598	9.99438	0.0790832	2.9709663	48	3	1997-2000	0.49	M-v	3	Williams	37284	1998 QO ₅₀
1998 QU ₅₀	13.1	0.15	20000226	161.57455	284.13708	348.75230	21.28173	0.0379267	3.2050476	48	5	1979-1999	0.66	M-v	1	Williams	37284	1998 QU ₅₀
1998 QX ₅₀	14.0	0.15	20000226	164.40566	315.75440	353.24114	7.41680	0.1331034	2.4800123	63	4	1977-2000	0.69	M-v	3	Williams	37284	1998 QX ₅₀
1998 QZ ₅₀	14.5	0.15	20000226	104.19364	216.79497	146.50592	5.72985	0.1742259	2.7700294	58	4	1992-2000	0.64	M-v	3	Williams	35631	1998 QZ ₅₀
1998 QC ₅₁	15.0	0.15	20000226	117.12487	238.74386	159.32298	4.30583	0.1277237	2.2449975	40	3	1993-2000	0.60	M-v	3	Williams	33084	1998 QC ₅₁
1998 QP ₅₁	14.9	0.15	20000226	195.40028	26.17243	268.74583	2.60903	0.0765931	2.3472047	43	3	1994-2000	0.63	M-v	4	Williams	32715	1998 QP ₅₁
1998 QT ₅₁	14.2	0.15	20000226	179.30933	355.51630	316.79025	6.45759	0.1492902	2.3044793	64	4	1935-2000	0.72	M-v	3	Williams	35711	1998 QT ₅₁
1998 QV ₅₁	14.5	0.15	20000226	160.96069	11.01208	316.29988	7.61631	0.1369661	2.3930078	68	4	1987-2000	0.63	M-v	2	Williams	34301	1998 QV ₅₁
1998 QX ₅₁	15.0	0.15	20000226	35.93487	258.49109	215.30902	4.97822	0.0617884	2.2934651	37	4	1995-2000	0.82	M-v	1	Williams	35711	1998 QX ₅₁
1998 QC ₅₂	13.3	0.15	20000226	310.54242	345.21852	181.30204	22.08699	0.0108795	2.5944045	60	4	1973-2000	0.81	M-v	2	Williams	33560	1998 QC ₅₂
1998 QH ₅₂	13.8	0.15	20000226	343.10060	190.28541	319.19852	7.55500	0.0547269	2.4548380	62	3	1994-2000	0.67	M-v	3	Williams	36903	1998 QH ₅₂
1998 QM ₅₂	14.9	0.15	20000226	88.88206	270.85434	143.59995	6.79268	0.0985208	2.3460980	33	3	1991-2000	0.90	M-v	3	Williams	37284	1998 QM ₅₂
1998 QR ₅₂	18.7	0.15	20000226	329.97748	204.19244	316.31859	17.63493	0.2878473	1.0437923	185	2	1998-1999	0.55	M-v	3	Williams	36539	1998 QR ₅₂
1998 QU ₅₂	13.4	0.15	20000226	83.47359	106.70428	271.69181	7.49970	0.1180394	3.0307620	52	2	1998-2000	0.51	M-v	3	Williams	37165	1998 QU ₅₂
1998 QE ₅₄	13.8	0.15	20000226	299.50000	254.28760	311.73137	5.32101	0.1283923	2.3194774	73	4	1972-2000	0.73	M-v	3	Williams	36903	1998 QE ₅₄
1998 QG ₅₄	14.6	0.15	20000226	126.35392	140.50547	225.24949	5.95138	0.1736946	2.5418545	87	4	1978-2000	0.86	M-v	2	Williams	33561	1998 QG ₅₄
1998 QY ₅₄	14.1	0.15	20000226	95.90969	167.46144	220.71528	4.16337	0.1657937	2.7688189	45	4	1979-2000	0.68	M-v	2	Williams	36903	1998 QY ₅₄
1998 QZ ₅₄	14.4	0.15	20000226	54.77044	129.21507	329.45398	6.11892	0.1111498	2.4466792	43	3	1996-2000	0.89	M-v	2	Williams	33561	1998 QZ ₅₄
1998 QF ₅₅	13.9	0.15	20000226	248.02232	338.77834	263.24282	1.32813	0.1941516	2.3418121	62	4	1954-2000	0.62	M-v	1	Williams	37165	1998 QF ₅₅
1998 QO ₅₅	15.5	0.15	20000226	221.16684	93.67700	190.82086	2.48224	0.1634084	2.4002667	26	3	1997-2000	0.56	M-v	3	Williams	33085	1998 QO ₅₅
1998 QT ₅₅	15.3	0.15	20000226	235.77242	245.16729	41.04460	2.08694	0.1656376	2.2251889	32	3	1997-2000	0.44	M-v	2	Williams	35711	1998 QT ₅₅
1998 QY ₅₅	13.4	0.15	20000226	48.33424	270.58592	148.03933	2.58055	0.0591255	2.9007126	57	4	1993-2000	0.66	M-v	1	Williams	37165	1998 QY ₅₅
1998 QL ₅₇	15.0	0.15	20000226	109.50844	199.21740	200.88073	1.47496	0.0207635	2.2569565	55	3	1996-2000	0.64	M-v	3	Williams	37284	1998 QL ₅₇
1998 QM ₅₇	14.6	0.15	20000226	74.68110	71.79222	330.26889	1.88233	0.0730808	2.7207094	34	3	1993-2000	0.71	M-v	4	Williams	32717	1998 QM ₅₇
1998 QP ₅₇	13.4	0.15	20000226	14.32521	269.45527	185.04000	3.13887	0.1757137	3.1504438	55	3	1993-2000	0.65	M-v	3	Williams	37284	1998 QP ₅₇
1998 QO ₆₀	13.3	0.15	20000226	209.28816	283.51792	7.89387	11.21956	0.1865942	2.6702393	46	2	1998-2000	0.52	M-v	3	Williams	37285	1998 QO ₆₀
1998 QL ₆₆	13.6	0.15	20000226	163.51351	33.78524	247.23458	12.12083	0.1535136	2.6422276	67	2	1998-2000	0.54	M-v	3	Williams	37285	1998 QL ₆₆
1998 QK ₆₈	13.8	0.15	20000226	119.99414	57.59753	253.25337	13.92074	0.1331705	3.0593698	40	2	1998-2000	0.60	M-v	4	Williams	37165	1998 QK ₆₈
1998 QJ ₆₉	13.2	0.15	20000226	194.95437	22.96837	210.59155	15.44332	0.0375820	3.1483343	76	3	1993-1999	0.70	M-v	3	Williams	37285	1998 QJ ₆₉
1998 QP ₆₉	14.3	0.15	20000226	105.83483	125.54834	244.81510	14.13817	0.1452660	2.5913881	42	3	1990-2000	0.73	M-v	2	Williams	37285	1998 QP ₆₉
1998 QZ ₆₉	14.0	0.15	20000226	83.28667	151.37611	211.94169	8.69452	0.0887521	2.9659042	48	3	1997-2000	0.68	M-v	3	Williams	37285	1998 QZ ₆₉
1998 QC ₇₀	13.6	0.15	20000226	31.09905	179.61436	240.25495	10.02704	0.0790821	3.0094919	48	3	1978-2000	0.67	M-v	3	Williams	37285	1998 QC ₇₀
1998 QF ₇₀	12.6	0.15	20000226	350.80961	239.88858	212.89835	15.67739	0.0942941	3.1928878	73	3	1996-2000	0.60	M-v	3	Williams	37285	1998 QF ₇₀
1998 QP ₇₀	14.8	0.15	20000226	108.90419	139.42008	219.38418	12.02210	0.1879399	2.6910963	47	3	1997-2000	0.68	M-v	3	Williams	35712	1998 QP ₇₀
1998 QU ₇₀	14.9	0.15	20000226	58.57770	196.09245	230.63312	10.27119	0.1406822	2.5895053	30	3	1997-2000	0.84	M-v	3	Williams	35712	1998 QU ₇₀
1998 QW ₇₀	13.4	0.15	20000226	107.83699	88.92283	233.69911	10.38884	0.1528874	3.1826520	68	2	1998-1999	0.75	M-v	3	Williams	37285	1998 QW ₇₀
1998 QC ₇₁	14.3	0.15	20000226	106.00462	112.25559	237.40894	7.23163	0.2841805	2.8496909	55	3	1979-2000	0.78	M-v	2	Williams	35712	1998 QC ₇₁
1998 QF ₇₁	14.2	0.15	20000226	139.59678	84.03999	212.92594	9.16954	0.1138820	2.9630139	32	3	1997-1999	0.90	M-v	4	Williams	32980	1998 QF ₇₁
1998 QR ₇₁	13.6	0.15	20000226	49.60097	128.98111	266.38443	9.40466	0.1010864	3.1660245	44	2	1998-2000	0.73	M-v	3	Williams	36817	1998 QR ₇₁
1998 QX ₇₂	14.1	0.15	20000226	100.71957	155.16601	184.17566	15.54520	0.0792158	3.0748233	46	3	1997-2000	0.83	M-v	3	Williams	37285	1998 QX ₇₂
1998 QB ₇₃	14.1	0.15	20000226	94.07324	138.71726	218.10404	9.15662	0.1915920	2.9919362	48	3	1997-2000	0.70	M-v	3	Williams	35712	1998 QB ₇₃
1998 QE ₇₃	12.2	0.15	20000226	137.60695	9.39979	294.61818	8.74029	0.0641278	3.0028631	63	3	1993-2000	0.53	M-v	3	Williams	37285	1998 QE ₇₃
1998 QG ₇₃	12.1	0.15	20000226	346.65606	217.82255	246.96666	8.39796	0.0455803	3.0136883	91	4	1978-2000	0.60	M-v	3	Williams	37285	1998 QG ₇₃
1998 QL ₇₃	13.3	0.15	20000226	353.20565	221.86433	237.13182	9.42706	0.0623709	3.0455650	79	2	1998-2000	0.63	M-v	3	Williams	37285	1998 QL ₇₃

1998 QO ₇₃	14.4	0.15	20000226	157.42268	92.71929	205.08618	14.45622	0.2182297	2.5948911	48	4	1993-2000	0.63	M-v	2	Williams	35712	1998 QO ₇₃
1998 QV ₇₃	13.1	0.15	20000226	13.06095	214.58858	260.51777	14.23889	0.1792670	2.6495397	51	3	1990-2000	0.70	M-v	2	Williams	37285	1998 QV ₇₃
1998 QD ₇₄	14.2	0.15	20000226	37.34786	161.28502	257.22084	8.14548	0.0573479	2.9786831	39	2	1998-2000	0.79	M-v	4	Williams	37165	1998 QD ₇₄
1998 QG ₇₄	13.5	0.15	20000226	63.89197	175.50755	219.09236	8.88698	0.1991919	3.1143987	55	3	1993-2000	0.72	M-v	2	Williams	37285	1998 QG ₇₄
1998 QO ₇₄	13.9	0.15	20000226	71.76920	130.39569	285.50836	11.45447	0.1392575	2.6092998	59	2	1998-2000	0.66	M-v	3	Williams	37165	1998 QO ₇₄
1998 QV ₇₄	14.3	0.15	20000226	230.86057	11.68791	230.67106	14.42248	0.0506493	2.5459916	47	3	1997-2000	0.59	M-v	3	Williams	37285	1998 QV ₇₄
1998 QY ₇₄	14.7	0.15	20000226	11.13374	190.53577	278.78551	12.86950	0.0560443	2.6274415	39	2	1998-2000	0.67	M-v	4	Williams	37166	1998 QY ₇₄
1998 QC ₇₅	13.4	0.15	20000226	123.44551	63.44759	238.14661	9.01947	0.0969023	3.4208825	74	2	1998-1999	0.75	M-v	4	Williams	37285	1998 QC ₇₅
1998 QO ₇₅	13.5	0.15	20000226	118.97400	76.31595	252.12978	13.89528	0.1027401	3.0547027	51	2	1998-2000	0.63	M-v	4	Williams	37166	1998 QO ₇₅
1998 QM ₇₆	12.8	0.15	20000226	298.90090	291.60846	245.04941	9.92199	0.1340513	2.6400548	84	4	1986-2000	0.61	M-v	2	Williams	37285	1998 QM ₇₆
1998 QT ₇₆	14.7	0.15	20000226	322.41021	273.16283	275.02614	5.92426	0.0860213	2.1952889	50	2	1998-2000	0.62	M-v	4	Williams	37166	1998 QT ₇₆
1998 QR ₇₇	13.7	0.15	20000226	304.91841	316.87415	214.41359	12.42620	0.1090192	2.6728801	32	4	1990-2000	0.65	M-v	3	Williams	37285	1998 QR ₇₇
1998 QS ₇₇	13.8	0.15	20000226	72.84282	106.73906	285.73713	9.03686	0.0892692	2.9604437	40	2	1998-2000	0.58	M-v	3	Williams	37166	1998 QS ₇₇
1998 QW ₇₇	12.5	0.15	20000226	208.42872	286.90149	323.92166	11.94600	0.1637105	2.6733978	64	3	1992-2000	0.67	M-v	3	Williams	37285	1998 QW ₇₇
1998 QX ₇₇	13.5	0.15	20000226	119.49857	40.79204	324.08357	13.65851	0.1494795	2.5984924	68	3	1996-2000	0.64	M-v	2	Williams	35712	1998 QX ₇₇
1998 QE ₇₈	12.9	0.15	20000226	219.31845	310.54453	287.39692	11.02078	0.2484067	2.6132728	42	3	1960-2000	0.58	M-v	4	Williams	37285	1998 QE ₇₈
1998 QA ₈₄	14.2	0.15	20000226	116.10978	92.26604	222.15378	16.72996	0.2213466	3.0904705	42	4	1960-2000	0.71	M-v	2	Williams	37285	1998 QA ₈₄
1998 QQ ₈₄	13.4	0.15	20000226	3.75605	214.16189	236.96856	12.98642	0.1280041	3.0903526	74	3	1996-2000	0.66	M-v	3	Williams	37285	1998 QQ ₈₄
1998 QF ₈₅	13.7	0.15	20000226	271.08179	261.81476	299.10732	13.91454	0.0507431	2.5631456	53	2	1998-2000	0.57	M-v	4	Williams	37166	1998 QF ₈₅
1998 QW ₈₅	14.3	0.15	20000226	155.12234	100.05482	230.27843	6.60688	0.1405111	2.3915177	60	3	1987-2000	0.60	M-v	3	Williams	36903	1998 QW ₈₅
1998 QZ ₈₅	13.1	0.15	20000226	238.34959	241.53748	324.51873	31.50430	0.3041556	2.7861509	32	3	1993-1999	0.89	M-v	3	Williams	35712	1998 QZ ₈₅
1998 QG ₈₆	13.6	0.15	20000226	30.63835	169.42583	286.43307	12.14143	0.1916201	2.7725850	82	3	1997-2000	0.66	M-v	2	Williams	37285	1998 QG ₈₆
1998 QK ₈₆	13.7	0.15	20000226	92.76508	113.80403	246.63387	9.38844	0.1100298	2.9891153	49	3	1978-2000	0.66	M-v	3	Williams	37285	1998 QK ₈₆
1998 QN ₈₆	13.3	0.15	20000226	73.84601	118.47129	286.27323	8.08335	0.1597117	2.7592286	78	3	1989-2000	0.68	M-v	2	Williams	37285	1998 QN ₈₆
1998 QW ₈₆	13.7	0.15	20000226	140.01249	50.12182	285.03804	13.26611	0.1893863	2.5684884	68	2	1998-2000	0.57	M-v	3	Williams	37166	1998 QW ₈₆
1998 QB ₈₇	13.2	0.15	20000226	53.36127	100.90927	303.11886	15.77489	0.1320647	3.1738791	46	3	1989-2000	0.51	M-v	2	Williams	37285	1998 QB ₈₇
1998 QO ₈₇	13.8	0.15	20000226	78.82224	117.63789	265.22279	10.37675	0.1172877	2.9957030	43	2	1998-2000	0.74	M-v	3	Williams	37167	1998 QO ₈₇
1998 QP ₈₈	13.8	0.15	20000226	100.45046	129.72743	211.72472	9.84796	0.2009373	3.1220789	34	3	1997-2000	0.59	M-v	3	Williams	35712	1998 QP ₈₈
1998 QW ₈₉	13.8	0.15	20000226	168.93747	339.34917	322.32532	15.21578	0.1550530	2.5711967	39	4	1982-1999	0.61	M-v	3	Williams	37285	1998 QW ₈₉
1998 QU ₉₀	13.9	0.15	20000226	53.38596	54.01525	52.78922	5.96711	0.0772133	2.2664311	74	4	1993-2000	0.72	M-v	2	Williams	36903	1998 QU ₉₀
1998 QN ₉₂	13.1	0.15	20000226	117.20626	1.30026	8.50650	13.79952	0.1677485	2.9677545	52	3	1992-2000	0.73	M-v	3	Williams	34020	1998 QN ₉₂
1998 QU ₉₂	13.9	0.15	20000226	145.56809	305.87392	70.44781	6.77886	0.1615374	2.3954985	46	5	1976-2000	0.72	M-v	2	Williams	33756	1998 QU ₉₂
1998 QR ₉₃	13.3	0.15	20000226	120.84688	333.03512	58.04877	13.93785	0.1654547	2.6832269	54	3	1989-2000	0.70	M-v	3	Williams	35713	1998 QR ₉₃
1998 QS ₉₃	14.9	0.15	20000226	108.18359	216.16866	141.34309	15.67648	0.2085168	2.5668823	37	3	1994-2000	0.72	M-v	3	Williams	36003	1998 QS ₉₃
1998 QM ₉₄	14.4	0.15	20000226	116.36943	157.71218	203.77180	2.59506	0.0913824	2.5293879	36	3	1982-2000	0.66	M-v	4	Williams	33349	1998 QM ₉₄
1998 QC ₉₅	13.0	0.15	20000226	243.56430	256.23587	304.26540	12.78480	0.2266065	2.6419208	44	2	1998-2000	0.50	M-v	4	Williams	37285	1998 QC ₉₅
1998 QK ₉₅	13.1	0.15	20000226	65.23717	135.97526	254.65139	9.39286	0.1184760	2.9799186	55	2	1998-2000	0.48	M-v	3	Williams	37285	1998 QK ₉₅
1998 QF ₉₆	14.7	0.15	20000226	213.15399	31.61820	229.96925	5.86668	0.1681549	2.3373918	34	4	1991-2000	0.62	M-v	2	Williams	37285	1998 QF ₉₆
1998 QV ₉₆	14.0	0.15	20000226	68.80023	100.77537	292.17713	11.49043	0.0561566	2.9691283	29	2	1998-2000	0.56	M-v	3	Williams	37167	1998 QV ₉₆
1998 QA ₉₈	13.4	0.15	20000226	18.83785	187.33581	310.93262	6.59361	0.1618488	2.4516848	78	3	1997-2000	0.65	M-v	2	Williams	37285	1998 QA ₉₈
1998 QC ₉₈	13.8	0.15	20000226	93.72729	256.89508	152.98284	10.14648	0.1156795	2.4786104	62	6	1990-2000	0.75	M-v	2	Williams	36085	1998 QC ₉₈
1998 QD ₉₉	13.0	0.15	20000226	84.52093	283.92616	93.27928	3.29908	0.0705904	2.9087126	91	3	1989-2000	0.70	M-v	2	Williams	37285	1998 QD ₉₉
1998 QE ₉₉	13.2	0.15	20000226	23.83426	77.62649	356.31583	16.55692	0.1732448	3.3700091	49	3	1992-2000	0.75	M-v	3	Williams	36903	1998 QE ₉₉
1998 QP ₁₀₀	14.4	0.15	20000226	84.44568	332.76095	52.49480	5.12995	0.0793642	2.8007586	46	3	1994-2000	0.75	M-v	3	Williams	37285	1998 QP ₁₀₀
1998 QW ₁₀₀	13.0	0.15	20000226	302.49557	88.03762	82.22835	2.97132	0.0203469	2.7041495	55	2	1998-2000	0.49	M-v	4	Williams	37167	1998 QW ₁₀₀
1998 QQ ₁₀₁	12.7	0.15	20000226	79.54988	213.08750	165.12849	16.84641	0.1915721	3.0860383	72	3	1971-2000	0.66	M-v	2	Williams	36903	1998 QQ ₁₀₁
1998 QZ ₁₀₁	14.9	0.15	20000226	217.38615	102.65467	157.04294	9.92231	0.0278208	2.5574682	32	3	1992-2000	0.80	M-v	4	Williams	33563	1998 QZ ₁₀₁
1998 QZ ₁₀₂	13.1	0.15	20000226	147.26018	165.90228	131.33796	6.19584	0.2257086	2.8530864	80	5	1977-2000	0.71	M-v	2	Williams	37285	1998 QZ ₁₀₂
1998 QL ₁₀₃	15.4	0.15	20000226	3.18446	73.31734	83.30794	4.37287	0.0590978	2.1874506	44	4	1992-2000	0.84	M-v	3	Williams	35713	1998 QL ₁₀₃
1998 QM ₁₀₃	13.9	0.15	20000226	141.22217	227.21840	91.61513	3.24744	0.0608368	2.8887143	34	3	1982-1999	0.61	M-v	5	Williams	32988	1998 QM ₁₀₃
1998 QQ ₁₀₃	14.9	0.15	20000226	131.89779	350.48026	31.02278	4.47759	0.1145025	2.2790402	79	4	1991-2000	0.66	M-v	2	Williams	35713	1998 QQ ₁₀₃
1998 QF ₁₀₄	13.4	0.15	20000226	190.08371	272.25812	13.21657	14.94437	0.1004750	2.5356279	77	5	1978-2000	0.74	M-v	3	Williams	37285	1998 QF ₁₀₄
1998 QQ ₁₀₄	13.7	0.15	20000226	244.70673	140.05143	69.75714	5.72497	0.0292208	3.0861876	37	3	1996-2000	0.63	M-v	3	Williams	33270	1998 QQ ₁₀₄

1998 QW ₁₀₄	13.7	0.15	20000226	172.34491	122.99580	147.00178	9.94680	0.1172979	3.1174747	28	3	1992–2000	0.79	M-v	4	Williams	33270	1998 QW ₁₀₄
1998 QL ₁₀₅	14.7	0.15	20000226	332.71953	105.44650	69.82635	5.00855	0.1041696	2.2294051	56	2	1998–2000	0.76	M-v	4	Williams	37167	1998 QL ₁₀₅
1998 QM ₁₀₆	13.7	0.15	20000226	121.57332	326.10116	14.31378	11.33210	0.1656161	2.7467290	50	3	1989–1999	0.70	M-v	3	Williams	37285	1998 QM ₁₀₆
1998 QU ₁₀₆	13.9	0.15	20000226	77.06521	325.08525	68.78657	4.52768	0.1706881	2.8763381	37	1	111 days	0.51	M-v	4	Williams	33756	1998 QU ₁₀₆
1998 RM	13.2	0.15	20000226	324.88943	271.28186	207.24343	16.60513	0.0884496	2.8031866	99	3	1992–2000	0.49	M-v	2	Williams	37285	1998 RM
1998 RJ ₁	13.2	0.15	20000226	37.14789	259.39066	168.69974	1.14255	0.2192365	3.1943822	87	3	1993–2000	0.64	M-v	2	Williams	37167	1998 RJ ₁
1998 RO ₁	18.1	0.15	20000226	73.88065	151.04133	351.94939	22.67803	0.7200337	0.9907040	169	2	1998–1999	0.57	M-v	5	Williams	36378	1998 RO ₁
1998 RP ₁	14.8	0.15	20000226	147.01763	301.59818	14.96776	1.75832	0.2158254	2.7606975	50	2	1998–2000	0.50	M-v	4	Williams	37167	1998 RP ₁
1998 RE ₂	12.9	0.15	20000226	51.39615	281.39850	133.30798	10.63643	0.0914040	3.0588392	46	3	1995–2000	0.49	M-v	1	Williams	37285	1998 RE ₂
1998 RQ ₂	15.5	0.15	20000226	103.15439	46.42581	17.71948	6.13000	0.0572178	2.1464416	57	4	1995–2000	0.58	M-v	2	Williams	35713	1998 RQ ₂
1998 RP ₅	13.7	0.15	20000226	305.32957	1.35074	185.59754	13.99223	0.1112404	2.5614669	51	3	1988–2000	0.65	M-v	3	Williams	36903	1998 RP ₅
1998 RB ₆	15.2	0.15	20000226	112.14322	195.51913	169.54653	8.43056	0.1551370	2.5856146	22	3	1990–2000	0.71	M-v	3	Williams	35713	1998 RB ₆
1998 RM ₆	14.1	0.15	20000226	195.33115	109.86618	191.52047	11.44243	0.0918715	2.5674825	40	4	1981–2000	0.93	M-v	2	Williams	33510	1998 RM ₆
1998 RZ ₈	15.0	0.15	20000226	88.70580	195.61351	166.46809	3.65296	0.1703053	2.9615444	31	4	1993–2000	0.59	M-v	1	Williams	35713	1998 RZ ₈
1998 RF ₉	14.8	0.15	20000226	353.50512	265.26002	190.76052	0.21260	0.0445787	2.9553575	26	2	1998–1999	0.41	M-v	5	Williams	37168	1998 RF ₉
1998 RL ₉	15.7	0.15	20000226	156.82698	158.07668	161.69994	5.80448	0.0485596	2.4638083	17	3	1993–2000	0.48	M-v	3	Williams	32991	1998 RL ₉
1998 RX ₁₂	13.5	0.15	20000226	279.40097	4.32159	179.48423	0.67413	0.1120951	3.1604451	57	3	1995–2000	0.64	M-v	4	Williams	37285	1998 RX ₁₂
1998 RJ ₁₇	14.3	0.15	20000226	62.84450	261.71539	179.00005	10.55577	0.2304246	2.4251298	40	4	1987–2000	0.71	M-v	2	Williams	35714	1998 RJ ₁₇
1998 RQ ₁₉	13.5	0.15	20000226	124.30717	111.45312	189.92462	1.62986	0.1274791	3.1693904	52	2	1998–1999	0.65	M-v	5	Williams	37168	1998 RQ ₁₉
1998 RO ₂₂	15.0	0.15	20000226	19.02929	305.54075	172.20120	3.90519	0.0716598	2.3315402	52	4	1995–2000	0.59	M-v	1	Williams	37285	1998 RO ₂₂
1998 RF ₂₃	14.5	0.15	20000226	77.34037	264.83979	123.57664	6.23841	0.1130173	2.7505453	36	3	1997–2000	0.70	M-v	4	Williams	37285	1998 RF ₂₃
1998 RC ₂₄	14.9	0.15	20000226	45.01992	250.39856	172.90522	4.06592	0.1001549	2.7554760	34	3	1992–2000	0.76	M-v	3	Williams	35714	1998 RC ₂₄
1998 RR ₂₉	15.6	0.15	20000226	98.65939	243.43949	137.86134	4.25860	0.1326411	2.6027520	23	4	1992–2000	0.67	M-v	1	Williams	36085	1998 RR ₂₉
1998 RK ₃₃	13.8	0.15	20000226	200.31749	253.67855	2.23246	13.20742	0.1379253	2.5907299	42	3	1994–1999	0.53	M-v	3	Williams	37286	1998 RK ₃₃
1998 RM ₃₄	14.8	0.15	20000226	328.85832	35.03841	140.05855	7.38455	0.0349181	2.2473312	42	3	1997–2000	0.62	M-v	3	Williams	37286	1998 RM ₃₄
1998 RZ ₃₄	14.8	0.15	20000226	196.38020	146.55001	130.85800	3.05262	0.1665433	2.3944526	28	5	1976–2000	0.69	M-v	2	Williams	37286	1998 RZ ₃₄
1998 RN ₃₅	13.9	0.15	20000226	127.46231	327.93175	359.53845	1.72150	0.0549881	2.8785768	47	4	1993–2000	0.53	M-v	3	Williams	37286	1998 RN ₃₅
1998 RO ₃₈	14.2	0.15	20000226	240.84897	247.69230	6.75531	3.78849	0.1267229	2.2104789	54	3	1988–2000	0.79	M-v	3	Williams	36903	1998 RO ₃₈
1998 RA ₃₉	14.6	0.15	20000226	85.72788	229.96027	159.91953	10.17531	0.1278044	2.7304665	28	3	1997–2000	0.47	M-v	3	Williams	34021	1998 RA ₃₉
1998 RD ₄₀	15.3	0.15	20000226	207.40071	169.85434	96.26737	4.44839	0.1669552	2.3789325	23	3	1994–1999	0.68	M-v	5	Williams	33510	1998 RD ₄₀
1998 RJ ₄₀	14.9	0.15	20000226	24.89978	350.05711	126.07307	7.17796	0.0567204	2.3344106	47	2	1998–2000	0.68	M-v	4	Williams	37168	1998 RJ ₄₀
1998 RO ₄₀	13.3	0.15	20000226	91.62221	274.52282	75.41329	5.45343	0.0649968	3.1935979	65	2	1998–2000	0.48	M-v	3	Williams	37286	1998 RO ₄₀
1998 RQ ₄₂	14.8	0.15	20000226	169.74251	33.05936	297.81400	4.35944	0.1281712	2.2813711	39	3	1991–2000	0.62	M-v	4	Williams	37286	1998 RQ ₄₂
1998 RV ₄₂	13.5	0.15	20000226	117.73099	118.45539	231.54567	6.25854	0.0738124	2.7734507	57	2	1998–2000	0.55	M-v	4	Williams	37168	1998 RV ₄₂
1998 RD ₄₃	14.8	0.15	20000226	114.36478	46.41183	309.51935	3.89138	0.0829537	2.7323286	37	3	1993–2000	0.68	M-v	4	Williams	33350	1998 RD ₄₃
1998 RD ₄₄	15.0	0.15	20000226	105.88463	337.67726	26.56734	5.86736	0.0994495	2.7353139	35	3	1992–2000	0.68	M-v	4	Williams	35714	1998 RD ₄₄
1998 RO ₄₄	13.0	0.15	20000226	288.33966	97.17174	61.25109	5.93940	0.0997267	3.2060909	87	3	1984–2000	0.58	M-v	3	Williams	37286	1998 RO ₄₄
1998 RO ₄₅	15.1	0.15	20000226	192.94220	112.30633	183.74014	5.97385	0.0996883	2.3620008	38	3	1997–2000	0.78	M-v	4	Williams	35714	1998 RO ₄₅
1998 RE ₄₇	14.8	0.15	20000226	145.60609	143.21155	214.80305	6.30317	0.1526443	2.3230711	45	5	1984–2000	0.70	M-v	2	Williams	35714	1998 RE ₄₇
1998 RK ₄₇	14.1	0.15	20000226	188.52027	351.59277	311.70622	6.22196	0.1364797	2.3330246	83	4	1987–2000	0.77	M-v	2	Williams	36903	1998 RK ₄₇
1998 RS ₄₈	14.1	0.15	20000226	64.54111	178.13073	233.98371	1.84648	0.2143693	2.9652992	51	4	1978–2000	0.73	M-v	3	Williams	37286	1998 RS ₄₈
1998 RG ₄₉	15.3	0.15	20000226	208.50295	108.45398	184.31883	3.02974	0.1463255	2.1922377	54	5	1985–2000	0.65	M-v	2	Williams	35714	1998 RG ₄₉
1998 RO ₄₉	14.8	0.15	20000226	53.45252	301.96020	110.66427	1.47262	0.2559389	3.2630008	37	4	1994–2000	0.68	M-v	1	Marsden	35714	1998 RO ₄₉
1998 RJ ₅₀	13.7	0.15	20000226	61.39620	283.10253	126.40290	1.82846	0.2105744	3.0584754	49	4	1973–2000	0.65	M-v	1	Williams	36903	1998 RJ ₅₀
1998 RT ₅₀	13.9	0.15	20000226	238.79886	251.30460	349.97203	8.11031	0.1684125	2.3773358	52	5	1975–2000	0.54	M-v	1	Williams	37286	1998 RT ₅₀
1998 RW ₅₀	14.3	0.15	20000226	327.30472	214.76037	295.01183	2.40795	0.0217164	2.6850001	65	3	1993–2000	0.67	M-v	5	Williams	37286	1998 RW ₅₀
1998 RC ₅₁	14.8	0.15	20000226	243.20535	285.49347	313.81673	4.11668	0.1639127	2.3887115	39	3	1993–2000	0.80	M-v	4	Williams	33564	1998 RC ₅₁
1998 RD ₅₁	13.4	0.15	20000226	201.92685	36.75592	234.23992	5.10679	0.0564785	2.6488704	84	4	1981–2000	0.56	M-v	2	Williams	37286	1998 RD ₅₁
1998 RJ ₅₂	14.3	0.15	20000226	94.30189	328.43766	48.32275	6.89449	0.0572978	2.7397613	39	3	1996–2000	0.55	M-v	3	Williams	35714	1998 RJ ₅₂
1998 RQ ₅₂	13.6	0.15	20000226	254.73873	60.15048	149.15669	9.50402	0.1786823	2.6758198	30	3	1992–2000	0.74	M-v	4	Williams	33272	1998 RQ ₅₂
1998 RZ ₅₂	13.3	0.15	20000226	72.59382	223.10365	162.47504	7.65031	0.0448426	3.0191234	49	3	1977–2000	0.58	M-v	3	Williams	37286	1998 RZ ₅₂
1998 RC ₅₃	14.9	0.15	20000226	30.36024	60.24250	19.80845	2.01058	0.0363943	2.8262568	32	3	1960–2000	0.74	M-v	4	Williams	35714	1998 RC ₅₃
1998 RF ₅₃	13.9	0.15	20000226	169.55814	124.83252	162.93799	2.21066	0.0407138	2.9133580	61	3	1993–2000	0.72	M-v	5	Williams	37286	1998 RF ₅₃

1998 RL ₅₃	13.8	0.15	20000226	35.92235	81.33273	346.78893	9.62534	0.0811672	3.0678179	60	3	1996–1999	0.64	M-v	3	Williams	37286	1998 RL ₅₃
1998 RN ₅₃	14.9	0.15	20000226	175.20687	71.03573	228.52692	3.03632	0.0835729	2.5964085	42	3	1997–2000	0.79	M-v	4	Williams	35441	1998 RN ₅₃
1998 RP ₅₃	14.9	0.15	20000226	284.83984	6.91109	200.07825	7.33223	0.1416114	2.3849492	31	3	1997–2000	0.81	M-v	4	Williams	32996	1998 RP ₅₃
1998 RN ₅₄	15.0	0.15	20000226	256.00628	297.30560	306.82807	5.77763	0.0712368	2.3161854	32	3	1977–2000	0.88	M-v	4	Williams	33351	1998 RN ₅₄
1998 RY ₅₄	14.0	0.15	20000226	120.47255	132.73784	218.35324	8.57622	0.1754038	2.7604367	37	3	1997–2000	0.73	M-v	4	Williams	35714	1998 RY ₅₄
1998 RZ ₅₅	13.8	0.15	20000226	286.11530	267.71974	321.22163	4.01524	0.0907654	2.1657900	66	2	1998–2000	0.58	M-v	4	Williams	37168	1998 RZ ₅₅
1998 RC ₅₆	14.5	0.15	20000226	90.09897	217.12073	204.97910	6.04142	0.1001346	2.3744126	38	5	1989–2000	0.61	M-v	2	Williams	35715	1998 RC ₅₆
1998 RU ₅₆	13.7	0.15	20000226	359.16825	273.07907	211.74228	3.26324	0.0664245	2.6977823	77	3	1992–2000	0.66	M-v	3	Williams	37286	1998 RU ₅₆
1998 RY ₅₇	15.2	0.15	20000226	209.73278	174.25910	111.41100	1.90005	0.0324813	2.3899137	39	3	1997–2000	0.69	M-v	3	Williams	33351	1998 RY ₅₇
1998 RM ₅₈	14.1	0.15	20000226	163.44335	311.61663	350.20640	1.66609	0.0134925	2.8684776	37	3	1993–2000	0.77	M-v	5	Williams	33351	1998 RM ₅₈
1998 RP ₅₈	13.7	0.15	20000226	136.67986	126.37017	186.60104	12.01749	0.0928142	3.0545371	40	3	1993–2000	0.72	M-v	4	Williams	37286	1998 RP ₅₈
1998 RA ₅₉	14.4	0.15	20000226	278.10644	13.17106	210.41933	4.35130	0.0788073	2.3105419	73	4	1990–2000	0.64	M-v	1	Williams	36903	1998 RA ₅₉
1998 RR ₅₉	15.3	0.15	20000226	214.66236	335.40902	311.50532	3.57461	0.0742456	2.3044167	28	3	1997–2000	0.68	M-v	3	Williams	34022	1998 RR ₅₉
1998 RU ₅₉	14.4	0.15	20000226	195.51739	296.23185	346.75396	11.49955	0.1651680	2.4589735	42	3	1994–1999	0.67	M-v	4	Williams	37286	1998 RU ₅₉
1998 RX ₅₉	15.0	0.15	20000226	236.22017	48.24327	211.33260	5.63654	0.1035484	2.3319876	32	3	1997–2000	0.80	M-v	3	Williams	35715	1998 RX ₅₉
1998 RY ₆₀	13.9	0.15	20000226	156.74429	336.58968	346.88600	13.65506	0.1771782	2.5446485	64	2	1998–2000	0.65	M-v	3	Williams	37169	1998 RY ₆₀
1998 RL ₆₁	14.6	0.15	20000226	241.77541	284.17570	336.23206	5.25565	0.1361478	2.2325579	50	4	1987–2000	0.58	M-v	1	Williams	35715	1998 RL ₆₁
1998 RR ₆₁	13.3	0.15	20000226	51.09444	164.11155	238.45096	2.92903	0.1309118	3.4628615	46	3	1985–2000	0.61	M-v	3	Williams	37169	1998 RR ₆₁
1998 RW ₆₁	14.2	0.15	20000226	45.08699	158.52893	263.91292	1.25713	0.0614069	3.0430374	36	3	1996–2000	0.66	M-v	4	Williams	33273	1998 RW ₆₁
1998 RB ₆₂	13.5	0.15	20000226	99.98212	9.83856	353.52308	9.60473	0.1045943	2.9788738	61	3	1996–2000	0.63	M-v	2	Williams	37286	1998 RB ₆₂
1998 RD ₆₂	14.1	0.15	20000226	100.98501	85.24908	345.97299	4.14675	0.1667668	2.2466855	39	3	1991–2000	0.67	M-v	2	Williams	34022	1998 RD ₆₂
1998 RN ₆₂	13.4	0.15	20000226	193.21218	110.76617	138.01262	1.52023	0.1381325	3.0504445	51	2	1998–2000	0.66	M-v	5	Williams	37286	1998 RN ₆₂
1998 RZ ₆₂	15.0	0.15	20000226	138.07164	297.39851	54.62344	3.19928	0.1987692	2.4510105	40	4	1993–2000	0.64	M-v	2	Williams	35715	1998 RZ ₆₂
1998 RG ₆₄	15.1	0.15	20000226	224.65283	98.61158	163.38344	5.46782	0.1754105	2.3198823	40	5	1990–2000	0.69	M-v	1	Williams	35715	1998 RG ₆₄
1998 RP ₆₄	13.3	0.15	20000226	74.68865	204.65298	179.58790	23.20448	0.0920603	3.1291571	46	3	1987–2000	0.49	M-v	2	Williams	35715	1998 RP ₆₄
1998 RQ ₆₄	14.1	0.15	20000226	99.06788	187.44268	170.30085	1.97386	0.2384938	3.0548288	38	4	1993–2000	0.58	M-v	1	Williams	35715	1998 RQ ₆₄
1998 RS ₆₄	14.5	0.15	20000226	303.22013	180.99104	2.39749	15.38151	0.0521109	2.5850323	28	3	1973–1999	0.87	M-v	4	Williams	37286	1998 RS ₆₄
1998 RL ₆₅	14.2	0.15	20000226	90.08122	36.66081	345.66117	1.38079	0.0777316	2.8803377	50	3	1993–2000	0.68	M-v	4	Williams	37286	1998 RL ₆₅
1998 RR ₆₅	14.0	0.15	20000226	344.35562	141.94906	353.65428	5.00914	0.0550737	2.7938847	44	3	1977–2000	0.67	M-v	4	Williams	37286	1998 RR ₆₅
1998 RS ₆₅	14.5	0.15	20000226	170.33921	320.33082	343.39569	3.58124	0.1106324	2.6402639	53	3	1995–2000	0.62	M-v	5	Williams	33003	1998 RS ₆₅
1998 RC ₆₆	15.2	0.15	20000226	290.77914	18.64670	203.35550	3.72778	0.1178165	2.2139333	37	4	1974–2000	0.72	M-v	2	Williams	33273	1998 RC ₆₆
1998 RK ₆₆	13.9	0.15	20000226	101.78754	121.29429	250.17706	2.10655	0.0976107	2.8668366	63	3	1996–2000	0.62	M-v	3	Williams	37169	1998 RK ₆₆
1998 RP ₆₆	14.4	0.15	20000226	229.43207	340.15254	264.22582	2.77930	0.0381393	2.7973088	27	3	1993–2000	0.80	M-v	4	Williams	33004	1998 RP ₆₆
1998 RT ₆₆	13.0	0.15	20000226	109.82448	137.68520	215.47676	7.30988	0.0816275	3.0307398	70	2	1998–2000	0.62	M-v	3	Williams	37169	1998 RT ₆₆
1998 RV ₆₆	14.7	0.15	20000226	205.78678	47.98523	253.05554	3.32172	0.1783866	2.1929206	38	3	1988–2000	0.66	M-v	3	Williams	37286	1998 RV ₆₆
1998 RO ₆₇	14.9	0.15	20000226	222.39872	61.52675	214.04577	6.31584	0.1056828	2.3452087	42	3	1997–2000	0.65	M-v	3	Williams	33005	1998 RO ₆₇
1998 RR ₆₇	13.9	0.15	20000226	141.40633	46.18132	258.12988	2.87922	0.1834797	3.0895755	35	2	1998–2000	0.64	M-v	5	Williams	37170	1998 RR ₆₇
1998 RZ ₆₇	14.1	0.15	20000226	45.03250	218.21528	217.09643	3.46485	0.1197245	2.9726165	49	5	1985–2000	0.85	M-v	1	Williams	35715	1998 RZ ₆₇
1998 RN ₆₈	14.8	0.15	20000226	111.48189	22.45017	348.99757	2.31760	0.1293942	2.7124942	45	4	1994–2000	0.67	M-v	2	Williams	35715	1998 RN ₆₈
1998 RQ ₆₈	14.4	0.15	20000226	103.37699	29.06568	340.10000	1.43165	0.0943140	2.8749586	47	3	1993–2000	0.58	M-v	4	Williams	35715	1998 RQ ₆₈
1998 RS ₆₈	14.3	0.15	20000226	131.50074	21.86882	1.63753	9.14752	0.1007610	2.3145047	54	4	1982–2000	0.63	M-v	3	Williams	35715	1998 RS ₆₈
1998 RX ₆₈	13.6	0.15	20000226	129.34538	350.74553	5.96778	9.90598	0.1437896	2.6057492	38	4	1977–2000	0.75	M-v	2	Williams	35715	1998 RX ₆₈
1998 RC ₆₉	13.0	0.15	20000226	103.98175	324.71766	21.43178	0.52886	0.1928385	3.1763578	62	3	1992–2000	0.58	M-v	3	Williams	37170	1998 RC ₆₉
1998 RD ₆₉	15.3	0.15	20000226	270.91885	165.23816	69.00279	0.94464	0.1283267	2.2457572	37	3	1995–2000	0.65	M-v	4	Williams	35715	1998 RD ₆₉
1998 RP ₇₀	12.9	0.15	20000226	257.10848	127.23998	58.87217	7.65002	0.1119671	3.3884206	107	3	1996–2000	0.62	M-v	3	Williams	37286	1998 RP ₇₀
1998 RW ₇₀	14.9	0.15	20000226	147.78853	243.49494	131.70525	4.48712	0.1469329	2.1981600	47	4	1990–2000	0.73	M-v	2	Williams	35715	1998 RW ₇₀
1998 RF ₇₁	13.9	0.15	20000226	100.61622	261.59253	99.32004	3.08408	0.1177063	2.9982481	49	4	1993–2000	0.69	M-v	1	Williams	33352	1998 RF ₇₁
1998 RM ₇₁	14.7	0.15	20000226	26.92112	306.12014	156.34088	5.58525	0.1215810	2.7608101	32	3	1989–2000	0.75	M-v	4	Williams	33007	1998 RM ₇₁
1998 RZ ₇₁	13.1	0.15	20000226	101.01212	306.32445	63.56718	2.76121	0.0419796	2.8793129	63	3	1996–2000	0.47	M-v	3	Williams	37170	1998 RZ ₇₁
1998 RG ₇₂	14.4	0.15	20000226	160.47031	150.05600	168.73582	7.45479	0.1202201	2.5830632	40	3	1997–2000	0.64	M-v	4	Williams	33008	1998 RG ₇₂
1998 RM ₇₂	14.9	0.15	20000226	157.97708	180.61530	152.57550	2.22970	0.0620977	2.5112914	36	4	1996–2000	0.63	M-v	1	Williams	35715	1998 RM ₇₂
1998 RA ₇₃	13.5	0.15	20000226	341.70750	221.17797	271.14899	0.75778	0.0365129	2.9518062	51	3	1993–2000	0.70	M-v	5	Williams	37286	1998 RA ₇₃
1998 RH ₇₄	12.6	0.15	20000226	132.65810	47.90136	275.99617	3.79852	0.1527338	3.0369159	69	2	1998–2000	0.67	M-v	3	Williams	37286	1998 RH ₇₄

1998 RP ₇₄	14.7	0.15	20000226	244.83353	283.51748	335.32604	4.58808	0.1377883	2.2738293	53	4	1990–2000	0.62	M-v	2	Williams	35715	1998 RP ₇₄
1998 RT ₇₄	14.8	0.15	20000226	3.96480	195.66541	314.16158	1.80521	0.1101756	2.4284377	24	4	1987–2000	0.81	M-v	3	Williams	33352	1998 RT ₇₄
1998 RW ₇₅	13.1	0.15	20000226	313.11119	78.64229	80.41213	2.56775	0.1242002	3.0439238	64	3	1996–2000	0.57	M-v	3	Williams	37286	1998 RW ₇₅
1998 RC ₇₆	14.6	0.15	20000226	198.06819	130.98216	149.27598	4.98887	0.2249221	2.3820297	35	4	1979–2000	0.60	M-v	2	Williams	35716	1998 RC ₇₆
1998 RH ₇₆	13.1	0.15	20000226	69.74893	335.82296	68.02735	3.23756	0.1043306	2.9443995	72	3	1989–2000	0.65	M-v	2	Williams	37286	1998 RH ₇₆
1998 RU ₇₆	14.6	0.15	20000226	168.93347	167.89420	149.61751	6.20017	0.2534174	2.3631393	56	5	1976–2000	0.69	M-v	2	Williams	35716	1998 RU ₇₆
1998 RB ₇₇	13.2	0.15	20000226	72.26618	282.44554	130.16795	4.70306	0.0915223	2.7551234	73	4	1989–2000	0.59	M-v	1	Williams	36904	1998 RB ₇₇
1998 RC ₇₇	14.0	0.15	20000226	165.28377	192.09628	106.01453	3.70558	0.1874132	2.6793448	47	4	1984–2000	0.67	M-v	3	Williams	37286	1998 RC ₇₇
1998 RJ ₇₇	14.6	0.15	20000226	138.66700	206.33084	145.96792	5.77476	0.0684341	2.5386235	35	3	1997–2000	0.66	M-v	4	Williams	33011	1998 RJ ₇₇
1998 RR ₇₇	14.5	0.15	20000226	6.31946	29.48733	132.62900	3.67749	0.1890632	2.2495205	44	2	1998–2000	0.69	M-v	4	Williams	37170	1998 RR ₇₇
1998 RY ₇₇	14.2	0.15	20000226	305.91364	52.44857	152.22281	5.26009	0.1107582	2.2948432	54	2	1998–2000	0.59	M-v	4	Williams	37170	1998 RY ₇₇
1998 RF ₇₈	13.1	0.15	20000226	31.64736	305.66860	124.31079	4.57730	0.0113538	3.1402108	67	2	1998–2000	0.52	M-v	4	Williams	37170	1998 RF ₇₈
1998 RM ₇₈	13.6	0.15	20000226	340.01615	121.86362	40.58946	7.14452	0.0813233	2.4644884	40	3	1985–2000	0.62	M-v	3	Williams	36904	1998 RM ₇₈
1998 RN ₇₈	13.9	0.15	20000226	233.41841	163.95394	86.52829	4.36137	0.0955981	2.5242250	41	3	1997–2000	0.68	M-v	4	Williams	33011	1998 RN ₇₈
1998 RO ₇₈	14.8	0.15	20000226	170.16325	228.33908	90.16110	3.47404	0.2183759	2.3783855	52	4	1994–2000	0.62	M-v	2	Williams	34592	1998 RO ₇₈
1998 RZ ₇₉	12.9	0.15	20000226	37.48929	357.28285	92.50070	4.97538	0.0636959	2.7888785	84	3	1997–2000	0.55	M-v	2	Williams	36904	1998 RZ ₇₉
1998 RA ₈₀	14.9	0.15	20000226	237.55107	211.31823	58.63926	5.76766	0.1210919	2.2399978	34	3	1995–2000	0.64	M-v	3	Williams	33012	1998 RA ₈₀
1998 RB ₈₀	13.2	0.15	20000226	254.19775	125.76291	95.92281	6.08471	0.1037089	2.7360278	68	3	1989–2000	0.77	M-v	3	Williams	37286	1998 RB ₈₀
1998 RL ₈₀	14.7	0.15	20000226	30.17127	86.19426	56.00448	4.12220	0.0198648	2.1645339	53	4	1995–2000	0.79	M-v	2	Williams	35632	1998 RL ₈₀
1998 SA ₁	13.4	0.15	20000226	94.93025	210.47110	164.57392	1.37002	0.1988718	3.1805373	53	3	1996–2000	0.47	M-v	3	Williams	35633	1998 SA ₁
1998 SF ₁	14.8	0.15	20000226	220.49788	92.89560	191.15564	5.96862	0.0933877	2.4506428	40	4	1994–2000	0.69	M-v	1	Williams	35716	1998 SF ₁
1998 SK ₁	13.5	0.15	20000226	31.40629	36.21951	64.03368	1.60264	0.1373160	3.1370475	61	3	1992–2000	0.66	M-v	2	Williams	37286	1998 SK ₁
1998 SW ₁	12.4	0.15	20000226	329.49870	94.32287	46.51187	10.93713	0.0623391	3.0120358	65	3	1993–2000	0.58	M-v	3	Williams	37286	1998 SW ₁
1998 SL ₂	13.9	0.15	20000226	105.65834	67.39295	328.91053	6.11014	0.2692454	2.5468220	102	4	1951–2000	0.75	M-v	2	Williams	37286	1998 SL ₂
1998 SS ₂	13.3	0.15	20000226	169.54604	57.44329	259.25049	12.34405	0.1821581	2.5755422	95	2	1998–2000	0.56	M-v	3	Williams	37286	1998 SS ₂
1998 SZ ₂	13.8	0.15	20000226	130.10338	239.00787	97.35550	13.03879	0.1266382	2.7860957	49	2	1998–2000	0.47	M-v	4	Williams	37171	1998 SZ ₂
1998 SH ₄	13.6	0.15	20000226	184.25132	107.92623	137.37454	2.17675	0.1252649	3.1820316	55	3	1996–1999	0.54	M-v	3	Williams	37286	1998 SH ₄
1998 SL ₄	14.8	0.15	20000226	218.14406	307.02445	347.98692	2.08188	0.1552918	2.1683280	69	3	1997–2000	0.63	M-v	3	Williams	33566	1998 SL ₄
1998 SX ₄	13.2	0.15	20000226	95.55709	192.62614	174.04041	11.87521	0.1178653	3.1788357	58	3	1992–2000	0.53	M-v	3	Williams	37286	1998 SX ₄
1998 SG ₅	13.2	0.15	20000226	113.95471	179.49476	183.27501	12.77892	0.1726493	2.6692019	104	3	1979–2000	0.67	M-v	2	Williams	36904	1998 SG ₅
1998 SQ ₆	14.4	0.15	20000226	132.87416	133.58619	177.44575	1.97730	0.0658874	2.9127695	48	3	1993–2000	0.70	M-v	5	Williams	37286	1998 SQ ₆
1998 SP ₇	15.4	0.15	20000226	230.61567	58.96072	172.77721	2.03192	0.1954932	2.5495311	34	3	1997–1999	0.70	M-v	4	Williams	37286	1998 SP ₇
1998 SV ₉	13.7	0.15	20000226	129.29885	155.00381	161.78429	1.69090	0.1461239	3.1259839	62	3	1996–1999	0.60	M-v	4	Williams	37171	1998 SV ₉
1998 SA ₁₀	12.8	0.15	20000226	108.91554	131.04752	213.99131	34.33749	0.2117553	2.8560524	58	3	1997–1999	0.85	M-v	2	Williams	36540	1998 SA ₁₀
1998 SG ₁₀	13.7	0.15	20000226	332.73030	118.83296	60.64178	6.62296	0.1400809	2.3174625	85	4	1977–2000	0.70	M-v	2	Williams	37286	1998 SG ₁₀
1998 SU ₁₀	13.6	0.15	20000226	59.00391	194.92889	201.25674	0.54699	0.1529001	3.1359236	79	2	1998–2000	0.59	M-v	3	Williams	37171	1998 SU ₁₀
1998 SV ₁₀	14.6	0.15	20000226	122.99274	165.60213	167.29935	2.17324	0.2542910	2.8476583	77	3	1993–2000	0.80	M-v	3	Williams	35716	1998 SV ₁₀
1998 SC ₁₂	13.4	0.15	20000226	155.79916	111.24691	204.68568	10.53306	0.1503721	2.9956978	38	4	1987–2000	0.60	M-v	2	Williams	33277	1998 SC ₁₂
1998 SL ₁₂	13.6	0.15	20000226	172.36376	145.91498	153.74806	2.29897	0.0729999	2.8406393	63	4	1993–2000	0.59	M-v	2	Williams	37287	1998 SL ₁₂
1998 SY ₁₂	13.9	0.15	20000226	195.21915	173.62245	107.43891	14.60317	0.1369162	2.5435828	33	2	1998–2000	0.28	M-v	3	Williams	37171	1998 SY ₁₂
1998 SF ₁₃	13.3	0.15	20000226	99.88236	240.10838	112.29805	5.34540	0.0913362	3.1995325	58	3	1993–2000	0.68	M-v	4	Williams	37287	1998 SF ₁₃
1998 SY ₁₅	13.1	0.15	20000226	350.62931	157.17340	309.01302	0.81092	0.0869858	3.1595020	61	3	1996–2000	0.57	M-v	3	Williams	37171	1998 SY ₁₅
1998 SX ₁₆	14.8	0.15	20000226	249.79077	75.30979	176.52938	5.08589	0.0527678	2.3635024	59	3	1997–2000	0.65	M-v	3	Williams	33354	1998 SX ₁₆
1998 SK ₂₂	14.1	0.15	20000226	79.40767	187.48278	188.48886	4.95794	0.1685021	3.1606019	58	3	1996–2000	0.66	M-v	3	Williams	33018	1998 SK ₂₂
1998 SN ₂₂	13.5	0.15	20000226	353.87339	309.75453	191.44949	13.05726	0.0992970	2.6852549	74	4	1992–2000	0.66	M-v	3	Williams	37287	1998 SN ₂₂
1998 SR ₂₂	13.8	0.15	20000226	87.96049	14.34847	0.02636	6.78784	0.1238391	3.1533907	65	2	1998–2000	0.69	M-v	4	Williams	37172	1998 SR ₂₂
1998 SX ₂₂	14.2	0.15	20000226	126.31743	204.94703	145.38956	5.42702	0.1719706	2.7524020	85	4	1992–2000	0.69	M-v	1	Williams	35717	1998 SX ₂₂
1998 SV ₂₃	14.0	0.15	20000226	57.22545	27.34005	19.34573	18.34870	0.1248388	3.1266731	28	3	1987–1999	0.57	M-v	3	Williams	33277	1998 SV ₂₃
1998 SW ₂₃	15.0	0.15	20000226	6.40522	94.12860	44.25023	7.72135	0.0390745	2.3841648	32	3	1993–2000	0.67	M-v	3	Williams	37287	1998 SW ₂₃
1998 SX ₂₃	15.2	0.15	20000226	187.86601	196.50286	119.92499	4.90542	0.1432691	2.2415140	60	4	1991–2000	0.62	M-v	2	Williams	35717	1998 SX ₂₃
1998 SA ₂₄	13.6	0.15	20000226	23.00028	348.61783	104.11543	5.66310	0.0555207	2.8158111	59	3	1992–2000	0.73	M-v	4	Williams	37172	1998 SA ₂₄
1998 SG ₂₄	14.9	0.15	20000226	87.19582	352.49925	61.91414	3.91998	0.0790231	2.4079921	42	4	1972–2000	0.59	M-v	2	Williams	33566	1998 SG ₂₄
1998 SJ ₂₄	13.3	0.15	20000226	90.84877	296.49707	76.99647	3.76412	0.0646699	2.8734151	59	2	1998–2000	0.49	M-v	3	Williams	37287	1998 SJ ₂₄

1998 SU ₂₄	14.3	0.15	20000226	80.07887	17.92302	72.42156	5.08597	0.1015029	2.2798480	46	3	1981–2000	0.75	M-v	3	Williams	33354	1998 SU ₂₄
1998 SH ₂₅	12.8	0.15	20000226	210.20281	207.59373	71.88535	6.33505	0.0210638	2.7413142	107	3	1997–2000	0.59	M-v	2	Williams	37287	1998 SH ₂₅
1998 SN ₂₅	13.8	0.15	20000226	36.08862	319.63806	140.00404	5.51563	0.0782386	2.7819632	73	3	1993–2000	0.62	M-v	2	Williams	37287	1998 SN ₂₅
1998 SY ₂₅	13.7	0.15	20000226	114.55891	340.97261	33.33847	6.06315	0.0968266	2.6900998	51	4	1976–2000	0.53	M-v	1	Williams	36085	1998 SY ₂₅
1998 SN ₂₇	12.7	0.15	20000226	275.01153	296.70366	281.60794	27.11923	0.0986367	2.6510752	57	3	1987–2000	0.61	M-v	3	Williams	37287	1998 SN ₂₇
1998 SA ₂₈	13.5	0.15	20000226	180.38625	277.60163	27.48107	4.35103	0.0651850	2.7513313	82	3	1996–2000	0.61	M-v	3	Williams	36540	1998 SA ₂₈
1998 SB ₂₈	13.5	0.15	20000226	152.29014	286.05370	24.57658	10.45805	0.1401574	3.0434896	71	2	1998–1999	0.62	M-v	3	Williams	37172	1998 SB ₂₈
1998 SC ₂₈	14.6	0.15	20000226	136.76225	163.57945	159.66984	0.77226	0.1665241	3.0956500	35	3	1992–2000	0.73	M-v	3	Williams	35717	1998 SC ₂₈
1998 SG ₃₀	15.8	0.15	20000226	274.81154	223.53274	16.20813	2.29236	0.1045734	2.2159630	30	5	1977–2000	0.77	M-v	1	Williams	34535	1998 SG ₃₀
1998 SV ₃₆	15.4	0.15	20000226	274.10601	35.53826	187.53153	2.95204	0.1705987	2.3946426	27	4	1994–2000	0.63	M-v	2	Williams	35717	1998 SV ₃₆
1998 SZ ₃₆	15.0	0.15	20000226	305.51600	159.63587	39.97693	1.22303	0.0991230	2.4330800	27	3	1960–2000	0.66	M-v	5	Williams	33278	1998 SZ ₃₆
1998 SQ ₃₇	14.4	0.15	20000226	133.08616	356.48861	345.70898	2.27423	0.1195627	2.9728319	43	3	1977–2000	0.56	M-v	4	Williams	33355	1998 SQ ₃₇
1998 SU ₃₇	14.1	0.15	20000226	22.65149	296.22056	211.42159	6.91054	0.0537866	2.3483239	41	3	1975–2000	0.54	M-v	3	Williams	35717	1998 SU ₃₇
1998 SL ₄₂	14.3	0.15	20000226	93.43554	62.34469	332.42663	1.15988	0.0812792	2.5997214	67	3	1977–2000	0.52	M-v	4	Williams	33355	1998 SL ₄₂
1998 SY ₄₂	14.7	0.15	20000226	214.36111	244.79875	16.61715	7.21457	0.0876677	2.7452278	36	3	1996–1999	0.54	M-v	3	Williams	33024	1998 SY ₄₂
1998 SC ₄₃	14.6	0.15	20000226	154.43730	293.36023	33.37218	4.25717	0.1343779	2.6305551	51	3	1992–2000	0.66	M-v	4	Williams	35717	1998 SC ₄₃
1998 SG ₄₃	13.7	0.15	20000226	141.05497	288.74859	84.01780	3.60970	0.0292560	2.3247894	63	4	1991–2000	0.65	M-v	1	Williams	37287	1998 SG ₄₃
1998 SO ₄₃	14.0	0.15	20000226	130.83832	79.29050	228.19168	0.76814	0.1759119	3.1208001	41	2	1998–2000	0.68	M-v	5	Williams	37172	1998 SO ₄₃
1998 SR ₄₃	13.5	0.15	20000226	46.37944	69.01297	4.17459	1.76601	0.0543063	2.9408523	104	6	1976–2000	0.73	M-v	1	Williams	35717	1998 SR ₄₃
1998 SS ₄₃	14.5	0.15	20000226	123.02555	175.58884	183.77395	9.74721	0.1515768	2.7342397	71	5	1989–2000	0.81	M-v	1	Williams	35717	1998 SS ₄₃
1998 SW ₄₃	12.7	0.15	20000226	53.39159	137.46605	240.76297	5.26035	0.1752644	3.9482417	89	3	1990–2000	0.59	M-v	3	Williams	37287	1998 SW ₄₃
1998 SC ₄₆	13.4	0.15	20000226	102.06116	154.52959	218.85665	2.69633	0.1131351	3.0875018	48	4	1982–2000	0.53	M-v	1	Williams	34303	1998 SC ₄₆
1998 SE ₄₇	13.4	0.15	20000226	45.15378	53.80866	33.60212	5.76392	0.0673227	3.0011986	43	3	1993–2000	0.58	M-v	3	Williams	35717	1998 SE ₄₇
1998 SL ₄₇	14.9	0.15	20000226	246.78397	232.26634	16.09321	2.31194	0.1280801	2.2617641	45	3	1997–2000	0.63	M-v	3	Williams	37172	1998 SL ₄₇
1998 SC ₄₉	13.8	0.15	20000226	45.83259	263.93430	157.92634	2.30085	0.0491895	2.8636986	57	3	1993–2000	0.71	M-v	4	Williams	37173	1998 SC ₄₉
1998 SG ₄₉	12.9	0.15	20000226	58.34201	234.42577	213.52419	8.14426	0.1223817	2.7904948	69	4	1989–1999	0.70	M-v	1	Williams	35717	1998 SG ₄₉
1998 ST ₅₀	13.0	0.15	20000226	309.38998	169.25096	9.71038	3.78909	0.1688488	3.1368831	50	5	1989–2000	0.54	M-v	1	Williams	34928	1998 ST ₅₀
1998 SP ₅₃	14.0	0.15	20000226	102.56226	54.74248	309.25290	4.56888	0.1372879	2.8427630	60	2	1998–2000	0.66	M-v	4	Williams	37173	1998 SP ₅₃
1998 SQ ₅₃	14.3	0.15	20000226	90.24385	22.31894	342.77459	13.01490	0.1934113	3.0848566	43	3	1960–2000	0.64	M-v	3	Williams	37287	1998 SQ ₅₃
1998 SY ₅₃	14.8	0.15	20000226	138.14205	159.30680	196.11629	9.28119	0.0989883	2.4440597	51	3	1997–2000	0.50	M-v	3	Williams	33567	1998 SY ₅₃
1998 SL ₅₄	14.3	0.15	20000226	164.98577	90.59903	228.03206	1.77812	0.1783843	2.4248233	70	3	1997–2000	0.73	M-v	3	Marsden	35717	1998 SL ₅₄
1998 SN ₅₄	14.0	0.15	20000226	305.27308	216.70313	340.99100	6.74292	0.0515316	2.3288802	81	3	1991–2000	0.61	M-v	3	Williams	36540	1998 SN ₅₄
1998 ST ₅₄	14.4	0.15	20000226	175.10423	305.43133	11.28476	6.48802	0.1398540	2.3593109	68	5	1980–2000	0.78	M-v	2	Williams	35718	1998 ST ₅₄
1998 SZ ₅₄	14.1	0.15	20000226	119.61414	292.00155	35.66424	1.64441	0.1636790	3.0838200	34	3	1960–2000	1.01	M-v	6	Williams	33029	1998 SZ ₅₄
1998 SA ₅₅	14.2	0.15	20000226	117.90744	180.92731	169.71812	2.34690	0.0819609	2.8288629	41	3	1996–2000	0.64	M-v	5	Williams	37287	1998 SA ₅₅
1998 SA ₅₆	15.0	0.15	20000226	77.64590	222.91191	160.75290	1.41512	0.1988553	3.0946638	53	4	1995–2000	0.66	M-v	1	Williams	35718	1998 SA ₅₆
1998 SP ₅₆	13.5	0.15	20000226	137.09455	309.99115	15.51716	3.66806	0.0746050	2.8067467	51	2	1998–2000	0.52	M-v	3	Williams	36540	1998 SP ₅₆
1998 ST ₅₆	14.1	0.15	20000226	181.90140	279.22478	15.02341	2.67536	0.1832550	2.4295685	66	2	1998–2000	0.62	M-v	4	Williams	37173	1998 ST ₅₆
1998 SN ₅₇	13.4	0.15	20000226	93.44938	328.03400	56.33522	2.18675	0.1608136	2.7776495	69	3	1975–2000	0.58	M-v	2	Williams	36904	1998 SN ₅₇
1998 SY ₅₇	13.2	0.15	20000226	146.84551	238.25864	76.66173	3.05309	0.0655508	2.8946689	61	3	1996–2000	0.58	M-v	3	Williams	37173	1998 SY ₅₇
1998 SD ₅₈	12.4	0.15	20000226	9.20735	278.79153	178.79133	9.68786	0.0439966	3.0171041	101	3	1993–2000	0.60	M-v	2	Williams	37287	1998 SD ₅₈
1998 SE ₅₈	13.6	0.15	20000226	246.35191	227.48373	358.12752	2.19973	0.1278404	2.6575958	67	3	1990–2000	0.64	M-v	2	Williams	37287	1998 SE ₅₈
1998 SF ₅₈	14.8	0.15	20000226	165.75758	314.11724	4.85527	7.11232	0.1903281	2.4311918	61	4	1979–2000	0.64	M-v	2	Williams	35718	1998 SF ₅₈
1998 SH ₅₈	13.9	0.15	20000226	134.91066	170.05193	178.40336	8.30682	0.1756692	2.5731282	72	3	1997–2000	0.72	M-v	3	Williams	35718	1998 SH ₅₈
1998 SQ ₅₈	13.5	0.15	20000226	143.81100	126.08141	178.59244	14.80902	0.0732316	3.2056905	25	3	1996–2000	0.61	M-v	3	Williams	33280	1998 SQ ₅₈
1998 SR ₅₈	14.9	0.15	20000226	61.89424	274.32258	182.18804	6.44938	0.0526850	2.3056037	42	3	1997–2000	0.67	M-v	3	Williams	35718	1998 SR ₅₈
1998 SB ₅₉	14.7	0.15	20000226	99.73283	198.32928	168.10701	4.21307	0.1422845	3.0053453	37	3	1977–2000	0.64	M-v	4	Williams	35718	1998 SB ₅₉
1998 SE ₅₉	12.7	0.15	20000226	217.56762	133.13692	99.55299	2.83597	0.0977210	3.2308011	65	2	1998–2000	0.65	M-v	4	Williams	37174	1998 SE ₅₉
1998 SF ₅₉	13.7	0.15	20000226	210.52545	77.57392	177.30984	10.64140	0.0422775	2.9743835	41	3	1993–2000	0.73	M-v	3	Williams	35718	1998 SF ₅₉
1998 SY ₅₉	13.5	0.15	20000226	54.56078	284.61785	134.19864	6.09145	0.1489347	3.1565227	51	4	1989–2000	0.56	M-v	1	Marsden	36540	1998 SY ₅₉
1998 SZ ₅₉	14.6	0.15	20000226	237.68291	106.10378	153.63581	7.18974	0.0823989	2.4100336	38	4	1993–2000	0.70	M-v	2	Williams	33034	1998 SZ ₅₉
1998 SG ₆₀	12.8	0.15	20000226	43.26092	333.30601	94.39708	2.52482	0.1676198	3.1989119	63	2	1998–2000	0.57	M-v	3	Williams	37287	1998 SG ₆₀
1998 SN ₆₀	13.7	0.15	20000226	102.33058	235.12579	122.35493	2.85654	0.0990301	3.0652271	42	2	1998–2000	0.54	M-v	4	Williams	37174	1998 SN ₆₀

1998 SA ₆₁	13.8	0.15	20000226	74.98515	354.32464	42.84020	2.69835	0.0677234	2.8963583	58	2	1998–2000	0.64	M-v	4	Williams	37174	1998 SA ₆₁
1998 SF ₆₁	14.1	0.15	20000226	84.89773	117.11921	319.59025	6.35610	0.0736526	2.3342358	36	5	1984–2000	0.71	M-v	1	Williams	37287	1998 SF ₆₁
1998 SL ₆₁	14.6	0.15	20000226	207.59286	25.66575	266.42922	4.70064	0.1833402	2.2885439	39	6	1977–2000	0.80	M-v	1	Williams	35718	1998 SL ₆₁
1998 SO ₆₁	13.3	0.15	20000226	190.61560	11.92618	274.80393	3.26035	0.0367495	2.7845540	77	3	1994–2000	0.67	M-v	3	Williams	37287	1998 SO ₆₁
1998 SS ₆₁	13.9	0.15	20000226	79.65404	210.87589	209.09005	12.46749	0.1153709	2.6069946	76	3	1994–2000	0.74	M-v	2	Williams	33568	1998 SS ₆₁
1998 ST ₆₁	13.7	0.15	20000226	81.07605	173.51818	211.99719	12.83175	0.1099647	3.0881213	43	3	1960–2000	0.80	M-v	3	Williams	33357	1998 ST ₆₁
1998 SU ₆₂	13.8	0.15	20000226	104.41906	11.10614	343.73593	0.95371	0.0715685	2.9808033	50	3	1993–2000	0.64	M-v	5	Williams	33035	1998 SU ₆₂
1998 SB ₆₃	12.6	0.15	20000226	54.65715	59.56094	23.00606	22.40328	0.0478704	2.6522708	82	4	1981–1999	0.74	M-v	1	Williams	36904	1998 SB ₆₃
1998 SK ₆₃	13.1	0.15	20000226	5.24523	36.24956	79.44755	3.88706	0.1048156	3.0377057	88	2	1998–2000	0.63	M-v	3	Williams	37174	1998 SK ₆₃
1998 SM ₆₃	14.0	0.15	20000226	73.62490	116.85407	324.53908	5.67981	0.0618353	2.3040824	81	3	1991–2000	0.62	M-v	1	Williams	37287	1998 SM ₆₃
1998 SR ₆₃	14.3	0.15	20000226	122.29082	224.44776	105.78881	1.97531	0.2534103	3.0378579	60	3	1976–2000	0.55	M-v	3	Williams	37287	1998 SR ₆₃
1998 SN ₆₄	13.9	0.15	20000226	166.85930	132.87230	187.15913	12.20321	0.2020303	2.5556825	57	3	1997–2000	0.73	M-v	3	Williams	34304	1998 SN ₆₄
1998 SV ₆₅	13.2	0.15	20000226	302.76591	25.42406	187.21041	12.43289	0.1307828	2.4373130	71	4	1985–2000	0.65	M-v	3	Williams	37287	1998 SV ₆₅
1998 SB ₆₆	14.3	0.15	20000226	150.14337	258.42193	78.08666	4.99643	0.2346550	2.5781628	47	4	1992–2000	0.58	M-v	2	Williams	35633	1998 SB ₆₆
1998 SP ₆₆	14.6	0.15	20000226	251.72354	199.90621	67.96445	6.38900	0.1723492	2.1882086	36	3	1995–2000	0.88	M-v	3	Williams	35718	1998 SP ₆₆
1998 SX ₆₆	13.6	0.15	20000226	110.86441	263.71292	110.03096	3.20935	0.1014007	2.9186841	39	4	1989–2000	0.74	M-v	1	Williams	35718	1998 SX ₆₆
1998 SD ₆₇	14.2	0.15	20000226	174.70099	298.70705	48.58786	5.93866	0.1922658	2.2285791	61	3	1988–2000	0.69	M-v	3	Williams	35718	1998 SD ₆₇
1998 SN ₆₇	14.2	0.15	20000226	49.40726	70.41909	40.65007	15.63831	0.1670814	2.6499017	37	3	1996–2000	0.92	M-v	2	Williams	35718	1998 SN ₆₇
1998 SS ₆₇	14.9	0.15	20000226	201.90182	238.24825	76.96091	5.38131	0.2037751	2.1923173	39	3	1991–2000	0.75	M-v	3	Williams	33568	1998 SS ₆₇
1998 SQ ₇₀	13.5	0.15	20000226	103.67050	239.14210	135.54174	2.33686	0.1172713	2.9579677	42	4	1978–2000	0.73	M-v	4	Williams	34304	1998 SQ ₇₀
1998 SR ₇₀	13.9	0.15	20000226	103.68640	337.85332	30.16555	9.39865	0.0940346	3.0861721	50	4	1987–1999	0.72	M-v	1	Williams	37287	1998 SR ₇₀
1998 ST ₇₂	13.8	0.15	20000226	78.28345	312.72615	95.59043	3.17123	0.0873140	2.9495444	39	4	1995–2000	0.70	M-v	1	Williams	36085	1998 ST ₇₂
1998 SZ ₇₂	13.1	0.15	20000226	140.59316	213.31196	107.47985	2.67777	0.1466059	3.1155375	44	5	1981–2000	0.65	M-v	1	Williams	37287	1998 SZ ₇₂
1998 SM ₇₃	14.2	0.15	20000226	39.69947	301.68772	165.13047	5.39090	0.1210193	2.7232009	48	3	1989–1999	0.96	M-v	4	Williams	37287	1998 SM ₇₃
1998 ST ₇₃	14.5	0.15	20000226	281.27466	89.19585	143.40498	4.13165	0.1553867	2.3045963	55	5	1977–2000	0.73	M-v	1	Williams	33358	1998 ST ₇₃
1998 SL ₇₄	13.7	0.15	20000226	4.67723	96.47571	37.07286	12.29655	0.0510135	2.7375995	45	3	1996–2000	0.70	M-v	3	Williams	33758	1998 SL ₇₄
1998 ST ₇₄	15.4	0.15	20000226	217.86888	191.07506	87.60767	3.20186	0.2464578	2.2968951	38	4	1991–2000	0.93	M-v	2	Williams	33283	1998 ST ₇₄
1998 SW ₇₄	14.1	0.15	20000226	83.96278	34.94146	50.91009	7.35928	0.1061168	2.3586822	68	4	1971–2000	0.71	M-v	2	Williams	35718	1998 SW ₇₄
1998 SH ₇₉	14.1	0.15	20000226	167.42997	254.80129	76.60852	4.73187	0.1515758	2.2886277	50	3	1991–2000	0.63	M-v	3	Williams	37287	1998 SH ₇₉
1998 SM ₈₇	13.5	0.15	20000226	154.80622	81.98338	217.08560	8.60342	0.0910799	3.0808417	31	3	1960–2000	0.79	M-v	4	Williams	33039	1998 SM ₈₇
1998 SQ ₉₇	13.5	0.15	20000226	84.01853	194.68425	182.10590	17.38928	0.1151363	3.1300445	40	3	1987–1999	0.83	M-v	3	Williams	35719	1998 SQ ₉₇
1998 SV ₁₀₅	14.5	0.15	20000226	43.73173	12.42219	104.15549	2.24604	0.1352395	2.4151321	32	4	1993–2000	0.68	M-v	2	Williams	36085	1998 SV ₁₀₅
1998 SZ ₁₀₆	14.2	0.15	20000226	53.60669	239.55717	199.42453	2.75164	0.0601368	2.7080838	49	4	1993–2000	0.61	M-v	2	Williams	37287	1998 SZ ₁₀₆
1998 SM ₁₀₇	13.8	0.15	20000226	158.14895	356.01056	333.78420	2.67130	0.0966851	2.5722280	50	3	1994–2000	0.58	M-v	3	Williams	36904	1998 SM ₁₀₇
1998 SN ₁₀₈	13.4	0.15	20000226	74.03207	180.97581	211.45210	7.79251	0.0945927	3.2052827	57	3	1996–2000	0.69	M-v	3	Williams	37287	1998 SN ₁₀₈
1998 SJ ₁₀₉	14.2	0.15	20000226	69.43635	226.51902	211.56660	14.67583	0.1853761	2.6857747	45	3	1996–2000	0.75	M-v	2	Williams	33568	1998 SJ ₁₀₉
1998 SD ₁₁₀	14.2	0.15	20000226	328.67629	329.97088	224.87295	8.34497	0.0361156	2.2754568	39	3	1997–2000	0.68	M-v	4	Williams	33568	1998 SD ₁₁₀
1998 SR ₁₁₁	13.4	0.15	20000226	18.36463	104.10022	16.98244	13.42908	0.1007075	2.6743009	61	3	1996–2000	0.61	M-v	3	Williams	36904	1998 SR ₁₁₁
1998 SL ₁₁₅	14.7	0.15	20000226	178.20331	286.18067	13.87552	2.68017	0.0541096	2.7996022	23	3	1993–2000	0.59	M-v	4	Williams	33041	1998 SL ₁₁₅
1998 SM ₁₁₅	13.6	0.15	20000226	40.06306	110.78162	335.77893	0.39274	0.1871113	3.1395424	73	4	1976–2000	0.64	M-v	2	Williams	37287	1998 SM ₁₁₅
1998 SP ₁₁₅	13.5	0.15	20000226	109.60245	68.19264	283.31484	1.47417	0.2299865	3.0541964	67	4	1993–2000	0.54	M-v	2	Williams	37287	1998 SP ₁₁₅
1998 SY ₁₁₅	13.9	0.15	20000226	235.40014	242.29787	10.39674	13.44788	0.1468577	2.5281558	39	4	1990–2000	0.66	M-v	3	Williams	37287	1998 SY ₁₁₅
1998 SR ₁₁₇	13.8	0.15	20000226	108.07137	16.88331	5.22527	10.73110	0.0524790	2.7460523	37	3	1996–2000	0.68	M-v	3	Williams	34304	1998 SR ₁₁₇
1998 SS ₁₁₇	14.0	0.15	20000226	252.78833	307.06910	303.85808	2.64938	0.1581584	2.3313706	35	3	1991–2000	0.65	M-v	4	Williams	34023	1998 SS ₁₁₇
1998 SR ₁₁₈	14.7	0.15	20000226	113.41342	199.44672	189.73725	2.36478	0.0564632	2.5436437	39	4	1980–2000	0.72	M-v	4	Williams	35719	1998 SR ₁₁₈
1998 SB ₁₁₉	14.9	0.15	20000226	289.82528	187.97560	26.66162	2.66000	0.1307173	2.4254090	43	3	1960–2000	0.60	M-v	4	Williams	34593	1998 SB ₁₁₉
1998 SK ₁₂₁	13.0	0.15	20000226	293.61139	318.28799	227.69374	9.22665	0.1036551	3.0407572	61	3	1996–2000	0.58	M-v	3	Williams	37287	1998 SK ₁₂₁
1998 SC ₁₂₂	14.5	0.15	20000226	97.09593	65.72487	351.01622	4.34339	0.1542842	2.5322457	45	6	1954–2000	0.67	M-v	2	Williams	35719	1998 SC ₁₂₂
1998 SD ₁₂₂	13.0	0.15	20000226	231.43686	23.61133	217.65084	8.86116	0.0396079	3.0497295	58	4	1991–2000	0.58	M-v	1	Williams	36540	1998 SD ₁₂₂
1998 SH ₁₂₂	13.6	0.15	20000226	96.21281	148.08121	220.14632	5.02660	0.1568895	3.1946881	38	3	1996–2000	0.68	M-v	3	Williams	35635	1998 SH ₁₂₂
1998 SZ ₁₂₂	13.7	0.15	20000226	142.17603	293.78582	11.32278	1.31249	0.1982662	3.1691758	45	3	1992–2000	0.68	M-v	4	Williams	37287	1998 SZ ₁₂₂
1998 SK ₁₂₃	13.6	0.15	20000226	86.93356	4.96978	15.37469	1.97865	0.2031564	3.2025292	59	6	1981–2000	0.65	M-v	1	Williams	35719	1998 SK ₁₂₃
1998 SN ₁₂₃	14.2	0.15	20000226	148.09325	327.36834	14.77667	2.84684	0.1736118	2.5557543	61	5	1986–2000	0.63	M-v	1	Williams	35719	1998 SN ₁₂₃

1998 SR ₁₂₄	14.9	0.15	20000226	16.40411	336.81147	153.27859	1.83948	0.0058426	2.4795976	48	4	1992-2000	0.78	M-v	2	Williams	35719	1998 SR ₁₂₄
1998 SA ₁₂₆	14.1	0.15	20000226	84.27427	285.68386	103.20524	4.82010	0.0986757	2.9944389	55	3	1993-2000	0.78	M-v	4	Williams	33361	1998 SA ₁₂₆
1998 SV ₁₂₆	14.1	0.15	20000226	62.18207	318.18681	104.06730	5.90729	0.0434190	2.8065436	37	3	1996-2000	0.76	M-v	3	Williams	34024	1998 SV ₁₂₆
1998 SU ₁₂₈	13.5	0.15	20000226	169.22433	235.55954	70.66672	3.02471	0.0558845	2.8755568	75	3	1993-2000	0.61	M-v	3	Williams	37174	1998 SU ₁₂₈
1998 SO ₁₂₉	13.3	0.15	20000226	98.00792	336.38804	45.27393	2.60911	0.0554227	2.9377398	79	3	1996-2000	0.62	M-v	3	Williams	36904	1998 SO ₁₂₉
1998 SU ₁₂₉	12.4	0.15	20000226	185.81176	146.20932	125.54934	1.80193	0.1400587	3.0922232	80	2	1998-2000	0.54	M-v	3	Williams	37175	1998 SU ₁₂₉
1998 SA ₁₃₀	14.4	0.15	20000226	342.50261	9.51621	167.75020	2.52144	0.1188893	2.4127211	38	5	1974-2000	0.74	M-v	1	Williams	37287	1998 SA ₁₃₀
1998 SE ₁₃₀	13.4	0.15	20000226	184.08507	99.30171	191.42726	1.86916	0.0497805	2.9327687	55	2	1998-2000	0.63	M-v	5	Williams	37175	1998 SE ₁₃₀
1998 SG ₁₃₀	14.1	0.15	20000226	153.45282	354.70262	13.33173	8.72147	0.2157595	2.2647261	60	4	1981-2000	0.73	M-v	2	Williams	35719	1998 SG ₁₃₀
1998 SK ₁₃₀	15.1	0.15	20000226	209.20335	282.96326	11.16410	6.89121	0.1966723	2.2701724	42	4	1991-2000	0.72	M-v	3	Williams	35719	1998 SK ₁₃₀
1998 SN ₁₃₀	13.4	0.15	20000226	133.32650	86.57581	234.66779	0.79526	0.1921185	3.1205112	61	3	1992-2000	0.78	M-v	3	Williams	37287	1998 SN ₁₃₀
1998 SS ₁₃₀	14.5	0.15	20000226	275.14985	262.11082	344.34987	2.55090	0.1306708	2.2052054	31	3	1991-2000	0.60	M-v	3	Williams	36904	1998 SS ₁₃₀
1998 SD ₁₃₁	13.3	0.15	20000226	336.84889	148.01402	356.51086	4.86020	0.0845303	3.1447797	108	3	1995-2000	0.58	M-v	4	Williams	35719	1998 SD ₁₃₁
1998 ST ₁₃₁	14.0	0.15	20000226	351.79199	257.05527	292.25240	4.92119	0.1234492	2.1829616	42	4	1991-2000	0.69	M-v	2	Williams	34304	1998 ST ₁₃₁
1998 SV ₁₃₁	14.0	0.15	20000226	148.54641	124.64019	224.65958	12.93892	0.0650974	2.5957274	51	4	1990-2000	0.76	M-v	2	Williams	34304	1998 SV ₁₃₁
1998 SE ₁₃₂	12.5	0.15	20000226	178.68480	80.85145	219.94175	12.46225	0.0698000	2.8484349	90	3	1992-2000	0.61	M-v	2	Williams	37287	1998 SE ₁₃₂
1998 SG ₁₃₂	13.9	0.15	20000226	288.78117	255.52895	338.89767	5.42431	0.1294409	2.2472296	61	4	1990-2000	0.58	M-v	3	Williams	37287	1998 SG ₁₃₂
1998 SK ₁₃₂	13.8	0.15	20000226	344.02273	215.30340	315.74195	4.24323	0.0950534	2.5237578	51	3	1992-1999	0.80	M-v	3	Williams	37288	1998 SK ₁₃₂
1998 ST ₁₃₂	13.9	0.15	20000226	39.25280	146.65031	307.36888	3.36072	0.0232538	2.7910959	44	3	1989-2000	0.69	M-v	4	Williams	33291	1998 ST ₁₃₂
1998 SX ₁₃₂	14.1	0.15	20000226	274.19914	261.45825	330.42515	3.11449	0.0267891	2.5179804	58	3	1996-2000	0.65	M-v	3	Williams	37175	1998 SX ₁₃₂
1998 SA ₁₃₃	14.4	0.15	20000226	226.92786	278.96521	6.44733	8.88044	0.1459167	2.2618268	57	5	1981-2000	0.54	M-v	1	Williams	35719	1998 SA ₁₃₃
1998 SG ₁₃₃	14.3	0.15	20000226	35.35082	263.25737	208.14536	13.07613	0.0473401	2.6045999	47	3	1977-2000	0.74	M-v	3	Williams	34024	1998 SG ₁₃₃
1998 SZ ₁₃₃	14.5	0.15	20000226	87.14507	232.86645	200.34935	5.67354	0.0971781	2.4488154	48	4	1977-2000	0.66	M-v	2	Williams	35719	1998 SZ ₁₃₃
1998 SN ₁₃₄	14.3	0.15	20000226	112.99575	12.01205	30.01143	5.05632	0.0807462	2.4325341	38	3	1960-2000	0.68	M-v	3	Williams	34024	1998 SN ₁₃₄
1998 SV ₁₃₄	12.9	0.15	20000226	111.68444	226.91877	117.09107	1.78373	0.2184144	3.1785925	83	3	1992-2000	0.57	M-v	3	Williams	37288	1998 SV ₁₃₄
1998 SE ₁₃₅	13.4	0.15	20000226	139.03222	128.48319	182.91949	9.24608	0.2048095	3.1388371	47	3	1992-2000	0.65	M-v	3	Williams	35719	1998 SE ₁₃₅
1998 SN ₁₃₅	14.0	0.15	20000226	120.79439	356.39432	40.49595	7.74041	0.0538340	2.3742535	44	4	1987-2000	0.55	M-v	2	Williams	35719	1998 SN ₁₃₅
1998 SO ₁₃₅	13.8	0.15	20000226	56.12211	22.73699	38.06181	11.05677	0.1422162	3.2182891	49	5	1981-2000	0.66	M-v	1	Williams	33363	1998 SO ₁₃₅
1998 SW ₁₃₅	14.5	0.15	20000226	164.17918	285.89096	75.82529	3.94519	0.0150658	2.2589793	48	4	1995-2000	0.60	M-v	2	Williams	34593	1998 SW ₁₃₅
1998 SA ₁₃₇	13.6	0.15	20000226	224.53590	210.74034	38.32073	14.36362	0.2111431	2.6064144	37	4	1977-1999	0.69	M-v	2	Williams	35720	1998 SA ₁₃₇
1998 SC ₁₃₈	14.2	0.15	20000226	82.85912	225.65282	178.06178	1.96265	0.0655951	2.8998769	43	4	1971-2000	0.71	M-v	2	Williams	35720	1998 SC ₁₃₈
1998 SM ₁₃₈	14.2	0.15	20000226	80.48985	125.22303	283.38799	0.96642	0.0634130	2.8687602	60	4	1993-2000	0.71	M-v	2	Williams	35720	1998 SM ₁₃₈
1998 SN ₁₃₈	13.9	0.15	20000226	25.70141	98.42989	14.67396	4.21702	0.2046849	3.1060848	38	3	1992-1999	0.85	M-v	3	Williams	33294	1998 SN ₁₃₈
1998 SA ₁₃₉	14.5	0.15	20000226	206.98628	324.41664	336.93906	3.73548	0.1728008	2.2822938	59	6	1990-2000	0.64	M-v	2	Williams	35720	1998 SA ₁₃₉
1998 SR ₁₃₉	13.1	0.15	20000226	264.44561	312.18916	275.26516	6.11953	0.1342212	2.7470177	55	2	1998-2000	0.61	M-v	4	Williams	37175	1998 SR ₁₃₉
1998 SZ ₁₄₀	13.1	0.15	20000226	182.50716	81.43912	223.28484	1.74984	0.0086018	2.8571647	76	3	1993-2000	0.68	M-v	3	Williams	36905	1998 SZ ₁₄₀
1998 SF ₁₄₁	13.8	0.15	20000226	210.53435	260.52425	27.28188	1.65064	0.0623470	2.5692786	63	4	1992-2000	0.59	M-v	2	Williams	36905	1998 SF ₁₄₁
1998 SP ₁₄₃	14.0	0.15	20000226	13.03274	99.48716	23.67518	3.87932	0.0368945	2.7597101	36	3	1993-2000	0.76	M-v	3	Williams	33760	1998 SP ₁₄₃
1998 SS ₁₄₃	14.4	0.15	20000226	49.95419	215.13918	225.86127	1.11903	0.0506389	2.8802727	31	4	1981-2000	0.55	M-v	2	Williams	33708	1998 SS ₁₄₃
1998 SY ₁₄₃	15.3	0.15	20000226	199.47733	330.65143	349.03220	2.30588	0.1464282	2.2212760	44	3	1997-2000	0.47	M-v	3	Williams	35720	1998 SY ₁₄₃
1998 SA ₁₄₄	13.4	0.15	20000226	309.67377	26.87113	151.42986	2.24814	0.0604317	2.9190954	35	3	1996-2000	0.68	M-v	3	Williams	36541	1998 SA ₁₄₄
1998 SD ₁₄₄	14.0	0.15	20000226	37.96451	279.27504	199.38584	21.75482	0.0795120	2.5442509	34	3	1990-1999	0.83	M-v	3	Williams	35720	1998 SD ₁₄₄
1998 SE ₁₄₄	13.3	0.15	20000226	66.96867	58.43747	25.10970	8.83901	0.2149670	2.7931632	45	3	1984-2000	0.72	M-v	2	Williams	34305	1998 SE ₁₄₄
1998 SQ ₁₄₄	13.6	0.15	20000226	95.21463	158.80651	236.95069	0.68636	0.0824605	2.8569715	43	3	1993-2000	0.71	M-v	4	Williams	34305	1998 SQ ₁₄₄
1998 SV ₁₄₄	13.9	0.15	20000226	240.14656	220.60979	30.06291	3.87514	0.1116388	2.6777390	41	4	1992-2000	0.66	M-v	1	Williams	33760	1998 SV ₁₄₄
1998 ST ₁₄₅	13.1	0.15	20000226	95.75610	237.85579	146.18370	2.99269	0.0952365	3.0461279	69	4	1992-2000	0.66	M-v	1	Williams	35720	1998 ST ₁₄₅
1998 ST ₁₄₆	14.2	0.15	20000226	179.02297	286.05022	61.86618	2.31271	0.1644772	2.2002814	44	3	1997-2000	0.71	M-v	3	Williams	35720	1998 ST ₁₄₆
1998 SX ₁₄₆	13.0	0.15	20000226	167.32349	113.80111	169.15959	3.10761	0.2090263	3.2490886	29	4	1986-2000	0.92	M-v	1	Williams	34305	1998 SX ₁₄₆
1998 SE ₁₄₇	13.8	0.15	20000226	49.38666	9.35113	73.51843	1.40948	0.1295341	3.0856147	45	3	1989-2000	0.79	M-v	2	Williams	37288	1998 SE ₁₄₇
1998 SK ₁₅₇	13.5	0.15	20000226	187.83876	132.72391	131.25748	2.57086	0.1585722	3.0883924	36	3	1997-2000	0.64	M-v	4	Williams	37288	1998 SK ₁₅₇
1998 SD ₁₅₉	13.5	0.15	20000226	43.88031	130.34625	323.23559	3.27619	0.0539207	2.7318134	47	2	1998-2000	0.55	M-v	3	Williams	37175	1998 SD ₁₅₉
1998 SG ₁₅₉	14.3	0.15	20000226	12.52327	105.62595	9.78453	11.92687	0.1222416	3.0828357	30	4	1960-2000	0.71	M-v	1	Williams	34536	1998 SG ₁₅₉
1998 ST ₁₆₀	14.0	0.15	20000226	165.65900	120.17146	183.83940	2.48210	0.0762176	2.9779649	28	3	1991-2000	0.68	M-v	5	Williams	34025	1998 ST ₁₆₀

1998 SR ₁₆₂	13.2	0.15	20000226	226.88982	26.08840	227.34567	8.88577	0.1608713	2.7793441	60	3	1992-2000	0.72	M-v	3	Williams	37288	1998 SR ₁₆₂
1998 SE ₁₆₃	14.6	0.15	20000226	226.03928	158.21142	120.11937	5.35375	0.1836255	2.2944807	42	4	1993-2000	0.66	M-v	1	Williams	34593	1998 SE ₁₆₃
1998 SV ₁₆₃	12.8	0.15	20000226	304.49779	121.11981	62.78101	11.06606	0.0326479	3.0209305	58	4	1951-2000	0.76	M-v	3	Williams	37288	1998 SV ₁₆₃
1998 SX ₁₆₃	13.2	0.15	20000226	146.42887	282.54657	46.70525	11.50790	0.0905712	3.0898022	46	3	1996-2000	0.43	M-v	3	Williams	34305	1998 SX ₁₆₃
1998 SK ₁₆₄	13.1	0.15	20000226	329.12168	83.30150	104.07856	7.54791	0.1447506	2.6636328	67	3	1994-2000	0.69	M-v	3	Williams	37288	1998 SK ₁₆₄
1998 SN ₁₆₅	5.7	0.15	20000226	264.28391	260.71161	192.15278	4.59042	0.0264693	38.0729770	21	2	1998-1999	0.54	M-v	E	Marsden	37175	1998 SN ₁₆₅
1998 TA	13.7	0.15	20000226	256.67930	258.09402	0.31821	7.34511	0.0894863	2.3149843	110	2	1998-2000	0.64	M-v	4	Williams	37176	1998 TA
1998 TR ₁	14.4	0.15	20000226	138.99208	178.91665	116.12095	12.69340	0.2260197	2.6951113	37	2	1998-2000	0.64	M-v	3	Williams	37176	1998 TR ₁
1998 TU ₁	14.0	0.15	20000226	119.52755	161.33890	216.45223	13.07646	0.1820669	2.5832602	53	3	1994-2000	0.64	M-v	2	Williams	33760	1998 TU ₁
1998 TV ₁	13.2	0.15	20000226	131.20533	341.25172	54.46588	13.63972	0.2489479	2.3941731	84	5	1961-2000	0.60	M-v	2	Williams	35720	1998 TV ₁
1998 TZ ₁	13.9	0.15	20000226	135.29848	207.10867	171.68346	12.74032	0.0133513	2.5678271	47	5	1973-1999	0.81	M-v	2	Williams	35720	1998 TZ ₁
1998 TX ₂	14.3	0.15	20000226	346.48585	147.21318	6.76613	4.20752	0.1454775	3.0639429	33	4	1960-2000	0.61	M-v	2	Williams	35721	1998 TX ₂
1998 TG ₃	13.7	0.15	20000226	166.52223	109.14406	203.68570	21.43635	0.2989427	2.4121713	53	3	1983-2000	0.59	M-v	2	Williams	35721	1998 TG ₃
1998 TK ₅	14.4	0.15	20000226	69.98324	45.78536	59.25056	7.23806	0.0834849	2.4113149	38	3	1977-2000	0.56	M-v	2	Williams	34305	1998 TK ₅
1998 TM ₅	14.8	0.15	20000226	189.02451	235.81067	64.71571	3.86370	0.1936950	2.6274352	29	4	1971-2000	0.72	M-v	3	Williams	34305	1998 TM ₅
1998 TT ₅	12.6	0.15	20000226	3.02946	82.51720	62.30876	11.93119	0.2066264	3.1812590	44	3	1995-2000	0.63	M-v	3	Williams	36905	1998 TT ₅
1998 TX ₅	12.9	0.15	20000226	186.27394	26.10098	269.02149	1.89571	0.1265349	2.7843768	101	3	1993-2000	0.61	M-v	3	Williams	37288	1998 TX ₅
1998 TA ₆	13.3	0.15	20000226	30.51263	308.64363	183.92882	12.68114	0.1156359	2.6619344	31	3	1997-2000	0.47	M-v	3	Williams	33570	1998 TA ₆
1998 TH ₆	14.2	0.15	20000226	70.68047	8.26769	35.61726	19.29808	0.1080162	3.0477419	34	3	1992-2000	0.49	M-v	2	Marsden	37288	1998 TH ₆
1998 TU ₆	14.1	0.15	20000226	150.43519	247.35259	84.16558	2.74921	0.1286127	2.9313841	58	3	1997-2000	0.69	M-v	3	Williams	35721	1998 TU ₆
1998 TV ₆	12.7	0.15	20000226	267.37188	3.03661	214.82114	15.59998	0.0461775	3.1854308	78	3	1981-2000	0.64	M-v	3	Williams	36905	1998 TV ₆
1998 TY ₁₇	13.7	0.15	20000226	331.15262	30.94152	162.93142	3.96424	0.1220386	2.5819692	38	4	1994-2000	0.60	M-v	1	Williams	37288	1998 TY ₁₇
1998 TD ₁₈	13.0	0.15	20000226	148.25386	65.87219	230.39718	13.29053	0.2462538	3.1526078	50	4	1986-2000	0.65	M-v	1	Williams	37288	1998 TD ₁₈
1998 TZ ₁₈	14.8	0.15	20000226	182.26964	99.55375	203.59304	3.84033	0.1797008	2.5901977	35	3	1997-2000	0.54	M-v	4	Williams	35721	1998 TZ ₁₈
1998 TT ₂₆	14.0	0.15	20000226	258.59812	12.90281	222.62604	9.15357	0.0414657	2.9691787	27	3	1996-2000	0.75	M-v	4	Williams	35721	1998 TT ₂₆
1998 TD ₂₇	13.7	0.15	20000226	254.00493	211.40447	39.71826	6.24460	0.0457421	2.7620410	40	3	1995-2000	0.54	M-v	3	Williams	35721	1998 TD ₂₇
1998 TH ₂₉	13.8	0.15	20000226	48.87023	92.61967	355.12518	1.51788	0.0502418	2.9373194	41	4	1990-2000	0.63	M-v	2	Williams	37288	1998 TH ₂₉
1998 TN ₃₀	15.2	0.15	20000226	164.37238	105.57700	236.81683	0.41916	0.2002554	2.4250431	36	4	1979-2000	0.64	M-v	2	Williams	35721	1998 TN ₃₀
1998 TQ ₃₀	14.6	0.15	20000226	176.48542	88.59301	234.16821	1.80023	0.1445586	2.5388005	29	4	1978-2000	0.64	M-v	3	Williams	35721	1998 TQ ₃₀
1998 TR ₃₀	13.7	0.15	20000226	245.89332	28.24993	213.79212	5.35334	0.0269264	2.9912943	55	3	1996-2000	0.63	M-v	3	Williams	36541	1998 TR ₃₀
1998 TT ₃₀	14.5	0.15	20000226	253.43535	259.13442	17.15429	5.28370	0.1600519	2.2143223	23	3	1997-1999	0.53	M-v	4	Williams	33305	1998 TT ₃₀
1998 TW ₃₀	13.3	0.15	20000226	88.17528	24.89732	18.11704	9.30256	0.0989012	3.0092207	32	4	1976-2000	0.69	M-v	2	Williams	37288	1998 TW ₃₀
1998 TD ₃₂	14.5	0.15	20000226	31.80605	171.43659	333.07775	4.21634	0.0854417	2.3697670	31	3	1978-2000	0.66	M-v	4	Williams	34306	1998 TD ₃₂
1998 TL ₃₂	13.8	0.15	20000226	326.10350	167.23242	17.42830	7.42175	0.1578718	2.6786249	57	4	1976-2000	0.59	M-v	2	Williams	35441	1998 TL ₃₂
1998 TN ₃₃	13.6	0.15	20000226	109.61996	293.81668	89.96979	3.16649	0.0718818	2.8896296	33	3	1995-2000	0.49	M-v	3	Williams	36905	1998 TN ₃₃
1998 TR ₃₃	13.7	0.15	20000226	164.91328	213.03487	102.47171	2.71384	0.1493009	2.8694361	40	4	1993-2000	0.54	M-v	2	Williams	36541	1998 TR ₃₃
1998 TD ₃₄	13.4	0.15	20000226	101.10238	190.47563	195.78218	10.05877	0.1049935	2.9989399	37	3	1996-2000	0.64	M-v	3	Williams	35721	1998 TD ₃₄
1998 TG ₃₄	14.4	0.15	20000226	205.42725	122.62440	183.62012	6.61361	0.1928341	2.3026964	33	3	1997-2000	0.43	M-v	3	Williams	33571	1998 TG ₃₄
1998 TW ₃₄	13.0	0.15	20000226	180.66998	101.83241	193.90100	10.12336	0.0952511	2.9731418	44	3	1996-2000	0.65	M-v	3	Williams	37288	1998 TW ₃₄
1998 TF ₃₅	9.3	0.15	20000226	27.35543	301.86012	51.95649	12.61339	0.3832112	26.4236587	18	2	1998-2000	0.30	M-v	4	Marsden	36820	1998 TF ₃₅
1998 UE	13.5	0.15	20000226	22.86611	182.96060	319.82289	25.22373	0.1560930	2.3271870	42	3	1982-2000	0.75	M-v	3	Williams	36905	1998 UE
1998 UL	13.5	0.15	20000226	201.10786	329.52761	284.15113	9.32875	0.0688128	2.9644105	48	2	1998-2000	0.54	M-v	3	Williams	37288	1998 UL
1998 UJ ₁	14.8	0.15	20000226	209.61619	198.89201	72.27696	7.17170	0.1672950	2.5335202	28	3	1997-2000	0.84	M-v	3	Marsden	33050	1998 UJ ₁
1998 UK ₁	14.1	0.15	20000226	17.48044	282.89937	191.59875	1.33370	0.1398449	3.1577291	58	5	1992-2000	0.67	M-v	1	Williams	35721	1998 UK ₁
1998 UO ₁	16.4	0.15	20000226	288.61024	252.04231	358.93708	25.56885	0.7633991	1.5954379	112	3	1992-1999	0.47	M-v	3	Williams	37176	1998 UO ₁
1998 UO ₂	14.1	0.15	20000226	216.04660	242.84586	26.71395	12.99816	0.1589765	2.7403347	34	3	1992-1999	0.55	M-v	3	Williams	37288	1998 UO ₂
1998 UV ₆	14.0	0.15	20000226	82.36493	136.49965	270.06513	1.08655	0.0873299	2.9418656	66	4	1983-2000	0.48	M-v	2	Williams	35722	1998 UV ₆
1998 UD ₇	14.0	0.15	20000226	180.54960	271.36354	34.11742	3.06613	0.2870104	2.5915746	62	6	1980-2000	0.62	M-v	2	Williams	35722	1998 UD ₇
1998 US ₇	14.1	0.15	20000226	285.90844	17.75350	211.42361	14.48491	0.0868314	2.6181580	34	4	1992-2000	0.61	M-v	1	Williams	33572	1998 US ₇
1998 UY ₇	13.3	0.15	20000226	131.47334	188.43491	194.98686	9.70609	0.1090009	2.5831385	46	5	1969-2000	0.66	M-v	1	Williams	35722	1998 UY ₇
1998 UL ₈	13.1	0.15	20000226	61.63367	2.75322	87.49125	2.55602	0.1455901	3.1004946	71	4	1987-2000	0.55	M-v	1	Williams	35722	1998 UL ₈
1998 UO ₁₅	15.0	0.15	20000226	175.10893	51.33750	284.04154	0.34328	0.1773426	2.4777271	67	5	1986-2000	0.65	M-v	2	Williams	35722	1998 UO ₁₅
1998 UB ₁₆	14.2	0.15	20000226	300.76170	154.22501	51.87113	12.70453	0.1355513	2.6610613	43	2	1998-2000	0.62	M-v	4	Williams	37176	1998 UB ₁₆

1998 UM ₁₈	11.5	0.15	20000226	77.50100	232.32361	150.17260	28.61387	0.1341976	5.1662891	32	5	1954–1999	0.67	M-v	1	Williams	35722	1998 UM ₁₈
1998 UW ₁₉	13.9	0.15	20000226	109.06827	1.35050	20.53774	1.82455	0.0589834	3.1100799	52	3	1995–2000	0.76	M-v	3	Williams	35722	1998 UW ₁₉
1998 UJ ₂₀	13.9	0.15	20000226	137.77130	110.21253	265.81182	5.16151	0.2121474	2.4200287	44	4	1979–2000	0.71	M-v	2	Williams	33762	1998 UJ ₂₀
1998 UM ₂₀	13.7	0.15	20000226	57.72515	337.06980	91.43569	2.61796	0.1737894	3.2234359	53	3	1977–2000	0.73	M-v	2	Williams	37288	1998 UM ₂₀
1998 UN ₂₀	14.1	0.15	20000226	243.90628	171.24684	106.41261	2.45563	0.1977108	2.3285031	57	6	1987–2000	0.74	M-v	1	Williams	35722	1998 UN ₂₀
1998 UR ₂₀	14.1	0.15	20000226	187.05511	24.37128	292.82181	0.98988	0.0091871	2.8534167	61	4	1978–2000	0.66	M-v	2	Williams	35722	1998 UR ₂₀
1998 UV ₂₀	13.1	0.15	20000226	3.63075	299.25867	223.27564	12.52641	0.0732920	2.6302219	47	4	1953–2000	0.63	M-v	2	Williams	35722	1998 UV ₂₀
1998 UP ₂₁	13.8	0.15	20000226	46.60547	257.06859	178.77022	9.03887	0.0997920	3.0012082	28	3	1977–2000	0.66	M-v	2	Williams	36004	1998 UP ₂₁
1998 UZ ₂₁	14.0	0.15	20000226	164.77775	256.58502	53.63985	10.07418	0.1524307	2.7225073	43	2	1998–2000	0.65	M-v	4	Williams	37177	1998 UZ ₂₁
1998 UM ₂₄	14.1	0.15	20000226	219.41411	65.86789	222.85830	8.85878	0.1614187	2.5671342	33	3	1984–2000	0.80	M-v	3	Williams	34930	1998 UM ₂₄
1998 UM ₂₆	14.6	0.15	20000226	224.70687	169.65250	126.67299	4.92670	0.1695624	2.2545768	30	3	1991–2000	0.82	M-v	4	Williams	33574	1998 UM ₂₆
1998 UY ₂₆	13.3	0.15	20000226	242.95741	64.83600	185.65480	8.58400	0.2319454	2.7213671	34	7	1952–1999	0.76	M-v	1	Williams	35723	1998 UY ₂₆
1998 UA ₂₇	13.9	0.15	20000226	292.44667	133.74248	110.84100	4.65949	0.1413269	2.2265859	40	3	1991–2000	0.76	M-v	3	Williams	37288	1998 UA ₂₇
1998 UU ₂₈	13.3	0.15	20000226	134.15520	274.93533	75.21215	10.82960	0.1028448	3.0632866	35	3	1982–2000	0.59	M-v	3	Williams	34594	1998 UU ₂₈
1998 UZ ₂₈	13.8	0.15	20000226	185.43908	252.47946	85.71171	7.77346	0.1512058	2.3123532	39	4	1991–2000	0.67	M-v	2	Williams	35637	1998 UZ ₂₈
1998 UH ₃₁	12.1	0.15	20000226	122.97004	347.75058	62.13236	14.31050	0.1390446	2.6276929	47	5	1951–2000	0.77	M-v	2	Williams	34594	1998 UH ₃₁
1998 UG ₃₄	14.4	0.15	20000226	196.57526	327.60003	329.31916	2.23850	0.1687561	2.4434076	34	4	1990–2000	0.72	M-v	4	Williams	35723	1998 UG ₃₄
1998 VC	14.1	0.15	20000226	325.36773	303.00281	272.55222	1.38492	0.1549765	2.3792589	73	4	1978–2000	0.56	M-v	1	Williams	35723	1998 VC
1998 VG	13.3	0.15	20000226	76.09992	354.44432	56.28115	3.82614	0.1918712	3.1553149	80	5	1981–2000	0.59	M-v	1	Williams	37288	1998 VG
1998 VB ₄	13.4	0.15	20000226	192.95305	179.95698	122.45251	2.43799	0.1745800	3.0158484	27	4	1992–2000	0.75	M-v	2	Williams	33762	1998 VB ₄
1998 VD ₅	13.0	0.15	20000226	63.58138	3.65598	78.10615	2.62877	0.1532830	3.1548764	72	5	1981–1999	0.67	M-v	1	Williams	37288	1998 VD ₅
1998 VJ ₅	13.2	0.15	20000226	169.18549	287.25173	22.10206	11.49003	0.2407289	2.8619529	55	3	1993–2000	0.65	M-v	4	Williams	37288	1998 VJ ₅
1998 VX ₅	13.5	0.15	20000226	138.11923	318.38439	32.23440	2.81322	0.1674188	3.0103352	46	3	1996–2000	0.59	M-v	3	Williams	35723	1998 VX ₅
1998 VQ ₇	13.5	0.15	20000226	223.05057	212.55050	70.10274	7.36433	0.1030745	2.3751187	47	3	1990–2000	0.60	M-v	2	Williams	36905	1998 VQ ₇
1998 VD ₉	12.8	0.15	20000226	130.22219	138.43429	211.63837	16.40501	0.1258375	2.8891802	39	3	1993–2000	0.62	M-v	3	Williams	36905	1998 VD ₉
1998 VN ₁₁	14.3	0.15	20000226	247.66672	176.84264	108.09738	1.98319	0.1445785	2.1400713	28	3	1979–2000	0.62	M-v	3	Williams	37288	1998 VN ₁₁
1998 VP ₁₅	14.6	0.15	20000226	300.69039	18.06156	211.65317	4.39001	0.1620782	2.3054056	20	3	1980–1999	1.05	M-v	4	Williams	35637	1998 VP ₁₅
1998 VL ₁₆	13.3	0.15	20000226	108.21054	301.58154	71.08562	10.09540	0.1135945	3.0538508	36	3	1977–2000	0.56	M-v	3	Williams	36541	1998 VL ₁₆
1998 VP ₁₆	14.8	0.15	19981103	217.64087	96.54313	86.27573	9.35276	0.0668744	2.7536478	15	1	9 days	0.55			Williams		1998 VP ₁₆
1998 VO ₁₈	12.8	0.15	20000226	73.84817	69.62911	346.56512	5.54866	0.0938998	3.1610634	37	4	1978–2000	0.61	M-v	2	Williams	33763	1998 VO ₁₈
1998 VP ₂₀	13.1	0.15	20000226	251.03185	85.99647	146.29246	2.16100	0.1373116	3.1727663	48	4	1991–2000	0.70	M-v	1	Williams	37288	1998 VP ₂₀
1998 VB ₂₆	13.5	0.15	20000226	121.89314	338.72074	13.64465	1.33699	0.1758969	3.1802088	44	4	1992–2000	0.67	M-v	1	Williams	35724	1998 VB ₂₆
1998 VL ₂₇	11.6	0.15	20000226	28.30566	130.33930	291.04609	3.35326	0.0518346	5.0924679	39	3	1996–2000	0.75	M-v	3	Williams	37288	1998 VL ₂₇
1998 VQ ₂₇	13.6	0.15	20000226	160.75550	340.89949	350.01955	1.60131	0.0912033	2.9026976	49	3	1971–2000	0.61	M-v	3	Williams	35078	1998 VQ ₂₇
1998 VR ₂₇	12.5	0.15	20000226	350.61957	270.76184	239.65205	5.30945	0.0885141	3.1473531	43	3	1983–2000	0.53	M-v	4	Williams	36820	1998 VR ₂₇
1998 VB ₂₈	13.2	0.15	20000226	118.48795	29.39878	333.89686	4.43693	0.1581861	3.1526658	30	4	1981–2000	0.47	M-v	1	Williams	33319	1998 VB ₂₈
1998 VQ ₂₉	13.0	0.15	20000226	161.02440	85.80434	257.16804	11.85896	0.2016261	2.6178826	54	2	1998–2000	0.64	M-v	3	Williams	34309	1998 VQ ₂₉
1998 VY ₂₉	10.6	0.15	20000226	37.14054	163.41615	258.43754	12.03316	0.2040301	5.1714801	71	3	1986–2000	0.73	M-v	2	Williams	37288	1998 VY ₂₉
1998 VD ₃₀	10.3	0.15	20000226	2.27872	233.65524	225.43305	24.92439	0.1007482	5.2222852	45	3	1986–2000	0.70	M-v	3	Williams	37288	1998 VD ₃₀
1998 VM ₃₂	13.3	0.15	20000226	289.69426	333.45039	285.63750	8.28754	0.2140306	2.2876919	54	4	1980–2000	0.72	M-v	2	Williams	35724	1998 VM ₃₂
1998 VK ₃₃	14.1	0.15	20000226	227.30250	241.01773	32.17411	4.85744	0.0918124	2.9057917	39	6	1976–2000	0.62	M-v	1	Williams	35724	1998 VK ₃₃
1998 VC ₃₄	14.8	0.15	20000226	85.56415	121.33150	300.83473	1.05016	0.0466490	2.8809788	33	5	1971–2000	0.62	M-v	1	Williams	35724	1998 VC ₃₄
1998 VR ₃₄	14.6	0.15	20000226	219.20969	331.72786	315.05931	1.13170	0.0366107	2.8733899	27	4	1996–2000	0.57	M-v	1	Williams	35724	1998 VR ₃₄
1998 VE ₃₇	13.9	0.15	20000226	66.09132	83.76453	9.08271	9.06926	0.1814898	2.7717571	38	4	1981–1999	0.81	M-v	2	Williams	35725	1998 VE ₃₇
1998 VL ₃₇	14.0	0.15	20000226	208.09784	260.70355	27.96425	13.49547	0.1506665	2.6220158	30	3	1971–2000	0.66	M-v	3	Williams	37288	1998 VL ₃₇
1998 VZ ₃₇	14.4	0.15	20000226	6.85032	107.05100	54.83400	13.56740	0.1272986	2.6101076	26	3	1996–2000	0.73	M-v	4	Williams	35725	1998 VZ ₃₇
1998 VQ ₃₈	13.8	0.15	20000226	18.52524	268.95955	241.61300	8.45814	0.0749175	2.5869815	43	3	1997–2000	0.60	M-v	3	Williams	34029	1998 VQ ₃₈
1998 VG ₄₄	6.5	0.15	20000226	342.40675	319.77824	127.93059	3.03760	0.2474658	39.3926258	27	2	1998–2000	0.39	M-v	6	Williams	36821	1998 VG ₄₄
1998 VP ₄₄	14.0	0.15	20000226	350.96755	75.41423	103.45090	10.15984	0.0779310	2.7531285	26	5	1950–2000	0.71	M-v	1	Williams	36905	1998 VP ₄₄
1998 WO ₁	13.0	0.15	20000226	154.26679	190.90713	152.22846	2.62624	0.1917639	3.1602617	27	5	1975–2000	0.62	M-v	1	Williams	35725	1998 WO ₁
1998 WR ₃	13.7	0.15	20000226	259.88383	223.66285	58.45204	7.90093	0.1532668	2.2552766	51	4	1981–2000	0.71	M-v	2	Williams	35725	1998 WR ₃
1998 WH ₄	13.3	0.15	20000226	93.75489	0.05375	72.63745	4.30872	0.0619810	2.6847576	51	3	1996–2000	0.59	M-v	3	Williams	35725	1998 WH ₄
1998 WX ₄	9.1	0.15	20000226	60.89143	285.16119	120.55672	28.74925	0.0235411	5.2906156	43	3	1992–2000	0.49	M-v	2	Williams	37288	1998 WX ₄

1998 WO ₅	14.4	0.15	20000226	73.50041	125.19203	329.72335	5.82478	0.0900887	2.4636217	37	4	1990–2000	0.62	M-v	1	Williams	35725	1998 WO ₅
1998 WJ ₈	12.6	0.15	20000226	146.36663	257.35440	80.02470	17.20755	0.0797665	3.1255133	76	3	1996–2000	0.48	M-v	2	Williams	37177	1998 WJ ₈
1998 WU ₁₀	13.9	0.15	20000226	245.39145	42.75788	235.20297	1.92952	0.2271431	2.3556485	54	5	1986–2000	0.71	M-v	1	Williams	37288	1998 WU ₁₀
1998 WN ₁₁	11.4	0.15	20000226	29.44446	318.75823	110.37875	4.50972	0.1691906	5.1856778	52	3	1996–2000	0.71	M-v	3	Williams	37177	1998 WN ₁₁
1998 WD ₁₂	14.5	0.15	20000226	324.18165	56.23445	166.79411	2.34549	0.1644896	2.3822191	27	3	1997–2000	0.70	M-v	4	Williams	34597	1998 WD ₁₂
1998 WA ₁₅	11.0	0.15	20000226	30.49066	209.61030	218.88646	11.21399	0.1178970	5.2033650	68	4	1990–2000	0.68	M-v	1	Williams	37289	1998 WA ₁₅
1998 WS ₁₆	13.4	0.15	20000226	207.19186	242.89892	59.36983	2.82023	0.0491095	2.8574076	50	3	1996–2000	0.72	M-v	3	Williams	37289	1998 WS ₁₆
1998 WK ₁₇	12.6	0.15	20000226	326.89352	299.23666	244.81961	21.44288	0.1024132	3.1743460	47	4	1952–2000	0.72	M-v	2	Williams	34933	1998 WK ₁₇
1998 WA ₁₈	13.0	0.15	20000226	82.40794	129.48476	293.72315	4.90242	0.0682429	3.1083960	36	4	1992–2000	0.73	M-v	1	Williams	37289	1998 WA ₁₈
1998 WT ₂₀	14.3	0.15	20000226	316.99725	30.02861	206.71046	4.23436	0.1355714	2.1989251	35	3	1991–1999	0.63	M-v	5	Williams	35727	1998 WT ₂₀
1998 WR ₂₁	9.8	0.15	20000226	72.48364	135.66142	241.65847	14.99562	0.0687245	5.2306471	74	3	1986–2000	0.68	M-v	3	Williams	37289	1998 WR ₂₁
1998 WH ₂₄	4.8	0.15	20000226	328.77759	46.00516	49.95250	12.00008	0.0953378	46.0059879	73	2	1998–1999	0.40	M-v	6	Marsden	37289	1998 WH ₂₄
1998 WA ₃₂	13.2	0.15	20000226	199.22427	84.80242	226.93034	1.26205	0.0422558	2.9110471	32	4	1992–2000	0.69	M-v	1	Williams	35727	1998 WA ₃₂
1998 XB	15.5	0.15	20000226	343.55964	202.57077	75.86420	13.59667	0.3512079	0.9078184	180	2	1998–1999	0.52	M-v	4	Williams	36004	1998 XB
1998 XK	12.8	0.15	20000226	121.55354	40.41144	332.59484	5.98686	0.1562159	3.1479419	58	6	1981–2000	0.56	M-v	1	Marsden	35727	1998 XK
1998 XP ₂	13.0	0.15	20000226	22.72448	50.40223	93.35735	1.78369	0.0905700	3.1653155	44	3	1994–2000	0.62	M-v	4	Williams	35727	1998 XP ₂
1998 XM ₆	13.8	0.15	20000226	205.78596	182.28225	113.92015	3.06615	0.0862144	2.9322352	39	6	1978–2000	0.64	M-v	1	Williams	35727	1998 XM ₆
1998 XA ₇	12.7	0.15	20000226	40.17136	266.90987	147.70230	1.80637	0.0360228	5.2769559	28	4	1996–2000	0.45	M-v	2	Williams	35727	1998 XA ₇
1998 XR ₉	13.4	0.15	20000226	319.88944	357.45281	231.97612	5.70198	0.1004868	2.4369868	33	6	1982–2000	0.53	M-v	2	Williams	35639	1998 XR ₉
1998 XS ₉	14.0	0.15	20000226	228.53632	122.64954	190.70314	2.49909	0.1563779	2.2645731	49	3	1991–2000	0.67	M-v	3	Williams	35727	1998 XS ₉
1998 XE ₁₃	13.7	0.15	20000226	166.63710	266.55793	66.95700	3.01982	0.0737166	2.8673083	48	4	1989–2000	0.62	M-v	2	Williams	35639	1998 XE ₁₃
1998 XS ₁₆	16.3	0.15	20000226	152.94867	358.17720	273.05935	26.55284	0.4966120	1.2123417	160	3	1998–2000	0.56	M-v	3	Williams	37289	1998 XS ₁₆
1998 XG ₂₄	12.1	0.15	20000226	151.34389	93.78757	290.47408	14.60284	0.0955951	3.1942429	48	6	1975–2000	0.85	M-v	1	Williams	34598	1998 XG ₂₄
1998 XP ₂₇	13.7	0.15	20000226	225.75642	261.89062	44.51700	6.96890	0.1350992	2.3954243	42	4	1983–2000	0.67	M-v	3	Williams	35640	1998 XP ₂₇
1998 XJ ₄₀	12.6	0.15	20000226	308.99924	219.86233	3.25016	7.27940	0.0597310	3.0793088	48	7	1984–2000	0.60	M-v	1	Williams	34934	1998 XJ ₄₀
1998 XG ₄₈	12.6	0.15	20000226	149.53275	308.74549	67.20135	11.53389	0.1322801	2.9861637	32	6	1976–2000	0.84	M-v	2	Williams	34934	1998 XG ₄₈
1998 XD ₅₁	11.8	0.15	20000226	12.49230	196.66506	318.52494	7.76234	0.1304577	3.9641469	42	4	1992–2000	0.76	M-v	1	Williams	37289	1998 XD ₅₁
1998 XU ₅₁	12.1	0.15	20000226	267.17498	216.41585	57.06130	17.04874	0.1693882	3.1474892	54	7	1950–2000	0.78	M-v	1	Williams	35728	1998 XU ₅₁
1998 XH ₅₉	13.5	0.15	20000226	256.36330	185.66874	114.30794	7.28290	0.2188278	2.2652335	29	5	1987–2000	0.92	M-v	2	Williams	35728	1998 XH ₅₉
1998 XT ₆₂	12.5	0.15	20000226	4.53747	200.72964	333.77067	17.39820	0.0730195	3.1240843	47	3	1994–2000	0.80	M-v	4	Williams	34033	1998 XT ₆₂
1998 XW ₆₂	13.4	0.15	20000226	98.76743	55.28258	26.63302	18.27523	0.0798468	3.0066272	43	5	1974–2000	0.64	M-v	1	Williams	35079	1998 XW ₆₂
1998 XS ₇₃	12.1	0.15	20000226	36.08505	174.33786	308.29293	7.68428	0.1539338	4.0040368	40	3	1996–2000	0.59	M-v	2	Williams	37289	1998 XS ₇₃
1998 XZ ₇₃	13.0	0.15	20000226	177.02239	7.80477	352.47225	6.68769	0.1393668	2.7285317	28	4	1970–2000	0.80	M-v	2	Williams	34598	1998 XZ ₇₃
1998 XO ₇₇	13.9	0.15	20000226	127.01134	295.57628	98.65951	13.48774	0.1636665	2.6323003	37	3	1997–2000	0.56	M-v	3	Williams	35728	1998 XO ₇₇
1998 XP ₉₂	12.4	0.15	20000226	141.34442	144.62000	238.55249	9.65563	0.1177102	3.0241730	39	4	1982–2000	0.82	M-v	2	Williams	35728	1998 XP ₉₂
1998 XR ₉₂	12.9	0.15	20000226	257.35589	57.93459	235.53842	12.15075	0.1584017	2.6353299	38	7	1975–2000	0.76	M-v	1	Williams	35728	1998 XR ₉₂
1998 XY ₉₅	6.1	0.15	20000226	337.95641	83.93508	47.31403	6.65869	0.3786577	62.1580839	31	2	1998–1999	0.68	M-v	6	Marsden	37178	1998 XY ₉₅
1998 XZ ₉₆	13.5	0.15	20000226	184.87268	253.84681	115.82410	13.64298	0.1088964	2.8694331	19	1	64 days	0.90	M-v	6	Williams	36905	1998 XZ ₉₆
1998 YR	12.0	0.15	20000226	283.53110	348.89623	277.86081	10.48462	0.1559803	3.0432376	59	5	1980–2000	0.70	M-v	2	Williams	34312	1998 YR
1998 YX	12.6	0.15	20000226	117.51359	321.08387	99.61754	11.67912	0.0806357	3.0131968	45	4	1982–2000	0.66	M-v	1	Williams	34598	1998 YX
1998 YW ₁	11.5	0.15	20000226	329.69537	192.34454	309.32245	7.95600	0.0616344	5.1667642	59	4	1989–2000	0.59	M-v	1	Williams	35729	1998 YW ₁
1998 YF ₃	13.4	0.15	20000226	181.84131	72.38013	287.71057	6.34205	0.2153537	2.5813829	44	4	1956–2000	0.66	M-v	2	Williams	34313	1998 YF ₃
1998 YG ₃	12.5	0.15	20000226	203.23427	241.02077	94.57015	10.70344	0.0933618	3.0007186	51	4	1992–2000	0.61	M-v	1	Williams	35640	1998 YG ₃
1998 YT ₃	12.9	0.15	20000226	339.77342	60.86596	151.01407	2.53642	0.0159023	2.9014649	49	3	1977–2000	0.49	M-v	5	Williams	34035	1998 YT ₃
1998 YH ₄	14.4	0.15	20000226	264.24899	167.93959	119.60339	8.43340	0.1343218	2.2298276	25	3	1994–2000	0.51	M-v	3	Williams	34035	1998 YH ₄
1998 YU ₆	12.0	0.15	20000226	178.88187	54.18108	267.64209	13.24470	0.1016661	3.2107000	41	3	1992–2000	0.60	M-v	3	Williams	33773	1998 YU ₆
1998 YB ₇	13.0	0.15	20000226	112.81595	97.87348	296.06486	12.76391	0.2066952	2.6499868	61	3	1991–2000	0.66	M-v	2	Williams	35729	1998 YB ₇
1998 YF ₇	12.4	0.15	20000226	166.72942	118.38488	228.17669	12.61059	0.1988717	3.2002602	53	6	1968–2000	0.66	M-v	1	Williams	37289	1998 YF ₇
1998 YC ₈	13.2	0.15	20000226	146.58096	87.34573	281.15960	11.68651	0.2258667	2.5804089	71	3	1985–2000	0.66	M-v	3	Williams	35729	1998 YC ₈
1998 YL ₈	13.0	0.15	20000226	167.47187	277.14861	94.96344	12.17366	0.2522617	2.5187001	79	3	1991–2000	0.60	M-v	3	Williams	35079	1998 YL ₈
1998 YD ₁₀	13.6	0.15	20000226	124.96625	319.86023	92.62355	3.28630	0.0843454	2.9083774	36	3	1950–1999	0.60	M-v	4	Williams	35729	1998 YD ₁₀
1998 YF ₁₂	12.9	0.15	20000226	260.97167	203.58453	95.91460	11.10313	0.0821916	3.0089417	42	3	1997–2000	0.62	M-v	3	Williams	34313	1998 YF ₁₂
1998 YT ₂₀	12.8	0.15	20000226	261.01804	345.68880	308.38469	9.48233	0.1163764	3.0623973	46	6	1953–2000	0.62	M-v	1	Williams	35730	1998 YT ₂₀

1999 AK ₃	13.6	0.15	20000226	75.78677	176.05452	243.71186	13.50637	0.1640780	2.7522863	35	3	1991–2000	0.73	M-v	2	Williams	35442	1999 AK ₃
1999 AM ₆	13.4	0.15	20000226	131.06657	80.07717	323.40124	5.63387	0.0446918	2.3677600	21	4	1992–2000	0.80	M-v	3	Williams	34599	1999 AM ₆
1999 AM ₂₀	12.7	0.15	20000226	256.38762	172.96426	124.26212	11.33049	0.0889598	2.9900812	40	4	1991–2000	0.50	M-v	1	Williams	34315	1999 AM ₂₀
1999 AF ₂₄	12.9	0.15	20000226	7.35277	80.66602	115.42933	11.51323	0.1168311	2.6435273	47	4	1955–2000	0.87	M-v	1	Williams	37289	1999 AF ₂₄
1999 CF ₉	17.9	0.15	20000226	123.28143	89.55899	157.61262	5.54318	0.5988185	1.7737469	234	2	1999–1999	0.50	M-v	4	Williams	36905	1999 CF ₉
1999 CL ₁₀	12.6	0.15	20000226	188.87530	232.01724	117.99204	8.41850	0.1892154	3.2086996	56	5	1985–2000	0.72	M-v	2	Williams	33993	1999 CL ₁₀
1999 DC	11.9	0.15	20000226	96.30985	252.52320	196.41235	5.73574	0.1214670	3.9925544	36	6	1972–2000	0.69	M-v	1	Williams	35734	1999 DC
1999 EA ₂	15.4	0.15	20000226	223.50232	224.53647	135.84540	4.02542	0.2417143	2.5776083	21	3	1995–1999	0.40	M-v	5	Williams	34262	1999 EA ₂
1999 ED ₅	19.8	0.15	20000226	106.52578	273.75892	5.79397	18.17686	0.4662608	1.7459413	59	1	219 days	0.55	M-v	3	Williams	36541	1999 ED ₅
1999 FX ₃₂	12.8	0.15	20000226	350.33842	163.64547	128.84114	9.53523	0.0905872	2.7850410	44	5	1986–1999	0.65	M-v	2	Williams	34952	1999 FX ₃₂
1999 GJ ₄	15.0	0.15	20000226	69.87222	211.79422	148.37043	34.58059	0.8079852	1.3386457	61	5	1955–2000	0.76	M-v	3	Williams	35647	1999 GJ ₄
1999 HW ₂	15.8	0.15	20000226	56.47012	85.23987	180.75100	27.16163	0.4063540	2.6108304	130	1	182 days	0.56	M-v	3	Williams	36542	1999 HW ₂
1999 HX ₂	15.2	0.15	20000226	38.16628	148.94608	141.80083	16.45674	0.5545960	3.1790673	365	1	205 days	0.57	M-v	3	Williams	36906	1999 HX ₂
1999 JJ	15.3	0.15	19990522	330.33682	2.05072	248.64885	18.18533	0.0473218	1.9211651	17	1	38 days	0.86			Williams		1999 JJ
1999 JM ₈	15.1	0.15	20000226	47.60136	165.98366	134.10329	13.69243	0.6436677	2.7226711	400	3	1990–2000	0.59	M-v	0	Williams	36906	1999 JM ₈
1999 JD ₁₃	16.6	0.15	20000226	99.46895	53.81886	220.24210	5.68038	0.2664865	2.1928397	41	1	243 days	0.41	M-v	3	Williams	37289	1999 JD ₁₃
1999 JN ₁₇	14.1	0.15	20000226	69.63266	79.22273	216.08138	4.27141	0.2082643	2.2367997	84	1	235 days	0.66	M-v	3	Williams	37289	1999 JN ₁₇
1999 JS ₂₄	12.5	0.15	19990522	328.29174	238.69864	28.17722	13.69223	0.1358206	2.9785688	27	1	30 days	0.83			Williams		1999 JS ₂₄
1999 JX ₂₆	13.4	0.15	20000226	298.85626	284.69310	66.61720	2.92180	0.0835853	2.8520767	45	4	1986–1999	0.89	M-v	1	Williams	35454	1999 JX ₂₆
1999 JK ₄₁	15.5	0.15	19990522	265.88583	213.04951	122.75319	4.48740	0.0808314	2.4627592	19	1	28 days	0.72			Williams		1999 JK ₄₁
1999 JK ₄₉	15.1	0.15	19990522	277.17687	104.12205	226.56818	7.79055	0.1022616	2.5705307	16	1	40 days	1.00			Williams		1999 JK ₄₉
1999 JD ₅₀	14.5	0.15	19990522	107.62687	44.80192	78.15429	10.94479	0.0400580	2.5251792	18	1	30 days	0.56			Williams		1999 JD ₅₀
1999 JR ₅₀	16.2	0.15	19990522	41.47647	93.08587	77.24857	11.19773	0.2573269	2.6321742	17	1	40 days	0.63			Williams		1999 JR ₅₀
1999 JY ₅₂	14.4	0.15	19990522	188.45408	332.92091	76.96850	9.21509	0.0795645	2.7957119	15	1	36 days	0.57			Williams		1999 JY ₅₂
1999 JC ₅₄	15.9	0.15	19990522	337.28906	199.78877	69.48718	3.39670	0.1436803	2.5933280	26	1	36 days	0.82			Williams		1999 JC ₅₄
1999 JO ₅₇	13.2	0.15	20000226	43.63388	144.09639	111.42165	3.21384	0.0267137	2.8420422	56	4	1993–1999	0.67	M-v	2	Williams	35460	1999 JO ₅₇
1999 JG ₅₈	16.0	0.15	19990522	346.19061	322.83628	298.47165	1.89832	0.1381345	2.4213257	16	1	30 days	0.87			Williams		1999 JG ₅₈
1999 JY ₅₈	15.8	0.15	19990522	327.59309	190.41040	93.45603	4.28819	0.1390681	2.6290359	25	1	36 days	0.96			Williams		1999 JY ₅₈
1999 JK ₆₄	13.5	0.15	20000226	62.22657	177.83392	70.04730	8.41069	0.1559885	2.7302398	38	5	1978–1999	0.67	M-v	2	Williams	35461	1999 JK ₆₄
1999 JQ ₆₄	15.5	0.15	19990522	307.48547	227.41047	86.70764	14.39654	0.1641122	2.5948878	28	1	35 days	0.94			Williams		1999 JQ ₆₄
1999 JF ₇₀	12.6	0.15	20000226	28.35070	192.98728	60.66044	13.58051	0.0607249	2.9334529	60	6	1979–1999	0.67	M-v	3	Williams	36543	1999 JF ₇₀
1999 JW ₈₀	14.1	0.15	19990522	46.86231	87.84149	97.44906	14.02567	0.1116312	2.6870187	16	1	33 days	0.62			Williams		1999 JW ₈₀
1999 JB ₉₃	13.9	0.15	19990522	6.82862	99.79753	119.96456	16.98176	0.0893155	3.2086109	17	1	31 days	0.53			Williams		1999 JB ₉₃
1999 JF ₉₄	13.4	0.15	19990522	102.29530	298.69335	178.09433	14.72324	0.1262224	3.1985764	18	1	33 days	0.68			Williams		1999 JF ₉₄
1999 JW ₉₅	16.3	0.15	19990522	8.01627	34.74473	190.08792	11.55638	0.1959201	2.3595315	19	1	31 days	0.74			Williams		1999 JW ₉₅
1999 JH ₉₈	15.2	0.15	19990522	316.84009	189.55058	107.44334	10.34890	0.1967803	2.7701344	18	1	33 days	0.87			Williams		1999 JH ₉₈
1999 JO ₁₀₃	13.7	0.15	20000226	260.60850	252.60920	134.94587	8.54036	0.2366735	2.8001041	32	4	1991–1999	0.77	M-v	2	Williams	35654	1999 JO ₁₀₃
1999 JN ₁₁₆	15.1	0.15	19990522	88.76453	270.55359	220.34893	5.91035	0.1727469	2.5371090	14	1	36 days	0.86			Williams		1999 JN ₁₁₆
1999 JX ₁₁₈	14.1	0.15	19990522	292.83807	93.20026	226.88564	8.44522	0.1056999	2.7416582	17	1	33 days	0.93			Williams		1999 JX ₁₁₈
1999 JX ₁₁₉	14.5	0.15	19990522	314.35643	92.69445	203.09881	9.27533	0.0760307	3.1784751	14	1	32 days	0.80			Williams		1999 JX ₁₁₉
1999 JC ₁₂₀	15.6	0.15	19990522	277.87905	113.09712	218.90627	5.60197	0.0558435	2.1785502	18	1	33 days	0.82			Williams		1999 JC ₁₂₀
1999 JE ₁₂₁	16.8	0.15	19990522	323.72078	138.80618	164.41829	4.65701	0.2570541	2.3146567	16	1	33 days	0.45			Williams		1999 JE ₁₂₁
1999 JO ₁₂₁	16.7	0.15	19990522	25.12675	341.32022	230.98958	5.84080	0.1327288	2.2885061	16	1	33 days	0.63			Williams		1999 JO ₁₂₁
1999 JX ₁₂₁	15.4	0.15	19990522	285.93412	269.14060	83.82858	11.84405	0.2869981	2.5699216	18	1	33 days	0.74			Williams		1999 JX ₁₂₁
1999 JA ₁₂₇	14.9	0.15	19990522	294.01066	79.80761	240.06443	12.34587	0.1147079	2.6292029	17	1	33 days	0.95			Williams		1999 JA ₁₂₇
1999 KR ₄	14.3	0.15	20000226	53.18050	114.88384	209.51775	8.69869	0.2601503	2.3960876	96	5	1988–1999	0.55	M-v	1	Williams	37289	1999 KR ₄
1999 KK ₆	13.7	0.15	20000226	41.99240	134.88179	220.00068	23.86651	0.0622497	1.8925585	80	4	1991–2000	0.54	M-v	2	Williams	37289	1999 KK ₆
1999 KH ₇	15.6	0.15	19990522	205.64535	289.35012	101.93401	6.88099	0.1178019	2.3498070	15	1	23 days	0.90			Williams		1999 KH ₇
1999 KM ₁₁	16.7	0.15	19990522	321.37557	219.00815	83.22153	8.48458	0.2393962	2.5207462	18	1	28 days	0.74			Williams		1999 KM ₁₁
1999 KV ₁₆	14.2	0.15	19990502	91.55380	67.38687	27.81068	8.02799	0.3054787	2.6624151	16	1	12 days	1.10			Williams		1999 KV ₁₆
1999 KY ₁₆	15.8	0.15	19990502	45.13258	264.52946	262.85624	1.95942	0.1642070	2.4050422	17	1	11 days	0.78			Williams		1999 KY ₁₆
1999 KO ₁₇	15.0	0.15	19990522	304.71147	246.58436	67.70077	13.85715	0.2161632	2.6828595	16	1	29 days	0.48			Williams		1999 KO ₁₇
1999 LF ₆	18.1	0.15	20000226	98.48959	140.61358	208.63222	18.93576	0.2801963	1.4082274	350	2	1979–1999	0.51	M-v	0	Williams	37289	1999 LF ₆

1999 LO ₇	14.6	0.15	20000226	32.46713	208.10202	140.98441	4.82721	0.2317444	2.2907289	78	2	1998–1999	0.70	M-v	3	Williams	37289	1999 LO ₇
1999 LV ₈	14.8	0.15	19990522	112.84577	359.62919	120.38137	10.43255	0.0900957	2.7550419	17	1	36 days	0.56			Williams		1999 LV ₈
1999 LE ₉	15.2	0.15	19990522	13.80702	120.59371	104.45648	13.34219	0.1215384	2.5325234	18	1	36 days	0.42			Williams		1999 LE ₉
1999 LS ₁₁	15.3	0.15	19990522	354.35592	163.76843	85.34649	14.32396	0.1452582	2.7177384	16	1	36 days	0.48			Williams		1999 LS ₁₁
1999 LN ₂₈	19.3	0.15	20000226	68.23030	186.52593	115.75633	9.18392	0.4660353	2.1428674	191	1	115 days	0.53	M-v	4	Williams	36544	1999 LN ₂₈
1999 LO ₂₈	15.6	0.15	20000226	133.53611	283.56629	280.24787	33.92280	0.4125257	1.8766141	217	2	1954–1999	0.61	M-v	3	Williams	36544	1999 LO ₂₈
1999 LD ₃₁	13.7	0.15	20000226	0.82571	102.18541	296.98410	160.19357	0.9026561	24.4255732	225	2	1999–2000	0.54	M-v	2	Williams	36088	1999 LD ₃₁
1999 ML	17.6	0.15	20000226	60.48134	110.93297	211.78125	2.50844	0.4541019	2.2658547	264	1	141 days	0.56	M-v	3	Williams	37289	1999 ML
1999 MV	15.8	0.15	20000226	45.05477	56.29864	296.95379	22.85463	0.1285296	1.8913771	38	2	1997–1999	0.59	M-v	3	Williams	36906	1999 MV
1999 NT	13.7	0.15	20000226	37.37879	35.81733	302.80879	8.43717	0.1976733	2.3954656	84	2	1998–2000	0.65	M-v	2	Williams	37289	1999 NT
1999 NP ₂	14.8	0.15	20000226	61.91325	124.58525	200.44791	5.23297	0.1813003	2.2543507	98	3	1996–1999	0.70	M-v	2	Williams	37289	1999 NP ₂
1999 NW ₂	23.1	0.15	20000226	147.71118	52.64824	289.68421	8.67239	0.1091166	1.1169163	144	1	28 days	0.66	M-v	5	Williams	35739	1999 NW ₂
1999 NT ₄	14.3	0.15	20000226	324.30760	96.71967	338.41152	2.20404	0.0794455	2.3773772	206	3	1976–1999	0.53	M-v	2	Williams	37289	1999 NT ₄
1999 NZ ₄	17.6	0.15	20000226	41.57089	19.48183	297.73982	19.61180	0.4963602	2.8553580	142	1	97 days	0.43	M-v	3	Williams	36906	1999 NZ ₄
1999 NA ₅	20.3	0.15	20000226	176.91321	318.61546	262.30506	4.27563	0.2483149	1.4360211	40	1	39 days	0.39	M-v	5	Williams	35739	1999 NA ₅
1999 NB ₅	21.6	0.15	19990721	343.34287	121.44336	236.73503	1.40584	0.5302790	2.0609508	65	1	28 days	0.85			Williams		1999 NB ₅
1999 NC ₅	16.6	0.15	20000226	351.39318	295.17897	128.95219	45.74709	0.3939865	2.0295208	42	2	1983–1999	0.55	M-v	4	Williams	35659	1999 NC ₅
1999 NZ ₅	13.8	0.15	20000226	28.81603	199.06900	151.64099	13.54418	0.2796714	2.4143661	52	3	1995–1999	0.50	M-v	2	Williams	36544	1999 NZ ₅
1999 NG ₆	15.1	0.15	20000226	44.26082	200.20662	129.12972	7.53500	0.1603676	2.2744469	47	2	1998–1999	0.76	M-v	3	Williams	36544	1999 NG ₆
1999 NV ₆	16.2	0.15	20000226	54.82310	64.30626	246.24009	0.48486	0.1795010	2.3976935	20	1	151 days	0.60	M-v	5	Williams	36906	1999 NV ₆
1999 NA ₉	16.3	0.15	19990721	20.01297	156.74855	122.21777	6.87483	0.1848172	2.2543291	15	1	31 days	0.49			Williams		1999 NA ₉
1999 NM ₉	14.8	0.15	20000226	178.14228	353.71387	201.64617	1.20565	0.0522977	2.1909162	53	3	1996–1999	0.52	M-v	3	Williams	36906	1999 NM ₉
1999 NS ₉	13.2	0.15	20000226	112.03379	93.12250	145.22725	9.63053	0.1006880	2.7944905	68	3	1993–1999	0.64	M-v	2	Williams	37289	1999 NS ₉
1999 NP ₁₇	14.7	0.15	19990611	76.04813	244.50252	306.45457	7.83554	0.1502978	2.5986009	18	1	35 days	0.55			Williams		1999 NP ₁₇
1999 NS ₁₇	15.4	0.15	19990611	35.87786	208.33329	19.84920	2.57256	0.1842818	2.3501681	18	1	33 days	0.43			Williams		1999 NS ₁₇
1999 NX ₁₇	15.6	0.15	19990611	359.17644	223.06263	57.80512	4.57354	0.1683348	2.6418820	16	1	33 days	0.57			Williams		1999 NX ₁₇
1999 NO ₁₈	15.0	0.15	19990611	319.40870	290.52336	48.57737	3.17155	0.2038534	2.3961477	19	1	35 days	0.38			Williams		1999 NO ₁₈
1999 NL ₁₉	14.5	0.15	19990611	70.50165	88.48082	121.70927	11.75157	0.0512408	2.9666042	19	1	35 days	0.53			Williams		1999 NL ₁₉
1999 NQ ₂₀	14.4	0.15	19990611	343.33102	206.60230	104.39289	11.55452	0.1956183	3.1559502	19	1	35 days	0.47			Williams		1999 NQ ₂₀
1999 NB ₂₁	16.8	0.15	19990611	342.08035	215.58142	89.70399	6.50526	0.1823382	2.2852471	18	1	35 days	0.60			Williams		1999 NB ₂₁
1999 NY ₂₂	14.5	0.15	20000226	37.31345	205.21847	131.27138	4.86025	0.2601442	2.3378896	37	1	183 days	0.57	M-v	4	Williams		1999 NY ₂₂
1999 ND ₂₃	15.2	0.15	19990701	352.09069	175.86951	126.08385	10.37388	0.1318787	2.7613809	16	1	26 days	0.38			Williams		1999 ND ₂₃
1999 NV ₂₃	14.7	0.15	20000226	61.56441	189.52945	110.38457	8.69410	0.1871686	2.2804041	24	1	62 days	0.57	M-v	4 D	Williams		1999 NV ₂₃
1999 ND ₂₄	15.5	0.15	19990701	330.43729	223.75496	106.34658	7.51177	0.1497398	2.3269296	15	1	31 days	0.37			Williams		1999 ND ₂₄
1999 NF ₃₅	14.9	0.15	19990611	341.41879	206.68069	99.60900	13.77952	0.1549327	2.3378178	25	1	35 days	0.50			Williams		1999 NF ₃₅
1999 NP ₃₉	15.1	0.15	20000226	6.66446	35.60862	349.92585	4.70652	0.2583880	2.4302164	30	1	119 days	0.50	M-v	4	Williams	36907	1999 NP ₃₉
1999 NJ ₄₁	13.9	0.15	20000226	357.93634	55.71185	329.99523	13.51578	0.1856030	2.6328923	81	1	119 days	0.59	M-v	4	Williams	37289	1999 NJ ₄₁
1999 NK ₄₁	14.7	0.15	20000226	32.80792	14.06348	337.16492	7.93295	0.1746464	2.3096402	68	5	1978–1999	0.80	M-v	3	Williams	37290	1999 NK ₄₁
1999 NU ₄₁	13.8	0.15	20000226	10.11113	21.45980	333.84934	16.15232	0.1766097	3.1911964	37	1	115 days	0.54	M-v	4	Williams	36546	1999 NU ₄₁
1999 NV ₄₁	12.8	0.15	20000226	281.29047	104.53457	356.50992	7.77945	0.1394184	2.5342971	56	1	122 days	0.58	M-v	4	Williams	37290	1999 NV ₄₁
1999 NC ₄₃	15.9	0.15	20000226	17.20491	120.27447	312.03935	7.11414	0.5795989	1.7593922	69	1	221 days	0.48	M-v	3	Williams	37290	1999 NC ₄₃
1999 ND ₄₃	19.1	0.15	20000226	71.26553	51.81781	332.27777	5.55660	0.3140336	1.5225854	477	1	185 days	0.52	M-v	3	Marsden	37290	1999 ND ₄₃
1999 NC ₄₉	15.3	0.15	20000226	40.70405	154.60906	175.80347	3.15296	0.1723780	2.3685680	16	2	1981–1999	0.40	M-v	4	Williams	36822	1999 NC ₄₉
1999 NK ₄₉	14.7	0.15	20000226	34.04476	138.54451	199.46907	5.66467	0.1613838	2.4125224	31	1	118 days	0.41	M-v	4	Williams	36907	1999 NK ₄₉
1999 NT ₅₄	14.1	0.15	20000226	343.96100	226.27060	170.62559	15.29151	0.1129625	2.5208073	64	2	1998–2000	0.49	M-v	3	Williams	36546	1999 NT ₅₄
1999 NX ₅₄	12.9	0.15	20000226	18.77426	187.45277	159.00463	25.11578	0.0267870	2.7156997	64	1	174 days	0.49	M-v	3	Williams	36907	1999 NX ₅₄
1999 NC ₅₇	12.5	0.15	20000226	1.81625	116.71486	262.86734	10.36008	0.1063565	3.0337012	79	3	1984–2000	0.74	M-v	2	Williams	37290	1999 NC ₅₇
1999 NB ₆₃	11.1	0.15	20000226	354.17863	65.70263	279.79737	21.45008	0.1677309	5.1674705	23	1	117 days	0.40	M-v	5	Williams		1999 NB ₆₃
1999 OB	14.6	0.15	20000226	28.13756	189.81257	164.86626	4.41162	0.1368209	2.2831588	110	2	1998–1999	0.69	M-v	3	Williams	37290	1999 OB
1999 OL	14.1	0.15	20000226	28.41836	354.10434	346.22188	7.03013	0.1509494	2.7359354	72	3	1997–1999	0.58	M-v	3	Williams	36908	1999 OL
1999 OW	15.0	0.15	20000226	35.01330	172.61301	163.08950	6.49849	0.3152297	2.5801430	88	2	1995–1999	0.58	M-v	2	Williams	37290	1999 OW
1999 OV ₁	14.3	0.15	20000226	23.37539	73.42273	313.98697	5.55839	0.1516649	2.3057328	51	3	1985–2000	0.65	M-v	2	Williams	37290	1999 OV ₁
1999 OZ ₁	14.2	0.15	20000226	54.48407	80.07939	259.05687	12.94778	0.2426616	2.5615369	39	2	1995–1999	0.60	M-v	4	Williams	37290	1999 OZ ₁

1999 OE ₂	12.6	0.15	20000226	159.50257	344.27751	247.06985	15.29969	0.0545027	3.1923049	48	1	169 days	0.51	M-v	4	Williams	37290	1999 OE ₂
1999 OG ₂	14.7	0.15	20000226	105.76750	122.87656	185.04733	22.30582	0.1182998	1.9358169	52	1	107 days	0.34	M-v	3	Williams	37290	1999 OG ₂
1999 OJ ₂	12.8	0.15	20000226	260.67485	256.01129	259.23317	12.41557	0.1046602	2.5908630	80	3	1987–2000	0.57	M-v	2	Williams	37290	1999 OJ ₂
1999 OL ₂	13.6	0.15	20000226	351.99971	139.97996	314.90211	23.53254	0.2830182	2.3708691	37	1	164 days	0.49	M-v	4	Williams	37290	1999 OL ₂
1999 OM ₂	14.0	0.15	20000226	213.92956	291.57391	281.85015	17.99365	0.0590309	1.9420273	32	1	145 days	0.45	M-v	4	Williams	37290	1999 OM ₂
1999 OR ₂	13.7	0.15	20000226	339.90519	173.01693	280.92388	12.18597	0.1175245	2.3417924	46	3	1985–2000	0.55	M-v	3	Williams	37290	1999 OR ₂
1999 OS ₂	14.3	0.15	20000226	60.53748	56.19100	288.91000	12.09875	0.1995857	2.5559483	40	1	165 days	0.48	M-v	4	Williams	37290	1999 OS ₂
1999 OW ₂	12.4	0.15	20000226	12.36505	99.99946	313.47633	21.17225	0.1533557	2.6155971	57	3	1986–2000	0.49	M-v	2	Williams	37290	1999 OW ₂
1999 OY ₂	14.0	0.15	20000226	49.01009	109.57570	223.95715	24.08212	0.3718286	3.1336628	61	1	171 days	0.48	M-v	3	Williams	37290	1999 OY ₂
1999 OB ₃	12.2	0.15	20000226	57.02934	92.90376	256.40917	12.26819	0.0984946	2.9891446	81	3	1989–2000	0.62	M-v	2	Williams	37290	1999 OB ₃
1999 OC ₃	14.5	0.15	20000226	61.53430	25.86770	318.90753	17.64563	0.2319983	2.6058986	19	1	164 days	0.45	M-v	5	Williams	37290	1999 OC ₃
1999 OG ₃	14.8	0.15	20000226	55.01349	137.63686	233.28289	20.65049	0.2361875	2.2965402	79	3	1992–2000	0.56	M-v	2	Williams	37290	1999 OG ₃
1999 OH ₃	13.6	0.15	20000226	62.37440	98.60743	243.97490	18.88346	0.2142705	2.7875331	77	2	1998–2000	0.59	M-v	3	Williams	37290	1999 OH ₃
1999 OJ ₃	14.2	0.15	20000226	66.21464	109.94424	226.03354	28.25481	0.2487394	2.6352182	102	2	1998–2000	0.67	M-v	3	Williams	37290	1999 OJ ₃
1999 OP ₃	14.5	0.15	20000226	85.84005	271.13710	311.80254	27.56435	0.6110448	2.7098749	149	2	1990–1999	0.57	M-v	3	Williams	36908	1999 OP ₃
1999 OQ ₃	20.0	0.15	20000226	80.45801	164.24390	148.08530	9.14846	0.4239375	1.8965740	54	1	86 days	0.58	M-v	4	Williams	36908	1999 OQ ₃
1999 OT ₃	18.6	0.15	20000226	54.21795	94.20809	254.00611	7.33896	0.3309286	2.0615763	31	1	80 days	0.71	M-v	5	Williams	36548	1999 OT ₃
1999 OW ₃	14.6	0.15	20000226	132.73689	35.00003	196.84200	35.46094	0.7796589	2.0897220	65	1	178 days	0.46	M-v	4	Williams	37290	1999 OW ₃
1999 PY	14.4	0.15	20000226	85.38357	292.68061	49.02949	6.30208	0.1247587	2.2338435	150	2	1998–2000	0.54	M-v	3	Williams	37290	1999 PY
1999 PZ	14.4	0.15	20000226	44.38234	176.38897	157.27666	7.23688	0.2383936	2.3082805	65	1	173 days	0.54	M-v	3	Williams	36908	1999 PZ
1999 PC ₁	13.1	0.15	20000226	125.70482	7.19101	293.57592	13.38746	0.1778675	2.6446704	67	2	1998–2000	0.61	M-v	3	Williams	37290	1999 PC ₁
1999 PJ ₁	18.0	0.15	20000226	50.60098	80.46702	319.58921	34.48559	0.3594870	1.6750831	226	1	161 days	0.55	M-v	3	Marsden	37290	1999 PJ ₁
1999 PQ ₁	15.1	0.15	20000226	150.35733	187.32899	21.94700	2.03520	0.0470667	2.9504602	22	3	1994–1999	0.92	M-v	4	Williams	36823	1999 PQ ₁
1999 PS ₃	21.7	0.15	20000226	61.11716	78.25034	257.70269	3.59816	0.4892227	2.0441949	50	1	57 days	0.69	M-v	5	Williams	36549	1999 PS ₃
1999 PX ₃	17.0	0.15	19990721	5.87955	351.22046	310.72411	17.29163	0.0781777	1.9202791	14	1	30 days	0.44			Williams		1999 PX ₃
1999 PG ₄	18.0	0.15	20000226	34.95496	22.61553	330.53599	12.97459	0.3054484	2.5893989	26	1	62 days	0.80	M-v	5	Williams	36549	1999 PG ₄
1999 PO ₄	14.6	0.15	20000226	30.48584	20.44801	349.34373	19.23280	0.3057032	2.5650315	97	1	112 days	0.43	M-v	3	Williams	37291	1999 PO ₄
1999 PP ₄	13.0	0.15	20000226	47.28153	297.17265	33.06445	6.57430	0.0790602	3.1934162	54	1	137 days	0.49	M-v	4	Williams	37291	1999 PP ₄
1999 PT ₄	13.8	0.15	20000226	278.54704	213.72467	263.91177	2.62960	0.0105732	2.3899975	102	3	1981–1999	0.65	M-v	2	Williams	37291	1999 PT ₄
1999 PV ₄	14.2	0.15	20000226	0.57013	239.68935	177.86582	21.66210	0.0786753	2.6147127	52	1	86 days	0.41	M-v	4	Williams	37291	1999 PV ₄
1999 PB ₅	13.5	0.15	20000226	24.75573	354.08505	24.56134	11.47102	0.0809974	3.2378788	68	1	146 days	0.50	M-v	3	Williams	37291	1999 PB ₅
1999 QH	14.7	0.15	20000226	74.54170	283.57231	23.08668	5.80060	0.1494540	2.2365538	45	1	81 days	0.45	M-v	4	Williams	36909	1999 QH
1999 QJ	17.4	0.15	20000226	38.60908	14.98103	344.29372	32.05312	0.4404820	2.4273501	190	1	77 days	0.52	M-v	4	Williams	36909	1999 QJ
1999 QP	16.6	0.15	20000226	76.34459	352.43433	314.67785	0.61668	0.1913096	2.3851521	44	1	85 days	0.63	M-v	4	Williams		1999 QP
1999 QQ ₁	15.7	0.15	20000226	23.50403	176.06874	228.96904	5.20804	0.3137745	2.5753220	36	1	139 days	0.77	M-v	4	Williams		1999 QQ ₁
1999 QV ₁	15.7	0.15	20000226	30.79518	207.91879	167.80223	6.97236	0.3652807	2.6046470	120	1	169 days	0.57	M-v	3	Williams	37291	1999 QV ₁
1999 QH ₂	14.9	0.15	20000226	37.57402	32.97253	306.86943	0.44417	0.2508549	3.1697409	62	1	83 days	0.52	M-v	4	Williams		1999 QH ₂
1999 QS ₂	14.1	0.15	20000226	35.73193	216.06458	123.28978	2.34315	0.1831126	3.1767725	39	1	74 days	0.65	M-v	4	Williams		1999 QS ₂
1999 RE	15.4	0.15	20000226	61.03286	300.92405	23.88426	12.07732	0.3084648	2.6455538	56	1	74 days	0.56	M-v	4	Williams	36909	1999 RE
1999 RJ	16.1	0.15	19990830	4.68566	31.89457	307.88426	15.28760	0.1913790	3.1163181	8	1	13 days	0.29			Williams		1999 RJ
1999 RM	13.9	0.15	20000226	65.53746	148.97644	171.18875	9.27959	0.1323564	3.0628786	73	2	1998–1999	0.65	M-v	3	Williams	37291	1999 RM
1999 RN	15.7	0.15	20000226	353.50297	68.53394	351.60835	3.71358	0.1198444	2.3353331	67	1	107 days	0.50	M-v	4	Williams	37291	1999 RN
1999 RS	13.6	0.15	20000226	327.43006	282.42855	162.16339	9.73230	0.0690871	3.1770213	58	4	1987–2000	0.61	M-v	1	Williams	37179	1999 RS
1999 RU	15.9	0.15	20000226	33.43258	209.92065	153.67592	4.84105	0.1866507	2.3236203	67	1	85 days	0.61	M-v	4	Williams	36909	1999 RU
1999 RV	14.4	0.15	20000226	354.94778	194.74153	209.00424	4.91325	0.2966057	2.6070555	61	2	1993–1999	0.56	M-v	3	Williams	36550	1999 RV
1999 RD ₁	16.0	0.15	20000226	28.23581	335.36639	40.34969	2.47626	0.1702155	2.2670948	77	1	95 days	0.46	M-v	4	Williams		1999 RD ₁
1999 RN ₁	16.0	0.15	20000226	1.77746	132.84390	278.85874	1.44669	0.1991238	2.4325354	52	1	70 days	0.59	M-v	5	Williams	36909	1999 RN ₁
1999 RR ₁	15.6	0.15	20000226	153.46006	287.43135	309.39540	2.86829	0.1251717	2.2732622	33	2	1984–1999	0.48	M-v	5	Williams	36909	1999 RR ₁
1999 RT ₁	13.5	0.15	20000226	33.82977	11.61587	351.56128	15.11223	0.1802487	2.5965162	97	3	1995–2000	0.46	M-v	2	Williams	37291	1999 RT ₁
1999 RU ₁	16.3	0.15	20000226	40.09532	225.55352	137.43970	0.49137	0.2216936	2.3543017	52	2	1997–1999	0.68	M-v	4	Williams	37291	1999 RU ₁
1999 RW ₁	14.6	0.15	20000226	27.05527	4.95504	6.49322	1.95508	0.2243195	2.6921217	111	3	1990–1999	0.63	M-v	2	Williams	37291	1999 RW ₁
1999 RZ ₁	15.0	0.15	20000226	29.05228	18.74380	5.27059	0.91860	0.1983404	2.4190318	104	3	1995–2000	0.54	M-v	2	Williams	37291	1999 RZ ₁
1999 RC ₂	16.2	0.15	20000226	104.63670	347.68935	331.00471	24.51568	0.1485762	1.6192369	83	2	1989–2000	0.49	M-v	3	Williams	37179	1999 RC ₂

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1999 RD ₂	12.4	0.15	20000226	320.50843	113.26687	23.51768	32.70619	0.3187175	2.7952093	83	1	93 days	0.42	M-v	4	Williams	37291	1999 RD ₂
1999 RE ₂	14.8	0.15	20000226	25.76281	215.85815	192.47440	8.46997	0.2442982	2.3780926	64	1	127 days	0.54	M-v	3	Williams	37291	1999 RE ₂
1999 RQ ₂	16.4	0.15	20000226	128.97905	71.50540	202.67443	20.71140	0.0783416	1.9044038	25	1	69 days	0.49	M-v	4	Williams		1999 RQ ₂
1999 RR ₂	12.3	0.15	20000226	327.72931	173.42341	259.48577	17.32867	0.1702471	3.1414281	45	1	137 days	0.40	M-v	4	Williams	37291	1999 RR ₂
1999 RU ₂	20.2	0.15	20000226	27.16407	202.72968	179.69428	5.44893	0.5599320	2.8065328	140	1	61 days	0.54	M-v	5	Williams	36910	1999 RU ₂
1999 RV ₂	18.6	0.15	20000226	37.15488	42.85289	335.60522	4.85747	0.5091424	2.4378613	187	1	119 days	0.52	M-v	4	Williams	37291	1999 RV ₂
1999 RZ ₂	14.1	0.15	20000226	347.76842	97.69535	319.41978	0.97489	0.0796713	2.8701231	67	3	1995–1999	0.59	M-v	3	Williams	37291	1999 RZ ₂
1999 RB ₃	15.0	0.15	20000226	220.54291	198.01506	352.65830	4.46265	0.0512933	2.2552868	98	4	1984–1999	0.63	M-v	3	Williams	37291	1999 RB ₃
1999 RC ₃	13.9	0.15	20000226	333.73176	71.60143	4.02962	10.86028	0.1457693	3.2204620	62	1	71 days	0.60	M-v	5	Williams		1999 RC ₃
1999 RD ₃	14.8	0.15	20000226	0.12506	219.17759	196.38139	2.44404	0.1358435	2.2825067	86	3	1982–1999	0.55	M-v	3	Williams	37291	1999 RD ₃
1999 RF ₃	15.7	0.15	20000226	47.01116	7.49355	348.39582	4.28557	0.1831627	2.2948134	53	1	86 days	0.57	M-v	4	Williams		1999 RF ₃
1999 RK ₃	15.7	0.15	20000226	305.06676	75.40251	44.23820	7.28746	0.0404798	2.2256211	48	1	94 days	0.64	M-v	4	Williams	37291	1999 RK ₃
1999 RL ₃	13.0	0.15	20000226	0.50547	69.72147	36.21869	15.39654	0.0785015	2.5867989	45	1	116 days	0.36	M-v	3	Williams	37291	1999 RL ₃
1999 RK ₇	15.2	0.15	20000226	65.58013	318.06210	16.14776	2.07490	0.2441723	2.1738390	95	1	175 days	0.49	M-v	3	Williams	37291	1999 RK ₇
1999 RK ₈	15.0	0.15	20000226	330.56932	88.22028	340.20857	7.29564	0.0749851	2.4297599	55	1	89 days	0.44	M-v	5	Williams		1999 RK ₈
1999 RE ₉	14.5	0.15	20000226	359.24228	228.04200	166.37529	6.27208	0.1210404	2.8007605	37	1	72 days	0.55	M-v	5	Williams		1999 RE ₉
1999 RK ₉	15.3	0.15	20000226	24.80733	32.64416	352.38671	2.67232	0.1636510	2.1933886	94	2	1998–1999	0.52	M-v	3	Williams	37291	1999 RK ₉
1999 RA ₁₀	14.3	0.15	20000226	140.42626	69.03182	178.91743	0.66230	0.0787895	2.8479726	35	1	63 days	0.69	M-v	5	Williams		1999 RA ₁₀
1999 RC ₁₀	16.5	0.15	19990810	1.87064	356.56399	317.96884	30.90852	0.1770039	2.6625682	15	1	32 days	0.45			Williams		1999 RC ₁₀
1999 RD ₁₀	14.1	0.15	20000226	4.76084	194.32525	185.49011	6.99667	0.2027322	2.5343151	75	4	1991–1999	0.70	M-v	3	Williams	37291	1999 RD ₁₀
1999 RG ₁₀	14.5	0.15	20000226	354.69969	84.76531	334.68427	22.35882	0.3286695	2.2731191	34	1	117 days	0.57	M-v	4	Williams	36910	1999 RG ₁₀
1999 RJ ₁₀	13.6	0.15	20000226	32.20792	300.06586	20.94819	0.70113	0.2489420	3.2125946	66	4	1976–1999	0.79	M-v	2	Williams	37180	1999 RJ ₁₀
1999 RU ₁₀	14.5	0.15	20000226	222.09330	201.54095	332.15392	20.58659	0.0574819	1.9224677	47	1	108 days	0.37	M-v	4	Williams	36910	1999 RU ₁₀
1999 RX ₁₀	17.2	0.15	19990810	334.22364	61.68634	301.34411	1.19165	0.2128509	2.1905583	16	1	32 days	0.42			Williams		1999 RX ₁₀
1999 RL ₁₁	17.0	0.15	19990810	10.09044	158.44037	151.27853	12.59789	0.1913377	2.6279196	25	1	37 days	0.51			Williams		1999 RL ₁₁
1999 RT ₁₁	13.9	0.15	20000226	325.10591	117.38920	308.42372	3.10123	0.0883487	2.4421829	67	3	1988–1999	0.57	M-v	3	Williams	36910	1999 RT ₁₁
1999 RL ₁₂	15.5	0.15	20000226	34.14482	139.12558	223.62662	2.47865	0.1865747	2.3091833	44	1	63 days	0.53	M-v	5	Williams		1999 RL ₁₂
1999 RS ₁₂	15.0	0.15	20000226	28.77283	55.12522	309.34188	6.81871	0.1241710	2.3659743	52	1	77 days	0.42	M-v	4	Williams		1999 RS ₁₂
1999 RL ₁₃	14.8	0.15	20000226	325.15221	101.06951	345.42225	2.16061	0.1939566	2.3448092	45	1	64 days	0.60	M-v	6	Williams		1999 RL ₁₃
1999 RB ₁₄	14.4	0.15	20000226	10.55718	25.16761	346.98842	15.70121	0.2272078	3.1663622	46	1	68 days	0.50	M-v	4	Williams		1999 RB ₁₄
1999 RJ ₁₄	14.9	0.15	20000226	62.71276	305.97904	4.74556	2.66588	0.2078747	2.5334802	45	1	65 days	0.69	M-v	5	Williams		1999 RJ ₁₄
1999 RO ₁₄	14.6	0.15	20000226	269.93580	300.17316	179.39015	4.54482	0.0245740	2.4377028	67	2	1998–1999	0.63	M-v	4	Williams	36910	1999 RO ₁₄
1999 RQ ₁₄	15.6	0.15	20000226	30.03361	39.30666	327.27745	3.73383	0.1212978	2.3114406	60	3	1994–1999	0.66	M-v	3	Williams	36910	1999 RQ ₁₄
1999 RS ₁₄	15.5	0.15	20000226	57.86595	72.80153	245.28188	3.41946	0.2227635	2.5582436	31	1	77 days	0.38	M-v	4	Williams		1999 RS ₁₄
1999 RX ₁₄	13.9	0.15	19990810	15.66630	333.05478	346.48756	2.63020	0.0730887	2.9919330	142	1	38 days	0.44			Williams		1999 RX ₁₄
1999 RB ₁₅	17.7	0.15	19990830	325.22788	236.74305	155.71837	1.97686	0.2044355	2.2357257	132	1	28 days	0.51			Williams		1999 RB ₁₅
1999 RN ₁₅	15.2	0.15	19990919	325.91334	55.07539	345.67389	26.71535	0.2374498	3.1535521	130	1	29 days	0.48			Williams		1999 RN ₁₅
1999 RQ ₁₅	16.9	0.15	20000226	357.74109	79.70933	346.14949	19.35697	0.1280757	1.8944137	178	2	1998–1999	0.55	M-v	4	Williams	36552	1999 RQ ₁₅
1999 RR ₁₅	16.4	0.15	19990830	353.21712	5.30893	346.72658	16.14458	0.1974617	2.6793648	111	1	10 days	0.66			Williams		1999 RR ₁₅
1999 RU ₁₅	15.7	0.15	20000226	13.86468	226.06959	168.06024	2.26363	0.1230002	2.3564083	146	1	91 days	0.40	M-v	4	Williams	37292	1999 RU ₁₅
1999 RE ₁₆	12.5	0.15	20000226	79.66495	324.07962	326.71805	5.29271	0.0606603	3.1702026	85	1	122 days	0.42	M-v	4	Williams		1999 RE ₁₆
1999 RJ ₁₆	14.0	0.15	19990810	152.94252	28.10184	158.25224	2.06920	0.0208491	2.9537826	29	1	30 days	0.57			Williams		1999 RJ ₁₆
1999 RK ₁₆	15.2	0.15	20000226	9.19787	55.83339	347.44681	4.56727	0.3076335	2.5795848	68	1	91 days	0.55	M-v	4	Williams		1999 RK ₁₆
1999 RT ₁₆	15.6	0.15	20000226	58.07895	157.81725	167.09008	5.46393	0.1990676	2.4514287	55	1	69 days	0.41	M-v	4	Williams		1999 RT ₁₆
1999 RU ₁₆	13.5	0.15	20000226	49.48545	59.66331	272.02780	1.10178	0.0437610	2.8459392	70	3	1997–2000	0.61	M-v	2	Williams	37292	1999 RU ₁₆
1999 RW ₁₆	14.5	0.15	20000226	1.22302	178.99727	208.62742	4.74522	0.1776949	3.2042283	35	1	71 days	0.52	M-v	5	Williams		1999 RW ₁₆
1999 RV ₁₇	13.8	0.15	20000226	67.80379	325.97950	335.71502	7.56923	0.1060113	3.1776402	45	1	84 days	0.58	M-v	5	Williams		1999 RV ₁₇
1999 RY ₁₇	14.8	0.15	20000226	23.90239	63.80016	311.51820	2.36663	0.2317395	2.5657195	98	4	1991–1999	0.56	M-v	2	Williams	37292	1999 RY ₁₇
1999 RD ₁₈	15.9	0.15	20000226	27.39664	202.35049	173.65536	6.14826	0.1445156	2.2795574	33	1	69 days	0.42	M-v	5	Williams		1999 RD ₁₈
1999 RN ₁₈	14.9	0.15	20000226	47.00998	154.66103	194.72378	6.21414	0.1573656	2.3407930	96	3	1992–1999	0.63	M-v	2	Williams	37292	1999 RN ₁₈
1999 RP ₁₈	15.2	0.15	20000226	63.80292	123.63216	182.14514	12.85039	0.2686828	2.6829068	54	1	107 days	0.50	M-v	4	Williams	36911	1999 RP ₁₈
1999 RR ₁₈	14.7	0.15	20000226	85.18616	115.52918	185.67350	4.91374	0.1685809	2.2331677	91	2	1989–1999	0.54	M-v	4	Williams	37292	1999 RR ₁₈
1999 RU ₁₈	16.4	0.15	20000226	33.52321	129.05303	249.05350	1.11213	0.1897575	2.1534352	84	2	1977–1999	0.55	M-v	3	Williams	37292	1999 RU ₁₈

1999 RP ₁₉	16.2	0.15	20000226	60.09584	165.73560	162.32883	2.79565	0.1866123	2.3817796	34	1	85 days	0.53	M-v	5	Williams		1999 RP ₁₉
1999 RT ₁₉	12.5	0.15	20000226	302.39498	99.60396	350.40519	18.25168	0.1015612	3.1856914	72	1	123 days	0.45	M-v	4	Williams	37292	1999 RT ₁₉
1999 RY ₁₉	16.0	0.15	20000226	46.98413	51.58554	302.35495	3.33028	0.1655771	2.2810148	26	1	61 days	0.38	M-v	4	Williams		1999 RY ₁₉
1999 RC ₂₀	14.0	0.15	20000226	327.68259	218.89798	211.24307	5.27793	0.1276149	3.1979371	31	1	94 days	0.51	M-v	5	Williams	37292	1999 RC ₂₀
1999 RN ₂₀	14.9	0.15	20000226	41.50085	198.57831	173.51602	27.08872	0.2689088	2.1516946	95	1	162 days	0.42	M-v	3	Williams	37292	1999 RN ₂₀
1999 RO ₂₀	15.6	0.15	20000226	69.26974	128.75949	195.99657	5.72059	0.1353341	2.3318626	45	2	1998–1999	0.47	M-v	4	Williams	36911	1999 RO ₂₀
1999 RU ₂₀	16.0	0.15	20000226	47.69510	147.26518	203.12385	3.15000	0.1935127	2.3835573	69	1	116 days	0.43	M-v	3	Williams	36911	1999 RU ₂₀
1999 RZ ₂₀	17.1	0.15	19990830	0.62047	1.95521	343.49018	6.63124	0.3140467	2.3678929	24	1	17 days	0.51			Williams		1999 RZ ₂₀
1999 RH ₂₁	16.1	0.15	20000226	38.36159	347.66445	7.07687	7.95196	0.2043547	2.6259431	53	1	69 days	0.49	M-v	4	Williams		1999 RH ₂₁
1999 RP ₂₁	15.9	0.15	20000226	354.34697	310.68241	111.43141	2.27386	0.1703935	2.3924775	28	1	69 days	0.60	M-v	6	Williams		1999 RP ₂₁
1999 RT ₂₁	16.0	0.15	20000226	49.76589	246.14753	99.66880	2.26920	0.2003455	2.4117658	30	1	71 days	0.56	M-v	4	Williams		1999 RT ₂₁
1999 RU ₂₁	15.4	0.15	20000226	64.13787	314.63816	4.18029	11.93198	0.1959562	2.5854852	35	1	84 days	0.59	M-v	4	Williams	36911	1999 RU ₂₁
1999 RV ₂₁	15.8	0.15	20000226	36.54984	207.84654	153.33394	5.95135	0.3127699	2.5783964	34	1	78 days	0.48	M-v	4	Williams		1999 RV ₂₁
1999 RY ₂₁	14.4	0.15	20000226	290.34640	108.91864	8.91857	10.55985	0.1100114	2.5781724	51	1	107 days	0.61	M-v	4	Williams		1999 RY ₂₁
1999 RA ₂₂	16.4	0.15	20000226	23.44210	18.19297	14.72054	5.12734	0.2028659	2.2534761	46	1	83 days	0.65	M-v	4	Williams	36911	1999 RA ₂₂
1999 RB ₂₂	12.7	0.15	20000226	212.10694	167.29769	13.48703	8.75468	0.0609107	2.7719403	59	4	1974–1999	0.70	M-v	2	Williams	37292	1999 RB ₂₂
1999 RL ₂₂	15.0	0.15	20000226	4.98935	46.71164	359.75523	8.06746	0.0852809	2.2835847	73	1	73 days	0.52	M-v	5	Williams	36911	1999 RL ₂₂
1999 RQ ₂₂	15.8	0.15	20000226	31.82266	201.68664	179.48071	23.02870	0.2230377	2.2793414	60	1	111 days	0.58	M-v	4	Williams	36911	1999 RQ ₂₂
1999 RS ₂₂	15.6	0.15	20000226	56.49830	9.84941	329.32481	5.16867	0.2223373	2.3456801	48	1	96 days	0.49	M-v	4	Williams	36911	1999 RS ₂₂
1999 RT ₂₂	13.7	0.15	20000226	34.34671	154.08284	198.89083	8.82048	0.0914400	3.1713505	42	2	1997–1999	0.67	M-v	3	Williams	37292	1999 RT ₂₂
1999 RG ₂₃	15.9	0.15	20000226	40.01165	342.93375	11.49503	5.04726	0.1220752	2.6789284	28	1	87 days	0.58	M-v	4	Williams	36911	1999 RG ₂₃
1999 RH ₂₃	13.6	0.15	20000226	18.82448	337.50944	38.37590	2.47267	0.0869056	2.8895711	56	1	123 days	0.58	M-v	4	Williams	37292	1999 RH ₂₃
1999 RN ₂₃	16.2	0.15	20000226	66.24440	220.21361	111.89496	1.81398	0.1700210	2.2252250	26	1	69 days	0.53	M-v	5	Williams		1999 RN ₂₃
1999 RR ₂₃	14.8	0.15	20000226	330.78803	75.09109	15.88798	7.14434	0.1655273	2.3337227	53	1	107 days	0.48	M-v	4	Williams	37292	1999 RR ₂₃
1999 RW ₂₃	15.8	0.15	20000226	43.46269	339.39358	21.35121	6.00265	0.2335261	2.2958144	58	1	93 days	0.53	M-v	3	Williams	37292	1999 RW ₂₃
1999 RB ₂₄	14.3	0.15	20000226	50.17342	322.85424	25.26468	6.38305	0.1654394	2.3740536	128	2	1998–1999	0.65	M-v	3	Williams	37292	1999 RB ₂₄
1999 RS ₂₄	15.5	0.15	20000226	72.51465	118.91186	193.35018	10.28800	0.2541826	2.3891828	35	1	69 days	0.44	M-v	4	Williams		1999 RS ₂₄
1999 RZ ₂₄	15.0	0.15	20000226	19.62513	120.70728	266.77423	2.16500	0.2169924	2.6869746	35	1	91 days	0.48	M-v	4	Williams	37292	1999 RZ ₂₄
1999 RC ₂₅	14.6	0.15	20000226	39.55521	170.60051	184.72120	14.39396	0.2012121	2.6960602	15	1	61 days	0.56	M-v	8	Williams		1999 RC ₂₅
1999 RE ₂₅	14.7	0.15	20000226	307.35281	195.65903	274.82223	1.81425	0.1237155	2.4119678	40	3	1977–1999	0.52	M-v	3	Williams	37292	1999 RE ₂₅
1999 RK ₂₅	15.1	0.15	20000226	32.37474	12.45936	348.83949	8.07898	0.3141708	2.8898027	44	2	1994–2000	0.67	M-v	3	Williams	37180	1999 RK ₂₅
1999 RL ₂₅	13.8	0.15	20000226	35.74342	13.92280	354.14040	16.34178	0.0970171	2.4760220	58	5	1978–2000	0.63	M-v	2	Williams	37292	1999 RL ₂₅
1999 RN ₂₅	15.7	0.15	20000226	73.01995	324.27788	8.04436	6.86515	0.1098507	2.1730747	65	2	1998–1999	0.58	M-v	4	Williams	36911	1999 RN ₂₅
1999 RU ₂₅	15.5	0.15	20000226	26.03003	41.96544	340.82795	3.58238	0.2450190	2.5850987	47	1	91 days	0.52	M-v	4	Williams	37292	1999 RU ₂₅
1999 RV ₂₅	13.9	0.15	20000226	3.80897	54.30830	345.33164	4.54174	0.1876455	3.1811710	34	1	91 days	0.34	M-v	4	Williams	37292	1999 RV ₂₅
1999 RX ₂₅	15.2	0.15	20000226	70.02910	319.09511	13.01239	4.59608	0.1820635	2.1574445	108	4	1980–2000	0.68	M-v	2	Williams	37292	1999 RX ₂₅
1999 RG ₂₆	16.4	0.15	20000226	35.69495	353.81989	24.97364	4.41904	0.2724515	2.2993334	67	1	91 days	0.48	M-v	3	Williams	37292	1999 RG ₂₆
1999 RK ₂₆	13.5	0.15	20000226	341.65384	270.12371	153.58349	9.27398	0.1299156	3.0910076	24	1	60 days	0.38	M-v	5	Williams		1999 RK ₂₆
1999 RN ₂₆	14.5	0.15	20000226	12.12786	11.11627	18.90362	10.99208	0.1420811	2.9439341	48	1	91 days	0.57	M-v	4	Williams	37292	1999 RN ₂₆
1999 RE ₂₇	14.9	0.15	20000226	29.55142	220.20594	171.53142	23.13458	0.1090807	1.9706964	39	1	161 days	0.54	M-v	3	Williams	37292	1999 RE ₂₇
1999 RF ₂₇	13.1	0.15	20000226	186.22714	70.02070	141.08209	8.02073	0.2538123	2.6126488	54	4	1951–1999	0.64	M-v	1	Williams	37292	1999 RF ₂₇
1999 RG ₂₇	16.5	0.15	20000226	45.09853	22.97831	4.63180	22.65536	0.1745694	1.9111965	53	4	1975–1999	0.66	M-v	2	Williams	37180	1999 RG ₂₇
1999 RH ₂₇	16.8	0.15	20000226	14.47174	95.36560	343.90166	4.39670	0.5766066	2.8840835	485	1	132 days	0.48	M-v	3	Williams	37292	1999 RH ₂₇
1999 RJ ₂₇	19.5	0.15	20000226	169.01602	64.22132	170.41498	25.76937	0.3520757	1.4787794	40	1	39 days	0.59	M-v	6	Williams	36554	1999 RJ ₂₇
1999 RL ₂₇	12.7	0.15	20000226	116.10333	262.32792	32.48410	13.37755	0.1712323	2.5992620	80	1	121 days	0.47	M-v	4	Williams	37293	1999 RL ₂₇
1999 RP ₂₇	15.4	0.15	20000226	65.40607	189.53791	141.54878	1.11835	0.1780507	2.1983862	61	1	107 days	0.65	M-v	4	Williams	37293	1999 RP ₂₇
1999 RR ₂₇	14.8	0.15	20000226	9.26789	45.50252	350.76881	10.37029	0.3068619	3.0320644	70	1	92 days	0.52	M-v	4	Williams	37293	1999 RR ₂₇
1999 RU ₂₇	13.4	0.15	20000226	317.75305	81.02748	356.75448	15.27598	0.1112051	3.2289674	74	5	1985–1999	0.65	M-v	1	Williams	37180	1999 RU ₂₇
1999 RW ₂₇	13.1	0.15	20000226	18.49874	41.75169	21.69752	14.06165	0.2856002	2.6066957	67	2	1978–2000	0.49	M-v	2	Williams	37293	1999 RW ₂₇
1999 RX ₂₇	14.4	0.15	20000226	47.27926	125.23760	200.46704	16.58512	0.2301108	3.0569837	91	1	68 days	0.51	M-v	4	Williams		1999 RX ₂₇
1999 RD ₂₈	15.3	0.15	20000226	78.83690	131.09850	167.37913	2.77573	0.1991547	2.2198612	56	3	1976–1999	0.96	M-v	3	Williams	37293	1999 RD ₂₈
1999 RE ₂₈	16.2	0.15	20000226	25.16479	39.72028	348.11311	5.18154	0.3504436	2.5628984	85	1	106 days	0.56	M-v	3	Williams	37293	1999 RE ₂₈
1999 RM ₂₈	16.8	0.15	20000226	11.68182	301.69998	136.19275	30.53055	0.3241024	1.8169610	35	1	108 days	0.51	M-v	4	Williams	37293	1999 RM ₂₈

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1999 RN ₂₈	20.9	0.15	20000226	57.39352	342.52540	346.19771	8.78642	0.4560459	2.1684691	65	1	41 days	0.69	M-v	5	Williams	36554	1999 RN ₂₈
1999 RP ₂₈	22.6	0.15	19990919	22.71575	144.75562	174.25815	9.25605	0.2411899	1.4778803	43	1	29 days	0.57			Williams		1999 RP ₂₈
1999 RQ ₂₈	20.5	0.15	20000226	44.72120	269.56620	124.41639	3.55609	0.4243704	1.9084271	111	1	99 days	0.58	M-v	4	Williams	37293	1999 RQ ₂₈
1999 RR ₂₈	18.4	0.15	20000226	25.56245	283.78033	178.85498	7.12179	0.6542853	1.8764356	106	1	58 days	0.47	M-v	5	Williams	36912	1999 RR ₂₈
1999 RT ₂₈	15.7	0.15	20000226	26.48145	13.29608	8.18334	14.19971	0.1814182	2.5775243	55	1	68 days	0.51	M-v	4	Williams		1999 RT ₂₈
1999 RQ ₂₉	16.2	0.15	19990919	4.73367	24.74597	316.57702	17.94565	0.0681472	1.9535770	37	1	58 days	0.68			Williams		1999 RQ ₂₉
1999 RS ₂₉	15.8	0.15	20000226	2.87513	84.82688	327.03131	22.40238	0.2375827	2.3346442	42	1	89 days	0.53	M-v	4	Williams		1999 RS ₂₉
1999 RA ₃₁	15.7	0.15	20000226	12.59989	73.67859	350.27759	23.12211	0.3074072	2.3036444	52	1	116 days	0.54	M-v	3	Williams		1999 RA ₃₁
1999 RC ₃₁	16.4	0.15	20000226	13.25268	91.78628	345.21283	26.27578	0.4651016	2.5809518	20	1	99 days	0.61	M-v	4	Williams	37293	1999 RC ₃₁
1999 RD ₃₁	15.8	0.15	20000226	23.55566	55.07398	357.32715	24.43830	0.0834858	1.9612452	59	1	95 days	0.48	M-v	4	Williams	37293	1999 RD ₃₁
1999 RJ ₃₁	14.6	0.15	20000226	112.46919	286.27601	342.60340	7.51100	0.0984388	2.3126944	94	4	1985–1999	0.62	M-v	2	Williams	37293	1999 RJ ₃₁
1999 RK ₃₁	16.0	0.15	20000226	35.75810	14.46693	1.40948	4.82104	0.1623110	2.3531293	59	1	91 days	0.55	M-v	4	Williams	37293	1999 RK ₃₁
1999 RM ₃₁	14.6	0.15	20000226	32.85422	2.32170	6.76912	14.59645	0.1012562	2.7092973	73	1	69 days	0.57	M-v	4	Williams		1999 RM ₃₁
1999 RR ₃₁	15.2	0.15	20000226	74.20613	306.08231	23.00892	5.35602	0.2035898	2.2454015	108	2	1998–2000	0.50	M-v	3	Williams	37293	1999 RR ₃₁
1999 RS ₃₁	14.4	0.15	20000226	345.76281	226.46421	186.71391	5.29488	0.0592212	2.7628150	53	3	1981–1999	0.64	M-v	3	Williams	37293	1999 RS ₃₁
1999 RT ₃₁	16.1	0.15	20000226	88.14135	27.79833	263.88347	0.30811	0.1838881	2.4455310	51	1	71 days	0.44	M-v	5	Williams	36912	1999 RT ₃₁
1999 RU ₃₁	15.5	0.15	20000226	101.95739	82.14944	220.71627	7.79753	0.0233568	2.4223807	60	1	67 days	0.53	M-v	4	Williams		1999 RU ₃₁
1999 RV ₃₁	13.7	0.15	20000226	114.40221	254.09736	12.88490	2.43546	0.0244859	2.7903610	69	4	1981–1999	0.72	M-v	1	Williams	37293	1999 RV ₃₁
1999 RX ₃₁	15.9	0.15	20000226	45.41367	359.81334	16.43480	20.27038	0.0746484	1.9679077	108	2	1998–1999	0.52	M-v	3	Williams	36912	1999 RX ₃₁
1999 RY ₃₁	16.2	0.15	19990830	53.22111	209.75947	59.63529	7.91179	0.3132909	2.2501349	40	1	5 days	0.62			Williams		1999 RY ₃₁
1999 RB ₃₂	19.8	0.15	20000226	39.49557	39.33186	330.25384	3.94586	0.5725055	2.4280389	191	1	69 days	0.58	M-v	5	Williams	36912	1999 RB ₃₂
1999 RC ₃₂	18.4	0.15	20000226	34.50544	82.68089	352.51487	30.96717	0.4318685	1.8388874	116	1	53 days	0.55	M-v	5	Williams	36912	1999 RC ₃₂
1999 RD ₃₂	16.3	0.15	20000226	58.49826	294.81209	314.90523	6.63274	0.7784121	2.6188394	213	1	57 days	0.53	M-v	5	Williams	36912	1999 RD ₃₂
1999 RF ₃₂	14.5	0.15	20000226	351.64311	244.13150	167.67282	12.34518	0.1653472	2.5598676	70	1	93 days	0.51	M-v	4	Williams	37293	1999 RF ₃₂
1999 RH ₃₂	14.0	0.15	20000226	12.27634	211.48229	169.35551	9.66809	0.1683912	2.8071438	64	1	85 days	0.47	M-v	4	Williams		1999 RH ₃₂
1999 RJ ₃₂	12.7	0.15	20000226	29.32271	0.83050	357.13466	8.13316	0.0823223	3.1707168	106	1	160 days	0.47	M-v	3	Williams	37293	1999 RJ ₃₂
1999 RK ₃₂	17.3	0.15	19990919	357.89748	190.18000	172.18307	5.46643	0.2323109	2.2666181	40	1	30 days	0.53			Williams		1999 RK ₃₂
1999 RM ₃₂	16.0	0.15	19990830	338.84105	23.71323	356.42784	6.89977	0.1218635	2.3573819	47	1	46 days	0.54			Williams		1999 RM ₃₂
1999 RN ₃₂	13.4	0.15	20000226	7.96049	207.77944	177.69999	9.26470	0.0984005	3.1726519	60	2	1994–1999	0.60	M-v	4	Williams	37293	1999 RN ₃₂
1999 RO ₃₂	13.4	0.15	20000226	333.17622	88.65447	358.69085	12.95284	0.2912756	3.1258184	99	2	1988–1999	0.47	M-v	3	Williams	37293	1999 RO ₃₂
1999 RP ₃₂	16.7	0.15	20000226	67.37168	332.81200	354.29520	2.22203	0.1985498	2.1998631	68	1	87 days	0.56	M-v	4	Williams	36912	1999 RP ₃₂
1999 RQ ₃₂	14.9	0.15	20000226	56.45363	345.03273	359.43776	5.00044	0.1349774	2.5854119	57	1	91 days	0.54	M-v	4	Williams	37293	1999 RQ ₃₂
1999 RW ₃₂	13.3	0.15	20000226	7.52035	101.66850	309.30499	8.56015	0.0962477	3.0596720	66	1	121 days	0.46	M-v	3	Williams	37293	1999 RW ₃₂
1999 RA ₃₃	14.9	0.15	20000226	42.90376	337.82735	29.34851	1.17929	0.1334652	2.4187501	89	1	94 days	0.56	M-v	3	Williams	37293	1999 RA ₃₃
1999 RJ ₃₃	22.5	0.15	20000226	101.93844	27.16843	343.22674	18.53700	0.1892158	1.2546082	33	1	16 days	0.64	M-v	7	Williams	36103	1999 RJ ₃₃
1999 RK ₃₃	22.4	0.15	19990830	351.63709	51.47783	321.23081	2.99232	0.5980431	2.5248577	88	1	10 days	1.03			Williams		1999 RK ₃₃
1999 RL ₃₃	14.6	0.15	20000226	323.97807	109.37893	329.45823	5.20797	0.1244961	2.2782509	75	5	1977–1999	0.70	M-v	2	Williams	36824	1999 RL ₃₃
1999 RP ₃₃	15.2	0.15	20000226	347.62793	51.89512	7.97283	7.06255	0.0967428	2.3917252	43	1	107 days	0.68	M-v	4	Williams	37293	1999 RP ₃₃
1999 RC ₃₄	14.8	0.15	20000226	47.21702	151.44225	196.93276	2.73606	0.0721332	2.5575873	63	1	94 days	0.48	M-v	4	Williams	37293	1999 RC ₃₄
1999 RF ₃₄	14.1	0.15	20000226	346.17062	272.49037	147.92999	0.53662	0.1904812	3.1385856	62	3	1994–1999	0.52	M-v	4	Williams	37293	1999 RF ₃₄
1999 RL ₃₄	13.8	0.15	20000226	312.63339	284.88989	188.09493	11.87445	0.1737511	2.6286856	34	1	72 days	0.47	M-v	5	Williams		1999 RL ₃₄
1999 RO ₃₄	13.1	0.15	20000226	242.10570	337.80747	177.09171	9.63618	0.0319669	3.0646898	62	3	1986–1999	0.53	M-v	2	Williams	37293	1999 RO ₃₄
1999 RR ₃₄	16.3	0.15	20000226	24.40882	214.31842	176.91730	3.78316	0.2508710	2.3243882	55	1	107 days	0.58	M-v	4	Williams		1999 RR ₃₄
1999 RU ₃₄	14.3	0.15	20000226	13.28803	201.68640	193.05770	9.90938	0.1039976	3.0368238	38	1	121 days	0.54	M-v	4	Williams	36913	1999 RU ₃₄
1999 RX ₃₄	14.9	0.15	20000226	103.45356	233.58199	82.32840	2.01537	0.1827238	2.1305212	81	2	1998–2000	0.58	M-v	4	Williams	37293	1999 RX ₃₄
1999 RZ ₃₄	13.6	0.15	20000226	73.69679	314.10714	34.99423	22.62125	0.1342802	2.4305487	83	1	118 days	0.47	M-v	3	Williams	37293	1999 RZ ₃₄
1999 RB ₃₅	14.0	0.15	20000226	332.18884	136.01457	291.23788	21.26532	0.0408527	2.6508667	113	1	165 days	0.68	M-v	4	Williams	37294	1999 RB ₃₅
1999 RD ₃₅	15.0	0.15	20000226	25.93201	199.51815	205.11340	24.35689	0.2163290	2.3360564	87	1	171 days	0.47	M-v	3	Williams	37294	1999 RD ₃₅
1999 RE ₃₅	14.6	0.15	20000226	149.32557	164.10476	61.18466	3.44432	0.0432714	2.6615249	46	6	1982–1999	0.61	M-v	1	Williams	37181	1999 RE ₃₅
1999 RM ₃₅	13.5	0.15	20000226	105.43492	85.25651	192.33560	2.99222	0.1205098	3.0570816	63	1	93 days	0.57	M-v	5	Williams	37294	1999 RM ₃₅
1999 RO ₃₅	15.1	0.15	20000226	45.19084	275.61282	72.93615	1.15459	0.2974912	2.5765361	96	3	1996–1999	0.54	M-v	2	Williams	37294	1999 RO ₃₅
1999 RP ₃₅	16.2	0.15	20000226	28.83940	15.62149	6.45790	5.95223	0.2729032	2.5396998	73	1	89 days	0.56	M-v	3	Williams	37294	1999 RP ₃₅
1999 RR ₃₅	14.0	0.15	20000226	177.65436	197.73972	21.93473	4.00534	0.0203113	2.7424155	47	1	94 days	0.49	M-v	4	Williams	37294	1999 RR ₃₅

1999 RT ₃₅	15.3	0.15	20000226	66.11375	325.54029	6.80389	8.21739	0.1390691	2.3690382	70	3	1994–1999	0.62	M-v	3	Williams	37294	1999 RT ₃₅
1999 RW ₃₅	14.8	0.15	20000226	55.65554	338.56786	8.68172	2.14427	0.0787551	2.8471237	56	1	65 days	0.53	M-v	4	Williams	36913	1999 RW ₃₅
1999 RC ₃₆	13.1	0.15	20000226	73.84911	327.41448	8.04482	10.64328	0.1065869	3.2105351	81	2	1993–2000	0.56	M-v	3	Williams	37294	1999 RC ₃₆
1999 RD ₃₆	17.3	0.15	19990919	348.33934	193.73940	180.31881	7.24551	0.3710264	2.6223974	54	1	54 days	0.50			Williams		1999 RD ₃₆
1999 RG ₃₆	13.6	0.15	20000226	352.85560	246.09256	205.22919	13.95064	0.1291098	2.6141050	78	3	1992–2000	0.57	M-v	2	Williams	36913	1999 RG ₃₆
1999 RH ₃₆	13.4	0.15	20000226	52.93242	322.33023	43.37568	11.83837	0.1533237	3.0333484	72	3	1976–1999	0.52	M-v	3	Williams	37294	1999 RH ₃₆
1999 RN ₃₆	13.3	0.15	20000226	52.98978	152.74706	217.14173	12.85153	0.1883896	2.5716541	80	2	1998–2000	0.54	M-v	3	Williams	37294	1999 RN ₃₆
1999 RO ₃₆	20.7	0.15	20000226	41.23823	196.97879	168.24260	3.28741	0.4855455	2.3819375	141	1	62 days	0.57	M-v	5	Williams	36913	1999 RO ₃₆
1999 RP ₃₆	18.6	0.15	20000226	39.91938	321.22227	58.12670	5.47875	0.4166658	2.2274578	143	1	87 days	0.47	M-v	4	Williams	37294	1999 RP ₃₆
1999 RQ ₃₆	21.0	0.15	20000226	81.03367	65.66680	2.17700	6.02500	0.2046015	1.1288510	180	1	110 days	0.55	M-v	5	Williams	36104	1999 RQ ₃₆
1999 RR ₃₆	13.9	0.15	20000226	343.42483	62.05989	0.86346	1.72263	0.0500456	2.9547456	43	1	87 days	0.53	M-v	4	Williams	37294	1999 RR ₃₆
1999 RT ₃₆	15.3	0.15	20000226	357.66315	67.44276	0.40245	12.88638	0.2533766	2.6343605	38	1	91 days	0.63	M-v	4	Williams	37294	1999 RT ₃₆
1999 RC ₃₇	15.6	0.15	20000226	63.59695	310.15766	3.60186	4.28921	0.2450516	2.5514520	72	3	1995–1999	0.56	M-v	2	Williams	37294	1999 RC ₃₇
1999 RE ₃₇	15.9	0.15	20000226	26.40001	310.93629	78.61124	2.08027	0.1927482	2.1988333	41	2	1996–1999	0.60	M-v	4	Williams	37294	1999 RE ₃₇
1999 RK ₃₇	13.5	0.15	20000226	14.79586	45.13222	329.33766	25.49735	0.0754427	1.9224894	36	5	1954–1999	0.53	M-v	2	Williams	37181	1999 RK ₃₇
1999 RW ₃₇	14.5	0.15	20000226	4.39537	223.65785	189.07855	12.56614	0.1590258	2.6873550	45	1	126 days	0.52	M-v	4	Williams		1999 RW ₃₇
1999 RX ₃₇	13.9	0.15	20000226	314.26192	265.99739	187.30708	9.40991	0.0583811	3.0598774	30	1	63 days	0.56	M-v	5	Williams		1999 RX ₃₇
1999 RZ ₃₇	15.5	0.15	20000226	354.49608	249.76680	184.00404	5.45092	0.2140975	2.5584749	51	2	1997–1999	0.49	M-v	4	Williams	37294	1999 RZ ₃₇
1999 RA ₃₈	14.5	0.15	20000226	354.81791	30.66926	38.87569	3.10936	0.1441365	2.4076550	53	1	117 days	0.45	M-v	4	Williams	37294	1999 RA ₃₈
1999 RC ₃₈	12.5	0.15	20000226	302.60295	289.08177	190.31551	13.39822	0.1198390	2.6293183	65	3	1965–2000	0.65	M-v	3	Williams	37294	1999 RC ₃₈
1999 RD ₃₈	14.4	0.15	20000226	8.99587	217.68647	185.94828	14.23990	0.0957189	2.6415519	35	1	63 days	0.53	M-v	5	Williams		1999 RD ₃₈
1999 RF ₃₈	15.0	0.15	20000226	12.68446	33.16612	9.10915	16.21390	0.3101391	3.0485893	42	1	61 days	0.57	M-v	4	Williams		1999 RF ₃₈
1999 RG ₃₈	14.9	0.15	20000226	59.25356	311.42434	16.77394	4.64226	0.1995522	2.9787045	40	1	84 days	0.57	M-v	4	Williams	37294	1999 RG ₃₈
1999 RH ₃₈	15.2	0.15	20000226	39.20690	354.99468	19.12879	5.92136	0.1533458	2.3444518	45	1	85 days	0.45	M-v	3	Williams	37294	1999 RH ₃₈
1999 RM ₃₈	13.1	0.15	20000226	87.30107	110.85062	195.77421	9.13998	0.0601860	3.1770222	76	3	1994–2000	0.55	M-v	2	Williams	37294	1999 RM ₃₈
1999 RN ₃₈	14.3	0.15	20000226	61.61456	222.68805	123.02421	1.52675	0.1365824	2.3058245	99	2	1998–2000	0.63	M-v	3	Williams	37294	1999 RN ₃₈
1999 RO ₃₈	15.1	0.15	20000226	13.35599	232.29906	186.07610	5.97060	0.2272143	2.2717441	80	4	1975–2000	0.62	M-v	2	Williams	37294	1999 RO ₃₈
1999 RT ₃₈	14.9	0.15	20000226	43.01142	342.18210	54.50189	4.03030	0.1594873	2.2086997	96	4	1994–2000	0.53	M-v	2	Williams	37294	1999 RT ₃₈
1999 RV ₃₈	15.7	0.15	20000226	55.64791	293.11877	37.76425	6.84199	0.1449523	2.3608987	30	1	69 days	0.57	M-v	4	Williams	37294	1999 RV ₃₈
1999 RG ₃₉	15.6	0.15	20000226	18.80226	78.00389	323.42758	11.97864	0.2757021	2.6564094	42	1	99 days	0.56	M-v	4	Williams		1999 RG ₃₉
1999 RJ ₃₉	15.7	0.15	20000226	114.16753	275.48533	41.20804	21.64255	0.0763205	1.9705374	60	1	95 days	0.50	M-v	4	Williams	37294	1999 RJ ₃₉
1999 RL ₃₉	15.9	0.15	20000226	74.52500	251.79175	88.18504	7.63455	0.2429592	2.1822069	33	1	88 days	0.57	M-v	4	Williams	37294	1999 RL ₃₉
1999 RO ₃₉	15.0	0.15	20000226	44.46464	337.03735	25.38634	6.69832	0.1714344	2.2272758	92	3	1989–2000	0.68	M-v	2	Williams	37294	1999 RO ₃₉
1999 RP ₃₉	13.6	0.15	20000226	25.88751	329.71686	32.10053	8.10667	0.2012663	3.1802329	89	4	1982–1999	0.65	M-v	2	Williams	37181	1999 RP ₃₉
1999 RV ₃₉	15.4	0.15	20000226	50.43610	9.09228	354.72470	7.95061	0.1649511	2.4228673	54	3	1991–1999	0.47	M-v	3	Williams	37182	1999 RV ₃₉
1999 RW ₃₉	15.9	0.15	20000226	43.56708	12.01748	347.65082	4.46573	0.2818843	2.7215244	40	1	116 days	0.56	M-v	4	Williams		1999 RW ₃₉
1999 RY ₃₉	14.5	0.15	20000226	65.25627	128.38923	208.22736	8.37645	0.1648255	2.7674638	53	1	115 days	0.47	M-v	4	Williams	36914	1999 RY ₃₉
1999 RB ₄₀	15.0	0.15	20000226	109.69971	269.21372	16.57777	14.48183	0.2126110	2.5541396	37	2	1998–1999	0.74	M-v	4	Williams	36825	1999 RB ₄₀
1999 RC ₄₀	14.2	0.15	20000226	2.68136	39.44365	17.54060	16.88400	0.1349741	3.2106444	39	1	82 days	0.56	M-v	4	Williams	37294	1999 RC ₄₀
1999 RK ₄₀	14.4	0.15	20000226	177.30956	49.39576	167.02700	11.65560	0.0255283	2.4350254	60	3	1994–1999	0.70	M-v	3	Williams	37294	1999 RK ₄₀
1999 RF ₄₁	15.4	0.15	20000226	20.25426	244.14364	162.88783	23.01510	0.1310426	1.9328995	36	1	100 days	0.43	M-v	4	Williams	37294	1999 RF ₄₁
1999 RV ₄₁	14.3	0.15	20000226	24.92964	330.55179	45.79040	1.98304	0.1890805	3.0786237	56	1	93 days	0.55	M-v	3	Williams	37294	1999 RV ₄₁
1999 RX ₄₁	13.8	0.15	20000226	142.54299	262.10375	349.18787	13.87676	0.0814941	2.6073803	51	1	122 days	0.57	M-v	4	Williams	37294	1999 RX ₄₁
1999 RZ ₄₁	12.5	0.15	20000226	73.74947	108.65373	204.19269	8.48289	0.0686143	3.1945253	102	3	1982–1999	0.52	M-v	2	Williams	37294	1999 RZ ₄₁
1999 RC ₄₂	13.9	0.15	20000226	39.53402	33.26630	332.94616	4.83600	0.0842821	2.4313852	88	3	1995–2000	0.56	M-v	2	Williams	37295	1999 RC ₄₂
1999 RF ₄₂	15.7	0.15	20000226	32.14981	57.45574	334.86620	3.72052	0.1463293	2.6825456	39	1	76 days	0.46	M-v	4	Williams	37295	1999 RF ₄₂
1999 RH ₄₂	14.0	0.15	20000226	1.68806	112.71334	3.84483	9.60268	0.0695521	3.0042689	46	2	1998–2000	0.49	M-v	3	Williams	37295	1999 RH ₄₂
1999 RJ ₄₂	12.8	0.15	20000226	34.93826	145.29174	241.38882	8.35875	0.1659973	2.7787687	105	3	1962–2000	0.53	M-v	2	Williams	37295	1999 RJ ₄₂
1999 RK ₄₂	14.6	0.15	20000226	9.29837	234.89754	208.29888	22.46488	0.1987619	2.3251436	56	1	119 days	0.43	M-v	3	Williams	37295	1999 RK ₄₂
1999 RL ₄₂	14.0	0.15	20000226	63.94388	308.89015	41.67571	4.55014	0.2123313	2.8035311	63	1	115 days	0.46	M-v	4	Williams	37295	1999 RL ₄₂
1999 RN ₄₂	13.2	0.15	20000226	90.87745	245.07541	63.61702	10.69496	0.1064919	3.0244719	24	1	115 days	0.69	M-v	5	Williams		1999 RN ₄₂
1999 RP ₄₂	15.4	0.15	20000226	14.06951	10.80239	51.48256	9.39093	0.2351125	2.3474159	55	1	115 days	0.55	M-v	3	Williams	37295	1999 RP ₄₂
1999 RQ ₄₂	13.1	0.15	20000226	353.53137	265.91183	173.20154	12.78525	0.1587705	2.5884408	36	1	119 days	0.31	M-v	4	Williams		1999 RQ ₄₂

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1999 RR ₄₂	13.2	0.15	20000226	35.44773	211.70568	163.55003	10.05805	0.1093162	3.0623967	37	1	142 days	0.60	M-v	4	Williams	37295	1999 RR ₄₂
1999 RW ₄₂	12.3	0.15	20000226	339.86023	261.18579	136.75707	8.16525	0.2189595	3.9761784	38	1	94 days	0.54	M-v	5	Williams	36914	1999 RW ₄₂
1999 RX ₄₂	13.8	0.15	20000226	58.90842	148.20561	179.75994	12.98166	0.2616059	2.4450329	75	3	1980–2000	0.71	M-v	2	Williams	37295	1999 RX ₄₂
1999 RC ₄₃	14.2	0.15	20000226	91.02886	262.60180	6.45378	22.66018	0.2583723	2.2715637	34	1	60 days	0.41	M-v	4	Williams	36914	1999 RC ₄₃
1999 RQ ₄₃	15.7	0.15	20000226	76.09784	134.05297	184.78676	4.18869	0.3007644	2.1402924	75	2	1998–2000	0.50	M-v	4	Williams	37295	1999 RQ ₄₃
1999 RS ₄₃	15.2	0.15	20000226	67.87928	180.73766	182.15094	4.39463	0.1641642	2.1762003	67	2	1998–2000	0.64	M-v	4	Williams	37295	1999 RS ₄₃
1999 RT ₄₃	14.2	0.15	20000226	3.16562	300.29386	134.00669	2.46886	0.1681299	3.0982069	59	1	89 days	0.54	M-v	4	Williams	37295	1999 RT ₄₃
1999 RU ₄₃	13.0	0.15	20000226	104.05732	264.89289	40.26811	22.90053	0.2161392	2.5800297	86	2	1998–2000	0.50	M-v	3	Williams	37295	1999 RU ₄₃
1999 RW ₄₃	13.9	0.15	20000226	25.54619	216.08674	171.22434	10.10949	0.1084784	3.0592567	39	1	115 days	0.65	M-v	4	Williams		1999 RW ₄₃
1999 RZ ₄₃	13.8	0.15	20000226	25.75165	296.51844	88.98462	6.25204	0.1458075	3.1740630	50	1	141 days	0.48	M-v	3	Williams	37295	1999 RZ ₄₃
1999 RA ₄₄	14.3	0.15	20000226	326.01883	75.28361	52.85852	7.20913	0.1139250	2.2746887	82	2	1992–2000	0.49	M-v	4	Williams	37295	1999 RA ₄₄
1999 RB ₄₄	14.0	0.15	20000226	24.10613	16.64472	39.38417	11.23635	0.1700066	2.5355815	61	3	1987–1999	0.43	M-v	2	Williams	37295	1999 RB ₄₄
1999 RC ₄₄	13.2	0.15	20000226	52.50015	327.85293	45.23329	11.89656	0.1687591	2.6234855	77	2	1986–2000	0.59	M-v	4	Williams	37295	1999 RC ₄₄
1999 RD ₄₄	14.4	0.15	20000226	183.99993	221.86211	358.50533	14.82823	0.0327495	2.5885711	43	1	116 days	0.54	M-v	4	Williams		1999 RD ₄₄
1999 RH ₄₄	14.4	0.15	20000226	40.64226	324.83745	29.31216	7.20474	0.1457260	2.4337469	77	3	1982–1999	0.62	M-v	2	Williams	37295	1999 RH ₄₄
1999 RM ₄₄	14.3	0.15	20000226	43.41906	150.27523	196.12704	17.86808	0.2316559	2.5957865	88	2	1998–1999	0.51	M-v	3	Williams	37295	1999 RM ₄₄
1999 RN ₄₄	15.4	0.15	20000226	65.12291	126.65621	194.02216	12.62723	0.2921212	2.3308118	43	1	120 days	0.47	M-v	4	Williams	37295	1999 RN ₄₄
1999 RS ₄₄	14.8	0.15	20000226	36.94504	321.92909	57.11099	5.80274	0.2715275	2.5343515	75	3	1991–2000	0.56	M-v	3	Williams	37295	1999 RS ₄₄
1999 RT ₄₄	13.6	0.15	20000226	11.07969	48.58639	331.20017	13.08357	0.2165589	2.5829850	78	2	1997–2000	0.52	M-v	3	Williams	37295	1999 RT ₄₄
1999 RB ₄₅	15.6	0.15	20000226	28.81015	40.24054	347.67789	1.91759	0.2132474	2.3714315	44	1	93 days	0.48	M-v	4	Williams	37295	1999 RB ₄₅
1999 RG ₄₅	12.9	0.15	20000226	57.75860	330.97507	329.08276	6.46897	0.1655261	3.1911537	88	3	1981–1999	0.66	M-v	3	Williams	37295	1999 RG ₄₅
1999 RJ ₄₅	14.8	0.15	20000226	30.39136	241.78599	126.39530	15.22901	0.4435771	2.8614990	128	2	1984–2000	0.55	M-v	2	Williams	37295	1999 RJ ₄₅
1999 RK ₄₅	19.8	0.15	19990919	330.56272	4.03984	120.02809	5.87674	0.7718332	1.5933947	85	1	24 days	0.70			Williams		1999 RK ₄₅
1999 RM ₄₅	19.3	0.15	20000226	107.18109	88.19511	163.33540	10.88783	0.6438745	1.6814922	69	1	85 days	0.45	M-v	5	Williams	36915	1999 RM ₄₅
1999 RQ ₄₅	15.5	0.15	20000226	43.95003	180.14766	177.06348	6.71177	0.1395792	2.3233625	55	1	115 days	0.56	M-v	4	Williams	37295	1999 RQ ₄₅
1999 RW ₄₅	15.1	0.15	20000226	27.75146	288.13347	68.88575	1.44346	0.3109014	3.0743635	48	1	122 days	0.59	M-v	4	Williams	37295	1999 RW ₄₅
1999 RE ₄₆	14.6	0.15	20000226	22.55254	9.04732	344.24583	6.92620	0.1533742	2.3253454	38	2	1998–1999	0.69	M-v	4	Williams	37182	1999 RE ₄₆
1999 RC ₄₇	14.2	0.15	20000226	62.59978	309.44619	338.26565	11.12895	0.1856256	2.6710595	70	3	1986–1999	0.63	M-v	2	Williams	36826	1999 RC ₄₇
1999 RE ₄₇	15.2	0.15	19990830	45.33195	262.84545	351.26013	4.74578	0.2244074	2.3362058	18	1	8 days	0.59			Williams		1999 RE ₄₇
1999 RH ₄₇	13.5	0.15	20000226	356.83384	225.48348	135.83338	12.92039	0.1102587	3.1673817	31	1	115 days	0.50	M-v	4	Williams	36558	1999 RH ₄₇
1999 RN ₄₇	14.4	0.15	20000226	8.51899	144.63514	233.46928	3.56424	0.2146067	2.4756588	34	2	1998–1999	0.56	M-v	3	Williams	36915	1999 RN ₄₇
1999 RT ₄₇	13.4	0.15	19990810	338.26786	0.43824	338.79133	6.82953	0.0506388	3.2058104	16	1	59 days	0.48			Williams		1999 RT ₄₇
1999 RX ₄₇	13.8	0.15	20000226	348.72696	60.14797	336.55905	14.47050	0.2201551	2.6556830	30	1	122 days	0.60	M-v	4	Williams		1999 RX ₄₇
1999 RG ₄₈	16.5	0.15	19990810	48.11591	76.62832	179.18640	4.02533	0.1348003	2.2009028	15	1	50 days	0.48			Williams		1999 RG ₄₈
1999 RC ₄₉	16.0	0.15	20000226	20.71006	38.82654	334.06118	3.14587	0.2503622	2.3431556	16	1	61 days	0.38	M-v	5	Williams		1999 RC ₄₉
1999 RD ₄₉	13.0	0.15	20000226	311.77416	78.50023	331.87646	8.26522	0.0770149	3.0892597	29	1	119 days	0.59	M-v	5	Williams	36915	1999 RD ₄₉
1999 RG ₄₉	14.9	0.15	20000226	46.28178	213.02729	112.70817	3.32877	0.2164469	2.4410567	25	1	120 days	0.64	M-v	4	Williams	36915	1999 RG ₄₉
1999 RW ₄₉	14.3	0.15	20000226	347.49851	199.44393	178.77514	2.38941	0.0709876	2.8657762	17	1	62 days	0.47	M-v	6	Williams		1999 RW ₄₉
1999 RS ₅₀	14.8	0.15	19990810	309.18953	302.35908	89.48036	3.21917	0.2083100	2.3607187	18	1	59 days	0.46			Williams		1999 RS ₅₀
1999 RV ₅₀	15.2	0.15	19990810	14.63458	184.81407	110.63370	5.70655	0.2217176	2.3786241	18	1	59 days	0.41			Williams		1999 RV ₅₀
1999 RC ₅₂	14.9	0.15	20000226	47.16081	313.01037	20.43119	3.54453	0.1838715	2.3108816	56	4	1971–1999	0.63	M-v	3	Williams	37295	1999 RC ₅₂
1999 RR ₅₆	15.3	0.15	20000226	358.15979	122.30595	317.08849	9.49359	0.3092842	2.7900029	33	1	126 days	0.66	M-v	4	Williams		1999 RR ₅₆
1999 RU ₅₉	13.6	0.15	20000226	348.54496	19.59391	2.31841	6.27313	0.1881003	3.1743229	17	1	60 days	0.58	M-v	6	Williams		1999 RU ₅₉
1999 RL ₆₄	14.2	0.15	20000226	336.35047	5.05648	48.76676	3.72864	0.0971890	2.5390436	40	4	1977–1999	0.63	M-v	1	Williams	37182	1999 RL ₆₄
1999 RL ₆₅	15.4	0.15	20000226	72.06400	53.04135	245.38741	3.24121	0.0865933	2.8144117	18	3	1993–1999	0.56	M-v	4	Williams	36826	1999 RL ₆₅
1999 RQ ₇₅	16.0	0.15	20000226	51.59319	52.09287	292.47056	3.15590	0.1647180	2.2836792	38	1	84 days	0.57	M-v	4	Williams		1999 RQ ₇₅
1999 RM ₇₆	15.9	0.15	20000226	37.90692	191.99567	171.34298	5.37584	0.2564565	2.3574214	52	1	85 days	0.49	M-v	4	Williams		1999 RM ₇₆
1999 RN ₈₁	15.6	0.15	20000226	57.31578	344.04927	341.80162	3.47787	0.1886651	2.5622958	61	1	68 days	0.42	M-v	5	Williams		1999 RN ₈₁
1999 RV ₈₁	13.7	0.15	20000226	12.05252	154.87768	220.46689	3.80463	0.1541012	3.2081876	63	1	107 days	0.55	M-v	4	Williams	37296	1999 RV ₈₁
1999 RX ₈₁	15.9	0.15	20000226	20.44273	152.14951	227.29888	3.03613	0.2470228	2.7239444	36	1	70 days	0.53	M-v	5	Williams		1999 RX ₈₁
1999 RE ₈₂	14.3	0.15	20000226	4.34838	190.03491	187.99100	17.17771	0.0245402	3.1972540	19	1	69 days	0.62	M-v	5	Williams		1999 RE ₈₂
1999 RP ₈₂	14.4	0.15	20000226	46.45666	151.26581	182.11675	19.01638	0.1237489	3.0471177	22	1	69 days	0.62	M-v	4	Williams		1999 RP ₈₂
1999 RA ₈₃	15.4	0.15	20000226	67.84324	350.94208	325.84590	1.68012	0.1951089	2.4105643	67	2	1998–1999	0.66	M-v	3	Williams	37296	1999 RA ₈₃

1999 RJ ₈₃	15.6	0.15	20000226	55.27824	300.65045	33.82451	2.67341	0.2240866	2.3765335	37	1	144 days	0.49	M-v	4	Williams	37296	1999 RJ ₈₃
1999 RP ₈₄	14.3	0.15	20000226	223.66012	264.71822	272.71733	3.58218	0.1694093	2.3786188	41	3	1991–1999	0.62	M-v	4	Williams	36916	1999 RP ₈₄
1999 RS ₈₄	15.3	0.15	20000226	94.30969	90.44920	199.35256	5.25043	0.1836898	2.2989560	29	1	114 days	0.30	M-v	4	Williams	36916	1999 RS ₈₄
1999 RC ₈₅	16.8	0.15	20000226	18.16122	182.94903	199.35149	1.22467	0.2327272	2.7796714	21	1	67 days	0.43	M-v	5	Williams	36916	1999 RC ₈₅
1999 RD ₈₅	14.8	0.15	20000226	298.03380	143.52673	309.59084	0.32445	0.0339743	2.9841212	24	3	1992–1999	0.59	M-v	4	Williams	36916	1999 RD ₈₅
1999 RV ₈₅	15.9	0.15	20000226	50.22243	341.65976	9.01613	6.87884	0.2001762	2.2422181	33	1	68 days	0.56	M-v	4	Williams		1999 RV ₈₅
1999 RS ₈₆	15.2	0.15	20000226	48.81171	325.75403	11.67859	6.37807	0.2806474	2.5652964	61	1	144 days	0.45	M-v	3	Williams	37296	1999 RS ₈₆
1999 RV ₈₆	14.0	0.15	20000226	56.71931	307.61813	24.31333	5.61148	0.0638251	2.7507982	27	1	93 days	0.55	M-v	4	Williams	37296	1999 RV ₈₆
1999 RW ₈₆	13.4	0.15	20000226	32.43568	328.48712	22.52090	6.40742	0.1653330	3.1869815	56	2	1997–1999	0.68	M-v	3	Williams	37296	1999 RW ₈₆
1999 RA ₈₇	13.4	0.15	20000226	13.68895	344.88833	34.56596	2.24289	0.0888860	2.8565618	35	2	1992–1999	0.60	M-v	4	Williams	37182	1999 RA ₈₇
1999 RO ₈₇	16.8	0.15	19990830	349.98000	3.14837	359.93197	4.15014	0.1499452	2.2802415	13	1	7 days	0.28			Williams		1999 RO ₈₇
1999 RS ₈₇	16.7	0.15	20000226	5.26521	43.48213	11.74616	3.50499	0.1964691	2.2775767	14	1	63 days	0.42	M-v	5	Williams		1999 RS ₈₇
1999 RY ₈₇	16.2	0.15	20000226	98.44889	285.68842	3.01365	5.79764	0.1647379	2.2677212	53	2	1998–1999	0.51	M-v	4	Williams	36916	1999 RY ₈₇
1999 RF ₈₈	14.4	0.15	20000226	115.60037	273.14480	353.34012	4.62002	0.1052881	2.7432611	43	3	1997–1999	0.59	M-v	3	Williams	36827	1999 RF ₈₈
1999 RR ₈₈	13.3	0.15	20000226	326.21658	101.61548	336.33123	4.56668	0.1510522	3.1931992	33	1	91 days	0.49	M-v	5	Williams	37296	1999 RR ₈₈
1999 RT ₈₈	14.6	0.15	20000226	28.25656	181.64821	192.58337	7.28963	0.1894078	2.5841777	33	1	137 days	0.43	M-v	3	Williams	37296	1999 RT ₈₈
1999 RW ₈₈	15.6	0.15	20000226	2.97891	209.51777	207.07142	2.44265	0.1224656	2.1645989	40	1	91 days	0.49	M-v	4	Williams	37296	1999 RW ₈₈
1999 RB ₈₉	13.4	0.15	20000226	326.06829	259.55596	183.05049	13.58124	0.1426660	2.8874730	52	1	128 days	0.53	M-v	4	Williams	37296	1999 RB ₈₉
1999 RG ₈₉	15.7	0.15	20000226	104.50045	99.39086	180.91062	6.18016	0.1548474	2.4331174	29	2	1998–1999	0.51	M-v	4	Williams	36421	1999 RG ₈₉
1999 RP ₈₉	14.1	0.15	20000226	300.15386	322.25815	147.48796	3.43451	0.1404347	2.7598469	38	3	1983–1999	0.46	M-v	3	Williams	37182	1999 RP ₈₉
1999 RS ₈₉	14.4	0.15	20000226	30.54610	220.61714	154.46708	5.81288	0.2901529	2.5356210	64	2	1995–2000	0.49	M-v	2	Williams	37296	1999 RS ₈₉
1999 RG ₉₀	14.8	0.15	20000226	0.70825	300.37372	120.60265	4.84494	0.2688997	2.5367944	36	5	1975–1999	0.67	M-v	3	Williams	37296	1999 RG ₉₀
1999 RR ₉₀	15.0	0.15	20000226	60.64853	317.57885	19.99791	8.41224	0.1615709	2.2937931	46	2	1998–1999	0.49	M-v	3	Williams	37182	1999 RR ₉₀
1999 RU ₉₀	13.3	0.15	20000226	192.95285	186.55124	13.18022	14.58186	0.1219125	2.5688445	42	1	93 days	0.65	M-v	4	Williams		1999 RU ₉₀
1999 RN ₉₁	15.9	0.15	20000226	9.85467	264.12866	144.90592	2.65392	0.2050287	2.3820368	33	1	69 days	0.68	M-v	5	Williams		1999 RN ₉₁
1999 RO ₉₁	14.7	0.15	20000226	6.07401	282.57624	130.61750	1.64927	0.2213209	2.4661694	38	2	1995–1999	0.51	M-v	4	Williams	37296	1999 RO ₉₁
1999 RP ₉₁	12.8	0.15	20000226	82.71293	234.90966	57.10829	1.46447	0.1412861	3.1990361	47	4	1976–1999	0.64	M-v	1	Williams	37296	1999 RP ₉₁
1999 RT ₉₁	16.3	0.15	20000226	20.39390	49.52577	351.25206	2.05933	0.2122105	2.2374297	43	1	95 days	0.50	M-v	4	Williams	37296	1999 RT ₉₁
1999 RV ₉₁	13.5	0.15	20000226	66.50335	324.40525	357.95662	9.11335	0.1117077	2.7321116	52	6	1972–1999	0.50	M-v	1	Williams	37296	1999 RV ₉₁
1999 RZ ₉₁	16.1	0.15	20000226	19.99212	98.85260	303.22255	0.73292	0.2794329	2.3633115	30	1	91 days	0.58	M-v	4	Williams	37296	1999 RZ ₉₁
1999 RE ₉₂	14.1	0.15	20000226	45.80301	160.27413	187.50170	6.85804	0.1304912	2.7163144	56	4	1990–1999	0.55	M-v	2	Williams	37296	1999 RE ₉₂
1999 RH ₉₂	13.7	0.15	20000226	49.20583	9.21105	334.89537	1.39016	0.0266540	2.9545389	39	2	1997–1999	0.63	M-v	3	Williams	37183	1999 RH ₉₂
1999 RK ₉₂	14.2	0.15	20000226	274.70526	144.15808	357.16999	6.06925	0.0909112	2.2604677	65	4	1974–1999	0.58	M-v	3	Williams	37296	1999 RK ₉₂
1999 RM ₉₂	13.3	0.15	20000226	182.62082	10.98971	193.67815	0.26372	0.1061346	3.2159443	30	2	1993–1999	0.72	M-v	5	Williams	36828	1999 RM ₉₂
1999 RP ₉₂	15.0	0.15	20000226	358.29125	53.60085	8.46181	5.87704	0.1545918	2.3359362	63	1	94 days	0.55	M-v	4	Williams	37296	1999 RP ₉₂
1999 RQ ₉₂	15.9	0.15	20000226	64.67633	330.40026	1.73277	7.51008	0.2294482	2.2254336	47	1	123 days	0.45	M-v	3	Williams	36916	1999 RQ ₉₂
1999 RB ₉₃	14.0	0.15	20000226	18.08221	323.83421	54.56442	2.92284	0.1953800	3.0659619	57	2	1978–1999	0.61	M-v	4	Williams	37296	1999 RB ₉₃
1999 RJ ₉₃	14.2	0.15	20000226	305.59692	336.26567	116.80748	3.16254	0.0340647	2.8877104	20	2	1977–1999	0.68	M-v	6	Williams	37183	1999 RJ ₉₃
1999 RN ₉₃	13.8	0.15	20000226	346.61631	352.85892	59.44788	3.33171	0.0225524	2.6913696	38	3	1990–1999	0.63	M-v	3	Williams	37296	1999 RN ₉₃
1999 RT ₉₃	14.3	0.15	20000226	61.41575	218.17472	85.13775	3.49665	0.3089982	2.9954017	57	2	1998–1999	0.71	M-v	4	Williams	37296	1999 RT ₉₃
1999 RV ₉₃	16.2	0.15	20000226	49.00977	342.31907	8.53464	12.61942	0.2045680	2.3593612	31	1	84 days	0.55	M-v	4	Williams		1999 RV ₉₃
1999 RH ₉₄	16.4	0.15	20000226	40.47310	262.10609	103.88935	2.93519	0.2171167	2.3483448	27	1	69 days	0.54	M-v	4	Williams		1999 RH ₉₄
1999 RK ₉₄	13.8	0.15	20000226	2.91863	25.22454	13.35913	15.59159	0.1312847	2.9771203	79	3	1971–1999	0.62	M-v	3	Williams	37296	1999 RK ₉₄
1999 RO ₉₄	12.6	0.15	20000226	221.52212	151.09449	21.46248	10.66105	0.0383784	3.0310727	55	4	1976–1999	0.66	M-v	2	Williams	37296	1999 RO ₉₄
1999 RF ₉₅	16.0	0.15	20000226	0.12063	213.02063	208.85025	2.73403	0.1146991	2.1971546	40	1	91 days	0.62	M-v	4	Williams	37296	1999 RF ₉₅
1999 RG ₉₅	14.2	0.15	20000226	32.99879	11.05797	353.72154	8.90699	0.1682458	2.7991436	56	2	1992–2000	0.43	M-v	3	Williams	37297	1999 RG ₉₅
1999 RH ₉₅	17.2	0.15	20000226	56.32303	168.53446	173.99466	2.32880	0.2944424	2.2649853	41	1	71 days	0.55	M-v	5	Williams		1999 RH ₉₅
1999 RM ₉₅	13.1	0.15	20000226	211.78268	167.26784	13.56424	18.34063	0.1140748	3.2236433	18	1	66 days	0.81	M-v	5	Williams	36916	1999 RM ₉₅
1999 RR ₉₅	15.5	0.15	20000226	43.03895	291.02613	69.94247	3.29201	0.2236359	2.3782020	40	1	93 days	0.73	M-v	4	Williams	37297	1999 RR ₉₅
1999 RS ₉₅	14.6	0.15	20000226	41.28161	224.53052	133.98272	5.33173	0.1841843	2.5328100	32	1	103 days	0.48	M-v	3	Williams	37297	1999 RS ₉₅
1999 RY ₉₅	13.9	0.15	20000226	37.33239	248.08874	102.44195	4.87030	0.1441136	3.1845693	26	1	89 days	0.63	M-v	4	Williams	37297	1999 RY ₉₅
1999 RZ ₉₅	13.7	0.15	20000226	359.25231	3.60376	35.14023	9.36929	0.1066999	3.1695444	29	1	91 days	0.48	M-v	4	Williams	37297	1999 RZ ₉₅
1999 RD ₉₆	15.7	0.15	20000226	38.01275	356.89508	12.02392	14.39927	0.0851478	2.3687276	37	1	68 days	0.54	M-v	4	Williams		1999 RD ₉₆

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1999 RL ₉₆	14.6	0.15	20000226	325.16145	26.63840	74.99483	2.69354	0.1768861	2.4275307	34	3	1988–1999	0.74	M-v	4	Williams	37183	1999 RL ₉₆
1999 RM ₉₆	14.2	0.15	20000226	20.78315	274.53733	102.50949	2.27624	0.1889564	3.1399050	47	1	91 days	0.54	M-v	4	Williams	37297	1999 RM ₉₆
1999 RR ₉₆	16.1	0.15	20000226	90.51779	69.20599	211.02938	5.02225	0.2177995	2.5338665	14	1	68 days	0.45	M-v	6	Williams		1999 RR ₉₆
1999 RH ₉₈	14.3	0.15	20000226	40.50412	259.94224	86.03421	2.59499	0.2007771	3.2019810	37	1	91 days	0.53	M-v	4	Williams	37297	1999 RH ₉₈
1999 RQ ₉₈	16.3	0.15	19990919	3.22083	189.34936	170.09198	9.03831	0.2819522	2.7893451	27	1	59 days	0.65			Williams		1999 RQ ₉₈
1999 RS ₉₈	14.6	0.15	20000226	107.15979	266.97760	20.53089	7.45080	0.1110047	2.5447287	16	1	66 days	0.55	M-v	6	Williams	36916	1999 RS ₉₈
1999 RW ₉₈	13.7	0.15	20000226	14.39024	212.65204	180.55683	24.81799	0.2140364	3.1566386	23	1	62 days	0.29	M-v	4	Williams		1999 RW ₉₈
1999 RX ₉₈	14.7	0.15	20000226	26.64820	221.53633	169.51262	13.62523	0.2177099	2.4543257	31	1	124 days	0.39	M-v	3	Williams		1999 RX ₉₈
1999 RZ ₉₈	12.6	0.15	20000226	67.11213	310.04140	21.14446	21.86839	0.0222876	3.2296605	90	4	1982–2000	0.54	M-v	1	Williams	37297	1999 RZ ₉₈
1999 RB ₉₉	13.7	0.15	20000226	35.90273	193.79435	168.50574	12.55121	0.1548795	3.1932049	24	1	61 days	0.69	M-v	5	Williams		1999 RB ₉₉
1999 RC ₉₉	14.7	0.15	20000226	101.50705	211.26567	69.53018	5.86260	0.2603628	2.4403903	39	2	1998–1999	0.72	M-v	4	Williams	37297	1999 RC ₉₉
1999 RE ₁₀₂	12.8	0.15	20000226	12.88649	164.39136	199.63869	16.41465	0.1367925	3.1004316	81	3	1983–2000	0.56	M-v	2	Williams	37297	1999 RE ₁₀₂
1999 RN ₁₀₂	14.7	0.15	20000226	37.64853	106.10012	236.31623	7.02614	0.2718083	2.6913115	62	1	172 days	0.57	M-v	3	Williams	37297	1999 RN ₁₀₂
1999 RA ₁₀₃	12.6	0.15	20000226	22.28236	99.01685	251.59793	6.77453	0.1120868	3.2382862	64	3	1982–2000	0.56	M-v	2	Williams	37297	1999 RA ₁₀₃
1999 RE ₁₀₃	15.1	0.15	20000226	22.81109	61.33696	305.55127	14.56122	0.3501143	2.9814022	31	1	89 days	0.66	M-v	4	Williams	37297	1999 RE ₁₀₃
1999 RK ₁₀₄	12.7	0.15	20000226	60.43406	31.43752	281.28297	12.10690	0.1716363	2.6803622	68	4	1982–1999	0.56	M-v	1	Williams	37297	1999 RK ₁₀₄
1999 RE ₁₀₅	16.2	0.15	20000226	50.75835	341.17175	21.04665	5.56516	0.1629171	2.2780408	30	1	90 days	0.60	M-v	4	Williams	37297	1999 RE ₁₀₅
1999 RF ₁₀₅	13.9	0.15	20000226	83.55981	285.26790	24.02196	9.59706	0.1077068	3.0354867	31	1	65 days	0.46	M-v	5	Williams		1999 RF ₁₀₅
1999 RH ₁₀₅	13.9	0.15	20000226	67.31841	289.37943	46.79498	3.27545	0.0715209	2.7156947	74	1	122 days	0.49	M-v	4	Williams	37297	1999 RH ₁₀₅
1999 RJ ₁₀₅	15.4	0.15	20000226	37.16567	359.41357	18.72327	8.20963	0.1216789	2.3808060	64	1	123 days	0.42	M-v	3	Williams		1999 RJ ₁₀₅
1999 RL ₁₀₅	13.8	0.15	20000226	65.55822	216.39946	115.59760	2.16621	0.1001748	2.9618904	27	1	122 days	0.40	M-v	4	Williams		1999 RL ₁₀₅
1999 RU ₁₀₅	14.1	0.15	20000226	3.24993	113.23059	285.21145	12.95007	0.0970948	2.5967911	39	1	137 days	0.50	M-v	4	Williams	37297	1999 RU ₁₀₅
1999 RV ₁₀₅	14.4	0.15	19990919	337.96153	161.55600	224.40051	14.50498	0.1359921	2.6661964	24	1	58 days	0.41			Williams		1999 RV ₁₀₅
1999 RL ₁₀₆	17.0	0.15	19990919	0.33913	70.89643	286.21368	5.64350	0.2228792	2.2896473	22	1	58 days	0.60			Williams		1999 RL ₁₀₆
1999 RB ₁₀₇	15.3	0.15	20000226	345.13677	53.45149	11.90079	9.08211	0.1707985	2.7151379	28	2	1997–1999	0.51	M-v	4	Williams	36828	1999 RB ₁₀₇
1999 RG ₁₀₇	15.1	0.15	20000226	341.82109	133.01068	306.34157	1.79490	0.1599477	2.4691588	29	1	61 days	0.67	M-v	5	Williams		1999 RG ₁₀₇
1999 RL ₁₀₇	13.9	0.15	20000226	41.09027	155.19030	200.24024	9.37801	0.0874322	3.1919161	44	1	65 days	0.56	M-v	5	Williams	36917	1999 RL ₁₀₇
1999 RM ₁₀₇	13.7	0.15	20000226	337.94845	140.72065	297.03951	1.93703	0.1611277	3.1777977	51	3	1993–2000	0.68	M-v	2	Williams	36828	1999 RM ₁₀₇
1999 RO ₁₀₇	13.9	0.15	19990919	334.71323	145.45807	247.76623	8.45533	0.0970314	3.1641828	31	1	58 days	0.70			Williams		1999 RO ₁₀₇
1999 RX ₁₀₈	14.6	0.15	20000226	46.61260	115.03690	233.04468	11.50514	0.1383156	2.6358832	50	1	136 days	0.51	M-v	3	Williams	37297	1999 RX ₁₀₈
1999 RJ ₁₀₉	14.8	0.15	20000226	56.11588	12.27697	329.31691	9.06136	0.1969612	2.3627564	61	1	175 days	0.53	M-v	3	Williams	37297	1999 RJ ₁₀₉
1999 RL ₁₀₉	13.2	0.15	20000226	275.79037	273.78503	216.98242	10.60061	0.1548115	3.0491164	54	2	1997–1999	0.76	M-v	3	Williams	37297	1999 RL ₁₀₉
1999 RN ₁₀₉	16.2	0.15	19990919	344.10187	77.16354	304.39492	5.68146	0.1217697	2.2929680	27	1	58 days	0.48			Williams		1999 RN ₁₀₉
1999 RS ₁₀₉	16.8	0.15	19990919	18.18908	34.92398	301.87830	4.77057	0.1920850	2.2852106	30	1	58 days	0.62			Williams		1999 RS ₁₀₉
1999 RV ₁₀₉	15.4	0.15	19990919	93.08664	308.11188	313.34211	5.94490	0.1014640	2.4172681	43	1	58 days	0.51			Williams		1999 RV ₁₀₉
1999 RH ₁₁₀	13.4	0.15	20000226	345.24467	170.35154	255.40365	8.90912	0.0863826	3.0073095	49	3	1989–2000	0.53	M-v	3	Williams	37297	1999 RH ₁₁₀
1999 RQ ₁₁₂	14.5	0.15	20000226	77.89560	61.40972	218.34393	4.51383	0.1709115	2.4374440	31	1	120 days	0.53	M-v	4	Williams		1999 RQ ₁₁₂
1999 RR ₁₁₃	12.9	0.15	20000226	359.06671	102.04867	303.34236	13.41843	0.2044632	2.5528753	56	1	93 days	0.34	M-v	4	Williams	37298	1999 RR ₁₁₃
1999 RW ₁₁₄	13.5	0.15	20000226	126.48990	228.50638	301.59495	7.99963	0.0902493	3.0521620	38	2	1997–1999	0.44	M-v	4	Williams	36828	1999 RW ₁₁₄
1999 RY ₁₁₄	15.4	0.15	20000226	333.29650	220.77957	217.03911	5.61029	0.1250412	2.2021868	38	1	70 days	0.51	M-v	5	Williams		1999 RY ₁₁₄
1999 RY ₁₁₅	13.3	0.15	20000226	356.51498	218.88509	154.12869	12.05000	0.1478613	3.0526767	55	2	1998–1999	0.56	M-v	3	Williams	36918	1999 RY ₁₁₅
1999 RZ ₁₁₅	14.6	0.15	20000226	40.56015	17.91552	319.19184	7.55995	0.1537843	2.3616639	44	1	138 days	0.47	M-v	3	Williams		1999 RZ ₁₁₅
1999 RT ₁₁₇	13.5	0.15	20000226	20.59025	72.61255	282.51850	13.56309	0.1269934	2.6738935	33	1	143 days	0.41	M-v	3	Williams	37298	1999 RT ₁₁₇
1999 RX ₁₁₈	13.4	0.15	20000226	355.63299	201.80711	196.17256	12.05885	0.2512086	2.6938709	50	4	1955–1999	0.67	M-v	2	Williams	37298	1999 RX ₁₁₈
1999 RE ₁₂₃	13.7	0.15	20000226	136.16520	323.01756	287.37554	6.25291	0.0764141	2.3540784	65	3	1992–1999	0.53	M-v	2	Williams	37298	1999 RE ₁₂₃
1999 RQ ₁₂₃	15.1	0.15	20000226	25.41868	151.41339	223.56158	8.17960	0.3256732	2.7245241	53	1	91 days	0.44	M-v	4	Williams	37298	1999 RQ ₁₂₃
1999 RE ₁₂₄	14.8	0.15	20000226	51.63748	142.56107	195.27698	13.79078	0.1147899	2.5949584	67	3	1995–1999	0.51	M-v	2	Williams	37298	1999 RE ₁₂₄
1999 RO ₁₂₄	14.5	0.15	20000226	18.30480	173.51489	207.76759	11.03681	0.1548678	2.7376815	33	1	69 days	0.57	M-v	4	Williams		1999 RO ₁₂₄
1999 RF ₁₂₅	15.9	0.15	19990810	356.40547	17.29548	318.40109	2.27727	0.1974747	2.2487251	16	1	38 days	0.26			Williams		1999 RF ₁₂₅
1999 RL ₁₂₅	13.4	0.15	20000226	37.67144	359.32154	333.07323	15.91010	0.0859505	3.1510136	38	1	61 days	0.60	M-v	4	Williams		1999 RL ₁₂₅
1999 RV ₁₂₅	14.1	0.15	20000226	101.85668	310.97463	320.42550	7.65610	0.1153729	2.3916835	57	3	1994–1999	0.65	M-v	2	Williams	36918	1999 RV ₁₂₅
1999 RY ₁₂₅	13.4	0.15	20000226	77.25295	307.39067	325.07664	15.83250	0.1930396	3.1207130	32	1	77 days	0.52	M-v	5	Williams		1999 RY ₁₂₅
1999 RZ ₁₂₅	13.5	0.15	20000226	147.77338	254.55880	324.87624	14.83162	0.1233632	2.5302676	33	2	1991–1999	0.58	M-v	5	Williams	37298	1999 RZ ₁₂₅

1999 RX ₁₂₇	14.7	0.15	20000226	16.58005	147.38910	235.56109	1.79717	0.2213260	2.3242368	39	3	1985–1999	0.82	M-v	3	Williams	37183	1999 RX ₁₂₇
1999 RT ₁₂₈	14.0	0.15	20000226	37.08207	152.29824	183.41635	6.91722	0.2772766	2.7613086	73	3	1981–1999	0.76	M-v	2	Williams	37298	1999 RT ₁₂₈
1999 RD ₁₂₉	15.6	0.15	19990830	46.71841	315.29756	315.59164	2.83733	0.1623704	2.2829027	17	1	27 days	0.37			Williams		1999 RD ₁₂₉
1999 RJ ₁₂₉	16.5	0.15	19990830	336.42013	215.33411	154.94385	2.88341	0.2295924	2.4285332	17	1	23 days	0.61			Williams		1999 RJ ₁₂₉
1999 RS ₁₂₉	14.6	0.15	20000226	62.52077	328.85759	346.10508	7.13994	0.1895276	2.2940992	59	5	1977–1999	0.54	M-v	2	Williams	36918	1999 RS ₁₂₉
1999 RV ₁₂₉	14.2	0.15	19990810	286.22517	268.67843	143.50714	11.08704	0.0932175	3.0466851	14	1	41 days	0.47			Williams		1999 RV ₁₂₉
1999 RA ₁₃₀	15.2	0.15	19990830	80.66160	84.75820	149.39574	2.61865	0.1560748	2.3831720	17	1	23 days	0.47			Williams		1999 RA ₁₃₀
1999 RE ₁₃₀	13.6	0.15	20000226	328.80250	86.90582	339.53546	8.59754	0.2581205	3.0466889	42	2	1996–1999	0.49	M-v	3	Williams	36918	1999 RE ₁₃₀
1999 RH ₁₃₀	15.5	0.15	20000226	16.34809	217.02415	164.86729	2.82419	0.2154807	2.3821912	40	3	1988–1999	0.57	M-v	2	Williams	36828	1999 RH ₁₃₀
1999 RL ₁₃₀	14.9	0.15	20000226	1.23466	238.59697	159.68348	4.93161	0.1951743	2.4232077	40	3	1988–1999	0.68	M-v	3	Williams	37184	1999 RL ₁₃₀
1999 RM ₁₃₀	14.0	0.15	19990830	137.48192	222.23367	324.88092	5.75622	0.1248519	2.8575520	17	1	27 days	0.38			Williams		1999 RM ₁₃₀
1999 RT ₁₃₀	14.7	0.15	20000226	42.50331	163.16827	167.95314	12.10608	0.1842956	2.6731002	44	5	1982–1999	0.58	M-v	1	Williams	37184	1999 RT ₁₃₀
1999 RA ₁₃₂	14.8	0.15	20000226	27.94010	150.82786	212.12750	5.73857	0.1264960	2.3284740	80	5	1985–2000	0.70	M-v	2	Williams	36918	1999 RA ₁₃₂
1999 RG ₁₃₂	14.2	0.15	20000226	90.34190	357.08009	289.77855	6.34045	0.1132268	2.2932165	39	4	1992–1999	0.46	M-v	1	Williams	37298	1999 RG ₁₃₂
1999 RB ₁₃₃	14.2	0.15	20000226	339.53654	199.10626	232.11280	6.17923	0.2865352	2.6343138	35	1	121 days	0.53	M-v	4	Williams		1999 RB ₁₃₃
1999 RX ₁₃₄	14.9	0.15	20000226	103.81094	291.95142	327.95473	13.39470	0.1345638	2.5702956	26	2	1998–1999	0.77	M-v	4	Williams	37184	1999 RX ₁₃₄
1999 RD ₁₃₅	13.2	0.15	20000226	8.57446	205.86070	160.99722	11.35511	0.1169938	2.9911120	43	1	70 days	0.39	M-v	5	Williams	36919	1999 RD ₁₃₅
1999 RO ₁₃₅	15.1	0.15	20000226	35.02464	0.52889	346.15145	13.37204	0.1895719	2.5627275	39	1	61 days	0.50	M-v	4	Williams		1999 RO ₁₃₅
1999 RW ₁₃₅	15.1	0.15	20000226	28.57114	4.90999	358.37414	6.42240	0.2175465	2.4384305	29	1	62 days	0.39	M-v	5	Williams		1999 RW ₁₃₅
1999 RY ₁₃₅	15.0	0.15	20000226	354.12864	271.63123	139.09308	7.30738	0.1786450	2.3279339	37	4	1990–1999	0.66	M-v	2	Williams	36919	1999 RY ₁₃₅
1999 RU ₁₃₆	15.8	0.15	20000226	44.47079	168.46352	165.44009	8.15085	0.2393407	2.5432290	39	3	1991–1999	0.55	M-v	3	Williams	36829	1999 RU ₁₃₆
1999 RA ₁₃₇	15.1	0.15	20000226	52.07932	141.75221	177.41653	4.02725	0.2534460	2.5847154	34	1	82 days	0.48	M-v	4	Williams	36919	1999 RA ₁₃₇
1999 RZ ₁₃₈	14.8	0.15	20000226	15.07745	164.38081	211.62864	9.53054	0.2630038	2.7328967	26	1	118 days	0.51	M-v	4	Williams		1999 RZ ₁₃₈
1999 RP ₁₃₉	15.7	0.15	19990810	313.59622	250.73123	150.02983	26.56601	0.2539851	3.1572802	14	1	36 days	0.45			Williams		1999 RP ₁₃₉
1999 RL ₁₄₀	16.0	0.15	19990830	331.61440	337.61711	38.16541	0.23178	0.1981732	2.6076091	15	1	23 days	0.47			Williams		1999 RL ₁₄₀
1999 RY ₁₄₁	16.0	0.15	20000226	14.83951	194.15404	203.94786	2.18200	0.1155327	2.2126724	64	2	1998–1999	0.56	M-v	4	Williams	36919	1999 RY ₁₄₁
1999 RE ₁₄₂	16.9	0.15	20000226	68.95197	297.43623	22.35368	2.77645	0.2192482	2.3022104	32	1	76 days	0.63	M-v	5	Williams		1999 RE ₁₄₂
1999 RJ ₁₄₂	13.5	0.15	20000226	145.61005	89.22434	144.92239	5.09110	0.0775953	3.1887674	40	2	1997–1999	0.76	M-v	4	Williams	36829	1999 RJ ₁₄₂
1999 RV ₁₄₂	15.1	0.15	20000226	43.53205	232.41595	130.54894	4.81534	0.2347541	2.2600389	59	1	178 days	0.57	M-v	3	Williams	37298	1999 RV ₁₄₂
1999 RH ₁₄₃	13.8	0.15	19990919	25.29415	157.33813	179.56665	10.71125	0.0163870	3.1181211	42	1	59 days	0.57			Williams		1999 RH ₁₄₃
1999 RM ₁₄₃	15.0	0.15	20000226	59.52647	315.41715	8.13242	4.96095	0.2450795	2.6568474	59	1	107 days	0.51	M-v	4	Williams	37298	1999 RM ₁₄₃
1999 RN ₁₄₃	15.5	0.15	20000226	30.83560	206.89376	175.78859	8.62023	0.3113560	2.4039931	67	2	1997–2000	0.57	M-v	2	Williams	37298	1999 RN ₁₄₃
1999 RU ₁₄₃	16.1	0.15	20000226	21.89751	168.37450	203.71129	4.36279	0.1353570	2.7617386	27	1	65 days	0.47	M-v	5	Williams		1999 RU ₁₄₃
1999 RV ₁₄₃	15.3	0.15	20000226	247.36964	319.02012	195.32296	5.74648	0.0492434	2.3407357	42	2	1998–1999	0.65	M-v	4	Williams	36829	1999 RV ₁₄₃
1999 RW ₁₄₃	15.9	0.15	20000226	80.52878	78.31727	227.42526	2.28188	0.2055569	2.2453978	52	1	137 days	0.50	M-v	4	Williams	37298	1999 RW ₁₄₃
1999 RB ₁₄₄	16.2	0.15	20000226	17.57078	162.41518	209.81682	5.43306	0.2429591	3.1045759	16	1	68 days	0.63	M-v	5	Williams		1999 RB ₁₄₄
1999 RH ₁₄₄	15.1	0.15	20000226	51.68246	120.44139	201.30172	9.80289	0.0983274	3.0173982	26	3	1988–1999	0.69	M-v	4	Williams	37184	1999 RH ₁₄₄
1999 RO ₁₄₄	13.6	0.15	20000226	211.55391	333.24100	194.54809	13.68438	0.1264590	2.6598276	43	1	63 days	0.63	M-v	5	Williams		1999 RO ₁₄₄
1999 RQ ₁₄₅	14.3	0.15	20000226	73.59145	21.92726	275.08435	4.24610	0.1021324	2.7000631	38	2	1998–1999	0.68	M-v	4	Williams	36829	1999 RQ ₁₄₅
1999 RM ₁₄₆	13.4	0.15	20000226	357.60644	201.15699	182.98981	10.57216	0.1111549	2.9767615	66	1	111 days	0.58	M-v	4	Williams	37298	1999 RM ₁₄₆
1999 RY ₁₄₇	14.5	0.15	20000226	2.52736	86.54353	319.85776	8.91686	0.1908939	2.3180334	41	2	1985–1999	0.39	M-v	4	Williams	37298	1999 RY ₁₄₇
1999 RA ₁₄₉	15.2	0.15	20000226	37.78199	84.85080	266.79293	0.48421	0.1968759	2.4023004	57	1	69 days	0.63	M-v	5	Williams	36919	1999 RA ₁₄₉
1999 RC ₁₄₉	16.4	0.15	19990810	338.90355	17.62516	339.61129	5.62230	0.1315885	2.3703100	15	1	37 days	0.59			Williams		1999 RC ₁₄₉
1999 RW ₁₄₉	14.3	0.15	20000226	67.41700	355.31684	316.67501	2.31926	0.1875747	2.3217738	80	3	1992–1999	0.68	M-v	2	Williams	37298	1999 RW ₁₄₉
1999 RP ₁₅₀	14.4	0.15	20000226	41.73347	348.08308	346.89847	13.71496	0.1803167	2.6896119	48	1	70 days	0.56	M-v	4	Williams		1999 RP ₁₅₀
1999 RM ₁₅₁	15.0	0.15	20000226	72.60612	285.74756	15.87355	3.59785	0.1027836	2.5731344	43	2	1998–1999	0.79	M-v	4	Williams	36830	1999 RM ₁₅₁
1999 RN ₁₅₁	15.5	0.15	20000226	4.78964	39.19527	1.69193	5.24667	0.2835744	2.6202138	42	2	1997–1999	0.50	M-v	3	Williams	36919	1999 RN ₁₅₁
1999 RX ₁₅₁	13.2	0.15	20000226	234.21552	12.88339	128.17550	4.48171	0.0641475	3.0021029	46	4	1982–1999	0.74	M-v	2	Williams	37298	1999 RX ₁₅₁
1999 RB ₁₅₂	14.6	0.15	20000226	69.84796	146.10203	150.93520	6.70480	0.2643084	2.4673696	46	3	1994–1999	0.62	M-v	2	Williams	37298	1999 RB ₁₅₂
1999 RF ₁₅₂	14.7	0.15	20000226	42.66447	355.54763	336.27282	7.56706	0.2199865	2.7829239	52	1	70 days	0.61	M-v	4	Williams	36919	1999 RF ₁₅₂
1999 RM ₁₅₂	14.6	0.15	20000226	40.49518	353.75437	334.68612	5.49977	0.2711273	2.9873912	33	1	68 days	0.53	M-v	4	Williams		1999 RM ₁₅₂
1999 RO ₁₅₂	15.8	0.15	20000226	53.09416	167.16835	167.60595	7.11763	0.1960554	2.3182771	36	1	69 days	0.50	M-v	4	Williams		1999 RO ₁₅₂
1999 RX ₁₅₂	15.0	0.15	20000226	13.04959	198.31197	182.11968	9.98414	0.2334416	2.7836594	50	3	1976–1999	0.69	M-v	3	Williams	37298	1999 RX ₁₅₂

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1999 RY ₁₅₂	14.7	0.15	20000226	30.15369	66.55318	298.14231	5.23918	0.1518458	2.3768762	38	1	103 days	0.55	M-v	4	Williams	37299	1999 RY ₁₅₂
1999 RS ₁₅₄	13.6	0.15	20000226	319.86628	134.55143	284.87674	2.54615	0.0610963	3.2248275	24	1	70 days	0.47	M-v	6	Williams		1999 RS ₁₅₄
1999 RA ₁₅₆	15.6	0.15	20000226	92.45592	38.79351	247.70098	3.45270	0.1675819	2.2915056	39	1	84 days	0.61	M-v	5	Williams		1999 RA ₁₅₆
1999 RD ₁₅₆	14.2	0.15	20000226	45.04178	59.19600	266.13155	3.70368	0.1371316	3.1647339	29	1	68 days	0.43	M-v	5	Williams		1999 RD ₁₅₆
1999 RL ₁₅₆	14.8	0.15	20000226	25.70114	169.49865	198.65829	3.60779	0.2473422	2.6341763	52	1	107 days	0.65	M-v	4	Williams	37299	1999 RL ₁₅₆
1999 RS ₁₅₆	14.5	0.15	20000226	50.57690	147.27796	174.35243	12.29543	0.1396073	2.9724179	24	2	1998–1999	0.68	M-v	4	Williams	36830	1999 RS ₁₅₆
1999 RA ₁₅₈	14.3	0.15	20000226	348.57359	52.95852	357.37870	13.24377	0.1742789	2.6452522	38	1	107 days	0.43	M-v	4	Williams		1999 RA ₁₅₈
1999 RB ₁₅₈	12.5	0.15	20000226	66.61407	302.91290	355.36116	16.55245	0.0880835	3.1752036	72	2	1997–1999	0.60	M-v	3	Williams	37299	1999 RB ₁₅₈
1999 RF ₁₅₉	12.5	0.15	20000226	215.62287	167.97866	350.47479	19.40405	0.0815641	3.1212240	43	1	145 days	0.57	M-v	4	Williams	37299	1999 RF ₁₅₉
1999 RV ₁₅₉	14.2	0.15	20000226	9.57674	8.61455	2.83763	11.23152	0.0782259	2.8745640	29	1	62 days	0.52	M-v	5	Williams		1999 RV ₁₅₉
1999 RY ₁₅₉	14.9	0.15	20000226	4.43072	259.15300	138.07882	7.57562	0.1562606	2.4267892	39	1	93 days	0.53	M-v	5	Williams	36920	1999 RY ₁₅₉
1999 RC ₁₆₀	14.7	0.15	20000226	18.87151	9.43777	2.25361	14.00893	0.2271170	2.7341486	44	1	66 days	0.64	M-v	4	Williams	36920	1999 RC ₁₆₀
1999 RJ ₁₆₀	16.1	0.15	20000226	17.35886	273.96255	108.90890	5.28811	0.1954147	2.4663179	31	1	68 days	0.65	M-v	5	Williams		1999 RJ ₁₆₀
1999 RN ₁₆₀	13.3	0.15	20000226	342.11445	40.42320	13.41518	9.33934	0.1566927	2.8061012	56	3	1992–2000	0.52	M-v	2	Williams	37299	1999 RN ₁₆₀
1999 RM ₁₆₁	14.7	0.15	20000226	352.77192	73.56969	327.72880	13.97056	0.1203903	2.6081794	48	2	1997–1999	0.53	M-v	4	Williams	36920	1999 RM ₁₆₁
1999 RO ₁₆₁	13.1	0.15	20000226	44.65045	184.18798	134.76223	1.84900	0.1647615	3.1313050	69	2	1998–1999	0.54	M-v	3	Williams	37299	1999 RO ₁₆₁
1999 RL ₁₆₂	16.0	0.15	20000226	47.57322	313.03921	29.74815	10.16203	0.2600729	2.8067972	27	1	64 days	0.50	M-v	4	Williams		1999 RL ₁₆₂
1999 RN ₁₆₂	13.3	0.15	20000226	15.09501	4.50094	27.48640	13.92795	0.1319770	2.8674723	98	3	1991–2000	0.49	M-v	2	Williams	37299	1999 RN ₁₆₂
1999 RO ₁₆₂	13.6	0.15	20000226	20.08272	351.72796	36.34690	9.96587	0.1641275	2.7905606	60	1	121 days	0.64	M-v	3	Williams	37299	1999 RO ₁₆₂
1999 RR ₁₆₂	14.6	0.15	20000226	57.57065	352.03329	333.32933	13.23200	0.2028049	2.5420363	33	1	75 days	0.40	M-v	4	Williams		1999 RR ₁₆₂
1999 RZ ₁₆₂	14.1	0.15	20000226	60.57984	104.79414	204.76812	6.93664	0.1079580	3.1437572	26	1	70 days	0.42	M-v	5	Williams		1999 RZ ₁₆₂
1999 RD ₁₆₃	14.3	0.15	20000226	21.62408	71.43902	295.33110	4.45216	0.1343473	2.7499625	47	1	89 days	0.56	M-v	4	Williams	37299	1999 RD ₁₆₃
1999 RH ₁₆₃	14.1	0.15	20000226	12.03414	51.10226	327.35412	8.80067	0.0346480	2.5346468	27	3	1991–1999	0.36	M-v	4	Williams	37185	1999 RH ₁₆₃
1999 RU ₁₆₃	14.8	0.15	20000226	46.50219	9.05681	323.57938	4.29698	0.1625532	2.7717319	61	3	1993–1999	0.75	M-v	3	Williams	37299	1999 RU ₁₆₃
1999 RZ ₁₆₃	14.2	0.15	20000226	356.81207	225.82620	169.02199	13.64594	0.1416416	2.8438548	37	2	1992–1999	0.67	M-v	4	Williams	37299	1999 RZ ₁₆₃
1999 RG ₁₆₅	13.4	0.15	20000226	117.45536	268.87141	338.39217	15.00059	0.1334287	3.1245405	41	3	1989–1999	0.60	M-v	2	Williams	37185	1999 RG ₁₆₅
1999 RR ₁₆₅	13.6	0.15	20000226	40.30994	0.15172	339.52769	5.24228	0.0419957	3.0193807	44	1	94 days	0.52	M-v	4	Williams		1999 RR ₁₆₅
1999 RY ₁₆₆	14.4	0.15	20000226	108.41210	230.56751	40.98097	6.19312	0.1376292	2.2396261	35	1	95 days	0.48	M-v	4	Williams	36920	1999 RY ₁₆₆
1999 RH ₁₆₇	16.1	0.15	20000226	32.31958	327.47523	45.17987	3.50575	0.3082303	2.3637641	45	1	176 days	0.69	M-v	4	Williams	37299	1999 RH ₁₆₇
1999 RQ ₁₆₇	15.1	0.15	20000226	354.17502	39.12182	20.46020	5.85004	0.1915766	2.3348330	35	1	95 days	0.54	M-v	4	Williams		1999 RQ ₁₆₇
1999 RZ ₁₆₇	15.3	0.15	20000226	11.66797	35.43939	357.17865	8.14165	0.1137641	2.2922553	40	1	94 days	0.61	M-v	4	Williams		1999 RZ ₁₆₇
1999 RA ₁₆₈	14.5	0.15	20000226	28.63480	10.97927	4.13058	4.96464	0.1673775	2.2854676	68	1	167 days	0.54	M-v	3	Williams	37299	1999 RA ₁₆₈
1999 RK ₁₆₈	14.3	0.15	20000226	36.76005	344.43787	5.17310	4.55641	0.1742089	2.7035760	67	2	1998–1999	0.58	M-v	3	Williams	37299	1999 RK ₁₆₈
1999 RU ₁₆₈	14.9	0.15	20000226	75.06914	146.14735	169.73351	2.89525	0.1303929	2.2459489	70	2	1998–1999	0.57	M-v	3	Williams	37299	1999 RU ₁₆₈
1999 RD ₁₆₉	15.3	0.15	20000226	23.72254	62.35362	315.26588	2.38759	0.2894587	2.6205833	52	1	107 days	0.56	M-v	4	Williams	37299	1999 RD ₁₆₉
1999 RH ₁₆₉	15.2	0.15	20000226	87.43623	107.80688	190.94648	5.19797	0.1365198	2.2845501	63	2	1998–1999	0.54	M-v	4	Williams	36920	1999 RH ₁₆₉
1999 RV ₁₆₉	16.4	0.15	20000226	22.62874	92.56774	297.02293	2.24417	0.2135245	2.2812665	38	1	77 days	0.55	M-v	5	Williams	36920	1999 RV ₁₆₉
1999 RH ₁₇₀	15.4	0.15	20000226	87.50291	319.77545	336.89653	3.45865	0.1872202	2.2275738	69	3	1989–1999	0.47	M-v	2	Williams	37299	1999 RH ₁₇₀
1999 RJ ₁₇₂	14.6	0.15	20000226	59.27879	12.24600	20.66533	7.17552	0.1031167	2.7481131	27	1	69 days	0.58	M-v	5	Williams		1999 RJ ₁₇₂
1999 RO ₁₇₂	14.3	0.15	20000226	343.21135	60.48676	6.59785	11.67505	0.1512821	2.3365565	31	1	105 days	0.54	M-v	4	Williams		1999 RO ₁₇₂
1999 RQ ₁₇₄	16.7	0.15	20000226	55.43896	330.39106	3.41804	6.16671	0.2329607	2.3522265	26	1	63 days	0.60	M-v	5	Williams		1999 RQ ₁₇₄
1999 RG ₁₇₅	16.1	0.15	20000226	28.24090	15.71747	354.73718	5.45811	0.1453106	2.4675095	32	1	70 days	0.40	M-v	4	Williams		1999 RG ₁₇₅
1999 RT ₁₇₅	17.0	0.15	20000226	26.81692	180.86802	199.50851	3.30663	0.2185679	2.3672734	32	1	68 days	0.43	M-v	4	Williams	36920	1999 RT ₁₇₅
1999 RK ₁₇₆	15.7	0.15	20000226	8.13093	75.72125	314.18057	3.08974	0.1857785	2.9001060	22	1	68 days	0.56	M-v	6	Williams		1999 RK ₁₇₆
1999 RM ₁₇₆	16.4	0.15	19990830	24.84821	345.75975	328.31907	3.17583	0.1464145	2.1758054	21	1	24 days	0.48			Williams		1999 RM ₁₇₆
1999 RN ₁₇₆	15.1	0.15	20000226	14.92804	176.57503	198.86740	3.82409	0.1693208	3.0874189	33	1	66 days	0.53	M-v	5	Williams	36920	1999 RN ₁₇₆
1999 RP ₁₇₆	15.2	0.15	20000226	357.89084	171.15873	241.83401	1.99383	0.1566491	2.4490500	25	1	66 days	0.31	M-v	5	Williams		1999 RP ₁₇₆
1999 RY ₁₇₆	15.4	0.15	20000226	66.45240	132.00268	191.58145	4.13223	0.0820268	2.5184314	26	3	1995–1999	0.62	M-v	4	Williams	36831	1999 RY ₁₇₆
1999 RE ₁₇₇	16.3	0.15	20000226	14.90283	52.77687	340.98416	1.83380	0.1935405	2.4358925	30	1	66 days	0.51	M-v	5	Williams		1999 RE ₁₇₇
1999 RG ₁₇₇	14.6	0.15	20000226	54.39121	64.07129	274.41857	0.59380	0.0254557	2.5419530	75	3	1997–1999	0.62	M-v	3	Williams	37299	1999 RG ₁₇₇
1999 RJ ₁₇₇	13.9	0.15	20000226	47.43064	339.47383	355.01099	11.64192	0.0636351	3.0358282	46	1	94 days	0.51	M-v	4	Williams	36920	1999 RJ ₁₇₇
1999 RW ₁₇₇	15.8	0.15	19990830	91.18947	242.37135	2.34223	8.33357	0.1042619	2.2840592	12	1	5 days	0.86		E	Williams		1999 RW ₁₇₇
1999 RY ₁₇₇	16.1	0.15	19990830	24.46943	146.03893	162.04612	10.72097	0.2174381	2.3405588	13	1	7 days	0.38			Williams		1999 RY ₁₇₇

1999 RN ₁₇₈	15.5	0.15	20000226	29.05382	222.36008	149.56746	5.30187	0.3826745	2.6611956	44	1	151 days	0.59	M-v	4	Williams	37299	1999 RN ₁₇₈
1999 RU ₁₇₈	15.0	0.15	20000226	72.64614	153.99114	147.93417	9.15074	0.2052408	2.5493979	29	1	117 days	0.39	M-v	4	Williams	36921	1999 RU ₁₇₈
1999 RW ₁₇₉	15.3	0.15	20000226	48.88838	203.00877	139.57215	10.43717	0.1617597	2.4263006	27	1	64 days	0.61	M-v	4	Williams	36921	1999 RW ₁₇₉
1999 RW ₁₈₀	15.8	0.15	20000226	65.07892	273.40511	47.84750	3.42651	0.1884097	2.3801135	26	1	71 days	0.52	M-v	5	Williams		1999 RW ₁₈₀
1999 RY ₁₈₀	13.4	0.15	20000226	55.46662	312.60659	359.73215	16.61634	0.2107456	3.1213876	52	1	87 days	0.60	M-v	4	Williams	37299	1999 RY ₁₈₀
1999 RK ₁₈₁	14.6	0.15	20000226	325.15871	74.73162	9.41572	5.74166	0.1196013	2.4499117	44	1	117 days	0.64	M-v	4	Williams	37300	1999 RK ₁₈₁
1999 RT ₁₈₁	14.5	0.15	20000226	55.70462	175.35928	153.88991	4.88778	0.0985791	2.7804553	48	4	1995–1999	0.69	M-v	1	Williams	36921	1999 RT ₁₈₁
1999 RF ₁₈₂	15.5	0.15	20000226	71.78686	321.05260	350.42290	4.49592	0.1863718	2.4457957	70	3	1994–1999	0.62	M-v	3	Williams	37300	1999 RF ₁₈₂
1999 RS ₁₈₂	16.0	0.15	20000226	41.05299	95.73856	262.29780	1.04571	0.2246905	2.4085054	52	1	107 days	0.49	M-v	3	Williams		1999 RS ₁₈₂
1999 RT ₁₈₂	14.7	0.15	20000226	343.72478	225.30256	193.32562	5.20303	0.1696337	3.0840925	30	1	70 days	0.53	M-v	5	Williams	36921	1999 RT ₁₈₂
1999 RW ₁₈₂	16.2	0.15	20000226	69.04074	330.39937	341.44446	1.64862	0.1851530	2.5849246	28	1	68 days	0.46	M-v	5	Williams		1999 RW ₁₈₂
1999 RM ₁₈₃	15.2	0.15	20000226	30.15819	7.55612	3.56753	6.55328	0.1340124	2.3960890	63	1	117 days	0.50	M-v	3	Williams	37300	1999 RM ₁₈₃
1999 RU ₁₈₄	17.5	0.15	20000226	45.26704	333.94853	20.56170	6.89845	0.2428618	2.3025247	15	1	65 days	0.39	M-v	5	Williams		1999 RU ₁₈₄
1999 RX ₁₈₄	14.1	0.15	20000226	55.35297	276.17037	53.52934	5.55841	0.1059676	2.6734530	24	2	1982–1999	0.40	M-v	4	Williams	37185	1999 RX ₁₈₄
1999 RN ₁₈₇	14.7	0.15	20000226	22.64275	344.21511	21.61807	5.81320	0.0970592	2.7395715	51	1	69 days	0.56	M-v	5	Williams		1999 RN ₁₈₇
1999 RY ₁₈₈	17.4	0.15	20000226	51.34440	345.65066	2.46566	4.79164	0.2312832	2.2401383	29	1	71 days	0.49	M-v	4	Williams		1999 RY ₁₈₈
1999 RE ₁₉₀	13.5	0.15	20000226	309.70828	232.29480	235.12035	7.15176	0.2051494	2.5375368	49	2	1987–1999	0.53	M-v	4	Williams	36921	1999 RE ₁₉₀
1999 RF ₁₉₀	16.3	0.15	20000226	26.67591	21.67566	0.74651	4.64020	0.1111440	2.2022096	30	1	68 days	0.54	M-v	5	Williams		1999 RF ₁₉₀
1999 RO ₁₉₀	15.2	0.15	20000226	18.26058	28.58462	13.08397	6.46707	0.1412455	2.4588491	62	1	91 days	0.59	M-v	4	Williams	37300	1999 RO ₁₉₀
1999 RS ₁₉₀	16.3	0.15	20000226	81.18624	22.99835	274.68498	1.60067	0.2112217	2.3603828	33	1	84 days	0.57	M-v	5	Williams		1999 RS ₁₉₀
1999 RZ ₁₉₀	15.9	0.15	20000226	51.24791	250.12148	68.67784	3.08381	0.3271844	2.6354453	45	2	1998–1999	0.60	M-v	4	Williams	36921	1999 RZ ₁₉₀
1999 RY ₁₉₁	13.2	0.15	20000226	38.05020	264.24976	86.57901	15.60363	0.0983631	2.6965548	30	1	80 days	0.44	M-v	4	Williams	37300	1999 RY ₁₉₁
1999 RA ₁₉₂	13.8	0.15	20000226	128.85961	296.59428	332.30567	12.79095	0.1509591	2.5955765	55	2	1990–1999	0.57	M-v	4	Williams	37300	1999 RA ₁₉₂
1999 RF ₁₉₂	13.5	0.15	20000226	28.71270	331.56070	14.77807	10.53105	0.1237862	3.0360268	47	1	81 days	0.57	M-v	4	Williams	37300	1999 RF ₁₉₂
1999 RC ₁₉₃	15.5	0.15	20000226	43.38620	334.03911	21.90403	5.55091	0.2012121	2.2386055	49	1	119 days	0.32	M-v	3	Williams		1999 RC ₁₉₃
1999 RG ₁₉₃	12.9	0.15	20000226	282.95634	9.19801	106.08054	10.84868	0.0621132	3.0921595	41	2	1998–1999	0.69	M-v	4	Williams	37300	1999 RG ₁₉₃
1999 RO ₁₉₃	12.7	0.15	20000226	14.11956	39.34865	353.26508	12.83727	0.1750352	2.6870109	92	4	1982–2000	0.56	M-v	1	Williams	37300	1999 RO ₁₉₃
1999 RQ ₁₉₃	14.7	0.15	20000226	112.16672	158.68982	132.59817	5.66552	0.1925592	2.3345705	47	2	1998–2000	0.58	M-v	4	Williams	37300	1999 RQ ₁₉₃
1999 RR ₁₉₃	13.0	0.15	20000226	346.33806	262.96665	167.56074	10.28948	0.0702820	3.5162472	30	1	118 days	0.51	M-v	4	Williams		1999 RR ₁₉₃
1999 RS ₁₉₃	15.8	0.15	20000226	2.40646	202.32693	213.56015	4.32247	0.2245631	2.3789311	30	1	91 days	0.55	M-v	5	Williams		1999 RS ₁₉₃
1999 RU ₁₉₃	14.0	0.15	20000226	35.51885	12.17675	333.61373	13.06849	0.1488418	3.1428729	55	2	1960–1999	0.61	M-v	3	Williams	37300	1999 RU ₁₉₃
1999 RV ₁₉₃	14.0	0.15	20000226	357.29462	187.80682	221.47343	5.31196	0.1696160	2.6479965	53	2	1995–1999	0.57	M-v	4	Williams	37185	1999 RV ₁₉₃
1999 RX ₁₉₃	15.0	0.15	20000226	61.44822	8.22105	323.71595	6.99330	0.1942939	2.3026836	46	1	175 days	0.47	M-v	3	Williams	37300	1999 RX ₁₉₃
1999 RB ₁₉₄	14.8	0.15	20000226	354.82027	144.67263	277.50647	3.37817	0.2257697	2.5983250	38	1	117 days	0.56	M-v	4	Williams	37300	1999 RB ₁₉₄
1999 RD ₁₉₄	14.6	0.15	20000226	173.79290	4.67654	216.63566	5.52106	0.1066277	2.2210818	71	3	1995–1999	0.64	M-v	3	Williams	37300	1999 RD ₁₉₄
1999 RG ₁₉₄	14.9	0.15	20000226	53.63460	114.06553	202.43647	6.67709	0.3107139	2.8715565	50	3	1993–1999	0.62	M-v	2	Williams	37300	1999 RG ₁₉₄
1999 RH ₁₉₄	14.4	0.15	20000226	62.49393	34.94567	291.37676	3.86047	0.1145643	2.6055451	32	1	116 days	0.51	M-v	4	Williams	36921	1999 RH ₁₉₄
1999 RK ₁₉₄	14.8	0.15	20000226	24.77632	155.83638	223.78044	3.54219	0.2502574	2.6072580	50	2	1978–1999	0.51	M-v	3	Williams	37300	1999 RK ₁₉₄
1999 RN ₁₉₄	15.2	0.15	20000226	348.86983	184.07047	251.33194	3.45325	0.1981301	2.3505945	46	2	1990–1999	0.84	M-v	4	Williams	37300	1999 RN ₁₉₄
1999 RO ₁₉₄	13.7	0.15	20000226	44.68787	131.83880	214.38005	3.33501	0.1096814	2.8025784	70	3	1994–1999	0.46	M-v	2	Williams	37300	1999 RO ₁₉₄
1999 RR ₁₉₄	14.9	0.15	20000226	60.08407	58.57362	275.01486	3.44685	0.1969618	2.4099242	49	1	122 days	0.62	M-v	4	Williams	37300	1999 RR ₁₉₄
1999 RS ₁₉₄	13.0	0.15	20000226	6.15280	157.47976	231.53433	5.19831	0.1519336	3.1384892	51	2	1960–1999	0.44	M-v	3	Williams	37300	1999 RS ₁₉₄
1999 RE ₁₉₅	15.2	0.15	20000226	44.85605	114.01856	237.09939	5.65092	0.2175138	2.3177382	26	2	1992–1999	0.55	M-v	3	Williams	37186	1999 RE ₁₉₅
1999 RB ₁₉₅	14.9	0.15	20000226	25.53797	66.98620	298.32602	12.28253	0.2095341	2.5746192	47	1	148 days	0.56	M-v	3 D	Williams		1999 RB ₁₉₅
1999 RV ₁₉₅	15.9	0.15	20000226	22.53959	124.05732	253.50318	8.09792	0.4016564	2.7666854	35	1	117 days	0.49	M-v	4 D	Williams		1999 RV ₁₉₅
1999 RF ₁₉₆	14.3	0.15	20000226	29.09868	164.66166	196.41165	14.98588	0.1440467	2.6159457	35	2	1998–1999	0.58	M-v	3	Williams	36831	1999 RF ₁₉₆
1999 RS ₁₉₆	12.9	0.15	20000226	156.42421	8.61580	215.42330	8.97820	0.0328726	2.9935886	35	4	1982–1999	0.72	M-v	3	Williams	37186	1999 RS ₁₉₆
1999 RT ₁₉₆	14.4	0.15	20000226	350.70124	149.14625	265.83966	6.32637	0.0939438	2.2909342	27	2	1989–1999	0.61	M-v	4	Williams	37186	1999 RT ₁₉₆
1999 RU ₁₉₆	13.3	0.15	20000226	297.16168	217.10186	225.64697	9.56934	0.0319343	3.0104551	28	3	1982–1999	0.76	M-v	3	Williams	37186	1999 RU ₁₉₆
1999 RX ₁₉₆	13.8	0.15	20000226	62.12002	91.00919	217.24234	12.84054	0.1960293	2.9282235	52	2	1998–1999	0.70	M-v	3	Williams	37186	1999 RX ₁₉₆
1999 RC ₁₉₇	14.1	0.15	20000226	113.18093	339.06870	286.85615	6.02091	0.1133115	2.7118272	36	4	1994–1999	0.54	M-v	1	Williams	37186	1999 RC ₁₉₇
1999 RG ₁₉₇	14.7	0.15	20000226	58.12607	137.37549	198.51125	12.30546	0.0955725	2.4649877	74	2	1998–1999	0.62	M-v	3	Williams	37300	1999 RG ₁₉₇
1999 RL ₁₉₇	12.4	0.15	20000226	311.20498	192.08261	254.47480	8.57664	0.0711563	3.0628039	62	3	1989–1999	0.66	M-v	3	Williams	37300	1999 RL ₁₉₇

1999 RO ₁₉₇	14.3	0.15	20000226	329.51046	150.35835	296.04147	5.99954	0.0804806	2.2754462	56	1	168 days	0.52	M-v	4	Williams	37300	1999 RO ₁₉₇
1999 RU ₁₉₇	13.4	0.15	20000226	230.50966	304.23603	217.86431	14.00163	0.0482270	2.5867553	53	2	1998–1999	0.53	M-v	3	Williams	37186	1999 RU ₁₉₇
1999 RV ₁₉₇	15.2	0.15	20000226	17.47332	162.05904	227.76623	7.56171	0.1183353	2.2992891	32	1	64 days	0.49	M-v	4	Williams	36922	1999 RV ₁₉₇
1999 RR ₁₉₈	14.3	0.15	20000226	34.61189	164.69881	202.00640	5.02382	0.2128387	2.4311647	80	2	1998–1999	0.44	M-v	3	Williams	37300	1999 RR ₁₉₈
1999 RG ₁₉₉	14.7	0.15	20000226	23.34269	38.15523	354.88776	13.02810	0.2703725	2.6459094	45	1	124 days	0.44	M-v	3	Williams		1999 RG ₁₉₉
1999 RM ₁₉₉	14.0	0.15	20000226	57.06322	359.21232	339.82844	10.85069	0.2673774	2.3947627	45	4	1973–1999	0.59	M-v	2	Williams	37300	1999 RM ₁₉₉
1999 RO ₁₉₉	13.8	0.15	20000226	343.29658	212.82036	228.73664	7.94468	0.2215459	2.7280350	43	1	90 days	0.42	M-v	4	Williams	37300	1999 RO ₁₉₉
1999 RP ₁₉₉	12.8	0.15	20000226	109.89697	341.45661	293.43293	7.09425	0.1335432	2.7307169	70	3	1997–2000	0.49	M-v	2	Williams	37300	1999 RP ₁₉₉
1999 RZ ₁₉₉	14.7	0.15	20000226	22.17063	114.93374	262.47709	11.51290	0.1623136	2.6572118	41	1	117 days	0.50	M-v	4	Williams	37300	1999 RZ ₁₉₉
1999 RY ₂₀₀	14.6	0.15	20000226	12.43750	165.91529	223.77383	15.88135	0.1333232	2.6555595	31	1	60 days	0.50	M-v	4	Williams		1999 RY ₂₀₀
1999 RB ₂₀₁	14.7	0.15	20000226	47.36797	112.65119	233.87702	12.06768	0.1830966	2.5652072	45	3	1991–1999	0.59	M-v	2	Williams	37301	1999 RB ₂₀₁
1999 RK ₂₀₁	14.4	0.15	19990919	312.53312	168.59803	248.45326	9.34108	0.0848192	3.0376592	32	1	58 days	0.51			Williams		1999 RK ₂₀₁
1999 RL ₂₀₁	14.1	0.15	20000226	359.84970	212.50236	202.87030	18.55897	0.3272078	3.1689225	45	1	138 days	0.46	M-v	4	Williams	37301	1999 RL ₂₀₁
1999 RQ ₂₀₁	14.8	0.15	20000226	350.34254	194.89132	226.41591	12.61998	0.1301820	2.5985449	34	3	1991–1999	0.56	M-v	3	Williams	37187	1999 RQ ₂₀₁
1999 RS ₂₀₁	13.4	0.15	20000226	327.88409	199.45678	242.42247	13.43749	0.1779002	3.1612379	40	1	121 days	0.59	M-v	4	Williams	37301	1999 RS ₂₀₁
1999 RE ₂₀₂	13.2	0.15	20000226	341.83378	145.60975	280.57221	9.63209	0.1308088	2.9523783	46	1	123 days	0.55	M-v	4	Williams	37301	1999 RE ₂₀₂
1999 RJ ₂₀₂	14.4	0.15	20000226	90.75267	10.77825	276.49051	6.72696	0.2220514	2.5442622	48	2	1998–1999	0.63	M-v	4	Williams	36832	1999 RJ ₂₀₂
1999 RL ₂₀₂	15.2	0.15	19990919	340.00744	163.23756	230.13645	8.70694	0.1865475	3.0678010	25	1	58 days	0.47			Williams		1999 RL ₂₀₂
1999 RA ₂₀₄	13.8	0.15	20000226	328.24490	111.36581	347.54345	28.06303	0.2303328	2.6477560	45	1	89 days	0.50	M-v	4	Williams	37301	1999 RA ₂₀₄
1999 RF ₂₀₄	13.9	0.15	20000226	67.76115	61.41726	255.60223	7.96131	0.1581524	2.8150391	58	2	1998–1999	0.69	M-v	3	Williams	37301	1999 RF ₂₀₄
1999 RP ₂₀₄	14.6	0.15	19990919	10.94886	94.90820	255.41379	9.53122	0.1273289	2.9652097	22	1	58 days	0.48			Williams		1999 RP ₂₀₄
1999 RQ ₂₀₄	12.8	0.15	20000226	337.83022	145.71785	277.20757	9.58462	0.0570209	3.0651408	56	3	1978–2000	0.51	M-v	2	Williams	37301	1999 RQ ₂₀₄
1999 RY ₂₀₄	14.1	0.15	20000226	14.50500	78.16846	308.26515	15.17518	0.1542361	3.0392604	24	1	66 days	0.37	M-v	4	Williams		1999 RY ₂₀₄
1999 RK ₂₀₅	13.5	0.15	20000226	55.33561	73.99370	253.04259	13.41338	0.1689481	3.2175193	36	1	169 days	0.62	M-v	4	Williams	36922	1999 RK ₂₀₅
1999 RP ₂₀₅	14.8	0.15	20000226	19.70915	179.93871	209.13380	16.98549	0.1821588	2.6221619	79	1	170 days	0.61	M-v	3	Williams	37301	1999 RP ₂₀₅
1999 RR ₂₀₅	13.0	0.15	20000226	351.63775	165.19565	247.48032	10.39880	0.1078092	3.0604479	45	1	168 days	0.48	M-v	4	Williams	37301	1999 RR ₂₀₅
1999 RW ₂₀₅	14.5	0.15	20000226	166.38381	348.44948	238.96294	8.46074	0.1592614	2.3691036	51	3	1981–1999	0.57	M-v	3	Williams	36833	1999 RW ₂₀₅
1999 RB ₂₀₆	15.5	0.15	20000226	18.54636	97.86449	299.80215	6.24057	0.1049567	2.2863832	37	1	88 days	0.69	M-v	4	Williams	37301	1999 RB ₂₀₆
1999 RL ₂₀₆	16.0	0.15	20000226	48.87628	159.30034	199.18223	23.85086	0.1690232	2.2639047	61	1	68 days	0.48	M-v	4	Williams		1999 RL ₂₀₆
1999 RR ₂₀₆	15.7	0.15	20000226	32.11342	137.11987	233.69876	11.58599	0.3113740	2.6829953	41	1	116 days	0.55	M-v	3	Williams		1999 RR ₂₀₆
1999 RT ₂₀₆	12.3	0.15	20000226	33.63242	76.79313	284.32541	13.18403	0.1184670	3.1424454	46	1	139 days	0.47	M-v	3	Williams	37301	1999 RT ₂₀₆
1999 RU ₂₀₆	13.3	0.15	20000226	9.88639	110.76470	295.59664	11.75234	0.2154885	2.6803021	67	3	1990–1999	0.55	M-v	2	Williams	37301	1999 RU ₂₀₆
1999 RC ₂₀₇	14.1	0.15	20000226	354.64296	170.71618	244.01522	11.94279	0.1571485	3.1001328	39	1	89 days	0.52	M-v	4	Williams	37301	1999 RC ₂₀₇
1999 RG ₂₀₇	14.7	0.15	19990919	316.09368	143.93134	275.65640	8.23023	0.0849147	3.1720906	24	1	58 days	0.45			Williams		1999 RG ₂₀₇
1999 RJ ₂₀₇	13.9	0.15	20000226	7.08501	136.92947	257.25606	9.08533	0.0566005	2.9964309	36	1	121 days	0.58	M-v	4	Williams		1999 RJ ₂₀₇
1999 RP ₂₀₇	15.6	0.15	20000226	28.26343	69.33189	321.23367	8.77030	0.1655660	2.2628458	28	1	89 days	0.45	M-v	4	Williams	37301	1999 RP ₂₀₇
1999 RQ ₂₀₇	15.4	0.15	19990919	11.07273	47.95117	300.04178	6.68079	0.2325817	2.8051057	43	1	58 days	0.52			Williams		1999 RQ ₂₀₇
1999 RR ₂₀₇	15.0	0.15	20000226	59.73127	121.46132	222.44003	7.60940	0.1680025	2.2874905	93	3	1992–2000	0.55	M-v	2	Williams	37301	1999 RR ₂₀₇
1999 RW ₂₀₇	17.2	0.15	19990919	350.71494	111.91149	268.53225	4.66618	0.2457018	2.2579819	31	1	58 days	0.48			Williams		1999 RW ₂₀₇
1999 RY ₂₀₇	14.9	0.15	20000226	25.70887	180.78230	208.80644	13.89329	0.2655292	2.5208499	73	1	170 days	0.53	M-v	3	Williams	37301	1999 RY ₂₀₇
1999 RC ₂₀₈	14.6	0.15	20000226	356.08959	189.30797	227.17721	13.79054	0.0836489	2.6087109	42	1	90 days	0.53	M-v	4	Williams		1999 RC ₂₀₈
1999 RG ₂₀₈	15.4	0.15	20000226	39.06331	43.91368	323.82712	13.66059	0.1238351	2.6340018	23	1	67 days	0.61	M-v	4	Williams		1999 RG ₂₀₈
1999 RH ₂₀₈	14.8	0.15	20000226	1.57096	105.35357	319.33153	12.67708	0.2224985	2.6139846	56	1	99 days	0.53	M-v	4	Williams		1999 RH ₂₀₈
1999 RN ₂₀₈	15.7	0.15	20000226	2.89915	185.97173	236.46209	7.44724	0.2207713	2.5246163	27	1	90 days	0.55	M-v	4	Williams	37301	1999 RN ₂₀₈
1999 RT ₂₀₈	14.1	0.15	20000226	108.70887	58.92875	224.82922	10.45223	0.0709697	2.9670377	35	2	1998–1999	0.67	M-v	4	Williams	36833	1999 RT ₂₀₈
1999 RW ₂₀₈	13.1	0.15	20000226	7.00055	177.33747	233.78524	6.48301	0.2199809	2.7096172	59	1	168 days	0.54	M-v	4	Williams	37301	1999 RW ₂₀₈
1999 RB ₂₀₉	13.3	0.15	20000226	19.12355	63.09460	319.90231	7.61444	0.1660427	3.1511972	50	1	168 days	0.50	M-v	3	Williams	37301	1999 RB ₂₀₉
1999 RC ₂₀₉	15.5	0.15	20000226	31.27314	107.76178	274.69028	4.68393	0.1106348	2.3766659	41	1	82 days	0.59	M-v	4	Williams	37301	1999 RC ₂₀₉
1999 RH ₂₀₉	15.0	0.15	20000226	23.69465	166.28499	209.99717	17.77951	0.1673998	3.1601547	27	1	92 days	0.49	M-v	4	Williams	37301	1999 RH ₂₀₉
1999 RM ₂₀₉	13.5	0.15	20000226	343.97787	160.76141	276.77713	9.79951	0.1975862	3.0775364	39	2	1998–1999	0.50	M-v	3	Williams	37187	1999 RM ₂₀₉
1999 RX ₂₀₉	14.0	0.15	20000226	116.33026	294.36796	339.44575	12.90440	0.1774994	2.5628573	54	3	1977–1999	0.51	M-v	2	Williams	37187	1999 RX ₂₀₉
1999 RB ₂₁₀	15.1	0.15	20000226	36.73211	75.19539	304.85640	4.32952	0.2145612	2.3188835	56	1	170 days	0.48	M-v	3	Williams		1999 RB ₂₁₀
1999 RD ₂₁₀	14.7	0.15	20000226	25.20827	73.95853	321.42131	6.09389	0.2278712	2.4360282	45	1	167 days	0.40	M-v	3	Williams	37301	1999 RD ₂₁₀

1999 RO ₂₁₀	15.8	0.15	20000226	52.87779	97.92978	263.77777	5.77776	0.1713005	2.2157106	30	1	113 days	0.48	M-v	4	Williams	36923	1999 RO ₂₁₀
1999 RS ₂₁₀	14.8	0.15	20000226	61.50002	115.00577	222.09296	13.88600	0.1645642	2.6331592	63	3	1995–1999	0.52	M-v	2	Williams	37187	1999 RS ₂₁₀
1999 RF ₂₁₁	14.3	0.15	20000226	49.69854	71.82245	293.92705	5.07110	0.0494769	2.3524350	59	3	1997–2000	0.56	M-v	2	Williams	37187	1999 RF ₂₁₁
1999 RJ ₂₁₁	14.0	0.15	20000226	266.14212	164.49931	349.20422	12.88984	0.1011609	2.6913463	35	2	1977–1999	0.66	M-v	5	Williams	37301	1999 RJ ₂₁₁
1999 RM ₂₁₁	13.9	0.15	20000226	227.56314	215.92798	327.06516	9.45598	0.0129515	2.8022965	27	1	83 days	0.51	M-v	4	Williams	37301	1999 RM ₂₁₁
1999 RN ₂₁₁	17.1	0.15	20000226	41.88244	54.57004	306.09559	5.11940	0.3567903	2.5933591	30	1	67 days	0.78	M-v	5	Williams	36923	1999 RN ₂₁₁
1999 RO ₂₁₁	13.5	0.15	20000226	12.26913	189.90306	206.92105	27.45432	0.1642862	3.1760949	99	1	173 days	0.59	M-v	3	Williams	37301	1999 RO ₂₁₁
1999 RQ ₂₁₁	14.3	0.15	20000226	34.86261	42.63409	331.57100	9.98521	0.2117125	2.7348453	50	1	170 days	0.59	M-v	3	Williams	37301	1999 RQ ₂₁₁
1999 RS ₂₁₁	14.8	0.15	20000226	27.93655	87.23167	298.17942	7.17308	0.2261445	2.7758749	17	1	91 days	0.43	M-v	4	Williams		1999 RS ₂₁₁
1999 RU ₂₁₁	13.1	0.15	20000226	34.38617	27.82429	339.81925	11.80213	0.2010089	3.1416010	60	3	1988–2000	0.53	M-v	2	Williams	37301	1999 RU ₂₁₁
1999 RV ₂₁₁	14.7	0.15	20000226	144.94703	332.43576	292.41937	6.32434	0.0970063	2.2961622	43	2	1998–2000	0.63	M-v	3	Williams	37188	1999 RV ₂₁₁
1999 RA ₂₁₂	13.6	0.15	20000226	303.02016	152.93770	329.46484	10.04703	0.1327941	3.0665370	34	1	123 days	0.57	M-v	5	Williams		1999 RA ₂₁₂
1999 RC ₂₁₂	15.2	0.15	20000226	49.61554	55.37100	306.72865	6.08780	0.2296255	2.4011958	48	1	120 days	0.57	M-v	4	Williams	37301	1999 RC ₂₁₂
1999 RH ₂₁₂	15.3	0.15	19990919	332.49584	140.11008	259.49613	8.24055	0.0897267	3.0579548	24	1	58 days	0.66			Williams		1999 RH ₂₁₂
1999 RK ₂₁₂	14.9	0.15	19990919	165.64497	335.00872	224.95534	13.90162	0.0308462	2.6002923	35	1	58 days	0.68			Williams		1999 RK ₂₁₂
1999 RO ₂₁₂	14.2	0.15	20000226	4.16097	173.98216	235.48010	6.30311	0.1383945	2.7536913	75	3	1981–2000	0.52	M-v	2	Williams	37188	1999 RO ₂₁₂
1999 RP ₂₁₃	16.2	0.15	20000226	343.31926	129.30507	323.40967	6.65447	0.2418442	2.3510887	45	1	68 days	0.58	M-v	5	Williams	36923	1999 RP ₂₁₃
1999 RM ₂₁₄	13.6	0.15	20000226	63.45725	298.79185	29.79260	8.85935	0.1246754	3.0814365	90	3	1992–2000	0.55	M-v	2	Williams	37301	1999 RM ₂₁₄
1999 RN ₂₁₄	13.4	0.15	20000226	359.89129	246.10503	162.89185	5.50967	0.0598963	2.7455896	63	4	1981–2000	0.55	M-v	2	Williams	37301	1999 RN ₂₁₄
1999 RO ₂₁₄	13.3	0.15	20000226	326.98147	84.75549	356.26373	10.81332	0.1240322	3.0274267	44	1	124 days	0.62	M-v	4	Williams	37301	1999 RO ₂₁₄
1999 RV ₂₁₄	7.9	0.15	19990919	180.12926	357.83118	144.62927	1.14909	0.0798094	45.0319991	8	1	34 days	0.15			E Marsden		1999 RV ₂₁₄
1999 RW ₂₁₄	7.4	0.15	19990919	0.00000	1.00375	0.36694	1.35929	0.0000000	42.9472042	9	1	64 days	0.13			E Marsden		1999 RW ₂₁₄
1999 RX ₂₁₄	6.9	0.15	19991009	0.00000	1.96226	3.77664	4.78017	0.0000000	45.5524039	11	1	65 days	0.20			E Marsden		1999 RX ₂₁₄
1999 RY ₂₁₄	7.4	0.15	19991009	0.11166	41.59115	327.92057	13.84418	0.1335742	43.7411278	11	1	65 days	0.21			E Marsden		1999 RY ₂₁₄
1999 RZ ₂₁₄	7.9	0.15	19991009	8.37641	117.65923	214.77617	20.30056	0.5738496	87.1874528	9	1	65 days	0.14			Marsden		1999 RZ ₂₁₄
1999 RA ₂₁₅	7.4	0.15	19990830	0.06290	182.58807	132.63089	25.13604	0.0000000	43.0074686	6	1	1 days	0.15			E Marsden		1999 RA ₂₁₅
1999 RB ₂₁₅	9.4	0.15	19991009	0.09578	1.54846	4.99749	7.81353	0.3457487	48.3152024	13	1	66 days	0.22			E Marsden		1999 RB ₂₁₅
1999 RC ₂₁₅	6.8	0.15	19990919	0.00000	178.14528	189.01307	1.41767	0.0000000	43.4967766	9	1	64 days	0.22			E Marsden		1999 RC ₂₁₅
1999 RD ₂₁₅	7.5	0.15	19991009	2.79933	140.32499	210.19235	26.05522	0.6764431	117.0838512	9	1	65 days	0.12			Marsden		1999 RD ₂₁₅
1999 RE ₂₁₅	6.5	0.15	19991009	327.46689	259.21234	149.28580	1.33579	0.4638544	58.3534674	7	1	64 days	0.12			E Marsden		1999 RE ₂₁₅
1999 RF ₂₁₅	7.4	0.15	19991009	0.00000	0.19570	327.57913	3.67497	0.0000000	43.9641315	8	1	65 days	0.20			E Marsden		1999 RF ₂₁₅
1999 RG ₂₁₅	7.4	0.15	19990919	0.00000	46.71140	290.63557	0.23457	0.0000000	45.1829554	8	1	34 days	0.10			E Marsden		1999 RG ₂₁₅
1999 RH ₂₁₅	8.1	0.15	19991009	34.94940	355.46057	277.12305	10.23459	0.3481731	47.8895525	10	1	66 days	0.23			E Marsden		1999 RH ₂₁₅
1999 RJ ₂₁₅	7.3	0.15	19991009	1.91934	23.46847	315.06324	19.80063	0.3961615	58.0418801	11	1	63 days	0.16			Marsden		1999 RJ ₂₁₅
1999 RK ₂₁₅	7.7	0.15	19991009	110.96558	103.44327	137.76087	11.49919	0.1664410	39.7291329	11	1	65 days	0.22			E Marsden		1999 RK ₂₁₅
1999 SE	14.2	0.15	20000226	29.03472	174.10719	195.25121	12.01288	0.2031592	3.1967677	69	1	169 days	0.57	M-v	3	Williams	37301	1999 SE
1999 SG	14.4	0.15	20000226	308.43831	112.02153	8.17447	5.32188	0.1143555	2.3020856	74	1	147 days	0.59	M-v	4	Williams	37301	1999 SG
1999 SH	15.5	0.15	20000226	41.68249	339.70564	17.99182	4.31628	0.2847067	2.6897212	49	1	81 days	0.46	M-v	4	Williams	37301	1999 SH
1999 SJ	15.4	0.15	20000226	92.41397	130.26438	169.64068	2.20772	0.2108347	2.3462313	56	2	1998–1999	0.61	M-v	4	Williams	36923	1999 SJ
1999 SL	13.6	0.15	20000226	17.50213	10.98176	30.71481	8.68473	0.2287641	2.8001320	104	1	112 days	0.51	M-v	3	Williams	37301	1999 SL
1999 SH ₁	15.5	0.15	20000226	34.80289	173.36849	191.97610	9.06187	0.2387774	2.4340292	48	1	94 days	0.61	M-v	4	Williams		1999 SH ₁
1999 SN ₁	13.0	0.15	20000226	220.09053	183.04179	39.43176	14.37869	0.1300245	2.6197209	59	1	89 days	0.55	M-v	4	Williams	37301	1999 SN ₁
1999 SO ₁	13.5	0.15	20000226	343.68029	43.91260	28.04965	6.44023	0.0878874	2.7124041	109	3	1990–2000	0.50	M-v	2	Williams	37301	1999 SO ₁
1999 SQ ₁	16.5	0.15	19991009	15.91898	338.43547	14.12317	2.52037	0.2297609	2.6248333	36	1	57 days	0.47			D Williams		1999 SQ ₁
1999 SR ₁	17.0	0.15	19991009	50.64206	264.01091	44.06157	7.61565	0.1907407	2.2118916	25	1	53 days	0.54			Williams		1999 SR ₁
1999 SU ₁	13.0	0.15	20000226	35.59983	29.50405	352.94697	12.54896	0.1392494	2.7224322	56	1	108 days	0.39	M-v	3	Williams	37301	1999 SU ₁
1999 SZ ₁	15.3	0.15	20000226	107.24171	102.25685	193.65810	23.10944	0.0799560	1.9202910	33	1	67 days	0.43	M-v	4	Williams		1999 SZ ₁
1999 SA ₂	16.0	0.15	20000226	44.72481	168.46090	204.51714	22.05627	0.0827774	1.9221397	30	1	80 days	0.52	M-v	4	Williams		1999 SA ₂
1999 SB ₂	13.7	0.15	20000226	18.94014	118.83196	267.81622	12.59687	0.1994064	2.6409510	53	1	169 days	0.55	M-v	3	Williams	37302	1999 SB ₂
1999 SC ₂	13.8	0.15	20000226	15.72788	196.10644	206.18568	24.11969	0.2477189	2.3709291	63	1	113 days	0.48	M-v	3	Williams	37302	1999 SC ₂
1999 SF ₂	14.6	0.15	20000226	24.39665	270.41468	133.63591	3.35964	0.1831007	2.4282438	62	4	1991–2000	0.65	M-v	2	Williams	37302	1999 SF ₂
1999 SG ₂	13.9	0.15	20000226	270.52836	110.26000	51.41215	9.44749	0.0989817	2.4341530	50	1	76 days	0.60	M-v	4	Williams	37302	1999 SG ₂
1999 SH ₂	15.5	0.15	20000226	34.96894	254.05239	146.18379	2.44700	0.1972694	2.4105183	78	2	1995–2000	0.65	M-v	3	Williams	37302	1999 SH ₂

1999 SO ₂	14.9	0.15	20000226	16.66348	92.37817	336.08170	21.89409	0.3674742	2.5526166	45	1	159 days	0.59	M-v	3	Williams	36923	1999 SO ₂
1999 SQ ₂	15.6	0.15	19991009	343.63959	2.23721	28.74716	14.30122	0.1839766	2.6206514	49	1	53 days	0.58			Williams		1999 SQ ₂
1999 SS ₂	14.6	0.15	20000226	19.18898	358.44921	23.22670	18.67759	0.1731363	2.7777783	73	4	1976–1999	0.63	M-v	2	Williams	37188	1999 SS ₂
1999 SV ₂	14.4	0.15	20000226	16.13976	37.29403	10.65914	9.26413	0.0607347	2.9666983	47	1	104 days	0.63	M-v	4	Williams	37302	1999 SV ₂
1999 SB ₃	14.2	0.15	20000226	23.98556	60.07414	354.48983	32.10448	0.3391716	2.7651011	59	1	95 days	0.56	M-v	4	Williams		1999 SB ₃
1999 SC ₃	15.1	0.15	20000226	81.08590	50.60090	316.62567	23.14891	0.0629113	1.8658293	46	1	160 days	0.61	M-v	4	Williams	36924	1999 SC ₃
1999 SD ₃	14.5	0.15	20000226	2.57797	117.37930	327.90218	29.95004	0.3180198	2.6459230	30	1	84 days	0.46	M-v	4	Williams		1999 SD ₃
1999 SK ₃	14.4	0.15	20000226	1.09347	133.13151	301.18836	23.44713	0.2377283	2.3281439	30	1	104 days	0.48	M-v	4	Williams		1999 SK ₃
1999 SN ₃	13.5	0.15	20000226	94.01745	48.62925	258.56581	23.53694	0.2075381	2.2780993	37	3	1989–2000	0.69	M-v	2	Williams	37188	1999 SN ₃
1999 SP ₃	14.6	0.15	20000226	38.71667	99.88891	295.71821	26.67761	0.4081618	2.6455636	41	1	98 days	0.50	M-v	4	Williams		1999 SP ₃
1999 SS ₃	11.9	0.15	20000226	19.80915	78.22385	355.76549	21.63535	0.0923725	3.1681735	50	5	1976–1999	0.72	M-v	2	Williams	36834	1999 SS ₃
1999 SU ₃	16.9	0.15	19991009	353.55914	1.93043	17.99374	9.96319	0.2705849	2.7001433	21	1	56 days	0.69			Williams		1999 SU ₃
1999 SX ₃	15.6	0.15	20000226	61.22886	137.01448	211.98734	1.77946	0.0248779	2.2573220	53	2	1998–1999	0.56	M-v	4	Williams	37302	1999 SX ₃
1999 SY ₃	13.6	0.15	20000226	97.89345	292.95369	351.46936	0.51101	0.1060545	3.2502494	56	4	1993–1999	0.79	M-v	1	Williams	36924	1999 SY ₃
1999 SZ ₃	13.4	0.15	20000226	210.23205	212.58422	336.38836	1.12981	0.0482914	2.9248763	65	3	1997–1999	0.63	M-v	3	Williams	36924	1999 SZ ₃
1999 SG ₄	12.9	0.15	20000226	265.48191	109.15340	54.41279	14.28366	0.1176647	2.5784132	48	1	139 days	0.48	M-v	4	Williams	37302	1999 SG ₄
1999 SL ₄	13.4	0.15	20000226	2.65871	214.19038	199.29971	4.71867	0.2924016	3.1191309	77	3	1977–2000	0.62	M-v	3	Williams	37302	1999 SL ₄
1999 SM ₄	15.7	0.15	19991009	33.40278	321.00057	6.87507	15.19503	0.1507105	2.5604467	30	1	36 days	0.79			Williams		1999 SM ₄
1999 SO ₄	14.3	0.15	20000226	338.14718	66.43958	18.11724	4.93453	0.0538004	2.3569281	66	1	124 days	0.44	M-v	4	Williams	37302	1999 SO ₄
1999 SP ₄	14.2	0.15	20000226	357.50710	226.94389	199.73507	8.95050	0.1894647	2.7596130	73	3	1976–2000	0.67	M-v	3	Williams	37302	1999 SP ₄
1999 SQ ₄	13.0	0.15	20000226	75.39088	128.72950	201.15533	15.52222	0.0079275	3.1038886	51	2	1997–2000	0.56	M-v	3	Williams	37302	1999 SQ ₄
1999 SR ₄	12.6	0.15	20000226	191.18133	17.99035	198.50094	8.90898	0.0853098	2.8057531	82	5	1985–2000	0.56	M-v	2	Williams	37302	1999 SR ₄
1999 SS ₄	15.8	0.15	19991009	30.53316	287.76072	43.70371	0.68827	0.2253131	2.3431452	40	1	43 days	0.85			Williams		1999 SS ₄
1999 SX ₄	15.3	0.15	19991009	338.82686	258.77907	145.63308	3.93687	0.1997433	2.7405210	63	1	59 days	0.69			Williams		1999 SX ₄
1999 SB ₅	14.2	0.15	20000226	75.03110	277.30257	67.13969	22.99782	0.1027035	1.9599594	59	1	102 days	0.45	M-v	3	Williams	37302	1999 SB ₅
1999 SD ₅	13.6	0.15	20000226	1.60917	262.31928	137.72411	18.92328	0.2128488	3.1776867	28	1	63 days	0.46	M-v	5	Williams		1999 SD ₅
1999 SP ₅	15.3	0.15	20000226	28.15995	352.02818	23.55290	25.85932	0.1929967	2.2740218	25	1	68 days	0.49	M-v	4	Williams		1999 SP ₅
1999 SR ₅	15.8	0.15	20000226	117.24317	272.32483	13.98978	21.15754	0.0773560	1.9099388	22	1	62 days	0.51	M-v	4	Williams		1999 SR ₅
1999 SY ₅	13.8	0.15	20000226	34.58109	272.37240	130.55626	23.23568	0.3203203	2.3277597	24	1	102 days	0.42	M-v	4	Williams	37302	1999 SY ₅
1999 SZ ₅	13.9	0.15	20000226	31.15915	239.44788	161.47302	22.63112	0.3178464	2.4287915	71	3	1989–2000	0.65	M-v	2	Williams	37302	1999 SZ ₅
1999 SH ₆	14.8	0.15	20000226	160.13976	112.72446	121.21335	8.16446	0.0933100	2.2350648	41	3	1988–1999	0.47	M-v	2	Williams	37188	1999 SH ₆
1999 SL ₆	14.8	0.15	20000226	61.48667	214.24362	110.78993	11.07868	0.1496539	2.5854602	27	2	1998–1999	0.62	M-v	4	Williams	36835	1999 SL ₆
1999 SN ₆	13.0	0.15	20000226	32.78154	248.16049	116.74031	10.78706	0.1150855	2.9949940	43	1	123 days	0.42	M-v	3	Williams		1999 SN ₆
1999 SU ₆	13.8	0.15	20000226	82.28918	1.06906	322.51760	0.89447	0.0779186	2.9046519	70	1	102 days	0.46	M-v	4	Williams		1999 SU ₆
1999 SV ₆	14.8	0.15	20000226	75.04938	71.58348	256.29014	3.74159	0.2087711	2.2544805	89	2	1998–1999	0.63	M-v	4	Williams	37302	1999 SV ₆
1999 SW ₆	15.6	0.15	20000226	59.11921	124.53396	219.29255	1.47389	0.2285216	2.4113189	58	1	68 days	0.56	M-v	5	Williams	37302	1999 SW ₆
1999 SZ ₆	14.3	0.15	20000226	23.74387	336.76980	12.86738	11.15234	0.3766828	3.0794508	25	1	63 days	0.40	M-v	4	Williams		1999 SZ ₆
1999 SR ₇	14.1	0.15	20000226	46.31147	289.27777	48.91703	7.59602	0.1513013	2.3772300	50	3	1981–1999	0.63	M-v	2	Williams	37302	1999 SR ₇
1999 SL ₈	14.6	0.15	20000226	18.85875	342.59109	46.41288	11.15901	0.2472814	2.2871839	42	3	1975–1999	0.67	M-v	3	Williams	37302	1999 SL ₈
1999 ST ₈	13.9	0.15	20000226	27.40164	282.69107	84.65270	7.67349	0.2489609	2.5382826	24	1	65 days	0.63	M-v	5	Williams	37302	1999 ST ₈
1999 SA ₉	13.8	0.15	20000226	81.21131	165.51834	118.61692	13.04773	0.1638457	2.6265147	24	2	1998–1999	0.55	M-v	4	Williams	36835	1999 SA ₉
1999 SN ₉	14.9	0.15	20000226	7.48999	81.53613	337.31004	1.84442	0.1920645	2.3816353	78	4	1988–2000	0.54	M-v	1	Williams	37302	1999 SN ₉
1999 SR ₉	14.9	0.15	20000226	94.49568	138.97017	169.68388	5.86060	0.2261061	2.2344354	61	2	1998–2000	0.60	M-v	4	Williams	37302	1999 SR ₉
1999 SS ₉	14.7	0.15	20000226	3.31632	8.41547	65.16605	5.71690	0.2237136	2.5474852	56	3	1991–2000	0.56	M-v	4	Williams	36835	1999 SS ₉
1999 ST ₉	14.5	0.15	20000226	30.63098	12.99990	358.52898	6.02994	0.1889224	3.1665011	46	1	92 days	0.65	M-v	4	Williams		1999 ST ₉
1999 SA ₁₀	14.7	0.15	20000226	11.91653	1.77258	45.10208	14.87655	0.2456902	2.6545977	45	1	116 days	0.64	M-v	4	Williams	37302	1999 SA ₁₀
1999 SC ₁₀	14.6	0.15	20000226	349.50332	196.53118	235.85910	16.73815	0.1945186	3.1204242	33	1	98 days	0.79	M-v	4	Williams		1999 SC ₁₀
1999 SO ₁₀	14.4	0.15	20000226	63.13230	287.71071	34.90151	14.07635	0.2713191	2.4688628	40	1	85 days	0.50	M-v	4	Williams	37302	1999 SO ₁₀
1999 SR ₁₀	15.3	0.15	20000226	58.87014	136.80994	209.22967	6.70610	0.1328778	2.2799116	71	2	1998–1999	0.68	M-v	3	Williams	37302	1999 SR ₁₀
1999 SU ₁₀	14.3	0.15	20000226	1.26030	349.77338	73.85123	10.75689	0.2286392	3.1364125	45	1	140 days	0.56	M-v	4	Williams	37302	1999 SU ₁₀
1999 SW ₁₀	13.7	0.15	20000226	57.92982	285.63960	55.38424	15.67234	0.2061121	2.9129734	65	3	1997–2000	0.53	M-v	2	Williams	37302	1999 SW ₁₀
1999 SH ₁₁	14.4	0.15	20000226	98.11851	224.76927	70.58887	8.95427	0.1899105	2.7837780	34	3	1984–1999	0.71	M-v	3	Williams	36836	1999 SH ₁₁
1999 SJ ₁₁	14.0	0.15	20000226	297.11702	35.53928	92.15048	6.23661	0.0624162	2.6682989	26	1	100 days	0.51	M-v	5	Williams		1999 SJ ₁₁

1999 SN ₁₁	12.8	0.15	20000226	91.79706	268.62081	41.72381	15.86530	0.0977223	3.1099557	26	1	99 days	0.32	M-v	4	Williams	1999 SN ₁₁
1999 SP ₁₁	16.2	0.15	20000226	60.28314	229.70782	120.17956	3.26258	0.2632367	2.2593276	24	1	66 days	0.49	M-v	5	Williams	37302 1999 SP ₁₁
1999 SQ ₁₁	14.1	0.15	20000226	43.69853	293.42956	77.00937	5.82169	0.1271652	2.7460595	38	1	97 days	0.52	M-v	4	Williams	37302 1999 SQ ₁₁
1999 SS ₁₁	14.2	0.15	20000226	61.21300	248.24777	94.28373	4.44238	0.2246290	2.6072492	61	2	1998–2000	0.63	M-v	3	Williams	37302 1999 SS ₁₁
1999 ST ₁₁	14.5	0.15	20000226	71.26446	286.21924	57.50598	7.40877	0.1422501	2.3375328	56	2	1998–2000	0.61	M-v	3	Williams	37302 1999 ST ₁₁
1999 SU ₁₁	15.5	0.15	20000226	12.55851	258.20680	161.75304	6.38946	0.1195172	2.3536370	28	1	116 days	0.67	M-v	4	Williams	1999 SU ₁₁
1999 SV ₁₁	15.1	0.15	20000226	38.34645	294.18948	84.94264	5.14777	0.2412574	2.5359369	50	1	138 days	0.50	M-v	3	Williams	37302 1999 SV ₁₁
1999 SW ₁₁	14.0	0.15	20000226	27.12746	338.27156	62.51046	6.88816	0.0927668	2.3502330	87	5	1981–2000	0.52	M-v	2	Williams	37188 1999 SW ₁₁
1999 SD ₁₂	15.0	0.15	19990919	210.52870	103.31435	60.39709	3.86100	0.1209308	2.4372377	27	1	19 days	0.71			Williams	1999 SD ₁₂
1999 TD	13.3	0.15	20000226	333.64721	252.58036	201.91483	22.40811	0.2353622	3.1372411	70	1	113 days	0.53	M-v	4	Williams	37302 1999 TD
1999 TE	16.4	0.15	20000226	40.41112	148.08772	230.97234	2.75680	0.2378767	2.2510635	41	1	67 days	0.54	M-v	4	Williams	37302 1999 TE
1999 TF	15.8	0.15	20000226	52.08407	217.87166	127.52293	5.36938	0.2592996	2.3501054	49	1	139 days	0.51	M-v	4	Williams	37302 1999 TF
1999 TK	14.9	0.15	19991029	333.56710	346.07745	76.32939	2.18589	0.2034345	3.1132429	44	1	57 days	0.46			Williams	1999 TK
1999 TL	14.7	0.15	19991029	300.29621	6.55378	90.00341	2.15968	0.1394317	3.1019779	47	1	59 days	0.52			Williams	1999 TL
1999 TM	14.8	0.15	20000226	10.17894	203.88278	212.75179	5.18953	0.1281114	2.3146093	114	4	1978–2000	0.53	M-v	2	Williams	37302 1999 TM
1999 TN	15.1	0.15	20000226	28.54777	183.10726	209.29570	7.10129	0.1976194	2.3946806	99	1	169 days	0.55	M-v	3	Williams	37303 1999 TN
1999 TO	16.3	0.15	20000226	19.51511	115.69703	284.33146	0.73656	0.1724326	2.3930195	39	1	68 days	0.62	M-v	5	Williams	37303 1999 TO
1999 TP	13.6	0.15	20000226	41.15850	156.41436	198.09707	17.01229	0.1300558	3.0792376	102	3	1997–2000	0.52	M-v	2	Williams	37303 1999 TP
1999 TQ	15.8	0.15	20000226	27.68761	192.42076	209.33072	1.68911	0.2317858	2.3988535	57	1	97 days	0.56	M-v	4	Williams	1999 TQ
1999 TS	15.1	0.15	19991009	28.70594	133.14191	202.47688	8.53210	0.1700187	2.8010876	40	1	42 days	0.46			Williams	1999 TS
1999 TT	15.0	0.15	20000226	72.78723	310.58496	21.27414	7.01927	0.1340352	2.3511220	65	2	1998–1999	0.64	M-v	3	Williams	37303 1999 TT
1999 TU	14.8	0.15	20000226	85.73926	278.45970	28.96675	2.17055	0.1691502	2.5733407	59	2	1998–1999	0.63	M-v	4	Williams	37303 1999 TU
1999 TV	15.6	0.15	20000226	43.86402	145.65182	219.86060	2.30749	0.3012009	2.4282367	64	1	97 days	0.52	M-v	4	Williams	37303 1999 TV
1999 TW	14.7	0.15	20000226	85.66131	101.81818	214.56536	3.36771	0.2193996	2.1848370	110	2	1998–1999	0.53	M-v	4	Williams	37303 1999 TW
1999 TY	14.0	0.15	20000226	114.57588	252.56668	22.27673	17.50838	0.2091176	2.5992106	78	2	1998–2000	0.60	M-v	3	Williams	37303 1999 TY
1999 TZ	15.2	0.15	20000226	41.23735	177.57008	188.33630	4.70230	0.2970973	2.5364856	54	1	169 days	0.51	M-v	3	Williams	37303 1999 TZ
1999 TB ₁	15.1	0.15	20000226	33.19248	179.30217	208.77166	4.70831	0.2347534	2.3698673	99	2	1988–2000	0.58	M-v	2	Williams	37303 1999 TB ₁
1999 TD ₁	14.4	0.15	19991009	36.17318	131.56483	199.80849	23.06780	0.1773880	3.1159380	27	1	44 days	0.60			Williams	1999 TD ₁
1999 TE ₁	13.8	0.15	20000226	44.96940	279.06697	70.92697	2.04302	0.1914015	3.2099032	55	3	1976–2000	0.53	M-v	3	Williams	37303 1999 TE ₁
1999 TF ₁	14.8	0.15	19991029	335.77090	204.44202	224.09401	2.80507	0.2503129	3.0571735	59	1	56 days	0.76			Williams	1999 TF ₁
1999 TG ₁	14.4	0.15	20000226	29.19840	71.81045	308.62885	0.96830	0.1395913	2.9268496	57	1	72 days	0.57	M-v	4	Williams	1999 TG ₁
1999 TH ₁	15.4	0.15	20000226	289.32530	289.56903	211.38423	4.69326	0.0768866	2.2749958	42	1	71 days	0.64	M-v	5	Williams	37303 1999 TH ₁
1999 TJ ₁	14.0	0.15	20000226	358.13375	47.57156	15.54055	6.35918	0.0471859	2.4498048	65	1	97 days	0.53	M-v	4	Williams	1999 TJ ₁
1999 TL ₁	15.3	0.15	20000226	29.65404	191.29936	196.78487	6.29456	0.2005715	2.5250955	46	1	97 days	0.70	M-v	4	Williams	1999 TL ₁
1999 TM ₁	14.5	0.15	20000226	359.90865	46.35741	20.91256	8.41966	0.0566150	2.2261846	76	3	1989–2000	0.62	M-v	3	Williams	37303 1999 TM ₁
1999 TN ₁	14.1	0.15	20000226	70.66338	108.75227	205.61481	15.41777	0.2303869	3.1365920	61	2	1998–1999	0.64	M-v	3	Williams	36838 1999 TN ₁
1999 TP ₁	15.5	0.15	20000226	19.22952	189.86942	216.63542	1.88038	0.1841141	2.4335709	52	2	1997–1999	0.43	M-v	4	Williams	37303 1999 TP ₁
1999 TR ₁	15.3	0.15	20000226	1.25817	225.89388	199.79061	6.24655	0.0849517	2.3380573	57	3	1994–2000	0.54	M-v	2	Williams	37303 1999 TR ₁
1999 TT ₁	13.7	0.15	20000226	51.25515	323.71474	18.30799	10.62656	0.2248274	3.1468042	46	1	97 days	0.52	M-v	4	Williams	1999 TT ₁
1999 TU ₁	12.7	0.15	20000226	160.88678	212.52130	33.65745	6.61368	0.0311336	3.0474857	59	1	87 days	0.38	M-v	5	Williams	1999 TU ₁
1999 TV ₁	15.3	0.15	20000226	59.51778	174.86935	170.81716	2.65848	0.2451087	2.3480996	71	1	99 days	0.61	M-v	4	Williams	37303 1999 TV ₁
1999 TW ₁	15.1	0.15	19991009	67.90070	118.48874	183.56983	4.57018	0.1091448	2.3564524	39	1	44 days	0.88			Williams	1999 TW ₁
1999 TY ₁	14.6	0.15	20000226	39.16476	336.62975	50.76904	15.21280	0.3156594	2.5457367	73	1	117 days	0.45	M-v	3	Williams	37303 1999 TY ₁
1999 TB ₂	13.1	0.15	20000226	36.19133	272.26427	93.55100	13.77275	0.1971877	2.6283341	51	2	1998–2000	0.55	M-v	3	Williams	37303 1999 TB ₂
1999 TC ₂	14.0	0.15	20000226	38.86495	272.80727	87.19137	13.72122	0.2108711	2.6988001	33	1	118 days	0.46	M-v	3	Williams	1999 TC ₂
1999 TD ₂	15.3	0.15	20000226	2.29066	31.84550	40.34739	21.65902	0.0917773	1.9300474	90	2	1998–2000	0.59	M-v	3	Williams	37303 1999 TD ₂
1999 TF ₂	16.2	0.15	20000226	32.95607	172.88335	217.01275	5.64134	0.2587623	2.2786857	66	1	109 days	0.55	M-v	3	Williams	37303 1999 TF ₂
1999 TG ₂	12.5	0.15	20000226	229.54922	182.97473	359.11433	8.94994	0.0816450	2.7944852	57	2	1997–2000	0.45	M-v	3	Williams	37303 1999 TG ₂
1999 TJ ₂	16.2	0.15	20000226	64.62563	139.49647	196.99512	2.86207	0.2219854	2.3556027	56	1	66 days	0.54	M-v	5	Williams	37303 1999 TJ ₂
1999 TN ₂	13.9	0.15	20000226	19.11368	286.00588	106.87899	13.93726	0.1957229	2.6593521	34	2	1994–2000	0.52	M-v	3	Williams	36925 1999 TN ₂
1999 TP ₂	14.8	0.15	20000226	105.31936	207.74818	83.66231	12.61223	0.1607610	2.3539167	43	3	1993–1999	0.74	M-v	2	Williams	36925 1999 TP ₂
1999 TQ ₂	14.0	0.15	20000226	13.66655	260.57780	141.13707	21.44020	0.3085816	3.0357471	38	1	119 days	0.63	M-v	4	Williams	37303 1999 TQ ₂
1999 TR ₂	12.2	0.15	20000226	86.65750	199.96900	111.18622	22.79365	0.0436920	3.1673555	61	2	1998–1999	0.62	M-v	3	Williams	37303 1999 TR ₂

1999 TS ₂	12.8	0.15	20000226	55.15826	256.47295	76.60900	23.71562	0.1174553	3.2333690	33	1	66 days	0.73	M-v	4	Williams		1999 TS ₂
1999 TZ ₂	15.6	0.15	20000226	80.76621	227.89102	107.10140	4.31163	0.1990497	2.1617696	47	1	97 days	0.47	M-v	4	Williams	37303	1999 TZ ₂
1999 TA ₃	13.2	0.15	20000226	40.35047	80.81331	297.06900	8.74375	0.1182557	3.0017122	60	2	1998–2000	0.75	M-v	3	Williams	37303	1999 TA ₃
1999 TD ₃	15.1	0.15	20000226	317.71257	263.39541	207.40603	4.23938	0.1571867	2.4618101	52	2	1997–1999	0.55	M-v	4	Williams	36839	1999 TD ₃
1999 TK ₃	14.7	0.15	19991009	17.10938	130.11276	227.78600	1.71422	0.1147589	3.2214569	25	1	39 days	0.54			Williams		1999 TK ₃
1999 TM ₃	16.0	0.15	19991029	78.88338	205.91678	86.13867	4.21322	0.1417626	2.3185122	33	1	59 days	0.82			Williams		1999 TM ₃
1999 TP ₃	13.2	0.15	20000226	25.08802	11.37259	18.21667	10.80614	0.1081096	3.0443991	64	1	114 days	0.50	M-v	3	Williams	37303	1999 TP ₃
1999 TR ₃	16.3	0.15	19991009	73.71003	81.15504	203.56956	4.74224	0.1690573	2.2827227	27	1	46 days	0.52			Williams		1999 TR ₃
1999 TU ₃	13.6	0.15	20000226	280.01970	115.33387	16.19382	10.00259	0.0522325	2.9691567	58	1	68 days	0.46	M-v	5	Williams	37303	1999 TU ₃
1999 TW ₃	14.2	0.15	20000226	352.24161	6.30450	65.67273	5.37555	0.0928610	2.3935696	76	4	1992–2000	0.52	M-v	3	Williams	37303	1999 TW ₃
1999 TX ₃	15.9	0.15	20000226	64.68029	329.22960	13.74554	4.25950	0.1602684	2.3167280	50	1	63 days	0.34	M-v	4	Williams	37303	1999 TX ₃
1999 TY ₃	15.4	0.15	20000226	325.73340	83.91761	24.88143	3.61858	0.1535172	2.3304581	52	1	65 days	0.42	M-v	5	Williams	37303	1999 TY ₃
1999 TZ ₃	14.7	0.15	19991009	277.31178	273.29799	192.86642	9.31801	0.0366130	3.1307120	16	1	44 days	0.35			Williams		1999 TZ ₃
1999 TD ₄	14.9	0.15	20000226	159.68574	280.80877	307.80904	5.32114	0.2350755	2.2553334	52	1	64 days	0.47	M-v	5	Williams	36926	1999 TD ₄
1999 TJ ₄	13.4	0.15	20000226	137.63024	44.45784	219.98041	6.31003	0.0740601	2.9895327	63	3	1997–2000	0.57	M-v	3	Williams	37303	1999 TJ ₄
1999 TL ₄	14.9	0.15	20000226	2.24172	51.02874	15.32665	5.96743	0.1047633	2.4049963	46	1	97 days	0.46	M-v	5	Williams		1999 TL ₄
1999 TM ₄	14.0	0.15	20000226	81.73788	89.46634	242.24864	4.40614	0.1245867	2.8533097	67	1	95 days	0.59	M-v	4	Williams	37303	1999 TM ₄
1999 TO ₄	16.4	0.15	20000226	4.99630	56.09613	9.70242	21.12899	0.0864489	1.9097255	48	2	1998–1999	0.61	M-v	4	Williams	37303	1999 TO ₄
1999 TS ₄	15.1	0.15	19991009	71.84063	85.67699	190.79664	22.92946	0.2156583	2.3427452	45	1	50 days	0.46			Williams		1999 TS ₄
1999 TW ₄	14.8	0.15	20000226	51.04901	334.65819	22.06157	17.93863	0.2133558	2.5242592	58	1	94 days	0.43	M-v	4	Williams	37303	1999 TW ₄
1999 TC ₅	18.4	0.15	20000226	15.50178	282.54344	192.61506	29.09325	0.5476504	2.0155923	54	1	91 days	0.52	M-v	5	Williams	36926	1999 TC ₅
1999 TD ₅	19.2	0.15	20000226	27.12954	309.52565	105.30942	4.14707	0.5271845	2.4674858	153	1	99 days	0.49	M-v	3	Williams	37304	1999 TD ₅
1999 TG ₅	14.6	0.15	19991009	34.44317	289.41303	43.45600	1.66487	0.1501898	3.1163997	30	1	38 days	0.41			Williams		1999 TG ₅
1999 TJ ₅	15.1	0.15	20000226	68.28404	6.51516	347.36179	3.86006	0.1721789	2.1911793	67	2	1998–2000	0.63	M-v	4	Williams	37304	1999 TJ ₅
1999 TK ₅	13.9	0.15	20000226	86.04055	97.93754	212.65853	12.10863	0.2116573	2.5540298	109	2	1998–2000	0.56	M-v	3	Williams	37304	1999 TK ₅
1999 TM ₅	15.9	0.15	19991009	302.97298	70.46124	27.83571	5.90822	0.1916996	2.3427215	47	1	43 days	0.77			Williams		1999 TM ₅
1999 TN ₅	15.7	0.15	19991009	6.74427	198.79840	173.76770	2.26822	0.0905603	2.3781083	39	1	44 days	0.71			Williams		1999 TN ₅
1999 TO ₅	15.0	0.15	20000226	70.58491	309.86832	20.40259	5.15581	0.2137600	2.4407144	68	2	1998–2000	0.57	M-v	3	Williams	37304	1999 TO ₅
1999 TP ₅	15.8	0.15	19991009	21.85977	247.96589	111.31204	1.73289	0.0061218	2.1783696	34	1	44 days	0.58			Williams		1999 TP ₅
1999 TQ ₅	14.7	0.15	20000226	15.67049	206.23324	201.02136	4.05834	0.1720956	2.5889271	60	4	1987–1999	0.56	M-v	3	Williams	37304	1999 TQ ₅
1999 TR ₅	14.1	0.15	20000226	58.19610	323.11610	27.89541	8.20813	0.2102548	2.5527345	71	4	1974–2000	0.55	M-v	1	Williams	37189	1999 TR ₅
1999 TS ₅	15.4	0.15	20000226	54.32386	24.64545	337.46841	3.70631	0.1792682	2.2000537	54	1	97 days	0.58	M-v	4	Williams	37304	1999 TS ₅
1999 TT ₅	14.9	0.15	20000226	21.90003	185.20971	220.51920	5.12363	0.1992919	2.4371513	81	1	98 days	0.48	M-v	3	Williams	37304	1999 TT ₅
1999 TU ₅	13.5	0.15	20000226	6.52521	349.96972	72.06891	5.46133	0.1005801	2.8126381	56	1	93 days	0.54	M-v	4	Williams	37304	1999 TU ₅
1999 TV ₅	13.7	0.15	20000226	62.75144	136.86852	221.97290	11.22148	0.2079280	2.5749739	86	3	1974–2000	0.56	M-v	2	Williams	37304	1999 TV ₅
1999 TC ₆	15.0	0.15	20000226	105.76066	161.74507	133.62148	7.28247	0.1168408	2.4111945	53	2	1998–1999	0.74	M-v	4	Williams	36926	1999 TC ₆
1999 TD ₆	14.3	0.15	20000226	26.59005	264.69337	122.44247	4.50857	0.1054256	2.6521535	54	1	97 days	0.70	M-v	4	Williams		1999 TD ₆
1999 TF ₆	14.9	0.15	20000226	21.05277	353.96978	27.84217	7.26442	0.1653394	3.1365756	69	1	66 days	0.56	M-v	4	Williams	37304	1999 TF ₆
1999 TK ₆	15.8	0.15	20000226	25.85343	192.84811	199.16670	3.78765	0.2210426	2.5768683	44	1	66 days	0.60	M-v	4	Williams	37304	1999 TK ₆
1999 TO ₆	13.7	0.15	20000226	25.04437	239.11207	142.66084	1.68815	0.1747250	3.2005495	51	2	1997–1999	0.46	M-v	4	Williams	36841	1999 TO ₆
1999 TP ₆	14.1	0.15	20000226	20.49547	297.21249	92.90431	2.63335	0.2196080	3.0907367	46	1	65 days	0.62	M-v	4	Williams	37304	1999 TP ₆
1999 TR ₆	13.3	0.15	19991009	42.62365	293.94271	41.30731	11.01694	0.0690474	3.0290832	37	1	44 days	0.55			Williams		1999 TR ₆
1999 TU ₆	14.8	0.15	20000226	93.61677	299.99319	15.78422	3.40678	0.1197007	2.3345734	66	3	1988–1999	0.67	M-v	3	Williams	36841	1999 TU ₆
1999 TW ₆	15.5	0.15	19991009	36.96703	309.12303	23.11098	14.61806	0.1731563	2.7095593	36	1	45 days	0.84			Williams		1999 TW ₆
1999 TX ₆	14.0	0.15	20000226	355.25446	49.44252	24.40940	13.58314	0.1706140	2.6606867	56	2	1997–2000	0.53	M-v	3	Williams	37304	1999 TX ₆
1999 TY ₆	15.0	0.15	19991009	92.12085	254.25246	14.32105	3.74021	0.1702374	2.2926106	53	1	39 days	0.67			Williams		1999 TY ₆
1999 TB ₇	15.7	0.15	19991009	292.33875	62.24547	40.76985	4.31007	0.1169519	2.2811056	23	1	38 days	1.05			Williams		1999 TB ₇
1999 TC ₇	13.8	0.15	20000226	229.76440	160.34714	33.13403	7.37914	0.0633286	2.3277088	51	1	72 days	0.51	M-v	4	Williams		1999 TC ₇
1999 TD ₇	14.3	0.15	20000226	20.67678	212.03931	183.34084	3.98013	0.1911666	2.8354083	44	2	1994–2000	0.48	M-v	3	Williams	36841	1999 TD ₇
1999 TE ₇	14.9	0.15	19991009	301.09684	37.74169	48.12424	4.77887	0.0380859	2.6193163	22	1	37 days	0.63			Williams		1999 TE ₇
1999 TF ₇	14.9	0.15	19991009	2.48160	325.52929	54.51513	3.96947	0.1393481	3.0521382	31	1	40 days	0.59			Williams		1999 TF ₇
1999 TK ₇	16.1	0.15	20000226	8.45503	50.99484	11.39360	2.74797	0.2105463	2.4025251	41	1	64 days	0.36	M-v	5	Williams	37304	1999 TK ₇
1999 TL ₇	16.2	0.15	19991009	29.66023	293.71101	32.73310	6.10684	0.3199230	2.6371976	20	1	32 days	0.48			Williams		1999 TL ₇

1999 TM ₇	16.4	0.15	19991009	15.63369	325.37517	34.19445	3.57450	0.1727004	2.1549273	33	1	36 days	0.68		Williams		1999 TM ₇
1999 TN ₇	16.4	0.15	19991009	314.37382	19.62022	67.31547	2.58821	0.1948038	2.3812854	28	1	42 days	1.01		Williams		1999 TN ₇
1999 TO ₇	13.5	0.15	20000226	48.50560	324.91655	55.23165	14.40778	0.1770448	2.6279295	80	2	1992–2000	0.54	M-v	3	Williams	37304 1999 TO ₇
1999 TP ₇	14.8	0.15	20000226	85.23941	46.59804	264.41461	12.06107	0.2432411	2.3846638	108	1	165 days	0.62	M-v	4	Williams	37304 1999 TP ₇
1999 TS ₇	15.8	0.15	20000226	43.70037	323.90219	28.65895	16.19172	0.2545903	2.6093379	34	1	90 days	0.57	M-v	4	Williams	37304 1999 TS ₇
1999 TV ₇	14.9	0.15	20000226	60.32529	284.06430	47.14994	9.88074	0.2924386	2.3742324	48	1	116 days	0.63	M-v	4	Williams	37304 1999 TV ₇
1999 TB ₈	14.9	0.15	20000226	20.01296	14.03389	32.41630	14.50707	0.2725975	2.6757546	90	1	137 days	0.42	M-v	3	Williams	37304 1999 TB ₈
1999 TC ₈	14.5	0.15	19991029	14.34921	262.28280	98.29729	3.82446	0.2622213	3.9727929	31	1	59 days	0.51			Williams	1999 TC ₈
1999 TD ₈	15.8	0.15	20000226	28.62284	358.25622	37.46812	0.84903	0.2052713	2.3282272	62	1	66 days	0.55	M-v	4	Williams	37304 1999 TD ₈
1999 TE ₈	16.0	0.15	20000226	52.41537	168.34466	195.70218	6.40829	0.1547450	2.2462890	33	1	98 days	0.57	M-v	4	Williams	1999 TE ₈
1999 TF ₈	14.9	0.15	20000226	50.46846	48.75640	303.58518	7.82646	0.2337666	2.7208123	37	1	64 days	0.58	M-v	4	Williams	37304 1999 TF ₈
1999 TG ₈	13.9	0.15	20000226	7.32346	86.76211	341.97116	6.38620	0.1341669	2.2908494	53	1	95 days	0.53	M-v	4	Williams	37304 1999 TG ₈
1999 TH ₈	15.1	0.15	20000226	16.52456	139.22244	279.43731	3.95943	0.2119825	2.3589755	49	1	95 days	0.54	M-v	4	Williams	37304 1999 TH ₈
1999 TJ ₈	16.0	0.15	19991009	325.14171	34.49860	36.07153	3.16815	0.1910996	2.4261292	41	1	44 days	0.79			Williams	1999 TJ ₈
1999 TK ₈	16.0	0.15	19991009	71.30412	212.25956	71.74577	1.34015	0.2232463	2.3973013	28	1	41 days	1.08			Williams	1999 TK ₈
1999 TL ₈	15.5	0.15	20000226	41.85572	342.91031	29.98384	9.97810	0.1861133	2.4391092	42	1	83 days	0.57	M-v	4	Williams	37304 1999 TL ₈
1999 TM ₈	15.1	0.15	19991009	349.01351	318.33177	77.66141	3.14344	0.1018742	2.9011166	21	1	42 days	0.76			Williams	1999 TM ₈
1999 TN ₈	14.8	0.15	19991009	341.59498	235.42421	172.20662	3.98492	0.1478882	3.0324004	27	1	44 days	0.64			Williams	1999 TN ₈
1999 TO ₈	14.1	0.15	19991009	62.68081	152.62121	160.94830	2.29836	0.0743662	2.8726699	32	1	42 days	0.65			Williams	1999 TO ₈
1999 TQ ₈	13.7	0.15	20000226	141.89247	57.52292	121.02400	9.48450	0.0147722	2.9827685	54	1	79 days	0.52	M-v	4	Williams	37304 1999 TQ ₈
1999 TS ₈	15.1	0.15	20000226	68.33665	333.67648	357.03319	4.05235	0.2107123	2.5578976	78	2	1998–1999	0.55	M-v	4	Williams	37304 1999 TS ₈
1999 TT ₈	13.7	0.15	20000226	52.25672	130.36819	216.96404	8.02963	0.1577989	3.0452776	70	1	97 days	0.43	M-v	4	Williams	37304 1999 TT ₈
1999 TU ₈	12.7	0.15	20000226	307.68751	25.45548	89.09277	2.76131	0.1116103	3.2293538	60	3	1982–2000	0.61	M-v	3	Williams	37304 1999 TU ₈
1999 TX ₈	16.1	0.15	20000226	42.84869	37.47315	320.59087	1.69956	0.2048729	2.3605090	77	1	107 days	0.49	M-v	3	Williams	37304 1999 TX ₈
1999 TA ₉	15.9	0.15	19991009	337.50235	24.42645	31.62554	4.15334	0.2249406	2.7091553	56	1	44 days	0.95			Williams	1999 TA ₉
1999 TB ₉	15.0	0.15	20000226	56.70906	143.06400	204.10577	12.87806	0.1684621	2.6998773	50	1	125 days	0.66	M-v	4	Williams	1999 TB ₉
1999 TC ₉	14.6	0.15	20000226	43.04847	358.67110	11.22523	3.88264	0.1814229	2.5807280	83	1	97 days	0.48	M-v	4	Williams	37304 1999 TC ₉
1999 TF ₉	15.9	0.15	19991029	16.70839	344.94475	21.88879	5.94700	0.1864849	2.2885178	43	1	59 days	0.55			Williams	1999 TF ₉
1999 TG ₉	16.5	0.15	19991009	23.44484	323.20039	22.33785	5.40407	0.2323018	2.2491035	43	1	39 days	0.47			Williams	1999 TG ₉
1999 TJ ₉	12.4	0.15	20000226	311.29292	253.21697	210.04604	11.22426	0.0225379	3.1770261	51	1	98 days	0.42	M-v	5	Williams	37304 1999 TJ ₉
1999 TK ₉	14.3	0.15	20000226	17.31131	23.97922	15.91747	4.48180	0.2467778	3.1068145	65	1	94 days	0.50	M-v	4	Williams	1999 TK ₉
1999 TL ₉	15.0	0.15	20000226	30.08320	7.66340	22.20671	9.73752	0.1890375	2.6038860	75	1	114 days	0.50	M-v	3	Williams	37304 1999 TL ₉
1999 TM ₉	16.5	0.15	20000226	44.32068	352.37740	21.91802	8.43546	0.2727100	2.3074593	45	1	67 days	0.59	M-v	4	Williams	37304 1999 TM ₉
1999 TN ₉	15.1	0.15	20000226	154.76764	232.90546	29.31415	7.50924	0.0916656	2.3239860	64	2	1998–1999	0.58	M-v	3	Williams	36842 1999 TN ₉
1999 TO ₉	17.1	0.15	19991009	359.86841	4.05278	20.75948	5.38507	0.2343202	2.3409526	57	1	44 days	0.60			Williams	1999 TO ₉
1999 TP ₉	15.4	0.15	20000226	57.43088	335.48544	18.97267	2.31036	0.2211985	2.3606612	59	1	96 days	0.58	M-v	5	Williams	1999 TP ₉
1999 TQ ₉	13.6	0.15	20000226	25.42896	195.59937	192.08298	0.71798	0.1981777	3.0935883	99	3	1989–2000	0.57	M-v	2	Williams	37304 1999 TQ ₉
1999 TR ₉	15.1	0.15	20000226	28.71860	22.26345	19.10679	2.55229	0.2464360	2.3441384	83	3	1981–2000	0.50	M-v	2	Williams	37304 1999 TR ₉
1999 TS ₉	14.8	0.15	20000226	100.19972	272.71767	31.49333	5.96082	0.2073376	2.2730561	77	2	1998–2000	0.48	M-v	4	Williams	37304 1999 TS ₉
1999 TT ₉	15.9	0.15	20000226	18.15184	204.66384	205.32736	2.92480	0.2196550	2.4685269	41	1	61 days	0.56	M-v	5	Williams	37304 1999 TT ₉
1999 TV ₉	14.6	0.15	19991009	286.28814	256.70808	200.01104	21.50979	0.0390365	2.5819187	49	1	42 days	0.48			Williams	1999 TV ₉
1999 TW ₉	15.7	0.15	20000226	57.65137	23.93160	330.34101	1.89747	0.2135156	2.3909338	100	3	1973–2000	0.66	M-v	3	Williams	37304 1999 TW ₉
1999 TX ₉	13.7	0.15	20000226	39.54458	12.89393	50.11017	26.40704	0.2760857	2.3142209	56	1	82 days	0.51	M-v	4	Williams	1999 TX ₉
1999 TZ ₉	14.9	0.15	20000226	352.54541	17.92454	54.22601	3.49099	0.1985764	2.8024849	61	2	1997–2000	0.51	M-v	3	Williams	37304 1999 TZ ₉
1999 TD ₁₀	8.7	0.15	20000226	0.12356	172.32291	184.67277	5.95163	0.8789869	101.6060784	71	1	90 days	0.42	M-v	4	Williams	37304 1999 TD ₁₀
1999 TE ₁₀	16.1	0.15	19991009	303.50887	169.51066	270.64771	2.73083	0.1913275	2.6042320	12	1	38 days	0.32			Williams	1999 TE ₁₀
1999 TG ₁₀	14.5	0.15	20000226	277.60573	159.39730	350.60668	2.26777	0.1352420	2.4589093	52	2	1997–1999	0.58	M-v	4	Williams	37304 1999 TG ₁₀
1999 TH ₁₀	14.9	0.15	19991029	329.52619	244.99032	184.19830	8.19603	0.2022048	3.0550883	40	1	57 days	0.55			Williams	1999 TH ₁₀
1999 TN ₁₀	15.9	0.15	20000226	69.04732	119.67804	204.79298	4.83463	0.2885883	2.5611232	21	1	90 days	0.64	M-v	5	Williams	1999 TN ₁₀
1999 TQ ₁₀	16.3	0.15	19991009	65.71502	277.24965	14.73023	2.58215	0.1611588	2.1484117	26	1	39 days	0.41			Williams	1999 TQ ₁₀
1999 TR ₁₀	12.9	0.15	20000226	35.84542	355.20661	20.50076	10.48407	0.0564655	3.0681596	84	1	97 days	0.41	M-v	3	Williams	37305 1999 TR ₁₀
1999 TT ₁₀	12.7	0.15	20000226	100.02195	275.24407	31.55339	11.22171	0.0888693	3.0294236	63	1	96 days	0.48	M-v	4	Williams	37305 1999 TT ₁₀
1999 TW ₁₀	15.3	0.15	20000226	355.47066	41.45673	45.30070	8.78732	0.1449839	2.3776827	58	1	66 days	0.64	M-v	5	Williams	37305 1999 TW ₁₀

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1999 TY ₁₀	15.3	0.15	19991009	146.73624	84.54074	161.96761	4.67372	0.0090676	2.5476781	22	1	28 days	1.08		Williams		1999 TY ₁₀	
1999 TA ₁₁	15.0	0.15	20000226	328.01510	287.21889	184.35304	7.68367	0.0638270	2.2790559	38	1	98 days	0.70	M-v	5	Williams		1999 TA ₁₁
1999 TF ₁₁	14.0	0.15	20000226	28.46642	156.89956	220.21157	16.60876	0.2140791	3.1735882	50	1	65 days	0.52	M-v	4	Williams	37305	1999 TF ₁₁
1999 TG ₁₁	14.7	0.15	20000226	49.32146	344.52116	9.92110	16.47460	0.2391669	2.6586056	60	1	118 days	0.52	M-v	4	Williams	37305	1999 TG ₁₁
1999 TH ₁₁	12.7	0.15	20000226	4.49025	184.51874	223.55621	14.60689	0.0869522	3.2006704	60	2	1997–2000	0.63	M-v	3	Williams	37305	1999 TH ₁₁
1999 TK ₁₁	13.5	0.15	20000226	324.33274	105.38018	356.95425	6.36549	0.0843587	2.4359937	64	4	1984–2000	0.48	M-v	1	Williams	37305	1999 TK ₁₁
1999 TL ₁₁	14.3	0.15	20000226	19.96733	202.57668	208.25624	13.73726	0.1336600	2.4415822	84	3	1994–2000	0.61	M-v	2	Williams	37305	1999 TL ₁₁
1999 TN ₁₁	14.5	0.15	20000226	52.42206	248.09817	99.56833	22.99881	0.2952144	2.3684295	28	1	95 days	0.43	M-v	4	Williams		1999 TN ₁₁
1999 TO ₁₁	18.4	0.15	19991029	15.99596	341.89575	23.62819	4.71717	0.3274005	2.3272729	57	1	53 days	0.45			Williams		1999 TO ₁₁
1999 TP ₁₁	14.6	0.15	20000226	33.21368	330.59065	71.11548	7.31850	0.0951651	2.2517075	67	1	116 days	0.38	M-v	3	Williams	37305	1999 TP ₁₁
1999 TQ ₁₁	12.9	0.15	20000226	28.20556	294.11902	96.79936	6.41837	0.1528396	3.1905764	82	3	1997–2000	0.51	M-v	3	Williams	37305	1999 TQ ₁₁
1999 TR ₁₁	8.5	0.15	19991118	4.66311	351.95309	54.70636	17.08427	0.2482674	39.7019760	15	1	90 days	0.27			Marsden		1999 TR ₁₁
1999 TS ₁₁	12.9	0.15	20000226	56.18704	23.41103	326.64341	12.61515	0.1911766	2.6446596	110	2	1990–2000	0.40	M-v	3	Williams	37305	1999 TS ₁₁
1999 TU ₁₁	12.5	0.15	20000226	84.85368	106.55196	209.17317	13.60603	0.2262628	3.1779376	60	4	1993–1999	0.61	M-v	1	Williams	37305	1999 TU ₁₁
1999 TW ₁₁	14.8	0.15	20000226	336.63540	286.04676	185.31891	4.60355	0.1076723	2.3319426	73	2	1990–2000	0.62	M-v	4	Williams	37305	1999 TW ₁₁
1999 TZ ₁₁	15.7	0.15	20000226	95.33230	102.33042	204.21458	3.51954	0.1690215	2.2297935	44	1	61 days	0.37	M-v	5	Williams	37305	1999 TZ ₁₁
1999 TA ₁₂	16.1	0.15	20000226	63.24730	130.05756	208.40968	1.88616	0.2315660	2.3350398	46	1	63 days	0.45	M-v	5	Williams	37305	1999 TA ₁₂
1999 TB ₁₂	13.5	0.15	20000226	301.53317	88.12370	48.95268	14.19426	0.1014616	2.5648540	95	4	1987–2000	0.50	M-v	2	Williams	37305	1999 TB ₁₂
1999 TD ₁₂	15.2	0.15	20000226	59.58457	244.99324	111.35708	3.30414	0.1981604	2.4178451	49	1	63 days	0.43	M-v	4	Williams	37305	1999 TD ₁₂
1999 TE ₁₂	15.8	0.15	19991009	303.46119	44.26719	59.82582	8.94526	0.1354106	2.6907324	23	1	36 days	0.71			Williams		1999 TE ₁₂
1999 TF ₁₂	14.0	0.15	20000226	70.57040	137.48980	201.14705	10.35310	0.1408215	2.9840149	48	2	1997–1999	0.58	M-v	4	Williams	36844	1999 TF ₁₂
1999 TG ₁₂	15.6	0.15	20000226	38.99796	236.94256	151.27393	2.85514	0.1924088	2.3808638	57	1	95 days	0.56	M-v	4	Williams	37305	1999 TG ₁₂
1999 TH ₁₂	14.9	0.15	20000226	56.83909	205.78913	142.55864	6.14446	0.2145266	2.1667307	55	3	1983–2000	0.44	M-v	2	Williams	37305	1999 TH ₁₂
1999 TN ₁₂	17.3	0.15	20000226	68.16438	150.16086	212.44602	37.25475	0.3915736	1.8862516	51	1	85 days	0.57	M-v	5	Williams	37305	1999 TN ₁₂
1999 TP ₁₂	13.8	0.15	20000226	62.22319	303.40948	34.37800	13.28106	0.1954337	2.6097068	104	2	1998–2000	0.60	M-v	3	Williams	37305	1999 TP ₁₂
1999 TQ ₁₂	15.8	0.15	20000226	55.92895	293.19383	66.87173	3.34697	0.1723358	2.2228675	43	1	89 days	0.62	M-v	5	Williams	36928	1999 TQ ₁₂
1999 TR ₁₂	17.7	0.15	19991009	19.23772	356.47298	2.78637	1.47127	0.1977314	2.3630685	21	1	39 days	0.46			Williams		1999 TR ₁₂
1999 TS ₁₂	15.9	0.15	19991009	9.49153	350.39997	27.34312	9.92781	0.1506821	2.7780143	40	1	41 days	0.62			Williams		1999 TS ₁₂
1999 TT ₁₂	15.1	0.15	20000226	41.21514	324.50486	29.95009	15.82966	0.2166731	2.5980512	54	1	85 days	0.51	M-v	3	Williams		1999 TT ₁₂
1999 TU ₁₂	15.6	0.15	20000226	31.31120	214.04583	178.60701	6.86159	0.2089961	2.3200224	42	1	125 days	0.60	M-v	3	Williams	37305	1999 TU ₁₂
1999 TW ₁₂	13.7	0.15	20000226	338.60389	57.67736	36.13306	17.36544	0.2448355	3.1010950	53	1	95 days	0.59	M-v	4	Williams	37305	1999 TW ₁₂
1999 TX ₁₂	12.8	0.15	20000226	345.85411	1.46261	67.66196	5.65020	0.0742254	3.0044238	73	2	1997–2000	0.56	M-v	3	Williams	37305	1999 TX ₁₂
1999 TY ₁₂	13.3	0.15	20000226	12.77900	322.66722	55.64130	4.49005	0.2004204	4.0123986	57	1	74 days	0.53	M-v	4	Williams	37305	1999 TY ₁₂
1999 TZ ₁₂	13.7	0.15	20000226	68.39062	274.25184	81.46245	4.69494	0.1900276	2.2517487	85	3	1992–2000	0.48	M-v	2	Williams	37305	1999 TZ ₁₂
1999 TB ₁₃	14.5	0.15	20000226	49.56387	71.21404	292.17348	7.91588	0.2214452	2.7286616	48	1	122 days	0.50	M-v	4	Williams	37305	1999 TB ₁₃
1999 TC ₁₃	13.8	0.15	20000226	63.38145	288.11680	55.14872	2.09385	0.2000542	3.1684579	85	1	75 days	0.43	M-v	4	Williams	37305	1999 TC ₁₃
1999 TD ₁₃	16.7	0.15	20000226	30.32968	187.63256	211.29107	5.43721	0.3175947	2.5646033	51	1	65 days	0.62	M-v	4	Williams	37305	1999 TD ₁₃
1999 TE ₁₃	14.3	0.15	20000226	280.38203	113.70793	52.70729	15.65318	0.0542632	2.6224776	78	1	85 days	0.59	M-v	4	Williams	37305	1999 TE ₁₃
1999 TG ₁₃	15.0	0.15	20000226	85.96628	283.83570	54.88863	4.69831	0.1965678	2.2500457	88	2	1998–1999	0.55	M-v	4	Williams	37305	1999 TG ₁₃
1999 TH ₁₃	13.9	0.15	20000226	139.22346	230.81399	26.72354	12.66640	0.1841756	2.7367396	36	2	1993–1999	0.57	M-v	5	Williams	36845	1999 TH ₁₃
1999 TJ ₁₃	13.6	0.15	20000226	217.82225	247.47131	293.39220	11.10456	0.1231217	2.6942124	52	1	66 days	0.47	M-v	4	Williams	36928	1999 TJ ₁₃
1999 TK ₁₃	14.1	0.15	20000226	37.62035	290.90140	86.02748	7.07835	0.2396593	3.0605945	55	1	116 days	0.58	M-v	4	Williams	37305	1999 TK ₁₃
1999 TL ₁₃	16.0	0.15	20000226	64.76716	306.14360	38.47745	5.67938	0.2346416	2.2220594	53	1	64 days	0.61	M-v	5	Williams	37305	1999 TL ₁₃
1999 TP ₁₃	14.9	0.15	20000226	13.02878	192.46610	219.29109	1.92788	0.1420026	2.3663364	62	2	1997–1999	0.52	M-v	4	Williams	37305	1999 TP ₁₃
1999 TQ ₁₃	14.4	0.15	20000226	20.77296	123.76737	262.42132	2.26734	0.1612334	3.0655261	39	1	67 days	0.55	M-v	4	Williams	37305	1999 TQ ₁₃
1999 TR ₁₃	13.7	0.15	20000226	330.30168	87.64069	14.05551	13.93151	0.1366426	2.5974809	57	2	1997–2000	0.47	M-v	4	Williams	37305	1999 TR ₁₃
1999 TT ₁₃	13.8	0.15	20000226	80.12992	288.81290	40.23051	5.24191	0.0971649	2.7003652	33	1	97 days	0.69	M-v	5	Williams	37305	1999 TT ₁₃
1999 TU ₁₃	14.8	0.15	20000226	67.57077	312.66219	36.35028	6.58057	0.1450010	2.2726281	32	2	1998–2000	0.60	M-v	4	Williams	36928	1999 TU ₁₃
1999 TX ₁₃	13.7	0.15	20000226	74.73348	125.54716	201.77277	10.55470	0.2062592	2.9019782	76	2	1998–2000	0.64	M-v	3	Williams	37305	1999 TX ₁₃
1999 TY ₁₃	14.8	0.15	20000226	27.10558	263.77478	135.84819	3.03314	0.1054279	2.6374978	49	1	64 days	0.62	M-v	4	Williams	37305	1999 TY ₁₃
1999 TA ₁₄	17.4	0.15	19991029	16.84180	117.88334	252.69368	4.47992	0.1695086	2.2381866	24	1	36 days	0.76			Williams		1999 TA ₁₄
1999 TC ₁₄	17.1	0.15	19991029	353.67765	257.84905	140.66657	2.75186	0.1993833	2.3569900	15	1	33 days	0.39			Williams		1999 TC ₁₄
1999 TD ₁₄	15.6																	

1999 TE ₁₄	14.8	0.15	20000226	75.18028	252.54080	73.13436	1.80813	0.2215900	2.3997693	44	4	1984–1999	0.69	M-v	2	Williams	36845	1999 TE ₁₄
1999 TG ₁₄	14.5	0.15	20000226	64.20056	306.03684	42.29886	7.30803	0.1326490	2.3853862	74	2	1998–2000	0.65	M-v	3	Williams	37305	1999 TG ₁₄
1999 TH ₁₄	13.3	0.15	20000226	57.22156	236.15270	103.76360	1.87125	0.1756543	3.1673225	45	3	1993–1999	0.58	M-v	4	Williams	37305	1999 TH ₁₄
1999 TK ₁₄	14.1	0.15	20000226	17.42713	265.92595	147.87381	2.45828	0.1959138	2.3792338	52	1	92 days	0.49	M-v	4	Williams	37305	1999 TK ₁₄
1999 TL ₁₄	15.2	0.15	20000226	68.10247	272.01504	67.42516	4.92265	0.2620530	2.5588015	48	3	1995–1999	0.51	M-v	3	Williams	37305	1999 TL ₁₄
1999 TM ₁₄	16.0	0.15	20000226	41.91563	220.12999	173.72980	2.18277	0.1694710	2.2232431	80	3	1992–2000	0.61	M-v	3	Williams	37305	1999 TM ₁₄
1999 TN ₁₄	14.2	0.15	20000226	39.07523	166.79164	208.49149	9.43337	0.2670292	3.0772588	56	1	91 days	0.58	M-v	4	Williams	37306	1999 TN ₁₄
1999 TO ₁₄	13.6	0.15	20000226	68.21004	218.72131	136.17480	2.87734	0.0856128	2.8448853	70	2	1998–1999	0.53	M-v	3	Williams	37306	1999 TO ₁₄
1999 TS ₁₄	14.7	0.15	20000226	14.15621	188.17827	207.03952	2.06646	0.1622164	3.0372079	55	1	99 days	0.55	M-v	4	Williams	37306	1999 TS ₁₄
1999 TT ₁₄	14.5	0.15	19991009	160.88652	169.60622	49.18739	3.13911	0.1347096	2.4104790	12	1	35 days	0.53			Williams		1999 TT ₁₄
1999 TW ₁₄	13.8	0.15	20000226	102.47525	258.76807	57.85709	7.32881	0.1153171	2.5459930	67	1	95 days	0.47	M-v	4	Williams	37306	1999 TW ₁₄
1999 TX ₁₄	15.8	0.15	20000226	33.29920	340.25169	39.34101	9.35369	0.3205349	2.6543787	55	1	96 days	0.65	M-v	3	Williams	37306	1999 TX ₁₄
1999 TY ₁₄	16.0	0.15	20000226	35.73299	278.85673	94.32980	2.90279	0.3481512	2.6650945	39	1	61 days	0.56	M-v	4	Williams	37306	1999 TY ₁₄
1999 TZ ₁₄	14.8	0.15	20000226	68.68829	156.56848	182.55549	7.70579	0.2320379	2.2449075	75	2	1998–2000	0.55	M-v	3	Williams	37306	1999 TZ ₁₄
1999 TA ₁₅	15.1	0.15	20000226	49.10996	197.10320	173.49162	6.59623	0.1444225	2.3087165	26	1	96 days	0.54	M-v	5	Williams		1999 TA ₁₅
1999 TD ₁₅	14.5	0.15	20000226	351.18138	231.49417	213.65230	22.73763	0.2968808	2.3557194	66	1	161 days	0.46	M-v	3	Williams	37306	1999 TD ₁₅
1999 TG ₁₅	15.3	0.15	20000226	354.46749	225.37121	203.87288	7.75360	0.1889428	2.7497219	50	1	67 days	0.43	M-v	5	Williams	37306	1999 TG ₁₅
1999 TO ₁₅	15.6	0.15	19991009	10.40438	161.55784	204.00008	1.61288	0.1096782	2.8442709	16	1	36 days	0.61			Williams		1999 TO ₁₅
1999 TP ₁₅	14.2	0.15	20000226	22.50433	8.14101	21.07297	10.27559	0.0779626	3.1905286	39	1	93 days	0.47	M-v	4	Williams		1999 TP ₁₅
1999 TR ₁₅	15.5	0.15	19991009	12.51524	357.83086	11.87422	4.25794	0.1215560	2.6884155	39	1	44 days	0.56			Williams		1999 TR ₁₅
1999 TS ₁₅	15.3	0.15	19991009	88.40529	254.41223	38.31765	3.55523	0.1236124	2.6068782	53	1	39 days	0.73			Williams		1999 TS ₁₅
1999 TT ₁₅	14.4	0.15	20000226	9.01609	215.35376	241.98320	13.10506	0.1341758	2.6507171	46	1	90 days	0.41	M-v	3	Williams		1999 TT ₁₅
1999 TV ₁₅	13.6	0.15	20000226	192.32738	66.96675	170.87762	4.29710	0.0842615	2.2699535	76	4	1978–2000	0.59	M-v	2	Williams	37306	1999 TV ₁₅
1999 TY ₁₅	13.9	0.15	20000226	14.91446	203.61133	199.65890	5.69931	0.1453275	2.5648880	68	1	171 days	0.58	M-v	4	Williams	37306	1999 TY ₁₅
1999 TA ₁₆	15.4	0.15	19991009	31.16564	125.39713	224.66481	1.72022	0.1299037	3.0784617	34	1	41 days	0.78			Williams		1999 TA ₁₆
1999 TB ₁₆	14.1	0.15	19991009	110.63796	224.01921	24.66852	17.24899	0.1622187	3.1159102	34	1	41 days	0.49			Williams		1999 TB ₁₆
1999 TD ₁₆	13.7	0.15	20000226	5.55396	22.87441	15.48935	6.67295	0.1449159	3.2067232	55	1	93 days	0.60	M-v	4	Williams	37306	1999 TD ₁₆
1999 TE ₁₆	14.7	0.15	20000226	346.17611	72.05450	16.39584	12.69245	0.2417061	2.6847876	40	1	63 days	0.52	M-v	5	Williams	37306	1999 TE ₁₆
1999 TF ₁₆	13.9	0.15	20000226	170.73789	92.89906	143.45635	3.51069	0.0264849	2.7284985	40	1	98 days	0.72	M-v	5	Williams		1999 TF ₁₆
1999 TG ₁₆	15.4	0.15	20000226	9.30631	199.68989	210.68857	2.69139	0.1785205	2.7328306	44	1	61 days	0.53	M-v	5	Williams	37306	1999 TG ₁₆
1999 TJ ₁₆	15.0	0.15	20000226	39.38220	301.71603	78.65823	3.62759	0.1802210	2.3796870	45	1	64 days	0.54	M-v	4	Williams	37306	1999 TJ ₁₆
1999 TK ₁₆	15.9	0.15	20000226	8.19611	350.77090	55.39310	3.18561	0.2044626	2.8804718	29	1	62 days	0.47	M-v	4	Williams		1999 TK ₁₆
1999 TM ₁₆	15.4	0.15	19991029	39.86933	118.16865	238.58701	10.05281	0.0425898	3.0705168	16	1	32 days	0.68			Williams		1999 TM ₁₆
1999 TN ₁₆	15.4	0.15	19991009	292.19469	129.95444	326.77114	0.89924	0.0915843	2.9471237	21	1	41 days	0.59			Williams		1999 TN ₁₆
1999 TP ₁₆	14.3	0.15	20000226	32.27444	177.65675	191.83150	1.51944	0.1342243	3.0860939	62	1	125 days	0.41	M-v	3	Williams	37306	1999 TP ₁₆
1999 TS ₁₆	16.2	0.15	20000226	25.37837	200.77717	211.39521	5.35220	0.1482136	2.2423165	49	1	64 days	0.40	M-v	4	Williams	37306	1999 TS ₁₆
1999 TX ₁₆	15.7	0.15	20000226	97.44470	311.09806	54.74306	38.21169	0.3329184	1.5510248	91	1	95 days	0.57	M-v	4	Williams	37306	1999 TX ₁₆
1999 TY ₁₆	16.3	0.15	20000226	52.09078	156.81185	241.97794	60.43820	0.4053653	2.0974421	69	1	94 days	0.61	M-v	5	Williams		1999 TY ₁₆
1999 TZ ₁₆	14.3	0.15	20000226	18.47458	312.67572	74.08274	3.84901	0.2564802	2.9754036	55	1	124 days	0.59	M-v	3	Williams	37306	1999 TZ ₁₆
1999 TA ₁₇	15.4	0.15	19991009	338.14902	274.84273	143.33828	2.52323	0.2004381	2.9771802	24	1	44 days	0.83			Williams		1999 TA ₁₇
1999 TB ₁₇	12.9	0.15	20000226	356.70176	0.33299	68.42164	3.04763	0.2006355	3.1793276	48	3	1994–2000	0.58	M-v	3	Williams	37306	1999 TB ₁₇
1999 TC ₁₇	14.1	0.15	19991029	35.46076	299.04073	57.05442	2.53816	0.0271262	2.9028867	23	1	28 days	0.50			Williams		1999 TC ₁₇
1999 TE ₁₇	15.7	0.15	20000226	38.60934	350.59390	48.39199	7.27725	0.1004731	2.2755376	70	1	81 days	0.47	M-v	4	Williams		1999 TE ₁₇
1999 TF ₁₇	15.1	0.15	20000226	4.21542	322.90491	117.15624	1.58106	0.1316435	2.4147092	61	1	111 days	0.55	M-v	4	Williams	37306	1999 TF ₁₇
1999 TG ₁₇	13.7	0.15	20000226	66.45590	299.90503	68.42258	9.28247	0.1852350	2.6028427	53	1	84 days	0.42	M-v	4	Williams		1999 TG ₁₇
1999 TH ₁₇	13.4	0.15	20000226	50.07738	268.72745	92.06886	3.20229	0.1035059	2.9173971	47	1	94 days	0.53	M-v	4	Williams		1999 TH ₁₇
1999 TM ₁₇	13.0	0.15	20000226	317.44949	8.25300	92.22123	11.98618	0.0817387	3.0576036	50	1	101 days	0.59	M-v	4	Williams		1999 TM ₁₇
1999 TN ₁₇	15.4	0.15	20000226	26.19221	260.86342	140.06647	8.86370	0.1910221	2.3134232	40	1	119 days	0.55	M-v	4	Williams		1999 TN ₁₇
1999 TO ₁₇	15.4	0.15	20000226	38.26816	18.99147	30.97098	20.92612	0.1121582	1.9785272	62	2	1998–2000	0.56	M-v	3	Williams	37189	1999 TO ₁₇
1999 TQ ₁₇	16.0	0.15	20000226	326.18315	166.92423	299.12720	0.41812	0.1493287	2.3881024	28	1	60 days	0.53	M-v	5	Williams	37306	1999 TQ ₁₇
1999 TR ₁₇	14.6	0.15	19991029	304.43744	188.02655	255.78341	0.27920	0.0612851	3.1713796	27	1	31 days	0.42			Williams		1999 TR ₁₇
1999 TS ₁₇	15.8	0.15	20000226	3.47872	218.88799	202.93109	4.28605	0.1308585	2.3892927	56	1	66 days	0.49	M-v	5	Williams	37306	1999 TS ₁₇
1999 TW ₁₇	16.3	0.15	19991009	12.65100	252.68165	108.79365	3.17126	0.2225631	2.3521182	32	1	44 days	0.47			Williams		1999 TW ₁₇

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1999 TY ₁₇	15.2	0.15	20000226	48.34445	335.18566	50.21567	4.55650	0.1889677	2.3465019	62	1	93 days	0.43	M-v	4	Williams	37306	1999 TY ₁₇
1999 TZ ₁₇	14.1	0.15	20000226	179.77564	25.83912	205.47982	11.80281	0.0565841	2.6122387	55	2	1998–1999	0.45	M-v	3	Williams	36847	1999 TZ ₁₇
1999 TA ₁₈	15.5	0.15	19991009	2.10503	140.55620	237.98217	1.16634	0.1419720	2.8506414	45	1	41 days	0.58			Williams		1999 TA ₁₈
1999 TB ₁₈	15.1	0.15	19991009	302.57467	71.59812	13.19503	4.00811	0.0521744	2.7098803	59	1	45 days	0.48			Williams		1999 TB ₁₈
1999 TC ₁₈	15.8	0.15	19991009	12.68741	177.26991	187.13235	13.01293	0.2044728	3.0818051	16	1	27 days	0.65			Williams		1999 TC ₁₈
1999 TE ₁₈	15.5	0.15	19991009	355.86755	202.91620	187.96998	12.20389	0.2537676	3.1428344	25	1	34 days	0.38			Williams		1999 TE ₁₈
1999 TF ₁₈	15.5	0.15	20000226	76.98905	122.33269	226.58254	0.53748	0.2056583	2.1549293	116	1	85 days	0.48	M-v	4	Williams	37306	1999 TF ₁₈
1999 TJ ₁₈	13.2	0.15	20000226	15.11842	195.92551	224.58118	10.82313	0.0499055	3.0458937	70	2	1998–1999	0.51	M-v	3	Williams	37306	1999 TJ ₁₈
1999 TL ₁₈	14.8	0.15	20000226	60.11098	305.91688	47.59146	7.57853	0.1377211	2.3488195	71	2	1998–1999	0.61	M-v	3	Williams	37306	1999 TL ₁₈
1999 TM ₁₈	16.2	0.15	19991009	261.50367	259.54042	231.39933	2.14212	0.0937570	2.3995915	27	1	37 days	0.66			Williams		1999 TM ₁₈
1999 TN ₁₈	17.3	0.15	19991009	347.46170	38.79472	0.82245	2.36352	0.1915694	2.4005415	31	1	44 days	0.49			Williams		1999 TN ₁₈
1999 TO ₁₈	15.2	0.15	19991009	25.35388	137.58756	206.37476	20.11465	0.2028388	3.1276332	26	1	34 days	0.37			Williams		1999 TO ₁₈
1999 TP ₁₈	14.9	0.15	19991009	33.17741	133.46674	209.14006	8.88654	0.0992791	3.1774087	34	1	41 days	0.62			Williams		1999 TP ₁₈
1999 TR ₁₈	13.7	0.15	20000226	10.36101	35.47050	8.52158	1.80173	0.1091174	2.9230627	62	1	97 days	0.45	M-v	4	Williams		1999 TR ₁₈
1999 TT ₁₈	15.8	0.15	20000226	154.53726	231.84611	29.47539	8.73017	0.1710165	2.2662352	43	2	1998–1999	0.61	M-v	4	Williams	36848	1999 TT ₁₈
1999 TU ₁₈	14.3	0.15	20000226	56.24990	326.74096	20.75414	25.41717	0.2454291	2.3912052	87	3	1988–1999	0.63	M-v	2	Williams	37306	1999 TU ₁₈
1999 TV ₁₈	13.9	0.15	19991009	308.83209	237.09836	215.39649	9.62394	0.1450023	3.0418408	26	1	45 days	0.40			Williams		1999 TV ₁₈
1999 TY ₁₈	14.6	0.15	20000226	4.15194	229.71297	215.86853	1.37607	0.1832491	2.3870945	96	5	1982–2000	0.44	M-v	1	Williams	37306	1999 TY ₁₈
1999 TZ ₁₈	14.3	0.15	20000226	14.44797	253.52842	164.37711	2.45277	0.1359163	2.2879192	51	1	94 days	0.42	M-v	4	Williams	37306	1999 TZ ₁₈
1999 TB ₁₉	15.2	0.15	19991009	341.82526	208.51458	205.85345	4.91323	0.1594094	2.9446460	35	1	40 days	0.77			Williams		1999 TB ₁₉
1999 TC ₁₉	15.5	0.15	19991029	38.39332	129.93809	208.46180	11.83004	0.2029886	2.6587051	29	1	30 days	0.78			Williams		1999 TC ₁₉
1999 TF ₁₉	15.2	0.15	20000226	49.65708	294.77068	56.76416	13.34860	0.1723019	2.6893983	35	1	90 days	0.53	M-v	4	Williams	36930	1999 TF ₁₉
1999 TG ₁₉	14.0	0.15	20000226	115.89654	354.10358	300.64036	3.66488	0.0160496	2.6969609	62	4	1991–2000	0.60	M-v	2	Williams	37306	1999 TG ₁₉
1999 TH ₁₉	15.0	0.15	20000226	62.58360	316.37828	30.81489	15.06014	0.1992522	2.5766351	61	1	70 days	0.52	M-v	4	Williams	37306	1999 TH ₁₉
1999 TJ ₁₉	15.3	0.15	20000226	53.75314	337.75068	24.89744	3.07608	0.2130834	2.5695723	68	1	65 days	0.53	M-v	4	Williams	37306	1999 TJ ₁₉
1999 TK ₁₉	14.0	0.15	20000226	50.83750	315.10401	45.43247	3.30777	0.1450423	2.5908851	48	2	1998–2000	0.60	M-v	4	Williams	36848	1999 TK ₁₉
1999 TO ₁₉	14.7	0.15	20000226	243.36550	328.84280	205.63063	4.76260	0.0963664	2.2254071	62	4	1988–1999	0.52	M-v	2	Williams	36848	1999 TO ₁₉
1999 TP ₁₉	15.3	0.15	19991029	68.18031	279.33228	22.88936	7.62682	0.1801032	2.5874650	26	1	32 days	0.48			Williams		1999 TP ₁₉
1999 TR ₁₉	14.5	0.15	20000226	10.64636	296.73035	101.25166	27.10514	0.1920429	2.6733623	14	1	66 days	0.41	M-v	5	Williams		1999 TR ₁₉
1999 TS ₁₉	14.4	0.15	20000226	9.58391	310.54854	102.74870	25.32714	0.2680902	2.4509943	16	1	77 days	0.28	M-v	4	Williams		1999 TS ₁₉
1999 TX ₁₉	16.7	0.15	19991009	317.50272	65.31629	8.76351	1.94774	0.1153609	2.5419896	18	1	34 days	0.41			Williams		1999 TX ₁₉
1999 TY ₁₉	14.5	0.15	19991009	305.05956	76.36113	6.74434	1.99870	0.0587586	2.9402233	18	1	30 days	0.52			Williams		1999 TY ₁₉
1999 TZ ₁₉	16.1	0.15	19991009	49.01210	188.96740	126.05804	3.13996	0.1847234	2.4329402	28	1	42 days	0.50			Williams		1999 TZ ₁₉
1999 TA ₂₀	15.0	0.15	19991009	126.92366	122.34277	131.30809	4.44921	0.0427034	2.8031548	21	1	42 days	0.64			Williams		1999 TA ₂₀
1999 TC ₂₀	13.8	0.15	20000226	69.40742	201.51557	133.38740	4.60993	0.0775012	3.0402816	21	1	93 days	0.47	M-v	5	Williams		1999 TC ₂₀
1999 TG ₂₀	13.8	0.15	20000226	14.79195	347.87149	61.85172	2.99966	0.0309809	2.9439973	80	2	1997–2000	0.62	M-v	3	Williams	37306	1999 TG ₂₀
1999 TH ₂₀	14.5	0.15	20000226	54.35090	236.69974	124.50251	4.55316	0.2561557	2.5956795	52	2	1998–2000	0.59	M-v	4	Williams	37306	1999 TH ₂₀
1999 TM ₂₀	15.2	0.15	19991009	57.79560	296.59334	6.81219	3.74984	0.1404832	2.6161399	27	1	44 days	0.76			Williams		1999 TM ₂₀
1999 TO ₂₀	14.4	0.15	20000226	82.08143	108.72208	210.53621	1.19165	0.0612350	2.7320265	38	1	80 days	0.51	M-v	5	Williams		1999 TO ₂₀
1999 TP ₂₀	15.0	0.15	20000226	17.33248	7.96549	22.20373	2.50309	0.1205429	2.9634812	33	1	65 days	0.54	M-v	5	Williams	37306	1999 TP ₂₀
1999 TQ ₂₀	16.8	0.15	19991009	27.12573	312.66462	24.17693	2.72948	0.2040292	2.3561139	28	1	41 days	0.72			Williams		1999 TQ ₂₀
1999 TR ₂₀	14.2	0.15	19991009	289.35550	88.96249	12.02404	5.14095	0.1232741	3.1768333	30	1	42 days	0.75			Williams		1999 TR ₂₀
1999 TS ₂₀	13.6	0.15	19991009	7.45215	125.84332	239.56466	9.04588	0.1088972	3.1032961	10	1	29 days	0.48			Williams		1999 TS ₂₀
1999 TW ₂₀	14.6	0.15	19991009	1.98389	174.77835	199.13998	5.38594	0.1858233	3.1019471	24	1	36 days	0.44			Williams		1999 TW ₂₀
1999 TY ₂₀	16.4	0.15	19991009	3.14024	159.10131	216.54146	7.52168	0.3100560	2.6706920	20	1	36 days	0.42			Williams		1999 TY ₂₀
1999 TA ₂₁	14.0	0.15	20000226	344.70508	89.97070	345.28301	3.28426	0.0775341	2.9442606	70	2	1994–2000	0.47	M-v	4	Williams	37306	1999 TA ₂₁
1999 TB ₂₁	15.7	0.15	20000226	341.38475	101.49966	354.71693	3.67036	0.1283304	2.3074548	42	2	1997–1999	0.62	M-v	4	Williams	36849	1999 TB ₂₁
1999 TG ₂₁	14.9	0.15	20000226	21.95753	37.00916	36.17604	25.38854	0.3104094	2.3157133	25	1	75 days	0.37	M-v	4	Williams		1999 TG ₂₁
1999 TN ₂₁	16.4	0.15	20000226	250.19124	310.21882	244.02946	6.10532	0.0610371	2.3994300	43	1	66 days	0.34	M-v	4	Williams		1999 TN ₂₁
1999 TP ₂₁	14.9	0.15	20000226	31.77130	339.93458	48.28532	14.58943	0.2441499	3.1817701	40	1	72 days	0.49	M-v	4	Williams	37306	1999 TP ₂₁
1999 TQ ₂₁	14.5	0.15	20000226	351.62435	27.44254	56.27949	11.15416	0.0732244	2.9981061	45	1	71 days	0.45	M-v	4	Williams	37306	1999 TQ ₂₁
1999 TR ₂₁	16.1	0.15	20000226	22.11571	2.93325	55.99609	7.53711	0.0924662	2.3536246	36	1	66 days	0.51	M-v	5	Williams	37306	1999 TR ₂₁
1999 TS ₂₁	15.2	0.15	19991009	12.46792	333.07752	50.11337	18.51882	0.2115218	3.1576457	16	1	41 days	0.22			Williams		1999 TS ₂₁

1999 TT ₂₁	17.0	0.15	19991009	24.12791	304.52360	52.96554	9.14169	0.2664493	2.4720741	15	1	41 days	0.34		Williams		1999 TT ₂₁
1999 TU ₂₁	15.9	0.15	20000226	52.81180	319.61510	51.11879	13.79319	0.2088236	2.6015499	28	1	64 days	0.63	M-v 5	Williams	37306	1999 TU ₂₁
1999 TR ₂₃	17.7	0.15	19991009	8.16895	318.61872	43.61668	3.76376	0.1895032	2.2569379	12	1	38 days	0.21		Williams		1999 TR ₂₃
1999 TH ₂₄	14.7	0.15	20000226	333.87919	288.47304	187.15213	20.48064	0.3112063	2.2863783	32	2	1997–1999	0.42	M-v 3	Williams	37306	1999 TH ₂₄
1999 TW ₂₄	15.6	0.15	20000226	348.66322	97.35580	335.13816	1.77515	0.1850461	2.3703027	30	2	1997–1999	0.49	M-v 4	Williams	37190	1999 TW ₂₄
1999 TG ₂₅	13.4	0.15	20000226	117.03436	261.79823	13.96050	7.45450	0.1948181	2.7999607	36	2	1993–1999	0.43	M-v 5	Williams	36849	1999 TG ₂₅
1999 TJ ₂₅	15.1	0.15	19991009	27.90049	136.31656	210.46653	6.17579	0.1382901	2.3721113	32	1	45 days	0.45		Williams		1999 TJ ₂₅
1999 TM ₂₅	14.9	0.15	20000226	77.59669	94.55292	225.10730	3.44424	0.2111336	2.6155763	54	2	1998–1999	0.64	M-v 4	Williams	36850	1999 TM ₂₅
1999 TN ₂₅	13.7	0.15	20000226	337.73635	82.97815	6.81193	3.35269	0.1087369	2.7602896	57	1	115 days	0.44	M-v 4	Williams	37306	1999 TN ₂₅
1999 TO ₂₅	15.7	0.15	19991009	43.03656	90.74266	228.43839	3.06737	0.2410030	2.5615266	33	1	44 days	0.55		Williams		1999 TO ₂₅
1999 TQ ₂₅	14.7	0.15	20000226	200.97450	8.02476	211.31639	8.93005	0.0770416	2.4482593	42	2	1998–1999	0.60	M-v 4	Williams	36850	1999 TQ ₂₅
1999 TR ₂₅	16.0	0.15	19991009	283.84521	101.10800	14.70591	4.04300	0.1202523	2.4235887	27	1	44 days	0.41		Williams		1999 TR ₂₅
1999 TT ₂₅	15.6	0.15	20000226	55.27530	352.22978	13.99712	5.64497	0.1664007	2.1821370	34	1	95 days	0.43	M-v 4	Williams		1999 TT ₂₅
1999 TU ₂₅	17.0	0.15	19991009	22.48087	340.68209	9.39301	1.33275	0.2078215	2.3839358	25	1	44 days	0.62		Williams		1999 TU ₂₅
1999 TV ₂₅	15.3	0.15	19991009	15.54932	151.94723	219.32088	1.32111	0.0293205	2.9154706	17	1	33 days	0.38		Williams		1999 TV ₂₅
1999 TW ₂₅	16.5	0.15	19991009	11.71032	114.01127	252.81893	0.45222	0.2151710	2.5630440	15	1	33 days	0.33		Williams		1999 TW ₂₅
1999 TY ₂₅	13.7	0.15	20000226	53.03073	330.60228	24.84352	16.58361	0.0923761	3.1029251	52	2	1977–2000	0.60	M-v 4	Williams	37306	1999 TY ₂₅
1999 TZ ₂₅	15.3	0.15	20000226	78.27646	320.89045	16.28582	6.89291	0.1315169	2.2783903	42	2	1998–2000	0.68	M-v 4	Williams	36850	1999 TZ ₂₅
1999 TA ₂₆	14.6	0.15	19991009	8.18885	128.24330	248.40637	1.21253	0.1188191	2.6453835	20	1	37 days	0.29		Williams		1999 TA ₂₆
1999 TB ₂₆	14.4	0.15	20000226	65.16366	324.71984	14.99983	5.31746	0.1648461	2.7631827	64	2	1976–2000	0.50	M-v 4	Williams	36850	1999 TB ₂₆
1999 TD ₂₆	15.3	0.15	19991009	271.26973	253.93491	236.56931	1.11804	0.1170830	2.4899791	31	1	44 days	0.58		Williams		1999 TD ₂₆
1999 TE ₂₆	15.0	0.15	20000226	23.31014	24.55087	21.25302	10.85877	0.1034715	2.3405828	57	1	114 days	0.46	M-v 3	Williams	37306	1999 TE ₂₆
1999 TF ₂₆	14.6	0.15	20000226	12.85303	193.51880	218.00646	3.56173	0.1183360	2.6965251	47	2	1997–2000	0.53	M-v 3	Williams	36850	1999 TF ₂₆
1999 TH ₂₆	14.3	0.15	20000226	316.28775	277.92243	215.31843	10.05289	0.1981353	2.3855751	61	1	98 days	0.55	M-v 5	Williams		1999 TH ₂₆
1999 TJ ₂₆	15.4	0.15	20000226	31.34095	175.58423	220.82379	3.71903	0.1551224	2.3789482	42	1	96 days	0.68	M-v 4	Williams	37307	1999 TJ ₂₆
1999 TL ₂₆	14.4	0.15	20000226	29.95923	166.95665	218.14525	9.91347	0.1447681	3.0670971	75	3	1997–2000	0.61	M-v 3	Williams	37307	1999 TL ₂₆
1999 TP ₂₆	13.8	0.15	20000226	68.12936	123.33403	217.52689	9.40327	0.0791660	3.0886878	28	1	63 days	0.54	M-v 5	Williams	37307	1999 TP ₂₆
1999 TS ₂₆	16.4	0.15	19991009	54.21430	51.84535	258.53447	1.39205	0.2086164	2.4097773	22	1	32 days	0.45		Williams		1999 TS ₂₆
1999 TU ₂₆	14.1	0.15	20000226	4.70583	201.81767	219.49375	12.78901	0.1549352	3.0110597	65	1	94 days	0.57	M-v 4	Williams	37307	1999 TU ₂₆
1999 TV ₂₆	15.8	0.15	20000226	42.58352	43.37670	336.65868	1.53243	0.2075933	2.3839843	36	1	93 days	0.35	M-v 4	Williams		1999 TV ₂₆
1999 TX ₂₆	14.5	0.15	20000226	48.34318	45.05056	323.48684	1.18118	0.0844321	2.8679120	48	1	65 days	0.58	M-v 4	Williams	37307	1999 TX ₂₆
1999 TY ₂₆	16.9	0.15	19991009	350.77239	182.02468	218.01546	4.04616	0.1075334	2.2853114	30	1	44 days	0.39		Williams		1999 TY ₂₆
1999 TZ ₂₆	15.6	0.15	20000226	19.86379	28.80373	23.61158	6.68378	0.1487512	2.3835706	59	1	114 days	0.53	M-v 4	Williams	37307	1999 TZ ₂₆
1999 TC ₂₇	14.2	0.15	20000226	324.28657	259.10064	223.66002	6.31985	0.1474820	2.3361515	79	3	1992–2000	0.49	M-v 2	Williams	37307	1999 TC ₂₇
1999 TE ₂₇	14.8	0.15	20000226	49.17194	340.79581	26.98033	14.13865	0.1890023	2.5798814	40	1	107 days	0.39	M-v 4	Williams		1999 TE ₂₇
1999 TG ₂₇	15.0	0.15	20000226	27.75286	8.50738	30.42993	10.16521	0.1643607	2.6671433	47	1	110 days	0.58	M-v 3	Williams		1999 TG ₂₇
1999 TH ₂₇	15.0	0.15	20000226	39.67575	354.27882	21.61220	7.01130	0.2362661	2.8007341	40	1	95 days	0.50	M-v 4	Williams	37307	1999 TH ₂₇
1999 TK ₂₇	13.9	0.15	20000226	198.95094	9.85691	222.61560	6.48208	0.0794136	2.3121186	79	4	1960–2000	0.52	M-v 3	Williams	37307	1999 TK ₂₇
1999 TL ₂₇	14.4	0.15	20000226	3.82301	100.81843	323.31085	1.12479	0.0764701	2.9282641	61	1	95 days	0.56	M-v 4	Williams	37307	1999 TL ₂₇
1999 TM ₂₇	14.5	0.15	20000226	76.19884	348.61082	355.44230	1.82610	0.0740807	2.7242407	71	4	1990–2000	0.54	M-v 1	Williams	37190	1999 TM ₂₇
1999 TN ₂₇	14.0	0.15	20000226	342.22086	228.16885	225.32447	4.48722	0.1547276	3.1451842	62	1	96 days	0.62	M-v 4	Williams	37307	1999 TN ₂₇
1999 TP ₂₇	14.2	0.15	20000226	346.09994	60.03907	25.17592	2.85454	0.0325899	2.7188806	69	2	1990–2000	0.50	M-v 4	Williams	37307	1999 TP ₂₇
1999 TQ ₂₇	13.9	0.15	20000226	248.42390	321.89316	231.69733	3.95238	0.0740938	2.2490130	81	4	1989–2000	0.60	M-v 2	Williams	37307	1999 TQ ₂₇
1999 TS ₂₇	13.1	0.15	20000226	257.40719	146.14568	32.16236	11.18091	0.0694437	2.9523339	55	1	71 days	0.51	M-v 4	Williams	37307	1999 TS ₂₇
1999 TW ₂₇	14.8	0.15	20000226	35.57637	111.39011	293.67882	1.30032	0.2071711	2.3968717	48	1	72 days	0.47	M-v 4	Williams	37307	1999 TW ₂₇
1999 TX ₂₇	12.9	0.15	20000226	33.85579	348.95358	44.68460	16.00424	0.2315834	3.1025849	27	1	73 days	0.32	M-v 4	Williams	37307	1999 TX ₂₇
1999 TY ₂₇	15.3	0.15	20000226	32.55294	33.85431	9.16851	2.85130	0.3006566	2.5969308	32	1	73 days	0.42	M-v 4	Williams		1999 TY ₂₇
1999 TZ ₂₇	14.1	0.15	20000226	340.90232	84.93154	41.56148	12.38697	0.2627397	2.7849257	40	1	91 days	0.43	M-v 4	Williams		1999 TZ ₂₇
1999 TD ₂₈	16.0	0.15	20000226	74.88852	331.38470	6.16141	2.54382	0.1898336	2.3329557	37	2	1996–1999	0.47	M-v 4	Williams	36851	1999 TD ₂₈
1999 TF ₂₈	16.0	0.15	19991009	49.45289	286.38167	30.20345	9.50386	0.2569005	2.7214965	27	1	39 days	0.66		Williams		1999 TF ₂₈
1999 TV ₂₈	14.9	0.15	20000226	22.45459	167.74886	210.59932	1.47000	0.0926241	2.7544229	32	1	91 days	0.62	M-v 4	Williams	37307	1999 TV ₂₈
1999 TW ₂₈	15.4	0.15	20000226	351.54964	230.94075	198.74815	2.53414	0.1019119	2.2174680	46	3	1976–1999	0.61	M-v 3	Williams	37307	1999 TW ₂₈
1999 TD ₂₉	14.4	0.15	20000226	306.28400	270.30259	200.82668	4.68809	0.0980995	2.4371462	36	1	91 days	0.57	M-v 5	Williams	37307	1999 TD ₂₉

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1999 TF ₂₉	14.0	0.15	20000226	120.72827	69.91196	207.37019	4.21529	0.0781027	2.4066854	67	3	1980–1999	0.64	M-v	2	Williams	37307	1999 TF ₂₉
1999 TG ₂₉	14.5	0.15	20000226	357.94238	215.84819	195.45115	11.44025	0.1306802	2.7609200	44	1	91 days	0.69	M-v	4	Williams	37307	1999 TG ₂₉
1999 TO ₂₉	15.8	0.15	20000226	55.99567	136.94425	200.85342	4.66171	0.2055571	2.5537372	31	2	1995–1999	0.66	M-v	4	Williams	36852	1999 TO ₂₉
1999 TP ₂₉	15.4	0.15	20000226	35.97746	155.99548	212.18013	1.60548	0.1214051	2.5317703	26	1	91 days	0.64	M-v	4	Williams	37307	1999 TP ₂₉
1999 TF ₃₀	14.9	0.15	20000226	343.51623	117.10657	325.41974	1.63013	0.1648832	2.4088554	35	1	68 days	0.46	M-v	5	Williams	37307	1999 TF ₃₀
1999 TU ₃₀	16.1	0.15	20000226	13.27097	69.97656	338.92615	1.77455	0.1738107	2.4158040	36	3	1995–1999	0.43	M-v	3	Williams	36852	1999 TU ₃₀
1999 TV ₃₀	14.0	0.15	20000226	136.32979	57.81350	198.21370	12.63052	0.1377123	2.6891208	51	2	1998–1999	0.46	M-v	3	Williams	36852	1999 TV ₃₀
1999 TX ₃₀	15.1	0.15	20000226	140.70825	43.44418	223.34737	1.90797	0.0929191	2.2061167	74	3	1996–1999	0.48	M-v	3	Williams	37307	1999 TX ₃₀
1999 TA ₃₁	14.6	0.15	20000226	357.25141	209.23749	222.18489	3.29582	0.1588194	2.3288557	62	1	112 days	0.47	M-v	4	Williams	37307	1999 TA ₃₁
1999 TC ₃₁	13.5	0.15	20000226	85.51793	294.67540	9.11689	13.08486	0.1074851	3.1756968	44	2	1997–2000	0.66	M-v	3	Williams	36853	1999 TC ₃₁
1999 TE ₃₁	13.9	0.15	20000226	1.32693	44.90751	10.31256	14.97824	0.1227086	2.6490625	48	2	1997–2000	0.40	M-v	3	Williams	37307	1999 TE ₃₁
1999 TK ₃₁	14.2	0.15	20000226	4.78457	37.53033	7.75865	5.07121	0.1717557	3.1146376	44	1	124 days	0.54	M-v	4	Williams		1999 TK ₃₁
1999 TO ₃₁	13.4	0.15	20000226	262.56530	153.80848	353.90745	4.21542	0.0656284	3.0914124	51	1	71 days	0.51	M-v	5	Williams	37307	1999 TO ₃₁
1999 TR ₃₁	16.7	0.15	20000226	26.20658	177.90359	215.44810	2.49008	0.1814975	2.4162876	36	1	66 days	0.51	M-v	5	Williams	37307	1999 TR ₃₁
1999 TS ₃₁	16.0	0.15	20000226	91.83749	90.61619	211.41340	3.62773	0.2077809	2.3718739	20	1	62 days	0.44	M-v	6	Williams	37307	1999 TS ₃₁
1999 TU ₃₁	14.8	0.15	19991009	303.33602	208.43387	233.55164	1.71961	0.0628265	2.6927089	17	1	39 days	0.37			Williams		1999 TU ₃₁
1999 TA ₃₂	15.4	0.15	20000226	86.05568	109.21516	208.04412	8.16663	0.0889337	2.6592663	21	1	65 days	0.49	M-v	5	Williams	37307	1999 TA ₃₂
1999 TD ₃₂	16.5	0.15	19991009	7.87084	160.66689	207.81163	7.77851	0.2050628	2.7950462	33	1	38 days	0.73			Williams		1999 TD ₃₂
1999 TF ₃₂	14.7	0.15	19991009	333.52044	34.47388	16.43344	10.64997	0.0576460	3.0903279	30	1	43 days	0.65			Williams		1999 TF ₃₂
1999 TG ₃₂	14.1	0.15	20000226	286.59636	299.84787	206.35250	4.22113	0.1775359	2.6602310	52	3	1982–1999	0.58	M-v	3	Williams	36853	1999 TG ₃₂
1999 TH ₃₂	15.7	0.15	19991009	279.59179	108.19950	4.27409	5.38564	0.0894788	2.2653491	27	1	43 days	0.65			Williams		1999 TH ₃₂
1999 TJ ₃₂	13.8	0.15	20000226	319.34726	114.04187	342.47856	2.02162	0.0591973	3.0240707	43	2	1996–1999	0.59	M-v	4	Williams	36853	1999 TJ ₃₂
1999 TM ₃₂	14.7	0.15	20000226	19.21763	206.38675	207.14006	3.74654	0.2344980	2.3447829	65	1	168 days	0.49	M-v	3	Williams	37307	1999 TM ₃₂
1999 TN ₃₂	15.4	0.15	20000226	36.90152	10.15080	14.55145	5.43647	0.2052966	2.3523405	53	4	1981–2000	0.47	M-v	2	Williams	37307	1999 TN ₃₂
1999 TX ₃₂	13.6	0.15	20000226	143.80914	11.45400	236.33948	1.03332	0.0703319	3.1736963	34	3	1997–1999	0.69	M-v	3	Williams	37190	1999 TX ₃₂
1999 TB ₃₃	15.4	0.15	19991009	319.81942	129.24296	302.57259	1.01016	0.1934798	3.0967499	25	1	42 days	0.54			Williams		1999 TB ₃₃
1999 TJ ₃₃	15.0	0.15	19991009	358.02490	10.04532	10.20245	10.01206	0.0925008	3.0842342	22	1	41 days	0.80			Williams		1999 TJ ₃₃
1999 TN ₃₃	15.6	0.15	20000226	85.47004	78.75400	216.10948	3.59023	0.2784190	2.5887868	23	1	62 days	0.43	M-v	6	Williams	37307	1999 TN ₃₃
1999 TP ₃₃	14.4	0.15	19991009	24.25681	138.21826	202.10924	16.41326	0.2345858	3.1291977	19	1	42 days	0.70			Williams		1999 TP ₃₃
1999 TR ₃₃	15.1	0.15	20000226	21.81800	180.60558	206.75560	9.94104	0.1441779	2.9623469	31	1	76 days	0.45	M-v	4	Williams	37307	1999 TR ₃₃
1999 TU ₃₃	15.3	0.15	19991009	13.29075	153.30741	205.68634	9.93429	0.2317389	3.1407637	29	1	52 days	0.37			Williams		1999 TU ₃₃
1999 TW ₃₃	15.3	0.15	19991009	66.53590	287.36944	12.86978	4.67869	0.1422061	2.7439321	21	1	37 days	0.62			Williams		1999 TW ₃₃
1999 TY ₃₃	14.4	0.15	19991009	16.75105	32.04511	320.53474	1.05077	0.1232602	2.9380612	13	1	36 days	0.51			Williams		1999 TY ₃₃
1999 TZ ₃₃	14.8	0.15	20000226	15.90680	173.17726	217.93687	2.43187	0.1330675	2.9002518	46	3	1996–1999	0.52	M-v	3	Williams	37307	1999 TZ ₃₃
1999 TD ₃₄	13.3	0.15	20000226	89.44054	291.64642	40.76988	13.57824	0.2132813	2.5557606	62	2	1998–2000	0.61	M-v	4	Williams	37307	1999 TD ₃₄
1999 TQ ₃₄	14.5	0.15	20000226	99.52919	255.19747	30.74071	13.15694	0.2374932	2.3309064	47	2	1998–1999	0.46	M-v	4	Williams	37307	1999 TQ ₃₄
1999 TR ₃₄	16.8	0.15	19991009	315.37074	55.60241	23.86581	21.07979	0.2088980	2.3717091	24	1	43 days	0.56			Williams		1999 TR ₃₄
1999 TS ₃₄	15.4	0.15	20000226	31.20901	346.54744	31.40227	15.90707	0.1568251	2.6330621	42	1	66 days	0.52	M-v	4	Williams	37307	1999 TS ₃₄
1999 TW ₃₄	15.6	0.15	20000226	317.80167	283.80398	206.54334	21.47053	0.1366736	1.9514282	39	1	99 days	0.49	M-v	4	Williams		1999 TW ₃₄
1999 TB ₃₅	14.8	0.15	20000226	339.57097	91.15367	18.71400	20.23019	0.1048070	1.9570388	30	1	96 days	0.40	M-v	4	Williams	37307	1999 TB ₃₅
1999 TH ₃₅	14.2	0.15	20000226	297.64875	137.38471	3.52331	24.14788	0.2714928	2.3372246	27	1	62 days	0.54	M-v	5	Williams	37307	1999 TH ₃₅
1999 TL ₃₅	16.0	0.15	19991009	47.65029	311.06658	8.89686	19.60452	0.0611712	1.9384097	22	1	32 days	0.38			Williams		1999 TL ₃₅
1999 TR ₃₅	13.8	0.15	20000226	203.61039	181.68053	25.80294	24.84058	0.1530126	2.4070286	59	2	1953–2000	0.63	M-v	4	Williams	37307	1999 TR ₃₅
1999 TX ₃₅	17.0	0.15	19991009	11.21303	348.23258	19.46007	13.16214	0.1683681	2.3371882	22	1	30 days	0.42			Williams		1999 TX ₃₅
1999 TY ₃₅	16.1	0.15	20000226	19.98775	202.96314	206.39323	2.60882	0.1914189	2.2942001	34	1	64 days	0.57	M-v	5	Williams	37307	1999 TY ₃₅
1999 TC ₃₆	5.3	0.15	19991029	5.43098	250.35888	97.85192	8.43367	0.1914523	38.9915306	14	1	96 days	0.66			E Marsden		1999 TC ₃₆
1999 UA	16.0	0.15	20000226	50.30705	124.96603	245.57670	4.43895	0.2395455	2.3196080	47	1	91 days	0.50	M-v	4	Williams	37307	1999 UA
1999 UC	16.7	0.15	19991029	315.63124	55.56339	36.70960	7.03281	0.0994076	2.4001189	19	1	44 days	0.58			Williams		1999 UC
1999 UD	14.6	0.15	20000226	90.39673	104.64236	198.28694	7.18041	0.1989976	2.2559101	77	4	1982–2000	0.58	M-v	1	Williams	36931	1999 UD
1999 UE	13.9	0.15	20000226	46.37502	354.93900	345.52243	0.85301	0.1894692	3.1491398	43	1	93 days	0.60	M-v	4	Williams	37307	1999 UE
1999 UF	13.2	0.15	20000226	294.73447	101.85414	18.60864	4.92536	0.0996716	3.2031979	41	1	95 days	0.48	M-v	5	Williams		1999 UF
1999 UG	15.8	0.15	20000226	36.27608	351.73269	28.49107	1.92154	0.1942800	2.3957861	62	1	72 days	0.52	M-v	4	Williams	37307	1999 UG
1999 UK	15.2	0.15	20000226	21.18521	138.83807	259.98086	1.22157	0.1694018	2.5459576	38	1	66 days	0.52	M-v	4	Williams	37307	1999 UK

1999 UM	16.0	0.15	19991009	299.68211	91.83035	5.43134	2.48451	0.1467837	2.4271195	35	1	43 days	0.66		Williams		1999 UM
1999 UN	15.2	0.15	19991009	39.79060	290.34005	20.05650	7.68004	0.3186893	3.0738281	35	1	38 days	0.53		Williams		1999 UN
1999 UO	14.6	0.15	20000226	24.40398	177.78700	205.96410	10.68337	0.1176965	3.0666612	76	2	1997–1999	0.62	M-v 3	Williams	36854	1999 UO
1999 UP	15.4	0.15	20000226	91.31895	116.46580	198.99356	6.33911	0.1309824	2.3726740	33	2	1998–1999	0.70	M-v 4	Williams	36854	1999 UP
1999 UT	13.9	0.15	20000226	15.10830	213.48078	203.57791	5.43800	0.0516974	2.8634700	88	1	92 days	0.60	M-v 4	Williams		1999 UT
1999 UV	15.1	0.15	20000226	15.65064	18.27963	29.61681	6.65557	0.1264680	2.4094327	67	1	96 days	0.59	M-v 4	Williams	37308	1999 UV
1999 UA ₁	15.1	0.15	20000226	69.40032	298.76645	34.17154	7.52685	0.2521493	2.4275246	54	1	81 days	0.54	M-v 5	Williams		1999 UA ₁
1999 UC ₁	13.4	0.15	20000226	63.34971	309.42137	34.87014	12.41063	0.1955115	2.5744611	114	3	1988–2000	0.48	M-v 2	Williams	37308	1999 UC ₁
1999 UD ₁	14.8	0.15	20000226	166.28520	207.54417	44.30888	6.62341	0.1331488	2.3005875	75	3	1992–1999	0.58	M-v 3	Williams	37308	1999 UD ₁
1999 UE ₁	15.1	0.15	20000226	87.72216	262.46520	62.90151	3.22184	0.1535297	2.2690824	57	2	1998–2000	0.73	M-v 4	Williams	36855	1999 UE ₁
1999 UF ₁	14.0	0.15	20000226	354.11155	42.77774	34.07982	17.11237	0.2103149	3.1188210	68	2	1977–2000	0.49	M-v 4	Williams	37308	1999 UF ₁
1999 UG ₁	16.4	0.15	19991029	35.67038	295.34648	48.74694	5.87443	0.1826064	2.3135840	34	1	31 days	0.56		Williams		1999 UG ₁
1999 UJ ₁	16.0	0.15	19991009	94.12333	263.66925	22.02459	21.84183	0.0676845	1.9323463	34	1	39 days	0.51		Williams		1999 UJ ₁
1999 UL ₁	13.9	0.15	20000226	3.52311	26.46207	33.43732	1.92170	0.2364748	3.0672408	41	2	1988–2000	0.62	M-v 4	Williams	36856	1999 UL ₁
1999 UN ₁	15.3	0.15	20000226	341.01190	84.68833	17.32555	3.42385	0.1308222	2.4312448	77	1	92 days	0.53	M-v 4	Williams		1999 UN ₁
1999 UQ ₁	14.7	0.15	20000226	21.78984	11.88869	52.61950	7.38926	0.0889040	2.3234044	64	1	83 days	0.53	M-v 4	Nakano		1999 UQ ₁
1999 UR ₁	15.6	0.15	20000226	89.61287	117.45134	218.70884	3.22147	0.1866769	2.2337835	67	1	61 days	0.46	M-v 4	Williams		1999 UR ₁
1999 UV ₁	13.3	0.15	20000226	229.47515	315.55651	248.41534	6.75866	0.1445060	2.5681199	69	1	95 days	0.45	M-v 4	Williams	37308	1999 UV ₁
1999 UW ₁	13.4	0.15	20000226	282.82510	150.32682	49.58861	11.74606	0.0744263	3.1633215	29	2	1998–2000	0.65	M-v 4	Williams	37190	1999 UW ₁
1999 UY ₁	14.1	0.15	20000226	89.87900	121.37319	218.10996	7.58362	0.1089044	2.2797784	100	3	1994–2000	0.45	M-v 2	Williams	37308	1999 UY ₁
1999 UA ₂	14.9	0.15	20000226	68.68844	98.74464	228.57173	2.49238	0.2956367	2.5984469	79	1	94 days	0.58	M-v 4	Williams	37308	1999 UA ₂
1999 UC ₂	14.9	0.15	19991009	36.38063	314.34649	24.32317	2.39682	0.0749114	2.9300394	28	1	39 days	0.61		Williams		1999 UC ₂
1999 UE ₂	14.9	0.15	20000226	76.32073	286.06615	72.89462	6.51929	0.2041438	2.2682619	49	1	80 days	0.47	M-v 4	Williams		1999 UE ₂
1999 UF ₂	14.1	0.15	20000226	32.66417	246.03684	140.02939	2.79324	0.1093589	2.7113665	44	1	82 days	0.53	M-v 4	Williams		1999 UF ₂
1999 UG ₂	14.9	0.15	20000226	79.86085	174.65853	159.67372	2.77039	0.2245851	2.3526073	79	2	1998–2000	0.63	M-v 4	Williams	37308	1999 UG ₂
1999 UH ₂	15.6	0.15	20000226	62.28890	148.95251	208.84848	6.75335	0.1418245	2.2917400	36	1	79 days	0.54	M-v 5	Williams		1999 UH ₂
1999 UK ₂	14.3	0.15	20000226	162.06175	220.62991	35.58827	5.96644	0.1256993	2.3257629	88	3	1980–2000	0.54	M-v 3	Williams	37308	1999 UK ₂
1999 UP ₂	15.9	0.15	20000226	25.45155	339.56014	54.96663	18.00994	0.2735161	2.6353524	18	1	66 days	0.50	M-v 4	Williams		1999 UP ₂
1999 UR ₂	14.6	0.15	19991029	95.30116	50.37784	250.01137	7.42725	0.0381230	3.0979993	25	1	45 days	0.65		Williams		1999 UR ₂
1999 UT ₂	14.4	0.15	20000226	309.89704	82.74714	40.79511	11.37521	0.0992817	3.0767031	54	1	63 days	0.67	M-v 5	Williams		1999 UT ₂
1999 UU ₂	14.0	0.15	20000226	87.17839	351.52506	314.62372	6.49082	0.1528743	2.3041538	60	3	1992–2000	0.61	M-v 2	Williams	37308	1999 UU ₂
1999 UV ₂	14.2	0.15	20000226	131.16537	202.30513	60.21032	7.20097	0.2293740	2.6365057	57	2	1998–1999	0.70	M-v 3	Williams	36856	1999 UV ₂
1999 UW ₂	14.0	0.15	20000226	293.36628	121.12261	28.78369	14.29520	0.0937197	2.5704174	48	1	73 days	0.49	M-v 4	Williams	37308	1999 UW ₂
1999 UX ₂	14.3	0.15	20000226	23.77051	355.30023	34.39662	15.61528	0.0918467	2.6445694	55	1	121 days	0.41	M-v 3	Williams	37308	1999 UX ₂
1999 UY ₂	16.7	0.15	20000226	24.36671	212.69493	190.35072	4.36769	0.1554647	2.1939979	42	1	64 days	0.43	M-v 4	Williams	37308	1999 UY ₂
1999 UZ ₂	13.8	0.15	20000226	59.14061	118.83781	222.26804	11.63722	0.2003273	2.6889815	92	2	1998–1999	0.61	M-v 3	Williams	37308	1999 UZ ₂
1999 UC ₃	14.8	0.15	20000226	22.67841	318.75222	88.74243	4.76505	0.2937563	2.6100375	69	3	1978–2000	0.52	M-v 2	Williams	37308	1999 UC ₃
1999 UD ₃	17.4	0.15	19991029	349.02254	42.57785	21.46066	4.83637	0.2007673	2.5878483	37	1	30 days	0.33		Williams		1999 UD ₃
1999 UE ₃	15.0	0.15	20000226	76.87658	289.23604	109.58387	5.98169	0.0919038	2.4574255	37	1	86 days	0.37	M-v 5	Williams		1999 UE ₃
1999 UG ₃	17.1	0.15	19991029	359.17923	55.41211	353.04677	2.41372	0.0999804	2.3915281	30	1	28 days	0.35		Williams		1999 UG ₃
1999 UH ₃	16.5	0.15	19991029	299.11890	109.62003	42.13363	22.29585	0.3566486	2.7469495	15	1	28 days	0.37		Williams		1999 UH ₃
1999 UK ₃	12.7	0.15	20000226	335.04425	355.43792	97.39233	3.31805	0.1253214	2.9538476	49	1	77 days	0.56	M-v 5	Williams		1999 UK ₃
1999 UL ₃	14.8	0.15	20000226	8.38583	65.80754	2.55695	7.98986	0.2235246	2.7664872	48	1	111 days	0.54	M-v 4	Williams	37308	1999 UL ₃
1999 UM ₃	16.2	0.15	20000226	13.76578	36.35367	113.88746	10.67699	0.6676508	2.3815201	72	1	62 days	0.54	M-v 5	Marsden	37308	1999 UM ₃
1999 UN ₃	14.9	0.15	20000226	58.70588	164.43762	220.83646	5.81103	0.1406807	2.4431703	58	3	1989–2000	0.49	M-v 3	Williams	37190	1999 UN ₃
1999 UO ₃	14.9	0.15	20000226	64.67645	161.09239	202.11528	5.79369	0.1356551	2.4279993	43	1	80 days	0.46	M-v 4	Williams		1999 UO ₃
1999 UP ₃	13.6	0.15	20000226	22.14977	3.36961	52.94292	4.82299	0.1425928	2.7093805	81	3	1972–1999	0.47	M-v 3	Williams	37308	1999 UP ₃
1999 UR ₃	15.0	0.15	20000226	335.56509	22.31212	89.30214	26.89297	0.0689371	1.8692968	27	1	83 days	0.37	M-v 4	Williams		1999 UR ₃
1999 US ₃	13.8	0.15	20000226	15.90646	181.42213	268.32482	28.99320	0.5196076	2.7589753	380	2	1994–2000	0.45	M-v 1	Williams	37308	1999 US ₃
1999 UT ₃	14.4	0.15	20000226	20.30973	175.99315	228.63525	11.56106	0.2213001	2.4172794	70	1	137 days	0.49	M-v 3	Williams		1999 UT ₃
1999 UU ₃	13.0	0.15	20000226	39.70092	132.52517	238.20773	4.46171	0.2092297	3.1521516	93	3	1982–2000	0.42	M-v 3	Marsden	37308	1999 UU ₃
1999 UZ ₃	16.2	0.15	19991029	359.60093	161.95245	232.92409	10.60750	0.2626285	3.1215933	46	1	31 days	0.82		Williams		1999 UZ ₃
1999 UA ₄	12.3	0.15	20000226	45.64081	179.27052	192.95709	9.71838	0.0663817	3.0681092	61	1	98 days	0.48	M-v 4	Williams		1999 UA ₄

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1999 UB ₄	16.6	0.15	19991029	337.57463	38.60420	27.87299	2.76866	0.1728130	2.3850290	28	1	19 days	0.56		Williams		1999 UB ₄
1999 UC ₄	15.3	0.15	20000226	76.12173	287.47356	33.92870	8.36805	0.1545143	2.4828101	44	2	1998–1999	0.50	M-v 3	Williams	37190	1999 UC ₄
1999 UD ₄	14.8	0.15	20000226	55.29644	322.77240	41.07230	6.83356	0.1579670	2.3933487	49	1	70 days	0.39	M-v 5	Williams		1999 UD ₄
1999 UE ₄	14.2	0.15	20000226	84.95219	290.53090	39.32320	4.40054	0.1620656	2.3100040	93	3	1994–2000	0.58	M-v 2	Williams	37191	1999 UE ₄
1999 UF ₄	16.2	0.15	19991029	19.01424	251.16434	116.22844	2.80292	0.1861405	2.6618840	43	1	16 days	0.36		Williams		1999 UF ₄
1999 UG ₄	14.0	0.15	20000226	277.61684	345.77536	177.67537	2.27343	0.1411930	2.4074376	79	3	1992–2000	0.64	M-v 3	Williams	37308	1999 UG ₄
1999 UH ₄	15.1	0.15	20000226	30.52003	194.34854	197.08876	9.39095	0.2059823	2.7901471	45	1	95 days	0.61	M-v 4	Williams		1999 UH ₄
1999 UJ ₄	15.8	0.15	20000226	27.49251	208.93612	183.54695	8.58831	0.2065036	2.4154774	32	2	1997–1999	0.60	M-v 3	Williams	37191	1999 UJ ₄
1999 UL ₄	13.2	0.15	20000226	131.35228	29.78175	252.36527	8.64652	0.0621001	3.0731930	59	1	95 days	0.64	M-v 5	Williams		1999 UL ₄
1999 UM ₄	14.1	0.15	20000226	110.06754	87.46436	230.98824	13.95187	0.2534222	2.7051060	33	1	74 days	0.54	M-v 4	Williams		1999 UM ₄
1999 UN ₄	13.6	0.15	20000226	342.86646	73.95134	24.13318	14.53831	0.1476480	2.5843732	49	1	92 days	0.43	M-v 4	Williams		1999 UN ₄
1999 UO ₄	15.6	0.15	20000226	1.67944	120.70578	319.45595	3.51464	0.1411048	2.3054076	45	2	1997–2000	0.57	M-v 4	Williams	37308	1999 UO ₄
1999 UP ₄	15.9	0.15	20000226	40.63117	357.22477	16.60807	2.69285	0.2110877	2.3629981	59	1	71 days	0.41	M-v 3	Williams		1999 UP ₄
1999 UQ ₄	13.5	0.15	20000226	266.30026	344.27010	165.12437	5.72725	0.0925301	3.1543706	32	3	1993–1999	0.56	M-v 4	Williams	36858	1999 UQ ₄
1999 UR ₄	15.2	0.15	19991118	303.26708	290.17683	167.36864	5.11471	0.0918217	2.6931106	22	1	42 days	0.45		Williams		1999 UR ₄
1999 US ₄	14.8	0.15	19991029	116.13362	150.90573	115.25098	3.44766	0.0405735	2.6622437	17	1	14 days	0.47		Williams		1999 US ₄
1999 UU ₄	15.7	0.15	20000226	11.30778	170.04475	243.87260	1.79740	0.1933969	2.6106558	49	1	70 days	0.48	M-v 5	Williams		1999 UU ₄
1999 UV ₄	12.4	0.15	20000226	95.07310	136.12770	164.39368	10.20882	0.0607631	3.4958575	40	1	122 days	0.52	M-v 4	Williams		1999 UV ₄
1999 UZ ₄	16.8	0.15	19991029	64.84043	278.63499	44.05332	15.49607	0.1462663	2.5484051	12	1	11 days	0.35		Williams		1999 UZ ₄
1999 UA ₅	16.1	0.15	20000226	351.09295	84.17428	24.73581	5.79701	0.4676877	2.6788924	67	1	92 days	0.60	M-v 4	Williams	37308	1999 UA ₅
1999 UC ₅	15.3	0.15	20000226	48.20694	174.85734	198.33182	1.51980	0.1838506	2.4426762	71	1	98 days	0.47	M-v 4	Williams	37308	1999 UC ₅
1999 UD ₅	14.2	0.15	20000226	345.08107	27.49066	67.67683	3.01957	0.1077515	2.5216133	72	4	1993–2000	0.61	M-v 2	Williams	37191	1999 UD ₅
1999 UE ₅	15.3	0.15	20000226	16.02205	98.07693	347.35081	22.62701	0.2923173	2.3337165	30	1	60 days	0.37	M-v 4	Williams		1999 UE ₅
1999 UG ₅	9.9	0.15	20000226	9.68313	288.97477	87.46796	5.59710	0.4147272	12.7530756	98	1	108 days	0.50	M-v 4	Williams	37308	1999 UG ₅
1999 UJ ₅	14.0	0.15	20000226	61.70905	28.18770	340.11433	28.99825	0.1705291	2.6005493	26	1	63 days	0.58	M-v 5	Williams		1999 UJ ₅
1999 UP ₅	16.8	0.15	19991029	17.95865	112.41637	260.06141	2.91281	0.1336566	2.1626679	21	1	18 days	0.47		Williams		1999 UP ₅
1999 UQ ₅	14.1	0.15	20000226	352.67802	173.74680	259.23091	4.00851	0.0541247	2.7667639	54	2	1996–2000	0.60	M-v 4	Williams	37191	1999 UQ ₅
1999 UR ₅	12.7	0.15	20000226	96.95773	71.25072	232.13551	10.74723	0.1416070	3.2390960	65	2	1993–2000	0.52	M-v 4	Williams	37308	1999 UR ₅
1999 UA ₆	14.8	0.15	19991009	30.16760	152.70203	188.94036	9.65828	0.1657468	2.7671903	10	1	19 days	0.32		Williams		1999 UA ₆
1999 UB ₆	14.4	0.15	20000226	228.00224	79.82270	117.88168	3.34240	0.1085205	2.2827780	30	1	96 days	0.56	M-v 4	Williams		1999 UB ₆
1999 UD ₆	13.1	0.15	20000226	26.60918	354.87441	52.20132	9.36955	0.1310969	2.8925886	69	3	1994–1999	0.44	M-v 3	Williams	37308	1999 UD ₆
1999 UJ ₆	15.2	0.15	19991029	5.10905	163.98610	225.90845	1.23051	0.2183094	3.0597950	29	1	19 days	0.53		Williams		1999 UJ ₆
1999 UK ₆	12.9	0.15	20000226	34.89589	344.01662	38.89084	7.07504	0.0868450	3.1679151	106	1	97 days	0.49	M-v 3	Williams		1999 UK ₆
1999 UL ₆	15.8	0.15	20000226	38.21097	172.01915	207.73087	4.14015	0.2538237	2.6264791	37	1	68 days	0.41	M-v 4	Williams		1999 UL ₆
1999 UN ₆	14.5	0.15	20000226	33.67915	339.40560	52.61458	10.18970	0.3173959	2.7538446	69	1	93 days	0.42	M-v 3	Williams	37309	1999 UN ₆
1999 UO ₆	15.7	0.15	20000226	51.79719	180.90553	206.95951	1.64266	0.0992282	2.1639744	81	1	87 days	0.52	M-v 4	Williams		1999 UO ₆
1999 UR ₆	14.4	0.15	19991029	78.39584	100.64938	202.71062	1.03273	0.0532931	2.8399999	14	1	11 days	0.57		Williams		1999 UR ₆
1999 US ₆	15.5	0.15	20000226	87.24496	94.75552	212.40612	1.54731	0.1960681	2.6451225	42	4	1995–1999	0.64	M-v 1	Williams	37192	1999 US ₆
1999 UY ₆	16.5	0.15	19991029	17.88310	334.40470	13.12949	10.45166	0.0963000	2.6802558	15	1	16 days	0.24		Williams		1999 UY ₆
1999 UZ ₆	16.1	0.15	20000226	79.14965	260.33574	96.90347	5.99605	0.2078345	2.2343302	29	1	68 days	0.44	M-v 5	Williams		1999 UZ ₆
1999 UB ₇	14.3	0.15	20000226	186.47812	90.65061	176.75680	4.54275	0.2129288	2.3059209	28	1	69 days	0.62	M-v 5	Williams		1999 UB ₇
1999 UG ₇	14.7	0.15	20000226	60.51218	25.08906	353.52595	25.33742	0.1731041	2.3238213	28	1	62 days	0.49	M-v 5	Williams		1999 UG ₇
1999 UK ₇	14.4	0.15	20000226	307.84009	202.17500	337.00823	24.18915	0.2672521	1.8531473	32	1	94 days	0.50	M-v 4	Williams		1999 UK ₇
1999 UN ₇	14.8	0.15	19991029	306.49642	236.62071	208.96110	8.43265	0.0956391	3.1945491	10	1	8 days	0.28		Williams		1999 UN ₇
1999 UR ₇	15.2	0.15	20000226	47.92625	157.48833	212.91122	8.74927	0.1642849	2.8087149	22	1	68 days	0.58	M-v 5	Williams		1999 UR ₇
1999 US ₇	13.6	0.15	20000226	53.50101	311.18849	55.17523	7.44519	0.1315683	2.7565182	85	2	1992–2000	0.44	M-v 3	Williams	37192	1999 US ₇
1999 UU ₇	17.0	0.15	19991029	6.04366	169.44252	220.11674	16.49401	0.3215045	2.9321247	26	1	37 days	0.62		Williams		1999 UU ₇
1999 UW ₇	15.3	0.15	20000226	76.24795	289.16174	49.76041	4.64249	0.2341106	2.2380860	84	3	1989–2000	0.55	M-v 2	Williams	37309	1999 UW ₇
1999 UX ₇	15.5	0.15	19991118	185.50889	173.68199	49.81712	7.01663	0.0619627	2.3830961	58	1	39 days	0.52		Williams		1999 UX ₇
1999 UY ₇	16.5	0.15	19991118	354.41579	7.46612	48.93632	7.04672	0.1132619	2.3962155	50	1	39 days	0.47		Williams		1999 UY ₇
1999 UZ ₇	15.3	0.15	20000226	8.91026	13.49504	55.11913	5.63373	0.0777859	2.4495919	80	1	90 days	0.53	M-v 4	Williams		1999 UZ ₇
1999 UA ₈	14.4	0.15	20000226	4.34300	199.25823	228.03651	15.88067	0.1569734	3.1220633	47	1	68 days	0.43	M-v 4	Williams		1999 UA ₈
1999 UB ₈	15.6	0.15	19991029	36.82187	304.01448	40.59308	2.70988	0.2408478	2.6465345	29	1	18 days	0.33		Williams		1999 UB ₈

1999 UD ₈	14.6	0.15	20000226	45.19071	116.06309	260.65840	0.91534	0.1113104	2.9322017	60	1	75 days	0.47	M-v	4	Williams	1999 UD ₈
1999 UE ₈	15.0	0.15	20000226	16.27239	96.82602	318.12085	1.29868	0.1059221	2.7945241	38	1	63 days	0.57	M-v	5	Williams	1999 UE ₈
1999 UF ₈	15.8	0.15	19991029	322.04924	72.75089	30.14995	1.23286	0.2381007	3.0864335	36	1	18 days	0.55			Williams	1999 UF ₈
1999 UG ₈	16.1	0.15	20000226	68.81053	82.29248	266.35838	1.38529	0.2082588	2.3612115	44	1	62 days	0.61	M-v	5	Williams	1999 UG ₈
1999 UH ₈	16.0	0.15	19991118	30.86184	324.69974	41.13024	11.85562	0.1745434	2.7009933	35	1	40 days	0.54			Williams	1999 UH ₈
1999 UK ₈	14.4	0.15	19991029	39.45083	324.06035	36.60444	9.58240	0.0625114	3.0987717	31	1	18 days	0.77			Williams	1999 UK ₈
1999 UL ₈	14.5	0.15	20000226	42.73181	153.48587	227.44896	12.36647	0.2123683	2.5592434	57	1	95 days	0.44	M-v	3	Williams	1999 UL ₈
1999 UM ₈	15.5	0.15	20000226	346.89305	64.97956	44.05558	0.90849	0.2247248	2.4340757	69	1	69 days	0.44	M-v	5	Williams	1999 UM ₈
1999 UN ₈	14.6	0.15	20000226	95.89335	278.27642	41.42866	13.20956	0.1477224	2.6182147	54	1	70 days	0.54	M-v	4	Williams	1999 UN ₈
1999 UO ₈	16.1	0.15	19991118	43.47477	118.30687	228.15367	1.47903	0.2081199	2.4346230	46	1	45 days	0.49		D	Williams	1999 UO ₈
1999 UQ ₈	13.3	0.15	20000226	71.94917	113.80543	234.85156	7.46879	0.0637146	3.1482435	61	3	1977–1999	0.50	M-v	3	Williams	37192 1999 UQ ₈
1999 UR ₈	15.3	0.15	19991029	298.50016	228.08824	246.68841	2.96428	0.0819715	2.6495894	22	1	18 days	0.40			Williams	1999 UR ₈
1999 US ₈	14.7	0.15	20000226	338.90438	65.37941	40.71094	14.28162	0.1422930	2.6949469	38	1	71 days	0.58	M-v	5	Williams	1999 US ₈
1999 UT ₈	14.0	0.15	20000226	307.95400	279.97870	228.75138	23.55552	0.2158125	2.6838176	63	1	95 days	0.39	M-v	4	Williams	1999 UT ₈
1999 UU ₈	13.7	0.15	20000226	81.09340	96.87588	242.18950	4.29919	0.1109305	2.7514186	54	3	1980–2000	0.55	M-v	2	Williams	37193 1999 UU ₈
1999 UV ₈	16.8	0.15	20000226	29.46678	345.15472	66.16511	2.68391	0.1747767	2.2041225	54	2	1996–1999	0.46	M-v	4	Williams	37193 1999 UV ₈
1999 UW ₈	15.1	0.15	20000226	32.74217	193.78527	209.71683	7.68683	0.1639069	2.3234593	40	1	70 days	0.50	M-v	4	Williams	1999 UW ₈
1999 UX ₈	13.5	0.15	20000226	197.84302	16.11875	214.20877	8.18564	0.0294766	2.9905897	73	3	1997–1999	0.66	M-v	3	Williams	37193 1999 UX ₈
1999 UY ₈	15.1	0.15	20000226	156.36082	59.53993	211.64676	5.85429	0.1154656	2.3342799	64	2	1998–1999	0.63	M-v	4	Williams	37193 1999 UY ₈
1999 UA ₉	15.6	0.15	19991118	52.98642	293.02616	53.41306	12.15014	0.1021298	3.0311259	29	1	48 days	0.57			Williams	1999 UA ₉
1999 UB ₉	14.3	0.15	20000226	288.23870	88.39926	55.62953	5.25225	0.0102131	2.8018839	57	1	63 days	0.55	M-v	5	Williams	1999 UB ₉
1999 UC ₉	15.1	0.15	20000226	56.31055	345.85235	34.34274	4.02714	0.0365491	2.2931056	67	3	1978–2000	0.48	M-v	3	Williams	37193 1999 UC ₉
1999 UD ₉	14.1	0.15	20000226	113.38458	264.66524	46.05788	7.83843	0.0661798	2.7186468	62	1	63 days	0.48	M-v	4	Williams	1999 UD ₉
1999 UE ₉	13.6	0.15	20000226	5.23439	214.59094	212.83141	1.37121	0.0938763	2.9307341	71	1	88 days	0.44	M-v	4	Williams	1999 UE ₉
1999 UG ₉	14.1	0.15	20000226	333.28467	232.93398	225.41148	8.63705	0.0493050	3.1707528	58	2	1998–1999	0.54	M-v	3	Williams	37193 1999 UG ₉
1999 UH ₉	15.1	0.15	20000226	18.73944	192.59470	230.03823	1.73982	0.1789640	2.3954424	94	1	86 days	0.41	M-v	3	Williams	1999 UH ₉
1999 UJ ₉	14.3	0.15	20000226	17.94403	191.84205	224.35367	1.32794	0.0890044	2.6634753	74	3	1997–2000	0.52	M-v	3	Williams	37309 1999 UJ ₉
1999 UK ₉	13.6	0.15	20000226	356.62055	217.70375	220.79130	4.52178	0.1424737	3.1669373	69	1	63 days	0.50	M-v	4	Williams	1999 UK ₉
1999 UL ₉	14.4	0.15	20000226	199.93318	195.76208	40.07505	6.11591	0.0761911	2.4578612	40	2	1960–1999	0.56	M-v	4	Williams	37194 1999 UL ₉
1999 UN ₉	16.6	0.15	19991029	346.73527	108.91968	316.66600	0.27686	0.2308478	2.4261541	43	1	52 days	0.49			Williams	1999 UN ₉
1999 UQ ₉	14.7	0.15	20000226	142.98640	4.47090	281.63539	24.08003	0.0755776	1.8802460	25	1	96 days	0.36	M-v	4	Williams	1999 UQ ₉
1999 UX ₉	15.6	0.15	20000226	31.08260	140.80952	263.28327	22.25376	0.2676099	2.2835972	38	1	65 days	0.43	M-v	4	Williams	1999 UX ₉
1999 UD ₁₀	16.2	0.15	20000226	49.69719	126.04115	264.98403	19.25423	0.1164523	1.9546157	17	1	69 days	0.41	M-v	5	Williams	1999 UD ₁₀
1999 UO ₁₀	15.5	0.15	19991118	6.97828	38.27480	13.79587	23.69431	0.1884619	2.3013433	13	1	47 days	0.34			Williams	1999 UO ₁₀
1999 UQ ₁₀	13.9	0.15	19991118	82.64939	298.90738	38.04689	25.36248	0.1442396	1.8359588	28	1	58 days	0.51			Williams	1999 UQ ₁₀
1999 UD ₁₁	13.8	0.15	20000226	77.24854	22.55914	325.04068	20.65188	0.1394279	3.0935135	16	1	61 days	0.52	M-v	6	Williams	1999 UD ₁₁
1999 UG ₁₁	13.7	0.15	20000226	17.53765	133.82422	319.40389	24.01665	0.3407222	3.1728339	42	2	1998–2000	0.55	M-v	3	Williams	37194 1999 UG ₁₁
1999 UJ ₁₁	16.2	0.15	20000226	48.00810	330.77620	41.15230	17.67731	0.2819345	2.5575995	68	1	97 days	0.52	M-v	4	Williams	37309 1999 UJ ₁₁
1999 UM ₁₁	13.4	0.15	20000226	344.12161	24.05730	61.53167	1.69391	0.1405116	3.1755921	73	3	1990–2000	0.52	M-v	4	Williams	37309 1999 UM ₁₁
1999 UN ₁₁	14.0	0.15	20000226	233.08567	343.92241	216.12684	9.66281	0.1151611	2.3461411	70	3	1994–2000	0.55	M-v	3	Williams	37309 1999 UN ₁₁
1999 UO ₁₁	15.2	0.15	20000226	40.83931	196.80173	181.08102	5.06809	0.1584407	2.7731393	30	2	1994–1999	0.64	M-v	5	Williams	36860 1999 UO ₁₁
1999 UR ₁₁	17.3	0.15	19991029	24.56965	317.75827	48.35444	6.94729	0.1957776	2.7184795	21	1	19 days	0.31			Williams	1999 UR ₁₁
1999 UT ₁₁	16.7	0.15	19991029	259.79441	318.15920	199.94133	1.58389	0.1331448	2.3647253	21	1	30 days	0.55			Williams	1999 UT ₁₁
1999 UU ₁₁	16.1	0.15	19991029	36.62151	139.94708	214.87527	4.06468	0.1587688	3.1892522	23	1	30 days	0.56			Williams	1999 UU ₁₁
1999 UV ₁₁	16.9	0.15	19991118	183.54838	149.52723	75.58999	1.42362	0.0485163	2.4920506	23	1	44 days	0.31			Williams	1999 UV ₁₁
1999 UW ₁₁	15.9	0.15	19991029	9.54482	344.41701	47.83380	11.79410	0.1001757	2.9771118	32	1	18 days	0.52			Williams	1999 UW ₁₁
1999 UX ₁₁	17.6	0.15	19991118	331.30462	26.33017	53.21253	5.14911	0.0374230	2.7880452	18	1	39 days	0.29			Williams	1999 UX ₁₁
1999 UY ₁₁	16.6	0.15	19991029	197.84898	144.79801	62.11895	1.90935	0.0128389	3.0612127	9	1	19 days	0.19			Williams	1999 UY ₁₁
1999 UZ ₁₁	16.2	0.15	19991029	66.40493	104.20524	223.10855	12.13877	0.0977362	3.1444872	13	1	18 days	0.49			Williams	1999 UZ ₁₁
1999 UA ₁₂	16.6	0.15	19991029	150.20778	53.56916	199.16296	1.47451	0.0343405	3.1682057	12	1	37 days	0.19			Williams	1999 UA ₁₂
1999 UB ₁₂	16.6	0.15	19991029	279.63575	84.59474	51.92585	5.53852	0.1024473	2.7963849	12	1	19 days	0.20			Williams	1999 UB ₁₂
1999 UE ₁₂	17.9	0.15	19991009	295.95368	59.21380	38.25224	6.82451	0.1506715	2.2364540	19	1	40 days	1.43			Williams	1999 UE ₁₂
1999 UF ₁₂	15.4	0.15	19991029	304.97602	73.73772	27.25615	17.40877	0.2376435	3.2687657	9	1	5 days	0.16		E	Williams	1999 UF ₁₂

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1999 UG ₁₂	16.4	0.15	19991029	55.28137	279.40809	32.99992	10.57543	0.1274726	2.9085513	9	1	5 days	0.19	E	Williams	1999 UG ₁₂	
1999 UH ₁₂	17.3	0.15	19991029	77.90842	129.14561	142.82247	2.14954	0.2795850	2.4316716	9	1	5 days	0.14	E	Williams	1999 UH ₁₂	
1999 UJ ₁₂	17.1	0.15	19991029	21.42273	301.55777	49.42804	3.93316	0.2116393	2.4179036	18	1	12 days	0.23		Williams	1999 UJ ₁₂	
1999 UK ₁₂	18.7	0.15	19991029	343.61190	7.17753	44.76046	4.80658	0.2363540	2.3411619	9	1	5 days	0.09	E	Williams	1999 UK ₁₂	
1999 UM ₁₂	17.3	0.15	19991029	31.51633	136.72031	197.91347	12.68627	0.2203177	2.6201384	12	1	10 days	0.12		Williams	1999 UM ₁₂	
1999 UN ₁₂	15.4	0.15	20000226	357.13615	150.62300	290.71515	3.38715	0.2284199	2.5815063	60	1	96 days	0.52	M-v	4	Williams	1999 UN ₁₂
1999 UR ₁₂	14.2	0.15	20000226	5.06034	35.04765	13.84318	15.17731	0.1685093	2.6112967	48	1	123 days	0.58	M-v	4	Williams	1999 UR ₁₂
1999 UT ₁₂	15.7	0.15	19991029	355.74638	173.08023	209.69996	7.31552	0.2152799	2.7944868	16	1	14 days	0.49		Williams	1999 UT ₁₂	
1999 UU ₁₂	16.0	0.15	19991029	337.62181	53.31606	358.63458	8.96906	0.2130686	2.6381893	12	1	7 days	0.93		Williams	1999 UU ₁₂	
1999 UY ₁₂	16.9	0.15	19991029	342.21462	202.14657	207.90756	9.43602	0.2796749	2.6944897	15	1	14 days	0.71		Williams	1999 UY ₁₂	
1999 UB ₁₃	14.7	0.15	20000226	31.27050	159.15560	209.66284	15.51082	0.1344172	2.7636128	25	1	69 days	0.63	M-v	4	Williams	1999 UB ₁₃
1999 UE ₁₃	14.3	0.15	19991029	351.71727	199.45428	184.76467	4.56970	0.1054007	3.2195191	12	1	11 days	0.88		Williams	1999 UE ₁₃	
1999 UF ₁₃	12.9	0.15	20000226	276.10027	275.72155	209.82874	10.02317	0.0430745	3.0024467	58	3	1979–1999	0.69	M-v	3	Williams	37194 1999 UF ₁₃
1999 UH ₁₃	14.6	0.15	20000226	47.78474	25.03340	329.97788	2.24502	0.0885118	2.5561602	39	2	1997–1999	0.53	M-v	3	Williams	37194 1999 UH ₁₃
1999 UJ ₁₃	14.9	0.15	20000226	87.87820	80.42004	218.52200	5.73598	0.2172173	2.3987493	31	2	1998–1999	0.62	M-v	5	Williams	37194 1999 UJ ₁₃
1999 UL ₁₃	15.2	0.15	20000226	0.89693	113.87812	312.08561	1.51429	0.1928044	2.3645993	35	1	124 days	0.50	M-v	4	Williams	1999 UL ₁₃
1999 UO ₁₃	14.2	0.15	19991029	314.34386	215.31157	215.90140	6.38563	0.1056100	3.1524808	13	1	7 days	0.43		Williams	1999 UO ₁₃	
1999 UQ ₁₃	15.1	0.15	19991029	314.87575	157.97864	273.36931	3.76188	0.1066812	2.8437378	11	1	7 days	0.57		Williams	1999 UQ ₁₃	
1999 US ₁₃	14.3	0.15	19991029	194.96888	257.10656	288.26653	3.68516	0.1450555	2.5346117	13	1	7 days	0.71		Williams	1999 US ₁₃	
1999 UU ₁₃	14.7	0.15	19991029	248.29616	267.21769	236.11426	4.44788	0.1333325	2.2907438	16	1	15 days	0.40		Williams	1999 UU ₁₃	
1999 UV ₁₃	14.3	0.15	19991029	334.38566	136.94510	271.18154	4.08627	0.1001289	3.2531659	12	1	7 days	0.65		Williams	1999 UV ₁₃	
1999 UW ₁₃	15.1	0.15	19991029	286.68990	234.09944	216.12949	14.14458	0.0174534	2.5878326	16	1	7 days	1.16		Williams	1999 UW ₁₃	
1999 UY ₁₃	14.0	0.15	20000226	299.25878	19.99057	122.74557	3.55962	0.1290424	2.2862026	61	2	1989–2000	0.56	M-v	4	Williams	37194 1999 UY ₁₃
1999 UZ ₁₃	16.8	0.15	19991029	21.23956	258.12211	106.07580	2.90568	0.1634513	2.2012780	18	1	10 days	0.65		Williams	1999 UZ ₁₃	
1999 UA ₁₄	15.5	0.15	20000226	9.38857	337.05051	88.50495	3.60968	0.1744166	2.4055972	40	1	93 days	0.58	M-v	4	Williams	1999 UA ₁₄
1999 UB ₁₄	16.8	0.15	19991029	50.58785	232.81253	83.31310	3.57607	0.2553542	2.4242422	12	1	7 days	1.20		Williams	1999 UB ₁₄	
1999 UC ₁₄	16.0	0.15	19991029	43.07985	178.71204	143.89354	3.30793	0.2809272	2.3232684	13	1	7 days	0.80		Williams	1999 UC ₁₄	
1999 UD ₁₄	15.5	0.15	19991029	347.64223	210.19569	200.25156	14.31735	0.1334564	2.6122616	13	1	7 days	0.35		Williams	1999 UD ₁₄	
1999 UE ₁₄	16.6	0.15	19991029	319.10659	34.92412	57.78109	7.10451	0.1979375	2.3402428	13	1	7 days	0.65		Williams	1999 UE ₁₄	
1999 UF ₁₄	13.9	0.15	20000226	130.56456	116.76337	164.10538	4.26086	0.1067572	2.5508262	63	2	1998–2000	0.60	M-v	3	Williams	37195 1999 UF ₁₄
1999 UJ ₁₄	16.2	0.15	19991029	21.69818	218.33100	143.54720	3.40433	0.1970657	2.4223455	18	1	10 days	0.43		Williams	1999 UJ ₁₄	
1999 UK ₁₄	15.7	0.15	19991029	268.72475	323.27330	180.00941	5.39583	0.1549785	2.5270638	12	1	7 days	0.51		Williams	1999 UK ₁₄	
1999 UM ₁₄	14.7	0.15	19991029	182.62098	99.93122	113.12817	3.30928	0.2474001	2.3161160	13	1	7 days	0.70		Williams	1999 UM ₁₄	
1999 UN ₁₄	15.8	0.15	19991029	45.25907	232.84464	99.27932	4.13953	0.1791340	2.5783062	16	1	16 days	0.55		Williams	1999 UN ₁₄	
1999 UO ₁₄	15.3	0.15	19991029	314.34338	264.36437	187.81126	8.61989	0.1280259	2.7469191	19	1	16 days	0.45		Williams	1999 UO ₁₄	
1999 UP ₁₄	16.0	0.15	19991029	310.00992	257.11646	202.01167	13.78537	0.1411816	2.6195353	13	1	7 days	0.70		Williams	1999 UP ₁₄	
1999 UQ ₁₄	16.9	0.15	19991029	329.74508	22.84160	61.41985	7.22519	0.2499670	2.5323650	13	1	7 days	0.50		Williams	1999 UQ ₁₄	
1999 UR ₁₄	15.2	0.15	19991029	211.38152	126.49481	57.25193	10.61935	0.0095614	3.0076353	11	1	17 days	0.77		Williams	1999 UR ₁₄	
1999 UT ₁₄	16.6	0.15	19991029	43.11057	267.04859	70.55711	2.96533	0.1490880	2.3709898	13	1	7 days	0.46		Williams	1999 UT ₁₄	
1999 UU ₁₄	16.1	0.15	19991029	11.05389	177.58844	202.31222	4.90241	0.1353375	2.6637334	18	1	11 days	0.71		Williams	1999 UU ₁₄	
1999 UV ₁₄	17.2	0.15	19991029	347.13673	210.04352	206.93994	12.60765	0.2613013	2.5722540	11	1	7 days	0.74		Williams	1999 UV ₁₄	
1999 UX ₁₄	15.4	0.15	19991029	246.50633	116.21394	41.25385	12.88467	0.0983124	2.6204671	17	1	11 days	0.50		Williams	1999 UX ₁₄	
1999 UY ₁₄	14.7	0.15	19991029	137.80285	99.22759	152.35724	2.35527	0.0677078	2.9364282	16	1	17 days	0.54		Williams	1999 UY ₁₄	
1999 UZ ₁₄	15.9	0.15	19991029	4.95781	333.56307	54.57917	5.78315	0.1125419	2.9373685	20	1	19 days	0.46		Williams	1999 UZ ₁₄	
1999 UA ₁₅	15.2	0.15	20000226	8.34764	17.00505	43.08405	8.81335	0.1999101	2.8075297	41	1	67 days	0.50	M-v	4	Williams	1999 UA ₁₅
1999 UB ₁₅	15.9	0.15	19991029	358.93550	346.36336	49.79962	5.09047	0.0831031	2.5609495	26	1	19 days	0.61		Williams	1999 UB ₁₅	
1999 UC ₁₅	16.1	0.15	19991118	350.14619	5.04390	48.57572	6.73527	0.1052140	2.3873487	30	1	39 days	0.55		Williams	1999 UC ₁₅	
1999 UD ₁₅	12.7	0.15	20000226	51.62043	310.39924	48.50331	9.93377	0.0967452	3.0678914	62	2	1997–2000	0.64	M-v	3	Williams	37195 1999 UD ₁₅
1999 UE ₁₅	15.8	0.15	20000226	60.35060	296.27307	46.17406	6.45017	0.2637871	2.5576018	41	1	98 days	0.53	M-v	4	Williams	1999 UE ₁₅
1999 UF ₁₅	13.1	0.15	20000226	59.42206	304.89545	42.16503	14.40644	0.1465610	2.9743730	56	1	98 days	0.57	M-v	4	Williams	1999 UF ₁₅
1999 UG ₁₅	14.4	0.15	19991029	260.90409	300.92897	207.28871	15.79950	0.1244776	3.2125073	12	1	7 days	0.55		Williams	1999 UG ₁₅	
1999 UJ ₁₅	13.9	0.15	19991029	162.67840	180.79621	44.28561	15.58288	0.2826924	2.5717137	12	1	7 days	0.62		Williams	1999 UJ ₁₅	
1999 UK ₁₅	14.0	0.15	20000226	40.36772	285.20876	92.66140	2.47217	0.0871004	2.7700171	56	4	1992–2000	0.67	M-v	2	Williams	37195 1999 UK ₁₅

1999 UL ₁₅	15.1	0.15	19991029	135.36520	57.51938	194.99863	5.15268	0.1082298	2.4778087	13	1	7 days	0.27		Williams		1999 UL ₁₅
1999 UM ₁₅	14.6	0.15	20000226	199.88868	195.96120	30.44980	7.13826	0.1305965	2.2740119	59	2	1998–1999	0.64	M-v	4	Williams	37195 1999 UM ₁₅
1999 UN ₁₅	14.7	0.15	19991029	146.47855	61.46530	185.02334	1.85619	0.0294075	2.8310429	28	1	14 days	0.40		Williams		1999 UN ₁₅
1999 UP ₁₅	15.4	0.15	19991029	239.41063	309.71799	210.61651	14.14902	0.0454364	2.6380896	11	1	7 days	0.72		E Williams		1999 UP ₁₅
1999 UQ ₁₅	15.6	0.15	20000226	24.11501	225.90906	177.88071	5.98840	0.1341210	2.4572661	26	1	99 days	0.62	M-v	4	Williams	1999 UQ ₁₅
1999 UR ₁₅	15.6	0.15	19991029	65.87332	154.28797	164.50654	4.85484	0.0965439	2.7967297	16	1	17 days	1.05		Williams		1999 UR ₁₅
1999 US ₁₅	16.4	0.15	19991029	330.50513	32.92301	47.96002	13.41994	0.2253859	2.5926650	24	1	19 days	0.55		Williams		1999 US ₁₅
1999 UT ₁₅	15.9	0.15	19991029	0.03076	232.40318	162.73904	5.05618	0.1410627	2.6783837	11	1	7 days	0.50		Williams		1999 UT ₁₅
1999 UU ₁₅	15.2	0.15	19991029	24.56772	174.69154	189.65921	8.23332	0.1223291	2.9862167	13	1	7 days	0.56		Williams		1999 UU ₁₅
1999 UV ₁₅	14.7	0.15	20000226	330.51938	25.91986	76.88349	5.04729	0.0566875	2.3885289	38	1	70 days	0.53	M-v	5	Williams	1999 UV ₁₅
1999 UW ₁₅	16.8	0.15	19991029	49.65931	133.95359	191.52378	7.40009	0.2014921	2.2572975	13	1	7 days	0.68		Williams		1999 UW ₁₅
1999 UX ₁₅	16.8	0.15	19991029	15.46443	263.69270	109.93686	3.62998	0.1645792	2.3419548	13	1	7 days	0.43		Williams		1999 UX ₁₅
1999 UY ₁₅	16.4	0.15	19991029	21.94180	305.98215	53.09826	10.57258	0.2419481	2.4049841	13	1	7 days	0.45		Williams		1999 UY ₁₅
1999 UZ ₁₅	15.8	0.15	19991029	43.46312	253.84861	90.71616	2.27549	0.0930653	2.7093872	11	1	7 days	0.59		Williams		1999 UZ ₁₅
1999 UA ₁₆	16.5	0.15	19991029	344.79695	342.43168	76.50527	3.20254	0.2043123	2.4783947	13	1	7 days	0.41		Williams		1999 UA ₁₆
1999 UB ₁₆	15.5	0.15	19991029	17.30779	219.68459	156.44521	2.29700	0.0779673	2.8506405	13	1	7 days	0.47		Williams		1999 UB ₁₆
1999 UC ₁₆	14.1	0.15	20000226	236.35688	352.33263	206.33692	3.97904	0.0755535	2.2436421	83	2	1998–2000	0.56	M-v	3	Williams	37195 1999 UC ₁₆
1999 UD ₁₆	17.8	0.15	19991029	29.25982	81.39991	263.72228	1.69549	0.2782996	2.3360738	22	1	18 days	0.38		Williams		1999 UD ₁₆
1999 UE ₁₆	16.6	0.15	19991029	339.02095	169.58218	258.04233	1.39054	0.1993409	2.7046562	22	1	16 days	0.54		Williams		1999 UE ₁₆
1999 UF ₁₆	15.9	0.15	19991029	294.58202	84.27104	24.15639	7.46522	0.0590104	2.3664551	22	1	18 days	0.38		Williams		1999 UF ₁₆
1999 UG ₁₆	13.3	0.15	20000226	247.05491	143.06161	30.17459	9.72983	0.0137519	3.0208641	48	1	97 days	0.45	M-v	4	Williams	1999 UG ₁₆
1999 UH ₁₆	16.7	0.15	19991029	13.15826	345.31114	29.19082	5.73472	0.2403131	2.5635228	23	1	18 days	0.51		Williams		1999 UH ₁₆
1999 UJ ₁₆	16.6	0.15	19991029	21.96270	141.03368	221.36884	13.32298	0.2160679	2.7725231	28	1	17 days	0.76		Williams		1999 UJ ₁₆
1999 UK ₁₆	17.2	0.15	19991029	37.21678	311.52803	30.15422	5.05052	0.2045476	2.1723120	26	1	18 days	0.54		Williams		1999 UK ₁₆
1999 UL ₁₆	15.1	0.15	20000226	99.94331	321.68215	342.73056	1.85584	0.2029859	2.4613947	60	4	1991–1999	0.67	M-v	2	Williams	37309 1999 UL ₁₆
1999 UN ₁₆	16.7	0.15	19991029	25.16586	339.35498	20.53683	3.93051	0.1890674	2.3375740	25	1	18 days	0.47		Williams		1999 UN ₁₆
1999 UO ₁₆	15.9	0.15	19991029	340.98917	78.72779	348.68272	1.31436	0.2306029	2.7896458	35	1	59 days	0.60		Williams		1999 UO ₁₆
1999 UP ₁₆	16.7	0.15	19991029	354.72733	177.89680	225.75608	6.08091	0.1324062	2.3383767	35	1	36 days	0.44		Williams		1999 UP ₁₆
1999 UQ ₁₆	15.6	0.15	20000226	20.32406	185.07403	222.63214	10.11162	0.2640828	2.7094004	54	1	94 days	0.61	M-v	4	Williams	1999 UQ ₁₆
1999 UR ₁₆	15.2	0.15	19991029	353.98126	147.36041	257.30480	2.24162	0.0925601	2.7866363	43	1	59 days	0.49		Williams		1999 UR ₁₆
1999 US ₁₆	15.2	0.15	19991118	333.54569	207.17310	228.46518	11.73174	0.1364520	3.0983321	32	1	39 days	0.59		Williams		1999 US ₁₆
1999 UT ₁₆	15.5	0.15	19991029	44.95850	112.39981	237.77872	5.42400	0.0279048	2.7505248	23	1	18 days	0.65		Williams		1999 UT ₁₆
1999 UU ₁₆	15.2	0.15	20000226	333.32414	78.69079	30.18177	6.41412	0.1608360	2.6034901	33	2	1995–2000	0.60	M-v	4	Williams	37195 1999 UU ₁₆
1999 UV ₁₆	15.7	0.15	20000226	48.59602	335.15311	27.05615	5.30447	0.2812722	2.5347849	35	1	69 days	0.37	M-v	5	Williams	1999 UV ₁₆
1999 UW ₁₆	17.3	0.15	19991029	339.67578	57.06238	10.50853	2.30545	0.1936843	2.3303532	27	1	18 days	0.49		Williams		1999 UW ₁₆
1999 UA ₁₇	15.7	0.15	19991029	71.65368	46.04556	247.16878	3.54366	0.1322858	2.3103208	12	1	6 days	0.65		E Williams		1999 UA ₁₇
1999 UC ₁₇	15.1	0.15	19991029	42.79128	104.26422	204.04418	21.53910	0.4372640	3.2108783	12	1	6 days	0.49		Williams		1999 UC ₁₇
1999 UD ₁₇	13.7	0.15	20000226	41.44257	263.09878	107.67697	6.68892	0.1615367	3.1446044	37	1	94 days	0.64	M-v	4	Williams	1999 UD ₁₇
1999 UE ₁₇	16.9	0.15	19991029	328.53393	227.77182	208.05668	21.10673	0.0819560	1.9091189	16	1	17 days	0.36		Williams		1999 UE ₁₇
1999 UF ₁₇	15.1	0.15	19991118	262.21310	281.05831	227.81923	12.80538	0.0970574	2.6071423	38	1	37 days	0.59		Williams		1999 UF ₁₇
1999 UO ₁₇	18.1	0.15	19991029	34.87807	293.55966	26.28121	2.43503	0.2262337	2.2202636	9	1	8 days	0.31		Williams		1999 UO ₁₇
1999 UD ₁₈	18.9	0.15	19991029	26.90808	169.51777	166.75717	2.86288	0.2780786	2.5829089	9	1	11 days	0.23		Williams		1999 UD ₁₈
1999 UH ₁₈	15.2	0.15	20000226	72.42161	286.56767	42.63550	7.03225	0.1488483	2.4149850	56	2	1998–1999	0.69	M-v	4	Williams	37196 1999 UH ₁₈
1999 UL ₁₈	15.6	0.15	19991029	0.23335	295.95896	85.63905	2.85535	0.1209172	2.9173079	9	1	16 days	0.44		Williams		1999 UL ₁₈
1999 UN ₁₈	16.6	0.15	19991029	7.42373	318.08137	57.03670	3.79976	0.1574104	2.1761688	9	1	6 days	0.09		E Williams		1999 UN ₁₈
1999 UD ₁₉	17.3	0.15	19991029	17.38749	332.29421	36.67088	5.44004	0.1660851	2.3084696	16	1	13 days	0.24		Williams		1999 UD ₁₉
1999 UE ₁₉	16.8	0.15	19991029	16.97962	332.80049	35.58387	12.42326	0.1850850	2.6733594	18	1	10 days	0.45		Williams		1999 UE ₁₉
1999 UN ₁₉	17.2	0.15	19991029	28.79554	316.99391	43.35383	4.53172	0.0874218	2.1889952	13	1	10 days	0.30		Williams		1999 UN ₁₉
1999 UF ₂₀	17.3	0.15	19991029	56.42941	120.16932	188.98355	4.98234	0.1483122	2.3777860	9	1	10 days	0.14		Williams		1999 UF ₂₀
1999 UL ₂₀	18.0	0.15	19991029	69.09811	144.25370	145.83045	1.82879	0.1941324	2.4120652	9	1	10 days	0.24		Williams		1999 UL ₂₀
1999 UY ₂₀	16.8	0.15	19991029	326.02154	269.45503	159.80939	2.91345	0.1650145	2.6629856	9	1	10 days	0.10		Williams		1999 UY ₂₀
1999 UD ₂₁	16.8	0.15	20000226	7.82906	223.63346	182.39343	6.45909	0.1469304	2.8239106	8	1	69 days	0.45	M-v	7	Williams	1999 UD ₂₁
1999 UO ₂₁	16.5	0.15	19991029	351.47424	8.18463	37.70191	0.33520	0.2009275	3.0639070	10	1	9 days	0.24		Williams		1999 UO ₂₁

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1999 UZ ₂₁	16.2	0.15	19991029	338.31539	210.16430	210.87582	7.03499	0.1099840	2.9555784	10	1	9 days	0.21		Williams	1999 UZ ₂₁	
1999 UH ₂₂	16.4	0.15	19991029	52.13372	268.49876	65.53452	1.40748	0.0854570	2.5851522	10	1	9 days	0.31		Williams	1999 UH ₂₂	
1999 UF ₂₃	16.0	0.15	19991029	15.56871	334.23699	38.74754	13.24268	0.1809463	2.6265716	29	1	38 days	0.36	D	Williams	1999 UF ₂₃	
1999 UM ₂₃	16.4	0.15	19991029	350.93017	185.12111	215.78493	19.96629	0.3615835	2.6570929	14	1	8 days	0.59		Williams	1999 UM ₂₃	
1999 UP ₂₃	13.7	0.15	20000226	9.77523	49.41215	347.16350	10.27434	0.1848677	2.8550558	39	1	124 days	0.53	M-v	4	Williams	1999 UP ₂₃
1999 UR ₂₃	15.0	0.15	20000226	336.01027	110.57841	331.97040	6.50654	0.0792663	2.3092231	39	1	126 days	0.55	M-v	5	Williams	1999 UR ₂₃
1999 US ₂₃	14.6	0.15	20000226	321.51549	220.01667	234.69868	5.54118	0.0826674	2.4088781	42	2	1977–1999	0.64	M-v	4	Williams	37196 1999 US ₂₃
1999 UC ₂₄	16.7	0.15	19991029	36.59770	26.65035	317.06979	4.87775	0.1405170	2.3132583	12	1	12 days	0.59		Williams	1999 UC ₂₄	
1999 UE ₂₄	14.6	0.15	20000226	13.39757	78.02371	332.60975	6.13964	0.1969789	2.7435029	37	1	116 days	0.49	M-v	4	Williams	1999 UE ₂₄
1999 UJ ₂₄	14.5	0.15	20000226	28.76202	128.54629	257.74744	6.85243	0.2400362	2.7844932	40	1	168 days	0.40	M-v	3	Williams	1999 UJ ₂₄
1999 UK ₂₄	13.9	0.15	20000226	68.20664	48.26175	296.11897	5.39481	0.1430359	2.3789064	42	1	98 days	0.54	M-v	4	Williams	1999 UK ₂₄
1999 UL ₂₄	14.9	0.15	20000226	79.93729	65.00669	250.12304	9.27715	0.2179698	2.6851781	25	2	1990–1999	0.63	M-v	5	Williams	36860 1999 UL ₂₄
1999 UN ₂₄	14.6	0.15	20000226	65.72346	17.80699	330.19277	4.21712	0.1694712	2.2972724	48	3	1985–2000	0.65	M-v	3	Williams	37196 1999 UN ₂₄
1999 UP ₂₄	14.2	0.15	20000226	25.03349	137.11696	248.60978	8.09330	0.1456656	3.1592978	24	1	71 days	0.54	M-v	4	Williams	1999 UP ₂₄
1999 UA ₂₅	15.3	0.15	19991029	74.34519	71.17664	237.10800	9.90677	0.0845554	2.7651208	11	1	19 days	0.68		Williams	1999 UA ₂₅	
1999 UQ ₂₅	13.8	0.15	20000226	32.46121	153.51151	243.81594	4.00600	0.1445922	2.7523720	67	1	86 days	0.46	M-v	3	Williams	1999 UQ ₂₅
1999 UR ₂₅	15.6	0.15	20000226	32.48490	14.09606	28.08127	2.77084	0.1882259	2.4545466	72	1	88 days	0.50	M-v	3	Williams	1999 UR ₂₅
1999 US ₂₅	17.0	0.15	19991029	20.68670	338.25409	28.96692	4.78547	0.2822225	2.5308677	18	1	16 days	0.49		Williams	1999 US ₂₅	
1999 UU ₂₅	16.3	0.15	19991029	355.68326	16.73007	16.46532	4.65182	0.1812055	2.6464975	13	1	6 days	0.52	E	Williams	1999 UU ₂₅	
1999 UV ₂₅	16.5	0.15	19991029	353.12049	19.78635	15.10423	2.41649	0.0693144	2.3015417	13	1	6 days	0.81	E	Williams	1999 UV ₂₅	
1999 UW ₂₅	15.9	0.15	19991029	339.73379	201.98800	214.71354	12.48709	0.1865406	2.6672254	12	1	6 days	0.55	E	Williams	1999 UW ₂₅	
1999 UY ₂₅	15.8	0.15	19991029	289.98652	238.22709	232.28084	6.20011	0.1200377	2.4258171	13	1	6 days	0.62	E	Williams	1999 UY ₂₅	
1999 UZ ₂₅	16.5	0.15	19991029	8.64797	124.06489	252.59109	2.69903	0.1551501	2.1834629	13	1	6 days	0.49	E	Williams	1999 UZ ₂₅	
1999 UK ₂₆	15.6	0.15	19991029	294.70639	246.03589	229.92775	4.50812	0.1884446	2.3494648	23	1	17 days	0.41		Williams	1999 UK ₂₆	
1999 UL ₂₆	15.3	0.15	20000226	28.16807	33.64811	354.20694	3.28712	0.2610161	2.6907955	32	1	95 days	0.52	M-v	4	Williams	1999 UL ₂₆
1999 UM ₂₆	13.4	0.15	20000226	87.70710	60.15123	256.84459	2.88183	0.0939602	2.7996685	46	1	97 days	0.46	M-v	5	Williams	1999 UM ₂₆
1999 UN ₂₆	16.0	0.15	19991029	343.14305	189.64964	226.58906	5.32359	0.2096715	2.7695557	13	1	6 days	0.61	E	Williams	1999 UN ₂₆	
1999 UO ₂₆	15.2	0.15	19991029	20.08668	39.70442	326.66780	3.66392	0.0853275	2.5666784	13	1	6 days	0.23	E	Williams	1999 UO ₂₆	
1999 UP ₂₆	17.3	0.15	19991029	2.31097	57.19283	330.98409	3.28512	0.1372896	2.1678043	13	1	6 days	0.78	E	Williams	1999 UP ₂₆	
1999 UA ₂₇	15.2	0.15	19991029	12.38362	131.85726	244.37355	8.24739	0.1600985	3.0326778	16	1	33 days	0.56		Williams	1999 UA ₂₇	
1999 UF ₂₇	18.1	0.15	19991029	359.29634	16.77167	356.85107	3.67761	0.2294482	2.4896832	12	1	15 days	0.24		Williams	1999 UF ₂₇	
1999 UL ₂₇	16.5	0.15	19991029	75.57850	274.93271	4.90314	7.93957	0.1330365	2.2454059	12	1	15 days	0.18		Williams	1999 UL ₂₇	
1999 UM ₂₇	17.6	0.15	19991029	17.67998	341.91253	6.51291	6.31611	0.1409892	2.3830851	12	1	15 days	0.31		Williams	1999 UM ₂₇	
1999 UT ₂₈	16.5	0.15	19991029	335.64730	22.45324	27.56448	11.84034	0.1109301	3.0276342	15	1	12 days	0.15		Williams	1999 UT ₂₈	
1999 UW ₂₈	16.9	0.15	19991029	286.76398	60.96973	39.54780	4.70239	0.0656386	2.8083473	15	1	11 days	0.22		Williams	1999 UW ₂₈	
1999 UX ₂₈	18.1	0.15	19991029	335.42018	12.31589	46.66535	3.27958	0.1910501	2.4531788	15	1	11 days	0.17		Williams	1999 UX ₂₈	
1999 UZ ₂₈	16.4	0.15	19991029	54.09680	293.17053	25.71282	16.03100	0.0632650	3.1934509	12	1	12 days	0.30		Williams	1999 UZ ₂₈	
1999 UA ₂₉	15.2	0.15	20000226	51.87002	321.79992	29.21044	14.33431	0.1078974	2.6573528	37	1	66 days	0.48	M-v	4	Williams	1999 UA ₂₉
1999 UB ₂₉	16.4	0.15	19991029	32.97167	294.37763	41.02602	5.48837	0.1784286	2.7018014	12	1	11 days	0.16		Williams	1999 UB ₂₉	
1999 UV ₂₉	15.9	0.15	19991029	344.64828	349.88916	46.95320	2.48140	0.0517035	2.8811799	15	1	12 days	0.16		Williams	1999 UV ₂₉	
1999 UW ₂₉	17.1	0.15	19991029	185.54497	161.15686	34.63347	4.41668	0.1354743	2.3704509	12	1	12 days	0.20		Williams	1999 UW ₂₉	
1999 UY ₂₉	16.6	0.15	19991029	293.29634	33.43020	67.56344	1.69162	0.1195899	2.6064692	18	1	11 days	0.42		Williams	1999 UY ₂₉	
1999 UA ₃₀	16.3	0.15	19991029	336.96116	349.71810	67.19703	2.15992	0.2194410	3.1916761	12	1	11 days	0.16		Williams	1999 UA ₃₀	
1999 UC ₃₀	16.1	0.15	19991029	299.33753	35.71151	50.29060	2.77025	0.0529390	3.0435941	12	1	12 days	0.19		Williams	1999 UC ₃₀	
1999 UD ₃₀	16.9	0.15	19991029	265.73393	103.27213	31.14550	9.59640	0.1684759	2.3134864	15	1	12 days	0.18		Williams	1999 UD ₃₀	
1999 UF ₃₀	16.3	0.15	19991029	86.24590	242.45613	46.05633	3.63242	0.0529591	2.6678006	12	1	11 days	0.30		Williams	1999 UF ₃₀	
1999 UH ₃₀	17.0	0.15	19991029	216.58250	118.17335	55.30702	2.77376	0.1527206	2.3750532	12	1	11 days	0.11		Williams	1999 UH ₃₀	
1999 UK ₃₁	15.6	0.15	19991029	28.45571	323.94919	32.01535	9.71667	0.1284411	2.9408948	16	1	9 days	0.41		Williams	1999 UK ₃₁	
1999 UC ₃₂	16.1	0.15	19991029	303.42542	57.12380	51.50324	1.93801	0.1628947	2.3390292	23	1	14 days	0.46		Williams	1999 UC ₃₂	
1999 UL ₃₂	14.3	0.15	20000226	31.20235	333.83294	53.81049	2.82823	0.0348257	2.8879998	37	1	98 days	0.50	M-v	4	Williams	1999 UL ₃₂
1999 UY ₃₂	16.6	0.15	19991029	45.48311	295.77463	32.63722	5.39367	0.2002892	2.2436455	19	1	9 days	0.36		Williams	1999 UY ₃₂	
1999 UN ₃₃	14.4	0.15	19991009	171.27518	4.25372	212.72931	7.04072	0.1405011	2.8009973	27	1	41 days	0.73		Williams	1999 UN ₃₃	
1999 UY ₃₃	16.0	0.15	19991029	328.59592	39.80447	38.12271	2.85008	0.1731394	3.0839519	18	1	12 days	0.47		Williams	1999 UY ₃₃	

1999 UB ₃₅	15.6	0.15	19991029	111.46293	215.63085	47.10750	3.66265	0.2249537	2.4374889	15	1	12 days	0.41		Williams	1999 UB ₃₅
1999 UN ₃₅	14.5	0.15	20000226	14.16098	283.08938	141.18292	10.43284	0.1631325	2.5974654	34	1	72 days	0.52	M-v 4	Williams	1999 UN ₃₅
1999 UQ ₃₅	16.8	0.15	19991029	269.28449	267.88034	231.96010	3.77855	0.0654777	2.4115696	15	1	13 days	0.38		Williams	1999 UQ ₃₅
1999 UR ₃₅	17.3	0.15	19991029	84.02564	336.54929	316.42662	0.59941	0.2166240	2.2910695	13	1	15 days	0.40		Williams	1999 UR ₃₅
1999 US ₃₅	17.0	0.15	19991029	301.73718	249.57847	225.45430	12.80533	0.1414790	2.5871203	13	1	13 days	0.39		Williams	1999 US ₃₅
1999 UX ₃₅	16.8	0.15	19991029	4.32174	164.49354	201.14851	4.60903	0.1464058	2.1943886	13	1	12 days	0.33		Williams	1999 UX ₃₅
1999 VA	15.3	0.15	20000226	65.48938	302.27910	74.48991	7.20986	0.0669957	2.3850363	74	1	68 days	0.48	M-v 4	Williams	1999 VA
1999 VB	15.1	0.15	20000226	72.23862	270.20088	85.99226	4.60481	0.1745920	2.5173344	77	1	71 days	0.40	M-v 4	Williams	1999 VB
1999 VE	15.7	0.15	19991029	335.49499	200.57422	232.53663	1.66180	0.1987251	2.3899157	30	1	13 days	1.03		Williams	1999 VE
1999 VF	16.1	0.15	19991029	321.17099	244.59598	220.15011	10.85044	0.3030837	2.5862998	36	1	11 days	1.07		Williams	1999 VF
1999 VG	14.4	0.15	20000226	41.35267	175.78327	195.87023	3.59231	0.2356968	2.6934784	80	3	1981–2000	0.49	M-v 3	Williams	37197 1999 VG
1999 VH	17.4	0.15	19991029	334.30431	303.88278	128.84310	2.46394	0.1900080	2.3166024	17	1	14 days	0.56		Williams	1999 VH
1999 VJ	14.3	0.15	20000226	76.46592	333.88512	54.65215	15.74425	0.1330213	2.6291120	37	3	1990–2000	0.62	M-v 3	Williams	37197 1999 VJ
1999 VK	14.7	0.15	20000226	68.18121	313.81750	79.83940	3.47662	0.1442186	2.2069617	49	1	68 days	0.47	M-v 5	Williams	1999 VK
1999 VL	15.8	0.15	20000226	28.33163	334.02129	66.90703	2.39161	0.1863394	2.3923030	40	1	62 days	0.63	M-v 5	Williams	1999 VL
1999 VM	14.7	0.15	20000226	56.45580	187.92799	173.20125	2.12326	0.0824048	2.6825062	29	1	62 days	0.65	M-v 5	Williams	1999 VM
1999 VN	14.2	0.15	19991118	352.46242	10.61032	50.11758	2.87124	0.0912797	2.8835835	46	1	35 days	0.40		Williams	1999 VN
1999 VP	14.0	0.15	20000226	87.06599	346.81314	352.50555	5.60256	0.0099567	2.5603551	73	1	95 days	0.53	M-v 4	Williams	1999 VP
1999 VQ	13.1	0.15	20000226	18.45985	249.09881	168.01048	1.22107	0.1843937	3.1049118	105	5	1988–1999	0.54	M-v 1	Williams	37310 1999 VQ
1999 VR	14.4	0.15	19991118	30.31099	326.78801	44.09176	1.76467	0.2213447	3.0899343	69	1	42 days	0.74		Williams	1999 VR
1999 VS	15.9	0.15	20000226	33.60558	230.97305	162.29456	6.25817	0.1237686	2.3089105	39	1	96 days	0.69	M-v 4	Williams	1999 VS
1999 VU	17.1	0.15	20000226	356.25350	202.96311	333.66633	9.27752	0.5535350	1.3880196	128	2	1977–2000	0.46	M-v 3	Williams	37197 1999 VU
1999 VV	15.8	0.15	20000226	193.34253	19.68720	241.11111	58.05479	0.4231880	1.3324251	134	2	1979–2000	0.46	M-v 4	Williams	37310 1999 VV
1999 VW	13.6	0.15	20000226	68.01493	303.08801	52.53605	10.35820	0.1111521	2.9750558	97	4	1983–1999	0.58	M-v 2	Williams	37197 1999 VW
1999 VY	15.9	0.15	20000226	359.52485	49.40761	18.72117	7.58568	0.1987993	2.5727042	40	1	92 days	0.44	M-v 4	Williams	1999 VY
1999 VZ	13.4	0.15	20000226	322.50312	100.40340	54.13740	23.28049	0.2717316	2.3372975	96	2	1992–2000	0.42	M-v 3	Williams	37197 1999 VZ
1999 VB ₁	16.0	0.15	20000226	13.05224	359.53213	57.00207	13.27215	0.2648868	2.6927001	46	1	97 days	0.67	M-v 4	Williams	1999 VB ₁
1999 VE ₁	15.2	0.15	20000226	29.92329	21.31432	18.83479	10.19051	0.1137180	2.3243933	47	1	112 days	0.70	M-v 4	Williams	1999 VE ₁
1999 VF ₁	15.0	0.15	20000226	49.99624	127.82433	248.12241	6.28690	0.2494612	2.4110658	89	2	1995–2000	0.35	M-v 3	Williams	37198 1999 VF ₁
1999 VG ₁	14.7	0.15	20000226	16.98476	357.41891	48.93203	2.04180	0.2613780	3.1329955	73	1	96 days	0.42	M-v 3	Williams	1999 VG ₁
1999 VH ₁	16.4	0.15	19991029	44.13111	110.59543	215.68032	10.17356	0.2791537	2.7669479	18	1	6 days	0.48		E Williams	1999 VH ₁
1999 VJ ₁	15.1	0.15	19991029	11.25725	169.35404	215.51045	8.42316	0.1249743	3.1934134	25	1	25 days	0.54		Williams	1999 VJ ₁
1999 VK ₁	14.8	0.15	20000226	7.68764	13.56295	49.96793	4.20025	0.0714223	2.5559122	69	2	1993–2000	0.56	M-v 4	Williams	37310 1999 VK ₁
1999 VM ₁	16.4	0.15	20000226	12.20883	193.11300	240.99140	11.53508	0.2646991	2.6477086	60	1	65 days	0.72	M-v 4	Williams	1999 VM ₁
1999 VN ₁	15.3	0.15	20000226	180.22791	257.56277	4.65474	3.61941	0.0595521	2.1721843	61	2	1998–1999	0.65	M-v 4	Williams	37310 1999 VN ₁
1999 VO ₁	17.0	0.15	19991118	281.64389	218.82899	282.74524	3.36172	0.0726915	2.1635575	31	1	45 days	0.71		Williams	1999 VO ₁
1999 VP ₁	16.7	0.15	20000226	58.54206	314.80209	34.16174	7.36441	0.1329701	2.3613169	38	1	67 days	0.43	M-v 4	Williams	1999 VP ₁
1999 VQ ₁	14.6	0.15	19991029	81.61863	258.04702	33.68320	15.79728	0.1841546	3.1561660	16	1	11 days	0.47		Williams	1999 VQ ₁
1999 VS ₁	14.7	0.15	20000226	39.26515	163.94373	227.89547	7.25091	0.1749817	2.7130602	57	2	1985–1999	0.63	M-v 4	Williams	37310 1999 VS ₁
1999 VT ₁	12.9	0.15	20000226	37.29745	194.54924	204.84825	9.95799	0.0425538	3.0038764	60	3	1995–2000	0.57	M-v 3	Williams	37310 1999 VT ₁
1999 VV ₁	13.9	0.15	20000226	102.88925	112.50902	198.90906	13.66010	0.1062550	2.6211303	65	2	1998–2000	0.50	M-v 3	Williams	37310 1999 VV ₁
1999 VW ₁	13.6	0.15	20000226	352.31681	190.99685	273.66606	9.24369	0.1217105	2.5725202	52	1	123 days	0.47	M-v 4	Williams	1999 VW ₁
1999 VY ₁	15.4	0.15	19991029	11.34015	348.40665	39.04767	4.12892	0.0896628	2.5502066	34	1	13 days	1.00		Williams	1999 VY ₁
1999 VZ ₁	15.8	0.15	20000226	348.15157	214.73813	242.02398	1.05483	0.0905056	2.2108200	57	2	1981–1999	0.74	M-v 5	Williams	37198 1999 VZ ₁
1999 VA ₂	15.2	0.15	20000226	63.41827	122.60147	232.94374	23.88466	0.2903320	2.2700844	107	1	97 days	0.47	M-v 4	Williams	1999 VA ₂
1999 VC ₂	14.3	0.15	20000226	288.02115	116.38810	64.79784	7.45857	0.1698748	2.3108545	52	1	63 days	0.46	M-v 4	Williams	1999 VC ₂
1999 VD ₂	13.6	0.15	20000226	80.97229	282.75757	65.84042	11.66748	0.1289833	2.9966608	55	1	61 days	0.40	M-v 5	Williams	1999 VD ₂
1999 VE ₂	13.2	0.15	20000226	128.60438	150.51763	100.37421	14.61051	0.1317916	2.6066920	51	3	1994–1999	0.67	M-v 3	Williams	36861 1999 VE ₂
1999 VG ₂	13.1	0.15	20000226	37.08961	302.43421	74.33404	11.19810	0.1077582	2.9782303	54	1	66 days	0.59	M-v 4	Williams	1999 VG ₂
1999 VH ₂	14.2	0.15	20000226	33.91213	75.81052	320.53823	2.74901	0.1691661	2.5922988	57	1	64 days	0.53	M-v 4	Williams	1999 VH ₂
1999 VJ ₂	14.4	0.15	19991118	19.17714	87.09216	293.39635	8.77365	0.1294749	2.9763430	40	1	59 days	0.66		Williams	1999 VJ ₂
1999 VM ₂	12.9	0.15	20000226	326.56725	250.93839	241.82255	23.67632	0.0890581	2.5796450	65	1	98 days	0.44	M-v 4	Williams	1999 VM ₂
1999 VO ₂	13.5	0.15	20000226	68.37913	276.90719	115.98521	27.55333	0.3250492	2.6740170	55	3	1990–2000	0.54	M-v 1	Williams	37198 1999 VO ₂

1999 VP ₂	15.9	0.15	19991029	49.40127	113.87374	209.27832	16.71434	0.2871065	2.6091681	8	1	2 days	0.66	E	Williams	1999 VP ₂	
1999 VQ ₂	14.1	0.15	20000226	357.91346	23.26631	55.80553	7.49458	0.0664641	2.3255248	61	3	1994–2000	0.43	M-v	4	Williams	37198 1999 VQ ₂
1999 VS ₂	15.8	0.15	19991009	92.40270	254.22594	37.76358	14.38095	0.1923486	2.6131366	22	1	41 days	0.31			Williams	1999 VS ₂
1999 VT ₂	21.2	0.15	19991029	335.76239	48.38035	54.99905	0.50117	0.4766744	2.2647637	18	1	12 days	0.57			Williams	1999 VT ₂
1999 VV ₂	16.1	0.15	20000226	42.09320	114.86870	267.22902	3.85973	0.2396527	2.6566929	58	1	66 days	0.54	M-v	4	Williams	1999 VV ₂
1999 VW ₂	17.5	0.15	19991029	322.09371	190.08437	259.02535	5.06877	0.0585034	2.1728809	24	1	12 days	0.40			Williams	1999 VW ₂
1999 VX ₂	14.5	0.15	20000226	40.55773	142.56235	264.49429	6.17851	0.0892730	2.2886953	68	1	93 days	0.61	M-v	4	Williams	1999 VX ₂
1999 VY ₂	13.6	0.15	20000226	42.72025	120.87304	272.15932	7.84045	0.1706128	2.8116917	52	2	1998–2000	0.63	M-v	3	Williams	37310 1999 VY ₂
1999 VZ ₂	14.6	0.15	20000226	338.45989	91.88418	5.02665	6.98850	0.0820738	2.3962694	64	1	95 days	0.62	M-v	5	Williams	1999 VZ ₂
1999 VA ₃	16.3	0.15	19991029	310.72170	309.33493	160.90603	1.99272	0.1175376	3.2426558	12	1	8 days	0.28			Williams	1999 VA ₃
1999 VB ₃	15.4	0.15	20000226	6.48626	323.86532	105.16518	2.21287	0.1673771	3.1914470	44	1	66 days	0.57	M-v	4	Williams	1999 VB ₃
1999 VC ₃	16.5	0.15	19991118	109.60762	226.22560	63.79643	7.16141	0.1339315	2.4019153	18	1	46 days	0.29			Williams	1999 VC ₃
1999 VD ₃	17.3	0.15	19991029	176.03625	9.54134	223.48630	14.94797	0.1158865	2.5584659	9	1	5 days	0.13	E		Williams	1999 VD ₃
1999 VE ₃	18.0	0.15	19991029	355.07780	264.41908	148.77279	1.51180	0.1668081	2.3633579	12	1	8 days	0.40			Williams	1999 VE ₃
1999 VF ₃	18.4	0.15	19991029	151.18148	37.95061	215.89200	7.37075	0.0741110	2.3547831	12	1	8 days	0.22			Williams	1999 VF ₃
1999 VG ₃	13.8	0.15	20000226	348.77926	303.87368	147.86407	1.89018	0.1400952	3.1641943	58	2	1998–2000	0.56	M-v	4	Williams	37199 1999 VG ₃
1999 VH ₃	18.9	0.15	19991029	58.07019	157.30921	167.80751	1.85213	0.2174121	2.2862397	9	1	5 days	0.29	E		Williams	1999 VH ₃
1999 VJ ₃	17.4	0.15	19991029	75.72326	172.37622	137.95643	1.74043	0.1958718	2.5025551	12	1	8 days	0.51			Williams	1999 VJ ₃
1999 VK ₃	18.7	0.15	19991029	22.40985	270.14901	102.32553	1.92044	0.2096377	2.5449319	9	1	5 days	0.15	E		Williams	1999 VK ₃
1999 VL ₃	18.8	0.15	19991029	356.82063	246.56818	165.29319	1.78438	0.1261718	2.5780307	9	1	8 days	0.16			Williams	1999 VL ₃
1999 VM ₃	13.7	0.15	20000226	114.04457	197.20921	104.09057	2.49427	0.1494028	3.1115119	67	3	1996–1999	0.50	M-v	4	Williams	37199 1999 VM ₃
1999 VN ₃	17.7	0.15	19991029	92.54215	193.41039	105.18115	2.25101	0.1609037	2.5340241	9	1	5 days	0.14	E		Williams	1999 VN ₃
1999 VQ ₃	19.4	0.15	19991029	19.79314	302.53994	65.34920	4.73374	0.3104358	2.6536015	9	1	15 days	0.11			Williams	1999 VQ ₃
1999 VR ₃	19.0	0.15	19991029	72.71548	208.90480	101.01076	2.13612	0.2144515	2.1712760	24	1	15 days	1.32			Williams	1999 VR ₃
1999 VS ₃	16.6	0.15	19991029	335.63368	247.55408	189.78129	2.75279	0.0803125	2.6827068	12	1	14 days	0.26			Williams	1999 VS ₃
1999 VV ₃	16.2	0.15	19991029	324.60178	26.33431	69.52578	6.25623	0.1393184	3.1902880	14	1	14 days	0.25			Williams	1999 VV ₃
1999 VX ₃	15.5	0.15	19991029	213.76090	346.53513	220.89539	12.63036	0.1000299	2.6768850	10	1	14 days	0.28			Williams	1999 VX ₃
1999 VA ₄	14.7	0.15	20000226	35.27981	282.90828	98.15451	3.15385	0.2226944	2.3959195	31	1	94 days	0.52	M-v	4	Williams	1999 VA ₄
1999 VD ₄	16.2	0.15	20000226	19.03783	353.93094	54.30387	5.99104	0.3789076	2.6312311	34	1	66 days	0.42	M-v	4	Williams	1999 VD ₄
1999 VH ₄	15.4	0.15	20000226	8.39654	11.17003	39.10826	15.22343	0.1373258	2.6506836	30	1	64 days	0.58	M-v	4	Williams	1999 VH ₄
1999 VK ₄	14.5	0.15	20000226	39.46979	178.86620	184.31747	8.40328	0.2359418	2.7961813	42	1	171 days	0.51	M-v	3	Williams	1999 VK ₄
1999 VL ₄	14.5	0.15	20000226	69.31692	217.57058	95.84030	2.93782	0.3747183	2.3605213	59	2	1988–1999	0.53	M-v	3	Williams	37199 1999 VL ₄
1999 VR ₄	15.0	0.15	20000226	8.73146	0.82983	67.04847	12.58473	0.1577167	2.6438995	31	1	95 days	0.54	M-v	4	Williams	1999 VR ₄
1999 VS ₄	16.4	0.15	19991029	1.54025	344.39777	50.80083	2.52015	0.1603562	2.5389577	35	1	29 days	0.64			Williams	1999 VS ₄
1999 VT ₄	16.0	0.15	20000226	40.08144	348.86496	32.54210	0.16533	0.2224076	2.4896279	39	2	1995–1999	0.58	M-v	4	Williams	37199 1999 VT ₄
1999 VU ₄	14.2	0.15	19991118	84.60412	272.74144	40.33659	5.63761	0.0435108	2.7472400	28	1	30 days	0.72			Williams	1999 VU ₄
1999 VV ₄	15.4	0.15	20000226	41.73113	339.46524	44.94325	3.31009	0.1805145	2.3855836	79	1	97 days	0.52	M-v	3	Williams	1999 VV ₄
1999 VW ₄	14.6	0.15	20000226	61.14132	307.23601	46.87687	4.18332	0.1718349	2.5986441	85	1	96 days	0.64	M-v	4	Williams	1999 VW ₄
1999 VX ₄	15.3	0.15	20000226	9.12381	224.47882	201.25786	0.74723	0.1209735	2.5402997	49	2	1993–2000	0.63	M-v	4	Williams	37199 1999 VX ₄
1999 VZ ₄	16.1	0.15	19991118	6.65801	181.84168	216.07066	2.49486	0.1808864	2.4254974	46	1	39 days	0.49			Williams	1999 VZ ₄
1999 VA ₅	13.7	0.15	20000226	36.36574	332.26399	45.79920	4.16947	0.2001169	3.1528416	87	4	1982–2000	0.58	M-v	1	Williams	37199 1999 VA ₅
1999 VB ₅	14.4	0.15	20000226	37.26811	340.90176	43.02034	2.50421	0.1065035	2.9257254	71	2	1997–1999	0.54	M-v	4	Williams	37310 1999 VB ₅
1999 VC ₅	15.4	0.15	20000226	5.42192	31.66306	42.90341	4.51775	0.1954234	2.5841161	67	1	96 days	0.48	M-v	4	Williams	1999 VC ₅
1999 VD ₅	15.4	0.15	20000226	43.78238	330.04221	52.20690	3.44504	0.1916768	2.4057108	59	1	96 days	0.50	M-v	4	Williams	1999 VD ₅
1999 VE ₅	14.4	0.15	20000226	7.01106	10.18950	60.21268	14.67528	0.1344335	2.6362718	64	1	94 days	0.56	M-v	4	Williams	1999 VE ₅
1999 VF ₅	14.4	0.15	20000226	69.11505	198.62861	160.59670	2.30348	0.0790882	2.5696307	80	1	65 days	0.48	M-v	4	Williams	1999 VF ₅
1999 VG ₅	16.1	0.15	20000226	45.22068	155.40301	225.40751	0.13823	0.2477467	2.2933388	58	1	69 days	0.40	M-v	4	Williams	1999 VG ₅
1999 VH ₅	12.7	0.15	20000226	112.59786	231.34321	64.81729	13.51959	0.1093524	2.9174686	41	1	97 days	0.50	M-v	4	Williams	1999 VH ₅
1999 VJ ₅	15.0	0.15	20000226	75.05047	6.45222	348.79889	3.79795	0.2166468	2.2216223	36	2	1998–2000	0.65	M-v	5	Williams	37311 1999 VJ ₅
1999 VK ₅	15.7	0.15	20000226	48.39412	356.79790	30.98303	2.88798	0.0622733	2.5705695	34	2	1993–1999	0.64	M-v	5	Williams	37200 1999 VK ₅
1999 VL ₅	15.7	0.15	20000226	33.66577	160.72467	233.20783	11.72645	0.2269789	2.4374973	77	1	93 days	0.63	M-v	3	Williams	1999 VL ₅
1999 VM ₅	15.4	0.15	20000226	43.79045	47.63587	332.33057	2.52268	0.1961062	2.4190921	45	1	95 days	0.57	M-v	4	Williams	1999 VM ₅
1999 VN ₅	14.6	0.15	20000226	28.90106	180.12371	226.67519	7.25044	0.1905707	2.5906272	71	1	87 days	0.47	M-v	3	Williams	1999 VN ₅

1999 VO ₅	15.3	0.15	19991029	13.53267	172.48073	219.91061	3.77180	0.0910705	2.5165217	67	1	53 days	0.68		Williams	1999 VO ₅
1999 VP ₅	14.9	0.15	20000226	7.89088	349.80183	84.50434	1.15537	0.1064334	2.5870753	67	1	64 days	0.51	M-v 4	Williams	1999 VP ₅
1999 VR ₅	19.2	0.15	19991029	15.34402	113.41189	241.96726	4.67382	0.3919739	2.2224746	67	1	13 days	0.65		Williams	1999 VR ₅
1999 VS ₅	17.1	0.15	19991118	60.56836	160.02287	149.54749	1.13392	0.3764106	2.3477115	59	1	37 days	0.60		Williams	1999 VS ₅
1999 VT ₅	14.6	0.15	20000226	65.90311	4.44717	1.63790	4.96335	0.1654428	2.7345041	26	2	1997–2000	0.64	M-v 4	Williams	37311 1999 VT ₅
1999 VU ₅	14.5	0.15	20000226	63.52215	309.66057	68.29564	11.01108	0.0947978	2.3777830	56	1	66 days	0.54	M-v 4	Williams	1999 VU ₅
1999 VV ₅	13.6	0.15	20000226	28.03851	339.50648	72.88045	11.38991	0.0995306	3.0103435	55	1	68 days	0.62	M-v 4	Williams	1999 VV ₅
1999 VW ₅	15.8	0.15	19991118	11.58117	351.65574	53.56231	2.19905	0.1801580	2.3921579	64	1	39 days	0.48		Williams	1999 VW ₅
1999 VX ₅	13.0	0.15	20000226	72.47505	288.04220	77.94388	9.43389	0.0505228	3.0358948	54	1	63 days	0.43	M-v 4	Williams	1999 VX ₅
1999 VY ₅	15.4	0.15	19991118	10.71094	341.56391	66.40579	8.57711	0.1413596	2.2485643	37	1	39 days	0.78		Williams	1999 VY ₅
1999 VZ ₅	13.2	0.15	20000226	21.78572	340.36823	80.59827	11.82809	0.0887749	2.9956463	39	1	63 days	0.47	M-v 4	Williams	1999 VZ ₅
1999 VA ₆	14.3	0.15	20000226	3.41702	223.82343	229.92823	12.53448	0.2238344	2.7299716	50	2	1990–2000	0.54	M-v 4	Williams	37311 1999 VA ₆
1999 VB ₆	15.0	0.15	20000226	53.25662	275.73010	110.10524	1.93751	0.1949077	2.3255445	60	4	1981–1999	0.59	M-v 2	Williams	37311 1999 VB ₆
1999 VC ₆	14.8	0.15	20000226	57.76525	179.09635	207.75072	2.21678	0.1490404	2.1823885	53	1	85 days	0.59	M-v 4	Williams	1999 VC ₆
1999 VD ₆	13.9	0.15	20000226	31.27988	302.54616	104.52710	2.02319	0.1783929	3.0909505	54	2	1995–2000	0.56	M-v 4	Williams	37200 1999 VD ₆
1999 VE ₆	14.8	0.15	20000226	18.94937	334.71159	90.81156	5.78012	0.2631608	2.9804562	40	1	63 days	0.47	M-v 4	Williams	1999 VE ₆
1999 VF ₆	14.2	0.15	20000226	45.37160	192.95797	208.98533	3.12983	0.1501625	2.2671437	48	2	1998–1999	0.50	M-v 4	Williams	37311 1999 VF ₆
1999 VJ ₆	14.2	0.15	20000226	15.93525	6.33684	74.17731	5.35070	0.1045169	2.2849896	55	1	62 days	0.39	M-v 4	Williams	1999 VJ ₆
1999 VK ₆	12.6	0.15	20000226	94.23930	101.43812	239.93604	13.56849	0.1012150	2.9964645	81	3	1992–2000	0.56	M-v 3	Williams	37311 1999 VK ₆
1999 VM ₆	14.2	0.15	20000226	61.04808	241.59465	118.87142	5.76237	0.1712413	3.1750662	45	2	1995–1999	0.60	M-v 4	Williams	37311 1999 VM ₆
1999 VN ₆	19.5	0.15	20000226	21.55821	43.39351	58.18571	19.49535	0.3700596	1.7333478	150	1	54 days	0.60	M-v 5	Williams	37311 1999 VN ₆
1999 VP ₆	19.8	0.15	20000226	99.50146	108.72911	227.25975	12.81487	0.3047002	1.3786607	49	1	67 days	0.74	M-v 5	Williams	1999 VP ₆
1999 VQ ₆	18.7	0.15	20000226	9.11888	254.34529	203.68396	27.62549	0.5077146	2.5970151	27	1	59 days	0.52	M-v 5	Williams	1999 VQ ₆
1999 VS ₆	18.9	0.15	20000226	21.13658	89.25888	35.38069	27.97034	0.2230622	1.1977667	96	1	32 days	0.71	M-v 6	Williams	37311 1999 VS ₆
1999 VT ₆	14.1	0.15	19991029	65.38461	40.94540	281.48487	3.92807	0.1388311	3.1511411	26	1	13 days	0.83		Williams	1999 VT ₆
1999 VU ₆	15.1	0.15	19991118	218.90205	135.61626	56.24192	2.37126	0.1012131	2.2998865	66	1	39 days	0.52		Williams	1999 VU ₆
1999 VV ₆	14.9	0.15	20000226	60.44568	295.38053	68.75213	3.36856	0.2106476	2.4366180	75	1	83 days	0.36	M-v 4	Williams	1999 VV ₆
1999 VW ₆	12.9	0.15	20000226	48.31252	216.52986	153.98128	14.95717	0.1986504	2.5536189	74	2	1998–2000	0.62	M-v 3	Williams	37200 1999 VW ₆
1999 VX ₆	14.4	0.15	20000226	48.13021	238.16017	130.09666	16.26764	0.1514168	2.8138304	31	2	1998–1999	0.72	M-v 3	Williams	37200 1999 VX ₆
1999 VY ₆	14.6	0.15	20000226	39.13338	266.11427	118.55469	13.63080	0.2082361	2.5145421	37	1	116 days	0.74	M-v 4	Williams	1999 VY ₆
1999 VZ ₆	13.1	0.15	20000226	5.72349	266.32618	156.54438	18.21187	0.1614232	3.1982561	32	1	117 days	0.44	M-v 3	Williams	1999 VZ ₆
1999 VA ₇	12.1	0.15	20000226	309.45749	18.40229	106.78349	23.56634	0.0918871	3.2138595	28	1	64 days	0.55	M-v 5	Williams	1999 VA ₇
1999 VB ₇	11.5	0.15	20000226	84.26491	196.25203	141.04680	22.47023	0.0454432	3.2079039	42	2	1998–2000	0.56	M-v 3	Williams	37201 1999 VB ₇
1999 VC ₇	14.5	0.15	20000226	20.26334	12.35678	41.39613	12.48430	0.1444801	2.3193441	102	1	137 days	0.47	M-v 3	Williams	1999 VC ₇
1999 VD ₇	14.0	0.15	20000226	95.09373	216.12925	88.34422	0.46504	0.1971734	2.9734869	72	3	1993–1999	0.61	M-v 4	Williams	37201 1999 VD ₇
1999 VE ₇	15.0	0.15	19991029	68.03634	261.89641	47.00565	2.57848	0.1664730	3.0879424	36	1	53 days	0.78		Williams	1999 VE ₇
1999 VF ₇	14.9	0.15	20000226	174.21347	189.99360	58.02994	3.61021	0.1665857	2.3159847	56	2	1998–1999	0.72	M-v 4	Williams	37201 1999 VF ₇
1999 VJ ₇	13.1	0.15	20000226	8.48781	10.52217	49.10796	9.29388	0.1578575	3.1220026	97	2	1988–2000	0.72	M-v 4	Williams	37311 1999 VJ ₇
1999 VK ₇	15.9	0.15	19991118	309.69985	50.24400	63.84106	5.51245	0.1383374	2.5397301	49	1	42 days	0.76		Williams	1999 VK ₇
1999 VN ₇	16.0	0.15	19991118	329.27420	0.15672	90.51339	3.71095	0.1368253	2.4221000	45	1	41 days	0.58		Williams	1999 VN ₇
1999 VP ₇	14.5	0.15	20000226	73.06923	121.36618	218.74375	10.85036	0.2210275	2.5559203	85	2	1998–2000	0.66	M-v 4	Williams	37201 1999 VP ₇
1999 VQ ₇	14.4	0.15	20000226	94.53258	198.67817	122.95376	2.56507	0.1343224	2.8709791	49	2	1989–1999	0.64	M-v 5	Williams	37201 1999 VQ ₇
1999 VR ₇	13.0	0.15	20000226	187.72406	187.44379	58.99999	15.11959	0.0357283	3.2128153	69	1	61 days	0.54	M-v 5	Williams	1999 VR ₇
1999 VS ₇	14.0	0.15	20000226	318.83518	265.66085	226.97131	13.87356	0.1038502	2.6287618	77	4	1973–2000	0.66	M-v 1	Williams	37201 1999 VS ₇
1999 VT ₇	13.2	0.15	20000226	62.99070	306.90771	59.54836	15.61229	0.1290795	2.6074002	78	3	1978–2000	0.41	M-v 3	Williams	37202 1999 VT ₇
1999 VU ₇	16.1	0.15	19991118	344.11386	2.19937	76.92882	3.74080	0.1625029	2.6134331	49	1	43 days	0.65		Williams	1999 VU ₇
1999 VW ₇	16.2	0.15	19991118	3.84770	347.22070	63.54032	5.92188	0.2343232	2.5748481	89	1	44 days	0.39		Williams	1999 VW ₇
1999 VZ ₇	14.7	0.15	20000226	66.54341	137.01652	241.82999	5.04478	0.1063263	2.4578012	49	1	64 days	0.55	M-v 5	Williams	1999 VZ ₇
1999 VB ₈	15.5	0.15	20000226	15.21300	292.11819	151.80614	2.28198	0.1831800	2.3899175	53	3	1995–2000	0.49	M-v 3	Williams	37202 1999 VB ₈
1999 VC ₈	16.2	0.15	19991118	33.66901	288.67445	78.85659	5.79565	0.2916915	2.5655911	36	1	30 days	0.62		Williams	1999 VC ₈
1999 VF ₈	13.0	0.15	19991118	22.48469	321.41359	92.89172	12.14147	0.2372428	3.1123072	48	1	57 days	0.40		Williams	1999 VF ₈
1999 VH ₈	12.7	0.15	20000226	292.18986	93.26916	118.67163	10.87915	0.0436269	2.9830254	50	1	63 days	0.56	M-v 6	Williams	1999 VH ₈
1999 VJ ₈	13.0	0.15	20000226	106.42642	77.45670	292.75933	12.19813	0.2152219	2.6519887	62	2	1998–2000	0.59	M-v 3	Williams	37202 1999 VJ ₈

1999 VK ₈	15.2	0.15	19991118	32.48732	295.76596	63.88272	1.08012	0.1839074	3.0987703	51	1	39 days	0.68		Williams	1999 VK ₈
1999 VM ₈	14.8	0.15	20000226	10.61205	345.56843	61.05111	4.84126	0.1524594	2.6836812	37	1	90 days	0.53	M-v 4	Williams	1999 VM ₈
1999 VN ₈	16.5	0.15	19991029	23.42333	167.47133	202.76690	8.72384	0.1625886	2.7902058	17	1	11 days	0.35		Williams	1999 VN ₈
1999 VO ₈	14.7	0.15	20000226	3.09176	251.73582	193.89564	5.89944	0.1141027	2.3895576	55	1	69 days	0.46	M-v 4	Williams	1999 VO ₈
1999 VP ₈	15.0	0.15	20000226	349.59650	14.17016	85.07328	5.37245	0.1900909	2.3467852	47	1	97 days	0.57	M-v 4	Williams	1999 VP ₈
1999 VQ ₈	15.8	0.15	19991118	25.42091	308.50866	66.29997	12.40607	0.2995937	2.6251987	35	1	57 days	0.58		Williams	1999 VQ ₈
1999 VR ₈	15.2	0.15	20000226	65.75530	292.07471	87.31124	7.18287	0.1243892	2.2443558	57	1	63 days	0.46	M-v 4	Williams	1999 VR ₈
1999 VS ₈	14.8	0.15	20000226	38.97064	276.29820	120.96303	13.56212	0.2127982	2.5788307	31	1	66 days	0.52	M-v 4	Williams	1999 VS ₈
1999 VT ₈	13.4	0.15	20000226	36.25282	264.61796	128.41002	14.87457	0.2529151	3.1281242	44	3	1988–2000	0.69	M-v 3	Williams	37202 1999 VT ₈
1999 VU ₈	14.0	0.15	20000226	57.29860	233.06724	141.10150	13.94099	0.1476007	2.8459682	54	4	1996–2000	0.67	M-v 1	Williams	37202 1999 VU ₈
1999 VV ₈	16.1	0.15	19991118	66.90715	267.57568	53.56833	5.35422	0.2557753	2.2729111	54	1	40 days	0.93		Williams	1999 VV ₈
1999 VW ₈	16.9	0.15	19991029	19.56539	146.57924	219.57209	9.43910	0.2424189	2.5908678	31	1	15 days	0.56		Williams	1999 VW ₈
1999 VX ₈	14.8	0.15	19991118	12.82205	199.59989	171.63886	13.66163	0.2596562	2.6791406	16	1	35 days	0.57		Williams	1999 VX ₈
1999 VY ₈	13.7	0.15	20000226	38.59498	282.97113	91.40644	10.20683	0.2271215	2.4107897	45	1	117 days	0.42	M-v 3	Williams	1999 VY ₈
1999 VZ ₈	13.9	0.15	20000226	359.50219	347.38192	84.32711	13.39842	0.2321881	2.5453795	45	1	117 days	0.53	M-v 4	Williams	1999 VZ ₈
1999 VA ₉	12.5	0.15	20000226	4.91612	255.27202	176.85599	15.49792	0.3064959	2.6469815	35	1	101 days	0.39	M-v 4	Williams	1999 VA ₉
1999 VC ₉	13.7	0.15	20000226	44.63822	274.30017	75.03206	14.53910	0.2510972	2.7584516	53	2	1998–2000	0.72	M-v 3	Williams	37203 1999 VC ₉
1999 VD ₉	13.7	0.15	20000226	12.92818	335.78338	71.81896	14.64002	0.1698319	2.5300178	39	1	119 days	0.55	M-v 3	Williams	1999 VD ₉
1999 VE ₉	13.6	0.15	19991118	64.76943	280.40310	50.47894	13.41884	0.1939399	2.7077850	44	1	42 days	0.44		Williams	1999 VE ₉
1999 VF ₉	15.1	0.15	19991118	21.74102	160.10039	222.03047	9.77929	0.2312567	3.1517849	42	1	40 days	0.57		Williams	1999 VF ₉
1999 VH ₉	15.6	0.15	19991118	12.13771	355.62654	43.25788	5.44075	0.1858693	2.4255521	46	1	42 days	0.57		Williams	1999 VH ₉
1999 VK ₉	15.4	0.15	19991118	61.99971	107.90762	233.61218	4.94523	0.1229472	2.2586019	55	1	45 days	0.57		Williams	1999 VK ₉
1999 VL ₉	13.7	0.15	20000226	208.62762	356.38658	237.20259	18.02090	0.1185510	2.7572804	81	2	1998–2000	0.71	M-v 4	Williams	37203 1999 VL ₉
1999 VM ₉	16.7	0.15	19991118	14.22727	342.59879	52.22113	4.30046	0.2346875	2.3252947	58	1	46 days	0.48		Williams	1999 VM ₉
1999 VN ₉	13.7	0.15	20000226	195.05694	7.90709	243.22070	3.55824	0.1192025	2.2334864	74	2	1998–1999	0.52	M-v 4	Williams	37312 1999 VN ₉
1999 VQ ₉	14.9	0.15	20000226	24.55992	202.92835	222.93105	4.16486	0.2633070	2.6057207	56	1	64 days	0.51	M-v 4	Williams	1999 VQ ₉
1999 VR ₉	13.7	0.15	20000226	45.37918	307.51260	101.21745	6.75715	0.2762141	2.5579096	60	4	1962–2000	0.55	M-v 2	Williams	37203 1999 VR ₉
1999 VS ₉	13.7	0.15	20000226	59.41835	183.03693	159.68721	15.05764	0.1919283	2.6479534	33	1	119 days	0.57	M-v 4	Williams	1999 VS ₉
1999 VT ₉	13.3	0.15	20000226	337.38904	359.66185	90.57674	14.67042	0.1241792	2.6217826	37	1	117 days	0.68	M-v 4	Williams	1999 VT ₉
1999 VU ₉	12.2	0.15	20000226	336.95362	305.02791	134.46378	16.82682	0.0984734	3.2180316	41	2	1998–1999	0.57	M-v 3	Williams	37203 1999 VU ₉
1999 VV ₉	13.2	0.15	20000226	28.18084	206.73278	173.35872	17.85061	0.2154746	3.1062469	34	1	119 days	0.71	M-v 4	Williams	1999 VV ₉
1999 VW ₉	12.6	0.15	20000226	17.69803	306.91089	87.76525	18.21822	0.1344179	3.0851617	41	1	103 days	0.47	M-v 3	Williams	1999 VW ₉
1999 VX ₉	12.8	0.15	20000226	288.00436	16.61515	122.89371	14.20475	0.1058121	2.5580395	50	3	1994–2000	0.60	M-v 3	Williams	37204 1999 VX ₉
1999 VY ₉	13.8	0.15	20000226	356.03201	107.12988	334.51811	9.79864	0.1723286	2.9477017	44	1	94 days	0.59	M-v 4	Williams	1999 VY ₉
1999 VZ ₉	13.5	0.15	20000226	325.46938	196.91811	285.48390	7.28898	0.0986161	2.2730388	67	4	1980–2000	0.59	M-v 1	Williams	37204 1999 VZ ₉
1999 VA ₁₀	15.0	0.15	20000226	22.05046	33.37765	20.23171	12.81202	0.2771154	2.6404746	58	1	91 days	0.54	M-v 3	Williams	1999 VA ₁₀
1999 VB ₁₀	13.7	0.15	20000226	25.23745	87.17233	311.81516	9.44174	0.2429223	2.9772151	53	1	94 days	0.48	M-v 3	Williams	1999 VB ₁₀
1999 VE ₁₀	13.8	0.15	20000226	325.37221	163.37558	310.85596	7.35853	0.0407661	2.3411322	39	1	99 days	0.45	M-v 4	Williams	1999 VE ₁₀
1999 VF ₁₀	14.5	0.15	20000226	48.38995	290.38613	87.42970	12.44961	0.2993754	2.6607150	40	1	63 days	0.53	M-v 4	Williams	1999 VF ₁₀
1999 VH ₁₀	13.2	0.15	20000226	265.22165	69.33145	124.21883	2.12007	0.0889724	2.7989647	65	4	1989–2000	0.61	M-v 2	Williams	37204 1999 VH ₁₀
1999 VK ₁₀	13.8	0.15	20000226	86.94248	113.98344	219.22259	11.03997	0.2783636	2.5465716	56	2	1998–2000	0.56	M-v 3	Williams	37312 1999 VK ₁₀
1999 VL ₁₀	14.3	0.15	20000226	72.24138	134.66315	221.56078	8.26926	0.2553461	2.3174200	62	2	1998–2000	0.66	M-v 4	Williams	37312 1999 VL ₁₀
1999 VM ₁₀	14.4	0.15	20000226	7.50165	9.05426	85.43728	8.40613	0.2856263	2.6332603	56	2	1996–1999	0.54	M-v 3	Williams	37204 1999 VM ₁₀
1999 VO ₁₀	14.9	0.15	20000226	71.60313	109.59683	260.63698	5.93109	0.1460603	2.3847057	49	1	64 days	0.57	M-v 4	Williams	1999 VO ₁₀
1999 VP ₁₀	12.6	0.15	20000226	134.91795	183.25161	113.45911	9.31965	0.2039766	2.7963256	46	1	64 days	0.56	M-v 5	Williams	1999 VP ₁₀
1999 VQ ₁₀	9.9	0.15	20000226	2.47560	183.22884	258.69264	8.44501	0.0396608	5.1782207	66	2	1998–2000	0.48	M-v 3	Williams	37312 1999 VQ ₁₀
1999 VR ₁₀	12.4	0.15	20000226	50.28100	308.28314	81.70164	11.39557	0.1195260	2.9947615	51	2	1997–2000	0.42	M-v 3	Williams	37204 1999 VR ₁₀
1999 VS ₁₀	13.6	0.15	20000226	42.15965	300.81879	107.82446	7.45292	0.1034804	2.3587817	41	1	63 days	0.47	M-v 4	Williams	1999 VS ₁₀
1999 VT ₁₀	15.0	0.15	20000226	345.58241	313.41973	166.34305	3.91269	0.1046044	2.2741774	50	1	63 days	0.48	M-v 4	Williams	1999 VT ₁₀
1999 VV ₁₀	14.9	0.15	20000226	71.93345	321.38247	66.06116	23.08527	0.0701584	1.8438917	58	2	1998–2000	0.53	M-v 4	Williams	37312 1999 VV ₁₀
1999 VW ₁₀	13.7	0.15	20000226	289.60417	69.20018	113.22924	8.44551	0.1288675	2.2379103	46	2	1998–2000	0.49	M-v 4	Williams	37205 1999 VW ₁₀
1999 VY ₁₀	14.8	0.15	20000226	331.99635	4.36211	115.15114	4.60696	0.0796002	2.3185343	61	1	77 days	0.42	M-v 4	Williams	1999 VY ₁₀
1999 VZ ₁₀	17.5	0.15	19991118	2.89646	296.91025	114.07091	3.43621	0.2187117	2.2783940	28	1	32 days	0.86		Williams	1999 VZ ₁₀

1999 VA ₁₁	15.1	0.15	20000226	31.66554	136.61965	251.05780	4.74814	0.2261621	2.6435919	59	1	62 days	0.45	M-v	4	Williams	1999 VA ₁₁
1999 VB ₁₁	13.9	0.15	20000226	34.18891	118.32038	261.55346	4.56613	0.1224389	2.9742738	49	1	96 days	0.54	M-v	4	Williams	1999 VB ₁₁
1999 VD ₁₁	16.3	0.15	19991118	357.59742	190.21495	219.86475	2.88284	0.1245798	2.2701253	63	1	39 days	0.58			Williams	1999 VD ₁₁
1999 VF ₁₁	15.0	0.15	20000226	75.19790	115.21831	222.14843	13.61847	0.2041035	2.6208631	51	1	64 days	0.55	M-v	5	Williams	1999 VF ₁₁
1999 VG ₁₁	14.2	0.15	20000226	212.19466	157.32293	71.09128	7.14127	0.0697930	2.3737882	67	2	1998–2000	0.58	M-v	3	Williams	37205 1999 VG ₁₁
1999 VH ₁₁	15.1	0.15	19991118	41.38410	138.35365	229.21937	4.18955	0.1282877	2.7464523	56	1	59 days	0.49			Williams	1999 VH ₁₁
1999 VJ ₁₁	14.3	0.15	20000226	57.94933	324.09476	52.33637	6.44459	0.1324153	2.5352397	65	3	1995–1999	0.58	M-v	3	Williams	37312 1999 VJ ₁₁
1999 VK ₁₁	15.7	0.15	20000226	75.53656	102.58764	244.66232	1.12534	0.2276914	2.3798748	65	3	1995–1999	0.67	M-v	4	Williams	37205 1999 VK ₁₁
1999 VM ₁₁	20.6	0.15	20000226	38.55253	206.18677	218.13482	17.05714	0.2788124	1.5943340	29	1	54 days	0.47	M-v	5	Williams	1999 VM ₁₁
1999 VO ₁₁	18.4	0.15	20000226	6.50455	71.51037	68.29269	15.81150	0.6341422	2.2551471	122	1	59 days	0.55	M-v	4	Williams	37312 1999 VO ₁₁
1999 VP ₁₁	18.4	0.15	20000226	179.70420	61.45531	208.26640	17.30111	0.5834231	1.0842724	89	1	63 days	0.61	M-v	6	Williams	37312 1999 VP ₁₁
1999 VQ ₁₁	17.5	0.15	20000226	24.46625	352.98385	26.95792	7.94062	0.5953288	2.8094144	85	1	63 days	0.56	M-v	5	Williams	37312 1999 VQ ₁₁
1999 VR ₁₁	14.7	0.15	19991118	54.68148	251.98742	92.57279	3.16802	0.0824462	2.8992639	57	1	36 days	0.81			Williams	1999 VR ₁₁
1999 VS ₁₁	16.3	0.15	20000226	2.98591	41.17294	52.71446	5.92800	0.2007337	2.3645692	60	1	70 days	0.56	M-v	5	Williams	1999 VS ₁₁
1999 VT ₁₁	14.0	0.15	20000226	19.86909	191.71959	207.72579	10.78573	0.1220697	3.0683269	43	1	99 days	0.58	M-v	4	Williams	1999 VT ₁₁
1999 VU ₁₁	15.2	0.15	20000226	32.67689	79.81707	292.47355	8.62176	0.1632362	3.0799472	24	1	81 days	0.76	M-v	4	Williams	1999 VU ₁₁
1999 VV ₁₁	14.7	0.15	20000226	29.07692	357.24233	39.56697	5.50374	0.1575442	3.1233547	82	1	61 days	0.64	M-v	4	Williams	1999 VV ₁₁
1999 VW ₁₁	12.4	0.15	20000226	10.47103	330.79425	46.32054	13.96518	0.1106103	2.9779247	35	1	83 days	0.49	M-v	4	Williams	1999 VW ₁₁
1999 VX ₁₁	12.6	0.15	20000226	345.72839	307.49974	108.65767	9.98536	0.1641030	2.8928548	37	1	79 days	0.57	M-v	5	Williams	1999 VX ₁₁
1999 VY ₁₁	13.9	0.15	20000226	31.46095	87.04814	281.82139	9.12010	0.3755344	3.0407174	69	1	167 days	0.41	M-v	3	Williams	1999 VY ₁₁
1999 VZ ₁₁	13.1	0.15	20000226	97.84562	352.90365	311.02266	10.00141	0.1485674	2.5972375	72	4	1982–2000	0.55	M-v	2	Williams	37205 1999 VZ ₁₁
1999 VA ₁₂	14.5	0.15	20000226	62.00763	91.24458	261.78230	6.36566	0.2152266	2.3195144	74	3	1992–2000	0.55	M-v	2	Williams	37205 1999 VA ₁₂
1999 VB ₁₂	12.8	0.15	20000226	279.94452	183.25352	337.56322	8.39335	0.1114813	2.5579891	36	1	121 days	0.39	M-v	4	Williams	1999 VB ₁₂
1999 VC ₁₂	15.9	0.15	20000226	34.59605	109.63387	269.38343	4.84147	0.4100640	2.6742389	79	1	121 days	0.60	M-v	4	Williams	37312 1999 VC ₁₂
1999 VD ₁₂	13.5	0.15	20000226	7.57691	182.58703	241.87140	13.89390	0.2048777	3.1618541	75	1	93 days	0.46	M-v	3	Williams	1999 VD ₁₂
1999 VE ₁₂	12.5	0.15	20000226	331.60419	71.10108	29.22327	9.73798	0.0459154	3.0529440	57	1	73 days	0.46	M-v	4	Williams	1999 VE ₁₂
1999 VF ₁₂	16.8	0.15	20000226	284.91572	125.64241	40.49415	23.52580	0.0823103	1.9281297	34	2	1998–1999	0.59	M-v	5	Williams	37205 1999 VF ₁₂
1999 VH ₁₂	14.7	0.15	20000226	57.50299	286.63935	58.82470	12.25263	0.3196425	2.6437925	92	1	96 days	0.51	M-v	4	Williams	1999 VH ₁₂
1999 VM ₁₂	14.8	0.15	20000226	14.04187	355.62204	70.32347	3.49122	0.1893524	2.6942258	47	2	1977–1999	0.50	M-v	4	Williams	37206 1999 VM ₁₂
1999 VN ₁₂	15.4	0.15	19991118	32.96973	274.46307	97.39137	2.97984	0.1620910	2.3982744	65	1	38 days	0.46			Williams	1999 VN ₁₂
1999 VP ₁₂	14.3	0.15	20000226	15.24426	266.64041	164.43088	3.52184	0.1411718	2.5179304	44	2	1991–1999	0.54	M-v	4	Williams	37206 1999 VP ₁₂
1999 VQ ₁₂	12.5	0.15	20000226	274.14057	321.42618	218.16741	11.91375	0.1080226	2.6679584	58	4	1988–2000	0.52	M-v	1	Williams	37206 1999 VQ ₁₂
1999 VR ₁₂	12.1	0.15	20000226	83.70846	265.67312	77.26059	10.80918	0.1069025	3.0193158	64	2	1978–2000	0.52	M-v	4	Williams	37206 1999 VR ₁₂
1999 VS ₁₂	14.5	0.15	20000226	63.17676	291.36636	65.22297	9.19990	0.2821554	2.3982608	71	2	1998–2000	0.54	M-v	4	Williams	37206 1999 VS ₁₂
1999 VT ₁₂	15.6	0.15	19991118	21.11831	327.21508	62.65377	6.01452	0.1798761	2.2594460	66	1	45 days	0.46			Williams	1999 VT ₁₂
1999 VU ₁₂	13.6	0.15	20000226	43.56441	328.38027	65.77504	9.63320	0.1175490	2.7261047	83	1	66 days	0.50	M-v	4	Williams	1999 VU ₁₂
1999 VV ₁₂	11.2	0.15	20000226	261.82168	114.14886	73.77506	21.52765	0.0962123	3.1497255	64	2	1988–2000	0.56	M-v	4	Williams	37207 1999 VV ₁₂
1999 VW ₁₂	15.8	0.15	19991118	20.88630	61.35870	324.50580	2.47917	0.1629561	2.3305015	39	1	42 days	0.42			Williams	1999 VW ₁₂
1999 VX ₁₂	13.0	0.15	20000226	43.25199	34.17442	335.26803	19.61112	0.0662412	3.2178623	23	1	62 days	0.54	M-v	5	Williams	1999 VX ₁₂
1999 VH ₁₃	14.7	0.15	19991118	354.75697	37.87171	59.39331	33.28055	0.2408387	2.6232455	31	1	57 days	0.50			Williams	1999 VH ₁₃
1999 VJ ₁₃	14.4	0.15	20000226	314.27191	132.98464	52.27318	25.23419	0.1057032	1.8800752	32	1	60 days	0.43	M-v	5	Williams	1999 VJ ₁₃
1999 VL ₁₃	15.9	0.15	20000226	35.89315	154.65211	242.31151	18.98911	0.0801665	1.9807303	17	1	66 days	0.51	M-v	5	Williams	1999 VL ₁₃
1999 VM ₁₃	15.2	0.15	20000226	35.39318	155.44467	242.78360	19.32176	0.0906348	1.9746140	27	1	107 days	0.39	M-v	3	Williams	1999 VM ₁₃
1999 VN ₁₃	17.1	0.15	19991029	17.17196	130.60217	240.56969	20.66354	0.1228436	1.8928935	24	1	4 days	0.51		E	Williams	1999 VN ₁₃
1999 VR ₁₃	15.3	0.15	19991029	30.20764	331.07634	24.20121	27.90641	0.2310148	2.7310070	13	1	6 days	0.49		E	Williams	1999 VR ₁₃
1999 VS ₁₃	15.6	0.15	20000226	11.11624	45.12749	29.97271	32.16953	0.2836096	2.6127373	43	1	88 days	0.56	M-v	4	Williams	1999 VS ₁₃
1999 VW ₁₃	16.2	0.15	19991029	118.49505	259.84942	12.63572	21.83772	0.0559733	1.9321163	11	1	4 days	0.52		E	Williams	1999 VW ₁₃
1999 VE ₁₄	15.6	0.15	20000226	53.70489	137.04854	242.16557	22.18039	0.2484139	2.3123204	52	1	70 days	0.54	M-v	4	Williams	1999 VE ₁₄
1999 VJ ₁₄	14.6	0.15	19991118	342.17048	59.00126	56.49632	23.13398	0.2401187	2.3243403	26	1	58 days	0.45			Williams	1999 VJ ₁₄
1999 VK ₁₄	16.0	0.15	20000226	356.60564	67.33252	50.31306	24.51129	0.0972938	1.8659275	32	2	1998–1999	0.56	M-v	3	Williams	37207 1999 VK ₁₄
1999 VU ₁₄	18.1	0.15	19991029	17.81606	85.19167	263.17705	2.32022	0.1397534	2.1740092	9	1	13 days	0.17			Williams	1999 VU ₁₄
1999 VX ₁₄	16.2	0.15	19991029	183.14869	264.23049	280.94234	1.95819	0.0993299	2.2720057	9	1	15 days	0.21			Williams	1999 VX ₁₄
1999 VA ₁₅	16.0	0.15	19991029	248.06426	297.05856	195.92227	11.73819	0.1419910	2.7206238	9	1	11 days	0.13			Williams	1999 VA ₁₅

1999 VQ ₁₅	16.5	0.15	19991029	33.38617	22.42487	319.08433	2.26889	0.2027137	2.3813935	19	1	14 days	0.42	Williams	1999 VQ ₁₅
1999 VR ₁₅	16.3	0.15	19991029	75.55992	7.19853	303.30904	2.19126	0.0416759	2.1669071	16	1	12 days	0.31	Williams	1999 VR ₁₅
1999 VA ₁₆	19.7	0.15	19991029	4.39438	58.14732	326.76277	2.07795	0.1754989	2.4330437	9	1	4 days	0.19	E Williams	1999 VA ₁₆
1999 VF ₁₆	15.5	0.15	19991029	15.86310	46.61213	325.63781	2.53958	0.0795824	2.8025016	16	1	12 days	0.45	Williams	1999 VF ₁₆
1999 VG ₁₆	17.3	0.15	19991029	220.32834	302.84499	230.14494	7.19613	0.0383454	2.6852700	9	1	4 days	0.30	E Williams	1999 VG ₁₆
1999 VH ₁₆	17.8	0.15	19991029	306.58989	124.42326	342.01935	2.47578	0.2041781	2.4104297	9	1	4 days	0.11	E Williams	1999 VH ₁₆
1999 VJ ₁₆	14.7	0.15	19991029	38.04964	123.51030	223.23142	11.78145	0.0774822	2.7390354	31	1	30 days	0.28	Williams	1999 VJ ₁₆
1999 VK ₁₆	17.4	0.15	19991029	17.49492	142.02998	228.82391	7.80251	0.0560583	3.1890396	9	1	4 days	0.11	E Williams	1999 VK ₁₆
1999 VM ₁₆	15.7	0.15	19991029	248.32929	286.16292	223.01788	12.02721	0.0653321	2.7462121	9	1	4 days	0.06	E Williams	1999 VM ₁₆
1999 VO ₁₆	16.3	0.15	19991029	35.14667	325.46733	9.31446	4.77300	0.2499899	2.8835930	9	1	4 days	0.15	E Williams	1999 VO ₁₆
1999 VP ₁₆	18.0	0.15	19991029	336.78595	38.31497	23.48476	14.93281	0.1344542	3.1481110	9	1	8 days	0.21	Williams	1999 VP ₁₆
1999 VR ₁₆	19.0	0.15	19991029	340.48619	136.89902	286.41313	1.46665	0.2216596	2.2266634	9	1	4 days	0.10	E Williams	1999 VR ₁₆
1999 VV ₁₆	18.1	0.15	19991029	282.10394	217.52404	265.98361	2.18792	0.1184112	2.3598948	9	1	4 days	0.18	E Williams	1999 VV ₁₆
1999 VA ₁₇	16.7	0.15	19991029	28.64975	73.99654	287.83810	2.07359	0.0210212	2.9756794	9	1	4 days	0.20	E Williams	1999 VA ₁₇
1999 VC ₁₇	19.2	0.15	19991029	343.54985	73.95558	347.29764	1.52515	0.2553343	2.1989363	9	1	4 days	0.28	E Williams	1999 VC ₁₇
1999 VD ₁₇	17.5	0.15	19991029	45.03977	311.19456	6.74420	3.28716	0.2871848	2.4206860	9	1	4 days	0.08	E Williams	1999 VD ₁₇
1999 VF ₁₇	17.9	0.15	19991029	87.77494	54.35461	234.54566	4.66128	0.1391873	2.1848941	9	1	4 days	0.26	E Williams	1999 VF ₁₇
1999 VG ₁₇	16.2	0.15	19991029	255.77710	228.56955	284.77056	1.95503	0.1653862	2.7819899	9	1	4 days	0.18	E Williams	1999 VG ₁₇
1999 VK ₁₇	16.2	0.15	19991029	231.61035	190.58704	335.70917	2.02485	0.0664546	2.5187114	17	1	12 days	0.46	Williams	1999 VK ₁₇
1999 VM ₁₇	17.5	0.15	19991029	9.60937	63.95272	313.74774	1.30711	0.2232065	2.3130084	25	1	14 days	0.49	Williams	1999 VM ₁₇
1999 VN ₁₇	16.4	0.15	19991029	183.65950	283.34698	285.93454	1.84952	0.1326100	2.7357771	9	1	4 days	0.28	E Williams	1999 VN ₁₇
1999 VO ₁₇	17.8	0.15	19991029	295.78762	232.88501	233.65279	4.44022	0.0898350	2.3893143	9	1	4 days	0.18	E Williams	1999 VO ₁₇
1999 VP ₁₇	17.4	0.15	19991029	329.72523	70.57857	8.06654	3.35239	0.2109351	2.6225332	9	1	13 days	0.09	Williams	1999 VP ₁₇
1999 VQ ₁₇	17.3	0.15	19991029	355.61506	15.90506	21.84222	9.10450	0.0847545	3.0022880	12	1	13 days	0.18	Williams	1999 VQ ₁₇
1999 VU ₁₇	14.8	0.15	19991029	99.92252	64.43333	221.67649	9.01676	0.0673313	3.0795627	28	1	12 days	0.56	Williams	1999 VU ₁₇
1999 VX ₁₇	17.2	0.15	19991029	206.85014	300.56095	247.54842	4.86033	0.0994071	2.2846263	10	1	12 days	0.48	Williams	1999 VX ₁₇
1999 VA ₁₈	19.3	0.15	19991029	39.85260	48.91984	287.15336	1.44598	0.1984652	2.1956480	9	1	8 days	0.11	Williams	1999 VA ₁₈
1999 VC ₁₈	17.6	0.15	19991029	332.75929	58.82316	7.38546	3.69260	0.0961050	2.6090193	12	1	13 days	0.17	Williams	1999 VC ₁₈
1999 VD ₁₈	16.7	0.15	19991029	303.49898	77.28941	23.19669	9.20586	0.1040834	2.7485978	12	1	11 days	0.14	Williams	1999 VD ₁₈
1999 VE ₁₈	16.0	0.15	19991029	106.02694	47.04722	220.94337	15.97732	0.1824528	3.1540416	9	1	8 days	0.28	Williams	1999 VE ₁₈
1999 VF ₁₈	16.8	0.15	19991029	352.00677	26.06242	18.72076	5.33704	0.1696971	2.7348075	20	1	13 days	0.41	Williams	1999 VF ₁₈
1999 VH ₁₈	14.8	0.15	19991029	265.05758	115.86970	25.47839	12.18538	0.1191531	3.1562498	20	1	13 days	0.31	Williams	1999 VH ₁₈
1999 VL ₁₈	14.3	0.15	20000226	66.64943	110.55477	227.69090	7.36051	0.1614225	2.7723779	62	2	1998–2000	0.52	M-v 3 Williams	37207 1999 VL ₁₈
1999 VN ₁₈	16.3	0.15	19991029	63.38106	45.64333	272.25401	1.56483	0.1145398	2.4017198	19	1	12 days	0.44	Williams	1999 VN ₁₈
1999 VO ₁₈	15.4	0.15	19991029	334.22534	116.51180	305.79760	1.64694	0.0538255	2.6891179	28	1	13 days	0.30	Williams	1999 VO ₁₈
1999 VP ₁₈	18.2	0.15	19991029	309.35050	107.66447	355.77621	2.14992	0.1853288	2.3701224	9	1	8 days	0.08	Williams	1999 VP ₁₈
1999 VT ₁₈	17.5	0.15	19991029	64.83034	50.66396	247.53367	2.69707	0.2674165	2.6133885	9	1	13 days	0.13	Williams	1999 VT ₁₈
1999 VW ₁₈	16.7	0.15	19991029	61.51609	55.28948	247.60476	2.61046	0.2592777	2.6134365	10	1	12 days	0.43	Williams	1999 VW ₁₈
1999 VY ₁₈	16.1	0.15	19991029	58.31137	107.34514	225.08595	8.12667	0.0286137	3.1738405	9	1	13 days	0.16	Williams	1999 VY ₁₈
1999 VA ₁₉	14.0	0.15	20000226	54.18605	136.95036	237.14179	25.99513	0.1005514	3.1484231	70	2	1997–1999	0.53	M-v 3 Williams	37207 1999 VA ₁₉
1999 VB ₁₉	15.8	0.15	20000226	81.22597	92.80563	256.89755	6.46767	0.2323982	2.4393217	54	2	1997–2000	0.49	M-v 4 Williams	37207 1999 VB ₁₉
1999 VC ₁₉	15.4	0.15	19991208	181.02973	355.78517	259.81386	6.11828	0.0856224	2.2830796	52	1	56 days	0.53	Williams	1999 VC ₁₉
1999 VD ₁₉	16.5	0.15	19991118	27.87531	313.53252	57.03939	5.26855	0.2506718	2.4616814	58	1	39 days	0.50	Williams	1999 VD ₁₉
1999 VE ₁₉	14.2	0.15	20000226	327.20409	67.08301	57.34030	6.62939	0.0465975	2.2401465	77	2	1986–2000	0.46	M-v 5 Williams	37207 1999 VE ₁₉
1999 VF ₁₉	15.4	0.15	20000226	4.23243	210.44783	233.68717	3.35058	0.1433486	2.6324291	67	4	1971–1999	0.64	M-v 2 Williams	37208 1999 VF ₁₉
1999 VG ₁₉	14.5	0.15	20000226	16.76396	205.41122	229.88395	9.84483	0.1281611	2.7923502	41	1	62 days	0.46	M-v 4 Williams	1999 VG ₁₉
1999 VH ₁₉	14.8	0.15	19991208	23.57576	156.50612	261.34359	12.53420	0.2221645	2.6670734	31	1	59 days	0.60	Williams	1999 VH ₁₉
1999 VJ ₁₉	15.1	0.15	20000226	85.99767	272.77280	79.52415	4.76211	0.1717510	2.2307505	65	2	1998–2000	0.53	M-v 4 Williams	37208 1999 VJ ₁₉
1999 VK ₁₉	14.4	0.15	20000226	37.09709	173.08372	237.47645	11.67522	0.1636185	2.5882956	47	1	65 days	0.41	M-v 4 Williams	1999 VK ₁₉
1999 VL ₁₉	15.8	0.15	19991029	13.47385	135.61124	238.17483	1.71340	0.1870909	2.5617837	38	1	55 days	1.16	Williams	1999 VL ₁₉
1999 VN ₁₉	15.6	0.15	19991029	339.84934	279.79571	150.29459	3.31834	0.1369079	2.5310601	19	1	12 days	0.63	Williams	37208 1999 VN ₁₉
1999 VO ₁₉	15.7	0.15	19991029	36.29671	281.65347	66.40408	9.99320	0.2200608	2.5355553	21	1	12 days	0.64	Williams	1999 VO ₁₉
1999 VP ₁₉	16.7	0.15	19991118	35.55837	313.07763	46.61624	6.18401	0.1965747	2.2937434	44	1	37 days	0.45	Williams	1999 VP ₁₉

1999 VQ ₁₉	17.7	0.15	19991029	17.41992	305.55028	84.65195	4.22036	0.1086704	2.6780918	12	1	12 days	0.15		Williams	1999 VQ ₁₉	
1999 VR ₁₉	15.4	0.15	20000226	58.61390	174.06908	205.69199	2.80135	0.1566397	2.2382336	69	1	100 days	0.42	M-v	4	Williams	1999 VR ₁₉
1999 VS ₁₉	13.2	0.15	20000226	21.84251	184.68488	230.55074	11.56318	0.1460559	3.1365533	63	1	76 days	0.45	M-v	4	Williams	1999 VS ₁₉
1999 VT ₁₉	15.2	0.15	20000226	21.96073	97.95421	291.45553	11.61101	0.3321720	3.1490011	40	1	65 days	0.71	M-v	4	Williams	1999 VT ₁₉
1999 VU ₁₉	14.7	0.15	20000226	235.24920	148.66460	52.16297	6.14884	0.0798036	2.3146838	63	1	93 days	0.62	M-v	4	Williams	1999 VU ₁₉
1999 VV ₁₉	15.5	0.15	20000226	86.22592	217.81186	112.69407	3.69773	0.1897358	2.4138861	45	1	62 days	0.65	M-v	5	Williams	1999 VV ₁₉
1999 VW ₁₉	14.3	0.15	19991029	338.75681	309.92121	114.83767	2.14709	0.1362343	3.1410979	19	1	12 days	0.94			Williams	1999 VW ₁₉
1999 VX ₁₉	13.5	0.15	20000226	87.21405	220.43195	90.84148	3.76778	0.2832748	3.0846818	80	1	65 days	0.53	M-v	4	Williams	1999 VX ₁₉
1999 VY ₁₉	16.2	0.15	19991118	56.78879	279.14741	59.45596	3.26618	0.2102874	2.3928112	39	1	35 days	0.84			Williams	1999 VY ₁₉
1999 VZ ₁₉	16.5	0.15	19991029	49.97735	288.57223	33.41608	5.67847	0.2128476	2.2771403	28	1	12 days	0.55			Williams	1999 VZ ₁₉
1999 VA ₂₀	15.4	0.15	19991118	131.56389	210.80912	55.86125	14.34274	0.1472071	2.6324677	26	1	42 days	0.65			Williams	1999 VA ₂₀
1999 VB ₂₀	14.9	0.15	20000226	355.02348	338.90272	101.25627	2.26127	0.1198202	3.0370587	51	1	65 days	0.66	M-v	4	Williams	1999 VB ₂₀
1999 VD ₂₀	14.7	0.15	19991029	68.23336	286.10655	43.09964	2.75645	0.0793386	3.0014357	28	1	12 days	0.45			Williams	1999 VD ₂₀
1999 VE ₂₀	18.7	0.15	19991118	347.60186	344.68133	90.03235	2.11561	0.2365841	1.9032430	44	1	46 days	1.00			Williams	1999 VE ₂₀
1999 VF ₂₀	16.6	0.15	19991118	18.33901	341.63983	40.81987	4.60304	0.2985495	2.6122227	24	1	23 days	0.51			Williams	1999 VF ₂₀
1999 VH ₂₀	13.7	0.15	20000226	36.30997	83.69194	288.42002	10.74629	0.1852785	2.6569684	54	1	167 days	0.46	M-v	3	Williams	1999 VH ₂₀
1999 VJ ₂₀	13.8	0.15	20000226	45.03738	31.82532	332.13060	12.40924	0.1718007	2.6639263	49	2	1990–2000	0.51	M-v	3	Williams	37208 1999 VJ ₂₀
1999 VK ₂₀	13.4	0.15	20000226	2.67548	81.74512	340.84022	15.31345	0.2349688	3.0927518	27	1	117 days	0.47	M-v	4	Williams	1999 VK ₂₀
1999 VL ₂₀	14.2	0.15	20000226	11.99482	112.14514	306.77434	11.10784	0.2483852	2.6244194	46	1	168 days	0.43	M-v	3	Williams	1999 VL ₂₀
1999 VM ₂₀	12.8	0.15	20000226	333.01995	139.67005	320.09765	12.70468	0.1245660	2.6711228	34	1	118 days	0.47	M-v	4	Williams	1999 VM ₂₀
1999 VN ₂₀	13.0	0.15	20000226	267.13597	166.68338	0.62381	22.53178	0.0897122	2.5837552	42	1	89 days	0.62	M-v	5	Williams	1999 VN ₂₀
1999 VO ₂₀	13.0	0.15	20000226	358.92968	148.98794	282.05903	14.26550	0.0983300	2.5830210	34	1	169 days	0.46	M-v	4	Williams	37313 1999 VO ₂₀
1999 VP ₂₀	13.9	0.15	20000226	337.24598	161.32005	307.78545	9.82171	0.2350799	2.6938788	41	1	118 days	0.61	M-v	4	Williams	1999 VP ₂₀
1999 VR ₂₀	13.3	0.15	20000226	203.27377	15.07237	223.05572	14.24662	0.0705828	2.5961254	86	3	1978–1999	0.53	M-v	3	Williams	37209 1999 VR ₂₀
1999 VS ₂₀	16.6	0.15	19991118	90.37654	263.64579	50.85814	22.13070	0.0744221	1.9810384	47	1	42 days	0.62			Williams	1999 VS ₂₀
1999 VT ₂₀	15.0	0.15	20000226	354.35965	106.72056	2.01426	3.62072	0.1337702	2.2569227	50	1	81 days	0.57	M-v	4	Williams	1999 VT ₂₀
1999 VU ₂₀	14.1	0.15	20000226	308.01462	106.80877	48.24812	4.09336	0.0818476	2.2501914	62	4	1982–2000	0.61	M-v	2	Williams	37313 1999 VU ₂₀
1999 VV ₂₀	13.9	0.15	20000226	358.18058	37.46064	56.43841	15.89239	0.1082657	2.8500684	51	1	62 days	0.54	M-v	4	Williams	1999 VV ₂₀
1999 VW ₂₀	14.8	0.15	20000226	23.13845	143.83487	255.99563	10.49279	0.1592106	2.4264403	51	1	86 days	0.56	M-v	4	Williams	1999 VW ₂₀
1999 VX ₂₀	14.1	0.15	20000226	75.47843	82.66587	248.95750	7.73019	0.1555936	2.7452516	66	2	1998–2000	0.71	M-v	3	Williams	37209 1999 VX ₂₀
1999 VY ₂₀	17.1	0.15	19991118	7.75246	350.77407	45.64611	26.25190	0.2052449	2.1822860	44	1	21 days	0.52			Williams	1999 VY ₂₀
1999 VZ ₂₀	14.2	0.15	20000226	40.83670	324.02749	71.85923	10.43553	0.0603836	2.5763196	83	1	88 days	0.52	M-v	4	Williams	1999 VZ ₂₀
1999 VA ₂₁	15.7	0.15	20000226	148.58202	63.63362	236.25274	20.10505	0.0598484	1.9175188	82	2	1993–2000	0.51	M-v	4	Williams	37313 1999 VA ₂₁
1999 VB ₂₁	14.3	0.15	20000226	325.63072	62.51470	84.82606	7.98640	0.1385533	2.3368394	69	1	67 days	0.54	M-v	4	Williams	1999 VB ₂₁
1999 VC ₂₁	15.6	0.15	19991118	319.94671	30.91882	79.10106	2.21719	0.1475152	2.6817193	74	1	34 days	0.44			Williams	1999 VC ₂₁
1999 VD ₂₁	15.8	0.15	19991029	202.13192	17.82034	194.38179	3.22160	0.2462679	2.3139341	12	1	4 days	0.68		E	Williams	1999 VD ₂₁
1999 VE ₂₁	13.4	0.15	20000226	61.13149	144.40409	207.79907	15.47403	0.1162870	3.0953716	73	1	112 days	0.58	M-v	4	Williams	1999 VE ₂₁
1999 VF ₂₁	15.6	0.15	19991029	11.95856	293.33143	91.44537	4.52760	0.2064818	2.7314099	17	1	12 days	0.53			Williams	1999 VF ₂₁
1999 VG ₂₁	15.8	0.15	19991029	33.30636	122.10441	223.33049	3.75378	0.1519377	2.1614647	16	1	9 days	0.40			Williams	1999 VG ₂₁
1999 VH ₂₁	14.1	0.15	20000226	355.11945	222.81737	209.91413	11.14529	0.1721271	2.6992474	53	1	98 days	0.49	M-v	4	Williams	1999 VH ₂₁
1999 VK ₂₁	14.2	0.15	20000226	29.26436	150.27854	327.13456	5.53413	0.1769911	2.5312260	48	2	1998–2000	0.72	M-v	4	Williams	37209 1999 VK ₂₁
1999 VL ₂₁	15.1	0.15	19991029	340.27218	265.95117	163.29138	3.29378	0.2858667	2.9104676	8	1	2 days	0.43		E	Williams	1999 VL ₂₁
1999 VO ₂₁	17.0	0.15	19991029	33.09336	113.99305	224.35019	11.14175	0.3235544	2.3296769	16	1	7 days	0.34			Williams	1999 VO ₂₁
1999 VP ₂₁	13.0	0.15	20000226	17.05839	358.62914	48.02682	18.68621	0.1283978	3.1923480	80	1	96 days	0.43	M-v	3	Williams	1999 VP ₂₁
1999 VR ₂₁	14.3	0.15	20000226	286.03486	328.97267	194.89164	6.41659	0.1348423	2.5539634	50	2	1995–1999	0.62	M-v	4	Williams	37313 1999 VR ₂₁
1999 VS ₂₁	13.2	0.15	20000226	83.12255	226.23650	97.48831	5.54086	0.1934502	3.0975331	74	2	1998–2000	0.55	M-v	3	Williams	37209 1999 VS ₂₁
1999 VT ₂₁	15.2	0.15	19991029	33.56208	241.26201	104.99345	4.11309	0.2890241	2.6872803	25	1	12 days	0.67			Williams	1999 VT ₂₁
1999 VU ₂₁	14.6	0.15	20000226	195.09510	158.86687	81.92287	7.09898	0.0711500	2.3958581	44	1	65 days	0.62	M-v	5	Williams	1999 VU ₂₁
1999 VV ₂₁	16.5	0.15	19991029	24.88875	144.14638	229.75557	4.16880	0.1870092	2.5546772	31	1	8 days	0.48			Williams	1999 VV ₂₁
1999 VW ₂₁	17.3	0.15	19991118	9.78994	334.58290	66.71318	0.82602	0.2168868	2.4579960	34	1	40 days	0.60			Williams	1999 VW ₂₁
1999 VX ₂₁	17.5	0.15	19991118	28.21812	161.12664	209.14952	3.55508	0.2478155	2.1842085	42	1	31 days	0.48			Williams	1999 VX ₂₁
1999 VY ₂₁	15.5	0.15	19991029	186.53137	51.23968	175.33862	2.34938	0.0881011	2.2441816	29	1	25 days	0.56			Williams	1999 VY ₂₁
1999 VZ ₂₁	16.8	0.15	19991118	50.62861	146.20030	195.18898	1.81234	0.2388793	2.3672625	40	1	33 days	0.69			Williams	1999 VZ ₂₁

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1999 VA ₂₂	17.0	0.15	19991029	34.76577	202.17791	154.09605	1.07364	0.2279224	2.3945754	31	1	8 days	0.58		Williams		1999 VA ₂₂
1999 VB ₂₂	15.3	0.15	20000226	114.34167	100.90761	210.32815	0.82557	0.0547177	2.4926454	52	2	1994–1999	0.61	M-v	5	Williams	37209 1999 VB ₂₂
1999 VC ₂₂	15.2	0.15	20000226	37.49950	254.60684	139.66665	3.22578	0.1822677	2.4540328	46	1	67 days	0.53	M-v	4	Williams	1999 VC ₂₂
1999 VE ₂₂	16.3	0.15	19991208	137.67551	234.98875	58.27451	4.87627	0.0769807	2.1951106	36	1	53 days	0.59			Williams	1999 VE ₂₂
1999 VG ₂₂	18.7	0.15	20000226	357.30980	222.45809	271.50444	2.85288	0.3296627	1.6467490	73	2	1998–1999	0.54	M-v	3	Williams	37210 1999 VG ₂₂
1999 VH ₂₂	12.9	0.15	20000226	319.11123	58.51933	42.41417	14.83078	0.1908504	3.1673416	42	1	82 days	0.43	M-v	4	Williams	1999 VH ₂₂
1999 VJ ₂₂	14.9	0.15	20000226	103.44993	189.35912	118.19092	9.21379	0.2122619	2.4068521	53	3	1991–2000	0.76	M-v	2	Williams	37210 1999 VJ ₂₂
1999 VK ₂₂	15.9	0.15	20000226	39.20782	131.86142	243.57440	7.62895	0.3200962	2.4316955	82	1	168 days	0.47	M-v	3	Williams	1999 VK ₂₂
1999 VL ₂₂	12.3	0.15	20000226	119.22257	24.41032	261.68475	8.55595	0.0621466	3.0698012	50	1	95 days	0.53	M-v	5	Williams	1999 VL ₂₂
1999 VM ₂₂	13.3	0.15	20000226	70.21332	330.06428	7.87399	7.16716	0.1039305	2.7706737	67	1	114 days	0.48	M-v	4	Williams	1999 VM ₂₂
1999 VN ₂₂	15.4	0.15	20000226	22.65042	131.81962	277.72143	3.00268	0.2417061	2.3499062	89	1	97 days	0.57	M-v	4	Williams	1999 VN ₂₂
1999 VO ₂₂	14.0	0.15	20000226	26.43267	14.49604	8.74999	8.41951	0.2275175	3.1601650	52	1	116 days	0.54	M-v	3	Williams	1999 VO ₂₂
1999 VP ₂₂	15.3	0.15	20000226	23.97541	82.89600	326.82172	3.33294	0.2498962	2.3080836	66	2	1994–2000	0.53	M-v	3	Williams	37210 1999 VP ₂₂
1999 VQ ₂₂	13.6	0.15	20000226	338.14918	222.80781	234.85140	11.88531	0.1443103	2.5468859	50	1	96 days	0.50	M-v	4	Williams	1999 VQ ₂₂
1999 VS ₂₂	14.8	0.15	20000226	31.50012	152.74843	247.49626	5.45915	0.1606028	2.2736027	70	1	96 days	0.43	M-v	3	Williams	1999 VS ₂₂
1999 VT ₂₂	13.4	0.15	20000226	354.72265	115.89261	329.07906	8.51553	0.1410828	2.6539414	50	2	1992–2000	0.57	M-v	4	Williams	37210 1999 VT ₂₂
1999 VU ₂₂	15.3	0.15	19991208	348.33400	241.19680	179.40208	10.45554	0.1054617	3.0357911	19	1	54 days	0.39			Williams	1999 VU ₂₂
1999 VV ₂₂	13.9	0.15	19991208	277.80515	317.00712	221.45542	36.28094	0.1342904	2.7496583	30	1	58 days	0.55			Williams	1999 VV ₂₂
1999 VW ₂₂	13.7	0.15	20000226	147.13737	138.64723	129.80437	15.60037	0.0179801	2.6700394	28	1	119 days	0.61	M-v	4	Williams	1999 VW ₂₂
1999 VX ₂₂	17.1	0.15	19991029	325.90286	291.76214	144.34268	2.76145	0.0814368	2.2306101	14	1	6 days	0.79		E	Williams	1999 VX ₂₂
1999 VY ₂₂	14.9	0.15	20000226	42.09666	244.25427	139.25745	2.31892	0.1976470	2.5158611	60	4	1991–2000	0.58	M-v	2	Williams	37314 1999 VY ₂₂
1999 VZ ₂₂	14.8	0.15	20000226	60.84749	273.63042	103.67324	4.47081	0.1068809	2.2729515	64	3	1995–1999	0.44	M-v	3	Williams	37314 1999 VZ ₂₂
1999 VA ₂₃	13.7	0.15	20000226	203.48730	347.85284	229.42504	14.40868	0.0466538	2.6936831	57	1	79 days	0.56	M-v	4	Williams	1999 VA ₂₃
1999 VC ₂₃	15.0	0.15	20000226	32.42864	330.87396	70.73479	12.63195	0.2126864	2.5895228	66	1	90 days	0.45	M-v	3	Williams	1999 VC ₂₃
1999 VD ₂₃	16.8	0.15	19991118	53.88692	218.49093	119.88344	3.07210	0.2294032	2.4066323	27	1	31 days	0.94			Williams	1999 VD ₂₃
1999 VE ₂₃	12.8	0.15	20000226	30.30255	330.02487	64.81807	9.83275	0.2018169	2.5874014	59	2	1978–2000	0.41	M-v	2	Williams	37211 1999 VE ₂₃
1999 VG ₂₃	15.9	0.15	20000226	68.67821	85.80842	258.78279	4.44493	0.2306789	2.3498342	62	1	70 days	0.65	M-v	4	Williams	1999 VG ₂₃
1999 VH ₂₃	16.5	0.15	19991029	344.40111	42.08693	18.00947	5.74612	0.1428600	2.3013405	11	1	7 days	0.80			Williams	1999 VH ₂₃
1999 VJ ₂₃	15.4	0.15	20000226	17.14393	61.30752	356.63097	3.69500	0.1284351	2.4836259	57	2	1991–2000	0.55	M-v	4	Williams	37211 1999 VJ ₂₃
1999 VK ₂₃	15.9	0.15	20000226	23.32634	346.65633	67.21277	7.02556	0.2335157	2.3432050	49	1	66 days	0.52	M-v	4	Williams	1999 VK ₂₃
1999 VL ₂₃	14.8	0.15	20000226	15.85431	211.05165	222.20739	23.59949	0.2643240	2.2636461	73	1	128 days	0.46	M-v	3	Williams	1999 VL ₂₃
1999 VN ₂₃	16.1	0.15	20000226	41.35467	308.95021	58.87175	6.77119	0.4856218	2.8007285	61	1	65 days	0.52	M-v	4	Williams	1999 VN ₂₃
1999 VO ₂₃	13.7	0.15	20000226	39.89009	172.85075	206.33911	15.18861	0.1994953	2.6212805	58	2	1986–2000	0.48	M-v	3	Williams	37211 1999 VO ₂₃
1999 VP ₂₃	13.2	0.15	20000226	60.71974	272.24900	76.17096	13.59335	0.2078704	2.6771390	79	3	1977–2000	0.48	M-v	2	Williams	37211 1999 VP ₂₃
1999 VQ ₂₃	14.0	0.15	20000226	314.87003	2.26189	124.13631	5.76459	0.0670582	2.2844182	68	4	1985–2000	0.72	M-v	2	Williams	37211 1999 VQ ₂₃
1999 VR ₂₃	14.4	0.15	20000226	67.41229	275.94547	71.43072	6.68616	0.2081863	2.4462580	86	2	1998–2000	0.56	M-v	3	Williams	37211 1999 VR ₂₃
1999 VS ₂₃	14.4	0.15	20000226	0.38407	316.26536	122.17970	4.21123	0.1816125	2.5343746	49	1	98 days	0.59	M-v	4	Williams	1999 VS ₂₃
1999 VT ₂₃	13.7	0.15	20000226	97.77410	163.74207	149.24554	6.52393	0.1928532	2.2672381	57	2	1998–2000	0.62	M-v	4	Williams	37211 1999 VT ₂₃
1999 VU ₂₃	13.0	0.15	20000226	342.93758	274.04601	186.75724	11.02949	0.1373658	2.5639886	46	1	67 days	0.54	M-v	5	Williams	1999 VU ₂₃
1999 VV ₂₃	13.1	0.15	20000226	336.36754	304.31675	176.48948	9.45560	0.1760568	2.4322836	53	4	1989–2000	0.56	M-v	1	Williams	37212 1999 VV ₂₃
1999 VW ₂₃	13.0	0.15	20000226	42.76009	218.79019	170.03635	9.48816	0.1708173	2.7797113	60	4	1971–2000	0.51	M-v	1	Williams	37212 1999 VW ₂₃
1999 VX ₂₃	15.6	0.15	19991118	12.69237	130.97707	274.04965	6.26923	0.1892934	2.5838316	41	1	56 days	0.57			Williams	1999 VX ₂₃
1999 VY ₂₃	13.7	0.15	20000226	149.97728	236.08241	53.16078	7.02059	0.0680637	2.6123628	65	1	74 days	0.45	M-v	4	Williams	1999 VY ₂₃
1999 VZ ₂₃	14.3	0.15	20000226	35.63009	6.08160	48.34082	5.16077	0.1205538	2.1680499	50	2	1998–1999	0.50	M-v	3	Williams	37212 1999 VZ ₂₃
1999 VA ₂₄	16.7	0.15	19991029	3.94797	135.57191	258.35446	3.98071	0.1255337	2.1502578	20	1	7 days	0.90			Williams	1999 VA ₂₄
1999 VB ₂₄	16.0	0.15	19991029	355.06032	162.32497	244.83805	7.02541	0.2185011	2.7511604	20	1	7 days	0.81			Williams	1999 VB ₂₄
1999 VC ₂₄	13.9	0.15	20000226	17.62710	137.00745	269.56846	4.50629	0.1505345	3.1380966	49	2	1988–1999	0.60	M-v	4	Williams	37212 1999 VC ₂₄
1999 VE ₂₄	13.9	0.15	20000226	35.60071	333.88091	50.70889	12.12604	0.2050769	3.1218003	95	1	110 days	0.52	M-v	3	Williams	1999 VE ₂₄
1999 VF ₂₄	12.9	0.15	20000226	31.94647	98.35335	274.85172	12.17905	0.1339274	2.5434402	54	4	1979–1999	0.43	M-v	2	Williams	37212 1999 VF ₂₄
1999 VJ ₂₄	13.3	0.15	20000226	27.57219	352.17493	48.89090	10.34621	0.2035777	2.4603065	71	1	91 days	0.47	M-v	3	Williams	1999 VJ ₂₄
1999 VK ₂₄	14.6	0.15	20000226	53.02652	224.63276	137.82794	3.04608	0.2263068	2.3602524	58	3	1988–2000	0.59	M-v	2	Williams	37213 1999 VK ₂₄
1999 VL ₂₄	12.6	0.15	20000226	15.69575	77.00565	343.32334	12.17988	0.1657348	2.6568952	47	2	1990–2000	0.49	M-v	3	Williams	37213 1999 VL ₂₄
1999 VM ₂₄	13.8	0.15	20000226	57.74353	115.03896	261.29320	18.93357	0.0411615	2.2977469	57	2	1998–2000	0.46	M-v	3	Williams	37213 1999 VM ₂₄

1999 VN ₂₄	13.3	0.15	20000226	2.93591	286.32490	176.50245	22.97064	0.2945268	2.3165168	41	1	118 days	0.39	M-v	3	Williams		1999 VN ₂₄
1999 VO ₂₄	13.1	0.15	20000226	28.57646	167.20787	228.86532	11.30266	0.1878730	2.6731834	88	3	1964–2000	0.60	M-v	2	Williams	37213	1999 VO ₂₄
1999 VP ₂₄	15.2	0.15	19991029	58.26208	23.45076	280.75535	7.65789	0.2232592	2.2834141	17	1	25 days	0.43			Williams		1999 VP ₂₄
1999 VQ ₂₄	10.9	0.15	19991208	77.73216	276.36099	96.41464	13.47322	0.0771045	5.1812192	44	1	50 days	0.41			Williams		1999 VQ ₂₄
1999 VR ₂₄	16.5	0.15	19991118	37.00553	144.69141	229.95694	1.13214	0.1503645	2.4034097	28	1	29 days	0.46			Williams		1999 VR ₂₄
1999 VS ₂₄	15.3	0.15	20000226	3.62914	59.10259	41.26224	2.89660	0.1422530	2.4025409	54	3	1995–2000	0.55	M-v	3	Marsden	37213	1999 VS ₂₄
1999 VT ₂₄	14.5	0.15	20000226	50.08936	268.03036	126.36839	2.77525	0.1870061	2.4166336	57	2	1995–2000	0.40	M-v	4	Williams	37214	1999 VT ₂₄
1999 VU ₂₄	14.6	0.15	19991118	357.79744	3.66204	67.93687	26.27470	0.2206823	2.3108685	28	1	56 days	1.30			Williams		1999 VU ₂₄
1999 VV ₂₄	15.2	0.15	19991208	58.88502	98.92271	252.60182	9.39914	0.2363909	2.2800309	43	1	54 days	0.37			Williams		1999 VV ₂₄
1999 VW ₂₄	11.5	0.15	20000226	302.83801	258.46586	258.60691	19.63785	0.0675885	3.1546120	39	2	1998–2000	0.50	M-v	3	Williams	37214	1999 VW ₂₄
1999 VX ₂₄	14.6	0.15	20000226	43.80629	193.08612	211.59901	3.74355	0.2095932	2.2972078	47	4	1978–2000	0.60	M-v	3	Williams	37214	1999 VX ₂₄
1999 VY ₂₄	14.0	0.15	20000226	307.42149	197.75909	328.66320	3.13285	0.1470864	2.5641386	57	4	1972–2000	0.73	M-v	4	Williams	37314	1999 VY ₂₄
1999 VZ ₂₄	13.4	0.15	20000226	6.58150	15.46031	77.15869	10.41296	0.1347823	2.7553763	43	1	62 days	0.49	M-v	4	Williams		1999 VZ ₂₄
1999 VB ₂₅	13.9	0.15	19991208	28.76566	306.35070	90.94133	13.88278	0.1708503	2.6940915	31	1	54 days	0.51			Williams		1999 VB ₂₅
1999 VC ₂₅	15.1	0.15	20000226	32.95114	316.79044	102.62239	6.21625	0.1767163	2.4698342	36	2	1993–2000	0.54	M-v	3	Williams	37214	1999 VC ₂₅
1999 VD ₂₅	13.0	0.15	20000226	120.88482	247.24177	76.02150	16.26494	0.1178014	2.6564762	59	1	62 days	0.35	M-v	4	Williams		1999 VD ₂₅
1999 VE ₂₅	14.5	0.15	19991208	59.21102	112.89486	249.66089	10.60346	0.1581806	2.5711877	35	1	58 days	0.53			Williams		1999 VE ₂₅
1999 VG ₂₅	14.0	0.15	20000226	23.70848	41.16440	35.09262	3.94018	0.0717336	2.3783394	41	1	91 days	0.58	M-v	4	Williams		1999 VG ₂₅
1999 VH ₂₅	14.3	0.15	19991208	26.81871	19.37778	21.86570	3.24410	0.1695757	2.3315702	33	1	51 days	0.47			Williams		1999 VH ₂₅
1999 VJ ₂₅	14.8	0.15	19991208	68.19260	76.07314	278.21264	3.46971	0.1477678	2.2955862	40	1	52 days	0.54			Williams		1999 VJ ₂₅
1999 VK ₂₅	14.4	0.15	20000226	88.88894	71.91784	272.64321	5.68141	0.2194545	2.5726164	37	1	62 days	0.64	M-v	5	Williams		1999 VK ₂₅
1999 VN ₂₅	14.4	0.15	20000226	64.37408	68.08124	320.39632	3.17273	0.1066256	2.2962584	37	1	91 days	0.49	M-v	4	Williams		1999 VN ₂₅
1999 VO ₂₅	15.9	0.15	19991118	22.61688	77.47182	310.61712	1.20298	0.0957378	2.6911795	30	1	29 days	0.66			Williams		1999 VO ₂₅
1999 VQ ₂₅	14.1	0.15	20000226	99.74114	68.60537	246.79925	4.41324	0.0861137	2.7648308	113	1	70 days	0.51	M-v	4	Williams		1999 VQ ₂₅
1999 VR ₂₅	14.8	0.15	20000226	44.40819	225.56738	156.50909	5.24231	0.1334012	2.4446932	42	1	97 days	0.44	M-v	4	Williams		1999 VR ₂₅
1999 VY ₂₅	14.9	0.15	20000226	57.33693	289.02723	92.67740	10.35341	0.2876368	2.6927415	50	1	61 days	0.61	M-v	5	Williams		1999 VY ₂₅
1999 VA ₂₆	14.2	0.15	20000226	327.79796	56.94123	63.96769	12.92036	0.2245802	3.0802963	47	1	60 days	0.53	M-v	5	Williams		1999 VA ₂₆
1999 VB ₂₆	15.1	0.15	20000226	5.42088	213.16686	238.57797	23.91162	0.1440858	2.2544717	61	1	98 days	0.52	M-v	4	Williams		1999 VB ₂₆
1999 VC ₂₆	14.2	0.15	20000226	42.04082	71.05783	313.08317	0.84449	0.2034878	3.1567671	61	2	1993–1999	0.53	M-v	5	Williams	37214	1999 VC ₂₆
1999 VD ₂₆	15.1	0.15	19991118	321.62543	223.10641	243.71986	5.53780	0.0997780	2.5690959	55	1	40 days	0.49			Williams		1999 VD ₂₆
1999 VE ₂₆	15.7	0.15	20000226	61.79651	136.79794	228.25868	1.58474	0.2198097	2.4251822	62	2	1995–2000	0.45	M-v	4	Williams	37214	1999 VE ₂₆
1999 VH ₂₆	16.0	0.15	19991118	276.28776	296.31163	224.69829	1.59741	0.1516291	2.3371434	46	1	44 days	0.64			Williams		1999 VH ₂₆
1999 VJ ₂₆	16.0	0.15	19991118	314.45648	53.34252	63.09165	2.95507	0.1258374	2.3137865	59	1	45 days	0.48			Williams		1999 VJ ₂₆
1999 VK ₂₆	14.1	0.15	19991118	141.46379	210.65665	62.38936	17.59534	0.0999068	3.1652976	28	1	35 days	0.50			Williams		1999 VK ₂₆
1999 VL ₂₆	15.5	0.15	19991118	16.13903	325.55305	73.55465	3.11404	0.1243723	2.6258690	47	1	40 days	0.46			Williams		1999 VL ₂₆
1999 VM ₂₆	16.3	0.15	19991118	41.61497	154.10579	213.65993	1.44632	0.1254234	2.5588772	42	1	44 days	0.63			Williams		1999 VM ₂₆
1999 VN ₂₆	15.6	0.15	20000226	29.20754	184.10522	229.48250	1.94755	0.1425185	2.5298635	44	2	1997–1999	0.51	M-v	4	Williams	37215	1999 VN ₂₆
1999 VO ₂₆	14.3	0.15	20000226	44.11592	332.50525	61.27096	3.73078	0.0969422	2.7019305	54	3	1990–1999	0.59	M-v	4	Williams	37315	1999 VO ₂₆
1999 VP ₂₆	15.8	0.15	20000226	14.19497	24.04175	53.29492	4.34567	0.1157430	2.3145891	54	2	1994–1999	0.58	M-v	4	Williams	37215	1999 VP ₂₆
1999 VR ₂₆	14.2	0.15	20000226	114.14021	264.20224	56.36125	2.85267	0.0619858	2.8654144	61	1	68 days	0.59	M-v	5	Williams		1999 VR ₂₆
1999 VS ₂₆	15.6	0.15	19991118	31.25467	328.70487	51.66530	3.07356	0.1272290	2.4859710	49	1	45 days	0.60			Williams		1999 VS ₂₆
1999 VU ₂₆	15.7	0.15	20000226	50.84381	130.64280	236.99265	4.24831	0.3260353	2.5684370	51	1	96 days	0.48	M-v	4	Williams		1999 VU ₂₆
1999 VV ₂₆	15.2	0.15	20000226	81.53765	74.60472	267.82103	1.42626	0.2096702	2.4478884	60	3	1991–1999	0.57	M-v	4	Williams	37215	1999 VV ₂₆
1999 VX ₂₆	15.5	0.15	20000226	77.59820	278.27256	68.76197	3.64906	0.2113227	2.4428673	61	2	1991–1999	0.59	M-v	5	Williams	37215	1999 VX ₂₆
1999 VY ₂₆	17.5	0.15	19991118	0.03271	186.44886	232.84545	5.73717	0.2548715	2.5400656	44	1	43 days	0.77			Williams		1999 VY ₂₆
1999 VZ ₂₆	15.7	0.15	19991118	305.44637	254.09676	233.97032	11.86867	0.1292465	2.6190487	35	1	36 days	0.53			Williams		1999 VZ ₂₆
1999 VA ₂₇	15.4	0.15	20000226	303.84746	314.34598	199.61338	1.36744	0.0998326	2.4326892	42	3	1995–1999	0.57	M-v	4	Williams	37215	1999 VA ₂₇
1999 VB ₂₇	14.9	0.15	20000226	323.53501	268.56040	226.61528	1.43841	0.1459190	2.6667513	48	1	63 days	0.48	M-v	5	Williams		1999 VB ₂₇
1999 VC ₂₇	15.8	0.15	19991118	159.51936	198.10995	57.37175	3.88908	0.1646250	2.3042371	41	1	40 days	0.58			Williams		1999 VC ₂₇
1999 VE ₂₇	15.5	0.15	19991118	274.36156	287.66897	229.91221	5.31062	0.1023402	2.6348089	26	1	39 days	0.44			Williams		1999 VE ₂₇
1999 VF ₂₇	15.8	0.15	19991029	98.81032	232.74726	24.52945	22.59840	0.3573836	3.2741555	9	1	10 days	1.50			Williams		1999 VF ₂₇
1999 VG ₂₇	17.0	0.15	19991029	64.16526	314.50454	9.79182	5.10119	0.0419777	2.7276101	9	1	12 days	0.14			Williams		1999 VG ₂₇
1999 VH ₂₇	16.3	0.15	19991029	258.50076	113.28806	29.80644	16.99214	0.0688836	3.2095986	9	1	12 days	0.23			Williams		1999 VH ₂₇

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1999 VK ₂₇	13.3	0.15	20000226	33.34532	8.06189	8.73853	7.99914	0.1167197	3.1149099	52	1	96 days	0.48	M-v	4	Williams	1999 VK ₂₇
1999 VM ₂₇	13.8	0.15	19991118	110.12111	45.92734	227.26486	13.20842	0.1066959	3.1245881	24	1	31 days	0.54			Williams	1999 VM ₂₇
1999 VN ₂₇	15.7	0.15	20000226	4.73596	61.26379	9.71124	4.93642	0.1257917	2.2995635	37	1	96 days	0.56	M-v	5	Williams	1999 VN ₂₇
1999 VR ₂₇	14.8	0.15	20000226	77.35332	91.75865	239.20824	4.67132	0.2145130	2.3108223	66	2	1998–2000	0.67	M-v	4	Williams	37215 1999 VR ₂₇
1999 VS ₂₇	13.4	0.15	20000226	74.99614	106.89716	230.15453	9.88210	0.0452419	3.1642187	49	1	65 days	0.64	M-v	5	Williams	1999 VS ₂₇
1999 VT ₂₇	15.0	0.15	20000226	319.44290	89.19752	27.06870	7.39710	0.0477987	2.3050215	46	1	97 days	0.47	M-v	5	Williams	1999 VT ₂₇
1999 VV ₂₇	17.2	0.15	19991029	338.20161	35.06251	35.29482	5.65580	0.2097817	2.3232712	23	1	13 days	0.47			Williams	1999 VV ₂₇
1999 VX ₂₇	16.0	0.15	19991118	276.02470	105.99611	59.74258	5.00287	0.2086770	2.5912817	44	1	34 days	0.63		D	Williams	1999 VX ₂₇
1999 VY ₂₇	14.2	0.15	20000226	91.30493	27.12698	300.81732	15.62009	0.0880278	2.4491645	38	1	66 days	0.53	M-v	5	Williams	1999 VY ₂₇
1999 VZ ₂₇	14.5	0.15	19991029	329.81904	143.29356	257.15683	14.36178	0.1499291	3.0563842	12	1	7 days	0.82			Williams	1999 VZ ₂₇
1999 VA ₂₈	15.8	0.15	20000226	60.33712	137.70252	233.97112	8.29701	0.0978668	2.4047559	47	1	60 days	0.67	M-v	5	Williams	1999 VA ₂₈
1999 VB ₂₈	14.2	0.15	19991118	108.46398	8.02999	286.48798	0.78539	0.0903398	2.9455416	31	1	35 days	0.64			Williams	1999 VB ₂₈
1999 VC ₂₈	15.4	0.15	19991029	63.10652	74.42734	250.65881	1.69282	0.1699580	2.3822703	19	1	14 days	0.44			Williams	1999 VC ₂₈
1999 VD ₂₈	14.4	0.15	20000226	101.01020	88.93503	239.23347	4.06950	0.0523625	2.7204698	51	2	1997–1999	0.54	M-v	4	Williams	37216 1999 VD ₂₈
1999 VF ₂₈	14.1	0.15	20000226	13.66638	196.78289	235.65641	5.12849	0.1469003	2.3364449	96	1	86 days	0.40	M-v	4	Williams	1999 VF ₂₈
1999 VG ₂₈	15.5	0.15	20000226	85.98136	104.33452	234.94964	5.71802	0.1397451	2.3823628	56	1	66 days	0.58	M-v	4	Williams	1999 VG ₂₈
1999 VH ₂₈	16.1	0.15	19991118	33.46727	135.88626	233.73016	2.87896	0.1443682	2.5466400	45	1	45 days	0.52			Williams	1999 VH ₂₈
1999 VK ₂₈	14.1	0.15	20000226	20.11889	173.62902	242.43824	1.64510	0.0556398	2.7086603	46	2	1992–1999	0.40	M-v	4	Williams	37216 1999 VK ₂₈
1999 VL ₂₈	16.3	0.15	20000226	43.43025	136.07564	256.29340	0.52092	0.1997800	2.2635376	55	2	1992–1999	0.48	M-v	4	Williams	37216 1999 VL ₂₈
1999 VP ₂₈	15.0	0.15	20000226	359.70124	202.47706	248.97990	1.58329	0.1571578	2.3868604	67	3	1993–2000	0.56	M-v	3	Williams	37216 1999 VP ₂₈
1999 VQ ₂₈	15.0	0.15	20000226	38.13191	158.14985	237.82939	1.56958	0.2085804	2.4269942	75	1	78 days	0.43	M-v	4	Williams	1999 VQ ₂₈
1999 VR ₂₈	16.9	0.15	19991029	40.33678	100.39171	242.28619	1.90794	0.2568261	2.3856378	22	1	13 days	0.58			Williams	1999 VR ₂₈
1999 VT ₂₈	16.2	0.15	19991029	18.18729	336.35214	47.34496	4.20960	0.1304429	2.2594002	55	1	51 days	0.50			Williams	1999 VT ₂₈
1999 VU ₂₈	15.3	0.15	20000226	67.17157	29.79873	326.27992	0.66758	0.1997466	2.3874027	61	1	62 days	0.43	M-v	5	Williams	1999 VU ₂₈
1999 VV ₂₈	14.2	0.15	20000226	332.82753	235.77861	237.61328	7.42901	0.0775633	2.5624481	64	1	67 days	0.48	M-v	4	Williams	1999 VV ₂₈
1999 VW ₂₈	15.7	0.15	19991029	316.63571	78.34823	32.70935	2.07648	0.1936268	2.7577654	57	1	51 days	0.50			Williams	1999 VW ₂₈
1999 VX ₂₈	14.5	0.15	20000226	7.76774	29.97254	40.52421	3.71410	0.0706847	2.7923762	64	1	61 days	0.57	M-v	4	Williams	1999 VX ₂₈
1999 VY ₂₈	16.1	0.15	19991118	327.31973	214.14857	237.67724	5.70657	0.0623780	2.3031976	66	1	57 days	0.55			Williams	1999 VY ₂₈
1999 VZ ₂₈	15.1	0.15	19991029	54.64744	300.98148	44.73146	2.56385	0.1164612	2.9226107	46	1	51 days	0.69			Williams	1999 VZ ₂₈
1999 VA ₂₉	16.4	0.15	19991118	316.75635	59.08220	50.43129	4.31677	0.1268625	2.3044133	53	1	37 days	0.54			Williams	1999 VA ₂₉
1999 VB ₂₉	15.1	0.15	19991029	84.01371	314.37238	357.84194	0.57794	0.1131885	2.2275884	28	1	13 days	0.61			Williams	1999 VB ₂₉
1999 VC ₂₉	14.0	0.15	20000226	271.42747	123.67657	49.53983	1.67168	0.1078127	3.1573014	45	2	1996–1999	0.55	M-v	5	Williams	37216 1999 VC ₂₉
1999 VD ₂₉	14.8	0.15	20000226	54.28428	325.10378	40.52364	1.26642	0.1753460	3.0865037	52	2	1998–1999	0.63	M-v	4	Williams	37217 1999 VD ₂₉
1999 VE ₂₉	14.7	0.15	20000226	44.96254	329.54290	49.16932	2.89833	0.2248220	2.7573690	66	1	61 days	0.50	M-v	5	Williams	1999 VE ₂₉
1999 VH ₂₉	17.1	0.15	19991029	2.34863	178.13020	226.25252	3.07119	0.1449273	2.1895087	40	1	51 days	0.57			Williams	1999 VH ₂₉
1999 VJ ₂₉	16.4	0.15	19991118	11.74342	345.10811	53.67513	5.20184	0.1865801	2.4746054	44	1	44 days	0.57			Williams	1999 VJ ₂₉
1999 VK ₂₉	14.2	0.15	20000226	50.29568	318.65784	50.56926	2.56667	0.1925002	3.1714027	60	1	62 days	0.55	M-v	5	Williams	1999 VK ₂₉
1999 VL ₂₉	14.1	0.15	20000226	250.26939	138.56943	56.06869	9.90050	0.0693633	2.6496643	62	1	63 days	0.57	M-v	5	Williams	1999 VL ₂₉
1999 VO ₂₉	16.5	0.15	19991118	317.69673	64.16575	45.41951	6.23344	0.1241893	2.2703490	42	1	35 days	0.61			Williams	1999 VO ₂₉
1999 VP ₂₉	16.0	0.15	19991118	278.15119	95.40908	47.33858	7.47315	0.0373588	2.3277431	41	1	40 days	0.59			Williams	1999 VP ₂₉
1999 VQ ₂₉	14.7	0.15	19991118	257.50387	287.34850	238.74630	5.48830	0.0573994	3.0563334	31	1	40 days	0.56			Williams	1999 VQ ₂₉
1999 VR ₂₉	14.6	0.15	20000226	76.98840	301.33099	49.21434	2.70016	0.0961365	2.8986463	50	1	61 days	0.57	M-v	5	Williams	1999 VR ₂₉
1999 VS ₂₉	16.8	0.15	19991118	36.52821	318.26974	42.92791	3.11921	0.2224061	2.3951608	32	1	35 days	0.71			Williams	1999 VS ₂₉
1999 VT ₂₉	13.2	0.15	20000226	205.48476	348.91836	241.28539	16.33278	0.0739384	3.2336881	58	2	1998–2000	0.64	M-v	4	Williams	37217 1999 VT ₂₉
1999 VU ₂₉	17.1	0.15	19991118	29.41696	106.71588	265.37445	1.67702	0.2157018	2.4076688	28	1	41 days	0.69			Williams	1999 VU ₂₉
1999 VV ₂₉	15.3	0.15	20000226	41.58606	43.62623	351.98640	0.68914	0.1886167	2.3893187	56	1	95 days	0.50	M-v	4	Williams	1999 VV ₂₉
1999 VW ₂₉	18.5	0.15	19991118	15.37366	152.41942	236.44713	7.09750	0.2916649	2.3435587	22	1	34 days	0.43			Williams	1999 VW ₂₉
1999 VX ₂₉	15.8	0.15	20000226	29.42436	156.59711	251.79718	2.47728	0.2093794	2.6258383	58	1	74 days	0.62	M-v	4	Williams	1999 VX ₂₉
1999 VY ₂₉	15.7	0.15	20000226	104.40822	90.97905	234.36409	5.90373	0.1420915	2.2849482	56	3	1995–1999	0.51	M-v	3	Williams	37217 1999 VY ₂₉
1999 VA ₃₀	14.1	0.15	19991118	96.42730	245.62141	57.52154	2.26203	0.1779350	3.1369762	39	1	35 days	0.61			Williams	1999 VA ₃₀
1999 VB ₃₀	15.0	0.15	19991118	280.26419	290.67180	223.02463	2.91462	0.1463676	2.7001370	50	1	45 days	0.50			Williams	1999 VB ₃₀
1999 VC ₃₀	14.2	0.15	20000226	315.01081	69.83038	70.99047	2.19696	0.1719971	3.0686750	56	2	1996–1999	0.59	M-v	4	Williams	37217 1999 VC ₃₀
1999 VD ₃₀	14.8	0.15	19991118	35.81884	310.23319	59.72358	6.08138	0.1588235	3.1299604	55	1	41 days	0.63			Williams	1999 VD ₃₀

1999 VJ ₃₀	17.0	0.15	19991118	56.21206	289.56300	53.62337	5.48405	0.1785680	2.2439073	29	1	35 days	0.58		Williams	1999 VJ ₃₀	
1999 VL ₃₀	16.0	0.15	19991118	18.52317	148.83486	247.10483	5.15735	0.1311255	2.4039308	36	1	35 days	0.46		Williams	1999 VL ₃₀	
1999 VM ₃₀	16.3	0.15	19991118	46.43059	346.38893	4.02700	1.08141	0.2320869	2.3735678	50	1	41 days	0.51		Williams	1999 VM ₃₀	
1999 VO ₃₀	15.5	0.15	20000226	146.38976	71.96742	219.80781	1.45748	0.1146348	2.1829282	71	3	1992–1999	0.65	M-v	4	Williams	37217 1999 VO ₃₀
1999 VP ₃₀	14.4	0.15	20000226	93.18183	94.95020	234.20562	15.45444	0.1686363	2.7271272	44	1	68 days	0.60	M-v	5	Williams	1999 VP ₃₀
1999 VQ ₃₀	14.6	0.15	20000226	11.64192	195.24538	237.25713	14.31838	0.1143760	2.8517724	60	1	91 days	0.68	M-v	4	Williams	1999 VQ ₃₀
1999 VR ₃₀	14.5	0.15	20000226	24.34356	198.87144	216.30851	0.84037	0.0810213	3.0445285	39	2	1993–2000	0.64	M-v	4	Williams	37218 1999 VR ₃₀
1999 VS ₃₀	13.8	0.15	20000226	33.28095	173.72238	238.58586	5.13808	0.1172574	2.3912452	60	1	88 days	0.50	M-v	4	Williams	1999 VS ₃₀
1999 VT ₃₀	15.3	0.15	20000226	54.32477	129.10440	242.69552	11.09235	0.2544763	2.5760251	55	1	64 days	0.49	M-v	4	Williams	1999 VT ₃₀
1999 VU ₃₀	15.3	0.15	19991118	52.68090	292.22353	58.61821	11.49610	0.1823577	3.0128732	36	1	40 days	0.42			Williams	1999 VU ₃₀
1999 VV ₃₀	13.9	0.15	20000226	199.55250	192.51569	54.64769	5.33286	0.1433756	2.4423281	47	1	64 days	0.39	M-v	5	Williams	1999 VV ₃₀
1999 VW ₃₀	15.9	0.15	19991118	4.72418	358.49071	55.87525	5.23245	0.1963667	2.6733504	39	1	42 days	0.55			Williams	1999 VW ₃₀
1999 VY ₃₀	16.1	0.15	19991118	342.06059	35.33433	52.86160	5.75869	0.1991744	2.3601592	40	1	40 days	0.35			Williams	1999 VY ₃₀
1999 VZ ₃₀	14.7	0.15	20000226	70.17426	116.53685	239.46995	7.96767	0.1738729	2.7939088	33	1	62 days	0.43	M-v	5	Williams	1999 VZ ₃₀
1999 VA ₃₁	15.5	0.15	19991118	62.20839	103.82671	239.46350	10.80946	0.1545810	2.5943624	36	1	39 days	0.56			Williams	1999 VA ₃₁
1999 VB ₃₁	13.7	0.15	20000226	66.55405	326.22325	49.08822	2.84807	0.0181741	2.9192788	49	3	1996–2000	0.54	M-v	3	Williams	37218 1999 VB ₃₁
1999 VC ₃₁	13.7	0.15	20000226	19.28764	195.05514	235.70784	3.83971	0.1243948	2.3668485	59	2	1977–1999	0.46	M-v	3	Williams	37218 1999 VC ₃₁
1999 VD ₃₁	15.0	0.15	19991118	12.60895	322.38365	79.89415	0.91368	0.2080891	3.1310080	40	1	35 days	0.55			Williams	1999 VD ₃₁
1999 VE ₃₁	14.8	0.15	20000226	251.64166	95.61059	111.10104	0.43576	0.1186046	2.2901128	55	3	1997–2000	0.65	M-v	3	Williams	37218 1999 VE ₃₁
1999 VF ₃₁	14.6	0.15	20000226	34.88916	336.59479	60.37753	9.34118	0.1770499	3.2062339	47	2	1993–2000	0.70	M-v	4	Williams	37218 1999 VF ₃₁
1999 VG ₃₁	13.6	0.15	20000226	128.86088	245.28582	63.74086	10.31381	0.0208297	3.1051402	51	1	62 days	0.59	M-v	5	Williams	1999 VG ₃₁
1999 VH ₃₁	14.6	0.15	20000226	25.20726	348.38731	63.15729	10.81925	0.1818821	3.0986714	48	1	62 days	0.47	M-v	4	Williams	1999 VH ₃₁
1999 VJ ₃₁	14.4	0.15	20000226	81.43227	286.50470	64.11897	10.54204	0.1532341	2.3931822	68	2	1998–2000	0.55	M-v	4	Williams	37219 1999 VJ ₃₁
1999 VL ₃₁	14.7	0.15	20000226	23.51857	226.78236	188.85125	1.45444	0.1654075	3.0462506	27	1	63 days	0.37	M-v	4	Williams	1999 VL ₃₁
1999 VM ₃₁	16.4	0.15	19991118	0.88193	359.01618	60.32115	6.22227	0.2534451	2.4056775	29	1	35 days	0.55			Williams	1999 VM ₃₁
1999 VN ₃₁	15.6	0.15	19991118	23.76107	168.06267	210.53706	1.79397	0.2927027	2.7484423	34	1	39 days	0.68			Williams	1999 VN ₃₁
1999 VP ₃₁	17.2	0.15	19991118	194.56442	338.53850	241.83836	2.48217	0.1024932	2.1975356	19	1	31 days	0.59			Williams	1999 VP ₃₁
1999 VT ₃₁	16.0	0.15	19991029	5.91664	152.66860	248.31005	1.72807	0.1635005	3.0333409	24	1	14 days	0.61			Williams	1999 VT ₃₁
1999 VU ₃₁	14.7	0.15	20000226	292.48805	287.20658	240.53564	2.59203	0.1642358	2.3234717	62	1	67 days	0.46	M-v	5	Williams	1999 VU ₃₁
1999 VV ₃₁	16.4	0.15	19991118	331.58237	46.09898	46.90596	6.45602	0.1531792	2.5253502	31	1	35 days	0.43			Williams	1999 VV ₃₁
1999 VX ₃₁	15.0	0.15	19991029	266.28271	277.87278	230.59458	5.09400	0.0416743	2.6610240	17	1	11 days	0.44			Williams	1999 VX ₃₁
1999 VY ₃₁	17.1	0.15	19991118	22.89648	332.58883	47.44294	3.11993	0.2047448	2.4910530	31	1	37 days	0.63			Williams	1999 VY ₃₁
1999 VZ ₃₁	14.9	0.15	19991029	55.63936	13.00606	331.78179	0.61565	0.0972143	2.7029283	18	1	13 days	0.50			Williams	1999 VZ ₃₁
1999 VA ₃₂	16.6	0.15	19991029	9.79689	154.07843	236.13856	9.06762	0.2742537	2.7518781	51	1	58 days	0.64			Williams	1999 VA ₃₂
1999 VB ₃₂	15.9	0.15	19991118	22.06169	119.98818	265.41588	0.82478	0.1650021	2.9172302	34	1	34 days	0.62			Williams	1999 VB ₃₂
1999 VD ₃₂	16.9	0.15	19991118	21.15541	153.70648	233.84482	5.56475	0.1443747	2.3141914	47	1	56 days	0.55			Williams	1999 VD ₃₂
1999 VE ₃₂	15.7	0.15	19991029	34.31034	121.94766	234.86733	15.43350	0.2411168	3.1009960	20	1	14 days	0.40			Williams	1999 VE ₃₂
1999 VF ₃₂	15.1	0.15	19991118	103.65436	247.69660	51.97222	12.17523	0.1129870	3.0087949	35	1	35 days	0.77			Williams	1999 VF ₃₂
1999 VG ₃₂	14.3	0.15	19991118	346.47293	200.40150	233.60819	10.10661	0.1336823	3.1486325	52	1	44 days	0.74			Williams	1999 VG ₃₂
1999 VH ₃₂	15.1	0.15	19991029	47.25647	119.81554	234.73811	11.63995	0.1127995	3.1146369	15	1	14 days	0.63			Williams	1999 VH ₃₂
1999 VJ ₃₂	15.9	0.15	19991118	343.03994	214.56100	232.08352	2.32675	0.2694954	3.0977563	58	1	45 days	0.50			Williams	1999 VJ ₃₂
1999 VK ₃₂	16.0	0.15	19991029	101.53848	87.74930	203.29934	0.99406	0.1811093	2.4225407	16	1	14 days	0.49			Williams	1999 VK ₃₂
1999 VL ₃₂	15.1	0.15	19991029	156.97497	199.84107	54.36708	4.43523	0.0495576	2.7842213	51	1	51 days	0.62			Williams	1999 VL ₃₂
1999 VM ₃₂	15.2	0.15	20000226	292.32198	303.01730	220.98651	1.73000	0.1233796	2.4462792	56	3	1997–1999	0.50	M-v	4	Williams	37219 1999 VM ₃₂
1999 VO ₃₂	15.4	0.15	19991118	42.53729	54.77782	314.31871	1.02874	0.0765779	2.9951308	31	1	40 days	0.79		D	Williams	1999 VO ₃₂
1999 VP ₃₂	16.0	0.15	19991118	301.95891	240.50889	239.06305	13.16020	0.0387652	2.6506691	35	1	35 days	0.67			Williams	1999 VP ₃₂
1999 VQ ₃₂	15.1	0.15	19991118	36.52968	343.29368	26.74255	0.88202	0.1430394	3.0272997	30	1	41 days	0.59			Nakano	1999 VQ ₃₂
1999 VR ₃₂	14.9	0.15	20000226	231.06796	343.75004	236.14526	6.50984	0.1099642	2.2545332	63	3	1991–1999	0.60	M-v	4	Williams	37219 1999 VR ₃₂
1999 VS ₃₂	15.4	0.15	19991118	334.02877	221.54325	232.27664	0.22214	0.1648997	3.2186157	36	1	40 days	0.47			Williams	1999 VS ₃₂
1999 VT ₃₂	15.7	0.15	19991118	299.71963	67.53080	55.36127	4.76874	0.0471825	2.7831590	21	1	41 days	0.60			Williams	1999 VT ₃₂
1999 VV ₃₂	14.4	0.15	19991118	100.47066	246.09277	59.25742	1.92848	0.1167164	3.1813102	39	1	40 days	0.89			Williams	1999 VV ₃₂
1999 VW ₃₂	16.7	0.15	19991118	35.17394	152.33839	221.51657	2.76489	0.1147315	2.3190022	37	1	35 days	0.53			Williams	1999 VW ₃₂
1999 VX ₃₂	16.8	0.15	19991118	43.54144	129.95322	228.32458	4.80587	0.1725179	2.3347155	40	1	34 days	0.59			Williams	1999 VX ₃₂

1999 VZ ₃₂	14.9	0.15	19991118	249.31018	305.36742	240.06773	6.79217	0.1579780	2.7856416	39	1	40 days	0.80		Williams	1999 VZ ₃₂
1999 VA ₃₃	14.6	0.15	20000226	314.66208	270.35658	229.39556	0.81217	0.1471313	2.9918623	41	1	63 days	0.59	M-v 5	Williams	1999 VA ₃₃
1999 VB ₃₃	15.5	0.15	19991118	49.73422	103.81369	240.18065	10.26669	0.2435284	3.0430873	43	1	44 days	0.62		Williams	1999 VB ₃₃
1999 VC ₃₃	16.3	0.15	20000226	41.01414	126.48774	265.96931	2.23337	0.2113443	2.6099914	29	1	67 days	0.51	M-v 5	Williams	1999 VC ₃₃
1999 VE ₃₃	14.6	0.15	19991118	14.22522	0.48199	41.32544	3.92145	0.1293604	2.9255898	47	1	41 days	0.56		Williams	1999 VE ₃₃
1999 VF ₃₃	15.3	0.15	19991118	7.10046	0.61993	52.30480	9.44326	0.0573108	3.1165597	28	1	40 days	0.43		Williams	1999 VF ₃₃
1999 VG ₃₃	14.9	0.15	19991118	193.55264	345.06171	243.54423	9.29524	0.0428672	3.1040031	21	1	40 days	0.65		Williams	1999 VG ₃₃
1999 VH ₃₃	15.5	0.15	19991118	60.30757	98.28813	240.34071	11.88604	0.1914764	2.6676046	28	1	44 days	0.43		Williams	1999 VH ₃₃
1999 VJ ₃₃	14.7	0.15	19991118	148.68368	229.85336	38.27232	2.50976	0.0811868	2.9023801	37	1	41 days	0.56		Williams	1999 VJ ₃₃
1999 VK ₃₃	15.2	0.15	20000226	349.35890	47.67683	63.74630	1.45521	0.2297573	2.6406357	59	1	72 days	0.51	M-v 5	Williams	1999 VK ₃₃
1999 VL ₃₃	16.1	0.15	19991118	23.62831	154.44531	235.85338	1.46615	0.1088348	2.6579615	38	1	40 days	0.48		Williams	1999 VL ₃₃
1999 VN ₃₃	15.5	0.15	19991118	12.07112	343.19022	61.29820	4.99231	0.1163486	3.0654492	29	1	40 days	0.59		Williams	1999 VN ₃₃
1999 VO ₃₃	15.1	0.15	20000226	322.18061	271.36883	211.70769	2.62839	0.0289734	2.6532201	50	2	1998–1999	0.64	M-v 4	Williams	37219 1999 VO ₃₃
1999 VP ₃₃	14.0	0.15	20000226	259.78340	309.20087	238.38589	12.36820	0.0633305	2.9863785	45	1	69 days	0.50	M-v 5	Williams	1999 VP ₃₃
1999 VQ ₃₃	15.8	0.15	19991118	17.01391	35.13835	1.63989	0.74115	0.1952179	3.1235083	25	1	35 days	0.54		D Williams	1999 VQ ₃₃
1999 VR ₃₃	14.1	0.15	19991029	60.38488	235.16831	103.80994	0.53097	0.1843425	3.2495596	13	1	9 days	0.73		Williams	1999 VR ₃₃
1999 VS ₃₃	15.9	0.15	19991118	28.89803	266.48841	116.88509	0.89545	0.1439460	2.5946197	42	1	35 days	0.65		Williams	1999 VS ₃₃
1999 VT ₃₃	14.7	0.15	20000226	0.90359	213.90931	230.87464	6.52554	0.1341248	3.1525755	41	1	63 days	0.54	M-v 5	Williams	1999 VT ₃₃
1999 VU ₃₃	14.5	0.15	20000226	17.95185	195.36650	228.49348	4.81884	0.1283402	3.0230056	45	2	1978–2000	0.47	M-v 4	Williams	37219 1999 VU ₃₃
1999 VV ₃₃	14.0	0.15	20000226	150.04123	94.59997	198.27890	1.54101	0.0052144	2.8654474	48	2	1998–2000	0.52	M-v 5	Williams	37220 1999 VV ₃₃
1999 VW ₃₃	16.3	0.15	19991118	10.40868	333.37713	71.74325	4.00231	0.2257130	2.6330386	31	1	35 days	0.63		Williams	1999 VW ₃₃
1999 VX ₃₃	15.3	0.15	19991118	273.86401	105.74061	49.49044	10.15507	0.1283185	2.8041590	29	1	35 days	0.81		Williams	1999 VX ₃₃
1999 VZ ₃₃	16.4	0.15	19991118	264.30394	278.85106	238.36101	6.16381	0.0589241	2.3625816	35	1	45 days	0.59		Williams	1999 VZ ₃₃
1999 VA ₃₄	15.9	0.15	19991118	317.93122	250.96951	220.57676	2.02974	0.1250064	2.3951982	43	1	40 days	0.51		Williams	1999 VA ₃₄
1999 VB ₃₄	16.7	0.15	19991118	242.04534	321.26613	224.82619	3.75412	0.0969737	2.1835035	40	1	36 days	0.66		Williams	1999 VB ₃₄
1999 VC ₃₄	15.4	0.15	19991029	46.20397	294.29384	58.23150	10.54314	0.1641691	2.6166679	16	1	13 days	0.32		Williams	1999 VC ₃₄
1999 VD ₃₄	15.1	0.15	19991118	24.72265	320.31204	61.30211	9.05039	0.2407000	2.7924052	45	1	46 days	0.34		Williams	1999 VD ₃₄
1999 VE ₃₄	15.3	0.15	20000226	97.95849	98.44424	236.45288	4.78137	0.1440959	2.3536206	37	1	62 days	0.56	M-v 5	Williams	1999 VE ₃₄
1999 VF ₃₄	14.0	0.15	20000226	312.62112	93.81271	55.83305	5.90785	0.1471207	2.6926339	54	1	66 days	0.56	M-v 5	Williams	1999 VF ₃₄
1999 VG ₃₄	15.6	0.15	19991029	347.66729	14.07814	56.29928	7.76530	0.0964738	2.3251418	20	1	13 days	0.31		Williams	1999 VG ₃₄
1999 VH ₃₄	16.1	0.15	19991118	22.59879	140.54853	245.94957	1.12955	0.2189463	2.3631886	46	1	39 days	0.54		Williams	1999 VH ₃₄
1999 VJ ₃₄	14.5	0.15	20000226	14.99649	197.34431	237.62787	5.09499	0.1410245	2.5658456	63	2	1995–2000	0.56	M-v 3	Williams	37220 1999 VJ ₃₄
1999 VK ₃₄	15.3	0.15	20000226	22.28708	179.03228	247.78553	14.21354	0.0833784	2.5653391	34	1	63 days	0.66	M-v 5	Williams	1999 VK ₃₄
1999 VM ₃₄	13.5	0.15	20000226	343.46209	228.34083	248.30310	12.55464	0.1275236	2.5869026	63	2	1998–2000	0.51	M-v 3	Williams	37220 1999 VM ₃₄
1999 VN ₃₄	14.5	0.15	20000226	123.06656	58.62553	250.38673	14.09617	0.1644152	2.6253192	28	1	64 days	0.43	M-v 5	Williams	1999 VN ₃₄
1999 VO ₃₄	14.1	0.15	20000226	52.61718	136.83421	247.87076	11.11930	0.1620374	2.6792087	44	1	64 days	0.33	M-v 4	Williams	1999 VO ₃₄
1999 VP ₃₄	13.3	0.15	20000226	52.51548	139.27453	248.97488	11.79943	0.1143075	2.7399408	46	1	64 days	0.42	M-v 4	Williams	1999 VP ₃₄
1999 VR ₃₄	15.7	0.15	19991118	34.26763	121.40267	242.93686	14.68730	0.2919294	2.7109133	26	1	41 days	0.78		Williams	1999 VR ₃₄
1999 VS ₃₄	13.3	0.15	20000226	75.19043	105.65127	251.10878	8.07187	0.1156344	3.2226001	56	2	1998–2000	0.54	M-v 3	Williams	37220 1999 VS ₃₄
1999 VT ₃₄	16.4	0.15	20000226	49.75548	144.00243	248.51516	4.76504	0.1876247	2.2836712	40	1	86 days	0.49	M-v 4	Williams	1999 VT ₃₄
1999 VV ₃₄	15.5	0.15	20000226	25.78850	178.15921	241.53435	13.73445	0.2311872	2.6565863	31	1	65 days	0.44	M-v 4	Williams	1999 VV ₃₄
1999 VW ₃₄	14.1	0.15	20000226	37.49305	133.40695	263.91951	2.42271	0.2173701	2.9680099	45	1	90 days	0.42	M-v 4	Williams	1999 VW ₃₄
1999 VX ₃₄	14.1	0.15	20000226	166.86680	30.79909	243.47807	5.52269	0.1893210	2.3014392	52	1	69 days	0.55	M-v 5	Williams	1999 VX ₃₄
1999 VY ₃₄	14.2	0.15	19991029	57.53135	73.03986	273.67564	0.72407	0.1661118	3.0426246	15	1	9 days	0.47		Williams	1999 VY ₃₄
1999 VZ ₃₄	14.5	0.15	20000226	197.56017	190.83002	65.65422	4.21318	0.0733084	2.1396750	60	2	1998–2000	0.53	M-v 4	Williams	37220 1999 VZ ₃₄
1999 VA ₃₅	15.2	0.15	20000226	74.83300	297.09736	58.95363	6.89105	0.1921646	2.4431905	32	1	62 days	0.54	M-v 5	Williams	1999 VA ₃₅
1999 VB ₃₅	14.2	0.15	20000226	308.12907	93.53582	59.03797	2.40361	0.0955907	2.5688122	60	3	1997–2000	0.46	M-v 3	Williams	37220 1999 VB ₃₅
1999 VD ₃₅	15.2	0.15	19991118	183.48648	180.90504	61.05318	6.96790	0.1111492	2.4401525	33	1	35 days	0.53		Williams	1999 VD ₃₅
1999 VE ₃₅	14.0	0.15	20000226	135.91238	237.13083	64.12474	4.39252	0.1202763	2.5247176	59	2	1995–2000	0.60	M-v 4	Williams	37221 1999 VE ₃₅
1999 VG ₃₅	15.9	0.15	19991029	4.81488	343.10774	61.44096	6.81067	0.2853235	2.5922329	19	1	13 days	0.59		Williams	1999 VG ₃₅
1999 VK ₃₅	17.2	0.15	19991118	36.24494	292.30784	78.21810	3.66380	0.1897912	2.4654843	21	1	35 days	0.56		Williams	1999 VK ₃₅
1999 VN ₃₅	13.9	0.15	20000226	89.24244	117.63278	210.94582	1.76771	0.2271856	3.0571048	63	3	1993–2000	0.54	M-v 3	Williams	37221 1999 VN ₃₅
1999 VO ₃₅	13.9	0.15	20000226	323.44112	64.69754	68.62895	10.40793	0.1128113	2.9365581	54	2	1994–2000	0.72	M-v 5	Williams	37221 1999 VO ₃₅

1999 VP ₃₅	14.5	0.15	20000226	92.52213	114.82527	233.75689	5.91041	0.0834845	2.4562439	45	1	68 days	0.43	M-v	5	Williams	1999 VP ₃₅
1999 VR ₃₅	15.3	0.15	20000226	33.05400	340.55184	63.75732	7.27853	0.2536318	2.7616594	42	1	62 days	0.46	M-v	4	Williams	1999 VR ₃₅
1999 VS ₃₅	13.6	0.15	20000226	136.74890	234.60011	67.54416	15.49837	0.1016038	2.5999692	47	2	1978–2000	0.52	M-v	4	Williams	37221 1999 VS ₃₅
1999 VT ₃₅	15.1	0.15	20000226	351.27322	31.06445	80.92617	2.58961	0.1134403	2.2079487	50	4	1971–2000	0.68	M-v	2	Williams	37222 1999 VT ₃₅
1999 VU ₃₅	14.0	0.15	20000226	30.63955	337.89760	78.56289	2.00695	0.1393633	2.5576249	57	2	1984–2000	0.53	M-v	4	Williams	37222 1999 VU ₃₅
1999 VV ₃₅	14.9	0.15	20000226	65.75129	121.73807	234.75329	6.74723	0.2467498	2.8044038	39	2	1994–1999	0.51	M-v	4	Williams	37222 1999 VV ₃₅
1999 VY ₃₅	15.8	0.15	19991118	0.31871	197.75372	226.44689	3.04681	0.1993140	2.4179859	33	1	35 days	0.55			Williams	1999 VY ₃₅
1999 VZ ₃₅	14.6	0.15	20000226	320.06742	90.34502	60.97290	5.65894	0.1653043	2.4017546	41	1	62 days	0.38	M-v	4	Williams	1999 VZ ₃₅
1999 VA ₃₆	13.7	0.15	20000226	124.98882	257.89288	59.12026	2.83274	0.0558760	2.8648534	60	3	1997–2000	0.56	M-v	3	Williams	37222 1999 VA ₃₆
1999 VB ₃₆	14.7	0.15	20000226	31.96070	148.83202	268.24704	1.37406	0.1742029	2.4363432	52	1	64 days	0.45	M-v	4 D	Williams	1999 VB ₃₆
1999 VC ₃₆	14.3	0.15	20000226	299.44331	276.31404	253.45301	7.28733	0.1595011	2.6054008	31	1	64 days	0.48	M-v	5	Williams	1999 VC ₃₆
1999 VD ₃₆	13.8	0.15	20000226	0.21385	208.10599	247.54368	13.29739	0.0978029	2.5952752	66	1	93 days	0.40	M-v	3	Williams	1999 VD ₃₆
1999 VG ₃₆	14.7	0.15	20000226	25.35193	178.89566	248.17563	6.07117	0.1633396	2.4463563	52	2	1979–2000	0.44	M-v	3	Williams	37222 1999 VG ₃₆
1999 VH ₃₆	14.1	0.15	20000226	8.74807	176.61906	265.49936	1.16038	0.1490207	3.0658099	46	2	1993–2000	0.59	M-v	4	Williams	37222 1999 VH ₃₆
1999 VJ ₃₆	15.7	0.15	20000226	26.87184	177.38190	242.00976	12.20965	0.2688731	2.6453716	31	1	63 days	0.50	M-v	4	Williams	1999 VJ ₃₆
1999 VL ₃₆	14.3	0.15	20000226	15.71875	196.37936	237.91491	3.07473	0.1031191	2.7803090	37	1	64 days	0.41	M-v	4	Williams	1999 VL ₃₆
1999 VN ₃₆	14.2	0.15	20000226	351.81914	64.40002	59.64000	7.64329	0.3023906	2.5688679	54	1	62 days	0.44	M-v	4	Williams	1999 VN ₃₆
1999 VO ₃₆	13.0	0.15	20000226	344.82232	51.77827	64.87326	13.61749	0.1453893	2.6907539	54	1	62 days	0.37	M-v	4	Williams	1999 VO ₃₆
1999 VP ₃₆	13.2	0.15	20000226	318.74630	55.99317	83.23173	2.13155	0.1084359	3.1734974	64	3	1996–2000	0.68	M-v	3	Williams	37223 1999 VP ₃₆
1999 VQ ₃₆	15.4	0.15	20000226	89.19807	283.94513	61.87186	7.39427	0.1778560	2.3079851	30	1	62 days	0.77	M-v	5	Williams	1999 VQ ₃₆
1999 VR ₃₆	14.1	0.15	20000226	217.59119	167.72330	72.07309	6.98657	0.1687263	2.3414193	46	1	64 days	0.52	M-v	5	Williams	1999 VR ₃₆
1999 VS ₃₆	14.4	0.15	20000226	31.56034	329.78942	84.58945	3.12982	0.0842509	2.8351259	45	2	1989–2000	0.64	M-v	4	Williams	37223 1999 VS ₃₆
1999 VT ₃₆	14.9	0.15	20000226	329.88769	57.86843	70.94296	7.20003	0.0554542	2.3767188	34	1	62 days	0.58	M-v	5	Williams	1999 VT ₃₆
1999 VU ₃₆	13.9	0.15	19991118	59.54132	283.90695	72.58257	10.76815	0.1087565	3.0411171	26	1	35 days	0.50			Williams	1999 VU ₃₆
1999 VV ₃₆	15.3	0.15	20000226	78.71331	262.53668	77.12561	5.57642	0.2894671	2.6220324	33	1	62 days	0.56	M-v	5	Williams	1999 VV ₃₆
1999 VW ₃₆	14.6	0.15	20000226	328.91735	72.45397	64.27606	8.75167	0.1217584	2.4755522	53	1	62 days	0.45	M-v	4	Williams	1999 VW ₃₆
1999 VX ₃₆	14.7	0.15	20000226	84.35992	107.45710	240.33497	5.86117	0.2098041	2.2909256	41	3	1992–2000	0.71	M-v	3	Williams	37223 1999 VX ₃₆
1999 VY ₃₆	13.7	0.15	20000226	102.29290	72.79010	245.92222	9.95526	0.2606395	2.7525544	49	1	64 days	0.46	M-v	5	Williams	1999 VY ₃₆
1999 VZ ₃₆	14.9	0.15	20000226	60.59124	317.47841	67.10790	3.84471	0.0767502	2.6757417	30	1	62 days	0.62	M-v	5	Williams	1999 VZ ₃₆
1999 VA ₃₇	13.4	0.15	20000226	280.35837	115.59051	68.07855	17.69727	0.1058642	2.5803605	63	2	1997–2000	0.57	M-v	4	Williams	37223 1999 VA ₃₇
1999 VC ₃₇	15.7	0.15	20000226	43.03665	347.88698	60.56951	7.23094	0.1217080	2.2786674	39	1	62 days	0.54	M-v	4	Williams	1999 VC ₃₇
1999 VD ₃₇	15.0	0.15	20000226	20.93899	14.50540	58.04331	5.86209	0.2231405	2.5415470	69	2	1997–2000	0.47	M-v	3	Williams	37224 1999 VD ₃₇
1999 VE ₃₇	15.7	0.15	20000226	42.31052	349.49859	55.48974	3.90077	0.1897939	2.3398224	39	1	62 days	0.38	M-v	4	Williams	1999 VE ₃₇
1999 VF ₃₇	14.3	0.15	20000226	96.56026	80.95484	247.50710	12.30895	0.2542891	2.4539049	54	4	1991–2000	0.52	M-v	2	Williams	37224 1999 VF ₃₇
1999 VG ₃₇	15.8	0.15	20000226	39.55376	160.17967	249.39406	6.27342	0.2122641	2.2717934	37	1	64 days	0.37	M-v	4	Williams	1999 VG ₃₇
1999 VH ₃₇	13.7	0.15	20000226	297.98402	273.80696	254.24557	7.55860	0.1391569	3.1003619	37	1	64 days	0.40	M-v	5	Williams	1999 VH ₃₇
1999 VJ ₃₇	15.2	0.15	20000226	104.98199	82.96926	250.44866	4.94318	0.1597733	2.3380557	32	1	64 days	0.38	M-v	4	Williams	1999 VJ ₃₇
1999 VK ₃₇	14.4	0.15	20000226	345.61591	233.34867	240.71162	3.97189	0.1131733	2.7731307	50	2	1998–2000	0.48	M-v	4	Williams	37224 1999 VK ₃₇
1999 VL ₃₇	14.7	0.15	20000226	44.04537	158.14480	241.79192	7.11729	0.1507225	2.6835423	54	4	1977–2000	0.44	M-v	2	Williams	37224 1999 VL ₃₇
1999 VM ₃₇	13.8	0.15	20000226	113.91562	87.77990	241.35157	8.83427	0.1064586	2.4844841	34	1	64 days	0.40	M-v	4	Williams	1999 VM ₃₇
1999 VO ₃₇	14.3	0.15	20000226	29.61973	353.80056	67.75066	15.43582	0.0596627	2.6068624	38	1	62 days	0.58	M-v	5	Williams	1999 VO ₃₇
1999 VP ₃₇	13.8	0.15	20000226	85.73669	109.39023	232.93856	5.12087	0.1821333	3.1456763	26	1	64 days	0.54	M-v	5	Williams	1999 VP ₃₇
1999 VQ ₃₇	15.5	0.15	20000226	45.54646	325.84055	69.18709	8.60955	0.2535295	2.3768251	37	1	62 days	0.33	M-v	4	Williams	1999 VQ ₃₇
1999 VR ₃₇	13.6	0.15	20000226	161.46827	210.63352	72.74393	18.76713	0.1257841	2.7728955	25	1	62 days	0.36	M-v	5	Williams	1999 VR ₃₇
1999 VT ₃₇	13.4	0.15	19991029	25.63580	337.90269	40.67602	1.15767	0.3353498	4.2278295	19	1	13 days	0.36			Williams	1999 VT ₃₇
1999 VV ₃₇	14.7	0.15	20000226	356.11377	44.83237	68.79078	13.96811	0.2213480	2.5712554	49	1	62 days	0.56	M-v	4	Williams	1999 VV ₃₇
1999 VW ₃₇	15.5	0.15	20000226	13.74499	188.91976	248.99575	6.72519	0.1496966	2.5595184	45	1	92 days	0.59	M-v	4	Williams	1999 VW ₃₇
1999 VY ₃₇	13.4	0.15	20000226	291.50373	89.40357	78.00591	5.88432	0.1419134	3.0403272	55	3	1996–2000	0.57	M-v	3	Williams	37224 1999 VY ₃₇
1999 VC ₃₈	16.2	0.15	20000226	48.55575	132.81713	256.39944	1.17444	0.2085539	2.3633243	45	1	63 days	0.48	M-v	5	Williams	1999 VC ₃₈
1999 VE ₃₈	14.8	0.15	19991029	27.28487	131.63052	219.86297	9.17376	0.2070305	3.2003817	21	1	15 days	0.40			Williams	1999 VE ₃₈
1999 VH ₃₈	15.3	0.15	19991029	19.06503	338.53204	25.11386	2.45342	0.2157099	2.6828801	14	1	6 days	0.54		E	Williams	1999 VH ₃₈
1999 VJ ₃₈	16.8	0.15	19991029	50.42821	88.25724	223.11123	3.89489	0.2938337	2.3951790	18	1	8 days	0.74			Williams	1999 VJ ₃₈
1999 VK ₃₈	16.3	0.15	19991029	50.09458	284.54584	39.23960	3.80500	0.1949687	2.4107124	27	1	16 days	0.55			Williams	1999 VK ₃₈

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1999 VL ₃₈	14.7	0.15	19991029	36.90143	135.05042	217.68800	9.82387	0.0534302	3.0002090	23	1	11 days	0.58		Williams	1999 VL ₃₈
1999 VM ₃₈	15.5	0.15	19991029	343.63220	22.51175	37.70292	1.49871	0.2314436	3.1008957	22	1	7 days	0.41		Williams	1999 VM ₃₈
1999 VN ₃₈	14.6	0.15	19991118	58.70839	270.10713	66.31192	6.16054	0.2374232	3.1539040	39	1	34 days	0.59		Williams	1999 VN ₃₈
1999 VO ₃₈	15.4	0.15	19991118	16.98926	327.98791	71.05531	5.12712	0.1186739	2.5537280	49	1	44 days	0.50		Williams	1999 VO ₃₈
1999 VP ₃₈	17.3	0.15	19991118	8.21969	340.91258	64.61553	6.97945	0.2671261	2.6110359	46	1	35 days	0.59		Williams	1999 VP ₃₈
1999 VQ ₃₈	15.8	0.15	19991029	352.92009	344.22393	78.22125	3.48602	0.0182043	2.3144308	20	1	6 days	0.70		E Williams	1999 VQ ₃₈
1999 VR ₃₈	15.4	0.15	20000226	110.08865	169.90606	148.08179	1.02424	0.1938090	2.2388606	51	2	1998–1999	0.62	M-v 4	Williams	37225 1999 VR ₃₈
1999 VS ₃₈	16.7	0.15	19991118	281.52153	78.60089	67.58703	1.46937	0.0747494	2.1930088	37	1	34 days	0.62		Williams	1999 VS ₃₈
1999 VV ₃₈	15.6	0.15	19991118	88.52210	258.02808	56.73292	7.05376	0.1490015	2.4582450	48	1	35 days	0.55		Williams	1999 VV ₃₈
1999 VW ₃₈	14.8	0.15	19991029	21.96539	342.59805	49.62624	1.96959	0.0287226	2.6080173	20	1	7 days	0.42		E Williams	1999 VW ₃₈
1999 VX ₃₈	15.2	0.15	19991118	47.40369	309.17130	55.82010	2.42252	0.0910480	2.8806268	45	1	39 days	0.56		Williams	1999 VX ₃₈
1999 VZ ₃₈	14.7	0.15	20000226	57.17571	139.10808	239.62712	2.41281	0.1689877	2.3315018	53	1	73 days	0.42	M-v 4	Williams	1999 VZ ₃₈
1999 VA ₃₉	14.4	0.15	19991029	33.69643	133.81019	242.02800	11.85208	0.1108304	3.2395341	14	1	3 days	0.68		E Williams	1999 VA ₃₉
1999 VB ₃₉	16.6	0.15	19991118	46.35594	284.14746	54.55046	4.24745	0.3274030	2.5524230	40	1	35 days	0.46		Williams	1999 VB ₃₉
1999 VC ₃₉	15.9	0.15	19991118	165.55465	10.08938	242.60647	6.09957	0.1093331	2.3569501	29	1	34 days	0.46		Williams	1999 VC ₃₉
1999 VD ₃₉	15.7	0.15	19991118	175.55749	2.54908	242.34577	8.27503	0.0759345	2.4178107	36	1	34 days	0.56		Williams	1999 VD ₃₉
1999 VE ₃₉	14.7	0.15	20000226	200.27677	199.49602	48.30140	0.48162	0.1742359	2.2315020	41	2	1981–2000	0.63	M-v 5	Williams	37225 1999 VE ₃₉
1999 VG ₃₉	15.3	0.15	19991118	69.92562	96.61416	243.33837	4.01331	0.1070655	2.8626696	44	1	41 days	0.74		Williams	1999 VG ₃₉
1999 VH ₃₉	14.4	0.15	20000226	321.40585	228.73580	256.13353	2.61253	0.0182407	2.6625685	48	2	1998–1999	0.52	M-v 3	Williams	37225 1999 VH ₃₉
1999 VJ ₃₉	16.5	0.15	19991118	340.76136	24.11172	65.47466	7.60434	0.2019672	2.4402418	56	1	56 days	0.76		Williams	1999 VJ ₃₉
1999 VK ₃₉	16.5	0.15	20000226	19.71320	359.27506	67.09931	5.49680	0.1891022	2.6066716	31	2	1978–1999	0.66	M-v 4	Williams	37225 1999 VK ₃₉
1999 VL ₃₉	15.4	0.15	19991029	25.62229	197.57239	177.57801	1.25775	0.2320065	3.0296323	13	1	3 days	0.51		E Williams	1999 VL ₃₉
1999 VM ₃₉	16.5	0.15	20000226	70.06027	278.59181	77.08110	2.32028	0.2054960	2.4385541	37	1	62 days	0.48	M-v 5	Williams	1999 VM ₃₉
1999 VN ₃₉	15.0	0.15	19991029	45.20342	297.08688	54.25702	2.74766	0.2049007	3.1185892	12	1	3 days	0.42		E Williams	1999 VN ₃₉
1999 VO ₃₉	15.3	0.15	19991118	295.82244	81.89540	56.78335	14.13509	0.1186187	2.6923419	25	1	34 days	0.52		Williams	1999 VO ₃₉
1999 VP ₃₉	15.8	0.15	20000226	134.61146	229.12838	68.05011	5.62368	0.1694407	2.2521805	54	2	1998–1999	0.66	M-v 4	Williams	37225 1999 VP ₃₉
1999 VQ ₃₉	17.3	0.15	19991118	26.25508	318.49961	57.36242	6.07368	0.2582195	2.5619027	32	1	35 days	0.48		Williams	1999 VQ ₃₉
1999 VT ₃₉	13.9	0.15	19991029	167.98754	174.29588	32.60432	2.98735	0.1297514	3.0591312	11	1	3 days	0.18		E Williams	1999 VT ₃₉
1999 VU ₃₉	16.3	0.15	19991029	80.75880	89.79208	196.57896	5.22034	0.1122449	2.6663276	9	1	3 days	0.10		E Williams	1999 VU ₃₉
1999 VV ₃₉	16.4	0.15	19991029	318.04649	54.92688	35.99092	4.01033	0.2734097	2.5848247	9	1	7 days	0.09		Williams	1999 VV ₃₉
1999 VW ₃₉	15.0	0.15	20000226	47.34429	318.58308	32.92367	12.20412	0.2015587	2.6837024	52	2	1993–1999	0.45	M-v 3	Williams	37318 1999 VW ₃₉
1999 VZ ₃₉	18.3	0.15	19991029	328.03080	33.25902	37.22773	10.21580	0.1982782	2.6059811	9	1	7 days	0.16		Williams	1999 VZ ₃₉
1999 VA ₄₀	17.8	0.15	19991029	29.35688	260.58172	79.67640	2.29915	0.2091317	2.4614582	12	1	12 days	0.16		Williams	1999 VA ₄₀
1999 VB ₄₀	18.6	0.15	19991029	311.72119	38.00968	46.18702	6.27236	0.1189772	2.2824691	9	1	7 days	0.24		Williams	1999 VB ₄₀
1999 VC ₄₀	16.6	0.15	19991029	33.16731	309.81013	44.03905	5.80061	0.1489409	2.7666282	12	1	7 days	0.24		E Williams	1999 VC ₄₀
1999 VH ₄₀	14.5	0.15	20000226	310.57514	107.66655	17.08206	2.67057	0.0273062	2.6138198	64	3	1990–1999	0.46	M-v 3	Williams	37225 1999 VH ₄₀
1999 VJ ₄₀	15.1	0.15	20000226	131.63435	41.06775	247.19512	3.66082	0.1556935	2.3588607	65	2	1998–1999	0.61	M-v 4	Williams	37226 1999 VJ ₄₀
1999 VK ₄₀	15.6	0.15	20000226	78.67117	94.87190	247.19058	4.29567	0.1564656	2.3723738	59	1	65 days	0.56	M-v 4	Williams	1999 VK ₄₀
1999 VL ₄₀	14.6	0.15	19991118	338.02758	246.69076	265.51489	19.91272	0.3097942	2.2842814	27	1	55 days	0.38		Williams	1999 VL ₄₀
1999 VM ₄₀	14.6	0.15	20000226	43.44160	354.17730	51.55933	15.37649	0.4848286	2.3097386	125	1	91 days	0.52	M-v 4	Williams	37318 1999 VM ₄₀
1999 VO ₄₀	16.4	0.15	19991118	83.24937	275.65817	28.02694	5.84847	0.1584762	2.2121202	22	1	37 days	0.61		Williams	1999 VO ₄₀
1999 VQ ₄₀	17.3	0.15	19991029	358.32616	162.54235	232.46824	3.39107	0.1227151	2.3262429	11	1	13 days	0.48		Williams	1999 VQ ₄₀
1999 VB ₄₁	19.8	0.15	19991029	0.43260	174.28943	218.96497	10.75131	0.1857959	2.1695228	9	1	4 days	0.17		E Williams	1999 VB ₄₁
1999 VC ₄₁	16.9	0.15	19991029	10.08561	159.41708	220.22072	7.75245	0.1589625	2.5619556	18	1	12 days	0.43		Williams	1999 VC ₄₁
1999 VD ₄₁	17.9	0.15	19991029	0.72671	7.16456	25.53207	4.50638	0.1039920	2.7464663	9	1	9 days	0.17		Williams	1999 VD ₄₁
1999 VF ₄₁	15.2	0.15	19991118	333.58442	22.46604	63.98796	11.06470	0.0771864	2.9359053	29	1	37 days	0.39		Williams	1999 VF ₄₁
1999 VG ₄₁	18.6	0.15	19991029	343.02017	14.02714	63.17399	9.18879	0.2415921	2.6914062	9	1	9 days	0.61		Williams	1999 VG ₄₁
1999 VJ ₄₁	17.2	0.15	19991029	256.94547	107.81228	65.32158	13.42305	0.1617792	2.6471741	12	1	10 days	0.28		Williams	1999 VJ ₄₁
1999 VK ₄₁	17.9	0.15	19991029	16.24544	340.20753	27.13405	8.64209	0.2356968	2.3402665	11	1	3 days	0.52		E Williams	1999 VK ₄₁
1999 VT ₄₁	15.3	0.15	19991029	61.37204	276.99981	35.25645	15.06651	0.0866547	2.6215896	14	1	11 days	0.24		Williams	1999 VT ₄₁
1999 VV ₄₁	17.4	0.15	19991029	75.20377	308.86138	348.84167	4.33022	0.1615768	2.7889631	9	1	9 days	0.18		Williams	1999 VV ₄₁
1999 VW ₄₁	16.7	0.15	19991029	19.71508	116.44370	246.24008	4.84011	0.1925282	2.6589743	9	1	11 days	0.23		Williams	1999 VW ₄₁
1999 VX ₄₁	15.1	0.15	19991029	40.03766	35.16221	301.22619	2.96266	0.1719369	3.1830149	16	1	10 days	0.27		Williams	1999 VX ₄₁

1999 VY ₄₁	17.1	0.15	19991029	108.06335	275.07665	350.22751	4.03824	0.1867521	2.3251100	9	1	9 days	0.14	Williams	1999 VY ₄₁
1999 VZ ₄₁	18.0	0.15	19991029	32.48751	3.78667	351.67489	4.00481	0.0625692	2.7580797	9	1	9 days	0.28	Williams	1999 VZ ₄₁
1999 VA ₄₂	17.1	0.15	19991029	19.78843	126.44186	243.81775	5.19948	0.0487243	2.7291869	9	1	11 days	0.09	Williams	1999 VA ₄₂
1999 VB ₄₂	17.2	0.15	19991029	300.10297	110.51626	350.51346	3.76136	0.0834778	2.5800302	9	1	9 days	0.16	Williams	1999 VB ₄₂
1999 VC ₄₂	17.0	0.15	19991029	45.52710	74.14566	262.56931	3.50254	0.1108587	2.7421834	12	1	11 days	0.20	Williams	1999 VC ₄₂
1999 VE ₄₂	17.7	0.15	19991029	276.94303	104.67881	15.66571	7.20342	0.0392273	2.3516732	9	1	9 days	0.11	Williams	1999 VE ₄₂
1999 VF ₄₂	16.9	0.15	19991029	286.28249	204.48844	268.76131	3.07511	0.0641678	2.8111988	9	1	11 days	0.27	Williams	1999 VF ₄₂
1999 VG ₄₂	16.2	0.15	19991029	1.10188	155.80991	234.94297	6.87293	0.2031673	3.1984926	14	1	11 days	0.32	Williams	1999 VG ₄₂
1999 VJ ₄₂	17.7	0.15	19991029	349.49495	174.58707	231.77022	7.49092	0.1113330	2.9482032	9	1	11 days	0.16	Williams	1999 VJ ₄₂
1999 VK ₄₂	17.2	0.15	19991029	325.98318	197.46541	249.55699	3.44218	0.2344300	2.6573218	13	1	11 days	0.54	Williams	1999 VK ₄₂
1999 VL ₄₂	18.6	0.15	19991029	297.14485	174.75099	297.61351	1.98701	0.1436612	2.3742628	9	1	11 days	0.16	Williams	1999 VL ₄₂
1999 VM ₄₂	17.5	0.15	19991029	45.11877	316.37134	21.43016	6.51969	0.1213965	2.2576300	13	1	10 days	0.34	Williams	1999 VM ₄₂
1999 VN ₄₂	16.7	0.15	19991029	15.57899	118.95294	256.67617	3.03096	0.0721725	2.5793011	12	1	11 days	0.18	Williams	1999 VN ₄₂
1999 VO ₄₂	18.4	0.15	19991029	354.61825	75.52414	326.90619	1.90159	0.2154857	2.6152485	9	1	9 days	0.21	Williams	1999 VO ₄₂
1999 VP ₄₂	16.9	0.15	19991029	347.21841	72.16290	338.47318	2.33320	0.1324075	2.6905982	9	1	9 days	0.11	Williams	1999 VP ₄₂
1999 VQ ₄₂	17.9	0.15	19991029	59.32577	359.09901	313.52092	1.78121	0.2001400	2.4230891	12	1	11 days	0.19	Williams	1999 VQ ₄₂
1999 VR ₄₂	17.3	0.15	19991029	27.64543	93.14678	258.16389	2.70820	0.2171405	2.6644317	12	1	11 days	0.15	Williams	1999 VR ₄₂
1999 VS ₄₂	17.9	0.15	19991029	316.21823	109.06112	2.39679	2.86945	0.3219167	2.7032511	9	1	11 days	0.27	Williams	1999 VS ₄₂
1999 VT ₄₂	17.3	0.15	19991029	32.64284	36.51153	310.98039	1.61319	0.1854974	2.2896481	26	1	11 days	0.50	D Williams	1999 VT ₄₂
1999 VU ₄₂	16.6	0.15	19991029	127.23476	245.52601	6.83643	4.07020	0.1864310	2.2988808	13	1	10 days	0.46	Williams	1999 VU ₄₂
1999 VV ₄₂	18.4	0.15	19991029	316.61073	89.65016	0.77543	2.69560	0.1410667	2.3735719	9	1	9 days	0.20	Williams	1999 VV ₄₂
1999 VW ₄₂	17.2	0.15	19991029	304.54046	143.32924	324.75368	1.75643	0.1717482	2.3994558	14	1	10 days	0.43	Williams	1999 VW ₄₂
1999 VX ₄₂	16.9	0.15	20000226	341.23789	0.97240	102.94311	2.91777	0.1317915	3.1247159	21	2	1994–1999	0.43	M-v 5 Williams	37226 1999 VX ₄₂
1999 VY ₄₂	15.1	0.15	19991029	279.40533	72.09525	75.69052	6.84367	0.1174289	3.2544435	14	1	11 days	0.51	Williams	1999 VY ₄₂
1999 VZ ₄₂	18.7	0.15	19991029	29.67344	286.54387	78.61094	4.31748	0.2103925	2.5573492	12	1	12 days	0.16	Williams	1999 VZ ₄₂
1999 VA ₄₃	17.9	0.15	19991029	58.47078	154.21520	173.04586	2.14802	0.2258793	2.3794354	12	1	11 days	0.29	Williams	1999 VA ₄₃
1999 VB ₄₃	15.7	0.15	19991118	26.93347	251.81336	123.20302	2.24245	0.2259780	3.1742182	34	1	33 days	0.57	Williams	1999 VB ₄₃
1999 VC ₄₃	16.2	0.15	19991029	48.65291	278.37932	69.94658	8.81432	0.1656524	3.1776215	13	1	11 days	0.33	Williams	1999 VC ₄₃
1999 VD ₄₃	15.5	0.15	19991118	346.02249	344.54290	88.32235	3.93950	0.0491124	2.7694110	40	1	33 days	0.57	Williams	1999 VD ₄₃
1999 VE ₄₃	16.3	0.15	19991118	201.94960	146.53786	75.01909	6.10876	0.1811176	2.2266828	26	1	44 days	0.49	Williams	1999 VE ₄₃
1999 VG ₄₃	14.9	0.15	19991029	68.27710	303.64080	334.97253	1.28629	0.2978523	2.9523414	11	1	4 days	0.89	E Williams	1999 VG ₄₃
1999 VH ₄₃	14.6	0.15	19991029	67.68304	286.92749	1.55897	2.38964	0.2227436	2.8944331	11	1	4 days	0.49	E Williams	1999 VH ₄₃
1999 VJ ₄₃	15.4	0.15	20000226	310.50089	98.38515	21.40315	5.95993	0.1098856	2.2814489	31	1	66 days	0.66	M-v 6 Williams	1999 VJ ₄₃
1999 VM ₄₃	15.3	0.15	19991009	23.49848	135.47438	218.13697	5.29391	0.0382930	2.7116107	31	1	44 days	0.57	Williams	1999 VM ₄₃
1999 VO ₄₃	16.5	0.15	20000226	39.76618	24.50886	358.67857	1.63969	0.1705306	2.1636744	54	1	71 days	0.59	M-v 4 Williams	1999 VO ₄₃
1999 VP ₄₃	16.1	0.15	19991009	357.70419	2.62778	19.37171	3.57630	0.0225711	2.2537552	25	1	39 days	0.45	Williams	1999 VP ₄₃
1999 VQ ₄₃	16.5	0.15	19991029	8.34585	25.59681	347.05653	0.46236	0.2356142	2.6411352	17	1	8 days	0.65	E Williams	1999 VQ ₄₃
1999 VR ₄₃	15.3	0.15	20000226	346.43891	66.31712	11.41041	3.22837	0.1291258	2.6452490	22	2	1997–1999	0.66	M-v 5 Williams	37226 1999 VR ₄₃
1999 VS ₄₃	15.7	0.15	19991029	6.55189	304.90880	36.10699	2.88523	0.1309300	2.6214069	17	1	8 days	0.48	Williams	1999 VS ₄₃
1999 VT ₄₃	15.1	0.15	19991029	72.00017	109.43065	201.45305	10.85979	0.0135426	2.8971763	12	1	8 days	0.95	Williams	1999 VT ₄₃
1999 VU ₄₃	15.1	0.15	20000226	37.57513	311.40594	45.51002	1.35657	0.2703709	3.1253941	35	1	66 days	0.51	M-v 5 Williams	1999 VU ₄₃
1999 VV ₄₃	14.7	0.15	19991029	39.20944	291.75060	29.65425	13.40696	0.2602761	3.1446949	17	1	8 days	0.49	Williams	1999 VV ₄₃
1999 VW ₄₃	16.6	0.15	20000226	38.04220	347.01601	35.52496	2.92417	0.2579788	2.2682354	41	1	65 days	0.53	M-v 4 Williams	1999 VW ₄₃
1999 VX ₄₃	14.8	0.15	20000226	341.26395	63.60974	34.09021	6.35420	0.1669484	2.2608165	48	1	95 days	0.50	M-v 4 Williams	1999 VX ₄₃
1999 VZ ₄₃	16.8	0.15	19991029	32.35337	89.80309	245.28918	1.79188	0.2871505	2.5581793	13	1	2 days	0.60	E Williams	1999 VZ ₄₃
1999 VA ₄₄	15.8	0.15	19991029	18.93961	142.44870	225.23907	3.50544	0.1161989	2.3772228	18	1	13 days	0.35	Williams	1999 VA ₄₄
1999 VB ₄₄	14.9	0.15	19991029	334.64845	194.68917	229.08322	5.08360	0.1212852	3.1615870	13	1	11 days	0.67	Williams	1999 VB ₄₄
1999 VE ₄₄	16.5	0.15	19991029	68.10608	270.64504	22.45514	3.59089	0.2712896	2.3441478	12	1	11 days	0.80	Williams	1999 VE ₄₄
1999 VF ₄₄	15.1	0.15	19991029	34.51336	118.42547	215.76928	10.25080	0.2772014	3.2552154	21	1	6 days	0.47	Williams	1999 VF ₄₄
1999 VG ₄₄	15.6	0.15	19991029	32.22870	122.78523	228.13090	9.90611	0.1172552	2.6980751	20	1	13 days	0.50	Williams	1999 VG ₄₄
1999 VH ₄₄	16.3	0.15	19991029	10.73991	3.75850	8.66197	4.37886	0.2869185	2.6511968	21	1	13 days	0.43	Williams	1999 VH ₄₄
1999 VJ ₄₄	16.4	0.15	19991029	359.37910	170.61869	222.42153	17.38685	0.1929338	2.6384488	21	1	11 days	0.48	Williams	1999 VJ ₄₄
1999 VK ₄₄	15.4	0.15	19991029	356.73698	43.34873	353.75133	3.62658	0.1271302	2.6160991	13	1	13 days	0.25	Williams	1999 VK ₄₄

1999 VN ₄₄	14.2	0.15	19991029	154.91527	215.84987	359.93259	27.18227	0.0888457	2.6584875	17	1	8 days	0.53		Williams		1999 VN ₄₄
1999 VV ₄₄	15.2	0.15	20000226	86.67876	322.96899	345.70969	7.37082	0.2272583	2.3841971	33	2	1998–1999	0.68	M-v	4	Williams	37226 1999 VV ₄₄
1999 VX ₄₄	15.3	0.15	20000226	54.59795	105.27486	232.05698	12.49614	0.2976477	2.6822959	29	1	65 days	0.46	M-v	4	Williams	1999 VX ₄₄
1999 VC ₄₅	15.1	0.15	19991029	65.59184	281.31693	12.27488	11.63858	0.2691307	2.9220961	12	1	7 days	0.67		E	Williams	1999 VC ₄₅
1999 VD ₄₅	14.9	0.15	20000226	52.80706	110.76756	248.54869	5.08937	0.1444228	2.5531427	34	1	95 days	0.60	M-v	4	Williams	1999 VD ₄₅
1999 VE ₄₅	16.2	0.15	19991029	285.25635	225.54824	247.57631	5.77598	0.0591730	2.3192460	17	1	10 days	0.58			Williams	1999 VE ₄₅
1999 VF ₄₅	16.5	0.15	19991029	346.84062	57.45011	352.11705	4.22838	0.1193589	2.2537844	12	1	12 days	0.46			Williams	1999 VF ₄₅
1999 VG ₄₅	15.2	0.15	19991029	78.90325	275.07314	17.63833	8.98627	0.1803128	2.4387389	20	1	10 days	0.86			Williams	1999 VG ₄₅
1999 VJ ₄₅	15.4	0.15	19991118	29.32171	336.85399	20.21242	9.03327	0.1795028	2.7996603	16	1	29 days	0.45			Williams	1999 VJ ₄₅
1999 VM ₄₅	16.3	0.15	19991029	20.49414	124.80970	227.11103	11.37157	0.3272008	3.1105549	20	1	12 days	0.61			Williams	1999 VM ₄₅
1999 VO ₄₅	17.0	0.15	19991029	320.78954	102.04805	349.99888	2.96693	0.2152353	2.5650098	13	1	7 days	0.88			Williams	1999 VO ₄₅
1999 VP ₄₅	14.7	0.15	19991029	56.23609	348.82131	341.89593	3.89529	0.0710980	2.7874116	16	1	12 days	0.47			Williams	1999 VP ₄₅
1999 VQ ₄₅	17.5	0.15	19991029	2.91091	59.43407	330.42286	1.60584	0.2144846	2.3395120	11	1	9 days	0.28			Williams	1999 VQ ₄₅
1999 VR ₄₅	15.3	0.15	20000226	7.14939	62.62791	5.89337	4.50799	0.2566250	2.6897833	41	1	97 days	0.55	M-v	4	Williams	1999 VR ₄₅
1999 VT ₄₅	14.6	0.15	20000226	96.67819	4.65083	305.95218	5.63364	0.1388949	2.4569031	26	1	95 days	0.50	M-v	5	Williams	1999 VT ₄₅
1999 VX ₄₅	13.0	0.15	20000226	156.84361	22.88780	227.75417	18.68748	0.0800779	3.1273850	46	2	1998–2000	0.70	M-v	3	Williams	37226 1999 VX ₄₅
1999 VD ₄₆	17.0	0.15	19991029	349.83669	31.79942	18.58229	24.82447	0.2290024	2.2195620	12	1	2 days	0.54		E	Williams	1999 VD ₄₆
1999 VF ₄₆	17.2	0.15	19991029	43.89344	308.72593	31.91329	12.02754	0.1897568	2.2554035	13	1	6 days	0.50		E	Williams	1999 VF ₄₆
1999 VH ₄₆	16.0	0.15	20000226	54.04278	126.72163	236.92161	10.86009	0.2559034	2.4095044	68	1	61 days	0.50	M-v	4	Williams	1999 VH ₄₆
1999 VK ₄₆	15.4	0.15	19991029	26.22403	325.20026	40.63673	29.19201	0.1848860	3.1903526	22	1	11 days	0.60			Williams	1999 VK ₄₆
1999 VL ₄₆	16.7	0.15	20000226	24.84497	164.53772	235.84001	14.00628	0.4286011	2.8847593	94	1	62 days	0.52	M-v	4	Williams	37318 1999 VL ₄₆
1999 VN ₄₆	16.9	0.15	19991029	25.43359	134.28937	234.50116	21.90480	0.1633849	1.9776923	15	1	3 days	0.57		E	Williams	1999 VN ₄₆
1999 VP ₄₆	17.6	0.15	19991029	354.59272	8.32997	40.36673	22.04779	0.1935679	2.0476010	17	1	3 days	0.54		E	Williams	1999 VP ₄₆
1999 VQ ₄₆	18.0	0.15	19991118	287.35131	255.91774	235.70595	20.45284	0.0626093	1.9350748	28	1	34 days	0.53			Williams	1999 VQ ₄₆
1999 VS ₄₆	17.7	0.15	19991029	1.56345	357.59629	44.79536	24.58257	0.2253121	2.3992826	18	1	10 days	0.46			Williams	1999 VS ₄₆
1999 VU ₄₆	16.1	0.15	19991118	353.63836	17.23829	47.89524	22.91536	0.1115926	1.9262072	22	1	32 days	0.27			Williams	1999 VU ₄₆
1999 VW ₄₆	15.4	0.15	19991118	233.74018	324.35596	218.94878	23.61365	0.1942105	2.3737192	32	1	39 days	0.55			Williams	1999 VW ₄₆
1999 VX ₄₆	15.3	0.15	20000226	94.13668	268.29149	54.59298	10.05242	0.2320035	2.2638588	72	1	63 days	0.43	M-v	4	Williams	1999 VX ₄₆
1999 VY ₄₆	14.0	0.15	20000226	90.73124	276.07819	43.78222	19.43127	0.1447779	2.6052746	74	1	115 days	0.49	M-v	4	Williams	1999 VY ₄₆
1999 VB ₄₇	17.4	0.15	19991029	349.52622	12.07810	45.19888	11.03451	0.2405029	2.4809317	20	1	13 days	0.52			Williams	1999 VB ₄₇
1999 VC ₄₇	13.9	0.15	20000226	40.24211	336.15759	46.81986	14.24052	0.1887429	2.6212451	94	1	115 days	0.43	M-v	3	Williams	1999 VC ₄₇
1999 VD ₄₇	16.9	0.15	19991118	359.77097	3.23080	46.81107	15.02072	0.2456537	2.6811429	46	1	37 days	0.44			Williams	1999 VD ₄₇
1999 VE ₄₇	14.2	0.15	20000226	43.02319	331.13096	51.06622	14.50052	0.1638774	2.5461928	55	1	115 days	0.36	M-v	3	Williams	1999 VE ₄₇
1999 VF ₄₇	14.2	0.15	20000226	49.40969	319.34215	56.36806	14.82740	0.2043535	2.5281520	59	3	1991–2000	0.51	M-v	4	Williams	37226 1999 VF ₄₇
1999 VH ₄₇	17.1	0.15	19991029	19.71957	328.67999	48.63456	31.98590	0.1455494	2.5661150	17	1	10 days	0.62			Williams	1999 VH ₄₇
1999 VN ₄₇	14.1	0.15	19991118	59.42743	41.23459	286.99244	11.85837	0.1845560	2.6248043	25	1	42 days	0.46			Williams	1999 VN ₄₇
1999 VQ ₄₇	14.2	0.15	19991118	66.80198	333.60161	351.29975	8.91595	0.1189613	2.6186929	16	1	32 days	0.29			Williams	1999 VQ ₄₇
1999 VR ₄₇	15.3	0.15	19991029	14.85039	82.68540	290.46450	8.84428	0.1697878	2.9302795	12	1	6 days	0.41		E	Williams	1999 VR ₄₇
1999 VS ₄₇	15.4	0.15	19991118	26.07133	50.89858	312.65174	7.94331	0.1807665	2.5724588	16	1	30 days	0.43			Williams	1999 VS ₄₇
1999 VT ₄₇	14.9	0.15	19991029	348.00334	123.73447	278.69958	10.47581	0.2535055	2.5565392	13	1	11 days	0.24			Williams	1999 VT ₄₇
1999 VV ₄₇	14.4	0.15	19991029	99.16855	347.54503	288.56618	8.35400	0.1068231	3.0727173	13	1	6 days	0.21		E	Williams	1999 VV ₄₇
1999 VW ₄₇	14.3	0.15	19991029	4.44871	106.27710	276.65476	8.31112	0.0538090	3.0999702	15	1	6 days	0.55		E	Williams	1999 VW ₄₇
1999 VX ₄₇	14.9	0.15	19991029	316.76881	177.11146	267.17016	7.98907	0.1329707	2.8537062	14	1	6 days	0.41		E	Williams	1999 VX ₄₇
1999 VE ₄₈	13.6	0.15	20000226	50.08271	41.65469	317.46530	8.23120	0.1775836	2.7848178	21	1	64 days	0.33	M-v	5	Williams	1999 VE ₄₈
1999 VH ₄₈	14.6	0.15	20000226	31.42954	129.08979	263.57490	4.55510	0.1821538	2.5613287	52	2	1993–2000	0.50	M-v	3	Williams	37226 1999 VH ₄₈
1999 VQ ₄₈	13.7	0.15	20000226	146.98737	27.70971	240.42217	11.99534	0.1147798	2.6620398	37	1	96 days	0.50	M-v	4	Williams	1999 VQ ₄₈
1999 VT ₄₈	14.0	0.15	20000226	343.74540	92.66665	6.17860	10.12823	0.1498271	2.8908780	32	1	63 days	0.58	M-v	5	Williams	1999 VT ₄₈
1999 VU ₄₈	14.3	0.15	20000226	30.31736	32.43708	17.95460	7.24481	0.1029892	2.3411964	47	1	93 days	0.39	M-v	3	Williams	1999 VU ₄₈
1999 VX ₄₈	13.0	0.15	20000226	278.69180	252.02217	268.28576	10.25376	0.1348865	2.8151185	81	3	1978–2000	0.62	M-v	3	Williams	37226 1999 VX ₄₈
1999 VY ₄₈	14.1	0.15	20000226	93.27713	63.40468	251.83581	12.48896	0.1771340	2.5486872	44	2	1998–2000	0.62	M-v	4	Williams	37227 1999 VY ₄₈
1999 VA ₄₉	16.3	0.15	19991029	349.03098	121.40081	296.59357	4.02370	0.1621673	2.7977875	12	1	11 days	0.45			Williams	1999 VA ₄₉
1999 VB ₄₉	15.8	0.15	20000226	87.06691	323.24192	14.12358	6.90298	0.1280163	2.2624760	26	2	1998–1999	0.67	M-v	4	Williams	37227 1999 VB ₄₉
1999 VC ₄₉	14.2	0.15	20000226	22.50051	134.90950	272.38255	5.75356	0.0803410	2.7585591	44	1	93 days	0.38	M-v	3	Williams	1999 VC ₄₉

1999 VE ₄₉	14.0	0.15	20000226	140.80087	19.74031	259.28776	4.81693	0.1670492	2.2947600	103	2	1998–2000	0.54	M-v	3	Williams	37227	1999 VE ₄₉
1999 VF ₄₉	14.4	0.15	20000226	353.64118	204.73177	237.02461	13.96468	0.0785765	2.6703827	74	1	87 days	0.62	M-v	4	Williams		1999 VF ₄₉
1999 VG ₄₉	16.2	0.15	20000226	36.25123	138.24958	262.24510	3.75525	0.1346952	2.2359560	53	1	61 days	0.52	M-v	4	Williams		1999 VG ₄₉
1999 VJ ₄₉	16.6	0.15	19991029	4.36549	146.78483	249.93594	5.18498	0.1145016	2.3689418	24	1	13 days	0.53			Williams		1999 VJ ₄₉
1999 VK ₄₉	14.2	0.15	20000226	173.82202	230.82596	25.13624	7.19646	0.1377940	2.2482476	78	2	1998–2000	0.54	M-v	3	Williams	37227	1999 VK ₄₉
1999 VL ₄₉	14.8	0.15	20000226	170.73459	272.17305	349.93011	2.99027	0.0565844	2.3214318	49	1	95 days	0.46	M-v	4 D	Williams		1999 VL ₄₉
1999 VN ₄₉	15.2	0.15	19991029	105.13771	44.34805	247.72633	5.88648	0.0541573	2.7509601	26	1	13 days	0.66			Williams		1999 VN ₄₉
1999 VO ₄₉	14.1	0.15	19991029	84.74400	272.27466	31.08429	10.08909	0.1396149	3.0433171	15	1	11 days	0.44			Williams		1999 VO ₄₉
1999 VP ₄₉	15.1	0.15	19991029	191.69365	183.44318	32.35704	9.66264	0.1839346	2.4499514	24	1	13 days	0.69			Williams		1999 VP ₄₉
1999 VR ₄₉	15.1	0.15	19991118	35.44058	99.78364	273.41667	5.22460	0.0479560	2.7215221	30	1	40 days	0.52			Williams		1999 VR ₄₉
1999 VS ₄₉	14.8	0.15	20000226	36.11076	113.13473	281.49755	4.78618	0.1056735	2.7450452	37	2	1995–1999	0.52	M-v	4	Williams	37227	1999 VS ₄₉
1999 VT ₄₉	15.9	0.15	19991118	62.86536	79.60614	250.58318	3.23853	0.1743317	2.3359458	41	1	35 days	0.58			Williams		1999 VT ₄₉
1999 VU ₄₉	15.8	0.15	19991029	24.02900	324.05824	40.37815	6.86498	0.2516944	2.5372351	15	1	11 days	0.34			Williams		1999 VU ₄₉
1999 VV ₄₉	14.0	0.15	19991029	318.70676	53.00367	45.27019	12.67964	0.1116900	3.1013960	23	1	13 days	0.36			Williams		1999 VV ₄₉
1999 VX ₄₉	15.5	0.15	20000226	18.66405	140.76970	278.55745	1.10575	0.1455985	2.5882003	59	2	1978–2000	0.43	M-v	4	Williams	37228	1999 VX ₄₉
1999 VA ₅₀	14.5	0.15	19991029	227.37608	300.06487	252.50916	6.40175	0.1521635	2.3463466	27	1	13 days	0.52			Williams		1999 VA ₅₀
1999 VB ₅₀	14.4	0.15	20000226	16.06965	33.44204	34.13938	7.39816	0.0892549	2.3427037	57	1	90 days	0.47	M-v	4	Williams		1999 VB ₅₀
1999 VC ₅₀	16.8	0.15	19991029	42.35830	327.59122	19.36401	3.65679	0.1847748	2.1759612	25	1	13 days	0.52			Williams		1999 VC ₅₀
1999 VD ₅₀	15.0	0.15	20000226	140.91555	301.55512	350.62695	2.52146	0.1090138	2.1900603	51	2	1998–1999	0.56	M-v	4	Williams	37228	1999 VD ₅₀
1999 VE ₅₀	14.9	0.15	20000226	334.96925	173.49160	306.42287	2.25988	0.0991909	2.1616173	59	2	1992–2000	0.44	M-v	4	Williams	37228	1999 VE ₅₀
1999 VF ₅₀	15.2	0.15	20000226	75.23535	72.51638	278.07075	3.05143	0.1768529	2.2792729	39	1	64 days	0.50	M-v	5	Williams		1999 VF ₅₀
1999 VG ₅₀	14.9	0.15	20000226	19.30470	166.30465	245.10779	13.65462	0.2032431	3.0807159	54	1	61 days	0.57	M-v	4	Williams		1999 VG ₅₀
1999 VH ₅₀	13.5	0.15	19991118	327.37358	52.28185	38.84343	10.48923	0.0617741	2.7706481	35	1	42 days	0.38			Williams		1999 VH ₅₀
1999 VJ ₅₀	15.7	0.15	19991118	8.65761	15.52188	29.98113	4.56502	0.1255670	2.7942632	36	1	40 days	0.58			Williams		1999 VJ ₅₀
1999 VK ₅₀	15.0	0.15	19991029	291.24517	107.12024	22.59176	3.84304	0.0803272	2.6219919	16	1	13 days	0.58			Williams		1999 VK ₅₀
1999 VN ₅₀	15.2	0.15	19991118	276.20715	114.72558	39.87382	6.21045	0.1232492	2.5507895	39	1	40 days	0.48			Williams		1999 VN ₅₀
1999 VO ₅₀	13.1	0.15	20000226	358.27129	71.11197	9.12903	1.96362	0.0347637	2.9080891	96	2	1998–1999	0.52	M-v	4	Williams	37228	1999 VO ₅₀
1999 VP ₅₀	15.1	0.15	19991118	2.61595	51.58307	2.52572	1.75982	0.1358645	2.9313660	41	1	40 days	0.66			Williams		1999 VP ₅₀
1999 VQ ₅₀	15.1	0.15	19991029	34.87124	322.33567	44.30178	11.53882	0.1516850	3.0045761	19	1	6 days	0.73		E	Williams		1999 VQ ₅₀
1999 VR ₅₀	15.1	0.15	20000226	319.32230	217.34604	280.44276	2.10587	0.1100893	2.3331875	51	3	1976–1999	0.68	M-v	4	Williams	37228	1999 VR ₅₀
1999 VS ₅₀	14.8	0.15	20000226	351.37022	84.97934	17.26625	2.78051	0.1312148	2.4102445	52	2	1997–1999	0.46	M-v	4	Williams	37229	1999 VS ₅₀
1999 VT ₅₀	16.4	0.15	20000226	53.27615	105.60359	254.71835	3.45942	0.3310816	2.5672474	37	1	64 days	0.67	M-v	5	Williams		1999 VT ₅₀
1999 VU ₅₀	13.9	0.15	20000226	261.23323	307.25377	243.27792	10.95549	0.1058573	2.5560885	66	1	64 days	0.55	M-v	4	Williams		1999 VU ₅₀
1999 VV ₅₀	14.8	0.15	20000226	91.57383	69.76411	266.98950	2.65562	0.1719789	2.2266157	57	2	1998–1999	0.55	M-v	4	Williams	37229	1999 VV ₅₀
1999 VH ₅₁	17.2	0.15	19991029	18.65492	126.11544	245.95204	11.41683	0.2789518	2.5299131	18	1	13 days	0.57			Williams		1999 VH ₅₁
1999 VJ ₅₁	15.8	0.15	19991029	308.77689	143.91421	334.14142	4.02794	0.1776444	2.6588290	18	1	13 days	0.52			Williams		1999 VJ ₅₁
1999 VL ₅₁	16.0	0.15	19991029	334.29055	169.41615	264.47081	5.39600	0.1018677	2.4026364	11	1	13 days	0.41			Williams		1999 VL ₅₁
1999 VM ₅₁	15.9	0.15	20000226	7.94429	41.72213	28.20750	9.16463	0.1819134	2.7085307	39	1	68 days	0.56	M-v	4	Williams		1999 VM ₅₁
1999 VO ₅₁	15.4	0.15	19991029	333.58388	64.57053	14.76793	4.49551	0.1535490	3.1368444	17	1	11 days	0.82			Williams		1999 VO ₅₁
1999 VP ₅₁	16.2	0.15	20000226	55.10324	357.14344	15.95038	5.73196	0.1716720	2.3802643	36	2	1997–1999	0.54	M-v	5	Williams	37229	1999 VP ₅₁
1999 VQ ₅₁	15.3	0.15	19991118	352.65231	72.25726	350.65925	4.51950	0.1763728	3.0516802	31	1	35 days	0.55			Williams		1999 VQ ₅₁
1999 VR ₅₁	16.8	0.15	19991118	29.61573	0.36582	8.06475	4.96743	0.2047016	2.3006117	25	1	40 days	0.44			Williams		1999 VR ₅₁
1999 VV ₅₁	15.1	0.15	19991029	35.23033	346.58011	9.85384	1.56480	0.1898228	2.9810634	19	1	11 days	0.44			Williams		1999 VV ₅₁
1999 VX ₅₁	15.0	0.15	19991029	145.99927	212.12730	42.98939	6.62747	0.1234320	2.5370029	41	1	51 days	0.66			Williams		1999 VX ₅₁
1999 VY ₅₁	16.3	0.15	19991118	317.34693	78.47395	24.38220	3.93891	0.0875455	2.3348557	34	1	40 days	0.52			Williams		1999 VY ₅₁
1999 VA ₅₂	16.0	0.15	19991118	307.41802	189.93676	293.62155	1.14578	0.1754378	2.3227998	33	1	35 days	0.44			Williams		1999 VA ₅₂
1999 VB ₅₂	14.7	0.15	19991029	205.11383	335.15018	240.03439	11.51591	0.2867698	2.6581786	12	1	6 days	0.65		E	Williams		1999 VB ₅₂
1999 VC ₅₂	14.5	0.15	19991118	228.44982	193.18660	357.26760	3.44372	0.0584123	3.2561121	25	1	40 days	0.58			Williams		1999 VC ₅₂
1999 VE ₅₂	14.6	0.15	19991029	336.02009	199.28418	242.42913	10.85464	0.1498704	3.1124027	20	1	13 days	0.54			Williams		1999 VE ₅₂
1999 VF ₅₂	16.8	0.15	19991118	351.31747	25.43439	45.42992	14.55083	0.2326706	2.6418225	21	1	40 days	0.51			Williams		1999 VF ₅₂
1999 VG ₅₂	15.5	0.15	19991118	78.56248	61.87329	269.25134	3.30352	0.0750556	2.7828362	48	1	40 days	0.68			Williams		1999 VG ₅₂
1999 VH ₅₂	16.7	0.15	19991029	33.20113	315.81021	37.77919	11.79976	0.2497117	2.5490624	12	1	6 days	0.42		E	Williams		1999 VH ₅₂
1999 VK ₅₂	13.9	0.15	20000226	53.36882	331.89933	48.88893	12.02160	0.1179178	3.0452319	39	1	90 days	0.50	M-v	4	Williams		1999 VK ₅₂

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1999 VO ₅₂	14.2	0.15	20000226	68.31069	294.23425	72.70174	11.72742	0.1957070	2.5669137	27	1	62 days	0.44	M-v	5	Williams	1999 VO ₅₂
1999 VQ ₅₂	15.3	0.15	20000226	33.45068	340.14087	73.79881	7.03864	0.2234088	2.5738542	55	1	62 days	0.47	M-v	4	Williams	1999 VQ ₅₂
1999 VR ₅₂	16.2	0.15	20000226	12.72228	217.15581	238.62369	19.19777	0.0909499	1.9593298	39	1	66 days	0.56	M-v	4	Williams	1999 VR ₅₂
1999 VT ₅₂	12.5	0.15	20000226	171.10429	199.15564	78.02528	14.52647	0.1351805	2.6488147	48	1	62 days	0.46	M-v	5	Williams	1999 VT ₅₂
1999 VU ₅₂	15.5	0.15	20000226	25.67698	186.01408	240.65634	9.71988	0.3493748	2.6860662	28	1	69 days	0.45	M-v	4	Williams	1999 VU ₅₂
1999 VV ₅₂	14.9	0.15	20000226	62.88610	159.92493	233.72381	4.18494	0.1361297	2.1560526	37	1	64 days	0.52	M-v	5	Williams	1999 VV ₅₂
1999 VW ₅₂	15.7	0.15	20000226	47.14952	330.24314	78.23979	6.21300	0.1778937	2.2778533	34	1	68 days	0.49	M-v	5	Williams	1999 VW ₅₂
1999 VX ₅₂	14.3	0.15	20000226	338.97387	255.59308	246.28140	5.25047	0.1091256	2.2792973	30	1	64 days	0.38	M-v	5	Williams	1999 VX ₅₂
1999 VZ ₅₂	11.5	0.15	20000226	96.83379	275.19976	84.27404	22.75324	0.0754310	3.1866295	39	1	62 days	0.41	M-v	5	Williams	1999 VZ ₅₂
1999 VA ₅₃	14.8	0.15	20000226	38.26054	206.77177	217.73070	1.48672	0.1835905	2.3653793	43	3	1991–2000	0.61	M-v	4	Williams	37229 1999 VA ₅₃
1999 VB ₅₃	14.2	0.15	20000226	335.84452	253.39195	253.17532	22.26019	0.0484305	1.9371009	61	2	1998–2000	0.56	M-v	3	Williams	37229 1999 VB ₅₃
1999 VF ₅₃	14.4	0.15	20000226	38.42987	351.96020	63.80713	5.43242	0.2651439	2.5908480	59	3	1978–2000	0.55	M-v	3	Williams	37230 1999 VF ₅₃
1999 VG ₅₃	15.1	0.15	19991029	26.06161	346.19367	29.14455	4.67919	0.2229833	2.6665213	14	1	11 days	0.48			Williams	1999 VG ₅₃
1999 VH ₅₃	14.1	0.15	20000226	288.20912	98.43402	78.49684	6.94329	0.0677157	2.4401248	41	2	1982–2000	0.63	M-v	4	Williams	37230 1999 VH ₅₃
1999 VJ ₅₃	15.6	0.15	20000226	13.33354	225.19724	227.77441	6.74294	0.2120718	2.4724543	25	1	65 days	0.46	M-v	4	Williams	1999 VJ ₅₃
1999 VM ₅₃	16.6	0.15	19991029	267.26022	278.29873	219.31978	6.75474	0.0972650	2.2291149	15	1	8 days	0.54			Williams	1999 VM ₅₃
1999 VO ₅₃	15.1	0.15	19991029	38.63898	324.70076	25.71992	2.13865	0.0676869	2.8913558	13	1	10 days	0.39			Williams	1999 VO ₅₃
1999 VP ₅₃	16.6	0.15	19991029	356.38630	2.79800	36.62069	4.44940	0.1695334	2.6469201	24	1	9 days	0.51			Williams	1999 VP ₅₃
1999 VQ ₅₃	15.5	0.15	19991029	111.30748	227.64347	28.82007	1.90825	0.2922428	2.4454031	15	1	9 days	0.55			Williams	1999 VQ ₅₃
1999 VR ₅₃	16.5	0.15	19991029	346.45323	23.72497	29.55910	1.09352	0.1555822	2.5759971	11	1	10 days	0.22			Williams	1999 VR ₅₃
1999 VS ₅₃	12.8	0.15	20000226	184.51373	11.20207	216.72623	16.93765	0.1080285	3.1755354	34	1	95 days	0.52	M-v	4	Williams	1999 VS ₅₃
1999 VT ₅₃	15.2	0.15	19991029	351.19240	10.16666	36.27620	7.08359	0.1387181	3.0586852	23	1	12 days	0.44			Williams	1999 VT ₅₃
1999 VU ₅₃	15.0	0.15	19991029	129.96425	224.59710	17.55478	2.81547	0.3429240	2.3836300	13	1	11 days	0.36			Williams	1999 VU ₅₃
1999 VV ₅₃	16.3	0.15	19991029	341.56425	27.03768	29.71335	5.08926	0.0827083	2.6697898	10	1	11 days	0.55			Williams	1999 VV ₅₃
1999 VW ₅₃	15.6	0.15	19991029	219.49304	152.51093	31.15013	5.06816	0.1161118	2.3313902	23	1	12 days	0.50			Williams	1999 VW ₅₃
1999 VX ₅₃	16.2	0.15	19991029	184.15229	178.54783	33.42534	4.79200	0.0565115	2.3440879	16	1	11 days	0.43			Williams	1999 VX ₅₃
1999 VY ₅₃	15.9	0.15	19991029	335.35300	205.07196	220.98376	11.58462	0.1056941	2.9068413	15	1	11 days	0.57			Williams	1999 VY ₅₃
1999 VZ ₅₃	15.4	0.15	19991029	87.09815	273.76833	29.92301	2.79492	0.0445715	2.6666049	22	1	12 days	0.44			Williams	1999 VZ ₅₃
1999 VB ₅₄	14.0	0.15	19991029	270.44664	100.29447	37.90872	10.96197	0.1215583	3.2542038	23	1	9 days	0.54			Williams	1999 VB ₅₄
1999 VC ₅₄	15.8	0.15	19991029	31.89747	320.58704	35.36647	5.31452	0.1086504	2.6195724	21	1	12 days	0.46			Williams	1999 VC ₅₄
1999 VD ₅₄	14.9	0.15	19991029	72.71474	294.81141	12.35516	0.52003	0.1343037	3.2197289	15	1	10 days	0.52			Williams	1999 VD ₅₄
1999 VE ₅₄	15.7	0.15	19991029	352.56689	5.53047	37.92652	10.65103	0.0651685	3.1054418	17	1	10 days	0.75			Williams	1999 VE ₅₄
1999 VF ₅₄	16.0	0.15	19991029	24.69363	138.38214	221.74995	1.39238	0.1782869	2.5576797	18	1	12 days	0.25			Williams	1999 VF ₅₄
1999 VH ₅₄	14.5	0.15	19991029	118.40497	193.51403	69.42028	0.56787	0.1527462	3.0214602	26	1	12 days	0.62			Williams	1999 VH ₅₄
1999 VJ ₅₄	15.8	0.15	19991029	310.13635	48.55563	39.36562	2.16884	0.0289734	2.6737029	16	1	10 days	0.49			Williams	1999 VJ ₅₄
1999 VK ₅₄	16.2	0.15	19991029	19.52576	147.48118	217.68375	6.25863	0.2135095	2.7259572	12	1	8 days	0.60			Williams	1999 VK ₅₄
1999 VM ₅₄	15.1	0.15	19991118	357.48534	5.29883	39.43669	0.68572	0.1877100	3.1189239	27	1	30 days	0.31			Williams	1999 VM ₅₄
1999 VN ₅₄	15.2	0.15	20000226	148.03685	230.08215	39.56025	7.51853	0.1332594	2.2545837	56	2	1998–1999	0.56	M-v	4	Williams	37230 1999 VN ₅₄
1999 VO ₅₄	16.9	0.15	19991029	7.26265	171.52014	212.60447	3.20692	0.2154050	2.7139161	20	1	9 days	0.36			Williams	1999 VO ₅₄
1999 VP ₅₄	16.1	0.15	19991029	65.67059	93.34959	206.63812	2.56748	0.2618281	2.4565316	17	1	8 days	0.56			Williams	1999 VP ₅₄
1999 VQ ₅₄	15.5	0.15	19991029	149.71775	194.40078	38.81201	0.71642	0.3107126	2.2082288	12	1	10 days	0.52			Williams	1999 VQ ₅₄
1999 VR ₅₄	17.2	0.15	19991029	323.72888	43.84043	43.76317	2.94114	0.1876921	2.3492374	17	1	10 days	0.51			Williams	1999 VR ₅₄
1999 VS ₅₄	15.9	0.15	19991029	19.84585	324.69078	44.91531	2.12412	0.1411367	2.8958027	17	1	10 days	0.49			Williams	1999 VS ₅₄
1999 VT ₅₄	15.3	0.15	19991029	42.09057	137.83052	214.80306	10.11017	0.0186074	2.7229052	21	1	13 days	0.45			Williams	1999 VT ₅₄
1999 VU ₅₄	17.6	0.15	19991029	359.96853	349.08807	46.85058	3.40599	0.2119548	2.6465545	17	1	10 days	0.46			Williams	1999 VU ₅₄
1999 VV ₅₄	16.8	0.15	19991029	1.71742	351.30247	42.05484	2.95653	0.2128890	2.3318212	20	1	11 days	0.23			Williams	1999 VV ₅₄
1999 VZ ₅₄	15.1	0.15	19991029	297.28777	68.28969	39.49205	11.15986	0.0798588	2.9701992	21	1	11 days	0.39			Williams	1999 VZ ₅₄
1999 VA ₅₅	15.7	0.15	19991029	44.64863	291.12116	39.94994	14.77323	0.2141173	2.7419234	17	1	8 days	0.41			Williams	1999 VA ₅₅
1999 VB ₅₅	14.7	0.15	19991029	75.90501	95.95111	202.97650	2.10785	0.1900201	3.1104801	18	1	10 days	0.72			Williams	1999 VB ₅₅
1999 VC ₅₅	15.5	0.15	19991029	4.26199	170.82933	220.02532	3.47449	0.0973576	2.6834197	25	1	12 days	0.29			Williams	1999 VC ₅₅
1999 VE ₅₅	14.0	0.15	19991029	41.48536	297.88425	40.16218	1.26539	0.1884806	3.0981449	19	1	12 days	0.34			Williams	1999 VE ₅₅
1999 VG ₅₅	17.3	0.15	19991029	25.79467	138.93647	219.16368	11.39806	0.2005067	2.5032849	16	1	8 days	0.72			Williams	1999 VG ₅₅
1999 VH ₅₅	16.9	0.15	19991029	24.94176	142.35600	221.21614	14.39515	0.1500075	2.5888567	14	1	11 days	0.64			Williams	1999 VH ₅₅

1999 VJ ₅₅	16.0	0.15	19991029	310.33741	88.86338	22.59559	1.95657	0.2342108	2.5630880	14	1	10 days	0.55	Williams	1999 VJ ₅₅
1999 VK ₅₅	16.2	0.15	19991029	323.89749	185.41593	260.30546	0.60431	0.1561916	2.4084093	26	1	12 days	0.62	Williams	1999 VK ₅₅
1999 VM ₅₅	15.2	0.15	20000226	343.60616	237.07030	227.52964	4.37703	0.1823628	2.3821838	71	1	89 days	0.48	M-v 4 Williams	1999 VM ₅₅
1999 VN ₅₅	16.7	0.15	19991029	304.95094	247.57246	213.07419	0.79819	0.0863724	2.3764776	18	1	12 days	0.54	Williams	1999 VN ₅₅
1999 VO ₅₅	16.7	0.15	19991029	34.83157	124.16425	221.78507	2.09320	0.1985817	2.2363808	22	1	12 days	0.52	Williams	1999 VO ₅₅
1999 VP ₅₅	16.0	0.15	19991029	15.53395	149.11197	226.61237	1.55249	0.1583580	2.7553877	12	1	8 days	0.50	Williams	1999 VP ₅₅
1999 VQ ₅₅	15.7	0.15	19991029	38.37230	299.04468	35.96554	0.91772	0.2577794	2.4005708	19	1	10 days	0.37	Williams	1999 VQ ₅₅
1999 VT ₅₅	17.6	0.15	19991029	4.86852	297.53540	92.43117	0.83525	0.1355737	2.2298405	16	1	9 days	0.41	Williams	1999 VT ₅₅
1999 VV ₅₅	16.2	0.15	19991029	49.21741	239.11707	95.80501	0.96997	0.1309432	2.7463798	15	1	9 days	0.44	Williams	1999 VV ₅₅
1999 VW ₅₅	15.3	0.15	19991029	357.94507	185.24137	214.53937	7.08565	0.1786349	2.9380943	14	1	8 days	0.65	Williams	1999 VW ₅₅
1999 VY ₅₅	14.8	0.15	19991029	47.98095	120.66944	210.86956	6.57200	0.1762337	2.5121080	25	1	11 days	0.32	Williams	1999 VY ₅₅
1999 VZ ₅₅	17.9	0.15	19991029	25.80054	308.49830	51.63021	3.14370	0.1751476	2.2341164	15	1	10 days	0.61	Williams	1999 VZ ₅₅
1999 VA ₅₆	16.4	0.15	19991029	51.03358	120.84928	211.00237	5.16241	0.1421966	2.2448828	13	1	8 days	0.44	Williams	1999 VA ₅₆
1999 VB ₅₆	15.3	0.15	20000226	44.65307	159.10265	216.76970	9.04861	0.1393189	2.5736445	31	1	62 days	0.41	M-v 4 Williams	1999 VB ₅₆
1999 VD ₅₆	15.2	0.15	19991029	57.59241	275.81443	51.23720	2.59564	0.1230547	3.1256702	16	1	11 days	0.40	Williams	1999 VD ₅₆
1999 VE ₅₆	14.5	0.15	19991118	261.84864	110.98510	45.42953	9.17160	0.1580565	2.8052016	33	1	33 days	0.77	Williams	1999 VE ₅₆
1999 VF ₅₆	15.8	0.15	20000226	80.63222	266.19423	61.73879	2.12498	0.2067929	2.3796831	35	1	64 days	0.49	M-v 5 Williams	1999 VF ₅₆
1999 VG ₅₆	14.6	0.15	19991029	335.07199	275.43734	152.47765	0.91869	0.0954290	3.2546480	12	1	8 days	0.51	Williams	1999 VG ₅₆
1999 VH ₅₆	15.6	0.15	19991118	107.06629	237.76587	47.65428	7.68540	0.0954875	2.3885044	16	1	30 days	0.50	Williams	1999 VH ₅₆
1999 VJ ₅₆	15.5	0.15	19991118	340.31433	222.81733	208.81340	5.36661	0.1575057	2.3776931	25	1	30 days	0.50	Williams	1999 VJ ₅₆
1999 VL ₅₆	15.9	0.15	19991118	24.56689	316.00060	50.47459	3.30888	0.2275347	2.4078352	22	1	30 days	0.26	Williams	1999 VL ₅₆
1999 VN ₅₆	14.6	0.15	20000226	36.02406	345.71889	47.32742	7.19579	0.0983202	2.3776898	52	1	63 days	0.48	M-v 4 Williams	1999 VN ₅₆
1999 VP ₅₆	14.3	0.15	20000226	187.60625	178.82066	58.49244	3.80297	0.0256914	2.6269288	32	4	1978–1999	0.65	M-v 2 Williams	37230 1999 VP ₅₆
1999 VQ ₅₆	15.4	0.15	19991029	99.91745	227.45175	47.33637	7.22257	0.2247052	2.3207532	19	1	8 days	0.53	Williams	1999 VQ ₅₆
1999 VR ₅₆	15.8	0.15	19991029	53.33903	131.03900	203.93250	3.48135	0.1000329	2.5842716	19	1	8 days	0.68	Williams	1999 VR ₅₆
1999 VS ₅₆	14.2	0.15	20000226	357.61588	266.12061	169.56033	1.39302	0.2203252	3.1005493	52	2	1998–2000	0.52	M-v 3 Williams	37230 1999 VS ₅₆
1999 VT ₅₆	14.4	0.15	19991118	28.16405	218.33683	146.19694	1.00795	0.1787693	2.5123338	17	1	30 days	0.35	Williams	1999 VT ₅₆
1999 VW ₅₆	14.7	0.15	19991029	156.31977	31.44104	203.36561	3.55688	0.2041789	2.5008323	13	1	8 days	0.46	Williams	1999 VW ₅₆
1999 VX ₅₆	15.9	0.15	19991029	342.77186	4.96791	54.84705	3.56201	0.1115828	2.6763472	17	1	8 days	0.61	Williams	1999 VX ₅₆
1999 VY ₅₆	15.2	0.15	19991029	359.63599	223.22064	175.57497	2.10809	0.1266889	2.9294436	18	1	13 days	0.70	Williams	1999 VY ₅₆
1999 VZ ₅₆	16.0	0.15	19991029	56.51367	157.65578	165.99270	1.43972	0.1719238	2.5596901	11	1	8 days	0.68	Williams	1999 VZ ₅₆
1999 VA ₅₇	15.9	0.15	19991029	348.83823	8.04178	42.10022	7.55900	0.0472260	2.3065260	18	1	8 days	0.90	Williams	1999 VA ₅₇
1999 VC ₅₇	14.4	0.15	19991029	46.21034	129.08749	218.57428	13.73363	0.0616889	3.1247652	12	1	8 days	0.52	Williams	1999 VC ₅₇
1999 VD ₅₇	17.1	0.15	19991029	75.59185	292.34226	23.72116	2.65039	0.0311328	2.1968326	14	1	11 days	0.79	Williams	1999 VD ₅₇
1999 VF ₅₇	16.7	0.15	19991029	353.77238	182.08634	221.21930	1.16580	0.1181593	2.6589871	15	1	10 days	0.56	Williams	1999 VF ₅₇
1999 VG ₅₇	15.8	0.15	19991029	47.25177	120.68685	218.35773	9.23985	0.1010073	2.9622750	14	1	10 days	0.50	Williams	1999 VG ₅₇
1999 VJ ₅₇	15.1	0.15	19991029	72.37914	94.74817	206.73452	2.26025	0.1927554	3.1721298	15	1	9 days	0.44	Williams	1999 VJ ₅₇
1999 VK ₅₇	16.2	0.15	19991029	197.28025	157.83278	44.72108	5.04043	0.1100863	2.3046067	17	1	10 days	0.56	Williams	1999 VK ₅₇
1999 VL ₅₇	16.9	0.15	19991029	66.16502	70.15449	246.72137	4.23907	0.1411727	2.1313583	11	1	10 days	0.63	Williams	1999 VL ₅₇
1999 VO ₅₇	16.5	0.15	19991029	327.87800	278.39002	171.34040	1.25903	0.2518681	2.9877426	11	1	9 days	0.41	Williams	1999 VO ₅₇
1999 VP ₅₇	18.1	0.15	19991029	2.31818	340.82682	52.45609	3.28104	0.2071794	2.4112849	16	1	10 days	0.37	Williams	1999 VP ₅₇
1999 VS ₅₇	15.3	0.15	19991029	5.52532	352.85360	39.14290	4.96083	0.0584412	2.6092566	20	1	12 days	0.72	Williams	1999 VS ₅₇
1999 VU ₅₇	16.4	0.15	19991029	327.68155	222.02244	224.50112	4.09146	0.0966742	2.2000856	49	1	51 days	0.56	Williams	1999 VU ₅₇
1999 VW ₅₇	15.4	0.15	19991029	10.57498	171.72046	221.84547	4.67650	0.2013562	3.1349536	43	1	52 days	0.82	Williams	1999 VW ₅₇
1999 VX ₅₇	15.8	0.15	19991029	51.53744	109.76227	226.83402	3.95866	0.1912568	2.2452107	24	1	13 days	0.33	Williams	1999 VX ₅₇
1999 VY ₅₇	14.6	0.15	20000226	250.09625	143.00864	57.07387	3.91452	0.1157800	2.3523426	62	1	61 days	0.56	M-v 5 Williams	1999 VY ₅₇
1999 VZ ₅₇	15.6	0.15	19991029	299.22347	66.21272	54.28338	6.22890	0.1027027	2.2807021	59	1	52 days	0.43	Williams	1999 VZ ₅₇
1999 VA ₅₈	15.6	0.15	20000226	29.34530	195.48708	218.45159	3.96352	0.1292805	2.2983395	50	1	64 days	0.47	M-v 4 Williams	1999 VA ₅₈
1999 VD ₅₈	14.3	0.15	20000226	51.74415	325.25289	49.75796	5.19566	0.1208865	2.8126944	65	1	63 days	0.44	M-v 5 Williams	1999 VD ₅₈
1999 VF ₅₈	16.7	0.15	19991118	31.90322	313.80146	55.42319	3.47596	0.1767524	2.1785224	42	1	37 days	0.32	Williams	1999 VF ₅₈
1999 VG ₅₈	15.9	0.15	19991118	13.21492	346.24942	51.56263	12.50260	0.1104301	2.6800511	42	1	42 days	0.66	Williams	1999 VG ₅₈
1999 VH ₅₈	15.2	0.15	20000226	1.64578	222.34689	227.63102	11.82167	0.1575752	2.3327666	81	1	92 days	0.55	M-v 4 Williams	1999 VH ₅₈
1999 VJ ₅₈	15.3	0.15	19991118	159.05789	195.04882	55.40974	4.55427	0.1299727	2.2837955	50	1	37 days	0.46	Williams	1999 VJ ₅₈

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1999 VL ₅₈	14.1	0.15	20000226	48.96812	315.15773	55.09340	1.80133	0.1811435	3.1480228	62	1	61 days	0.47	M-v	5	Williams	1999 VL ₅₈
1999 VM ₅₈	13.9	0.15	20000226	82.35760	282.53415	59.90892	3.11584	0.0897853	2.9234076	63	1	63 days	0.42	M-v	5	Williams	1999 VM ₅₈
1999 VO ₅₈	16.6	0.15	19991118	22.88458	328.85726	46.89904	5.70069	0.2415297	2.6056959	45	1	34 days	0.54			Williams	1999 VO ₅₈
1999 VQ ₅₈	13.1	0.15	20000226	4.19930	15.99354	52.70078	14.29136	0.0798135	3.1972973	83	1	66 days	0.44	M-v	4	Williams	1999 VQ ₅₈
1999 VR ₅₈	15.6	0.15	20000226	74.78021	296.75591	51.31086	5.28282	0.1893725	2.3170272	59	1	64 days	0.44	M-v	5	Williams	1999 VR ₅₈
1999 VS ₅₈	15.2	0.15	20000226	95.09612	282.27451	49.69384	6.51790	0.1185503	2.3811756	55	2	1998–1999	0.52	M-v	4	Williams	37231 1999 VS ₅₈
1999 VT ₅₈	15.3	0.15	20000226	41.42571	311.02132	55.99603	4.10599	0.3513321	2.9934031	66	1	110 days	0.56	M-v	4	Williams	1999 VT ₅₈
1999 VU ₅₈	13.6	0.15	20000226	115.58541	69.30434	228.59160	11.30531	0.1645121	3.1703156	49	2	1998–1999	0.66	M-v	4	Williams	37231 1999 VU ₅₈
1999 VV ₅₈	16.7	0.15	19991029	359.96160	178.35043	225.53148	4.05898	0.2339896	2.3304232	24	1	13 days	0.47			Williams	1999 VV ₅₈
1999 VW ₅₈	14.9	0.15	20000226	350.97173	51.84860	51.19058	1.41314	0.1728619	2.3474193	64	1	81 days	0.55	M-v	4	Williams	1999 VW ₅₈
1999 VX ₅₈	16.2	0.15	19991029	3.24134	354.05346	46.85480	6.99619	0.1379500	2.3014399	20	1	12 days	0.52			Williams	1999 VX ₅₈
1999 VY ₅₈	14.9	0.15	20000226	259.66022	311.60251	229.96060	3.62419	0.0334924	2.4345339	56	4	1995–1999	0.53	M-v	2	Williams	37231 1999 VY ₅₈
1999 VZ ₅₈	15.4	0.15	20000226	7.47335	203.78521	228.76541	10.14888	0.0242721	2.3881317	42	1	61 days	0.60	M-v	5	Williams	1999 VZ ₅₈
1999 VA ₅₉	15.3	0.15	19991029	315.28895	57.08762	43.18590	3.29284	0.0906394	2.7616239	17	1	13 days	0.58			Williams	1999 VA ₅₉
1999 VB ₅₉	16.1	0.15	20000226	9.78608	211.12596	226.68666	2.85795	0.1056250	2.2164237	54	1	65 days	0.45	M-v	5	Williams	1999 VB ₅₉
1999 VC ₅₉	16.5	0.15	19991029	13.81620	337.63515	44.12076	2.75180	0.2208706	2.4244732	50	1	52 days	0.40			Williams	1999 VC ₅₉
1999 VD ₅₉	17.3	0.15	19991029	352.36139	22.97473	32.10152	0.86581	0.2020564	2.2584907	13	1	12 days	0.62			Williams	1999 VD ₅₉
1999 VE ₅₉	18.2	0.15	19991029	24.18004	137.38349	227.90251	1.30599	0.2286938	2.3212193	15	1	10 days	0.42			Williams	1999 VE ₅₉
1999 VF ₅₉	15.4	0.15	19991029	5.54224	171.14116	227.79339	1.98528	0.1255534	2.6780667	17	1	12 days	0.52			Williams	1999 VF ₅₉
1999 VG ₅₉	15.9	0.15	19991029	279.38192	271.50525	228.12497	8.85972	0.1089646	2.4561492	46	1	51 days	0.69			Williams	1999 VG ₅₉
1999 VH ₅₉	14.4	0.15	20000226	89.02037	79.86862	229.87437	15.52552	0.2481360	3.1796621	47	1	67 days	0.57	M-v	4	Williams	1999 VH ₅₉
1999 VK ₅₉	17.0	0.15	19991029	20.54234	106.37349	268.76523	0.84389	0.1453176	2.2708034	33	1	12 days	0.37			Williams	1999 VK ₅₉
1999 VL ₅₉	14.6	0.15	19991029	39.45799	102.56064	259.07090	1.59204	0.0639402	3.9124112	9	1	11 days	0.57			Williams	1999 VL ₅₉
1999 VM ₅₉	15.6	0.15	19991029	75.53709	80.06866	231.44935	12.08650	0.1560557	2.8047213	21	1	12 days	0.50			Williams	1999 VM ₅₉
1999 VN ₅₉	14.4	0.15	19991118	19.29436	343.35366	34.94746	3.23948	0.2288208	4.0009047	36	1	38 days	0.59			Williams	1999 VN ₅₉
1999 VO ₅₉	16.7	0.15	19991029	17.38802	131.30068	245.35185	2.34630	0.2113211	2.7290055	22	1	12 days	0.49			Williams	1999 VO ₅₉
1999 VQ ₅₉	14.4	0.15	19991029	315.92364	52.63235	43.47100	8.84375	0.0826144	2.8070672	13	1	8 days	0.39			Williams	1999 VQ ₅₉
1999 VR ₅₉	15.0	0.15	20000226	52.68631	123.05105	245.37565	0.79431	0.0998339	2.6174450	47	3	1993–1999	0.51	M-v	4	Williams	37231 1999 VR ₅₉
1999 VS ₅₉	14.3	0.15	19991029	109.52436	248.52220	38.40516	2.20392	0.0252382	2.9562279	33	1	12 days	0.55			Williams	1999 VS ₅₉
1999 VT ₅₉	15.2	0.15	19991029	350.96643	190.11942	219.97957	8.65196	0.0997392	3.0141718	16	1	10 days	0.48			Williams	1999 VT ₅₉
1999 VU ₅₉	15.4	0.15	19991029	53.80710	101.92605	222.32642	4.79975	0.1973759	2.6356663	23	1	10 days	0.52			Williams	1999 VU ₅₉
1999 VV ₅₉	16.2	0.15	20000226	25.86754	185.22143	225.70667	3.45981	0.1462728	2.2455508	55	1	68 days	0.61	M-v	4	Williams	1999 VV ₅₉
1999 VW ₅₉	16.8	0.15	19991029	14.79837	152.78752	224.31840	2.30376	0.1829107	2.5144864	12	1	8 days	0.60			Williams	1999 VW ₅₉
1999 VX ₅₉	15.1	0.15	19991029	319.49116	196.18655	247.60539	0.78006	0.0473808	2.5800908	30	1	12 days	1.13			Williams	1999 VX ₅₉
1999 VY ₅₉	13.9	0.15	19991029	130.63421	31.86396	219.88468	11.96542	0.2500626	2.9690857	12	1	8 days	0.71			Williams	1999 VY ₅₉
1999 VZ ₅₉	14.8	0.15	19991029	314.62904	161.58444	296.11522	0.41501	0.1345812	3.0981958	19	1	12 days	0.48			Williams	1999 VZ ₅₉
1999 VA ₆₀	15.2	0.15	19991029	77.46795	79.94845	224.11550	2.73935	0.1599199	2.6564863	19	1	8 days	0.50			Williams	1999 VA ₆₀
1999 VB ₆₀	14.7	0.15	20000226	13.39481	189.01448	222.24158	8.28392	0.1515409	3.0913663	40	1	70 days	0.56	M-v	4	Williams	1999 VB ₆₀
1999 VD ₆₀	14.4	0.15	19991029	312.69459	60.06336	41.01000	5.68621	0.1404530	3.2148970	21	1	12 days	0.51			Williams	1999 VD ₆₀
1999 VG ₆₀	15.0	0.15	19991029	319.35755	42.84842	45.61601	11.57298	0.1023737	2.9692484	17	1	10 days	0.39			Williams	1999 VG ₆₀
1999 VH ₆₀	16.2	0.15	19991029	36.65043	130.17299	214.77492	6.84849	0.2072585	2.6841169	11	1	8 days	0.37			Williams	1999 VH ₆₀
1999 VK ₆₀	15.2	0.15	19991029	109.74979	226.35634	49.12727	7.17785	0.1425469	2.5643424	11	1	8 days	0.64			Williams	1999 VK ₆₀
1999 VL ₆₀	16.0	0.15	19991029	344.94204	18.79827	44.36017	8.99175	0.2230094	2.8085675	17	1	12 days	0.52			Williams	1999 VL ₆₀
1999 VM ₆₀	15.8	0.15	19991029	271.71460	292.22762	210.05555	2.37117	0.1270380	2.2814208	14	1	8 days	0.38			Williams	1999 VM ₆₀
1999 VN ₆₀	15.0	0.15	19991029	197.47246	15.77139	189.70850	1.96788	0.1082635	2.2077247	13	1	8 days	0.33			Williams	1999 VN ₆₀
1999 VO ₆₀	15.4	0.15	20000226	84.07200	119.64690	213.20083	6.63667	0.1419254	2.3997256	42	1	62 days	0.47	M-v	4	Williams	1999 VO ₆₀
1999 VP ₆₀	15.5	0.15	20000226	118.27591	132.29918	162.87705	1.29711	0.1575401	2.4047546	44	2	1998–1999	0.71	M-v	4	Williams	37231 1999 VP ₆₀
1999 VQ ₆₀	13.8	0.15	20000226	119.67765	246.36830	48.93311	9.91151	0.0883836	2.7384559	62	1	71 days	0.42	M-v	4	Williams	1999 VQ ₆₀
1999 VS ₆₀	14.8	0.15	20000226	277.07959	100.43275	61.83261	2.99731	0.0664875	2.3050202	66	1	97 days	0.56	M-v	4	Williams	1999 VS ₆₀
1999 VT ₆₀	14.8	0.15	19991029	334.53242	9.93615	57.05747	5.19787	0.0477075	2.8213379	13	1	8 days	0.34			Williams	1999 VT ₆₀
1999 VU ₆₀	15.6	0.15	20000226	39.29765	340.90941	50.81338	7.66087	0.1159491	2.2917545	45	1	96 days	0.49	M-v	3	Williams	1999 VU ₆₀
1999 VW ₆₀	15.2	0.15	20000226	308.42928	76.78912	52.57760	7.51501	0.0348400	2.2593632	63	1	97 days	0.52	M-v	4	Williams	1999 VW ₆₀
1999 VY ₆₀	13.5	0.15	20000226	272.27563	121.46306	48.03256	16.10532	0.1689678	2.7604069	39	1	86 days	0.52	M-v	4	Williams	1999 VY ₆₀

1999 VZ ₆₀	14.1	0.15	20000226	24.86024	325.47106	70.45455	3.18198	0.1435196	3.0904751	52	1	97 days	0.61	M-v	3	Williams	1999 VZ ₆₀
1999 VA ₆₁	14.5	0.15	19991029	37.63646	305.90388	50.94393	12.79772	0.0772681	2.9355563	13	1	13 days	0.44			Williams	1999 VA ₆₁
1999 VC ₆₁	14.6	0.15	19991029	39.28632	293.84138	59.78611	2.78312	0.0920686	2.8835911	18	1	12 days	0.38			Williams	1999 VC ₆₁
1999 VD ₆₁	14.6	0.15	19991029	129.67263	206.87267	58.47164	2.90899	0.0644347	2.6714760	19	1	12 days	0.36			Williams	1999 VD ₆₁
1999 VF ₆₁	15.2	0.15	20000226	46.62138	318.84361	57.19590	3.20705	0.2103598	2.4033245	41	1	63 days	0.47	M-v	5	Williams	1999 VF ₆₁
1999 VG ₆₁	17.3	0.15	19991029	46.51753	131.27678	207.16699	2.48934	0.1515884	2.0506453	11	1	8 days	0.50			Williams	1999 VG ₆₁
1999 VJ ₆₁	16.9	0.15	19991029	38.68394	284.40310	54.36194	3.28114	0.2443914	2.3607237	13	1	8 days	0.63			Williams	1999 VJ ₆₁
1999 VK ₆₁	13.9	0.15	20000226	42.56527	327.32457	49.07992	10.50096	0.1040678	2.9935235	75	1	96 days	0.57	M-v	4	Williams	1999 VK ₆₁
1999 VL ₆₁	18.0	0.15	19991029	21.48910	314.51865	49.39507	2.28189	0.2436241	2.5492912	13	1	12 days	0.58			Williams	1999 VL ₆₁
1999 VN ₆₁	14.9	0.15	20000226	63.05427	303.58824	52.84738	2.25129	0.0885696	2.7770704	28	2	1992–1999	0.64	M-v	5	Williams	37232 1999 VN ₆₁
1999 VO ₆₁	13.8	0.15	19991029	290.44398	256.12634	218.50432	10.77743	0.0348843	3.0929462	14	1	8 days	0.40			Williams	1999 VO ₆₁
1999 VP ₆₁	12.7	0.15	20000226	23.13064	185.83298	201.46820	2.32423	0.2520250	3.9594590	30	1	64 days	0.51	M-v	5	Williams	1999 VP ₆₁
1999 VQ ₆₁	16.4	0.15	19991029	58.90284	94.07585	232.02884	2.43561	0.1367449	2.2917238	15	1	8 days	0.45			Williams	1999 VQ ₆₁
1999 VU ₆₁	15.1	0.15	19991029	148.78161	226.71837	16.21748	0.93860	0.1780791	2.4193632	12	1	8 days	0.54			Williams	1999 VU ₆₁
1999 VV ₆₁	14.6	0.15	19991029	275.97287	265.30022	227.41657	4.15682	0.0715253	2.8684383	18	1	12 days	0.46			Williams	1999 VV ₆₁
1999 VW ₆₁	16.1	0.15	19991029	6.75190	160.40699	228.46594	5.12208	0.2195466	2.6888234	14	1	12 days	0.52			Williams	1999 VW ₆₁
1999 VX ₆₁	17.5	0.15	19991029	19.94750	139.51448	227.35614	4.68901	0.2376371	2.5569406	20	1	12 days	0.52			Williams	1999 VX ₆₁
1999 VY ₆₁	14.5	0.15	20000226	28.89256	154.25612	241.21139	2.03215	0.1621870	2.8451524	74	2	1996–2000	0.55	M-v	3	Williams	37232 1999 VY ₆₁
1999 VA ₆₂	15.2	0.15	19991029	272.68300	275.22362	226.65737	1.02427	0.1176567	2.6514306	20	1	12 days	0.79			Williams	1999 VA ₆₂
1999 VB ₆₂	15.9	0.15	19991029	109.06861	51.22163	223.99314	15.06647	0.1692156	2.4009523	19	1	13 days	0.51			Williams	1999 VB ₆₂
1999 VC ₆₂	16.3	0.15	19991029	24.61655	139.13163	227.92939	3.76104	0.1521733	2.4749143	23	1	13 days	0.58			Williams	1999 VC ₆₂
1999 VE ₆₂	17.1	0.15	19991029	332.90878	210.76445	227.09870	0.55071	0.1564369	2.4114151	16	1	13 days	0.26			Williams	1999 VE ₆₂
1999 VF ₆₂	16.6	0.15	19991029	358.47445	128.51799	275.00383	0.34522	0.1485406	2.5859077	19	1	13 days	0.57			Williams	1999 VF ₆₂
1999 VG ₆₂	16.1	0.15	19991029	94.64563	68.92058	225.93239	6.10924	0.1133533	2.4571533	16	1	13 days	0.50			Williams	1999 VG ₆₂
1999 VH ₆₂	14.8	0.15	20000226	339.05135	233.20650	223.25575	4.03885	0.0809431	2.7436953	58	2	1997–1999	0.53	M-v	4	Williams	37232 1999 VH ₆₂
1999 VJ ₆₂	15.2	0.15	20000226	50.51632	144.10033	234.57959	1.26891	0.1546017	2.2855850	78	4	1985–2000	0.62	M-v	2	Williams	37232 1999 VJ ₆₂
1999 VK ₆₂	14.2	0.15	20000226	178.51189	20.34831	229.17182	3.12127	0.1083566	2.4244397	72	2	1995–2000	0.62	M-v	5	Williams	37232 1999 VK ₆₂
1999 VL ₆₂	15.7	0.15	20000226	21.17211	197.78379	210.96314	2.00736	0.1810662	2.6947741	31	1	62 days	0.53	M-v	5	Williams	1999 VL ₆₂
1999 VM ₆₂	16.8	0.15	19991029	6.30813	347.48171	46.02211	4.16287	0.1009952	2.8033724	16	1	13 days	0.61			Williams	1999 VM ₆₂
1999 VN ₆₂	15.5	0.15	19991029	79.25284	105.83567	204.17749	1.24258	0.1098677	2.9416267	15	1	12 days	0.40			Williams	1999 VN ₆₂
1999 VO ₆₂	17.5	0.15	19991029	357.13468	346.95191	57.49222	2.18545	0.1871444	2.4269085	16	1	12 days	0.30			Williams	1999 VO ₆₂
1999 VP ₆₂	15.6	0.15	19991029	159.99836	175.76942	61.35314	0.68980	0.1441823	2.3943303	21	1	12 days	0.38			Williams	1999 VP ₆₂
1999 VQ ₆₂	15.8	0.15	19991118	341.66195	17.17710	53.47618	3.22159	0.1280945	2.8987773	24	1	33 days	0.54			Williams	1999 VQ ₆₂
1999 VR ₆₂	12.8	0.15	20000226	47.83066	308.46538	53.16427	5.52124	0.1953385	3.1541494	70	4	1982–2000	0.57	M-v	1	Williams	37232 1999 VR ₆₂
1999 VT ₆₂	14.9	0.15	19991029	311.02663	53.89360	49.93003	11.17742	0.1354836	2.5836115	16	1	13 days	0.43			Williams	1999 VT ₆₂
1999 VV ₆₂	15.2	0.15	20000226	25.39494	351.39098	53.06188	10.89669	0.1797478	2.6502919	33	1	66 days	0.47	M-v	4	Williams	1999 VV ₆₂
1999 VW ₆₂	15.3	0.15	20000226	28.22863	351.61658	49.30852	8.24548	0.2331176	2.5898426	78	1	96 days	0.57	M-v	3	Williams	1999 VW ₆₂
1999 VX ₆₂	15.1	0.15	20000226	58.50249	304.11905	65.07920	2.24420	0.1283563	2.3073402	60	2	1989–2000	0.54	M-v	4	Williams	37233 1999 VX ₆₂
1999 VY ₆₂	14.8	0.15	20000226	69.40589	296.42334	47.55578	13.77117	0.1858657	2.5909449	60	1	69 days	0.52	M-v	5	Williams	1999 VY ₆₂
1999 VZ ₆₂	17.3	0.15	19991029	347.04792	13.17948	49.70460	4.42235	0.2419074	2.6052888	17	1	13 days	0.36			Williams	1999 VZ ₆₂
1999 VA ₆₃	15.5	0.15	19991029	27.72309	147.56728	220.88442	9.71482	0.1107425	2.9727350	16	1	12 days	0.53			Williams	1999 VA ₆₃
1999 VB ₆₃	17.6	0.15	19991029	5.14454	340.69953	53.13801	3.52736	0.1802402	2.4547167	15	1	13 days	0.42			Williams	1999 VB ₆₃
1999 VC ₆₃	17.9	0.15	19991118	8.07340	345.57677	51.64657	4.86659	0.1931680	2.3420415	30	1	33 days	0.43			Williams	1999 VC ₆₃
1999 VF ₆₃	13.8	0.15	20000226	1.64687	30.50171	43.89140	9.73440	0.1426755	2.7647527	83	1	96 days	0.51	M-v	4	Williams	1999 VF ₆₃
1999 VG ₆₃	15.6	0.15	19991118	336.19722	13.94749	61.56475	1.22726	0.0831070	3.0657681	32	1	44 days	0.40			Williams	1999 VG ₆₃
1999 VH ₆₃	16.5	0.15	19991029	22.69339	142.28597	223.60509	8.07407	0.2279421	2.6978080	15	1	12 days	0.55			Williams	1999 VH ₆₃
1999 VJ ₆₃	16.5	0.15	19991029	105.74748	228.75421	49.96762	4.45990	0.1790012	2.2495447	16	1	13 days	0.58			Williams	1999 VJ ₆₃
1999 VK ₆₃	16.7	0.15	19991029	351.03584	185.41515	229.17475	9.34819	0.1698054	2.7545010	16	1	9 days	0.37			Williams	1999 VK ₆₃
1999 VL ₆₃	15.0	0.15	20000226	9.78571	201.88286	227.89301	10.05206	0.2267420	2.6418631	55	1	70 days	0.41	M-v	4	Williams	1999 VL ₆₃
1999 VM ₆₃	14.5	0.15	20000226	38.49456	148.31431	225.73464	6.75490	0.3667166	2.6713534	48	1	168 days	0.46	M-v	3	Williams	1999 VM ₆₃
1999 VO ₆₃	13.4	0.15	20000226	332.53055	219.54807	242.01383	0.88543	0.0718569	2.9221475	84	1	95 days	0.45	M-v	4	Williams	1999 VO ₆₃
1999 VR ₆₃	13.8	0.15	20000226	101.55188	266.93283	43.96490	10.68176	0.1264750	3.0682334	75	1	63 days	0.47	M-v	4	Williams	1999 VR ₆₃
1999 VS ₆₃	15.6	0.15	19991029	155.48199	201.55796	42.95896	7.59663	0.1045574	2.4325702	30	1	12 days	0.41			Williams	1999 VS ₆₃

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1999 VU ₆₃	16.9	0.15	19991118	22.10348	153.50005	231.21529	0.51990	0.0573859	2.2940180	37	1	39 days	0.49		Williams	1999 VU ₆₃
1999 VV ₆₃	15.5	0.15	19991029	0.86691	198.02408	204.74662	0.50070	0.1976714	3.1276133	24	1	12 days	0.35		Williams	1999 VV ₆₃
1999 VW ₆₃	17.0	0.15	19991118	112.67833	235.47231	48.76299	3.63256	0.1162673	2.2372875	26	1	33 days	0.53		Williams	1999 VW ₆₃
1999 VX ₆₃	14.7	0.15	20000226	306.09367	91.39234	50.41597	8.20682	0.1361167	2.5767081	68	2	1997–2000	0.61	M-v 4	Williams	37233 1999 VX ₆₃
1999 VA ₆₄	14.4	0.15	19991029	255.66189	107.11078	48.34622	7.00703	0.0546125	3.2742425	24	1	12 days	0.51		Williams	1999 VA ₆₄
1999 VC ₆₄	16.0	0.15	19991029	38.49976	124.97074	221.46291	8.03371	0.2131715	2.7015992	23	1	13 days	0.41		Williams	1999 VC ₆₄
1999 VD ₆₄	14.8	0.15	20000226	349.33702	44.77565	49.89748	13.22722	0.1615473	2.6108077	62	2	1997–1999	0.45	M-v 3	Williams	37233 1999 VD ₆₄
1999 VE ₆₄	16.0	0.15	19991118	344.50321	7.75248	56.94778	5.85947	0.0336202	2.5257698	28	1	31 days	0.59		Williams	1999 VE ₆₄
1999 VF ₆₄	15.9	0.15	19991118	305.54963	69.64793	48.60072	18.13017	0.1555061	3.1371481	28	1	30 days	0.47		Williams	1999 VF ₆₄
1999 VG ₆₄	16.1	0.15	19991118	9.93209	342.24957	52.55626	7.66371	0.1596545	3.0180498	33	1	42 days	0.70		Williams	1999 VG ₆₄
1999 VH ₆₄	15.3	0.15	20000226	323.88478	58.19514	67.64905	3.00312	0.1349126	2.4383402	43	1	69 days	0.52	M-v 5	Williams	1999 VH ₆₄
1999 VJ ₆₄	16.0	0.15	19991118	42.47889	291.30284	57.91673	6.01002	0.1887884	3.0364771	24	1	39 days	0.33		Williams	1999 VJ ₆₄
1999 VK ₆₄	15.3	0.15	19991118	72.74396	278.92168	52.93869	11.25857	0.0387929	2.7232851	34	1	42 days	0.66		Williams	1999 VK ₆₄
1999 VL ₆₄	15.6	0.15	19991118	333.88246	325.06107	112.29721	1.50043	0.0385056	2.7932121	24	1	33 days	0.50		Williams	1999 VL ₆₄
1999 VM ₆₄	17.3	0.15	19991118	38.19225	285.02096	60.45819	5.89718	0.2802690	2.6147030	25	1	39 days	0.47		Williams	1999 VM ₆₄
1999 VN ₆₄	15.9	0.15	20000226	21.45503	354.66910	61.53550	4.70468	0.1627643	2.4651269	56	1	63 days	0.59	M-v 4	Williams	1999 VN ₆₄
1999 VO ₆₄	14.9	0.15	20000226	36.17434	318.94630	63.93280	1.82024	0.1672356	3.1830897	59	1	68 days	0.58	M-v 4	Williams	1999 VO ₆₄
1999 VQ ₆₄	14.3	0.15	19991118	9.42078	177.56173	220.28271	8.60904	0.0922029	3.1638997	23	1	30 days	0.59		Williams	1999 VQ ₆₄
1999 VR ₆₄	14.8	0.15	20000226	249.73078	120.62903	66.81040	2.84122	0.0434440	2.5219863	61	1	63 days	0.53	M-v 4	Williams	1999 VR ₆₄
1999 VS ₆₄	14.9	0.15	19991029	295.75534	61.53208	58.47443	5.39215	0.0955208	3.2297355	42	1	59 days	0.67		Williams	1999 VS ₆₄
1999 VT ₆₄	15.0	0.15	19991118	303.21336	73.60919	47.90565	18.93611	0.1463169	3.1687804	41	1	34 days	0.51		Williams	1999 VT ₆₄
1999 VU ₆₄	14.5	0.15	20000226	344.14817	39.29250	55.72023	2.72227	0.1533162	3.1073128	63	1	75 days	0.47	M-v 4	Williams	1999 VU ₆₄
1999 VV ₆₄	16.1	0.15	19991029	1.80882	178.67614	222.03709	11.00053	0.1889529	2.5966087	26	1	13 days	0.50		Williams	1999 VV ₆₄
1999 VW ₆₄	14.7	0.15	19991118	137.12973	37.37935	222.31541	7.20207	0.1886423	2.7517881	24	1	31 days	0.33		Williams	1999 VW ₆₄
1999 VX ₆₄	15.7	0.15	20000226	201.58366	19.65820	215.32293	3.49311	0.2134539	2.2051488	36	2	1998–1999	0.65	M-v 4	Williams	37233 1999 VX ₆₄
1999 VY ₆₄	16.2	0.15	19991029	309.80780	48.95688	51.79068	6.53291	0.0681727	2.3528239	20	1	12 days	0.35		Williams	1999 VY ₆₄
1999 VZ ₆₄	15.4	0.15	19991029	49.88780	299.73320	51.34956	9.55936	0.0392660	2.4469022	13	1	8 days	0.49		Williams	1999 VZ ₆₄
1999 VA ₆₅	16.7	0.15	19991029	305.64937	249.75146	224.26767	1.24971	0.1499311	2.4094398	25	1	12 days	0.68		Williams	1999 VA ₆₅
1999 VB ₆₅	15.1	0.15	20000226	31.77503	167.26531	225.21509	14.40166	0.1695697	2.9699880	51	1	67 days	0.53	M-v 4	Williams	1999 VB ₆₅
1999 VC ₆₅	14.9	0.15	19991029	120.43578	47.87578	225.11184	6.10533	0.1313922	2.4047585	13	1	8 days	0.64		Williams	1999 VC ₆₅
1999 VD ₆₅	16.4	0.15	19991029	320.74555	236.97854	222.13408	3.05221	0.1750141	2.7357793	43	1	59 days	0.56		Williams	1999 VD ₆₅
1999 VE ₆₅	15.1	0.15	19991029	154.63461	202.12854	46.13680	5.99664	0.0770221	2.8612245	24	1	12 days	0.54		Williams	1999 VE ₆₅
1999 VF ₆₅	16.0	0.15	20000226	16.36626	1.00545	63.35896	0.87858	0.2281429	2.5332096	42	1	63 days	0.52	M-v 5	Williams	1999 VF ₆₅
1999 VG ₆₅	15.7	0.15	19991029	220.21381	322.22019	233.83612	1.58331	0.1634859	2.3762332	17	1	12 days	0.40		Williams	1999 VG ₆₅
1999 VJ ₆₅	16.4	0.15	19991118	259.83867	302.39930	219.47508	2.82145	0.1020773	2.3384558	40	1	41 days	0.63		Williams	1999 VJ ₆₅
1999 VK ₆₅	13.7	0.15	20000226	117.04884	77.03307	225.54049	10.49396	0.0907977	2.9769426	58	1	67 days	0.56	M-v 4	Williams	1999 VK ₆₅
1999 VL ₆₅	17.6	0.15	19991029	327.05296	35.06430	54.00704	1.64064	0.1601009	2.3420212	18	1	12 days	0.46		Williams	1999 VL ₆₅
1999 VM ₆₅	14.6	0.15	19991118	102.98075	237.90668	49.61451	17.07397	0.1934653	3.1402702	30	1	37 days	0.41		Williams	1999 VM ₆₅
1999 VN ₆₅	15.5	0.15	20000226	330.00319	68.48374	53.89532	1.97721	0.1439005	2.4273073	56	2	1997–1999	0.70	M-v 4	Williams	37233 1999 VN ₆₅
1999 VO ₆₅	18.1	0.15	19991029	16.54274	327.14320	51.12289	7.32523	0.2109847	2.3627625	16	1	10 days	0.40		Williams	1999 VO ₆₅
1999 VP ₆₅	13.8	0.15	20000226	56.42236	304.13760	64.12850	3.23977	0.0759294	2.8871261	55	3	1996–1999	0.41	M-v 3	Williams	37233 1999 VP ₆₅
1999 VQ ₆₅	15.6	0.15	19991029	27.71126	149.67061	217.19937	5.83427	0.1558203	2.5405651	14	1	13 days	0.33		Williams	1999 VQ ₆₅
1999 VR ₆₅	14.7	0.15	19991118	107.89242	202.24230	99.78515	0.94844	0.0044496	3.0086475	42	1	36 days	0.60		Williams	1999 VR ₆₅
1999 VS ₆₅	17.4	0.15	19991118	320.50763	245.94230	217.29444	3.96955	0.1517184	2.6081063	20	1	31 days	0.42		Williams	1999 VS ₆₅
1999 VT ₆₅	14.3	0.15	20000226	37.11059	167.27995	218.18638	7.18836	0.1118484	3.2190639	34	1	65 days	0.57	M-v 5	Williams	1999 VT ₆₅
1999 VU ₆₅	14.2	0.15	19991029	147.22613	22.10787	225.62315	22.11792	0.2545200	2.5632852	12	1	8 days	0.62		Williams	1999 VU ₆₅
1999 VV ₆₅	16.9	0.15	19991029	15.90762	284.84695	93.05996	1.20626	0.2228838	2.3437563	19	1	10 days	0.40		Williams	1999 VV ₆₅
1999 VX ₆₅	15.0	0.15	20000226	64.79089	221.15445	135.79172	1.15693	0.1482221	2.6081932	53	3	1993–1999	0.48	M-v 4	Williams	37234 1999 VX ₆₅
1999 VY ₆₅	15.5	0.15	20000226	17.32993	208.12071	212.76904	5.25785	0.0710201	2.4008638	57	1	63 days	0.65	M-v 5	Williams	1999 VY ₆₅
1999 VZ ₆₅	14.5	0.15	20000226	325.47622	269.22201	212.53283	5.16141	0.0710576	2.2421508	81	1	87 days	0.50	M-v 4	Williams	1999 VZ ₆₅
1999 VA ₆₆	15.9	0.15	19991118	45.32276	287.82984	67.43414	4.28991	0.1046703	2.7106587	35	1	41 days	0.70		Williams	1999 VA ₆₆
1999 VD ₆₆	13.8	0.15	20000226	90.38191	270.30424	56.19487	12.14782	0.0970035	3.1656079	50	2	1997–1999	0.56	M-v 3	Williams	37234 1999 VD ₆₆
1999 VF ₆₆	14.8	0.15	20000226	42.12581	332.83795	53.84558	16.21935	0.1252855	2.6443604	60	1	90 days	0.47	M-v 3	Williams	1999 VF ₆₆

1999 VG ₆₆	15.5	0.15	20000226	343.08687	43.30660	66.44782	3.27137	0.1546677	2.3576257	58	3	1993–2000	0.47	M-v	4	Williams	37234	1999 VG ₆₆
1999 VH ₆₆	14.7	0.15	19991118	52.30711	277.23606	70.53663	3.00968	0.1121619	2.9196429	45	1	36 days	0.49			Williams		1999 VH ₆₆
1999 VJ ₆₆	14.7	0.15	20000226	17.49184	4.85458	53.41676	10.43757	0.1859473	2.7272128	61	1	65 days	0.47	M-v	4	Williams		1999 VJ ₆₆
1999 VK ₆₆	14.9	0.15	19991029	265.55789	105.27618	53.42201	13.86037	0.1545835	2.6629874	13	1	10 days	1.30			Williams		1999 VK ₆₆
1999 VL ₆₆	13.7	0.15	20000226	246.02746	144.11289	56.61794	12.96639	0.2015246	2.6922776	65	1	69 days	0.59	M-v	5	Williams		1999 VL ₆₆
1999 VM ₆₆	15.9	0.15	19991029	52.99378	133.09956	201.37554	2.37336	0.1771308	2.3915273	19	1	13 days	0.66			Williams		1999 VM ₆₆
1999 VN ₆₆	15.4	0.15	19991029	26.05877	163.15725	206.92810	3.54997	0.1798492	3.2045959	26	1	13 days	0.59			Williams		1999 VN ₆₆
1999 VO ₆₆	14.4	0.15	20000226	54.51013	296.65266	64.14385	5.13506	0.2295126	2.7490453	107	1	110 days	0.51	M-v	4	Williams		1999 VO ₆₆
1999 VP ₆₆	15.9	0.15	19991118	29.59857	151.41328	223.16606	6.05094	0.1189740	2.3327467	38	1	36 days	0.40			Williams		1999 VP ₆₆
1999 VQ ₆₆	15.9	0.15	19991029	204.48078	155.37044	50.27820	4.35021	0.0822127	2.2902137	23	1	12 days	0.38			Williams		1999 VQ ₆₆
1999 VR ₆₆	17.5	0.15	19991118	15.76857	167.80466	224.04178	5.57098	0.1211466	2.3828469	26	1	33 days	0.64			Williams		1999 VR ₆₆
1999 VU ₆₆	16.0	0.15	19991029	38.08145	291.77583	52.24149	6.92727	0.2529552	2.4813223	20	1	12 days	0.40			Williams		1999 VU ₆₆
1999 VV ₆₆	14.1	0.15	19991029	98.33947	247.53693	53.92184	12.15010	0.0750447	3.0736832	19	1	10 days	0.47			Williams		1999 VV ₆₆
1999 VW ₆₆	15.8	0.15	19991029	43.40051	112.98908	225.73568	5.91987	0.2448078	2.5343735	23	1	13 days	0.42			Williams		1999 VW ₆₆
1999 VX ₆₆	14.3	0.15	19991029	311.67885	246.86218	216.06170	3.46394	0.0678906	3.1649506	20	1	13 days	0.51			Williams		1999 VX ₆₆
1999 VY ₆₆	13.9	0.15	20000226	54.35589	307.49327	61.36405	2.84678	0.1169185	2.9508011	64	2	1998–1999	0.54	M-v	3	Williams	37234	1999 VY ₆₆
1999 VZ ₆₆	17.6	0.15	19991118	26.75950	318.50988	58.53516	5.58200	0.1432440	2.2394474	37	1	36 days	0.49			Williams		1999 VZ ₆₆
1999 VB ₆₇	16.5	0.15	19991118	24.94826	314.28909	56.22762	13.78616	0.2622190	2.6421021	34	1	37 days	0.50			Williams		1999 VB ₆₇
1999 VC ₆₇	15.5	0.15	20000226	337.46885	35.94846	68.39585	4.36361	0.0588023	2.5942797	37	1	71 days	0.59	M-v	4	Williams		1999 VC ₆₇
1999 VD ₆₇	15.8	0.15	19991029	269.70265	60.57895	87.01603	2.12913	0.0858618	2.2631683	13	1	13 days	0.34			Williams		1999 VD ₆₇
1999 VE ₆₇	13.8	0.15	20000226	50.31373	136.46104	225.76725	8.80100	0.2186702	3.1966614	70	1	95 days	0.54	M-v	4	Williams		1999 VE ₆₇
1999 VF ₆₇	17.0	0.15	19991118	68.37648	121.51873	209.94021	1.71465	0.1146402	2.2174710	24	1	39 days	0.48			Williams		1999 VF ₆₇
1999 VG ₆₇	14.1	0.15	20000226	64.54947	291.85818	65.23317	2.99074	0.1163472	2.9444744	61	1	69 days	0.47	M-v	4	Williams		1999 VG ₆₇
1999 VJ ₆₇	16.1	0.15	19991029	313.54730	246.56900	217.74158	1.88826	0.1229517	2.3589546	18	1	12 days	0.44			Williams		1999 VJ ₆₇
1999 VK ₆₇	15.4	0.15	19991029	6.95504	340.45971	58.60325	4.13235	0.0949845	2.7001570	18	1	12 days	0.38			Williams		1999 VK ₆₇
1999 VL ₆₇	15.0	0.15	20000226	10.40874	352.92717	71.44899	3.13169	0.0750569	2.8662560	48	1	70 days	0.61	M-v	4	Williams		1999 VL ₆₇
1999 VM ₆₇	14.5	0.15	20000226	177.99603	36.55318	216.15630	4.37363	0.0827779	2.7820022	36	4	1992–1999	0.72	M-v	2	Williams	37234	1999 VM ₆₇
1999 VN ₆₇	15.5	0.15	20000226	341.02372	279.55817	196.70997	1.04507	0.2433057	2.7784054	42	2	1994–1999	0.59	M-v	5	Williams	37234	1999 VN ₆₇
1999 VO ₆₇	15.2	0.15	19991029	213.89927	336.79462	221.04084	6.69346	0.0622151	2.3395139	15	1	13 days	0.40			Williams		1999 VO ₆₇
1999 VQ ₆₇	14.1	0.15	19991118	189.77330	167.68568	57.05221	11.72002	0.0446269	3.2076368	39	1	34 days	0.49			Williams		1999 VQ ₆₇
1999 VR ₆₇	14.4	0.15	19991118	119.24206	232.79404	57.49252	12.64968	0.0430248	2.9794905	36	1	34 days	0.50			Williams		1999 VR ₆₇
1999 VS ₆₇	15.4	0.15	19991118	153.73300	175.48055	75.82691	2.70647	0.2128691	2.3334365	30	1	43 days	0.38			Williams		1999 VS ₆₇
1999 VU ₆₇	13.7	0.15	20000226	248.13678	140.34289	57.77723	12.58285	0.1270700	2.6582762	64	1	66 days	0.42	M-v	5	Williams		1999 VU ₆₇
1999 VV ₆₇	14.3	0.15	20000226	345.51600	7.07656	93.92927	1.81697	0.1795458	3.0695795	56	2	1977–1999	0.50	M-v	4	Williams	37235	1999 VV ₆₇
1999 VW ₆₇	14.9	0.15	19991118	279.35253	274.93353	224.95942	7.80184	0.0380872	3.0616211	41	1	36 days	0.53			Williams		1999 VW ₆₇
1999 VY ₆₇	14.7	0.15	20000226	356.18764	23.27178	58.80280	11.29254	0.0964553	3.0799884	46	1	65 days	0.58	M-v	4	Williams		1999 VY ₆₇
1999 VZ ₆₇	15.6	0.15	19991118	26.41504	196.13579	186.63644	2.03579	0.1134449	2.7705973	40	1	33 days	0.60			Williams		1999 VZ ₆₇
1999 VC ₆₈	15.7	0.15	19991118	22.09361	325.70878	57.83986	9.86233	0.1933939	2.6890695	48	1	34 days	0.51			Williams		1999 VC ₆₈
1999 VD ₆₈	13.5	0.15	20000226	207.40076	6.12931	227.94540	13.38651	0.1217423	2.5510054	51	2	1998–1999	0.54	M-v	4	Williams	37235	1999 VD ₆₈
1999 VF ₆₈	15.1	0.15	19991029	40.46775	129.33976	226.17081	5.34525	0.1744744	2.6080574	30	1	9 days	0.51			Williams		1999 VF ₆₈
1999 VG ₆₈	16.2	0.15	20000226	20.54758	297.74584	127.80373	0.66966	0.2071683	2.4317736	71	1	68 days	0.55	M-v	4	Williams		1999 VG ₆₈
1999 VH ₆₈	16.2	0.15	19991118	276.68166	86.31685	71.30286	3.03070	0.1460404	2.3750181	49	1	38 days	0.70			Williams		1999 VH ₆₈
1999 VL ₆₈	16.0	0.15	19991118	48.81064	144.18707	205.09720	2.13062	0.1996166	2.4032949	62	1	44 days	0.52			Williams		1999 VL ₆₈
1999 VM ₆₈	15.2	0.15	19991118	51.10145	284.44391	59.36111	13.06476	0.2248646	2.6492404	47	1	45 days	0.47			Williams		1999 VM ₆₈
1999 VN ₆₈	14.4	0.15	20000226	28.69343	344.37967	61.75348	17.13753	0.0935954	3.1344015	37	1	63 days	0.56	M-v	4	Williams		1999 VN ₆₈
1999 VO ₆₈	14.2	0.15	20000226	83.51691	278.19883	67.19236	10.49216	0.1457147	2.6610884	63	1	66 days	0.48	M-v	4	Williams		1999 VO ₆₈
1999 VP ₆₈	17.3	0.15	19991118	335.65408	217.99467	225.97475	3.93040	0.0880490	2.1999705	26	1	35 days	0.54			Williams		1999 VP ₆₈
1999 VS ₆₈	14.9	0.15	19991118	6.62073	352.68336	55.33750	15.79926	0.0818642	3.1739677	26	1	34 days	0.57			Williams		1999 VS ₆₈
1999 VT ₆₈	15.2	0.15	20000226	203.63216	17.37766	218.76959	2.03351	0.1314250	2.4070309	43	4	1994–1999	0.62	M-v	2	Williams	37235	1999 VT ₆₈
1999 VU ₆₈	13.9	0.15	20000226	45.21685	202.05700	159.64164	0.69627	0.2511565	3.9349461	60	1	69 days	0.60	M-v	5	Williams		1999 VU ₆₈
1999 VV ₆₈	16.5	0.15	19991029	53.89960	110.82191	227.11956	5.48812	0.1602540	2.3978345	19	1	13 days	0.41			Williams		1999 VV ₆₈
1999 VW ₆₈	16.3	0.15	19991029	36.95556	118.19545	232.55965	3.41401	0.2116382	2.5086931	12	1	8 days	0.62			Williams		1999 VW ₆₈
1999 VZ ₆₈	17.4	0.15	19991118	84.04590	79.82434	231.04238	4.63180	0.1529015	2.2802067	20	1	30 days	0.51			Williams		1999 VZ ₆₈

1999 VA ₆₉	14.9	0.15	19991029	25.03299	335.48363	40.26774	2.03117	0.0988176	2.9282975	14	1	12 days	0.65		Williams		1999 VA ₆₉
1999 VB ₆₉	15.2	0.15	20000226	96.72832	89.52678	220.89171	11.02296	0.1743221	2.6277639	39	2	1998–1999	0.65	M-v 4	Williams	37235	1999 VB ₆₉
1999 VC ₆₉	16.2	0.15	19991029	0.79812	359.23014	39.52004	4.12928	0.1202237	2.6158604	14	1	8 days	0.60		Williams		1999 VC ₆₉
1999 VD ₆₉	16.3	0.15	19991029	282.00388	302.34779	192.61007	2.12652	0.1589297	2.3253430	12	1	8 days	0.46		Williams		1999 VD ₆₉
1999 VE ₆₉	17.0	0.15	19991029	10.29554	324.36608	61.03550	2.82670	0.1169538	2.2945126	13	1	8 days	0.42		Williams		1999 VE ₆₉
1999 VF ₆₉	14.5	0.15	19991029	200.54375	154.26944	47.53673	11.83375	0.0669981	3.0258587	12	1	8 days	0.74		Williams		1999 VF ₆₉
1999 VG ₆₉	15.7	0.15	19991029	230.72456	354.84104	180.03140	2.03898	0.0706452	2.3092982	15	1	11 days	0.63		Williams		1999 VG ₆₉
1999 VJ ₆₉	16.6	0.15	19991029	38.54751	135.61443	215.40257	6.82626	0.1220505	2.2127233	11	1	8 days	0.28		Williams		1999 VJ ₆₉
1999 VK ₆₉	14.2	0.15	19991029	207.13001	348.40339	211.70543	3.99199	0.1356154	3.0368033	11	1	8 days	0.56		Williams		1999 VK ₆₉
1999 VL ₆₉	13.6	0.15	20000226	38.71512	312.20832	63.34851	2.27314	0.1806397	3.1033825	72	2	1997–2000	0.46	M-v 3	Williams	37235	1999 VL ₆₉
1999 VM ₆₉	16.0	0.15	19991029	348.71337	161.13447	252.71889	1.11644	0.1212959	2.6382236	18	1	10 days	0.51		Williams		1999 VM ₆₉
1999 VO ₆₉	17.1	0.15	19991029	4.46013	167.39007	227.32690	1.44787	0.1218367	2.7217143	14	1	12 days	0.49		Williams		1999 VO ₆₉
1999 VR ₆₉	14.8	0.15	20000226	38.63472	341.53781	44.30569	9.06264	0.1726319	2.6248104	81	1	96 days	0.52	M-v 3	Williams		1999 VR ₆₉
1999 VS ₆₉	16.8	0.15	19991029	320.10813	244.00369	207.31385	1.38655	0.1184308	2.6143577	15	1	12 days	0.38		Williams		1999 VS ₆₉
1999 VT ₆₉	16.0	0.15	19991029	324.58249	242.89797	199.39777	1.43208	0.0593985	2.8996095	11	1	12 days	0.43		Williams		1999 VT ₆₉
1999 VU ₆₉	16.8	0.15	19991029	216.51918	142.00272	45.67172	5.63195	0.0302925	2.2357758	16	1	13 days	0.87		Williams		1999 VU ₆₉
1999 VV ₆₉	18.0	0.15	19991029	358.86961	357.68590	45.24531	5.59882	0.1463774	2.2130831	17	1	9 days	0.88		Williams		1999 VV ₆₉
1999 VW ₆₉	15.6	0.15	19991029	59.61628	92.72343	225.01854	2.98207	0.2233303	2.1946257	12	1	8 days	0.65		Williams		1999 VW ₆₉
1999 VY ₆₉	15.2	0.15	19991029	231.00917	136.71725	43.23533	11.94727	0.0705410	2.9894745	25	1	11 days	0.42		Williams		1999 VY ₆₉
1999 VZ ₆₉	17.7	0.15	19991029	12.39902	147.51597	235.88699	1.58515	0.2013414	2.3522113	23	1	11 days	0.39		Williams		1999 VZ ₆₉
1999 VA ₇₀	16.3	0.15	19991118	138.85595	209.17988	51.34679	3.30238	0.1348136	2.3819642	27	1	33 days	0.39		Williams		1999 VA ₇₀
1999 VB ₇₀	16.2	0.15	19991118	328.01665	31.27433	49.72751	13.04648	0.0172785	2.6165942	26	1	33 days	0.70		Williams		1999 VB ₇₀
1999 VC ₇₀	15.9	0.15	19991029	13.80939	195.47396	192.10196	1.68601	0.0797960	2.8443815	17	1	30 days	0.44		Williams		1999 VC ₇₀
1999 VG ₇₀	17.4	0.15	19991118	61.45987	101.16439	219.41056	2.67954	0.2486411	2.5912069	21	1	38 days	0.37		Williams		1999 VG ₇₀
1999 VH ₇₀	18.3	0.15	19991029	347.19956	15.20503	47.66310	7.70202	0.2113265	2.3221574	17	1	11 days	0.50		Williams		1999 VH ₇₀
1999 VK ₇₀	16.4	0.15	19991118	13.86425	347.27435	46.92186	7.01459	0.1083204	2.3690936	18	1	30 days	0.38		Williams		1999 VK ₇₀
1999 VL ₇₀	14.0	0.15	20000226	184.31714	183.41908	60.93931	2.84421	0.0560470	2.9352021	69	3	1997–1999	0.64	M-v 3	Williams	37236	1999 VL ₇₀
1999 VM ₇₀	17.6	0.15	19991118	355.92523	345.11525	70.94823	4.12476	0.0889665	2.4092270	19	1	39 days	0.35		Williams		1999 VM ₇₀
1999 VN ₇₀	16.7	0.15	19991029	353.42914	307.97392	105.95428	0.83333	0.2005598	2.3208388	22	1	13 days	0.42		Williams		1999 VN ₇₀
1999 VO ₇₀	15.3	0.15	19991029	318.95209	256.23417	206.09183	3.21342	0.1653108	2.7939611	23	1	13 days	0.51		Williams		1999 VO ₇₀
1999 VP ₇₀	15.3	0.15	19991118	82.23011	104.77121	217.85472	1.26608	0.0607258	2.9045623	32	1	42 days	0.74		Williams		1999 VP ₇₀
1999 VQ ₇₀	16.4	0.15	19991029	34.13697	302.48176	57.19668	4.03031	0.1503436	2.3342695	16	1	13 days	0.40		Williams		1999 VQ ₇₀
1999 VR ₇₀	16.4	0.15	19991029	319.51139	48.40220	50.21155	9.00596	0.1477617	2.3362401	17	1	12 days	0.52		Williams		1999 VR ₇₀
1999 VS ₇₀	16.2	0.15	19991029	299.90314	62.14837	52.13113	5.05269	0.0787540	2.2460881	13	1	8 days	0.50		Williams		1999 VS ₇₀
1999 VT ₇₀	13.4	0.15	20000226	314.42986	251.25733	227.43438	15.37727	0.0389502	3.2414430	62	2	1998–1999	0.52	M-v 3	Williams	37236	1999 VT ₇₀
1999 VU ₇₀	17.0	0.15	19991029	349.89867	6.17463	53.73668	5.21443	0.1990803	2.3274406	32	1	52 days	0.45		Williams		1999 VU ₇₀
1999 VV ₇₀	16.0	0.15	19991118	317.48156	295.85373	170.09798	1.27963	0.1219176	3.1063174	20	1	38 days	0.69		Williams		1999 VV ₇₀
1999 VX ₇₀	14.5	0.15	19991029	62.21851	297.13929	133.01470	1.11591	0.0768063	2.7987332	17	1	13 days	0.53		Williams		1999 VX ₇₀
1999 VY ₇₀	14.3	0.15	20000226	326.15024	20.40799	90.65353	2.56629	0.1331083	3.1828171	50	3	1993–1999	0.66	M-v 3	Williams	37236	1999 VY ₇₀
1999 VZ ₇₀	16.3	0.15	19991029	12.39394	312.35484	76.05532	3.05394	0.2374267	2.8115494	18	1	13 days	0.49		Williams		1999 VZ ₇₀
1999 VA ₇₁	15.1	0.15	19991118	350.58681	353.12758	72.30124	3.71865	0.0152099	2.6352747	52	1	58 days	0.42		Williams		1999 VA ₇₁
1999 VC ₇₁	16.1	0.15	19991029	29.26423	267.00905	93.61361	2.30348	0.2684941	3.0545018	20	1	13 days	0.60		Williams		1999 VC ₇₁
1999 VD ₇₁	16.8	0.15	19991029	0.83055	352.73322	54.99555	13.01007	0.1706698	2.5955791	16	1	13 days	0.40		Williams		1999 VD ₇₁
1999 VE ₇₁	15.4	0.15	19991118	333.37274	221.81397	228.74817	12.72501	0.1256709	2.6480369	22	1	28 days	0.50		Williams		1999 VE ₇₁
1999 VG ₇₁	15.2	0.15	19991029	33.74769	303.67446	63.24279	10.55805	0.1660817	2.9260086	13	1	8 days	0.31		Williams		1999 VG ₇₁
1999 VH ₇₁	16.4	0.15	19991118	358.20743	213.36377	207.57824	2.07484	0.1616964	2.4595341	57	1	47 days	0.46		Williams		1999 VH ₇₁
1999 VK ₇₁	15.5	0.15	19991029	250.75926	106.57770	49.16634	4.50514	0.0679959	2.5233101	18	1	12 days	0.48		Williams		1999 VK ₇₁
1999 VL ₇₁	15.0	0.15	19991029	33.14020	308.41859	49.02352	11.63980	0.1234836	2.9658250	11	1	8 days	0.45		Williams		1999 VL ₇₁
1999 VM ₇₁	16.7	0.15	19991029	27.75209	332.26599	36.00403	2.25567	0.0789451	2.8654503	14	1	13 days	0.48		Williams		1999 VM ₇₁
1999 VN ₇₁	15.0	0.15	20000226	75.00281	101.66052	229.50851	7.47549	0.1896592	3.1173183	38	1	68 days	0.45	M-v 4	Williams		1999 VN ₇₁
1999 VO ₇₁	15.9	0.15	19991029	12.84714	168.95036	221.22377	6.33440	0.1004470	2.6503556	16	1	10 days	0.58		Williams		1999 VO ₇₁
1999 VP ₇₁	14.9	0.15	19991029	270.90600	91.04963	52.51843	13.67729	0.0728424	2.6706100	18	1	13 days	0.48		Williams		1999 VP ₇₁
1999 VQ ₇₁	15.9	0.15	19991118	23.06271	327.68945	57.51923	10.63157	0.0358469	3.0255640	17	1	43 days	0.42		Williams		1999 VQ ₇₁

1999 VR ₇₁	16.2	0.15	19991029	32.36486	305.55474	62.84381	3.13889	0.0958548	2.3264008	16	1	13 days	0.50		Williams	1999 VR ₇₁
1999 VS ₇₁	15.5	0.15	19991118	105.01686	95.68822	211.85641	2.59744	0.0134827	3.0461920	22	1	43 days	0.51		Williams	1999 VS ₇₁
1999 VT ₇₁	16.0	0.15	19991029	36.34479	164.28721	198.82164	1.98570	0.1309027	2.5880501	14	1	13 days	0.39		Williams	1999 VT ₇₁
1999 VU ₇₁	15.6	0.15	19991118	0.91953	349.05499	66.18887	2.77314	0.0808426	2.9249208	28	1	34 days	0.40		Williams	1999 VU ₇₁
1999 VV ₇₁	17.1	0.15	20000226	26.03314	354.50200	57.23002	9.33943	0.2549248	2.6606411	34	1	60 days	0.62	M-v 4	Williams	1999 VV ₇₁
1999 VW ₇₁	16.4	0.15	19991208	38.44093	124.17852	255.11396	10.60010	0.2177016	2.6335212	40	1	54 days	0.71		Williams	1999 VW ₇₁
1999 VX ₇₁	13.8	0.15	19991029	94.63280	257.37475	24.74720	9.63113	0.0870047	3.0312073	19	1	11 days	0.46		Williams	1999 VX ₇₁
1999 VZ ₇₁	14.7	0.15	19991029	137.35359	216.22485	52.68214	7.81671	0.0456161	3.1198583	19	1	8 days	0.60		Williams	1999 VZ ₇₁
1999 VB ₇₂	14.3	0.15	20000226	59.21653	302.71265	112.26485	7.06788	0.1444566	2.4584600	50	1	65 days	0.60	M-v 5	Williams	1999 VB ₇₂
1999 VC ₇₂	14.7	0.15	20000226	88.42448	134.74218	249.26208	2.97276	0.1509261	2.1851033	49	3	1989–2000	0.41	M-v 4	Williams	37236 1999 VC ₇₂
1999 VD ₇₂	14.2	0.15	19991208	53.92646	287.91151	107.61408	13.17620	0.1811544	2.5527178	48	1	54 days	0.58		Williams	1999 VD ₇₂
1999 VE ₇₂	14.3	0.15	19991208	78.09852	276.25153	110.38002	15.54686	0.0494800	2.5812826	25	1	53 days	0.40		Williams	1999 VE ₇₂
1999 VG ₇₂	16.2	0.15	19991118	17.78808	146.02730	251.69496	2.79415	0.2114812	2.3518364	22	1	29 days	0.30		Williams	1999 VG ₇₂
1999 VH ₇₂	14.5	0.15	19991208	275.96301	271.09121	252.59263	9.81251	0.0535023	2.9711760	39	1	58 days	0.55		Williams	1999 VH ₇₂
1999 VJ ₇₂	14.5	0.15	19991208	40.74035	129.59617	268.07508	7.51701	0.2862188	2.7691591	49	1	57 days	0.59		Williams	1999 VJ ₇₂
1999 VK ₇₂	14.5	0.15	19991208	330.90837	32.55421	114.59295	4.38602	0.1427360	2.4351110	47	1	58 days	0.71		Williams	1999 VK ₇₂
1999 VL ₇₂	14.7	0.15	20000226	342.20513	65.37907	43.85834	5.36174	0.1548393	2.5318919	71	3	1995–1999	0.45	M-v 2	Williams	37236 1999 VL ₇₂
1999 VM ₇₂	13.7	0.15	19991208	128.43412	242.65585	109.85729	7.24216	0.1752288	2.4584306	13	1	57 days	0.63		Williams	1999 VM ₇₂
1999 VN ₇₂	14.9	0.15	20000226	124.52778	63.09803	231.29784	5.69555	0.1197711	2.3432706	65	2	1998–1999	0.58	M-v 4	Williams	37236 1999 VN ₇₂
1999 VP ₇₂	15.4	0.15	19991118	37.02019	355.66933	10.70800	2.85233	0.1995545	2.7699613	30	1	35 days	0.49		Williams	1999 VP ₇₂
1999 VR ₇₂	14.7	0.15	20000226	36.98923	329.69569	59.97164	9.75490	0.1894550	2.5836159	97	1	115 days	0.40	M-v 3	Williams	1999 VR ₇₂
1999 VS ₇₂	14.2	0.15	20000226	272.47661	272.94827	259.45163	2.59180	0.1379669	2.6847350	49	1	70 days	0.64	M-v 5	Williams	1999 VS ₇₂
1999 VT ₇₂	16.2	0.15	19991118	352.07497	171.61097	254.64863	5.45114	0.1595603	2.5697520	29	1	39 days	0.69		Williams	1999 VT ₇₂
1999 VX ₇₂	15.8	0.15	19991029	41.48553	315.20797	22.18821	5.22860	0.2995732	2.5300649	8	1	8 days	0.47		Williams	1999 VX ₇₂
1999 VZ ₇₂	16.7	0.15	19991029	18.65755	147.26851	228.64902	6.17475	0.2402306	2.4550540	15	1	5 days	0.46	E	Williams	1999 VZ ₇₂
1999 VA ₇₃	16.5	0.15	19991118	46.27302	307.73599	43.02561	3.04176	0.1918364	2.3586816	32	1	35 days	0.48	D	Williams	1999 VA ₇₃
1999 VB ₇₃	15.2	0.15	19991208	55.50857	128.45436	247.00747	6.14353	0.0326459	2.2811755	26	1	58 days	0.52	D	Williams	1999 VB ₇₃
1999 VF ₇₃	20.3	0.15	19991029	358.37144	184.10974	205.42171	6.74706	0.3936077	2.6097330	15	1	10 days	0.22		Williams	1999 VF ₇₃
1999 VH ₇₃	15.9	0.15	19991029	232.51402	337.89017	185.14386	3.26437	0.1962841	2.2949125	18	1	11 days	0.31		Williams	1999 VH ₇₃
1999 VL ₇₃	17.6	0.15	19991029	277.97830	281.58771	192.32411	5.55158	0.0882680	2.3983823	15	1	10 days	0.10		Williams	1999 VL ₇₃
1999 VM ₇₃	18.6	0.15	19991029	311.74865	283.89681	164.90728	1.49807	0.1730868	2.2367110	12	1	11 days	0.24		Williams	1999 VM ₇₃
1999 VP ₇₃	15.1	0.15	19991029	338.88796	353.09062	50.26776	2.58740	0.0346671	2.8201217	15	1	11 days	0.53		Williams	1999 VP ₇₃
1999 VJ ₇₅	16.8	0.15	19991009	350.55553	188.62857	214.18072	3.87443	0.2058850	2.8029677	22	1	37 days	0.55		Williams	1999 VJ ₇₅
1999 VR ₇₅	16.2	0.15	19991118	62.33446	186.99850	147.99532	1.12346	0.1508963	2.5879026	19	1	32 days	0.36		Williams	1999 VR ₇₅
1999 VE ₇₇	16.2	0.15	19991118	289.20083	70.38181	75.65714	5.64162	0.1507735	2.4103101	22	1	32 days	0.65		Williams	1999 VE ₇₇
1999 VN ₇₇	14.8	0.15	19991029	252.15613	263.69523	257.21108	8.88555	0.0346552	3.0242795	16	1	10 days	0.62		Williams	1999 VN ₇₇
1999 VV ₇₇	15.6	0.15	19991029	340.89673	47.35709	27.12788	9.20937	0.1510160	2.8819314	17	1	10 days	0.55		Williams	1999 VV ₇₇
1999 VY ₇₇	13.7	0.15	20000226	359.98625	29.89546	82.16657	6.19410	0.0574775	2.5185274	23	1	62 days	0.39	M-v 4	Williams	1999 VY ₇₇
1999 VZ ₇₇	14.0	0.15	19991029	270.09376	197.92644	292.27307	6.26026	0.1014915	2.2873162	28	1	7 days	0.45		Williams	1999 VZ ₇₇
1999 VE ₇₈	14.3	0.15	20000226	150.92862	251.84861	355.32012	12.14747	0.2241141	2.5856938	26	1	67 days	0.60	M-v 5	Williams	1999 VE ₇₈
1999 VL ₇₈	14.6	0.15	19991029	77.74035	59.81658	225.74948	14.44694	0.2390572	3.2120008	13	1	9 days	0.60		Williams	1999 VL ₇₈
1999 VM ₇₈	15.8	0.15	19991029	329.14238	169.64773	259.66272	4.02197	0.1021576	2.7533906	18	1	9 days	0.82		Williams	1999 VM ₇₈
1999 VU ₇₈	15.4	0.15	20000226	95.30732	278.77542	28.38439	2.42764	0.2269521	2.3545599	34	1	64 days	0.54	M-v 5	Williams	1999 VU ₇₈
1999 VX ₇₈	17.6	0.15	19991029	35.92100	120.60609	222.28978	4.25685	0.2005648	2.2473095	22	1	14 days	0.46		Williams	1999 VX ₇₈
1999 VR ₇₉	15.6	0.15	19991029	8.60761	147.19022	242.25170	6.28252	0.0443583	3.0712967	22	1	16 days	0.61		Williams	1999 VR ₇₉
1999 VU ₇₉	15.9	0.15	19991009	37.72032	112.06054	226.26785	2.91261	0.1761487	2.5669201	22	1	39 days	0.36		Williams	1999 VU ₇₉
1999 VW ₇₉	16.5	0.15	19991029	268.87426	137.51790	2.54083	3.06736	0.0864769	2.3187350	18	1	10 days	0.81		Williams	1999 VW ₇₉
1999 VX ₇₉	16.0	0.15	19991029	337.24786	79.21446	346.36031	2.22729	0.0796854	2.4500028	28	1	16 days	0.47		Williams	1999 VX ₇₉
1999 VY ₇₉	15.8	0.15	20000226	65.19458	319.82418	28.84639	7.08416	0.2312973	2.3203715	54	1	110 days	0.47	M-v 4	Williams	1999 VY ₇₉
1999 VD ₈₁	13.8	0.15	20000226	23.59578	291.20909	130.87020	3.94361	0.1733381	2.8813673	27	1	62 days	0.42	M-v 4	Williams	1999 VD ₈₁
1999 VH ₈₁	14.3	0.15	20000226	45.99509	259.48017	137.53424	4.51220	0.1032457	2.7980871	26	1	63 days	0.61	M-v 5	Williams	1999 VH ₈₁
1999 VJ ₈₁	14.4	0.15	20000226	76.37867	244.09804	117.96030	5.13028	0.1183207	2.6418964	25	1	63 days	0.42	M-v 4	Williams	1999 VJ ₈₁
1999 VP ₈₁	12.8	0.15	20000226	133.17119	59.26509	205.24957	11.44745	0.0517620	3.0945380	51	1	171 days	0.45	M-v 4	Williams	1999 VP ₈₁

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1999 VQ ₈₁	15.1	0.15	20000226	332.88981	263.67098	204.14508	4.32843	0.2085927	2.3446639	39	1	98 days	0.58	M-v	5	Williams	1999 VQ ₈₁
1999 VP ₈₂	13.1	0.15	20000226	25.54832	290.87329	115.93664	10.01737	0.0951001	3.0768335	39	1	67 days	0.53	M-v	4	Williams	1999 VP ₈₂
1999 VC ₈₄	14.9	0.15	19991118	45.79354	292.64528	45.54121	31.25562	0.2438075	2.7312453	27	1	42 days	0.53			Williams	1999 VC ₈₄
1999 VL ₈₄	16.4	0.15	19991029	207.25743	332.53985	228.80584	3.43335	0.1331866	2.3410803	13	1	6 days	0.29		E	Williams	1999 VL ₈₄
1999 VZ ₈₄	16.8	0.15	19991029	134.71734	119.48360	136.64532	0.24089	0.2008825	2.2471696	13	1	6 days	0.43		E	Williams	1999 VZ ₈₄
1999 VJ ₈₅	14.5	0.15	19991029	18.15386	321.11857	350.92460	23.22683	0.2598710	2.4709567	18	1	8 days	0.50			Williams	1999 VJ ₈₅
1999 VV ₈₅	15.7	0.15	20000226	11.94903	38.39559	28.59959	6.44481	0.2629491	2.5716738	52	1	110 days	0.50	M-v	4	Williams	1999 VV ₈₅
1999 VV ₈₆	15.0	0.15	20000226	10.84605	265.80156	162.11905	13.04751	0.3312226	3.0857880	30	1	67 days	0.44	M-v	4	Williams	1999 VV ₈₆
1999 VX ₈₆	14.0	0.15	20000226	294.02859	22.69426	130.01500	13.70162	0.0988635	2.5354265	22	1	67 days	0.48	M-v	6	Williams	1999 VX ₈₆
1999 VH ₈₇	14.7	0.15	20000226	65.79220	315.93395	122.66678	24.28695	0.0906969	1.9276273	27	1	63 days	0.47	M-v	5	Williams	1999 VH ₈₇
1999 VL ₈₇	15.2	0.15	20000226	64.13077	103.65305	245.32024	4.81730	0.2194851	2.3680635	61	1	98 days	0.45	M-v	4	Williams	1999 VL ₈₇
1999 VQ ₈₇	14.6	0.15	20000226	48.65444	171.81448	188.82424	8.61698	0.2254335	2.7199668	33	1	116 days	0.50	M-v	4	Williams	1999 VQ ₈₇
1999 VT ₈₇	13.4	0.15	20000226	72.62579	229.17664	121.11882	11.01879	0.1236121	3.0478841	36	1	71 days	0.66	M-v	5	Williams	1999 VT ₈₇
1999 VZ ₈₇	15.3	0.15	20000226	87.60008	265.84413	85.24740	23.42018	0.1006088	1.9404544	29	1	64 days	0.49	M-v	5	Williams	1999 VZ ₈₇
1999 VD ₈₈	15.7	0.15	20000226	33.98988	3.45624	49.41968	2.80900	0.1613104	2.4640227	29	1	62 days	0.45	M-v	4	Williams	1999 VD ₈₈
1999 VG ₈₉	15.4	0.15	19991118	25.28904	155.94014	226.30051	11.79519	0.1249786	2.6306830	24	1	33 days	0.38			Williams	1999 VG ₈₉
1999 VM ₈₉	13.6	0.15	19991029	187.03973	163.80267	49.76563	1.43426	0.1126649	3.2061801	18	1	9 days	0.82			Williams	1999 VM ₈₉
1999 VW ₈₉	13.9	0.15	19991029	14.83352	344.91383	28.30070	2.60258	0.0666997	2.9045104	20	1	9 days	0.41			Williams	1999 VW ₈₉
1999 VO ₉₂	14.6	0.15	19991029	74.91744	253.63156	43.31380	2.35828	0.0757469	2.9351205	18	1	12 days	0.49			Williams	1999 VO ₉₂
1999 VE ₉₃	15.4	0.15	19991118	308.18709	281.08170	191.03281	2.54308	0.2812126	2.7199524	11	1	18 days	0.42			Williams	1999 VE ₉₃
1999 VE ₉₆	18.5	0.15	19991029	336.92405	69.53145	4.47573	0.55402	0.2566749	2.3003363	12	1	5 days	0.65		E	Williams	1999 VE ₉₆
1999 VF ₉₆	16.6	0.15	19991009	308.80978	233.58955	223.03512	4.89652	0.1578786	2.5478043	22	1	39 days	0.50			Williams	1999 VF ₉₆
1999 VO ₉₈	16.8	0.15	19991029	336.75410	44.84731	35.14775	2.47330	0.2435941	3.0585501	14	1	7 days	0.90			Williams	1999 VO ₉₈
1999 VW ₉₉	16.4	0.15	19991029	45.19413	295.41763	57.15798	5.16893	0.0618842	2.5730458	10	1	7 days	0.46			Williams	1999 VW ₉₉
1999 VO ₁₀₂	16.4	0.15	19991029	102.83173	71.22131	226.55399	0.98018	0.0406438	2.7529454	13	1	4 days	0.54		E	Williams	1999 VO ₁₀₂
1999 VQ ₁₀₂	15.8	0.15	19991029	62.94335	301.39060	23.85007	0.83917	0.1582111	3.1750071	13	1	5 days	0.35		E	Williams	1999 VQ ₁₀₂
1999 VT ₁₀₂	18.6	0.15	19991029	328.31950	213.93364	232.59104	2.25213	0.1538164	2.2934231	15	1	5 days	0.52		E	Williams	1999 VT ₁₀₂
1999 VW ₁₀₂	16.4	0.15	19991029	21.06132	159.25925	211.33020	0.78110	0.2372632	3.0046162	15	1	4 days	0.39		E	Williams	1999 VW ₁₀₂
1999 VS ₁₀₄	19.2	0.15	19991029	348.66079	46.20571	14.79639	0.11519	0.2699484	2.3252318	14	1	7 days	0.91			Williams	1999 VS ₁₀₄
1999 VL ₁₁₁	14.7	0.15	19991208	182.48402	166.50690	82.85141	2.94583	0.1330873	2.3260967	12	1	57 days	0.53			Williams	1999 VL ₁₁₁
1999 VU ₁₁₁	14.4	0.15	19991118	280.96274	84.31492	66.72945	15.00461	0.0390920	2.6170774	24	1	56 days	0.60			Williams	1999 VU ₁₁₁
1999 VZ ₁₁₁	14.1	0.15	19991118	94.86430	254.28738	64.17449	14.62646	0.1303579	2.6219869	23	1	56 days	0.34			Williams	1999 VZ ₁₁₁
1999 VL ₁₁₂	15.8	0.15	19991118	5.82655	357.63390	60.96394	4.11305	0.1556895	2.2560862	25	1	56 days	0.37			Williams	1999 VL ₁₁₂
1999 VU ₁₁₂	15.4	0.15	19991118	333.35335	178.67628	286.26942	0.56265	0.1507070	2.4224670	20	1	56 days	0.67			Williams	1999 VU ₁₁₂
1999 VZ ₁₁₂	14.4	0.15	19991208	301.40000	261.48302	248.36868	11.99222	0.1335358	2.5883816	24	1	58 days	0.34			Williams	1999 VZ ₁₁₂
1999 VA ₁₁₃	14.1	0.15	19991118	31.43176	301.86776	71.83778	10.44276	0.3337331	3.9547702	19	1	56 days	0.65			Williams	1999 VA ₁₁₃
1999 VZ ₁₁₃	14.6	0.15	20000226	352.67809	156.61320	270.09221	7.54372	0.0844965	2.8148582	33	1	98 days	0.64	M-v	5	Williams	1999 VZ ₁₁₃
1999 VE ₁₁₄	14.1	0.15	20000226	50.72006	81.01505	275.63231	7.56112	0.1020108	2.9950659	24	1	73 days	0.48	M-v	5	Williams	1999 VE ₁₁₄
1999 VE ₁₁₅	12.9	0.15	19991118	108.67903	324.58957	305.47458	10.82485	0.1567748	2.6708680	15	1	29 days	0.29			Williams	1999 VE ₁₁₅
1999 VB ₁₂₀	16.2	0.15	20000226	34.51650	136.63101	244.79510	3.36005	0.1255026	2.8164093	11	1	62 days	0.54	M-v	6	Williams	1999 VB ₁₂₀
1999 VH ₁₃₄	15.0	0.15	19991029	79.71510	71.03622	231.60983	8.48668	0.1912888	3.1013157	12	1	5 days	0.40		E	Williams	1999 VH ₁₃₄
1999 VH ₁₃₅	14.2	0.15	20000226	299.89828	343.15703	159.57054	5.77133	0.0957320	2.2777170	36	1	98 days	0.41	M-v	4	Williams	1999 VH ₁₃₅
1999 VK ₁₃₅	14.6	0.15	20000226	42.73086	174.85769	195.53252	10.43772	0.2339020	2.7359795	29	1	70 days	0.64	M-v	5	Williams	1999 VK ₁₃₅
1999 VL ₁₃₅	14.5	0.15	20000226	267.99567	56.03614	118.14042	5.54949	0.1071450	2.2990206	38	1	98 days	0.57	M-v	4	Williams	1999 VL ₁₃₅
1999 VO ₁₃₆	15.7	0.15	19991118	1.70996	6.95327	56.86396	6.73205	0.1527498	2.3493785	27	1	56 days	0.61			Williams	1999 VO ₁₃₆
1999 VU ₁₃₇	14.1	0.15	20000226	358.91244	82.53274	4.28561	1.61873	0.0077509	2.8927373	31	1	62 days	0.51	M-v	5	Williams	1999 VU ₁₃₇
1999 VV ₁₃₇	16.6	0.15	19991208	14.67827	125.35997	290.52264	1.04436	0.1496660	2.1957790	24	1	53 days	0.69			Williams	1999 VV ₁₃₇
1999 WB	14.0	0.15	20000226	63.06726	134.49017	232.73221	13.78388	0.1394033	2.6524050	82	2	1998–2000	0.55	M-v	3	Williams	37237 1999 WB
1999 WC	14.0	0.15	20000226	126.30736	303.43115	349.03346	13.02943	0.1623756	2.5559480	49	1	87 days	0.54	M-v	4	Williams	1999 WC
1999 WD	14.2	0.15	20000226	330.68949	24.15259	86.94573	1.75980	0.0183377	2.7803560	66	3	1997–1999	0.64	M-v	4	Williams	37237 1999 WD
1999 WE	15.6	0.15	20000226	24.30042	201.51621	234.63279	19.28348	0.0897645	1.9518950	37	1	66 days	0.48	M-v	4	Williams	1999 WE
1999 WG	14.7	0.15	19991208	50.24710	96.86019	274.82007	10.02561	0.1847716	2.5995350	40	1	51 days	0.68			Williams	1999 WG
1999 WH	12.0	0.15	20000226	161.22129	237.59226	54.08012	11.24770	0.0903748	2.9891501	36	3	1980–2000	0.68	M-v	4	Williams	37237 1999 WH

1999 WK	13.3	0.15	20000226	351.11699	66.38556	52.86049	9.67195	0.1552872	2.6243931	39	1	89 days	0.60	M-v	4	Williams		1999 WK
1999 WL	14.2	0.15	20000226	355.31099	15.13505	99.28414	6.07609	0.0979792	2.2520417	62	5	1980–2000	0.53	M-v	2	Williams	37237	1999 WL
1999 WM	14.1	0.15	20000226	36.50483	286.96540	130.81426	4.60243	0.2022972	2.3780408	47	4	1973–2000	0.81	M-v	2	Williams	37237	1999 WM
1999 WN	16.7	0.15	20000226	61.02948	265.48595	90.58771	4.13006	0.2642809	2.2568311	33	1	90 days	0.59	M-v	5	Williams		1999 WN
1999 WO	15.5	0.15	19991208	88.58182	253.56041	67.53546	3.29476	0.2338343	2.3753422	40	1	56 days	0.52			Nakano		1999 WO
1999 WP	15.1	0.15	20000226	18.38148	287.89740	149.98945	1.32110	0.1700409	2.3694682	59	2	1997–2000	0.58	M-v	4	Williams	37238	1999 WP
1999 WQ	14.8	0.15	20000226	64.55569	102.11601	272.02960	10.58227	0.1861390	2.5852466	35	1	60 days	0.36	M-v	4	Williams		1999 WQ
1999 WR	14.4	0.15	20000226	187.48462	15.09583	221.63027	4.44021	0.1545092	2.4844857	65	2	1998–1999	0.62	M-v	4	Williams	37238	1999 WR
1999 WS	15.4	0.15	20000226	163.16398	279.77052	356.28580	1.36000	0.1229374	2.1445660	70	2	1998–1999	0.67	M-v	4	Williams	37238	1999 WS
1999 WT	16.3	0.15	19991118	355.46311	35.52107	32.55833	4.50011	0.2021766	2.3850956	39	1	42 days	0.57			Williams		1999 WT
1999 WV	16.3	0.15	19991208	11.32630	151.23829	268.09381	5.11215	0.1775353	2.2321178	43	1	51 days	0.53			Williams		1999 WV
1999 WX	15.4	0.15	19991208	25.34763	338.59916	83.51124	7.95131	0.0763445	2.3094557	45	1	49 days	0.34			Williams		1999 WX
1999 WY	14.3	0.15	20000226	54.80380	95.09487	286.07359	26.15022	0.4281669	2.6288395	91	2	1990–2000	0.40	M-v	3	Williams	37238	1999 WY
1999 WA ₁	12.6	0.15	20000226	21.17705	321.39653	88.54013	15.45598	0.0889584	3.0229553	59	2	1994–2000	0.62	M-v	3	Williams	37238	1999 WA ₁
1999 WC ₁	14.0	0.15	20000226	49.30005	218.21524	163.04579	16.41758	0.2881685	2.6133415	32	1	64 days	0.48	M-v	4	Williams		1999 WC ₁
1999 WF ₁	13.9	0.15	19991208	270.00721	59.58179	64.50404	6.12956	0.1082919	2.4383917	33	1	40 days	0.37			Marsden		1999 WF ₁
1999 WG ₁	16.3	0.15	19991118	19.02252	1.50502	15.36074	2.44341	0.2030771	2.4687655	52	1	27 days	0.48			Williams		1999 WG ₁
1999 WH ₁	17.0	0.15	19991208	32.53665	335.37415	49.31867	4.17849	0.2403935	2.3397908	55	1	53 days	0.68			Marsden		1999 WH ₁
1999 WJ ₁	15.8	0.15	19991208	71.49833	291.21251	61.35068	9.03357	0.1140853	2.4279459	41	1	53 days	0.61			Marsden		1999 WJ ₁
1999 WK ₁	14.8	0.15	19991208	54.57592	319.14535	54.25332	5.96578	0.0926531	2.7468979	39	1	53 days	0.56			Marsden		1999 WK ₁
1999 WL ₁	16.3	0.15	19991208	340.57024	313.46603	152.99583	0.97678	0.1106234	2.2279625	44	1	52 days	0.40			Williams		1999 WL ₁
1999 WM ₁	14.6	0.15	20000226	32.38753	334.91069	79.85325	4.91335	0.1261798	2.2988726	93	1	99 days	0.45	M-v	3	Williams		1999 WM ₁
1999 WN ₁	14.5	0.15	19991208	258.13084	98.68309	71.82045	9.79828	0.0314048	3.0017059	39	1	56 days	0.58			Williams		1999 WN ₁
1999 WP ₁	14.6	0.15	19991208	31.53483	298.96542	96.17820	3.19535	0.2039849	2.3849978	53	1	58 days	0.37			Williams		1999 WP ₁
1999 WR ₁	14.3	0.15	20000226	73.52581	305.69018	49.31168	22.67931	0.0230908	2.5572345	61	2	1991–2000	0.54	M-v	4	Williams	37239	1999 WR ₁
1999 WT ₁	14.7	0.15	19991118	205.55547	44.71872	160.82781	2.16674	0.0957072	2.2612639	41	1	37 days	0.72			Williams		1999 WT ₁
1999 WU ₁	15.8	0.15	20000226	49.90509	316.18573	61.65415	9.44401	0.1794323	2.2735433	80	1	115 days	0.57	M-v	4	Williams		1999 WU ₁
1999 WV ₁	15.4	0.15	20000226	353.17282	322.46649	134.33518	2.66460	0.1656106	2.3697467	50	1	111 days	0.56	M-v	4	Williams		1999 WV ₁
1999 WY ₁	15.7	0.15	20000226	58.91232	144.72132	236.34269	4.24066	0.1613002	2.2363569	48	1	63 days	0.48	M-v	5	Williams		1999 WY ₁
1999 WZ ₁	14.6	0.15	20000226	36.68508	146.03361	246.73464	7.85443	0.2943732	2.7449723	52	1	68 days	0.51	M-v	4	Williams		1999 WZ ₁
1999 WA ₂	15.5	0.15	20000226	84.24818	75.21944	293.86802	34.61885	0.4341365	1.9662136	47	1	56 days	0.42	M-v	4	Williams		1999 WA ₂
1999 WC ₂	16.4	0.15	20000226	3.43793	286.88540	270.28826	29.38301	0.6384927	2.2161434	25	1	43 days	0.76	M-v	6	Williams		1999 WC ₂
1999 WD ₂	15.7	0.15	19991118	194.39435	154.07804	69.69000	4.43214	0.0209956	2.5383521	43	1	29 days	0.55			Williams		1999 WD ₂
1999 WE ₂	15.0	0.15	19991118	247.95610	284.47809	234.51022	10.39223	0.0356001	2.7536005	49	1	39 days	0.58			Williams		1999 WE ₂
1999 WG ₂	17.4	0.15	19991029	1.39879	212.52879	169.40534	1.68459	0.2097860	2.3002490	20	1	31 days	0.80			Williams		1999 WG ₂
1999 WK ₂	14.5	0.15	20000226	225.95719	161.10668	52.07735	7.86737	0.1040493	2.1951767	55	1	97 days	0.44	M-v	4	Williams		1999 WK ₂
1999 WL ₂	16.0	0.15	19991118	247.10846	89.80055	76.32305	3.70209	0.0575052	2.1942286	35	1	36 days	0.70			Williams		1999 WL ₂
1999 WN ₂	14.7	0.15	20000226	99.27963	266.18689	79.33769	3.14678	0.0598549	2.3465642	70	2	1992–2000	0.60	M-v	4	Williams	37239	1999 WN ₂
1999 WP ₂	16.1	0.15	19991208	353.54101	10.75373	74.70429	7.14989	0.2700433	2.5793163	41	1	50 days	0.47			Williams		1999 WP ₂
1999 WR ₂	16.4	0.15	20000226	48.47406	57.24687	328.36159	1.83532	0.1984422	2.3742825	60	1	73 days	0.62	M-v	4	Williams		1999 WR ₂
1999 WS ₂	15.3	0.15	20000226	68.98829	73.97933	287.54865	3.52988	0.0954996	2.1826682	78	1	93 days	0.44	M-v	4	Williams		1999 WS ₂
1999 WT ₂	15.2	0.15	20000226	45.31799	38.90676	351.17441	1.44905	0.2295637	2.7282263	40	2	1994–2000	0.59	M-v	4	Marsden	37239	1999 WT ₂
1999 WX ₂	15.9	0.15	20000226	80.20730	229.89862	124.39708	1.42726	0.1808631	2.2099088	29	3	1979–1999	0.54	M-v	3	Williams	37239	1999 WX ₂
1999 WY ₂	14.2	0.15	20000226	117.72134	158.02494	150.55448	1.45244	0.2213879	2.4029648	41	1	73 days	0.51	M-v	5	Williams		1999 WY ₂
1999 WZ ₂	15.2	0.15	19991208	244.05929	113.84068	81.19409	4.77207	0.0983760	2.3253486	21	1	55 days	0.60			Williams		1999 WZ ₂
1999 WC ₃	14.8	0.15	19991208	309.83568	49.01499	86.86729	3.57448	0.1615008	2.4022725	42	1	54 days	0.45			Williams		1999 WC ₃
1999 WD ₃	15.1	0.15	19991208	253.83849	292.97359	258.35804	13.35112	0.1219614	2.5463744	56	1	53 days	0.68			Williams		1999 WD ₃
1999 WF ₃	16.4	0.15	20000226	44.50908	312.55376	80.59981	3.53098	0.1886873	2.3940393	59	1	72 days	0.63	M-v	4	Williams		1999 WF ₃
1999 WG ₃	15.3	0.15	19991208	340.15776	359.59256	87.37898	3.19155	0.0469637	2.8972604	28	1	51 days	0.83			Williams		1999 WG ₃
1999 WH ₃	12.6	0.15	20000226	11.09148	15.62687	64.80487	14.08334	0.0495833	2.9734845	52	1	62 days	0.59	M-v	4	Williams		1999 WH ₃
1999 WK ₃	14.5	0.15	20000226	55.64501	155.83932	234.69498	12.37569	0.1837730	2.3441679	41	1	68 days	0.49	M-v	4	Williams		1999 WK ₃
1999 WL ₃	14.7	0.15	20000226	351.58274	33.14484	88.14126	13.64359	0.2281642	2.5810978	38	1	61 days	0.58	M-v	5	Williams		1999 WL ₃
1999 WP ₃	14.9	0.15	19991208	35.37690	157.38099	238.13859	6.61471	0.1025608	2.3044266	31	1	50 days	0.71			Williams		1999 WP ₃

1999 WR ₃	13.4	0.15	20000226	72.88763	257.95327	112.35340	3.18770	0.1257914	2.7457601	35	1	64 days	0.45	M-v	5	Williams	1999 WR ₃
1999 WS ₃	14.9	0.15	20000226	52.87495	163.86548	227.75136	2.58016	0.2158888	2.2965860	48	1	66 days	0.57	M-v	4	Williams	1999 WS ₃
1999 WT ₃	14.3	0.15	19991208	4.37110	156.68174	272.15493	5.82175	0.0778204	2.2870001	40	1	51 days	0.76			Williams	1999 WT ₃
1999 WW ₃	13.9	0.15	20000226	31.50145	316.38600	106.45512	7.59460	0.1628962	2.4504063	41	3	1981–2000	0.38	M-v	2	Williams	37239 1999 WW ₃
1999 WZ ₃	13.6	0.15	20000226	0.89053	250.45122	206.19229	1.41782	0.0491338	2.8710494	40	1	64 days	0.62	M-v	5	Williams	1999 WZ ₃
1999 WA ₄	14.7	0.15	19991208	53.67447	345.49461	8.50797	2.67501	0.2458438	2.3491420	47	1	51 days	0.62			Williams	1999 WA ₄
1999 WB ₄	15.0	0.15	19991208	11.21558	30.79355	27.11582	4.10582	0.1958658	2.4157737	45	1	51 days	0.58			Williams	1999 WB ₄
1999 WC ₄	13.0	0.15	19991208	24.40849	77.85633	324.83438	4.22097	0.1354863	3.0339108	42	1	53 days	0.50			Williams	1999 WC ₄
1999 WD ₄	14.1	0.15	19991208	44.63396	330.44849	49.25337	11.06717	0.1196859	2.6341240	27	1	52 days	0.57			Williams	1999 WD ₄
1999 WE ₄	13.8	0.15	20000226	313.47381	323.30181	193.67257	5.19560	0.0718623	2.2575836	38	4	1975–2000	0.48	M-v	3	Williams	37239 1999 WE ₄
1999 WH ₄	16.5	0.15	19991118	9.28243	320.75578	73.24171	2.60672	0.1881126	2.3979183	16	1	19 days	0.43			Williams	1999 WH ₄
1999 WJ ₄	13.9	0.15	20000226	29.13691	64.28632	356.25726	1.53857	0.0460188	2.8518769	65	3	1996–2000	0.65	M-v	3	Williams	37239 1999 WJ ₄
1999 WL ₄	14.4	0.15	20000226	23.96731	338.86754	96.75294	3.69552	0.1424216	2.3968342	44	2	1998–2000	0.37	M-v	4	Williams	37240 1999 WL ₄
1999 WM ₄	15.5	0.15	19991208	358.41505	149.21288	287.30186	5.29725	0.0927877	2.2888396	35	1	49 days	0.62			Williams	1999 WM ₄
1999 WN ₄	14.9	0.15	20000226	40.63317	106.96557	299.32978	3.96966	0.2166118	2.3145333	47	1	85 days	0.42	M-v	4	Williams	1999 WN ₄
1999 WO ₄	15.1	0.15	19991208	36.98449	230.65273	159.32852	4.04816	0.1547065	2.2839476	37	1	50 days	0.60			Williams	1999 WO ₄
1999 WP ₄	13.8	0.15	20000226	274.08642	98.87070	94.49185	7.77598	0.0492755	2.3144964	58	2	1998–2000	0.44	M-v	3	Williams	37240 1999 WP ₄
1999 WR ₄	13.9	0.15	19991208	49.25400	323.24776	58.23844	11.30631	0.0521872	2.9709372	31	1	41 days	0.69			Nakano	1999 WR ₄
1999 WS ₄	10.8	0.15	19991208	332.00247	169.24391	300.99125	7.17992	0.1090837	5.1766378	30	1	53 days	0.57			Williams	1999 WS ₄
1999 WV ₄	14.6	0.15	19991208	327.91781	16.36680	107.08219	6.26999	0.1557970	2.5565278	28	1	39 days	0.67			Williams	1999 WV ₄
1999 WZ ₄	14.1	0.15	20000226	343.01363	39.13880	82.76170	16.87162	0.0676207	2.5599677	47	1	62 days	0.46	M-v	4	Williams	1999 WZ ₄
1999 WA ₅	16.0	0.15	19991208	29.93281	266.29426	124.28021	4.93079	0.2510174	2.3221253	36	1	39 days	0.46			Williams	1999 WA ₅
1999 WB ₅	14.7	0.15	20000226	335.35983	341.42172	156.91428	3.00815	0.1291633	2.4125100	42	2	1989–2000	0.54	M-v	4	Williams	37240 1999 WB ₅
1999 WC ₅	11.9	0.15	19991208	218.78656	136.00380	91.31458	12.35907	0.0556413	3.0385118	40	1	52 days	0.34			Williams	1999 WC ₅
1999 WD ₅	13.7	0.15	20000226	27.04836	178.23580	250.87613	12.03538	0.1609178	2.6864464	47	1	85 days	0.55	M-v	4	Williams	1999 WD ₅
1999 WE ₅	15.8	0.15	19991208	41.68967	236.64331	149.42263	6.08730	0.2162811	2.3356648	35	1	44 days	0.31			Williams	1999 WE ₅
1999 WK ₅	19.3	0.15	19991118	334.84216	28.48702	59.50909	6.45127	0.2046845	2.3454921	12	1	20 days	0.17			Williams	1999 WK ₅
1999 WM ₅	18.3	0.15	19991118	200.77534	156.26299	62.11832	22.93246	0.0448266	1.9596795	12	1	14 days	0.33			Williams	1999 WM ₅
1999 WP ₅	17.6	0.15	19991118	176.28032	2.58967	239.82749	19.29384	0.0388692	1.9269979	13	1	23 days	0.32			Williams	1999 WP ₅
1999 WS ₅	16.4	0.15	19991118	335.57629	23.87050	36.52965	10.01403	0.1027890	2.5952007	15	1	24 days	0.27			Williams	1999 WS ₅
1999 WT ₅	15.4	0.15	19991118	269.43889	92.04738	39.40767	6.72613	0.0911892	2.4542388	17	1	30 days	0.25			Williams	1999 WT ₅
1999 WY ₅	13.4	0.15	20000226	14.24897	321.55325	108.67577	24.55120	0.2733948	2.3137798	28	1	103 days	0.51	M-v	4	Williams	1999 WY ₅
1999 WZ ₅	15.9	0.15	19991208	12.99225	295.69904	103.58227	27.54353	0.3420931	2.3099753	28	1	59 days	0.56			Williams	1999 WZ ₅
1999 WA ₆	14.2	0.15	20000226	127.27658	346.45547	307.46992	4.61928	0.1134624	2.2952631	18	1	64 days	0.44	M-v	6	Williams	1999 WA ₆
1999 WB ₆	14.0	0.15	20000226	344.85130	3.84941	86.38045	4.60146	0.0511931	2.7404817	83	2	1997–2000	0.65	M-v	4	Williams	37240 1999 WB ₆
1999 WC ₆	14.3	0.15	19991118	31.54822	207.36248	155.31843	2.63897	0.2063696	3.1009207	30	1	27 days	0.30			Williams	1999 WC ₆
1999 WD ₆	16.2	0.15	19991118	30.61022	302.58877	68.74775	13.52475	0.2001902	2.5569671	29	1	33 days	0.67			Williams	1999 WD ₆
1999 WF ₆	15.8	0.15	19991118	52.23197	268.71745	80.29453	7.29464	0.1527694	2.3813078	42	1	34 days	0.62			Williams	1999 WF ₆
1999 WG ₆	15.3	0.15	19991118	181.42019	20.34508	215.75650	5.95061	0.0733590	2.3134004	52	1	44 days	0.92			Williams	1999 WG ₆
1999 WJ ₆	15.6	0.15	19991118	359.00430	281.02450	137.23548	2.61136	0.1098905	2.6236940	32	1	29 days	0.69			Williams	1999 WJ ₆
1999 WK ₆	15.3	0.15	20000226	336.22568	44.10399	70.19479	8.07672	0.0362611	2.2801730	79	1	68 days	0.51	M-v	5	Williams	1999 WK ₆
1999 WM ₆	15.1	0.15	20000226	7.43866	233.65322	210.89479	3.03963	0.1020215	2.5773662	59	3	1997–2000	0.53	M-v	4	Williams	37240 1999 WM ₆
1999 WN ₆	14.1	0.15	20000226	28.00011	325.25088	86.95380	7.16676	0.1419440	3.0571271	47	1	63 days	0.54	M-v	4	Williams	1999 WN ₆
1999 WO ₆	15.0	0.15	20000226	358.17610	18.67189	77.07039	14.74800	0.1614852	2.7943774	42	1	63 days	0.65	M-v	4	Williams	1999 WO ₆
1999 WP ₆	14.2	0.15	20000226	334.11762	31.10075	90.33621	7.31540	0.1394899	3.1241511	25	1	63 days	0.52	M-v	5	Williams	1999 WP ₆
1999 WQ ₆	14.7	0.15	20000226	52.83707	305.38791	80.58774	10.35817	0.1371272	2.5897622	39	1	63 days	0.54	M-v	4	Williams	1999 WQ ₆
1999 WR ₆	15.4	0.15	19991208	62.38763	266.83544	87.78433	7.11931	0.1209546	2.4286868	23	1	50 days	1.02			Williams	1999 WR ₆
1999 WW ₆	15.7	0.15	19991208	332.76439	259.10088	206.54699	1.95616	0.1172439	2.2487565	39	1	52 days	0.52			Williams	1999 WW ₆
1999 WX ₆	13.9	0.15	19991118	36.32545	145.92217	236.05222	9.27081	0.1021922	3.0416666	34	1	45 days	0.49			Williams	1999 WX ₆
1999 WY ₆	13.8	0.15	20000226	64.96460	129.65807	237.20851	12.13009	0.1286390	3.1444498	40	1	64 days	0.52	M-v	5 D	Williams	1999 WY ₆
1999 WZ ₆	15.3	0.15	19991208	291.04972	53.20524	92.99502	5.73825	0.0618099	2.2929239	36	1	52 days	0.55			Williams	1999 WZ ₆
1999 WA ₇	13.5	0.15	20000226	210.15001	94.64295	141.83892	2.78648	0.0153833	2.8802940	50	1	63 days	0.45	M-v	4	Williams	1999 WA ₇
1999 WB ₇	14.2	0.15	20000226	30.04345	291.53726	119.14571	2.74084	0.1478687	2.9152768	59	2	1996–2000	0.50	M-v	4	Williams	37240 1999 WB ₇

1999 WD ₇	15.6	0.15	20000226	320.27226	241.07430	261.56587	6.16246	0.0834296	2.2536698	35	1	64 days	0.60	M-v	5	Williams	1999 WD ₇
1999 WE ₇	15.4	0.15	20000226	26.77155	15.07509	50.13219	5.08555	0.1512719	2.3287763	54	1	62 days	0.43	M-v	4	Williams	1999 WE ₇
1999 WF ₇	16.6	0.15	19991118	359.29146	148.21018	276.06308	2.81076	0.3016172	2.5859402	25	1	24 days	0.50			Williams	1999 WF ₇
1999 WH ₇	15.6	0.15	19991118	357.48285	161.66964	266.19084	1.54241	0.1668989	2.5749107	18	1	29 days	0.46			Williams	1999 WH ₇
1999 WJ ₇	13.0	0.15	20000226	1.07033	154.40683	290.52454	2.97991	0.3162137	4.6333351	61	1	73 days	0.58	M-v	4	Marsden	1999 WJ ₇
1999 WK ₇	12.7	0.15	20000226	202.92795	352.70232	251.23205	9.34642	0.1650328	3.1445266	42	1	64 days	0.59	M-v	5	Williams	1999 WK ₇
1999 WL ₇	16.2	0.15	19991118	356.64069	173.16738	255.08357	3.40277	0.2021950	2.3526918	29	1	29 days	0.38			Williams	1999 WL ₇
1999 WM ₇	14.3	0.15	19991118	59.39962	303.35355	47.51445	2.48936	0.1471474	2.9848729	40	1	58 days	0.70			Williams	1999 WM ₇
1999 WN ₇	14.9	0.15	20000226	97.09441	252.24001	79.91568	7.57886	0.2178811	2.3747436	61	2	1998–2000	0.59	M-v	4	Williams	37241 1999 WN ₇
1999 WP ₇	15.3	0.15	19991208	282.51179	17.00767	142.48957	1.86381	0.0789485	2.3166588	27	1	51 days	0.60			Williams	1999 WP ₇
1999 WQ ₇	14.3	0.15	19991208	323.39740	344.66951	139.00207	1.91044	0.1705886	3.1470915	23	1	50 days	0.69			Williams	1999 WQ ₇
1999 WU ₇	13.1	0.15	19991208	197.46424	154.47444	110.19498	14.29218	0.1319162	2.6653627	24	1	38 days	0.48			Williams	1999 WU ₇
1999 WV ₇	16.1	0.15	19991208	0.82909	186.43765	264.14964	19.70023	0.1361358	1.9186237	52	1	58 days	0.86			Williams	1999 WV ₇
1999 WX ₇	15.2	0.15	19991208	343.48889	218.49810	264.19505	7.13872	0.1864770	2.4515514	34	1	49 days	0.45			Williams	1999 WX ₇
1999 WY ₇	13.9	0.15	19991208	328.61407	237.85315	267.93362	11.99161	0.1777135	2.7152281	50	1	56 days	0.51			Williams	1999 WY ₇
1999 WA ₈	13.3	0.15	20000226	313.39984	192.63310	297.05664	8.84255	0.1339502	3.1400648	47	1	60 days	0.71	M-v	5	Williams	1999 WA ₈
1999 WB ₈	14.9	0.15	20000226	283.45904	107.69693	68.87225	11.04091	0.1410846	2.4782141	59	1	67 days	0.62	M-v	5	Williams	1999 WB ₈
1999 WD ₈	16.8	0.15	19991208	334.54294	28.80359	74.80468	5.40590	0.1788197	2.3444071	27	1	55 days	0.71			Williams	1999 WD ₈
1999 WE ₈	16.0	0.15	20000226	49.62220	296.98118	90.17247	2.75859	0.2068449	2.3025793	54	1	67 days	0.61	M-v	4	Williams	1999 WE ₈
1999 WG ₈	15.0	0.15	20000226	61.15832	294.43328	81.59271	4.16437	0.1722779	2.2457188	40	1	70 days	0.58	M-v	4	Williams	1999 WG ₈
1999 WH ₈	13.7	0.15	19991208	257.81543	229.42501	320.90465	4.43688	0.1319955	2.5280345	16	1	49 days	0.76			Williams	1999 WH ₈
1999 WJ ₈	14.4	0.15	19991208	238.91146	77.10936	130.80769	6.34573	0.0664216	2.3654070	33	1	39 days	0.78			Williams	1999 WJ ₈
1999 WK ₈	15.2	0.15	19991118	226.84591	154.64862	48.34974	6.61584	0.1708384	2.4314483	57	1	56 days	0.66			Williams	1999 WK ₈
1999 WL ₈	16.0	0.15	19991118	344.77778	40.94381	27.53821	6.73164	0.1138247	2.3954360	23	1	29 days	0.90			Williams	1999 WL ₈
1999 WM ₈	15.3	0.15	20000226	59.45310	12.03017	336.37952	3.26386	0.2852783	2.5357053	65	1	69 days	0.55	M-v	5	Williams	1999 WM ₈
1999 WN ₈	14.4	0.15	19991118	67.65515	294.70509	28.81756	11.45112	0.1449125	3.0955431	25	1	19 days	0.86			Williams	1999 WN ₈
1999 WO ₈	14.1	0.15	20000226	84.38275	151.65986	204.44384	6.19710	0.1099003	2.3672031	45	1	64 days	0.48	M-v	4	Williams	1999 WO ₈
1999 WQ ₈	13.8	0.15	20000226	72.89542	269.34008	95.28393	10.62328	0.0727197	2.9637725	26	1	68 days	0.56	M-v	5	Williams	1999 WQ ₈
1999 WS ₈	15.9	0.15	20000226	86.45246	230.58676	121.70927	5.70695	0.1389390	2.2325728	32	2	1997–2000	0.63	M-v	4	Williams	37241 1999 WS ₈
1999 WT ₈	15.5	0.15	20000226	333.33372	68.68883	76.37631	24.15258	0.2518299	2.3239674	34	1	60 days	0.60	M-v	5	Williams	1999 WT ₈
1999 WU ₈	14.2	0.15	20000226	99.29756	205.84213	129.44098	4.72012	0.1556433	2.3104823	85	3	1997–2000	0.49	M-v	2	Williams	37241 1999 WU ₈
1999 WV ₈	14.9	0.15	20000226	29.04311	253.43275	160.35073	4.22915	0.2375891	2.5945723	46	1	64 days	0.42	M-v	4	Williams	1999 WV ₈
1999 WW ₈	12.7	0.15	20000226	355.71255	15.51946	82.88376	16.15564	0.2298002	3.1838213	64	1	63 days	0.34	M-v	4	Williams	1999 WW ₈
1999 WX ₈	12.3	0.15	20000226	312.22591	54.78295	83.57152	17.21626	0.0792986	3.1853013	56	2	1990–2000	0.50	M-v	4	Williams	37241 1999 WX ₈
1999 WY ₈	13.6	0.15	20000226	358.32992	336.60000	117.49822	6.27954	0.0896356	2.5901307	55	1	64 days	0.47	M-v	4	Williams	1999 WY ₈
1999 WZ ₈	14.2	0.15	20000226	101.29042	209.51332	108.81408	6.87576	0.2469159	2.6229677	53	2	1998–2000	0.62	M-v	4	Williams	37241 1999 WZ ₈
1999 WA ₉	16.0	0.15	19991208	48.98119	233.88829	140.68287	5.11595	0.0620955	2.7365515	11	1	39 days	0.80			Williams	1999 WA ₉
1999 WB ₉	15.8	0.15	19991208	353.38132	189.33320	258.74924	4.56662	0.2475031	2.3645006	52	1	55 days	0.46			Williams	1999 WB ₉
1999 WC ₉	15.4	0.15	20000226	83.16843	293.82569	41.93107	5.04780	0.2064969	2.3114756	77	2	1998–1999	0.49	M-v	4	Williams	37242 1999 WC ₉
1999 WD ₉	13.9	0.15	20000226	358.34791	250.68221	204.07697	6.83815	0.0675251	2.3780266	59	2	1997–2000	0.53	M-v	4	Williams	37242 1999 WD ₉
1999 WF ₉	14.9	0.15	20000226	43.53806	86.38707	310.17288	10.92483	0.1772278	2.4738111	28	1	62 days	0.42	M-v	4	Williams	1999 WF ₉
1999 WG ₉	14.1	0.15	20000226	56.89583	264.23008	104.74177	14.14254	0.1888288	2.6260561	48	2	1994–2000	0.62	M-v	4	Williams	37242 1999 WG ₉
1999 WH ₉	15.2	0.15	19991118	112.40815	243.28863	49.26910	8.58113	0.1370959	2.4753201	24	1	22 days	0.59			Williams	1999 WH ₉
1999 WL ₉	15.5	0.15	20000226	90.50247	231.11495	93.26454	5.49718	0.2250268	2.5803412	38	2	1998–1999	0.54	M-v	4	Williams	37242 1999 WL ₉
1999 WM ₉	15.2	0.15	19991118	21.68076	186.96867	206.82492	5.70944	0.0361447	2.7319472	21	1	21 days	0.59			Williams	1999 WM ₉
1999 WN ₉	14.4	0.15	20000226	101.95073	197.28979	133.23860	1.99438	0.1471557	2.5556646	55	2	1994–2000	0.61	M-v	4	Williams	37242 1999 WN ₉
1999 WO ₉	14.6	0.15	20000226	78.83253	207.65552	133.29565	7.87502	0.1863679	2.4527147	32	1	68 days	0.47	M-v	5	Williams	1999 WO ₉
1999 WP ₉	15.5	0.15	19991208	2.17139	311.30760	90.55878	10.11982	0.1497575	2.6674539	7	1	9 days	0.88			Nakano	1999 WP ₉
1999 WQ ₉	12.7	0.15	19991208	359.20598	336.28906	106.82615	8.94797	0.2469354	2.7510475	31	1	37 days	0.57			Williams	1999 WQ ₉
1999 WS ₉	11.9	0.15	20000226	177.21498	209.28417	81.58261	10.35077	0.0818072	2.6813254	46	3	1983–2000	0.59	M-v	3	Williams	37242 1999 WS ₉
1999 WT ₉	14.6	0.15	20000226	15.54609	23.67172	75.03043	7.05733	0.1026202	2.3089067	32	2	1994–2000	0.60	M-v	4	Williams	37242 1999 WT ₉
1999 WU ₉	14.8	0.15	19991208	19.81176	143.54669	274.92176	13.89696	0.2212616	2.5694285	42	1	54 days	0.98			Williams	1999 WU ₉
1999 WW ₉	15.6	0.15	20000226	47.94901	290.69355	104.33365	3.96783	0.2932535	2.3064602	39	1	68 days	0.41	M-v	4	Williams	1999 WW ₉

1999 WX ₉	14.5	0.15	19991208	354.75211	187.46916	271.27757	12.30786	0.1047009	2.6409484	34	1	54 days	0.63		Williams		1999 WX ₉
1999 WY ₉	14.8	0.15	20000226	88.67922	298.69486	82.67603	25.43215	0.0830203	1.9314892	57	3	1990–2000	0.54	M-v 2	Williams	37243	1999 WY ₉
1999 WZ ₉	13.9	0.15	19991208	39.15189	17.91769	21.70245	3.19760	0.1475486	2.5127841	24	1	37 days	0.42		Williams		1999 WZ ₉
1999 WA ₁₀	13.9	0.15	20000226	36.76489	329.42542	90.79167	14.81274	0.1574135	2.4579834	38	1	63 days	0.48	M-v 4	Williams		1999 WA ₁₀
1999 WB ₁₀	13.2	0.15	19991208	318.21152	254.19734	254.30424	16.58058	0.2319620	2.9382443	35	1	52 days	0.43		Williams		1999 WB ₁₀
1999 WD ₁₀	14.1	0.15	19991208	326.16498	63.81895	77.73579	3.80802	0.1808972	2.6098782	27	1	38 days	0.65		Williams		1999 WD ₁₀
1999 WE ₁₀	12.9	0.15	19991208	205.90496	171.28494	82.19397	8.10755	0.0702190	2.7682812	27	1	37 days	0.51		Williams		1999 WE ₁₀
1999 WG ₁₀	16.6	0.15	19991118	55.15635	285.18138	32.42595	6.22370	0.1524181	2.3806384	20	1	29 days	0.34		Williams		1999 WG ₁₀
1999 WJ ₁₀	15.1	0.15	20000226	17.97825	180.77689	207.71437	10.18238	0.0930072	2.9587095	29	1	83 days	0.53	M-v 4	Williams		1999 WJ ₁₀
1999 WQ ₁₀	16.9	0.15	19991118	6.01038	185.19627	226.62491	4.59922	0.0754828	2.7581057	24	1	33 days	0.32		Williams		1999 WQ ₁₀
1999 WT ₁₀	17.0	0.15	20000226	342.21933	29.00113	79.40712	4.07573	0.0884862	2.5512526	37	1	60 days	0.41	M-v 5	Williams		1999 WT ₁₀
1999 WU ₁₀	18.3	0.15	19991208	334.71574	7.64310	90.89255	2.39279	0.1368020	2.4514248	20	1	57 days	0.44		Williams		1999 WU ₁₀
1999 WX ₁₀	18.2	0.15	19991118	355.56274	4.16649	59.65997	19.28545	0.2487421	3.1443878	12	1	23 days	0.18		Williams		1999 WX ₁₀
1999 WY ₁₀	14.4	0.15	19991208	177.10756	182.51752	73.52558	13.51935	0.0316116	3.1858781	42	1	57 days	0.66		Williams		1999 WY ₁₀
1999 WZ ₁₀	16.5	0.15	20000226	359.41866	137.99168	318.07255	0.44377	0.2234171	2.2509014	44	1	69 days	0.50	M-v 5	Williams		1999 WZ ₁₀
1999 WA ₁₁	17.1	0.15	19991118	31.17882	311.43860	49.26975	7.87771	0.2191890	2.8084509	16	1	28 days	0.45		Williams		1999 WA ₁₁
1999 WB ₁₁	16.4	0.15	20000226	42.47800	314.99105	79.52194	3.50606	0.2096101	2.3467845	82	1	67 days	0.38	M-v 4	Williams		1999 WB ₁₁
1999 WC ₁₁	16.2	0.15	19991118	342.92126	10.24263	68.19145	12.93114	0.0780387	2.5910567	69	1	41 days	0.55		Williams		1999 WC ₁₁
1999 WD ₁₁	16.5	0.15	19991118	298.54187	319.42185	171.21732	1.50627	0.0959457	3.1587907	31	1	30 days	0.37		Williams		1999 WD ₁₁
1999 WE ₁₁	15.9	0.15	19991118	160.52561	164.96934	92.20531	2.91234	0.0367246	3.0107564	30	1	33 days	0.33		Williams		1999 WE ₁₁
1999 WF ₁₁	16.5	0.15	19991118	40.34411	179.09957	189.82555	1.73698	0.1162647	2.9409500	28	1	28 days	0.48		Williams		1999 WF ₁₁
1999 WH ₁₁	15.0	0.15	19991118	239.99879	121.05152	71.20078	9.80071	0.1435124	2.4392952	68	1	37 days	0.37		Williams		1999 WH ₁₁
1999 WJ ₁₁	17.5	0.15	19991118	320.96005	238.30683	226.09181	4.09941	0.0824988	2.1986205	15	1	23 days	0.33		Williams		1999 WJ ₁₁
1999 WL ₁₁	13.2	0.15	20000226	89.76868	295.74931	50.77546	14.38758	0.1192807	2.5275237	39	1	63 days	0.47	M-v 5	Williams		1999 WL ₁₁
1999 WM ₁₁	14.1	0.15	20000226	65.91928	65.55007	289.88752	6.41064	0.2449668	2.8003912	43	2	1995–2000	0.48	M-v 5	Williams	37243	1999 WM ₁₁
1999 WN ₁₁	15.6	0.15	20000226	35.40627	48.74421	1.11443	3.60699	0.2401689	2.3423103	31	1	82 days	0.53	M-v 4	Williams		1999 WN ₁₁
1999 WO ₁₁	13.2	0.15	20000226	335.59118	191.82927	284.26411	8.36647	0.0727359	2.9849542	37	2	1998–2000	0.45	M-v 4	Williams	37243	1999 WO ₁₁
1999 WP ₁₁	14.8	0.15	20000226	17.25576	45.60564	34.12886	5.26302	0.0975400	2.2239050	48	2	1996–2000	0.56	M-v 4	Williams	37243	1999 WP ₁₁
1999 WQ ₁₁	15.0	0.15	20000226	162.26233	356.99069	276.71677	4.86407	0.1943752	2.4426331	30	2	1998–1999	0.66	M-v 5	Williams	37243	1999 WQ ₁₁
1999 WR ₁₁	17.8	0.15	19991118	26.49705	319.79978	31.03485	14.81106	0.1781390	2.5603833	12	1	31 days	0.27		Williams		1999 WR ₁₁
1999 WS ₁₁	16.2	0.15	20000226	69.05992	303.07604	34.69894	4.53441	0.1561908	2.2422542	28	1	62 days	0.40	M-v 5	Williams		1999 WS ₁₁
1999 WT ₁₁	15.3	0.15	20000226	37.09128	337.28531	34.68579	15.36974	0.1608948	2.5443261	42	2	1995–1999	0.45	M-v 3	Williams	37243	1999 WT ₁₁
1999 WB ₁₂	16.9	0.15	19991118	81.85094	240.97030	87.91353	3.46880	0.1612999	2.3970156	19	1	26 days	0.40		Williams		1999 WB ₁₂
1999 WE ₁₂	16.2	0.15	19991118	23.45461	153.23720	247.98760	9.82547	0.1137413	2.9650741	13	1	29 days	0.70		Williams		1999 WE ₁₂
1999 WK ₁₂	17.6	0.15	19991118	26.24280	283.43901	103.48796	1.90400	0.2257238	2.3640444	21	1	23 days	0.37		Williams		1999 WK ₁₂
1999 WL ₁₂	17.0	0.15	19991118	12.43693	157.58340	216.39980	5.54263	0.1498306	2.3817927	14	1	29 days	0.28		Williams		1999 WL ₁₂
1999 WM ₁₂	16.6	0.15	19991118	56.37098	91.16323	216.82677	2.02390	0.2257531	2.4781463	13	1	28 days	0.21		Williams		1999 WM ₁₂
1999 WR ₁₂	16.1	0.15	19991118	346.89783	209.02382	203.57908	1.63346	0.2284452	2.7391985	21	1	30 days	0.31		Williams		1999 WR ₁₂
1999 WS ₁₂	17.1	0.15	19991118	2.39894	339.79749	49.58468	4.48890	0.2037821	2.5989545	13	1	23 days	0.25		Williams		1999 WS ₁₂
1999 WV ₁₂	15.9	0.15	19991118	106.20182	114.70976	185.53373	1.79743	0.1194588	2.9038144	18	1	30 days	0.48		Williams		1999 WV ₁₂
1999 WW ₁₂	17.2	0.15	19991118	234.83007	111.73364	86.22929	3.34345	0.1642473	2.3151489	29	1	27 days	0.61		Williams		1999 WW ₁₂
1999 WZ ₁₂	15.7	0.15	19991208	319.59586	157.00761	320.79393	12.19224	0.1918585	2.7632790	16	1	41 days	0.57		Williams		1999 WZ ₁₂
1999 WA ₁₃	13.9	0.15	20000226	345.61823	122.61512	334.95111	12.93993	0.1084584	2.8789338	45	1	89 days	0.53	M-v 4	Williams		1999 WA ₁₃
1999 WC ₁₃	15.0	0.15	19991118	109.45812	244.08882	25.40776	13.22328	0.0433491	3.0697872	12	1	25 days	0.46		Williams		1999 WC ₁₃
1999 WF ₁₃	17.8	0.15	19991118	93.75476	55.19691	247.61413	1.38254	0.1115941	2.1535679	14	1	30 days	0.39		Williams		1999 WF ₁₃
1999 WG ₁₃	17.5	0.15	19991118	339.50516	21.94910	53.26668	5.03742	0.1088815	2.2754605	25	1	37 days	0.49		Williams		1999 WG ₁₃
1999 WJ ₁₃	16.5	0.15	19991118	209.03764	148.08621	58.97966	3.13211	0.1155777	2.5742784	20	1	38 days	0.38		Williams		1999 WJ ₁₃
1999 WL ₁₃	14.8	0.15	20000226	314.72833	163.88386	345.30391	1.71852	0.0797539	2.2525070	49	1	90 days	0.46	M-v 4	Williams		1999 WL ₁₃
1999 WM ₁₃	14.6	0.15	19991208	8.77489	192.84433	227.43975	4.80848	0.2194115	3.1732473	33	1	52 days	0.61		Williams		1999 WM ₁₃
1999 WN ₁₃	15.9	0.15	20000226	32.22872	320.16498	91.50229	5.85338	0.2586006	2.5603456	37	1	63 days	0.50	M-v 4	Williams		1999 WN ₁₃
1999 WO ₁₃	14.7	0.15	20000226	150.17016	131.19742	165.37193	3.34602	0.1147697	2.3376239	27	1	63 days	0.59	M-v 5	Williams		1999 WO ₁₃
1999 WP ₁₃	14.4	0.15	20000226	85.95076	102.37330	239.25273	12.56442	0.2200345	2.7312794	36	1	64 days	0.54	M-v 5	Williams		1999 WP ₁₃
1999 WR ₁₃	13.5	0.15	19991208	276.74729	73.03871	103.09048	8.04033	0.1518871	2.8404312	34	1	50 days	0.76		Williams		1999 WR ₁₃

1999 WS ₁₃	14.5	0.15	20000226	351.40995	51.15687	65.39152	24.13983	0.3314173	2.4486042	58	1	114 days	0.39	M-v	3	Williams	1999 WS ₁₃
1999 WY ₁₃	17.4	0.15	19991118	46.45749	271.50598	72.91652	2.14357	0.1749888	3.0862153	9	1	19 days	0.33			Williams	1999 WY ₁₃
1999 WZ ₁₃	18.1	0.15	19991118	64.15223	263.36173	59.98085	4.47060	0.1907206	2.4258305	9	1	19 days	0.43			Williams	1999 WZ ₁₃
1999 WA ₁₄	14.0	0.15	19991118	276.65947	84.57146	54.81937	11.54399	0.0721405	3.0402793	38	1	27 days	0.58			Williams	1999 WA ₁₄
1999 WG ₁₄	17.8	0.15	19991118	23.80047	307.50021	67.35784	4.73097	0.2035649	2.3696451	20	1	29 days	0.32			Williams	1999 WG ₁₄
1999 WP ₁₄	15.0	0.15	19991118	262.93337	284.11117	235.99299	13.56049	0.0714661	3.1315440	16	1	26 days	0.28			Williams	1999 WP ₁₄
1999 WQ ₁₄	17.1	0.15	19991118	293.80872	69.68525	65.40142	2.24579	0.1221221	2.4187291	17	1	26 days	0.41			Williams	1999 WQ ₁₄
1999 WR ₁₄	17.6	0.15	19991118	37.04089	256.47664	115.01633	0.37648	0.0892470	2.7565814	9	1	18 days	0.21			Williams	1999 WR ₁₄
1999 WS ₁₄	17.2	0.15	19991118	72.89468	89.23804	230.42596	2.62488	0.2009015	2.4008413	9	1	18 days	0.12			Williams	1999 WS ₁₄
1999 WT ₁₄	15.0	0.15	19991118	315.05327	243.69819	236.95483	13.51482	0.2081257	3.1434239	45	1	35 days	0.46			Williams	1999 WT ₁₄
1999 WV ₁₄	15.7	0.15	19991118	129.54018	50.27184	235.57468	5.54605	0.0037535	2.7261686	39	1	39 days	0.60			Williams	1999 WV ₁₄
1999 WZ ₁₄	16.4	0.15	19991118	43.22376	298.36724	33.78172	6.63406	0.1663610	2.3075233	14	1	26 days	0.43			Williams	1999 WZ ₁₄
1999 WA ₁₅	15.8	0.15	20000226	45.41027	319.00620	31.90941	12.62082	0.2003163	2.8663844	21	1	82 days	0.36	M-v	4	Williams	1999 WA ₁₅
1999 WB ₁₅	14.9	0.15	19991118	1.96464	354.03491	31.70510	6.91279	0.0403866	2.7200460	24	1	36 days	0.45			Williams	1999 WB ₁₅
1999 WH ₁₅	16.6	0.15	19991118	18.86967	157.47240	227.29823	2.52436	0.1029081	2.5721370	21	1	31 days	0.55			Williams	1999 WH ₁₅
1999 WJ ₁₅	16.7	0.15	19991118	85.04553	71.71495	229.17301	2.78260	0.1945871	2.3490166	20	1	29 days	0.33			Williams	1999 WJ ₁₅
1999 WN ₁₅	17.9	0.15	19991118	32.17081	136.27566	224.13169	2.57374	0.2082638	2.7452900	17	1	29 days	0.39			Williams	1999 WN ₁₅
1999 WP ₁₅	17.4	0.15	19991118	199.26862	348.26478	224.40237	4.82474	0.0988775	2.4176816	12	1	29 days	0.17			Williams	1999 WP ₁₅
1999 WR ₁₅	18.3	0.15	19991118	326.63989	229.97058	228.88310	5.91668	0.2029259	2.5601321	16	1	26 days	0.40			Williams	1999 WR ₁₅
1999 WU ₁₅	17.9	0.15	19991208	64.97624	274.76515	54.70838	15.92772	0.1768258	2.6089418	12	1	17 days	0.21			Williams	1999 WU ₁₅
1999 WW ₁₅	17.4	0.15	19991118	122.92958	53.31422	220.17944	3.67085	0.1467228	2.5343690	12	1	29 days	0.14			Williams	1999 WW ₁₅
1999 WX ₁₅	16.7	0.15	19991118	356.43776	345.60225	68.63614	2.89166	0.1627026	3.0424092	12	1	33 days	0.33			Williams	1999 WX ₁₅
1999 WG ₁₆	17.8	0.15	19991118	338.27687	209.53732	227.06229	7.24041	0.0841029	2.4021729	21	1	26 days	0.52			Williams	1999 WG ₁₆
1999 WL ₁₆	15.6	0.15	20000226	83.15426	273.46509	68.51286	4.85435	0.1295151	2.3533254	40	2	1998–1999	0.61	M-v	4	Williams	37244 1999 WL ₁₆
1999 WM ₁₆	16.9	0.15	19991118	9.66366	178.35564	221.28632	5.42174	0.0791279	2.6849575	15	1	23 days	0.39			Williams	1999 WM ₁₆
1999 WO ₁₆	18.9	0.15	19991118	356.11847	333.38401	84.31435	2.34319	0.2112532	2.5038691	9	1	14 days	1.26			Williams	1999 WO ₁₆
1999 WS ₁₆	15.8	0.15	19991118	304.40448	76.70501	26.24500	6.77147	0.1839176	2.6925594	14	1	26 days	0.33			Williams	1999 WS ₁₆
1999 WT ₁₆	15.2	0.15	19991118	357.85315	2.90039	29.15998	9.97003	0.1708022	2.7580859	16	1	27 days	0.39			Williams	1999 WT ₁₆
1999 WA ₁₇	15.7	0.15	19991118	350.40505	10.61506	33.16396	6.65694	0.2030934	3.1613588	14	1	27 days	0.35			Williams	1999 WA ₁₇
1999 WE ₁₇	16.8	0.15	19991118	339.45474	209.01485	209.94871	9.52575	0.1753538	3.0698906	12	1	29 days	0.30			Williams	1999 WE ₁₇
1999 WF ₁₇	14.9	0.15	20000226	10.39457	5.68628	46.62828	4.07990	0.2029328	2.6282518	40	1	96 days	0.52	M-v	4	Williams	1999 WF ₁₇
1999 WG ₁₇	16.5	0.15	19991118	321.95121	46.51918	39.26039	7.87445	0.1911417	2.8081563	12	1	27 days	0.22			Williams	1999 WG ₁₇
1999 WJ ₁₇	15.1	0.15	19991118	246.38219	284.93159	222.51198	6.03324	0.0665096	2.3345828	23	1	32 days	0.53			Williams	1999 WJ ₁₇
1999 WL ₁₇	16.8	0.15	19991118	65.36730	99.68607	219.75729	21.18104	0.0665762	1.9165373	24	1	39 days	0.77			Williams	1999 WL ₁₇
1999 WM ₁₇	16.8	0.15	19991118	9.66057	153.21417	221.49501	11.40091	0.2453433	2.5241359	19	1	32 days	0.33			Williams	1999 WM ₁₇
1999 WV ₁₇	13.3	0.15	20000226	8.63432	199.24743	215.00060	14.12190	0.2034387	2.6757572	64	1	171 days	0.43	M-v	3	Williams	1999 WV ₁₇
1999 WW ₁₇	17.2	0.15	19991118	45.94310	144.97941	203.97212	0.64456	0.1517623	2.5697729	32	1	39 days	0.37		D	Williams	1999 WW ₁₇
1999 WX ₁₇	15.7	0.15	20000226	243.50739	324.40010	229.86151	5.02923	0.0783911	2.5886614	19	1	61 days	0.35	M-v	5	Williams	1999 WX ₁₇
1999 WB ₁₈	19.3	0.15	19991118	357.31499	182.65396	232.62364	4.56993	0.2203070	2.3886742	18	1	33 days	0.34			Williams	1999 WB ₁₈
1999 WC ₁₈	15.5	0.15	19991118	149.01032	29.93874	228.49809	13.76777	0.0274213	3.1849899	14	1	27 days	0.55			Williams	1999 WC ₁₈
1999 WD ₁₈	17.8	0.15	19991118	8.18601	175.82430	225.42332	5.67760	0.1081668	2.6119346	15	1	33 days	0.44			Williams	1999 WD ₁₈
1999 WE ₁₈	17.2	0.15	19991118	35.54287	125.67305	235.40415	7.09494	0.1640319	2.2470396	42	1	39 days	0.52			Williams	1999 WE ₁₈
1999 WF ₁₈	13.4	0.15	20000226	57.80911	315.27686	116.33514	14.34280	0.1480125	2.5658494	45	1	63 days	0.54	M-v	5	Williams	1999 WF ₁₈
1999 WH ₁₈	14.6	0.15	19991208	296.98565	80.73893	69.33072	10.28875	0.1449101	2.3547631	29	1	53 days	0.62			Williams	1999 WH ₁₈
1999 WJ ₁₈	14.3	0.15	20000226	18.23027	351.21345	77.26679	16.75868	0.1717210	3.0950505	24	1	61 days	0.52	M-v	5	Williams	1999 WJ ₁₈
1999 WL ₁₈	16.0	0.15	19991118	20.02446	272.19566	125.93887	1.87180	0.1747775	2.3796021	21	1	31 days	0.83			Williams	1999 WL ₁₈
1999 WO ₁₈	16.9	0.15	19991118	33.54325	315.47364	51.20647	12.33268	0.1119042	2.7281269	12	1	28 days	0.30			Williams	1999 WO ₁₈
1999 WR ₁₈	16.5	0.15	19991118	9.87350	342.77698	51.10993	1.14920	0.1853168	3.1070209	21	1	31 days	0.37			Williams	1999 WR ₁₈
1999 WT ₁₈	18.4	0.15	19991118	52.46025	124.92163	215.14546	0.67122	0.1701099	2.3618561	9	1	13 days	0.25			Williams	1999 WT ₁₈
1999 WX ₁₈	18.7	0.15	19991208	358.42108	358.90971	62.65788	4.33683	0.2327708	2.5419133	9	1	16 days	0.12			Williams	1999 WX ₁₈
1999 WZ ₁₈	17.5	0.15	19991118	340.82107	231.55886	202.71385	1.39297	0.1062923	2.9253709	9	1	13 days	0.22			Williams	1999 WZ ₁₈
1999 WC ₁₉	16.8	0.15	19991208	339.52934	24.64914	58.10264	11.65887	0.1446098	3.0816562	9	1	16 days	0.21			Williams	1999 WC ₁₉
1999 WE ₁₉	16.8	0.15	19991118	83.11373	274.88241	42.85562	2.62965	0.0594363	2.8688126	15	1	31 days	0.24			Williams	1999 WE ₁₉

1999 WF ₁₉	17.6	0.15	19991118	352.60133	175.73621	244.39253	1.15825	0.1572513	2.3305351	23	1	36 days	0.36		Williams	1999 WF ₁₉
1999 WH ₁₉	18.3	0.15	19991118	337.87436	202.67086	237.41700	3.18894	0.1577331	2.4389674	9	1	23 days	0.62		Williams	1999 WH ₁₉
1999 WJ ₁₉	16.8	0.15	19991118	216.05200	336.83047	230.52361	2.94289	0.2483074	2.2525048	16	1	27 days	0.37		Williams	1999 WJ ₁₉
1999 WK ₁₉	16.9	0.15	19991118	266.18849	281.00957	231.99101	13.29731	0.0813426	2.6653207	9	1	22 days	0.10		Williams	1999 WK ₁₉
1999 WL ₁₉	17.3	0.15	19991118	334.65043	31.43864	65.14370	14.56944	0.2193197	2.6622123	14	1	28 days	0.21		Williams	1999 WL ₁₉
1999 XE	16.1	0.15	19991118	87.04078	118.82375	192.47071	1.80525	0.1869285	2.6128240	18	1	22 days	0.26		Williams	1999 XE
1999 XJ	16.6	0.15	19991118	345.69976	357.49110	88.98701	2.90549	0.1639114	2.5782048	17	1	21 days	0.57		Williams	1999 XJ
1999 XM	14.2	0.15	20000226	25.54277	356.75725	75.72380	8.84725	0.2424521	2.4116905	69	4	1978–2000	0.53	M-v 2	Williams	37244 1999 XM
1999 XQ	15.5	0.15	19991208	297.09716	82.12511	105.95185	16.77271	0.1639709	3.1210093	12	1	15 days	0.24		Williams	1999 XQ
1999 XR	16.1	0.15	19991208	5.76729	354.95882	102.92651	7.26384	0.0897123	2.8011406	12	1	34 days	0.42		Williams	1999 XR
1999 XS	15.9	0.15	19991118	211.07147	342.67947	237.88411	4.46345	0.0655758	2.3561250	22	1	29 days	0.44		Williams	1999 XS
1999 XV	15.1	0.15	20000226	64.54639	293.47936	72.48525	23.30215	0.1017765	1.9504547	42	1	100 days	0.65	M-v 4	Williams	1999 XV
1999 XX	15.2	0.15	19991208	17.82419	12.28627	46.73873	3.40389	0.1637758	2.3856965	26	1	35 days	0.51		Williams	1999 XX
1999 XY	14.8	0.15	20000226	18.67520	174.54512	273.81103	4.47333	0.2013988	2.3690835	46	1	70 days	0.36	M-v 4	Williams	1999 XY
1999 XA ₁	13.1	0.15	19991208	320.70316	201.72235	287.56865	8.68566	0.0413543	2.9767865	24	1	49 days	0.66		Williams	1999 XA ₁
1999 XB ₁	11.0	0.15	19991208	144.32967	198.13286	109.01321	8.99087	0.0602660	3.3980532	26	1	35 days	1.06	D	Williams	1999 XB ₁
1999 XD ₁	15.2	0.15	20000226	42.47842	346.71553	71.35501	6.47474	0.1707370	2.2287873	38	1	64 days	0.54	M-v 5	Williams	1999 XD ₁
1999 XE ₁	13.5	0.15	20000226	49.90657	224.07934	190.16257	4.15003	0.1162137	2.5259839	45	4	1991–2000	0.63	M-v 1	Williams	37244 1999 XE ₁
1999 XF ₁	13.8	0.15	19991208	349.43670	354.87932	108.38625	7.99036	0.0678598	2.3129761	32	1	35 days	0.60		Williams	1999 XF ₁
1999 XH ₁	12.4	0.15	20000226	250.40334	138.34595	79.89989	11.13210	0.0461423	2.9875172	51	1	64 days	0.60	M-v 5	Williams	1999 XH ₁
1999 XK ₁	12.5	0.15	19991208	138.75871	190.20704	120.24651	10.5392	0.0774866	2.6193401	22	1	35 days	0.48		Williams	1999 XK ₁
1999 XL ₁	13.2	0.15	20000226	331.75238	248.15180	263.93789	12.96718	0.1561446	3.0388702	29	2	1988–2000	0.53	M-v 4	Williams	37244 1999 XL ₁
1999 XR ₁	14.0	0.15	19991208	293.55288	93.30358	94.60983	25.55813	0.2573170	2.7894023	35	1	35 days	0.51		Williams	1999 XR ₁
1999 XS ₁	14.3	0.15	19991208	353.42504	132.12022	311.45419	8.27475	0.1305141	2.7881016	43	1	32 days	0.66		Williams	1999 XS ₁
1999 XT ₁	13.5	0.15	20000226	227.72786	332.23386	223.23418	22.37844	0.0590453	3.1253228	58	1	91 days	0.60	M-v 4	Williams	1999 XT ₁
1999 XU ₁	16.0	0.15	20000226	315.05195	59.74035	73.52370	6.77717	0.0444692	2.2341168	56	1	62 days	0.63	M-v 5	Williams	1999 XU ₁
1999 XV ₁	13.2	0.15	20000226	33.84149	307.56673	93.92893	5.15559	0.1049906	2.6530700	73	3	1982–2000	0.38	M-v 3	Williams	37244 1999 XV ₁
1999 XW ₁	14.5	0.15	20000226	60.97543	249.38024	105.79236	3.84126	0.3015490	2.3718501	66	3	1997–2000	0.50	M-v 2	Williams	37244 1999 XW ₁
1999 XX ₁	15.3	0.15	20000226	36.68125	153.05106	250.47171	3.92464	0.2230032	2.3595152	65	1	98 days	0.48	M-v 4	Williams	1999 XX ₁
1999 XY ₁	14.5	0.15	20000226	42.53931	295.29891	94.57575	18.32791	0.2284019	2.5219952	52	1	115 days	0.46	M-v 3	Williams	1999 XY ₁
1999 XZ ₁	13.4	0.15	20000226	51.00084	183.11271	199.49583	9.09339	0.1689142	2.7699510	35	1	64 days	0.58	M-v 4	Williams	1999 XZ ₁
1999 XB ₂	14.1	0.15	20000226	72.51574	198.23441	170.10651	9.44491	0.0950405	2.5783812	43	1	70 days	0.60	M-v 4	Williams	1999 XB ₂
1999 XF ₂	15.2	0.15	19991208	58.01401	240.82249	117.90719	2.65869	0.1489484	2.1946969	44	1	52 days	0.34		Williams	1999 XF ₂
1999 XG ₂	13.8	0.15	20000226	61.09933	116.82881	251.88898	8.40047	0.2173670	2.6445817	53	2	1986–2000	0.52	M-v 4	Williams	37245 1999 XG ₂
1999 XH ₂	13.2	0.15	20000226	144.03382	216.98030	38.55058	12.60480	0.1316231	2.6434931	42	1	97 days	0.53	M-v 5	Williams	1999 XH ₂
1999 XK ₂	14.6	0.15	19991208	271.10835	93.87049	116.73632	2.48533	0.1305468	3.1778177	19	1	33 days	0.46		Williams	1999 XK ₂
1999 XO ₂	17.2	0.15	19991118	11.93274	195.70703	208.85902	2.04371	0.0830614	2.6648541	23	1	27 days	0.34		Williams	1999 XO ₂
1999 XP ₂	17.7	0.15	19991118	277.78114	74.22886	83.87872	3.23161	0.1474013	2.3368739	22	1	27 days	0.29		Williams	1999 XP ₂
1999 XU ₂	14.3	0.15	20000226	20.63071	155.65363	258.59420	6.35484	0.1558135	2.2683095	57	1	95 days	0.52	M-v 4	Williams	1999 XU ₂
1999 XV ₂	13.2	0.15	20000226	271.21114	272.52288	259.23078	7.83295	0.1681643	2.3855166	54	1	198 days	0.52	M-v 4	Williams	1999 XV ₂
1999 XZ ₂	14.9	0.15	20000226	38.73791	310.78931	77.60570	10.48711	0.2053607	2.7475368	30	1	62 days	0.42	M-v 4	Williams	1999 XZ ₂
1999 XA ₃	15.8	0.15	19991118	26.19043	216.72065	151.73505	3.64776	0.2799243	3.0233944	28	1	38 days	0.52		Williams	1999 XA ₃
1999 XB ₃	15.2	0.15	19991118	359.58008	242.26802	173.51682	3.05424	0.0732267	3.0016368	27	1	27 days	0.60		Williams	1999 XB ₃
1999 XC ₃	15.4	0.15	20000226	6.08104	339.01556	104.43517	3.94030	0.2161794	2.5714645	49	1	63 days	0.49	M-v 4	Williams	1999 XC ₃
1999 XD ₃	16.7	0.15	19991208	334.99501	268.36029	207.08106	4.92177	0.3505200	2.6576958	21	1	12 days	0.98		Williams	1999 XD ₃
1999 XE ₃	15.6	0.15	19991118	248.86540	320.61459	213.07802	6.28624	0.0597729	2.3630946	41	1	40 days	0.46		Williams	1999 XE ₃
1999 XF ₃	15.8	0.15	20000226	55.82919	164.50034	211.86003	6.25908	0.1742941	2.3321177	41	1	64 days	0.54	M-v 5	Williams	1999 XF ₃
1999 XG ₃	15.2	0.15	20000226	333.36302	26.57362	95.15596	6.72199	0.1065542	2.2909671	34	1	63 days	0.65	M-v 5	Williams	1999 XG ₃
1999 XH ₃	15.6	0.15	19991208	295.22684	55.81969	85.36421	7.22298	0.1299687	2.3267132	24	1	50 days	0.38		Williams	1999 XH ₃
1999 XL ₃	14.2	0.15	19991118	267.23915	297.75877	218.54886	13.07775	0.0623696	3.0504277	11	1	3 days	0.61	E	Williams	1999 XL ₃
1999 XM ₃	16.1	0.15	19991118	357.60270	213.21474	206.40189	5.28633	0.1534918	2.6882756	13	1	18 days	0.43		Williams	1999 XM ₃
1999 XQ ₃	15.3	0.15	20000226	56.01261	144.07558	226.65783	13.06099	0.1852041	2.5973070	42	1	69 days	0.55	M-v 4	Williams	1999 XQ ₃
1999 XR ₃	14.0	0.15	19991118	84.87177	243.29530	79.88153	10.59644	0.0759745	2.9874440	25	1	27 days	0.39		Williams	1999 XR ₃

1999 XS ₃	14.8	0.15	20000226	343.08534	33.43480	83.08409	7.91979	0.1733042	2.3914726	47	1	63 days	0.37	M-v	4	Williams	1999 XS ₃
1999 XX ₃	15.1	0.15	19991118	38.20412	267.36300	97.85380	7.78828	0.1631253	3.1800584	12	1	18 days	0.85			Williams	1999 XX ₃
1999 XZ ₃	14.7	0.15	19991118	78.58417	112.74862	207.27181	8.44779	0.1681307	2.7782917	17	1	27 days	0.58			Williams	1999 XZ ₃
1999 XB ₄	14.7	0.15	20000226	281.89347	71.86645	95.17075	5.98270	0.0375351	2.3802257	61	1	67 days	0.54	M-v	5	Williams	1999 XB ₄
1999 XC ₄	16.2	0.15	19991118	356.58417	213.79829	208.36269	6.50812	0.0955796	2.3976059	25	1	29 days	0.46			Williams	1999 XC ₄
1999 XG ₄	16.9	0.15	19991118	43.30777	237.57845	115.21574	0.97251	0.2108162	2.2748672	25	1	28 days	0.54			Williams	1999 XG ₄
1999 XH ₄	15.0	0.15	19991118	315.65750	328.08021	134.95072	2.32597	0.0354375	3.0665528	27	1	28 days	0.56			Williams	1999 XH ₄
1999 XJ ₄	15.4	0.15	19991118	197.78472	116.73558	106.31303	3.06994	0.1578566	2.3749528	21	1	33 days	0.63			Williams	1999 XJ ₄
1999 XO ₄	16.5	0.15	20000226	7.30020	351.48830	93.05974	3.36325	0.2023584	2.4298806	40	1	68 days	0.66	M-v	5	Williams	1999 XO ₄
1999 XR ₄	15.4	0.15	20000226	327.36447	3.34820	131.54727	2.52383	0.1665136	2.3433126	30	1	68 days	0.44	M-v	5	Williams	1999 XR ₄
1999 XS ₄	15.2	0.15	19991118	0.45277	203.58439	212.84669	4.95454	0.1320305	3.1958210	39	1	33 days	0.48			Williams	1999 XS ₄
1999 XV ₄	17.2	0.15	19991118	38.45672	260.55073	107.53048	1.99488	0.1320198	2.1232995	37	1	32 days	0.59			Williams	1999 XV ₄
1999 XW ₄	16.1	0.15	19991118	44.42750	187.23951	166.23559	2.12276	0.2038262	2.6174821	37	1	38 days	0.52			Williams	1999 XW ₄
1999 XY ₄	15.8	0.15	19991118	345.68471	273.71977	167.80698	1.59367	0.2404212	3.1721302	30	1	24 days	0.61			Williams	1999 XY ₄
1999 XA ₅	15.0	0.15	19991118	68.99833	194.31272	144.92617	2.28859	0.0917160	2.9504785	34	1	29 days	0.56			Williams	1999 XA ₅
1999 XB ₅	16.8	0.15	19991118	14.74849	283.97249	112.41112	3.34714	0.1790685	2.4111819	23	1	20 days	0.43			Williams	1999 XB ₅
1999 XC ₅	15.3	0.15	20000226	12.07453	356.89985	77.31351	11.75552	0.2444894	2.7181709	38	1	62 days	0.58	M-v	4	Williams	1999 XC ₅
1999 XE ₅	16.3	0.15	20000226	56.76300	269.33316	110.24849	2.56925	0.1778614	2.2251247	48	1	61 days	0.39	M-v	5	Williams	1999 XE ₅
1999 XG ₅	15.1	0.15	19991118	50.63528	256.35026	96.62666	3.71581	0.1539271	3.0183567	44	1	34 days	0.30			Williams	1999 XG ₅
1999 XH ₅	17.0	0.15	20000226	30.74723	338.86248	78.03296	6.58726	0.1362957	2.2283599	49	1	69 days	0.43	M-v	4	Williams	1999 XH ₅
1999 XJ ₅	15.4	0.15	19991118	30.12153	290.16769	85.91240	6.41914	0.1782677	3.1368198	26	1	31 days	0.58			Williams	1999 XJ ₅
1999 XL ₅	15.7	0.15	20000226	14.32947	357.79434	75.22573	4.24762	0.2168764	2.5325659	52	1	63 days	0.48	M-v	4	Williams	1999 XL ₅
1999 XM ₅	13.8	0.15	20000226	328.49852	59.27021	65.19283	16.98463	0.1715598	3.0454959	57	1	68 days	0.41	M-v	4	Williams	1999 XM ₅
1999 XN ₅	15.2	0.15	19991118	357.31934	205.01631	216.41764	0.97672	0.0837963	2.9054596	40	1	34 days	0.52			Williams	1999 XN ₅
1999 XO ₅	16.5	0.15	20000226	21.02334	359.72963	68.85577	1.98263	0.1375618	2.2671488	46	1	68 days	0.57	M-v	5 D	Williams	1999 XO ₅
1999 XP ₅	16.2	0.15	20000226	51.02045	287.35677	101.06471	1.84632	0.1730015	2.1970116	56	2	1994-2000	0.47	M-v	4	Williams	37245 1999 XP ₅
1999 XQ ₅	14.1	0.15	19991208	19.88568	150.98396	269.63086	16.58555	0.0961409	2.7090897	51	1	52 days	0.45			Williams	1999 XQ ₅
1999 XR ₅	16.9	0.15	20000226	28.26434	329.88470	86.45336	3.44503	0.2041718	2.3669281	56	1	69 days	0.56	M-v	4	Williams	1999 XR ₅
1999 XS ₅	15.8	0.15	19991118	165.84806	165.19322	85.95062	2.56054	0.1028248	2.3052541	31	1	21 days	0.68			Williams	1999 XS ₅
1999 XV ₅	16.1	0.15	19991208	1.67258	356.10917	67.00627	7.69205	0.0359964	2.5809488	29	1	53 days	0.52			Williams	1999 XV ₅
1999 XW ₅	17.1	0.15	19991208	12.82814	68.82894	340.37920	0.94437	0.2000509	2.2293851	46	1	53 days	0.48			Williams	1999 XW ₅
1999 XX ₅	13.2	0.15	20000226	252.24463	144.14404	54.88180	5.94843	0.0911690	2.7573571	66	1	68 days	0.43	M-v	4	Williams	1999 XX ₅
1999 XY ₅	15.3	0.15	19991208	164.13626	2.70055	254.72159	3.58029	0.1872395	2.2874139	27	1	55 days	0.69			Williams	1999 XY ₅
1999 XZ ₅	17.3	0.15	19991208	15.59392	153.86912	246.97336	9.38833	0.2830278	2.3497390	39	1	53 days	0.62			Williams	1999 XZ ₅
1999 XA ₆	16.9	0.15	19991208	330.17773	234.26250	247.51300	21.82109	0.2906492	2.4354864	33	1	38 days	0.45			Williams	1999 XA ₆
1999 XB ₆	17.3	0.15	19991118	24.70010	313.65660	72.72802	0.04385	0.1614736	2.1185053	33	1	27 days	0.68			Williams	1999 XB ₆
1999 XF ₆	14.7	0.15	19991118	32.29099	137.15785	235.32420	1.87444	0.2377290	3.9912161	26	1	29 days	0.78			Williams	1999 XF ₆
1999 XG ₆	15.9	0.15	19991118	146.27226	199.01273	70.69839	4.19283	0.1482417	2.2469017	28	1	29 days	0.67			Williams	1999 XG ₆
1999 XJ ₆	15.7	0.15	20000226	80.84218	104.73103	245.74925	13.66250	0.1575994	2.5448209	30	1	69 days	0.60	M-v	5	Williams	1999 XJ ₆
1999 XK ₆	16.7	0.15	19991118	18.58628	335.00748	59.87369	3.30647	0.1939603	2.3755089	28	1	29 days	0.29			Williams	1999 XK ₆
1999 XL ₆	15.5	0.15	19991118	3.61610	47.29202	6.98834	2.61498	0.2124059	3.1103734	24	1	31 days	0.43			Williams	1999 XL ₆
1999 XM ₆	13.7	0.15	20000226	309.79280	111.59840	52.49048	16.27247	0.2953093	3.0783957	36	1	62 days	0.57	M-v	5	Williams	1999 XM ₆
1999 XR ₆	16.4	0.15	19991118	346.50462	161.99299	274.43716	3.28213	0.0875065	2.2238640	34	1	30 days	0.51			Williams	1999 XR ₆
1999 XU ₆	16.9	0.15	19991118	18.34252	79.45719	312.59038	1.50639	0.2039847	2.3802180	38	1	30 days	0.44			Williams	1999 XU ₆
1999 XV ₆	15.1	0.15	20000226	132.64142	316.91557	347.39292	1.49513	0.1278225	2.2410947	48	2	1998-1999	0.51	M-v	4	Williams	37245 1999 XV ₆
1999 XW ₆	15.8	0.15	19991118	210.47101	165.66291	47.24757	5.04137	0.0279736	2.5685771	31	1	31 days	0.63			Williams	1999 XW ₆
1999 XX ₆	16.3	0.15	19991118	283.75005	122.06811	33.94851	3.00311	0.1578520	2.3548279	25	1	31 days	0.49			Williams	1999 XX ₆
1999 XY ₆	15.1	0.15	20000226	352.12808	63.78551	44.01718	6.64962	0.1939216	2.5749417	46	1	61 days	0.47	M-v	5	Williams	1999 XY ₆
1999 XZ ₆	14.4	0.15	20000226	9.78490	104.55947	329.10745	2.85558	0.0936476	3.0004073	32	1	62 days	0.51	M-v	5	Williams	1999 XZ ₆
1999 XB ₇	15.0	0.15	19991118	353.58625	36.40889	34.41150	5.47258	0.0974997	3.1473363	12	1	21 days	0.52			Williams	1999 XB ₇
1999 XD ₇	15.9	0.15	19991118	307.34117	78.14146	59.08879	13.55728	0.2043080	2.7039342	22	1	34 days	0.41			Williams	1999 XD ₇
1999 XF ₇	16.2	0.15	19991118	8.86361	23.49804	27.60075	2.51391	0.1326961	2.6025765	21	1	23 days	0.41			Williams	1999 XF ₇
1999 XL ₇	12.2	0.15	20000226	52.97380	308.51031	69.17670	17.09508	0.1123818	3.1775751	55	1	68 days	0.42	M-v	4	Williams	1999 XL ₇

1999 XN ₇	14.4	0.15	20000226	342.11919	344.55255	140.82271	2.71138	0.1685602	2.3859040	46	1	63 days	0.39	M-v	4	Williams	1999 XN ₇
1999 XO ₇	12.6	0.15	20000226	37.01951	67.84098	3.81127	12.38259	0.1557671	2.6628515	30	1	73 days	0.38	M-v	4	Williams	1999 XO ₇
1999 XP ₇	12.9	0.15	19991208	7.24243	19.64290	66.10065	7.97433	0.2527777	2.5604468	36	1	52 days	0.35			Williams	1999 XP ₇
1999 XR ₇	12.3	0.15	20000226	45.56911	8.51178	53.75460	16.05696	0.1249576	2.9606472	29	1	63 days	0.37	M-v	4	Williams	1999 XR ₇
1999 XS ₇	13.3	0.15	20000226	58.04902	1.68024	45.26735	14.60794	0.1793550	2.7262813	30	1	115 days	0.42	M-v	4	Williams	1999 XS ₇
1999 XT ₇	13.5	0.15	19991118	18.86805	79.09291	341.21864	12.62541	0.1806248	2.5526293	27	1	59 days	0.54			Williams	1999 XT ₇
1999 XV ₇	15.8	0.15	20000226	59.15413	359.11107	15.41433	6.41160	0.2739614	2.2756938	42	1	80 days	0.56	M-v	4	Williams	1999 XV ₇
1999 XY ₇	14.7	0.15	20000226	35.57048	338.43886	39.51571	12.44826	0.1836298	2.4296660	50	1	115 days	0.56	M-v	3	Williams	1999 XY ₇
1999 XA ₈	15.4	0.15	19991208	334.00971	108.73453	354.83225	14.12691	0.2119075	3.0843281	11	1	33 days	0.48			Williams	1999 XA ₈
1999 XB ₈	14.5	0.15	20000226	64.53789	275.41258	103.65694	7.17357	0.0723220	2.7528411	33	1	63 days	0.83	M-v	5	Williams	1999 XB ₈
1999 XD ₈	14.4	0.15	20000226	87.39411	252.59913	108.47593	6.02993	0.1690822	2.3038375	41	3	1981–2000	0.52	M-v	3	Williams	37245 1999 XD ₈
1999 XE ₈	15.4	0.15	20000226	37.45070	292.69695	127.17508	2.96241	0.1983751	2.4251355	45	1	63 days	0.40	M-v	5	Williams	1999 XE ₈
1999 XF ₈	13.3	0.15	19991208	339.83666	9.03933	100.41250	10.52340	0.0289968	3.1781186	42	1	37 days	0.43			Williams	1999 XF ₈
1999 XG ₈	14.9	0.15	20000226	66.94914	143.83848	241.67233	4.78198	0.1715772	2.2755270	56	1	64 days	0.47	M-v	5	Williams	1999 XG ₈
1999 XJ ₈	13.4	0.15	19991208	155.76465	193.49021	93.30135	8.04868	0.1407099	2.6015503	24	1	43 days	0.49			Williams	1999 XJ ₈
1999 XK ₈	13.8	0.15	19991208	339.01777	26.91510	87.27778	13.38998	0.1352633	2.6294527	31	1	50 days	0.56			Williams	1999 XK ₈
1999 XL ₈	14.7	0.15	20000226	339.09083	263.02520	230.41761	3.17627	0.1422559	2.2636482	58	3	1980–2000	0.41	M-v	2	Williams	37245 1999 XL ₈
1999 XN ₈	13.9	0.15	19991208	206.43058	155.07074	109.96651	14.30914	0.1169348	2.5855900	53	1	45 days	0.45			Williams	1999 XN ₈
1999 XQ ₈	14.2	0.15	20000226	36.68369	89.92877	262.05378	11.23888	0.2569374	2.7321369	51	1	171 days	0.43	M-v	3	Williams	1999 XQ ₈
1999 XU ₈	15.9	0.15	19991208	72.59109	258.79529	90.93095	24.01992	0.1202976	1.9752124	28	1	32 days	0.59			Williams	1999 XU ₈
1999 XV ₈	14.9	0.15	20000226	14.51474	339.53324	98.99375	13.14851	0.2165593	2.5779009	45	1	62 days	0.39	M-v	4	Williams	1999 XV ₈
1999 XW ₈	15.4	0.15	20000226	46.37800	285.72104	70.85356	28.76180	0.4147155	2.6325132	35	1	55 days	0.54	M-v	4	Williams	1999 XW ₈
1999 XX ₈	15.4	0.15	20000226	26.19315	338.81807	72.51675	34.93396	0.2224580	2.6225666	37	1	61 days	0.61	M-v	4	Williams	1999 XX ₈
1999 XZ ₈	14.9	0.15	20000226	29.48060	338.30875	69.76360	26.06196	0.2327359	2.3074564	43	1	62 days	0.47	M-v	4	Williams	1999 XZ ₈
1999 XB ₉	16.5	0.15	19991118	12.42920	312.47298	82.36289	23.67109	0.2966198	2.2775709	31	1	35 days	0.44			Williams	1999 XB ₉
1999 XG ₉	16.1	0.15	19991208	69.14728	98.33360	248.94246	3.45884	0.1546300	2.3570890	35	1	58 days	0.65			Williams	1999 XG ₉
1999 XK ₉	13.6	0.15	20000226	311.31149	284.21215	252.30851	21.73966	0.2744923	2.3455483	42	1	93 days	0.46	M-v	4	Williams	1999 XK ₉
1999 XL ₉	16.0	0.15	19991208	38.63985	129.05206	250.63623	6.98876	0.1864620	2.7409897	35	1	58 days	0.48			Williams	1999 XL ₉
1999 XV ₉	16.5	0.15	19991208	113.99017	239.29963	93.45626	4.22509	0.1541390	2.2666462	12	1	13 days	0.27			Williams	1999 XV ₉
1999 XW ₉	16.6	0.15	19991208	133.92675	231.56684	84.55307	3.10773	0.2288360	2.3335529	12	1	13 days	0.16			Williams	1999 XW ₉
1999 XY ₉	16.8	0.15	19991118	301.10899	63.78771	62.94132	7.46683	0.1593471	2.5482404	24	1	28 days	0.64			Williams	1999 XY ₉
1999 XZ ₉	17.1	0.15	19991208	20.50183	317.34909	76.74441	5.46791	0.2200306	2.3664827	55	1	55 days	0.41			Williams	1999 XZ ₉
1999 XB ₁₀	16.8	0.15	19991208	186.16365	203.03440	75.97036	2.30558	0.0841175	2.5199412	18	1	32 days	0.30			Marsden	1999 XB ₁₀
1999 XD ₁₀	16.0	0.15	19991208	107.16039	40.65656	289.75148	8.35253	0.2619590	2.2201954	19	1	31 days	0.35			Williams	1999 XD ₁₀
1999 XE ₁₀	14.9	0.15	20000226	333.45965	145.04359	322.85402	6.65845	0.0675500	2.3424562	47	2	1997–2000	0.48	M-v	4	Williams	37245 1999 XE ₁₀
1999 XL ₁₀	16.1	0.15	19991208	24.72169	111.43062	263.47812	10.33567	0.2477629	2.5195165	34	1	59 days	0.53			Williams	1999 XL ₁₀
1999 XR ₁₀	14.8	0.15	19991118	116.12308	311.02385	332.25088	6.53551	0.1056299	2.3160066	26	1	37 days	0.75			Williams	1999 XR ₁₀
1999 XS ₁₀	15.3	0.15	20000226	74.18113	345.02688	5.49545	7.03663	0.1538471	2.2736984	46	1	95 days	0.74	M-v	4	Williams	1999 XS ₁₀
1999 XT ₁₀	15.5	0.15	19991118	289.83276	228.42528	264.31266	10.61294	0.1220344	2.5787441	20	1	35 days	0.93			Williams	1999 XT ₁₀
1999 XX ₁₀	14.4	0.15	19991208	19.84627	128.75650	252.97576	15.69518	0.2480321	3.1538267	33	1	59 days	0.53			Williams	1999 XX ₁₀
1999 XD ₁₁	15.9	0.15	19991118	55.98799	330.94281	12.51768	6.80530	0.1207951	2.3987439	12	1	24 days	0.34			Williams	1999 XD ₁₁
1999 XE ₁₁	16.1	0.15	20000226	89.76023	0.51290	337.28164	4.60189	0.1351071	2.2185122	27	2	1998–1999	0.55	M-v	4	Williams	37245 1999 XE ₁₁
1999 XF ₁₁	15.7	0.15	20000226	43.59336	20.65040	359.14667	4.62818	0.2389816	2.5590542	29	1	93 days	0.53	M-v	4	Williams	1999 XF ₁₁
1999 XG ₁₁	15.7	0.15	19991208	24.64420	96.31324	291.23800	5.70036	0.1211012	2.3597349	37	1	54 days	0.56			Williams	1999 XG ₁₁
1999 XH ₁₁	15.5	0.15	19991208	346.35298	138.95429	298.35830	4.91463	0.1271029	2.2800719	30	1	54 days	0.37			Williams	1999 XH ₁₁
1999 XK ₁₁	15.2	0.15	19991208	280.92870	245.90211	260.54192	11.05131	0.0849329	2.3426806	21	1	54 days	0.44			Williams	1999 XK ₁₁
1999 XL ₁₁	15.5	0.15	19991118	88.97967	21.53040	274.36511	7.53215	0.2502167	2.3457065	16	1	30 days	0.45			Williams	1999 XL ₁₁
1999 XM ₁₁	15.6	0.15	20000226	32.48903	92.09485	304.36637	3.99002	0.3004841	2.5595625	40	1	91 days	0.48	M-v	4	Williams	1999 XM ₁₁
1999 XN ₁₁	15.5	0.15	19991118	32.94539	349.02661	24.87148	7.68895	0.0935321	2.4697555	29	1	38 days	0.60			Williams	1999 XN ₁₁
1999 XO ₁₁	15.6	0.15	19991208	320.18852	186.04981	291.94538	5.07843	0.1960534	2.3092046	27	1	32 days	0.29			Williams	1999 XO ₁₁
1999 XP ₁₁	14.5	0.15	19991118	1.33328	62.47005	349.58356	5.45161	0.0734825	2.7465652	20	1	31 days	0.36			Williams	1999 XP ₁₁
1999 XQ ₁₁	14.9	0.15	19991118	2.28408	98.70856	305.40328	9.42814	0.0601219	2.9680991	18	1	35 days	0.72			Williams	1999 XQ ₁₁
1999 XS ₁₁	13.6	0.15	19991208	330.63899	122.22373	340.30913	10.15777	0.2672422	3.8129708	15	1	8 days	1.19		E	Williams	1999 XS ₁₁

1999 XU ₁₁	12.4	0.15	20000226	17.89138	144.12544	265.00108	13.71028	0.1340159	3.0530054	51	1	127 days	0.40	M-v	3	Williams	1999 XU ₁₁
1999 XW ₁₁	15.5	0.15	20000226	69.88759	31.60739	319.80677	5.75457	0.2044549	2.2591513	40	1	91 days	0.54	M-v	4	Williams	1999 XW ₁₁
1999 XY ₁₁	14.7	0.15	20000226	357.75522	208.44705	250.54103	24.43345	0.2294762	2.2783722	45	1	67 days	0.38	M-v	4	Williams	1999 XY ₁₁
1999 XZ ₁₁	16.4	0.15	19991118	7.00884	87.86210	314.01518	6.00061	0.1338838	2.4133566	15	1	35 days	0.57			Williams	1999 XZ ₁₁
1999 XC ₁₂	14.0	0.15	19991118	75.53287	349.81839	340.07160	9.70530	0.0496357	3.0170598	27	1	53 days	0.62			Williams	1999 XC ₁₂
1999 XD ₁₂	16.0	0.15	20000226	13.60066	110.08575	326.95905	6.75056	0.2551660	2.3218459	25	1	61 days	0.50	M-v	4	Williams	1999 XD ₁₂
1999 XH ₁₂	12.6	0.15	19991208	53.83637	234.49365	163.34178	5.39834	0.0629182	2.8129143	23	1	32 days	0.45			Williams	1999 XH ₁₂
1999 XK ₁₂	13.8	0.15	19991208	61.03634	260.61915	113.15790	13.54134	0.1925150	2.5647858	33	1	31 days	0.58			Williams	1999 XK ₁₂
1999 XL ₁₂	15.3	0.15	19991208	28.89786	258.96541	145.29317	4.54907	0.2713578	2.5549983	31	1	54 days	0.42			Williams	1999 XL ₁₂
1999 XM ₁₂	13.1	0.15	19991208	279.13287	299.43896	256.35064	12.56537	0.1465825	2.5434487	28	1	37 days	0.39			Williams	1999 XM ₁₂
1999 XR ₁₂	14.4	0.15	19991208	51.68621	147.23596	218.39609	12.70155	0.1998809	2.8314358	18	1	9 days	0.54			Williams	1999 XR ₁₂
1999 XS ₁₂	14.8	0.15	20000226	1.01175	245.96866	216.82428	11.00744	0.1171558	2.3768183	23	1	64 days	0.53	M-v	4	Williams	1999 XS ₁₂
1999 XT ₁₂	13.0	0.15	20000226	247.35029	75.83871	130.96418	10.51763	0.0246933	2.9919120	34	1	67 days	0.42	M-v	4	Williams	1999 XT ₁₂
1999 XW ₁₂	15.3	0.15	19991208	58.54110	201.25626	163.96760	6.86423	0.1155988	2.3931180	16	1	9 days	0.57			Williams	1999 XW ₁₂
1999 XX ₁₂	14.5	0.15	20000226	321.79953	285.98310	217.44738	12.73566	0.1068460	2.7221735	34	1	68 days	0.65	M-v	4	Williams	1999 XX ₁₂
1999 XY ₁₂	15.3	0.15	20000226	12.14905	322.38516	119.17141	8.17873	0.1668617	2.5846307	38	1	63 days	0.59	M-v	4	Williams	1999 XY ₁₂
1999 XB ₁₃	14.8	0.15	19991208	357.77593	214.43542	218.30822	11.30040	0.1944142	2.6211393	14	1	9 days	0.68			Williams	1999 XB ₁₃
1999 XE ₁₃	16.6	0.15	19991118	329.89639	251.69364	204.73694	11.37074	0.1845429	2.3697346	17	1	24 days	0.66			Williams	1999 XE ₁₃
1999 XF ₁₃	12.7	0.15	20000226	274.42880	90.23777	83.05770	14.19324	0.1065214	2.6006893	45	1	68 days	0.44	M-v	4	Williams	1999 XF ₁₃
1999 XH ₁₃	14.5	0.15	19991208	326.76016	282.30705	191.80004	8.06275	0.2489827	2.9324877	18	1	9 days	0.77			Williams	1999 XH ₁₃
1999 XL ₁₃	15.9	0.15	19991118	6.15937	236.91216	174.18809	5.98249	0.0648557	2.2798553	27	1	39 days	0.62			Williams	1999 XL ₁₃
1999 XN ₁₃	13.7	0.15	20000226	73.83117	233.48457	114.28674	9.64589	0.1735850	2.7407467	43	1	67 days	0.57	M-v	5	Williams	1999 XN ₁₃
1999 XO ₁₃	13.7	0.15	19991208	253.92591	313.02881	265.07802	13.26463	0.1175694	2.5358797	38	1	53 days	0.79			Williams	1999 XO ₁₃
1999 XV ₁₃	16.0	0.15	20000226	8.20868	336.99546	109.11012	10.31861	0.2728854	2.6927574	43	1	63 days	0.66	M-v	4	Williams	1999 XV ₁₃
1999 XY ₁₃	15.4	0.15	19991118	303.85625	340.09179	146.95890	8.45713	0.0891736	2.4528469	30	1	39 days	0.52			Williams	1999 XY ₁₃
1999 XB ₁₄	16.0	0.15	20000226	21.17083	282.53854	139.35188	8.03597	0.3361918	2.7356461	28	1	67 days	0.65	M-v	4	Williams	1999 XB ₁₄
1999 XC ₁₄	13.5	0.15	19991208	55.33498	243.67931	122.08993	10.71050	0.0933339	3.0954702	20	1	56 days	1.55			Williams	1999 XC ₁₄
1999 XD ₁₄	14.6	0.15	19991208	66.03008	128.08677	208.68664	10.74059	0.2554130	2.4449599	18	1	9 days	0.67			Williams	1999 XD ₁₄
1999 XF ₁₄	14.6	0.15	19991208	329.42166	247.46713	249.42323	10.76215	0.1465002	2.6939879	24	1	55 days	0.71			Williams	1999 XF ₁₄
1999 XH ₁₄	13.1	0.15	19991208	304.50856	255.99187	336.84424	12.70132	0.2962972	2.8298864	29	1	34 days	0.63			Williams	1999 XH ₁₄
1999 XL ₁₄	12.1	0.15	19991208	162.25464	207.10797	136.08872	10.98557	0.1360428	2.9266227	15	1	36 days	0.49			Williams	1999 XL ₁₄
1999 XM ₁₄	13.6	0.15	20000226	110.01381	324.00083	6.82817	5.21651	0.0659824	2.7243156	48	2	1998–2000	0.57	M-v	4	Williams	37246 1999 XM ₁₄
1999 XU ₁₄	14.6	0.15	20000226	5.01931	8.01923	83.16151	22.98802	0.1205235	2.5853197	35	1	62 days	0.50	M-v	4	Williams	1999 XU ₁₄
1999 XV ₁₄	15.7	0.15	19991208	308.18173	271.30038	242.38784	21.22540	0.2315534	2.3105903	25	1	36 days	0.49			Williams	1999 XV ₁₄
1999 XW ₁₄	16.2	0.15	19991208	275.68595	79.60223	90.41693	24.01008	0.0724927	1.9478988	29	1	31 days	0.47			Williams	1999 XW ₁₄
1999 XX ₁₄	16.5	0.15	19991208	327.94529	50.94915	87.68377	24.85733	0.3308428	2.2702143	67	1	31 days	0.57			Williams	1999 XX ₁₄
1999 XY ₁₄	15.6	0.15	19991208	33.74190	145.94896	234.54298	12.28963	0.2913547	2.5873726	33	1	55 days	0.73			Williams	1999 XY ₁₄
1999 XZ ₁₄	15.5	0.15	20000226	64.49921	273.46777	89.58895	23.73739	0.3270592	2.3190686	38	1	61 days	0.56	M-v	5	Williams	1999 XZ ₁₄
1999 XA ₁₅	13.5	0.15	20000226	144.46246	218.06626	77.86718	22.44138	0.0898160	2.4078251	51	1	67 days	0.37	M-v	4	Williams	1999 XA ₁₅
1999 XC ₁₅	15.5	0.15	19991208	312.91549	42.69391	99.39519	27.59668	0.0681423	1.9125533	38	1	32 days	0.26			Williams	1999 XC ₁₅
1999 XD ₁₅	14.3	0.15	19991208	25.21348	129.39087	319.76883	24.10021	0.2305088	2.2617710	25	1	33 days	0.52			Williams	1999 XD ₁₅
1999 XE ₁₅	15.4	0.15	19991208	15.26788	336.10038	106.18178	26.29063	0.2895761	2.3662182	31	1	29 days	0.57			Williams	1999 XE ₁₅
1999 XF ₁₅	15.2	0.15	19991208	7.17087	158.53477	309.51066	24.50663	0.2639049	2.3152577	25	1	33 days	0.67			Williams	1999 XF ₁₅
1999 XK ₁₅	15.1	0.15	19991208	338.31577	200.90953	258.11629	10.91829	0.1257201	2.5233306	36	1	53 days	0.45			Williams	1999 XK ₁₅
1999 XL ₁₅	15.5	0.15	20000226	75.51969	122.30310	239.88428	4.45273	0.1952715	2.2101193	45	1	64 days	0.45	M-v	4	Williams	1999 XL ₁₅
1999 XN ₁₅	15.2	0.15	20000226	64.37436	224.06332	152.16079	3.26675	0.1708245	2.3797588	37	1	63 days	0.59	M-v	4	Williams	1999 XN ₁₅
1999 XP ₁₅	16.7	0.15	19991208	19.69771	294.98082	100.47598	4.23949	0.3298065	2.5718365	30	1	51 days	0.63			Williams	1999 XP ₁₅
1999 XQ ₁₅	15.4	0.15	19991118	53.13164	129.24565	232.79149	5.79549	0.1378458	2.3106770	33	1	29 days	0.40			Williams	1999 XQ ₁₅
1999 XR ₁₅	16.0	0.15	20000226	27.09302	315.94339	115.01194	4.30017	0.1446202	2.2302601	29	1	63 days	0.66	M-v	5	Williams	1999 XR ₁₅
1999 XU ₁₅	14.2	0.15	19991208	35.96686	306.74415	101.49923	15.44675	0.1809535	2.6248461	45	1	51 days	0.50			Williams	1999 XU ₁₅
1999 XV ₁₅	13.9	0.15	19991208	17.93277	315.90527	97.60381	8.95635	0.3838414	2.7491410	55	1	51 days	0.51			Williams	1999 XV ₁₅
1999 XZ ₁₅	14.9	0.15	19991208	22.01697	180.91810	260.94694	2.46061	0.2066573	2.4235275	41	1	51 days	0.63			Williams	1999 XZ ₁₅
1999 XB ₁₆	14.3	0.15	20000226	326.72643	167.40216	9.96433	10.67070	0.1458886	2.4696439	38	2	1998–2000	0.48	M-v	4	Williams	37246 1999 XB ₁₆

1999 XD ₁₆	13.9	0.15	19991208	69.96788	329.18575	30.41487	11.80616	0.3768135	2.6372007	28	1	34 days	0.49		Williams	1999 XD ₁₆	
1999 XF ₁₆	14.7	0.15	20000226	56.45341	285.07116	90.92357	11.05137	0.2810791	2.3826759	29	1	63 days	0.33	M-v	4	Williams	1999 XF ₁₆
1999 XG ₁₆	14.6	0.15	20000226	52.31936	293.81209	61.10509	30.45807	0.3617172	2.6195458	55	1	111 days	0.35	M-v	3	Williams	1999 XG ₁₆
1999 XH ₁₆	17.9	0.15	19991208	10.57818	348.01251	69.31812	12.50141	0.0362326	2.0138161	13	1	6 days	0.90		E	Williams	1999 XH ₁₆
1999 XJ ₁₆	15.7	0.15	20000226	45.53631	144.95567	251.53860	23.94449	0.1712279	2.2929255	29	1	67 days	0.52	M-v	4	Williams	1999 XJ ₁₆
1999 XM ₁₆	17.7	0.15	19991208	350.68524	189.78439	247.99648	23.64626	0.1269467	2.2624065	10	1	6 days	0.24		E	Williams	1999 XM ₁₆
1999 XQ ₁₆	15.3	0.15	20000226	47.57486	321.11786	79.19874	10.50669	0.1774419	2.2759610	25	1	61 days	0.49	M-v	6	Williams	1999 XQ ₁₆
1999 XS ₁₆	14.8	0.15	20000226	337.26423	99.14512	77.45668	10.07626	0.5367830	2.9453107	23	1	30 days	0.34	M-v	6	Williams	1999 XS ₁₆
1999 XV ₁₆	15.8	0.15	20000226	64.73519	293.41059	88.59309	7.49575	0.1713478	2.1797536	30	1	61 days	0.40	M-v	5	Williams	1999 XV ₁₆
1999 XX ₁₆	15.9	0.15	19991208	218.58469	327.13843	259.62532	23.89143	0.0672309	1.9017718	29	1	58 days	0.48			Williams	1999 XX ₁₆
1999 XA ₁₇	15.6	0.15	19991208	21.65365	143.76958	254.08974	13.27374	0.2584337	2.6418213	23	1	53 days	0.50			Williams	1999 XA ₁₇
1999 XC ₁₇	16.5	0.15	19991208	33.60359	144.83542	258.57465	19.94243	0.0586724	1.8908584	20	1	35 days	0.45			Williams	1999 XC ₁₇
1999 XD ₁₇	15.0	0.15	19991208	72.93411	74.96839	273.17647	22.58739	0.2736478	2.3177355	38	1	57 days	0.28			Williams	1999 XD ₁₇
1999 XF ₁₇	15.2	0.15	19991208	28.82456	131.56547	268.90045	21.83091	0.2983806	2.3539967	34	1	56 days	0.24			Williams	1999 XF ₁₇
1999 XG ₁₇	15.9	0.15	19991208	349.40911	199.73660	276.60245	22.05235	0.2072798	2.2959169	29	1	35 days	0.42			Williams	1999 XG ₁₇
1999 XH ₁₇	16.7	0.15	19991208	11.15962	349.30816	94.45422	26.50045	0.1234387	1.9242215	35	1	35 days	0.50			Williams	1999 XH ₁₇
1999 XJ ₁₇	15.6	0.15	19991208	9.68246	157.91884	285.84818	25.63903	0.2999073	2.6840739	29	1	35 days	0.33			Williams	1999 XJ ₁₇
1999 XK ₁₇	16.7	0.15	19991208	44.53240	303.69147	104.27308	24.17629	0.1225218	1.9157643	18	1	27 days	0.65			Williams	1999 XK ₁₇
1999 XT ₁₇	12.4	0.15	20000226	321.16057	56.57630	31.70624	11.00985	0.1234965	2.9419509	35	1	107 days	0.65	M-v	4	Williams	1999 XT ₁₇
1999 XB ₁₈	13.6	0.15	19991118	19.49957	328.13790	26.71723	10.97901	0.1221642	2.9781794	19	1	30 days	0.74			Williams	1999 XB ₁₈
1999 XE ₁₈	12.9	0.15	19991118	318.42389	48.81653	22.05171	9.86354	0.1008213	3.0776944	20	1	28 days	0.52			Williams	1999 XE ₁₈
1999 XF ₁₈	14.3	0.15	20000226	110.73399	271.21620	19.49077	3.12916	0.1452949	2.1440480	36	3	1992–2000	0.69	M-v	3	Williams	37246 1999 XF ₁₈
1999 XG ₁₈	15.7	0.15	19991118	338.36696	15.15769	45.65414	5.46475	0.1901145	2.3693676	21	1	32 days	0.65			Williams	1999 XG ₁₈
1999 XH ₁₈	14.5	0.15	20000226	47.93183	144.27350	204.06436	6.98740	0.2454725	2.5748929	41	3	1981–2000	0.77	M-v	3	Williams	37246 1999 XH ₁₈
1999 XJ ₁₈	16.0	0.15	19991118	349.48408	10.00998	33.86175	3.33919	0.1655005	2.4010152	19	1	30 days	0.53			Williams	1999 XJ ₁₈
1999 XL ₁₈	14.2	0.15	20000226	15.38518	3.59326	45.38781	4.90526	0.1942566	2.3423982	32	2	1992–2000	0.60	M-v	4	Williams	37246 1999 XL ₁₈
1999 XO ₁₈	14.6	0.15	20000226	21.81932	310.85153	84.84901	3.37562	0.2053132	2.4466014	39	1	116 days	0.53	M-v	4	Williams	1999 XO ₁₈
1999 XR ₁₈	13.3	0.15	20000226	40.93065	330.96278	36.86849	16.36531	0.1035437	2.5808590	51	1	121 days	0.42	M-v	3	Williams	1999 XR ₁₈
1999 XV ₁₈	14.7	0.15	20000226	23.55021	186.68092	209.76796	8.57949	0.1825568	2.4883398	71	1	169 days	0.61	M-v	3	Williams	1999 XV ₁₈
1999 XD ₁₉	14.3	0.15	20000226	72.01397	281.78871	42.59381	6.97492	0.1986241	2.3157653	38	2	1998–2000	0.64	M-v	4	Williams	37246 1999 XD ₁₉
1999 XE ₁₉	15.5	0.15	19991118	358.99188	344.83890	42.06554	10.52852	0.2190483	2.7223197	26	1	32 days	0.67			Williams	1999 XE ₁₉
1999 XK ₁₉	15.8	0.15	20000226	0.20834	316.87463	115.73086	1.81029	0.1893019	2.3372605	27	1	66 days	0.46	M-v	5	Williams	1999 XK ₁₉
1999 XN ₁₉	15.1	0.15	19991118	355.27051	10.48064	23.67181	7.12772	0.1148633	2.3539559	17	1	28 days	0.59			Williams	1999 XN ₁₉
1999 XO ₁₉	15.9	0.15	19991118	7.13660	142.92414	237.06446	4.55086	0.1513362	2.3054081	33	1	32 days	0.64			Williams	1999 XO ₁₉
1999 XP ₁₉	15.5	0.15	20000226	7.22061	48.99899	35.79207	5.67419	0.4282730	2.4564765	50	1	96 days	0.44	M-v	4	Williams	1999 XP ₁₉
1999 XR ₁₉	15.2	0.15	20000226	55.72248	325.19577	32.13725	7.93113	0.1337390	2.2947349	35	2	1998–1999	0.64	M-v	4	Williams	37247 1999 XR ₁₉
1999 XS ₁₉	15.6	0.15	19991118	355.57968	142.62801	258.24108	2.78158	0.1189544	2.1936516	22	1	29 days	0.59			Williams	1999 XS ₁₉
1999 XT ₁₉	15.5	0.15	19991118	38.80165	100.26958	228.99254	5.00369	0.2844799	2.2441507	19	1	10 days	0.34			Williams	1999 XT ₁₉
1999 XX ₁₉	15.4	0.15	19991118	347.63277	349.34113	65.84744	2.20848	0.2029338	2.4782712	14	1	32 days	0.42			Williams	1999 XX ₁₉
1999 XZ ₁₉	15.5	0.15	19991118	16.29368	306.02018	67.93217	3.56660	0.1934457	2.4030018	21	1	23 days	0.51			Williams	1999 XZ ₁₉
1999 XB ₂₀	14.0	0.15	20000226	40.07021	323.04795	53.16664	13.58327	0.1973696	2.6303872	49	1	121 days	0.48	M-v	3	Williams	1999 XB ₂₀
1999 XF ₂₀	14.3	0.15	19991208	274.32970	40.51103	112.19496	2.51916	0.1710351	2.2918456	16	1	33 days	0.51			Williams	1999 XF ₂₀
1999 XL ₂₀	14.5	0.15	20000226	327.39196	23.83852	93.60765	3.32896	0.1388462	2.3954229	40	1	96 days	0.40	M-v	4	Williams	1999 XL ₂₀
1999 XM ₂₀	14.2	0.15	19991118	151.36555	183.81174	64.63925	7.39552	0.0722994	2.3964718	18	1	20 days	0.66			Williams	1999 XM ₂₀
1999 XO ₂₀	14.2	0.15	19991118	131.06501	201.40460	65.38564	7.32162	0.0702636	2.4015968	25	1	32 days	0.55			Williams	1999 XO ₂₀
1999 XS ₂₀	13.4	0.15	20000226	58.10607	303.34746	59.07183	11.87050	0.0843538	2.7204642	27	1	69 days	0.33	M-v	4	Williams	1999 XS ₂₀
1999 XW ₂₀	15.3	0.15	20000226	2.02060	29.44259	31.39361	14.32595	0.2274920	2.7675726	35	1	84 days	0.64	M-v	4	Williams	1999 XW ₂₀
1999 XY ₂₀	14.2	0.15	20000226	25.84125	347.60375	48.91686	7.80145	0.1303537	2.3630488	47	1	95 days	0.49	M-v	4	Williams	1999 XY ₂₀
1999 XC ₂₁	15.3	0.15	20000226	37.38684	158.67473	218.18041	5.98705	0.2074317	2.4724253	39	1	80 days	0.50	M-v	4	Williams	1999 XC ₂₁
1999 XD ₂₁	14.0	0.15	20000226	14.77320	315.04622	107.01216	8.55070	0.1499196	3.1132288	35	1	63 days	0.53	M-v	4	Williams	1999 XD ₂₁
1999 XG ₂₁	13.8	0.15	19991118	48.09511	276.52034	66.90911	10.96552	0.1305408	3.1487242	14	1	32 days	0.45			Williams	1999 XG ₂₁
1999 XO ₂₁	15.1	0.15	19991118	40.80026	199.86226	165.39160	6.60306	0.1462041	2.7437581	24	1	39 days	0.61			Williams	1999 XO ₂₁
1999 XQ ₂₁	14.1	0.15	19991208	19.19496	315.71121	104.86018	16.74290	0.2958499	3.0968701	24	1	30 days	0.39			Williams	1999 XQ ₂₁

1999 XV ₂₁	15.7	0.15	19991208	28.57407	303.30961	126.74712	11.39362	0.2110459	2.3697371	23	1	42 days	0.47		Williams	1999 XV ₂₁
1999 XW ₂₁	13.5	0.15	19991208	274.22454	297.97629	283.22247	12.01001	0.1188172	2.6307870	27	1	52 days	0.56		Williams	1999 XW ₂₁
1999 XX ₂₁	14.9	0.15	19991208	354.13800	263.90460	221.03513	3.38707	0.2140333	2.6059237	30	1	51 days	0.61		Williams	1999 XX ₂₁
1999 XA ₂₂	13.8	0.15	19991208	299.55468	281.56535	278.46897	8.27435	0.1398523	2.7676068	24	1	34 days	0.52		Williams	1999 XA ₂₂
1999 XE ₂₂	14.7	0.15	19991208	24.55019	307.97243	134.57070	7.78753	0.1611745	2.3558840	20	1	33 days	0.62		Williams	1999 XE ₂₂
1999 XF ₂₂	13.4	0.15	19991208	293.11814	277.24353	288.49368	11.05599	0.1169992	2.6247486	18	1	34 days	0.37		Williams	1999 XF ₂₂
1999 XJ ₂₂	16.5	0.15	19991118	26.77776	162.96415	205.56109	4.23568	0.2207184	2.3314031	16	1	20 days	0.61		Williams	1999 XJ ₂₂
1999 XM ₂₂	15.0	0.15	19991118	49.00293	277.18239	63.91958	10.53062	0.1835030	2.5601082	13	1	3 days	0.70	E	Williams	1999 XM ₂₂
1999 XP ₂₂	14.8	0.15	20000226	36.68919	330.05802	66.22561	7.00077	0.1449209	2.2997432	61	1	115 days	0.51	M-v 3	Williams	1999 XP ₂₂
1999 XT ₂₂	15.6	0.15	20000226	27.11080	334.42113	70.87860	3.33536	0.1759538	2.4204877	42	1	94 days	0.54	M-v 4	Williams	1999 XT ₂₂
1999 XU ₂₂	15.2	0.15	20000226	6.85311	10.78988	61.25236	10.96794	0.2736020	2.7976030	49	1	95 days	0.60	M-v 4	Williams	1999 XU ₂₂
1999 XX ₂₂	13.8	0.15	19991118	183.66652	172.46475	46.78703	14.21812	0.1087715	2.6495217	26	1	25 days	0.41		Williams	1999 XX ₂₂
1999 XZ ₂₂	14.4	0.15	19991118	310.62711	40.31613	61.12087	4.87041	0.0918610	2.6580139	21	1	20 days	0.59		Williams	1999 XZ ₂₂
1999 XB ₂₃	16.2	0.15	19991118	11.51385	336.21547	49.72366	15.39596	0.1977799	2.5955617	29	1	28 days	0.53		Williams	1999 XB ₂₃
1999 XD ₂₃	16.0	0.15	19991118	14.65641	145.76412	232.66331	11.74330	0.2218335	2.4279765	12	1	3 days	0.79	E	Williams	1999 XD ₂₃
1999 XJ ₂₃	14.6	0.15	20000226	31.10212	155.12309	233.34828	11.77027	0.1429046	2.5185230	28	1	64 days	0.58	M-v 4	Williams	1999 XJ ₂₃
1999 XM ₂₃	14.9	0.15	19991118	47.45534	240.76865	113.28910	3.12600	0.0889366	2.8368814	24	1	27 days	0.54		Williams	1999 XM ₂₃
1999 XO ₂₃	15.4	0.15	19991118	65.52598	111.08909	215.61753	7.73299	0.1238817	2.8129255	23	1	28 days	0.68		Williams	1999 XO ₂₃
1999 XP ₂₃	14.1	0.15	19991118	64.53673	200.54091	108.79165	1.86023	0.2756806	3.0038224	13	1	3 days	0.45	E	Williams	1999 XP ₂₃
1999 XR ₂₃	14.9	0.15	19991118	15.33247	301.50920	86.23377	15.03924	0.2988554	3.1431219	15	1	39 days	0.71		Williams	1999 XR ₂₃
1999 XS ₂₃	15.4	0.15	19991118	81.86795	227.26827	81.93163	4.47955	0.1602026	2.6007100	12	1	3 days	0.77	E	Williams	1999 XS ₂₃
1999 XT ₂₃	14.8	0.15	19991118	346.58746	308.07895	121.48270	1.32136	0.2384813	3.2993437	28	1	44 days	0.55		Williams	1999 XT ₂₃
1999 XU ₂₃	14.5	0.15	20000226	22.44144	177.01779	229.18567	9.42862	0.1162335	2.5649787	59	1	96 days	0.53	M-v 3	Williams	1999 XU ₂₃
1999 XW ₂₃	13.9	0.15	20000226	14.34977	167.99204	239.43501	8.97875	0.1040583	3.0671240	54	1	93 days	0.43	M-v 4	Williams	1999 XW ₂₃
1999 XX ₂₃	15.2	0.15	20000226	50.20198	130.62703	245.30435	5.79716	0.1376430	2.3295871	58	1	98 days	0.50	M-v 4	Williams	1999 XX ₂₃
1999 XB ₂₄	13.6	0.15	20000226	353.52738	202.23130	231.46413	14.45720	0.0832128	3.1350809	52	1	68 days	0.46	M-v 4	Williams	1999 XB ₂₄
1999 XF ₂₄	12.8	0.15	20000226	48.66824	319.45373	52.97816	14.73829	0.1731030	2.6000742	51	4	1957–2000	0.46	M-v 1	Williams	37247 1999 XF ₂₄
1999 XG ₂₄	15.3	0.15	19991118	63.92610	77.29214	235.54874	22.06900	0.2746080	2.4264072	14	1	3 days	0.47	E	Williams	1999 XG ₂₄
1999 XH ₂₄	15.4	0.15	19991118	71.42887	69.71005	242.22754	5.71417	0.2183784	2.7330935	12	1	3 days	0.44	E	Williams	1999 XH ₂₄
1999 XJ ₂₄	14.4	0.15	19991118	82.13336	265.62163	50.03830	22.57680	0.0892372	3.1337082	24	1	28 days	0.64		Williams	1999 XJ ₂₄
1999 XL ₂₄	14.2	0.15	20000226	348.01286	215.57636	239.59001	4.80894	0.1119596	2.5261298	50	1	66 days	0.42	M-v 5	Williams	1999 XL ₂₄
1999 XN ₂₄	16.3	0.15	19991118	29.71896	131.02241	234.82174	11.69081	0.2091140	2.6283250	30	1	23 days	0.40		Williams	1999 XN ₂₄
1999 XO ₂₄	17.2	0.15	19991118	358.20423	350.31017	64.14006	15.33813	0.2620044	2.6459529	19	1	30 days	0.47		Williams	1999 XO ₂₄
1999 XQ ₂₄	14.3	0.15	20000226	40.93107	315.20002	60.07145	17.63969	0.2059664	3.1683793	53	1	63 days	0.49	M-v 4	Williams	1999 XQ ₂₄
1999 XS ₂₄	14.0	0.15	20000226	217.52703	4.88369	217.43949	6.77059	0.0619617	2.3979651	41	1	63 days	0.47	M-v 5 D	Williams	1999 XS ₂₄
1999 XU ₂₄	14.3	0.15	20000226	22.70025	345.87282	67.45093	10.25407	0.0227494	2.5584914	52	1	66 days	0.52	M-v 4	Williams	1999 XU ₂₄
1999 XV ₂₄	16.0	0.15	19991118	290.40235	286.74490	206.80564	3.65267	0.1011250	2.3158911	23	1	33 days	0.57		Williams	1999 XV ₂₄
1999 XX ₂₄	15.8	0.15	19991118	21.65169	320.47628	63.19979	7.61291	0.1308063	2.4417691	37	1	41 days	0.62		Williams	1999 XX ₂₄
1999 XY ₂₄	14.0	0.15	20000226	255.97608	320.30172	235.08494	22.87193	0.1365642	2.2941891	65	1	65 days	0.47	M-v 4	Williams	1999 XY ₂₄
1999 XZ ₂₄	14.9	0.15	20000226	49.74333	137.69305	240.18378	9.37348	0.2290983	2.3119131	46	1	65 days	0.34	M-v 4	Williams	1999 XZ ₂₄
1999 XB ₂₅	13.3	0.15	19991118	143.72897	201.03449	63.93926	12.56359	0.0552673	3.3970162	33	1	30 days	0.53		Williams	1999 XB ₂₅
1999 XC ₂₅	15.5	0.15	20000226	78.16341	256.69395	71.14415	8.29582	0.3145476	2.3859255	35	1	62 days	0.65	M-v 5	Williams	1999 XC ₂₅
1999 XD ₂₅	15.5	0.15	20000226	31.42007	244.50004	161.59136	2.12785	0.2001863	2.3741668	47	1	64 days	0.50	M-v 4	Williams	1999 XD ₂₅
1999 XE ₂₅	14.9	0.15	19991118	128.44009	122.32826	161.01309	2.73254	0.0254064	2.7175783	19	1	20 days	0.61		Williams	1999 XE ₂₅
1999 XG ₂₅	15.1	0.15	20000226	37.76141	332.42999	70.74518	11.34977	0.1158746	2.2847233	47	1	63 days	0.46	M-v 4	Williams	1999 XG ₂₅
1999 XJ ₂₅	14.1	0.15	20000226	23.62233	351.01381	62.66789	16.02928	0.1323091	2.5972244	51	1	63 days	0.37	M-v 4	Williams	1999 XJ ₂₅
1999 XK ₂₅	14.8	0.15	20000226	41.53283	322.86689	63.19642	14.80561	0.1673240	2.7686616	47	1	63 days	0.50	M-v 4	Williams	1999 XK ₂₅
1999 XL ₂₅	15.0	0.15	19991118	41.04665	118.65638	234.23821	10.99360	0.2216796	2.9387518	51	1	34 days	0.49	D	Williams	1999 XL ₂₅
1999 XN ₂₅	14.3	0.15	20000226	2.48045	313.11612	126.11115	1.66876	0.2222708	3.1423218	85	4	1988–1999	0.61	M-v 1	Williams	37247 1999 XN ₂₅
1999 XP ₂₅	15.7	0.15	19991118	191.59558	149.31342	75.71646	7.88262	0.0514690	2.4060687	26	1	22 days	0.65		Williams	1999 XP ₂₅
1999 XQ ₂₅	15.5	0.15	20000226	39.46678	318.69160	72.12338	10.17163	0.2033912	2.6004466	47	1	63 days	0.46	M-v 4	Williams	1999 XQ ₂₅
1999 XR ₂₅	14.9	0.15	19991118	240.15127	345.48477	197.45916	4.07253	0.0776739	2.2339624	46	1	40 days	0.56		Williams	1999 XR ₂₅
1999 XU ₂₅	15.5	0.15	19991118	338.41368	335.03433	110.46884	3.12263	0.1307282	2.5672208	14	1	3 days	0.61	E	Williams	1999 XU ₂₅

1999 XW ₂₅	17.2	0.15	19991118	23.93412	306.46882	78.86363	5.65994	0.1560460	2.3116948	40	1	38 days	0.53		Williams	1999 XW ₂₅
1999 XX ₂₅	15.9	0.15	20000226	3.30353	14.03222	77.47958	7.92766	0.1079290	2.2091225	48	1	63 days	0.53	M-v 5	Williams	1999 XX ₂₅
1999 XA ₂₆	14.3	0.15	19991118	27.41702	215.57008	162.13838	4.22746	0.2104206	3.0147677	16	1	27 days	0.36		Williams	1999 XA ₂₆
1999 XC ₂₆	16.1	0.15	20000226	36.10614	303.03219	94.10945	2.27288	0.2403001	2.3228240	45	1	66 days	0.54	M-v 4	Williams	1999 XC ₂₆
1999 XD ₂₆	13.3	0.15	20000226	63.98202	299.68548	53.32704	10.99724	0.0769891	3.0212136	53	1	99 days	0.50	M-v 4	Williams	1999 XD ₂₆
1999 XE ₂₆	15.6	0.15	20000226	9.53350	199.69878	231.78980	7.59944	0.2181864	2.4393719	58	1	68 days	0.54	M-v 4	Williams	1999 XE ₂₆
1999 XG ₂₆	13.6	0.15	20000226	292.73236	266.71254	238.87483	9.07772	0.1137182	2.5622672	52	1	96 days	0.44	M-v 4	Williams	1999 XG ₂₆
1999 XJ ₂₆	15.6	0.15	19991118	31.43960	108.05684	241.35071	8.06805	0.2907774	2.3711214	13	1	3 days	0.57		E Williams	1999 XJ ₂₆
1999 XO ₂₆	14.7	0.15	19991118	36.89802	129.22126	234.06260	6.36370	0.0901762	3.0302510	35	1	23 days	0.52		Williams	1999 XO ₂₆
1999 XP ₂₆	15.8	0.15	19991118	2.13023	50.72896	354.05974	1.59919	0.1743691	2.8572029	29	1	23 days	0.63		Williams	1999 XP ₂₆
1999 XQ ₂₆	15.0	0.15	19991118	331.64378	160.11012	279.25035	0.84461	0.0427507	2.8923448	27	1	33 days	0.52		Williams	1999 XQ ₂₆
1999 XR ₂₆	17.2	0.15	19991118	24.72953	318.49543	55.51544	7.25425	0.1827114	2.2621123	40	1	45 days	0.55		Williams	1999 XR ₂₆
1999 XS ₂₆	16.6	0.15	19991118	352.52651	186.19161	235.26528	3.13914	0.2237061	2.5894294	31	1	34 days	0.47		Williams	1999 XS ₂₆
1999 XT ₂₆	15.7	0.15	19991208	66.45664	92.97946	242.85929	4.32137	0.1334956	2.2771734	34	1	53 days	0.52		Williams	1999 XT ₂₆
1999 XU ₂₆	15.9	0.15	19991208	248.35388	74.78938	103.94955	1.84146	0.1040636	2.2780253	20	1	8 days	0.98		E Williams	1999 XU ₂₆
1999 XY ₂₆	14.5	0.15	19991208	83.51507	176.19637	123.77453	2.97435	0.2659297	2.9236081	20	1	8 days	0.82		E Williams	1999 XY ₂₆
1999 XZ ₂₆	14.1	0.15	20000226	3.43910	321.09101	110.12848	2.66528	0.1862506	3.1834951	39	1	65 days	0.42	M-v 5	Williams	1999 XZ ₂₆
1999 XB ₂₇	15.6	0.15	19991118	313.05132	47.49533	71.47125	6.37953	0.2068032	3.1013387	10	1	3 days	0.55		E Williams	1999 XB ₂₇
1999 XC ₂₇	15.5	0.15	20000226	62.18261	281.59904	83.06470	3.92786	0.1548839	2.3947229	43	1	63 days	0.51	M-v 5	Williams	1999 XC ₂₇
1999 XE ₂₇	14.9	0.15	20000226	65.66034	299.79811	57.46950	15.10865	0.1500870	2.5562872	45	1	66 days	0.53	M-v 4	Williams	1999 XE ₂₇
1999 XF ₂₇	14.7	0.15	19991118	74.56679	241.54226	63.92454	10.53046	0.2778494	2.9708017	13	1	3 days	0.81		E Williams	1999 XF ₂₇
1999 XG ₂₇	17.0	0.15	19991118	331.42387	277.23097	181.19408	1.67427	0.2245561	2.5667983	10	1	3 days	0.44		E Williams	1999 XG ₂₇
1999 XH ₂₇	14.9	0.15	19991208	317.77079	38.66695	66.82418	15.35557	0.0541086	2.5797779	21	1	50 days	0.86		Williams	1999 XH ₂₇
1999 XJ ₂₇	14.6	0.15	20000226	45.55792	309.01520	69.59680	12.25259	0.1894633	2.7612241	37	1	63 days	0.51	M-v 4	Williams	1999 XJ ₂₇
1999 XK ₂₇	16.2	0.15	19991118	102.18979	139.05973	168.82120	1.69293	0.0419117	2.3078442	15	1	5 days	0.75		E Williams	1999 XK ₂₇
1999 XL ₂₇	16.1	0.15	19991118	332.11148	21.27044	66.75570	14.23688	0.0967877	2.6794398	16	1	20 days	0.57		Williams	1999 XL ₂₇
1999 XM ₂₇	16.1	0.15	19991208	2.53305	190.78920	228.53932	6.06046	0.2095751	2.3696371	50	1	59 days	0.50		Williams	1999 XM ₂₇
1999 XN ₂₇	16.1	0.15	19991118	339.64963	248.81237	197.40434	2.47810	0.2097771	2.5996925	31	1	41 days	0.49		Williams	1999 XN ₂₇
1999 XO ₂₇	14.6	0.15	19991118	25.41456	270.36217	104.07132	2.35200	0.2274343	3.1557214	33	1	30 days	0.43		Williams	1999 XO ₂₇
1999 XP ₂₇	16.1	0.15	19991118	58.05376	267.48910	64.85752	5.64623	0.2130109	2.4331040	40	1	47 days	0.61		Williams	1999 XP ₂₇
1999 XR ₂₇	15.5	0.15	20000226	63.86539	284.46451	77.88757	5.56237	0.2229231	2.2709480	38	1	63 days	0.44	M-v 5 D	Williams	1999 XR ₂₇
1999 XU ₂₇	16.6	0.15	19991118	280.19630	67.69488	82.09470	7.11731	0.1213154	2.2339614	15	1	25 days	0.70		Williams	1999 XU ₂₇
1999 XX ₂₇	14.3	0.15	19991118	314.52303	40.10233	71.02333	25.47410	0.1480961	3.2242493	14	1	32 days	0.55		Williams	1999 XX ₂₇
1999 XY ₂₇	15.9	0.15	19991118	215.40387	153.36934	37.00001	9.24522	0.0295413	2.3629912	25	1	39 days	0.52		Williams	1999 XY ₂₇
1999 XC ₂₈	15.5	0.15	20000226	312.70616	276.68847	223.65915	1.78935	0.1353775	2.3894446	44	1	68 days	0.56	M-v 5 D	Williams	1999 XC ₂₈
1999 XL ₂₈	14.7	0.15	19991208	320.30123	30.49413	74.28332	11.39594	0.0208432	3.0641230	39	1	53 days	0.55		Williams	1999 XL ₂₈
1999 XM ₂₈	15.0	0.15	19991118	10.15122	328.19912	78.45344	9.91667	0.1238798	3.0964031	28	1	31 days	0.65		Williams	1999 XM ₂₈
1999 XO ₂₈	16.8	0.15	19991208	23.77467	195.06619	195.91184	2.17197	0.2128147	2.3707973	27	1	58 days	0.49		Williams	1999 XO ₂₈
1999 XQ ₂₈	15.5	0.15	19991208	119.92250	209.97489	85.96765	6.80414	0.1071024	2.3426083	26	1	50 days	0.43		Williams	1999 XQ ₂₈
1999 XR ₂₈	14.9	0.15	20000226	329.81246	15.64707	103.01639	4.49043	0.0524237	2.6602963	44	1	69 days	0.57	M-v 5	Williams	1999 XR ₂₈
1999 XS ₂₈	14.2	0.15	20000226	88.68757	265.67627	87.76592	6.07850	0.0085250	2.7346225	43	2	1997-2000	0.54	M-v 3	Williams	37247 1999 XS ₂₈
1999 XT ₂₈	14.2	0.15	20000226	8.36894	340.01523	96.07331	5.83473	0.0620380	2.7519397	53	1	74 days	0.47	M-v 4	Williams	1999 XT ₂₈
1999 XU ₂₈	14.2	0.15	20000226	64.76555	285.87908	79.80027	12.34711	0.2030194	2.3372825	51	1	67 days	0.41	M-v 4	Williams	1999 XU ₂₈
1999 XV ₂₈	14.3	0.15	19991208	221.01317	77.81263	128.39201	3.48236	0.0154188	2.6998864	26	1	51 days	0.66		Williams	1999 XV ₂₈
1999 XW ₂₈	15.7	0.15	20000226	53.07935	286.98487	99.26934	4.92224	0.1884828	2.2119596	52	1	72 days	0.59	M-v 4	Williams	1999 XW ₂₈
1999 XX ₂₈	17.1	0.15	19991208	11.54217	222.17567	189.70104	2.31114	0.1687814	2.3247386	29	1	58 days	0.53		Williams	1999 XX ₂₈
1999 XZ ₂₈	17.6	0.15	19991208	4.84569	339.40073	81.80388	8.07234	0.1738059	2.3407067	21	1	33 days	0.43		Williams	1999 XZ ₂₈
1999 XA ₂₉	15.2	0.15	19991208	80.88004	231.23990	105.90400	4.73619	0.0693661	2.8015263	30	1	48 days	0.57		Williams	1999 XA ₂₉
1999 XC ₂₉	15.4	0.15	19991118	13.37394	174.03178	231.43247	10.42923	0.1157521	3.0808824	30	1	29 days	0.64		Williams	1999 XC ₂₉
1999 XD ₂₉	12.9	0.15	20000226	187.40305	169.65394	82.98858	12.80618	0.0569041	3.0530495	47	1	69 days	0.51	M-v 5	Williams	1999 XD ₂₉
1999 XE ₂₉	14.2	0.15	19991208	70.26806	233.46112	110.87390	4.76372	0.1129200	2.6837721	38	1	57 days	0.55		Williams	1999 XE ₂₉
1999 XH ₂₉	12.8	0.15	20000226	283.45005	80.31947	91.71795	10.94697	0.1321581	3.2199364	50	1	63 days	0.58	M-v 5	Williams	1999 XH ₂₉
1999 XJ ₂₉	15.5	0.15	19991118	314.99521	260.78605	211.74048	5.59529	0.0566910	2.2917285	22	1	40 days	0.52		Williams	1999 XJ ₂₉

1999 XN ₂₉	13.2	0.15	20000226	279.55901	88.92525	76.62649	23.65995	0.0451185	3.2351094	30	1	67 days	0.51	M-v	5	Williams	1999 XN ₂₉
1999 XO ₂₉	15.1	0.15	20000226	67.61355	275.43320	96.33689	7.13215	0.1212541	2.3698795	45	1	63 days	0.60	M-v	4	Williams	1999 XO ₂₉
1999 XP ₂₉	14.5	0.15	19991118	44.01955	123.98360	231.74290	10.81188	0.2353078	3.1535940	25	1	29 days	0.76			Williams	1999 XP ₂₉
1999 XT ₂₉	14.9	0.15	20000226	61.42964	178.77185	205.97749	6.13356	0.1247671	2.3030737	33	1	64 days	0.39	M-v	4	Williams	1999 XT ₂₉
1999 XU ₂₉	14.0	0.15	20000226	302.77200	58.89235	97.16014	14.27918	0.0779412	2.7842911	35	1	63 days	0.53	M-v	4	Williams	1999 XU ₂₉
1999 XV ₂₉	16.0	0.15	19991118	5.36750	185.53757	232.54400	12.78041	0.2290814	2.6319944	26	1	29 days	0.58			Williams	1999 XV ₂₉
1999 XY ₂₉	14.6	0.15	19991208	121.94273	190.20139	108.55535	8.15875	0.1472642	2.4093031	12	1	8 days	0.55			Williams	1999 XY ₂₉
1999 XA ₃₀	14.9	0.15	20000226	298.86496	47.48983	116.91163	6.58110	0.0722131	2.4320600	25	1	63 days	0.62	M-v	5	Williams	1999 XA ₃₀
1999 XB ₃₀	15.1	0.15	19991208	340.05142	227.35834	235.15355	11.77313	0.1710906	2.7023168	32	1	53 days	0.72			Williams	1999 XB ₃₀
1999 XF ₃₀	14.5	0.15	20000226	351.34310	2.22199	108.09414	7.50337	0.0743107	2.3262326	35	1	63 days	0.32	M-v	4	Williams	1999 XF ₃₀
1999 XJ ₃₀	15.5	0.15	20000226	65.86754	228.08001	149.19387	4.38016	0.1595218	2.3129291	22	1	63 days	0.59	M-v	5	Williams	1999 XJ ₃₀
1999 XK ₃₀	14.4	0.15	19991208	43.37616	269.55754	118.05069	6.40186	0.0531012	2.7289087	14	1	8 days	0.65			Williams	1999 XK ₃₀
1999 XL ₃₀	14.9	0.15	19991208	101.65679	132.05540	187.45449	6.81613	0.1409595	2.4091545	12	1	8 days	0.64			Williams	1999 XL ₃₀
1999 XN ₃₀	14.9	0.15	19991208	49.44888	158.99803	209.42456	8.72899	0.1889170	2.7817482	14	1	8 days	0.56			Williams	1999 XN ₃₀
1999 XO ₃₀	14.3	0.15	20000226	84.36175	247.04473	101.87403	14.53440	0.1897670	2.5973235	34	1	62 days	0.47	M-v	4	Williams	1999 XO ₃₀
1999 XP ₃₀	13.9	0.15	19991208	319.57178	265.71872	222.59546	11.71735	0.0946045	3.1302574	29	1	36 days	0.50			Williams	1999 XP ₃₀
1999 XQ ₃₀	15.4	0.15	19991208	64.04613	233.37206	126.00920	7.85492	0.1402715	2.2858299	33	1	32 days	0.52			Williams	1999 XQ ₃₀
1999 XR ₃₀	14.7	0.15	19991208	67.82597	226.35139	119.84673	8.34906	0.2319362	2.5818861	24	1	31 days	0.38			Williams	1999 XR ₃₀
1999 XS ₃₀	15.4	0.15	19991208	14.17351	305.02158	118.04655	8.23212	0.0841342	2.3896040	27	1	31 days	0.50			Williams	1999 XS ₃₀
1999 XV ₃₀	15.9	0.15	19991118	11.03231	302.32176	104.33161	3.15630	0.0788810	2.7407203	30	1	41 days	0.51			Williams	1999 XV ₃₀
1999 XW ₃₀	16.2	0.15	20000226	6.06372	275.11978	178.32660	2.05151	0.1659401	2.2445951	27	1	69 days	0.47	M-v	5	Williams	1999 XW ₃₀
1999 XX ₃₀	15.7	0.15	19991208	19.74705	197.91446	203.25187	3.79069	0.1535829	2.5622412	17	1	24 days	0.88			Williams	1999 XX ₃₀
1999 XY ₃₀	14.7	0.15	19991208	151.23303	41.76904	226.86029	10.48050	0.1544049	2.6572715	11	1	7 days	0.50			Williams	1999 XY ₃₀
1999 XZ ₃₀	15.2	0.15	19991208	273.58103	84.72143	80.17336	15.81488	0.0955714	2.5756798	13	1	36 days	0.37			Williams	1999 XZ ₃₀
1999 XC ₃₁	14.8	0.15	19991208	4.34516	243.51952	186.71151	6.31357	0.1700304	3.0493635	27	1	32 days	0.48			Williams	1999 XC ₃₁
1999 XG ₃₁	14.8	0.15	19991208	15.96994	334.01333	101.78709	25.06744	0.1459345	2.5520846	50	1	57 days	0.42			Williams	1999 XG ₃₁
1999 XH ₃₁	15.5	0.15	19991208	50.18963	122.99694	247.44190	3.73620	0.3203213	2.2486301	39	1	35 days	0.53			Williams	1999 XH ₃₁
1999 XK ₃₁	12.8	0.15	19991208	26.24927	291.17382	133.75177	10.58166	0.0694884	2.9779275	29	1	34 days	0.49			Williams	1999 XK ₃₁
1999 XO ₃₁	13.8	0.15	19991208	320.97979	39.22809	115.83719	12.19654	0.1679750	2.6884136	25	1	30 days	0.59			Williams	1999 XO ₃₁
1999 XP ₃₁	12.3	0.15	19991208	112.01959	226.01327	114.47698	16.02187	0.1392620	2.5625943	35	1	35 days	0.44			Williams	1999 XP ₃₁
1999 XQ ₃₁	13.7	0.15	19991208	199.92975	149.14829	124.69239	9.88160	0.1172255	2.7582639	18	1	32 days	0.51			Williams	1999 XQ ₃₁
1999 XR ₃₁	13.4	0.15	19991208	108.74497	220.73998	119.88722	15.32472	0.1991149	2.5885769	24	1	42 days	0.42			Williams	1999 XR ₃₁
1999 XU ₃₁	14.0	0.15	20000226	344.59961	226.87781	297.02158	8.82948	0.0765085	2.5823446	22	1	61 days	0.58	M-v	5	Williams	1999 XU ₃₁
1999 XX ₃₁	13.1	0.15	19991208	330.16093	43.09923	125.71933	11.26553	0.2552675	2.7851763	36	1	34 days	0.46			Williams	1999 XX ₃₁
1999 XY ₃₁	14.7	0.15	19991118	16.74753	244.21789	204.72617	1.56307	0.1197198	2.2840596	14	1	20 days	0.55			Williams	1999 XY ₃₁
1999 XC ₃₂	14.8	0.15	19991208	49.30566	155.71391	260.51914	5.40154	0.1073076	2.3709998	24	1	32 days	0.56			Williams	1999 XC ₃₂
1999 XJ ₃₂	14.9	0.15	19991208	353.84272	322.92506	150.26847	3.75387	0.1521772	2.2875483	28	1	51 days	0.55			Williams	1999 XJ ₃₂
1999 XK ₃₂	15.2	0.15	19991208	9.41823	339.09546	113.70421	14.25402	0.1941431	2.5848489	25	1	34 days	0.47			Williams	1999 XK ₃₂
1999 XL ₃₂	13.7	0.15	19991228	280.38451	93.29299	117.06679	16.44323	0.1224580	2.6736878	21	1	50 days	0.60			Williams	1999 XL ₃₂
1999 XM ₃₂	15.4	0.15	19991208	10.03842	182.23784	269.84796	5.53873	0.2120881	2.5615114	21	1	33 days	0.39			Williams	1999 XM ₃₂
1999 XN ₃₂	14.4	0.15	19991208	33.72171	316.29828	116.99388	16.32258	0.0770422	2.6263937	31	1	59 days	0.47			Williams	1999 XN ₃₂
1999 XP ₃₂	15.5	0.15	19991208	54.66205	118.05702	280.21361	4.38820	0.1444064	2.1789579	20	1	31 days	0.58			Williams	1999 XP ₃₂
1999 XQ ₃₂	15.3	0.15	19991208	21.00116	320.21875	114.61175	5.15792	0.2354244	2.5771162	23	1	31 days	0.32			Williams	1999 XQ ₃₂
1999 XT ₃₂	14.4	0.15	19991208	341.85227	209.64414	294.36431	6.77787	0.2575131	2.8594143	28	1	38 days	0.56			Williams	1999 XT ₃₂
1999 XW ₃₂	14.3	0.15	19991208	316.59898	256.00419	280.84903	7.49235	0.1621573	2.9732071	27	1	32 days	0.52			Williams	1999 XW ₃₂
1999 XX ₃₂	13.6	0.15	19991208	101.66817	74.72420	289.75747	13.82763	0.1210932	2.6288867	32	1	51 days	0.44			Williams	1999 XX ₃₂
1999 XY ₃₂	14.7	0.15	19991208	337.36329	226.27888	278.85039	7.27273	0.1391426	2.5252474	23	1	32 days	0.53			Williams	1999 XY ₃₂
1999 XZ ₃₂	14.1	0.15	19991208	319.56448	228.86202	292.06350	10.19261	0.0376052	2.5990646	18	1	32 days	0.58			Williams	1999 XZ ₃₂
1999 XA ₃₃	13.8	0.15	19991208	325.80279	235.91369	293.31745	10.79787	0.2050714	3.0153004	19	1	32 days	0.45			Williams	1999 XA ₃₃
1999 XB ₃₃	13.7	0.15	19991208	12.31343	340.37790	112.23023	3.85909	0.2125968	2.4386613	25	1	51 days	0.37			Williams	1999 XB ₃₃
1999 XE ₃₃	14.6	0.15	19991208	356.79840	26.41386	92.39972	2.22338	0.1407909	2.4773153	13	1	31 days	0.55			Williams	1999 XE ₃₃
1999 XF ₃₃	13.9	0.15	19991208	323.77035	48.14760	114.13692	8.25124	0.1047893	2.6395885	22	1	31 days	0.71			Williams	1999 XF ₃₃
1999 XH ₃₃	15.4	0.15	19991208	44.91157	280.40709	125.47383	6.75127	0.2235487	2.2477278	15	1	41 days	0.40			Williams	1999 XH ₃₃

1999 XJ ₃₃	14.5	0.15	19991208	14.62803	178.58608	262.19606	2.86639	0.3704340	3.0077515	23	1	32 days	0.30	Williams	1999 XJ ₃₃
1999 XL ₃₃	15.3	0.15	19991208	316.38301	242.75523	285.75205	2.71589	0.1100775	2.2166225	25	1	52 days	0.49	Williams	1999 XL ₃₃
1999 XO ₃₃	12.7	0.15	19991208	344.34756	19.02801	119.03427	14.76056	0.0914689	2.6188638	39	1	50 days	0.34	Williams	1999 XO ₃₃
1999 XP ₃₃	15.6	0.15	19991208	29.18717	332.02182	105.13128	5.27659	0.1390808	2.3348585	24	1	33 days	0.55	Williams	1999 XP ₃₃
1999 XS ₃₃	14.2	0.15	19991208	74.57192	282.64456	109.70133	7.38533	0.1155582	2.3504683	31	1	51 days	0.53	Williams	1999 XS ₃₃
1999 XU ₃₃	14.2	0.15	19991208	42.91871	132.62812	285.82702	0.79130	0.1988169	2.6609708	24	1	32 days	0.44	Williams	1999 XU ₃₃
1999 XA ₃₄	12.8	0.15	20000226	304.88487	244.09180	317.70559	9.54845	0.0580573	3.0258253	32	1	68 days	0.53	M-v 5 Williams	1999 XA ₃₄
1999 XB ₃₄	15.9	0.15	19991208	350.19797	39.04177	91.02718	4.15574	0.0916879	2.3009018	28	1	33 days	0.68	Williams	1999 XB ₃₄
1999 XF ₃₄	13.4	0.15	20000226	343.69411	54.95675	121.12196	25.84280	0.2424742	2.7164562	42	1	62 days	0.52	M-v 4 Williams	1999 XF ₃₄
1999 XG ₃₄	15.3	0.15	19991208	278.33936	99.79709	119.12543	6.77995	0.1270079	2.2891349	24	1	34 days	0.72	Williams	1999 XG ₃₄
1999 XJ ₃₄	13.3	0.15	20000226	16.96010	20.29535	118.83619	13.86950	0.1406456	2.6463138	41	1	67 days	0.48	M-v 5 Williams	1999 XJ ₃₄
1999 XN ₃₄	13.5	0.15	19991208	322.11719	252.55732	288.89859	18.92397	0.3074776	3.1127591	32	1	52 days	0.33	Williams	1999 XN ₃₄
1999 XP ₃₄	13.9	0.15	19991208	292.21243	270.32094	296.10535	10.48170	0.1957726	2.5941789	19	1	34 days	0.49	Williams	1999 XP ₃₄
1999 XR ₃₄	14.8	0.15	19991208	55.65408	173.13572	232.99767	1.33785	0.1177813	2.2445557	22	1	38 days	0.46	Williams	1999 XR ₃₄
1999 XS ₃₄	14.7	0.15	19991208	316.44163	62.61829	104.74185	6.82859	0.0670182	2.4566397	30	1	31 days	0.56	Williams	1999 XS ₃₄
1999 XT ₃₄	14.4	0.15	19991208	351.62691	192.05369	299.26384	9.96839	0.1072716	2.6251522	41	1	52 days	0.42	Williams	1999 XT ₃₄
1999 XU ₃₄	13.4	0.15	19991208	48.78639	128.96250	299.25496	21.37316	0.0579235	2.6157755	19	1	32 days	0.49	Williams	1999 XU ₃₄
1999 XV ₃₄	14.1	0.15	19991208	30.57191	326.99858	115.29524	7.03760	0.1027916	2.3672723	18	1	31 days	0.44	Williams	1999 XV ₃₄
1999 XB ₃₅	12.5	0.15	19991208	246.06583	130.40268	124.36695	14.29443	0.0223679	3.1326927	17	1	32 days	0.38	Williams	1999 XB ₃₅
1999 XC ₃₅	16.7	0.15	19991118	326.97641	229.78108	248.61663	18.77988	0.2795616	3.0122807	13	1	4 days	0.86	E Williams	1999 XC ₃₅
1999 XF ₃₅	16.8	0.15	19991118	103.29928	66.55389	256.54983	4.35623	0.0482476	2.1466770	13	1	3 days	0.50	E Williams	1999 XF ₃₅
1999 XL ₃₅	14.7	0.15	20000226	34.50449	333.62704	87.36719	15.44088	0.1820790	2.5844817	23	1	67 days	0.53	M-v 5 Williams	1999 XL ₃₅
1999 XM ₃₅	15.8	0.15	19991208	248.83747	108.38268	81.02347	3.93795	0.1254037	2.3060136	65	1	51 days	0.61	Williams	1999 XM ₃₅
1999 XN ₃₅	15.4	0.15	19991118	54.77208	307.10348	55.13544	23.26898	0.3257238	2.2286913	40	1	46 days	0.70	Williams	1999 XN ₃₅
1999 XO ₃₅	16.8	0.15	20000226	36.12160	292.31517	82.87892	20.48562	0.5728443	2.5301079	194	1	49 days	0.43	M-v 5 Williams	1999 XO ₃₅
1999 XP ₃₅	18.3	0.15	20000226	37.31568	198.08082	263.54848	21.10894	0.1841531	1.4348637	56	1	40 days	0.52	M-v 5 Williams	1999 XP ₃₅
1999 XQ ₃₅	15.3	0.15	19991208	346.52947	84.56339	78.85768	28.34316	0.3717487	2.6281350	24	1	37 days	0.83	Marsden	1999 XQ ₃₅
1999 XR ₃₅	17.8	0.15	19991208	329.25433	80.98978	60.98499	18.75475	0.5096066	2.3697326	25	1	27 days	0.49	Williams	1999 XR ₃₅
1999 XS ₃₅	17.2	0.15	20000226	1.64301	333.15891	49.02419	19.47356	0.9474985	18.0513306	203	1	43 days	0.53	M-v 3 Marsden	1999 XS ₃₅
1999 XU ₃₅	13.6	0.15	20000226	20.77356	303.57733	111.77508	6.00802	0.1808996	3.1723477	55	1	64 days	0.48	M-v 4 Williams	1999 XU ₃₅
1999 XV ₃₅	15.0	0.15	19991208	165.30706	96.84841	175.61394	6.27591	0.0130366	2.7269839	28	1	36 days	0.59	Williams	1999 XV ₃₅
1999 XW ₃₅	13.4	0.15	20000226	356.09152	38.64079	76.11142	16.66327	0.2007437	2.5411217	52	1	63 days	0.45	M-v 4 Williams	1999 XW ₃₅
1999 XY ₃₅	14.3	0.15	19991208	61.69308	296.16709	86.03785	18.28679	0.1115381	2.7098357	30	1	52 days	0.81	Williams	1999 XY ₃₅
1999 XA ₃₆	15.5	0.15	20000226	31.55957	316.57413	103.91734	3.04550	0.2007455	2.4063975	50	1	86 days	0.36	M-v 4 Williams	1999 XA ₃₆
1999 XB ₃₆	14.4	0.15	19991208	33.25160	94.30046	319.36836	6.13235	0.0942257	2.3420650	31	1	54 days	0.66	Williams	1999 XB ₃₆
1999 XC ₃₆	13.6	0.15	19991208	15.40719	325.50348	107.91873	12.80287	0.1190986	2.3296450	25	1	32 days	0.66	Williams	1999 XC ₃₆
1999 XD ₃₆	13.0	0.15	20000226	279.25131	123.26811	89.38214	13.97440	0.1052752	2.5808330	55	2	1990-2000	0.48	M-v 5 Williams	37247 1999 XD ₃₆
1999 XF ₃₆	15.3	0.15	19991208	342.25561	141.36508	334.30532	4.47941	0.1172673	2.2883052	35	1	49 days	0.53	Williams	1999 XF ₃₆
1999 XG ₃₆	13.7	0.15	19991208	266.15687	144.20178	52.09735	7.09850	0.0585257	2.3928374	30	1	30 days	0.64	Williams	1999 XG ₃₆
1999 XH ₃₆	14.0	0.15	19991208	38.63774	349.96914	66.49153	10.23757	0.0549628	2.9605669	36	1	57 days	0.99	Williams	1999 XH ₃₆
1999 XK ₃₆	15.9	0.15	19991118	20.69044	303.73894	83.51041	8.50767	0.3005780	2.6567971	26	1	28 days	0.52	Williams	1999 XK ₃₆
1999 XM ₃₆	13.6	0.15	20000226	34.73122	10.18346	22.11680	15.07869	0.1228605	2.6396781	40	1	94 days	0.39	M-v 3 Williams	1999 XM ₃₆
1999 XN ₃₆	13.5	0.15	20000226	87.31902	305.16830	18.70552	14.08817	0.2190972	2.5643110	23	1	92 days	0.47	M-v 4 Williams	1999 XN ₃₆
1999 XO ₃₆	13.8	0.15	20000226	341.23347	96.87945	37.17076	22.86862	0.4155905	3.1446969	31	1	50 days	0.58	M-v 6 Williams	1999 XO ₃₆
1999 XS ₃₆	12.7	0.15	19991118	316.92358	90.57249	10.77791	10.81108	0.0528946	3.1532038	28	1	49 days	0.52	Williams	1999 XS ₃₆
1999 XU ₃₆	13.9	0.15	20000226	59.17315	98.25010	274.25647	13.40320	0.1253926	2.5371484	29	1	65 days	0.43	M-v 4 Williams	1999 XU ₃₆
1999 XV ₃₆	14.4	0.15	19991208	41.04096	4.71453	7.28577	7.15501	0.1309282	2.3014921	24	1	32 days	0.55	Williams	1999 XV ₃₆
1999 XW ₃₆	14.3	0.15	20000226	43.29988	30.35104	6.50065	8.74897	0.1086651	2.4293614	35	2	1997-2000	0.64	M-v 4 Williams	37248 1999 XW ₃₆
1999 XX ₃₆	14.2	0.15	20000226	20.90223	131.53603	287.29902	10.10091	0.2351743	2.7303299	44	1	65 days	0.36	M-v 3 Williams	1999 XX ₃₆
1999 XZ ₃₆	15.3	0.15	20000226	73.44372	272.47358	93.03385	3.49572	0.1804963	2.4078898	59	1	63 days	0.63	M-v 5 D Williams	1999 XZ ₃₆
1999 XA ₃₇	15.3	0.15	20000226	69.76238	170.23373	205.90842	5.96742	0.1714735	2.2967261	47	1	64 days	0.55	M-v 4 Williams	1999 XA ₃₇
1999 XD ₃₇	13.9	0.15	20000226	23.92979	321.97168	93.57968	13.00491	0.1859402	2.6670954	49	1	67 days	0.37	M-v 3 Williams	1999 XD ₃₇
1999 XE ₃₇	12.2	0.15	20000226	72.27265	252.28423	101.30138	11.33929	0.1324237	3.0213881	46	1	63 days	0.40	M-v 4 Williams	1999 XE ₃₇

1999 XJ ₃₇	13.5	0.15	20000226	62.66161	275.73124	82.95737	16.46857	0.1965891	2.6713456	48	2	1998-2000	0.54	M-v	3	Williams	37248	1999 XJ ₃₇
1999 XK ₃₇	13.0	0.15	19991208	296.21720	22.31893	119.92811	15.61553	0.1221550	2.6028638	28	1	39 days	0.63			Williams		1999 XK ₃₇
1999 XL ₃₇	13.3	0.15	20000226	21.07091	296.72702	126.41340	15.42778	0.0856978	2.6113375	47	1	70 days	0.50	M-v	4	Williams		1999 XL ₃₇
1999 XM ₃₇	15.1	0.15	19991208	25.25197	92.48903	300.99959	5.69895	0.1337515	2.3050673	38	1	30 days	0.50			Williams		1999 XM ₃₇
1999 XN ₃₇	15.0	0.15	19991208	28.88089	22.15169	8.20069	6.90694	0.1480115	2.3340304	36	1	36 days	0.97			Williams		1999 XN ₃₇
1999 XO ₃₇	13.7	0.15	20000226	87.25158	229.16836	107.86156	17.78198	0.2177931	2.7585575	24	1	67 days	0.58	M-v	5	Williams		1999 XO ₃₇
1999 XQ ₃₇	14.9	0.15	20000226	50.70484	291.07224	88.26315	16.16097	0.2358155	2.6674833	43	1	65 days	0.60	M-v	4	Williams		1999 XQ ₃₇
1999 XV ₃₇	15.8	0.15	20000226	24.27354	105.98088	310.88192	9.56670	0.2343998	2.5450066	29	1	62 days	0.39	M-v	4	Williams		1999 XV ₃₇
1999 XW ₃₇	15.4	0.15	19991208	233.40847	135.75202	76.05901	6.13068	0.1124482	2.3420120	31	1	38 days	0.41			Nakano		1999 XW ₃₇
1999 XX ₃₇	14.4	0.15	19991208	324.62558	317.23789	172.33463	1.11504	0.0966155	3.2517479	31	1	34 days	0.39			Williams		1999 XX ₃₇
1999 XY ₃₇	15.1	0.15	19991208	53.14753	295.57003	76.00614	7.01020	0.1106226	2.3598526	59	1	54 days	0.38			D Williams		1999 XY ₃₇
1999 XA ₃₈	16.0	0.15	19991208	67.67997	60.02250	276.50338	5.22850	0.2517797	2.2113272	41	1	51 days	0.77			Marsden		1999 XA ₃₈
1999 XB ₃₈	15.2	0.15	19991208	3.35945	164.77591	264.23157	9.72774	0.0364226	3.0062877	44	1	51 days	0.48			Williams		1999 XB ₃₈
1999 XD ₃₈	14.7	0.15	19991208	42.90398	208.06435	179.16282	1.94214	0.0766111	2.8618447	21	1	52 days	0.81			Williams		1999 XD ₃₈
1999 XE ₃₈	14.9	0.15	20000226	22.00680	32.82588	38.78218	7.36157	0.1570971	2.4063813	42	1	90 days	0.43	M-v	3	Williams		1999 XE ₃₈
1999 XF ₃₈	14.7	0.15	19991208	355.36026	113.84605	325.20743	4.16667	0.1536322	2.5307780	33	1	32 days	0.54			Williams		1999 XF ₃₈
1999 XG ₃₈	14.0	0.15	19991208	52.83732	287.07323	83.79970	12.03124	0.1286222	3.1874171	26	1	34 days	0.56			D Williams		1999 XG ₃₈
1999 XH ₃₈	14.4	0.15	19991208	228.10121	134.45067	80.91755	14.36563	0.0904141	2.5328890	15	1	32 days	0.46			D Williams		1999 XH ₃₈
1999 XP ₃₈	12.9	0.15	19991208	277.24607	121.41006	100.02732	11.10892	0.0828272	2.9427745	42	1	51 days	0.49			Williams		1999 XP ₃₈
1999 XQ ₃₈	14.3	0.15	19991118	31.69302	344.82829	78.34205	9.37174	0.2912478	2.6766878	20	1	29 days	0.43			Williams		1999 XQ ₃₈
1999 XR ₃₈	13.7	0.15	19991208	23.96038	329.85818	102.12485	13.73072	0.3015333	3.0868113	21	1	48 days	0.47			Williams		1999 XR ₃₈
1999 XS ₃₈	13.0	0.15	20000226	186.30597	189.64122	78.99820	14.30363	0.1588685	2.6600124	54	1	62 days	0.42	M-v	5	Williams		1999 XS ₃₈
1999 XU ₃₈	14.0	0.15	19991208	3.43068	321.16539	39.36960	13.52787	0.0858223	3.3861675	11	1	25 days	1.09			Williams		1999 XU ₃₈
1999 XV ₃₈	15.3	0.15	20000226	11.60419	284.58022	158.64014	5.78653	0.2747288	2.5534593	40	1	67 days	0.43	M-v	4	Williams		1999 XV ₃₈
1999 XA ₃₉	14.6	0.15	19991208	336.87326	240.60958	267.54322	12.86134	0.2197350	2.6760549	23	1	37 days	0.56			Williams		1999 XA ₃₉
1999 XB ₃₉	13.6	0.15	19991208	29.44761	257.15910	126.95359	3.55008	0.1847356	2.6917589	39	1	50 days	0.46			Williams		1999 XB ₃₉
1999 XF ₃₉	16.1	0.15	19991118	355.37816	294.50911	134.42893	4.17638	0.1826629	2.7368549	21	1	27 days	0.51			Williams		1999 XF ₃₉
1999 XH ₃₉	16.0	0.15	19991208	31.28200	257.79295	133.97571	5.95406	0.1494111	2.3496392	13	1	7 days	0.22			Williams		1999 XH ₃₉
1999 XM ₃₉	14.8	0.15	19991118	59.82974	134.51603	224.35563	7.78002	0.1060996	2.7330129	15	1	23 days	0.37			Williams		1999 XM ₃₉
1999 XN ₃₉	14.2	0.15	20000226	54.17130	178.23238	206.78091	6.86235	0.2018543	2.7545038	32	1	68 days	0.49	M-v	4	Williams		1999 XN ₃₉
1999 XW ₃₉	14.8	0.15	19991208	192.93658	99.46250	147.75088	6.08287	0.0518116	2.4119313	27	1	32 days	0.57			Williams		1999 XW ₃₉
1999 XY ₃₉	15.7	0.15	19991208	339.01115	3.83877	105.95351	5.98973	0.2569763	2.6492652	12	1	8 days	0.67			Williams		1999 XY ₃₉
1999 XZ ₃₉	13.9	0.15	19991208	48.82714	276.68412	110.86410	10.30618	0.1430798	2.5622525	30	1	34 days	0.41			Williams		1999 XZ ₃₉
1999 XD ₄₀	14.8	0.15	19991208	38.37019	328.76220	106.00511	13.01874	0.1040718	2.3838715	39	1	35 days	0.49			Williams		1999 XD ₄₀
1999 XG ₄₀	14.3	0.15	19991208	48.43312	9.48001	346.97901	1.97307	0.0791259	2.9343765	40	1	53 days	0.45			Williams		1999 XG ₄₀
1999 XJ ₄₀	15.2	0.15	19991118	74.86579	30.84343	292.18952	2.20099	0.1003925	2.6525198	27	1	28 days	0.44			Williams		1999 XJ ₄₀
1999 XL ₄₀	15.1	0.15	19991118	137.07652	18.89563	248.43756	6.74338	0.0842968	2.3524800	31	1	33 days	0.67			Williams		1999 XL ₄₀
1999 XM ₄₀	15.7	0.15	19991118	345.76562	175.15884	254.45002	4.43058	0.1527441	3.0981543	17	1	24 days	0.49			Williams		1999 XM ₄₀
1999 XO ₄₀	15.7	0.15	20000226	50.40185	334.11922	41.16623	3.76233	0.2003702	2.4103889	44	1	69 days	0.43	M-v	4	Williams		1999 XO ₄₀
1999 XR ₄₀	15.6	0.15	19991208	80.10250	287.99257	32.55508	2.25968	0.1403125	2.3404905	18	1	8 days	0.62			E Williams		1999 XR ₄₀
1999 XS ₄₀	14.9	0.15	19991118	87.22264	62.26990	240.80718	13.23090	0.1703244	2.9076335	11	1	4 days	0.94			E Williams		1999 XS ₄₀
1999 XT ₄₀	16.2	0.15	19991118	293.68834	108.10594	32.52865	4.31459	0.2019265	2.4078747	12	1	4 days	0.59			E Williams		1999 XT ₄₀
1999 XU ₄₀	17.0	0.15	19991208	8.94813	136.17573	267.07441	2.97617	0.3041516	2.5888546	35	1	58 days	0.62			Williams		1999 XU ₄₀
1999 XV ₄₀	13.2	0.15	20000226	42.81379	137.52433	239.55797	21.04217	0.1313567	3.1959810	40	1	93 days	0.41	M-v	3	Williams		1999 XV ₄₀
1999 XY ₄₀	14.9	0.15	19991118	305.24810	226.05071	244.59730	6.88861	0.0485963	2.7439546	28	1	28 days	0.39			Williams		1999 XY ₄₀
1999 XZ ₄₀	16.2	0.15	19991118	13.56379	148.99831	242.87117	11.83861	0.1817503	2.5689291	19	1	26 days	0.36			Williams		1999 XZ ₄₀
1999 XB ₄₁	15.2	0.15	19991118	306.93574	231.81316	244.04381	8.12299	0.1110972	2.7635904	24	1	24 days	0.60			Williams		1999 XB ₄₁
1999 XC ₄₁	16.7	0.15	19991118	357.02311	172.10366	244.03595	5.94968	0.0651656	2.1794120	29	1	35 days	0.52			Williams		1999 XC ₄₁
1999 XD ₄₁	14.7	0.15	19991118	107.56163	32.97746	255.66283	5.06339	0.1013427	3.1195254	29	1	33 days	0.65			Williams		1999 XD ₄₁
1999 XF ₄₁	15.2	0.15	19991118	339.21658	29.10524	46.68928	7.17596	0.0858769	2.5648790	17	1	29 days	0.49			Williams		1999 XF ₄₁
1999 XH ₄₁	17.1	0.15	19991118	14.44191	348.79380	41.53057	3.02508	0.1858268	2.4055443	21	1	24 days	0.62			Williams		1999 XH ₄₁
1999 XJ ₄₁	14.6	0.15	19991118	331.09589	229.28682	215.69243	9.49187	0.0893658	3.0242122	27	1	27 days	0.57			Williams		1999 XJ ₄₁
1999 XL ₄₁	14.5	0.15	19991118	111.78510	161.83455	137.78203	4.80861	0.0882036	2.5512306	17	1	27 days	0.61			Williams		1999 XL ₄₁

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1999 XN ₄₁	15.1	0.15	19991118	31.82961	253.39368	133.21944	3.44213	0.0410246	2.7423215	13	1	23 days	0.31		Williams	1999 XN ₄₁
1999 XR ₄₁	16.0	0.15	19991208	335.42006	311.64728	152.84065	3.39721	0.1879124	2.5906600	19	1	23 days	0.70		Williams	1999 XR ₄₁
1999 XT ₄₁	16.7	0.15	19991118	21.41561	131.76654	253.38992	6.08474	0.1149945	2.2754780	25	1	39 days	0.62		Williams	1999 XT ₄₁
1999 XU ₄₁	15.5	0.15	19991118	39.97721	82.74941	270.23157	2.73042	0.2081896	2.5831568	32	1	39 days	0.48		Williams	1999 XU ₄₁
1999 XV ₄₁	16.6	0.15	19991118	17.01496	84.96148	299.07419	1.66110	0.2398710	2.6397969	30	1	38 days	0.61		Williams	1999 XV ₄₁
1999 XX ₄₁	15.5	0.15	20000226	107.84952	282.17160	33.21397	3.10302	0.1593573	2.2635454	51	2	1998–1999	0.52	M-v 4	Williams	1999 XX ₄₁
1999 XA ₄₂	17.7	0.15	19991118	330.35146	59.96546	45.89373	0.48241	0.2873816	2.3422066	35	1	33 days	0.59		Williams	1999 XA ₄₂
1999 XB ₄₂	14.0	0.15	19991118	265.87232	277.25305	244.47379	3.34155	0.1334894	2.6389744	23	1	22 days	0.36		Williams	1999 XB ₄₂
1999 XC ₄₂	15.5	0.15	19991118	137.16245	225.92876	42.78209	5.20733	0.1048798	2.2685859	33	1	26 days	0.50		Williams	1999 XC ₄₂
1999 XE ₄₂	15.5	0.15	19991118	38.98084	339.43421	27.68093	2.24768	0.0843326	2.8704079	33	1	24 days	0.48		Williams	1999 XE ₄₂
1999 XH ₄₂	15.8	0.15	20000226	9.16201	131.84639	308.54634	1.67730	0.1845668	2.3556450	45	1	64 days	0.50	M-v 5	Williams	1999 XH ₄₂
1999 XJ ₄₂	14.7	0.15	19991118	359.91123	165.93255	247.39968	9.66381	0.0856453	2.9679572	31	1	30 days	0.54		Williams	1999 XJ ₄₂
1999 XK ₄₂	16.0	0.15	19991118	91.67011	260.04039	46.76092	7.18335	0.1385423	2.4236785	31	1	35 days	0.63		Williams	1999 XK ₄₂
1999 XL ₄₂	16.8	0.15	19991118	282.87739	113.63502	35.24107	2.75031	0.1536999	2.3486641	19	1	39 days	0.57		Williams	1999 XL ₄₂
1999 XM ₄₂	16.1	0.15	19991118	312.88821	209.84602	260.88094	3.25355	0.1040155	2.2850520	31	1	29 days	0.40		Williams	1999 XM ₄₂
1999 XQ ₄₂	16.0	0.15	19991029	40.75559	340.39983	12.93185	1.49434	0.1623263	2.5312192	20	1	51 days	1.00		Williams	1999 XQ ₄₂
1999 XR ₄₂	15.9	0.15	19991118	58.27960	72.92366	259.91725	1.55610	0.2126120	2.1415954	36	1	38 days	0.42		Williams	1999 XR ₄₂
1999 XT ₄₂	15.6	0.15	19991118	80.13055	68.37359	247.96300	4.97702	0.1551776	2.5853492	40	1	35 days	0.61		Williams	1999 XT ₄₂
1999 XW ₄₂	16.7	0.15	19991118	7.28435	154.68422	248.11510	1.23822	0.2081768	2.4282648	30	1	30 days	0.50		Williams	1999 XW ₄₂
1999 XX ₄₂	14.8	0.15	19991118	66.11204	71.53898	258.14415	4.39481	0.1564785	3.2102472	27	1	33 days	0.52		Williams	1999 XX ₄₂
1999 XZ ₄₂	16.2	0.15	19991118	359.00875	33.32221	22.56296	2.11667	0.1776463	2.5218991	46	1	39 days	0.61		Williams	1999 XZ ₄₂
1999 XB ₄₃	16.3	0.15	19991208	16.29690	0.88077	36.54744	2.49566	0.2212155	2.3291202	28	1	58 days	0.32		Williams	1999 XB ₄₃
1999 XC ₄₃	15.4	0.15	19991118	83.59519	66.88057	243.97945	16.54702	0.1755642	2.6628256	12	1	3 days	0.50		E Williams	1999 XC ₄₃
1999 XD ₄₃	13.9	0.15	20000226	26.29056	155.86791	250.47819	8.37531	0.0675288	2.9748318	45	1	62 days	0.53	M-v 4	Williams	1999 XD ₄₃
1999 XE ₄₃	15.5	0.15	19991118	51.09620	98.67895	245.32595	8.08118	0.1919280	2.7321443	14	1	4 days	1.02		E Williams	1999 XE ₄₃
1999 XG ₄₃	17.0	0.15	19991029	352.86398	156.18878	262.36391	1.53829	0.2340868	2.5390871	41	1	51 days	0.46		Williams	1999 XG ₄₃
1999 XH ₄₃	15.6	0.15	19991118	193.74460	336.31737	248.15691	4.34730	0.1204278	2.2842551	35	1	39 days	0.68		Williams	1999 XH ₄₃
1999 XJ ₄₃	17.0	0.15	19991118	355.69796	44.18492	16.85780	0.90567	0.1383389	2.3632207	27	1	34 days	0.61		Williams	1999 XJ ₄₃
1999 XK ₄₃	15.8	0.15	19991118	65.51437	270.28728	40.86639	4.15247	0.3336473	2.3368157	23	1	35 days	0.37		Williams	1999 XK ₄₃
1999 XL ₄₃	15.9	0.15	19991118	306.97693	193.43647	285.48017	1.68405	0.1071618	2.5485339	38	1	38 days	0.90		Williams	1999 XL ₄₃
1999 XN ₄₃	17.5	0.15	19991118	39.90340	100.35008	254.35720	5.24717	0.2299606	2.2823931	11	1	3 days	1.19		E Williams	1999 XN ₄₃
1999 XO ₄₃	15.5	0.15	20000226	42.41859	78.57990	313.65840	1.20503	0.1888825	2.3985223	36	1	62 days	0.47	M-v 4	Williams	1999 XO ₄₃
1999 XP ₄₃	14.9	0.15	19991118	22.90849	358.87648	28.35176	4.41949	0.1038227	2.8003036	49	1	40 days	0.59		Williams	1999 XP ₄₃
1999 XR ₄₃	15.1	0.15	19991118	333.72688	185.80710	264.34155	5.09467	0.1448388	3.0875730	37	1	40 days	0.87		Williams	1999 XR ₄₃
1999 XS ₄₃	15.1	0.15	19991118	255.33928	281.44834	258.77482	6.13224	0.1950940	2.5862796	19	1	27 days	0.88		Williams	1999 XS ₄₃
1999 XT ₄₃	15.3	0.15	19991118	325.39183	208.80049	261.04271	6.74259	0.2363854	3.1586980	14	1	3 days	0.64		E Williams	1999 XT ₄₃
1999 XV ₄₃	15.1	0.15	19991118	77.14037	297.39035	19.81306	3.15004	0.1876363	2.5830349	34	1	31 days	0.50		Williams	1999 XV ₄₃
1999 XW ₄₃	16.2	0.15	19991118	28.04004	102.43366	278.70983	3.35116	0.1076054	2.6311688	33	1	34 days	0.50		Williams	1999 XW ₄₃
1999 XY ₄₃	16.7	0.15	19991118	7.20447	74.18245	334.12033	1.97843	0.0386758	2.2597240	13	1	3 days	0.54		E Williams	1999 XY ₄₃
1999 XZ ₄₃	16.5	0.15	19991118	31.79166	58.66729	321.11684	2.00458	0.0696798	2.1755744	27	1	24 days	0.46		Williams	1999 XZ ₄₃
1999 XA ₄₄	17.2	0.15	19991118	33.55725	333.41861	29.19992	3.02231	0.2387424	2.3482448	35	1	34 days	0.58		Williams	1999 XA ₄₄
1999 XD ₄₄	15.7	0.15	19991208	16.86430	358.76581	40.19419	3.82728	0.1661093	2.5391774	39	1	58 days	0.80		Williams	1999 XD ₄₄
1999 XG ₄₄	17.5	0.15	19991118	19.41839	115.37217	269.40576	3.64242	0.2263031	2.1890131	14	1	3 days	0.69		E Williams	1999 XG ₄₄
1999 XH ₄₄	14.9	0.15	20000226	335.75828	232.78649	251.26595	10.28731	0.2183780	2.7167452	32	1	62 days	0.41	M-v 5	Williams	1999 XH ₄₄
1999 XJ ₄₄	16.8	0.15	19991118	321.21414	205.54158	259.41748	4.41401	0.1239906	2.1965697	14	1	3 days	0.83		E Williams	1999 XJ ₄₄
1999 XK ₄₄	16.3	0.15	19991118	3.82281	58.12997	351.95806	1.13473	0.1891245	2.6251687	21	1	35 days	0.51		Williams	1999 XK ₄₄
1999 XM ₄₄	16.3	0.15	19991118	345.19637	169.15404	266.12306	2.41980	0.1273716	2.5228308	36	1	37 days	0.66		Williams	1999 XM ₄₄
1999 XQ ₄₄	15.2	0.15	19991118	149.49270	9.55883	252.20085	6.53771	0.1060356	2.2607438	33	1	39 days	0.42		Williams	1999 XQ ₄₄
1999 XT ₄₄	15.9	0.15	19991118	255.62292	127.24035	50.75713	3.05958	0.1588820	2.3488894	22	1	33 days	0.48		Williams	1999 XT ₄₄
1999 XU ₄₄	15.5	0.15	19991118	286.25025	85.45776	55.13158	6.06136	0.0965071	2.2911937	22	1	39 days	0.55		Williams	1999 XU ₄₄
1999 XV ₄₄	14.2	0.15	19991118	333.67472	198.05737	250.70658	4.15972	0.1222349	3.1627428	34	1	29 days	0.57		Williams	1999 XV ₄₄
1999 XW ₄₄	16.9	0.15	19991118	341.76270	193.42344	246.75687	4.91637	0.1451918	2.3295678	25	1	28 days	0.37		Williams	1999 XW ₄₄
1999 XX ₄₄	16.7	0.15	19991118	3.29476	355.67606	54.62869	3.54249	0.2139529	2.3954649	18	1	29 days	0.42		Williams	1999 XX ₄₄

1999 XY ₄₄	14.3	0.15	19991118	124.18580	219.80768	57.12461	14.59430	0.1785478	2.6076492	18	1	29 days	0.39		Williams	1999 XY ₄₄
1999 XZ ₄₄	16.6	0.15	19991118	31.61668	126.15995	249.38763	3.55251	0.1264240	2.2987139	37	1	37 days	0.65		Williams	1999 XZ ₄₄
1999 XA ₄₅	16.2	0.15	19991118	28.34170	129.24245	244.37348	13.68053	0.2008580	2.5956819	31	1	33 days	0.45		Williams	1999 XA ₄₅
1999 XB ₄₅	16.1	0.15	19991118	304.55093	252.82975	245.21044	4.71693	0.2413913	2.8859165	15	1	6 days	0.81	E	Williams	1999 XB ₄₅
1999 XC ₄₅	16.8	0.15	19991118	47.34836	286.40340	58.69716	3.12924	0.2328620	2.3325180	36	1	35 days	0.47	D	Williams	1999 XC ₄₅
1999 XD ₄₅	14.8	0.15	20000226	5.55106	19.29539	62.50338	7.21313	0.0772064	2.3487248	60	1	83 days	0.47	M-v 4	Williams	1999 XD ₄₅
1999 XE ₄₅	16.1	0.15	19991118	83.19183	257.28189	67.29123	6.13327	0.0681893	2.7433662	20	1	33 days	0.41		Williams	1999 XE ₄₅
1999 XG ₄₅	16.1	0.15	19991118	61.69761	219.07358	106.49026	3.22096	0.2442435	2.3273770	35	1	30 days	0.59		Williams	1999 XG ₄₅
1999 XH ₄₅	15.3	0.15	20000226	67.76780	280.24065	83.30965	6.29522	0.1469451	2.2690113	41	1	63 days	0.46	M-v 5	Williams	1999 XH ₄₅
1999 XJ ₄₅	14.7	0.15	20000226	31.96289	322.89908	67.48876	18.55547	0.2462969	3.1037215	36	1	62 days	0.59	M-v 4	Williams	1999 XJ ₄₅
1999 XK ₄₅	17.8	0.15	19991118	1.12076	314.88187	98.29023	3.30432	0.1891659	2.3609291	20	1	23 days	0.77		Williams	1999 XK ₄₅
1999 XL ₄₅	15.5	0.15	20000226	97.18253	249.89403	68.42943	6.40977	0.2662784	2.2210442	26	1	68 days	0.59	M-v 5	Williams	1999 XL ₄₅
1999 XM ₄₅	15.0	0.15	19991118	232.15310	126.56356	67.87847	3.30954	0.1222570	2.4324328	31	1	29 days	0.48		Williams	1999 XM ₄₅
1999 XN ₄₅	15.7	0.15	19991118	333.06035	212.72319	240.57583	4.35177	0.1498163	3.0627072	30	1	27 days	0.39		Williams	1999 XN ₄₅
1999 XO ₄₅	17.2	0.15	19991118	339.43733	44.83146	45.59557	5.92517	0.2430968	2.7173944	13	1	3 days	0.70	E	Williams	1999 XO ₄₅
1999 XR ₄₅	14.7	0.15	19991118	181.07814	317.97451	278.29635	3.33322	0.1286883	2.3226728	11	1	24 days	0.36		Williams	1999 XR ₄₅
1999 XS ₄₅	15.9	0.15	19991118	19.91633	353.43636	37.68988	3.53193	0.1234092	2.6792089	43	1	42 days	0.58		Williams	1999 XS ₄₅
1999 XW ₄₅	16.2	0.15	19991118	71.21588	345.75507	332.13927	1.81217	0.2444434	2.4365128	12	1	3 days	0.58	E	Williams	1999 XW ₄₅
1999 XX ₄₅	14.8	0.15	19991118	101.75671	239.59337	57.50807	13.32919	0.1765780	2.6974540	31	1	34 days	0.97		Williams	1999 XX ₄₅
1999 XY ₄₅	16.3	0.15	19991118	350.43459	181.63786	246.59685	6.15632	0.0561724	2.4831321	28	1	29 days	0.48		Williams	1999 XY ₄₅
1999 XB ₄₆	16.6	0.15	20000226	51.87639	120.04958	258.79325	5.56192	0.2389122	2.2869325	33	1	64 days	0.44	M-v 4	Williams	1999 XB ₄₆
1999 XD ₄₆	16.0	0.15	19991118	320.44809	69.04260	36.43957	2.50627	0.0995788	2.9035088	28	1	34 days	0.63		Williams	1999 XD ₄₆
1999 XE ₄₆	16.1	0.15	19991118	307.70541	90.03092	43.47500	3.37509	0.2178864	2.3118540	14	1	3 days	0.73	E	Williams	1999 XE ₄₆
1999 XG ₄₆	15.8	0.15	19991208	305.12042	91.77505	45.58760	2.37256	0.1918607	3.2376126	11	1	7 days	0.61	E	Williams	1999 XG ₄₆
1999 XH ₄₆	16.4	0.15	19991118	312.73466	220.95369	251.57400	6.05379	0.0784506	2.2692507	25	1	24 days	0.52		Williams	1999 XH ₄₆
1999 XK ₄₆	17.0	0.15	20000226	28.22992	142.14967	277.66575	0.80198	0.1429645	2.2278427	21	1	60 days	0.41	M-v 5	Williams	1999 XK ₄₆
1999 XL ₄₆	16.5	0.15	19991118	348.97296	34.66268	38.92194	1.56752	0.1612497	2.5547643	27	1	34 days	0.64		Williams	1999 XL ₄₆
1999 XN ₄₆	16.4	0.15	19991118	30.43034	129.45873	249.63144	5.59045	0.1305395	2.2998603	32	1	40 days	0.50		Williams	1999 XN ₄₆
1999 XO ₄₆	16.2	0.15	19991208	18.48112	331.85580	64.02929	15.99966	0.1940524	2.7357085	35	1	52 days	0.58		Williams	1999 XO ₄₆
1999 XP ₄₆	16.6	0.15	19991118	342.22441	20.12327	62.48990	4.36171	0.1700886	2.7460244	28	1	34 days	0.55		Williams	1999 XP ₄₆
1999 XQ ₄₆	15.9	0.15	20000226	80.52609	276.61953	70.68091	4.13169	0.1898812	2.2340175	42	1	62 days	0.39	M-v 5	Williams	1999 XQ ₄₆
1999 XS ₄₆	16.7	0.15	19991118	1.62975	344.56820	71.58930	5.75435	0.1442121	2.3886143	47	1	39 days	0.44		Williams	1999 XS ₄₆
1999 XT ₄₆	17.1	0.15	19991118	19.22626	155.44174	239.39452	6.12448	0.1095313	2.3392248	21	1	29 days	0.60		Williams	1999 XT ₄₆
1999 XW ₄₆	14.2	0.15	19991208	134.31846	249.23270	26.44134	2.17039	0.1698210	2.9758698	20	1	11 days	0.43		Williams	1999 XW ₄₆
1999 XX ₄₆	14.4	0.15	19991118	350.73196	175.09528	256.88146	3.47573	0.1709296	3.0344023	28	1	24 days	0.41		Williams	1999 XX ₄₆
1999 XY ₄₆	14.3	0.15	19991118	328.35325	198.19186	264.61564	3.38579	0.1679607	3.2302326	37	1	34 days	0.69		Williams	1999 XY ₄₆
1999 XA ₄₇	15.4	0.15	19991118	140.87005	250.86002	25.09319	2.77422	0.0321036	2.5330440	40	1	30 days	0.54		Williams	1999 XA ₄₇
1999 XB ₄₇	14.4	0.15	20000226	18.60801	161.20759	257.97072	7.57725	0.0753734	3.0092061	42	1	67 days	0.42	M-v 4	Williams	1999 XB ₄₇
1999 XD ₄₇	16.8	0.15	19991118	35.31327	101.95285	260.98224	6.02759	0.2412802	2.7453014	29	1	35 days	0.62		Williams	1999 XD ₄₇
1999 XE ₄₇	15.6	0.15	19991208	298.55425	97.52408	42.20870	4.11288	0.1303183	2.7747466	23	1	9 days	0.56		Williams	1999 XE ₄₇
1999 XF ₄₇	16.0	0.15	19991208	64.95885	307.87471	47.80200	4.62187	0.0442197	2.3229651	21	1	9 days	0.74		Williams	1999 XF ₄₇
1999 XG ₄₇	15.9	0.15	19991118	348.78739	153.91582	281.33001	2.17548	0.1736712	3.0237345	35	1	41 days	0.44		Williams	1999 XG ₄₇
1999 XH ₄₇	14.0	0.15	19991118	42.74727	316.24264	55.78438	8.58513	0.0579247	3.2447182	48	1	41 days	0.57	D	Williams	1999 XH ₄₇
1999 XJ ₄₇	16.2	0.15	19991208	344.48700	188.96224	259.90654	3.78867	0.1809647	2.4222761	24	1	57 days	0.41		Williams	1999 XJ ₄₇
1999 XK ₄₇	14.5	0.15	19991118	127.95921	326.51110	321.57087	0.87344	0.0414101	3.0277520	19	1	24 days	0.60		Williams	1999 XK ₄₇
1999 XL ₄₇	14.6	0.15	20000226	295.00214	265.28109	253.21839	5.20351	0.0526469	2.3216191	38	1	64 days	0.43	M-v 5	Williams	1999 XL ₄₇
1999 XM ₄₇	15.4	0.15	19991208	61.81992	327.09900	11.17243	1.57003	0.2134869	3.0413469	23	1	10 days	0.69		Williams	1999 XM ₄₇
1999 XN ₄₇	17.9	0.15	19991118	16.02614	347.82679	47.66767	2.15720	0.1889339	2.4471884	30	1	34 days	0.54		Williams	1999 XN ₄₇
1999 XO ₄₇	14.7	0.15	19991118	77.44789	88.24188	249.01234	11.56773	0.0485304	3.1402356	31	1	29 days	0.60		Williams	1999 XO ₄₇
1999 XQ ₄₇	17.2	0.15	19991118	10.78870	339.51355	62.91538	13.13057	0.1926637	2.5763563	15	1	29 days	0.50		Williams	1999 XQ ₄₇
1999 XR ₄₇	15.6	0.15	20000226	18.62788	1.14176	64.29570	15.02272	0.2329543	2.6462562	65	1	66 days	0.49	M-v 4	Williams	1999 XR ₄₇
1999 XT ₄₇	15.5	0.15	19991118	298.34452	239.47596	244.97934	13.65684	0.0316781	2.6576980	33	1	34 days	0.60		Williams	1999 XT ₄₇
1999 XU ₄₇	15.8	0.15	20000226	75.78820	275.12162	73.43363	3.13650	0.2178510	2.3463343	39	1	67 days	0.48	M-v 5	Williams	1999 XU ₄₇

1999 XV ₄₇	16.5	0.15	19991118	43.74145	288.26374	74.97508	2.65804	0.1361873	2.3936788	36	1	34 days	0.72		Williams	1999 XV ₄₇
1999 XW ₄₇	15.4	0.15	20000226	332.23969	69.60553	66.54650	9.68149	0.2501900	2.6894933	40	1	63 days	0.44	M-v 5	Williams	1999 XW ₄₇
1999 XX ₄₇	15.6	0.15	19991118	313.56932	237.10511	237.24355	9.05343	0.0891543	3.0955071	22	1	38 days	0.42		Williams	1999 XX ₄₇
1999 XY ₄₇	15.8	0.15	19991118	128.27688	214.21060	70.25426	7.29546	0.0871849	2.3207354	27	1	28 days	0.53		Williams	1999 XY ₄₇
1999 XB ₄₈	16.5	0.15	19991118	24.15466	309.91612	71.77170	5.99696	0.2220143	2.5876577	28	1	28 days	0.57		Williams	1999 XB ₄₈
1999 XD ₄₈	16.4	0.15	20000226	3.46538	15.50819	78.50176	6.15601	0.1957617	2.3514027	56	1	67 days	0.40	M-v 4	Williams	1999 XD ₄₈
1999 XE ₄₈	15.6	0.15	19991118	27.61957	318.43389	66.82497	23.14001	0.1066607	3.1885790	22	1	28 days	0.40		Williams	1999 XE ₄₈
1999 XF ₄₈	16.0	0.15	19991118	24.88387	278.70853	101.87592	2.40252	0.2243140	3.0532793	22	1	32 days	0.45		Williams	1999 XF ₄₈
1999 XK ₄₈	15.5	0.15	20000226	26.81665	334.47310	74.73028	9.79186	0.2097639	2.8913366	41	1	66 days	0.49	M-v 4	Williams	1999 XK ₄₈
1999 XL ₄₈	16.9	0.15	19991118	8.72046	255.54247	151.35162	1.45582	0.1829116	2.4382047	32	1	38 days	0.52		Williams	1999 XL ₄₈
1999 XM ₄₈	15.9	0.15	20000226	67.98729	130.87187	228.60996	4.99358	0.1912462	2.5016646	26	2	1995–1999	0.83	M-v 6	Williams	37248 1999 XM ₄₈
1999 XO ₄₈	15.9	0.15	19991118	9.76447	148.13990	260.43348	1.05684	0.0903928	2.9518376	16	1	35 days	0.46		Williams	1999 XO ₄₈
1999 XR ₄₈	16.1	0.15	19991118	324.58435	39.17205	65.24208	4.90147	0.1173756	2.3622468	19	1	29 days	0.48		Williams	1999 XR ₄₈
1999 XS ₄₈	15.8	0.15	19991118	352.87971	103.33315	326.31001	1.94500	0.1686817	2.7343240	38	1	42 days	0.43		Williams	1999 XS ₄₈
1999 XU ₄₈	16.6	0.15	19991118	289.89753	81.25098	53.69196	7.22905	0.0415301	2.3145431	21	1	35 days	0.43		Williams	1999 XU ₄₈
1999 XV ₄₈	15.8	0.15	19991118	295.13989	223.27446	265.33696	3.76757	0.0336872	2.4037956	34	1	30 days	0.48		Williams	1999 XV ₄₈
1999 XX ₄₈	15.0	0.15	20000226	19.98950	174.72087	253.73919	6.30904	0.0855641	2.3651096	49	1	64 days	0.53	M-v 4	Williams	1999 XX ₄₈
1999 XY ₄₈	15.7	0.15	19991208	83.33482	281.73260	47.93336	3.32731	0.1069327	2.6755168	12	1	7 days	0.44		E Williams	1999 XY ₄₈
1999 XZ ₄₈	14.3	0.15	20000226	33.75497	330.29655	63.65806	15.15982	0.2329861	3.1377004	50	1	66 days	0.45	M-v 4	Williams	1999 XZ ₄₈
1999 XB ₄₉	14.7	0.15	20000226	131.73931	52.69259	249.39796	7.22660	0.1240533	2.4357797	33	1	64 days	0.45	M-v 5	Williams	1999 XB ₄₉
1999 XC ₄₉	14.6	0.15	19991208	295.04878	243.82156	252.15854	8.75416	0.0573486	3.0102038	31	1	57 days	0.43		Williams	1999 XC ₄₉
1999 XE ₄₉	17.7	0.15	19991118	16.87672	324.27805	64.14482	10.45567	0.2928358	2.7826281	20	1	27 days	0.61		Williams	1999 XE ₄₉
1999 XJ ₄₉	15.0	0.15	19991118	133.73673	219.69273	51.25218	6.97760	0.2706720	2.4050226	34	1	31 days	0.86		Williams	1999 XJ ₄₉
1999 XL ₄₉	14.5	0.15	19991208	70.17662	95.05749	251.70711	9.95935	0.0800905	2.9852400	31	1	57 days	0.48		Williams	1999 XL ₄₉
1999 XM ₄₉	14.1	0.15	20000226	57.45801	40.76356	339.34441	1.33587	0.0560427	2.9186385	45	1	62 days	0.51	M-v 4	Williams	1999 XM ₄₉
1999 XN ₄₉	16.7	0.15	19991118	31.88168	326.80642	44.06057	2.76813	0.2288466	2.3373476	15	1	29 days	0.36		Williams	1999 XN ₄₉
1999 XO ₄₉	15.6	0.15	19991118	130.63533	227.81837	54.56152	6.02324	0.1195571	2.2326559	35	1	36 days	0.46		Williams	1999 XO ₄₉
1999 XP ₄₉	15.8	0.15	19991118	268.84017	102.56343	58.15499	7.25003	0.0656759	2.2560944	18	1	29 days	0.46		Williams	1999 XP ₄₉
1999 XQ ₄₉	17.3	0.15	19991118	350.13222	44.82224	28.87375	1.71795	0.1199824	2.1879019	34	1	30 days	0.53		Williams	1999 XQ ₄₉
1999 XR ₄₉	17.5	0.15	19991118	10.71689	147.84831	256.13922	5.84042	0.2199014	2.6519879	17	1	30 days	0.55		Williams	1999 XR ₄₉
1999 XS ₄₉	15.6	0.15	19991118	184.25515	185.31752	52.99904	2.34332	0.0916475	2.6028648	17	1	34 days	0.45		Williams	1999 XS ₄₉
1999 XU ₄₉	15.3	0.15	19991208	161.93755	6.42415	254.36927	5.35112	0.1181049	2.3955800	23	1	57 days	0.36		Williams	1999 XU ₄₉
1999 XV ₄₉	16.4	0.15	19991118	61.81044	290.89320	48.57586	2.95940	0.1871795	3.1110131	24	1	35 days	0.71		Williams	1999 XV ₄₉
1999 XW ₄₉	15.2	0.15	19991118	64.57029	291.00163	59.42651	2.84787	0.0657837	2.9460087	26	1	34 days	0.68		Williams	1999 XW ₄₉
1999 XX ₄₉	15.3	0.15	19991118	298.92264	162.91939	341.99554	0.93370	0.1949386	3.0928873	22	1	35 days	0.40		Williams	1999 XX ₄₉
1999 XY ₄₉	17.2	0.15	19991118	24.73544	327.41349	63.46105	6.42615	0.1038394	2.1690525	37	1	40 days	0.65		Williams	1999 XY ₄₉
1999 XZ ₄₉	15.7	0.15	19991118	88.82027	236.40795	70.46426	3.29492	0.2273818	2.3515806	38	1	40 days	0.45		D Williams	1999 XZ ₄₉
1999 XB ₅₀	16.1	0.15	19991118	37.60471	291.73507	67.35516	13.85730	0.2617618	2.5678768	18	1	28 days	0.39		Williams	1999 XB ₅₀
1999 XC ₅₀	15.3	0.15	19991118	356.88727	186.92185	237.95041	1.19497	0.0919343	2.6457873	14	1	29 days	0.42		Williams	1999 XC ₅₀
1999 XE ₅₀	17.1	0.15	19991118	3.53474	345.23506	69.96170	7.19545	0.1634830	2.2704010	28	1	28 days	1.01		Williams	1999 XE ₅₀
1999 XF ₅₀	14.9	0.15	19991118	161.27028	190.33557	66.59839	7.64570	0.1161645	2.3744204	18	1	29 days	0.46		Williams	1999 XF ₅₀
1999 XG ₅₀	15.0	0.15	19991118	42.00679	136.83785	231.15216	1.65534	0.1321823	2.6506441	24	1	29 days	0.41		Williams	1999 XG ₅₀
1999 XH ₅₀	16.4	0.15	19991118	77.65317	250.70871	72.33224	4.22331	0.1723595	2.5507110	24	1	34 days	0.58		Williams	1999 XH ₅₀
1999 XJ ₅₀	14.9	0.15	19991208	269.21423	109.57075	68.01324	9.48155	0.1984985	2.7789872	31	1	55 days	0.56		Williams	1999 XJ ₅₀
1999 XK ₅₀	14.2	0.15	19991208	102.37259	237.16806	69.29683	10.25895	0.1468048	3.0911334	27	1	56 days	0.41		Williams	1999 XK ₅₀
1999 XL ₅₀	15.5	0.15	19991118	135.10633	205.59349	74.96758	6.22109	0.0731654	2.5262864	16	1	26 days	0.36		Williams	1999 XL ₅₀
1999 XN ₅₀	15.1	0.15	19991118	42.98188	137.49283	234.83995	9.50335	0.0746232	3.1217713	30	1	54 days	0.66		Williams	1999 XN ₅₀
1999 XO ₅₀	15.4	0.15	19991208	349.87024	215.73359	222.58996	4.57209	0.1073813	3.1655436	20	1	51 days	0.44		Williams	1999 XO ₅₀
1999 XQ ₅₀	17.2	0.15	19991118	7.82336	329.02571	78.51020	6.67535	0.2093718	2.3245957	29	1	28 days	0.67		Williams	1999 XQ ₅₀
1999 XR ₅₀	14.9	0.15	19991208	312.06404	270.58061	206.70451	2.91715	0.0373148	2.7086919	17	1	29 days	0.33		Williams	1999 XR ₅₀
1999 XS ₅₀	17.1	0.15	19991208	26.51781	279.56382	109.25733	2.12249	0.1961191	2.3753457	26	1	57 days	0.43		Williams	1999 XS ₅₀
1999 XU ₅₀	15.7	0.15	19991118	313.70273	31.13315	82.51357	5.38364	0.0689163	2.3480805	12	1	23 days	0.35		Williams	1999 XU ₅₀
1999 XV ₅₀	16.0	0.15	20000226	41.81274	303.66769	85.03533	4.82297	0.2381488	2.6992966	28	1	67 days	0.46	M-v 4	Williams	1999 XV ₅₀

1999 XY ₅₀	17.7	0.15	19991208	346.93688	7.82093	78.22729	3.46633	0.1608985	2.3959244	17	1	55 days	0.53		Williams	1999 XY ₅₀
1999 XZ ₅₀	16.3	0.15	19991118	350.31553	216.30128	218.70929	1.42340	0.1937103	2.3509015	13	1	21 days	0.50		Williams	1999 XZ ₅₀
1999 XA ₅₁	15.8	0.15	19991118	356.46388	352.47422	73.33588	10.65969	0.1209987	2.5661751	11	1	23 days	0.45		Williams	1999 XA ₅₁
1999 XC ₅₁	14.0	0.15	20000226	311.97511	308.81550	198.76537	1.58654	0.1356994	2.7220891	50	1	68 days	0.55	M-v 5	Williams	1999 XC ₅₁
1999 XD ₅₁	15.1	0.15	19991118	20.97232	325.00490	72.22254	11.62453	0.0877073	3.0756821	23	1	23 days	0.50		Williams	1999 XD ₅₁
1999 XE ₅₁	14.3	0.15	19991208	106.96353	239.07581	72.58852	10.89131	0.0704064	3.0589946	15	1	34 days	0.62		Williams	1999 XE ₅₁
1999 XF ₅₁	14.3	0.15	19991118	180.73443	174.32759	67.55878	3.26733	0.0851703	3.0873940	18	1	29 days	0.87		Williams	1999 XF ₅₁
1999 XG ₅₁	17.4	0.15	19991118	42.69510	299.03170	70.45416	6.64233	0.1075076	2.1983127	14	1	3 days	0.45	E	Williams	1999 XG ₅₁
1999 XH ₅₁	16.8	0.15	19991118	343.74004	230.34983	213.45311	0.61541	0.1627326	2.3706645	17	1	29 days	0.54		Williams	1999 XH ₅₁
1999 XJ ₅₁	15.1	0.15	20000226	25.31043	345.66032	69.51227	16.05680	0.2362829	2.7327250	46	1	66 days	0.49	M-v 4	Williams	1999 XJ ₅₁
1999 XK ₅₁	14.3	0.15	20000226	90.23153	96.00873	242.50977	1.30186	0.1122286	3.0253598	22	1	60 days	0.45	M-v 6	Williams	1999 XK ₅₁
1999 XL ₅₁	15.8	0.15	19991118	31.04966	307.52819	71.03142	6.07406	0.1708730	2.6059089	18	1	29 days	0.49		Williams	1999 XL ₅₁
1999 XN ₅₁	17.1	0.15	19991118	347.50508	18.84858	62.21678	5.23142	0.2167666	2.5723938	26	1	35 days	0.50		Williams	1999 XN ₅₁
1999 XO ₅₁	17.4	0.15	19991118	59.11637	288.49140	54.08522	2.82139	0.1884338	2.4461323	15	1	35 days	0.45		Williams	1999 XO ₅₁
1999 XP ₅₁	13.3	0.15	20000226	196.25428	249.36569	356.15978	0.82783	0.0812830	3.0380311	44	1	64 days	0.48	M-v 5 D	Williams	1999 XP ₅₁
1999 XS ₅₁	16.8	0.15	19991118	41.90440	287.71485	65.97989	3.66832	0.2709772	2.5799314	21	1	29 days	0.58		Williams	1999 XS ₅₁
1999 XT ₅₁	17.3	0.15	19991118	38.21578	294.75331	67.56319	3.27912	0.2362170	2.3545571	28	1	29 days	0.50		Williams	1999 XT ₅₁
1999 XU ₅₁	16.6	0.15	19991118	15.22754	332.18571	68.57137	10.23897	0.1626556	2.5435518	10	1	3 days	0.41	E	Williams	1999 XU ₅₁
1999 XV ₅₁	17.4	0.15	19991118	13.57068	334.26283	65.46649	3.94021	0.2162404	2.3081141	24	1	29 days	0.46		Williams	1999 XV ₅₁
1999 XY ₅₁	15.6	0.15	19991118	329.24872	46.53377	58.96093	7.18878	0.1679242	3.0505858	27	1	35 days	0.38		Williams	1999 XY ₅₁
1999 XA ₅₂	16.4	0.15	19991118	30.03290	88.94467	286.94016	1.57362	0.2179321	2.5248410	22	1	24 days	0.34		Williams	1999 XA ₅₂
1999 XB ₅₂	15.9	0.15	19991118	43.36298	349.73934	20.39949	1.66099	0.1071381	2.5388711	31	1	31 days	0.72		Williams	1999 XB ₅₂
1999 XG ₅₂	15.9	0.15	19991118	66.25310	29.05271	306.91480	1.57010	0.1882712	2.7599264	13	1	3 days	0.52	E	Williams	1999 XG ₅₂
1999 XM ₅₂	13.7	0.15	20000226	89.57605	296.96674	54.53774	4.93439	0.0502391	2.6862196	39	1	62 days	0.43	M-v 5	Williams	1999 XM ₅₂
1999 XQ ₅₂	15.4	0.15	19991118	349.17947	13.45224	63.95663	12.64175	0.0901316	3.1019459	27	1	29 days	0.59		Williams	1999 XQ ₅₂
1999 XU ₅₂	16.4	0.15	19991118	337.10592	29.25900	63.27110	6.98382	0.1254261	2.2803546	25	1	55 days	0.54		Williams	1999 XU ₅₂
1999 XV ₅₂	16.6	0.15	19991118	54.82942	287.70198	50.19724	1.88939	0.2803575	2.4431650	12	1	3 days	0.48	E	Williams	1999 XV ₅₂
1999 XW ₅₂	15.5	0.15	19991118	81.54204	264.87015	62.79655	5.62092	0.1356884	2.7187954	12	1	3 days	0.54	E	Williams	1999 XW ₅₂
1999 XX ₅₂	15.6	0.15	19991118	11.50636	153.46682	256.95938	5.43091	0.0934121	2.7850506	12	1	24 days	0.56		Williams	1999 XX ₅₂
1999 XZ ₅₂	15.7	0.15	19991208	307.16779	236.31880	254.53568	4.99513	0.0930042	2.4798457	17	1	36 days	0.65		Williams	1999 XZ ₅₂
1999 XA ₅₃	15.3	0.15	19991118	324.32070	206.49575	264.06940	0.22855	0.1389337	3.0940813	29	1	52 days	0.63		Williams	1999 XA ₅₃
1999 XG ₅₃	16.5	0.15	19991118	52.39531	285.26666	71.84787	10.46309	0.1329052	2.4116776	14	1	4 days	0.61	E	Williams	1999 XG ₅₃
1999 XJ ₅₃	15.1	0.15	19991208	72.42247	244.06587	101.26162	1.80142	0.0820616	2.7811261	35	1	58 days	0.57		Williams	1999 XJ ₅₃
1999 XK ₅₃	15.8	0.15	20000226	358.40621	24.77821	77.05537	6.22022	0.1270196	2.2068042	35	1	63 days	0.58	M-v 5	Williams	1999 XK ₅₃
1999 XL ₅₃	15.3	0.15	19991208	53.39719	280.71038	89.82724	2.77644	0.0381316	2.5574554	27	1	58 days	0.56		Williams	1999 XL ₅₃
1999 XM ₅₃	15.3	0.15	19991208	25.42498	317.38266	73.63039	12.77422	0.1910907	2.7024885	32	1	52 days	0.53		Williams	1999 XM ₅₃
1999 XR ₅₃	16.8	0.15	19991118	18.52422	308.74591	80.60439	6.04302	0.2643779	2.6417080	17	1	21 days	0.52		Williams	1999 XR ₅₃
1999 XT ₅₃	18.2	0.15	19991118	4.22462	168.93455	241.10763	9.09642	0.3708015	2.8971088	18	1	30 days	0.45		Williams	1999 XT ₅₃
1999 XU ₅₃	16.5	0.15	19991208	94.64903	101.98234	214.41980	2.78172	0.1486386	2.3284728	18	1	31 days	0.52		Williams	1999 XU ₅₃
1999 XV ₅₃	16.4	0.15	19991118	329.26101	239.07958	227.59600	4.18826	0.1953252	2.6130624	41	1	52 days	0.49		Williams	1999 XV ₅₃
1999 XW ₅₃	16.1	0.15	19991208	41.32129	291.52694	80.82489	6.87441	0.1634309	2.4190902	24	1	54 days	0.67		Williams	1999 XW ₅₃
1999 XY ₅₃	15.8	0.15	20000226	68.47523	157.02840	195.69050	2.53758	0.2448284	2.5843053	31	1	57 days	0.37	M-v 5	Williams	1999 XY ₅₃
1999 XZ ₅₃	14.2	0.15	19991208	153.91696	148.96402	121.65538	2.79667	0.0392521	2.9794158	33	1	56 days	0.50		Williams	1999 XZ ₅₃
1999 XA ₅₄	14.4	0.15	19991208	62.73487	237.21309	112.54897	3.06231	0.1318117	2.9327603	36	1	50 days	0.38		Williams	1999 XA ₅₄
1999 XB ₅₄	14.8	0.15	19991208	13.62841	274.87909	132.94771	2.36815	0.1726476	3.0924653	29	1	50 days	0.26		Williams	1999 XB ₅₄
1999 XC ₅₄	14.2	0.15	19991208	215.98863	142.20363	72.06517	23.12306	0.0695693	3.0768430	29	1	56 days	0.30		Williams	1999 XC ₅₄
1999 XF ₅₄	13.5	0.15	19991208	138.89228	117.25320	161.11101	1.98951	0.1442942	3.1067761	28	1	56 days	0.46		Williams	1999 XF ₅₄
1999 XG ₅₄	13.3	0.15	20000226	260.60083	109.59945	76.91062	11.63451	0.0461473	2.9810568	45	1	68 days	0.48	M-v 4	Williams	1999 XG ₅₄
1999 XJ ₅₄	15.8	0.15	19991208	133.30310	202.13821	84.63626	6.90030	0.1058996	2.2776393	19	1	35 days	0.43		Williams	1999 XJ ₅₄
1999 XK ₅₄	17.2	0.15	19991118	352.71648	299.48517	132.81249	1.76911	0.1703919	2.4207128	22	1	32 days	0.64		Williams	1999 XK ₅₄
1999 XM ₅₄	15.1	0.15	19991208	309.44955	41.30103	80.47356	10.57057	0.0418324	3.0589560	25	1	57 days	0.43		Williams	1999 XM ₅₄
1999 XP ₅₄	16.2	0.15	19991208	349.81790	354.39904	88.88601	4.02855	0.1485548	2.3673547	30	1	56 days	0.63		Williams	1999 XP ₅₄
1999 XQ ₅₄	16.0	0.15	19991118	346.86695	355.02983	85.82078	3.82031	0.1531304	2.7087636	11	1	23 days	0.51		Williams	1999 XQ ₅₄

1999 XR ₅₄	17.2	0.15	19991118	19.25447	317.09231	76.39279	9.75924	0.1893747	2.3714911	14	1	4 days	0.85	E	Williams	1999 XR ₅₄	
1999 XS ₅₄	16.2	0.15	19991118	32.23305	163.96343	205.68929	2.12751	0.2512900	2.4945015	22	1	21 days	0.35		Williams	1999 XS ₅₄	
1999 XU ₅₄	16.2	0.15	19991118	55.77026	137.08608	211.39475	1.50215	0.1767490	2.1819718	20	1	29 days	0.45		Williams	1999 XU ₅₄	
1999 XW ₅₄	14.8	0.15	19991208	35.83380	203.10868	188.53904	1.59938	0.0193516	2.8572522	22	1	55 days	0.56		Williams	1999 XW ₅₄	
1999 XY ₅₄	15.4	0.15	19991118	208.74639	143.54876	74.61885	3.35110	0.0434593	2.7388326	19	1	26 days	0.48		Williams	1999 XY ₅₄	
1999 XA ₅₅	15.4	0.15	19991118	73.28574	84.96243	246.84573	16.44500	0.1696034	2.6979746	14	1	3 days	0.45	E	Williams	1999 XA ₅₅	
1999 XD ₅₅	14.3	0.15	19991118	165.04997	188.55049	69.75750	24.18507	0.0585109	3.0631888	11	1	3 days	0.88	E	Williams	1999 XD ₅₅	
1999 XE ₅₅	15.6	0.15	19991118	84.01844	237.53271	88.27717	1.25629	0.1252047	2.3357995	19	1	29 days	0.41		Williams	1999 XE ₅₅	
1999 XF ₅₅	16.8	0.15	19991118	46.18366	102.29200	247.66445	10.53035	0.2671050	2.4668718	18	1	26 days	0.52		Williams	1999 XF ₅₅	
1999 XH ₅₅	13.5	0.15	20000226	79.33020	286.11487	70.73463	23.45789	0.0630852	3.1221369	36	1	61 days	0.47	M-v	4	Williams	1999 XH ₅₅
1999 XJ ₅₅	12.7	0.15	19991118	44.62817	309.68667	67.68394	35.13632	0.0442414	5.2654366	22	1	26 days	0.60		Williams	1999 XJ ₅₅	
1999 XS ₅₅	16.4	0.15	19991118	31.84215	311.23897	64.85268	9.19225	0.2042266	2.4661677	17	1	29 days	0.53		Williams	1999 XS ₅₅	
1999 XW ₅₅	15.2	0.15	19991118	35.41520	47.27012	335.85212	0.45371	0.0910639	2.7714139	20	1	29 days	0.33		Williams	1999 XW ₅₅	
1999 XX ₅₅	16.1	0.15	19991118	41.86321	315.49234	55.46392	2.33320	0.1309549	2.2412584	19	1	29 days	0.39		Williams	1999 XX ₅₅	
1999 XB ₅₆	15.6	0.15	19991118	356.79008	358.82402	69.88582	3.86507	0.1672316	2.6158421	13	1	21 days	0.58		Williams	1999 XB ₅₆	
1999 XC ₅₆	13.8	0.15	19991118	209.98602	158.52642	69.24650	10.20743	0.2546742	2.4067586	12	1	21 days	0.51		Williams	1999 XC ₅₆	
1999 XD ₅₆	16.2	0.15	19991118	328.38169	211.19556	249.35493	7.40188	0.0689022	2.2895310	13	1	29 days	0.50		Williams	1999 XD ₅₆	
1999 XH ₅₆	14.2	0.15	20000226	55.50499	297.03000	70.87361	16.05271	0.2340774	3.0709872	29	1	61 days	0.57	M-v	5	Williams	1999 XH ₅₆
1999 XJ ₅₆	14.7	0.15	19991118	348.70008	217.01864	223.62869	1.20818	0.1350550	3.0337612	25	1	29 days	0.51		Williams	1999 XJ ₅₆	
1999 XN ₅₆	15.6	0.15	19991118	73.29817	232.67672	93.41926	1.70208	0.2188313	2.2507105	16	1	29 days	0.44		Williams	1999 XN ₅₆	
1999 XO ₅₆	14.2	0.15	20000226	49.12762	290.13435	85.04366	4.49100	0.2439503	3.0458123	42	1	64 days	0.51	M-v	4	Williams	1999 XO ₅₆
1999 XT ₅₆	15.1	0.15	19991118	14.19206	156.03352	246.07077	10.52462	0.2226635	3.0267174	20	1	29 days	0.57		Williams	1999 XT ₅₆	
1999 XU ₅₆	16.0	0.15	19991118	358.96098	208.72277	216.43407	1.67772	0.1767822	2.4320060	13	1	21 days	0.45		Williams	1999 XU ₅₆	
1999 XV ₅₆	14.7	0.15	19991118	36.18288	126.44407	242.07040	14.98711	0.2302565	3.1148923	18	1	29 days	0.46		Williams	1999 XV ₅₆	
1999 XW ₅₆	13.7	0.15	20000226	30.55302	334.85035	74.96961	12.32285	0.0942365	3.0804192	34	1	63 days	0.39	M-v	4	Williams	1999 XW ₅₆
1999 XZ ₅₆	14.0	0.15	20000226	27.52718	283.83304	123.17800	1.67064	0.2187224	3.2982337	42	1	68 days	0.53	M-v	4	Williams	1999 XZ ₅₆
1999 XB ₅₇	16.3	0.15	19991208	7.95702	308.22268	110.04120	2.94017	0.1815227	2.9786558	22	1	52 days	0.53		Williams	1999 XB ₅₇	
1999 XC ₅₇	14.5	0.15	19991208	302.25513	23.75653	120.91229	2.41544	0.1626820	2.9712748	27	1	46 days	0.57		Williams	1999 XC ₅₇	
1999 XE ₅₇	14.9	0.15	20000226	351.13823	15.64242	88.30789	4.59733	0.1013407	2.5924730	26	1	63 days	0.52	M-v	5	Williams	1999 XE ₅₇
1999 XJ ₅₇	15.2	0.15	19991118	5.28486	310.16097	106.42930	2.43687	0.1976227	3.1097405	13	1	23 days	0.40		Williams	1999 XJ ₅₇	
1999 XU ₅₇	15.9	0.15	19991118	3.98780	225.35736	194.42416	2.35995	0.0559452	2.2254930	14	1	23 days	0.49	D	Williams	1999 XU ₅₇	
1999 XV ₅₇	13.7	0.15	19991208	32.63916	160.85844	225.45623	5.51910	0.1528431	3.2161920	23	1	30 days	0.58		Williams	1999 XV ₅₇	
1999 XW ₅₇	15.6	0.15	20000226	5.37657	12.93262	78.82960	13.28466	0.2000798	2.5694119	27	1	63 days	0.52	M-v	4	Williams	1999 XW ₅₇
1999 XZ ₅₇	14.7	0.15	19991208	241.42212	336.96712	220.60676	4.01955	0.0837021	2.2572886	24	1	34 days	0.60		Williams	1999 XZ ₅₇	
1999 XB ₅₈	15.8	0.15	19991118	357.49583	337.27184	91.22450	6.30757	0.1418056	2.7820369	20	1	57 days	0.54		Williams	1999 XB ₅₈	
1999 XC ₅₈	15.5	0.15	19991208	198.16614	10.89372	224.65484	3.62437	0.1071568	2.3207063	16	1	34 days	0.51		Williams	1999 XC ₅₈	
1999 XQ ₅₈	15.1	0.15	19991208	70.47019	267.81009	78.57022	10.36642	0.1257875	2.5610080	21	1	30 days	0.66		Williams	1999 XQ ₅₈	
1999 XR ₅₈	15.4	0.15	19991118	329.37343	227.68572	232.98041	3.02113	0.0658935	2.5298015	12	1	29 days	0.43		Williams	1999 XR ₅₈	
1999 XV ₅₈	14.3	0.15	20000226	68.56806	290.79468	81.85218	7.19766	0.0794231	2.7252827	33	1	63 days	0.52	M-v	4	Williams	1999 XV ₅₈
1999 XW ₅₈	14.9	0.15	19991118	83.55319	73.45424	253.54325	6.45985	0.1348064	2.6095684	16	1	29 days	0.41		Williams	1999 XW ₅₈	
1999 XX ₅₈	15.8	0.15	19991118	48.06901	293.97365	66.30315	3.27309	0.1718620	2.4128900	19	1	29 days	0.48		Williams	1999 XX ₅₈	
1999 XZ ₅₈	16.1	0.15	19991118	351.02247	182.88385	254.18132	13.65501	0.1087460	2.5909107	11	1	24 days	0.64		Williams	1999 XZ ₅₈	
1999 XA ₅₉	15.0	0.15	19991208	222.36977	322.17347	255.75242	0.69397	0.1259769	2.1788595	29	1	58 days	0.47		Williams	1999 XA ₅₉	
1999 XE ₅₉	14.9	0.15	19991118	80.52130	80.55706	253.43962	5.21226	0.1104709	2.7456880	18	1	29 days	0.49		Williams	1999 XE ₅₉	
1999 XF ₅₉	15.8	0.15	19991118	45.66441	299.63677	62.40462	2.95209	0.1872277	2.3905895	20	1	29 days	0.36		Williams	1999 XF ₅₉	
1999 XG ₅₉	14.8	0.15	19991208	65.95977	281.55587	62.99948	0.90770	0.1884334	2.7136838	24	1	58 days	0.41		Williams	1999 XG ₅₉	
1999 XH ₅₉	12.9	0.15	19991118	77.85354	273.31061	68.77863	13.59523	0.0731999	3.1843857	21	1	33 days	0.57		Williams	1999 XH ₅₉	
1999 XJ ₅₉	15.6	0.15	20000226	355.34006	206.15176	261.07926	3.71356	0.1940511	2.6010739	40	1	92 days	0.50	M-v	4	Williams	1999 XJ ₅₉
1999 XK ₅₉	16.1	0.15	19991118	54.76166	105.45159	242.88353	1.66816	0.2064861	2.3684620	17	1	29 days	0.66		Williams	1999 XK ₅₉	
1999 XL ₅₉	14.1	0.15	19991208	139.42325	211.56873	70.83247	1.85071	0.1398005	2.5507855	25	1	58 days	0.49		Williams	1999 XL ₅₉	
1999 XU ₅₉	14.4	0.15	19991208	180.12059	2.56127	248.93606	5.32353	0.1333120	2.3281569	22	1	57 days	0.43		Williams	1999 XU ₅₉	
1999 XX ₅₉	14.6	0.15	20000226	279.48794	99.78781	74.49343	14.70733	0.0276344	2.5842095	26	1	61 days	0.58	M-v	5	Williams	1999 XX ₅₉
1999 XZ ₅₉	15.3	0.15	19991118	293.15581	253.12109	246.86034	14.07361	0.0593748	2.5615849	16	1	29 days	0.43		Williams	1999 XZ ₅₉	

1999 XB ₆₀	16.7	0.15	19991118	2.63577	237.70447	183.09995	0.73035	0.1790811	2.3860605	17	1	29 days	0.45		Williams	1999 XB ₆₀
1999 XF ₆₀	14.8	0.15	19991118	19.84159	309.74789	88.80719	3.03871	0.1775358	3.0798769	18	1	29 days	0.36		Williams	1999 XF ₆₀
1999 XG ₆₀	14.9	0.15	19991118	282.41605	92.11544	78.10719	13.95963	0.2188017	2.6776312	17	1	23 days	0.50		Williams	1999 XG ₆₀
1999 XJ ₆₀	15.3	0.15	20000226	64.27055	302.59364	80.24010	7.08783	0.0950576	2.3143956	21	1	63 days	0.43	M-v 5	Williams	1999 XJ ₆₀
1999 XL ₆₀	14.0	0.15	19991118	278.37453	306.58226	214.29141	3.59187	0.1053277	3.1868713	11	1	23 days	0.60		Williams	1999 XL ₆₀
1999 XN ₆₀	14.0	0.15	19991118	206.83567	146.95399	83.29901	7.64252	0.2336290	2.5740303	11	1	21 days	0.46		Williams	1999 XN ₆₀
1999 XT ₆₀	14.3	0.15	19991208	306.22386	269.24564	238.38075	8.77613	0.2068300	2.7343246	30	1	58 days	0.37		Williams	1999 XT ₆₀
1999 XW ₆₀	15.3	0.15	20000226	5.55633	297.90262	151.01162	1.95005	0.0963327	2.5447939	27	1	64 days	0.53	M-v 5	Williams	1999 XW ₆₀
1999 XX ₆₀	16.7	0.15	19991118	359.72612	329.99999	95.11406	3.33572	0.1769751	2.3742940	13	1	23 days	0.55		Williams	1999 XX ₆₀
1999 XY ₆₀	14.5	0.15	19991208	106.27509	102.87389	206.29716	2.34288	0.1595807	2.5325231	17	1	30 days	0.45		Williams	1999 XY ₆₀
1999 XA ₆₁	13.8	0.15	20000226	55.02731	295.23171	78.33299	15.26639	0.2279443	2.7943941	24	1	63 days	0.34	M-v 4	Williams	1999 XA ₆₁
1999 XD ₆₁	16.1	0.15	19991118	359.00105	194.58142	230.96629	5.00602	0.1370241	2.2205578	17	1	29 days	0.34		Williams	1999 XD ₆₁
1999 XE ₆₁	14.2	0.15	20000226	31.33197	314.09617	92.44652	6.34794	0.1796614	3.1162875	37	1	63 days	0.41	M-v 4	Williams	1999 XE ₆₁
1999 XF ₆₁	16.0	0.15	20000226	55.84045	289.07350	97.88621	4.89640	0.1662615	2.2756462	25	1	63 days	0.41	M-v 4	Williams	1999 XF ₆₁
1999 XH ₆₁	15.4	0.15	19991118	345.64882	243.70717	201.01913	2.70798	0.1225963	2.5750917	23	1	23 days	0.48		Williams	1999 XH ₆₁
1999 XJ ₆₁	14.7	0.15	19991208	300.05721	279.19462	240.22179	7.96772	0.2412500	2.7285226	28	1	58 days	0.42		Williams	1999 XJ ₆₁
1999 XK ₆₁	14.9	0.15	20000226	310.90714	61.88595	97.63223	5.18236	0.1670806	2.5545723	22	1	63 days	0.53	M-v 5	Williams	1999 XK ₆₁
1999 XM ₆₁	15.3	0.15	19991118	2.46811	286.46862	137.08495	2.04113	0.1790883	3.0948736	11	1	23 days	0.57		Williams	1999 XM ₆₁
1999 XO ₆₁	16.0	0.15	20000226	57.82957	185.08944	192.69761	2.20362	0.2138574	2.4137340	20	1	64 days	0.47	M-v 5	Williams	1999 XO ₆₁
1999 XQ ₆₁	14.2	0.15	20000226	93.92452	252.99320	90.52854	7.71667	0.1096961	2.7064231	21	1	63 days	0.41	M-v 5	Williams	1999 XQ ₆₁
1999 XS ₆₁	15.2	0.15	19991208	277.86095	73.71448	97.29658	5.57621	0.1394006	2.4330733	16	1	30 days	0.38		Williams	1999 XS ₆₁
1999 XW ₆₁	16.8	0.15	19991118	315.48551	82.87246	30.78260	2.63357	0.1423869	2.2794947	18	1	40 days	0.51		Williams	1999 XW ₆₁
1999 XZ ₆₁	16.6	0.15	19991118	10.40213	71.89654	332.08213	1.73170	0.1602504	2.3995317	45	1	42 days	0.43		Williams	1999 XZ ₆₁
1999 XB ₆₂	16.4	0.15	19991208	304.60005	234.77974	261.12969	2.80795	0.1453949	2.3239625	19	1	10 days	1.35		Williams	1999 XB ₆₂
1999 XC ₆₂	16.4	0.15	20000226	66.59235	239.95070	120.75897	1.73621	0.2201920	2.3330361	38	1	67 days	0.47	M-v 5	Williams	1999 XC ₆₂
1999 XD ₆₂	14.9	0.15	20000226	92.17699	267.33509	71.13418	12.09239	0.1216310	2.5785187	41	1	66 days	0.61	M-v 5	Williams	1999 XD ₆₂
1999 XE ₆₂	15.8	0.15	19991118	251.03678	142.46577	40.50019	1.89782	0.1259478	2.4308880	17	1	35 days	0.50		Williams	1999 XE ₆₂
1999 XF ₆₂	16.1	0.15	19991208	128.29521	225.83865	58.69000	6.54033	0.1526832	2.6522004	17	1	11 days	0.52		Williams	1999 XF ₆₂
1999 XG ₆₂	16.5	0.15	19991118	50.09200	113.22605	242.64610	5.79756	0.1519502	2.4020107	25	1	56 days	0.58		Williams	1999 XG ₆₂
1999 XH ₆₂	16.4	0.15	19991208	97.43051	73.02968	241.71546	4.47822	0.1361447	2.2439950	21	1	57 days	0.56		Williams	1999 XH ₆₂
1999 XK ₆₂	16.3	0.15	19991118	315.29579	48.26892	74.83887	4.70588	0.1772863	2.5850741	22	1	29 days	0.42		Williams	1999 XK ₆₂
1999 XL ₆₂	17.0	0.15	19991118	0.10939	148.43338	273.83453	1.44219	0.2056397	2.5438566	12	1	4 days	1.28	E	Williams	1999 XL ₆₂
1999 XM ₆₂	15.0	0.15	19991118	84.55483	258.68229	73.32741	0.32721	0.0625675	3.0925945	10	1	3 days	1.00	E	Williams	1999 XM ₆₂
1999 XO ₆₂	16.2	0.15	19991118	163.61268	191.76724	66.14123	9.48342	0.1079786	2.4052577	22	1	29 days	0.72		Williams	1999 XO ₆₂
1999 XR ₆₂	16.1	0.15	19991118	351.19070	341.09769	91.99722	4.21767	0.0947121	2.2785827	14	1	23 days	0.38		Williams	1999 XR ₆₂
1999 XT ₆₂	14.8	0.15	19991118	319.48166	226.51730	243.99914	2.62462	0.0627157	3.0274512	12	1	29 days	0.43		Williams	1999 XT ₆₂
1999 XU ₆₂	15.5	0.15	19991118	22.58348	336.41176	60.33905	5.22597	0.1089550	2.6661882	14	1	29 days	0.44		Williams	1999 XU ₆₂
1999 XV ₆₂	14.6	0.15	19991118	32.33719	136.86070	250.96707	8.90239	0.0914638	2.9895549	19	1	29 days	0.44		Williams	1999 XV ₆₂
1999 XX ₆₂	14.8	0.15	19991208	24.66548	328.59221	72.55701	22.93320	0.0761438	3.1099060	18	1	50 days	0.62		Williams	1999 XX ₆₂
1999 XY ₆₂	14.3	0.15	19991118	303.08468	45.96633	85.10225	3.76008	0.0787617	3.1789646	12	1	23 days	0.64		Williams	1999 XY ₆₂
1999 XA ₆₃	14.6	0.15	19991208	18.25162	172.49742	235.64360	9.98084	0.0607050	3.0275429	11	1	24 days	0.73		Williams	1999 XA ₆₃
1999 XG ₆₃	16.7	0.15	19991118	7.75460	336.55249	77.24111	2.76922	0.1713745	2.3857581	13	1	29 days	0.50		Williams	1999 XG ₆₃
1999 XJ ₆₃	15.7	0.15	19991118	306.64060	46.96242	85.83710	8.93634	0.1351830	2.5473013	11	1	23 days	0.69		Williams	1999 XJ ₆₃
1999 XN ₆₃	15.9	0.15	19991118	3.80012	149.60106	269.19967	1.90919	0.2302835	3.0050548	17	1	29 days	0.64		Williams	1999 XN ₆₃
1999 XT ₆₃	15.3	0.15	20000226	50.05983	293.37705	102.69379	7.21726	0.1392986	2.3878394	22	1	63 days	0.39	M-v 4	Williams	1999 XT ₆₃
1999 XZ ₆₃	15.5	0.15	19991208	104.85705	163.66382	159.22635	6.03251	0.1064705	2.3255672	16	1	7 days	0.42	E	Williams	1999 XZ ₆₃
1999 XA ₆₄	14.4	0.15	19991208	72.58342	210.08023	147.77220	7.21843	0.0842035	3.0546057	12	1	7 days	0.61	E	Williams	1999 XA ₆₄
1999 XB ₆₄	14.2	0.15	19991208	63.46375	259.52734	108.80184	11.92985	0.0823546	3.0834772	15	1	8 days	0.45		Williams	1999 XB ₆₄
1999 XC ₆₄	11.8	0.15	19991208	18.44839	316.51519	105.56428	16.98749	0.0252769	5.2422916	14	1	29 days	0.32		Williams	1999 XC ₆₄
1999 XE ₆₄	15.0	0.15	19991208	264.26572	322.89317	222.45269	5.79169	0.0618714	2.3622332	11	1	7 days	0.45	E	Williams	1999 XE ₆₄
1999 XF ₆₄	14.7	0.15	19991208	54.94839	196.80766	184.38504	4.06290	0.0726694	2.7118724	15	1	30 days	0.45		Williams	1999 XF ₆₄
1999 XJ ₆₄	15.5	0.15	19991118	65.27949	269.95893	76.42377	1.42678	0.1330371	2.2621474	19	1	29 days	0.33		Williams	1999 XJ ₆₄
1999 XK ₆₄	15.1	0.15	19991208	267.66872	91.04790	76.71217	7.40709	0.0279870	2.4154027	20	1	30 days	0.51		Williams	1999 XK ₆₄

1999 XL ₆₄	13.7	0.15	20000226	351.37389	297.52389	165.17480	0.41920	0.1545082	3.2067376	43	1	64 days	0.59	M-v	5	Williams	1999 XL ₆₄
1999 XO ₆₄	13.0	0.15	19991118	4.28000	343.12205	77.13884	11.32585	0.3266437	5.9680212	11	1	23 days	0.46			Williams	1999 XO ₆₄
1999 XP ₆₄	14.7	0.15	19991208	348.27864	199.35948	249.98876	12.32716	0.1682268	3.1537319	29	1	58 days	0.49			Williams	1999 XP ₆₄
1999 XS ₆₄	14.7	0.15	20000226	255.04910	309.46999	259.71551	5.45388	0.1152018	2.2918854	32	1	64 days	0.50	M-v	5	Williams	1999 XS ₆₄
1999 XW ₆₄	16.6	0.15	19991118	17.55719	164.77963	236.30079	2.36754	0.1680212	2.3224966	18	1	29 days	0.63			Williams	1999 XW ₆₄
1999 XY ₆₄	15.0	0.15	19991118	2.67271	340.54123	83.11557	2.64395	0.2177242	2.9922809	17	1	29 days	0.35			Williams	1999 XY ₆₄
1999 XC ₆₅	15.1	0.15	19991118	59.28686	281.08326	80.50451	8.82669	0.0702768	2.6919194	13	1	23 days	0.40			Williams	1999 XC ₆₅
1999 XD ₆₅	15.0	0.15	19991118	26.95604	163.54635	223.27748	2.65534	0.2106725	3.0653041	18	1	29 days	0.39			Williams	1999 XD ₆₅
1999 XK ₆₅	16.4	0.15	19991118	15.19083	173.47341	224.48802	4.08571	0.2835474	2.6278475	18	1	29 days	0.37			Williams	1999 XK ₆₅
1999 XQ ₆₅	15.6	0.15	19991118	9.03033	221.72324	189.50175	1.14000	0.2607284	2.9763452	21	1	29 days	0.55			Williams	1999 XQ ₆₅
1999 XS ₆₅	14.5	0.15	19991118	283.20212	71.12811	85.72811	6.31081	0.1027835	2.4255089	13	1	21 days	0.30			Williams	1999 XS ₆₅
1999 XV ₆₅	15.7	0.15	19991208	331.50457	251.79953	223.79587	2.68928	0.1869302	2.5905669	25	1	58 days	0.56			Williams	1999 XV ₆₅
1999 XA ₆₆	15.3	0.15	19991118	340.24232	216.27084	244.47281	4.34173	0.2379723	3.0117454	19	1	29 days	0.41			Williams	1999 XA ₆₆
1999 XF ₆₆	14.7	0.15	20000226	355.71256	31.00510	74.80469	9.30819	0.2364937	3.0429219	31	1	62 days	0.49	M-v	4	Williams	1999 XF ₆₆
1999 XM ₆₆	15.6	0.15	19991208	66.62881	96.74830	248.33160	2.96311	0.2055649	2.2893761	24	1	58 days	0.45			Williams	1999 XM ₆₆
1999 XN ₆₆	15.3	0.15	19991208	357.82020	184.24560	253.19711	0.84836	0.0286677	3.0868075	26	1	57 days	0.44			Williams	1999 XN ₆₆
1999 XV ₆₆	16.7	0.15	19991208	31.87770	137.02359	258.75456	3.10264	0.1205459	2.4768616	27	1	58 days	0.56			Williams	1999 XV ₆₆
1999 XZ ₆₆	14.8	0.15	20000226	99.77025	247.08037	82.53886	5.32626	0.2540633	2.2536787	24	1	63 days	0.39	M-v	5	Williams	1999 XZ ₆₆
1999 XA ₆₇	15.5	0.15	19991208	292.39754	73.55523	87.72895	4.91387	0.1631380	2.2994809	17	1	30 days	0.58			Williams	1999 XA ₆₇
1999 XB ₆₇	14.0	0.15	19991208	229.09639	324.60090	252.62941	10.72816	0.1393184	2.6437192	23	1	58 days	0.73			Williams	1999 XB ₆₇
1999 XD ₆₇	11.7	0.15	19991208	49.35390	133.66662	243.38233	6.18299	0.1011510	5.1185400	14	1	30 days	0.57			Williams	1999 XD ₆₇
1999 XM ₆₇	14.3	0.15	19991208	64.39457	98.81620	248.75807	11.36439	0.2080703	2.6858057	23	1	57 days	0.38			Williams	1999 XM ₆₇
1999 XO ₆₇	15.6	0.15	19991208	248.11933	13.58484	182.53116	2.60992	0.0981642	2.3422933	11	1	7 days	0.72		E	Williams	1999 XO ₆₇
1999 XP ₆₇	15.3	0.15	19991208	344.43091	283.20244	173.09947	1.83548	0.1625319	2.4174741	20	1	30 days	0.34			Williams	1999 XP ₆₇
1999 XR ₆₇	14.6	0.15	19991118	290.66641	18.42660	135.40599	2.93365	0.1234601	3.1436645	11	1	23 days	0.54			Williams	1999 XR ₆₇
1999 XT ₆₇	14.8	0.15	19991208	61.30022	269.29669	88.48152	10.33725	0.1411267	2.7536360	17	1	51 days	0.35			Williams	1999 XT ₆₇
1999 XX ₆₇	15.5	0.15	19991118	30.66957	130.53675	247.10923	13.58963	0.2644151	2.8896371	18	1	29 days	0.38			Williams	1999 XX ₆₇
1999 XY ₆₇	15.2	0.15	19991208	278.91754	74.38887	90.07423	7.38779	0.0728885	2.3875348	18	1	30 days	0.49			Williams	1999 XY ₆₇
1999 XB ₆₈	16.2	0.15	19991208	349.07053	293.81782	157.34624	2.28316	0.1754496	2.4618866	24	1	52 days	0.48			Williams	1999 XB ₆₈
1999 XH ₆₈	14.8	0.15	19991208	299.42190	55.70784	84.33731	15.26140	0.0398015	2.6281917	18	1	30 days	0.39			Williams	1999 XH ₆₈
1999 XP ₆₈	14.2	0.15	19991208	330.59655	228.73188	247.72873	10.90936	0.1616470	3.1089298	28	1	58 days	0.38			Williams	1999 XP ₆₈
1999 XT ₆₈	16.3	0.15	19991208	10.73903	264.53264	154.89597	0.89665	0.2040486	2.2360816	20	1	30 days	0.35			Williams	1999 XT ₆₈
1999 XU ₆₈	14.9	0.15	19991208	40.26688	293.49227	86.42773	5.50415	0.1792150	2.2872093	21	1	28 days	0.63			Williams	1999 XU ₆₈
1999 XY ₆₈	13.7	0.15	19991208	106.28331	76.07477	246.22008	5.03192	0.0780768	2.8033685	29	1	58 days	0.45			Williams	1999 XY ₆₈
1999 XZ ₆₈	13.6	0.15	19991208	243.54515	112.26775	84.89226	7.01570	0.0388346	2.7408704	22	1	30 days	0.36			Williams	1999 XZ ₆₈
1999 XA ₆₉	16.0	0.15	19991208	316.11501	239.64568	248.15770	2.11101	0.0859034	2.4668929	12	1	20 days	0.28			Williams	1999 XA ₆₉
1999 XB ₆₉	16.4	0.15	20000226	0.94123	220.17753	256.16671	11.33448	0.6318203	4.4520962	35	1	60 days	0.37	M-v	4	Williams	1999 XB ₆₉
1999 XD ₆₉	15.6	0.15	19991208	329.88087	36.60499	80.68960	4.84042	0.1517395	3.1778786	11	1	11 days	0.19			Williams	1999 XD ₆₉
1999 XH ₆₉	15.3	0.15	19991118	18.11934	324.18036	77.00708	3.01966	0.2213920	2.5873141	17	1	29 days	0.42			Williams	1999 XH ₆₉
1999 XL ₆₉	15.2	0.15	19991208	50.36157	228.15191	134.94355	0.50480	0.2277910	2.3945889	35	1	58 days	0.38			Williams	1999 XL ₆₉
1999 XM ₆₉	16.1	0.15	19991208	16.66147	156.43415	255.72428	5.43900	0.1956912	2.3424738	19	1	30 days	0.44			Williams	1999 XM ₆₉
1999 XQ ₆₉	15.5	0.15	19991208	41.58552	147.20913	240.06694	1.70201	0.1053244	2.6298039	12	1	26 days	0.40			Williams	1999 XQ ₆₉
1999 XW ₆₉	16.8	0.15	19991208	6.06606	342.30203	86.86405	2.99222	0.1682042	2.5707900	10	1	11 days	0.32			Williams	1999 XW ₆₉
1999 XY ₆₉	14.2	0.15	19991208	336.35772	359.09216	107.82702	2.47546	0.1168733	3.2088872	22	1	52 days	0.42			Williams	1999 XY ₆₉
1999 XZ ₆₉	15.8	0.15	19991208	296.39141	108.42766	83.51344	8.90195	0.4397234	2.5977487	17	1	26 days	0.51			Williams	1999 XZ ₆₉
1999 XC ₇₀	16.7	0.15	19991208	12.64151	194.96988	222.83461	1.49751	0.1979189	2.2809495	18	1	30 days	0.45			Williams	1999 XC ₇₀
1999 XE ₇₀	14.6	0.15	19991208	119.31565	72.44131	238.81049	2.93342	0.0736441	2.6979211	17	1	55 days	0.45			Williams	1999 XE ₇₀
1999 XF ₇₀	15.8	0.15	19991208	30.59627	320.61936	82.39611	10.21244	0.0610114	2.6888445	23	1	28 days	0.42			Williams	1999 XF ₇₀
1999 XG ₇₀	14.6	0.15	20000226	78.53285	256.28034	85.96331	8.95589	0.2965516	2.7464039	18	1	60 days	0.44	M-v	5	Williams	1999 XG ₇₀
1999 XH ₇₀	16.4	0.15	19991208	2.13517	340.58069	94.02323	4.04413	0.1356114	2.5676092	21	1	52 days	0.52			Williams	1999 XH ₇₀
1999 XJ ₇₀	14.0	0.15	19991208	218.35748	4.05879	222.20113	1.42269	0.1007027	3.0919706	30	1	58 days	0.54			Williams	1999 XJ ₇₀
1999 XM ₇₀	14.9	0.15	19991208	321.28136	250.87227	236.81607	4.28635	0.1467827	2.5869383	18	1	30 days	0.33			Williams	1999 XM ₇₀
1999 XP ₇₀	14.9	0.15	19991208	238.69812	88.55020	121.02843	2.05481	0.1267396	2.3846024	16	1	30 days	0.42			Williams	1999 XP ₇₀

1999 XR ₇₀	14.1	0.15	20000226	61.66231	190.47972	177.95176	2.04913	0.2108593	3.1576085	22	1	63 days	0.38	M-v	5	Williams	1999 XR ₇₀
1999 XT ₇₀	15.4	0.15	19991208	63.38047	119.74132	237.05986	5.20740	0.1531658	2.3634402	15	1	30 days	0.52			Williams	1999 XT ₇₀
1999 XA ₇₁	15.2	0.15	19991208	3.56294	321.12245	109.57132	4.36958	0.1912585	2.6039985	20	1	30 days	0.34			Williams	1999 XA ₇₁
1999 XC ₇₁	14.5	0.15	19991208	133.82013	53.43695	236.64269	8.86366	0.1824425	2.6854535	11	1	7 days	0.77			E Williams	1999 XC ₇₁
1999 XE ₇₁	15.1	0.15	19991208	26.96284	153.77091	242.03968	8.19623	0.2099173	2.6497594	22	1	58 days	0.44			Williams	1999 XE ₇₁
1999 XG ₇₁	15.6	0.15	19991208	330.64636	9.12331	106.74158	4.62501	0.1470493	2.5641380	21	1	31 days	0.51			Williams	1999 XG ₇₁
1999 XH ₇₁	15.5	0.15	19991208	25.36899	240.48122	161.69691	1.66269	0.1620710	2.6018287	19	1	30 days	0.40			Williams	1999 XH ₇₁
1999 XJ ₇₁	16.5	0.15	19991208	336.98299	12.31886	93.70991	5.81046	0.1129532	2.2716907	16	1	30 days	0.52			Williams	1999 XJ ₇₁
1999 XK ₇₁	14.6	0.15	19991208	3.66148	255.41244	177.45841	1.66391	0.1180301	2.5768094	34	1	53 days	0.40			Williams	1999 XK ₇₁
1999 XM ₇₁	11.2	0.15	19991208	9.60541	319.86457	108.86347	4.24433	0.0132998	5.2319110	22	1	51 days	0.41			Williams	1999 XM ₇₁
1999 XR ₇₁	14.5	0.15	19991208	45.87302	125.59041	251.93128	8.21028	0.1551785	2.7289529	22	1	58 days	0.31			Williams	1999 XR ₇₁
1999 XS ₇₁	12.7	0.15	20000226	50.45284	297.77563	90.70441	6.74352	0.1622695	3.2026511	30	1	64 days	0.35	M-v	5	Williams	1999 XS ₇₁
1999 XU ₇₁	15.3	0.15	20000226	346.71775	39.66101	86.38585	1.57904	0.1638989	2.3470848	30	1	65 days	0.43	M-v	4	Williams	1999 XU ₇₁
1999 XV ₇₁	15.0	0.15	19991208	296.94086	279.26158	236.90603	1.20153	0.1359483	2.3761013	23	1	58 days	0.43			Williams	1999 XV ₇₁
1999 XW ₇₁	14.6	0.15	19991208	159.91250	30.21432	242.65461	1.87371	0.1759741	2.2069489	27	1	58 days	0.52			Williams	1999 XW ₇₁
1999 XX ₇₁	17.0	0.15	19991208	298.13274	275.95276	238.37853	0.97240	0.1302099	2.3325679	10	1	11 days	0.47			Williams	1999 XX ₇₁
1999 XA ₇₂	16.2	0.15	19991208	357.82912	356.30856	84.97916	3.57548	0.1334761	2.4537409	19	1	37 days	0.48			Williams	1999 XA ₇₂
1999 XE ₇₂	15.4	0.15	20000226	16.25676	5.38899	80.48080	10.81836	0.1430024	2.3674957	22	1	61 days	0.62	M-v	5	Williams	1999 XE ₇₂
1999 XG ₇₂	14.8	0.15	19991208	355.85756	3.68707	81.01736	6.16815	0.1304403	2.71739470	17	1	28 days	0.48			Williams	1999 XG ₇₂
1999 XH ₇₂	12.7	0.15	19991208	39.57728	312.41743	80.45779	11.70446	0.0923037	2.9977264	17	1	29 days	0.28			Williams	1999 XH ₇₂
1999 XL ₇₂	13.7	0.15	19991208	65.42042	278.26428	83.64015	10.97441	0.1150073	3.0232819	16	1	28 days	0.42			Williams	1999 XL ₇₂
1999 XN ₇₂	14.6	0.15	19991208	24.32117	143.25342	257.77127	10.64354	0.2295510	3.1305124	37	1	51 days	0.45			Williams	1999 XN ₇₂
1999 XO ₇₂	15.2	0.15	20000226	40.16061	297.92422	116.25481	0.26447	0.1099964	2.5205900	27	1	64 days	0.44	M-v	5	Williams	1999 XO ₇₂
1999 XP ₇₂	14.5	0.15	19991208	37.92293	309.84968	81.28375	15.07106	0.1200291	2.6647208	18	1	28 days	0.30			Williams	1999 XP ₇₂
1999 XQ ₇₂	15.4	0.15	19991208	39.41156	175.14823	207.68802	1.28270	0.1843096	2.3892673	18	1	30 days	0.46			Williams	1999 XQ ₇₂
1999 XR ₇₂	14.4	0.15	19991208	126.96170	214.58958	88.09887	8.15094	0.1096159	2.5564979	23	1	30 days	0.52			Williams	1999 XR ₇₂
1999 XV ₇₂	16.9	0.15	19991208	53.10458	187.30786	181.09586	0.90432	0.1678420	2.4140631	15	1	26 days	0.60			Williams	1999 XV ₇₂
1999 XY ₇₂	14.8	0.15	19991208	46.95530	136.99224	250.69109	7.15165	0.0521636	2.5302253	13	1	29 days	0.29			Williams	1999 XY ₇₂
1999 XZ ₇₂	14.9	0.15	20000226	40.74707	158.73066	249.05172	6.39638	0.1763410	2.5945269	28	1	64 days	0.40	M-v	5	Williams	1999 XZ ₇₂
1999 XD ₇₃	14.3	0.15	19991208	349.74123	349.81021	101.96002	5.69006	0.1234518	3.1823897	13	1	29 days	0.49			Williams	1999 XD ₇₃
1999 XE ₇₃	14.2	0.15	19991208	30.66451	236.44235	163.06759	2.05577	0.1295059	3.1403742	17	1	30 days	0.42			Williams	1999 XE ₇₃
1999 XF ₇₃	14.7	0.15	19991208	46.77147	176.02468	206.92596	2.73365	0.1079937	2.7899463	15	1	30 days	0.41			Williams	1999 XF ₇₃
1999 XG ₇₃	14.7	0.15	19991208	237.20913	34.91813	181.32498	2.02003	0.1586945	2.3424387	16	1	30 days	0.51			Williams	1999 XG ₇₃
1999 XL ₇₃	15.1	0.15	19991208	36.50859	155.99148	243.24387	4.29823	0.0614608	2.7464947	29	1	58 days	0.49			Williams	1999 XL ₇₃
1999 XM ₇₃	15.3	0.15	19991118	31.68375	145.61548	253.74839	8.47561	0.0839522	3.1013474	16	1	36 days	0.48			Williams	1999 XM ₇₃
1999 XO ₇₃	13.8	0.15	20000226	91.25350	274.26548	85.69054	14.67869	0.0759220	2.5597972	21	1	61 days	0.45	M-v	6	Williams	1999 XO ₇₃
1999 XP ₇₃	13.7	0.15	20000226	2.33369	236.23991	219.59603	0.54654	0.1324750	3.1592525	33	1	64 days	0.51	M-v	4	Williams	1999 XP ₇₃
1999 XQ ₇₃	15.7	0.15	19991208	1.45080	350.17913	87.29026	2.97706	0.1698256	2.3975075	28	1	48 days	0.55			Williams	1999 XQ ₇₃
1999 XR ₇₃	16.7	0.15	19991208	40.79392	300.67672	82.13388	3.98445	0.1795545	2.2386895	20	1	30 days	0.92			Williams	1999 XR ₇₃
1999 XS ₇₃	15.5	0.15	19991208	13.98875	184.42746	235.12303	0.96562	0.1857658	2.7166815	25	1	29 days	0.50			Williams	1999 XS ₇₃
1999 XX ₇₃	14.6	0.15	19991208	6.93163	184.47414	242.68800	2.23896	0.3022560	3.0852078	37	1	50 days	0.40			Williams	1999 XX ₇₃
1999 XZ ₇₃	15.0	0.15	19991208	6.84871	346.30539	84.48058	3.38711	0.1921054	2.7589283	27	1	48 days	0.32			Williams	1999 XZ ₇₃
1999 XA ₇₄	15.9	0.15	19991208	34.82775	158.76993	231.50496	0.54059	0.1946439	2.3798956	29	1	36 days	0.50			Williams	1999 XA ₇₄
1999 XD ₇₄	14.1	0.15	19991208	359.91764	351.91367	90.31539	2.67065	0.1674297	3.1658888	28	1	33 days	0.36			Williams	1999 XD ₇₄
1999 XG ₇₄	15.2	0.15	19991208	334.16844	245.08604	238.12784	3.18263	0.2442305	2.6423722	34	1	30 days	0.69			Williams	1999 XG ₇₄
1999 XH ₇₄	15.5	0.15	19991208	321.01069	12.11150	118.51670	2.67600	0.1436852	2.2911918	21	1	52 days	0.36			Williams	1999 XH ₇₄
1999 XJ ₇₄	15.3	0.15	19991208	338.74179	216.13376	250.32947	13.10474	0.0981752	2.6406240	11	1	7 days	0.83			E Williams	1999 XJ ₇₄
1999 XK ₇₄	14.8	0.15	19991208	176.47363	175.16664	88.19010	15.06758	0.1775425	2.5738060	13	1	8 days	0.38			Williams	1999 XK ₇₄
1999 XL ₇₄	16.8	0.15	19991208	13.85511	312.50429	106.90141	3.40551	0.1863707	2.3383629	25	1	30 days	0.49			Williams	1999 XL ₇₄
1999 XM ₇₄	11.2	0.15	19991208	340.83370	13.74688	91.74919	18.81661	0.0950044	5.2794143	27	1	52 days	0.36			Williams	1999 XM ₇₄
1999 XQ ₇₄	13.6	0.15	19991208	153.18187	192.34292	91.82110	12.75324	0.1040887	2.9545580	12	1	29 days	0.37			Williams	1999 XQ ₇₄
1999 XR ₇₄	15.4	0.15	20000226	42.12202	167.81054	229.69808	3.51622	0.3000690	2.5874816	29	1	64 days	0.33	M-v	4	Williams	1999 XR ₇₄
1999 XT ₇₄	15.5	0.15	19991208	40.92092	288.13795	96.07491	3.65506	0.1838511	2.6102572	21	1	37 days	0.63			Williams	1999 XT ₇₄

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1999 XU ₇₄	13.3	0.15	19991208	283.41250	73.36863	90.55767	9.92417	0.0399541	3.1184869	28	1	30 days	0.44	Williams	1999 XU ₇₄
1999 XX ₇₄	14.3	0.15	19991208	23.89360	164.02069	253.71011	5.82700	0.0149125	2.6349999	13	1	29 days	0.50	Williams	1999 XX ₇₄
1999 XZ ₇₄	15.0	0.15	19991208	156.90578	192.96032	88.98529	6.13647	0.1005079	2.4778127	25	1	29 days	0.51	Williams	1999 XZ ₇₄
1999 XA ₇₅	15.2	0.15	19991208	109.59915	224.10623	86.58741	3.65687	0.2384476	2.3324551	13	1	8 days	0.38	Williams	1999 XA ₇₅
1999 XB ₇₅	15.9	0.15	19991208	38.10628	298.26878	86.69668	2.97790	0.2175411	2.5778618	21	1	31 days	0.52	Williams	1999 XB ₇₅
1999 XG ₇₅	15.0	0.15	19991208	70.24737	239.93818	110.51418	3.40443	0.1895447	2.4419057	17	1	30 days	0.45	Williams	1999 XG ₇₅
1999 XL ₇₅	16.1	0.15	19991208	133.28070	61.97087	239.64496	3.19017	0.0987265	2.1482940	22	1	30 days	0.46	Williams	1999 XL ₇₅
1999 XO ₇₅	16.4	0.15	19991208	355.01735	359.62137	88.62188	8.54186	0.0847290	2.3330098	18	1	31 days	0.52	Williams	1999 XO ₇₅
1999 XP ₇₅	14.8	0.15	19991208	268.15723	90.47825	92.67063	7.72166	0.0772047	2.1966047	20	1	29 days	0.36	Williams	1999 XP ₇₅
1999 XR ₇₅	14.3	0.15	19991208	24.77941	300.92071	110.99105	2.95953	0.1235889	2.9233339	16	1	30 days	0.43	Williams	1999 XR ₇₅
1999 XT ₇₅	13.2	0.15	19991208	193.07123	167.24662	89.22265	6.99491	0.2309840	3.0420543	25	1	37 days	0.48	Williams	1999 XT ₇₅
1999 XU ₇₅	13.1	0.15	19991208	13.63611	337.17163	85.11869	11.95996	0.2159332	3.1436895	26	1	29 days	0.31	Williams	1999 XU ₇₅
1999 XW ₇₅	13.8	0.15	19991208	281.11680	283.89195	264.09487	23.99745	0.2119331	3.1371512	18	1	30 days	0.48	Williams	1999 XW ₇₅
1999 XX ₇₅	14.6	0.15	19991208	350.48778	355.78838	98.21028	5.44539	0.0562443	2.4578931	18	1	29 days	0.54	Williams	1999 XX ₇₅
1999 XY ₇₅	13.5	0.15	19991208	318.91946	357.56287	144.51094	2.09224	0.1821020	3.2054344	19	1	30 days	0.28	Williams	1999 XY ₇₅
1999 XZ ₇₅	15.8	0.15	19991208	23.22795	165.55563	244.86674	3.04236	0.1614810	2.2646216	19	1	30 days	0.53	Williams	1999 XZ ₇₅
1999 XA ₇₆	16.1	0.15	19991208	29.24419	157.95094	244.83908	4.42228	0.1563594	2.2025345	18	1	30 days	0.27	Williams	1999 XA ₇₆
1999 XD ₇₆	13.2	0.15	19991208	181.19741	6.45873	257.91950	22.04520	0.0730091	3.1676861	30	1	52 days	0.59	Williams	1999 XD ₇₆
1999 XE ₇₆	14.1	0.15	19991208	132.23953	203.11800	98.60665	7.01603	0.1300684	2.3803043	18	1	30 days	0.32	Williams	1999 XE ₇₆
1999 XF ₇₆	15.2	0.15	19991208	6.35110	304.14546	128.52342	2.08859	0.2083906	2.4805699	19	1	30 days	0.25	Williams	1999 XF ₇₆
1999 XG ₇₆	15.5	0.15	19991208	332.42794	244.16314	231.83696	3.85051	0.0898567	2.2634588	22	1	30 days	0.39	Williams	1999 XG ₇₆
1999 XS ₇₆	15.5	0.15	19991208	32.80259	249.12620	133.50963	1.21616	0.3265977	2.9822420	14	1	35 days	0.37	Williams	1999 XS ₇₆
1999 XU ₇₆	13.6	0.15	19991208	157.11517	29.72763	257.06069	9.19869	0.0726136	3.0657827	17	1	30 days	0.55	Williams	1999 XU ₇₆
1999 XV ₇₆	15.5	0.15	19991208	46.51090	288.28100	94.31802	4.24850	0.1522447	2.1487826	14	1	37 days	0.47	Williams	1999 XV ₇₆
1999 XC ₇₇	15.1	0.15	19991208	19.33219	168.50602	250.23736	4.83809	0.1507519	2.6324854	19	1	30 days	0.36	Williams	1999 XC ₇₇
1999 XF ₇₇	15.8	0.15	19991208	152.24335	188.69359	102.96404	3.63944	0.0255110	2.1782045	20	1	35 days	0.45	Williams	1999 XF ₇₇
1999 XJ ₇₇	13.4	0.15	19991208	292.86244	265.44505	251.39571	8.25999	0.0282024	3.0987609	14	1	29 days	0.40	Williams	1999 XJ ₇₇
1999 XK ₇₇	11.5	0.15	19991208	192.86634	143.60985	112.86234	5.88991	0.0174151	5.1170136	11	1	29 days	0.51	Williams	1999 XK ₇₇
1999 XM ₇₇	14.7	0.15	19991208	128.52507	68.64486	235.66791	4.21145	0.1689355	2.2820931	16	1	30 days	0.49	Williams	1999 XM ₇₇
1999 XP ₇₇	13.8	0.15	19991208	183.07166	96.08682	169.07647	2.20566	0.0935780	2.8280368	13	1	9 days	0.29	Williams	1999 XP ₇₇
1999 XR ₇₇	15.1	0.15	19991208	353.64139	2.94879	91.78990	14.18003	0.2084193	2.5786450	19	1	28 days	0.21	Williams	1999 XR ₇₇
1999 XS ₇₇	15.6	0.15	19991208	57.31673	121.85769	238.86614	3.72651	0.2540141	2.5242955	11	1	9 days	0.59	Williams	1999 XS ₇₇
1999 XT ₇₇	14.1	0.15	19991208	323.25729	257.35150	235.67145	4.22705	0.1062006	3.1698827	22	1	29 days	0.31	Williams	1999 XT ₇₇
1999 XY ₇₇	15.9	0.15	19991118	21.88005	321.16437	59.32342	1.54391	0.3455043	2.9744182	19	1	34 days	0.67	Williams	1999 XY ₇₇
1999 XA ₇₈	15.5	0.15	19991118	38.12585	120.65448	250.71288	2.90130	0.1930895	2.3741339	16	1	29 days	0.43	Williams	1999 XA ₇₈
1999 XC ₇₈	15.6	0.15	19991118	70.32200	264.70953	69.79452	7.28171	0.1954952	2.2531392	20	1	34 days	0.53	Williams	1999 XC ₇₈
1999 XE ₇₈	15.2	0.15	19991208	343.51901	27.99405	69.37767	3.02001	0.1794560	2.3571539	33	1	57 days	0.28	Williams	1999 XE ₇₈
1999 XH ₇₈	14.3	0.15	19991118	246.20367	292.58520	262.25896	0.98185	0.1204839	2.6109800	22	1	56 days	0.50	Williams	1999 XH ₇₈
1999 XJ ₇₈	14.5	0.15	19991118	181.59249	172.45766	75.53053	7.38871	0.1223804	2.3385803	29	1	56 days	0.70	Williams	1999 XJ ₇₈
1999 XL ₇₈	14.0	0.15	19991208	312.27615	241.45264	254.86979	12.10401	0.1553555	3.2106257	18	1	53 days	0.28	Williams	1999 XL ₇₈
1999 XM ₇₈	11.3	0.15	19991118	271.75856	96.03069	65.72554	1.43639	0.0162712	5.1580750	17	1	29 days	0.42	Williams	1999 XM ₇₈
1999 XN ₇₈	14.8	0.15	19991118	8.78233	176.19298	242.28166	0.80687	0.0893777	2.8947693	19	1	29 days	0.44	Williams	1999 XN ₇₈
1999 XS ₇₈	16.0	0.15	19991118	358.41098	356.54532	72.84679	5.65342	0.2089125	2.5622905	20	1	56 days	0.54	Williams	1999 XS ₇₈
1999 XV ₇₈	15.3	0.15	19991118	93.95343	227.87818	83.22545	7.13966	0.2122427	2.2256061	16	1	23 days	1.14	Williams	1999 XV ₇₈
1999 XA ₇₉	14.4	0.15	19991118	31.53842	141.60463	248.29740	10.02984	0.1232515	3.0607624	18	1	29 days	0.45	Williams	1999 XA ₇₉
1999 XH ₇₉	15.4	0.15	19991118	65.45270	279.56959	71.17986	3.70139	0.1270247	2.6544456	12	1	29 days	0.48	Williams	1999 XH ₇₉
1999 XM ₇₉	16.6	0.15	19991208	84.45057	86.66879	252.58431	1.31945	0.1082073	2.3252832	11	1	11 days	1.01	Williams	1999 XM ₇₉
1999 XR ₇₉	15.5	0.15	19991208	54.83896	226.69234	134.59191	2.70092	0.1746628	2.3981683	20	1	50 days	0.62	Williams	1999 XR ₇₉
1999 XT ₇₉	15.3	0.15	19991208	91.13383	102.51203	217.26656	4.34122	0.2266384	2.5366271	12	1	7 days	0.58	Williams	1999 XT ₇₉
1999 XA ₈₀	15.4	0.15	19991118	35.34142	241.81773	144.96216	0.94442	0.1164230	2.6289589	17	1	28 days	0.60	Williams	1999 XA ₈₀
1999 XB ₈₀	14.9	0.15	19991208	57.92973	108.77942	252.24030	11.12282	0.1637851	2.7012632	12	1	29 days	0.45	Williams	1999 XB ₈₀
1999 XF ₈₀	16.5	0.15	19991118	22.47540	145.87440	250.81689	4.16988	0.1840321	2.4122587	14	1	29 days	0.40	Williams	1999 XF ₈₀
1999 XK ₈₀	16.4	0.15	19991208	44.83380	303.15028	83.08278	7.01805	0.0811211	2.7996400	9	1	11 days	0.28	Williams	1999 XK ₈₀

1999 XO ₈₀	12.9	0.15	19991208	224.13505	335.88660	245.65776	10.14405	0.1128647	3.1672637	18	1	30 days	0.36		Williams	1999 XO ₈₀
1999 XR ₈₀	15.1	0.15	19991208	100.86063	129.40965	197.26740	3.34317	0.0817045	2.7148001	11	1	7 days	0.51	E	Williams	1999 XR ₈₀
1999 XU ₈₀	14.9	0.15	19991208	41.46418	309.60863	82.98158	3.20384	0.0731923	2.9139819	14	1	37 days	0.33		Williams	1999 XU ₈₀
1999 XV ₈₀	11.8	0.15	19991208	332.42668	27.62833	83.50407	11.13055	0.0419505	5.1847574	26	1	57 days	0.37		Williams	1999 XV ₈₀
1999 XZ ₈₀	16.0	0.15	19991208	12.32606	170.73522	252.56629	6.94593	0.1235986	2.3665275	13	1	30 days	0.60		Williams	1999 XZ ₈₀
1999 XB ₈₁	15.8	0.15	19991208	309.98532	258.68587	238.59722	5.78421	0.0961476	2.2652040	27	1	30 days	0.53		Williams	1999 XB ₈₁
1999 XE ₈₁	16.6	0.15	19991208	350.59675	222.65803	228.39281	3.68362	0.1288485	2.2674688	10	1	7 days	0.83	E	Williams	1999 XE ₈₁
1999 XF ₈₁	14.1	0.15	19991208	169.95805	169.72440	97.65204	5.99059	0.1541869	2.5412312	14	1	30 days	0.42		Williams	1999 XF ₈₁
1999 XJ ₈₁	15.6	0.15	19991208	86.65039	73.36454	258.22217	4.97636	0.2003068	2.3723440	15	1	30 days	0.39		Williams	1999 XJ ₈₁
1999 XK ₈₁	14.9	0.15	19991208	345.50459	206.02119	257.57866	5.60894	0.1963372	3.4667710	17	1	29 days	1.03		Williams	1999 XK ₈₁
1999 XM ₈₁	14.8	0.15	19991208	4.34824	247.46884	190.51738	0.32135	0.0264917	3.0935720	18	1	30 days	0.61		Williams	1999 XM ₈₁
1999 XR ₈₁	13.3	0.15	19991208	344.97035	18.76810	85.46392	18.79062	0.1700338	3.1245991	18	1	28 days	0.36		Williams	1999 XR ₈₁
1999 XT ₈₁	14.3	0.15	19991208	349.40997	350.19419	106.07007	3.16714	0.0795279	2.8601853	17	1	29 days	0.44		Williams	1999 XT ₈₁
1999 XV ₈₁	17.6	0.15	20000226	8.30282	214.32149	253.22984	3.83066	0.4519121	2.7095553	15	1	30 days	0.27	M-v 7	Williams	1999 XV ₈₁
1999 XZ ₈₁	16.1	0.15	19991208	51.67386	266.61221	111.47617	3.17191	0.1515933	2.1588751	16	1	30 days	0.40		Williams	1999 XZ ₈₁
1999 XD ₈₂	17.6	0.15	19991208	316.31089	230.42739	256.29288	3.38368	0.0861568	2.2650338	10	1	11 days	0.66		Williams	1999 XD ₈₂
1999 XJ ₈₂	14.7	0.15	19991208	290.35816	49.68796	101.73950	3.79594	0.0550500	2.6021418	14	1	30 days	0.46		Williams	1999 XJ ₈₂
1999 XR ₈₂	15.4	0.15	19991208	21.55701	157.31672	255.60137	4.43904	0.2197618	2.3942066	16	1	30 days	0.47		Williams	1999 XR ₈₂
1999 XS ₈₂	14.0	0.15	20000226	359.21196	18.28489	94.86896	13.89598	0.1096419	2.5452578	25	1	61 days	0.39	M-v	Williams	1999 XS ₈₂
1999 XV ₈₂	14.3	0.15	20000226	67.48449	108.76068	267.80117	10.67354	0.2480603	2.4197307	23	1	64 days	0.37	M-v 5	Williams	1999 XV ₈₂
1999 XW ₈₂	14.2	0.15	20000226	322.49500	255.61309	268.34092	7.46632	0.1649464	2.6054984	21	1	64 days	0.41	M-v 5	Williams	1999 XW ₈₂
1999 XY ₈₂	14.3	0.15	20000226	14.94544	356.12934	98.78178	9.12631	0.1600723	2.5831406	33	1	61 days	0.52	M-v 4	Williams	1999 XY ₈₂
1999 XE ₈₃	15.1	0.15	19991208	16.49177	234.66927	193.15670	2.53001	0.1677847	2.5488473	16	1	30 days	0.68		Williams	1999 XE ₈₃
1999 XJ ₈₃	15.2	0.15	20000226	43.89132	330.48785	87.16698	3.26275	0.1906920	2.3596024	42	1	64 days	0.43	M-v 5	Williams	1999 XJ ₈₃
1999 XM ₈₃	14.7	0.15	19991208	254.89526	124.41690	98.42489	13.69845	0.2271962	2.5739481	36	1	35 days	0.76		Williams	1999 XM ₈₃
1999 XN ₈₃	14.0	0.15	19991208	117.31827	221.29527	99.31308	14.95663	0.1890919	2.5728197	27	1	36 days	0.51		Williams	1999 XN ₈₃
1999 XP ₈₃	14.6	0.15	19991208	318.06465	266.29284	238.93146	1.62065	0.1264264	2.3871309	17	1	30 days	0.27		Williams	1999 XP ₈₃
1999 XR ₈₃	15.0	0.15	19991208	41.50311	282.06238	108.28017	5.92030	0.2040404	2.2401060	18	1	30 days	0.46		Williams	1999 XR ₈₃
1999 XU ₈₃	15.3	0.15	19991208	338.84223	13.30938	108.95022	1.94644	0.1682051	2.4363841	40	1	56 days	0.59		Williams	1999 XU ₈₃
1999 XV ₈₃	10.8	0.15	19991208	26.38997	318.04539	104.35129	14.25129	0.1813546	5.2523266	27	1	32 days	0.35		Williams	1999 XV ₈₃
1999 XX ₈₃	14.8	0.15	19991208	296.68402	290.51259	239.09623	3.38836	0.1167970	2.3386738	18	1	30 days	0.43		Williams	1999 XX ₈₃
1999 XZ ₈₃	14.2	0.15	19991208	2.13254	348.15449	103.15070	15.61844	0.2106280	3.0576842	32	1	33 days	0.45		Williams	1999 XZ ₈₃
1999 XA ₈₄	13.9	0.15	19991208	203.29044	145.66848	111.99656	8.92210	0.1365666	2.2685684	28	1	33 days	0.47		Williams	1999 XA ₈₄
1999 XC ₈₄	14.4	0.15	19991208	165.46391	185.15109	102.21188	12.71952	0.1226015	2.3079348	28	1	32 days	0.43		Williams	1999 XC ₈₄
1999 XE ₈₄	16.2	0.15	19991208	27.75426	312.38217	105.38051	5.43292	0.1152272	2.1950636	29	1	32 days	0.39		Williams	1999 XE ₈₄
1999 XJ ₈₄	14.2	0.15	19991208	341.37088	25.01222	96.13393	13.42916	0.1691632	2.5850917	36	1	51 days	0.60		Williams	1999 XJ ₈₄
1999 XO ₈₄	14.8	0.15	19991208	356.94741	352.34735	105.27607	4.21699	0.0657353	2.1881023	29	1	39 days	0.52		Williams	1999 XO ₈₄
1999 XR ₈₄	14.2	0.15	19991208	8.67897	163.56620	282.16712	1.66194	0.1094666	2.8073962	24	1	32 days	0.56		Williams	1999 XR ₈₄
1999 XV ₈₄	13.9	0.15	19991208	12.89087	276.97726	159.81622	2.06544	0.2185207	3.1722102	38	1	31 days	0.49		Williams	1999 XV ₈₄
1999 XX ₈₄	14.5	0.15	19991208	43.89940	297.27056	102.04836	14.50616	0.1466750	2.5735893	16	1	29 days	0.50		Williams	1999 XX ₈₄
1999 XY ₈₄	14.5	0.15	19991208	38.32009	178.79110	222.12368	1.38762	0.2070926	2.7610986	17	1	30 days	0.40		Williams	1999 XY ₈₄
1999 XZ ₈₄	15.4	0.15	19991208	10.14747	168.73999	269.00310	12.44250	0.2375519	2.5697814	19	1	33 days	0.33		Williams	1999 XZ ₈₄
1999 XA ₈₅	14.2	0.15	19991208	334.44472	223.51005	269.42655	6.57828	0.1643598	2.7795857	18	1	30 days	0.30		Williams	1999 XA ₈₅
1999 XC ₈₅	13.2	0.15	19991208	356.80332	350.41998	113.01501	12.71421	0.0325124	3.0829286	31	1	31 days	0.35		Williams	1999 XC ₈₅
1999 XE ₈₅	12.4	0.15	19991208	282.35973	76.15281	110.45234	11.36702	0.0725812	2.9925104	29	1	32 days	0.46		Williams	1999 XE ₈₅
1999 XG ₈₅	12.9	0.15	19991208	17.40872	334.17667	91.77395	13.13987	0.2340869	2.5760609	35	1	51 days	0.47		Williams	1999 XG ₈₅
1999 XH ₈₅	14.7	0.15	20000226	78.05025	102.14934	282.49718	5.57621	0.1433065	2.3486118	30	1	62 days	0.36	M-v 5	Williams	1999 XH ₈₅
1999 XJ ₈₅	15.7	0.15	19991208	57.50436	96.07564	284.50659	2.96482	0.1647309	2.3312949	35	1	38 days	0.46		Williams	1999 XJ ₈₅
1999 XM ₈₅	14.7	0.15	19991208	358.86886	178.26268	280.29049	12.05716	0.1270020	2.6188098	17	1	30 days	0.51		Williams	1999 XM ₈₅
1999 XN ₈₅	14.8	0.15	19991208	72.11985	265.82254	95.51697	9.17192	0.2049786	2.3048795	26	1	36 days	0.65		Williams	1999 XN ₈₅
1999 XP ₈₅	15.4	0.15	19991208	35.68402	204.99504	201.68750	1.43280	0.1831324	2.5327766	17	1	30 days	0.67		Williams	1999 XP ₈₅
1999 XQ ₈₅	15.0	0.15	19991208	25.21287	300.26392	114.55387	3.67291	0.2343093	2.4109791	20	1	31 days	0.24		Williams	1999 XQ ₈₅
1999 XS ₈₅	13.2	0.15	19991208	47.08658	289.39932	107.45684	13.80536	0.1778876	3.0409891	28	1	59 days	0.76		Williams	1999 XS ₈₅

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1999 XU ₈₅	13.0	0.15	19991208	106.34473	63.66348	282.05816	10.50945	0.1036981	3.1305649	23	1	30 days	0.43	Williams	1999 XU ₈₅
1999 XW ₈₅	13.0	0.15	19991208	235.87419	93.69968	134.52043	2.11324	0.0163051	3.1272000	19	1	29 days	0.93	Williams	1999 XW ₈₅
1999 XA ₈₆	13.4	0.15	19991208	254.92945	310.06531	277.38307	9.26501	0.1773690	3.1185566	29	1	33 days	0.52	Williams	1999 XA ₈₆
1999 XE ₈₆	14.8	0.15	19991208	296.79987	83.85808	100.70270	9.58699	0.1883733	2.5611301	51	1	36 days	0.47	Williams	1999 XE ₈₆
1999 XL ₈₆	15.5	0.15	19991208	342.51570	30.89560	93.90235	14.89365	0.1986037	2.6199459	34	1	32 days	0.35	Williams	1999 XL ₈₆
1999 XR ₈₆	14.5	0.15	19991208	96.41925	252.85078	107.06169	16.24013	0.0837018	3.1823257	29	1	28 days	0.46	Williams	1999 XR ₈₆
1999 XV ₈₆	13.2	0.15	20000226	135.94765	53.57331	285.70766	7.21013	0.0660495	2.6003861	42	2	1998-2000	0.36	M-v 3 Williams	37248 1999 XV ₈₆
1999 XW ₈₆	14.4	0.15	19991208	28.78691	341.83601	91.25373	6.72971	0.0191652	2.7432572	26	1	28 days	0.40	Williams	1999 XW ₈₆
1999 XY ₈₆	13.5	0.15	19991208	136.46758	213.81737	102.77764	15.13114	0.1763894	2.5782559	53	1	58 days	0.49	Williams	1999 XY ₈₆
1999 XA ₈₇	14.8	0.15	19991118	42.05855	113.94483	276.92917	10.77912	0.2483865	2.6478514	14	1	2 days	0.41	E Williams	1999 XA ₈₇
1999 XB ₈₇	15.8	0.15	19991118	87.77968	239.06470	113.11519	5.91358	0.1505255	2.1945366	15	1	3 days	0.71	E Williams	1999 XB ₈₇
1999 XC ₈₇	13.4	0.15	19991208	52.26446	296.25160	106.57079	12.63036	0.1125775	3.0065169	52	1	55 days	0.50	Williams	1999 XC ₈₇
1999 XJ ₈₇	17.0	0.15	19991208	22.67913	275.44445	120.14628	1.94346	0.3516437	2.3028087	10	1	10 days	0.45	Williams	1999 XJ ₈₇
1999 XK ₈₇	14.6	0.15	19991208	29.58574	318.38246	93.46822	15.38967	0.0816567	2.5325184	19	1	27 days	0.47	Williams	1999 XK ₈₇
1999 XL ₈₇	15.5	0.15	19991208	14.72016	180.10358	240.21319	4.02999	0.2508601	2.6073577	16	1	29 days	0.45	Williams	1999 XL ₈₇
1999 XM ₈₇	16.1	0.15	19991208	13.27340	334.80476	92.92414	6.24626	0.1386350	2.2218048	18	1	28 days	0.60	Williams	1999 XM ₈₇
1999 XN ₈₇	13.7	0.15	20000226	24.86665	343.57609	90.16832	18.48568	0.1722062	3.0515061	37	1	61 days	0.53	M-v 4 Williams	1999 XN ₈₇
1999 XV ₈₇	14.4	0.15	19991208	12.11202	218.91118	216.94998	2.44047	0.0911007	2.6011356	18	1	33 days	0.31	Williams	1999 XV ₈₇
1999 XC ₈₈	14.3	0.15	20000226	58.32510	131.19622	255.32223	7.35122	0.2575180	2.6882164	27	1	65 days	0.46	M-v 5 Williams	1999 XC ₈₈
1999 XE ₈₈	14.0	0.15	19991208	2.60396	176.38600	272.25903	7.88300	0.1340911	2.8080329	14	1	29 days	0.25	Williams	1999 XE ₈₈
1999 XH ₈₈	13.2	0.15	19991208	177.60010	8.52298	269.19005	8.10087	0.1147094	2.7812389	14	1	30 days	0.54	Williams	1999 XH ₈₈
1999 XK ₈₈	13.5	0.15	19991208	43.00790	144.97457	260.38311	9.47560	0.0780719	3.0881712	17	1	30 days	0.37	Williams	1999 XK ₈₈
1999 XS ₈₈	13.1	0.15	19991208	167.08849	19.25828	266.02627	6.79162	0.1628282	2.6517714	16	1	30 days	0.72	Williams	1999 XS ₈₈
1999 XV ₈₈	16.2	0.15	19991208	344.21750	210.29676	264.06521	1.88168	0.1813749	2.3612243	25	1	33 days	0.61	Williams	1999 XV ₈₈
1999 XW ₈₈	14.5	0.15	19991208	351.56552	189.54394	277.56900	4.30312	0.1315937	3.1752102	19	1	29 days	0.41	Williams	1999 XW ₈₈
1999 XZ ₈₈	14.5	0.15	19991208	55.80926	115.48219	270.16040	8.23344	0.1386986	2.7128166	22	1	33 days	0.47	Williams	1999 XZ ₈₈
1999 XA ₈₉	14.3	0.15	19991208	115.51352	213.24233	111.15993	9.66672	0.1821799	2.5509930	14	1	33 days	0.47	Williams	1999 XA ₈₉
1999 XC ₈₉	15.0	0.15	19991208	99.02102	231.13447	107.20274	5.05384	0.1639174	2.2605868	12	1	32 days	0.63	Williams	1999 XC ₈₉
1999 XH ₈₉	14.8	0.15	19991208	324.07520	40.26010	99.50094	4.30194	0.1105403	2.6120802	34	1	39 days	0.67	Williams	1999 XH ₈₉
1999 XJ ₈₉	15.6	0.15	19991208	337.02615	213.40982	267.97607	5.15235	0.1032426	2.2293724	25	1	33 days	0.40	Williams	1999 XJ ₈₉
1999 XK ₈₉	16.0	0.15	19991208	15.87015	336.15064	99.38216	6.92293	0.0796162	2.3061237	21	1	32 days	0.48	Williams	1999 XK ₈₉
1999 XM ₈₉	13.3	0.15	19991208	246.53264	329.33354	259.77979	6.93716	0.1756723	2.7860748	15	1	30 days	0.49	Williams	1999 XM ₈₉
1999 XN ₈₉	14.0	0.15	19991208	47.83555	251.87040	147.83668	2.54411	0.1094890	2.9302938	14	1	30 days	0.52	Williams	1999 XN ₈₉
1999 XP ₈₉	14.5	0.15	19991208	350.38496	3.21123	103.78368	10.72272	0.0821060	2.5543886	31	1	39 days	0.45	Williams	1999 XP ₈₉
1999 XQ ₈₉	14.6	0.15	19991208	239.89483	340.83150	243.18704	2.02868	0.0786731	2.3491571	14	1	30 days	0.40	Williams	1999 XQ ₈₉
1999 XR ₈₉	14.9	0.15	19991208	39.45204	127.09297	275.88810	12.37140	0.1638229	2.6659314	16	1	31 days	0.42	Williams	1999 XR ₈₉
1999 XS ₈₉	13.7	0.15	19991208	292.82572	72.95032	103.35979	11.88465	0.0887115	3.0609297	27	1	39 days	0.42	Williams	1999 XS ₈₉
1999 XT ₈₉	15.6	0.15	19991208	323.67525	29.60311	111.38809	5.56687	0.1271827	2.3046288	18	1	31 days	0.50	Williams	1999 XT ₈₉
1999 XU ₈₉	15.4	0.15	19991208	312.54807	263.73282	246.74374	3.05854	0.0843715	2.2638671	15	1	30 days	0.55	Williams	1999 XU ₈₉
1999 XW ₈₉	15.0	0.15	19991208	289.70400	48.53973	124.69334	3.29718	0.0570889	2.3246596	15	1	30 days	0.40	Williams	1999 XW ₈₉
1999 XX ₈₉	15.3	0.15	19991208	35.07632	144.36216	258.75817	4.83167	0.2039309	2.4246680	14	1	30 days	0.73	Williams	1999 XX ₈₉
1999 XB ₉₀	16.0	0.15	19991208	17.10599	292.58475	138.14941	3.01238	0.1747398	2.4394729	26	1	31 days	0.47	Williams	1999 XB ₉₀
1999 XD ₉₀	14.1	0.15	19991208	108.35108	59.61153	271.74609	2.95263	0.1907040	2.2561405	17	1	30 days	0.40	Williams	1999 XD ₉₀
1999 XF ₉₀	15.0	0.15	19991208	52.12090	115.81396	276.63151	6.08139	0.1096652	2.2573352	15	1	30 days	0.28	Williams	1999 XF ₉₀
1999 XG ₉₀	13.9	0.15	19991208	25.23929	331.94235	97.86335	11.31041	0.0822209	3.0670035	24	1	32 days	0.56	Williams	1999 XG ₉₀
1999 XH ₉₀	14.4	0.15	19991208	29.19481	329.50564	91.78648	6.53009	0.1010100	2.5364507	12	1	27 days	0.85	Williams	1999 XH ₉₀
1999 XJ ₉₀	14.6	0.15	19991208	320.64759	85.71822	78.65128	2.75889	0.2799240	3.0310055	37	1	56 days	0.70	Williams	1999 XJ ₉₀
1999 XK ₉₀	15.0	0.15	19991208	65.14123	95.07503	280.92046	5.78029	0.1445118	2.3459106	14	1	30 days	0.54	Williams	1999 XK ₉₀
1999 XN ₉₀	15.5	0.15	19991208	305.47156	261.08143	262.42681	3.22371	0.1274903	2.2135393	20	1	55 days	0.39	Williams	1999 XN ₉₀
1999 XO ₉₀	15.1	0.15	19991208	36.96926	290.05431	113.67201	1.97791	0.1967180	2.5940424	13	1	29 days	0.64	Williams	1999 XO ₉₀
1999 XP ₉₀	15.8	0.15	19991208	327.14132	232.70535	270.93549	6.19535	0.1892217	2.4170194	23	1	30 days	0.40	Williams	1999 XP ₉₀
1999 XS ₉₀	13.9	0.15	19991208	282.81103	81.29040	101.58696	8.05953	0.0681871	2.2932207	35	1	32 days	0.57	Williams	1999 XS ₉₀
1999 XW ₉₀	15.1	0.15	19991208	52.11207	301.34245	99.31505	2.85275	0.0592402	2.4651218	37	1	33 days	0.43	Williams	1999 XW ₉₀

1999 XX ₉₀	14.8	0.15	19991208	54.23282	119.54394	278.47107	10.56668	0.0715225	2.6209896	14	1	30 days	0.55	Williams	1999 XX ₉₀
1999 XY ₉₀	14.1	0.15	19991208	28.98047	127.90301	280.73712	6.82696	0.2754921	3.1287393	18	1	31 days	0.31	Williams	1999 XY ₉₀
1999 XZ ₉₀	14.8	0.15	19991208	76.13595	90.31565	268.35168	4.03589	0.2171450	2.4283178	16	1	30 days	0.36	Williams	1999 XZ ₉₀
1999 XB ₉₁	15.1	0.15	19991208	207.69791	335.62782	280.24865	10.45202	0.0299938	2.5818796	16	1	29 days	0.47	Williams	1999 XB ₉₁
1999 XC ₉₁	15.5	0.15	20000226	68.04442	195.74716	199.15244	0.49231	0.1799066	2.3978230	48	3	1995–2000	0.45	Williams	1999 XC ₉₁
1999 XF ₉₁	14.1	0.15	19991208	286.89081	87.16442	118.95738	2.71699	0.2412540	3.0934809	17	1	13 days	0.47	Williams	1999 XF ₉₁
1999 XG ₉₁	12.1	0.15	19991208	75.89626	270.37692	108.20500	26.85393	0.1254457	5.2222820	25	1	32 days	0.55	Williams	1999 XG ₉₁
1999 XK ₉₁	14.6	0.15	19991208	96.26987	246.17528	95.33492	5.52429	0.2105720	2.1473368	26	1	32 days	0.66	Williams	1999 XK ₉₁
1999 XL ₉₁	16.3	0.15	19991208	358.83500	12.45752	86.66348	5.28471	0.1376102	2.2481030	37	1	51 days	0.62	Williams	1999 XL ₉₁
1999 XM ₉₁	15.5	0.15	19991208	358.86548	3.70941	100.98147	24.58968	0.1309991	2.9330598	13	1	7 days	0.49	Williams	1999 XM ₉₁
1999 XO ₉₁	14.8	0.15	19991118	216.84475	339.44257	273.78890	9.84837	0.1078943	2.8174079	13	1	2 days	0.49	E Williams	1999 XO ₉₁
1999 XR ₉₁	13.9	0.15	19991208	163.02544	193.18880	106.38176	11.40823	0.1064645	2.5155947	69	1	57 days	0.63	Williams	1999 XR ₉₁
1999 XS ₉₁	14.4	0.15	19991208	125.41152	39.52951	290.59916	12.39510	0.1220072	2.6991595	11	1	6 days	0.31	E Williams	1999 XS ₉₁
1999 XU ₉₁	15.1	0.15	19991208	43.30366	203.16933	192.55036	6.90128	0.1186086	2.3677842	16	1	35 days	0.32	Williams	1999 XU ₉₁
1999 XV ₉₁	14.5	0.15	19991208	305.83716	311.73422	200.45241	6.23268	0.0450956	2.3301940	17	1	35 days	0.40	Williams	1999 XV ₉₁
1999 XW ₉₁	16.0	0.15	19991208	4.30853	182.75633	257.31527	11.15852	0.1916799	2.5400251	20	1	52 days	0.54	Williams	1999 XW ₉₁
1999 XB ₉₂	13.2	0.15	19991208	99.46251	236.28171	102.36660	10.96876	0.1191777	3.0435336	30	1	34 days	0.35	Williams	1999 XB ₉₂
1999 XL ₉₂	14.5	0.15	19991208	56.45532	134.28291	238.74175	4.25138	0.2080623	2.5423972	20	1	31 days	0.46	Williams	1999 XL ₉₂
1999 XO ₉₂	14.5	0.15	19991208	327.36187	36.33198	97.50184	6.73362	0.1178446	2.7532653	12	1	28 days	0.39	Williams	1999 XO ₉₂
1999 XV ₉₂	14.7	0.15	19991208	49.55769	211.33804	168.90321	1.83541	0.2361831	2.5794516	14	1	30 days	0.45	Williams	1999 XV ₉₂
1999 XW ₉₂	14.2	0.15	19991208	11.26807	300.43547	140.84226	2.56601	0.1494384	2.9759781	17	1	31 days	0.31	Williams	1999 XW ₉₂
1999 XX ₉₂	14.2	0.15	19991208	37.18440	291.75533	123.15848	2.96431	0.0724550	2.7285176	15	1	30 days	0.37	Williams	1999 XX ₉₂
1999 XB ₉₃	14.4	0.15	19991208	14.37149	277.30933	165.08307	2.38341	0.0870266	2.9350572	16	1	30 days	0.54	Williams	1999 XB ₉₃
1999 XC ₉₃	16.0	0.15	19991208	49.38141	111.41501	283.05570	26.02738	0.1876536	2.5649038	21	1	36 days	0.47	Williams	1999 XC ₉₃
1999 XE ₉₃	13.7	0.15	19991208	230.94656	329.81093	277.92360	9.23038	0.1369846	2.5532444	21	1	32 days	0.46	Williams	1999 XE ₉₃
1999 XH ₉₃	15.3	0.15	19991208	9.33659	340.20481	105.45591	5.84308	0.2100715	2.3476888	41	1	55 days	0.56	Williams	1999 XH ₉₃
1999 XJ ₉₃	14.1	0.15	19991208	345.01524	208.46592	278.85383	11.73605	0.2517678	2.5818249	38	1	56 days	0.43	Williams	1999 XJ ₉₃
1999 XK ₉₃	14.8	0.15	19991208	68.67952	284.99940	102.93149	10.22575	0.0769778	2.5620895	41	1	49 days	0.45	Williams	1999 XK ₉₃
1999 XL ₉₃	15.4	0.15	19991208	29.13590	333.07642	89.32780	5.41598	0.1251049	2.1766600	53	1	56 days	0.69	Williams	1999 XL ₉₃
1999 XN ₉₃	14.3	0.15	19991208	111.68539	233.99833	101.36994	11.56598	0.2245396	2.7260529	28	1	28 days	0.47	Williams	1999 XN ₉₃
1999 XO ₉₃	15.1	0.15	19991208	350.68913	29.93329	83.71514	6.33114	0.1035530	2.2893368	38	1	50 days	0.74	Williams	1999 XO ₉₃
1999 XP ₉₃	12.7	0.15	19991208	97.91136	260.77246	101.25883	17.75059	0.0920453	3.1711099	50	1	54 days	0.56	Williams	1999 XP ₉₃
1999 XQ ₉₃	13.3	0.15	19991208	40.18742	306.49166	100.93306	14.42132	0.1899470	2.5907634	40	1	54 days	0.55	Williams	1999 XQ ₉₃
1999 XS ₉₃	14.4	0.15	19991208	52.42917	293.42960	99.87087	5.86027	0.1902104	2.6218834	40	1	39 days	0.39	Williams	1999 XS ₉₃
1999 XU ₉₃	14.5	0.15	19991208	1.81173	359.63183	102.28549	12.27787	0.1722258	2.6992428	37	1	54 days	0.57	Williams	1999 XU ₉₃
1999 XV ₉₃	14.8	0.15	19991208	48.96812	294.38054	101.77822	10.41882	0.2114338	2.7329515	22	1	28 days	0.47	Williams	1999 XV ₉₃
1999 XX ₉₃	14.0	0.15	19991208	42.11400	290.59008	110.44543	14.56921	0.2481368	2.9660286	51	1	57 days	0.40	Williams	1999 XX ₉₃
1999 XZ ₉₃	13.4	0.15	19991208	65.33952	280.07155	105.23111	15.70713	0.1523047	2.6433814	31	1	54 days	0.47	Williams	1999 XZ ₉₃
1999 XA ₉₄	14.9	0.15	19991208	351.51973	184.96407	290.78266	21.57000	0.1152047	2.6725750	25	1	31 days	0.38	Williams	1999 XA ₉₄
1999 XD ₉₄	10.6	0.15	19991208	259.56287	283.29031	304.39014	12.21787	0.0844662	5.1400227	15	1	30 days	0.68	Williams	1999 XD ₉₄
1999 XF ₉₄	14.5	0.15	19991208	51.30547	275.94186	104.82380	22.96908	0.2989053	2.2776313	30	1	49 days	0.45	Williams	1999 XF ₉₄
1999 XH ₉₄	15.4	0.15	19991208	6.17377	174.48747	281.31662	4.48063	0.2317611	2.6010561	12	1	30 days	0.39	Williams	1999 XH ₉₄
1999 XJ ₉₄	15.5	0.15	19991208	69.63049	272.02299	107.62804	13.87043	0.1895263	2.6378410	18	1	28 days	0.54	Williams	1999 XJ ₉₄
1999 XL ₉₄	15.6	0.15	19991208	53.49143	305.05530	93.91175	7.55213	0.1570597	2.3476326	33	1	29 days	0.80	Williams	1999 XL ₉₄
1999 XM ₉₄	14.7	0.15	19991208	334.84781	231.11620	270.48872	1.16248	0.1714033	2.3308106	31	1	35 days	0.64	Williams	1999 XM ₉₄
1999 XN ₉₄	14.6	0.15	19991208	60.53657	281.45900	111.41948	15.44125	0.1701326	2.5389587	26	1	30 days	0.42	Williams	1999 XN ₉₄
1999 XO ₉₄	14.2	0.15	19991208	330.90421	40.80743	113.72140	17.69632	0.1617108	3.1398607	30	1	36 days	0.63	Williams	1999 XO ₉₄
1999 XP ₉₄	14.9	0.15	19991208	33.18084	318.04990	106.69958	12.98993	0.1713549	2.6601004	33	1	50 days	0.49	Williams	1999 XP ₉₄
1999 XR ₉₄	14.4	0.15	19991208	303.42055	82.60834	94.63984	6.27319	0.0892518	2.2754214	33	1	33 days	0.57	Williams	1999 XR ₉₄
1999 XS ₉₄	13.9	0.15	19991208	341.05860	31.31705	111.14685	23.13484	0.1371377	3.1444031	37	1	51 days	0.71	Williams	1999 XS ₉₄
1999 XT ₉₄	14.6	0.15	19991208	19.69607	27.17496	57.87989	1.61467	0.1667712	2.4234183	26	1	30 days	0.59	Williams	1999 XT ₉₄
1999 XU ₉₄	14.3	0.15	19991208	354.63349	80.02027	41.43916	1.79469	0.1527943	2.5330915	27	1	30 days	0.58	Williams	1999 XU ₉₄
1999 XX ₉₄	14.3	0.15	19991208	20.04035	335.30790	103.25834	22.87103	0.1619118	3.2054990	15	1	28 days	0.49	Williams	1999 XX ₉₄

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1999 XY ₉₄	14.0	0.15	19991208	134.54954	212.23016	108.70447	14.63689	0.1968885	2.4376948	43	1	39 days	0.51	Williams	1999 XY ₉₄
1999 XZ ₉₄	14.9	0.15	19991208	320.21663	68.96596	102.10538	4.59180	0.1915165	2.6046549	22	1	30 days	0.43	Williams	1999 XZ ₉₄
1999 XE ₉₅	14.5	0.15	19991228	322.76914	49.14686	106.58129	11.27282	0.1634590	3.1424098	13	1	37 days	0.31	Williams	1999 XE ₉₅
1999 XF ₉₅	14.9	0.15	19991208	353.15259	83.81336	13.36048	2.65022	0.1404640	2.3740733	24	1	28 days	0.57	Williams	1999 XF ₉₅
1999 XG ₉₅	14.9	0.15	19991208	14.18315	117.55305	307.46333	3.96599	0.2093982	2.3227014	22	1	28 days	0.46	Williams	1999 XG ₉₅
1999 XJ ₉₅	13.7	0.15	20000226	75.00149	298.44029	71.79894	14.97494	0.2217145	2.5848157	40	2	1978-2000	0.50	M-v 3 Williams	37249 1999 XJ ₉₅
1999 XL ₉₅	14.1	0.15	19991208	300.44316	313.02951	239.27702	1.55668	0.3403052	2.1401346	6	1	12 days	1.14	E Nakano	1999 XL ₉₅
1999 XM ₉₅	14.6	0.15	19991208	9.92241	54.19437	22.32507	5.80270	0.1055407	2.3133281	22	1	29 days	0.69	Williams	1999 XM ₉₅
1999 XN ₉₅	13.6	0.15	19991208	37.51315	115.50461	290.05790	14.12328	0.0928262	2.5408964	30	1	32 days	0.52	Williams	1999 XN ₉₅
1999 XQ ₉₅	11.6	0.15	19991208	80.68107	65.49357	287.62816	12.87490	0.1509455	2.3458806	27	1	28 days	0.37	Williams	1999 XQ ₉₅
1999 XR ₉₅	12.4	0.15	19991208	279.94226	290.43453	263.09905	12.34448	0.1080568	2.5749716	33	1	51 days	0.52	Williams	1999 XR ₉₅
1999 XT ₉₅	14.1	0.15	19991208	346.25048	36.10030	74.90745	12.54748	0.1496388	2.6648136	32	1	49 days	0.42	Williams	1999 XT ₉₅
1999 XU ₉₅	12.3	0.15	19991208	53.40222	323.79946	66.56923	12.04470	0.1084060	2.9986857	14	1	28 days	0.36	Williams	1999 XU ₉₅
1999 XW ₉₅	14.2	0.15	20000226	41.35996	122.63567	279.51691	23.17348	0.3310894	2.7427509	36	1	66 days	0.46	M-v 4 Williams	1999 XW ₉₅
1999 XY ₉₅	13.6	0.15	19991208	23.14573	37.35533	24.18903	5.11070	0.1524452	2.7441060	29	1	49 days	0.54	Williams	1999 XY ₉₅
1999 XA ₉₆	14.8	0.15	19991208	356.13536	85.94221	10.68839	4.18370	0.2498223	2.4064604	28	1	26 days	0.51	Williams	1999 XA ₉₆
1999 XB ₉₆	13.7	0.15	19991208	56.36165	346.58098	25.19528	6.04915	0.2191955	2.2849264	26	1	27 days	0.85	Williams	1999 XB ₉₆
1999 XE ₉₆	14.0	0.15	19991208	19.06258	146.43746	261.64367	8.23278	0.0598998	2.6342814	34	1	53 days	0.55	Williams	1999 XE ₉₆
1999 XF ₉₆	15.2	0.15	20000226	45.31748	117.67581	275.28168	4.32278	0.2396983	2.3496848	35	1	91 days	0.49	M-v 4 Williams	1999 XF ₉₆
1999 XG ₉₆	14.3	0.15	20000226	289.96080	117.03941	52.50102	7.43840	0.0604704	2.3303713	39	1	62 days	0.49	M-v 5 Williams	1999 XG ₉₆
1999 XH ₉₆	15.0	0.15	19991208	32.40064	110.29660	276.13996	4.06109	0.1803708	2.2718375	27	1	51 days	0.35	Williams	1999 XH ₉₆
1999 XK ₉₆	14.9	0.15	19991208	323.60179	74.69884	46.94542	3.07533	0.1330475	2.4218620	24	1	51 days	0.38	Williams	1999 XK ₉₆
1999 XO ₉₆	14.0	0.15	20000226	44.47445	347.14645	48.16951	2.48243	0.1574579	3.0398923	30	1	62 days	0.52	M-v 5 Williams	1999 XO ₉₆
1999 XP ₉₆	13.9	0.15	19991118	302.86279	69.28612	69.98032	10.01081	0.1036180	2.7735135	32	1	56 days	0.47	Williams	1999 XP ₉₆
1999 XQ ₉₆	10.6	0.15	19991208	338.99501	201.65745	260.14568	29.52096	0.1091847	5.1825713	34	1	51 days	0.45	Williams	1999 XQ ₉₆
1999 XT ₉₆	13.5	0.15	19991208	340.44988	208.78861	259.80501	19.42955	0.2329312	3.1985953	28	1	53 days	0.43	Williams	1999 XT ₉₆
1999 XU ₉₆	16.6	0.15	19991208	8.51722	38.69289	24.93628	1.73013	0.2081030	2.2671256	43	1	51 days	0.51	Williams	1999 XU ₉₆
1999 XV ₉₆	14.9	0.15	19991208	19.29273	144.74357	261.79525	8.11365	0.2154617	2.7142444	24	1	51 days	0.49	Williams	1999 XV ₉₆
1999 XX ₉₆	15.8	0.15	19991208	357.00003	8.53222	72.51794	9.93533	0.1285002	2.3569815	36	1	55 days	0.48	Williams	1999 XX ₉₆
1999 XY ₉₆	16.9	0.15	19991118	15.62186	336.02765	70.02964	8.43772	0.1950740	2.3656791	34	1	56 days	0.64	Williams	1999 XY ₉₆
1999 XZ ₉₆	16.2	0.15	19991208	68.75814	334.99853	9.85975	1.39814	0.2097338	2.3928653	12	1	5 days	0.39	E Williams	1999 XZ ₉₆
1999 XC ₉₇	15.7	0.15	19991118	69.62510	279.25439	60.22102	4.89640	0.2000465	2.3047631	31	1	56 days	0.66	Williams	1999 XC ₉₇
1999 XJ ₉₇	14.5	0.15	20000226	104.40926	270.67684	69.28441	7.84702	0.1376892	2.3546519	43	1	62 days	0.44	M-v 5 Williams	1999 XJ ₉₇
1999 XK ₉₇	14.5	0.15	19991118	295.84857	72.31279	71.29340	6.54721	0.0651884	2.3455693	48	1	56 days	0.44	Williams	1999 XK ₉₇
1999 XM ₉₇	15.5	0.15	19991118	14.89294	349.25937	65.45917	4.51789	0.0763745	2.3059492	32	1	56 days	0.38	Williams	1999 XM ₉₇
1999 XN ₉₇	14.7	0.15	19991208	90.91637	283.41419	55.64704	3.31632	0.0816369	2.6705900	24	1	49 days	0.58	Williams	1999 XN ₉₇
1999 XP ₉₇	13.3	0.15	20000226	155.18328	226.72707	66.40740	10.21610	0.1286843	2.7563470	42	1	62 days	0.44	M-v 4 Williams	1999 XP ₉₇
1999 XQ ₉₇	14.1	0.15	20000226	246.43743	158.14582	62.12712	6.93790	0.0775745	2.3861719	27	1	62 days	0.55	M-v 5 Williams	1999 XQ ₉₇
1999 XW ₉₇	16.1	0.15	19991208	359.63027	13.02614	66.50258	6.47651	0.2919986	2.6202450	21	1	28 days	0.46	Williams	1999 XW ₉₇
1999 XY ₉₇	15.5	0.15	19991208	35.78853	75.98815	308.12377	1.55624	0.2301837	2.3847066	20	1	51 days	0.54	Williams	1999 XY ₉₇
1999 XB ₉₈	15.2	0.15	19991208	342.73378	194.85052	264.26503	6.03292	0.0703532	2.2149104	36	1	38 days	0.54	Williams	1999 XB ₉₈
1999 XE ₉₈	14.7	0.15	19991208	57.07189	87.35366	279.52958	2.96303	0.1500582	2.4058044	22	1	51 days	0.56	Williams	1999 XE ₉₈
1999 XH ₉₈	14.3	0.15	20000226	51.08719	311.97788	74.12582	10.01689	0.2323302	2.9706449	31	1	62 days	0.45	M-v 5 Williams	1999 XH ₉₈
1999 XL ₉₈	14.0	0.15	19991208	6.51460	3.96123	70.94632	2.62135	0.0844310	3.0031985	21	1	49 days	0.42	Williams	1999 XL ₉₈
1999 XM ₉₈	14.4	0.15	19991208	302.11920	69.44729	75.14754	5.09808	0.0457156	2.2407613	28	1	49 days	0.26	Williams	1999 XM ₉₈
1999 XN ₉₈	15.2	0.15	19991208	49.79801	317.01506	54.42719	4.56604	0.1983705	2.3222656	26	1	49 days	0.58	Williams	1999 XN ₉₈
1999 XP ₉₈	13.2	0.15	20000226	51.90671	326.64116	73.08083	10.94632	0.0925975	3.0559540	34	1	62 days	0.46	M-v 5 Williams	1999 XP ₉₈
1999 XQ ₉₈	14.5	0.15	19991208	4.91443	35.98664	40.66856	2.76905	0.1237021	2.5822321	23	1	51 days	0.54	Williams	1999 XQ ₉₈
1999 XR ₉₈	14.6	0.15	19991208	7.69818	357.98597	75.52129	6.52983	0.1229206	2.7220022	16	1	28 days	0.48	Williams	1999 XR ₉₈
1999 XS ₉₈	13.4	0.15	19991208	257.70569	282.30845	270.43669	9.94736	0.0540231	3.0002386	27	1	33 days	0.42	Williams	1999 XS ₉₈
1999 XU ₉₈	14.4	0.15	19991208	280.77476	107.42158	63.60104	7.11720	0.0767306	2.4053917	26	1	51 days	0.46	Williams	1999 XU ₉₈
1999 XX ₉₈	14.2	0.15	19991208	197.21914	174.65844	76.62108	7.37522	0.1046437	2.4594946	20	1	34 days	0.56	Williams	1999 XX ₉₈
1999 XY ₉₈	14.5	0.15	20000226	0.90769	103.20484	8.25769	2.20992	0.1648937	2.3926053	46	1	68 days	0.50	M-v 4 Williams	1999 XY ₉₈

1999 XZ ₉₈	14.3	0.15	19991208	298.23371	251.64810	269.56404	3.82736	0.1395777	2.4357337	17	1	29 days	0.55		Williams	1999 XZ ₉₈
1999 XB ₉₉	15.3	0.15	20000226	33.05700	343.35950	78.28118	8.00774	0.2266587	2.5748208	20	1	62 days	0.45	M-v 4	Williams	1999 XB ₉₉
1999 XE ₉₉	15.5	0.15	20000226	55.19523	318.09050	64.25475	6.29772	0.2920220	2.5204508	28	1	62 days	0.63	M-v 5	Williams	1999 XE ₉₉
1999 XQ ₉₉	14.6	0.15	19991208	358.88162	175.80845	259.38417	12.57775	0.1457093	2.5434729	26	1	53 days	0.46		Williams	1999 XQ ₉₉
1999 XS ₉₉	16.1	0.15	19991208	21.73380	349.57377	54.47735	5.72521	0.1694162	2.2346690	47	1	51 days	0.56		Williams	1999 XS ₉₉
1999 XC ₁₀₀	12.6	0.15	19991208	154.73880	204.09099	90.50033	8.67292	0.0222216	3.1009238	30	1	52 days	0.70		Williams	1999 XC ₁₀₀
1999 XQ ₁₀₀	14.1	0.15	19991208	345.71974	196.97690	272.95340	13.45869	0.1325918	2.5708459	14	1	30 days	0.32		Williams	1999 XQ ₁₀₀
1999 XT ₁₀₀	13.2	0.15	19991208	23.49623	136.80762	276.46980	23.73586	0.2673737	3.1813918	38	1	31 days	0.33		Williams	1999 XT ₁₀₀
1999 XU ₁₀₀	14.4	0.15	20000226	28.05730	10.27311	71.90187	3.40312	0.1358994	2.3800236	21	1	62 days	0.37	M-v 5	Williams	1999 XU ₁₀₀
1999 XV ₁₀₀	14.3	0.15	19991208	41.55053	102.68671	286.33575	5.47672	0.2244293	2.5252654	28	1	29 days	0.52		Williams	1999 XV ₁₀₀
1999 XY ₁₀₀	13.5	0.15	19991208	110.72646	13.58635	303.96612	4.75736	0.2656149	2.1676081	19	1	28 days	0.33		Williams	1999 XY ₁₀₀
1999 XA ₁₀₁	14.9	0.15	19991208	7.83523	352.76580	88.45414	7.61730	0.1410945	2.3155551	24	1	52 days	0.35		Williams	1999 XA ₁₀₁
1999 XF ₁₀₁	14.8	0.15	19991208	299.69806	226.60789	311.95293	3.86311	0.1924936	2.6156964	28	1	36 days	0.70		Williams	1999 XF ₁₀₁
1999 XH ₁₀₁	12.9	0.15	19991208	185.14323	189.98844	86.60418	10.92601	0.0584249	3.0566361	24	1	28 days	0.32		Williams	1999 XH ₁₀₁
1999 XK ₁₀₁	15.0	0.15	19991208	9.65493	140.19937	295.75824	4.94674	0.2730451	2.5614883	16	1	39 days	0.44		Williams	1999 XK ₁₀₁
1999 XN ₁₀₁	15.9	0.15	19991208	257.45006	285.40321	278.63128	16.90078	0.0615191	1.9719945	34	1	31 days	0.45		Williams	1999 XN ₁₀₁
1999 XQ ₁₀₁	14.5	0.15	19991208	54.75920	296.43167	86.78958	5.38713	0.1928056	2.5556927	21	1	32 days	0.61		Williams	1999 XQ ₁₀₁
1999 XS ₁₀₁	15.6	0.15	19991208	335.80433	68.43309	58.87706	2.63659	0.0964307	2.4624775	24	1	29 days	0.47		Williams	1999 XS ₁₀₁
1999 XT ₁₀₁	15.1	0.15	19991208	22.42602	91.47681	327.02438	2.55855	0.2246733	2.3778827	31	1	33 days	0.50		Williams	1999 XT ₁₀₁
1999 XU ₁₀₁	13.1	0.15	19991208	113.86347	42.47029	296.57117	9.48778	0.0880923	3.1468274	32	1	35 days	0.48		Williams	1999 XU ₁₀₁
1999 XW ₁₀₁	15.0	0.15	19991208	26.83961	346.54632	66.01963	4.84528	0.2508800	2.7076841	62	1	57 days	0.51		Williams	1999 XW ₁₀₁
1999 XX ₁₀₁	13.1	0.15	19991208	251.21732	285.16930	296.55983	6.10307	0.1060450	2.7803455	37	1	40 days	0.43		Williams	1999 XX ₁₀₁
1999 XY ₁₀₁	10.6	0.15	19991208	7.43588	166.47077	292.05711	29.23527	0.0461193	5.1374401	20	1	28 days	0.52		Williams	1999 XY ₁₀₁
1999 XZ ₁₀₁	14.9	0.15	19991208	49.15871	86.06362	300.39509	4.83948	0.2250845	2.5579449	40	1	40 days	0.52		Williams	1999 XZ ₁₀₁
1999 XC ₁₀₂	13.7	0.15	19991208	357.64905	14.84155	91.93878	11.25746	0.0541674	3.0537970	28	1	28 days	0.40		Williams	1999 XC ₁₀₂
1999 XF ₁₀₂	13.5	0.15	19991208	18.58089	134.27886	287.36276	3.33023	0.1796618	3.1755478	18	1	28 days	0.69		Williams	1999 XF ₁₀₂
1999 XH ₁₀₂	14.2	0.15	19991208	64.60653	86.04796	282.34958	5.42075	0.1432649	2.4337613	10	1	28 days	0.58		Williams	1999 XH ₁₀₂
1999 XK ₁₀₂	15.7	0.15	20000226	26.03790	1.26204	70.53809	5.97620	0.3188577	2.6041579	26	1	62 days	0.39	M-v 4	Williams	1999 XK ₁₀₂
1999 XM ₁₀₂	14.3	0.15	19991208	83.11375	70.36925	280.75208	5.32908	0.1600230	2.3844990	13	1	28 days	0.56		Williams	1999 XM ₁₀₂
1999 XO ₁₀₂	15.3	0.15	19991208	339.35343	186.82496	290.32166	2.49165	0.1130451	2.2261820	16	1	28 days	0.51		Williams	1999 XO ₁₀₂
1999 XU ₁₀₂	15.4	0.15	19991208	345.04525	56.37634	58.27704	3.11721	0.1640739	2.4490705	31	1	34 days	0.53		Williams	1999 XU ₁₀₂
1999 XW ₁₀₂	15.4	0.15	19991208	321.17922	65.01368	76.08000	5.67017	0.0965391	2.2282335	31	1	34 days	0.57		Williams	1999 XW ₁₀₂
1999 XX ₁₀₂	15.7	0.15	19991208	36.56672	333.29790	79.08993	7.39945	0.0869311	2.2718755	18	1	28 days	0.51		Williams	1999 XX ₁₀₂
1999 XY ₁₀₂	14.0	0.15	19991208	286.50603	95.48168	88.82544	13.58822	0.1076789	2.6075692	23	1	49 days	0.34		Williams	1999 XY ₁₀₂
1999 XB ₁₀₃	15.8	0.15	19991208	284.01191	104.55446	91.68754	13.85679	0.1841754	2.4326668	38	1	33 days	0.67		Williams	1999 XB ₁₀₃
1999 XD ₁₀₃	14.8	0.15	19991208	77.47001	282.69224	79.37445	7.56357	0.1540957	2.3086670	38	1	50 days	0.49		Williams	1999 XD ₁₀₃
1999 XF ₁₀₃	14.5	0.15	19991208	110.30159	251.20597	82.52743	7.78487	0.1485257	2.3187965	20	1	30 days	0.45		Williams	1999 XF ₁₀₃
1999 XG ₁₀₃	15.6	0.15	19991208	12.58018	87.58755	349.71749	1.50281	0.1669038	2.2391254	21	1	49 days	0.41		Williams	1999 XG ₁₀₃
1999 XM ₁₀₃	15.2	0.15	19991208	44.25790	89.98308	288.09286	11.41081	0.3444741	2.5216298	48	1	57 days	0.52		Williams	1999 XM ₁₀₃
1999 XQ ₁₀₃	14.3	0.15	19991208	282.31587	106.27092	93.73080	13.17725	0.1516093	2.8426267	22	1	28 days	0.45		Williams	1999 XQ ₁₀₃
1999 XV ₁₀₃	15.3	0.15	19991208	318.60696	210.26321	292.25876	3.68572	0.0590497	2.2076987	23	1	39 days	0.49		Williams	1999 XV ₁₀₃
1999 XX ₁₀₃	15.3	0.15	19991118	331.26868	49.23827	41.00772	12.21495	0.1222503	2.6945239	35	1	40 days	0.46		Williams	1999 XX ₁₀₃
1999 XY ₁₀₃	13.6	0.15	19991208	273.84462	114.21746	95.92356	14.25215	0.1413609	2.5944812	39	1	53 days	0.50		Williams	1999 XY ₁₀₃
1999 XZ ₁₀₃	15.2	0.15	19991208	22.31843	132.06655	265.43081	11.80628	0.2100350	2.7356715	35	1	36 days	0.59		Williams	1999 XZ ₁₀₃
1999 XA ₁₀₄	14.9	0.15	19991208	285.31984	211.24292	301.49929	5.33663	0.0461838	2.6248352	24	1	28 days	0.60		Williams	1999 XA ₁₀₄
1999 XB ₁₀₄	15.4	0.15	20000226	48.92791	345.37712	45.73871	6.99950	0.2358308	2.3418351	50	1	63 days	0.56	M-v 4	Williams	1999 XB ₁₀₄
1999 XC ₁₀₄	15.0	0.15	19991208	18.19010	349.80322	77.98419	9.15740	0.2226803	2.2319788	40	1	59 days	0.56		Williams	1999 XC ₁₀₄
1999 XD ₁₀₄	14.4	0.15	19991208	1.20508	165.50906	291.58071	12.40006	0.2361250	2.6344251	53	1	55 days	0.40		Nakano	1999 XD ₁₀₄
1999 XE ₁₀₄	14.8	0.15	19991208	12.75209	3.74679	57.72234	2.01343	0.1759095	3.2048693	21	1	28 days	0.55		Williams	1999 XE ₁₀₄
1999 XF ₁₀₄	15.6	0.15	19991208	307.38942	18.43609	127.00968	4.29938	0.1078674	2.3072372	36	1	50 days	0.38		Williams	1999 XF ₁₀₄
1999 XG ₁₀₄	14.7	0.15	20000226	52.30291	334.72306	66.51285	9.42074	0.0901538	2.2541277	44	1	62 days	0.29	M-v 4	Williams	1999 XG ₁₀₄
1999 XK ₁₀₄	15.5	0.15	19991208	70.49969	56.35132	291.52879	2.05076	0.1688051	2.1770626	22	1	51 days	0.47		Williams	1999 XK ₁₀₄
1999 XN ₁₀₄	15.5	0.15	20000226	53.72680	119.38721	265.09303	23.54901	0.3041318	2.2734280	26	1	67 days	0.32	M-v 4	Williams	1999 XN ₁₀₄

1999 XO ₁₀₄	14.4	0.15	19991208	333.45731	43.23667	97.51649	32.79184	0.2020869	2.6287750	25	1	49 days	0.69		Williams	1999 XO ₁₀₄
1999 XR ₁₀₄	14.3	0.15	19991208	14.04830	317.41512	81.17494	25.07870	0.2954721	2.3393301	49	1	59 days	0.34		Williams	1999 XR ₁₀₄
1999 XS ₁₀₄	14.9	0.15	19991208	292.72260	113.54360	56.25541	5.29789	0.0609066	2.2025398	49	1	57 days	0.53		Williams	1999 XS ₁₀₄
1999 XT ₁₀₄	12.5	0.15	19991208	66.26134	296.12299	84.91668	11.19637	0.1277360	3.0491890	42	1	36 days	0.62		Williams	1999 XT ₁₀₄
1999 XU ₁₀₄	13.2	0.15	19991208	40.95903	154.32727	244.78217	5.50803	0.2087947	2.5261748	29	1	53 days	0.41		Williams	1999 XU ₁₀₄
1999 XV ₁₀₄	12.7	0.15	19991208	28.11546	290.71414	123.27774	6.77643	0.2447865	2.9012219	6	1	9 days	0.48		Nakano	1999 XV ₁₀₄
1999 XY ₁₀₄	13.7	0.15	19991208	348.33573	68.67071	0.36991	3.07982	0.1264722	2.9275507	16	1	5 days	0.66	E	Williams	1999 XY ₁₀₄
1999 XD ₁₀₅	13.3	0.15	19991208	1.57968	278.88620	140.93802	10.67224	0.0816764	3.0068763	13	1	54 days	0.89		Williams	1999 XD ₁₀₅
1999 XG ₁₀₅	15.9	0.15	19991118	25.43441	329.97112	25.57111	6.18291	0.1764996	2.3619752	14	1	33 days	0.45		Williams	1999 XG ₁₀₅
1999 XH ₁₀₅	15.2	0.15	20000226	29.03153	351.25120	31.61676	11.74322	0.1559733	2.7107705	37	1	91 days	0.56	M-v 3	Williams	1999 XH ₁₀₅
1999 XJ ₁₀₅	15.6	0.15	20000226	44.14416	158.01802	258.93683	18.74908	0.1412823	1.9733793	43	1	69 days	0.43	M-v 4	Williams	1999 XJ ₁₀₅
1999 XL ₁₀₅	15.8	0.15	20000226	10.32787	44.43909	48.70102	6.01122	0.1523422	2.2871469	36	1	62 days	0.61	M-v 4	Williams	1999 XL ₁₀₅
1999 XN ₁₀₅	14.5	0.15	19991208	25.80268	359.78558	40.74471	6.21738	0.1661640	2.4068066	62	1	50 days	0.43		Williams	1999 XN ₁₀₅
1999 XO ₁₀₅	14.3	0.15	20000226	59.98813	335.08969	33.65155	4.61084	0.2753898	2.5835291	51	1	91 days	0.44	M-v 4	Williams	1999 XO ₁₀₅
1999 XP ₁₀₅	14.3	0.15	19991208	35.44843	59.15065	323.10917	5.54284	0.1758824	3.1324495	17	1	25 days	0.55		Nakano	1999 XP ₁₀₅
1999 XQ ₁₀₅	14.2	0.15	19991208	172.11667	175.87898	87.37792	15.20730	0.1481575	2.6881845	36	1	34 days	0.60		Williams	1999 XQ ₁₀₅
1999 XR ₁₀₅	14.7	0.15	19991208	317.59303	261.24784	234.73565	12.30434	0.1455057	2.7255292	48	1	55 days	0.58		Williams	1999 XR ₁₀₅
1999 XS ₁₀₅	14.1	0.15	19991208	345.54584	250.60281	228.03188	5.37985	0.1607981	2.2742915	30	1	36 days	0.50		Williams	1999 XS ₁₀₅
1999 XV ₁₀₅	13.5	0.15	19991208	46.91969	136.15473	254.15536	16.86247	0.2082005	2.6108395	30	1	31 days	0.43		Williams	1999 XV ₁₀₅
1999 XW ₁₀₅	15.8	0.15	19991208	20.18498	317.12450	114.45548	3.13971	0.1508856	2.3123003	31	1	35 days	0.75		Williams	1999 XW ₁₀₅
1999 XC ₁₀₆	15.0	0.15	19991208	32.89865	162.76991	251.26562	0.39981	0.1814904	2.4144905	44	1	56 days	0.68		Williams	1999 XC ₁₀₆
1999 XD ₁₀₆	16.3	0.15	20000226	33.06499	301.34513	84.36356	24.70817	0.5715325	3.0393011	54	1	50 days	0.54	M-v 4	Williams	1999 XD ₁₀₆
1999 XE ₁₀₆	17.5	0.15	19991208	22.40915	140.85063	276.69517	18.31471	0.1242550	1.9402013	21	1	26 days	0.35		Williams	1999 XE ₁₀₆
1999 XJ ₁₀₆	14.7	0.15	19991208	274.63709	97.65220	93.98880	11.26847	0.0367561	3.0683029	22	1	28 days	0.45		Williams	1999 XJ ₁₀₆
1999 XL ₁₀₆	14.2	0.15	20000226	10.20146	177.71195	238.81359	14.00969	0.0939663	2.5541902	42	1	94 days	0.45	M-v 4	Williams	1999 XL ₁₀₆
1999 XN ₁₀₆	13.3	0.15	20000226	28.06596	145.85377	238.30581	10.16958	0.1637384	3.2102760	47	1	96 days	0.38	M-v 3	Williams	1999 XN ₁₀₆
1999 XO ₁₀₆	14.7	0.15	20000226	41.70717	119.79097	251.71529	12.88977	0.2204781	2.6025786	63	1	168 days	0.51	M-v 3 D	Williams	1999 XO ₁₀₆
1999 XP ₁₀₆	15.4	0.15	20000226	34.62419	0.17362	29.08058	11.79841	0.1996238	2.5169800	29	1	69 days	0.52	M-v 4	Williams	1999 XP ₁₀₆
1999 XR ₁₀₆	14.7	0.15	20000226	6.65495	164.61561	262.36172	5.45483	0.1000058	2.4151651	40	1	95 days	0.51	M-v 4	Williams	1999 XR ₁₀₆
1999 XT ₁₀₆	15.0	0.15	19991118	242.09413	296.35479	235.57789	10.98471	0.1232425	2.6513322	29	1	38 days	0.69		Williams	1999 XT ₁₀₆
1999 XW ₁₀₆	15.4	0.15	20000226	25.81421	7.81620	31.26691	11.00055	0.2570026	2.7163236	54	1	97 days	0.52	M-v 3	Williams	1999 XW ₁₀₆
1999 XE ₁₀₇	14.3	0.15	19991118	186.91548	170.30760	48.37654	12.84297	0.0285802	3.1686509	17	1	33 days	0.56		Williams	1999 XE ₁₀₇
1999 XQ ₁₀₇	13.7	0.15	20000226	50.34813	342.61257	26.72438	10.06164	0.0907113	2.9761271	43	1	95 days	0.56	M-v 4	Williams	1999 XQ ₁₀₇
1999 XR ₁₀₇	15.8	0.15	20000226	15.72181	30.07860	36.27842	7.71775	0.1964010	2.3370885	64	1	110 days	0.47	M-v 3	Williams	1999 XR ₁₀₇
1999 XT ₁₀₇	14.1	0.15	20000226	32.34263	143.39287	244.80514	8.11550	0.0951500	3.1603782	35	1	69 days	0.68	M-v 4	Williams	1999 XT ₁₀₇
1999 XU ₁₀₇	14.9	0.15	19991118	119.99453	35.61934	240.83778	10.21378	0.1072358	2.7233019	22	1	28 days	0.61		Williams	1999 XU ₁₀₇
1999 XF ₁₀₈	16.2	0.15	19991118	315.13497	10.99956	97.78030	3.23544	0.1505729	2.4467475	34	1	41 days	0.58		Williams	1999 XF ₁₀₈
1999 XH ₁₀₈	14.5	0.15	19991118	334.76681	220.65440	216.46144	8.24601	0.0531211	3.0647217	17	1	38 days	0.50		Williams	1999 XH ₁₀₈
1999 XM ₁₀₈	15.5	0.15	19991208	32.83471	309.95230	54.65922	10.02415	0.2027430	3.0274900	11	1	9 days	0.60		Williams	1999 XM ₁₀₈
1999 XR ₁₀₈	17.0	0.15	19991118	1.49482	137.95062	270.46234	2.79736	0.1699988	2.3402845	21	1	28 days	0.52		Williams	1999 XR ₁₀₈
1999 XU ₁₀₈	14.8	0.15	20000226	291.32051	264.80637	245.62067	5.42049	0.0406866	2.3641081	31	1	64 days	0.54	M-v 5	Williams	1999 XU ₁₀₈
1999 XX ₁₀₈	15.5	0.15	19991118	21.09335	166.96843	221.87003	10.43904	0.0368625	2.6504807	17	1	38 days	0.63		Williams	1999 XX ₁₀₈
1999 XY ₁₀₈	15.0	0.15	19991118	58.13158	203.77558	140.19791	2.67633	0.0883438	2.8688592	26	1	41 days	0.59		Williams	1999 XY ₁₀₈
1999 XL ₁₀₉	13.9	0.15	20000226	2.34260	3.51667	75.45477	9.45316	0.2425188	3.0863094	41	1	66 days	0.38	M-v 4	Williams	1999 XL ₁₀₉
1999 XP ₁₀₉	16.8	0.15	19991118	359.98797	330.14587	83.16176	5.77039	0.2676045	2.5725321	37	1	41 days	0.72		Williams	1999 XP ₁₀₉
1999 XQ ₁₀₉	16.7	0.15	19991118	0.02481	293.28586	120.33590	3.07631	0.2220328	2.3766868	26	1	32 days	0.53		Williams	1999 XQ ₁₀₉
1999 XR ₁₀₉	15.1	0.15	19991208	149.09756	93.33532	169.61468	3.15006	0.1301492	2.2356887	11	1	10 days	0.70		Williams	1999 XR ₁₀₉
1999 XT ₁₀₉	15.4	0.15	20000226	33.26142	316.33366	90.81817	5.09211	0.1940518	2.2712255	40	1	62 days	0.35	M-v 3	Williams	1999 XT ₁₀₉
1999 XU ₁₀₉	15.8	0.15	19991118	8.93505	225.22963	175.95256	3.05410	0.1716834	2.5746693	26	1	32 days	0.39		Williams	1999 XU ₁₀₉
1999 XY ₁₀₉	14.7	0.15	20000226	84.37503	214.73924	129.41783	3.25103	0.0986004	2.5182340	45	1	111 days	0.67	M-v 4	Williams	1999 XY ₁₀₉
1999 XD ₁₁₀	17.0	0.15	19991118	335.85119	218.97580	227.65874	1.76868	0.1492852	2.4076738	17	1	33 days	0.62		Williams	1999 XD ₁₁₀
1999 XJ ₁₁₀	16.0	0.15	19991118	351.96480	357.91826	66.34730	15.69218	0.0796523	2.6349828	21	1	32 days	0.58		Williams	1999 XJ ₁₁₀
1999 XK ₁₁₀	14.5	0.15	19991118	270.91801	99.61250	57.03285	17.67372	0.1074188	3.2559655	16	1	33 days	0.63		Williams	1999 XK ₁₁₀

1999 XM ₁₁₀	15.0	0.15	19991118	45.69993	280.34772	77.18479	10.01732	0.1214874	2.9681036	23	1	30 days	0.61			Williams	1999 XM ₁₁₀
1999 XQ ₁₁₀	15.6	0.15	20000226	350.44375	191.49035	263.17171	6.96369	0.1987089	2.7075329	27	1	64 days	0.68	M-v	5	Williams	1999 XQ ₁₁₀
1999 XV ₁₁₀	15.8	0.15	20000226	20.08144	161.07795	247.67623	12.73535	0.3701127	2.9925040	31	1	64 days	0.55	M-v	4	Williams	1999 XV ₁₁₀
1999 XW ₁₁₀	15.9	0.15	19991118	309.08300	213.12722	267.92388	3.86691	0.1678582	2.4294347	30	1	39 days	0.46			Williams	1999 XW ₁₁₀
1999 XD ₁₁₁	17.0	0.15	19991118	41.61521	296.77420	59.72510	3.24785	0.2018781	2.4858556	28	1	33 days	0.56			Williams	1999 XD ₁₁₁
1999 XG ₁₁₁	14.2	0.15	19991208	315.72369	114.31368	49.93763	13.52497	0.1160279	2.6966737	15	1	54 days	0.26			Williams	1999 XG ₁₁₁
1999 XK ₁₁₁	16.1	0.15	20000226	1.52204	48.17960	38.98689	31.99451	0.3160165	2.6182084	35	1	71 days	0.68	M-v	4	Williams	1999 XK ₁₁₁
1999 XS ₁₁₁	16.0	0.15	19991208	11.68275	153.39339	259.38596	13.01272	0.2449134	2.6268295	17	1	30 days	0.50			Williams	1999 XS ₁₁₁
1999 XX ₁₁₁	13.8	0.15	19991118	65.34616	267.88352	67.91300	16.90755	0.2417842	3.1261663	23	1	34 days	0.43			Williams	1999 XX ₁₁₁
1999 XY ₁₁₁	16.6	0.15	19991118	10.55059	101.81186	307.98137	0.67078	0.1828692	2.3657437	23	1	34 days	0.65			Williams	1999 XY ₁₁₁
1999 XB ₁₁₂	14.5	0.15	20000226	25.51154	348.16521	66.74203	11.82306	0.2175450	3.1466867	45	1	61 days	0.60	M-v	4	Williams	1999 XB ₁₁₂
1999 XE ₁₁₂	16.0	0.15	19991118	33.24303	305.26722	68.03181	8.16912	0.2355770	2.3340263	26	1	34 days	0.46			Williams	1999 XE ₁₁₂
1999 XF ₁₁₂	14.9	0.15	19991208	243.49139	257.90485	307.22940	1.13185	0.1692979	2.2581833	17	1	28 days	0.58			Williams	1999 XF ₁₁₂
1999 XH ₁₁₂	14.4	0.15	20000226	357.32302	44.69161	62.96972	14.39824	0.1523624	2.6348433	36	1	62 days	0.62	M-v	4	Williams	1999 XH ₁₁₂
1999 XK ₁₁₂	14.7	0.15	19991208	324.70467	154.44408	350.97559	6.43378	0.1352669	2.8052894	22	1	29 days	0.59			Williams	1999 XK ₁₁₂
1999 XL ₁₁₂	13.8	0.15	19991208	315.83293	78.79119	72.15339	12.74440	0.0961019	3.1336307	22	1	23 days	0.49			Williams	1999 XL ₁₁₂
1999 XM ₁₁₂	15.3	0.15	19991208	21.94732	28.48434	43.06998	6.77052	0.1000806	2.3948857	17	1	21 days	0.56			Williams	1999 XM ₁₁₂
1999 XD ₁₁₃	12.8	0.15	20000226	293.46249	255.23275	269.27802	23.56400	0.2147051	2.3000059	32	1	102 days	0.50	M-v	4	Williams	1999 XD ₁₁₃
1999 XJ ₁₁₃	13.5	0.15	20000226	79.08808	45.54168	287.73377	15.75283	0.1694719	2.6097203	25	1	67 days	0.51	M-v	5	Williams	1999 XJ ₁₁₃
1999 XL ₁₁₃	13.7	0.15	19991208	233.46118	214.37326	332.54993	12.85139	0.1058404	2.5508860	17	1	29 days	0.51			Williams	1999 XL ₁₁₃
1999 XN ₁₁₃	14.8	0.15	20000226	22.21351	101.78173	309.93866	12.09004	0.1903038	2.5947974	16	1	62 days	0.44	M-v	4	Williams	1999 XN ₁₁₃
1999 XP ₁₁₃	12.5	0.15	20000226	309.49876	174.61990	324.51567	13.17397	0.1191965	2.5496300	27	1	63 days	0.27	M-v	4	Williams	1999 XP ₁₁₃
1999 XR ₁₁₃	13.3	0.15	20000226	93.88190	332.07655	347.39175	13.20963	0.1800259	2.5766080	29	1	89 days	0.49	M-v	4	Williams	1999 XR ₁₁₃
1999 XW ₁₁₃	13.7	0.15	20000226	177.97100	284.19415	327.37356	12.26914	0.1617440	2.4506869	19	1	69 days	0.52	M-v	5	Williams	1999 XW ₁₁₃
1999 XY ₁₁₃	14.3	0.15	19991208	317.58046	150.37120	329.84695	11.94063	0.2240386	3.0287538	13	1	6 days	0.78		E	Williams	1999 XY ₁₁₃
1999 XQ ₁₁₄	15.4	0.15	20000226	84.56297	325.33609	11.67489	11.11584	0.2018678	2.2189859	23	1	61 days	0.51	M-v	5	Williams	1999 XQ ₁₁₄
1999 XS ₁₁₄	13.8	0.15	19991208	121.84907	289.16933	1.64551	12.93208	0.0515039	2.5608778	10	1	7 days	0.39			Williams	1999 XS ₁₁₄
1999 XT ₁₁₄	15.3	0.15	20000226	49.27363	62.87063	321.44723	8.86297	0.1756949	2.2433185	25	1	62 days	0.56	M-v	4	Williams	1999 XT ₁₁₄
1999 XV ₁₁₄	12.7	0.15	20000226	245.18589	234.62072	322.79786	11.89586	0.1033234	2.6785071	22	1	71 days	0.39	M-v	4	Williams	1999 XV ₁₁₄
1999 XW ₁₁₄	12.1	0.15	20000226	31.88000	127.90288	267.79137	23.32934	0.0755867	3.0464377	22	1	62 days	0.41	M-v	4	Williams	1999 XW ₁₁₄
1999 XA ₁₁₅	14.2	0.15	20000226	22.40240	131.13563	279.01597	13.11938	0.3430536	2.7519713	28	1	103 days	0.40	M-v	3	Williams	1999 XA ₁₁₅
1999 XB ₁₁₅	14.2	0.15	19991208	237.39822	215.48821	326.45298	13.25403	0.0955465	2.5790280	12	1	7 days	0.52			Williams	1999 XB ₁₁₅
1999 XD ₁₁₅	16.9	0.15	19991228	11.79600	340.44232	102.33751	3.51014	0.1920995	2.3675048	25	1	34 days	0.37			Williams	1999 XD ₁₁₅
1999 XL ₁₁₅	16.4	0.15	20000226	27.82305	157.70742	264.08544	5.66067	0.1715256	2.2392696	36	1	61 days	0.48	M-v	4	Williams	1999 XL ₁₁₅
1999 XN ₁₁₅	16.5	0.15	19991118	12.82699	28.64216	15.98330	3.58905	0.1180607	2.5800715	17	1	29 days	0.47			Williams	1999 XN ₁₁₅
1999 XO ₁₁₅	17.5	0.15	19991208	331.10040	66.41542	43.14038	5.54550	0.1712163	2.1925915	12	1	11 days	0.48			Williams	1999 XO ₁₁₅
1999 XQ ₁₁₅	15.0	0.15	19991208	12.98648	117.78128	275.27716	7.95195	0.0723990	2.9600135	11	1	32 days	0.74			Williams	1999 XQ ₁₁₅
1999 XR ₁₁₅	14.6	0.15	20000226	35.69519	136.80501	252.56370	14.23192	0.0896225	2.6487652	30	1	124 days	0.55	M-v	4	Williams	1999 XR ₁₁₅
1999 XT ₁₁₅	14.2	0.15	20000226	66.08822	5.29560	335.56316	5.64205	0.1982858	2.9181417	27	1	64 days	0.48	M-v	5	Williams	1999 XT ₁₁₅
1999 XU ₁₁₅	14.8	0.15	20000226	103.36782	53.86614	257.85592	11.31487	0.1770188	2.3280744	23	1	91 days	0.61	M-v	5	Williams	1999 XU ₁₁₅
1999 XW ₁₁₅	15.0	0.15	20000226	37.26723	81.04346	309.92612	4.45385	0.1919291	2.4749945	38	1	93 days	0.44	M-v	3	Williams	1999 XW ₁₁₅
1999 XY ₁₁₅	16.0	0.15	19991208	339.95836	180.36896	266.91877	6.76697	0.2049879	2.4177143	22	1	58 days	0.62			Williams	1999 XY ₁₁₅
1999 XD ₁₁₆	14.7	0.15	20000226	13.77626	97.24606	327.02366	5.48143	0.2447601	2.6349577	42	1	66 days	0.38	M-v	4	Williams	1999 XD ₁₁₆
1999 XF ₁₁₆	15.8	0.15	20000226	9.10820	132.00338	307.82980	4.44503	0.1578851	2.1642291	36	1	64 days	0.48	M-v	5	Williams	1999 XF ₁₁₆
1999 XJ ₁₁₆	14.6	0.15	20000226	347.35866	51.94874	38.72781	14.16969	0.0697924	2.6210224	45	1	71 days	0.59	M-v	5	Williams	1999 XJ ₁₁₆
1999 XK ₁₁₆	15.3	0.15	19991118	254.31920	254.47009	267.72149	6.55203	0.0602204	2.3540389	19	1	30 days	0.68			Williams	1999 XK ₁₁₆
1999 XL ₁₁₆	16.9	0.15	19991118	326.53366	114.26399	358.44905	2.83200	0.3130701	2.4475298	11	1	29 days	0.59			Williams	1999 XL ₁₁₆
1999 XM ₁₁₆	14.9	0.15	19991118	335.78415	70.66645	5.89263	5.57657	0.0395892	2.5765649	28	1	34 days	0.61			Williams	1999 XM ₁₁₆
1999 XP ₁₁₆	15.3	0.15	20000226	352.58420	174.05060	287.17361	4.78804	0.2352467	2.5737713	40	1	64 days	0.55	M-v	5	Williams	1999 XP ₁₁₆
1999 XU ₁₁₆	15.3	0.15	20000226	33.98820	103.45308	289.22235	3.43534	0.2956068	2.5892742	31	1	64 days	0.43	M-v	4	Williams	1999 XU ₁₁₆
1999 XW ₁₁₆	16.1	0.15	19991118	307.46256	162.08923	313.31663	3.40719	0.0987316	2.2288428	23	1	40 days	0.44			Williams	1999 XW ₁₁₆
1999 XY ₁₁₆	15.0	0.15	20000226	22.44489	15.41040	45.30541	7.73745	0.1097960	2.3016001	36	1	64 days	0.39	M-v	4	Williams	1999 XY ₁₁₆
1999 XZ ₁₁₆	14.0	0.15	19991118	72.50444	281.81555	33.47517	10.07160	0.2201444	3.1419638	26	1	40 days	0.53			Williams	1999 XZ ₁₁₆

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1999 XA ₁₁₇	14.7	0.15	20000226	24.60121	146.78491	270.24583	5.73247	0.1121553	2.3492807	41	1	64 days	0.48	M-v	4	Williams	1999 XA ₁₁₇
1999 XD ₁₁₇	15.9	0.15	19991118	38.09069	317.41847	39.77574	7.49463	0.2187664	2.3600457	26	1	40 days	0.64			Williams	1999 XD ₁₁₇
1999 XF ₁₁₇	15.5	0.15	19991208	71.97227	54.29327	271.93952	7.87955	0.1718269	2.2950658	23	1	54 days	0.60			Williams	1999 XF ₁₁₇
1999 XJ ₁₁₇	15.8	0.15	20000226	54.29379	352.02998	20.50088	5.61108	0.2535318	2.2333409	49	1	93 days	0.45	M-v	4	Williams	1999 XJ ₁₁₇
1999 XK ₁₁₇	15.9	0.15	20000226	35.80494	73.79294	314.29645	4.21625	0.3204339	2.6250901	27	1	91 days	0.58	M-v	4	Williams	1999 XK ₁₁₇
1999 XM ₁₁₇	14.8	0.15	19991118	296.35794	135.02576	358.34014	4.22974	0.1464332	2.5761397	32	1	40 days	0.37			Williams	1999 XM ₁₁₇
1999 XO ₁₁₇	13.1	0.15	19991118	43.28564	341.25426	28.34024	9.04777	0.0103316	3.0474951	33	1	42 days	0.46			Williams	1999 XO ₁₁₇
1999 XP ₁₁₇	16.7	0.15	19991118	33.54621	337.67886	29.48451	7.21632	0.1787088	2.3365507	13	1	27 days	0.61			Williams	1999 XP ₁₁₇
1999 XS ₁₁₇	14.8	0.15	19991118	23.57914	13.48050	9.13910	4.95257	0.1439618	3.1936301	21	1	38 days	0.63			Williams	1999 XS ₁₁₇
1999 XV ₁₁₇	15.0	0.15	19991118	136.13645	15.83255	253.36513	13.28125	0.1201687	2.6071867	16	1	30 days	0.58			Williams	1999 XV ₁₁₇
1999 XA ₁₁₈	17.3	0.15	19991118	16.20187	348.09892	42.92949	5.37298	0.1812216	2.1995651	36	1	37 days	0.47			Williams	1999 XA ₁₁₈
1999 XB ₁₁₈	14.9	0.15	19991118	244.47613	174.58408	1.42659	3.42779	0.0596874	2.7652010	20	1	32 days	0.37			Williams	1999 XB ₁₁₈
1999 XE ₁₁₈	15.5	0.15	20000226	5.81852	83.29105	0.39854	2.11148	0.1714627	2.4240676	47	1	64 days	0.54	M-v	5	Williams	1999 XE ₁₁₈
1999 XF ₁₁₈	15.2	0.15	19991118	230.19953	302.45909	251.51064	11.76614	0.1156191	2.5891743	17	1	28 days	0.59			Williams	1999 XF ₁₁₈
1999 XG ₁₁₈	15.5	0.15	19991118	18.83139	138.05721	252.63730	10.58490	0.1197354	3.0595040	22	1	34 days	0.36			Williams	1999 XG ₁₁₈
1999 XH ₁₁₈	14.9	0.15	19991118	10.44266	0.38445	42.87273	6.65638	0.0677694	2.8003436	38	1	40 days	0.56			Williams	1999 XH ₁₁₈
1999 XO ₁₁₈	15.6	0.15	19991118	72.12404	47.84469	276.20381	3.88063	0.1805876	2.5329261	26	1	40 days	0.55			Williams	1999 XO ₁₁₈
1999 XQ ₁₁₈	15.5	0.15	19991118	261.75093	260.01404	273.45829	3.99784	0.1648020	2.6051579	20	1	40 days	0.52			Williams	1999 XQ ₁₁₈
1999 XR ₁₁₈	15.0	0.15	19991118	138.42236	341.12540	286.60816	3.01886	0.1767979	2.4029000	34	1	40 days	0.60			Williams	1999 XR ₁₁₈
1999 XU ₁₁₈	14.9	0.15	19991118	71.03071	70.69774	258.90803	7.75429	0.1531586	2.7899443	27	1	40 days	0.45			Williams	1999 XU ₁₁₈
1999 XW ₁₁₈	17.4	0.15	19991118	15.37322	336.15578	56.43034	3.32498	0.2267745	2.3449060	18	1	40 days	0.51			Williams	1999 XW ₁₁₈
1999 XX ₁₁₈	15.8	0.15	19991118	7.03381	88.01938	318.93923	1.54476	0.2011568	2.4085683	24	1	30 days	0.30			Williams	1999 XX ₁₁₈
1999 XZ ₁₁₈	16.7	0.15	19991208	353.36078	44.31443	31.89596	2.00260	0.2495780	2.8384652	11	1	9 days	0.73			Williams	1999 XZ ₁₁₈
1999 XA ₁₁₉	17.7	0.15	19991118	334.43560	77.47940	15.15416	1.06309	0.1546706	2.1223600	13	1	28 days	1.04			Williams	1999 XA ₁₁₉
1999 XC ₁₁₉	15.6	0.15	19991118	7.28072	104.43085	305.66637	0.97063	0.1047794	2.8680115	21	1	29 days	0.56			Williams	1999 XC ₁₁₉
1999 XF ₁₁₉	16.4	0.15	19991118	339.83051	94.23887	348.27319	4.04218	0.1493895	2.7397234	17	1	34 days	0.79			Williams	1999 XF ₁₁₉
1999 XG ₁₁₉	14.6	0.15	19991208	338.28600	180.15040	274.48155	8.18758	0.2246203	3.2681020	11	1	29 days	0.54			Williams	1999 XG ₁₁₉
1999 XH ₁₁₉	16.8	0.15	19991118	333.13557	69.78569	20.91684	4.88300	0.1342220	2.3571419	22	1	34 days	0.60			Williams	1999 XH ₁₁₉
1999 XK ₁₁₉	15.8	0.15	19991118	7.30554	19.42186	27.32531	5.24775	0.0923768	2.5768990	23	1	39 days	0.51			Williams	1999 XK ₁₁₉
1999 XL ₁₁₉	14.9	0.15	19991118	92.97881	280.53069	32.05570	8.86661	0.0928532	2.6689592	20	1	42 days	1.16			Williams	1999 XL ₁₁₉
1999 XP ₁₁₉	16.2	0.15	19991118	339.09547	41.15758	44.97914	9.37269	0.1807966	2.4557165	21	1	40 days	0.49			Williams	1999 XP ₁₁₉
1999 XY ₁₁₉	13.6	0.15	19991208	100.75234	64.31878	248.67083	20.68785	0.0468270	3.2128328	25	1	55 days	0.50			Williams	1999 XY ₁₁₉
1999 XN ₁₂₀	12.5	0.15	19991118	340.53580	162.64224	285.61623	5.01113	0.2200997	4.1940588	20	1	29 days	0.68			Williams	1999 XN ₁₂₀
1999 XP ₁₂₀	12.5	0.15	19991208	83.50152	272.16945	44.67453	12.64424	0.1947094	2.9772737	13	1	10 days	0.33			Williams	1999 XP ₁₂₀
1999 XR ₁₂₀	14.2	0.15	19991118	261.02562	119.37085	40.95929	9.78473	0.0227517	3.0711865	16	1	40 days	0.54			Williams	1999 XR ₁₂₀
1999 XT ₁₂₀	13.8	0.15	20000226	270.56681	274.88273	260.32719	12.57513	0.0149932	2.4549991	32	1	64 days	0.42	M-v	4	Williams	1999 XT ₁₂₀
1999 XX ₁₂₀	15.5	0.15	19991208	324.79611	78.56877	33.42075	4.94043	0.1498143	2.4123092	13	1	10 days	0.39			Williams	1999 XX ₁₂₀
1999 XZ ₁₂₀	15.5	0.15	19991208	40.95625	42.95185	319.70428	2.85321	0.2285957	2.6478497	12	1	10 days	0.53			Williams	1999 XZ ₁₂₀
1999 XD ₁₂₁	15.1	0.15	19991118	14.31710	348.18187	51.69779	10.18390	0.1535496	2.7426281	35	1	46 days	0.40			Williams	1999 XD ₁₂₁
1999 XH ₁₂₁	15.6	0.15	19991118	65.54717	82.00700	261.24236	8.55900	0.1036671	2.7092180	14	1	29 days	0.53			Williams	1999 XH ₁₂₁
1999 XJ ₁₂₁	16.3	0.15	19991118	332.84688	141.13100	317.78436	1.97558	0.1825698	2.3577496	23	1	31 days	0.42			Williams	1999 XJ ₁₂₁
1999 XK ₁₂₁	15.2	0.15	19991118	13.39829	10.46390	28.75001	2.63908	0.2015676	2.3737515	18	1	29 days	0.26			Williams	1999 XK ₁₂₁
1999 XM ₁₂₁	15.8	0.15	19991118	33.24950	109.07957	272.28822	4.22693	0.1007630	2.8052831	24	1	31 days	0.55			Williams	1999 XM ₁₂₁
1999 XP ₁₂₁	15.0	0.15	19991118	352.78120	67.13044	2.85346	2.01424	0.0235867	2.9088915	21	1	31 days	0.54			Williams	1999 XP ₁₂₁
1999 XQ ₁₂₁	14.5	0.15	20000226	49.19758	8.64458	20.92846	3.54334	0.0879904	2.7626039	31	1	62 days	0.51	M-v	4	Williams	1999 XQ ₁₂₁
1999 XT ₁₂₁	14.9	0.15	19991208	348.61532	162.57572	267.30736	12.48289	0.1551454	2.6960435	36	1	59 days	0.46			Williams	1999 XT ₁₂₁
1999 XU ₁₂₁	13.5	0.15	19991208	17.86973	62.78106	326.48596	6.40531	0.0925757	3.0824405	12	1	28 days	1.02			Williams	1999 XU ₁₂₁
1999 XA ₁₂₂	14.0	0.15	20000226	83.52102	11.36500	323.88452	5.13655	0.1237980	2.6463366	41	1	64 days	0.54	M-v	5	Williams	1999 XA ₁₂₂
1999 XC ₁₂₂	15.3	0.15	19991118	357.62264	88.19732	322.93512	9.30018	0.0813073	2.6074919	14	1	35 days	0.60			Williams	1999 XC ₁₂₂
1999 XE ₁₂₂	14.9	0.15	19991208	161.03274	313.96977	292.73129	10.85056	0.1414755	2.4689400	14	1	10 days	0.92			Williams	1999 XE ₁₂₂
1999 XG ₁₂₂	15.2	0.15	19991208	271.85156	268.62007	254.19449	21.25200	0.1870594	2.3868000	23	1	32 days	0.59			Williams	1999 XG ₁₂₂
1999 XH ₁₂₂	14.6	0.15	19991208	35.68163	87.61881	284.26420	10.42424	0.0934844	2.9972464	11	1	8 days	0.44			Williams	1999 XH ₁₂₂
1999 XJ ₁₂₂	16.4	0.15	19991208	355.41894	137.26007	287.76884	9.64054	0.1643734	2.4093073	11	1	8 days	0.45			Williams	1999 XJ ₁₂₂

1999 XL ₁₂₂	15.2	0.15	19991208	30.57300	115.25155	254.88306	15.79574	0.1763089	3.1760004	19	1	30 days	0.88	Williams	1999 XL ₁₂₂
1999 XM ₁₂₂	15.9	0.15	19991118	10.57246	78.24305	315.78942	5.01332	0.2134713	2.6501454	26	1	56 days	0.81	Williams	1999 XM ₁₂₂
1999 XO ₁₂₂	15.6	0.15	19991118	14.58125	50.11055	342.98348	5.91830	0.1162367	2.4238825	25	1	57 days	0.74	Williams	1999 XO ₁₂₂
1999 XS ₁₂₂	14.6	0.15	19991118	69.00755	309.28085	20.69201	8.96731	0.1162786	2.7234685	21	1	36 days	0.42	Williams	1999 XS ₁₂₂
1999 XZ ₁₂₂	15.7	0.15	19991208	357.09813	36.22057	27.03454	13.88892	0.2360561	3.0907181	11	1	8 days	0.36	E Williams	1999 XZ ₁₂₂
1999 XB ₁₂₃	16.8	0.15	19991118	356.91703	103.10134	313.49298	5.63500	0.1302674	2.1996068	12	1	30 days	0.41	Williams	1999 XB ₁₂₃
1999 XF ₁₂₃	14.7	0.15	19991118	39.40467	42.85926	309.22244	6.88895	0.2261908	3.0710485	19	1	37 days	0.58	Williams	1999 XF ₁₂₃
1999 XM ₁₂₃	15.6	0.15	19991208	354.50539	66.51382	1.67252	6.10328	0.1452585	2.4329148	24	1	28 days	0.57	Williams	1999 XM ₁₂₃
1999 XO ₁₂₃	14.4	0.15	19991118	351.49720	158.72923	267.77498	14.51784	0.2156035	3.1214598	31	1	57 days	0.56	Williams	1999 XO ₁₂₃
1999 XR ₁₂₃	15.4	0.15	19991208	64.61929	321.57300	18.85676	9.68493	0.1363148	2.5862031	15	1	8 days	0.66	E Williams	1999 XR ₁₂₃
1999 XU ₁₂₃	15.2	0.15	19991118	26.90156	10.56514	15.50545	9.70211	0.0359755	3.0157448	15	1	34 days	0.51	Williams	1999 XU ₁₂₃
1999 XB ₁₂₄	16.1	0.15	19991208	348.88756	58.20015	16.64447	8.36157	0.0564799	2.3019595	11	1	8 days	0.35	Williams	1999 XB ₁₂₄
1999 XF ₁₂₄	16.1	0.15	19991118	320.51356	137.24933	334.86854	4.61266	0.1889324	2.3538786	15	1	36 days	0.38	Williams	1999 XF ₁₂₄
1999 XK ₁₂₄	15.5	0.15	19991208	8.57511	138.61574	272.16583	11.19960	0.1725092	2.5996882	25	1	30 days	0.71	Williams	1999 XK ₁₂₄
1999 XM ₁₂₄	16.1	0.15	19991208	49.66232	30.79912	318.34786	4.68969	0.2460961	2.1815853	25	1	30 days	0.50	Williams	1999 XM ₁₂₄
1999 XQ ₁₂₄	15.3	0.15	19991208	14.90432	15.02283	28.17311	10.63303	0.1240266	3.1552964	11	1	8 days	0.56	Williams	1999 XQ ₁₂₄
1999 XT ₁₂₄	16.3	0.15	19991208	86.56830	304.13570	5.98361	5.58904	0.2400712	2.1942611	11	1	8 days	0.70	Williams	1999 XT ₁₂₄
1999 XZ ₁₂₄	15.6	0.15	19991118	153.77925	237.87741	22.93092	6.95341	0.0853093	2.2933760	16	1	39 days	0.51	Williams	1999 XZ ₁₂₄
1999 XB ₁₂₅	15.2	0.15	19991208	48.15996	52.27369	297.17666	8.34176	0.2292304	2.7336465	16	1	30 days	0.51	Williams	1999 XB ₁₂₅
1999 XQ ₁₂₅	16.0	0.15	19991208	55.90907	45.81685	308.96445	5.55969	0.1440317	2.3831926	11	1	8 days	0.64	Williams	1999 XQ ₁₂₅
1999 XR ₁₂₅	15.7	0.15	20000226	28.90577	125.19212	293.06397	4.93643	0.1481188	2.2882094	29	1	62 days	0.49	M-v 4 Williams	1999 XR ₁₂₅
1999 XT ₁₂₅	15.1	0.15	19991118	300.79774	98.61207	47.72157	12.56571	0.2393503	2.6939535	20	1	31 days	0.66	Williams	1999 XT ₁₂₅
1999 XU ₁₂₅	16.3	0.15	19991118	330.66898	173.50386	295.36814	4.14768	0.2646793	2.5741882	25	1	55 days	0.48	Williams	1999 XU ₁₂₅
1999 XV ₁₂₅	16.0	0.15	19991208	349.59874	88.97394	352.27795	3.94247	0.1706599	2.5678111	21	1	45 days	0.42	Williams	1999 XV ₁₂₅
1999 XB ₁₂₆	14.3	0.15	20000226	62.47958	97.79149	268.96154	10.63593	0.1512993	2.7139892	30	1	62 days	0.41	M-v 4 Williams	1999 XB ₁₂₆
1999 XD ₁₂₆	16.0	0.15	19991118	57.97118	15.24276	336.15860	4.00983	0.1082251	2.3576944	19	1	55 days	0.53	Williams	1999 XD ₁₂₆
1999 XE ₁₂₆	15.2	0.15	19991208	109.81832	26.82340	281.19559	7.62550	0.0679219	2.7705960	20	1	30 days	0.46	Williams	1999 XE ₁₂₆
1999 XK ₁₂₆	13.9	0.15	19991208	104.19810	273.92273	31.10272	9.07014	0.1669591	2.5476154	26	1	28 days	0.60	Williams	1999 XK ₁₂₆
1999 XL ₁₂₆	15.9	0.15	19991208	178.50285	321.71431	285.69535	5.62458	0.1002413	2.3373242	12	1	8 days	0.49	Williams	1999 XL ₁₂₆
1999 XM ₁₂₆	14.9	0.15	19991208	44.33789	89.48727	284.28523	8.68119	0.0924056	2.6416543	16	1	27 days	0.72	Williams	1999 XM ₁₂₆
1999 XO ₁₂₆	16.5	0.15	19991118	336.95963	133.94062	320.78886	2.91436	0.1952535	2.3412361	18	1	29 days	0.50	Williams	1999 XO ₁₂₆
1999 XR ₁₂₆	16.4	0.15	19991208	341.24132	97.08612	1.44303	4.19273	0.2290206	2.6401716	13	1	8 days	0.48	Williams	1999 XR ₁₂₆
1999 XS ₁₂₆	14.8	0.15	19991208	65.04494	276.27363	55.26867	18.82876	0.2658707	2.9646829	12	1	8 days	0.50	Williams	1999 XS ₁₂₆
1999 XT ₁₂₆	15.8	0.15	19991208	29.66393	110.32942	279.77695	6.97622	0.1338533	2.2785299	23	1	28 days	0.39	Williams	1999 XT ₁₂₆
1999 XW ₁₂₆	15.3	0.15	19991208	345.74755	186.41477	261.36913	12.89344	0.1732868	3.1273572	16	1	28 days	0.58	Williams	1999 XW ₁₂₆
1999 XY ₁₂₆	15.8	0.15	19991208	11.43397	61.43450	351.91226	3.60800	0.1551594	2.5824933	12	1	8 days	0.45	Williams	1999 XY ₁₂₆
1999 XA ₁₂₇	15.6	0.15	19991208	19.43221	127.46561	267.63852	12.08662	0.2715368	2.6952557	27	1	28 days	0.59	Williams	1999 XA ₁₂₇
1999 XC ₁₂₇	15.4	0.15	19991118	12.07689	100.48629	308.41183	3.85685	0.1032508	2.8113872	17	1	29 days	0.53	Williams	1999 XC ₁₂₇
1999 XD ₁₂₇	15.3	0.15	19991208	45.28806	339.68486	13.14307	5.42362	0.2931217	2.5991263	30	1	24 days	0.73	Williams	1999 XD ₁₂₇
1999 XF ₁₂₇	14.9	0.15	20000226	41.01595	160.48659	223.25868	25.25108	0.2743507	2.3848759	50	1	98 days	0.57	M-v 4 Williams	1999 XF ₁₂₇
1999 XH ₁₂₇	13.8	0.15	19991118	307.48597	312.23025	166.20242	10.19290	0.0837865	2.7514210	30	1	39 days	0.65	Williams	1999 XH ₁₂₇
1999 XJ ₁₂₇	13.2	0.15	19991208	36.03239	263.94801	107.14606	14.37138	0.1870445	2.9455913	39	1	39 days	0.59	Williams	1999 XJ ₁₂₇
1999 XK ₁₂₇	15.7	0.15	19991208	39.17682	186.54186	163.17316	9.16101	0.3524427	2.3759640	21	1	59 days	0.83	Williams	1999 XK ₁₂₇
1999 XL ₁₂₇	13.6	0.15	19991208	41.32737	26.24769	11.23456	6.79365	0.2587606	2.7611838	28	1	47 days	0.24	Williams	1999 XL ₁₂₇
1999 XM ₁₂₇	16.5	0.15	19991208	35.70389	311.95781	95.86388	4.54130	0.2065996	2.2004056	31	1	33 days	0.42	Williams	1999 XM ₁₂₇
1999 XN ₁₂₇	14.9	0.15	19991208	192.49131	181.45630	66.18843	15.17265	0.0635362	2.6538555	18	1	51 days	0.46	Williams	1999 XN ₁₂₇
1999 XO ₁₂₇	18.2	0.15	19991208	19.35133	3.52969	58.11096	1.78954	0.1691302	2.1293670	7	1	24 days	0.26	Williams	1999 XO ₁₂₇
1999 XQ ₁₂₇	14.7	0.15	20000226	61.98104	269.52225	113.30589	5.44035	0.1573895	2.2863425	37	1	63 days	0.42	M-v 4 Williams	1999 XQ ₁₂₇
1999 XR ₁₂₇	14.7	0.15	19991118	71.21275	166.77637	173.28631	23.79325	0.1790404	2.3286380	25	1	57 days	0.85	Williams	1999 XR ₁₂₇
1999 XS ₁₂₇	16.7	0.15	19991208	12.84679	291.56878	129.44227	23.70849	0.1160523	1.9198040	20	1	28 days	0.41	Williams	1999 XS ₁₂₇
1999 XV ₁₂₇	13.4	0.15	19991208	289.47032	254.31156	281.86375	15.47432	0.0936032	3.1923501	20	1	30 days	0.60	Williams	1999 XV ₁₂₇
1999 XW ₁₂₇	12.9	0.15	19991118	29.68809	30.81462	43.17569	14.26981	0.1289865	2.5957171	32	1	55 days	0.25	Williams	1999 XW ₁₂₇
1999 XD ₁₂₈	16.7	0.15	19991118	354.50823	26.40228	46.97550	2.86240	0.1829464	2.3564036	27	1	34 days	0.62	Williams	1999 XD ₁₂₈

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1999 XJ ₁₂₈	15.1	0.15	19991118	180.06014	183.84886	64.64194	9.27682	0.0753671	2.3528219	17	1	34 days	0.45	Williams	1999 XJ ₁₂₈
1999 XP ₁₂₈	13.8	0.15	19991208	132.84854	241.51898	47.32572	4.62743	0.1603344	2.7235406	16	1	28 days	0.46	Williams	1999 XP ₁₂₈
1999 XV ₁₂₈	14.0	0.15	19991208	10.67240	15.67763	41.28517	12.22885	0.1370969	2.6800222	20	1	21 days	0.36	Williams	1999 XV ₁₂₈
1999 XW ₁₂₈	15.7	0.15	19991208	305.73316	105.93093	36.29642	8.69602	0.1613712	2.2039343	20	1	26 days	0.35	Williams	1999 XW ₁₂₈
1999 XX ₁₂₈	14.5	0.15	19991208	2.10926	133.08586	294.04017	7.66138	0.2227565	2.6832952	30	1	23 days	0.35	Williams	1999 XX ₁₂₈
1999 XY ₁₂₈	16.9	0.15	19991208	29.60130	359.98622	28.47028	6.45176	0.1921451	2.1757441	28	1	8 days	0.52	Williams	1999 XY ₁₂₈
1999 XZ ₁₂₈	16.0	0.15	19991208	59.92040	358.17157	350.76554	5.30359	0.2006274	2.2343713	36	1	28 days	0.66	Williams	1999 XZ ₁₂₈
1999 XA ₁₂₉	14.4	0.15	19991208	5.40185	50.78243	11.90155	7.01966	0.1745058	3.0922486	19	1	3 days	0.42	E Williams	1999 XA ₁₂₉
1999 XB ₁₂₉	15.0	0.15	19991208	150.71157	270.82674	2.62755	6.24802	0.1340055	2.2073306	33	1	26 days	0.42	Williams	1999 XB ₁₂₉
1999 XC ₁₂₉	14.4	0.15	19991208	267.69411	185.31393	351.17485	5.93271	0.1208761	2.4784222	17	1	3 days	0.41	E Williams	1999 XC ₁₂₉
1999 XD ₁₂₉	16.7	0.15	19991208	349.74374	77.05298	8.03472	6.33767	0.1476618	2.5752006	25	1	8 days	0.47	Williams	1999 XD ₁₂₉
1999 XF ₁₂₉	15.5	0.15	19991208	13.89147	26.97277	19.99239	6.22632	0.2720321	2.5965475	29	1	4 days	0.56	E Williams	1999 XF ₁₂₉
1999 XK ₁₂₉	14.9	0.15	19991208	6.99973	65.62959	358.07796	7.24313	0.0151488	2.6909900	26	1	26 days	0.39	Williams	1999 XK ₁₂₉
1999 XN ₁₂₉	15.3	0.15	19991208	325.70498	111.91311	3.74820	7.66393	0.1272973	2.3908144	14	1	3 days	0.47	E Williams	1999 XN ₁₂₉
1999 XO ₁₂₉	13.1	0.15	19991208	90.37360	335.27129	345.99534	9.28662	0.1705001	3.1609210	15	1	3 days	0.48	E Williams	1999 XO ₁₂₉
1999 XP ₁₂₉	13.8	0.15	19991208	337.42629	109.08234	356.13294	8.43523	0.1992025	3.1798588	18	1	21 days	0.77	Williams	1999 XP ₁₂₉
1999 XR ₁₂₉	14.5	0.15	19991208	328.69749	97.89221	28.81775	13.70221	0.2770839	3.0828257	17	1	21 days	0.37	Williams	1999 XR ₁₂₉
1999 XT ₁₂₉	14.9	0.15	19991208	29.73554	352.37637	44.32025	15.14123	0.1397169	2.6274651	18	1	21 days	0.58	Williams	1999 XT ₁₂₉
1999 XU ₁₂₉	13.4	0.15	19991208	331.88211	65.25635	42.54076	10.86363	0.0699954	2.9670812	23	1	21 days	0.47	Williams	1999 XU ₁₂₉
1999 XV ₁₂₉	14.6	0.15	19991208	41.24384	339.41139	39.17360	13.30300	0.1813702	2.6798849	19	1	21 days	0.41	Williams	1999 XV ₁₂₉
1999 XW ₁₂₉	14.8	0.15	19991208	132.57045	264.60908	24.00406	7.18209	0.1975205	2.2491811	14	1	3 days	0.45	E Williams	1999 XW ₁₂₉
1999 XB ₁₃₀	14.8	0.15	20000226	40.73404	347.28932	58.17173	14.00110	0.1502979	2.6842555	32	1	60 days	0.53	M-v 4 Williams	1999 XB ₁₃₀
1999 XD ₁₃₀	16.2	0.15	19991208	348.33069	151.63399	297.23346	7.04422	0.0535853	2.2249618	11	1	3 days	0.44	E Williams	1999 XD ₁₃₀
1999 XF ₁₃₀	13.8	0.15	19991208	57.10099	324.46861	42.20478	10.53009	0.1272358	2.9934785	20	1	21 days	0.36	Williams	1999 XF ₁₃₀
1999 XG ₁₃₀	15.4	0.15	19991208	73.54556	24.06717	322.06639	5.85244	0.1470867	2.3767071	15	1	3 days	0.42	E Williams	1999 XG ₁₃₀
1999 XH ₁₃₀	15.7	0.15	19991208	35.33520	10.74655	20.26949	5.12798	0.1385769	2.3325288	25	1	23 days	0.64	Williams	1999 XH ₁₃₀
1999 XJ ₁₃₀	15.0	0.15	19991208	21.27870	87.50999	304.37388	5.56348	0.3502967	2.9166419	24	1	23 days	0.32	Williams	1999 XJ ₁₃₀
1999 XM ₁₃₀	15.6	0.15	19991208	272.63272	137.70435	36.93439	6.29772	0.0800367	2.1996350	18	1	23 days	0.38	Williams	1999 XM ₁₃₀
1999 XS ₁₃₀	14.3	0.15	19991208	234.34052	253.65299	309.62747	7.08624	0.0809669	2.5639596	14	1	4 days	0.55	E Williams	1999 XS ₁₃₀
1999 XT ₁₃₀	14.6	0.15	19991208	37.06247	52.58446	314.75993	8.89827	0.2930841	3.0930615	12	1	3 days	0.31	E Williams	1999 XT ₁₃₀
1999 XU ₁₃₀	15.4	0.15	19991208	43.39435	78.67238	290.59794	12.61786	0.2217171	2.5703495	15	1	4 days	0.51	E Williams	1999 XU ₁₃₀
1999 XY ₁₃₀	15.3	0.15	19991208	42.90881	78.18757	295.13306	12.23583	0.1948000	2.6115252	20	1	21 days	0.48	Williams	1999 XY ₁₃₀
1999 XC ₁₃₁	15.4	0.15	19991208	125.88948	339.29676	323.18619	8.10581	0.0757006	2.2545914	15	1	4 days	0.63	E Williams	1999 XC ₁₃₁
1999 XG ₁₃₁	14.0	0.15	19991208	189.65214	318.25039	290.71839	11.32494	0.1703497	2.3366955	23	1	23 days	0.65	Williams	1999 XG ₁₃₁
1999 XJ ₁₃₁	15.0	0.15	19991208	355.77825	156.89184	284.34890	12.86222	0.1047730	3.0797557	12	1	3 days	0.43	E Williams	1999 XJ ₁₃₁
1999 XN ₁₃₁	16.1	0.15	19991118	40.98942	307.50390	65.10879	7.69876	0.1496304	2.3565804	17	1	34 days	0.57	Williams	1999 XN ₁₃₁
1999 XP ₁₃₁	16.3	0.15	19991208	1.64211	49.49963	23.31025	5.79096	0.2170696	2.5116879	15	1	4 days	0.59	E Williams	1999 XP ₁₃₁
1999 XT ₁₃₁	14.9	0.15	19991208	359.49130	41.90093	57.25462	9.40248	0.1352354	2.7533113	19	1	3 days	0.78	E Williams	1999 XT ₁₃₁
1999 XU ₁₃₁	14.6	0.15	19991208	236.36254	218.55095	10.61626	6.69438	0.0687852	2.3723084	20	1	3 days	0.55	E Williams	1999 XU ₁₃₁
1999 XX ₁₃₁	16.7	0.15	19991208	5.21360	24.73828	61.35678	9.92385	0.2818070	2.5095276	16	1	2 days	0.61	E Williams	1999 XX ₁₃₁
1999 XY ₁₃₁	14.2	0.15	19991208	1.35542	140.19475	303.28643	9.81166	0.1253187	3.1193720	20	1	23 days	0.49	Williams	1999 XY ₁₃₁
1999 XZ ₁₃₁	15.8	0.15	19991208	333.32042	86.57148	38.27043	6.35432	0.2132836	2.3818363	13	1	3 days	0.41	E Williams	1999 XZ ₁₃₁
1999 XB ₁₃₂	13.8	0.15	19991208	324.24147	117.15208	13.90850	6.36971	0.1136607	3.2264657	21	1	23 days	0.66	Williams	1999 XB ₁₃₂
1999 XC ₁₃₂	10.5	0.15	19991208	142.46189	228.91038	71.97059	23.16582	0.1145261	5.1549589	13	1	3 days	0.30	E Williams	1999 XC ₁₃₂
1999 XD ₁₃₂	14.0	0.15	19991208	79.36580	288.97094	50.31581	9.84242	0.2478160	2.8258476	12	1	3 days	0.35	E Williams	1999 XD ₁₃₂
1999 XE ₁₃₂	11.3	0.15	19991208	43.01348	84.55405	314.62301	10.03607	0.0804157	5.1832006	23	1	23 days	0.49	Williams	1999 XE ₁₃₂
1999 XG ₁₃₂	11.3	0.15	19991208	311.82373	218.43848	289.78069	20.12478	0.1218803	5.1795724	23	1	23 days	0.50	Williams	1999 XG ₁₃₂
1999 XJ ₁₃₂	15.1	0.15	19991208	340.75791	60.21369	54.63891	8.22366	0.2089758	2.4298992	30	1	48 days	0.37	Williams	1999 XJ ₁₃₂
1999 XN ₁₃₂	15.3	0.15	19991208	61.21416	341.78963	30.34802	5.31389	0.1197016	2.2859356	13	1	3 days	0.54	E Williams	1999 XN ₁₃₂
1999 XQ ₁₃₂	13.9	0.15	19991208	9.43597	134.48203	299.67689	11.86092	0.0960550	2.3338355	14	1	3 days	0.54	E Williams	1999 XQ ₁₃₂
1999 XS ₁₃₂	15.1	0.15	19991208	332.63585	142.42866	335.64586	6.92110	0.0693342	2.3693482	24	1	27 days	0.40	Williams	1999 XS ₁₃₂
1999 XU ₁₃₂	15.0	0.15	19991208	60.85160	330.35865	33.19755	8.42852	0.2134459	2.6039744	21	1	21 days	0.49	Williams	1999 XU ₁₃₂
1999 XV ₁₃₂	12.9	0.15	19991208	48.41910	75.25976	319.75846	9.64907	0.0608625	3.0406031	20	1	21 days	0.34	Williams	1999 XV ₁₃₂

1999 XW ₁₃₂	13.9	0.15	19991208	54.06035	40.11197	329.29421	8.56760	0.2374802	3.1928902	13	1	3 days	0.66	E	Williams	1999 XW ₁₃₂
1999 XB ₁₃₃	14.3	0.15	19991208	68.01771	43.06731	318.05313	12.33156	0.1837702	2.6693262	23	1	21 days	0.56		Williams	1999 XB ₁₃₃
1999 XC ₁₃₃	14.4	0.15	19991208	69.86836	313.60356	44.71581	12.26375	0.2040412	2.6024075	18	1	18 days	0.43		Williams	1999 XC ₁₃₃
1999 XD ₁₃₃	14.4	0.15	19991208	252.56485	233.09290	336.26737	9.60049	0.1114094	2.3353589	23	1	21 days	0.42		Williams	1999 XD ₁₃₃
1999 XF ₁₃₃	13.0	0.15	19991208	177.74752	301.65854	333.32892	11.02883	0.1871405	2.6898501	14	1	3 days	0.40	E	Williams	1999 XF ₁₃₃
1999 XG ₁₃₃	13.2	0.15	19991228	37.19717	340.90743	64.92007	15.66606	0.1769328	2.5640611	24	1	40 days	0.52		Williams	1999 XG ₁₃₃
1999 XJ ₁₃₃	12.5	0.15	19991228	331.79642	79.54070	53.42691	13.93254	0.1235877	2.5980823	26	1	40 days	0.70		Williams	1999 XJ ₁₃₃
1999 XK ₁₃₃	14.5	0.15	19991208	35.32870	354.55682	46.81547	12.53685	0.1950014	3.1340951	17	1	4 days	0.67	E	Williams	1999 XK ₁₃₃
1999 XN ₁₃₃	13.7	0.15	19991208	141.32970	255.09606	52.11722	13.70183	0.1141980	2.7902485	13	1	3 days	0.43	E	Williams	1999 XN ₁₃₃
1999 XO ₁₃₃	13.6	0.15	20000226	342.45391	171.35757	320.33448	12.97459	0.0776972	2.9391239	21	1	62 days	0.43	M-v 5	Williams	1999 XO ₁₃₃
1999 XP ₁₃₃	16.4	0.15	19991208	26.49823	351.46587	56.55379	12.84770	0.2402738	2.4712714	12	1	3 days	0.52	E	Williams	1999 XP ₁₃₃
1999 XQ ₁₃₃	14.0	0.15	19991208	106.26775	272.40750	54.33837	15.27364	0.2329538	2.6259247	22	1	19 days	0.44		Williams	1999 XQ ₁₃₃
1999 XR ₁₃₃	14.9	0.15	19991208	65.08770	50.28937	301.73261	9.76528	0.2486479	2.5748083	19	1	23 days	0.53		Williams	1999 XR ₁₃₃
1999 XT ₁₃₃	16.4	0.15	19991208	27.51447	23.13301	21.88780	6.60187	0.2173298	2.3679739	16	1	21 days	0.60		Williams	1999 XT ₁₃₃
1999 XU ₁₃₃	14.2	0.15	19991208	301.24973	147.65510	17.17746	9.04487	0.1243230	2.8680777	15	1	3 days	0.71	E	Williams	1999 XU ₁₃₃
1999 XV ₁₃₃	15.3	0.15	19991208	35.19544	73.67075	319.15178	11.40425	0.2684124	2.8726253	13	1	3 days	0.48	E	Williams	1999 XV ₁₃₃
1999 XY ₁₃₃	13.0	0.15	19991208	127.28112	343.70737	342.39510	8.77175	0.1145071	3.1862191	26	1	27 days	0.46		Williams	1999 XY ₁₃₃
1999 XA ₁₃₄	15.5	0.15	19991208	5.76306	121.17599	328.57512	7.90138	0.1307476	2.3288742	33	1	23 days	0.54		Williams	1999 XA ₁₃₄
1999 XD ₁₃₄	15.1	0.15	19991208	250.37527	183.25861	36.53980	7.88908	0.0790331	2.2937229	21	1	21 days	0.68		Williams	1999 XD ₁₃₄
1999 XE ₁₃₄	15.8	0.15	19991208	16.09896	46.48479	20.40069	5.98470	0.2834516	2.4291143	32	1	30 days	0.77		Williams	1999 XE ₁₃₄
1999 XF ₁₃₄	15.3	0.15	19991208	317.07664	142.55606	6.03209	7.05029	0.0642303	2.2608051	19	1	3 days	0.42	E	Williams	1999 XF ₁₃₄
1999 XG ₁₃₄	13.7	0.15	20000226	56.08107	110.82009	299.17957	23.69392	0.1631832	2.3698054	31	1	64 days	0.39	M-v 5	Williams	1999 XG ₁₃₄
1999 XH ₁₃₄	15.2	0.15	19991208	74.39149	356.00907	357.87389	9.08503	0.2814718	2.3193692	16	1	21 days	0.63		Williams	1999 XH ₁₃₄
1999 XQ ₁₃₄	14.5	0.15	20000226	350.24907	28.13370	84.50569	26.01713	0.2323268	2.4011707	33	1	61 days	0.42	M-v 4	Williams	1999 XQ ₁₃₄
1999 XR ₁₃₄	14.3	0.15	20000226	334.14545	255.04751	238.54851	20.71753	0.0962252	2.6328832	21	1	68 days	0.48	M-v 4	Williams	1999 XR ₁₃₄
1999 XT ₁₃₄	15.2	0.15	20000226	50.67916	272.36768	97.24548	15.41677	0.3450285	2.5821333	29	1	67 days	0.55	M-v 4	Williams	1999 XT ₁₃₄
1999 XU ₁₃₄	14.4	0.15	19991208	68.75391	262.26909	92.54317	23.96862	0.1068716	1.9658991	22	1	32 days	0.32		Williams	1999 XU ₁₃₄
1999 XW ₁₃₄	15.2	0.15	19991208	218.40274	127.57997	113.27091	24.47603	0.0602427	1.9273824	21	1	33 days	0.45		Williams	1999 XW ₁₃₄
1999 XZ ₁₃₄	14.9	0.15	19991208	12.24448	329.11850	90.99503	26.60075	0.1167254	2.7309571	18	1	31 days	0.48		Williams	1999 XZ ₁₃₄
1999 XA ₁₃₅	14.8	0.15	19991208	283.05888	87.04853	90.36891	24.43922	0.2003620	2.3712981	25	1	32 days	0.50		Williams	1999 XA ₁₃₅
1999 XB ₁₃₅	14.8	0.15	20000226	42.69179	281.00564	92.34665	21.96717	0.3923829	3.1681865	21	1	62 days	0.64	M-v 5	Williams	1999 XB ₁₃₅
1999 XG ₁₃₅	16.2	0.15	20000226	358.31309	36.33200	87.04674	11.37753	0.4989474	2.9703818	29	1	62 days	0.55	M-v 4	Williams	1999 XG ₁₃₅
1999 XH ₁₃₅	14.5	0.15	19991208	187.44601	74.00417	182.37614	5.48825	0.1693589	2.1967818	16	1	32 days	0.38		Williams	1999 XH ₁₃₅
1999 XJ ₁₃₅	13.9	0.15	19991208	290.00155	278.71976	264.43933	26.15123	0.1635677	2.5696569	22	1	36 days	0.47		Williams	1999 XJ ₁₃₅
1999 XK ₁₃₅	15.9	0.15	19991208	47.65226	258.32906	111.24868	4.70878	0.2359509	2.2110300	24	1	29 days	0.46		Williams	1999 XK ₁₃₅
1999 XL ₁₃₅	15.9	0.15	19991208	53.76304	263.15090	104.19068	7.24803	0.1706354	2.2648380	14	1	29 days	0.43		Williams	1999 XL ₁₃₅
1999 XN ₁₃₅	16.2	0.15	19991208	59.10483	183.20360	177.85238	3.27515	0.1842434	2.1848216	13	1	7 days	0.61		Williams	1999 XN ₁₃₅
1999 XO ₁₃₅	16.2	0.15	20000226	352.15459	253.83971	254.34404	20.18517	0.5053079	3.1452313	30	1	38 days	0.46	M-v 5	Williams	1999 XO ₁₃₅
1999 XR ₁₃₅	16.1	0.15	19991208	52.13744	126.83838	255.47854	18.13274	0.1062832	1.9486561	25	1	55 days	0.31		Williams	1999 XR ₁₃₅
1999 XS ₁₃₅	15.5	0.15	19991208	87.43575	112.37856	221.21375	4.63335	0.1873422	2.2386919	14	1	29 days	0.59		Williams	1999 XS ₁₃₅
1999 XV ₁₃₅	14.2	0.15	19991208	68.23795	262.90157	97.81063	25.53887	0.1784993	2.7519640	25	1	30 days	0.45		Williams	1999 XV ₁₃₅
1999 XW ₁₃₅	16.2	0.15	19991208	16.62491	142.99489	268.73744	17.94380	0.0732471	1.9937062	19	1	23 days	0.50		Williams	1999 XW ₁₃₅
1999 XZ ₁₃₅	15.8	0.15	19991118	321.47281	75.97052	56.56805	24.53239	0.2566683	2.3251001	29	1	59 days	0.45		Williams	1999 XZ ₁₃₅
1999 XB ₁₃₆	15.9	0.15	19991208	49.84865	75.37424	306.40944	17.90435	0.1668275	1.9381914	25	1	32 days	0.67		Williams	1999 XB ₁₃₆
1999 XD ₁₃₆	16.7	0.15	19991208	31.16731	342.09440	73.45704	23.59342	0.1029828	1.9514062	13	1	3 days	0.25		Williams	1999 XD ₁₃₆
1999 XG ₁₃₆	15.3	0.15	19991208	36.54821	349.04004	75.09412	24.00473	0.0930167	1.9690370	27	1	27 days	0.31		Williams	1999 XG ₁₃₆
1999 XK ₁₃₆	20.1	0.15	20000226	33.01294	301.51017	64.18066	2.66099	0.7021984	2.3760682	100	1	36 days	0.92	M-v 6	Williams	1999 XK ₁₃₆
1999 XL ₁₃₆	19.9	0.15	19991208	328.08887	274.15521	271.06577	8.91259	0.6467481	1.8088906	108	1	28 days	0.67		Williams	1999 XL ₁₃₆
1999 XM ₁₃₆	15.4	0.15	20000226	45.07614	86.64397	317.90695	26.47136	0.4217395	2.6266582	35	1	37 days	0.38	M-v 5	Williams	1999 XM ₁₃₆
1999 XO ₁₃₆	14.2	0.15	19991208	304.06938	92.66433	98.48117	7.43876	0.1412075	2.2571865	39	1	53 days	0.59		Williams	1999 XO ₁₃₆
1999 XR ₁₃₆	13.2	0.15	19991208	50.99071	85.18068	316.77697	11.74963	0.2712979	2.6176261	42	1	59 days	0.42		Williams	1999 XR ₁₃₆
1999 XS ₁₃₆	12.3	0.15	20000226	357.48368	215.39000	299.72989	15.90857	0.1311192	2.5684607	35	1	64 days	0.48	M-v 5	Williams	1999 XS ₁₃₆
1999 XU ₁₃₆	14.8	0.15	20000226	32.79841	286.83485	124.14854	5.86760	0.2019374	2.3887996	47	1	63 days	0.46	M-v 4	Williams	1999 XU ₁₃₆

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1999 XV ₁₃₆	15.5	0.15	20000226	34.50360	313.28222	99.27859	10.25815	0.1922323	2.3415917	33	1	62 days	0.52	M-v	4	Williams	1999 XV ₁₃₆
1999 XZ ₁₃₆	15.5	0.15	20000226	33.87103	310.57579	107.57093	6.77899	0.1457795	2.2533265	34	1	63 days	0.64	M-v	4	Williams	1999 XZ ₁₃₆
1999 XB ₁₃₇	14.8	0.15	19991208	350.02078	219.04388	221.93200	13.99472	0.2485803	3.0981459	18	1	50 days	0.94			Williams	1999 XB ₁₃₇
1999 XC ₁₃₇	15.4	0.15	20000226	21.75723	137.42516	277.77517	8.99607	0.3200817	2.5422817	25	1	62 days	0.44	M-v	4	Williams	1999 XC ₁₃₇
1999 XD ₁₃₇	14.5	0.15	20000226	33.90457	315.69990	91.87589	25.06551	0.1952992	2.3007046	24	1	62 days	0.44	M-v	4	Williams	1999 XD ₁₃₇
1999 XH ₁₃₇	14.8	0.15	19991208	276.40224	94.63546	92.44110	17.89794	0.0295133	2.8350196	20	1	25 days	0.47			Williams	1999 XH ₁₃₇
1999 XO ₁₃₇	14.8	0.15	20000226	95.12802	181.86528	149.22020	8.62797	0.1956581	2.2856779	25	1	67 days	0.64	M-v	5	Williams	1999 XO ₁₃₇
1999 XQ ₁₃₇	14.8	0.15	19991208	24.62950	142.75118	283.64612	12.76539	0.1954764	2.6965514	43	1	55 days	0.64			Williams	1999 XQ ₁₃₇
1999 XR ₁₃₇	15.8	0.15	20000226	8.18887	309.43594	118.03812	7.02915	0.2180051	2.2259945	38	1	116 days	0.55	M-v	4	Williams	1999 XR ₁₃₇
1999 XS ₁₃₇	14.3	0.15	19991118	190.36248	327.10961	256.33938	8.84705	0.0335276	3.5018755	25	1	43 days	0.58			Williams	1999 XS ₁₃₇
1999 XT ₁₃₇	16.4	0.15	19991118	29.88420	323.60189	45.84983	8.60946	0.2072968	2.5736518	50	1	43 days	0.59			Williams	1999 XT ₁₃₇
1999 XU ₁₃₇	14.7	0.15	19991118	107.96614	52.80538	249.14645	13.85846	0.0333251	3.2349015	15	1	30 days	0.56			Williams	1999 XU ₁₃₇
1999 XV ₁₃₇	13.7	0.15	19991118	210.34075	161.29139	50.30366	17.96755	0.1432284	2.7615491	55	1	43 days	0.56			Williams	1999 XV ₁₃₇
1999 XW ₁₃₇	16.2	0.15	19991118	51.86387	111.94033	240.93814	12.78971	0.1188481	2.8196236	11	1	23 days	0.30			Williams	1999 XW ₁₃₇
1999 XB ₁₃₈	18.8	0.15	19991118	325.25885	46.12091	60.53974	2.55224	0.1891075	2.3146291	14	1	28 days	0.45			Williams	1999 XB ₁₃₈
1999 XD ₁₃₈	16.1	0.15	19991118	31.65641	125.26688	241.21139	7.41168	0.2385907	3.1696865	23	1	34 days	0.65			Williams	1999 XD ₁₃₈
1999 XE ₁₃₈	17.4	0.15	19991208	8.85532	175.32912	239.70250	6.19559	0.1063209	2.3767107	9	1	15 days	0.15			Williams	1999 XE ₁₃₈
1999 XT ₁₃₈	16.3	0.15	19991208	88.66465	267.57403	95.82114	6.75891	0.0952155	2.7652699	17	1	30 days	0.31			Williams	1999 XT ₁₃₈
1999 XU ₁₃₈	16.8	0.15	19991208	323.91763	47.26994	93.76364	7.60832	0.0535708	2.3756301	12	1	13 days	0.12			Williams	1999 XU ₁₃₈
1999 XY ₁₃₈	13.2	0.15	19991208	118.91321	348.09302	341.05643	1.87517	0.2680888	3.9889405	12	1	34 days	0.23			Williams	1999 XY ₁₃₈
1999 XZ ₁₃₈	16.5	0.15	19991208	65.54709	314.86744	72.77073	2.49854	0.0670837	2.1295075	21	1	30 days	0.29			Williams	1999 XZ ₁₃₈
1999 XB ₁₃₉	14.9	0.15	19991208	27.07183	331.97144	94.06359	8.73015	0.1683552	2.7627664	23	1	32 days	0.36			Williams	1999 XB ₁₃₉
1999 XF ₁₃₉	16.5	0.15	19991208	39.47357	331.71183	77.90011	4.08814	0.1335630	2.1981198	24	1	29 days	0.43			Williams	1999 XF ₁₃₉
1999 XG ₁₃₉	16.5	0.15	19991208	18.12954	351.37696	82.65462	4.92674	0.1993843	2.5804668	19	1	29 days	0.31			Williams	1999 XG ₁₃₉
1999 XJ ₁₃₉	16.1	0.15	19991118	43.44852	310.03539	30.01785	5.97716	0.0349174	2.7520089	16	1	29 days	0.49			Williams	1999 XJ ₁₃₉
1999 XN ₁₃₉	17.2	0.15	19991118	313.82036	51.40084	64.11881	15.41751	0.1128566	2.5934466	10	1	6 days	0.59		E	Williams	1999 XN ₁₃₉
1999 XU ₁₃₉	16.8	0.15	19991208	338.49656	21.54740	107.66903	5.51548	0.1693328	2.6206856	16	1	36 days	0.34			Williams	1999 XU ₁₃₉
1999 XV ₁₃₉	15.1	0.15	19991208	78.91380	269.23705	108.55385	10.79917	0.0557742	3.0259490	22	1	38 days	0.44			Williams	1999 XV ₁₃₉
1999 XX ₁₃₉	15.9	0.15	19991208	198.72283	155.64223	109.97234	7.26552	0.0988959	2.2822086	20	1	41 days	0.50			Williams	1999 XX ₁₃₉
1999 XZ ₁₃₉	17.6	0.15	19991208	16.59670	330.82050	103.93654	7.14500	0.1597545	2.3394813	17	1	33 days	0.61			Williams	1999 XZ ₁₃₉
1999 XB ₁₄₀	16.7	0.15	19991208	40.85465	282.53828	112.13489	2.80840	0.2400564	2.3522331	18	1	38 days	0.51			Williams	1999 XB ₁₄₀
1999 XD ₁₄₀	15.6	0.15	19991208	274.31575	76.78242	121.23252	3.27867	0.0773393	2.6622481	17	1	34 days	0.35			Williams	1999 XD ₁₄₀
1999 XK ₁₄₀	14.9	0.15	19991208	189.49989	161.86236	116.68844	3.80364	0.0400464	3.0674531	12	1	36 days	0.25			Williams	1999 XK ₁₄₀
1999 XN ₁₄₀	16.0	0.15	19991208	164.52527	185.56873	109.76195	5.72315	0.2430775	2.2564610	12	1	31 days	0.23			Williams	1999 XN ₁₄₀
1999 XS ₁₄₀	14.4	0.15	19991208	287.43084	78.67121	113.29602	3.84837	0.1293564	3.1548053	23	1	34 days	0.73			Williams	1999 XS ₁₄₀
1999 XC ₁₄₁	14.6	0.15	20000226	31.45475	152.07865	221.12047	1.17032	0.0865748	2.8647740	47	1	94 days	0.61	M-v	4	Williams	1999 XC ₁₄₁
1999 XG ₁₄₁	15.3	0.15	19991208	339.30072	204.96674	287.15117	4.07361	0.1036632	3.1492016	18	1	44 days	0.53			Williams	1999 XG ₁₄₁
1999 XH ₁₄₁	16.6	0.15	19991208	25.86194	160.65331	269.28337	2.37657	0.0771928	2.2197747	27	1	32 days	0.50			Williams	1999 XH ₁₄₁
1999 XJ ₁₄₁	16.0	0.15	19991228	348.74167	168.14785	282.77805	34.09936	0.4917419	2.4832513	20	1	11 days	0.92			Nakano	1999 XJ ₁₄₁
1999 XK ₁₄₁	17.7	0.15	19991208	358.52555	173.74302	259.82177	43.71363	0.3417643	2.5340922	56	1	18 days	0.60			Williams	1999 XK ₁₄₁
1999 XM ₁₄₁	19.6	0.15	19991208	308.73436	105.63164	73.12991	21.64659	0.3700330	1.2379662	38	1	7 days	0.52			Williams	1999 XM ₁₄₁
1999 XN ₁₄₁	22.8	0.15	19991208	7.79282	308.01072	88.53799	7.34464	0.6171656	2.5071612	18	1	16 days	0.39			Williams	1999 XN ₁₄₁
1999 XO ₁₄₁	17.8	0.15	19991208	143.02190	195.16256	111.37129	2.89839	0.1715765	1.6741887	22	1	16 days	0.59			Williams	1999 XO ₁₄₁
1999 XP ₁₄₁	15.5	0.15	19991208	17.10428	141.44586	298.92438	24.74930	0.2437754	2.2452077	22	1	59 days	0.26			Williams	1999 XP ₁₄₁
1999 XS ₁₄₁	16.3	0.15	19991208	313.65851	58.81933	92.98906	22.39969	0.0469280	1.9115384	25	1	31 days	0.46			Williams	1999 XS ₁₄₁
1999 XU ₁₄₁	15.0	0.15	19991208	320.93753	83.61977	98.89446	28.65113	0.3534768	2.6341159	28	1	31 days	0.52			Williams	1999 XU ₁₄₁
1999 XV ₁₄₁	16.5	0.15	19991208	11.01918	152.28216	284.26136	23.16927	0.2357221	2.3861481	15	1	28 days	0.49			Williams	1999 XV ₁₄₁
1999 XY ₁₄₁	14.8	0.15	20000226	332.67084	234.72960	270.88740	21.91780	0.2859760	2.4067796	23	1	64 days	0.46	M-v	4	Williams	1999 XY ₁₄₁
1999 XZ ₁₄₁	15.5	0.15	20000226	70.04387	114.45684	272.29674	19.14355	0.0641599	1.9013333	27	1	65 days	0.40	M-v	4	Williams	1999 XZ ₁₄₁
1999 XB ₁₄₂	16.0	0.15	19991208	339.28431	182.98928	276.72314	17.09473	0.0980384	1.9258687	30	1	23 days	0.39			Williams	1999 XB ₁₄₂
1999 XC ₁₄₂	16.1	0.15	19991208	74.94947	283.58576	67.45009	23.86200	0.0914418	1.9768994	22	1	21 days	0.42			Williams	1999 XC ₁₄₂
1999 XG ₁₄₂	13.7	0.15	19991228	24.11069	341.80751	77.75724	31.38912	0.1560424	2.6639713	21	1	40 days	0.50			Williams	1999 XG ₁₄₂
1999 XH ₁₄₂	13.9	0.15	19991208	89.20405	62.37708	275.39711	32.30129	0.1598037	2.7462459	22	1	25 days	0.43			Williams	1999 XH ₁₄₂

1999 XK ₁₄₂	14.9	0.15	19991208	74.25341	21.46668	311.92405	9.31064	0.3365488	2.2584570	22	1	21 days	0.31		Williams	1999 XK ₁₄₂
1999 XL ₁₄₂	14.7	0.15	19991208	265.11642	290.04542	279.76578	35.12007	0.2672865	2.2498891	13	1	3 days	0.54	E	Williams	1999 XL ₁₄₂
1999 XM ₁₄₂	15.7	0.15	19991228	276.59591	113.12273	75.02452	23.34389	0.0608061	1.9055243	37	1	40 days	0.54		Williams	1999 XM ₁₄₂
1999 XN ₁₄₂	16.6	0.15	19991208	42.57248	110.61002	285.77605	21.53328	0.0809553	1.8721765	33	1	23 days	0.49		Williams	1999 XN ₁₄₂
1999 XO ₁₄₂	15.3	0.15	19991208	326.30996	63.89914	79.39378	31.11724	0.2047857	2.5965316	26	1	19 days	0.40		Williams	1999 XO ₁₄₂
1999 XQ ₁₄₂	16.0	0.15	19991208	334.90674	200.56219	280.28054	23.60514	0.1501397	2.3897504	14	1	27 days	0.46		Williams	1999 XQ ₁₄₂
1999 XT ₁₄₂	13.5	0.15	19991208	304.56981	217.79143	286.62159	30.04981	0.0440060	2.8005768	20	1	26 days	0.46		Williams	1999 XT ₁₄₂
1999 XV ₁₄₂	15.1	0.15	19991208	303.87626	234.38002	288.17417	23.40013	0.1988590	2.3150018	19	1	21 days	0.40		Williams	1999 XV ₁₄₂
1999 XA ₁₄₃	16.3	0.15	20000226	345.68147	103.92326	116.84112	38.51999	0.5820571	1.8433240	76	1	35 days	0.39	M-v 5	Williams	1999 XA ₁₄₃
1999 XB ₁₄₃	13.0	0.15	20000226	348.55281	20.44395	65.87959	13.01964	0.3317990	3.2051348	53	1	118 days	0.51	M-v 4	Williams	1999 XB ₁₄₃
1999 XC ₁₄₃	14.0	0.15	20000226	5.10614	337.61676	85.61234	4.85780	0.1747501	2.4830807	39	1	122 days	0.54	M-v 4	Williams	1999 XC ₁₄₃
1999 XK ₁₄₃	12.6	0.15	20000226	123.25508	212.78366	103.78681	17.90913	0.0859615	2.8958618	36	1	67 days	0.50	M-v 4	Williams	1999 XK ₁₄₃
1999 XM ₁₄₃	16.0	0.15	19991208	354.16345	18.37195	80.44399	35.77396	0.2031443	2.5578500	16	1	18 days	0.43		Williams	1999 XM ₁₄₃
1999 XO ₁₄₃	15.0	0.15	19991228	358.10299	258.99580	231.88630	8.67730	0.1871981	2.2321086	16	1	28 days	0.60		Williams	1999 XO ₁₄₃
1999 XP ₁₄₃	17.4	0.15	19991118	60.92637	282.14382	64.38702	26.27565	0.1444149	1.8499589	25	1	59 days	0.50		Williams	1999 XP ₁₄₃
1999 XQ ₁₄₃	15.0	0.15	20000226	274.38667	287.68146	269.96191	19.05816	0.0508179	1.9240822	25	1	64 days	0.35	M-v 5	Williams	1999 XQ ₁₄₃
1999 XS ₁₄₃	9.6	0.15	19991208	56.33444	93.17364	306.90423	22.03730	0.0638924	5.1975764	38	1	30 days	0.44		Williams	1999 XS ₁₄₃
1999 XT ₁₄₃	17.2	0.15	19991208	62.61207	256.59510	100.71863	2.74407	0.3614370	2.2077328	21	1	23 days	0.56		Williams	1999 XT ₁₄₃
1999 XU ₁₄₃	15.0	0.15	19991208	147.54026	210.30127	100.03972	5.49561	0.1787110	2.1713734	26	1	28 days	0.65		Williams	1999 XU ₁₄₃
1999 XW ₁₄₃	15.4	0.15	19991208	71.65992	76.09218	281.00140	4.37366	0.2217775	2.3981561	31	1	29 days	0.51		Williams	1999 XW ₁₄₃
1999 XX ₁₄₃	8.5	0.15	19991208	202.22483	182.01160	104.68573	7.32419	0.4923248	16.7304547	7	1	28 days	0.31	E	Marsden	1999 XX ₁₄₃
1999 XY ₁₄₃	6.2	0.15	19991208	0.00000	182.29264	254.97895	5.78938	0.0000000	43.2492837	5	1	1 days	0.24	E	Marsden	1999 XY ₁₄₃
1999 XA ₁₄₄	15.7	0.15	19991208	257.55339	140.33017	39.25946	7.48914	0.0608817	2.3405906	28	1	51 days	0.76		Williams	1999 XA ₁₄₄
1999 XE ₁₄₄	13.7	0.15	20000226	62.62887	240.20306	139.52219	3.38495	0.1365100	2.6275952	36	1	63 days	0.48	M-v 4	Williams	1999 XE ₁₄₄
1999 XG ₁₄₄	13.5	0.15	19991208	72.18929	304.08645	76.67292	22.80936	0.0742671	2.6342050	30	1	39 days	0.64		Williams	1999 XG ₁₄₄
1999 XJ ₁₄₄	13.1	0.15	19991208	46.65617	329.22198	66.35743	13.53102	0.1814636	2.7141183	20	1	21 days	0.51		Williams	1999 XJ ₁₄₄
1999 XL ₁₄₄	14.6	0.15	20000226	43.86841	67.55066	2.41188	7.89645	0.1189108	2.3703371	34	1	106 days	0.60	M-v 4	Williams	1999 XL ₁₄₄
1999 XM ₁₄₄	12.9	0.15	19991208	310.84670	99.70246	72.87176	16.01255	0.2123610	2.7984631	24	1	30 days	0.50		Williams	1999 XM ₁₄₄
1999 XN ₁₄₄	14.7	0.15	20000226	304.84404	122.57716	49.91031	5.68023	0.1880703	2.5487059	34	1	61 days	0.47	M-v 5	Williams	1999 XN ₁₄₄
1999 XO ₁₄₄	14.1	0.15	19991208	295.36545	238.71622	270.34603	13.64308	0.0809023	3.1835104	23	1	49 days	0.63		Nakano	1999 XO ₁₄₄
1999 XR ₁₄₄	15.7	0.15	19991208	10.46554	116.17020	306.85271	4.08688	0.1145745	2.2652896	33	1	49 days	0.54		Williams	1999 XR ₁₄₄
1999 XT ₁₄₄	13.4	0.15	19991208	25.11528	329.42493	104.74345	18.15064	0.0690128	3.1788654	17	1	28 days	0.74		Williams	1999 XT ₁₄₄
1999 XA ₁₄₅	15.5	0.15	20000226	171.86909	18.83672	230.75072	3.49016	0.2159791	2.6055425	20	1	68 days	0.36	M-v 6	Williams	1999 XA ₁₄₅
1999 XB ₁₄₅	16.4	0.15	19991118	57.74526	104.90854	232.24863	6.03049	0.1340331	2.6832704	25	1	34 days	0.36		Williams	1999 XB ₁₄₅
1999 XC ₁₄₅	16.3	0.15	19991118	38.41627	131.14009	232.01127	7.46755	0.0883987	3.1303501	20	1	33 days	0.41		Williams	1999 XC ₁₄₅
1999 XE ₁₄₅	15.1	0.15	19991118	65.54110	103.55817	230.68673	8.84210	0.0845106	2.9897096	20	1	34 days	0.32		Williams	1999 XE ₁₄₅
1999 XK ₁₄₅	15.5	0.15	19991118	140.79007	34.40879	228.13480	5.70266	0.1179508	2.4796770	15	1	34 days	0.23		Williams	1999 XK ₁₄₅
1999 XL ₁₄₅	15.9	0.15	19991118	123.33726	197.92302	79.95341	2.26735	0.1188851	2.5183687	15	1	34 days	0.28		Williams	1999 XL ₁₄₅
1999 XV ₁₄₅	17.6	0.15	19991118	286.44217	81.59618	65.65469	10.26039	0.1401280	2.7043913	12	1	38 days	0.24		Williams	1999 XV ₁₄₅
1999 XD ₁₄₆	15.8	0.15	19991118	4.41735	176.90907	235.26269	4.43232	0.1577284	3.2036365	15	1	34 days	0.32		Williams	1999 XD ₁₄₆
1999 XF ₁₄₆	17.2	0.15	19991118	307.42798	255.13482	228.54596	1.86206	0.1259184	2.3797787	12	1	34 days	0.43		Williams	1999 XF ₁₄₆
1999 XN ₁₄₆	15.2	0.15	19991208	283.53374	70.50507	77.44220	3.18018	0.0707143	2.9328982	30	1	57 days	0.55		Williams	1999 XN ₁₄₆
1999 XB ₁₄₇	15.2	0.15	19991118	178.36706	357.89267	240.97232	7.19709	0.1548621	2.5458857	31	1	40 days	0.63		Williams	1999 XB ₁₄₇
1999 XC ₁₄₇	16.2	0.15	19991118	102.62248	57.06338	240.45970	1.87606	0.1667021	2.3816972	15	1	34 days	0.40		Williams	1999 XC ₁₄₇
1999 XN ₁₄₇	16.2	0.15	19991118	152.90684	172.67767	86.15528	0.77127	0.1490859	2.4089491	11	1	34 days	0.26		Williams	1999 XN ₁₄₇
1999 XS ₁₄₇	16.3	0.15	19991118	215.41923	140.77196	69.18326	3.43837	0.1136464	2.3921731	15	1	34 days	0.44		Williams	1999 XS ₁₄₇
1999 XF ₁₄₈	16.4	0.15	19991118	321.09724	23.65998	83.49186	1.93038	0.1136083	2.8908063	14	1	34 days	0.31		Williams	1999 XF ₁₄₈
1999 XW ₁₄₈	17.6	0.15	19991208	247.61000	112.33336	74.08171	6.15796	0.0758337	2.1972909	12	1	34 days	0.32		Williams	1999 XW ₁₄₈
1999 XZ ₁₄₈	16.6	0.15	19991118	246.78083	291.22487	248.01129	2.94570	0.0822179	2.3304614	15	1	34 days	0.28		Williams	1999 XZ ₁₄₈
1999 XA ₁₄₉	16.0	0.15	19991118	85.77207	267.89826	56.43301	2.83351	0.0644385	2.8670933	16	1	34 days	0.27		Williams	1999 XA ₁₄₉
1999 XH ₁₄₉	16.3	0.15	19991208	299.42902	246.55478	242.87011	3.73808	0.0558075	2.9003663	21	1	57 days	0.54		Williams	1999 XH ₁₄₉
1999 XB ₁₅₀	17.8	0.15	19991118	3.98356	177.14347	237.14986	1.94610	0.1766074	2.8087009	12	1	34 days	0.41		Williams	1999 XB ₁₅₀
1999 XC ₁₅₀	16.2	0.15	19991118	130.77120	36.40298	240.79325	6.84138	0.1747406	2.6085536	13	1	34 days	0.34		Williams	1999 XC ₁₅₀

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1999 XZ ₁₅₀	14.2	0.15	20000226	17.01644	336.37966	64.33842	14.92946	0.2828308	2.6546781	38	1	119 days	0.57	M-v	4	Williams	1999 XZ ₁₅₀
1999 XD ₁₅₁	14.6	0.15	20000226	9.69324	331.81626	79.09650	11.05472	0.1814093	2.7445146	38	1	116 days	0.67	M-v	4	Williams	1999 XD ₁₅₁
1999 XM ₁₅₁	15.3	0.15	19991208	246.29307	300.89387	289.88558	8.55130	0.1426220	2.6147601	14	1	28 days	0.44			Williams	1999 XM ₁₅₁
1999 XO ₁₅₁	16.9	0.15	19991208	313.55091	215.95976	306.26145	2.93338	0.1509862	2.6267419	15	1	27 days	0.45			Williams	1999 XO ₁₅₁
1999 XS ₁₅₁	14.9	0.15	19991208	96.90854	39.34277	314.87810	3.88942	0.1557698	3.1099443	12	1	32 days	0.37			Williams	1999 XS ₁₅₁
1999 XU ₁₅₁	16.3	0.15	19991208	45.59495	102.15225	305.58518	4.83743	0.1198420	2.6380803	12	1	37 days	0.20			Williams	1999 XU ₁₅₁
1999 XV ₁₅₁	16.0	0.15	19991208	221.31478	309.30816	300.02417	6.90806	0.0842718	2.3496322	12	1	35 days	0.24			Williams	1999 XV ₁₅₁
1999 XA ₁₅₂	17.6	0.15	19991228	18.15800	101.10513	242.83434	0.93666	0.3327694	2.2073941	17	1	41 days	0.28			Williams	1999 XA ₁₅₂
1999 XC ₁₅₂	16.6	0.15	19991118	279.78950	96.96236	59.58015	8.61471	0.1569795	2.7800569	14	1	35 days	0.44			Williams	1999 XC ₁₅₂
1999 XD ₁₅₂	17.6	0.15	19991118	333.38808	36.35840	59.39755	3.05860	0.1736205	2.6110227	16	1	35 days	0.35			Williams	1999 XD ₁₅₂
1999 XO ₁₅₂	15.2	0.15	19991208	22.99879	269.34920	94.17530	8.58863	0.2148637	2.2638598	15	1	28 days	0.61			Williams	1999 XO ₁₅₂
1999 XP ₁₅₂	13.9	0.15	20000226	356.65296	354.88345	67.49416	14.59673	0.1280453	2.5963922	34	1	119 days	0.62	M-v	4	Williams	1999 XP ₁₅₂
1999 XQ ₁₅₂	13.9	0.15	20000226	322.68020	327.45821	149.21348	6.08003	0.0556090	2.6520879	26	1	63 days	0.61	M-v	5	Williams	1999 XQ ₁₅₂
1999 XS ₁₅₂	13.6	0.15	19991208	279.00264	5.35912	151.87092	9.68876	0.1189583	2.8525446	11	1	10 days	0.98			Williams	1999 XS ₁₅₂
1999 XT ₁₅₂	15.8	0.15	19991208	322.36746	314.97602	160.48870	3.57068	0.1368702	2.3252079	18	1	11 days	0.75			Williams	1999 XT ₁₅₂
1999 XY ₁₅₂	15.0	0.15	19991208	339.54819	326.31367	144.97707	6.47431	0.1936166	3.0855304	19	1	31 days	0.37			Williams	1999 XY ₁₅₂
1999 XA ₁₅₃	15.4	0.15	19991208	280.22814	10.19274	166.07535	5.16190	0.1341586	2.3147568	17	1	32 days	2.08			Williams	1999 XA ₁₅₃
1999 XC ₁₅₃	16.4	0.15	19991208	39.25533	146.63323	235.54968	4.72579	0.2059781	2.2730608	16	1	30 days	0.53			Williams	1999 XC ₁₅₃
1999 XD ₁₅₃	14.7	0.15	19991208	357.44892	275.97199	163.50970	7.66750	0.1323606	3.0688375	11	1	35 days	0.40			Williams	1999 XD ₁₅₃
1999 XK ₁₅₃	13.9	0.15	19991208	11.19057	1.70088	59.92553	11.01355	0.0710364	3.0830647	36	1	51 days	0.51			Williams	1999 XK ₁₅₃
1999 XO ₁₅₃	14.4	0.15	19991208	311.97951	258.84137	268.74627	12.83936	0.1751298	2.5487332	19	1	31 days	0.25			Williams	1999 XO ₁₅₃
1999 XS ₁₅₃	13.6	0.15	19991208	55.12183	271.74477	122.60927	13.43288	0.1748787	3.0938263	20	1	32 days	0.62			Williams	1999 XS ₁₅₃
1999 XZ ₁₅₃	15.1	0.15	19991208	52.70383	131.18563	235.40830	13.71202	0.1930383	2.6104494	19	1	34 days	0.50			Williams	1999 XZ ₁₅₃
1999 XA ₁₅₄	12.5	0.15	20000226	137.23225	197.07760	113.96625	11.36595	0.0649486	2.9967794	28	1	63 days	0.32	M-v	4	Williams	1999 XA ₁₅₄
1999 XD ₁₅₄	13.9	0.15	19991208	320.94080	299.11143	185.87338	3.52930	0.0300399	2.7943325	19	1	28 days	0.32			Williams	1999 XD ₁₅₄
1999 XG ₁₅₄	16.2	0.15	19991118	355.79584	209.36615	222.37870	4.49312	0.1298171	2.1685083	15	1	29 days	0.49			Williams	1999 XG ₁₅₄
1999 XM ₁₅₄	15.1	0.15	20000226	110.02818	230.94907	101.00107	6.84274	0.1382417	2.3164254	21	1	63 days	0.54	M-v	5	Williams	1999 XM ₁₅₄
1999 XO ₁₅₄	14.5	0.15	19991208	350.85523	2.32918	86.12890	18.77204	0.1743414	3.1166153	19	1	29 days	0.62			Williams	1999 XO ₁₅₄
1999 XQ ₁₅₄	16.2	0.15	19991208	337.63451	334.27533	132.94136	2.94989	0.1608547	2.4048980	9	1	8 days	0.53			Williams	1999 XQ ₁₅₄
1999 XR ₁₅₄	16.2	0.15	19991208	6.35485	316.45723	109.67987	4.54334	0.2136035	2.3273822	20	1	29 days	0.32			Williams	1999 XR ₁₅₄
1999 XT ₁₅₄	15.5	0.15	19991208	9.60427	325.56075	98.90614	7.50604	0.1033975	2.4007716	19	1	29 days	0.48			Williams	1999 XT ₁₅₄
1999 XX ₁₅₄	15.1	0.15	20000226	65.81872	210.18470	160.82953	2.58750	0.2107067	2.4590492	23	1	63 days	0.42	M-v	5	Williams	1999 XX ₁₅₄
1999 XZ ₁₅₄	14.8	0.15	19991208	301.92975	276.14836	242.50689	12.02206	0.2084013	2.6256560	19	1	29 days	0.47			Williams	1999 XZ ₁₅₄
1999 XD ₁₅₅	14.5	0.15	20000226	42.13741	153.60581	240.74410	9.55403	0.2272782	3.1348845	18	1	64 days	0.63	M-v	5	Williams	1999 XD ₁₅₅
1999 XE ₁₅₅	16.4	0.15	19991208	8.77719	180.36794	243.52269	6.87684	0.2344420	2.5497991	21	1	58 days	0.58			Williams	1999 XE ₁₅₅
1999 XG ₁₅₅	15.8	0.15	19991208	31.06792	279.17838	102.46501	4.86785	0.3007038	2.5816729	23	1	29 days	0.35			Williams	1999 XG ₁₅₅
1999 XN ₁₅₅	16.0	0.15	19991208	15.99159	189.68858	227.37848	4.99100	0.1235155	2.2712666	15	1	28 days	0.34			Williams	1999 XN ₁₅₅
1999 XP ₁₅₅	14.1	0.15	20000226	23.66617	187.95704	243.98089	14.35537	0.0715308	2.6816780	24	1	65 days	0.37	M-v	4	Williams	1999 XP ₁₅₅
1999 XT ₁₅₅	15.1	0.15	20000226	37.24908	162.79284	239.18655	7.26149	0.3215191	2.5576373	35	1	93 days	0.40	M-v	4	Williams	1999 XT ₁₅₅
1999 XU ₁₅₅	13.7	0.15	20000226	349.36882	319.29816	150.92976	3.54145	0.1006819	2.9984912	25	1	63 days	0.47	M-v	4	Williams	1999 XU ₁₅₅
1999 XW ₁₅₅	15.0	0.15	19991208	238.24398	105.27062	98.54508	9.08929	0.0370197	2.5339794	21	1	29 days	0.53			Williams	1999 XW ₁₅₅
1999 XX ₁₅₅	13.4	0.15	19991208	321.85321	237.35082	248.05152	16.64111	0.0944514	3.1633303	23	1	50 days	0.35			Williams	1999 XX ₁₅₅
1999 XY ₁₅₅	14.5	0.15	19991208	15.42774	219.08086	203.02650	4.31206	0.0592397	2.7771198	17	1	29 days	0.34			Williams	1999 XY ₁₅₅
1999 XZ ₁₅₅	15.7	0.15	19991208	39.95550	269.80441	102.93106	7.32983	0.2720391	2.5209120	22	1	49 days	0.32			Williams	1999 XZ ₁₅₅
1999 XA ₁₅₆	14.2	0.15	19991208	133.32380	185.17936	107.47933	8.06925	0.1951860	2.5839000	16	1	29 days	0.50			Williams	1999 XA ₁₅₆
1999 XB ₁₅₆	14.5	0.15	20000226	304.85898	282.61120	246.18269	11.94645	0.1371250	2.6460284	21	1	64 days	0.61	M-v	5	Williams	1999 XB ₁₅₆
1999 XC ₁₅₆	15.6	0.15	19991208	8.74478	178.68682	245.15524	8.44966	0.2577127	2.7759284	24	1	29 days	0.35			Williams	1999 XC ₁₅₆
1999 XD ₁₅₆	14.7	0.15	20000226	216.79455	147.18421	101.86087	6.98586	0.1081029	2.2103717	27	1	63 days	0.45	M-v	5	Williams	1999 XD ₁₅₆
1999 XE ₁₅₆	15.8	0.15	19991208	42.55715	143.75190	242.50040	7.06300	0.1207532	2.3532035	22	1	57 days	0.53			Williams	1999 XE ₁₅₆
1999 XF ₁₅₆	15.1	0.15	19991208	313.20648	307.62872	190.27346	3.05086	0.1160265	2.5458710	23	1	52 days	0.56			Williams	1999 XF ₁₅₆
1999 XG ₁₅₆	14.3	0.15	19991208	162.87670	50.93630	222.53296	5.03833	0.1630433	2.2758914	14	1	28 days	0.28			Williams	1999 XG ₁₅₆
1999 XH ₁₅₆	15.2	0.15	19991208	314.01875	343.05509	155.43040	2.81432	0.1324441	2.4095190	20	1	29 days	0.28			Williams	1999 XH ₁₅₆
1999 XL ₁₅₆	15.8	0.15	19991208	24.94273	276.30766	120.73260	4.53528	0.2555484	2.5891572	18	1	29 days	0.55			Williams	1999 XL ₁₅₆

1999 XQ ₁₅₆	14.9	0.15	19991208	157.13723	51.32507	228.36010	6.92062	0.1247937	2.2810005	10	1	28 days	0.37		Williams	1999 XQ ₁₅₆
1999 XS ₁₅₆	16.3	0.15	19991208	39.46050	220.30877	160.58420	2.51102	0.2251076	2.3373386	14	1	29 days	0.54		Williams	1999 XS ₁₅₆
1999 XT ₁₅₆	14.6	0.15	19991208	173.26796	153.65487	113.63794	5.14744	0.1254148	2.2495245	17	1	29 days	0.40		Williams	1999 XT ₁₅₆
1999 XV ₁₅₆	11.6	0.15	19991208	290.98902	32.06889	124.16410	6.07760	0.0273044	5.1955723	12	1	28 days	0.37		Williams	1999 XV ₁₅₆
1999 XW ₁₅₆	13.6	0.15	19991208	315.46980	244.61958	245.94084	9.38113	0.0319532	3.0732197	12	1	28 days	0.37		Williams	1999 XW ₁₅₆
1999 XY ₁₅₆	15.3	0.15	19991208	19.03490	302.20789	109.62288	4.89238	0.2187655	2.5945392	20	1	29 days	0.34		Williams	1999 XY ₁₅₆
1999 XZ ₁₅₆	14.1	0.15	19991208	51.28201	183.85471	200.07109	3.74370	0.0667193	2.2848675	18	1	29 days	0.29		Williams	1999 XZ ₁₅₆
1999 XB ₁₅₇	15.8	0.15	19991208	332.23919	244.28782	231.14017	5.47552	0.0987985	2.2607762	26	1	50 days	0.47		Williams	1999 XB ₁₅₇
1999 XD ₁₅₇	15.4	0.15	19991208	53.45676	253.25258	126.73536	3.96962	0.0952736	2.3384304	16	1	29 days	0.44		Williams	1999 XD ₁₅₇
1999 XN ₁₅₇	16.1	0.15	19991208	5.45780	269.26796	167.27906	3.06147	0.1141010	2.2375060	17	1	29 days	0.45		Williams	1999 XN ₁₅₇
1999 XO ₁₅₇	14.3	0.15	19991208	322.30312	278.73527	212.02866	4.57004	0.0886352	3.1483947	16	1	29 days	0.56		Williams	1999 XO ₁₅₇
1999 XP ₁₅₇	15.2	0.15	19991208	38.37609	203.15253	186.84297	3.50513	0.1940458	2.8014289	16	1	29 days	0.45		Williams	1999 XP ₁₅₇
1999 XQ ₁₅₇	15.6	0.15	19991208	306.52883	270.62076	231.82126	6.06637	0.0447478	2.2698002	18	1	29 days	0.40		Williams	1999 XQ ₁₅₇
1999 XW ₁₅₇	14.2	0.15	20000226	49.08716	307.28860	97.68702	14.29196	0.1470115	2.5723327	27	1	68 days	0.27	M-v 5	Williams	1999 XW ₁₅₇
1999 XY ₁₅₇	14.1	0.15	20000226	58.66633	148.25646	239.87889	8.48610	0.1783479	2.8574754	22	1	64 days	0.47	M-v 5	Williams	1999 XY ₁₅₇
1999 XC ₁₅₈	12.7	0.15	19991208	129.23334	207.42120	104.99738	11.33190	0.0843780	3.0014398	16	1	29 days	0.25		Williams	1999 XC ₁₅₈
1999 XD ₁₅₈	13.4	0.15	19991208	54.41835	245.85803	128.05991	4.10251	0.1864904	2.7497672	18	1	29 days	0.32		Williams	1999 XD ₁₅₈
1999 XE ₁₅₈	14.7	0.15	19991208	293.59743	296.17168	235.24599	4.51341	0.1559820	2.2911878	15	1	29 days	0.45		Williams	1999 XE ₁₅₈
1999 XQ ₁₅₈	16.5	0.15	19991208	6.46787	282.54652	148.36928	2.79769	0.1470068	2.2296850	15	1	29 days	0.52		Williams	1999 XQ ₁₅₈
1999 XC ₁₅₉	14.1	0.15	19991208	337.61431	9.21866	104.05429	10.41932	0.0665450	2.8582749	16	1	28 days	0.40		Williams	1999 XC ₁₅₉
1999 XE ₁₅₉	16.4	0.15	19991208	32.67819	262.51902	130.60081	3.21255	0.1804253	2.3435602	18	1	29 days	0.65		Williams	1999 XE ₁₅₉
1999 XH ₁₅₉	14.5	0.15	19991208	337.89983	11.46030	104.60947	12.80049	0.1192453	2.6700855	17	1	29 days	0.40		Williams	1999 XH ₁₅₉
1999 XJ ₁₅₉	14.4	0.15	20000226	69.25229	276.90233	114.18746	7.23884	0.1070296	2.2863848	22	1	63 days	0.43	M-v 6	Williams	1999 XJ ₁₅₉
1999 XK ₁₅₉	14.4	0.15	19991208	70.30951	120.64694	234.24922	6.26155	0.2088704	2.5736791	17	1	30 days	0.59		Williams	1999 XK ₁₅₉
1999 XL ₁₅₉	14.9	0.15	19991208	313.62825	303.67343	208.90911	3.20081	0.1869656	2.5277972	16	1	29 days	0.51		Williams	1999 XL ₁₅₉
1999 XN ₁₅₉	15.7	0.15	19991208	16.29979	246.61495	176.68519	2.42114	0.1794468	2.3706258	17	1	29 days	0.31		Williams	1999 XN ₁₅₉
1999 XO ₁₅₉	14.0	0.15	20000226	67.18211	133.37814	257.43279	13.93686	0.1124826	2.5749111	22	1	63 days	0.34	M-v 5	Williams	1999 XO ₁₅₉
1999 XV ₁₅₉	14.6	0.15	19991208	4.93667	337.42444	104.47949	12.53304	0.1589378	2.6125689	18	1	29 days	0.29		Williams	1999 XV ₁₅₉
1999 XW ₁₅₉	15.3	0.15	19991208	26.67405	242.94934	169.37527	3.22429	0.1498349	2.3092447	18	1	29 days	0.69		Williams	1999 XW ₁₅₉
1999 XZ ₁₅₉	15.4	0.15	20000226	65.33934	257.49067	139.05718	2.71886	0.1342663	2.1616114	33	1	66 days	0.40	M-v 5	Williams	1999 XZ ₁₅₉
1999 XA ₁₆₀	10.9	0.15	19991208	350.57402	2.92295	100.94257	20.92876	0.1103066	3.1444415	16	1	29 days	0.47		Williams	1999 XA ₁₆₀
1999 XC ₁₆₀	13.4	0.15	19991208	267.71373	301.41240	257.52205	13.30723	0.1165322	2.6145826	18	1	29 days	0.27		Williams	1999 XC ₁₆₀
1999 XH ₁₆₀	14.2	0.15	19991208	348.08856	220.97515	245.44911	6.17438	0.0935003	2.4430212	22	1	32 days	0.54		Williams	1999 XH ₁₆₀
1999 XJ ₁₆₀	15.0	0.15	19991208	345.44294	252.72002	216.29228	3.27453	0.1015769	2.2806725	18	1	29 days	0.46		Williams	1999 XJ ₁₆₀
1999 XN ₁₆₀	14.7	0.15	19991208	294.21081	310.97914	219.92480	3.41627	0.0918777	2.5130192	18	1	29 days	0.42		Williams	1999 XN ₁₆₀
1999 XP ₁₆₀	15.1	0.15	19991208	26.45170	282.18501	129.77312	4.88664	0.2249853	2.5649170	16	1	29 days	0.25		Williams	1999 XP ₁₆₀
1999 XQ ₁₆₀	15.8	0.15	19991208	12.11330	195.80472	242.22587	4.28786	0.1111138	2.2585693	17	1	29 days	0.37		Williams	1999 XQ ₁₆₀
1999 XU ₁₆₀	16.1	0.15	19991208	353.06938	206.28838	260.54571	7.43714	0.2292735	2.3969185	18	1	30 days	0.47		Williams	1999 XU ₁₆₀
1999 XV ₁₆₀	14.6	0.15	19991208	1.35939	193.70738	265.26217	9.34430	0.1951065	3.0950662	24	1	35 days	0.60		Williams	1999 XV ₁₆₀
1999 XZ ₁₆₀	14.1	0.15	19991208	184.09423	163.95612	105.10332	13.07956	0.1876464	2.3395484	14	1	30 days	0.30		Williams	1999 XZ ₁₆₀
1999 XB ₁₆₁	14.3	0.15	19991208	17.51093	3.92674	38.88787	9.66925	0.2426425	2.7767767	24	1	21 days	0.57		Williams	1999 XB ₁₆₁
1999 XC ₁₆₁	16.4	0.15	19991208	47.38513	343.63210	30.01624	7.70758	0.1166710	2.3555725	30	1	28 days	0.50		Williams	1999 XC ₁₆₁
1999 XD ₁₆₁	14.3	0.15	19991208	196.42902	232.37182	6.53652	6.42207	0.1506270	2.2553200	16	1	4 days	0.56	E	Williams	1999 XD ₁₆₁
1999 XE ₁₆₁	14.7	0.15	19991208	26.38081	96.96653	325.64400	10.69828	0.1706366	3.1435819	23	1	2 days	0.76	E	Williams	1999 XE ₁₆₁
1999 XH ₁₆₂	11.4	0.15	19991208	351.60407	79.09630	24.33917	15.74289	0.0864765	5.2790874	14	1	17 days	0.56		Williams	1999 XH ₁₆₂
1999 XJ ₁₆₂	14.7	0.15	20000226	27.09826	68.59525	8.47780	10.96681	0.2453025	2.6445651	29	1	81 days	0.40	M-v 4	Williams	1999 XJ ₁₆₂
1999 XK ₁₆₂	15.7	0.15	19991228	220.45272	287.65518	312.71286	18.38395	0.0534194	1.9430668	33	1	47 days	0.57		Williams	1999 XK ₁₆₂
1999 XM ₁₆₂	16.0	0.15	19991208	12.40211	23.08705	50.03786	14.13162	0.2651133	2.7381428	13	1	3 days	0.52	E	Williams	1999 XM ₁₆₂
1999 XL ₁₆₃	16.2	0.15	19991208	141.37851	31.33259	288.18760	1.03566	0.0857567	2.6675259	12	1	33 days	0.22		Williams	1999 XL ₁₆₃
1999 XO ₁₆₃	15.6	0.15	19991208	17.48245	336.35838	100.68047	2.81182	0.1863362	2.6545734	23	1	34 days	0.26		Williams	1999 XO ₁₆₃
1999 XU ₁₆₃	13.8	0.15	19991208	332.85993	41.23318	108.18412	17.87609	0.0871941	3.2322846	28	1	27 days	0.52		Williams	1999 XU ₁₆₃
1999 XV ₁₆₃	13.4	0.15	19991208	155.08930	214.63526	102.77843	13.26503	0.1077987	2.7282464	26	1	29 days	0.40		Williams	1999 XV ₁₆₃
1999 XX ₁₆₃	13.2	0.15	20000226	81.97307	284.92517	41.98931	17.81427	0.1470733	3.0879021	50	1	96 days	0.51	M-v 4	Williams	1999 XX ₁₆₃

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1999 XC ₁₆₄	16.2	0.15	19991208	10.74669	252.88837	173.29952	2.52201	0.0804017	2.2369236	16	1	29 days	0.53	Williams	1999 XC ₁₆₄
1999 XF ₁₆₄	12.7	0.15	19991208	225.95280	158.00034	126.02603	24.01407	0.2011934	2.3994886	15	1	29 days	0.58	Williams	1999 XF ₁₆₄
1999 XG ₁₆₄	14.2	0.15	19991208	22.10040	339.83493	97.36044	14.95133	0.1590584	2.6939228	24	1	54 days	0.28	Williams	1999 XG ₁₆₄
1999 XH ₁₆₄	14.4	0.15	19991208	42.28257	311.66253	95.01160	10.97403	0.2086343	2.7522151	27	1	54 days	0.36	Williams	1999 XH ₁₆₄
1999 XK ₁₆₄	14.9	0.15	19991208	84.93725	285.17841	88.58489	6.61013	0.0724944	2.1965032	25	1	54 days	0.64	Williams	1999 XK ₁₆₄
1999 XM ₁₆₄	14.1	0.15	19991208	313.51700	76.49965	101.19266	17.51588	0.1845251	3.1108037	27	1	54 days	0.48	Williams	1999 XM ₁₆₄
1999 XN ₁₆₄	12.9	0.15	19991208	116.75640	245.11079	98.27340	10.06140	0.1688123	2.7662817	28	1	28 days	0.52	Williams	1999 XN ₁₆₄
1999 XO ₁₆₄	14.3	0.15	19991208	141.17193	231.39267	90.16239	8.32448	0.1929302	2.2088956	40	1	30 days	0.63	Williams	1999 XO ₁₆₄
1999 XP ₁₆₄	12.4	0.15	19991208	210.35841	175.02369	101.63071	15.39342	0.1271669	2.9849115	24	1	29 days	0.42	Williams	1999 XP ₁₆₄
1999 XQ ₁₆₄	15.8	0.15	19991208	331.90378	197.98839	300.79421	17.82360	0.0734148	1.9300247	27	1	34 days	0.56	Williams	1999 XQ ₁₆₄
1999 XV ₁₆₄	14.9	0.15	19991208	333.78575	201.09740	309.37485	8.00790	0.2042741	2.4315866	26	1	34 days	0.46	Williams	1999 XV ₁₆₄
1999 XV ₁₆₄	13.7	0.15	19991208	19.85223	349.89870	87.98372	5.98879	0.2814917	2.7696081	25	1	29 days	0.47	Williams	1999 XV ₁₆₄
1999 XX ₁₆₄	15.0	0.15	19991208	333.99692	201.16612	313.28240	10.54795	0.2025024	2.5654805	23	1	33 days	0.49	Williams	1999 XX ₁₆₄
1999 XC ₁₆₅	14.5	0.15	19991208	20.14208	98.11027	351.22486	7.13426	0.2057225	2.8087644	25	1	29 days	0.49	Williams	1999 XC ₁₆₅
1999 XR ₁₆₅	15.2	0.15	19991208	264.50197	271.68904	299.01555	17.53534	0.0555050	1.9178909	23	1	32 days	0.69	Williams	1999 XR ₁₆₅
1999 XT ₁₆₅	14.9	0.15	19991208	9.23984	9.99015	92.83710	4.71027	0.1890368	2.6863012	42	1	40 days	0.62	Williams	1999 XT ₁₆₅
1999 XA ₁₆₆	13.4	0.15	19991208	108.51727	8.42687	280.73107	12.49027	0.1532878	2.6827527	22	1	33 days	0.72	Williams	1999 XA ₁₆₆
1999 XD ₁₆₆	14.5	0.15	19991208	336.75906	63.73109	28.09600	12.40263	0.1855857	2.6522831	15	1	31 days	0.38	Williams	1999 XD ₁₆₆
1999 XG ₁₆₆	13.2	0.15	19991208	66.76809	311.63666	21.51416	11.43768	0.1534918	2.9143807	10	1	8 days	0.55	Williams	1999 XG ₁₆₆
1999 XJ ₁₆₆	14.0	0.15	20000226	24.18839	135.76086	271.64723	14.75473	0.2344494	2.8522024	33	1	64 days	0.38	M-v 3 Williams	1999 XJ ₁₆₆
1999 XL ₁₆₆	16.2	0.15	19991208	2.55525	143.50873	275.95903	9.10447	0.2713253	2.4027316	27	1	30 days	0.94	Williams	1999 XL ₁₆₆
1999 XR ₁₆₆	13.5	0.15	19991208	307.29711	188.65767	294.25621	8.72589	0.0710563	3.2121467	11	1	10 days	0.69	Williams	1999 XR ₁₆₆
1999 XV ₁₆₆	15.3	0.15	19991208	47.06276	82.39900	287.10696	7.17611	0.1057963	2.2516296	26	1	30 days	0.57	Williams	1999 XV ₁₆₆
1999 XX ₁₆₆	13.9	0.15	19991208	49.57733	317.56449	47.13179	12.24310	0.1273215	2.7457762	11	1	21 days	0.52	Williams	1999 XX ₁₆₆
1999 XZ ₁₆₆	15.3	0.15	19991208	356.46756	121.91912	310.65231	5.77708	0.1248624	2.2818113	30	1	28 days	0.44	Williams	1999 XZ ₁₆₆
1999 XA ₁₆₇	13.8	0.15	20000226	355.76802	52.18716	49.51040	11.77258	0.1979152	2.6310799	39	1	92 days	0.59	M-v 4 Williams	1999 XA ₁₆₇
1999 XG ₁₆₇	14.7	0.15	20000226	333.77692	87.80077	42.51771	5.74431	0.1109401	2.2754235	34	1	90 days	0.34	M-v 4 Williams	1999 XG ₁₆₇
1999 XM ₁₆₇	15.0	0.15	20000226	51.95402	341.70248	45.44454	5.67733	0.1873507	2.4351088	29	1	62 days	0.35	M-v 4 Williams	1999 XM ₁₆₇
1999 XW ₁₆₇	10.6	0.15	19991208	313.03126	204.94486	276.37632	12.64158	0.0244492	5.1465722	18	1	25 days	0.51	Williams	1999 XW ₁₆₇
1999 XY ₁₆₇	13.9	0.15	19991208	312.93227	96.34760	36.40917	5.90838	0.1143586	2.6773350	24	1	25 days	0.47	Williams	1999 XY ₁₆₇
1999 XZ ₁₆₇	14.8	0.15	20000226	332.68028	94.05938	41.83914	5.10522	0.1267871	2.4115810	38	1	62 days	0.39	M-v 4 Williams	1999 XZ ₁₆₇
1999 XD ₁₆₈	13.7	0.15	20000226	104.43786	263.35931	64.29388	14.00167	0.1975243	2.7206107	32	1	62 days	0.53	M-v 5 Williams	1999 XD ₁₆₈
1999 XG ₁₆₈	15.6	0.15	19991208	29.57238	30.74449	359.36451	2.09584	0.2394717	2.3600940	25	1	51 days	0.41	Williams	1999 XG ₁₆₈
1999 XJ ₁₆₈	16.1	0.15	19991118	10.23099	40.57803	0.45227	3.40791	0.2256879	2.5819656	17	1	42 days	0.35	Williams	1999 XJ ₁₆₈
1999 XU ₁₆₈	13.4	0.15	20000226	37.00301	345.57991	52.18489	12.62753	0.1892386	3.1755423	28	1	62 days	0.43	M-v 4 Williams	1999 XU ₁₆₈
1999 XV ₁₆₈	13.7	0.15	19991208	4.32044	31.57733	35.44224	6.80693	0.1562222	3.1941390	19	1	49 days	0.64	Williams	1999 XV ₁₆₈
1999 XL ₁₆₉	13.9	0.15	19991208	324.90421	112.37049	17.91558	4.57066	0.1116493	3.1481496	14	1	25 days	0.37	Williams	1999 XL ₁₆₉
1999 XR ₁₆₉	13.6	0.15	19991208	332.71301	199.04671	281.95901	11.23592	0.0913067	2.4529963	22	1	27 days	0.68	Williams	1999 XR ₁₆₉
1999 XV ₁₆₉	15.9	0.15	19991208	44.72054	327.10094	61.61680	4.72408	0.1810667	2.1668736	22	1	52 days	0.71	Williams	1999 XV ₁₆₉
1999 XM ₁₇₀	15.3	0.15	19991208	348.24185	99.72148	9.79033	3.22831	0.2085506	2.5941846	25	1	29 days	0.59	Williams	1999 XM ₁₇₀
1999 XT ₁₇₀	13.3	0.15	19991208	178.74955	202.14589	70.05294	10.14122	0.0655560	2.7984988	23	1	25 days	0.42	Williams	1999 XT ₁₇₀
1999 XU ₁₇₀	14.2	0.15	20000226	33.06384	336.20422	80.37838	14.37543	0.2685119	3.1776736	24	1	62 days	0.47	M-v 4 Williams	1999 XU ₁₇₀
1999 XV ₁₇₀	12.3	0.15	20000226	37.51084	357.92225	67.56179	8.62372	0.0647781	3.1603855	23	1	62 days	0.42	M-v 5 Williams	1999 XV ₁₇₀
1999 XW ₁₇₀	12.2	0.15	19991208	129.74211	1.38604	309.38948	7.26341	0.1436693	2.7802122	24	1	25 days	0.61	Williams	1999 XW ₁₇₀
1999 XD ₁₇₁	15.1	0.15	19991208	44.45427	45.30608	339.12116	4.24738	0.2451657	2.6391087	21	1	29 days	0.57	Williams	1999 XD ₁₇₁
1999 XG ₁₇₁	16.0	0.15	19991208	30.61751	352.51662	56.56929	3.36026	0.1872009	2.3621920	23	1	25 days	0.78	Williams	1999 XG ₁₇₁
1999 XJ ₁₇₁	15.3	0.15	19991208	62.03583	43.34871	331.19609	2.60922	0.1661141	2.2947251	16	1	25 days	0.55	Williams	1999 XJ ₁₇₁
1999 XK ₁₇₁	15.9	0.15	19991208	26.92727	72.78863	341.95423	2.57751	0.1865666	2.3821112	13	1	24 days	0.56	Williams	1999 XK ₁₇₁
1999 XL ₁₇₁	15.5	0.15	19991208	55.48398	324.76963	48.18051	3.22109	0.2432218	2.3481940	28	1	31 days	0.50	Williams	1999 XL ₁₇₁
1999 XP ₁₇₁	14.2	0.15	19991208	42.09652	101.05205	294.44960	14.95206	0.2057023	3.1389893	16	1	25 days	0.63	Williams	1999 XP ₁₇₁
1999 XQ ₁₇₁	15.0	0.15	19991208	338.07790	201.62392	292.08662	13.24096	0.2856012	2.8273790	25	1	29 days	0.33	Williams	1999 XQ ₁₇₁
1999 XW ₁₇₁	13.8	0.15	19991208	65.01221	293.01523	75.99233	13.59138	0.1999930	2.5737218	23	1	57 days	0.49	Williams	1999 XW ₁₇₁
1999 XX ₁₇₁	14.2	0.15	19991208	83.00040	270.80195	78.39110	15.26955	0.2232222	2.5441824	17	1	29 days	0.53	Williams	1999 XX ₁₇₁

1999 XB ₁₇₂	15.1	0.15	19991208	87.60585	292.35773	58.61322	7.21008	0.1691545	2.3875139	23	1	36 days	0.40	Williams	1999 XB ₁₇₂
1999 XC ₁₇₂	15.5	0.15	19991208	49.51710	29.60061	5.71987	4.25812	0.1093156	2.2370327	16	1	29 days	0.40	Williams	1999 XC ₁₇₂
1999 XH ₁₇₂	16.5	0.15	19991208	25.10959	54.65121	358.44577	2.47431	0.2375881	2.3017257	28	1	29 days	0.58	Williams	1999 XH ₁₇₂
1999 XL ₁₇₂	14.0	0.15	19991208	45.48239	74.64398	329.96343	4.62558	0.0964899	2.5274070	23	1	32 days	0.45	Williams	1999 XL ₁₇₂
1999 XM ₁₇₂	13.6	0.15	19991208	339.07813	174.24562	309.73045	10.45120	0.0675826	3.0668636	33	1	36 days	0.53	Williams	1999 XM ₁₇₂
1999 XN ₁₇₂	14.5	0.15	19991208	319.79030	97.19801	63.10798	7.39968	0.2203405	3.1140471	24	1	53 days	0.37	Williams	1999 XN ₁₇₂
1999 XR ₁₇₂	13.7	0.15	19991208	349.13053	173.51929	300.44878	16.94467	0.1182512	3.2179050	30	1	29 days	0.45	Williams	1999 XR ₁₇₂
1999 XV ₁₇₂	12.9	0.15	19991208	36.72240	329.49433	87.98121	14.10821	0.1088999	3.1131174	32	1	36 days	0.53	Williams	1999 XV ₁₇₂
1999 XY ₁₇₂	13.0	0.15	19991208	10.56734	97.98159	349.17307	2.38884	0.0831153	2.3835047	32	1	29 days	0.52	Williams	1999 XY ₁₇₂
1999 XZ ₁₇₂	14.1	0.15	20000226	17.38164	153.04716	307.68809	8.30382	0.1172896	2.7864221	29	1	60 days	0.57	M-v 5 Williams	1999 XZ ₁₇₂
1999 XA ₁₇₃	15.5	0.15	19991208	359.09757	82.73747	15.39930	3.07255	0.1332555	2.1888877	25	1	49 days	0.45	Williams	1999 XA ₁₇₃
1999 XC ₁₇₃	14.9	0.15	19991208	353.44257	48.12610	59.08536	6.12397	0.0755813	2.3629787	23	1	32 days	0.41	Williams	1999 XC ₁₇₃
1999 XD ₁₇₃	14.5	0.15	19991208	20.17487	354.88953	73.63430	8.09920	0.1825183	2.3717877	24	1	32 days	0.38	Williams	1999 XD ₁₇₃
1999 XL ₁₇₃	15.9	0.15	19991208	49.99484	52.96598	343.24419	4.67631	0.1275740	2.2369568	25	1	32 days	0.49	Williams	1999 XL ₁₇₃
1999 XM ₁₇₃	15.7	0.15	19991208	5.22546	29.06591	61.86000	6.11985	0.1532656	2.2965854	29	1	25 days	0.37	Williams	1999 XM ₁₇₃
1999 XO ₁₇₃	15.0	0.15	19991208	96.88434	284.21253	62.71023	4.48264	0.1780674	2.2913408	27	1	53 days	0.53	Williams	1999 XO ₁₇₃
1999 XP ₁₇₃	15.9	0.15	19991208	311.05033	96.94704	74.35349	5.22052	0.1971501	2.6101091	25	1	27 days	0.62	Williams	1999 XP ₁₇₃
1999 XR ₁₇₃	14.1	0.15	19991208	43.51073	103.43043	298.48653	11.36923	0.1849189	2.6703037	38	1	55 days	0.58	Williams	1999 XR ₁₇₃
1999 XS ₁₇₃	13.5	0.15	19991208	113.50490	238.78878	90.74103	13.18359	0.2698929	2.5572578	33	1	53 days	0.37	Williams	1999 XS ₁₇₃
1999 XT ₁₇₃	15.0	0.15	19991208	63.55746	348.67728	32.89466	3.90063	0.1707978	2.6058774	30	1	27 days	0.62	Williams	1999 XT ₁₇₃
1999 XU ₁₇₃	14.7	0.15	19991208	3.66634	6.34262	89.87805	18.43892	0.2035980	2.7346582	32	1	36 days	0.53	Williams	1999 XU ₁₇₃
1999 XZ ₁₇₃	14.6	0.15	19991208	71.11540	358.74402	9.12075	6.39045	0.2035650	2.4505049	13	1	5 days	0.32	E Williams	1999 XZ ₁₇₃
1999 XC ₁₇₄	15.1	0.15	19991208	308.18486	105.37096	61.86906	7.97327	0.1371411	2.3664283	16	1	28 days	0.40	Williams	1999 XC ₁₇₄
1999 XJ ₁₇₄	14.4	0.15	19991208	33.60723	353.59391	64.77259	6.13662	0.1315971	2.2692296	24	1	53 days	0.35	Williams	1999 XJ ₁₇₄
1999 XK ₁₇₄	14.9	0.15	19991208	57.73942	78.26251	301.51168	7.82675	0.2275738	2.4027247	40	1	56 days	0.66	Williams	1999 XK ₁₇₄
1999 XM ₁₇₄	15.3	0.15	19991208	301.97487	92.15943	91.49264	13.50080	0.1870504	2.6467437	24	1	27 days	0.42	Williams	1999 XM ₁₇₄
1999 XO ₁₇₄	14.9	0.15	19991208	80.19542	290.15776	81.48794	9.37706	0.1167292	2.4165146	24	1	27 days	0.40	Williams	1999 XO ₁₇₄
1999 XQ ₁₇₄	13.7	0.15	19991208	181.60955	193.36673	93.65704	15.13887	0.0919668	2.5880006	28	1	53 days	0.52	Williams	1999 XQ ₁₇₄
1999 XU ₁₇₄	14.7	0.15	19991208	331.08414	55.91069	86.27241	13.89604	0.1249517	2.6875153	19	1	51 days	0.46	Williams	1999 XU ₁₇₄
1999 XV ₁₇₄	15.1	0.15	19991208	65.51176	317.67125	60.70300	6.31726	0.1780281	2.2905519	22	1	25 days	0.44	Williams	1999 XV ₁₇₄
1999 XX ₁₇₄	14.5	0.15	19991208	335.99002	113.51566	21.33356	5.26788	0.1227932	2.6483379	13	1	24 days	0.36	Williams	1999 XX ₁₇₄
1999 XC ₁₇₅	13.7	0.15	19991208	355.24872	38.72646	73.93570	11.64609	0.0515939	2.9752274	14	1	23 days	0.48	Williams	1999 XC ₁₇₅
1999 XD ₁₇₆	13.7	0.15	19991208	306.46982	105.08016	72.37356	9.46039	0.1217163	2.9996009	19	1	27 days	0.34	Williams	1999 XD ₁₇₆
1999 XJ ₁₇₆	13.6	0.15	19991208	137.40450	277.55477	46.87466	4.94366	0.1645270	2.4176310	17	1	25 days	0.49	Williams	1999 XJ ₁₇₆
1999 XM ₁₇₆	13.3	0.15	19991208	64.65066	327.09708	71.31366	10.05731	0.0700552	2.5911657	14	1	25 days	0.42	Nakano	1999 XM ₁₇₆
1999 XR ₁₇₆	14.1	0.15	19991208	69.24106	22.26201	350.24759	9.52280	0.2344492	2.3655573	15	1	31 days	0.36	Williams	1999 XR ₁₇₆
1999 XU ₁₇₆	14.9	0.15	19991208	335.01917	102.86792	33.71864	6.79945	0.0817688	2.2267525	22	1	34 days	0.47	Williams	1999 XU ₁₇₆
1999 XV ₁₇₆	13.5	0.15	19991208	114.12129	34.03137	303.48019	22.90898	0.2070910	2.3152558	31	1	59 days	0.37	Williams	1999 XV ₁₇₆
1999 XX ₁₇₆	14.2	0.15	19991208	29.47528	123.47847	297.60746	34.02809	0.2470764	2.8490395	30	1	32 days	0.34	Williams	1999 XX ₁₇₆
1999 XC ₁₇₇	13.9	0.15	19991208	54.00246	20.64219	11.42456	8.35135	0.2295730	2.5368019	19	1	23 days	0.69	Williams	1999 XC ₁₇₇
1999 XK ₁₇₇	12.9	0.15	19991208	157.92240	213.34982	86.58490	16.85927	0.0650389	3.1578881	22	1	53 days	0.33	Williams	1999 XK ₁₇₇
1999 XL ₁₇₇	14.9	0.15	19991208	2.74227	118.72271	335.88516	3.16087	0.0527577	2.3829069	34	1	29 days	0.51	Williams	1999 XL ₁₇₇
1999 XQ ₁₇₇	14.0	0.15	19991208	308.40098	90.63887	77.58787	8.21891	0.1495032	2.8056925	33	1	29 days	0.42	Williams	1999 XQ ₁₇₇
1999 XR ₁₇₇	14.3	0.15	19991208	310.87011	71.06550	86.85931	12.14392	0.0617005	2.9507095	22	1	25 days	0.42	Williams	1999 XR ₁₇₇
1999 XU ₁₇₇	16.1	0.15	19991208	9.45228	4.94297	78.07517	6.60065	0.2203580	2.6504222	19	1	25 days	0.47	Williams	1999 XU ₁₇₇
1999 XY ₁₇₇	15.3	0.15	19991208	10.02285	70.15168	16.76283	2.87864	0.0938745	2.2538682	21	1	27 days	0.73	Williams	1999 XY ₁₇₇
1999 XA ₁₇₈	15.3	0.15	19991208	350.47760	163.20019	309.55598	7.55751	0.1179592	2.7463513	27	1	29 days	0.59	Williams	1999 XA ₁₇₈
1999 XB ₁₇₈	14.0	0.15	19991208	196.67052	308.44141	321.61292	8.63110	0.1425598	2.5610744	23	1	29 days	0.39	Williams	1999 XB ₁₇₈
1999 XD ₁₇₈	14.7	0.15	19991208	23.86280	136.18701	297.74395	21.21618	0.0502614	2.6548651	18	1	25 days	0.47	Williams	1999 XD ₁₇₈
1999 XH ₁₇₈	15.3	0.15	19991208	348.72087	43.72898	69.64938	7.53193	0.0861783	2.2952752	25	1	25 days	0.47	Williams	1999 XH ₁₇₈
1999 XL ₁₇₈	15.6	0.15	19991208	300.85181	85.94346	82.23670	6.53491	0.0629210	2.4014867	25	1	27 days	0.42	Williams	1999 XL ₁₇₈
1999 XM ₁₇₈	12.7	0.15	19991208	108.62214	267.20967	87.55794	12.65997	0.0324074	2.9894565	27	1	27 days	0.36	Williams	1999 XM ₁₇₈
1999 XP ₁₇₈	14.8	0.15	19991208	30.17623	98.05820	323.99502	8.16726	0.1531465	2.7826757	21	1	25 days	0.49	Williams	1999 XP ₁₇₈

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1999 XQ ₁₇₈	14.1	0.15	19991208	80.12352	272.70071	89.21439	14.17249	0.2133944	2.6135711	19	1	25 days	0.46	Williams	1999 XQ ₁₇₈
1999 XS ₁₇₈	16.2	0.15	19991208	319.56789	66.18675	83.46190	6.37797	0.0960541	2.2444793	22	1	27 days	0.48	Williams	1999 XS ₁₇₈
1999 XT ₁₇₈	14.7	0.15	19991208	80.60693	330.86424	23.43258	2.76281	0.2571782	2.3815632	16	1	25 days	0.63	Williams	1999 XT ₁₇₈
1999 XU ₁₇₈	15.4	0.15	19991208	76.65214	330.07869	39.57559	3.55250	0.1438054	2.2388779	21	1	25 days	0.41	Williams	1999 XU ₁₇₈
1999 XZ ₁₇₈	15.2	0.15	19991208	314.50500	69.97415	94.02429	15.80594	0.0710812	2.6690862	15	1	24 days	0.52	Williams	1999 XZ ₁₇₈
1999 XD ₁₇₉	15.9	0.15	19991208	31.77319	345.30013	75.82014	6.95193	0.1818287	2.3043064	26	1	27 days	0.36	Williams	1999 XD ₁₇₉
1999 XF ₁₇₉	14.9	0.15	19991208	354.13704	54.88570	65.96388	9.36987	0.1012388	2.7792068	20	1	29 days	0.47	Williams	1999 XF ₁₇₉
1999 XO ₁₇₉	15.2	0.15	19991208	240.43601	163.71351	59.99466	6.68433	0.0767462	2.3203549	25	1	57 days	0.57	Williams	1999 XO ₁₇₉
1999 XP ₁₇₉	15.8	0.15	19991208	14.39072	94.62979	337.77342	5.10334	0.1856265	2.5710073	17	1	29 days	0.35	Williams	1999 XP ₁₇₉
1999 XR ₁₇₉	15.5	0.15	19991208	319.50431	107.03722	39.26740	3.13812	0.1041051	2.3642739	32	1	28 days	0.40	Williams	1999 XR ₁₇₉
1999 XT ₁₇₉	15.4	0.15	19991208	200.67693	187.00049	74.82434	7.39212	0.0906360	2.1598686	19	1	28 days	0.56	Williams	1999 XT ₁₇₉
1999 XB ₁₈₀	13.8	0.15	19991208	7.82054	23.30757	77.31896	12.07299	0.0710744	3.0885294	12	1	23 days	0.58	Williams	1999 XB ₁₈₀
1999 XG ₁₈₀	14.7	0.15	19991208	340.92964	83.74175	55.22756	7.40693	0.1158887	2.4304862	14	1	24 days	0.47	Williams	1999 XG ₁₈₀
1999 XK ₁₈₀	13.7	0.15	19991208	56.49698	338.05795	77.23886	15.23561	0.1089881	2.7703405	13	1	23 days	0.43	Williams	1999 XK ₁₈₀
1999 XX ₁₈₀	14.5	0.15	19991208	329.58688	76.96031	26.62428	13.25091	0.1352486	2.5443635	11	1	10 days	0.45	Williams	1999 XX ₁₈₀
1999 XB ₁₈₁	14.0	0.15	19991208	336.25105	121.38632	339.01259	7.37291	0.1869268	2.7980262	18	1	26 days	0.47	Williams	1999 XB ₁₈₁
1999 XN ₁₈₁	12.8	0.15	20000226	357.94914	164.46321	277.20295	20.85957	0.0445673	3.2294808	25	1	63 days	0.40	M-v 4 Williams	1999 XN ₁₈₁
1999 XR ₁₈₁	13.5	0.15	19991208	85.67019	284.01797	34.13110	14.54329	0.2126712	2.6019362	24	1	27 days	0.38	Williams	1999 XR ₁₈₁
1999 XT ₁₈₁	15.6	0.15	19991208	356.29577	122.35412	313.50014	7.21352	0.2969827	2.7695211	19	1	26 days	0.42	Williams	1999 XT ₁₈₁
1999 XB ₁₈₂	16.5	0.15	19991208	343.58370	129.90786	321.87057	6.93819	0.1618287	2.5797926	15	1	26 days	0.53	Williams	1999 XB ₁₈₂
1999 XD ₁₈₂	14.2	0.15	19991208	24.84556	3.20103	35.81012	15.62438	0.1124875	2.6801725	13	1	21 days	0.47	Williams	1999 XD ₁₈₂
1999 XT ₁₈₃	13.1	0.15	20000226	22.35561	110.06568	317.33509	9.22737	0.0988170	2.9724835	24	1	62 days	0.37	M-v 4 Williams	1999 XT ₁₈₃
1999 XN ₁₈₄	13.4	0.15	19991208	44.22368	41.06024	335.54498	6.03659	0.1774900	3.1954826	20	1	23 days	0.39	Williams	1999 XN ₁₈₄
1999 XT ₁₈₄	13.8	0.15	20000226	244.90173	196.34419	23.73817	7.14986	0.0495185	2.3181701	24	1	91 days	0.50	M-v 5 Williams	1999 XT ₁₈₄
1999 XD ₁₈₅	14.0	0.15	20000226	52.53867	66.03189	308.22266	12.02156	0.1987829	3.1083014	15	1	62 days	0.62	M-v 5 Williams	1999 XD ₁₈₅
1999 XM ₁₈₅	13.2	0.15	19991208	17.71607	2.01235	50.19325	17.00904	0.0967705	3.0891558	12	1	21 days	0.32	Williams	1999 XM ₁₈₅
1999 XA ₁₈₆	14.5	0.15	19991208	83.69145	33.07650	283.79576	12.44904	0.3030002	2.3840175	19	1	23 days	0.57	Williams	1999 XA ₁₈₆
1999 XE ₁₈₆	13.3	0.15	19991208	147.61119	234.62995	45.83829	13.44087	0.1577200	2.6986088	14	1	21 days	0.45	Williams	1999 XE ₁₈₆
1999 XN ₁₈₆	15.2	0.15	19991208	7.03296	55.36633	13.47385	5.04353	0.1450055	2.7767565	19	1	49 days	0.74	Williams	1999 XN ₁₈₆
1999 XW ₁₈₆	13.4	0.15	19991208	158.70395	243.97226	26.89227	9.28328	0.1114268	2.6850128	10	1	21 days	0.39	Williams	1999 XW ₁₈₆
1999 XA ₁₈₇	11.1	0.15	19991208	32.26420	22.46768	42.30339	8.79359	0.0589055	5.0297034	19	1	21 days	0.61	Williams	1999 XA ₁₈₇
1999 XJ ₁₈₇	12.8	0.15	19991208	95.46250	281.07112	64.78559	11.80813	0.1669980	3.0981398	18	1	3 days	0.41	E Williams	1999 XJ ₁₈₇
1999 XK ₁₈₇	15.4	0.15	19991208	5.29131	15.07289	72.38508	14.95561	0.2171773	2.8840777	17	1	3 days	0.65	E Williams	1999 XK ₁₈₇
1999 XN ₁₈₇	15.9	0.15	19991208	46.11050	51.82185	345.38780	6.93258	0.1388065	2.2355855	18	1	3 days	0.54	E Williams	1999 XN ₁₈₇
1999 XQ ₁₈₇	16.2	0.15	19991208	336.81902	73.21819	36.66138	8.93583	0.1587494	2.2274235	14	1	21 days	0.40	Williams	1999 XQ ₁₈₇
1999 XH ₁₈₈	14.5	0.15	19991208	284.78536	140.75853	29.18232	7.21978	0.1385968	2.7927228	11	1	21 days	0.43	Williams	1999 XH ₁₈₈
1999 XL ₁₈₈	14.6	0.15	19991208	316.59254	164.21847	327.47849	4.79650	0.1074985	2.3326754	18	1	23 days	0.52	Williams	1999 XL ₁₈₈
1999 XS ₁₈₈	14.0	0.15	19991208	17.35874	118.16939	300.14386	7.84331	0.1117331	3.0620152	19	1	23 days	0.43	Williams	1999 XS ₁₈₈
1999 XM ₁₈₉	14.7	0.15	19991208	357.43132	102.14501	341.68812	4.61219	0.1034964	2.7659675	19	1	23 days	0.36	Williams	1999 XM ₁₈₉
1999 XQ ₁₈₉	15.4	0.15	19991208	311.07626	174.18051	321.81909	6.48928	0.0708356	2.2789144	15	1	23 days	0.38	Williams	1999 XQ ₁₈₉
1999 XR ₁₈₉	14.9	0.15	19991208	64.44878	316.42375	34.97131	6.58789	0.2236923	2.3128091	18	1	23 days	0.66	Williams	1999 XR ₁₈₉
1999 XV ₁₈₉	13.4	0.15	19991208	241.66924	170.60011	31.68107	9.64471	0.0115189	3.1672594	13	1	21 days	0.24	Williams	1999 XV ₁₈₉
1999 XD ₁₉₀	14.8	0.15	19991208	339.17273	164.08324	304.60218	10.32747	0.1192885	2.7238714	14	1	23 days	0.32	Williams	1999 XD ₁₉₀
1999 XM ₁₉₀	11.2	0.15	19991208	343.28349	130.54943	333.74527	7.08271	0.0771879	5.2763084	16	1	23 days	0.42	Williams	1999 XM ₁₉₀
1999 XQ ₁₉₀	14.2	0.15	19991208	354.73324	35.87742	53.90048	10.53882	0.0492652	3.1045677	11	1	23 days	0.56	Williams	1999 XQ ₁₉₀
1999 XW ₁₉₀	13.8	0.15	19991208	59.37067	312.71373	60.46306	11.56443	0.1145558	3.0148385	21	1	51 days	0.47	Williams	1999 XW ₁₉₀
1999 XX ₁₉₀	11.7	0.15	19991208	5.64747	137.29458	301.12683	10.86493	0.1041292	5.2262133	14	1	21 days	0.52	Williams	1999 XX ₁₉₀
1999 XD ₁₉₁	16.0	0.15	19991208	3.83795	45.23248	32.25865	7.06587	0.1454727	2.2838133	15	1	22 days	0.45	Williams	1999 XD ₁₉₁
1999 XG ₁₉₁	11.3	0.15	19991208	8.34869	44.96430	32.40701	12.33552	0.0327314	5.2648451	12	1	21 days	0.50	Williams	1999 XG ₁₉₁
1999 XT ₁₉₁	14.8	0.15	19991208	353.65873	51.56088	43.59692	10.41298	0.1957631	3.1456248	12	1	21 days	0.41	Williams	1999 XT ₁₉₁
1999 XU ₁₉₁	14.4	0.15	19991208	316.39707	120.80100	17.84597	7.70228	0.1017206	3.0803103	11	1	21 days	0.51	Williams	1999 XU ₁₉₁
1999 XV ₁₉₁	13.9	0.15	19991208	97.74737	334.65261	6.87933	5.77889	0.0616107	3.0872018	9	1	23 days	0.35	Williams	1999 XV ₁₉₁
1999 XZ ₁₉₁	14.5	0.15	19991208	48.25394	49.45466	330.82203	6.54966	0.1684970	2.8363480	15	1	23 days	0.42	Williams	1999 XZ ₁₉₁

1999 XJ ₁₉₂	13.9	0.15	19991208	78.85642	309.88194	47.16937	7.99157	0.0969349	2.7675519	15	1	23 days	0.67	Williams	1999 XJ ₁₉₂
1999 XK ₁₉₂	11.7	0.15	19991208	336.66865	88.23405	25.63413	10.26783	0.0348862	5.0710925	11	1	21 days	0.38	Williams	1999 XK ₁₉₂
1999 XT ₁₉₂	14.3	0.15	19991208	322.38419	83.24145	50.08973	12.95187	0.1049933	3.0963959	10	1	21 days	0.41	Williams	1999 XT ₁₉₂
1999 XF ₁₉₃	11.6	0.15	19991208	11.24565	112.21046	324.98084	8.84409	0.0516090	5.2998095	12	1	23 days	0.29	Williams	1999 XF ₁₉₃
1999 XH ₁₉₃	11.8	0.15	19991208	227.85501	272.66935	317.40003	7.91849	0.1066842	3.9767695	17	1	23 days	0.32	Williams	1999 XH ₁₉₃
1999 XM ₁₉₃	11.1	0.15	19991208	323.91598	185.18440	312.07216	12.15995	0.1432555	5.1805873	13	1	21 days	0.22	Williams	1999 XM ₁₉₃
1999 XC ₁₉₄	13.4	0.15	19991208	282.45817	145.87047	30.40431	6.80872	0.0701647	3.1319945	19	1	23 days	0.42	Williams	1999 XC ₁₉₄
1999 XG ₁₉₄	14.1	0.15	19991208	342.07291	120.10209	353.05879	7.99702	0.1693958	3.1259196	13	1	21 days	0.44	Williams	1999 XG ₁₉₄
1999 XO ₁₉₄	11.2	0.15	19991208	60.49649	344.70407	37.47153	10.60314	0.1022396	5.2442945	13	1	21 days	0.39	Williams	1999 XO ₁₉₄
1999 XQ ₁₉₄	13.6	0.15	19991208	199.44731	190.01999	64.24552	11.56194	0.0695103	3.0363648	17	1	23 days	0.55	Williams	1999 XQ ₁₉₄
1999 XT ₁₉₄	14.7	0.15	19991208	167.55089	237.34592	44.18421	7.58940	0.1036700	2.3590955	13	1	21 days	0.48	Williams	1999 XT ₁₉₄
1999 XW ₁₉₄	16.2	0.15	19991208	2.33525	115.29647	329.49370	6.02173	0.1356772	2.2869786	18	1	23 days	0.50	Williams	1999 XW ₁₉₄
1999 XY ₁₉₄	13.3	0.15	19991208	1.62129	145.37243	301.02020	12.72426	0.1266488	2.6831563	20	1	23 days	0.46	Williams	1999 XY ₁₉₄
1999 XP ₁₉₅	13.5	0.15	19991208	81.56931	46.47571	305.69708	13.70558	0.1429464	2.5326038	19	1	26 days	0.52	Williams	1999 XP ₁₉₅
1999 XR ₁₉₅	15.0	0.15	19991208	2.07746	33.20018	54.42708	12.23276	0.1472811	2.6445770	25	1	18 days	0.38	Williams	1999 XR ₁₉₅
1999 XA ₁₉₆	15.8	0.15	19991208	355.13254	57.58882	37.71516	5.28645	0.1103190	2.2929042	22	1	23 days	0.45	Williams	1999 XA ₁₉₆
1999 XQ ₁₉₆	14.0	0.15	19991208	18.08421	83.94198	347.37702	8.44763	0.1059363	3.0709262	11	1	21 days	0.62	Williams	1999 XQ ₁₉₆
1999 XX ₁₉₆	15.4	0.15	19991208	355.87996	83.96010	13.19733	4.53870	0.1138879	2.5012925	15	1	23 days	1.28	Williams	1999 XX ₁₉₆
1999 XE ₁₉₇	16.2	0.15	19991208	350.72871	150.78673	316.21418	7.54034	0.2437961	2.6819945	19	1	23 days	0.54	Williams	1999 XE ₁₉₇
1999 XL ₁₉₇	14.8	0.15	19991208	305.95255	167.47922	353.21063	9.42702	0.1273464	2.7652335	13	1	21 days	0.41	Williams	1999 XL ₁₉₇
1999 XA ₁₉₈	15.1	0.15	19991208	51.64304	68.56869	311.85356	11.33367	0.2216994	2.5522802	15	1	21 days	0.71	Williams	1999 XA ₁₉₈
1999 XF ₁₉₈	15.9	0.15	19991208	342.88765	167.69300	292.23253	11.49698	0.1324798	2.5284613	10	1	21 days	0.63	Williams	1999 XF ₁₉₈
1999 XO ₁₉₈	15.1	0.15	19991208	41.80786	76.60774	308.69672	5.70948	0.1337532	2.3898731	20	1	23 days	0.55	Williams	1999 XO ₁₉₈
1999 XF ₁₉₉	15.2	0.15	19991208	353.23044	42.23049	47.19557	14.76402	0.1535592	2.7637018	12	1	18 days	0.31	Williams	1999 XF ₁₉₉
1999 XH ₁₉₉	14.8	0.15	19991208	21.23941	2.48803	51.08731	16.26506	0.1261668	2.8714773	13	1	21 days	0.66	Williams	1999 XH ₁₉₉
1999 XP ₁₉₉	12.3	0.15	19991208	349.32805	75.83313	21.37676	6.42204	0.0926707	5.2263956	10	1	23 days	0.49	Williams	1999 XP ₁₉₉
1999 XO ₂₀₀	13.5	0.15	19991208	273.57130	226.69885	314.41104	8.78663	0.0420131	3.0702915	15	1	23 days	0.51	Williams	1999 XO ₂₀₀
1999 XS ₂₀₀	15.0	0.15	19991208	295.22882	232.97456	293.76706	12.01107	0.1141160	2.7604031	10	1	21 days	0.48	Williams	1999 XS ₂₀₀
1999 XU ₂₀₀	11.9	0.15	19991208	353.73137	30.94321	72.51482	16.82030	0.1232285	5.2804046	17	1	23 days	0.36	Williams	1999 XU ₂₀₀
1999 XS ₂₀₁	15.7	0.15	19991208	31.19631	340.44916	56.32197	12.12018	0.2854477	2.5283378	17	1	19 days	0.44	Williams	1999 XS ₂₀₁
1999 XJ ₂₀₂	13.6	0.15	19991208	351.13387	155.55993	310.77471	10.40633	0.0902359	3.0646286	20	1	23 days	0.62	Williams	1999 XJ ₂₀₂
1999 XR ₂₀₂	14.7	0.15	19991208	36.07486	17.41371	40.15402	9.18283	0.0629153	2.9767584	13	1	3 days	0.41	E Williams	1999 XR ₂₀₂
1999 XT ₂₀₂	13.7	0.15	19991208	281.31991	262.56116	292.36424	29.10490	0.1793434	2.7192063	20	1	27 days	0.29	Williams	1999 XT ₂₀₂
1999 XW ₂₀₂	15.6	0.15	19991208	20.74778	102.34224	313.82552	10.98384	0.2695778	2.7182129	13	1	3 days	0.49	E Williams	1999 XW ₂₀₂
1999 XZ ₂₀₂	14.0	0.15	19991208	45.02608	336.84942	56.37651	13.12925	0.1796047	2.5504090	12	1	3 days	0.43	E Williams	1999 XZ ₂₀₂
1999 XA ₂₀₃	14.0	0.15	19991208	337.86482	103.67231	22.22213	9.07673	0.1330832	3.0917607	12	1	21 days	0.46	Williams	1999 XA ₂₀₃
1999 XE ₂₀₃	15.1	0.15	19991208	46.44576	85.55553	297.62208	24.72605	0.2380465	2.6439397	22	1	36 days	0.54	Williams	1999 XE ₂₀₃
1999 XJ ₂₀₃	13.6	0.15	19991208	343.50791	154.02986	325.60887	10.31439	0.1358035	3.1144012	12	1	21 days	0.59	Williams	1999 XJ ₂₀₃
1999 XK ₂₀₃	15.8	0.15	19991208	30.44418	3.06629	45.85159	6.61766	0.1915851	2.2900239	13	1	3 days	0.69	E Williams	1999 XK ₂₀₃
1999 XL ₂₀₃	12.9	0.15	19991208	216.20582	171.16521	86.43007	22.71973	0.1887736	3.2174193	13	1	3 days	0.63	E Williams	1999 XL ₂₀₃
1999 XM ₂₀₃	14.3	0.15	19991208	326.39116	189.94129	308.56549	11.71892	0.1110764	2.7106641	22	1	27 days	0.52	Williams	1999 XM ₂₀₃
1999 XB ₂₀₄	13.4	0.15	19991208	71.88387	10.02011	358.48558	9.43959	0.1661379	2.7139639	13	1	21 days	0.29	Williams	1999 XB ₂₀₄
1999 XH ₂₀₄	15.9	0.15	19991208	32.41659	60.18532	347.42068	6.01841	0.2162438	2.4778952	12	1	3 days	0.50	E Williams	1999 XH ₂₀₄
1999 XM ₂₀₄	13.2	0.15	19991208	90.45963	296.87113	60.80302	14.05530	0.1414562	3.1105709	13	1	3 days	0.93	E Williams	1999 XM ₂₀₄
1999 XS ₂₀₄	12.3	0.15	19991208	188.36932	237.67941	41.93596	12.50680	0.2697999	2.5934737	13	1	4 days	0.38	E Williams	1999 XS ₂₀₄
1999 XW ₂₀₄	12.7	0.15	19991208	238.31866	282.54019	319.64297	18.48299	0.2087807	2.7261686	13	1	3 days	0.57	E Williams	1999 XW ₂₀₄
1999 XX ₂₀₄	15.3	0.15	19991208	179.87592	314.58096	325.28413	13.72715	0.0663336	2.2314854	11	1	3 days	0.75	E Williams	1999 XX ₂₀₄
1999 XZ ₂₀₄	14.9	0.15	19991208	25.02893	9.37470	61.09577	13.58357	0.1011783	2.6044007	12	1	3 days	0.92	E Williams	1999 XZ ₂₀₄
1999 XG ₂₀₅	13.0	0.15	19991208	275.56030	165.64920	46.50718	8.44313	0.2050787	2.7508515	22	1	25 days	0.46	Williams	1999 XG ₂₀₅
1999 XJ ₂₀₅	13.7	0.15	19991208	40.29468	18.90135	28.86330	10.32076	0.1932794	3.2585155	12	1	3 days	0.46	E Williams	1999 XJ ₂₀₅
1999 XN ₂₀₅	13.7	0.15	19991208	286.67829	217.48537	335.30601	10.92051	0.1334094	2.6876787	20	1	27 days	0.35	Williams	1999 XN ₂₀₅
1999 XQ ₂₀₅	14.4	0.15	19991208	302.69396	176.18673	0.24039	8.18939	0.1639983	2.3496339	15	1	21 days	0.30	Williams	1999 XQ ₂₀₅
1999 XS ₂₀₅	15.4	0.15	19991208	28.34387	17.54775	38.44992	7.64109	0.2469572	2.7777745	24	1	28 days	0.57	Williams	1999 XS ₂₀₅

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1999 XV ₂₀₅	13.8	0.15	19991208	322.62516	68.87104	91.92039	34.16804	0.1646073	3.2141580	18	1	30 days	0.48	Williams	1999 XV ₂₀₅
1999 XF ₂₀₆	14.7	0.15	19991208	18.24501	49.07828	28.94701	8.77224	0.1854334	2.8076244	19	1	22 days	0.59	Williams	1999 XF ₂₀₆
1999 XG ₂₀₆	13.6	0.15	19991208	21.53584	19.95225	62.35775	12.57055	0.1088200	3.0981910	20	1	22 days	0.55	Williams	1999 XG ₂₀₆
1999 XM ₂₀₆	14.0	0.15	19991208	356.40045	37.23764	77.74938	19.39143	0.1059444	3.1521934	21	1	54 days	0.48	Williams	1999 XM ₂₀₆
1999 XP ₂₀₆	14.0	0.15	19991208	46.61939	57.51874	354.75875	9.84647	0.1102986	2.9810533	12	1	21 days	0.43	Williams	1999 XP ₂₀₆
1999 XZ ₂₀₆	14.5	0.15	19991208	148.24732	259.89722	37.31034	6.41152	0.1964071	2.1983639	16	1	23 days	0.34	Williams	1999 XZ ₂₀₆
1999 XA ₂₀₇	13.8	0.15	19991208	294.63093	180.21324	3.97581	5.40091	0.2059630	2.7627008	18	1	23 days	0.31	Williams	1999 XA ₂₀₇
1999 XH ₂₀₇	16.2	0.15	19991208	329.75310	177.88283	320.30767	7.46537	0.1850985	2.3711000	13	1	23 days	0.49	Williams	1999 XH ₂₀₇
1999 XN ₂₀₇	15.2	0.15	19991228	88.42407	268.18821	84.75106	23.76186	0.2836456	2.2605190	54	1	35 days	0.54	Williams	1999 XN ₂₀₇
1999 XP ₂₀₉	14.1	0.15	19991208	22.77193	25.27744	29.95817	11.45191	0.1264263	3.0566131	12	1	17 days	0.59	Williams	1999 XP ₂₀₉
1999 XW ₂₀₉	13.7	0.15	19991208	223.65238	236.43117	349.94209	10.74010	0.0423733	3.0068421	11	1	17 days	0.43	Williams	1999 XW ₂₀₉
1999 XY ₂₀₉	14.3	0.15	19991228	352.49868	58.27928	41.89787	12.58926	0.0565880	2.7360629	17	1	39 days	0.56	Williams	1999 XY ₂₀₉
1999 XZ ₂₀₉	15.3	0.15	19991208	342.74788	109.29726	359.66950	8.86668	0.1421294	2.7541512	11	1	17 days	0.37	Williams	1999 XZ ₂₀₉
1999 XC ₂₁₀	11.7	0.15	19991208	6.81177	48.81345	34.04421	14.42468	0.0962713	5.2692167	12	1	17 days	0.53	Williams	1999 XC ₂₁₀
1999 XF ₂₁₀	14.1	0.15	19991228	21.58129	42.49512	19.32079	11.28027	0.1918366	3.3059566	13	1	39 days	0.66	Williams	1999 XF ₂₁₀
1999 XK ₂₁₀	15.9	0.15	19991208	21.00102	96.74551	318.95261	11.92176	0.1921894	2.7087303	11	1	17 days	0.60	Williams	1999 XK ₂₁₀
1999 XO ₂₁₀	13.3	0.15	19991228	36.37907	1.98666	51.21247	15.62644	0.0701806	2.9168319	19	1	39 days	0.28	Williams	1999 XO ₂₁₀
1999 XP ₂₁₀	14.5	0.15	19991208	328.76129	125.50626	5.26079	10.69322	0.1477483	3.1029345	12	1	17 days	0.52	Williams	1999 XP ₂₁₀
1999 XQ ₂₁₀	14.5	0.15	19991208	18.14752	75.85014	352.30486	10.53547	0.0634015	2.8043960	14	1	17 days	0.37	Williams	1999 XQ ₂₁₀
1999 XS ₂₁₀	14.8	0.15	19991208	303.10027	148.59206	13.56815	10.11432	0.1529057	2.7588299	13	1	17 days	0.45	Williams	1999 XS ₂₁₀
1999 XY ₂₁₀	14.2	0.15	19991208	359.89734	60.45314	31.00881	11.07278	0.1280319	3.1435577	18	1	17 days	0.42	Williams	1999 XY ₂₁₀
1999 XB ₂₁₁	10.0	0.15	19991228	121.67726	9.01002	317.24921	19.68229	0.0884994	5.2078022	17	1	39 days	0.41	Williams	1999 XB ₂₁₁
1999 XC ₂₁₁	13.5	0.15	19991208	18.04820	37.99254	29.48523	10.16442	0.1334290	2.6624728	15	1	17 days	0.28	Williams	1999 XC ₂₁₁
1999 XQ ₂₁₁	14.8	0.15	19991208	25.55020	60.64017	351.16923	10.58722	0.1720464	3.0475682	16	1	18 days	0.50	Williams	1999 XQ ₂₁₁
1999 XU ₂₁₁	12.9	0.15	19991208	250.05179	249.68577	341.00423	16.83552	0.0628962	3.2224409	27	1	29 days	0.49	Williams	1999 XU ₂₁₁
1999 XA ₂₁₂	14.3	0.15	19991208	293.52701	240.57973	309.51428	20.92162	0.2408589	3.0773655	13	1	3 days	0.47	E Williams	1999 XA ₂₁₂
1999 XH ₂₁₂	14.9	0.15	20000226	80.21656	217.74229	119.94938	3.64606	0.2330373	2.1627894	39	1	113 days	0.49	M-v 4 Williams	1999 XH ₂₁₂
1999 XM ₂₁₂	13.0	0.15	20000226	328.25048	28.11098	78.20097	10.72636	0.0678342	3.0457468	31	1	63 days	0.54	M-v 5 Williams	1999 XM ₂₁₂
1999 XT ₂₁₂	15.2	0.15	19991118	45.47608	242.60643	118.74264	6.83567	0.1576146	2.6484408	19	1	41 days	0.63	Williams	1999 XT ₂₁₂
1999 XV ₂₁₂	15.1	0.15	20000226	0.39057	323.68508	135.85225	5.38504	0.1899918	2.3771824	35	1	63 days	0.60	M-v 4 Williams	1999 XV ₂₁₂
1999 XW ₂₁₂	15.0	0.15	19991208	52.20809	192.63185	168.58488	5.14266	0.1425293	2.4894298	11	1	2 days	0.51	E Williams	1999 XW ₂₁₂
1999 XX ₂₁₂	16.0	0.15	19991208	41.24864	279.12518	94.11361	11.68859	0.1563580	2.2994843	10	1	2 days	0.70	E Williams	1999 XX ₂₁₂
1999 XY ₂₁₂	13.8	0.15	19991208	355.23788	338.77752	95.47598	18.94865	0.1917409	3.0687403	35	1	55 days	0.62	Williams	1999 XY ₂₁₂
1999 XB ₂₁₃	14.4	0.15	20000226	27.64054	293.61203	129.71692	8.10273	0.1846528	2.5973278	36	1	65 days	0.50	M-v 4 Williams	1999 XB ₂₁₃
1999 XC ₂₁₃	14.5	0.15	19991208	22.95188	229.01448	165.82437	5.86365	0.1652247	3.2078684	14	1	12 days	0.53	Williams	1999 XC ₂₁₃
1999 XG ₂₁₃	15.0	0.15	20000226	96.58187	204.73814	142.23625	7.79227	0.1371406	2.3069050	28	1	67 days	0.54	M-v 4 Williams	1999 XG ₂₁₃
1999 XH ₂₁₃	14.9	0.15	20000226	34.84807	239.74523	183.18812	7.63300	0.0974104	2.2847703	29	1	67 days	0.46	M-v 4 Williams	1999 XH ₂₁₃
1999 XJ ₂₁₃	15.5	0.15	19991208	353.90121	314.08538	133.53557	9.33502	0.2524717	2.7779743	23	1	37 days	0.46	Williams	1999 XJ ₂₁₃
1999 XN ₂₁₃	14.9	0.15	20000226	299.73267	353.20432	169.98557	5.92817	0.0348725	2.3774811	28	1	66 days	0.62	M-v 5 Williams	1999 XN ₂₁₃
1999 XP ₂₁₃	15.8	0.15	19991208	6.25958	316.59629	114.62699	7.87192	0.0552650	2.2329040	18	1	23 days	0.49	Williams	1999 XP ₂₁₃
1999 XQ ₂₁₃	15.7	0.15	19991208	44.75550	183.84413	194.79354	4.23926	0.1649242	2.3776278	14	1	22 days	0.45	Williams	1999 XQ ₂₁₃
1999 XS ₂₁₃	13.9	0.15	19991228	293.48213	294.69371	238.41771	14.55278	0.2004799	3.1288302	23	1	28 days	0.54	Williams	1999 XS ₂₁₃
1999 XT ₂₁₃	11.6	0.15	19991208	5.98714	311.61426	120.36589	10.92254	0.0472457	5.2411453	20	1	32 days	0.47	Williams	1999 XT ₂₁₃
1999 XY ₂₁₃	14.3	0.15	19991208	246.59539	98.66825	101.15061	15.38452	0.0415426	2.4907751	23	1	31 days	0.49	Williams	1999 XY ₂₁₃
1999 XB ₂₁₄	11.3	0.15	19991228	359.28134	324.48871	131.61242	17.90606	0.0714476	5.2660992	16	1	28 days	0.63	Williams	1999 XB ₂₁₄
1999 XD ₂₁₄	13.5	0.15	19991208	279.47652	7.93237	154.78282	10.12712	0.0379376	3.1047081	23	1	37 days	0.54	Williams	1999 XD ₂₁₄
1999 XG ₂₁₄	13.6	0.15	19991208	189.31434	144.70602	105.99015	11.49979	0.0614360	2.9846069	23	1	31 days	0.58	Williams	1999 XG ₂₁₄
1999 XJ ₂₁₄	14.5	0.15	19991208	68.02024	134.14413	221.33375	6.67244	0.2049769	2.5709549	17	1	23 days	0.39	Williams	1999 XJ ₂₁₄
1999 XS ₂₁₄	15.1	0.15	19991208	116.54287	298.14277	3.59803	6.14356	0.1312210	2.4584335	29	1	28 days	0.53	Williams	1999 XS ₂₁₄
1999 XW ₂₁₄	14.7	0.15	19991208	39.68175	270.47690	122.40326	8.62742	0.2187193	2.7052289	20	1	22 days	0.50	Williams	1999 XW ₂₁₄
1999 XA ₂₁₅	13.8	0.15	19991208	42.83475	287.35312	117.06641	13.06173	0.1240378	3.0121756	23	1	32 days	0.49	Williams	1999 XA ₂₁₅
1999 XD ₂₁₅	14.1	0.15	19991208	73.25123	250.17021	113.74428	13.61295	0.1820920	2.6621369	28	1	33 days	0.52	Williams	1999 XD ₂₁₅
1999 XH ₂₁₅	13.0	0.15	19991208	358.22608	346.56383	110.15118	23.40915	0.0089210	3.1809378	21	1	31 days	0.66	Williams	1999 XH ₂₁₅

1999 XP ₂₁₅	14.8	0.15	20000226	48.33979	166.02788	250.59721	11.97994	0.1935574	2.6117004	24	1	60 days	0.56	M-v	5	Williams	1999 XP ₂₁₅
1999 XR ₂₁₅	14.7	0.15	19991208	80.61421	229.73918	117.52472	8.37944	0.2108913	2.5599119	16	1	26 days	0.43			Williams	1999 XR ₂₁₅
1999 XX ₂₁₅	16.3	0.15	19991208	277.30055	95.08431	103.80593	14.28822	0.1291057	2.5725446	12	1	26 days	0.60			Williams	1999 XX ₂₁₅
1999 XK ₂₁₆	15.1	0.15	19991208	64.65750	287.23646	105.29490	7.23544	0.0536591	2.7808713	19	1	28 days	0.53			Williams	1999 XK ₂₁₆
1999 XY ₂₁₆	17.8	0.15	19991208	33.08225	118.07722	298.57945	0.53112	0.1351867	2.3423199	9	1	14 days	0.09			Williams	1999 XY ₂₁₆
1999 XC ₂₁₇	16.0	0.15	19991208	154.68065	203.53702	104.20414	3.57476	0.1000030	2.9726332	12	1	18 days	0.18			Williams	1999 XC ₂₁₇
1999 XF ₂₁₇	17.2	0.15	19991208	355.54630	13.13538	97.23130	1.92536	0.1412865	3.1085677	15	1	24 days	0.17			Williams	1999 XF ₂₁₇
1999 XL ₂₁₇	16.3	0.15	19991208	345.51383	23.72587	103.09325	7.28237	0.2120091	3.1724401	12	1	26 days	0.27			Williams	1999 XL ₂₁₇
1999 XN ₂₁₇	15.8	0.15	19991208	40.12397	309.13490	100.29567	5.46614	0.1368654	2.3277606	29	1	28 days	0.55			Williams	1999 XN ₂₁₇
1999 XP ₂₁₇	17.2	0.15	19991228	29.67450	111.17534	315.56694	0.73530	0.1639017	2.3659397	18	1	29 days	0.23			Williams	1999 XP ₂₁₇
1999 XR ₂₁₇	16.1	0.15	19991228	197.88118	176.90418	101.15787	4.78858	0.1623017	2.6413494	12	1	31 days	0.14			Williams	1999 XR ₂₁₇
1999 XS ₂₁₇	17.0	0.15	19991228	32.86575	70.13939	0.75560	0.51619	0.0885717	2.6575222	15	1	29 days	0.23			Williams	1999 XS ₂₁₇
1999 XT ₂₁₇	16.6	0.15	19991208	58.90310	336.02303	59.59928	1.02403	0.1182059	2.9804259	12	1	24 days	0.41			Williams	1999 XT ₂₁₇
1999 XU ₂₁₇	15.3	0.15	19991228	207.17650	169.91238	101.80422	4.62649	0.1373605	3.0746011	18	1	29 days	0.24			Williams	1999 XU ₂₁₇
1999 XV ₂₁₇	16.2	0.15	19991228	95.24439	34.32537	332.41012	1.08188	0.0867780	2.9503882	18	1	29 days	0.33			Williams	1999 XV ₂₁₇
1999 XW ₂₁₇	16.7	0.15	19991208	304.06443	237.69740	291.78409	1.49347	0.1386023	2.3595146	25	1	27 days	0.63			Williams	1999 XW ₂₁₇
1999 XX ₂₁₇	17.5	0.15	19991208	323.37774	48.98111	98.71869	10.49711	0.1645873	2.3044369	13	1	22 days	0.48			Williams	1999 XX ₂₁₇
1999 XA ₂₁₈	15.8	0.15	19991208	199.18020	171.75757	99.99496	6.13199	0.1969474	2.4278938	13	1	24 days	0.66			Marsden	1999 XA ₂₁₈
1999 XJ ₂₁₈	17.3	0.15	19991208	9.46941	0.69101	86.14884	2.25196	0.1531984	2.4379426	11	1	21 days	0.34			Williams	1999 XJ ₂₁₈
1999 XK ₂₁₈	18.2	0.15	19991208	359.68089	176.37940	284.35720	11.55525	0.1423354	2.4726248	11	1	22 days	0.67			Williams	1999 XK ₂₁₈
1999 XM ₂₁₈	16.4	0.15	19991208	111.88673	39.96339	293.79605	3.26614	0.1840636	2.1870664	12	1	20 days	0.19			Williams	1999 XM ₂₁₈
1999 XN ₂₁₈	16.2	0.15	19991208	27.14994	327.68991	92.65038	4.51554	0.1886578	2.3761019	19	1	22 days	0.45			Williams	1999 XN ₂₁₈
1999 XR ₂₁₈	17.1	0.15	19991208	48.42851	284.28736	112.40234	6.95759	0.1995415	2.9747940	15	1	3 days	0.25	E		Williams	1999 XR ₂₁₈
1999 XU ₂₁₈	17.2	0.15	19991208	85.86581	243.76054	111.81081	5.98464	0.1995126	2.3340450	12	1	3 days	0.20	E		Williams	1999 XU ₂₁₈
1999 XW ₂₁₈	12.9	0.15	19991228	17.34453	331.34843	123.32365	3.41176	0.0686621	5.2335326	24	1	33 days	0.31			Williams	1999 XW ₂₁₈
1999 XK ₂₁₉	18.6	0.15	19991208	26.50317	322.26622	99.13939	25.23512	0.1367615	1.9298889	15	1	18 days	0.48			Williams	1999 XK ₂₁₉
1999 XM ₂₁₉	15.4	0.15	19991208	158.61905	203.95004	102.92332	3.12773	0.0472427	2.8695535	15	1	22 days	0.26			Williams	1999 XM ₂₁₉
1999 XO ₂₁₉	16.4	0.15	19991228	14.32877	338.65008	110.87893	2.80405	0.1439391	2.6071672	30	1	32 days	0.26			Williams	1999 XO ₂₁₉
1999 XL ₂₂₀	16.5	0.15	19991208	9.36080	104.64568	340.52243	10.22966	0.1232456	2.3833832	13	1	19 days	0.38			Williams	1999 XL ₂₂₀
1999 XO ₂₂₀	13.5	0.15	20000226	2.14262	343.00348	85.20064	13.97293	0.1446902	2.6043055	35	1	101 days	0.57	M-v	4	Williams	1999 XO ₂₂₀
1999 XQ ₂₂₀	14.8	0.15	20000226	20.37089	306.52631	109.54367	10.21258	0.2458043	2.4249560	41	1	119 days	0.46	M-v	3	Williams	1999 XQ ₂₂₀
1999 XR ₂₂₁	16.0	0.15	19991208	37.99132	338.99184	49.21225	6.50971	0.1162797	2.2077072	24	1	30 days	0.46			Williams	1999 XR ₂₂₁
1999 XS ₂₂₁	12.8	0.15	19991208	123.11026	252.02887	50.78683	11.26155	0.1063110	3.4711124	11	1	19 days	0.51			Williams	1999 XS ₂₂₁
1999 XU ₂₂₁	16.3	0.15	20000226	28.46881	5.70059	58.37411	8.29032	0.2575628	2.3480689	35	1	62 days	0.52	M-v	4	Williams	1999 XU ₂₂₁
1999 XN ₂₂₂	15.0	0.15	19991208	352.72137	123.55295	332.33977	3.48698	0.0907575	2.5195698	15	1	20 days	0.33			Williams	1999 XN ₂₂₂
1999 XT ₂₂₂	15.2	0.15	19991208	13.98209	74.67919	359.55687	5.07797	0.0997913	2.7622007	12	1	20 days	0.36			Williams	1999 XT ₂₂₂
1999 XU ₂₂₂	15.4	0.15	19991208	341.57586	139.21183	333.24520	8.42717	0.1015668	2.5223085	13	1	18 days	0.50			Williams	1999 XU ₂₂₂
1999 XT ₂₂₃	17.5	0.15	19991208	30.83779	321.46578	100.38532	6.41448	0.0937320	2.2351183	14	1	22 days	0.45			Williams	1999 XT ₂₂₃
1999 XB ₂₂₄	16.6	0.15	19991208	252.14125	223.53644	357.52337	0.61229	0.0793411	2.5318187	18	1	24 days	0.23			Williams	1999 XB ₂₂₄
1999 XE ₂₂₄	17.4	0.15	19991208	58.71657	281.73786	93.63466	3.21361	0.2565079	2.4178292	12	1	26 days	0.13			Williams	1999 XE ₂₂₄
1999 XK ₂₂₄	14.9	0.15	19991208	302.73678	160.69500	15.46737	0.38379	0.1368268	3.2072467	23	1	22 days	0.45			Williams	1999 XK ₂₂₄
1999 XW ₂₂₄	16.0	0.15	19991228	209.18455	301.52419	324.52006	1.27097	0.1123353	2.6106002	12	1	30 days	0.65			Williams	1999 XW ₂₂₄
1999 XX ₂₂₄	15.9	0.15	19991208	101.26153	46.14197	290.78757	8.18121	0.2620518	2.4145306	15	1	29 days	0.22			Williams	1999 XX ₂₂₄
1999 XA ₂₂₅	16.2	0.15	19991208	302.01661	245.27169	316.64430	1.41030	0.3423075	2.8299992	9	1	28 days	0.32			Williams	1999 XA ₂₂₅
1999 XB ₂₂₅	16.5	0.15	19991208	228.06828	313.61928	296.05348	3.54122	0.1874423	2.2051500	15	1	18 days	0.38			Williams	1999 XB ₂₂₅
1999 XC ₂₂₅	17.2	0.15	19991208	164.58943	1.53559	296.97130	3.80902	0.0281728	2.4390299	15	1	24 days	0.30			Williams	1999 XC ₂₂₅
1999 XD ₂₂₅	13.1	0.15	19991208	44.79773	119.39727	301.61524	6.35880	0.0702840	5.2240931	12	1	24 days	0.30			Williams	1999 XD ₂₂₅
1999 XE ₂₂₅	13.0	0.15	19991228	2.16214	116.38626	353.86628	0.85195	0.1461007	5.1566690	18	1	29 days	0.32			Williams	1999 XE ₂₂₅
1999 XJ ₂₂₅	15.4	0.15	19991208	94.03635	250.86267	98.78573	5.87321	0.1800917	2.2849611	27	1	27 days	0.57			Williams	1999 XJ ₂₂₅
1999 XN ₂₂₅	16.2	0.15	19991208	9.59157	354.04399	96.82577	5.27162	0.0769412	2.3791921	19	1	22 days	0.44			Williams	1999 XN ₂₂₅
1999 XO ₂₂₅	17.4	0.15	19991208	197.03023	335.07941	294.19677	4.28810	0.0881817	2.1930443	12	1	20 days	0.15			Williams	1999 XO ₂₂₅
1999 XR ₂₂₅	17.2	0.15	19991228	69.52432	80.46713	308.36861	2.10175	0.0947119	2.4056000	18	1	29 days	0.29			Williams	1999 XR ₂₂₅
1999 XS ₂₂₅	15.6	0.15	19991228	136.00261	236.82110	93.37013	3.47236	0.0663831	2.8714354	15	1	31 days	0.28			Williams	1999 XS ₂₂₅

1999 XU ₂₂₅	15.0	0.15	20000226	319.56282	244.25781	300.47638	3.00137	0.1777845	2.3142248	29	1	60 days	0.33	M-v	5	Williams	1999 XU ₂₂₅
1999 XV ₂₂₅	15.6	0.15	19991208	58.90498	289.11701	93.70910	3.99058	0.1871223	2.3121990	24	1	23 days	0.47			Williams	1999 XV ₂₂₅
1999 XZ ₂₂₅	16.5	0.15	19991208	145.36663	16.73327	294.96308	7.45872	0.1514152	2.2454718	9	1	20 days	0.13			Williams	1999 XZ ₂₂₅
1999 XF ₂₂₆	16.7	0.15	19991208	23.60104	128.82232	298.46753	2.56775	0.1438192	2.3918396	16	1	21 days	0.42			Williams	1999 XF ₂₂₆
1999 XK ₂₂₆	16.2	0.15	19991228	293.96293	246.10707	296.61331	5.08724	0.0827891	2.2723673	12	1	32 days	0.54			Williams	1999 XK ₂₂₆
1999 XN ₂₂₆	12.7	0.15	19991228	11.31707	163.89676	297.10987	22.04596	0.0554351	5.2764231	15	1	28 days	0.15			Williams	1999 XN ₂₂₆
1999 XP ₂₂₆	16.1	0.15	19991228	311.23675	228.46212	297.81999	10.14050	0.0751588	3.0915780	12	1	28 days	0.26			Williams	1999 XP ₂₂₆
1999 XQ ₂₂₆	16.9	0.15	19991208	26.65282	98.80079	324.00927	1.77251	0.1711140	2.3616793	12	1	25 days	0.18			Williams	1999 XQ ₂₂₆
1999 XS ₂₂₆	12.3	0.15	19991228	19.89075	26.49128	63.91664	2.27739	0.0908138	5.1977313	28	1	31 days	0.45			Williams	1999 XS ₂₂₆
1999 XU ₂₂₆	14.7	0.15	19991228	139.35498	352.43450	330.32897	3.04316	0.1723342	3.1793413	12	1	29 days	0.17			Williams	1999 XU ₂₂₆
1999 XV ₂₂₆	16.4	0.15	19991208	96.71177	237.82420	115.74150	4.15533	0.1408304	2.7097479	9	1	16 days	0.21			Williams	1999 XV ₂₂₆
1999 XX ₂₂₆	16.1	0.15	19991208	315.67873	56.50459	94.80479	5.68978	0.0861216	2.2636073	21	1	28 days	0.46			Williams	1999 XX ₂₂₆
1999 XD ₂₂₇	15.8	0.15	19991228	38.30524	124.79408	290.45971	0.60388	0.1856779	2.8673190	12	1	26 days	0.15			Williams	1999 XD ₂₂₇
1999 XK ₂₂₇	16.1	0.15	19991228	95.25610	256.83895	94.07174	1.24087	0.2227924	2.4776833	18	1	27 days	0.34			Williams	1999 XK ₂₂₇
1999 XM ₂₂₇	16.0	0.15	19991208	28.54732	310.59929	111.28401	4.12977	0.1458684	2.5791126	16	1	23 days	0.30			Williams	1999 XM ₂₂₇
1999 XS ₂₂₇	16.9	0.15	19991208	30.22440	317.08488	104.02238	3.61165	0.1454003	2.3397241	13	1	22 days	0.26			Williams	1999 XS ₂₂₇
1999 XV ₂₂₇	17.2	0.15	19991208	23.58469	148.79182	279.85554	1.98686	0.2051130	3.0026911	9	1	23 days	0.31			Williams	1999 XV ₂₂₇
1999 XY ₂₂₇	14.4	0.15	19991208	309.52180	201.11724	299.29830	6.38994	0.2033532	3.1940739	28	1	28 days	0.69			Williams	1999 XY ₂₂₇
1999 XD ₂₂₈	14.2	0.15	19991228	73.36703	284.00754	99.44405	11.37171	0.0996158	2.9937567	27	1	30 days	0.63			Williams	1999 XD ₂₂₈
1999 XG ₂₂₈	15.8	0.15	19991208	285.86318	91.15148	91.46128	5.30746	0.0641231	2.3058423	17	1	21 days	0.30			Williams	1999 XG ₂₂₈
1999 XL ₂₂₈	16.2	0.15	19991208	51.88736	287.48321	89.30816	5.63118	0.3135845	2.5850400	14	1	21 days	0.32			Williams	1999 XL ₂₂₈
1999 XR ₂₂₈	17.7	0.15	19991208	358.17489	120.34966	339.18501	1.27861	0.1430814	2.2867106	16	1	21 days	0.40			Williams	1999 XR ₂₂₈
1999 XS ₂₂₈	16.6	0.15	19991208	55.84998	86.01080	299.11231	4.37140	0.1684224	2.1882177	20	1	28 days	0.35			Williams	1999 XS ₂₂₈
1999 XU ₂₂₈	16.5	0.15	19991208	58.94385	305.37751	85.29808	4.50675	0.1258757	2.5974279	15	1	21 days	0.36			Williams	1999 XU ₂₂₈
1999 YA	18.0	0.15	20000226	76.50770	265.55233	106.28835	38.24831	0.3392354	1.6769096	58	1	40 days	0.56	M-v	5	Williams	1999 YA
1999 YB	18.5	0.15	19991208	227.18231	192.74287	31.07250	6.78859	0.0748541	1.3210244	47	1	24 days	0.40			Williams	1999 YB
1999 YC	17.5	0.15	19991208	319.98602	156.29636	64.87475	38.19759	0.8314404	1.4222672	72	1	20 days	0.69			Williams	1999 YC
1999 YD	21.6	0.15	19991208	0.70005	61.50351	9.83403	1.38645	0.5934729	2.4741110	79	1	18 days	0.61			Williams	1999 YD
1999 YE	15.3	0.15	19991228	347.20479	355.08570	86.06366	26.03253	0.2213188	2.2793662	18	1	26 days	0.71			Williams	1999 YE
1999 YG	14.9	0.15	20000226	57.90258	280.67284	109.77088	24.42874	0.1430220	1.9597667	31	1	61 days	0.34	M-v	4	Williams	1999 YG
1999 YK	15.1	0.15	19991228	51.76499	265.36066	113.59052	27.55825	0.1843502	1.9160459	24	1	25 days	0.26			Williams	1999 YK
1999 YM	16.3	0.15	19991228	2.26332	333.15038	115.19988	25.50901	0.0757267	1.9154596	17	1	26 days	0.47			Williams	1999 YM
1999 YN	14.3	0.15	20000226	35.48201	293.61731	121.61773	22.87004	0.3182088	2.3331251	25	1	63 days	0.35	M-v	5	Williams	1999 YN
1999 YO	15.8	0.15	19991228	60.07973	256.85536	122.18297	25.11223	0.1324162	1.9223461	17	1	25 days	0.41			Williams	1999 YO
1999 YS	14.2	0.15	19991208	341.24655	249.11222	261.40594	27.42280	0.4017727	2.5791375	28	1	18 days	0.40			Williams	1999 YS
1999 YT	16.6	0.15	20000226	67.57642	272.51544	116.57305	31.56424	0.3519957	1.7756265	92	1	33 days	0.47	M-v	5	Williams	1999 YT
1999 YU	16.6	0.15	19991208	354.55114	51.65950	39.30273	20.13212	0.1278743	1.8734674	11	1	3 days	0.41			Williams	1999 YU
1999 YX	15.8	0.15	20000226	22.46497	276.88791	143.56373	5.82683	0.3191538	2.5656693	42	1	63 days	0.63	M-v	4	Williams	1999 YX
1999 YA ₁	18.2	0.15	19991208	334.82079	168.35207	313.25465	4.20503	0.3298232	2.3318668	12	1	16 days	2.08			Williams	1999 YA ₁
1999 YB ₁	16.1	0.15	19991208	85.14241	224.88533	107.54688	7.86865	0.2574207	2.2737168	16	1	21 days	0.52			Williams	1999 YB ₁
1999 YD ₁	16.1	0.15	20000226	19.26981	134.66780	308.57728	21.09401	0.1119790	1.9043596	18	1	60 days	0.36	M-v	4	Williams	1999 YD ₁
1999 YE ₁	14.6	0.15	19991208	8.05668	124.48024	292.70255	23.49954	0.1830087	2.2971735	20	1	14 days	0.24			Williams	1999 YE ₁
1999 YN ₁	16.4	0.15	19991208	356.80226	48.07649	47.96385	22.51049	0.0937413	1.9679315	10	1	11 days	0.52			Williams	1999 YN ₁
1999 YR ₁	16.1	0.15	19991208	14.48264	201.77969	221.97491	2.35392	0.1849570	2.3436960	22	1	30 days	0.76			Williams	1999 YR ₁
1999 YT ₁	14.7	0.15	19991208	287.28190	290.52277	258.20911	12.08872	0.2473728	2.6650159	23	1	29 days	0.49			Williams	1999 YT ₁
1999 YU ₁	15.0	0.15	19991228	319.21270	56.23912	125.43625	24.65357	0.3699714	2.2378651	20	1	25 days	0.25			Williams	1999 YU ₁
1999 YZ ₁	15.9	0.15	19991118	353.29872	352.90303	67.08480	3.03503	0.0606362	2.9161829	14	1	38 days	0.52			Williams	1999 YZ ₁
1999 YK ₂	17.3	0.15	19991208	25.97556	330.11121	100.13224	6.04706	0.1461992	2.7905963	12	1	21 days	0.20			Williams	1999 YK ₂
1999 YN ₂	17.0	0.15	19991208	76.51138	272.48050	108.64065	6.56214	0.0384581	2.1928752	15	1	21 days	0.27			Williams	1999 YN ₂
1999 YQ ₂	16.8	0.15	19991208	335.86367	190.36425	304.48306	1.72385	0.2052399	2.3508474	15	1	21 days	0.36			Williams	1999 YQ ₂
1999 YT ₂	14.7	0.15	19991228	248.67159	268.48226	330.78840	1.72191	0.1930529	2.3718179	25	1	23 days	0.42			Williams	1999 YT ₂
1999 YB ₃	15.8	0.15	19991208	317.13116	32.38088	108.64157	3.40752	0.1332718	2.3856192	27	1	28 days	0.45			Williams	1999 YB ₃
1999 YE ₃	16.0	0.15	19991208	5.63023	125.97270	304.77916	35.09223	0.4800795	2.6323314	57	1	8 days	0.64			Williams	1999 YE ₃

1999 YF ₃	18.5	0.15	19991228	8.51682	146.97402	298.97686	26.77964	0.1435858	1.4876662	64	1	26 days	0.65		Williams	1999 YF ₃
1999 YG ₃	19.2	0.15	20000226	346.72423	250.21913	293.35363	34.51956	0.3293776	1.2847709	103	1	33 days	0.59	M-v 6	Williams	1999 YG ₃
1999 YJ ₃	16.3	0.15	19991208	10.67882	68.35684	10.84365	18.91142	0.0951405	1.8937291	19	1	14 days	0.63		Williams	1999 YJ ₃
1999 YP ₃	15.9	0.15	19991228	313.37685	29.65161	123.58089	24.10966	0.0658359	1.9314602	19	1	22 days	0.36		Williams	1999 YP ₃
1999 YT ₃	13.6	0.15	19991118	31.58675	34.99482	343.40378	25.05598	0.3025187	3.1576064	19	1	59 days	0.50		Williams	1999 YT ₃
1999 YU ₃	13.4	0.15	19991208	34.94629	17.01076	25.31331	27.72869	0.1329428	3.1293601	14	1	9 days	0.41		Williams	1999 YU ₃
1999 YV ₃	16.2	0.15	19991208	351.76891	101.25731	355.22107	23.17265	0.2733088	2.3811755	16	1	26 days	0.84		Williams	1999 YV ₃
1999 YW ₃	14.6	0.15	19991208	9.04827	40.27769	35.35032	30.75568	0.2076383	2.6001252	21	1	26 days	0.47		Williams	1999 YW ₃
1999 YX ₃	14.9	0.15	19991208	2.93031	76.62578	5.31909	21.72435	0.1359365	2.6542750	12	1	9 days	0.69		Williams	1999 YX ₃
1999 YY ₃	13.6	0.15	20000226	33.77325	76.37079	336.24388	24.16751	0.3183278	2.7755847	33	1	94 days	0.38	M-v 4	Williams	1999 YY ₃
1999 YA ₄	14.1	0.15	19991208	33.13257	51.73493	348.45385	25.50248	0.1989067	2.7773774	19	1	12 days	0.57		Williams	1999 YA ₄
1999 YB ₄	15.0	0.15	19991208	342.61190	130.70518	345.09811	27.93923	0.1922391	2.6000854	13	1	9 days	0.61		Williams	1999 YB ₄
1999 YC ₄	15.7	0.15	19991208	343.55699	123.98116	355.74392	22.75365	0.2310048	2.2902494	12	1	9 days	0.33		Williams	1999 YC ₄
1999 YD ₄	14.6	0.15	19991208	27.67871	41.94696	3.09625	23.36711	0.2947917	2.3593024	19	1	12 days	0.51		Williams	1999 YD ₄
1999 YE ₄	15.5	0.15	19991208	7.87733	77.43985	1.44719	22.27611	0.2765964	2.3266043	14	1	9 days	0.67		Williams	1999 YE ₄
1999 YG ₄	14.3	0.15	19991228	93.78664	261.13240	98.86707	9.25167	0.0571900	2.9972196	33	1	12 days	0.62		Williams	1999 YG ₄
1999 YJ ₄	13.7	0.15	19991228	253.70243	61.47035	98.74308	10.78475	0.0584006	2.9932680	21	1	12 days	0.89		Williams	1999 YJ ₄
1999 YL ₄	16.0	0.15	19991228	99.09693	259.00619	95.84440	2.77725	0.0566797	2.9487921	17	1	12 days	1.18		Williams	1999 YL ₄
1999 YM ₄	15.9	0.15	19991228	80.20218	29.47834	310.28438	4.55301	0.1804741	2.2830539	20	1	26 days	0.92		Williams	1999 YM ₄
1999 YN ₄	15.6	0.15	20000226	314.80395	242.67119	291.78512	36.81103	0.2314865	1.6847235	52	1	32 days	0.48	M-v 5	Williams	1999 YN ₄
1999 YO ₄	16.0	0.15	19991208	12.62148	67.04330	342.93839	23.21211	0.3049502	2.3095753	29	1	11 days	0.64		Williams	1999 YO ₄
1999 YP ₄	14.7	0.15	19991208	28.06832	76.02687	313.14932	33.71803	0.1985083	2.6081231	14	1	10 days	0.56		Williams	1999 YP ₄
1999 YQ ₄	14.8	0.15	19991228	1.27079	162.53774	305.62926	9.86265	0.1868959	2.6757535	44	1	23 days	0.97		Williams	1999 YQ ₄
1999 YR ₄	15.9	0.15	19991228	99.73725	75.98358	281.92558	5.41461	0.0178378	2.3153309	24	1	8 days	0.76		Williams	1999 YR ₄
1999 YS ₄	16.0	0.15	19991228	274.80321	94.55479	97.79043	5.49071	0.0646326	2.3616275	23	1	11 days	0.54		Williams	1999 YS ₄
1999 YT ₄	16.3	0.15	19991228	351.13334	11.60174	99.12060	4.37731	0.0900615	3.1063654	15	1	11 days	0.80		Williams	1999 YT ₄
1999 YU ₄	14.0	0.15	19991228	175.25545	1.28243	295.76620	6.98158	0.1790473	2.7647259	27	1	19 days	0.91		Williams	1999 YU ₄
1999 YW ₄	14.5	0.15	19991228	58.94725	316.15154	56.89074	1.33509	0.2372415	3.0919317	16	1	13 days	1.26		Williams	1999 YW ₄
1999 YX ₄	16.8	0.15	19991228	317.74809	56.40726	89.73714	6.01379	0.0921650	2.2135996	11	1	7 days	0.48		Williams	1999 YX ₄
1999 YY ₄	14.6	0.15	19991228	28.03457	337.81159	82.22324	3.15753	0.1305038	3.1296154	15	1	7 days	0.41		Williams	1999 YY ₄
1999 YZ ₄	15.3	0.15	19991228	96.87263	286.81586	64.64684	3.92891	0.1455801	2.3162589	37	1	11 days	0.41		Williams	1999 YZ ₄
1999 YB ₅	15.9	0.15	19991228	14.07955	353.67779	91.37972	10.54489	0.1586769	2.7215895	23	1	10 days	0.44		Williams	1999 YB ₅
1999 YC ₅	14.9	0.15	19991228	149.23075	198.37494	129.02282	15.69663	0.0306876	2.7224657	14	1	16 days	0.58		Williams	1999 YC ₅
1999 YE ₅	13.8	0.15	19991228	359.51075	340.20051	77.45582	9.37782	0.1766066	2.6391611	38	1	49 days	0.56		Nakano	1999 YE ₅
1999 YF ₅	12.4	0.15	19991208	286.74483	89.71960	93.68025	16.86928	0.0556564	3.1579024	22	1	24 days	0.86		Williams	1999 YF ₅
1999 YG ₅	14.3	0.15	19991208	314.91511	85.73515	84.99594	12.74797	0.2772576	2.4107749	17	1	29 days	0.55		Williams	1999 YG ₅
1999 YH ₅	15.6	0.15	19991208	307.39783	79.60989	116.72115	24.84309	0.3272495	2.2542658	33	1	26 days	0.63		Williams	1999 YH ₅
1999 YJ ₅	17.0	0.15	19991208	2.12838	108.32341	314.95418	22.91508	0.3543885	2.3093319	67	1	11 days	0.48		Williams	1999 YJ ₅
1999 YK ₅	16.9	0.15	19991228	148.17398	292.69874	349.70860	16.74183	0.5582801	0.8294140	139	1	25 days	0.54		Nakano	1999 YK ₅
1999 YL ₅	16.8	0.15	19991208	24.14705	353.20139	57.20418	3.20695	0.1932894	2.4111177	27	1	36 days	1.18		Williams	1999 YL ₅
1999 YM ₅	12.8	0.15	19991208	83.09020	269.27968	82.74284	15.27290	0.1731072	3.0671338	29	1	24 days	0.54		Williams	1999 YM ₅
1999 YW ₅	14.8	0.15	20000226	16.65355	111.76785	311.38634	29.63605	0.2579102	2.6190649	23	1	65 days	0.45	M-v 4	Williams	1999 YW ₅
1999 YB ₆	14.4	0.15	19991208	358.83840	83.92069	321.77386	26.76148	0.4020812	2.6239669	20	1	21 days	0.27		Williams	1999 YB ₆
1999 YO ₆	14.0	0.15	19991228	39.09810	6.44829	37.06491	18.03691	0.1357132	2.9389858	14	1	22 days	0.39		Williams	1999 YO ₆
1999 YQ ₆	14.7	0.15	19991228	22.57069	75.79612	347.82454	12.25184	0.1456697	2.6359096	14	1	22 days	0.44		Williams	1999 YQ ₆
1999 YS ₆	12.8	0.15	19991228	203.11071	226.34918	30.29665	14.35038	0.0961575	3.2298175	12	1	22 days	0.34		Williams	1999 YS ₆
1999 YU ₆	16.0	0.15	19991208	114.03368	27.62234	295.25526	18.71910	0.0590169	1.9192093	17	1	20 days	0.47		Williams	1999 YU ₆
1999 YY ₆	10.7	0.15	19991228	43.24576	356.83266	45.92527	21.19446	0.1430886	5.2090614	13	1	22 days	0.45		Williams	1999 YY ₆
1999 YZ ₆	14.1	0.15	19991228	4.75538	122.65722	325.42353	16.62165	0.2041195	3.2195983	13	1	22 days	0.37		Williams	1999 YZ ₆
1999 YB ₇	13.0	0.15	19991228	15.42778	25.91978	55.13116	18.02180	0.1052495	3.1648820	13	1	22 days	0.25		Williams	1999 YB ₇
1999 YT ₇	15.9	0.15	19991228	82.89216	238.51971	85.27342	12.96252	0.2250805	2.6392329	9	1	9 days	0.27		Williams	1999 YT ₇
1999 YU ₇	16.5	0.15	19991228	354.56997	343.23637	101.26665	5.93408	0.1272947	2.2586718	13	1	14 days	0.32		Williams	1999 YU ₇
1999 YY ₇	16.0	0.15	19991208	257.29179	287.80059	263.25225	7.07678	0.0645742	2.2373758	21	1	30 days	0.54		Williams	1999 YY ₇

1999 YZ ₇	17.0	0.15	19991228	350.85044	359.43697	100.22116	1.67831	0.1276914	2.3263791	9	1	11 days	0.11	Williams	1999 YZ ₇
1999 YA ₈	18.3	0.15	19991228	331.96953	29.97690	99.79950	1.85708	0.2022701	2.4115389	9	1	11 days	0.22	Williams	1999 YA ₈
1999 YB ₈	14.3	0.15	19991228	244.96208	310.63768	259.30238	2.46165	0.0831573	2.2360965	18	1	11 days	0.55	Williams	1999 YB ₈
1999 YD ₈	14.3	0.15	19991228	173.50361	189.10886	104.52508	5.04344	0.1523949	2.2105005	10	1	8 days	0.23	Williams	1999 YD ₈
1999 YH ₈	18.0	0.15	19991228	14.13813	352.42747	96.96804	2.66853	0.1425880	2.4334867	15	1	15 days	0.36	Williams	1999 YH ₈
1999 YJ ₈	17.0	0.15	19991228	358.75306	2.89961	108.85319	23.31050	0.0548755	2.5741028	9	1	9 days	0.14	Williams	1999 YJ ₈
1999 YK ₈	17.8	0.15	19991228	43.83180	7.82828	35.01139	0.64729	0.2186816	2.2137099	15	1	15 days	0.41	Williams	1999 YK ₈
1999 YL ₈	16.3	0.15	19991228	245.82961	127.20147	103.07900	6.05333	0.0612910	2.2595742	12	1	17 days	0.18	Williams	1999 YL ₈
1999 YM ₈	16.9	0.15	19991228	320.14241	67.78843	92.23277	2.33035	0.1295057	2.3988040	12	1	12 days	0.26	Williams	1999 YM ₈
1999 YN ₈	15.9	0.15	19991228	66.75464	271.65951	103.17383	5.49629	0.2524775	2.5477932	12	1	15 days	0.41	Williams	1999 YN ₈
1999 YO ₈	15.2	0.15	19991228	234.15757	138.46845	103.20416	6.66659	0.0614886	2.2555716	22	1	19 days	0.42	Williams	1999 YO ₈
1999 YP ₈	14.9	0.15	19991228	36.21215	336.39190	94.28422	3.10840	0.0711198	2.9756224	19	1	15 days	0.42	Williams	1999 YP ₈
1999 YQ ₈	16.0	0.15	19991228	108.67147	268.08025	76.03561	1.53129	0.1863092	2.3698653	12	1	15 days	0.36	Williams	1999 YQ ₈
1999 YR ₈	15.4	0.15	19991228	95.16321	261.70997	108.57038	11.11485	0.0672302	3.0487718	15	1	17 days	0.31	Williams	1999 YR ₈
1999 YS ₈	15.9	0.15	19991228	45.53736	315.54337	100.32997	5.02604	0.0955611	2.2847272	28	1	25 days	0.41	Williams	1999 YS ₈
1999 YT ₈	13.7	0.15	19991228	81.13695	45.99802	316.31601	8.54325	0.1065071	3.0627227	34	1	13 days	0.99	Williams	1999 YT ₈
1999 YU ₈	16.7	0.15	19991228	27.00586	132.17809	300.47718	3.46460	0.1149160	2.1506008	24	1	16 days	0.77	Williams	1999 YU ₈
1999 YW ₈	14.4	0.15	19991228	245.80893	134.71404	91.79649	11.90793	0.0631783	3.1095467	25	1	9 days	0.51	Williams	1999 YW ₈
1999 YA ₉	13.0	0.15	19991208	123.39910	234.06165	106.52422	10.65760	0.0641134	2.9712280	58	1	39 days	0.55	Williams	1999 YA ₉
1999 YB ₉	17.9	0.15	19991228	27.98022	356.36444	64.77305	1.34854	0.2632314	2.4614880	11	1	15 days	0.78	Williams	1999 YB ₉
1999 YD ₉	15.9	0.15	19991228	79.67827	75.39241	294.29863	2.72355	0.0900086	2.6061846	15	1	16 days	0.54	Williams	1999 YD ₉
1999 YF ₉	13.6	0.15	19991228	165.14250	6.40856	305.26323	9.24685	0.1108541	2.5987354	25	1	33 days	1.05	Williams	1999 YF ₉
1999 YG ₉	14.3	0.15	19991228	234.39693	304.39253	310.69321	3.53297	0.1255259	2.4546747	20	1	17 days	1.46	Williams	1999 YG ₉
1999 YH ₉	15.9	0.15	19991228	312.01710	51.39057	115.25472	22.51219	0.0531593	1.9046157	22	1	13 days	0.63	Williams	1999 YH ₉
1999 YJ ₉	15.2	0.15	20000226	1.84683	310.75332	164.80819	23.16167	0.2656342	2.3109908	37	1	89 days	0.43	M-v 4 Williams	1999 YJ ₉
1999 YL ₉	14.6	0.15	19991208	12.40843	149.97600	305.55773	7.11176	0.1867455	2.7834728	32	1	35 days	0.46	Williams	1999 YL ₉
1999 YM ₉	14.7	0.15	19991228	28.29335	84.72739	340.25779	5.17587	0.2696198	2.8014455	19	1	24 days	0.59	Williams	1999 YM ₉
1999 YN ₉	14.1	0.15	19991228	302.07678	137.49033	54.86031	3.39638	0.1594202	2.3902797	17	1	5 days	0.51	E Williams	1999 YN ₉
1999 YO ₉	14.4	0.15	19991228	67.71671	17.59100	13.55281	4.71409	0.1578209	2.3243489	17	1	6 days	0.50	E Williams	1999 YO ₉
1999 YP ₉	13.0	0.15	19991228	188.65109	293.45864	359.20697	8.72703	0.1720704	2.3839016	12	1	6 days	0.42	E Williams	1999 YP ₉
1999 YQ ₉	13.0	0.15	19991228	34.81412	91.77245	339.69389	10.72798	0.1669590	3.2010287	9	1	3 days	0.70	E Williams	1999 YQ ₉
1999 YS ₉	13.4	0.15	19991228	291.04995	166.45293	33.92907	6.01767	0.1321054	2.2150110	12	1	6 days	0.85	E Williams	1999 YS ₉
1999 YT ₉	13.6	0.15	19991208	70.14213	326.52394	64.26957	10.05846	0.1341402	2.7681411	19	1	33 days	0.54	Williams	1999 YT ₉
1999 YU ₉	12.4	0.15	19991228	162.25672	334.34677	342.93006	15.07645	0.0436628	3.0569192	12	1	10 days	0.26	Williams	1999 YU ₉
1999 YV ₉	15.2	0.15	19991228	18.02301	316.12610	94.11241	5.55191	0.0348589	2.7695850	9	1	16 days	0.29	Williams	1999 YV ₉
1999 YF ₁₀	16.1	0.15	19991228	313.11375	20.57486	106.15155	4.23691	0.0929764	2.6744122	12	1	16 days	0.25	Williams	1999 YF ₁₀
1999 YR ₁₀	16.2	0.15	19991228	81.94273	151.81062	175.93113	2.73466	0.1980976	2.6069178	9	1	9 days	0.20	Williams	1999 YR ₁₀
1999 YS ₁₀	17.0	0.15	19991228	339.04359	3.95789	98.44302	6.50831	0.1482874	2.6504563	9	1	9 days	0.24	Williams	1999 YS ₁₀
1999 YV ₁₀	13.4	0.15	19991228	107.61403	200.54626	105.78458	5.83651	0.1539451	3.2185432	13	1	15 days	0.31	Williams	1999 YV ₁₀
1999 YA ₁₁	15.6	0.15	20000226	351.45779	8.01974	107.70365	5.23340	0.2514947	2.5684871	34	1	62 days	0.47	M-v 4 Williams	1999 YA ₁₁
1999 YC ₁₁	15.6	0.15	19991228	261.41411	94.81012	84.46579	15.26007	0.0846417	3.0785695	12	1	16 days	0.32	Williams	1999 YC ₁₁
1999 YE ₁₁	16.3	0.15	19991228	79.24446	248.95384	101.33457	6.73632	0.0385045	2.5901490	12	1	16 days	0.27	Williams	1999 YE ₁₁
1999 YF ₁₁	16.4	0.15	19991228	322.70821	0.02537	123.43371	3.81026	0.1352828	2.5830701	12	1	16 days	0.21	Williams	1999 YF ₁₁
1999 YH ₁₂	15.1	0.15	19991228	312.37221	46.65255	88.23589	10.75650	0.0398736	3.1673735	9	1	11 days	0.13	Williams	1999 YH ₁₂
1999 YL ₁₂	14.8	0.15	19991208	174.43382	1.92868	264.71716	27.62650	0.0441967	2.5873698	21	1	52 days	0.40	Williams	1999 YL ₁₂
1999 YM ₁₂	13.9	0.15	19991228	9.22194	166.57837	291.30657	5.00884	0.0839398	3.1151095	17	1	15 days	0.64	Williams	1999 YM ₁₂
1999 YN ₁₂	11.9	0.15	19991228	72.57571	296.41771	66.60136	3.74772	0.1813511	5.0341755	9	1	16 days	0.38	Williams	1999 YN ₁₂
1999 YO ₁₂	16.3	0.15	19991208	35.47047	107.08244	290.72188	10.26562	0.3075613	2.6438776	16	1	31 days	0.36	Williams	1999 YO ₁₂
1999 YQ ₁₂	15.4	0.15	19991228	219.09378	308.57426	310.59004	1.83651	0.1181143	2.3797329	12	1	15 days	0.88	Williams	1999 YQ ₁₂
1999 YR ₁₂	13.9	0.15	19991228	38.77529	118.58473	300.23943	9.56478	0.1963559	5.3567870	9	1	14 days	0.17	Williams	1999 YR ₁₂
1999 YS ₁₂	13.4	0.15	19991228	274.84189	110.13288	99.31465	2.88794	0.1012052	3.0772547	19	1	15 days	0.40	Williams	1999 YS ₁₂
1999 YW ₁₂	15.2	0.15	19991228	107.99643	49.51423	260.52399	12.33113	0.2415974	2.7274183	9	1	6 days	0.35	E Williams	1999 YW ₁₂
1999 YZ ₁₂	16.9	0.15	19991228	356.44189	180.36344	293.63040	11.62325	0.1124573	2.6808953	9	1	10 days	0.15	Williams	1999 YZ ₁₂

1999 YA ₁₃	15.5	0.15	19991208	47.81162	76.16886	313.05233	6.37049	0.1347423	2.3670571	23	1	20 days	0.37		Williams	1999 YA ₁₃
1999 YC ₁₃	10.8	0.15	19991228	289.16832	112.65443	81.96805	20.43330	0.2288325	5.1819041	17	1	3 days	0.74	E	Williams	1999 YC ₁₃
1999 YD ₁₃	13.3	0.15	19991228	12.78920	315.28802	99.64932	7.73149	0.1637285	3.2246443	13	1	12 days	0.30		Williams	1999 YD ₁₃
1999 YF ₁₃	14.7	0.15	19991228	136.38763	192.06543	100.89704	7.79511	0.0467912	2.2742705	16	1	7 days	0.81		Williams	1999 YF ₁₃
1999 YG ₁₃	13.9	0.15	19991228	51.29773	289.38334	81.05093	16.35473	0.1187584	2.6860743	30	1	12 days	0.44		Williams	1999 YG ₁₃
1999 YH ₁₃	15.7	0.15	19991228	14.43446	139.47061	312.32933	3.76371	0.1679633	3.2601686	15	1	14 days	0.46		Williams	1999 YH ₁₃
1999 YJ ₁₃	14.1	0.15	19991228	232.25575	130.75407	129.78117	9.19974	0.2302185	2.2914847	19	1	6 days	0.54	E	Williams	1999 YJ ₁₃
1999 YK ₁₃	15.0	0.15	19991228	272.09453	116.08079	91.61674	2.50941	0.1708326	3.2118898	10	1	14 days	0.53		Williams	1999 YK ₁₃
1999 YM ₁₃	14.0	0.15	20000226	33.80965	256.32231	132.51159	22.63911	0.2414070	2.3972348	25	1	102 days	0.55	M-v 4	Williams	1999 YM ₁₃
1999 YP ₁₃	15.1	0.15	19991228	10.96799	282.31220	123.91507	28.00364	0.3316626	2.3562254	11	1	3 days	0.52		Williams	1999 YP ₁₃
1999 YS ₁₃	13.8	0.15	19991228	175.83216	162.82540	135.65386	4.20075	0.2066775	2.2217999	20	1	6 days	0.64	E	Williams	1999 YS ₁₃
1999 YT ₁₃	15.2	0.15	19991228	276.83390	273.28093	313.72093	4.15533	0.2376111	2.2774048	19	1	6 days	0.88	E	Williams	1999 YT ₁₃
1999 YU ₁₃	13.6	0.15	19991228	323.30134	64.42289	101.33825	3.98028	0.1242481	3.0840119	20	1	6 days	0.56	E	Williams	1999 YU ₁₃
1999 YV ₁₃	12.7	0.15	19991228	107.96369	242.85207	121.27932	10.00081	0.0825809	2.9161846	23	1	17 days	0.71		Williams	1999 YV ₁₃
1999 YW ₁₃	14.9	0.15	19991228	299.36300	80.63690	115.23243	6.65386	0.1704456	2.3161947	14	1	6 days	1.14	E	Williams	1999 YW ₁₃
1999 YX ₁₃	13.1	0.15	19991228	312.95268	260.50252	322.78865	5.30399	0.2334835	2.5267102	10	1	11 days	0.31		Williams	1999 YX ₁₃
1999 YY ₁₃	15.9	0.15	19991228	38.18558	130.66778	278.90165	27.26779	0.1105245	2.6604672	11	1	15 days	0.61		Williams	1999 YY ₁₃
1999 YZ ₁₃	16.1	0.15	19991228	358.85512	359.66340	88.45417	5.36565	0.0508107	2.6350686	11	1	9 days	0.30		Williams	1999 YZ ₁₃
1999 YB ₁₄	18.2	0.15	19991228	14.84736	332.86650	122.42130	6.80783	0.1630262	2.3018384	9	1	11 days	0.19		Williams	1999 YB ₁₄
1999 YC ₁₄	14.8	0.15	19991228	49.47172	278.36802	138.91318	2.59451	0.1521466	2.9721554	16	1	12 days	0.45		Williams	1999 YC ₁₄
1999 YF ₁₄	17.3	0.15	19991228	4.99608	232.82462	238.17160	0.41559	0.1625815	2.4475298	9	1	9 days	0.18		Williams	1999 YF ₁₄
1999 YG ₁₄	14.8	0.15	19991228	300.39881	85.78651	132.33303	0.48963	0.2965728	3.0890650	12	1	9 days	0.44		Williams	1999 YG ₁₄
1999 YH ₁₄	16.5	0.15	19991228	62.92029	86.90038	304.76917	1.88464	0.2428272	2.5075116	9	1	9 days	0.20		Williams	1999 YH ₁₄
1999 YJ ₁₄	15.6	0.15	19991228	357.96876	6.54562	116.56458	1.01405	0.1427264	2.5040173	22	1	12 days	0.65		Williams	1999 YJ ₁₄
1999 YR ₁₄	19.0	0.15	19991228	43.84060	9.33024	3.17302	3.72861	0.4013937	1.6545281	51	1	24 days	0.69		Williams	1999 YR ₁₄
1999 YT ₁₄	14.6	0.15	19991228	85.27889	121.16510	239.29911	4.37686	0.2933812	2.2846691	31	1	5 days	0.68	E	Williams	1999 YT ₁₄
1999 YU ₁₄	16.7	0.15	19991228	32.85183	121.87179	306.94487	4.07194	0.1209014	2.3889047	22	1	16 days	0.52		Williams	1999 YU ₁₄
1999 YY ₁₄	15.0	0.15	19991228	337.82610	45.40615	56.25025	24.68549	0.2788203	2.7462617	23	1	11 days	0.72		Williams	1999 YY ₁₄
1999 YB ₁₅	15.2	0.15	19991228	45.89280	277.85511	94.35734	7.79718	0.1673322	2.8012516	9	1	10 days	0.13		Williams	1999 YB ₁₅
1999 YE ₁₅	15.8	0.15	19991228	341.77271	0.01059	108.57656	3.09941	0.2939793	2.6980870	9	1	6 days	0.32	E	Williams	1999 YE ₁₅
1999 YB ₁₆	16.5	0.15	19991228	112.54433	155.23207	145.06088	2.89430	0.2159349	2.4439926	9	1	12 days	0.28		Williams	1999 YB ₁₆
1999 YK ₁₆	13.0	0.15	19991228	306.46760	53.72213	145.55085	11.24193	0.0358670	2.9734685	14	1	16 days	0.54		Williams	1999 YK ₁₆
1999 YM ₁₆	16.5	0.15	19991228	353.86492	183.16780	280.69041	9.19215	0.0922936	2.3261870	10	1	13 days	0.53		Williams	1999 YM ₁₆
1999 YP ₁₆	18.2	0.15	19991228	33.59765	94.42136	309.36757	2.56529	0.3422324	2.7801597	9	1	11 days	0.21		Williams	1999 YP ₁₆
1999 YR ₁₆	15.4	0.15	19991228	279.67501	260.38561	298.90944	9.82013	0.0589301	3.1347263	9	1	11 days	0.14		Williams	1999 YR ₁₆
1999 YS ₁₆	16.5	0.15	19991228	32.65803	319.43773	101.33288	4.42681	0.2229226	3.1198080	12	1	11 days	0.24		Williams	1999 YS ₁₆
1999 YT ₁₆	17.0	0.15	19991228	28.15644	107.54905	313.38635	2.12421	0.2664070	2.6615153	9	1	11 days	0.29		Williams	1999 YT ₁₆
1999 YU ₁₆	14.5	0.15	19991228	278.66989	283.93048	297.21288	11.35509	0.2480481	2.6963482	9	1	11 days	0.11		Williams	1999 YU ₁₆
1999 YV ₁₆	14.8	0.15	19991228	221.99784	329.32090	301.04232	9.41721	0.3235241	2.6693886	9	1	11 days	0.20		Williams	1999 YV ₁₆
1999 YW ₁₆	13.7	0.15	19991228	36.35010	125.34833	306.22563	8.64130	0.1025368	5.1852601	9	1	11 days	0.25		Williams	1999 YW ₁₆
1999 YY ₁₆	17.1	0.15	19991228	22.24936	113.95063	316.88590	3.07819	0.2952921	3.3720159	9	1	11 days	0.16		Williams	1999 YY ₁₆
1999 YA ₁₇	15.6	0.15	19991228	62.56173	106.95727	293.47115	9.21496	0.1403956	2.3357646	14	1	6 days	0.58	E	Williams	1999 YA ₁₇
1999 YD ₁₇	14.0	0.15	19991228	196.50345	157.87976	136.73037	5.66606	0.2060635	3.1611835	12	1	16 days	0.53		Williams	1999 YD ₁₇
1999 YG ₁₇	15.7	0.15	19991228	254.30850	335.64185	269.28020	1.40038	0.1778885	2.3473921	9	1	9 days	0.21		Williams	1999 YG ₁₇
1999 YJ ₁₇	15.7	0.15	19991228	22.39797	159.30730	293.55714	5.27948	0.0874577	2.4165291	9	1	13 days	0.08		Williams	1999 YJ ₁₇
1999 YK ₁₇	16.2	0.15	19991228	42.56636	259.38403	155.04156	1.01045	0.2383337	2.6089049	12	1	16 days	0.16		Williams	1999 YK ₁₇
1999 YM ₁₇	16.6	0.15	19991228	18.72894	319.99564	130.50586	2.38039	0.1784631	2.3418405	9	1	9 days	0.11		Williams	1999 YM ₁₇
1999 YO ₁₇	14.6	0.15	19991228	30.09367	295.37475	96.66843	6.30731	0.1535830	3.1177138	11	1	10 days	0.53		Williams	1999 YO ₁₇
2000 AA	15.3	0.15	19991208	355.14150	345.92873	114.76242	5.62777	0.0916480	2.2884211	33	1	31 days	0.70		Williams	2000 AA
2000 AC	14.6	0.15	19991208	40.15767	272.97097	122.69416	6.71239	0.3126679	2.6257121	26	1	42 days	0.50		Williams	2000 AC
2000 AE	13.7	0.15	19991228	257.82832	11.00972	181.15326	4.95626	0.1114467	2.3506994	17	1	8 days	0.66		Williams	2000 AE
2000 AF	14.9	0.15	19991208	14.91070	244.15871	168.93868	5.28831	0.1439710	2.2686777	25	1	32 days	0.70		Williams	2000 AF
2000 AJ	14.0	0.15	19991228	310.22870	59.18974	109.48285	8.86538	0.1322013	2.3149164	22	1	12 days	0.84		Williams	2000 AJ

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2000 AK	14.2	0.15	19991228	8.67913	336.95015	121.53295	4.82620	0.1347012	2.2659196	16	1	9 days	0.25	Williams	2000 AK
2000 AN	13.1	0.15	19991228	235.60300	155.39506	94.17705	7.05033	0.1644073	2.3251984	18	1	12 days	0.46	Williams	2000 AN
2000 AR	16.2	0.15	19991228	62.05357	282.02535	131.54263	5.94392	0.0679360	2.7070910	12	1	14 days	0.18	Williams	2000 AR
2000 AD ₁	14.9	0.15	19991228	273.56271	301.21123	299.77183	6.15246	0.2813467	2.4134459	15	1	4 days	0.40	E Williams	2000 AD ₁
2000 AF ₁	14.2	0.15	19991228	227.98634	135.33378	140.03322	3.08111	0.2306249	2.8685002	12	1	11 days	0.36	Williams	2000 AF ₁
2000 AG ₁	13.6	0.15	19991228	46.55197	44.37417	303.15895	21.48445	0.2289583	2.0910249	14	1	2 days	0.30	E Williams	2000 AG ₁
2000 AJ ₁	15.0	0.15	19991228	353.50936	161.79778	275.77416	27.15434	0.3383983	2.4295844	13	1	2 days	0.34	E Williams	2000 AJ ₁
2000 AM ₁	15.5	0.15	19991228	13.88290	347.23799	84.76453	19.30559	0.2337895	2.8416102	14	1	2 days	0.49	E Williams	2000 AM ₁
2000 AN ₁	17.0	0.15	19991228	343.16375	35.60048	94.09638	24.12741	0.1225189	1.9018846	13	1	9 days	0.40	Williams	2000 AN ₁
2000 AO ₁	15.0	0.15	19991208	355.42716	38.04505	93.05622	27.96990	0.1310671	2.6035822	19	1	27 days	0.30	Williams	2000 AO ₁
2000 AP ₁	16.6	0.15	19991228	340.11196	63.83396	90.26008	20.86079	0.2879384	2.2037084	12	1	2 days	0.36	E Williams	2000 AP ₁
2000 AR ₁	14.2	0.15	19991228	295.15895	255.61837	289.93318	7.16342	0.0626917	2.3905470	15	1	4 days	0.61	E Williams	2000 AR ₁
2000 AS ₁	14.6	0.15	19991228	142.91986	209.35725	113.11365	4.40313	0.1405794	2.1944389	17	1	3 days	0.69	E Williams	2000 AS ₁
2000 AY ₁	13.9	0.15	19991228	58.28119	295.84020	121.87158	12.91339	0.0374180	2.9446352	19	1	17 days	0.98	Williams	2000 AY ₁
2000 AB ₂	14.7	0.15	19991228	60.24930	267.85088	117.29406	6.69583	0.2170205	2.5056047	27	1	9 days	0.46	Williams	2000 AB ₂
2000 AC ₂	15.4	0.15	19991228	271.14955	84.17918	124.77775	3.56629	0.0937163	2.2690541	20	1	8 days	0.34	Williams	2000 AC ₂
2000 AD ₂	16.1	0.15	19991228	41.72578	128.56273	280.13164	6.23801	0.2008878	2.4871752	20	1	13 days	0.51	Williams	2000 AD ₂
2000 AE ₂	13.4	0.15	19991228	289.03857	185.63122	24.43624	6.09335	0.1705360	2.4853388	7	1	3 days	0.64	E Williams	2000 AE ₂
2000 AK ₂	13.3	0.15	19991228	72.47002	72.90624	326.65671	12.58952	0.0315826	2.4044149	7	1	3 days	0.81	E Williams	2000 AK ₂
2000 AL ₂	12.4	0.15	19991228	248.73789	200.09722	59.00079	6.06816	0.2165599	2.8947963	12	1	3 days	0.49	E Williams	2000 AL ₂
2000 AS ₂	14.8	0.15	19991228	31.40560	119.64042	313.68260	4.04716	0.0838551	2.2026655	35	1	14 days	0.53	Williams	2000 AS ₂
2000 AT ₂	16.1	0.15	19991228	47.84552	86.39663	323.35451	3.45136	0.1358867	2.2563603	15	1	7 days	0.67	Williams	2000 AT ₂
2000 AU ₂	15.2	0.15	19991228	37.70338	331.24406	84.11512	3.45048	0.1998275	2.3464493	17	1	7 days	0.20	Williams	2000 AU ₂
2000 AV ₂	13.7	0.15	19991228	178.84395	355.37423	300.63133	21.47746	0.0767366	3.1481491	10	1	10 days	0.34	Williams	2000 AV ₂
2000 AX ₂	13.9	0.15	19991228	17.66576	343.62881	107.86734	2.82619	0.1262225	3.2105845	15	1	15 days	0.35	Williams	2000 AX ₂
2000 AA ₃	15.1	0.15	19991228	136.76799	225.00685	102.06657	6.97923	0.1560792	2.2777189	13	1	13 days	0.55	Williams	2000 AA ₃
2000 AB ₃	14.8	0.15	19991228	286.93018	98.07872	104.56875	7.15789	0.1451531	2.3038125	18	1	8 days	0.30	Williams	2000 AB ₃
2000 AD ₃	14.1	0.15	19991228	273.52181	96.80036	96.00001	8.21521	0.1236799	2.9201743	11	1	5 days	0.24	Marsden	2000 AD ₃
2000 AE ₃	14.4	0.15	19991208	9.23219	88.92437	321.48471	11.84170	0.1854052	2.6517532	19	1	26 days	0.35	Williams	2000 AE ₃
2000 AG ₃	13.7	0.15	19991228	210.50434	198.09700	34.85368	9.97224	0.2063537	2.2740979	18	1	4 days	0.52	E Williams	2000 AG ₃
2000 AH ₃	14.3	0.15	19991228	62.72738	67.92811	284.57030	12.17125	0.2055077	2.5013057	14	1	2 days	0.46	E Williams	2000 AH ₃
2000 AL ₃	15.2	0.15	19991228	283.12777	104.32552	67.38973	8.31252	0.0044252	2.2629667	15	1	2 days	0.64	E Williams	2000 AL ₃
2000 AM ₃	15.6	0.15	19991228	44.81051	343.93323	36.93688	4.74552	0.2831512	2.7430347	11	1	2 days	0.41	E Williams	2000 AM ₃
2000 AV ₃	13.4	0.15	19991228	24.48870	80.45155	284.39432	22.08928	0.3455111	2.6018593	19	1	6 days	0.36	Williams	2000 AV ₃
2000 AZ ₃	16.1	0.15	19991228	82.01428	261.02745	102.84565	4.58774	0.1563573	2.1575944	21	1	12 days	0.47	Williams	2000 AZ ₃
2000 AD ₄	15.9	0.15	19991228	45.03717	96.14850	294.30752	4.32509	0.2693743	2.3164570	27	1	12 days	0.50	Williams	2000 AD ₄
2000 AJ ₄	15.8	0.15	19991228	18.25556	341.15259	101.24491	5.27393	0.0641653	2.5966949	15	1	12 days	0.50	Williams	2000 AJ ₄
2000 AN ₄	14.9	0.15	19991228	32.88665	305.08131	139.25799	15.35109	0.2333795	2.8265431	9	1	7 days	0.13	Williams	2000 AN ₄
2000 AP ₄	13.6	0.15	19991228	26.78991	209.87683	230.10174	5.08228	0.1692244	3.1662167	15	1	6 days	0.26	E Williams	2000 AP ₄
2000 AQ ₄	15.9	0.15	19991228	14.98589	252.33400	193.47766	3.69746	0.1551232	2.6867464	13	1	4 days	0.40	Williams	2000 AQ ₄
2000 AR ₄	13.9	0.15	19991228	81.73606	284.63059	97.39235	8.68841	0.1081933	2.7932951	8	1	13 days	0.54	Williams	2000 AR ₄
2000 AS ₄	15.3	0.15	19991228	63.98154	84.58577	312.67663	3.98346	0.1565967	2.1998745	16	1	13 days	0.84	Williams	2000 AS ₄
2000 AT ₄	15.9	0.15	19991228	33.49700	130.95770	286.75755	6.32295	0.1003591	2.3753201	41	1	21 days	1.14	Williams	2000 AT ₄
2000 AU ₄	16.6	0.15	19991228	6.10754	18.38731	69.19610	8.19929	0.1718400	2.3669205	28	1	10 days	0.94	Williams	2000 AU ₄
2000 AV ₄	13.6	0.15	19991228	53.42409	197.96318	217.30725	0.80745	0.0744492	3.2051547	38	1	3 days	0.64	E Williams	2000 AV ₄
2000 AX ₄	16.1	0.15	19991228	23.69917	128.62879	310.13036	0.28333	0.1548676	2.2474779	28	1	23 days	0.48	Williams	2000 AX ₄
2000 AZ ₄	16.0	0.15	19991228	46.59290	120.71148	297.99697	6.89885	0.0828202	2.3101959	12	1	13 days	0.51	Williams	2000 AZ ₄
2000 AB ₅	14.4	0.15	19991228	200.02770	172.40510	108.22987	14.23353	0.1341738	2.6561993	20	1	13 days	0.49	Williams	2000 AB ₅
2000 AC ₅	14.1	0.15	19991228	354.97258	29.35813	89.32477	4.74100	0.0587422	3.1807609	17	1	7 days	0.45	Nakano	2000 AC ₅
2000 AD ₅	13.0	0.15	19991228	138.87582	19.81933	303.51768	11.83052	0.1639631	2.6022320	21	1	5 days	0.42	Nakano	2000 AD ₅
2000 AE ₅	15.2	0.15	20000117	67.40867	49.49187	0.96188	3.65590	0.0925334	2.1715951	19	1	16 days	0.58	Nakano	2000 AE ₅
2000 AF ₅	13.5	0.15	19991228	38.31756	271.92366	118.48106	5.46567	0.1594607	2.6779011	14	1	3 days	0.39	E Williams	2000 AF ₅
2000 AH ₅	14.7	0.15	19991228	286.16959	262.07999	283.04895	14.22140	0.1140995	2.5478531	30	1	20 days	0.64	Williams	2000 AH ₅

2000 AJ ₅	15.6	0.15	19991228	327.09626	46.39246	105.26244	2.03231	0.1100851	2.1967961	10	1	13 days	0.40	Williams	2000 AJ ₅
2000 AK ₅	15.2	0.15	19991228	309.73229	66.56352	91.48469	6.40811	0.0584554	2.3503868	25	1	9 days	0.38	Williams	2000 AK ₅
2000 AM ₅	16.2	0.15	19991228	32.82769	316.28688	93.81127	4.08443	0.2541486	2.4461895	14	1	4 days	1.16	E Williams	2000 AM ₅
2000 AN ₅	15.0	0.15	19991228	328.54023	64.46187	99.16827	8.46923	0.2406832	2.6704584	18	1	14 days	0.83	Williams	2000 AN ₅
2000 AO ₅	12.6	0.15	19991228	271.18085	121.32824	113.57841	2.46514	0.2217738	3.1424131	13	1	12 days	0.67	Williams	2000 AO ₅
2000 AW ₅	14.8	0.15	19991228	145.81868	214.89350	95.86142	4.55324	0.1473475	2.7214610	12	1	11 days	0.19	Williams	2000 AW ₅
2000 AX ₅	15.9	0.15	19991228	112.65346	240.24249	121.95319	5.90982	0.0336895	2.1719427	12	1	6 days	0.47	E Marsden	2000 AX ₅
2000 AY ₅	13.8	0.15	19991228	221.69441	147.60300	123.73989	2.97947	0.1283130	2.8845454	13	1	7 days	0.51	Williams	2000 AY ₅
2000 AA ₆	21.9	0.15	20000226	351.50300	287.13944	280.35062	2.04677	0.5211438	1.2894946	84	1	10 days	0.48	M-v 8 Williams	2000 AA ₆
2000 AB ₆	22.1	0.15	19991228	12.97629	133.01849	283.31903	3.78682	0.4765769	1.7872973	104	1	12 days	0.57	Williams	2000 AB ₆
2000 AC ₆	21.0	0.15	20000226	241.65724	187.41300	102.14432	4.70532	0.2864176	0.8528899	76	1	20 days	0.54	M-v 8 Williams	2000 AC ₆
2000 AD ₆	18.7	0.15	19991228	7.54539	334.81709	112.93913	30.00062	0.4244045	2.2090782	46	1	14 days	0.63	Williams	2000 AD ₆
2000 AE ₆	17.3	0.15	19991228	23.90323	277.13965	121.80277	11.78375	0.5595592	2.7152309	33	1	9 days	0.55	Williams	2000 AE ₆
2000 AF ₆	19.9	0.15	19991228	132.01304	200.00599	110.91581	2.69713	0.4118260	0.8780492	40	1	20 days	0.78	Williams	2000 AF ₆
2000 AG ₆	25.3	0.15	20000226	336.00399	275.53770	283.73427	2.47467	0.1902470	1.0153379	68	1	7 days	0.65	M-v 6 Williams	2000 AG ₆
2000 AH ₆	15.1	0.15	19991228	58.88176	310.86629	85.59070	6.12471	0.1767195	2.8730273	20	1	13 days	0.54	Williams	2000 AH ₆
2000 AK ₆	13.7	0.15	19991228	205.03184	294.82456	339.74750	1.36005	0.1530385	2.8747762	12	1	7 days	0.21	Williams	2000 AK ₆
2000 AL ₆	16.5	0.15	19991228	336.20029	97.15461	43.79042	0.88854	0.1481526	2.3514876	11	1	7 days	0.37	Williams	2000 AL ₆
2000 AM ₆	13.7	0.15	19991228	242.06611	142.12775	101.10450	4.12404	0.1323745	2.8445815	18	1	7 days	0.45	Williams	2000 AM ₆
2000 AN ₆	10.9	0.15	19991228	248.71467	723.23243	113.00992	15.42341	0.0911293	5.0156060	14	1	7 days	0.37	Williams	2000 AN ₆
2000 AO ₆	14.0	0.15	19991228	164.25357	1.81894	296.95929	13.65548	0.1458005	2.7154853	7	1	6 days	0.25	E Williams	2000 AO ₆
2000 AP ₆	15.6	0.15	19991228	92.09371	109.03809	207.87509	7.64281	0.1285339	1.8348258	14	1	8 days	0.52	E Marsden	2000 AP ₆
2000 AQ ₆	14.9	0.15	19991228	9.57410	280.42996	148.09025	5.36830	0.1575446	3.1041630	22	1	9 days	0.33	Marsden	2000 AQ ₆
2000 AC ₉	14.0	0.15	19991228	67.31346	267.32658	80.37082	16.97610	0.3600751	2.9614825	15	1	6 days	0.99	Williams	2000 AC ₉
2000 AH ₉	15.0	0.15	19991208	323.02692	177.80802	323.66215	4.77725	0.1704357	2.561629	17	1	24 days	0.30	Williams	2000 AH ₉
2000 AK ₉	14.7	0.15	19991228	54.70747	307.51349	71.70520	7.73891	0.2363685	2.6978739	12	1	4 days	0.36	E Williams	2000 AK ₉
2000 AL ₉	12.5	0.15	19991228	143.06170	359.76939	301.96523	12.94612	0.2819912	2.9098580	17	1	6 days	0.42	E Williams	2000 AL ₉
2000 AR ₉	14.9	0.15	19991228	301.46371	160.23868	12.64811	5.01630	0.0869984	2.2421033	17	1	6 days	0.54	E Williams	2000 AR ₉
2000 AJ ₁₁	14.4	0.15	19991228	287.89049	231.68029	297.22252	2.73962	0.1486795	2.6595734	17	1	5 days	0.66	E Williams	2000 AJ ₁₁
2000 AK ₁₁	15.7	0.15	19991228	7.40598	356.76419	77.41206	6.83896	0.0609681	2.1691138	13	1	5 days	0.62	E Williams	2000 AK ₁₁
2000 AB ₁₃	16.0	0.15	19991228	357.44982	33.37080	58.18633	2.54881	0.2103230	2.4348153	16	1	4 days	0.66	E Williams	2000 AB ₁₃
2000 AN ₁₃	15.8	0.15	19991228	28.32926	96.87138	310.26891	2.03732	0.1755081	2.4452372	15	1	7 days	0.59	Williams	2000 AN ₁₃
2000 AN ₁₄	16.8	0.15	19991228	338.32936	202.40676	281.74965	1.64539	0.2302342	2.4485528	15	1	10 days	1.02	Williams	2000 AN ₁₄
2000 AO ₁₄	14.5	0.15	19991228	84.23921	243.86156	87.64719	6.76176	0.2931778	2.2047087	13	1	4 days	0.31	E Williams	2000 AO ₁₄
2000 AR ₁₄	15.7	0.15	19991228	338.54523	202.77849	276.93323	1.61755	0.1563221	2.4129727	14	1	10 days	0.46	Williams	2000 AR ₁₄
2000 AT ₁₄	13.9	0.15	19991228	51.67580	310.70872	61.20023	4.32343	0.2386737	3.0584530	13	1	7 days	0.49	E Williams	2000 AT ₁₄
2000 AD ₁₅	14.5	0.15	19991228	73.12811	267.88466	84.35322	3.86460	0.2079289	3.0370621	11	1	12 days	0.33	Williams	2000 AD ₁₅
2000 AE ₁₅	14.9	0.15	19991228	327.47300	220.40596	273.99157	4.37124	0.1533725	2.4631322	12	1	6 days	0.44	E Williams	2000 AE ₁₅
2000 AF ₁₅	13.7	0.15	19991228	292.48356	88.14404	90.73235	16.58901	0.1908895	3.1272635	15	1	7 days	0.42	Williams	2000 AF ₁₅
2000 AG ₁₅	14.0	0.15	19991228	265.37556	106.90919	87.20886	5.87967	0.0888158	3.2000948	11	1	4 days	0.51	E Williams	2000 AG ₁₅
2000 AY ₁₅	14.0	0.15	19991228	154.08604	11.70115	274.11293	6.54726	0.2822124	2.4470046	16	1	10 days	0.51	Williams	2000 AY ₁₅
2000 AF ₁₆	15.1	0.15	19991228	34.95420	118.59652	276.47347	12.18338	0.2558548	2.6520378	13	1	6 days	0.52	E Williams	2000 AF ₁₆
2000 AG ₁₆	14.9	0.15	19991228	16.71386	153.62965	278.43293	2.68869	0.0979354	2.5302411	12	1	10 days	0.70	Williams	2000 AG ₁₆
2000 AV ₁₆	13.3	0.15	19991228	137.76239	30.57496	275.05814	6.30253	0.1773243	2.9461711	13	1	5 days	0.40	E Williams	2000 AV ₁₆
2000 AO ₁₇	12.7	0.15	19991228	194.63457	166.60873	98.31874	13.76977	0.1661644	2.6328931	20	1	5 days	0.38	E Williams	2000 AO ₁₇
2000 AV ₁₇	14.3	0.15	19991228	34.52363	4.36603	38.70848	2.00370	0.2236900	2.8567700	13	1	3 days	0.34	E Williams	2000 AV ₁₇
2000 AW ₁₇	17.1	0.15	19991228	4.49995	92.88550	357.35251	0.86184	0.1405448	2.0027750	12	1	3 days	0.41	E Williams	2000 AW ₁₇
2000 AX ₁₇	15.3	0.15	19991228	81.77644	41.22021	290.69964	2.96669	0.3894365	2.4053498	17	1	4 days	0.65	E Williams	2000 AX ₁₇
2000 AD ₁₈	15.5	0.15	19991228	356.89415	97.15531	2.93941	1.80470	0.0611559	2.5790269	8	1	4 days	1.23	E Williams	2000 AD ₁₈
2000 AB ₁₉	15.1	0.15	19991228	333.93378	217.74492	265.01378	13.45898	0.2056393	2.7468752	13	1	3 days	0.35	E Williams	2000 AB ₁₉
2000 AO ₁₉	16.9	0.15	19991228	342.75355	185.24666	296.60839	2.73246	0.3178551	2.7799312	9	1	7 days	0.57	Williams	2000 AO ₁₉
2000 AA ₂₀	16.6	0.15	19991228	306.72875	218.74677	308.31741	0.68786	0.2211783	2.2607318	10	1	4 days	0.49	E Williams	2000 AA ₂₀
2000 AF ₂₀	14.0	0.15	19991228	87.41525	357.27974	337.35516	2.43930	0.2353421	2.8345534	11	1	7 days	0.42	E Williams	2000 AF ₂₀

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2000 AH ₂₀	15.2	0.15	19991228	74.13232	282.79557	68.76933	5.31260	0.2145999	2.3650722	13	1	7 days	0.66	E Williams	2000 AH ₂₀
2000 AN ₂₀	13.2	0.15	19991228	89.88441	26.55771	310.30121	0.35979	0.2077385	3.0123137	10	1	4 days	0.30	E Williams	2000 AN ₂₀
2000 AD ₂₁	15.0	0.15	19991228	81.66273	70.05010	282.30017	11.82439	0.1748581	2.4593996	10	1	5 days	0.45	E Williams	2000 AD ₂₁
2000 AC ₂₂	16.1	0.15	19991228	15.08151	156.86104	274.95305	6.49975	0.0722736	2.2807807	15	1	10 days	0.31	Williams	2000 AC ₂₂
2000 AO ₂₂	13.0	0.15	19991228	205.44526	178.62409	80.16614	11.57684	0.1345582	2.7179990	13	1	5 days	0.42	E Williams	2000 AO ₂₂
2000 AR ₂₂	13.2	0.15	19991228	63.83412	314.47492	77.97107	9.23584	0.0229100	3.1192525	15	1	5 days	0.35	E Williams	2000 AR ₂₂
2000 AS ₂₂	12.2	0.15	19991228	155.84731	200.89430	92.89681	15.07550	0.2220169	2.9142428	15	1	5 days	0.43	E Williams	2000 AS ₂₂
2000 AA ₂₃	15.7	0.15	19991228	341.22390	93.87182	31.72813	1.14417	0.1835722	2.3671669	14	1	5 days	0.34	E Williams	2000 AA ₂₃
2000 AC ₂₃	14.0	0.15	19991228	89.59362	270.92187	83.53153	9.44012	0.1288709	2.7528724	13	1	5 days	0.58	E Williams	2000 AC ₂₃
2000 AD ₂₃	13.3	0.15	19991228	319.49601	219.82936	295.09370	7.74939	0.1801238	3.1855869	14	1	5 days	0.48	E Williams	2000 AD ₂₃
2000 AJ ₂₃	16.0	0.15	19991228	353.49675	12.64182	96.41250	3.41009	0.1821270	2.4528852	15	1	5 days	0.55	E Williams	2000 AJ ₂₃
2000 AU ₂₃	14.1	0.15	19991228	77.71324	260.92357	92.12935	19.85130	0.2576980	2.8256328	12	1	5 days	0.39	E Williams	2000 AU ₂₃
2000 AY ₂₃	14.3	0.15	19991228	104.85422	306.96469	23.08414	3.98489	0.2494671	2.6214485	12	1	5 days	0.56	E Williams	2000 AY ₂₃
2000 AM ₂₄	13.6	0.15	19991228	267.95353	282.98682	284.02543	18.38190	0.1285142	2.6817760	12	1	5 days	0.42	E Williams	2000 AM ₂₄
2000 AN ₂₄	16.3	0.15	19991228	33.19505	109.01052	303.45738	1.08593	0.1840729	2.2332327	11	1	5 days	0.60	E Williams	2000 AN ₂₄
2000 AO ₂₄	14.7	0.15	19991228	13.67044	346.30515	98.83798	5.80693	0.0743155	2.7464523	22	1	9 days	0.41	Williams	2000 AO ₂₄
2000 AP ₂₄	14.8	0.15	19991228	279.77071	104.35596	90.24811	2.81050	0.1167975	2.4548065	15	1	5 days	0.37	E Williams	2000 AP ₂₄
2000 AQ ₂₄	14.7	0.15	19991228	343.77017	25.43831	101.90160	15.40265	0.2326119	3.0717457	12	1	5 days	0.35	E Williams	2000 AQ ₂₄
2000 AV ₂₄	15.9	0.15	19991228	10.15864	160.12627	287.69284	12.33304	0.1262981	2.6014152	15	1	12 days	0.31	Williams	2000 AV ₂₄
2000 AY ₂₄	17.6	0.15	19991228	338.96174	217.87326	275.55318	1.12433	0.2214472	2.1736692	10	1	10 days	0.38	Williams	2000 AY ₂₄
2000 AZ ₂₄	14.2	0.15	19991228	29.83413	148.75407	281.93562	7.20286	0.0389411	3.0438979	12	1	5 days	0.38	E Williams	2000 AZ ₂₄
2000 AB ₂₅	13.7	0.15	19991228	278.37793	267.90215	282.77521	9.19440	0.0531950	3.0088149	15	1	10 days	0.42	Williams	2000 AB ₂₅
2000 AC ₂₅	13.7	0.15	19991228	281.19998	37.43974	154.98773	0.49790	0.0904826	3.1574957	12	1	10 days	0.49	Williams	2000 AC ₂₅
2000 AE ₂₅	13.2	0.15	20000226	60.91953	278.53382	114.04181	0.26624	0.1940524	3.2025855	30	1	38 days	0.39	M-v 6 D Williams	2000 AE ₂₅
2000 AH ₂₅	15.6	0.15	19991228	35.40170	88.37745	325.37741	2.08321	0.1576479	2.3625068	13	1	5 days	0.46	E Williams	2000 AH ₂₅
2000 AM ₂₅	16.3	0.15	19991228	324.38198	145.99852	0.12768	2.37578	0.1259525	2.4406785	22	1	11 days	0.57	Marsden	2000 AM ₂₅
2000 AV ₂₅	14.5	0.15	19991228	32.15929	109.31947	295.60184	12.12493	0.2993963	3.1739520	14	1	5 days	0.49	E Williams	2000 AV ₂₅
2000 AW ₂₅	15.8	0.15	19991228	16.20506	4.11495	73.88052	3.25403	0.1872396	2.3824892	15	1	5 days	0.44	E Williams	2000 AW ₂₅
2000 AY ₂₅	16.3	0.15	19991228	335.78045	195.98530	296.67397	3.85709	0.1293493	2.2457257	13	1	12 days	0.50	Williams	2000 AY ₂₅
2000 AZ ₂₅	16.7	0.15	19991228	16.30113	121.53722	315.40566	1.16431	0.1934487	2.3895887	11	1	12 days	0.54	Williams	2000 AZ ₂₅
2000 AA ₂₆	15.5	0.15	19991228	13.26423	41.78601	39.54035	0.57541	0.2169291	3.0526278	11	1	12 days	0.48	Williams	2000 AA ₂₆
2000 AB ₂₆	11.4	0.15	19991228	47.77432	305.40561	100.67609	12.47775	0.1123242	5.1780943	13	1	9 days	0.56	Williams	2000 AB ₂₆
2000 AG ₂₆	16.4	0.15	19991228	18.47235	149.13404	288.21795	2.94885	0.1403021	2.3874370	20	1	11 days	0.51	Williams	2000 AG ₂₆
2000 AJ ₂₆	12.7	0.15	19991228	341.59974	196.16055	292.64890	3.79770	0.1201886	5.2188795	11	1	5 days	0.54	E Williams	2000 AJ ₂₆
2000 AM ₂₆	16.0	0.15	19991228	15.54530	79.86308	359.42924	1.44759	0.1745654	2.3622388	12	1	5 days	0.54	E Williams	2000 AM ₂₆
2000 AO ₂₆	13.9	0.15	19991228	121.21345	256.31674	76.76863	4.34664	0.1032839	2.7723419	13	1	5 days	0.52	E Williams	2000 AO ₂₆
2000 AP ₂₆	14.7	0.15	19991228	298.27744	245.48142	293.66498	12.12613	0.1323105	2.7724581	10	1	5 days	0.32	E Williams	2000 AP ₂₆
2000 AQ ₂₆	14.4	0.15	19991228	155.72520	8.34127	290.64903	9.82149	0.2536773	2.3013702	11	1	9 days	0.51	Williams	2000 AQ ₂₆
2000 AS ₂₆	15.9	0.15	19991228	32.22665	325.77185	87.25004	3.02386	0.2177075	2.2551898	18	1	5 days	0.41	E Williams	2000 AS ₂₆
2000 AT ₂₆	14.7	0.15	19991228	6.90149	168.23641	289.24726	10.32247	0.0395129	3.0648235	20	1	11 days	0.43	Williams	2000 AT ₂₆
2000 AW ₂₆	13.2	0.15	19991228	111.81708	26.97524	301.97578	8.12212	0.2654876	2.6889095	15	1	4 days	0.39	E Williams	2000 AW ₂₆
2000 AX ₂₆	15.9	0.15	19991228	12.64972	5.10472	78.70955	2.93923	0.1885946	2.2792711	14	1	4 days	0.40	E Williams	2000 AX ₂₆
2000 AY ₂₆	15.3	0.15	19991228	25.04127	129.80424	298.77442	5.18884	0.1538606	2.1442385	20	1	5 days	0.36	E Williams	2000 AY ₂₆
2000 AC ₂₇	14.7	0.15	19991228	73.38029	33.10562	318.25232	3.87617	0.3413555	2.5699573	22	1	10 days	0.53	Williams	2000 AC ₂₇
2000 AD ₂₇	15.9	0.15	19991228	349.43143	52.80192	64.59368	3.36842	0.1593456	2.4361849	18	1	5 days	0.50	E Williams	2000 AD ₂₇
2000 AF ₂₇	15.8	0.15	19991208	27.48134	34.50498	27.76004	2.00753	0.0985363	2.1874621	17	1	29 days	0.77	Williams	2000 AF ₂₇
2000 AG ₂₇	15.8	0.15	19991228	316.55089	100.46870	59.18642	2.91235	0.1426018	2.4220330	15	1	4 days	0.57	E Williams	2000 AG ₂₇
2000 AH ₂₇	14.2	0.15	19991208	28.15422	339.46644	71.47823	6.45920	0.2437883	2.9848716	19	1	29 days	0.43	Williams	2000 AH ₂₇
2000 AS ₂₇	12.3	0.15	19991228	135.16620	269.99780	55.16821	6.16368	0.0744091	3.8439652	22	1	5 days	0.65	E Williams	2000 AS ₂₇
2000 AV ₂₇	14.9	0.15	19991228	329.88832	199.32482	312.11601	6.49011	0.2366161	2.7257772	35	1	5 days	0.38	E Williams	2000 AV ₂₇
2000 AW ₂₇	14.9	0.15	19991228	36.37463	356.01243	57.75524	3.16858	0.1737580	2.7954670	23	1	5 days	0.59	E Williams	2000 AW ₂₇
2000 AX ₂₇	14.8	0.15	19991228	105.84913	36.80665	304.53757	8.84122	0.1706851	2.4819204	22	1	5 days	0.52	E Williams	2000 AX ₂₇
2000 AY ₂₇	15.2	0.15	19991228	345.78524	100.36472	26.68202	2.15064	0.0102310	2.8746948	17	1	10 days	0.73	Williams	2000 AY ₂₇

2000 AZ ₂₇	17.2	0.15	19991228	16.77407	56.56109	21.14587	2.25782	0.1976198	2.3761218	35	1	5 days	0.44	E Williams	2000 AZ ₂₇
2000 AA ₂₈	16.3	0.15	19991228	18.05003	343.43984	92.59780	2.97756	0.1882079	2.2886395	23	1	5 days	0.51	E Williams	2000 AA ₂₈
2000 AB ₂₈	15.5	0.15	19991228	335.79734	36.07741	98.02014	8.33782	0.1085698	2.4419887	15	1	4 days	0.43	E Williams	2000 AB ₂₈
2000 AC ₂₈	14.7	0.15	19991228	126.57273	230.67677	98.55197	3.44881	0.1174488	2.8536815	12	1	12 days	0.49	Williams	2000 AC ₂₈
2000 AE ₂₈	15.8	0.15	19991228	11.60929	115.12523	330.82055	0.32808	0.2246764	3.0620702	13	1	11 days	0.27	Williams	2000 AE ₂₈
2000 AF ₂₈	15.3	0.15	19991228	241.99982	264.65662	338.46859	0.88233	0.2216773	2.4322454	11	1	12 days	0.31	Williams	2000 AF ₂₈
2000 AG ₂₈	15.8	0.15	19991228	343.47145	22.59434	103.34791	4.66573	0.1441785	2.2608489	16	1	12 days	0.25	Williams	2000 AG ₂₈
2000 AN ₂₈	17.9	0.15	19991228	71.37621	28.46498	344.63530	1.95518	0.2276994	2.3664079	22	1	10 days	0.59	Williams	2000 AN ₂₈
2000 AO ₂₈	14.5	0.15	19991228	356.51964	20.34346	89.69191	3.82665	0.1039051	3.0058092	21	1	8 days	0.56	Williams	2000 AO ₂₈
2000 AP ₂₈	15.1	0.15	19991228	333.97656	199.09888	296.92847	7.60670	0.0851280	2.5794609	15	1	5 days	0.48	E Williams	2000 AP ₂₈
2000 AX ₂₈	14.9	0.15	19991228	299.61690	220.73886	325.48632	6.89240	0.1882319	2.5271359	18	1	8 days	0.37	Williams	2000 AX ₂₈
2000 AB ₂₉	13.4	0.15	19991228	138.43148	359.60717	314.63126	6.77788	0.2421360	2.4118390	15	1	5 days	0.37	E Williams	2000 AB ₂₉
2000 AC ₂₉	14.0	0.15	19991208	79.97429	61.30468	311.42447	7.78754	0.1021966	3.1772337	21	1	24 days	0.55	Williams	2000 AC ₂₉
2000 AH ₂₉	13.2	0.15	19991228	232.78930	308.18427	306.68015	1.55853	0.2454502	2.8511533	18	1	11 days	0.41	Williams	2000 AH ₂₉
2000 AJ ₂₉	15.9	0.15	19991228	18.16219	359.42923	77.35353	3.39581	0.2049126	2.3462937	13	1	5 days	0.36	E Williams	2000 AJ ₂₉
2000 AK ₂₉	15.2	0.15	19991228	52.22767	61.16634	325.35931	3.48976	0.2506346	2.3920170	15	1	5 days	0.31	E Williams	2000 AK ₂₉
2000 AN ₂₉	14.9	0.15	19991228	79.23224	284.72496	91.52172	6.81034	0.1071888	2.3765866	14	1	5 days	0.47	E Williams	2000 AN ₂₉
2000 AP ₂₉	13.6	0.15	19991208	277.47901	101.03287	93.96510	10.84388	0.0591975	3.0745101	26	1	30 days	0.46	Williams	2000 AP ₂₉
2000 AY ₂₉	15.3	0.15	19991228	28.02058	78.01394	345.18905	3.21990	0.2334052	2.8987730	12	1	5 days	0.45	E Williams	2000 AY ₂₉
2000 AG ₃₀	17.2	0.15	19991228	23.35962	74.19010	353.90784	0.88763	0.2362552	2.1837163	11	1	5 days	0.75	E Williams	2000 AG ₃₀
2000 AH ₃₀	14.4	0.15	19991228	19.86815	141.18114	300.66973	7.75454	0.1768032	3.1563178	15	1	8 days	0.48	Williams	2000 AH ₃₀
2000 AJ ₃₀	14.9	0.15	19991228	343.37067	189.77858	300.57709	7.47338	0.1014851	2.7376910	15	1	8 days	0.35	Williams	2000 AJ ₃₀
2000 AC ₃₁	16.4	0.15	19991228	355.61032	88.28548	25.94507	2.43101	0.1263795	2.3069939	16	1	6 days	0.94	E Williams	2000 AC ₃₁
2000 AH ₃₁	15.3	0.15	19991228	14.42574	140.16084	310.65426	5.20502	0.1122056	2.2768900	22	1	11 days	0.38	Williams	2000 AH ₃₁
2000 AJ ₃₁	16.5	0.15	19991228	72.52782	8.43310	13.09140	1.44754	0.1401931	2.1460535	34	1	12 days	0.45	Williams	2000 AJ ₃₁
2000 AK ₃₁	14.4	0.15	19991228	42.60378	332.27940	76.46502	2.57287	0.2115797	2.6703240	36	1	28 days	0.28	Williams	2000 AK ₃₁
2000 AL ₃₁	13.6	0.15	19991228	73.11989	279.05675	99.59673	6.53102	0.1939139	3.1854856	27	1	28 days	0.41	Williams	2000 AL ₃₁
2000 AM ₃₁	15.9	0.15	19991228	31.63172	330.49721	90.97715	3.93197	0.2123890	2.3153466	18	1	9 days	0.40	Williams	2000 AM ₃₁
2000 AO ₃₁	14.7	0.15	19991228	312.14150	78.94877	93.77058	10.35798	0.1531481	2.3726378	16	1	5 days	0.46	E Williams	2000 AO ₃₁
2000 AL ₃₂	14.6	0.15	19991228	66.31164	279.58589	106.28312	13.81501	0.1815436	2.6365317	18	1	21 days	0.40	Williams	2000 AL ₃₂
2000 AM ₃₂	16.0	0.15	19991228	356.16682	37.22669	77.91134	2.70039	0.1328883	2.3536898	16	1	5 days	0.71	E Williams	2000 AM ₃₂
2000 AN ₃₂	14.1	0.15	19991228	263.43782	179.40358	55.63317	2.74415	0.2138454	3.1162471	19	1	6 days	0.73	E Williams	2000 AN ₃₂
2000 AP ₃₂	16.1	0.15	19991228	21.97588	106.24829	334.19392	2.03087	0.1524296	2.3000371	12	1	8 days	0.40	Williams	2000 AP ₃₂
2000 AR ₃₂	14.0	0.15	19991208	230.10362	153.37003	93.18581	7.25871	0.0916067	2.4232948	22	1	24 days	0.36	Williams	2000 AR ₃₂
2000 AS ₃₂	16.0	0.15	19991228	0.38542	130.70722	340.07880	3.23940	0.0912163	2.3150477	12	1	5 days	0.45	E Williams	2000 AS ₃₂
2000 AX ₃₂	15.9	0.15	19991228	38.68054	91.75195	331.75179	3.32117	0.1234324	2.3561436	19	1	4 days	0.34	E Williams	2000 AX ₃₂
2000 AY ₃₂	12.7	0.15	19991228	273.21805	270.51475	310.06648	14.41022	0.1589698	3.0445093	15	1	3 days	0.42	E Williams	2000 AY ₃₂
2000 AZ ₃₂	13.3	0.15	19991228	289.66499	254.43730	313.80233	9.58311	0.2147675	2.4390635	15	1	3 days	0.28	E Williams	2000 AZ ₃₂
2000 AO ₃₃	13.1	0.15	19991228	259.04753	284.06761	320.06166	9.38965	0.2818442	2.2832384	13	1	3 days	0.45	E Williams	2000 AO ₃₃
2000 AT ₃₃	16.2	0.15	19991228	65.24497	241.66734	123.24950	5.61586	0.2791883	2.1385957	21	1	2 days	0.35	Williams	2000 AT ₃₃
2000 AV ₃₃	15.7	0.15	19991228	1.75194	34.85488	74.86208	2.89864	0.1714439	2.4182624	14	1	4 days	0.34	E Williams	2000 AV ₃₃
2000 AW ₃₃	12.3	0.15	19991228	129.53872	12.58731	317.17610	13.17946	0.2686487	3.0425973	15	1	21 days	0.37	Williams	2000 AW ₃₃
2000 AX ₃₃	14.1	0.15	19991228	288.05615	205.20220	16.15542	3.18506	0.2751845	3.1898953	11	1	2 days	0.66	E Williams	2000 AX ₃₃
2000 AY ₃₃	13.8	0.15	19991228	35.62256	127.83843	312.89762	12.34005	0.0221131	3.2157403	10	1	2 days	0.35	E Williams	2000 AY ₃₃
2000 AZ ₃₃	15.3	0.15	19991228	91.99076	70.52309	312.47580	8.29126	0.0036096	2.4316438	12	1	2 days	0.38	E Williams	2000 AZ ₃₃
2000 AC ₃₄	14.5	0.15	19991228	33.18690	95.86069	319.62378	7.74524	0.2951897	2.8204644	13	1	2 days	0.36	E Williams	2000 AC ₃₄
2000 AE ₃₄	13.9	0.15	19991228	236.49839	299.27558	318.17049	10.35341	0.2126958	2.2412460	13	1	3 days	0.35	E Williams	2000 AE ₃₄
2000 AG ₃₄	15.6	0.15	19991228	302.50627	203.67182	351.48109	3.70762	0.2100783	2.3567332	11	1	2 days	0.44	E Williams	2000 AG ₃₄
2000 AH ₃₄	13.0	0.15	19991228	216.00679	172.69255	100.96154	13.46440	0.1876384	2.8827576	12	1	3 days	0.56	E Williams	2000 AH ₃₄
2000 AJ ₃₄	13.6	0.15	19991228	211.17688	226.16967	51.24364	5.21044	0.2375421	2.3842046	14	1	5 days	0.55	E Williams	2000 AJ ₃₄
2000 AL ₃₄	15.5	0.15	19991228	12.99950	104.55555	351.14059	4.23177	0.1339777	2.3121626	13	1	3 days	0.39	E Williams	2000 AL ₃₄
2000 AN ₃₄	14.2	0.15	19991208	62.46375	343.76656	32.71208	4.72757	0.2724758	2.5525743	20	1	24 days	0.28	Williams	2000 AN ₃₄
2000 AR ₃₄	14.0	0.15	19991228	43.33113	108.38617	315.85526	16.80366	0.1151024	3.1642585	12	1	3 days	0.38	E Williams	2000 AR ₃₄

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2000 AT ₃₄	13.4	0.15	19991228	115.81176	39.05746	315.96763	9.59730	0.0650855	2.4791186	13	1	2 days	0.40	E Williams	2000 AT ₃₄
2000 AX ₃₄	13.5	0.15	19991228	278.53572	204.94087	24.12303	3.61330	0.2385860	2.9679428	12	1	2 days	0.40	E Williams	2000 AX ₃₄
2000 AE ₃₅	14.9	0.15	19991228	58.87273	30.33348	13.30294	5.94573	0.1475633	2.8198191	13	1	3 days	0.48	E Williams	2000 AE ₃₅
2000 AF ₃₅	15.5	0.15	19991228	162.96262	200.99372	93.24464	5.76393	0.0127498	2.1762431	12	1	5 days	0.36	E Williams	2000 AF ₃₅
2000 AG ₃₅	13.1	0.15	19991228	100.66035	263.11171	92.76117	11.19103	0.0178989	3.0188699	14	1	5 days	0.55	E Williams	2000 AG ₃₅
2000 AM ₃₅	16.1	0.15	19991228	30.36447	135.17767	285.48848	5.25104	0.1121431	2.2114700	12	1	4 days	0.35	E Williams	2000 AM ₃₅
2000 AN ₃₅	17.0	0.15	19991228	358.37243	8.23421	93.24622	2.83367	0.0980947	2.4159000	11	1	5 days	0.39	E Williams	2000 AN ₃₅
2000 AO ₃₅	16.7	0.15	19991228	85.51673	82.44012	285.81901	4.56993	0.0528751	2.2719972	11	1	5 days	0.45	E Williams	2000 AO ₃₅
2000 AP ₃₅	14.2	0.15	19991228	80.62392	74.10739	284.25591	6.62065	0.1862946	2.6989923	13	1	5 days	0.51	E Williams	2000 AP ₃₅
2000 AS ₃₅	15.6	0.15	19991208	40.92860	294.32252	89.78503	11.26068	0.2825577	2.5293603	15	1	32 days	0.37	Williams	2000 AS ₃₅
2000 AY ₃₅	14.6	0.15	19991228	94.82930	267.28535	66.82672	5.70433	0.2950061	2.2928875	14	1	5 days	0.50	E Williams	2000 AY ₃₅
2000 AA ₃₆	15.6	0.15	19991228	122.61227	244.82894	91.44655	2.90167	0.0142997	2.2191127	11	1	5 days	0.58	E Williams	2000 AA ₃₆
2000 AB ₃₆	16.9	0.15	19991228	353.72958	129.21729	340.35815	0.62194	0.2316911	2.3253732	12	1	5 days	0.81	E Williams	2000 AB ₃₆
2000 AC ₃₆	14.5	0.15	19991228	106.72785	49.45549	284.24686	12.06639	0.2042928	2.4434036	18	1	5 days	0.60	E Williams	2000 AC ₃₆
2000 AE ₃₆	15.6	0.15	19991228	67.15981	275.28187	98.13823	5.69047	0.1788110	2.2754366	15	1	5 days	0.46	E Williams	2000 AE ₃₆
2000 AF ₃₆	11.5	0.15	19991228	304.10635	76.87366	95.93144	8.13195	0.1367421	5.1800758	12	1	5 days	0.46	E Williams	2000 AF ₃₆
2000 AG ₃₆	16.9	0.15	19991228	359.66560	174.32687	286.89998	6.76354	0.1491043	2.2364045	14	1	11 days	0.34	Williams	2000 AG ₃₆
2000 AQ ₃₆	13.6	0.15	19991228	178.08137	186.81613	97.74441	5.44507	0.2614459	2.7804691	11	1	12 days	0.37	Williams	2000 AQ ₃₆
2000 AR ₃₆	16.5	0.15	19991228	335.33995	174.00566	321.95725	0.93571	0.1594921	2.4446890	14	1	12 days	0.42	Williams	2000 AR ₃₆
2000 AS ₃₆	14.3	0.15	19991228	286.04522	142.25639	55.63458	0.99931	0.1764193	3.0364719	14	1	12 days	0.45	Williams	2000 AS ₃₆
2000 AV ₃₆	15.3	0.15	19991228	7.82227	55.44561	36.47471	1.45081	0.1325548	2.5719869	13	1	5 days	0.55	E Williams	2000 AV ₃₆
2000 AX ₃₆	13.5	0.15	19991228	159.38649	245.92912	51.10191	3.60754	0.2755421	2.5424851	13	1	5 days	0.49	E Williams	2000 AX ₃₆
2000 AY ₃₆	16.2	0.15	19991228	12.06055	127.51906	318.96696	4.35201	0.1251754	2.2577333	13	1	5 days	0.40	E Williams	2000 AY ₃₆
2000 AZ ₃₆	16.7	0.15	19991228	21.78123	22.34341	52.17708	3.85736	0.1307715	2.2677683	11	1	5 days	0.48	E Williams	2000 AZ ₃₆
2000 AB ₃₇	14.4	0.15	19991228	355.63232	157.16695	313.08819	7.42027	0.1282928	3.0847796	33	1	5 days	0.45	E Williams	2000 AB ₃₇
2000 AC ₃₇	13.3	0.15	19991228	85.23752	51.90323	313.66750	8.16269	0.1272921	3.1486261	24	1	4 days	0.33	E Williams	2000 AC ₃₇
2000 AD ₃₇	15.1	0.15	19991228	288.79425	247.75507	293.20032	7.79671	0.0483554	2.4455301	27	1	12 days	0.55	Williams	2000 AD ₃₇
2000 AE ₃₇	15.2	0.15	19991228	104.38303	359.78979	335.65500	1.31528	0.2530409	2.2766828	16	1	9 days	0.54	Williams	2000 AE ₃₇
2000 AF ₃₇	15.5	0.15	19991228	126.94457	28.48245	305.80306	1.57606	0.0487437	2.6845264	10	1	12 days	0.46	Williams	2000 AF ₃₇
2000 AL ₃₇	14.7	0.15	19991228	290.74738	260.07350	306.32117	4.03906	0.2683950	2.7989426	14	1	5 days	0.42	E Williams	2000 AL ₃₇
2000 AM ₃₇	16.4	0.15	19991228	12.03664	151.34239	295.11897	5.28319	0.1768031	2.2762950	14	1	5 days	0.44	E Williams	2000 AM ₃₇
2000 AO ₃₇	16.6	0.15	19991228	14.77975	144.22351	294.28428	10.24133	0.2502955	2.5147332	12	1	5 days	0.58	E Williams	2000 AO ₃₇
2000 AS ₃₇	15.9	0.15	19991208	286.22126	237.85510	303.18276	6.23332	0.0603259	2.2749174	22	1	34 days	0.62	Williams	2000 AS ₃₇
2000 AT ₃₇	17.6	0.15	19991228	22.11854	65.70630	1.38525	1.70844	0.2599311	2.2707069	16	1	4 days	0.57	E Marsden	2000 AT ₃₇
2000 AM ₃₈	14.7	0.15	19991228	135.50772	18.02283	305.24304	5.12310	0.1768099	2.2556440	14	1	8 days	0.55	Williams	2000 AM ₃₈
2000 AN ₃₈	15.4	0.15	19991228	81.89030	20.43789	344.22460	1.64323	0.2198641	2.3006473	24	1	8 days	0.53	Williams	2000 AN ₃₈
2000 AQ ₃₈	14.4	0.15	19991228	117.58954	257.37267	93.96103	16.68320	0.0462217	2.7053988	10	1	5 days	0.34	E Williams	2000 AQ ₃₈
2000 AT ₃₈	15.5	0.15	19991228	1.31749	54.99269	54.61066	2.78803	0.1705737	2.6322231	14	1	5 days	0.35	E Williams	2000 AT ₃₈
2000 AD ₃₉	15.3	0.15	19991228	39.12142	311.80279	96.51963	9.27983	0.2977909	2.9362358	12	1	3 days	0.56	E Williams	2000 AD ₃₉
2000 AM ₃₉	14.6	0.15	19991228	28.25852	108.47173	329.72029	8.93987	0.1790447	3.2193610	26	1	5 days	0.39	E Marsden	2000 AM ₃₉
2000 AO ₃₉	15.4	0.15	19991228	25.46578	111.76479	326.54915	10.84281	0.1958551	2.7637205	12	1	3 days	0.57	E Williams	2000 AO ₃₉
2000 AQ ₃₉	15.9	0.15	19991228	69.77826	290.66692	75.83831	6.48140	0.1995356	2.2356688	11	1	5 days	0.48	Williams	2000 AQ ₃₉
2000 AV ₃₉	16.2	0.15	19991228	351.00258	22.64568	91.63075	6.99732	0.0967952	2.3175140	11	1	4 days	0.57	E Williams	2000 AV ₃₉
2000 AW ₃₉	15.9	0.15	19991228	346.22414	164.32565	315.57400	2.50324	0.0998998	2.1993840	16	1	4 days	0.59	E Williams	2000 AW ₃₉
2000 AX ₃₉	13.6	0.15	19991228	164.23402	322.24229	334.82680	5.27248	0.1762117	3.0042161	16	1	4 days	0.42	E Williams	2000 AX ₃₉
2000 AC ₄₀	15.2	0.15	19991228	118.84212	291.28294	39.31528	4.32186	0.1662161	2.2461018	15	1	5 days	0.62	E Williams	2000 AC ₄₀
2000 AE ₄₀	15.1	0.15	19991228	50.54199	46.97260	347.25949	4.04968	0.2618787	2.5050471	12	1	3 days	0.48	E Williams	2000 AE ₄₀
2000 AL ₄₀	14.4	0.15	19991208	115.99358	355.15895	342.80494	7.12236	0.1931141	2.3008413	25	1	24 days	0.40	Williams	2000 AL ₄₀
2000 AS ₄₀	15.2	0.15	19991228	21.68256	97.32223	348.92566	4.06927	0.1548457	2.5007501	13	1	2 days	0.63	E Williams	2000 AS ₄₀
2000 AT ₄₀	12.8	0.15	19991228	196.64186	330.80698	320.47869	11.95015	0.2174966	2.9793639	11	1	2 days	0.74	E Williams	2000 AT ₄₀
2000 AA ₄₁	14.4	0.15	19991228	276.88718	116.57116	94.72633	7.75479	0.0788437	2.3828595	13	1	2 days	0.27	E Williams	2000 AA ₄₁
2000 AC ₄₁	15.2	0.15	19991228	54.61022	333.13548	86.12128	5.86436	0.0584995	2.4847127	12	1	2 days	0.49	E Williams	2000 AC ₄₁
2000 AE ₄₁	16.0	0.15	19991228	30.18319	71.57149	358.17271	3.70095	0.2275145	2.5226017	13	1	2 days	0.35	E Williams	2000 AE ₄₁

2000 AF ₄₁	13.9	0.15	19991228	232.77958	159.45975	106.39396	13.03689	0.1977816	2.6442771	13	1	2 days	0.51	E Williams	2000 AF ₄₁
2000 AM ₄₁	13.5	0.15	19991228	275.75032	258.94979	323.25852	13.97892	0.1224404	3.2132555	13	1	2 days	0.45	E Williams	2000 AM ₄₁
2000 AN ₄₁	15.0	0.15	19991228	72.80464	8.24961	22.99908	4.91969	0.1332334	2.3050140	13	1	3 days	0.38	E Williams	2000 AN ₄₁
2000 AO ₄₁	14.4	0.15	19991228	81.97108	309.67054	63.45683	5.22041	0.2398443	2.5924293	12	1	2 days	0.43	E Williams	2000 AO ₄₁
2000 AS ₄₁	15.7	0.15	19991228	312.29244	127.58906	47.70841	4.69480	0.0853174	2.2722868	13	1	2 days	0.60	E Williams	2000 AS ₄₁
2000 AT ₄₁	15.6	0.15	19991228	42.26862	87.57772	323.81274	12.40548	0.2628739	2.4286925	13	1	3 days	0.45	E Williams	2000 AT ₄₁
2000 AA ₄₂	14.7	0.15	19991228	51.63306	86.49128	325.05703	10.67388	0.1746161	2.8314516	11	1	2 days	0.56	E Williams	2000 AA ₄₂
2000 AB ₄₂	14.8	0.15	19991228	88.53675	311.20341	59.92317	5.81525	0.2285419	2.4304384	10	1	3 days	0.52	E Williams	2000 AB ₄₂
2000 AC ₄₂	13.6	0.15	19991228	270.31439	192.19524	51.08420	5.99754	0.2294662	2.8461300	10	1	3 days	0.66	E Williams	2000 AC ₄₂
2000 AD ₄₂	17.2	0.15	19991228	13.49274	124.43735	315.28213	4.16399	0.1974166	2.3569280	26	1	9 days	0.37	Marsden	2000 AD ₄₂
2000 AF ₄₂	14.9	0.15	19991228	344.28331	10.55623	117.05093	14.74499	0.0481394	2.6409242	15	1	14 days	0.32	Williams	2000 AF ₄₂
2000 AG ₄₂	16.9	0.15	19991228	19.30228	207.07417	232.74296	0.67683	0.1874244	2.3465149	19	1	7 days	0.49	E Williams	2000 AG ₄₂
2000 AQ ₄₂	16.7	0.15	19991228	246.43754	291.90676	295.04370	16.70547	0.0351352	1.9147418	12	1	3 days	0.29	E Williams	2000 AQ ₄₂
2000 AR ₄₂	15.7	0.15	19991208	257.68330	103.33862	111.88844	24.02430	0.0926674	1.9046836	22	1	36 days	0.58	Williams	2000 AR ₄₂
2000 AS ₄₂	17.6	0.15	19991228	344.17800	195.99074	292.04295	22.81859	0.1075164	1.9450709	11	1	3 days	0.33	E Williams	2000 AS ₄₂
2000 AT ₄₂	16.6	0.15	19991228	17.69426	146.69352	299.42627	18.25387	0.1144672	1.9322574	19	1	5 days	0.60	E Williams	2000 AT ₄₂
2000 AA ₄₃	14.7	0.15	19991208	350.48789	193.39518	267.25183	16.27273	0.1598241	2.3838508	16	1	30 days	3.50	Williams	2000 AA ₄₃
2000 AB ₄₃	14.8	0.15	19991228	312.11485	58.16436	111.59812	13.99308	0.2268071	2.5278251	20	1	2 days	0.28	Williams	2000 AB ₄₃
2000 AD ₄₃	12.4	0.15	19991228	255.34990	105.76504	112.30573	28.36003	0.1123477	2.8132659	13	1	2 days	0.38	E Williams	2000 AD ₄₃
2000 AE ₄₃	16.2	0.15	19991228	86.26666	256.06736	110.49158	18.07313	0.0717873	1.8116285	13	1	2 days	0.27	Williams	2000 AE ₄₃
2000 AF ₄₃	14.6	0.15	19991228	326.43821	37.68350	111.70589	23.74555	0.1711876	3.0428425	12	1	2 days	0.33	Williams	2000 AF ₄₃
2000 AG ₄₃	14.1	0.15	19991228	29.49016	320.93522	109.63459	16.41392	0.0635762	2.4699483	13	1	2 days	0.33	Williams	2000 AG ₄₃
2000 AJ ₄₃	15.5	0.15	19991228	163.43736	16.67015	293.75923	17.78593	0.0700679	1.9626542	14	1	7 days	0.70	Williams	2000 AJ ₄₃
2000 AK ₄₃	16.6	0.15	19991208	28.08915	139.05387	294.55083	19.31416	0.0612439	1.9443188	27	1	24 days	0.43	Williams	2000 AK ₄₃
2000 AL ₄₃	15.0	0.15	19991228	98.96132	301.64160	58.54609	4.85178	0.1835356	2.5459402	20	1	8 days	0.42	Marsden	2000 AL ₄₃
2000 AM ₄₃	13.3	0.15	19991228	66.86704	190.02179	158.51025	5.29167	0.2418767	2.5282841	16	1	2 days	0.32	E Williams	2000 AM ₄₃
2000 AO ₄₃	14.8	0.15	19991228	275.12681	124.06449	93.63996	6.28790	0.1654691	2.7280032	7	1	15 days	0.62	Williams	2000 AO ₄₃
2000 AQ ₄₃	15.0	0.15	19991228	80.87411	100.49238	290.48750	3.15531	0.0707606	2.2188419	18	1	11 days	0.33	Williams	2000 AQ ₄₃
2000 AR ₄₃	17.2	0.15	19991228	2.03782	262.85072	213.20731	0.51036	0.1304137	2.3648022	12	1	14 days	0.15	Williams	2000 AR ₄₃
2000 AU ₄₃	14.4	0.15	19991228	135.55310	222.56718	99.93226	2.49803	0.1867949	2.2426255	16	1	9 days	0.64	Williams	2000 AU ₄₃
2000 AV ₄₃	17.7	0.15	19991228	73.62695	277.39112	104.72755	5.27520	0.1172550	2.2009086	15	1	11 days	0.44	Williams	2000 AV ₄₃
2000 AW ₄₃	16.5	0.15	19991228	56.50232	297.90278	108.84754	9.78538	0.0851332	3.0422978	9	1	9 days	0.24	Williams	2000 AW ₄₃
2000 AX ₄₃	15.0	0.15	19991228	162.16281	1.30695	305.94189	3.26384	0.0689263	2.5949966	9	1	9 days	0.20	Williams	2000 AX ₄₃
2000 AY ₄₃	15.9	0.15	19991228	354.90377	8.00703	110.31177	13.19408	0.1749471	3.0552728	15	1	19 days	0.26	Williams	2000 AY ₄₃
2000 AZ ₄₃	16.9	0.15	19991228	76.56985	42.92156	324.10370	1.31069	0.2378748	2.4389267	9	1	9 days	0.31	Williams	2000 AZ ₄₃
2000 AC ₄₄	16.6	0.15	19991228	306.43884	83.33936	105.94235	6.23600	0.2299011	2.5687536	9	1	9 days	0.11	Williams	2000 AC ₄₄
2000 AD ₄₄	16.6	0.15	19991228	343.56592	32.02089	101.71879	4.18713	0.1290591	3.0308252	9	1	9 days	0.18	Williams	2000 AD ₄₄
2000 AE ₄₄	15.5	0.15	19991228	140.36673	270.52550	48.07645	1.18462	0.2528199	2.3479017	9	1	9 days	0.13	Williams	2000 AE ₄₄
2000 AJ ₄₄	14.3	0.15	19991228	52.09300	357.45368	33.89577	1.42321	0.2579309	3.2289475	9	1	3 days	0.25	E Williams	2000 AJ ₄₄
2000 AL ₄₄	15.9	0.15	19991228	269.72467	137.21758	70.07457	2.13830	0.0525054	2.6946759	9	1	3 days	0.29	E Williams	2000 AL ₄₄
2000 AM ₄₄	15.7	0.15	19991228	208.90973	320.35127	307.20740	6.18849	0.0955074	2.7281520	12	1	8 days	0.14	Williams	2000 AM ₄₄
2000 AN ₄₄	15.9	0.15	19991228	174.61958	296.43512	0.08508	1.92339	0.1580792	2.7049461	12	1	10 days	0.23	Williams	2000 AN ₄₄
2000 AO ₄₄	15.6	0.15	19991228	57.34510	70.60611	308.35987	5.02952	0.3014090	2.5513759	19	1	10 days	0.45	Williams	2000 AO ₄₄
2000 AP ₄₄	15.6	0.15	19991228	227.70739	175.99584	83.74477	3.67106	0.1928615	2.9949795	12	1	10 days	0.53	Williams	2000 AP ₄₄
2000 AQ ₄₄	14.8	0.15	19991228	153.99956	357.69825	318.71129	4.20810	0.0557913	3.0689320	15	1	11 days	0.41	Williams	2000 AQ ₄₄
2000 AR ₄₄	15.9	0.15	19991228	118.35347	242.27156	93.92009	4.29652	0.1844603	2.1448169	18	1	9 days	0.41	Williams	2000 AR ₄₄
2000 AS ₄₄	15.6	0.15	19991228	221.72195	316.45702	311.41070	6.21425	0.2662413	2.6780382	9	1	8 days	0.25	Williams	2000 AS ₄₄
2000 AT ₄₄	12.1	0.15	19991228	17.01028	353.61301	102.86720	8.80891	0.0621773	5.2042775	18	1	10 days	0.14	Williams	2000 AT ₄₄
2000 AV ₄₄	15.7	0.15	19991228	127.42220	239.37084	100.95001	7.56895	0.0562849	2.7065052	15	1	8 days	0.16	Williams	2000 AV ₄₄
2000 AW ₄₄	15.4	0.15	19991228	275.86371	130.36393	79.40857	2.70288	0.1303300	2.2681416	27	1	10 days	0.35	Williams	2000 AW ₄₄
2000 AX ₄₄	15.1	0.15	19991228	168.28608	210.60853	91.99095	5.08923	0.1332908	2.7104380	12	1	8 days	0.17	Williams	2000 AX ₄₄
2000 AY ₄₄	16.9	0.15	19991228	5.36770	148.71013	312.84179	3.92776	0.1550918	2.3052649	24	1	9 days	0.61	Williams	2000 AY ₄₄
2000 AZ ₄₄	14.8	0.15	19991228	219.43009	322.78956	307.67942	9.93876	0.2644134	2.9731238	9	1	8 days	0.13	Williams	2000 AZ ₄₄

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2000 AB ₄₅	17.0	0.15	19991228	7.11767	119.92366	338.50066	1.88111	0.1863838	2.3749261	15	1	8 days	0.22	Williams	2000 AB ₄₅
2000 AC ₄₅	14.3	0.15	19991228	185.81189	192.41627	97.50598	6.71666	0.1986164	2.5119072	11	1	3 days	0.34	E Williams	2000 AC ₄₅
2000 AD ₄₅	15.5	0.15	19991228	206.29244	303.17322	329.24845	3.47968	0.1336790	2.3833629	15	1	10 days	0.18	Williams	2000 AD ₄₅
2000 AF ₄₅	12.4	0.15	19991228	119.48774	111.14603	263.83162	10.21804	0.0915761	3.1905431	7	1	6 days	0.29	E Williams	2000 AF ₄₅
2000 AJ ₄₅	14.7	0.15	19991228	8.67599	172.66959	267.86757	4.08788	0.1089708	2.2295841	13	1	8 days	0.30	Williams	2000 AJ ₄₅
2000 AN ₄₅	15.3	0.15	19991228	7.76374	345.24820	97.27403	13.59847	0.1229309	2.5774806	14	1	12 days	0.45	Williams	2000 AN ₄₅
2000 AQ ₄₅	16.4	0.15	19991228	43.10349	120.21492	269.33939	3.92503	0.2230775	2.3007678	14	1	4 days	0.36	E Williams	2000 AQ ₄₅
2000 AR ₄₅	14.0	0.15	19991228	140.74974	205.91767	97.71333	16.69934	0.1413001	2.7752364	16	1	4 days	0.39	E Williams	2000 AR ₄₅
2000 AS ₄₅	14.1	0.15	19991228	293.47534	274.49513	269.27247	10.52225	0.2606532	2.6197988	12	1	9 days	0.30	Williams	2000 AS ₄₅
2000 AU ₄₅	11.4	0.15	19991228	79.00324	98.11831	270.65908	13.83383	0.0475094	5.2558940	17	1	4 days	0.38	E Williams	2000 AU ₄₅
2000 AW ₄₅	13.9	0.15	19991228	1.21359	354.21741	99.15180	9.78024	0.0865590	3.1332632	27	1	7 days	0.36	Williams	2000 AW ₄₅
2000 AH ₄₆	14.9	0.15	19991228	64.68009	107.94444	280.97202	8.58951	0.0617232	2.4039174	12	1	5 days	0.43	E Williams	2000 AH ₄₆
2000 AJ ₄₆	17.7	0.15	19991228	343.17171	206.90114	277.61437	3.56987	0.1993957	2.0881081	11	1	5 days	0.64	E Williams	2000 AJ ₄₆
2000 AK ₄₆	14.4	0.15	19991208	244.46362	128.29272	104.60087	11.43315	0.2179652	2.5926356	22	1	32 days	0.62	Williams	2000 AK ₄₆
2000 AL ₄₆	15.3	0.15	19991228	73.59301	266.19394	106.91007	3.71134	0.1249928	2.5087956	15	1	5 days	0.61	E Williams	2000 AL ₄₆
2000 AM ₄₆	15.3	0.15	19991228	92.55814	260.28337	103.79290	4.19547	0.0373574	2.3443674	20	1	5 days	0.48	E Williams	2000 AM ₄₆
2000 AU ₄₆	15.9	0.15	19991228	48.49291	138.86582	257.71309	0.32651	0.2349791	2.4390452	12	1	3 days	0.40	E Williams	2000 AU ₄₆
2000 AZ ₄₆	13.8	0.15	19991228	56.75179	93.74485	326.00952	9.07300	0.0602101	3.1238895	23	1	4 days	0.47	E Williams	2000 AZ ₄₆
2000 AB ₄₇	13.9	0.15	19991228	96.53666	47.20579	327.96635	8.98824	0.1063812	3.0668116	23	1	4 days	0.44	E Williams	2000 AB ₄₇
2000 AM ₄₇	15.2	0.15	19991228	255.90582	107.36338	127.19161	6.59141	0.0655745	2.2388550	12	1	12 days	0.42	Williams	2000 AM ₄₇
2000 AU ₄₇	14.8	0.15	19991228	28.78583	316.31833	128.09861	14.41497	0.1807433	2.8062164	14	1	3 days	0.59	E Williams	2000 AU ₄₇
2000 AY ₄₇	14.1	0.15	19991228	205.67662	169.37419	126.63523	12.60955	0.2715345	2.1266476	14	1	3 days	0.39	E Williams	2000 AY ₄₇
2000 AB ₄₈	16.4	0.15	19991228	337.48584	23.93831	102.58473	10.21759	0.1665417	2.3472450	15	1	5 days	0.38	E Williams	2000 AB ₄₈
2000 AC ₄₈	13.9	0.15	19991208	45.10800	299.86129	129.18864	12.24538	0.1109404	3.0644242	40	1	39 days	0.70	Williams	2000 AC ₄₈
2000 AE ₄₈	15.4	0.15	19991228	56.30857	244.95208	139.26497	2.47852	0.2646904	2.5498059	14	1	13 days	0.51	Williams	2000 AE ₄₈
2000 AF ₄₈	14.8	0.15	19991228	243.21714	116.27272	117.10807	9.67193	0.0556646	2.7658235	14	1	8 days	0.49	Williams	2000 AF ₄₈
2000 AH ₄₈	15.1	0.15	19991228	91.52473	78.29173	287.70799	14.86197	0.1260269	2.5951575	13	1	8 days	0.66	Williams	2000 AH ₄₈
2000 AJ ₄₈	15.3	0.15	19991228	89.20440	254.81719	106.39373	7.22988	0.1937771	2.6348476	8	1	5 days	0.19	E Williams	2000 AJ ₄₈
2000 AK ₄₈	14.5	0.15	19991228	311.36420	63.93646	113.88767	4.73883	0.1512470	3.0040857	15	1	12 days	0.76	Williams	2000 AK ₄₈
2000 AO ₄₈	16.1	0.15	19991228	75.30202	339.63638	28.06279	2.79163	0.1780132	2.1901228	18	1	5 days	0.58	E Williams	2000 AO ₄₈
2000 AV ₄₈	15.0	0.15	19991228	171.60765	113.80360	129.92632	4.50799	0.0835199	1.6273286	14	1	3 days	0.65	E Williams	2000 AV ₄₈
2000 AW ₄₈	15.7	0.15	19991228	308.26405	62.02811	75.00695	23.55562	0.2131936	1.7961186	13	1	2 days	0.33	E Williams	2000 AW ₄₈
2000 AX ₄₈	15.1	0.15	19991228	353.48328	347.15316	76.28988	10.90865	0.1629390	2.1249668	11	1	3 days	0.43	E Williams	2000 AX ₄₈
2000 AG ₄₉	16.1	0.15	19991208	277.21159	276.01279	272.20989	17.83990	0.0849209	1.9083018	15	1	35 days	0.50	Williams	2000 AG ₄₉
2000 AH ₄₉	14.5	0.15	19991228	140.61155	24.74891	287.46601	8.42017	0.2441379	2.1937083	13	1	4 days	0.66	E Williams	2000 AH ₄₉
2000 AL ₄₉	16.0	0.15	19991228	180.57841	166.93542	122.39751	29.81269	0.0687110	1.9261765	13	1	4 days	0.36	E Williams	2000 AL ₄₉
2000 AN ₄₉	14.8	0.15	19991228	348.71122	2.36416	127.57086	33.36838	0.0959093	2.7245121	13	1	3 days	0.40	E Williams	2000 AN ₄₉
2000 AT ₄₉	16.2	0.15	19991208	259.43429	290.71430	281.25654	17.91881	0.0422925	1.9607433	15	1	36 days	0.49	Williams	2000 AT ₄₉
2000 AV ₄₉	16.0	0.15	19991228	348.19699	6.94948	104.94603	23.71782	0.1606783	2.3035461	17	1	4 days	0.61	E Williams	2000 AV ₄₉
2000 AW ₄₉	13.7	0.15	19991228	161.60332	354.75204	298.14698	1.43061	0.1417412	2.8974827	8	1	6 days	0.36	E Williams	2000 AW ₄₉
2000 AX ₄₉	16.1	0.15	19991228	199.37332	168.33158	95.16219	3.30239	0.1224182	2.1828267	6	1	6 days	0.36	E Williams	2000 AX ₄₉
2000 AY ₄₉	14.8	0.15	19991228	45.75551	280.39751	119.53001	9.70495	0.2841570	2.7617396	17	1	13 days	0.69	Williams	2000 AY ₄₉
2000 AB ₅₀	13.5	0.15	19991228	170.95012	8.34214	286.32832	12.44589	0.0889650	2.9317642	21	1	7 days	0.56	E Williams	2000 AB ₅₀
2000 AC ₅₀	13.5	0.15	19991228	351.15931	176.82617	318.41972	4.15360	0.1301842	3.1932217	15	1	8 days	0.37	Williams	2000 AC ₅₀
2000 AE ₅₀	13.1	0.15	19991228	228.07362	137.48028	115.97124	4.74894	0.2001022	2.9718920	16	1	7 days	0.69	E Williams	2000 AE ₅₀
2000 AF ₅₀	16.1	0.15	19991228	352.94188	352.77991	121.36615	1.79937	0.1465997	2.4612931	11	1	6 days	1.19	E Williams	2000 AF ₅₀
2000 AG ₅₀	16.4	0.15	19991228	345.86422	11.02227	110.53628	4.37233	0.1142503	2.1002420	21	1	7 days	0.97	E Williams	2000 AG ₅₀
2000 AH ₅₀	15.1	0.15	19991228	49.43228	281.27491	127.54664	7.36407	0.1685421	2.4836810	16	1	12 days	0.46	Williams	2000 AH ₅₀
2000 AJ ₅₀	14.3	0.15	19991228	133.43332	38.45842	290.62154	5.27994	0.2176772	2.2237305	21	1	17 days	0.56	Williams	2000 AJ ₅₀
2000 AK ₅₀	14.4	0.15	19991208	308.06605	51.89954	121.37434	17.74436	0.1136478	2.5814581	20	1	35 days	0.61	Williams	2000 AK ₅₀
2000 AL ₅₀	14.7	0.15	19991228	197.06021	135.60402	144.24834	3.59333	0.0465670	2.2258410	22	1	11 days	0.57	Williams	2000 AL ₅₀
2000 AN ₅₀	13.1	0.15	19991228	261.39890	308.82643	304.13213	1.21534	0.2223262	2.8428896	14	1	10 days	0.69	Williams	2000 AN ₅₀
2000 AO ₅₀	13.0	0.15	19991228	184.00307	171.19571	138.15662	10.74627	0.0751900	3.0371504	8	1	10 days	0.63	Williams	2000 AO ₅₀

2000 AP ₅₀	11.4	0.15	19991228	106.30975	60.89240	293.09039	12.66893	0.1973291	2.5734950	28	1	9 days	0.58	Williams	2000 AP ₅₀
2000 AR ₅₀	14.1	0.15	19991228	335.38346	306.05257	203.71551	2.77405	0.1217816	2.5059303	16	1	6 days	0.50	Williams	2000 AR ₅₀
2000 AS ₅₀	12.2	0.15	19991228	68.46838	233.75527	141.58529	9.43508	0.2824350	2.9971636	14	1	2 days	0.37	E Williams	2000 AS ₅₀
2000 AT ₅₀	13.4	0.15	19991228	347.91367	11.33436	122.37084	12.77469	0.1292130	2.6809814	31	1	40 days	0.47	Williams	2000 AT ₅₀
2000 AV ₅₀	13.6	0.15	19991228	41.19139	228.34349	186.82582	2.94919	0.2204723	2.6950647	16	1	6 days	0.30	Williams	2000 AV ₅₀
2000 AB ₅₁	14.0	0.15	19991228	57.78941	26.65157	12.00528	3.27699	0.0757408	2.6609751	27	1	4 days	0.34	E Williams	2000 AB ₅₁
2000 AD ₅₁	14.0	0.15	19991208	45.81999	84.73805	310.42919	12.24531	0.2767736	3.1102088	22	1	29 days	0.43	Williams	2000 AD ₅₁
2000 AG ₅₁	14.2	0.15	19991228	224.48419	315.86939	288.21487	8.34231	0.0468136	3.1717494	9	1	5 days	0.29	E Williams	2000 AG ₅₁
2000 AD ₅₂	13.9	0.15	20000226	73.42613	42.28144	287.33952	9.14995	0.2445129	2.5322270	17	1	125 days	0.37	M-v 6 Williams	2000 AD ₅₂
2000 AJ ₅₂	15.0	0.15	19991208	34.33650	19.23821	348.93794	5.10678	0.1319054	2.5893767	16	1	30 days	0.56	Williams	2000 AJ ₅₂
2000 AL ₅₂	15.4	0.15	19991208	335.44967	98.77609	349.77636	4.86311	0.1255785	2.2221654	28	1	32 days	0.52	Williams	2000 AL ₅₂
2000 AO ₅₂	14.9	0.15	19991208	352.07644	176.82157	249.92019	12.45269	0.2189277	2.7124892	18	1	30 days	0.37	Williams	2000 AO ₅₂
2000 AP ₅₂	14.4	0.15	19991208	51.13135	38.32753	305.44415	4.11745	0.2002445	2.5417680	18	1	30 days	0.43	Williams	2000 AP ₅₂
2000 AQ ₅₂	14.9	0.15	19991208	59.01035	27.87290	301.29139	4.16611	0.2529885	2.3175114	18	1	30 days	0.38	Williams	2000 AQ ₅₂
2000 AX ₅₂	15.3	0.15	19991208	18.75461	93.70279	291.65963	4.04924	0.2356785	2.3331949	17	1	30 days	0.79	Williams	2000 AX ₅₂
2000 AB ₅₃	16.2	0.15	19991228	3.23854	162.32202	266.35385	5.08769	0.2098237	2.3618595	13	1	5 days	0.36	E Williams	2000 AB ₅₃
2000 AK ₅₃	15.1	0.15	19991228	86.46394	50.10522	318.04372	6.53458	0.0451918	2.6212726	12	1	4 days	0.39	E Williams	2000 AK ₅₃
2000 AN ₅₃	14.2	0.15	19991228	226.98179	137.48111	106.41929	15.43174	0.0845179	2.6456276	15	1	11 days	0.38	Williams	2000 AN ₅₃
2000 AO ₅₃	14.7	0.15	19991228	309.29572	208.71007	319.70835	1.37855	0.1382742	2.6632991	26	1	12 days	0.43	Williams	2000 AO ₅₃
2000 AP ₅₃	16.2	0.15	19991228	272.31403	273.43282	290.22104	4.41236	0.1024815	2.4139816	16	1	10 days	0.61	Williams	2000 AP ₅₃
2000 AQ ₅₃	14.5	0.15	19991228	298.94583	67.71637	109.15646	6.75114	0.0610385	2.3955290	11	1	7 days	0.31	Williams	2000 AQ ₅₃
2000 AR ₅₃	14.6	0.15	19991228	75.76995	258.51419	114.14992	10.55399	0.1910808	2.2816418	10	1	3 days	0.49	E Williams	2000 AR ₅₃
2000 AS ₅₃	13.5	0.15	19991228	107.48909	227.18294	118.92892	2.65554	0.2080682	3.2146645	11	1	3 days	0.75	E Williams	2000 AS ₅₃
2000 AT ₅₃	14.6	0.15	19991228	157.29229	10.11031	303.81579	3.49956	0.0437809	2.7872157	10	1	6 days	0.37	E Williams	2000 AT ₅₃
2000 AU ₅₃	15.9	0.15	19991228	53.39070	83.90150	307.11897	0.96887	0.2504765	2.6460896	12	1	12 days	0.45	Williams	2000 AU ₅₃
2000 AV ₅₃	15.0	0.15	19991228	204.86739	166.74884	108.66408	4.39954	0.1632230	2.5102670	13	1	6 days	0.55	E Williams	2000 AV ₅₃
2000 AW ₅₃	15.6	0.15	19991228	18.74790	323.58092	113.25108	3.72714	0.2641891	2.5519417	14	1	3 days	0.47	E Williams	2000 AW ₅₃
2000 AX ₅₃	15.3	0.15	19991228	200.90552	163.26460	111.26835	0.63618	0.0785799	2.2867049	12	1	12 days	0.35	Williams	2000 AX ₅₃
2000 AY ₅₃	14.2	0.15	19991228	45.69501	105.36496	301.08202	8.69778	0.2113302	3.0652978	10	1	6 days	0.43	E Williams	2000 AY ₅₃
2000 AA ₅₄	11.5	0.15	19991228	109.42954	54.50083	303.28576	12.14506	0.1018548	5.1153270	11	1	6 days	0.53	E Williams	2000 AA ₅₄
2000 AB ₅₄	12.9	0.15	19991228	206.03470	161.22087	114.26382	11.79238	0.1463567	2.9804473	13	1	3 days	0.27	E Williams	2000 AB ₅₄
2000 AC ₅₄	14.5	0.15	19991228	304.55038	64.13232	109.08654	6.43952	0.0702838	2.2030261	16	1	6 days	0.33	E Williams	2000 AC ₅₄
2000 AD ₅₄	15.4	0.15	19991228	358.63404	2.28562	108.93095	3.63389	0.1746211	2.2958499	13	1	3 days	0.24	E Williams	2000 AD ₅₄
2000 AE ₅₄	15.4	0.15	19991228	20.88950	141.41905	291.11249	2.83953	0.2624623	2.3190653	12	1	3 days	0.55	E Williams	2000 AE ₅₄
2000 AF ₅₄	13.8	0.15	19991208	86.52316	245.79404	112.67780	7.62395	0.2001295	2.2847291	23	1	31 days	0.56	Williams	2000 AF ₅₄
2000 AK ₅₄	14.3	0.15	19991228	232.15307	316.46588	297.65834	11.01212	0.1529398	2.4073950	11	1	12 days	0.83	Williams	2000 AK ₅₄
2000 AN ₅₄	14.1	0.15	19991228	316.95027	57.11488	103.44589	12.50367	0.0277543	2.8729020	12	1	4 days	0.43	E Williams	2000 AN ₅₄
2000 AO ₅₄	15.2	0.15	19991228	57.97310	292.06084	95.74457	2.94426	0.2407140	2.4674926	11	1	7 days	0.50	Williams	2000 AO ₅₄
2000 AQ ₅₄	15.8	0.15	19991228	48.79387	319.93833	78.04689	2.14435	0.2411865	2.4323892	11	1	7 days	0.54	Williams	2000 AQ ₅₄
2000 AU ₅₄	14.7	0.15	19991228	2.20149	167.40303	303.66561	9.66559	0.1649020	3.1617968	15	1	13 days	0.43	Williams	2000 AU ₅₄
2000 AX ₅₄	14.3	0.15	19991228	297.46453	76.73934	110.24215	1.70235	0.0976832	2.5747193	11	1	12 days	0.39	Williams	2000 AX ₅₄
2000 AJ ₅₅	13.9	0.15	19991228	33.51682	127.18752	298.94057	9.61546	0.1970678	3.0116339	15	1	4 days	0.31	Williams	2000 AJ ₅₅
2000 AU ₅₅	15.6	0.15	19991228	62.87868	74.68045	312.73780	7.17227	0.2185084	2.4699184	11	1	2 days	0.44	E Williams	2000 AU ₅₅
2000 AX ₅₅	15.1	0.15	19991228	68.75654	308.61392	70.58301	1.68504	0.2435176	2.5823075	10	1	12 days	0.39	Williams	2000 AX ₅₅
2000 AH ₅₆	15.5	0.15	19991228	21.93369	341.28788	103.33814	5.38134	0.1392814	2.3173341	13	1	2 days	0.38	E Williams	2000 AH ₅₆
2000 AJ ₅₆	14.0	0.15	19991228	283.49244	119.50857	101.30127	3.81206	0.2289389	2.7678299	11	1	5 days	0.41	E Williams	2000 AJ ₅₆
2000 AM ₅₆	15.3	0.15	19991228	291.18031	260.02546	311.51281	4.73702	0.2363800	2.3394483	12	1	2 days	0.38	E Williams	2000 AM ₅₆
2000 AQ ₅₆	15.4	0.15	19991228	28.91415	328.09510	99.19903	5.74767	0.2377183	2.5336350	12	1	2 days	0.30	E Williams	2000 AQ ₅₆
2000 AT ₅₆	15.3	0.15	19991228	296.30606	258.64069	285.39295	6.97587	0.1500058	2.5895178	14	1	9 days	0.47	Williams	2000 AT ₅₆
2000 AW ₅₆	14.8	0.15	19991228	253.37760	109.44169	112.90302	4.72571	0.0274544	2.4537657	10	1	3 days	0.54	E Williams	2000 AW ₅₆
2000 AC ₅₇	15.3	0.15	19991228	248.72921	275.94380	319.69107	1.29231	0.2101559	2.2358752	18	1	12 days	1.13	Williams	2000 AC ₅₇
2000 AF ₅₇	15.4	0.15	19991228	95.09905	43.27947	322.01833	5.98332	0.1494120	2.4130136	12	1	2 days	0.52	E Williams	2000 AF ₅₇
2000 AK ₅₇	15.8	0.15	19991228	353.06410	32.63623	91.45722	4.33448	0.1636129	2.3861102	11	1	5 days	0.44	E Williams	2000 AK ₅₇

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2000 AM ₅₇	15.5	0.15	19991228	305.95894	247.06761	301.88656	9.58857	0.1820802	2.4651239	16	1	13 days	0.66	Williams	2000 AM ₅₇
2000 AO ₅₇	15.1	0.15	19991228	246.12745	116.02878	117.42027	6.12345	0.0147321	2.5259705	11	1	2 days	0.60	E Williams	2000 AO ₅₇
2000 AR ₅₇	14.8	0.15	19991228	245.52543	132.91928	117.01093	4.20055	0.1744729	2.3501847	11	1	2 days	0.43	E Williams	2000 AR ₅₇
2000 AS ₅₇	14.9	0.15	19991228	315.38731	212.40009	312.88461	6.38995	0.0559822	2.3230309	12	1	2 days	0.39	E Williams	2000 AS ₅₇
2000 AU ₅₇	11.4	0.15	19991228	249.72387	280.44806	317.13126	9.10183	0.0297061	5.1305352	11	1	2 days	0.75	E Williams	2000 AU ₅₇
2000 AB ₅₈	14.4	0.15	19991228	179.85060	184.65087	115.56851	11.23816	0.0870852	2.5434265	16	1	6 days	0.50	E Williams	2000 AB ₅₈
2000 AC ₅₈	14.6	0.15	19991228	240.25964	126.72443	119.88568	6.26557	0.0752188	2.4398161	21	1	17 days	0.57	Williams	2000 AC ₅₈
2000 AE ₅₈	14.1	0.15	19991228	315.29746	244.12824	297.50626	6.72938	0.1814765	2.7176834	14	1	5 days	0.32	E Williams	2000 AE ₅₈
2000 AF ₅₈	13.9	0.15	19991228	340.53081	200.71909	303.91705	9.13232	0.0670049	3.1539979	11	1	7 days	0.25	Williams	2000 AF ₅₈
2000 AH ₅₈	15.9	0.15	19991228	11.03179	356.65459	106.22387	5.56232	0.1175921	2.4099337	16	1	3 days	0.79	E Williams	2000 AH ₅₈
2000 AJ ₅₈	14.5	0.15	19991228	2.30885	118.02255	358.74806	1.45742	0.1492087	3.0623531	12	1	2 days	0.40	E Williams	2000 AJ ₅₈
2000 AL ₅₈	13.7	0.15	19991228	235.56376	298.89273	314.72152	5.21899	0.0893239	2.6944899	13	1	2 days	0.45	E Williams	2000 AL ₅₈
2000 AM ₅₈	15.3	0.15	19991228	49.54586	295.42913	105.28280	3.34196	0.2622312	2.4710929	13	1	2 days	0.56	E Williams	2000 AM ₅₈
2000 AO ₅₈	16.5	0.15	19991228	43.50961	83.33981	327.21248	3.40155	0.2175504	2.2084251	12	1	2 days	0.52	E Williams	2000 AO ₅₈
2000 AQ ₅₈	14.3	0.15	19991228	274.02510	101.17947	109.04854	10.29238	0.0327704	2.7228110	16	1	5 days	0.52	E Williams	2000 AQ ₅₈
2000 AS ₅₈	15.0	0.15	19991228	6.55441	156.68000	309.39613	12.51516	0.2483889	2.9661999	12	1	2 days	0.58	E Williams	2000 AS ₅₈
2000 AX ₅₈	15.5	0.15	19991228	20.70561	121.08841	326.74218	4.28301	0.1556203	2.4697137	13	1	2 days	0.55	E Williams	2000 AX ₅₈
2000 AB ₅₉	14.4	0.15	19991228	262.87914	292.32281	312.65135	17.13138	0.2664518	2.4233025	13	1	2 days	0.43	E Williams	2000 AB ₅₉
2000 AD ₅₉	15.6	0.15	19991228	295.36719	195.90462	16.99450	2.05168	0.2610189	2.4308674	11	1	2 days	0.75	E Williams	2000 AD ₅₉
2000 AQ ₅₉	15.3	0.15	19991228	203.88491	335.88717	303.78154	4.54190	0.0573798	2.3560246	14	1	7 days	0.65	Williams	2000 AQ ₅₉
2000 AR ₅₉	12.9	0.15	19991228	282.39018	104.12595	125.58532	14.05176	0.2420697	3.1506693	16	1	12 days	0.44	Williams	2000 AR ₅₉
2000 AS ₅₉	14.8	0.15	19991228	75.63724	84.19612	300.80402	4.67009	0.1766805	2.4645038	11	1	8 days	0.26	Williams	2000 AS ₅₉
2000 AU ₅₉	14.7	0.15	19991228	65.51113	298.49705	101.77479	3.62140	0.1276179	2.4807486	11	1	2 days	0.55	E Williams	2000 AU ₅₉
2000 AA ₆₀	14.4	0.15	19991228	359.72457	168.98639	311.05123	4.78593	0.2540929	3.0711097	24	1	41 days	0.45	Williams	2000 AA ₆₀
2000 AH ₆₀	14.7	0.15	19991228	91.00609	74.89967	310.21355	4.13683	0.0581076	2.5828607	12	1	7 days	0.40	Williams	2000 AH ₆₀
2000 AJ ₆₀	15.0	0.15	19991228	89.30412	269.29094	107.75969	1.21689	0.1231212	2.1880240	12	1	7 days	0.34	Williams	2000 AJ ₆₀
2000 AK ₆₀	13.4	0.15	19991228	111.88470	243.94431	125.58930	13.51822	0.0396271	3.1261237	14	1	8 days	0.42	Williams	2000 AK ₆₀
2000 AV ₆₀	14.5	0.15	19991228	269.42093	280.51674	311.76002	8.49411	0.2027791	2.0981794	12	1	2 days	0.35	E Williams	2000 AV ₆₀
2000 AW ₆₀	14.3	0.15	19991228	70.29645	274.13422	111.77477	7.51254	0.2297204	2.7078237	12	1	2 days	0.48	E Williams	2000 AW ₆₀
2000 AB ₆₁	14.8	0.15	19991228	286.20906	101.42737	101.58492	5.44065	0.0714567	2.4231876	13	1	2 days	0.52	E Williams	2000 AB ₆₁
2000 AC ₆₁	14.2	0.15	19991228	160.64965	355.58089	323.64863	6.36521	0.0786233	2.4260491	12	1	2 days	0.35	E Williams	2000 AC ₆₁
2000 AE ₆₁	14.2	0.15	19991228	275.33505	98.97257	119.14287	32.32117	0.1002566	2.5860994	15	1	4 days	0.66	E Williams	2000 AE ₆₁
2000 AG ₆₁	13.6	0.15	19991228	284.30083	256.85571	319.55923	9.58659	0.1560490	2.9932652	12	1	2 days	0.48	E Williams	2000 AG ₆₁
2000 AK ₆₁	14.4	0.15	19991228	6.92456	0.03777	108.70182	13.53940	0.2620403	3.2013676	13	1	2 days	0.32	E Williams	2000 AK ₆₁
2000 AL ₆₁	14.6	0.15	19991228	274.40928	227.05338	10.56307	3.75007	0.2826360	2.1911754	13	1	2 days	0.34	E Williams	2000 AL ₆₁
2000 AP ₆₁	15.2	0.15	19991228	34.56287	16.90330	40.68780	2.65580	0.2917486	2.4745607	13	1	2 days	0.27	E Williams	2000 AP ₆₁
2000 AS ₆₁	14.3	0.15	19991228	171.84309	188.76889	121.01953	7.15277	0.1788565	2.2219434	13	1	7 days	0.77	Williams	2000 AS ₆₁
2000 AU ₆₁	12.9	0.15	19991228	260.99420	292.44028	308.96592	6.66421	0.1620006	2.5687715	22	1	12 days	0.26	Williams	2000 AU ₆₁
2000 AV ₆₁	15.0	0.15	19991228	321.85851	231.42033	309.65219	3.68103	0.2358350	2.6556189	16	1	12 days	0.38	Williams	2000 AV ₆₁
2000 AW ₆₁	13.4	0.15	19991228	161.10578	13.01402	307.92725	7.11346	0.1884907	2.6857597	13	1	9 days	0.40	Williams	2000 AW ₆₁
2000 AA ₆₂	13.1	0.15	19991228	189.96642	175.68334	122.16817	13.93231	0.0968922	2.6662788	13	1	5 days	0.50	E Williams	2000 AA ₆₂
2000 AB ₆₂	14.7	0.15	19991228	32.33669	324.57065	101.20246	2.41355	0.2992885	3.1550799	14	1	7 days	0.34	Williams	2000 AB ₆₂
2000 AG ₆₂	14.3	0.15	19991228	156.40697	199.09655	126.86828	16.04440	0.1201484	2.6320066	12	1	8 days	0.48	Williams	2000 AG ₆₂
2000 AH ₆₂	13.7	0.15	19991228	126.37007	225.58113	128.07323	4.32398	0.0999589	3.0313200	14	1	12 days	0.48	Williams	2000 AH ₆₂
2000 AK ₆₂	13.1	0.15	19991228	14.49113	158.90590	311.83698	11.75172	0.0737742	3.1755067	14	1	12 days	0.28	Williams	2000 AK ₆₂
2000 AM ₆₂	14.3	0.15	19991228	301.86494	253.95893	313.47286	14.59477	0.2353922	2.6449452	12	1	2 days	0.28	E Williams	2000 AM ₆₂
2000 AS ₆₂	14.1	0.15	19991228	322.85802	84.20874	79.27555	3.21863	0.0049632	2.8463487	12	1	2 days	0.44	E Williams	2000 AS ₆₂
2000 AY ₆₂	13.3	0.15	19991228	279.84799	120.23506	104.51681	10.28665	0.1630791	3.1229621	13	1	2 days	0.83	E Williams	2000 AY ₆₂
2000 AB ₆₃	14.8	0.15	19991228	8.61397	150.33190	318.86847	13.78384	0.1642302	2.7997904	12	1	2 days	0.72	E Williams	2000 AB ₆₃
2000 AC ₆₃	13.1	0.15	19991228	101.01172	259.39384	111.46797	15.18310	0.1490639	3.1439435	13	1	2 days	0.57	E Williams	2000 AC ₆₃
2000 AT ₆₃	13.5	0.15	19991208	53.80132	92.30112	312.14187	11.85312	0.1869158	2.5249239	17	1	29 days	0.51	Williams	2000 AT ₆₃
2000 AT ₆₄	11.6	0.15	19991228	292.69061	226.83406	338.00946	10.61513	0.0831112	3.0934406	17	1	3 days	0.39	E Williams	2000 AT ₆₄
2000 AM ₆₆	14.9	0.15	19991228	12.81064	23.25009	87.52634	7.44391	0.0864590	2.3586650	18	1	4 days	0.64	E Williams	2000 AM ₆₆

2000 AU ₆₆	13.3	0.15	19991228	137.31273	354.87959	356.38612	9.64228	0.0642016	2.9867649	14	1	4 days	0.59	E Williams	2000 AU ₆₆
2000 AJ ₆₇	14.8	0.15	19991228	0.41647	179.20262	303.37067	2.00321	0.0444071	2.4732730	10	1	9 days	0.25	Williams	2000 AJ ₆₇
2000 AM ₆₇	15.2	0.15	19991228	97.02174	267.40123	106.99579	5.65157	0.0986985	2.1978770	11	1	2 days	0.82	E Williams	2000 AM ₆₇
2000 AZ ₆₇	14.5	0.15	19991228	76.82226	292.19733	107.86585	3.68213	0.0836404	2.8756503	8	1	11 days	0.39	Marsden	2000 AZ ₆₇
2000 AA ₆₈	14.3	0.15	19991228	296.91827	107.69006	96.27806	6.20792	0.0888720	2.2859480	12	1	6 days	0.52	E Williams	2000 AA ₆₈
2000 AE ₆₈	14.0	0.15	19991228	348.67155	34.92800	113.60481	9.50646	0.1261051	2.7403757	11	1	6 days	0.50	E Williams	2000 AE ₆₈
2000 AF ₆₈	13.9	0.15	19991228	344.94125	272.75360	160.37162	7.19957	0.2066599	2.8030043	17	1	6 days	0.42	E Williams	2000 AF ₆₈
2000 AP ₆₈	13.1	0.15	19991228	289.55967	72.62117	84.65570	12.94880	0.1311449	3.2061579	16	1	6 days	0.34	E Williams	2000 AP ₆₈
2000 AM ₇₈	14.8	0.15	19991228	91.78722	230.24584	113.65058	7.99679	0.1806718	2.3743411	9	1	4 days	0.63	E Williams	2000 AM ₇₈
2000 AN ₇₈	15.5	0.15	19991208	12.21949	205.32879	225.95760	3.01582	0.1957231	2.6089180	25	1	26 days	0.36	Williams	2000 AN ₇₈
2000 AC ₇₉	12.9	0.15	19991228	322.39875	32.93301	109.69956	8.40279	0.0723944	3.2575488	13	1	4 days	0.26	E Williams	2000 AC ₇₉
2000 AE ₇₉	14.0	0.15	19991228	65.88338	86.67007	278.80675	17.40769	0.2493982	2.7631141	12	1	4 days	0.22	E Williams	2000 AE ₇₉
2000 AM ₈₀	13.6	0.15	19991228	84.10741	248.40423	107.15870	15.72176	0.2047895	3.1411514	10	1	8 days	0.32	Williams	2000 AM ₈₀
2000 AX ₈₁	14.0	0.15	19991228	208.22199	96.49838	158.77926	2.28857	0.0439222	2.8411934	15	1	4 days	0.45	E Williams	2000 AX ₈₁
2000 AB ₈₂	15.4	0.15	19991228	52.58775	284.76976	94.98378	11.72830	0.1529434	2.5813306	14	1	7 days	0.38	Williams	2000 AB ₈₂
2000 AU ₈₂	14.9	0.15	19991228	19.17612	322.23502	114.13231	17.88363	0.1629054	2.9860966	15	1	5 days	0.39	E Williams	2000 AU ₈₂
2000 AV ₈₂	13.8	0.15	19991228	81.92743	237.76935	120.17198	13.70707	0.2157118	3.2384967	23	1	5 days	0.71	E Williams	2000 AV ₈₂
2000 AX ₈₂	14.6	0.15	19991228	91.19941	188.88539	156.92602	3.62311	0.2514940	2.5417338	21	1	5 days	0.55	E Williams	2000 AX ₈₂
2000 AC ₈₃	14.4	0.15	19991208	319.61272	252.93501	254.26968	8.12681	0.0989140	2.7947003	21	1	26 days	0.72	Williams	2000 AC ₈₃
2000 AD ₈₃	15.0	0.15	19991228	61.82488	205.00527	170.41908	4.66386	0.2298540	2.5568405	13	1	4 days	0.32	E Williams	2000 AD ₈₃
2000 AM ₈₃	15.0	0.15	19991228	352.06932	5.33820	111.86885	4.48463	0.2692168	2.9869521	14	1	8 days	0.44	Williams	2000 AM ₈₃
2000 AP ₈₃	13.6	0.15	19991228	115.05959	229.69222	111.57460	3.71588	0.0884523	2.8777897	16	1	8 days	0.37	Williams	2000 AP ₈₃
2000 AJ ₈₄	13.8	0.15	19991228	213.27358	55.22232	203.40325	4.14902	0.0831769	2.9818793	11	1	4 days	0.39	E Williams	2000 AJ ₈₄
2000 AO ₈₄	15.1	0.15	19991228	135.62237	202.90075	124.87496	7.29311	0.0784810	2.2274921	11	1	10 days	0.25	Williams	2000 AO ₈₄
2000 AS ₈₄	14.0	0.15	19991228	188.02402	11.35330	272.11955	3.14275	0.0243014	2.9351310	10	1	2 days	0.34	E Williams	2000 AS ₈₄
2000 AV ₈₄	13.9	0.15	19991228	287.09095	76.65743	132.21138	3.02910	0.2130532	2.8624560	11	1	2 days	0.37	E Williams	2000 AV ₈₄
2000 AW ₈₄	14.3	0.15	19991228	6.04237	336.59178	126.88979	4.54994	0.0657940	2.4806908	11	1	11 days	0.43	Williams	2000 AW ₈₄
2000 AX ₈₄	15.2	0.15	19991228	295.49050	78.22937	130.19917	3.33902	0.2803495	2.7863088	11	1	2 days	0.46	E Williams	2000 AX ₈₄
2000 AZ ₈₄	15.1	0.15	19991228	0.18939	256.33925	212.49580	0.74251	0.1490266	2.3990786	11	1	11 days	0.33	Williams	2000 AZ ₈₄
2000 AA ₈₅	13.5	0.15	19991228	281.15007	85.64711	129.41355	2.59061	0.2012823	3.1372558	18	1	12 days	0.65	Williams	2000 AA ₈₅
2000 AG ₈₅	14.4	0.15	19991228	288.18019	64.79468	128.90642	3.23670	0.0908983	2.4744841	15	1	11 days	0.54	Williams	2000 AG ₈₅
2000 AH ₈₅	13.8	0.15	19991228	321.52829	43.85255	120.00896	8.99672	0.1601072	2.8191467	15	1	10 days	0.30	Williams	2000 AH ₈₅
2000 AJ ₈₅	13.3	0.15	19991228	296.90433	90.46681	117.67540	8.56085	0.2934100	2.4246369	11	1	2 days	0.59	E Williams	2000 AJ ₈₅
2000 AO ₈₅	16.2	0.15	19991228	32.90804	209.20628	216.54416	1.62288	0.1648556	2.5064290	16	1	8 days	0.56	Williams	2000 AO ₈₅
2000 AQ ₈₅	15.2	0.15	19991228	293.80144	49.27404	136.03999	3.54944	0.0612080	2.4782550	13	1	3 days	0.31	E Williams	2000 AQ ₈₅
2000 AV ₈₅	14.4	0.15	19991228	349.78327	353.05649	131.25767	6.47679	0.1083842	2.5287571	22	1	8 days	0.50	Williams	2000 AV ₈₅
2000 AY ₈₅	15.9	0.15	19991228	47.46601	224.45883	170.64235	2.05709	0.2718000	2.4222722	17	1	3 days	0.65	E Williams	2000 AY ₈₅
2000 AA ₈₆	16.3	0.15	19991228	4.86235	256.80331	206.73992	1.56700	0.1633279	2.3945670	12	1	3 days	0.55	E Williams	2000 AA ₈₆
2000 AH ₈₆	13.4	0.15	19991228	309.08834	312.30836	237.47907	0.54869	0.2356778	3.1815392	13	1	2 days	0.29	E Williams	2000 AH ₈₆
2000 AL ₈₆	14.5	0.15	19991228	74.33887	75.39997	293.15471	5.58268	0.2765538	2.9650444	10	1	2 days	0.62	E Williams	2000 AL ₈₆
2000 AM ₈₇	14.6	0.15	19991228	108.09165	221.18109	134.78983	2.25422	0.1211886	3.1308953	10	1	11 days	0.33	Williams	2000 AM ₈₇
2000 AV ₈₇	13.4	0.15	19991228	248.09668	116.21341	126.76319	11.80796	0.1398377	2.9676119	13	1	4 days	0.21	E Marsden	2000 AV ₈₇
2000 AX ₈₈	15.8	0.15	19991228	25.53847	300.60844	135.63671	4.16553	0.2053861	2.4895149	17	1	3 days	0.53	E Williams	2000 AX ₈₈
2000 AB ₈₉	13.8	0.15	19991228	28.05222	314.84700	123.62210	29.17866	0.1827440	3.2036547	22	1	4 days	0.50	E Williams	2000 AB ₈₉
2000 AL ₈₉	14.6	0.15	19991228	231.47434	342.86561	283.79642	5.04308	0.2637234	2.1130260	18	1	3 days	0.47	E Williams	2000 AL ₈₉
2000 AV ₈₉	15.3	0.15	19991228	29.45017	306.48908	107.46317	13.17036	0.2510955	3.1491845	13	1	9 days	0.54	Williams	2000 AV ₈₉
2000 AB ₉₀	16.4	0.15	19991228	48.70720	272.25490	127.34178	4.84333	0.2139302	2.3965093	9	1	11 days	0.48	Williams	2000 AB ₉₀
2000 AO ₉₀	15.9	0.15	19991228	42.21256	304.26513	116.18367	5.68206	0.1036841	2.1961534	10	1	11 days	0.35	Williams	2000 AO ₉₀
2000 AE ₉₁	15.3	0.15	19991228	87.83506	208.10642	136.22860	5.94723	0.2889444	2.2864668	17	1	5 days	0.34	E Williams	2000 AE ₉₁
2000 AV ₉₁	14.0	0.15	19991228	261.88377	94.82968	128.68114	11.88973	0.0129649	3.0021151	14	1	7 days	0.35	Williams	2000 AV ₉₁
2000 AX ₉₁	15.2	0.15	19991228	332.74949	22.34029	127.34038	4.33452	0.0486483	2.3030442	15	1	7 days	0.79	Williams	2000 AX ₉₁
2000 AZ ₉₁	14.2	0.15	19991228	125.00881	217.96590	129.35912	13.74887	0.1471451	2.5080515	12	1	11 days	0.45	Williams	2000 AZ ₉₁
2000 AB ₉₂	14.3	0.15	19991228	14.95680	205.40522	261.83352	6.51394	0.1729570	2.9087966	15	1	3 days	0.57	E Williams	2000 AB ₉₂

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2000 AC ₉₂	13.1	0.15	19991228	43.10850	264.83532	166.04892	10.71144	0.1924118	3.2410188	14	1	3 days	0.36	E	Williams	2000 AC ₉₂	
2000 AF ₉₂	12.9	0.15	19991208	47.46203	141.73818	300.76455	20.10666	0.0193277	3.1571734	26	1	25 days	0.53		Williams	2000 AF ₉₂	
2000 AK ₉₂	13.7	0.15	19991228	294.83084	44.31533	159.80548	11.10250	0.0798401	2.8634232	13	1	3 days	0.49	E	Williams	2000 AK ₉₂	
2000 AY ₉₂	17.1	0.15	19991228	284.22881	252.59706	298.05456	18.03317	0.0515897	1.9385862	15	1	11 days	0.45		Williams	2000 AY ₉₂	
2000 AB ₉₃	17.5	0.15	19991228	258.38767	283.75245	286.73381	16.63949	0.0712680	1.9951091	16	1	11 days	0.57		Williams	2000 AB ₉₃	
2000 AE ₉₃	15.3	0.15	19991228	92.05087	254.85991	84.77007	8.56758	0.2829838	2.2537825	17	1	7 days	0.58	E	Williams	2000 AE ₉₃	
2000 AG ₉₃	17.8	0.15	19991228	283.37139	256.83056	291.31454	17.16684	0.0652898	1.9602390	12	1	10 days	0.40		Williams	2000 AG ₉₃	
2000 AH ₉₃	14.9	0.15	19991228	309.00819	92.09417	105.37776	25.12448	0.3405584	2.7575102	21	1	10 days	0.56		Williams	2000 AH ₉₃	
2000 AJ ₉₃	14.9	0.15	19991228	18.19972	148.19808	300.26074	22.12089	0.1225441	2.7197259	11	1	9 days	0.48		Williams	2000 AJ ₉₃	
2000 AR ₉₃	15.0	0.15	19991228	190.34761	151.86934	134.39513	24.53693	0.0507096	1.9187729	14	1	5 days	0.37		Williams	2000 AR ₉₃	
2000 AV ₉₃	15.1	0.15	19991228	78.25225	250.86823	88.22102	1.70420	0.2680476	2.1541818	13	1	3 days	0.73	E	Williams	2000 AV ₉₃	
2000 AW ₉₃	18.4	0.15	20000117	310.41371	61.22779	113.19625	27.32142	0.0893267	1.5074850	66	1	13 days	0.52		Nakano	2000 AW ₉₃	
2000 AX ₉₃	17.3	0.15	20000226	358.95154	234.18650	291.17417	23.35664	0.4795743	2.2089923	103	1	39 days	0.54	M-v	5	Nakano	2000 AX ₉₃
2000 AY ₉₃	17.0	0.15	20000117	353.56328	232.73947	281.82196	11.42219	0.5315900	3.2252882	54	1	13 days	0.65		Nakano	2000 AY ₉₃	
2000 AZ ₉₃	20.5	0.15	19991228	153.54033	7.87543	277.64498	8.55246	0.3584263	0.7475207	44	1	17 days	0.76		Williams	2000 AZ ₉₃	
2000 AO ₉₄	14.5	0.15	19991228	198.35230	345.95066	289.14459	5.00158	0.2469354	2.3362480	12	1	5 days	0.55	E	Williams	2000 AO ₉₄	
2000 AP ₉₄	13.7	0.15	19991228	18.68641	128.13644	315.05319	9.24198	0.0676087	2.9857013	20	1	5 days	0.37	E	Williams	2000 AP ₉₄	
2000 AT ₉₄	15.3	0.15	19991228	82.81817	74.74556	288.96569	8.71466	0.1699427	2.6018979	11	1	5 days	0.39	E	Williams	2000 AT ₉₄	
2000 AW ₉₄	16.3	0.15	19991228	54.84502	50.25442	339.93144	3.05473	0.1746633	2.2945395	22	1	5 days	0.67	E	Williams	2000 AW ₉₄	
2000 AA ₉₆	13.5	0.15	19991228	85.86359	27.91492	7.70223	1.52381	0.1451289	3.0633056	20	1	10 days	0.82		Marsden	2000 AA ₉₆	
2000 AM ₉₆	14.0	0.15	19991228	333.92778	33.55418	131.46072	15.70179	0.0279862	2.6266187	12	1	6 days	0.34	E	Williams	2000 AM ₉₆	
2000 AN ₉₆	14.3	0.15	19991228	333.53230	32.56404	137.26509	13.90074	0.1559827	2.4595134	16	1	6 days	0.76	E	Williams	2000 AN ₉₆	
2000 AP ₉₆	14.7	0.15	19991228	33.41153	319.76741	125.77141	7.58902	0.1985661	2.5106044	12	1	3 days	0.43	E	Williams	2000 AP ₉₆	
2000 AR ₉₆	14.9	0.15	19991228	5.25649	144.95683	338.74530	5.17468	0.2538423	2.7144003	13	1	3 days	0.40	E	Williams	2000 AR ₉₆	
2000 AS ₉₆	15.3	0.15	19991228	322.70841	91.97799	98.63229	5.55734	0.2306001	2.4292400	11	1	6 days	0.41	E	Williams	2000 AS ₉₆	
2000 AT ₉₆	15.2	0.15	19991228	346.26750	76.86462	70.75431	4.37708	0.0738234	2.0908521	12	1	6 days	0.58	E	Williams	2000 AT ₉₆	
2000 AU ₉₆	14.4	0.15	19991228	50.26271	290.75278	130.72657	28.45244	0.2412758	2.5304774	11	1	6 days	0.39	E	Williams	2000 AU ₉₆	
2000 AX ₉₆	14.7	0.15	19991228	62.80666	93.06339	325.63814	21.13747	0.0817761	1.9149284	17	1	9 days	0.72		Williams	2000 AX ₉₆	
2000 AY ₉₆	13.7	0.15	19991228	335.18251	63.55389	107.32553	9.99659	0.0876172	2.7212460	13	1	6 days	0.58	E	Williams	2000 AY ₉₆	
2000 AA ₉₇	15.0	0.15	19991228	254.37770	132.05576	129.58370	6.73606	0.1699976	2.0253703	10	1	3 days	0.65	E	Williams	2000 AA ₉₇	
2000 AB ₉₇	14.9	0.15	19991228	35.00805	355.82982	92.66816	1.48850	0.1775847	2.3763780	12	1	3 days	0.49	E	Williams	2000 AB ₉₇	
2000 AC ₉₇	13.6	0.15	19991228	62.61785	286.82741	131.06478	12.07479	0.2040635	2.7237028	13	1	6 days	0.53		Williams	2000 AC ₉₇	
2000 AD ₉₇	13.8	0.15	19991228	302.01426	237.37994	343.30939	8.08365	0.2297392	2.2389464	13	1	6 days	0.37	E	Williams	2000 AD ₉₇	
2000 AE ₉₇	14.6	0.15	19991228	5.63581	90.42110	38.35805	4.44280	0.2313621	2.7914105	12	1	6 days	0.53	E	Williams	2000 AE ₉₇	
2000 AG ₉₇	14.7	0.15	19991228	262.20778	135.54685	117.29260	9.17373	0.1128464	2.3141141	12	1	6 days	0.53	E	Williams	2000 AG ₉₇	
2000 AH ₉₇	14.5	0.15	19991228	28.67741	104.08651	326.82720	27.39110	0.4094963	2.7355126	13	1	6 days	0.57		Williams	2000 AH ₉₇	
2000 AK ₉₇	12.0	0.15	19991228	233.04793	147.15529	141.67595	16.34358	0.1405473	3.0343699	12	1	6 days	0.52	E	Williams	2000 AK ₉₇	
2000 AM ₉₇	13.7	0.15	19991228	2.56721	153.93067	346.84735	6.60182	0.1630085	2.9527958	12	1	6 days	0.44	E	Williams	2000 AM ₉₇	
2000 AN ₉₇	13.8	0.15	19991228	297.21297	103.76321	119.70153	8.50881	0.1769483	2.2590088	13	1	6 days	0.43	E	Williams	2000 AN ₉₇	
2000 AQ ₉₇	15.3	0.15	19991228	288.05955	241.30040	331.56881	18.99076	0.0499041	1.9324294	10	1	6 days	0.52	E	Williams	2000 AQ ₉₇	
2000 AR ₉₇	12.6	0.15	19991228	88.51074	347.09041	54.26681	5.17499	0.0995113	2.1324654	13	1	6 days	0.63	E	Williams	2000 AR ₉₇	
2000 AT ₉₇	13.9	0.15	19991228	332.65796	55.31268	126.81731	13.79263	0.1343434	2.7829796	12	1	6 days	0.64	E	Williams	2000 AT ₉₇	
2000 AW ₉₇	13.8	0.15	19991228	9.68500	146.70011	345.57265	11.69213	0.1210305	2.6373856	13	1	6 days	0.66	E	Williams	2000 AW ₉₇	
2000 AX ₉₇	15.3	0.15	19991228	125.26407	40.16135	331.36877	20.01057	0.0287067	1.9143643	12	1	6 days	0.72	E	Williams	2000 AX ₉₇	
2000 AB ₉₈	12.0	0.15	19991228	4.54570	20.97529	118.82524	13.74746	0.1159929	2.6644940	13	1	6 days	0.18	E	Williams	2000 AB ₉₈	
2000 AC ₉₈	13.3	0.15	19991228	264.28175	194.79677	70.85067	5.25132	0.2209314	2.2393117	12	1	6 days	0.61	E	Williams	2000 AC ₉₈	
2000 AD ₉₈	13.4	0.15	19991228	287.62332	159.69980	80.00272	5.81115	0.1421727	2.8803149	11	1	6 days	0.48	E	Williams	2000 AD ₉₈	
2000 AG ₉₈	13.0	0.15	19991228	152.81240	252.42937	98.65914	7.18774	0.1771913	2.3267560	10	1	6 days	0.46	E	Williams	2000 AG ₉₈	
2000 AN ₉₈	14.4	0.15	19991228	20.32536	347.89929	118.50557	7.72999	0.2269631	2.8494103	10	1	3 days	0.54	E	Williams	2000 AN ₉₈	
2000 AW ₉₈	12.4	0.15	19991228	358.67280	347.26930	61.00466	17.24375	0.1510934	3.8387393	13	1	2 days	0.54	E	Williams	2000 AW ₉₈	
2000 AX ₉₈	13.7	0.15	19991228	176.95892	66.90865	168.25982	2.91878	0.1112065	2.2191016	13	1	2 days	0.64	E	Williams	2000 AX ₉₈	
2000 AZ ₉₈	14.3	0.15	19991228	337.39016	346.55883	104.50586	3.59455	0.2169614	2.6605564	12	1	2 days	0.45	E	Williams	2000 AZ ₉₈	
2000 AF ₉₉	15.2	0.15	19991228	346.38842	317.51517	123.47399	4.48588	0.1887460	2.2761649	15	1	2 days	0.55	E	Williams	2000 AF ₉₉	

2000 AL ₉₉	13.5	0.15	19991228	59.52452	135.16292	190.09553	5.51131	0.2531026	3.1217709	13	1	2 days	0.51	E Williams	2000 AL ₉₉
2000 AN ₉₉	14.5	0.15	19991228	331.87541	16.74280	92.29159	6.76401	0.2936817	2.9753610	13	1	2 days	0.41	E Williams	2000 AN ₉₉
2000 AP ₉₉	14.1	0.15	19991228	112.82983	70.62904	214.56693	11.66079	0.1951604	2.3502615	13	1	2 days	0.45	E Williams	2000 AP ₉₉
2000 AS ₉₉	14.2	0.15	19991228	48.24360	256.38258	96.05617	7.44590	0.1888899	2.4933517	13	1	2 days	0.49	E Williams	2000 AS ₉₉
2000 AC ₁₀₀	15.0	0.15	19991228	44.41163	186.63152	168.25969	4.71260	0.2433051	2.2823521	13	1	2 days	0.48	E Williams	2000 AC ₁₀₀
2000 AE ₁₀₀	13.0	0.15	19991228	100.41503	161.09968	130.15126	6.41096	0.2398059	2.7347677	12	1	2 days	0.65	E Williams	2000 AE ₁₀₀
2000 AG ₁₀₀	13.7	0.15	19991228	102.99936	183.73237	112.67846	7.07934	0.1983937	2.2995086	13	1	2 days	0.37	E Williams	2000 AG ₁₀₀
2000 AH ₁₀₀	14.3	0.15	19991228	56.16979	223.48407	124.83382	6.82788	0.1633430	2.3995101	13	1	2 days	0.40	E Williams	2000 AH ₁₀₀
2000 AJ ₁₀₀	13.4	0.15	19991228	51.87224	231.96033	112.86592	6.42525	0.2090483	2.9162580	13	1	2 days	0.34	E Williams	2000 AJ ₁₀₀
2000 AL ₁₀₀	15.3	0.15	19991228	334.83209	321.88814	142.60480	4.03870	0.2245044	2.4644875	12	1	2 days	0.49	E Williams	2000 AL ₁₀₀
2000 AN ₁₀₀	15.3	0.15	19991228	32.78635	292.74701	85.88128	7.01510	0.2086337	2.2900542	13	1	2 days	0.49	E Williams	2000 AN ₁₀₀
2000 AV ₁₀₀	13.9	0.15	19991228	45.67144	128.17862	225.48082	17.27078	0.2379937	2.8394575	13	1	2 days	0.60	E Williams	2000 AV ₁₀₀
2000 AX ₁₀₀	13.2	0.15	19991228	76.89315	197.67380	123.05763	7.10262	0.2076680	2.7812900	17	1	4 days	0.57	E Williams	2000 AX ₁₀₀
2000 AZ ₁₀₀	15.2	0.15	19991228	48.51228	170.98899	187.36353	7.06943	0.2074036	2.2907119	13	1	2 days	0.60	E Williams	2000 AZ ₁₀₀
2000 AD ₁₀₁	14.9	0.15	19991228	322.51854	353.47597	124.46566	6.70266	0.1573435	2.3769107	13	1	2 days	0.50	E Williams	2000 AD ₁₀₁
2000 AE ₁₀₁	15.0	0.15	19991228	36.95570	291.05318	91.79072	12.39954	0.1256084	2.0931783	13	1	2 days	0.43	E Williams	2000 AE ₁₀₁
2000 AF ₁₀₁	15.9	0.15	19991228	1.35949	247.50448	180.99819	4.22170	0.1844451	2.3265613	13	1	2 days	0.54	E Williams	2000 AF ₁₀₁
2000 AA ₁₀₂	15.1	0.15	19991228	51.59290	248.62420	105.25406	7.17492	0.2303975	2.4063081	11	1	2 days	0.72	E Williams	2000 AA ₁₀₂
2000 AE ₁₀₂	15.5	0.15	19991228	347.26309	303.42506	145.64195	6.14070	0.1757983	2.4124789	13	1	2 days	0.61	E Williams	2000 AE ₁₀₂
2000 AF ₁₀₂	15.1	0.15	19991228	85.92285	163.90436	162.25629	6.42948	0.1517131	2.1578503	12	1	2 days	0.57	E Williams	2000 AF ₁₀₂
2000 AM ₁₀₂	16.2	0.15	19991228	357.10804	247.55215	191.59053	5.65998	0.2577499	2.5719805	12	1	2 days	0.86	E Williams	2000 AM ₁₀₂
2000 AN ₁₀₂	15.2	0.15	19991228	57.40037	252.50894	106.40925	10.39887	0.1497558	2.2882816	12	1	3 days	0.37	E Williams	2000 AN ₁₀₂
2000 AQ ₁₀₂	15.9	0.15	19991228	354.79701	314.09784	126.60810	7.44545	0.1496623	2.4520811	13	1	3 days	0.57	E Williams	2000 AQ ₁₀₂
2000 AG ₁₀₄	13.5	0.15	19991228	67.90616	122.78472	224.12588	10.37394	0.2241315	3.0267642	15	1	4 days	0.45	E Williams	2000 AG ₁₀₄
2000 AH ₁₀₄	14.9	0.15	19991208	32.19717	171.12028	212.98787	7.19011	0.2489299	2.6827931	23	1	34 days	0.50	Williams	2000 AH ₁₀₄
2000 AX ₁₀₄	16.3	0.15	19991228	14.31419	323.69222	108.15613	5.24238	0.2289420	2.5236830	20	1	5 days	0.49	E Williams	2000 AX ₁₀₄
2000 AT ₁₀₅	14.9	0.15	19991228	302.77716	277.07019	244.19279	12.25317	0.1191924	2.6079267	12	1	6 days	0.43	Williams	2000 AT ₁₀₅
2000 AS ₁₀₆	16.0	0.15	19991228	5.04796	308.66949	139.79837	3.14959	0.1551989	2.4086565	15	1	4 days	0.45	E Williams	2000 AS ₁₀₆
2000 AF ₁₀₇	15.9	0.15	19991228	351.23978	240.99111	228.39294	3.09712	0.1712054	2.4333538	19	1	4 days	0.45	E Williams	2000 AF ₁₀₇
2000 AL ₁₀₇	13.5	0.15	19991228	66.66577	273.39547	114.46331	18.64832	0.0269206	3.0640193	12	1	4 days	0.35	E Williams	2000 AL ₁₀₇
2000 AT ₁₀₇	15.0	0.15	19991228	52.60952	250.26715	127.36252	8.59307	0.2566530	2.5952006	10	1	4 days	0.61	E Williams	2000 AT ₁₀₇
2000 AA ₁₀₈	14.4	0.15	19991228	92.56079	132.78875	217.33163	6.18381	0.1491172	2.5903933	11	1	4 days	0.42	E Williams	2000 AA ₁₀₈
2000 AD ₁₀₈	14.5	0.15	19991228	50.00427	285.00300	109.78910	11.84924	0.1618164	2.8174083	12	1	4 days	0.40	E Williams	2000 AD ₁₀₈
2000 AE ₁₀₈	15.3	0.15	19991228	336.16569	3.90210	129.84872	3.25398	0.1605908	2.7940214	11	1	4 days	0.40	E Williams	2000 AE ₁₀₈
2000 AF ₁₀₈	14.1	0.15	19991228	86.07950	178.14418	180.65817	1.90399	0.1482366	2.9192134	13	1	4 days	0.52	E Williams	2000 AF ₁₀₈
2000 AJ ₁₀₉	15.0	0.15	19991208	316.59471	18.76891	125.89266	5.85602	0.1138617	2.7015060	13	1	26 days	0.52	Williams	2000 AJ ₁₀₉
2000 AN ₁₀₉	15.3	0.15	19991228	355.56707	302.78349	161.31018	4.10600	0.1835188	2.6961004	14	1	4 days	0.31	E Williams	2000 AN ₁₀₉
2000 AV ₁₀₉	15.7	0.15	19991228	219.54909	345.19156	262.93637	4.38125	0.1037839	2.1676625	10	1	4 days	0.77	E Williams	2000 AV ₁₀₉
2000 AX ₁₀₉	15.7	0.15	19991228	262.41942	83.79788	121.31796	5.47500	0.0606202	2.2335879	12	1	4 days	0.46	E Williams	2000 AX ₁₀₉
2000 AY ₁₀₉	16.1	0.15	19991228	45.81533	114.47614	275.41827	8.89988	0.2466918	2.4598931	11	1	4 days	0.49	E Williams	2000 AY ₁₀₉
2000 AN ₁₁₀	15.6	0.15	19991228	338.99284	338.71484	150.55941	3.72895	0.1129638	2.3124008	15	1	5 days	0.28	E Williams	2000 AN ₁₁₀
2000 AR ₁₁₁	14.7	0.15	19991228	172.47503	141.33828	150.74504	8.51625	0.1184058	2.3569023	14	1	4 days	0.58	E Williams	2000 AR ₁₁₁
2000 AB ₁₁₂	15.0	0.15	19991228	83.50948	77.01414	287.18956	11.61530	0.1648121	2.5394842	12	1	4 days	0.42	E Williams	2000 AB ₁₁₂
2000 AM ₁₁₂	13.6	0.15	19991228	121.83676	76.82288	255.17449	4.39128	0.1826819	3.0186585	16	1	5 days	0.59	E Williams	2000 AM ₁₁₂
2000 AT ₁₁₂	13.1	0.15	19991228	57.69331	255.54066	138.09602	10.18583	0.1515945	3.0611103	15	1	5 days	0.48	Williams	2000 AT ₁₁₂
2000 AU ₁₁₂	14.9	0.15	19991208	346.41364	212.99909	266.35901	12.36329	0.2057988	2.6234884	21	1	34 days	0.78	Williams	2000 AU ₁₁₂
2000 AX ₁₁₂	13.4	0.15	19991228	212.18681	118.08950	143.19518	11.71980	0.0983212	3.2144088	13	1	4 days	0.50	E Williams	2000 AX ₁₁₂
2000 AP ₁₁₃	14.5	0.15	19991208	278.48168	341.80906	213.81301	4.17422	0.1129245	2.2222080	21	1	26 days	0.46	Williams	2000 AP ₁₁₃
2000 AQ ₁₁₃	16.5	0.15	19991228	24.78964	269.47314	151.44350	5.58489	0.2931594	2.5725257	11	1	4 days	0.48	E Williams	2000 AQ ₁₁₃
2000 AB ₁₁₄	14.7	0.15	20000226	46.01255	224.99781	193.20046	5.34353	0.2263037	2.6235557	19	1	60 days	0.34	M-v 6 Williams	2000 AB ₁₁₄
2000 AX ₁₁₆	14.9	0.15	19991228	34.75728	238.91926	179.36542	5.02997	0.2062824	2.2801307	14	1	4 days	0.40	E Williams	2000 AX ₁₁₆
2000 AY ₁₁₆	14.9	0.15	19991228	85.11715	243.80840	140.18308	14.66653	0.0331213	2.5929336	18	1	7 days	0.48	Williams	2000 AY ₁₁₆
2000 AF ₁₁₇	14.2	0.15	19991228	111.44387	165.40716	177.07603	6.08121	0.2052315	2.3087913	13	1	4 days	0.43	E Williams	2000 AF ₁₁₇

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2000 AM ₁₁₈	15.2	0.15	19991228	54.40711	184.39527	204.01167	5.09483	0.2870911	2.6026816	13	1	3 days	0.48	E Williams	2000 AM ₁₁₈
2000 AN ₁₁₉	15.0	0.15	19991228	40.94486	240.79023	175.69333	5.61492	0.1893442	2.4791658	10	1	3 days	0.45	E Williams	2000 AN ₁₁₉
2000 AR ₁₁₉	15.2	0.15	19991228	356.60239	219.61387	258.56435	7.83260	0.2311175	2.4530032	13	1	3 days	0.26	E Williams	2000 AR ₁₁₉
2000 AS ₁₁₉	15.5	0.15	19991228	8.31616	254.25094	205.61481	4.55773	0.1998969	2.3639198	13	1	3 days	0.20	E Williams	2000 AS ₁₁₉
2000 AT ₁₁₉	14.5	0.15	19991228	56.81161	267.04835	134.04687	23.89357	0.1758933	2.9318868	13	1	3 days	0.22	E Williams	2000 AT ₁₁₉
2000 AX ₁₁₉	15.1	0.15	19991228	245.78340	102.57462	142.32206	11.87681	0.1470412	2.3454111	20	1	7 days	0.40	Williams	2000 AX ₁₁₉
2000 AY ₁₁₉	14.7	0.15	19991228	44.14758	167.18822	234.44505	4.90025	0.2804057	2.4063391	13	1	3 days	0.35	E Williams	2000 AY ₁₁₉
2000 AG ₁₂₀	13.7	0.15	19991228	109.13223	219.21637	140.72162	9.43769	0.1070425	3.1523124	12	1	4 days	0.62	E Williams	2000 AG ₁₂₀
2000 AQ ₁₂₀	15.0	0.15	19991228	223.41929	5.78831	257.50662	7.14073	0.1264821	2.2741944	12	1	3 days	0.53	E Williams	2000 AQ ₁₂₀
2000 AR ₁₂₀	12.7	0.15	19991228	91.27121	119.02839	265.55085	9.26656	0.0383046	2.9560766	13	1	3 days	0.31	E Williams	2000 AR ₁₂₀
2000 AS ₁₂₀	15.2	0.15	19991228	22.76039	228.22107	207.07460	4.08386	0.2683590	2.6624153	13	1	3 days	0.39	E Williams	2000 AS ₁₂₀
2000 AV ₁₂₀	13.7	0.15	19991228	46.93620	187.07658	243.31267	5.97233	0.0437480	3.2065953	12	1	3 days	0.33	E Williams	2000 AV ₁₂₀
2000 AZ ₁₂₀	13.7	0.15	19991228	262.06668	103.59605	141.77643	17.72097	0.2615008	2.7355408	12	1	3 days	0.28	E Williams	2000 AZ ₁₂₀
2000 AB ₁₂₁	13.0	0.15	19991228	52.95923	141.62528	269.56786	9.15603	0.1662044	3.0768274	13	1	3 days	0.16	E Williams	2000 AB ₁₂₁
2000 AA ₁₂₂	14.3	0.15	19991208	275.33352	309.00231	260.92013	13.15750	0.2134337	2.4552942	22	1	36 days	0.49	Williams	2000 AA ₁₂₂
2000 AK ₁₂₂	15.5	0.15	19991228	358.32940	312.12266	156.56976	6.25023	0.1243437	2.3125941	16	1	28 days	0.35	Williams	2000 AK ₁₂₂
2000 AJ ₁₂₄	13.2	0.15	19991228	245.09141	105.96925	142.69726	6.96118	0.0954451	3.1733912	31	1	13 days	0.48	Williams	2000 AJ ₁₂₄
2000 AL ₁₂₄	13.1	0.15	19991228	150.29866	196.40254	130.53060	30.63492	0.1504139	3.0575339	18	1	8 days	0.38	Marsden	2000 AL ₁₂₄
2000 AW ₁₂₄	13.4	0.15	19991228	270.67720	88.74589	143.29261	15.12200	0.1829847	2.6147395	16	1	4 days	0.38	E Williams	2000 AW ₁₂₄
2000 AJ ₁₂₅	12.8	0.15	19991228	53.89915	264.23253	155.42551	8.82523	0.1050766	3.2019265	17	1	4 days	0.38	E Williams	2000 AJ ₁₂₅
2000 AW ₁₂₅	13.3	0.15	19991228	225.91759	127.78292	138.66601	9.41570	0.1094530	2.6812479	21	1	12 days	0.72	Williams	2000 AW ₁₂₅
2000 AY ₁₂₅	14.6	0.15	19991228	72.65318	100.63138	292.73266	5.73009	0.1367204	2.3975193	20	1	12 days	0.47	Williams	2000 AY ₁₂₅
2000 AS ₁₂₆	14.0	0.15	19991228	278.86896	288.34989	279.07851	2.42451	0.0067977	2.7749555	18	1	10 days	0.62	Williams	2000 AS ₁₂₆
2000 AV ₁₂₆	14.2	0.15	19991228	229.86309	125.72185	141.98477	5.98694	0.1639799	2.3293875	12	1	4 days	0.44	E Williams	2000 AV ₁₂₆
2000 AA ₁₂₇	12.7	0.15	19991228	57.00244	202.14971	200.18875	1.33767	0.2511604	3.2423733	17	1	8 days	0.31	Williams	2000 AA ₁₂₇
2000 AQ ₁₂₇	13.4	0.15	19991228	194.39769	6.52086	289.24855	3.27642	0.1025063	2.6745417	17	1	8 days	0.56	Williams	2000 AQ ₁₂₇
2000 AW ₁₂₈	13.1	0.15	19991228	179.78763	2.89503	316.81616	11.03969	0.0072073	2.9500606	13	1	5 days	0.46	E Williams	2000 AW ₁₂₈
2000 AX ₁₂₈	12.6	0.15	19991228	174.64654	4.68107	322.32186	22.87221	0.1326325	3.1069757	17	1	6 days	0.42	E Williams	2000 AX ₁₂₈
2000 AY ₁₂₈	15.1	0.15	19991228	335.34948	323.55994	183.01269	6.25457	0.0709058	2.3991695	12	1	3 days	0.27	E Williams	2000 AY ₁₂₈
2000 AG ₁₂₉	16.0	0.15	19991228	39.89551	304.80514	129.51192	7.93177	0.0695678	2.2526307	13	1	11 days	0.26	Williams	2000 AG ₁₂₉
2000 AA ₁₃₁	16.6	0.15	19991228	336.78431	28.57943	118.60326	10.41173	0.3224418	2.6342094	24	1	27 days	0.64	Williams	2000 AA ₁₃₁
2000 AD ₁₃₁	14.9	0.15	19991228	16.82566	157.95934	297.88160	1.41092	0.1683279	2.6266498	17	1	10 days	0.76	Williams	2000 AD ₁₃₁
2000 AF ₁₃₁	15.5	0.15	19991228	347.93555	14.15144	121.55216	7.36606	0.1164262	2.6006108	11	1	5 days	0.41	E Williams	2000 AF ₁₃₁
2000 AY ₁₃₁	13.6	0.15	19991228	160.00795	195.85189	103.12520	18.91175	0.0909626	3.1066244	19	1	12 days	0.59	Williams	2000 AY ₁₃₁
2000 AZ ₁₃₁	16.8	0.15	19991228	15.01739	334.64465	104.54184	8.71645	0.1720581	2.3824274	12	1	12 days	0.33	Williams	2000 AZ ₁₃₁
2000 AA ₁₃₂	16.5	0.15	19991228	359.66141	176.28117	285.36039	4.37464	0.0736646	2.3262323	15	1	11 days	0.31	Williams	2000 AA ₁₃₂
2000 AB ₁₃₂	15.1	0.15	19991208	77.06876	271.01215	76.57975	6.62467	0.2800356	2.2725163	17	1	31 days	0.40	Williams	2000 AB ₁₃₂
2000 AC ₁₃₂	16.2	0.15	19991228	358.76528	171.70726	291.80401	1.97603	0.2885599	2.7726845	13	1	6 days	0.68	E Williams	2000 AC ₁₃₂
2000 AQ ₁₃₂	14.6	0.15	19991228	37.91470	128.03327	286.57636	9.63688	0.1279574	3.1913977	10	1	6 days	0.59	E Williams	2000 AQ ₁₃₂
2000 AB ₁₃₃	14.3	0.15	19991228	26.88379	117.85467	323.29393	15.47369	0.1578451	2.9984952	13	1	5 days	0.62	E Williams	2000 AB ₁₃₃
2000 AD ₁₃₃	15.4	0.15	19991228	353.86128	108.96665	15.88226	5.26061	0.2173171	2.6048842	16	1	5 days	0.48	E Williams	2000 AD ₁₃₃
2000 AH ₁₃₃	14.6	0.15	19991228	38.68323	356.73135	68.71038	6.75700	0.2232692	2.7022818	17	1	5 days	0.94	E Williams	2000 AH ₁₃₃
2000 AP ₁₃₃	16.0	0.15	19991228	8.28347	167.42254	277.76740	14.22122	0.1073738	2.3854894	15	1	7 days	0.52	Williams	2000 AP ₁₃₃
2000 AG ₁₃₄	16.9	0.15	19991228	357.07402	177.42460	286.78273	5.01385	0.1566183	2.3385412	15	1	5 days	0.65	E Williams	2000 AG ₁₃₄
2000 AK ₁₃₄	14.2	0.15	19991228	91.00916	48.46250	319.05816	5.40001	0.0323973	3.0220035	14	1	7 days	0.95	E Williams	2000 AK ₁₃₄
2000 AL ₁₃₄	13.6	0.15	19991228	278.37313	237.93610	318.93395	0.25655	0.1071265	3.2372029	16	1	11 days	0.48	Williams	2000 AL ₁₃₄
2000 AX ₁₃₅	14.8	0.15	19991228	232.08311	289.69705	319.66252	4.91278	0.1010347	2.5509443	12	1	11 days	0.29	Williams	2000 AX ₁₃₅
2000 AY ₁₃₅	14.0	0.15	19991228	307.95949	144.15333	48.75026	2.03598	0.2520453	3.2452235	16	1	9 days	0.51	Williams	2000 AY ₁₃₅
2000 AS ₁₃₆	15.3	0.15	19991228	14.92574	335.21961	136.81411	5.43054	0.2338019	2.6534967	10	1	4 days	0.68	E Williams	2000 AS ₁₃₆
2000 AT ₁₃₆	15.1	0.15	19991228	294.95722	77.66073	141.00855	7.03496	0.0927371	2.3405572	11	1	6 days	0.65	E Williams	2000 AT ₁₃₆
2000 AU ₁₃₆	13.9	0.15	19991228	316.73757	54.23613	148.46269	13.83210	0.1454733	2.7803290	11	1	4 days	0.40	E Williams	2000 AU ₁₃₆
2000 AV ₁₃₆	13.8	0.15	19991228	331.65625	210.77340	327.74135	14.29098	0.0930833	2.4320176	13	1	4 days	0.34	E Williams	2000 AV ₁₃₆
2000 AX ₁₃₆	13.5	0.15	19991228	276.45210	255.34521	341.22722	7.50115	0.0599568	2.4349571	13	1	6 days	0.48	E Williams	2000 AX ₁₃₆

2000 AY ₁₃₆	14.1	0.15	19991228	2.91591	19.65703	122.51577	3.65549	0.1648882	2.8921454	13	1	6 days	0.47	E	Williams	2000 AY ₁₃₆
2000 AZ ₁₃₆	13.8	0.15	19991208	219.31612	176.13796	117.42464	5.54206	0.1504117	2.2190996	16	1	35 days	0.49		Williams	2000 AZ ₁₃₆
2000 AC ₁₃₇	13.3	0.15	19991228	281.99509	242.38413	14.56124	5.32727	0.2193873	2.9427814	12	1	6 days	0.45		Williams	2000 AC ₁₃₇
2000 AE ₁₃₇	12.7	0.15	19991228	235.11207	147.31135	152.84382	7.54454	0.2005181	2.8483572	9	1	4 days	0.55	E	Williams	2000 AE ₁₃₇
2000 AF ₁₃₇	13.0	0.15	19991228	358.37367	3.62619	147.60215	15.64235	0.2865812	2.9775396	17	1	4 days	0.54	E	Williams	2000 AF ₁₃₇
2000 AG ₁₃₇	14.7	0.15	19991228	350.35373	140.73031	21.57412	2.73224	0.1342237	2.5565048	9	1	4 days	0.58	E	Williams	2000 AG ₁₃₇
2000 AJ ₁₃₇	14.7	0.15	19991228	357.39170	164.71959	344.67882	11.20683	0.2693373	2.7632077	12	1	6 days	0.55	E	Williams	2000 AJ ₁₃₇
2000 AK ₁₃₇	14.0	0.15	19991228	28.50798	326.18808	141.30030	17.55631	0.2001992	2.7291471	11	1	6 days	0.49	E	Williams	2000 AK ₁₃₇
2000 AT ₁₃₇	13.7	0.15	19991228	259.18678	300.22781	337.80869	12.44196	0.2591883	2.0409839	12	1	4 days	0.43	E	Williams	2000 AT ₁₃₇
2000 AV ₁₃₇	13.7	0.15	19991228	341.75506	192.87157	345.15530	14.92520	0.1808781	2.6767265	12	1	4 days	0.55	E	Williams	2000 AV ₁₃₇
2000 AH ₁₃₈	12.6	0.15	19991228	263.43234	100.51819	51.15429	23.05359	0.1230681	2.7290562	13	1	5 days	0.52	E	Williams	2000 AH ₁₃₈
2000 AO ₁₃₈	13.0	0.15	19991228	136.35625	169.55145	84.91254	10.28685	0.1523039	2.5340012	13	1	5 days	1.13	E	Williams	2000 AO ₁₃₈
2000 AQ ₁₃₈	13.5	0.15	19991228	19.66809	314.08291	64.86164	23.21456	0.1228340	2.6198862	15	1	5 days	0.45		Williams	2000 AQ ₁₃₈
2000 AJ ₁₃₉	13.5	0.15	19991228	351.30860	343.18214	85.17025	12.45933	0.2023546	2.7003373	13	1	3 days	0.43	E	Williams	2000 AJ ₁₃₉
2000 AM ₁₃₉	12.8	0.15	19991228	96.94034	228.15838	72.56494	15.10559	0.1072931	2.8531454	13	1	3 days	0.47	E	Williams	2000 AM ₁₃₉
2000 AN ₁₃₉	14.8	0.15	19991228	341.09752	310.04589	136.45963	5.16281	0.2092993	2.6924996	13	1	3 days	0.37	E	Williams	2000 AN ₁₃₉
2000 AO ₁₃₉	14.7	0.15	19991228	22.02945	262.04931	118.25311	7.37435	0.2103898	3.0008792	11	1	3 days	0.87	E	Williams	2000 AO ₁₃₉
2000 AR ₁₃₉	14.2	0.15	19991228	27.84237	292.71446	92.14664	13.20764	0.1016774	2.2665827	13	1	3 days	0.57	E	Williams	2000 AR ₁₃₉
2000 AS ₁₃₉	14.1	0.15	19991228	100.69698	172.64305	125.33266	6.76217	0.1505830	2.4409742	13	1	3 days	0.67	E	Williams	2000 AS ₁₃₉
2000 AX ₁₃₉	14.4	0.15	19991228	359.26125	292.51690	125.74319	7.25262	0.2195164	2.9935067	13	1	3 days	0.43	E	Williams	2000 AX ₁₃₉
2000 AY ₁₃₉	13.2	0.15	19991228	353.92554	210.82083	214.89762	17.42988	0.1503165	2.9128592	13	1	3 days	0.36	E	Williams	2000 AY ₁₃₉
2000 AZ ₁₃₉	15.2	0.15	19991228	11.96021	266.68106	136.29878	6.84772	0.2600006	2.4439387	13	1	3 days	0.42	E	Williams	2000 AZ ₁₃₉
2000 AA ₁₄₀	15.2	0.15	19991228	27.18097	184.45841	193.08551	6.77299	0.2677703	2.3922406	13	1	3 days	0.61	E	Williams	2000 AA ₁₄₀
2000 AD ₁₄₀	13.9	0.15	19991228	62.79681	192.47849	138.37454	7.30875	0.2417721	2.5803776	13	1	3 days	0.40	E	Williams	2000 AD ₁₄₀
2000 AF ₁₄₀	12.9	0.15	19991228	211.19893	132.51351	63.21048	12.49587	0.0983858	2.4485648	17	1	5 days	0.37	E	Williams	2000 AF ₁₄₀
2000 AM ₁₄₀	14.1	0.15	19991228	355.50609	226.93951	197.80864	8.73547	0.2184183	3.0050310	12	1	3 days	0.45	E	Williams	2000 AM ₁₄₀
2000 AP ₁₄₀	15.2	0.15	19991228	27.61168	314.13814	102.39465	5.03805	0.1664256	2.6487638	20	1	5 days	0.36	E	Williams	2000 AP ₁₄₀
2000 AV ₁₄₀	16.2	0.15	19991228	7.35587	276.95737	190.64574	5.56396	0.1272133	2.2546428	22	1	6 days	0.44	E	Williams	2000 AV ₁₄₀
2000 AW ₁₄₀	13.8	0.15	19991228	295.81297	343.55370	212.39436	6.88790	0.0717177	3.1243385	18	1	6 days	0.60	E	Williams	2000 AW ₁₄₀
2000 AX ₁₄₀	14.7	0.15	20000226	52.15458	224.68494	199.53472	5.93259	0.2104342	2.4182307	39	1	64 days	0.57	M-v 5	Williams	2000 AX ₁₄₀
2000 AB ₁₄₁	13.0	0.15	19991208	167.88264	36.82202	277.77325	12.39355	0.1623791	2.6831013	26	1	37 days	0.51		Williams	2000 AB ₁₄₁
2000 AH ₁₄₂	13.0	0.15	19991228	63.54751	247.27623	174.70999	9.14492	0.0868153	3.2390121	19	1	5 days	0.60	E	Williams	2000 AH ₁₄₂
2000 AL ₁₄₂	13.7	0.15	19991228	256.12188	346.16729	265.52910	8.62776	0.1330207	2.5608958	15	1	6 days	0.42		Williams	2000 AL ₁₄₂
2000 AP ₁₄₂	13.2	0.15	19991228	251.44104	98.00472	160.65776	11.21410	0.1435436	2.8084358	15	1	6 days	0.38	E	Williams	2000 AP ₁₄₂
2000 AF ₁₄₃	13.9	0.15	19991228	303.64058	310.73584	271.36757	5.51527	0.2850657	2.3947875	13	1	3 days	0.46	E	Williams	2000 AF ₁₄₃
2000 AG ₁₄₃	13.3	0.15	19991228	227.81248	354.37687	290.13424	7.48469	0.1786613	2.3843439	13	1	3 days	0.77	E	Williams	2000 AG ₁₄₃
2000 AK ₁₄₃	13.7	0.15	19991228	229.50314	45.06685	226.45714	7.32631	0.2101232	2.7771546	13	1	5 days	0.44	E	Williams	2000 AK ₁₄₃
2000 AU ₁₄₃	14.3	0.15	19991208	5.56733	334.00943	147.62039	17.95193	0.0719643	2.7849550	27	1	37 days	0.50		Williams	2000 AU ₁₄₃
2000 AB ₁₄₄	14.9	0.15	19991228	136.06258	40.43663	130.92336	18.69886	0.1010640	1.7623966	12	1	3 days	0.36	E	Williams	2000 AB ₁₄₄
2000 AC ₁₄₄	13.8	0.15	19991228	37.77427	165.51438	279.60122	4.18844	0.1962344	2.6027640	10	1	3 days	1.00	E	Williams	2000 AC ₁₄₄
2000 AF ₁₄₄	14.5	0.15	19991228	28.89714	168.97226	296.00269	6.91443	0.1259603	2.5119097	12	1	3 days	0.60	E	Williams	2000 AF ₁₄₄
2000 AH ₁₄₄	14.3	0.15	19991228	309.97792	4.52943	200.98447	1.76130	0.1375915	2.5460520	12	1	3 days	0.52	E	Williams	2000 AH ₁₄₄
2000 AL ₁₄₄	14.8	0.15	19991228	322.77895	46.31119	145.60733	18.19887	0.1616971	2.5705542	12	1	11 days	0.55		Williams	2000 AL ₁₄₄
2000 AM ₁₄₄	14.8	0.15	19991228	31.74358	153.52594	304.45415	3.75989	0.1359067	2.2660203	12	1	3 days	0.45	E	Williams	2000 AM ₁₄₄
2000 AN ₁₄₄	13.1	0.15	19991228	217.44786	348.91205	314.90826	12.76418	0.2339477	2.1996129	12	1	3 days	0.42	E	Williams	2000 AN ₁₄₄
2000 AP ₁₄₄	13.0	0.15	19991228	235.65151	319.87285	327.67603	21.88942	0.2051184	2.2758731	12	1	3 days	0.48	E	Williams	2000 AP ₁₄₄
2000 AQ ₁₄₄	15.4	0.15	19991228	13.21817	339.39719	144.59948	4.90456	0.0646006	2.1258334	11	1	3 days	0.70	E	Williams	2000 AQ ₁₄₄
2000 AU ₁₄₄	13.1	0.15	19991228	12.42090	339.41154	151.24615	13.41900	0.1377805	2.6369942	22	1	26 days	0.38		Williams	2000 AU ₁₄₄
2000 AX ₁₄₄	13.7	0.15	19991228	44.35073	136.91093	310.37564	24.87993	0.0431327	2.1982415	12	1	3 days	0.24	E	Williams	2000 AX ₁₄₄
2000 AH ₁₄₅	14.7	0.15	19991228	303.13867	235.18220	307.91402	36.39933	0.0334031	2.5487041	11	1	5 days	0.53	E	Williams	2000 AH ₁₄₅
2000 AL ₁₄₅	13.4	0.15	19991228	35.74006	264.67790	152.94120	14.83687	0.2987578	3.4688639	13	1	5 days	0.58		Williams	2000 AL ₁₄₅
2000 AD ₁₄₆	14.9	0.15	19991228	213.78261	125.19620	107.82416	24.26899	0.0544373	1.9638423	15	1	4 days	0.36		Williams	2000 AD ₁₄₆

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2000 AH ₁₄₆	14.2	0.15	19991228	166.46246	168.73476	114.76659	25.33522	0.1686917	2.3207672	13	1	4 days	0.34	Williams	2000 AH ₁₄₆
2000 AO ₁₄₆	16.0	0.15	19991208	332.17948	226.29944	278.89253	22.47705	0.2155322	2.3393317	17	1	34 days	0.30	Williams	2000 AO ₁₄₆
2000 AP ₁₄₆	14.7	0.15	19991228	294.91128	307.75032	281.59018	23.26624	0.4025002	2.5184619	20	1	7 days	0.44	Williams	2000 AP ₁₄₆
2000 AS ₁₄₆	13.7	0.15	19991228	337.47063	13.29264	117.28214	31.21870	0.1275685	3.2344867	11	1	4 days	0.39	Williams	2000 AS ₁₄₆
2000 AU ₁₄₆	16.5	0.15	19991228	15.63945	291.69072	135.10082	12.61862	0.3170431	2.5378108	12	1	4 days	0.23	Williams	2000 AU ₁₄₆
2000 AX ₁₄₆	16.2	0.15	19991228	22.14376	317.21813	125.57126	24.35932	0.2301098	2.1486661	13	1	9 days	0.40	Williams	2000 AX ₁₄₆
2000 AA ₁₄₇	13.1	0.15	19991228	208.17573	308.32612	338.80733	13.09816	0.1823908	2.4850362	7	1	4 days	0.42	E Williams	2000 AA ₁₄₇
2000 AB ₁₄₇	15.9	0.15	19991228	15.00258	138.16186	307.66313	4.63652	0.2119295	2.5947832	27	1	11 days	0.51	Williams	2000 AB ₁₄₇
2000 AD ₁₄₇	14.7	0.15	19991228	313.12643	212.25297	297.63000	6.38399	0.0361115	2.2655257	18	1	24 days	0.57	Williams	2000 AD ₁₄₇
2000 AD ₁₄₈	13.7	0.15	19991228	98.30275	247.72229	120.87767	13.23574	0.0607531	2.9801052	12	1	11 days	0.60	Williams	2000 AD ₁₄₈
2000 AH ₁₄₈	12.6	0.15	19991228	247.61128	327.09094	292.25241	12.66896	0.0792779	2.3552964	12	1	4 days	0.36	E Williams	2000 AH ₁₄₈
2000 AJ ₁₄₈	14.1	0.15	19991208	358.75573	138.06939	261.11890	17.92397	0.1422236	3.1749029	17	1	33 days	0.51	Williams	2000 AJ ₁₄₈
2000 AU ₁₄₈	16.2	0.15	19991228	346.89620	354.65372	126.62682	6.73529	0.1762110	2.5768626	12	1	3 days	0.46	E Williams	2000 AU ₁₄₈
2000 AX ₁₄₈	13.2	0.15	19991228	71.14786	175.76810	177.29541	9.40669	0.1617783	2.7703814	20	1	28 days	0.33	Williams	2000 AX ₁₄₈
2000 AY ₁₄₈	13.5	0.15	19991228	74.55350	110.62379	241.29765	24.65835	0.1510646	3.1272308	12	1	4 days	0.77	E Williams	2000 AY ₁₄₈
2000 AB ₁₄₉	12.7	0.15	19991228	114.16896	203.44838	113.53180	18.03180	0.0997435	3.1487875	15	1	4 days	0.46	Williams	2000 AB ₁₄₉
2000 AC ₁₄₉	15.3	0.15	19991228	46.96405	225.90399	164.02552	6.57239	0.1101028	2.2729640	17	1	28 days	0.55	Williams	2000 AC ₁₄₉
2000 AD ₁₄₉	14.0	0.15	20000226	341.12134	310.43675	177.73333	6.53756	0.0896878	2.3984365	27	1	68 days	0.41	M-v 4 Williams	2000 AD ₁₄₉
2000 AE ₁₄₉	14.9	0.15	19991208	51.28130	180.01946	198.12143	7.92568	0.1299461	2.3317656	23	1	37 days	0.41	Williams	2000 AE ₁₄₉
2000 AG ₁₄₉	16.0	0.15	19991228	31.62693	202.67756	197.88846	6.25695	0.2800458	2.5183953	12	1	4 days	0.47	Williams	2000 AG ₁₄₉
2000 AJ ₁₄₉	14.6	0.15	19991228	217.75684	122.04657	113.14575	14.27140	0.1571729	2.3950687	11	1	4 days	0.58	Williams	2000 AJ ₁₄₉
2000 AK ₁₄₉	13.9	0.15	19991228	281.55251	53.39749	117.96354	14.87550	0.0852855	3.0632213	18	1	28 days	0.61	Williams	2000 AK ₁₄₉
2000 AL ₁₄₉	15.5	0.15	19991208	41.30653	193.27690	180.84513	6.38371	0.2533911	2.3694435	24	1	36 days	0.73	Williams	2000 AL ₁₄₉
2000 AN ₁₄₉	13.8	0.15	19991228	218.57041	105.84152	139.10668	12.75843	0.1434168	2.6408652	10	1	4 days	0.35	Williams	2000 AN ₁₄₉
2000 AQ ₁₄₉	14.1	0.15	19991228	64.14260	182.01212	184.42808	6.41703	0.2810007	2.5799468	12	1	4 days	0.42	Williams	2000 AQ ₁₄₉
2000 AR ₁₄₉	15.7	0.15	19991228	29.45657	182.80590	221.76946	6.27561	0.3371079	2.6719070	11	1	4 days	0.50	Williams	2000 AR ₁₄₉
2000 AT ₁₄₉	13.7	0.15	19991208	16.69723	229.74798	201.14220	7.61762	0.2077383	2.7714268	22	1	37 days	0.30	Williams	2000 AT ₁₄₉
2000 AZ ₁₄₉	15.3	0.15	19991228	39.67759	233.77142	167.53512	7.85145	0.3033464	2.7785511	18	1	27 days	0.59	Williams	2000 AZ ₁₄₉
2000 AC ₁₅₀	14.1	0.15	19991228	80.99011	172.74968	203.44973	9.85601	0.0208004	2.9590350	11	1	4 days	0.55	E Williams	2000 AC ₁₅₀
2000 AD ₁₅₀	14.3	0.15	19991228	257.55285	342.91147	236.15205	12.94893	0.1539900	2.6879676	12	1	4 days	0.38	Williams	2000 AD ₁₅₀
2000 AE ₁₅₀	14.6	0.15	19991228	344.03455	340.04028	148.80312	9.33308	0.2453821	3.0366898	16	1	28 days	0.37	Williams	2000 AE ₁₅₀
2000 AF ₁₅₀	13.9	0.15	19991228	282.70008	319.88604	239.83458	11.27191	0.1553832	2.6225431	13	1	4 days	0.45	Williams	2000 AF ₁₅₀
2000 AG ₁₅₀	14.2	0.15	19991228	37.16048	194.46557	228.45099	10.91214	0.0732830	3.0682131	9	1	4 days	0.47	Williams	2000 AG ₁₅₀
2000 AH ₁₅₀	16.0	0.15	19991228	60.10818	207.16578	186.45035	7.70302	0.1214776	2.3738161	11	1	4 days	0.63	Williams	2000 AH ₁₅₀
2000 AN ₁₅₀	13.5	0.15	19991228	352.34483	219.48399	251.13394	26.97761	0.0994333	3.2613856	18	1	2 days	0.43	E Williams	2000 AN ₁₅₀
2000 AQ ₁₅₀	13.8	0.15	19991228	4.89751	315.16621	139.32625	19.12476	0.1944336	3.1021556	16	1	3 days	0.23	Williams	2000 AQ ₁₅₀
2000 AS ₁₅₀	15.1	0.15	19991228	336.80059	340.11004	162.02310	14.40119	0.1433883	2.7238822	13	1	3 days	0.62	E Williams	2000 AS ₁₅₀
2000 AT ₁₅₀	14.7	0.15	19991228	68.71832	225.65251	156.48336	12.73406	0.1899739	2.5577824	14	1	3 days	0.38	Williams	2000 AT ₁₅₀
2000 AU ₁₅₀	14.7	0.15	19991208	347.12516	329.12660	153.20095	10.50235	0.1837716	2.3488262	25	1	37 days	0.31	Williams	2000 AU ₁₅₀
2000 AW ₁₅₀	14.7	0.15	19991228	262.39242	330.19639	259.97521	11.69612	0.1444768	2.3597209	12	1	3 days	0.39	Williams	2000 AW ₁₅₀
2000 AC ₁₅₁	15.3	0.15	19991228	37.78214	327.84026	88.07836	3.65821	0.2587429	2.6331106	9	1	11 days	0.47	Williams	2000 AC ₁₅₁
2000 AD ₁₅₁	16.4	0.15	19991228	27.07064	119.56208	315.04714	6.45198	0.1998837	2.3232979	7	1	2 days	0.64	E Williams	2000 AD ₁₅₁
2000 AE ₁₅₁	15.6	0.15	19991228	337.74736	211.53246	303.43737	4.48036	0.2272332	3.0814927	6	1	2 days	0.22	E Marsden	2000 AE ₁₅₁
2000 AF ₁₅₁	15.4	0.15	19991228	51.44291	92.93345	302.55086	10.27024	0.3023823	2.8099156	6	1	2 days	0.08	E Marsden	2000 AF ₁₅₁
2000 AG ₁₅₁	16.6	0.15	19991228	203.05585	159.98981	123.98517	9.32219	0.1673742	2.2206077	8	1	2 days	0.42	E Marsden	2000 AG ₁₅₁
2000 AH ₁₅₁	14.3	0.15	19991228	37.26742	297.95829	118.75108	15.10791	0.1616667	2.7336324	19	1	10 days	0.73	Williams	2000 AH ₁₅₁
2000 AS ₁₅₂	13.3	0.15	19991208	127.46027	58.57785	268.85470	19.70122	0.1541967	1.9176996	30	1	38 days	0.58	Williams	2000 AS ₁₅₂
2000 AE ₁₅₃	13.8	0.15	19991228	291.72601	285.08524	272.26685	3.97981	0.0972201	3.1770770	13	1	8 days	1.38	Williams	2000 AE ₁₅₃
2000 AG ₁₅₃	15.3	0.15	19991228	15.67964	338.21707	121.94859	6.86366	0.0946576	2.4086389	16	1	7 days	0.75	Williams	2000 AG ₁₅₃
2000 AJ ₁₅₃	14.6	0.15	19991228	87.83254	9.42271	1.54950	3.75602	0.2403817	2.3250650	52	1	6 days	0.41	Williams	2000 AJ ₁₅₃
2000 AR ₁₅₄	16.1	0.15	19991208	36.08525	81.62163	284.71806	8.22809	0.2325714	2.3156065	17	1	28 days	0.59	Williams	2000 AR ₁₅₄
2000 AK ₁₅₅	14.9	0.15	19991228	133.89546	32.93527	265.03932	6.51009	0.1634828	2.3316422	12	1	9 days	0.76	Williams	2000 AK ₁₅₅
2000 AQ ₁₅₅	15.6	0.15	19991228	21.14990	149.33579	263.57667	2.92206	0.2419457	2.6274863	15	1	9 days	0.60	Williams	2000 AQ ₁₅₅

2000 AV ₁₅₅	15.4	0.15	19991228	67.43467	81.94298	281.15733	1.42348	0.1588104	2.5035387	15	1	6 days	0.56	E Williams	2000 AV ₁₅₅
2000 AK ₁₅₆	10.5	0.15	19991228	67.87225	89.23820	283.94604	16.08117	0.1119931	5.2260987	17	1	21 days	0.69	Williams	2000 AK ₁₅₆
2000 AV ₁₅₆	16.3	0.15	19991228	42.59986	276.71758	93.37269	7.61653	0.3461881	2.4802122	15	1	6 days	0.33	E Williams	2000 AV ₁₅₆
2000 AQ ₁₅₈	13.7	0.15	19991228	318.00061	95.04464	64.39634	2.22257	0.1119160	3.2087944	21	1	10 days	0.52	Williams	2000 AQ ₁₅₈
2000 AU ₁₅₈	16.1	0.15	19991228	342.26285	191.87959	300.82699	6.43024	0.1677065	2.4301670	11	1	10 days	0.71	Williams	2000 AU ₁₅₈
2000 AB ₁₅₉	14.6	0.15	19991228	34.15617	114.70177	304.72890	10.81782	0.2175069	3.1312507	23	1	18 days	0.52	Williams	2000 AB ₁₅₉
2000 AT ₁₅₉	15.1	0.15	19991228	16.75055	21.07858	70.00195	3.30606	0.1540865	2.6264507	15	1	21 days	0.75	Williams	2000 AT ₁₅₉
2000 AU ₁₅₉	14.9	0.15	19991228	261.09318	147.84875	86.64131	4.60658	0.1854407	2.3688883	12	1	2 days	0.58	E Williams	2000 AU ₁₅₉
2000 AA ₁₆₀	11.1	0.15	19991228	342.09100	134.57374	8.80351	7.21070	0.0391507	5.1590522	13	1	3 days	0.25	E Williams	2000 AA ₁₆₀
2000 AH ₁₆₀	16.2	0.15	19991228	337.74252	198.15917	295.51138	4.03998	0.1516078	2.7331645	11	1	6 days	0.84	E Williams	2000 AH ₁₆₀
2000 AE ₁₆₁	14.4	0.15	19991228	317.59914	102.63912	66.19969	7.63429	0.1172843	3.1583232	11	1	3 days	0.54	E Williams	2000 AE ₁₆₁
2000 AF ₁₆₁	14.8	0.15	19991228	2.22817	117.01376	354.10881	5.86858	0.1678648	2.3303864	13	1	5 days	0.28	E Williams	2000 AF ₁₆₁
2000 AG ₁₆₁	15.5	0.15	19991228	32.11427	97.46165	334.67051	7.54301	0.1489454	2.2306536	13	1	3 days	0.45	E Williams	2000 AG ₁₆₁
2000 AK ₁₆₁	14.1	0.15	19991228	308.17813	234.64996	316.50975	15.25527	0.1818693	3.0275898	13	1	2 days	0.47	E Williams	2000 AK ₁₆₁
2000 AN ₁₆₁	15.1	0.15	19991228	10.72406	99.02672	6.56528	4.96587	0.0591928	2.2714970	12	1	3 days	0.51	E Williams	2000 AN ₁₆₁
2000 AE ₁₆₂	15.4	0.15	19991228	39.88492	68.87735	343.81954	2.76865	0.2551375	2.4595354	12	1	2 days	0.46	E Williams	2000 AE ₁₆₂
2000 AH ₁₆₂	15.9	0.15	19991228	334.20107	190.56191	322.11033	3.47041	0.0979658	2.3524551	9	1	7 days	0.44	Williams	2000 AH ₁₆₂
2000 AR ₁₆₂	13.6	0.15	19991228	81.47980	85.63097	331.50607	12.22694	0.0624664	2.4980060	12	1	6 days	0.68	E Williams	2000 AR ₁₆₂
2000 AS ₁₆₂	15.0	0.15	19991228	46.99320	75.01395	357.15332	4.24535	0.2145241	2.1848356	12	1	6 days	0.59	Williams	2000 AS ₁₆₂
2000 AQ ₁₆₃	10.9	0.15	19991228	126.59139	213.29229	120.56760	13.57578	0.0471090	5.1946512	19	1	5 days	0.40	E Williams	2000 AQ ₁₆₃
2000 AL ₁₆₅	13.4	0.15	19991228	59.77785	241.28302	106.08993	17.37515	0.1232491	2.5468522	13	1	3 days	0.36	E Williams	2000 AL ₁₆₅
2000 AN ₁₆₅	12.0	0.15	19991228	71.25325	135.99454	227.11525	21.89964	0.0877832	3.2346684	16	1	3 days	0.51	E Williams	2000 AN ₁₆₅
2000 AP ₁₆₅	13.6	0.15	19991228	33.08342	200.24302	200.35320	12.61087	0.1546545	2.6264866	15	1	3 days	0.50	E Williams	2000 AP ₁₆₅
2000 AA ₁₆₇	13.2	0.15	19991228	277.13634	61.45611	166.71660	15.57578	0.2693187	3.1422977	18	1	4 days	0.56	E Williams	2000 AA ₁₆₇
2000 AG ₁₆₇	14.4	0.15	19991228	350.61070	304.07939	187.56860	9.05841	0.2666559	3.0957866	13	1	6 days	1.07	E Williams	2000 AG ₁₆₇
2000 AH ₁₆₇	15.7	0.15	19991228	14.26651	285.82839	169.10502	9.24811	0.1052707	2.3705569	13	1	6 days	0.48	E Williams	2000 AH ₁₆₇
2000 AE ₁₆₈	12.2	0.15	19991228	109.43330	200.42129	148.71525	24.01887	0.0384631	3.0444497	23	1	3 days	0.35	E Williams	2000 AE ₁₆₈
2000 AG ₁₆₈	15.6	0.15	19991228	13.76182	90.79548	61.66551	7.57715	0.0848491	2.4401302	12	1	9 days	1.35	Williams	2000 AG ₁₆₈
2000 AH ₁₆₈	14.9	0.15	19991228	234.10884	87.88867	131.28213	6.75671	0.1348248	2.5044509	16	1	2 days	0.44	E Marsden	2000 AH ₁₆₈
2000 AJ ₁₆₈	15.9	0.15	19991228	52.34685	268.63851	120.74814	20.55310	0.1907087	2.7489481	11	1	2 days	0.79	E Marsden	2000 AJ ₁₆₈
2000 AK ₁₆₈	14.6	0.15	19991228	85.52318	159.98787	218.64080	4.29648	0.0784890	3.0615273	13	1	2 days	0.29	E Marsden	2000 AK ₁₆₈
2000 AL ₁₆₈	15.9	0.15	19991228	4.14854	328.68918	135.67808	9.88962	0.1600185	2.6866511	15	1	2 days	0.33	E Marsden	2000 AL ₁₆₈
2000 AM ₁₆₈	15.3	0.15	19991228	280.95668	229.35435	344.07717	6.38859	0.1422919	2.6514694	18	1	2 days	0.31	E Marsden	2000 AM ₁₆₈
2000 AN ₁₆₈	14.8	0.15	19991228	72.17260	266.64358	144.20703	6.48236	0.0899310	2.7107596	15	1	2 days	0.31	E Marsden	2000 AN ₁₆₈
2000 AB ₁₆₉	15.5	0.15	19991228	32.49516	241.36016	142.94058	9.31735	0.2630678	2.4835159	13	1	7 days	0.40	Williams	2000 AB ₁₆₉
2000 AC ₁₆₉	14.2	0.15	19991228	11.47634	270.95822	150.46402	7.92850	0.1353821	2.8140644	12	1	7 days	0.90	Williams	2000 AC ₁₆₉
2000 AF ₁₆₉	14.7	0.15	19991228	325.75130	4.50932	115.26346	14.29887	0.1165248	2.8020300	13	1	7 days	0.41	Williams	2000 AF ₁₆₉
2000 AY ₁₆₉	14.2	0.15	19991228	69.28029	150.87448	196.86322	10.66400	0.1932436	3.0510960	10	1	7 days	0.51	Williams	2000 AY ₁₆₉
2000 AO ₁₇₀	14.3	0.15	19991228	47.01649	255.33495	116.74804	14.00056	0.2230188	2.6916882	13	1	7 days	0.24	Williams	2000 AO ₁₇₀
2000 AJ ₁₇₁	14.7	0.15	19991228	11.35921	299.40213	129.39343	13.66068	0.1341520	2.7785754	13	1	7 days	0.42	Williams	2000 AJ ₁₇₁
2000 AX ₁₈₂	15.0	0.15	19991228	19.79388	222.56120	231.03345	7.33069	0.0555118	2.5723298	12	1	7 days	0.71	Williams	2000 AX ₁₈₂
2000 AY ₁₈₂	11.0	0.15	19991228	47.82978	192.25744	230.74036	9.47161	0.1145932	5.2656134	11	1	7 days	0.52	Williams	2000 AY ₁₈₂
2000 AT ₁₈₆	14.5	0.15	19991228	34.28907	237.81183	140.02765	8.18225	0.1500030	2.4550263	12	1	5 days	0.61	E Williams	2000 AT ₁₈₆
2000 AX ₁₈₆	14.4	0.15	19991228	76.90121	131.46095	182.84668	14.14843	0.2943476	2.5476875	10	1	3 days	0.53	E Williams	2000 AX ₁₈₆
2000 AC ₁₈₇	14.5	0.15	19991228	357.38978	317.19116	114.19035	14.78532	0.2009936	2.8885210	12	1	3 days	0.83	E Williams	2000 AC ₁₈₇
2000 AD ₁₈₇	14.7	0.15	19991228	90.03853	218.14297	114.13870	15.11892	0.0483128	2.3220530	12	1	3 days	0.71	E Williams	2000 AD ₁₈₇
2000 AE ₁₈₇	14.9	0.15	19991228	58.14426	207.70205	155.18922	12.38371	0.0715383	2.2526444	11	1	3 days	0.41	E Williams	2000 AE ₁₈₇
2000 AG ₁₈₇	14.3	0.15	19991228	3.97678	230.33115	195.72666	15.18659	0.1246521	2.7556484	12	1	3 days	0.60	E Williams	2000 AG ₁₈₇
2000 AP ₁₈₇	14.2	0.15	19991228	52.06955	221.91053	126.20043	14.11014	0.3124624	2.2595148	13	1	4 days	0.25	E Williams	2000 AP ₁₈₇
2000 AQ ₁₈₇	13.5	0.15	19991228	76.80161	238.52807	109.35417	20.47683	0.0335978	3.1149148	11	1	4 days	0.54	E Williams	2000 AQ ₁₈₇
2000 AU ₁₈₇	14.9	0.15	19991228	354.22269	279.57096	164.04076	11.76692	0.1795754	2.6706878	12	1	4 days	0.27	E Williams	2000 AU ₁₈₇
2000 AV ₁₈₇	13.2	0.15	19991228	200.10281	45.49608	194.16802	14.10564	0.1212514	2.3624662	12	1	4 days	0.47	E Williams	2000 AV ₁₈₇
2000 AW ₁₈₇	15.4	0.15	19991228	9.54200	284.58742	134.34539	13.70095	0.2681773	2.9948408	11	1	4 days	0.61	E Williams	2000 AW ₁₈₇

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2000 AX ₁₈₇	15.0	0.15	19991228	331.35008	344.15715	136.08711	12.28465	0.1983798	2.4218072	13	1	4 days	0.40	E Williams	2000 AX ₁₈₇
2000 AZ ₁₈₇	13.8	0.15	19991228	240.79584	19.05183	181.26749	11.86172	0.0585973	2.6790505	13	1	7 days	0.44	Williams	2000 AZ ₁₈₇
2000 AA ₁₈₈	15.1	0.15	19991228	50.97497	236.99144	124.47857	14.07259	0.2278592	2.7554907	12	1	7 days	0.57	Williams	2000 AA ₁₈₈
2000 AB ₁₈₈	14.3	0.15	19991228	310.76035	308.91911	195.17379	13.04549	0.1777485	2.6880058	11	1	4 days	0.56	E Williams	2000 AB ₁₈₈
2000 AG ₁₈₈	13.6	0.15	19991228	320.00572	5.40462	130.62585	15.30457	0.2103972	3.1883180	12	1	4 days	0.36	E Williams	2000 AG ₁₈₈
2000 AH ₁₈₈	13.9	0.15	19991228	350.04427	268.63194	180.81421	12.05340	0.0256486	2.6925653	12	1	4 days	0.60	E Williams	2000 AH ₁₈₈
2000 AK ₁₈₈	15.2	0.15	19991228	35.68697	242.68560	139.68443	14.09268	0.2391819	2.7909247	16	1	4 days	0.70	E Williams	2000 AK ₁₈₈
2000 AQ ₁₈₈	14.5	0.15	19991228	5.79428	288.73750	145.74043	10.94714	0.2376503	2.3928210	13	1	4 days	0.16	E Williams	2000 AQ ₁₈₈
2000 AB ₁₈₉	14.5	0.15	19991228	307.50709	306.68933	185.15656	13.07502	0.0258716	2.6793435	11	1	4 days	0.69	E Williams	2000 AB ₁₈₉
2000 AO ₁₉₂	13.8	0.15	19991228	54.75088	175.86755	210.11670	11.52727	0.2563330	2.6739111	14	1	4 days	0.30	Williams	2000 AO ₁₉₂
2000 AR ₁₉₂	12.8	0.15	19991228	173.33642	71.05619	225.51961	13.01957	0.1168284	2.6950423	15	1	4 days	0.49	Williams	2000 AR ₁₉₂
2000 AT ₁₉₂	13.3	0.15	19991228	68.12993	218.15568	158.70890	16.24060	0.2095469	2.6401795	15	1	4 days	0.23	Williams	2000 AT ₁₉₂
2000 AB ₁₉₃	12.9	0.15	19991228	208.90909	10.57796	258.76653	21.11956	0.0442687	3.1472839	12	1	4 days	0.61	Williams	2000 AB ₁₉₃
2000 AC ₁₉₃	14.2	0.15	19991228	353.86245	320.54678	157.65347	15.72799	0.1274707	2.5957149	14	1	4 days	0.36	Williams	2000 AC ₁₉₃
2000 AQ ₁₉₃	14.3	0.15	19991228	298.05261	358.71248	187.14718	12.28186	0.0878765	2.6598381	13	1	4 days	0.50	Williams	2000 AQ ₁₉₃
2000 AJ ₁₉₄	12.8	0.15	19991228	27.12263	182.03354	256.25778	16.45113	0.1998214	3.2642607	15	1	4 days	0.34	Williams	2000 AJ ₁₉₄
2000 AN ₁₉₄	14.2	0.15	19991228	338.54534	344.84153	156.05952	11.99492	0.1195885	2.6608103	13	1	7 days	0.40	Williams	2000 AN ₁₉₄
2000 AU ₁₉₄	15.2	0.15	19991228	317.17196	356.38617	177.18761	8.22717	0.1616165	2.6676035	13	1	7 days	0.44	Williams	2000 AU ₁₉₄
2000 AX ₁₉₄	15.9	0.15	19991228	45.95615	209.15168	196.08293	6.86238	0.2381468	2.3664467	10	1	7 days	0.65	Williams	2000 AX ₁₉₄
2000 AD ₁₉₅	13.8	0.15	19991228	19.90045	240.35700	118.02538	8.85509	0.0659190	3.0772886	13	1	7 days	0.62	Williams	2000 AD ₁₉₅
2000 AD ₁₉₅	14.2	0.15	19991228	185.02427	44.87245	254.29810	12.93404	0.2029280	2.5507370	12	1	7 days	0.52	Williams	2000 AD ₁₉₅
2000 AL ₁₉₅	13.7	0.15	19991228	252.93220	5.70550	225.74467	12.07913	0.0178879	2.8214672	18	1	4 days	0.56	E Williams	2000 AL ₁₉₅
2000 AU ₁₉₅	13.6	0.15	19991228	276.11051	68.78025	150.49624	14.37545	0.1438784	2.6255208	13	1	7 days	0.27	Williams	2000 AU ₁₉₅
2000 AC ₁₉₆	14.2	0.15	19991228	280.03005	313.07452	267.73614	14.98606	0.1508089	2.6077076	10	1	6 days	0.79	E Williams	2000 AC ₁₉₆
2000 AO ₁₉₆	16.0	0.15	19991228	22.17690	209.61427	235.77294	6.94274	0.2096330	2.5934270	12	1	6 days	0.39	E Williams	2000 AO ₁₉₆
2000 AR ₁₉₆	16.0	0.15	19991228	347.53712	354.53387	145.71014	14.82133	0.2598624	2.7075859	13	1	6 days	0.51	E Williams	2000 AR ₁₉₆
2000 AC ₁₉₇	13.6	0.15	19991228	164.05928	57.30353	264.37550	14.74018	0.0866557	3.1754670	10	1	6 days	0.35	E Williams	2000 AC ₁₉₇
2000 AS ₁₉₇	13.8	0.15	19991228	46.01908	153.15438	270.94517	12.93599	0.1522911	2.4271177	13	1	6 days	0.18	E Williams	2000 AS ₁₉₇
2000 AU ₁₉₇	14.6	0.15	19991228	1.61095	289.93628	190.32293	7.52893	0.1854892	2.8268667	13	1	6 days	0.37	E Williams	2000 AU ₁₉₇
2000 AW ₁₉₇	13.9	0.15	19991228	67.45358	143.12452	254.92146	8.65442	0.1927100	3.1927100	16	1	6 days	0.32	E Williams	2000 AW ₁₉₇
2000 AY ₁₉₇	13.7	0.15	19991228	297.38296	357.10303	209.12986	8.71575	0.1339682	3.2745218	13	1	6 days	0.81	E Williams	2000 AY ₁₉₇
2000 AZ ₁₉₇	13.2	0.15	19991228	4.32689	200.30972	283.31134	16.64015	0.1286051	3.1526133	13	1	6 days	0.30	E Williams	2000 AZ ₁₉₇
2000 AE ₁₉₈	13.5	0.15	19991228	268.65231	52.09166	193.06953	7.93987	0.2302814	2.7922139	13	1	6 days	0.33	E Williams	2000 AE ₁₉₈
2000 AF ₁₉₈	13.8	0.15	19991228	289.36072	65.87021	151.22440	19.67999	0.1719102	2.7968068	13	1	6 days	0.25	E Williams	2000 AF ₁₉₈
2000 AG ₁₉₈	13.6	0.15	19991228	19.72526	304.76516	158.75271	14.21893	0.1036115	3.0039414	13	1	6 days	0.54	E Williams	2000 AG ₁₉₈
2000 AH ₁₉₈	13.8	0.15	19991228	41.47168	242.26019	185.08377	8.43154	0.2129580	3.1421891	12	1	6 days	0.42	E Williams	2000 AH ₁₉₈
2000 AR ₁₉₈	11.7	0.15	19991228	184.33552	26.95088	287.82769	18.51874	0.1729490	3.1002941	13	1	4 days	0.82	E Williams	2000 AR ₁₉₈
2000 AT ₁₉₈	13.5	0.15	19991228	337.60968	242.58919	274.94401	12.81696	0.1032396	2.6158444	13	1	4 days	0.32	E Williams	2000 AT ₁₉₈
2000 AB ₁₉₉	13.7	0.15	19991228	267.79663	331.82516	266.87333	11.69657	0.1473128	3.2390214	11	1	6 days	0.98	E Williams	2000 AB ₁₉₉
2000 AT ₂₀₀	14.8	0.15	19991228	30.17122	198.38116	174.38880	13.17456	0.2935235	2.7413092	12	1	2 days	0.72	E Williams	2000 AT ₂₀₀
2000 AV ₂₀₀	14.6	0.15	19991228	14.00876	303.13412	118.04427	26.32303	0.1530053	2.1703526	12	1	2 days	0.28	E Williams	2000 AV ₂₀₀
2000 AM ₂₀₁	15.0	0.15	19991228	24.14694	269.70031	147.86679	18.26225	0.2974013	2.0651198	13	1	3 days	0.75	Williams	2000 AM ₂₀₁
2000 AN ₂₀₁	13.6	0.15	19991228	352.34921	302.94838	181.73914	16.42585	0.1748386	3.0757419	14	1	3 days	0.47	Williams	2000 AN ₂₀₁
2000 AO ₂₀₁	15.0	0.15	19991228	328.80113	260.36244	276.35143	24.15462	0.3108177	2.7225332	11	1	4 days	0.49	E Williams	2000 AO ₂₀₁
2000 AS ₂₀₁	15.0	0.15	19991228	300.37042	336.98349	216.42403	10.34335	0.1269919	2.3606694	9	1	4 days	0.45	E Williams	2000 AS ₂₀₁
2000 AW ₂₀₁	13.8	0.15	19991228	23.55836	266.35494	179.05240	12.50994	0.2108378	2.7236701	11	1	4 days	0.27	E Williams	2000 AW ₂₀₁
2000 AZ ₂₀₁	12.6	0.15	19991228	266.01441	342.48316	265.73446	8.58438	0.1221714	2.8591705	11	1	4 days	0.70	E Williams	2000 AZ ₂₀₁
2000 AA ₂₀₂	11.6	0.15	19991228	205.47630	359.22695	302.31754	21.02168	0.0480725	3.1548377	14	1	5 days	0.40	E Williams	2000 AA ₂₀₂
2000 AD ₂₀₂	13.2	0.15	19991228	68.97120	144.14655	207.99176	16.35512	0.1897828	3.2185183	12	1	3 days	0.66	E Williams	2000 AD ₂₀₂
2000 AG ₂₀₂	14.2	0.15	19991228	243.32372	31.17954	167.18227	13.33900	0.0644380	2.4940661	11	1	4 days	0.35	E Williams	2000 AG ₂₀₂
2000 AS ₂₀₂	12.8	0.15	19991228	45.91586	165.04242	281.14717	19.88332	0.1102237	3.2285081	13	1	4 days	0.73	E Williams	2000 AS ₂₀₂
2000 AV ₂₀₂	14.5	0.15	19991228	288.88282	318.49430	273.69753	13.89295	0.1780231	2.5047627	13	1	4 days	0.49	E Williams	2000 AV ₂₀₂
2000 AE ₂₀₄	13.9	0.15	20000117	341.19262	193.43967	303.03665	16.67407	0.1451184	3.1430617	11	1	13 days	0.68	Williams	2000 AE ₂₀₄

2000 AF ₂₀₄	13.9	0.15	19991228	355.33679	60.03734	86.97979	10.28253	0.0702361	2.3775152	6	1	2 days	0.73	E	Williams	2000 AF ₂₀₄	
2000 AH ₂₀₄	17.6	0.15	19991228	334.79028	40.53842	99.58897	4.90493	0.1133376	2.0987264	23	1	2 days	0.55	E	Williams	2000 AH ₂₀₄	
2000 AZ ₂₀₄	15.0	0.15	19991228	196.51103	298.79000	344.48330	1.70114	0.1889709	2.6322845	15	1	10 days	0.71		Williams	2000 AZ ₂₀₄	
2000 AC ₂₀₅	12.5	0.15	19991228	88.73159	39.94526	42.18602	21.48672	0.0478576	3.0685530	7	1	3 days	0.53	E	Williams	2000 AC ₂₀₅	
2000 AD ₂₀₅	18.5	0.15	19991228	31.13927	191.80008	157.36299	7.92436	0.5859900	1.6931576	40	1	16 days	0.80		Williams	2000 AD ₂₀₅	
2000 AE ₂₀₅	23.3	0.15	19991228	25.75573	149.97997	271.84946	4.46056	0.1366675	1.1627370	68	1	16 days	0.60		Williams	2000 AE ₂₀₅	
2000 AF ₂₀₅	21.6	0.15	19991228	81.13900	127.10333	220.29367	2.40572	0.2768513	1.0341621	63	1	8 days	0.69		Williams	2000 AF ₂₀₅	
2000 AG ₂₀₅	19.7	0.15	19991228	334.01096	248.96897	270.00889	18.48724	0.5208541	2.3002409	12	1	5 days	0.45		Williams	2000 AG ₂₀₅	
2000 AH ₂₀₅	22.4	0.15	19991228	45.32212	117.32093	248.45022	2.60255	0.4068171	1.1459500	48	1	7 days	0.65		Williams	2000 AH ₂₀₅	
2000 AJ ₂₀₅	14.4	0.15	19991228	61.60585	90.85213	315.48027	6.38668	0.1765361	2.7474706	7	1	2 days	0.97	E	Williams	2000 AJ ₂₀₅	
2000 AO ₂₀₅	17.2	0.15	19991228	26.55284	297.71344	127.97977	0.15754	0.2235829	2.2257199	11	1	3 days	0.91	E	Williams	2000 AO ₂₀₅	
2000 AW ₂₀₅	17.6	0.15	20000117	296.47778	108.41321	86.56540	2.57416	0.1382213	2.3834016	10	1	8 days	0.57		Williams	2000 AW ₂₀₅	
2000 AX ₂₀₅	15.9	0.15	20000117	207.31225	164.23872	112.34856	20.30922	0.1657370	2.3096117	7	1	7 days	0.30		Williams	2000 AX ₂₀₅	
2000 AO ₂₁₉	16.1	0.15	19991228	218.26463	154.17783	105.10407	7.68527	0.0915267	2.3442024	9	1	13 days	0.69		Williams	2000 AO ₂₁₉	
2000 AB ₂₂₉	14.2	0.15	19991228	0.03820	171.79412	313.97448	68.75384	0.9578739	54.3700053	130	1	13 days	0.48		Marsden	2000 AB ₂₂₉	
2000 AC ₂₂₉	16.8	0.15	19991228	356.71945	358.48035	112.90248	52.58338	0.5699479	4.2549667	55	1	7 days	0.54		Marsden	2000 AC ₂₂₉	
2000 BB	15.8	0.15	19991228	275.46197	87.19890	110.60874	1.94876	0.0356227	2.2641331	11	1	9 days	0.61		Williams	2000 BB	
2090 P-L	14.9	0.15	20000226	29.91286	47.22280	321.66157	4.86150	0.0931720	2.8774444	33	2	1960–1999	0.62	M-v	4	Williams	37249 2090 P-L
2100 P-L	14.0	0.15	20000226	148.38669	75.59037	193.28139	16.79738	0.0747719	2.8595844	54	3	1960–2000	0.67	M-v	3	Williams	37340 2100 P-L
2102 P-L	15.3	0.15	20000226	142.88485	324.78365	335.96833	3.92543	0.1878875	2.3042659	24	4	1960–1999	0.70	M-v	2	Williams	32342 2102 P-L
2158 P-L	14.9	0.15	20000226	58.56241	234.26425	206.14553	6.01508	0.1005672	2.4426956	48	4	1960–2000	0.66	M-v	1	Williams	32785 2158 P-L
2206 P-L	14.4	0.15	20000226	51.28460	286.40492	192.50279	5.28080	0.1223452	2.5988321	33	4	1960–2000	0.69	M-v	1	Williams	33383 2206 P-L
2530 P-L	14.6	0.15	20000226	103.74311	35.48558	22.95445	4.68746	0.1308068	2.2871123	69	4	1960–2000	0.71	M-v	2	Williams	33784 2530 P-L
2556 P-L	13.3	0.15	20000226	347.91447	21.68814	23.26258	10.74394	0.2318687	3.1495070	30	3	1960–1999	0.56	M-v	3	Williams	36866 2556 P-L
2565 P-L	14.8	0.15	20000226	179.52732	297.43035	23.71440	4.83077	0.0227931	2.4341319	52	3	1960–2000	0.68	M-v	4	Williams	37340 2565 P-L
2579 P-L	13.7	0.15	20000226	220.96975	216.58486	26.97585	7.95746	0.1724262	2.2974022	29	3	1960–2000	0.46	M-v	4	Williams	37340 2579 P-L
2588 P-L	15.1	0.15	20000226	328.02724	93.78946	18.09516	6.18133	0.1721390	2.3214794	50	2	1960–2000	0.50	M-v	4	Williams	37340 2588 P-L
2589 P-L	13.6	0.15	20000226	350.71118	18.90373	145.38365	3.23242	0.1523337	2.6003143	61	3	1960–1999	0.65	M-v	3	Williams	37340 2589 P-L
2590 P-L	15.0	0.15	20000226	203.26664	264.43715	11.08428	4.65827	0.1770017	2.4343319	51	4	1960–2000	0.81	M-v	2	Williams	33129 2590 P-L
2596 P-L	14.3	0.15	20000226	356.96588	359.46798	67.29875	1.86147	0.2110564	3.1376698	34	2	1960–1999	0.55	M-v	5	Williams	36866 2596 P-L
2616 P-L	15.2	0.15	20000226	40.69648	40.78132	31.54136	3.92495	0.0128280	2.4478076	22	3	1960–2000	0.65	M-v	4	Williams	34564 2616 P-L
2635 P-L	14.9	0.15	20000226	245.41558	72.50600	190.19775	3.15628	0.1616181	2.2800815	57	5	1960–2000	0.62	M-v	1	Williams	36120 2635 P-L
2649 P-L	14.0	0.15	20000226	209.91993	9.71556	190.43690	10.82355	0.1211387	2.6575128	19	3	1960–1999	0.59	M-v	4	Williams	23680 2649 P-L
2657 P-L	14.8	0.15	20000226	245.63846	190.58362	33.47225	3.68350	0.0838970	2.4453319	27	3	1960–2000	0.70	M-v	4	Williams	30681 2657 P-L
2695 P-L	13.7	0.15	20000226	22.58105	117.00781	329.92274	1.07593	0.0974989	3.0966946	26	3	1960–2000	0.62	M-v	5	Williams	33735 2695 P-L
2703 P-L	15.0	0.15	20000226	26.62827	265.62909	185.07774	6.56542	0.0993238	2.3036418	17	3	1960–2000	0.80	M-v	5	Williams	32728 2703 P-L
2727 P-L	15.3	0.15	20000226	175.19178	189.23338	21.14435	4.93407	0.1448314	2.3345568	64	3	1960–1999	0.68	M-v	3	Williams	36578 2727 P-L
2728 P-L	14.4	0.15	20000226	156.52290	148.09441	13.70225	10.84340	0.0740063	2.9316703	36	3	1960–1998	0.68	M-v	4	Williams	32343 2728 P-L
2731 P-L	14.2	0.15	20000226	77.23319	205.19966	183.96672	10.89156	0.1426903	3.0884395	37	3	1960–2000	0.61	M-v	3	Williams	37340 2731 P-L
2768 P-L	14.7	0.15	20000226	238.01944	111.46347	126.57335	2.77587	0.1216110	2.6125068	35	5	1960–2000	0.88	M-v	2	Williams	34264 2768 P-L
3013 P-L	13.1	0.15	20000226	295.13711	277.08473	305.61404	12.44252	0.1064268	3.0361768	27	4	1960–2000	0.68	M-v	1	Williams	36491 3013 P-L
3082 P-L	13.9	0.15	20000226	44.30130	71.85937	310.09173	8.59845	0.0563910	2.6470361	30	2	1960–2000	0.72	M-v	4	Williams	37249 3082 P-L
3097 P-L	13.2	0.15	20000226	205.73892	357.44486	293.97907	7.01953	0.1995502	2.7956585	16	3	1960–2000	0.56	M-v	5	Williams	15423 3097 P-L
3503 P-L	14.2	0.15	20000226	116.98561	56.94260	244.66848	11.38535	0.1527658	2.6418882	75	3	1960–1999	0.64	M-v	3	Williams	37341 3503 P-L
3541 P-L	12.4	0.15	20000226	70.16505	34.48251	307.33861	8.42444	0.2994927	3.1024235	39	5	1960–2000	0.52	M-v	2	Williams	37341 3541 P-L
3563 P-L	14.2	0.15	20000226	349.65196	87.60823	342.93559	16.14217	0.2079069	3.1447811	37	2	1960–1999	0.54	M-v	4	Williams	37341 3563 P-L
4026 P-L	13.2	0.15	20000226	198.81883	249.30268	359.71397	13.27334	0.1263078	2.6240662	65	5	1960–2000	0.71	M-v	2	Williams	37341 4026 P-L
4032 P-L	14.7	0.15	20000226	51.18855	125.12317	326.56544	4.94663	0.1275166	2.2946029	46	3	1960–2000	0.66	M-v	3	Williams	37341 4032 P-L
4037 P-L	14.3	0.15	20000226	338.28360	97.25270	358.00794	6.84758	0.0861106	2.3193490	78	4	1960–2000	0.49	M-v	3	Williams	37341 4037 P-L
4080 P-L	13.6	0.15	20000226	219.29770	20.62259	208.77616	3.94596	0.1084236	3.0889420	37	3	1960–2000	0.82	M-v	4	Williams	37341 4080 P-L
4083 P-L	14.1	0.15	20000226	226.04027	215.49133	341.17975	4.11352	0.0912455	2.3193094	35	2	1960–2000	0.53	M-v	4	Williams	36866 4083 P-L
4104 P-L	15.7	0.15	20000226	39.61618	171.85599	209.25844	6.09362	0.1231903	2.3217306	51	2	1960–2000	0.54	M-v	3	Williams	37341 4104 P-L
4274 P-L	15.5	0.15	20000226	310.46924	249.05760	280.55590	2.14853	0.0729241	2.2990544	26	4	1960–2000	0.54	M-v	2	Williams	37341 4274 P-L

4315 P-L	14.8	0.15	20000226	131.56710	61.05849	211.19687	1.45492	0.0227617	2.8736418	24	3	1960-1999	0.43	M-v	3	Williams	37341	4315 P-L
4517 P-L	13.5	0.15	20000226	128.08454	322.40701	9.84442	6.86372	0.1772126	2.3001639	56	5	1960-2000	0.77	M-v	3	Williams	37341	4517 P-L
4525 P-L	13.5	0.15	20000226	79.53870	183.15792	206.87195	1.16782	0.1884623	3.0840723	74	4	1960-2000	0.65	M-v	1	Williams	36120	4525 P-L
4543 P-L	15.1	0.15	20000226	164.18066	295.32932	16.27381	2.43321	0.1599426	2.1677622	43	4	1960-2000	0.61	M-v	2	Williams	33129	4543 P-L
4572 P-L	11.3	0.15	20000226	43.94447	43.65323	16.85080	9.06591	0.0819337	5.3290637	40	5	1960-1999	0.65	M-v	1	Williams	37341	4572 P-L
4587 P-L	14.9	0.15	20000226	143.63236	122.17449	193.46797	2.48326	0.1780054	2.4445655	48	4	1960-2000	0.58	M-v	2	Williams	32785	4587 P-L
4597 P-L	15.0	0.15	20000226	66.49983	252.93705	167.72461	3.73003	0.1998537	2.3005108	20	3	1960-2000	0.57	M-v	3	Williams	37341	4597 P-L
4625 P-L	15.1	0.15	20000226	273.07423	191.46839	33.86904	2.22792	0.0924031	2.2874450	48	5	1960-2000	0.60	M-v	1	Williams	36120	4625 P-L
4646 P-L	12.6	0.15	20000226	5.83229	289.00184	186.07955	10.83186	0.1207778	3.0850638	113	3	1960-2000	0.66	M-v	2	Williams	37341	4646 P-L
4647 P-L	15.3	0.15	20000226	171.94460	76.50360	194.59526	1.51275	0.1244467	2.1779998	75	3	1960-1999	0.63	M-v	4	Williams	37341	4647 P-L
4758 P-L	14.8	0.15	20000226	51.20456	52.11579	9.79503	4.99984	0.1508064	3.0916895	28	3	1960-2000	0.73	M-v	3	Williams	33054	4758 P-L
4778 P-L	15.1	0.15	20000226	224.88750	87.54638	171.90735	4.50687	0.1219238	2.1648171	33	3	1960-1999	0.62	M-v	4	Williams	37341	4778 P-L
4810 P-L	14.5	0.15	20000226	7.30726	93.51562	5.61076	12.12099	0.1199358	3.1003064	32	3	1960-1999	0.62	M-v	4	Williams	37341	4810 P-L
4858 P-L	14.2	0.15	20000226	37.46319	263.38109	182.15621	11.03228	0.1095994	3.0845313	29	3	1960-2000	0.83	M-v	3	Williams	33383	4858 P-L
4882 P-L	14.0	0.15	20000226	295.61321	191.48554	20.56110	10.03210	0.0523113	2.5989602	54	4	1960-2000	0.72	M-v	2	Williams	34266	4882 P-L
5565 P-L	14.4	0.15	20000226	72.52805	353.89505	35.82842	6.26678	0.1812376	2.1796331	62	3	1960-2000	0.76	M-v	3	Williams	37341	5565 P-L
6020 P-L	11.2	0.15	20000226	173.64106	92.47984	189.47295	1.37035	0.0971550	5.2471135	28	5	1960-2000	0.72	M-v	1	Williams	36492	6020 P-L
6056 P-L	15.1	0.15	20000226	16.07797	197.84161	199.03587	8.53262	0.1396461	2.4756807	59	3	1960-2000	0.60	M-v	2	Williams	37341	6056 P-L
6063 P-L	15.3	0.15	20000226	174.89173	4.88420	314.52923	2.39265	0.1453811	2.1620896	47	6	1960-2000	0.75	M-v	2	Williams	33589	6063 P-L
6074 P-L	16.2	0.15	20000226	134.03791	340.96068	342.14322	0.66528	0.1484104	2.1740061	24	5	1960-2000	0.77	M-v	2	Williams	32091	6074 P-L
6106 P-L	14.9	0.15	20000226	99.90728	55.05951	324.47470	2.51637	0.0808768	2.6148270	43	5	1960-2000	0.84	M-v	2	Williams	36121	6106 P-L
6111 P-L	13.8	0.15	20000226	98.47772	338.38759	352.33650	9.75770	0.1275026	3.0965058	33	3	1960-2000	0.74	M-v	3	Williams	37341	6111 P-L
6245 P-L	14.3	0.15	20000226	285.77337	14.73688	193.49660	13.03206	0.0871695	2.6021691	43	4	1960-2000	0.86	M-v	3	Williams	33129	6245 P-L
6250 P-L	16.3	0.15	20000226	52.98181	170.87815	207.37710	3.80300	0.0668176	2.1872108	19	2	1960-1999	0.41	M-v	5	Williams	36867	6250 P-L
6328 P-L	14.5	0.15	20000226	329.39873	180.82490	9.29655	3.04253	0.0910182	2.5917565	52	5	1960-1999	0.69	M-v	2	Williams	36121	6328 P-L
6519 P-L	13.6	0.15	20000226	54.56907	94.35077	29.39624	3.42442	0.1803703	3.0416958	44	4	1960-2000	0.67	M-v	1	Williams	33784	6519 P-L
6529 P-L	14.2	0.15	20000226	88.09391	202.89346	126.46908	2.23438	0.1565232	3.1040920	55	3	1960-1999	0.51	M-v	3	Williams	37341	6529 P-L
6576 P-L	13.8	0.15	20000226	6.48856	77.29215	27.18656	4.05979	0.0850601	2.3027106	49	3	1960-2000	0.54	M-v	3	Williams	37249	6576 P-L
6577 P-L	13.5	0.15	20000226	194.34853	179.56039	126.16330	1.86503	0.1507309	2.7956873	35	4	1960-2000	0.67	M-v	2	Williams	36121	6577 P-L
6587 P-L	14.5	0.15	20000226	54.89829	296.07816	59.61088	2.18357	0.1987627	3.1115765	54	2	1960-1999	0.54	M-v	4	Williams	37249	6587 P-L
6607 P-L	13.6	0.15	20000226	297.85035	75.07169	134.39894	3.84748	0.1417726	2.4251742	66	4	1960-2000	0.65	M-v	1	Williams	33384	6607 P-L
6617 P-L	14.7	0.15	20000226	326.50025	87.50309	18.71743	6.48225	0.1072256	2.4684875	50	2	1960-2000	0.54	M-v	4	Williams	37341	6617 P-L
6622 P-L	14.7	0.15	20000226	269.10635	0.55917	160.01796	3.04352	0.1094869	2.3176450	47	2	1960-2000	0.62	M-v	4	Williams	37341	6622 P-L
6625 P-L	14.7	0.15	20000226	221.58751	148.70521	135.98301	2.63314	0.1205415	2.4231654	21	5	1960-2000	0.74	M-v	2	Williams	36121	6625 P-L
6634 P-L	13.6	0.15	20000226	355.46633	20.55535	80.61538	3.65594	0.1204508	3.1037071	61	4	1960-2000	0.59	M-v	2	Williams	37341	6634 P-L
6637 P-L	15.3	0.15	20000226	37.71851	321.95735	157.73712	4.79854	0.1118448	2.2861799	44	5	1960-2000	0.62	M-v	1	Williams	36121	6637 P-L
6703 P-L	15.1	0.15	20000226	282.80629	305.30668	168.36443	4.09289	0.0221405	2.6603278	36	5	1960-1999	0.55	M-v	1	Williams	36121	6703 P-L
6735 P-L	14.1	0.15	20000226	18.69943	27.06040	12.32983	5.15156	0.1630509	3.1233687	28	3	1960-2000	0.52	M-v	3	Williams	37341	6735 P-L
6790 P-L	15.5	0.15	20000226	187.20653	201.96527	96.53851	3.38820	0.1979724	2.4294796	32	3	1960-2000	0.73	M-v	4	Williams	34267	6790 P-L
6801 P-L	15.7	0.15	20000226	157.39551	198.39221	131.75765	3.28188	0.2082253	2.4333907	32	3	1960-2000	0.56	M-v	4	Williams	34267	6801 P-L
6818 P-L	14.4	0.15	20000226	145.14024	233.95051	70.33361	3.50707	0.1963942	2.6194596	48	3	1960-2000	0.77	M-v	4	Williams	37341	6818 P-L
7066 P-L	12.2	0.15	20000226	204.66654	109.72620	205.20114	11.73606	0.1599513	3.0282810	30	5	1960-2000	0.71	M-v	2	Williams	36121	7066 P-L
7606 P-L	16.2	0.15	20000226	62.89490	249.38964	83.42557	3.04383	0.2618832	2.3237425	44	3	1960-1999	0.60	M-v	4	Williams	37341	7606 P-L
9518 P-L	14.7	0.15	20000226	203.47297	258.49467	12.72267	2.42575	0.1670971	2.4324520	50	4	1960-2000	0.67	M-v	1	Williams	36122	9518 P-L
9602 P-L	11.4	0.15	20000226	67.40991	244.51561	147.11080	7.05005	0.0609588	5.2768723	19	6	1960-1999	0.55	M-v	1	Williams	37250	9602 P-L
9609 P-L	15.2	0.15	20000226	129.03568	122.50482	187.91274	3.36129	0.1842394	2.1793797	43	3	1960-2000	0.70	M-v	3	Williams	36942	9609 P-L
1043 T-1	14.6	0.15	20000226	0.10460	220.60634	222.86284	2.18086	0.1836485	2.3983851	88	4	1971-2000	0.57	M-v	2	Williams	37341	1043 T-1
1064 T-1	15.8	0.15	20000226	295.87817	217.32403	354.29272	4.41503	0.0855126	2.1951234	38	4	1971-2000	0.63	M-v	2	Williams	36122	1064 T-1
1178 T-1	15.0	0.15	20000226	7.43587	71.59797	346.46324	5.41695	0.1915647	2.6448597	35	2	1971-2000	0.56	M-v	4	Williams	37250	1178 T-1
1182 T-1	13.3	0.15	20000226	4.46810	208.10975	188.63177	12.98123	0.1640277	2.6687519	129	3	1971-1999	0.61	M-v	2	Williams	37341	1182 T-1
1222 T-1	14.1	0.15	20000226	71.10981	354.74978	347.15815	11.28783	0.2339835	2.4382835	63	4	1971-2000	0.60	M-v	2	Williams	37341	1222 T-1
2072 T-1	14.6	0.15	20000226	78.63892	11.22366	173.99689	0.73653	0.1327351	3.1284653	18	3	1971-1999	0.44	M-v	5	Williams	37250	2072 T-1
2104 T-1	14.8	0.15	20000226	268.04093	205.15398	21.98842	2.53473	0.1434097	2.3859538	44	4	1971-2000	0.61	M-v	1	Williams	32786	2104 T-1

2153 T-1	13.6	0.15	20000226	118.07030	209.93282	130.79794	3.04038	0.0830144	2.9296176	62	3	1971-2000	0.70	M-v	4	Williams	37341	2153 T-1
2166 T-1	14.3	0.15	20000226	81.84636	0.50543	24.04827	5.44217	0.1502069	2.2085041	21	3	1971-1999	0.72	M-v	4	Williams	25436	2166 T-1
2183 T-1	15.4	0.15	20000226	357.58152	28.18563	67.83907	2.24640	0.1491647	2.3956251	79	3	1971-1999	0.52	M-v	4	Williams	37341	2183 T-1
2258 T-1	13.4	0.15	20000226	4.95059	332.11155	27.41097	8.21293	0.2433973	2.4595434	56	6	1956-1998	0.71	M-v	2	Williams	32092	2258 T-1
2290 T-1	14.6	0.15	20000226	328.69106	11.63189	128.31316	3.57510	0.0977282	2.6212097	37	2	1971-2000	0.62	M-v	5	Williams	37250	2290 T-1
3041 T-1	14.1	0.15	20000226	97.42468	338.17609	332.95515	5.42687	0.1995234	2.6901001	65	3	1971-2000	0.61	M-v	3	Williams	37341	3041 T-1
3106 T-1	14.7	0.15	20000226	72.55004	61.40538	243.41007	2.93514	0.2087327	2.2694259	28	3	1971-1999	0.60	M-v	2	Williams	36868	3106 T-1
3109 T-1	15.4	0.15	20000226	159.56298	32.66531	246.89958	2.88978	0.1323381	2.4238988	32	3	1971-2000	0.75	M-v	4	Williams	37341	3109 T-1
3195 T-1	14.7	0.15	20000226	339.99921	99.77747	338.86992	4.75384	0.1209112	2.2316692	104	3	1971-1999	0.58	M-v	2	Williams	37341	3195 T-1
3243 T-1	15.2	0.15	20000226	53.50053	347.86755	357.78188	3.91919	0.1426358	2.2509823	110	4	1971-1999	0.78	M-v	2	Williams	37341	3243 T-1
3290 T-1	14.7	0.15	20000226	241.51794	272.26687	353.86763	6.24473	0.0905447	2.3827750	51	4	1971-2000	0.77	M-v	1	Williams	36122	3290 T-1
3314 T-1	14.3	0.15	20000226	215.20419	55.21733	194.93601	12.70411	0.1470816	2.6415544	53	3	1971-2000	0.74	M-v	3	Williams	36122	3314 T-1
3747 T-1	14.4	0.15	20000226	311.32521	305.88354	188.78291	1.88370	0.0752286	2.2221196	86	3	1971-2000	0.52	M-v	3	Williams	37250	3747 T-1
3770 T-1	15.3	0.15	20000226	192.97758	29.15994	191.19836	6.23376	0.1288695	2.2455187	92	3	1971-1999	0.62	M-v	3	Williams	37342	3770 T-1
4111 T-1	14.5	0.15	20000226	87.61853	185.13707	46.57150	4.55501	0.1000515	3.0807598	43	2	1971-1998	0.81	M-v	5	Williams	32343	4111 T-1
4178 T-1	15.0	0.15	20000226	279.68440	157.95290	59.34017	3.25819	0.1659977	2.3856869	35	4	1971-2000	1.01	M-v	2	Williams	30095	4178 T-1
4206 T-1	14.4	0.15	20000226	331.84027	37.76982	140.55518	2.75188	0.1757568	2.3734339	63	5	1971-2000	0.62	M-v	2	Williams	37342	4206 T-1
4326 T-1	13.9	0.15	20000226	63.35574	164.88712	170.69964	10.77968	0.1222041	3.0027252	21	3	1971-1999	0.63	M-v	2	Williams	37250	4326 T-1
4406 T-1	14.2	0.15	20000226	302.07033	157.27674	18.76817	15.06308	0.0089374	2.6219004	53	4	1971-2000	0.82	M-v	2	Williams	37342	4406 T-1
4841 T-1	13.8	0.15	20000226	154.36232	295.15994	20.27314	13.27688	0.1785772	2.6424706	52	3	1971-2000	0.67	M-v	3	Williams	37342	4841 T-1
1038 T-2	17.1	0.15	20000226	20.35691	183.64446	210.96409	1.58733	0.1441774	2.1949386	47	3	1960-1999	0.64	M-v	5	Williams	36943	1038 T-2
1114 T-2	16.8	0.15	20000226	27.30588	77.73480	301.59403	0.39639	0.1944656	2.3997133	74	3	1973-1999	0.54	M-v	3	Williams	36943	1114 T-2
1160 T-2	15.8	0.15	20000226	92.89773	324.56041	352.73645	7.60573	0.0936005	2.3905164	38	2	1973-1999	0.93	M-v	5	Williams	37251	1160 T-2
1171 T-2	13.6	0.15	20000226	112.25540	292.63542	0.12172	9.67543	0.0860460	2.9811009	28	2	1973-2000	0.91	M-v	5	Williams	36943	1171 T-2
1173 T-2	14.1	0.15	20000226	11.59534	45.66949	1.18528	9.38390	0.0676503	2.9796337	54	3	1973-2000	0.76	M-v	3	Williams	36943	1173 T-2
1181 T-2	13.8	0.15	20000226	30.28054	60.77788	342.27764	1.03774	0.0998269	2.9633699	57	2	1973-1999	0.69	M-v	5	Williams	37251	1181 T-2
1196 T-2	14.4	0.15	20000226	213.79532	241.69982	2.15917	5.10005	0.1518047	2.5966921	45	4	1973-2000	0.94	M-v	2	Williams	33130	1196 T-2
1198 T-2	14.9	0.15	20000226	21.16251	86.70432	303.56037	1.04677	0.0590056	2.6511539	58	2	1973-1999	0.81	M-v	5	Williams	37342	1198 T-2
1237 T-2	14.3	0.15	20000226	342.97574	134.52181	350.26421	1.42858	0.0326506	2.9245956	42	4	1973-2000	0.90	M-v	4	Williams	33130	1237 T-2
1242 T-2	14.0	0.15	20000226	232.86804	34.00381	184.11685	13.87355	0.1961705	2.6033044	54	4	1973-1999	0.87	M-v	3	Williams	37342	1242 T-2
1247 T-2	16.9	0.15	20000226	15.30715	212.87371	196.20635	2.56560	0.1698418	2.3933749	42	2	1973-1999	0.67	M-v	5	Williams	37342	1247 T-2
1259 T-2	13.3	0.15	20000226	17.20214	91.45924	31.98265	2.35946	0.0446610	2.8923676	62	3	1973-2000	0.87	M-v	3	Williams	37342	1259 T-2
1260 T-2	14.4	0.15	20000226	293.87152	303.60734	179.68511	7.86260	0.1169613	2.6559824	61	4	1960-1999	0.78	M-v	3	Williams	36943	1260 T-2
1266 T-2	14.6	0.15	20000226	151.88983	324.03539	352.60959	6.35914	0.0637764	2.3557215	65	5	1973-2000	0.74	M-v	1	Williams	32786	1266 T-2
1296 T-2	14.7	0.15	20000226	283.68326	52.70364	162.07921	2.03488	0.1445616	2.5711450	37	6	1973-2000	0.80	M-v	1	Williams	33130	1296 T-2
1320 T-2	14.4	0.15	20000226	125.39786	316.62558	358.88819	9.80392	0.0987251	2.9399227	37	4	1973-1999	0.95	M-v	2	Williams	37342	1320 T-2
1329 T-2	13.9	0.15	20000226	0.76940	208.80593	218.62410	1.90823	0.1851157	2.9835745	62	2	1973-2000	0.71	M-v	4	Williams	37342	1329 T-2
1332 T-2	14.6	0.15	20000226	21.92910	104.22507	316.30395	2.28003	0.1500252	2.9633191	43	2	1973-2000	0.84	M-v	4	Williams	37251	1332 T-2
1343 T-2	14.9	0.15	20000226	323.77209	185.33550	357.01225	3.00092	0.1009745	2.3378924	42	3	1973-2000	1.01	M-v	5	Williams	36123	1343 T-2
1494 T-2	15.0	0.15	20000226	275.22225	149.08907	74.21807	1.55582	0.0120638	2.5788758	28	4	1973-2000	0.95	M-v	2	Williams	33130	1494 T-2
2039 T-2	13.8	0.15	20000226	280.55751	189.50836	359.84663	6.58547	0.0511907	2.3589543	55	3	1973-2000	0.74	M-v	2	Williams	37342	2039 T-2
2066 T-2	14.0	0.15	20000226	80.45758	117.80251	214.71127	4.96326	0.1030633	2.9753370	55	3	1973-2000	0.77	M-v	3	Williams	37251	2066 T-2
2085 T-2	14.5	0.15	20000226	309.78619	150.27976	349.55149	4.50379	0.1283234	2.6302550	53	3	1973-1999	0.79	M-v	4	Williams	37342	2085 T-2
2104 T-2	14.4	0.15	20000226	98.73051	118.37211	251.31672	1.15736	0.1106657	2.9221218	77	4	1973-2000	0.85	M-v	3	Williams	37342	2104 T-2
2148 T-2	14.2	0.15	20000226	112.42254	193.83535	188.62446	11.81955	0.1917716	2.5880170	48	3	1973-1999	0.77	M-v	3	Williams	36123	2148 T-2
2168 T-2	13.9	0.15	20000226	77.14253	185.07577	198.23263	1.63789	0.1196133	2.9338690	92	5	1973-2000	0.73	M-v	2	Williams	37342	2168 T-2
2638 T-2	11.6	0.15	20000226	339.72765	43.55854	52.69913	2.32999	0.0305080	5.1886358	61	3	1973-2000	0.91	M-v	4	Williams	37342	2638 T-2
3063 T-2	14.2	0.15	20000226	22.83183	79.46391	9.69686	14.80750	0.0784175	2.6045701	35	4	1973-2000	0.93	M-v	2	Williams	37342	3063 T-2
3159 T-2	13.8	0.15	20000226	58.92240	210.71930	170.10052	11.82250	0.1225406	2.6261948	33	3	1973-2000	0.84	M-v	3	Williams	37342	3159 T-2
3182 T-2	14.6	0.15	20000226	263.98672	86.71516	150.21991	6.93920	0.1758623	2.3275713	42	3	1973-2000	0.77	M-v	4	Williams	33384	3182 T-2
3200 T-2	14.6	0.15	20000226	111.07085	241.26479	109.54359	3.40534	0.0955136	2.9213154	44	3	1973-2000	0.94	M-v	5	Williams	36123	3200 T-2
3234 T-2	15.5	0.15	20000226	49.99631	314.24801	68.08488	3.63736	0.2102360	2.3839283	85	2	1973-2000	0.58	M-v	4	Williams	37251	3234 T-2
3270 T-2	14.7	0.15	20000226	293.36263	65.04812	72.64172	3.34682	0.1348047	2.3904413	77	4	1973-2000	0.62	M-v	2	Williams	37342	3270 T-2

3306 T-2	16.6	0.15	20000226	62.20329	22.11378	37.67423	4.42611	0.1257576	2.1640338	35	3	1973-2000	0.95	M-v	4	Williams	24585	3306 T-2
3310 T-2	15.0	0.15	20000226	96.78584	279.00655	107.12880	2.31132	0.1189994	2.3528589	39	4	1973-2000	0.77	M-v	1	Williams	32537	3310 T-2
4041 T-2	15.7	0.15	20000226	67.85031	335.96511	28.05330	2.34732	0.0929937	2.6314286	59	3	1973-1999	0.89	M-v	5	Williams	37342	4041 T-2
4184 T-2	15.5	0.15	20000226	18.91138	338.94506	66.83147	1.90498	0.1661254	2.3933533	55	2	1973-1999	0.71	M-v	5	Williams	37342	4184 T-2
4216 T-2	12.2	0.15	20000226	173.37900	143.87939	169.28943	9.29874	0.1515417	3.9618449	47	8	1973-2000	0.67	M-v	1	Williams	33589	4216 T-2
4230 T-2	14.0	0.15	20000226	127.05621	245.99297	91.35230	3.39194	0.0987878	2.9193389	70	3	1973-2000	0.77	M-v	4	Williams	37342	4230 T-2
4231 T-2	14.7	0.15	20000226	142.55692	323.57094	30.03252	7.37788	0.1340306	2.3414091	34	4	1973-2000	0.73	M-v	2	Williams	36124	4231 T-2
4257 T-2	14.2	0.15	20000226	175.06713	246.07586	71.37718	3.12365	0.0628014	2.8926503	40	3	1973-2000	0.85	M-v	4	Williams	33589	4257 T-2
4281 T-2	13.6	0.15	20000226	240.89630	251.88814	18.05599	11.64350	0.1531663	2.8636625	20	3	1973-2000	0.80	M-v	5	Williams	32293	4281 T-2
4536 T-2	11.3	0.15	20000226	10.50156	283.12986	174.45167	15.06184	0.1063353	5.1886059	29	4	1973-2000	0.77	M-v	1	Williams	33059	4536 T-2
4613 T-2	11.5	0.15	20000226	307.41376	338.04237	176.33622	29.08671	0.0116846	5.1587244	23	3	1973-2000	0.90	M-v	4	Williams	29651	4613 T-2
4742 T-2	11.4	0.15	20000226	20.10807	267.61005	164.42356	7.27577	0.1101942	5.2335346	20	3	1973-1998	0.91	M-v	5	Williams	34273	4742 T-2
4834 T-2	13.9	0.15	20000226	310.12744	130.21032	105.87684	4.74649	0.0946927	2.3096545	17	3	1973-2000	1.00	M-v	4	Williams	34273	4834 T-2
5030 T-2	11.2	0.15	20000226	16.51956	156.39450	289.89220	10.95234	0.1351086	5.2173475	36	3	1973-2000	0.70	M-v	2	Williams	37342	5030 T-2
5036 T-2	13.9	0.15	20000226	352.23769	181.18681	262.17904	8.47381	0.0365065	2.6334495	67	3	1973-2000	0.55	M-v	3	Williams	37342	5036 T-2
5104 T-2	14.6	0.15	20000226	16.30225	172.69150	252.74226	7.67881	0.0127497	2.9529881	51	3	1973-2000	0.82	M-v	3	Williams	37342	5104 T-2
5153 T-2	15.7	0.15	20000226	28.25433	169.90682	248.27003	5.61053	0.1251834	2.3797942	38	2	1973-2000	0.70	M-v	4	Williams	37252	5153 T-2
5168 T-2	13.7	0.15	20000226	75.86544	119.48099	228.36451	9.65670	0.1108132	2.9651275	46	3	1973-1999	0.59	M-v	3	Williams	37252	5168 T-2
5179 T-2	14.0	0.15	20000226	333.78368	232.62384	229.44634	9.98588	0.0689624	2.9696278	60	3	1973-1999	0.73	M-v	3	Williams	37252	5179 T-2
5205 T-2	14.4	0.15	20000226	323.33947	217.35203	294.23486	5.79749	0.0342236	2.3588218	38	4	1973-2000	0.75	M-v	2	Williams	36124	5205 T-2
5211 T-2	12.9	0.15	20000226	75.02714	207.66157	228.67334	9.19019	0.2098939	2.9052492	83	4	1973-2000	0.67	M-v	2	Williams	34339	5211 T-2
1061 T-3	14.1	0.15	20000226	81.77479	172.93440	247.32988	9.69247	0.0588480	2.9895062	27	3	1977-2000	0.81	M-v	3	Williams	36581	1061 T-3
1068 T-3	13.3	0.15	20000226	303.63084	114.71464	2.74079	21.77483	0.1910736	3.1371429	61	3	1977-2000	0.62	M-v	2	Williams	36943	1068 T-3
1078 T-3	14.0	0.15	20000226	350.29125	268.94498	237.47179	14.05823	0.0702834	2.6085888	39	5	1954-2000	0.81	M-v	2	Williams	37342	1078 T-3
1088 T-3	14.2	0.15	20000226	80.67973	69.05819	347.58751	9.26207	0.0640559	2.6062808	63	3	1977-2000	0.80	M-v	3	Williams	33060	1088 T-3
1140 T-3	13.8	0.15	20000226	113.66546	108.67494	263.69770	6.89366	0.1332409	3.0025389	46	4	1977-2000	0.82	M-v	1	Williams	34339	1140 T-3
1141 T-3	14.2	0.15	20000226	83.81784	64.06204	268.95155	7.57774	0.1350236	3.0799577	30	2	1977-1999	0.76	M-v	5	Williams	37252	1141 T-3
1157 T-3	13.8	0.15	20000226	118.70373	119.94474	264.37614	8.79063	0.0958438	2.9864527	37	3	1977-2000	0.88	M-v	4	Williams	36124	1157 T-3
1158 T-3	13.2	0.15	20000226	209.36912	327.39696	259.62625	10.02918	0.1079735	3.0647362	61	3	1977-1999	0.70	M-v	3	Williams	37342	1158 T-3
1164 T-3	13.8	0.15	20000226	200.21416	46.27161	243.98916	11.04484	0.0886195	2.9839275	37	5	1977-2000	0.64	M-v	1	Williams	33130	1164 T-3
1168 T-3	14.4	0.15	20000226	13.51063	49.57692	355.92400	13.32320	0.1621701	2.6851008	84	3	1977-2000	0.67	M-v	3	Williams	37342	1168 T-3
1177 T-3	12.6	0.15	20000226	251.59116	244.99912	284.25650	7.55229	0.1617242	3.1308543	79	3	1977-2000	0.71	M-v	3	Williams	37342	1177 T-3
2023 T-3	16.0	0.15	20000226	86.43228	110.73236	214.05098	6.08965	0.2372125	2.3663826	62	2	1977-1999	0.72	M-v	5	Williams	37252	2023 T-3
2077 T-3	15.3	0.15	20000226	283.25702	210.26590	3.42909	9.05790	0.2034173	2.3169184	42	5	1977-1999	0.86	M-v	2	Williams	37342	2077 T-3
2139 T-3	13.0	0.15	20000226	307.05236	256.42519	254.21471	3.57951	0.0587634	2.6430288	63	2	1977-2000	0.67	M-v	4	Williams	37342	2139 T-3
2152 T-3	14.4	0.15	20000226	79.86205	109.22160	214.23136	15.29013	0.1483857	3.0949945	23	2	1977-1999	0.78	M-v	5	Williams	37253	2152 T-3
2214 T-3	15.2	0.15	20000226	215.18957	323.73995	247.12662	5.87542	0.0895570	2.3707332	30	2	1977-1999	0.86	M-v	5	Williams	37253	2214 T-3
2220 T-3	15.3	0.15	20000226	46.15878	151.33295	228.20574	4.66317	0.1620481	3.0828539	40	2	1977-1999	0.78	M-v	5	Williams	37253	2220 T-3
2416 T-3	13.9	0.15	20000226	324.34363	197.07964	274.35065	1.40247	0.1659761	2.3790371	90	3	1977-2000	0.61	M-v	4	Williams	37342	2416 T-3
2603 T-3	14.1	0.15	20000226	242.46845	325.79009	219.57685	14.32603	0.0891859	3.0931484	31	2	1977-1999	0.79	M-v	5	Williams	37253	2603 T-3
2634 T-3	15.1	0.15	20000226	252.35443	325.89540	232.17415	2.55949	0.0840581	2.6464398	31	2	1977-1999	0.59	M-v	5	Williams	37342	2634 T-3
3039 T-3	14.7	0.15	20000226	35.94553	259.67833	144.58332	3.30161	0.1015084	2.6614627	51	3	1977-1999	0.93	M-v	4	Williams	37342	3039 T-3
3191 T-3	15.7	0.15	20000226	24.44717	20.29448	39.50597	7.39033	0.1134202	2.3631406	53	2	1977-1999	0.74	M-v	4	Williams	37342	3191 T-3
3382 T-3	14.9	0.15	20000226	226.33416	75.06415	192.67482	6.21719	0.1205464	2.3132170	42	5	1977-2000	0.72	M-v	4	Williams	36125	3382 T-3
3393 T-3	13.8	0.15	20000226	142.85226	123.71197	195.67711	9.91343	0.1114433	3.0168385	29	3	1977-2000	0.82	M-v	4	Williams	34618	3393 T-3
3465 T-3	13.7	0.15	20000226	117.39115	294.55090	22.61882	11.02607	0.1450131	3.0470228	35	3	1977-2000	0.68	M-v	4	Williams	37343	3465 T-3
3574 T-3	13.8	0.15	20000226	29.52094	231.19056	185.42179	10.34163	0.0727008	3.0645380	49	4	1977-2000	0.70	M-v	2	Williams	37343	3574 T-3
4039 T-3	15.0	0.15	20000226	141.97840	148.83787	120.13532	2.63028	0.0993322	2.1462644	93	3	1977-2000	0.67	M-v	2	Williams	37343	4039 T-3
4072 T-3	13.6	0.15	20000226	352.44987	293.77272	159.41477	5.86247	0.1294292	3.0833306	62	3	1977-1999	0.73	M-v	4	Williams	37343	4072 T-3
4079 T-3	14.3	0.15	20000226	312.31969	142.86833	38.11502	10.79542	0.0412868	2.9950513	52	3	1977-2000	0.72	M-v	4	Williams	37343	4079 T-3
4093 T-3	15.1	0.15	20000226	257.06687	160.44904	50.06196	7.12826	0.0771897	2.3395790	42	3	1977-2000	0.59	M-v	4	Williams	37343	4093 T-3
4203 T-3	13.8	0.15	20000226	316.88748	5.25151	185.61494	13.01536	0.1052863	2.5951735	60	5	1960-2000	0.79	M-v	2	Williams	33385	4203 T-3
4205 T-3	13.6	0.15	20000226	188.45225	218.31081	97.95269	3.56131	0.2104879	2.5783468	55	5	1977-2000	0.71	M-v	1	Williams	36125	4205 T-3

4235 T-3	13.9	0.15	20000226	347.15181	20.52298	67.96749	5.12467	0.0287736	2.3669133	69	4	1977–2000	0.64	M-v	4	Williams	37253	4235 T-3
4303 T-3	14.2	0.15	20000226	3.37681	60.11419	43.38587	9.55261	0.1063513	3.0519749	36	3	1977–2000	0.80	M-v	4	Williams	37343	4303 T-3
4310 T-3	14.4	0.15	20000226	312.70594	167.16541	65.72341	5.67578	0.0958608	2.2857262	55	5	1977–2000	0.78	M-v	3	Williams	33785	4310 T-3
4358 T-3	14.3	0.15	20000226	99.43792	266.73098	59.77672	10.35345	0.1273618	3.0669412	48	2	1977–1999	0.60	M-v	4	Williams	37253	4358 T-3
4672 T-3	14.5	0.15	20000226	26.28054	31.77721	77.40339	5.04517	0.1389696	2.6223066	30	3	1977–2000	0.65	M-v	3	Williams	33062	4672 T-3
5018 T-3	13.9	0.15	20000226	352.64956	38.24095	53.12683	15.84761	0.0865540	2.6592132	67	3	1977–2000	0.57	M-v	3	Williams	37253	5018 T-3
5078 T-3	12.1	0.15	20000226	114.51149	222.57159	67.56280	10.77657	0.0482603	3.1129324	43	3	1977–2000	0.86	M-v	2	Williams	37343	5078 T-3
5124 T-3	14.5	0.15	20000226	280.26620	58.95981	102.93126	7.18457	0.0593081	2.3638793	58	3	1977–2000	0.76	M-v	3	Williams	37343	5124 T-3
5193 T-3	12.7	0.15	20000226	239.58266	83.60068	151.48576	12.53087	0.2013161	3.0012977	25	3	1977–2000	0.73	M-v	4	Williams	22702	5193 T-3
5710 T-3	14.8	0.15	20000226	246.94663	138.59275	52.08383	14.49087	0.0308305	2.6599947	29	2	1977–1999	0.78	M-v	5	Williams	37254	5710 T-3

1999 NV₂₃ = 1999 JQ₁₃₄ (G. V. Williams)

1999 RE₁₉₅ = 1999 XP₈ (G. V. Williams)

1999 RV₁₉₅ = 1999 UL₁₁ (G. V. Williams)

1999 SQ₁ = 1999 RQ₂₁₃ (G. V. Williams), *MPC* 36944)

1999 TS₂₆ = 1999 TA₃₆ (G. V. Williams), *MPC* 36944)

1999 UO₈ = 1999 XN₁₀₈ (G. V. Williams)

1999 UF₂₃ = 1999 VH₅₇ (G. V. Williams)

1999 VX₂₇ = 1999 WB₁ (G. V. Williams)

1999 VO₃₂ = 1999 XF₄₆ (G. V. Williams)

1999 VQ₃₃ = 1999 XY₂₂₈ (G. V. Williams)

1999 VB₃₆ = 1999 VF₇₂ (G. V. Williams)

1999 VT₄₂ = 1999 VL₄₄ (G. V. Williams)

1999 VL₄₉ = 1999 XV₁₀₇ (G. V. Williams)

1999 VA₇₃ = 1999 XM₄₃ (G. V. Williams)

1999 VB₇₃ = 1999 XY₇₈ (G. V. Williams)

1999 WY₆ = 1999 XX₅₇ (G. V. Williams)

1999 WW₁₇ = 1999 VY₆₃ (G. V. Williams)

1999 XB₁ = 1999 XC₈₃ (S. Nakano)

1999 XO₅ = 1999 VY₃₂ (G. V. Williams)

1999 XS₂₄ = 1999 XZ₁₀₈ (S. Nakano)

1999 XL₂₅ = 1999 VN₂₈ (G. V. Williams)

1999 XR₂₇ = 1999 XC₁₁₁ (G. V. Williams)

1999 XC₂₈ = 1999 VJ₇₀ (G. V. Williams)

1999 XZ₃₆ = 1999 XX₆₈ (G. V. Williams)

1999 XY₃₇ = 1999 XR₆₆ (S. Nakano)

1999 XG₃₈ = 1999 XK₇₀ (G. V. Williams)

1999 XH₃₈ = 1999 XV₆₈ (S. Nakano)

1999 XC₄₅ = 1999 VM₂₉ (G. V. Williams)

1999 XH₄₇ = 1999 VG₃₀ (G. V. Williams)

1999 XZ₄₉ = 1999 VD₂₇ (G. V. Williams)

1999 XP₅₁ = 1999 VX₃₀ (G. V. Williams)

1999 XU₅₇ = 1999 WO₁₉ (G. V. Williams)

1999 XO₁₀₆ = 1999 OT₂ (M. E. Sansaturio)

2000 AE₂₅ = 1999 XT₈₄ (G. V. Williams)

NEW NAMES OF MINOR PLANETS

(4228) Nemiro = 1968 OC₁

Discovered 1968 July 25 by G. A. Plyugin and Yu. A. Belyaev at Cerro El Roble.

Andrej Antonovich Nemiro (1909–1995) worked at the Pulkovo Observatory for more than 50 years and was one of the distinguished successors to the scientific

traditions of the Pulkovo Astrometry School. The name was suggested by the Pulkovo Observatory.

(5024) Bechmann = 1985 VP

Discovered 1985 Nov. 14 by P. Jensen at Brorfelde.

Poul Bechmann is the former head of the mechanical workshop at the Brorfelde Observatory.

(5030) Gyldenkerne = 1988 VK₄

Discovered 1988 Nov. 3 by P. Jensen at Brorfelde.

Danish astronomer Kjeld Gyldenkerne (1919–1999) worked in the areas of galactic dynamics and binary stars and was the principal founder and former head of the Brorfelde Observatory.

(5051) Ralph = 1984 SM

Discovered 1984 Sept. 24 by P. Jensen at Brorfelde.

Ralph Florentin Nielsen (1942–1995) was head of the electronics laboratory at the Brorfelde Observatory.

(5116) Korsør = 1988 EU

Discovered 1988 Mar. 13 by P. Jensen at Brorfelde.

Korsør, a town on the southwestern coast of Sjælland almost exactly 100 km from Copenhagen, is the birthplace of Brorfelde observer Karl Augustesen.

(5269) Paustovskij = 1978 SL₆

Discovered 1978 Sept. 28 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Konstantin Georgievich Paustovskij (1892–1968) was a well-known Russian writer, a master of lyric prose.

(5361) Goncharov = 1976 YC₂

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

Ivan Aleksandrovich Goncharov (1812–1891) is known for his four novels *Obломov*, *Obryv* (“Precipice”), *Obyknovennaya istoriya* (“Unusual event”) and *Fregat “Pallada”* (“Frigate Pallada”). The first of these, referring to the name of a family, is still a subject for obligatory study in schools in Russia.

(5385) Kamenka = 1975 TS₃

Discovered 1975 Oct. 3 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Kamenka, a small town in the Cherkassian region of Ukraine, is connected with many great persons of Russian culture and history, including Pushkin, Tchaikovsky and the Decembrists.

(5483) Cherkashin = 1990 UQ₁₁

Discovered 1990 Oct. 17 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Andrej Andreevich Cherkashin (1920–1993) was a literary scholar and historian, researcher of A. S. Pushkin's genealogy and author of *The Millennial Family Tree of Pushkin*.

(5737) Itoh = 1989 SK

Discovered 1989 Sept. 30 by T. Nomura and K. Kawanishi at Minami-Oda.

Japanese amateur astronomer Kazuyuki Itoh (b. 1951) has made more than 1000 astrometric observations of comets and minor planets. He discovered minor planet (6879) Hyogo. The name was suggested by M. Sugano.

(5772) Johnlambert = 1988 LB

Discovered 1988 June 15 by E. F. Helin at Palomar.

John V. Lambert (b. 1945) has developed techniques for determining the sizes and shapes of minor planets from occultation and lightcurve observations. He is now involved in the U.S. Air Force Space Command and the Phillips Laboratory programs for the study of near-earth objects.

(5827) Letunov = 1990 VB₁₅

Discovered 1990 Nov. 15 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Yuriy Aleksandrovich Letunov (1926–1984), a Russian journalist and radio commentator, held a doctorate in the history of science. Author of several books, he was one of the founders of *Mayak* ("Beacon"), a popular and informative radio program on music.

(5942) Denzilrobert = 1983 AN₂

Discovered 1983 Jan. 10 by B. E. Behymer and M. S. Marley at Palomar.

Denzil Marley (b. 1918) and Robert Behymer (b. 1926), fathers of the discoverers, encouraged, along with Louise Marley and Mary Behymer, their sons' interests in the natural world, inspired them to strive for high goals and provided for the education that made possible their participation in the discovery of this minor planet.

(5946) Hrozný = 1984 UC₁

Discovered 1984 Oct. 28 by A. Mrkos at Kleť.

Named in memory of Bedřich Hrozný (1879–1952), Czech archeologist, orientalist and language scholar. He deciphered the Hittite language and proved that it is a member of the Indo-European language group. The name was suggested by M. Tichý.

(5955) Khromchenko = 1987 RT₃

Discovered 1987 Sept. 2 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Vladimir Anatolievich Khromchenko is a music teacher at Yalta and a talented designer who constructed the first home-built organ in Ukraine. He founded the Centre of Organ Music in the former power station of the Imperial Livadia Palace at Yalta.

(5958) Barrande = 1989 BS₁

Discovered 1989 Jan. 29 by A. Mrkos at Kleť.

The French geologist and paleontologist Joachim Barrande (1799–1883) made studies of the fossil strata of Bohemia that revealed the abundance and rich variety of life in the Early Paleozoic era. The name was suggested by M. Tichý.

(6110) Kazak = 1978 NQ₁

Discovered 1978 July 4 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Yuriy Ivanovich Kazak (b. 1949), surgeon at Bakhchisaraj district hospital, treated many staff members of the Crimean Astrophysical Observatory. A skilled and kind doctor, he is always ready to help people.

(6435) Daveross = 1984 DA

Discovered 1984 Feb. 24 by E. F. Helin and R. S. Dunbar at Palomar.

David Justin Ross (b. 1949) is co-developer of the Prime Rib curve, a graphical display of energy requirements for rendezvous trajectories. A leading developer of context-based optical character recognition, he co-founded three successful companies that apply his technology. The name was suggested by N. D. Hulkower.

(6582) Flagsymphony = 1981 VS

Discovered 1981 Nov. 5 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

The Flagstaff Symphony Orchestra is celebrating its 50th season in 1999–2000. It is considered by many to be the best symphony orchestra in a small community in the U.S.A.

(6589) Jankovich = 1985 SL₃

Discovered 1985 Sept. 19 by N. S. Chernykh and L. I. Chernykh at the Crimean Astrophysical Observatory.

Milan Jankovich, economist and ecologist in Monaco, is head of the Zepter company. He is devoted to helping young people, improving the environment and encouraging cultural advances. He has won many prestigious international prizes. The name was suggested by the Ukrainian Ecological Academy of Sciences.

(6683) Karachentsov = 1976 GQ₂

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

Nikolaj Petrovich Karachentsov is an actor and singer at the Moscow Lenkom Theatre. As one review said, "He has a remarkable sense of rhythm and an exceptional voice, captivating audiences with his songs".

(6684) Volodshvchenko = 1977 QU

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

Vladimir Nikitovich Shevchenko (1929–1987) was a Ukrainian film producer best known for his film about the Chernobyl' disaster. A special prize in his memory was founded in Italy, awarded for films on the challenges of peace and the protection of the environment.

(6755) Solov'yanenko = 1976 YE₁

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

Anatolij Borisovich Solov'yanenko (1932–1999) was a Ukrainian singer and People's Artist of the former U.S.S.R.

(6764) Kirillavrov = 1981 TM₃

Discovered 1981 Oct. 7 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Kirill Yur'evich Lavrov (b. 1925) is a prominent Russian actor and public figure, People's Artist of the former U.S.S.R. and laureate of the Lenin and State Prizes. He was an actor at the Bolshoi Dramatic Theatre in St. Petersburg from 1955 and artistic adviser since 1989.

(7002) Bronshten = 1971 OV

Discovered 1971 July 26 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Vitalij Aleksandrovich Bronshten (b.1918) is a Moscow astronomer and specialist in physics and cosmogony of the minor bodies of the solar system. In addition, he contributed extensively to the development of amateur astronomy in the former U.S.S.R.

(7046) Reshetnev = 1977 QG₂

Discovered 1977 Aug. 20 by N. S. Chernykh at the Crimean Astrophysical Observatory.

An authority on theoretical and applied mechanics, Mikhail Fedorovich Reshetnev (1924–1996) constructed space devices and systems. He was head of the Research and Industrial Joint Institution of Applied Mechanics at Krasnoyarsk, and satellites for scientific research and communications were made under his leadership.

(7073) Rudbelia = 1972 RU₁

Discovered 1972 Sept. 11 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Ol'ga Ivanovna Belyaeva (née Rudneva) is a teacher of English at the Moscow College and Institute of Economics, Politics and Law.

(7074) Muckea = 1977 RD₃

Discovered 1977 Sept. 10 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Hermann Mucke (b.1935), director of the Urania Sternwarte and planetarium in Vienna, is well known for his work in ephemeris astronomy and the theory of astronomical phenomena. He has contributed much to the astronomical education of schoolchildren and adults. The name was suggested by V. K. Abalakin.

(7216) Ishkov = 1977 QQ₂

Discovered 1977 Aug. 21 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Vitalij Nikitich Ishkov, astrophysicist at the Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation in Moscow, works in the fields of solar physics, solar activity and solar-terrestrial relations.

(7271) Doroguntsov = 1979 SR₂

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

Sergej Ivanovich Doroguntsov (b.1929), corresponding member of the National Academy of Sciences of Ukraine, is prominent in the study of economics and ecology, head of a faculty at Kiev National Economic University and president of the Ukrainian Ecological Academy of Sciences.

(7299) Indiawadkins = 1992 WZ₅

Discovered 1992 Nov. 21 by E. F. Helin at Palomar.

India Wadkins (1947–1999) helped initiate and administer many programs of The Planetary Society, including NEO projects. As the society's voice and heart, she became known to thousands of people around the world for her unfailing kindness and enthusiasm. The name was suggested by The Planetary Society.

(7322) Lavrentina = 1979 SW₂

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

Soviet mathematician Mikhail Alekseevich Lavrent'ev (1900–1980) was the first head of the Siberian Department of the U.S.S.R. Academy of Sciences. His son Mikhail Mikhailovich Lavrent'ev (b.1932) also works in mathematical physics.

(7323) Robersomma = 1979 SD₉

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

Roberto Somma (b.1944), an Italian space engineer at Alenia Spazio, has promoted ideas and organized international meetings in Italy on the exploration of the solar system, in particular of near-earth objects.

(7328) Casanova = 1984 SC₁

Discovered 1984 Sept. 20 by A. Mrkos at Kleť.

Giovanni Giacomo Casanova (1725–1798) was a writer, spy and diplomat, the prince of Italian adventurers. His autobiography *Histoire de ma vie* established his reputation as an archetypal seducer of women. He spent his final years in Bohemia as librarian in the château of Dux, now Duchcov. The name was suggested by M. Tichý.

(7369) Gavrilin = 1975 AN

Discovered 1975 Jan. 13 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Valerij Aleksandrovich Gavrilin (1939–1999) was an outstanding Russian composer whose compositions have become a national property of Russia and occupy a well-deserved place in the culture of the twentieth century. The name was suggested by the Union of Concert Workers of Russia.

(7373) Stashis = 1979 QX₉

Discovered 1979 Aug. 27 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Vladimir Vladimirovich Stashis (b.1925) is a Ukrainian scholar of jurisprudence, vice-rector of the Ukrainian National Academy of Law and a member of the International Court of the United Nations. He also likes poetry and art and has a large collection of pictures of classical Russian painters.

(7382) Bozhenkova = 1981 RJ₅

Discovered 1981 Sept. 8 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

The Russian writer Margarita Ivanovna Bozhenkova (b.1941) is a member of the Writers' Union of Russia, vice-president of the Writers' Naval Association in St. Petersburg and laureate of the "Gold Pen" prize.

(7385) Aktsynovia = 1981 UQ₁₁

Discovered 1981 Oct. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Lyudmila Mikhailovna Aktsynova (1910–1997) and her husband Arkadij Vsevolodovich Aktsynov (1910–1997) were masters of portraiture and landscape painting. They depicted the beauties of nature in various parts of Russia, including Siberia, Baikal, Sayany, Altaj and Volga.

(7394) Xanthomalitia = 1985 QX₄

Discovered 1985 Aug. 18 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Leonid Vasil'evich Xanthomaliti (Ksanfomaliti; b. 1932), radiometrist, photometrist, polarimetrist and altimetrist, discovered the Martian "anti-greenhouse" effect, hypothesized on the thunderbolt phenomena in Venus' atmosphere and predicted high volcanic activity on Venus. The name was suggested by V. K. Abalakin.

(7415) Susumuimoto = 1990 VL₈

Discovered 1990 Nov. 14 by T. Seki at Geisei.

Susumu Imoto (1901–1981) studied the history of astronomy and old Japanese calendars. With I. Hasegawa, he compiled a catalogue of meteor showers and lent support to the world calendar proposed by E. Achelis.

(7451) Verbitskaya = 1978 PU₂

Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Professor of general linguistics Lyudmila Alekseevna Verbitskaya (b.1936) is an authority on Russian and experimental phonetics. As rector of St. Petersburg University she has created and supported favorable conditions for the development of higher education and science. The name was suggested by K. V. Kholshevnikov.

(7452) Izabelyuria = 1978 QU₂

Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Renowned Russian singer Izabella Danilovna Yur'eva (1900–2000) was a unique performer of lyric songs and romances.

(7453) Slovtsov = 1978 RV₁

Discovered 1978 Sept. 5 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Petr Andreevich Slovtsov (1767–1843), historiographer of Siberia and founder of regional studies of Siberia, was a prominent historian, poet, philosopher and pedagogue, as well as a religious and public figure.

(7509) Gamzatov = 1977 EL

Discovered 1977 Mar. 9 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Celebrated poet Rasul Gamzatovich Gamzatov (b.1923) is the national poet of Dagestan.

(7590) Aterui = 1992 UP₄

Discovered 1992 Oct. 26 by K. Endate and K. Watanabe at Kitami.

Aterui, patriarch of the Ainu tribe in northern Japan in the late eighth century, was believed to have had a castle in the present Mizusawa City. He resisted military invasion by the central government. He was eventually compelled to surrender to the commander of the Kyoto troops and was executed near Kyoto in 801.

(7628) Evgenifedorov = 1977 QY

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

Astrometrist Evgenij Pavlovich Fedorov (1909–1986) studied the rotation of the earth and was founder of the Kiev school for the study of polar motion. He served as director of the Main Astronomical Observatory of the Ukrainian Academy of Sciences for many years and was president of IAU Commission 19 during 1955–1961.

(7756) Scientia = 1990 FR₁

Discovered 1990 Mar. 27 by C. S. Shoemaker and E. M. Shoemaker at Palomar.

This Latin term for science or knowledge describes the purpose of the U.S. National Science Foundation on the occasion of its 50th anniversary in the year 2000. The NSF has acted as a “patron for pure science”, consistently championing excellence in activities that span the entire range of scientific endeavor.

(7910) Aleksola = 1976 GD₂

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

Aleksandr Anatolievich Solov'ev is a theoretical astrophysicist and solar physicist and a professor of Kalmyk University at Elista. He is also known as a poet.

(7912) Lapovok = 1978 PO₃

Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Yakov Semenovich Lapovok (b.1932) is a radio engineer and inventor, scientific secretary of the A. S. Popov Museum at St. Petersburg Electrotechnical University. His name and voice are known to radio amateurs throughout the world.

(7948) Whitaker = 1992 HY

Discovered 1992 Apr. 24 by Spacewatch at Kitt Peak.

Ewen A. Whitaker (b.1922) was a founding member of the Lunar and Planetary Laboratory. He participated in the construction of lunar atlases and maps. For Apollo 12 he successfully identified the crater in which Surveyor III had landed. He located manmade impact craters using lunar surface imagery.

(7973) Koppeschaar = 1344 T-2

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

Carl Egon Koppeschaar is a science writer and reporter in the Netherlands. He is internationally known for popularizing astrophysics and space science, for debunking pseudoscience, and for taking action against light pollution. His *Moon Handbook: a 21st-Century Travel Guide* is a delight.

(8064) Lisitsa = 1978 RR

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

Physicist Mikhail Pavlovich Lisitsa (b.1921) is a professor at Kiev University and department head at the Institute of Semiconductors of the Ukrainian Academy of Sciences, where he specializes in quantum electronics, nonlinear optics and molecular spectroscopy. The name was suggested by N. V. Steshenko.

(8065) Nakhodkin = 1979 FD₃

Discovered 1979 Mar. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Nikolaj Grigorievich Nakhodkin (b.1925), a faculty head at Kiev University, works in the areas of physical electronics, radiophysics and radioastronomy. The name was suggested by N. V. Steshenko.

(8080) Intel = 1987 WU₂

Discovered 1987 Nov. 17 at Caussols.

The Intel 8080 microprocessor is the ancestor of a series of microprocessor chips going from the 8086, 8088, 80286, 80386, 80486 to today's Pentium processors. Fundamental to the “PC revolution”, the 8080 did much to advance astronomy at amateur and professional observatories worldwide.

(8216) Melosh = 1995 FX₁₄

Discovered 1995 Mar. 27 by Spacewatch at Kitt Peak.

H. Jay Melosh (b.1947), of the Lunar and Planetary Laboratory, has worked on the formation of impact craters on the terrestrial planets and the “giant impact” origin of the moon. His “Panspermia” idea involves the ejection by impact of spall products containing microorganisms and their transfer to other planets.

(8246) Kotov = 1979 QT₈

Discovered 1979 Aug. 20 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Solar physicist Valerij Aleksandrovich Kotov (b.1943) has worked at the Crimean Astrophysical Observatory for more than 30 years. In the early 1970s he pioneered the field of helioseismology, the study of the interior structure and energy sources of the sun and other stars.

(8248) Gurzuf = 1979 TV₂

Discovered 1979 Oct. 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Gurzuf is small town near Yalta at the south coast of the Crimea, praised by A. S. Pushkin, who visited it in 1820.

(8408) Strom = 1995 SX₁₂

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

At the Lunar and Planetary Laboratory, Robert G. Strom (b.1933) studied the cratering record on the terrestrial planets and their satellites. He participated in both manned and unmanned exploration of the solar system and has searched for evidence of ancient oceans and ice sheets on Mars.

(8451) Gaidai = 1977 RY₆

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

Leonid Iovich Gaidai (1923–1993) was a prominent Soviet film producer and Peoples' Artist of the U.S.S.R. He directed several comedies that were popular in Russia and other countries.

(8474) Rettig = 1985 GA₁

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

Terrence W. Rettig (b.1946) is a planetary astronomer and educator at the University of Notre Dame who has contributed to the understanding of comets and the evolution of planet-forming regions around young stars. He has also served as the National Science Foundation Special Programs Director for Physics.

(8485) Satoru = 1989 FL

Discovered 1989 Mar. 29 by T. Seki at Geisei.

Satoru Honda (b.1913), some time kindergarten principal, is the widow of Minoru Honda, famed comet and nova hunter. When light pollution affected her husband's observatory at Kurashiki she spent her retirement allowance to purchase a new mountain site. The name was suggested by K. Kenmotsu and T. Sato.

(8492) Kikuoka = 1990 BZ

Discovered 1990 Jan. 21 by T. Seki at Geisei.

Hidekazu Kikuoka (b.1941) has been a planetarium educator at the Osaka Municipal Electric Science Museum and at the Science Museum of Osaka. He founded the Japan Astronomical Club in 1955 and served as its president during 1965–1985. The name was suggested by T. Sato and K. Kitao.

(8498) Ufa = 1990 RM₁₇

Discovered 1990 Sept. 15 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

The city of Ufa is a large industrial and cultural center in the south Urals. Founded in 1574, it is the capital of Bashkir, a republic in the Russian Federation.

(8568) Larrywilson = 1996 RU₂

Discovered 1996 Sept. 10 by the Near-Earth Asteroid Tracking program.

Named in honor of Lawrence (Larry) Wilson, whom discoverer E. F. Helin has known since his childhood. As the editor of the Pasadena *Star News*, he has been supportive of the discoverer's work at Caltech's Jet Propulsion Laboratory.

(8732) Champion = 1996 XR₂₅

Discovered 1996 Dec. 8 by T. Seki at Geisei.

Born in Texas, Frank Champion (1884–1917) was an aviator who flew to Japan in a wooden airplane. He entertained 100 000 Japanese with his acrobatic stunt flying over Kochi City. But a wing accidentally broke, and he was killed. There is a memorial to him in Kochi.

(9028) Konrádbeneš = 1989 BE₁

Discovered 1989 Jan. 26 by A. Mrkos at Kleť.

Konrád Beneš (1920–1999), a professor at the Technical University in Ostrava, was one of the pioneers of planetology in the Czech Republic and a past vice-president of the International Association of Planetology (1968–1977). The name was suggested by J. Honěk, P. Martinec and M. Eliáš.

(9032) Tanakami = 1989 WK₄

Discovered 1989 Nov. 23 by T. Seki at Geisei.

Mt. Tanakami, extending over Shiga, Mie and Kyoto prefectures, is the site of the largest meteorite found in Japan. Tanakami is also the name of the village that is the birthplace of Issei Yamamoto, founder of the Oriental Astronomical Association. The name was suggested by I. Hasegawa and A. S. Yamamoto.

(9064) Johndavies = 1993 BH₈

Discovered 1993 Jan. 21 by Spacewatch at Kitt Peak.

John K. Davies (b.1955) of the Joint Astronomy Centre was instrumental in the successful discovery and follow-up of (3200) Phaethon and several comets with the IRAS satellite in 1983. He has also carried out studies of the infrared nature of distant minor planets and authored a number of popular books and articles.

(9122) Hunten = 1998 FZ₈

Discovered 1998 Mar. 22 by Spacewatch at Kitt Peak.

Donald M. Hunten (b.1925), of the Lunar and Planetary Laboratory, has studied the atmospheres of the planets and their satellites, participating in space missions from Pioneer to Cassini. He used mid-infrared spectroscopy to study the comet impacts on Jupiter and has studied Martian water vapor and lightning on Venus.

(9211) Neese = 1995 SB₂₇

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.

Trained in stellar astronomy, Carol Lynn Neese (b.1958) turned to solar system studies in 1992, joining the Planetary Science Institute in Tucson, making physical studies of minor planets and archiving data from groundbased and spacecraft communities into the Small Bodies Node of the NASA Planetary Data System.

(9223) Leifandersson = 1995 YY₇

Discovered 1995 Dec. 18 by Spacewatch at Kitt Peak.

Leif Erland Andersson (1943–1979) observed that most satellites of the outer planets rotate synchronously about their parent planets, helped determine Pluto's pole position and albedo map, and determined that Pluto and its satellite Charon would display mutual transits and eclipses. He also made a catalogue of lunar craters.

(9490) Gosemeijer = 1181 T-1

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Dutch amateur astronomer Henny Gosemeijer (1924–1999) founded the Public Observatory Twente in 1984. He himself made many observations of satellites and meteors, in addition to his activities in popularizing astronomy. He was honored by NASA and awarded the Dutch “van der Bilt” and “Simon Stevin” prizes.

(9884) Příbram = 1994 TN₃

Discovered 1994 Oct. 12 by M. Tichý and Z. Moravec at Kleť.

The town of Příbram, in central Bohemia, was the impact site, on 1959 Apr. 7, of the first photographic detection of a meteorite fall. Analysis of the fireball trajectory by Z. Ceplecha led to the discovery of four meteorites.

(9922) Catcher = 1981 EO₂₁

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring.

Endowing the English language with a new term, the 1961 novel *Catcher* by U.S. writer Joseph Heller (1923–1999) epitomized both the problems of a sane person in an insane society and the absurdity of war. The name was suggested by B. G. Marsden.

(10247) Amphiaros = 6629 P-L

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

The Greek seer Amphiaros took part in the campaign of the Argonauts and the “Seven against Thebes”.

(10376) Chiarini = 1996 KW

Discovered 1996 May 16 at Osservatorio San Vittore.

Francesca (b. 1981) and Gabriele (b. 1986) Chiarini are grandchildren of Giorgio Sassi, co-founder of Osservatorio San Vittore. Gabriele often transmits his grandfather’s CCD images for reduction in Bologna, thereby saving time and a 100-km round-trip journey.

(10403) Marcelgrün = 1997 WU₃

Discovered 1997 Nov. 22 by J. Tichá and M. Tichý at Kleť.

The Czech astronomer Marcel Grün (b. 1946) is director of the Prague Planetarium. His main field of interest is education and popularization of astronautics, cosmonautics and space exploration.

(10515) Old Joe = 1989 UB₃

Discovered 1989 Oct. 31 by B. G. W. Manning at Stakenbridge.

“Old Joe” is the students’ name for the Joseph Chamberlain Clock Tower at the University of Birmingham, which received its charter in 1900 and is now celebrating its centenary. Birmingham, England’s “second city”, prospered from metal-working trades, from which enlightened industrialists founded the university.

(10626) Zajíc = 1998 AP₈

Discovered 1998 Jan. 10 by L. Šarounová at Ondřejov.

Jan Zajíc (b. 1910), founder and for a long time director of the observatory in Vlašim, has brought astronomy to many young people. In spite of many problems, this public observatory is currently one of the most active in the Czech Republic. The naming is on the occasion of Zajíc’s 90th birthday.

(10664) Phemios = 5187 T-2

Discovered 1973 Sept. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Phemios was a singer with Telemachos, forced to play for Penelope’s suitors, spared by Odysseus for friendly deeds and because a singer is sacred.

(10715) Nagler = 1983 RL₄

Discovered 1983 Sept. 11 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Al Nagler (b. 1935) is an optical designer best known for his innovative wide-field eyepieces and versatile, compact refractors. He also designed visual displays for the Gemini and Apollo Lunar Module simulators. The citation was provided by S. and A. French.

(10745) Arnstadt = 1989 AK₆

Discovered 1989 Jan. 11 by F. Börngen at Tautenburg.

Arnstadt is a town in Thuringia with a 1300-year history. The young J. S. Bach was an organist here during 1703–1707. The town is home to the priceless doll’s town “Mon plaisir”, the life-work of princess Auguste Dorothea von Schwarzburg-Arnstadt.

(10746) Mühlhausen = 1989 CE₆

Discovered 1989 Feb. 10 by F. Börngen at Tautenburg.

In Carolinian times the Thuringian town of Mühlhausen was the haunt of emperors and kings. It became a Reichstadt in 1180 and a member of the Hanse in 1418. J. S. Bach was an organist here during 1707–1708. The intact city is a jewel of town planning in medieval times.

(10747) Köthen = 1989 CW₇

Discovered 1989 Feb. 1 by F. Börngen at Tautenburg.

Köthen is a Saxon-Anhaltian town. J. S. Bach was the princely conductor there during 1717–1723, becoming the friend and travel attendant of the art-loving duke Leopold of Anhalt-Köthen. In Köthen Bach composed most of his chamber music, including all six Brandenburg concerti.

(10774) Eisenach = 1991 AS₂

Discovered 1991 Jan. 15 by F. Börngen at Tautenburg.

Charmingly situated, Eisenach is a Thuringian town, founded in the twelfth century. J. S. Bach was born there in 1685 and lived there for his first ten years.

(10775) Leipzig = 1991 AV₂

Discovered 1991 Jan. 15 by F. Börngen at Tautenburg.

The Saxon city of Leipzig has a great number of splendid sights. J. S. Bach worked as cantor in the Thomaskirche from 1723 to his death in 1750.

(10801) Lüneburg = 1992 SK₂₆

Discovered 1992 Sept. 23 by F. Börngen at Tautenburg.

Lüneburg is one of the richest Hanse towns, more than 1000 years old. J. S. Bach was a schoolboy there during 1700–1703. The six minor planets (10745), (10746), (10747), (10774), (10775) and (10801) are being named on the occasion of the 250th anniversary of Bach’s death.

(10825) Augusthermann = 1993 SF₄

Discovered 1993 Sept. 18 by F. Börngen at Tautenburg.

The German theologian and pedagogue August Hermann Francke (1663–1727) founded the “Franckeschen Stiftungen” in Halle in 1695, which had about 2300 pupils at the time and continues to exist today. Francke’s main intent was to educate the young and support the poor.

(10835) Fröbel = 1993 VB₈

Discovered 1993 Nov. 12 by F. Börngen at Tautenburg.

The Thuringian pedagogue Friedrich Fröbel (1782–1852) was committed to the education of young children. In 1839 he founded the first nursery school, which he named Kindergarten. He created toys and tools for use by children in different age groups.

(10839) Hufeland = 1994 GY₉

Discovered 1994 Apr. 3 by F. Börngen at Tautenburg.

The German physician Christoph Wilhelm Hufeland (1762–1836) was professor of medicine in Jena and Berlin. He attended Schiller and Goethe, tried to reconcile the methods of naturopathy with scientific findings and introduced smallpox vaccination. *Die Kunst, das menschliche Leben zu verlängern* is his chief work.

(10847) Koch = 1995 AV₄

Discovered 1995 Jan. 5 by F. Börngen at Tautenburg.

The German physician Robert Koch (1843–1910) is the chief founder of the methodology of modern bacteriology. In 1876, he showed that the anthrax bacillus causes an infectious disease. He discovered the tuberculosis and cholera bacilli and studied malaria and sleeping sickness. He won the Nobel prize for medicine in 1905.

(10856) Bechstein = 1995 EG₈

Discovered 1995 Mar. 4 by F. Börngen at Tautenburg.

Carl Bechstein (1826–1900), born in the Thuringian town of Gotha, founded a piano factory in Berlin in 1853. His instruments were used by Liszt, Bülow, Rubinstein and Wagner. Branches of his factory in London, Paris and St. Petersburg testify to the esteem in which Bechstein's instruments are held.

(10857) Blüthner = 1995 EZ₈

Discovered 1995 Mar. 5 by F. Börngen at Tautenburg.

Julius Blüthner (1824–1910) founded a piano factory in Leipzig in 1853. His instruments found high recognition because of their sonority, tone color and several technical innovations. The name Blüthner inspired friends of music around the world. Despite the elements of mass production, every piano remained a work of art.

(10872) Vaculík = 1996 TJ₉

Discovered 1996 Oct. 12 by J. Tichá and M. Tichý at Kleř.

Ludvík Vaculík (b.1926), Czech writer and journalist, was one of the most famous writers in the former Czechoslovakia in the 1970s and 1980s. He described his experiences in the book *A Cup of Coffee With My Interrogator*.

(10989) Dolios = 1973 SL₁

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Dolios was the faithful servant of Laërtes at Ithaca.

(11037) Distler = 1989 CD₆

Discovered 1989 Feb. 2 by F. Börngen at Tautenburg.

Hugo Distler (1908–1942), a composer, organist and director of renowned choirs, served in Lübeck, Stuttgart and Berlin. His works in a highly individual style brought him much respect in the new German church music.

(11043) Pepping = 1989 YX₆

Discovered 1989 Dec. 25 by F. Börngen at Tautenburg.

Ernst Pepping (1901–1981) was an organist and professor of music in Berlin and one of the leading German composers of church music. He rejuvenated sacred and secular choir music. His instrumental and vocal works are very extensive, and his books *Stilwende der Musik* and *Der polyphone Satz* set the fashion for their time.

(11050) Messiaën = 1990 TE₇

Discovered 1990 Oct. 13 by F. Börngen and L. D. Schmadel at Tautenburg.

Oliver Messiaën (1908–1992) was organist at Ste. Trinité in Paris, as well as a composer and teacher of a whole generation of young composers. In his works for organ and orchestra numerous influences are merged, such as rhythms from oriental civilizations.

(11061) Lagerlöf = 1991 RS₄₀

Discovered 1991 Sept. 10 by F. Börngen at Tautenburg.

Swedish novelist Selma Lagerlöf (1858–1940) wrote beautiful stories, using popular tales of her Vaermlandian homeland. She dealt with social problems, questions of fault and responsibility from a religious-ethical point of view. Awarded the Nobel prize for literature in 1909, she was the first female member of the Swedish Academy.

(11075) Dönhoff = 1992 SP₂₆

Discovered 1992 Sept. 23 by F. Börngen at Tautenburg.

Marion Gräfin Dönhoff (b.1909) is a highly esteemed critical German journalist, engaged in problems from the past and present. Her analyses are characterized by objectivity and restraint. Among her honors is the peace prize of the German book trade. The name was independently suggested by L. D. Schmadel.

(11112) Cagnoli = 1995 WM₂

Discovered 1995 Nov. 18 at Madonna di Dossobuono.

The Italian astronomer Antonio Cagnoli (1743–1816) worked to introduce the scientific ideas of the Enlightenment into Italian society, helping establish the “Italian Society”, founded in 1781 to gather the best Italian scientists into a single organization.

(11124) Mikulášek = 1996 TR₉

Discovered 1996 Oct. 14 by M. Tichý and Z. Moravec at Kleř.

The Czech astronomer Zdeněk Mikulášek (b.1947) is director of the Nicholas Copernicus Observatory and Planetarium in Brno, working also at the Masaryk University there. His main research interests consist of the photometry and spectra of variable stars and the study of atmospheric extinction.

(11251) Icarion = 1973 SN₁

Discovered 1973 Sept. 20 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Icarion was the son of Ebalus of Sparta. By the nymph Periboea Icarion was the father of Penelope.

(11252) Laërtes = 1973 SA₂

Discovered 1973 Sept. 19 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Laërtes, king of Ithaca, was the son of Arcisius, who in turn was a son of Zeus. Laërtes was the husband of Anticleia and father of Odysseus.

(11284) Belenus = 1990 BA

Discovered 1990 Jan. 21 by A. Maury at Caussols.

Belenus, husband of Belisana, is the Gaulish god of light, with responsibilities also to sheep and cattle.

(11359) Piteglio = 1998 BP₂₄

Discovered 1998 Jan. 27 by L. Tesi and V. Cecchini at San Marcello Pistoiese.

The northern Tuscany village of Piteglio was founded in medieval times. Piteglio's government has contributed to the construction and maintenance of the

Pian dei Termini Observatory, where this object was found. It is also where the second discoverer lives.

(11428) Alcinoös = 4139 P-L

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

Alcinoös, king of the Phaeacians, gave Odysseus shelter and aid.

(11429) Demodokus = 4655 P-L

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

Demodokus who was a blind singer at the court of Alcinoös.

(11496) Grass = 1989 AG₇

Discovered 1989 Jan. 10 by F. Börngen at Tautenburg.

Günter Grass (b. 1927), German writer, sculptor and graphic artist, is a critic of both the immediate postwar years and the present. His passionate writing received only partial recognition in Germany but great acclaim elsewhere. He won the 1999 Nobel Prize for literature.

(11528) Mie = 1991 XH

Discovered 1991 Dec. 3 by Y. Kushida and O. Muramatsu at the Yatsugatake South Base Observatory.

Mie Nagata (b. 1963) was a lecturer at the Gotoh Planetarium and Astronomical Museum in Tokyo from 1988 to 1994. She is a part-time lecturer at other planetaria in Tokyo and has strong interest in preschool education in astronomy.

(11595) Monsummano = 1995 KN

Discovered 1995 May 23 by A. Boattini and L. Tesi at San Marcello Pistoiese.

Monsummano Terme is a town in northern Tuscany, about 40 km from Florence. The town is known for its hot springs and for shoe manufacturing. Poet Giuseppe Giusti and French singer Ives Montand were born here. The second discoverer also was born and grew up in Monsummano.

(11625) Francelinda = 1996 UL₁

Discovered 1996 Oct. 20 by L. Tesi and G. Cattani at San Marcello Pistoiese.

Francesca Tesi and Linda Tesi are granddaughters of the first discoverer.

(11667) Testa = 1997 UB₁

Discovered 1997 Oct. 19 by L. Tesi and A. Boattini at San Marcello Pistoiese.

Augusto Testa (b. 1950), Italian amateur astronomer, observes minor planets at the Sormano Astronomical Observatory. Over the past few years he has developed a lot of software dedicated to the observation of minor planets, and these are widely used by the Italian community of astrometric observers.

(11739) Baton Rouge = 1998 SG₂₇

Discovered 1998 Sept. 25 by W. R. Cooney, Jr., and M. Collier at Baton Rouge.

Baton Rouge, the Louisiana state capital, is located on the banks of the Mississippi river and derives its name, French for “red stick”, from an Indian marker at the site seen by a French expedition in 1699. The city is home to the Highland Road Park Observatory, where this minor planet was discovered.

(11823) Christen = 1981 VF

Discovered 1981 Nov. 2 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Roland W. Christen (b. 1944) is an optician and maker of affordable apochromatic refractors at the forefront of mechanical and optical design. The citation was provided by S. and A. French.

(11955) Russrobb = 1994 CA₁

Discovered 1994 Feb. 8 by D. D. Balam at the Dominion Astrophysical Observatory, Victoria.

Russell M. Robb (b. 1952), astronomer at the University of Victoria, played the leading role in automating the university’s 0.5-m telescope and equipping it with a CCD camera. The telescope has been used extensively in the university’s observational programs, including astrometric work on comets and minor planets.

(12002) Suess = 1996 FR₁

Discovered 1996 Mar. 19 by P. Pravec and L. Šarounová at Ondřejov.

Austrian geologist Franz Eduard Suess (1867–1941), professor at the Technical College in Prague and the University of Vienna, worked on crystalline bedrock of the Bohemian Mass and made fundamental studies of the moldavites. He introduced the word “tektite”. The name was suggested by H. Raab.

(12007) Fermat = 1996 TD₇

Discovered 1996 Oct. 11 by P. G. Comba at Prescott.

Pierre Fermat (1601–1665), a lawyer in Toulouse, is considered the greatest amateur mathematician of all time. He was the co-inventor of analytic geometry and the founder of modern number theory. He bequeathed to mathematics a conjecture—the so-called Fermat’s last theorem—that was proved only in the 1990s.

(12016) Green = 1996 XC

Discovered 1996 Dec. 1 by P. G. Comba at Prescott.

George Green (1793–1841), a self-taught miller’s son of Nottingham, was instrumental (along with Gauss) in making the theories of electricity and magnetism a part of mathematical physics. His name is associated with the “Green’s function” used in the solution of partial differential equations.

(12022) Hilbert = 1996 XH₂₆

Discovered 1996 Dec. 15 by P. G. Comba at Prescott.

David Hilbert (1862–1943), professor at Göttingen and one of the greatest mathematicians of all time, exerted a profound influence on the development of many branches of mathematics in the twentieth century: the foundations, geometry, algebra, analysis. His name is associated with the infinite-dimensional Hilbert space.

(12032) Ivory = 1997 BP₅

Discovered 1997 Jan. 31 by P. G. Comba at Prescott.

James Ivory (1765–1842), Scottish mathematician and professor at the Royal Military College, published more than ninety papers on various mathematico-physical problems, including the attraction of ellipsoids, orbits of comets, atmospheric refraction and the equilibrium of fluid bodies.

(12040) Jacobi = 1997 EK₈

Discovered 1997 Mar. 8 by P. G. Comba at Prescott.

Carl G. J. Jacobi (1804–1851), professor at Königsberg and Berlin, developed the theory of elliptic functions (also discovered independently by Gauss and Abel). He is also known for a functional determinant now called the jacobian. He was one of the last mathematicians who published their researches in Latin.

(12045) Klein = 1997 FH₁

Discovered 1997 Mar. 30 by P. G. Comba at Prescott.

Felix Klein (1849–1925) was a professor of mathematics at Erlangen and later at Göttingen. Deeply impressed by the concept of a group of transformations as a unifying principle in geometry, he spent much of his life developing, applying and popularizing this notion.

(12473) Levi-Civita = 1997 CM₁₉

Discovered 1997 Feb. 10 by P. G. Comba at Prescott.

Tullio Levi-Civita (1873–1941) developed and extended the tensor calculus, originally formulated by Ricci, which plays a central role in the theory of general relativity and in differential geometry. In 1938 Levi-Civita was removed from his professorship at the University of Rome because of his being Jewish.

(12493) Minkowski = 1997 PM₁

Discovered 1997 Aug. 4 by P. G. Comba at Prescott.

Hermann Minkowski (1864–1909) was awarded a prestigious prize from the Paris Academy of Sciences while still a student. He was Einstein's teacher at Zurich and later developed the concept of four-dimensional space-time—the mathematical foundation of the special theory of relativity.

(12513) Niven = 1998 HC₂₀

Discovered 1998 Apr. 27 by P. G. Comba at Prescott.

Ivan M. Niven (1915–1999) was a Canadian-U.S. mathematician who worked mainly in number theory. In 1943 he completed the proof of Waring's conjecture, a conjecture formulated in 1770 to the effect that every positive integer is the sum of a finite number of n -th powers of integers.

(12576) Oresme = 1999 RP₁

Discovered 1999 Sept. 5 by P. G. Comba at Prescott.

Nicole Oresme (c. 1323–1382), bishop of Lisieux, conceived the representation of time-varying quantities by two-dimensional graphs, using the latitude-longitude analogy. He drew a velocity-time graph for a body moving with constant acceleration, anticipating later discoveries in analytic geometry and kinematics.

EPIHEMERIDES

C/1999 J3 (LINEAR)					Elements MPC 36212				
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 01 07		00 10.79	−64 53.8	2.223	1.990	63.6	26.3	16.7	
2000 01 17		00 18.28	−63 24.6	2.409	2.113	60.9	24.0	17.2	
2000 01 27		00 28.62	−62 12.0	2.577	2.235	59.0	22.2	17.5	
2000 02 06		00 41.05	−61 14.5	2.725	2.357	58.0	20.8	17.9	
2000 02 16		00 55.14	−60 31.4	2.856	2.478	58.0	19.8	18.2	
2000 02 26		01 10.60	−60 02.2	2.969	2.597	58.8	19.0	18.5	
2000 03 07		01 27.34	−59 46.4	3.066	2.716	60.4	18.5	18.8	
2000 03 17		01 45.27	−59 44.1	3.149	2.833	62.7	18.2	19.0	
2000 03 27		02 04.40	−59 54.9	3.220	2.950	65.5	17.9	19.2	
2000 04 06		02 24.79	−60 18.4	3.281	3.065	68.8	17.7	19.4	
2000 04 16		02 46.51	−60 54.2	3.336	3.179	72.4	17.5	19.6	
2000 04 26		03 09.67	−61 41.3	3.387	3.292	76.0	17.3	19.8	
2000 05 06		03 34.40	−62 38.2	3.438	3.404	79.6	17.0	20.0	
2000 05 16		04 00.84	−63 43.3	3.491	3.514	83.0	16.6	20.2	
2000 05 26		04 29.09	−64 54.2	3.549	3.624	86.1	16.2	20.3	
2000 06 05		04 59.27	−66 08.3	3.615	3.733	88.7	15.8	20.5	
2000 06 15		05 31.38	−67 22.8	3.691	3.840	90.7	15.3	20.7	
2000 06 25		06 05.36	−68 34.8	3.779	3.947	92.0	14.9	20.8	
2000 07 05		06 41.03	−69 41.9	3.878	4.053	92.5	14.5	21.0	

2000 07 15	07 18.0	−70 42.4	3.991	4.157	92.3	14.1	21.2
2000 07 25	07 55.9	−71 34.9	4.115	4.261	91.3	13.8	21.4
2000 08 04	08 34.1	−72 19.4	4.251	4.364	89.6	13.4	21.5

C/1999 T1 (McNaught-Hartley)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements MPC 37479
2000 01 17		01 10.27	−39 47.7	4.652	4.394	68.9	12.1	14.8		
2000 01 27		01 13.17	−38 47.5	4.656	4.295	62.7	11.8	14.7		
2000 02 06		01 17.66	−37 45.8	4.647	4.194	57.1	11.4	14.6		
2000 02 16		01 23.61	−36 44.4	4.622	4.093	52.3	11.0	14.4		
2000 02 26		01 30.90	−35 44.9	4.581	3.991	48.3	10.7	14.3		
2000 03 07		01 39.44	−34 48.5	4.523	3.888	45.2	10.4	14.2		
2000 03 17		01 49.14	−33 56.4	4.448	3.785	43.2	10.4	14.0		
2000 03 27		01 59.95	−33 09.8	4.357	3.681	42.3	10.5	13.9		
2000 04 06		02 11.83	−32 29.7	4.249	3.576	42.5	10.9	13.7		
2000 04 16		02 24.78	−31 57.2	4.127	3.470	43.6	11.5	13.5		
2000 04 26		02 38.81	−31 33.3	3.991	3.363	45.5	12.3	13.3		
2000 05 06		02 53.98	−31 19.0	3.845	3.255	47.9	13.3	13.0		
2000 05 16		03 10.34	−31 15.6	3.689	3.147	50.7	14.4	12.8		
2000 05 26		03 27.99	−31 24.0	3.528	3.038	53.6	15.6	12.6		
2000 06 05		03 47.07	−31 45.2	3.362	2.928	56.6	16.8	12.3		
2000 06 15		04 07.74	−32 20.0	3.196	2.818	59.4	18.1	12.0		
2000 06 25		04 30.17	−33 08.4	3.032	2.707	61.9	19.4	11.7		
2000 07 05		04 54.59	−34 10.4	2.874	2.595	64.0	20.6	11.4		
2000 07 15		05 21.19	−35 24.5	2.725	2.483	65.6	21.9	11.1		
2000 07 25		05 50.20	−36 47.9	2.587	2.371	66.4	23.1	10.8		
2000 08 04		06 21.74	−38 16.6	2.464	2.259	66.4	24.3	10.5		
2000 08 14		06 55.83	−39 44.5	2.356	2.146	65.6	25.5	10.2		
2000 08 24		07 32.30	−41 04.3	2.266	2.035	63.9	26.5	9.9		
2000 09 03		08 10.72	−42 08.5	2.191	1.924	61.4	27.4	9.5		
2000 09 13		08 50.39	−42 50.0	2.132	1.816	58.2	28.1	9.2		
2000 09 23		09 30.46	−43 03.3	2.084	1.710	54.6	28.6	8.9		
2000 10 03		10 10.01	−42 45.6	2.043	1.607	50.7	28.8	8.6		
2000 10 13		10 48.25	−41 55.5	2.006	1.510	46.8	28.8	8.3		
2000 10 23		11 24.71	−40 33.1	1.968	1.421	43.4	28.8	8.0		
2000 11 02		11 59.14	−38 38.4	1.924	1.340	40.8	28.9	7.7		
2000 11 12		12 31.61	−36 10.2	1.871	1.272	39.4	29.6	7.4		
2000 11 22		13 02.38	−33 05.8	1.806	1.220	39.6	31.1	7.1		
2000 12 02		13 31.84	−29 20.8	1.729	1.186	41.4	33.4	6.9		
2000 12 12		14 00.40	−24 48.2	1.642	1.172	44.8	36.3	6.8		
2000 12 22		14 28.50	−19 19.9	1.549	1.179	49.6	39.4	6.7		
2001 01 01		14 56.44	−12 46.8	1.457	1.208	55.3	42.0	6.6		
2001 01 11		15 24.38	−05 02.6	1.377	1.255	61.6	43.6	6.7		
2001 01 21		15 52.37	+03 50.1	1.317	1.319	68.2	43.8	6.8		
2001 01 31		16 20.22	+13 33.9	1.288	1.396	74.4	42.8	7.0		

C/1999 Y1 (LINEAR)

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2	Elements MPC 37479
2000 01 17		02 36.86	+67 10.4	4.587	5.060	113.5	10.3	15.8		
2000 01 27		02 26.13	+64 34.5	4.632	4.993	105.9	10.9	15.8		
2000 02 06		02 20.42	+62 04.1	4.695	4.926	97.7	11.4	15.8		
2000 02 16		02 18.39	+59 44.8	4.770	4.859	89.3	11.7	15.8		
2000 02 26		02 19.02	+57 39.6	4.850	4.792	80.8	11.8	15.7		
2000 03 07		02 21.59	+55 49.8	4.930	4.726	72.5	11.5	15.7		

2000 JAN. 24

M.P.C. 38203

2000 03 17	02 25.60	+54 15.4	5.004	4.661	64.4	11.1	15.7
2000 03 27	02 30.63	+52 55.7	5.068	4.596	56.7	10.5	15.6
2000 04 06	02 36.39	+51 49.7	5.118	4.531	49.4	9.7	15.6
2000 04 16	02 42.65	+50 56.2	5.149	4.467	42.9	8.8	15.6
2000 04 26	02 49.19	+50 13.8	5.161	4.403	37.3	8.0	15.5
2000 05 06	02 55.86	+49 41.4	5.150	4.340	33.1	7.3	15.4
2000 05 16	03 02.47	+49 17.7	5.116	4.278	30.8	6.9	15.4
2000 05 26	03 08.88	+49 01.9	5.057	4.217	30.6	7.0	15.3

C/1999 XS₈₇ (LINEAR)Elements *MPC* 37479

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 01 17		06 17.34	+18 07.9	2.233	3.164	157.4	6.9	16.7	17.3
2000 01 27		06 13.89	+17 34.8	2.341	3.209	146.5	9.7	16.9	17.5
2000 02 06		06 12.35	+17 07.8	2.472	3.255	136.1	12.1	17.1	17.8
2000 02 16		06 12.85	+16 46.1	2.622	3.303	126.2	14.0	17.3	18.0
2000 02 26		06 15.32	+16 28.7	2.788	3.353	116.8	15.3	17.5	18.2
2000 03 07		06 19.60	+16 14.1	2.965	3.404	107.9	16.1	17.7	18.4
2000 03 17		06 25.50	+16 00.9	3.151	3.456	99.4	16.5	17.9	18.6
2000 03 27		06 32.75	+15 47.8	3.342	3.509	91.3	16.5	18.1	18.7
2000 04 06		06 41.16	+15 33.6	3.534	3.564	83.5	16.2	18.3	18.9
2000 04 16		06 50.50	+15 17.3	3.727	3.619	76.1	15.6	18.4	19.0
2000 04 26		07 00.57	+14 58.2	3.916	3.675	68.9	14.8	18.6	19.1
2000 05 06		07 11.22	+14 35.6	4.100	3.733	61.9	13.8	18.8	19.2
2000 05 16		07 22.30	+14 09.2	4.278	3.791	55.1	12.6	18.9	19.3
2000 05 26		07 33.66	+13 38.7	4.447	3.849	48.4	11.3	19.1	19.4
2000 06 05		07 45.21	+13 04.1	4.606	3.909	41.8	10.0	19.2	19.4
2000 06 15		07 56.84	+12 25.3	4.753	3.969	35.4	8.5	19.4	19.5

P/1992 G3 (Mueller 4)Elements *MPC* 31663

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 01 17		06 55.36	−03 03.4	2.642	3.542	152.2	7.4	21.1	
2000 01 27		06 48.58	−01 46.0	2.642	3.507	146.8	8.8	21.0	
2000 02 06		06 42.94	−00 16.1	2.668	3.473	139.0	10.7	20.9	
2000 02 16		06 38.97	+01 21.8	2.718	3.438	130.1	12.7	20.9	
2000 02 26		06 36.95	+03 02.8	2.788	3.404	120.9	14.5	20.9	
2000 03 07		06 37.02	+04 42.9	2.874	3.370	111.8	15.9	20.8	
2000 03 17		06 39.19	+06 19.0	2.970	3.336	102.9	16.9	20.8	
2000 03 27		06 43.36	+07 48.6	3.074	3.303	94.3	17.5	20.8	
2000 04 06		06 49.38	+09 10.4	3.181	3.270	86.2	17.8	20.8	
2000 04 16		06 57.07	+10 23.2	3.287	3.237	78.3	17.7	20.8	
2000 04 26		07 06.22	+11 26.7	3.391	3.205	70.8	17.3	20.8	
2000 05 06		07 16.68	+12 20.4	3.489	3.172	63.6	16.6	20.7	
2000 05 16		07 28.26	+13 04.5	3.580	3.141	56.7	15.6	20.7	
2000 05 26		07 40.80	+13 38.9	3.662	3.110	50.1	14.5	20.7	
2000 06 05		07 54.18	+14 04.0	3.734	3.079	43.6	13.1	20.6	
2000 06 15		08 08.26	+14 19.9	3.795	3.049	37.3	11.6	20.6	
2000 06 25		08 22.92	+14 27.2	3.844	3.020	31.2	10.0	20.5	

C/2000 A1 (Montani)Elements *MPC* 37479

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 01 17		08 00.88	+23 25.0	8.816	9.798	176.9	0.3	18.1	20.8
2000 01 27		07 58.18	+23 45.1	8.822	9.794	170.1	1.0	18.1	20.8
2000 02 06		07 55.61	+24 03.9	8.860	9.790	159.5	2.0	18.1	20.9
2000 02 16		07 53.34	+24 21.0	8.927	9.786	148.9	3.0	18.2	21.0

2000 02 26	07 51.52	+24 35.9	9.020	9.782	138.4	3.9	18.2	21.1
2000 03 07	07 50.26	+24 48.6	9.136	9.779	128.1	4.6	18.2	21.2
2000 03 17	07 49.67	+24 58.8	9.270	9.776	118.0	5.2	18.2	21.2
2000 03 27	07 49.77	+25 06.6	9.418	9.773	108.1	5.6	18.3	21.3
2000 04 06	07 50.61	+25 12.1	9.575	9.771	98.4	5.8	18.3	21.3
2000 04 16	07 52.16	+25 15.4	9.736	9.769	88.9	5.9	18.3	21.4
2000 04 26	07 54.40	+25 16.6	9.897	9.767	79.7	5.8	18.4	21.4
2000 05 06	07 57.27	+25 15.8	10.053	9.766	70.7	5.6	18.4	21.4
2000 05 16	08 00.74	+25 13.2	10.201	9.764	61.8	5.2	18.4	21.4
2000 05 26	08 04.71	+25 09.0	10.338	9.764	53.1	4.8	18.5	21.4
2000 06 05	08 09.14	+25 03.4	10.459	9.763	44.6	4.2	18.5	21.4
2000 06 15	08 13.94	+24 56.6	10.564	9.763	36.2	3.5	18.5	21.4

47P/Ashbrook-JacksonElements *MPC* 31662

Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 01 27		18 08.06	−33 22.2	3.959	3.214	35.9	10.3	18.2	20.2
2000 02 06		18 25.04	−33 31.4	3.836	3.176	42.2	12.0	18.0	20.2
2000 02 16		18 41.81	−33 36.8	3.702	3.138	48.6	13.7	17.7	20.1
2000 02 26		18 58.27	−33 38.9	3.558	3.100	55.1	15.2	17.5	20.1
2000 03 07		19 14.29	−33 38.5	3.406	3.062	61.6	16.6	17.3	20.0
2000 03 17		19 29.72	−33 36.5	3.248	3.025	68.3	17.8	17.0	19.9
2000 03 27		19 44.42	−33 34.1	3.086	2.987	75.0	18.8	16.8	19.8
2000 04 06		19 58.24	−33 32.7	2.922	2.950	81.8	19.6	16.5	19.7
2000 04 16		20 10.97	−33 33.5	2.757	2.913	88.8	20.1	16.2	19.5
2000 04 26		20 22.43	−33 38.0	2.593	2.877	95.9	20.4	15.9	19.4
2000 05 06		20 32.38	−33 47.9	2.433	2.841	103.4	20.2	15.6	19.2
2000 05 16		20 40.53	−34 04.3	2.279	2.805	111.0	19.7	15.3	19.0
2000 05 26		20 46.62	−34 28.0	2.133	2.770	119.0	18.6	15.0	18.8
2000 06 05		20 50.30	−34 59.1	1.999	2.736	127.4	17.1	14.7	18.6
2000 06 15		20 51.29	−35 36.3	1.878	2.702	136.0	15.1	14.5	18.4
2000 06 25		20 49.43	−36 16.7	1.775	2.669	144.7	12.7	14.2	18.1
2000 07 05		20 44.71	−36 55.4	1.691	2.637	153.0	10.1	13.9	17.9
2000 07 15		20 37.51	−37 25.7	1.629	2.606	159.6	7.8	13.7	17.7
2000 07 25		20 28.64	−37 41.0	1.592	2.576	161.8	7.1	13.5	17.6
2000 08 04		20 19.23	−37 36.1	1.578	2.547	157.9	8.6	13.4	17.6
2000 08 14		20 10.67	−37 08.7	1.589	2.520	150.4	11.5	13.2	17.7
2000 08 24		20 04.12	−36 20.4	1.621	2.493	141.6	14.6	13.2	17.9
2000 09 03		20 00.40	−35 15.0	1.672	2.468	132.5	17.5	13.1	18.0
2000 09 13		19 59.90	−33 56.8	1.739	2.444	123.7	20.0	13.1	18.1
2000 09 23		20 02.61	−32 29.8	1.819	2.422	115.2	22.0	13.1	18.3
2000 10 03		20 08.28	−30 56.4	1.908	2.402	107.2	23.4	13.1	18.4
2000 10 13		20 16.58	−29 18.2	2.004	2.383	99.7	24.4	13.1	18.5
2000 10 23		20 27.06	−27 35.5	2.104	2.367	92.5	24.8	13.1	18.6
2000 11 02		20 39.37	−25 48.3	2.208	2.352	85.7	24.9	13.1	18.7
2000 11 12		20 53.14	−23 56.3	2.312	2.339	79.2	24.6	13.2	18.8
2000 11 22		21 08.06	−21 59.3	2.416	2.328	73.0	23.9	13.2	18.9
2000 12 02		21 23.88	−19 57.0	2.518	2.319	67.1	23.0	13.2	18.9
2000 12 12		21 40.39	−17 49.4	2.618	2.313	61.3	21.9	13.3	19.0
2000 12 22		21 57.39	−15 36.8	2.715	2.308	55.7	20.6	13.3	19.0
2001 01 01		22 14.76	−13 19.4	2.808	2.306	50.2	19.1	13.4	19.0
2001 01 11		22 32.40	−10 57.9	2.895	2.306	44.9	17.5	13.5	19.0
2001 01 21		22 50.20	−08 32.9	2.978	2.308	39.7	15.8	13.5	19.0
2001 01 31		23 08.14	−06 05.2	3.055	2.312	34.5	14.0	13.6	19.0

C/1999 N4 (LINEAR)

Date TT		α_{2000}	δ_{2000}	Δ	r	Elements <i>MPC</i> 36212			
						ϵ	ϕ	m_1	m_2
2000 01 27		18 18.35	−03 39.4	6.327	5.567	36.6	6.1	17.5	
2000 02 06		18 19.81	−03 12.8	6.208	5.556	45.1	7.2	17.4	
2000 02 16		18 20.55	−02 41.0	6.068	5.546	54.0	8.3	17.4	
2000 02 26		18 20.42	−02 04.3	5.910	5.537	63.3	9.2	17.3	
2000 03 07		18 19.22	−01 23.0	5.738	5.528	72.9	9.9	17.2	
2000 03 17		18 16.78	−00 37.4	5.557	5.521	82.8	10.3	17.1	
2000 03 27		18 12.92	+00 11.6	5.374	5.515	92.8	10.4	17.1	
2000 04 06		18 07.49	+01 03.2	5.195	5.509	103.1	10.2	17.0	
2000 04 16		18 00.39	+01 55.9	5.027	5.505	113.5	9.6	16.9	
2000 04 26		17 51.59	+02 48.0	4.877	5.501	123.9	8.7	16.8	
2000 05 06		17 41.16	+03 37.4	4.751	5.499	133.9	7.6	16.8	
2000 05 16		17 29.31	+04 21.5	4.657	5.498	142.9	6.4	16.7	
2000 05 26		17 16.38	+04 58.0	4.600	5.497	149.5	5.4	16.7	
2000 06 05		17 02.84	+05 24.8	4.581	5.498	151.9	5.0	16.7	
2000 06 15		16 49.25	+05 40.3	4.604	5.499	149.0	5.5	16.7	
2000 06 25		16 36.15	+05 44.4	4.665	5.501	142.0	6.5	16.7	
2000 07 05		16 24.02	+05 37.5	4.762	5.505	132.9	7.8	16.8	
2000 07 15		16 13.22	+05 21.0	4.889	5.509	123.0	8.9	16.9	
2000 07 25		16 03.98	+04 56.7	5.041	5.515	112.8	9.8	16.9	
2000 08 04		15 56.37	+04 26.5	5.209	5.521	102.6	10.3	17.0	
2000 08 14		15 50.39	+03 52.4	5.388	5.528	92.6	10.5	17.1	
2000 08 24		15 45.94	+03 15.9	5.571	5.536	82.8	10.4	17.2	
2000 09 03		15 42.89	+02 38.5	5.752	5.546	73.2	10.0	17.2	
2000 09 13		15 41.10	+02 01.3	5.924	5.556	63.9	9.4	17.3	
2000 09 23		15 40.37	+01 25.4	6.083	5.567	54.9	8.5	17.4	
2000 10 03		15 40.57	+00 51.4	6.226	5.579	46.1	7.4	17.4	
2000 10 13		15 41.51	+00 20.1	6.347	5.592	37.7	6.3	17.5	
2000 10 23		15 43.04	−00 07.9	6.445	5.606	30.0	5.1	17.5	

61P/Shajn-Schaldach

Date TT		α_{2000}	δ_{2000}	Δ	r	Elements <i>MPC</i> 31664			
						ϵ	ϕ	m_1	m_2
2000 02 06		19 05.63	−17 53.9	4.435	3.627	31.2	8.1		22.1
2000 02 16		19 18.43	−17 28.9	4.316	3.591	38.1	9.8		22.1
2000 02 26		19 30.88	−16 59.8	4.183	3.555	45.1	11.4		22.1
2000 03 07		19 42.88	−16 27.1	4.038	3.519	52.2	12.9		22.0
2000 03 17		19 54.32	−15 51.6	3.883	3.482	59.3	14.2		22.0
2000 03 27		20 05.08	−15 14.1	3.719	3.445	66.5	15.4		21.9
2000 04 06		20 15.05	−14 35.5	3.548	3.408	73.9	16.4		21.8
2000 04 16		20 24.07	−13 57.0	3.372	3.371	81.4	17.1		21.7
2000 04 26		20 32.02	−13 19.8	3.195	3.334	89.1	17.6		21.6
2000 05 06		20 38.71	−12 45.2	3.018	3.297	97.0	17.7	21.4	21.4
2000 05 16		20 43.96	−12 14.9	2.844	3.260	105.3	17.4	21.1	21.3
2000 05 26		20 47.60	−11 50.4	2.677	3.223	113.9	16.7	20.8	21.1
2000 06 05		20 49.46	−11 33.4	2.519	3.185	122.9	15.5	20.6	20.9
2000 06 15		20 49.37	−11 25.5	2.374	3.148	132.3	13.8	20.3	20.7
2000 06 25		20 47.30	−11 27.9	2.245	3.111	142.2	11.5	20.1	20.4
2000 07 05		20 43.29	−11 41.3	2.136	3.074	152.5	8.8	19.8	20.2
2000 07 15		20 37.61	−12 05.4	2.051	3.037	163.0	5.6	19.6	19.9
2000 07 25		20 30.72	−12 38.9	1.991	3.001	172.4	2.6	19.4	19.7
2000 08 04		20 23.30	−13 19.0	1.958	2.965	170.9	3.1	19.3	19.6
2000 08 14		20 16.17	−14 02.6	1.953	2.929	160.8	6.5	19.1	19.8

2000 08 24	20 10.14	−14 46.1	1.973	2.893	149.9	10.1	19.0	19.9
2000 09 03	20 05.88	−15 26.4	2.016	2.858	139.3	13.3	18.9	20.1
2000 09 13	20 03.89	−16 01.1	2.078	2.823	129.1	16.1	18.9	20.2
2000 09 23	20 04.38	−16 28.5	2.155	2.789	119.4	18.3	18.8	20.3
2000 10 03	20 07.40	−16 47.5	2.244	2.755	110.3	19.9	18.8	20.5
2000 10 13	20 12.84	−16 57.3	2.339	2.722	101.7	21.0	18.7	20.6
2000 10 23	20 20.49	−16 57.5	2.439	2.690	93.5	21.7	18.7	20.6
2000 11 02	20 30.14	−16 47.7	2.540	2.659	85.8	21.9	18.6	20.7
2000 11 12	20 41.52	−16 27.6	2.640	2.628	78.5	21.7	18.6	20.8
2000 11 22	20 54.38	−15 57.2	2.737	2.599	71.6	21.1	18.6	20.8
2000 12 02	21 08.50	−15 16.4	2.829	2.571	64.9	20.3	18.5	20.8
2000 12 12	21 23.67	−14 25.5	2.916	2.544	58.5	19.3	18.5	20.8
2000 12 22	21 39.70	−13 24.7	2.995	2.518	52.3	18.0	18.4	20.8
2001 01 01	21 56.44	−12 14.7	3.068	2.493	46.4	16.6	18.4	20.8
2001 01 11	22 13.76	−10 56.0	3.132	2.470	40.6	15.0	18.3	20.8
2001 01 21	22 31.53	−09 29.4	3.188	2.448	35.0	13.3	18.2	20.7

C/1999 K5 (LINEAR)

Date TT		α_{2000}	δ_{2000}	Δ	r	Elements <i>MPC</i> 36653			
						ϵ	ϕ	m_1	m_2
2000 02 06		20 02.97	−43 29.5	4.351	3.550	31.7	8.4	14.7	
2000 02 16		20 17.96	−44 54.7	4.234	3.513	38.4	10.0	14.6	
2000 02 26		20 33.75	−46 28.7	4.103	3.479	45.3	11.7	14.5	
2000 03 07		20 50.43	−48 13.4	3.962	3.447	52.4	13.2	14.4	
2000 03 17		21 08.14	−50 10.5	3.814	3.417	59.4	14.5	14.2	
2000 03 27		21 27.13	−52 21.6	3.664	3.390	66.4	15.7	14.1	
2000 04 06		21 47.76	−54 47.8	3.515	3.365	73.2	16.5	14.0	
2000 04 16		22 10.52	−57 29.4	3.372	3.342	79.7	17.2	13.9	
2000 04 26		22 36.20	−60 25.2	3.241	3.322	85.8	17.6	13.8	
2000 05 06		23 05.93	−63 31.6	3.125	3.304	91.2	17.8	13.7	
2000 05 16		23 41.32	−66 42.1	3.029	3.289	95.8	17.8	13.6	
2000 05 26		00 24.58	−69 45.5	2.956	3.277	99.4	17.8	13.5	
2000 06 05		01 18.1	−72 26.5	2.908	3.267	101.6	17.7	13.5	
2000 06 15		02 22.8	−74 26.1	2.886	3.261	102.5	17.7	13.4	
2000 06 25		03 35.3	−75 28.3	2.889	3.257	102.0	17.8	13.4	
2000 07 05		04 47.1	−75 31.0	2.914	3.255	100.4	17.9	13.4	
2000 07 15		05 49.9	−74 48.7	2.958	3.257	97.9	18.0	13.5	
2000 07 25		06 40.5	−73 43.6	3.017	3.261	94.7	18.1	13.5	
2000 08 04		07 20.2	−72 34.7	3.085	3.268	91.2	18.1	13.6	
2000 08 14		07 51.2	−71 34.1	3.159	3.278	87.7	18.0	13.7	
2000 08 24		08 15.5	−70 48.5	3.235	3.291	84.3	17.8	13.7	
2000 09 03		08 34.5	−70 21.2	3.308	3.306	81.1	17.5	13.8	
2000 09 13		08 49.1	−70 12.9	3.377	3.324	78.4	17.2	13.9	
2000 09 23		08 59.6	−70 22.8	3.438	3.345	76.2	16.9	13.9	
2000 10 03		09 06.1	−70 49.6	3.491	3.368	74.7	16.7	14.0	
2000 10 13		09 08.0	−71 30.4	3.533	3.393	73.8	16.4	14.0	
2000 10 23		09 04.8	−72 21.5	3.566	3.421	73.6	16.2	14.1	
2000 11 02		08 55.2	−73 17.5	3.589	3.451	74.0	16.0	14.2	
2000 11 12		08 38.2	−74 10.3	3.604	3.483	75.1	15.9	14.2	
2000 11 22		08 12.8	−74 49.0	3.611	3.518	76.7	15.9	14.3	
2000 12 02		07 39.9	−75 00.1	3.613	3.554	78.7	15.8	14.3	
2000 12 12		07 02.8	−74 30.4	3.613	3.592	80.9	15.7	14.3	
2000 12 22		06 26.9	−73 12.5	3.614	3.633	83.3	15.6	14.4	
2001 01 01		05 56.8	−71 06.6	3.619	3.675	85.5	15.5	14.4	

2001 01 11	05 34.46	−68 19.8	3.631	3.718	87.4	15.3	14.5
2001 01 21	05 19.45	−65 01.6	3.653	3.764	88.8	15.2	14.6
2001 01 31	05 10.58	−61 21.5	3.688	3.811	89.6	15.0	14.6

C/1999 T2 (LINEAR)				Elements <i>MPC</i> 36653					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 02 16		22 22.75	+26 19.0	4.785	4.071	39.5	8.9	15.5	
2000 02 26		22 26.62	+27 24.2	4.763	4.011	36.5	8.4	15.4	
2000 03 07		22 30.59	+28 42.8	4.719	3.952	35.3	8.4	15.3	
2000 03 17		22 34.46	+30 14.8	4.653	3.893	36.1	8.7	15.2	
2000 03 27		22 38.05	+32 00.5	4.565	3.836	38.6	9.3	15.1	
2000 04 06		22 41.15	+34 00.3	4.458	3.780	42.4	10.3	15.0	
2000 04 16		22 43.51	+36 14.6	4.334	3.725	47.2	11.4	14.9	
2000 04 26		22 44.81	+38 43.7	4.195	3.671	52.6	12.6	14.8	
2000 05 06		22 44.64	+41 28.0	4.045	3.619	58.4	13.7	14.6	
2000 05 16		22 42.45	+44 27.4	3.888	3.569	64.4	14.8	14.5	
2000 05 26		22 37.49	+47 40.6	3.727	3.520	70.4	15.7	14.3	
2000 06 05		22 28.69	+51 05.0	3.569	3.473	76.3	16.5	14.2	
2000 06 15		22 14.57	+54 34.5	3.419	3.427	82.0	17.1	14.0	
2000 06 25		21 53.19	+57 58.0	3.281	3.384	87.0	17.5	13.9	
2000 07 05		21 22.43	+60 57.4	3.161	3.343	91.3	17.7	13.7	
2000 07 15		20 41.23	+63 05.9	3.065	3.303	94.5	17.9	13.6	
2000 07 25		19 51.90	+63 54.5	2.995	3.267	96.3	18.0	13.5	
2000 08 04		19 01.26	+63 05.5	2.955	3.232	96.5	18.2	13.4	
2000 08 14		18 17.05	+60 45.9	2.945	3.200	95.2	18.4	13.4	
2000 08 24		17 43.09	+57 22.4	2.963	3.171	92.4	18.6	13.4	
2000 09 03		17 19.12	+53 24.7	3.006	3.144	88.4	18.7	13.4	
2000 09 13		17 03.17	+49 17.2	3.068	3.120	83.6	18.7	13.4	
2000 09 23		16 53.15	+45 16.2	3.144	3.099	78.2	18.5	13.4	
2000 10 03		16 47.43	+41 31.3	3.227	3.081	72.7	18.1	13.4	
2000 10 13		16 44.79	+38 07.8	3.311	3.066	67.2	17.5	13.5	
2000 10 23		16 44.35	+35 08.0	3.392	3.054	62.0	16.7	13.5	
2000 11 02		16 45.49	+32 32.4	3.464	3.045	57.4	15.9	13.5	
2000 11 12		16 47.70	+30 20.8	3.522	3.040	53.5	15.2	13.6	
2000 11 22		16 50.59	+28 32.3	3.564	3.037	50.8	14.6	13.6	
2000 12 02		16 53.86	+27 06.2	3.587	3.038	49.3	14.2	13.6	
2000 12 12		16 57.19	+26 01.7	3.590	3.042	49.4	14.2	13.6	
2000 12 22		17 00.32	+25 17.8	3.571	3.049	51.0	14.5	13.6	
2001 01 01		17 02.95	+24 54.2	3.531	3.060	54.1	15.1	13.6	
2001 01 11		17 04.79	+24 50.4	3.470	3.073	58.5	15.8	13.6	
2001 01 21		17 05.50	+25 05.8	3.391	3.090	64.0	16.6	13.6	
2001 01 31		17 04.69	+25 40.0	3.295	3.109	70.6	17.4	13.5	

9P/Tempel 1						Elements MPC 29881			
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 02 16		19 51.41	−24 17.4	2.319	1.565	31.5	19.3	12.2	18.3
2000 02 26		20 22.81	−23 29.6	2.311	1.596	34.5	20.5	12.4	18.3
2000 03 07		20 52.69	−22 25.3	2.302	1.632	37.6	21.8	12.6	18.4
2000 03 17		21 20.90	−21 08.9	2.291	1.672	41.0	23.0	12.9	18.5
2000 03 27		21 47.38	−19 44.6	2.278	1.716	44.6	24.1	13.2	18.6
2000 04 06		22 12.12	−18 16.5	2.261	1.763	48.4	25.1	13.4	18.7
2000 04 16		22 35.13	−16 48.2	2.239	1.814	52.6	26.1	13.7	18.7
2000 04 26		22 56.44	−15 22.8	2.213	1.866	57.0	26.9	14.0	18.8
2000 05 06		23 16.08	−14 03.2	2.180	1.921	61.7	27.6	14.3	18.8

2000 05 16	23 34.00	−12 51.8	2.142	1.976	66.8	28.1	14.5	18.9	
2000 05 26	23 50.20	−11 50.8	2.097	2.033	72.3	28.3	14.8	18.9	
2000 06 05	00 04.59	−11 02.1	2.047	2.091	78.2	28.4	15.1	18.9	
2000 06 15	00 17.04	−10 27.5	1.992	2.150	84.6	28.1	15.3	18.9	
2000 06 25	00 27.41	−10 08.3	1.934	2.209	91.5	27.4	15.5	18.9	
2000 07 05	00 35.47	−10 05.8	1.875	2.268	99.0	26.3	15.8	18.8	
2000 07 15	00 41.00	−10 20.5	1.816	2.327	107.1	24.7	16.0	18.8	
2000 07 25	00 43.78	−10 52.1	1.762	2.386	115.8	22.5	16.2	18.7	
2000 08 04	00 43.62	−11 39.4	1.715	2.445	125.2	19.8	16.4	18.6	
2000 08 14	00 40.50	−12 38.7	1.682	2.503	135.1	16.6	16.6	18.5	
2000 08 24	00 34.59	−13 44.8	1.665	2.561	145.3	13.0	16.8	18.4	
2000 09 03	00 26.38	−14 50.5	1.669	2.619	155.1	9.3	17.1	18.3	
2000 09 13	00 16.70	−15 47.7	1.699	2.676	162.5	6.5	17.3	18.3	
2000 09 23	00 06.59	−16 29.5	1.755	2.732	163.3	6.0	17.6	18.4	
2000 10 03	23 57.10	−16 51.7	1.839	2.788	156.9	8.1	18.0	18.6	
2000 10 13	23 49.15	−16 52.8	1.949	2.843	147.7	10.8	18.3	18.9	
2000 10 23	23 43.29	−16 34.4	2.082	2.897	137.8	13.3	18.6	19.2	
2000 11 02	23 39.79	−15 59.2	2.235	2.950	127.9	15.4	19.0	19.4	
2000 11 12	23 38.65	−15 10.3	2.403	3.003	118.4	16.8	19.3	19.7	
2000 11 22	23 39.68	−14 10.8	2.583	3.055	109.3	17.8	19.7	19.9	
2000 12 02	23 42.64	−13 03.2	2.771	3.106	100.5	18.2	20.0	20.1	
2000 12 12	23 47.26	−11 49.6	2.964	3.156	92.1	18.2		20.3	
2000 12 22	23 53.26	−10 31.6	3.158	3.206	83.9	17.8		20.5	
2001 01 01	00 00.40	−09 10.3	3.351	3.255	75.9	17.0		20.6	
2001 01 11	00 08.48	−07 46.9	3.538	3.302	68.2	16.1		20.7	
2001 01 21	00 17.31	−06 22.3	3.719	3.349	60.7	14.8		20.8	
2001 01 31	00 26.75	−04 57.2	3.891	3.396	53.3	13.5		20.9	
2001 02 10	00 36.66	−03 32.3	4.051	3.441	46.1	11.9		20.9	
2001 02 20	00 46.93	−02 08.2	4.197	3.485	39.0	10.3		21.0	
2001 03 02	00 57.48	−00 45.4	4.330	3.529	32.0	8.6		21.0	

14P/Wolf				Elements MPC 29882					
Date	TT	α_{2000}	δ_{2000}	Δ	r	ϵ	ϕ	m_1	m_2
2000 02 16	19	56.55	+01 14.7	3.831	3.046	32.6	10.1		22.0
2000 02 26	20	11.85	+02 24.4	3.738	3.010	37.2	11.5		22.0
2000 03 07	20	26.94	+03 42.5	3.636	2.974	42.0	12.9		21.9
2000 03 17	20	41.76	+05 08.3	3.526	2.938	46.9	14.3		21.9
2000 03 27	20	56.23	+06 40.9	3.409	2.903	52.0	15.7		21.8
2000 04 06	21	10.29	+08 19.5	3.286	2.869	57.1	17.0		21.8
2000 04 16	21	23.84	+10 03.0	3.158	2.836	62.4	18.3	21.6	21.7
2000 04 26	21	36.81	+11 50.2	3.027	2.803	67.6	19.4	21.3	21.6
2000 05 06	21	49.10	+13 39.8	2.892	2.771	73.0	20.4	21.1	21.5
2000 05 16	22	00.58	+15 30.3	2.755	2.739	78.5	21.2	20.8	21.4
2000 05 26	22	11.14	+17 20.0	2.618	2.709	84.1	21.8	20.6	21.3
2000 06 05	22	20.61	+19 06.7	2.482	2.680	89.9	22.2	20.3	21.2
2000 06 15	22	28.80	+20 47.9	2.347	2.652	95.9	22.4	20.1	21.0
2000 06 25	22	35.52	+22 20.6	2.215	2.625	102.2	22.2	19.8	20.9
2000 07 05	22	40.55	+23 41.1	2.088	2.599	108.7	21.8	19.5	20.7
2000 07 15	22	43.68	+24 44.7	1.968	2.575	115.5	20.9	19.3	20.6
2000 07 25	22	44.81	+25 26.3	1.857	2.552	122.6	19.6	19.1	20.4
2000 08 04	22	43.88	+25 40.0	1.757	2.530	129.9	17.9	18.8	20.2
2000 08 14	22	41.12	+25 19.7	1.671	2.510	137.2	15.9	18.6	20.0
2000 08 24	22	36.98	+24 21.5	1.602	2.492	144.1	13.8	18.4	19.8

2000 09 03	22 32.15	+22 43.9	1.553	2.476	149.5	11.9	18.3	19.6
2000 09 13	22 27.56	+20 30.3	1.527	2.461	151.9	11.1	18.2	19.6
2000 09 23	22 24.09	+17 49.5	1.526	2.448	150.3	11.7	18.1	19.6
2000 10 03	22 22.48	+14 53.8	1.548	2.437	145.1	13.6	18.1	19.7
2000 10 13	22 23.22	+11 57.1	1.595	2.428	137.8	16.0	18.1	19.8
2000 10 23	22 26.47	+09 11.4	1.662	2.421	129.7	18.4	18.1	20.0
2000 11 02	22 32.20	+06 45.3	1.748	2.416	121.2	20.6	18.2	20.1
2000 11 12	22 40.19	+04 43.8	1.849	2.413	112.9	22.2	18.3	20.3
2000 11 22	22 50.15	+03 08.6	1.962	2.413	104.9	23.3	18.4	20.5
2000 12 02	23 01.79	+01 59.0	2.083	2.414	97.2	23.9	18.6	20.6
2000 12 12	23 14.82	+01 13.3	2.210	2.417	89.8	24.0	18.7	20.8
2000 12 22	23 28.95	+00 48.7	2.341	2.422	82.8	23.8	18.9	20.9
2001 01 01	23 43.99	+00 42.3	2.473	2.430	76.0	23.1	19.0	21.0
2001 01 11	23 59.74	+00 51.2	2.604	2.439	69.5	22.2	19.2	21.1
2001 01 21	00 16.04	+01 12.5	2.732	2.450	63.2	21.0	19.4	21.2
2001 01 31	00 32.79	+01 43.6	2.857	2.464	57.1	19.6	19.5	21.2
2001 02 10	00 49.88	+02 22.0	2.976	2.479	51.1	18.1	19.7	21.3
2001 02 20	01 07.24	+03 05.5	3.088	2.496	45.4	16.4	19.9	21.3
2001 03 02	01 24.82	+03 51.9	3.194	2.514	39.8	14.6	20.0	21.3
2001 03 12	01 42.56	+04 39.4	3.291	2.534	34.4	12.8	20.2	21.4

OPPOSITION DATA

Planet	Opposition	α_{2000}	δ_{2000}	V	$\dot{\alpha}$	$\dot{\delta}$	ϕ_{MIN}	MPC
1998 RY ₆₂	1999 12 24.0	06 07.56	+36 37.8	18.2	-1.03	+ 0.8	4.3/23.8	37755
1997 GD ₂₄	1999 12 24.0	06 07.63	+12 40.0	18.4	-1.04	- 0.5	4.3/24.0	38043
(12624)	1999 12 24.0	06 07.69	+17 52.5	17.4	-1.14	+ 1.8	2.3/24.2	36776
1998 SF ₁₃	1999 12 24.0	06 07.70	+20 43.4	17.7	-0.87	+ 1.5	0.8/24.1	38061
1998 QO ₇₃	1999 12 24.0	06 07.72	+03 59.3	19.0	-0.94	- 1.0	6.1/24.1	38058
1991 RG ₄	1999 12 24.0	06 07.88	+23 45.6	18.7	-1.16	- 0.4	0.1/24.1	38024
1988 TR ₂	1999 12 24.0	06 07.98	+48 00.0	16.2	-1.23	+ 3.1	10.3/23.2	38021
1998 MJ ₃₇	1999 12 24.0	06 08.01	+15 01.1	17.8	-1.02	+ 5.0	2.9/24.6	37697
(12661)	1999 12 24.1	06 08.03	+17 41.1	17.5	-1.14	+ 1.9	2.4/24.3	37028
1997 GJ ₂₂	1999 12 24.1	06 08.12	+17 09.6	19.1	-1.04	- 1.0	2.3/24.1	38043
(13261)	1999 12 24.1	06 08.23	+16 44.8	17.6	-1.02	0.0	2.3/24.2	37557
1998 QV ₆₉	1999 12 24.1	06 08.39	+23 02.6	18.3	-0.96	- 2.1	0.1/24.2	37731
1997 GP ₂₃	1999 12 24.1	06 08.44	+30 47.6	18.9	-1.05	+ 0.5	2.3/24.1	37274
(12264)	1999 12 24.2	06 08.38	+25 51.9	16.8	-1.21	- 1.9	1.0/24.2	36677
1999 XH ₁	1999 12 24.2	06 08.38	+26 52.3	16.6	-0.98	+ 3.2	1.1/24.0	38129
1998 QF ₈₅	1999 12 24.2	06 08.46	+33 48.6	17.2	-1.22	- 4.5	3.9/24.6	38058
1994 CD ₁₈	1999 12 24.2	06 08.75	+39 16.1	16.8	-1.42	- 1.1	7.7/24.5	38031
1992 WZ	1999 12 24.2	06 08.75	+29 40.8	16.0	-1.22	+ 3.6	3.0/24.0	38028
(12551)	1999 12 24.2	06 08.84	+32 04.9	16.7	-1.20	+ 0.5	3.2/24.2	36755
1998 SE ₇	1999 12 24.3	06 08.89	+22 46.8	20.3	-1.12	+ 0.2	0.2/24.3	35716
(12006)	1999 12 24.3	06 08.93	+14 48.9	18.2	-0.69	- 1.0	2.0/24.3	36274
1998 XA ₇	1999 12 24.3	06 08.96	+21 34.7	19.4	-0.58	+ 0.2	0.4/24.4	38067
1998 QZ ₄₃	1999 12 24.4	06 09.36	+22 27.6	17.6	-0.97	+ 1.4	0.3/24.4	37722
1998 JZ ₁	1999 12 24.4	06 09.70	+30 27.0	18.8	-1.31	+ 1.3	2.5/24.3	38051
1998 RF ₆	1999 12 24.4	06 09.71	+13 56.1	18.1	-0.95	+ 0.9	3.4/24.7	37745
1998 RT ₅₀	1999 12 24.4	06 09.82	+35 50.9	17.6	-1.27	- 0.2	4.5/24.4	38059
1991 TK	1999 12 24.5	06 09.79	+21 01.3	16.6	-1.11	+ 2.8	1.0/24.6	38025
1998 SZ ₅₄	1999 12 24.5	06 09.98	+25 22.4	18.6	-0.92	+ 0.4	0.6/24.5	38062
(13369)	1999 12 24.5	06 10.02	+25 00.7	18.2	-0.89	+ 0.3	0.4/24.5	37587

1998 VD ₃₀	1999 12 24.5	06 10.20	-00 14.4	17.0	-0.58	- 2.0	4.8/24.3	38066
6020 P-L	1999 12 24.6	06 10.31	+21 46.6	18.5	-0.55	+ 0.1	0.3/24.7	38191
1987 VG	1999 12 24.6	06 10.34	+32 12.6	17.0	-1.21	- 0.7	3.8/24.6	38020
6105 P-L	1999 12 24.7	06 10.61	+06 01.8	18.7	-0.90	- 0.6	5.9/24.9	33383
1998 RB ₈₀	1999 12 24.7	06 10.68	+22 51.4	17.0	-1.01	+ 2.1	0.2/24.7	38061
1991 VN ₉	1999 12 24.7	06 10.76	+14 03.8	19.3	-1.05	- 0.5	3.6/24.8	29915
1999 XN ₈₇	1999 12 24.7	06 10.77	+24 39.2	16.8	-1.03	+ 8.4	0.5/24.6	38149
1993 GB	1999 12 24.7	06 10.77	+38 22.5	17.1	-1.32	+ 2.3	5.9/24.1	38029
1992 VN	1999 12 24.7	06 10.78	+20 02.3	15.9	-1.16	- 5.0	1.6/24.6	38027
6586 P-L	1999 12 24.7	06 10.81	+05 43.5	19.1	-0.96	+ 1.2	6.0/25.3	32537
1993 TZ ₁₅	1999 12 24.7	06 10.85	+21 50.6	19.5	-0.93	+ 0.4	0.5/24.8	35688
1995 VN	1999 12 24.7	06 10.85	+19 31.7	17.6	-1.11	+ 0.6	1.7/24.8	38035
1999 XX ₉₁	1999 12 24.7	06 10.86	+23 53.3	18.0	-1.06	+ 3.9	0.2/24.7	37920
1998 QG ₄₀	1999 12 24.8	06 11.19	+11 30.7	19.3	-0.97	+ 0.6	3.8/25.1	35711
1998 QM ₁₀₃	1999 12 24.8	06 11.25	+23 29.7	17.8	-0.96	+ 1.2	0.0/24.8	38058
3477 T-3	1999 12 24.8	06 11.32	+27 48.2	18.6	-0.96	+ 1.0	1.4/24.7	36125
1998 QP ₈₈	1999 12 24.8	06 11.42	+11 02.5	18.5	-0.86	- 0.7	3.7/25.0	38058
1992 PB ₂	1999 12 24.8	06 11.50	+20 10.5	17.9	-0.88	- 0.9	1.0/24.9	38027
1999 XF ₁₅₈	1999 12 24.9	06 11.66	+18 26.6	16.7	-1.15	- 2.8	2.3/24.9	37960
1999 YN	1999 12 24.9	06 11.71	-03 36.4	15.6	-1.05	+26.2	14.4/02.1	38169
1998 RU ₈	1999 12 24.9	06 11.83	+07 04.7	17.4	-0.91	+ 2.0	6.7/25.5	33350
1998 OW	1999 12 24.9	06 11.86	+23 00.2	17.8	-1.06	- 3.4	0.2/25.0	37698
1998 RJ ₄₅	1999 12 24.9	06 11.90	+24 17.3	17.6	-0.93	- 0.3	0.3/25.0	37749
2000 AM ₁₀₆	1999 12 24.9	06 11.93	+14 26.5	17.1	-1.05	- 5.2	3.5/24.6	37998
1998 QF ₂₆	1999 12 25.0	06 12.05	+19 54.3	18.3	-1.10	+ 0.6	1.2/25.1	38055
2768 P-L	1999 12 25.0	06 12.18	+21 03.4	18.5	-1.02	+ 1.0	0.8/25.1	38190
1998 QF ₉₆	1999 12 25.0	06 12.22	+17 08.8	18.3	-1.10	- 1.1	2.3/25.1	38058
1998 MZ ₃₇	1999 12 25.0	06 12.40	+21 22.2	18.0	-1.13	+ 2.9	0.8/25.2	38053
1996 DE ₁	1999 12 25.1	06 12.44	+18 28.6	17.2	-0.98	+ 0.9	2.1/25.2	38037
(13279)	1999 12 25.1	06 12.52	+30 17.5	17.9	-1.24	+ 1.6	2.7/24.9	37561
1995 YZ ₂	1999 12 25.1	06 12.78	+37 17.9	17.2	-1.48	-10.8	5.8/26.3	37653
1999 XJ ₁₅₉	1999 12 25.1	06 12.80	+18 33.4	16.7	-1.14	+ 4.6	2.2/25.5	38162
1996 EE ₈	1999 12 25.2	06 12.89	+39 35.8	19.8	-1.10	- 0.1	5.0/25.0	35695
1998 RJ ₄₈	1999 12 25.2	06 12.94	+40 06.1	17.6	-1.19	- 0.8	6.0/25.1	37751
(12190)	1999 12 25.2	06 13.01	+09 56.4	16.9	-0.99	- 0.8	5.1/25.4	36657
1999 XR ₁₇₀	1999 12 25.2	06 13.04	+28 26.5	17.8	-0.65	- 1.8	1.0/25.3	37969
1998 MS ₂₈	1999 12 25.2	06 13.09	+20 48.5	17.5	-1.05	- 3.1	0.9/25.2	38053
(13130)	1999 12 25.2	06 13.23	+11 32.5	17.6	-1.02	+ 0.6	4.1/25.5	37521
(13051)	1999 12 25.2	06 13.35	+17 05.0	18.1	-1.02	+ 1.3	2.4/25.5	37500
4303 T-3	1999 12 25.3	06 13.36	+34 45.9	18.0	-1.04	+ 2.6	4.1/24.8	38194
(11251)	1999 12 25.3	06 13.36	+22 35.8	18.6	-0.59	+ 0.6	0.2/25.3	35554
1997 GL	1999 12 25.3	06 13.36	+22 30.5	19.6	-1.05	+ 0.4	0.3/25.3	35699
(13118)	1999 12 25.3	06 13.45	+29 23.6	17.2	-0.99	+ 2.9	1.8/25.0	37518
1998 SW ₁	1999 12 25.3	06 13.49	+35 27.7	16.5	-1.06	+ 2.8	4.1/24.8	38061
1988 RF ₄	1999 12 25.3	06 13.71	+30 38.4	18.1	-1.27	- 0.5	2.8/25.3	38020
1993 QP ₃	1999 12 25.4	06 13.81	+20 16.5	17.7	-0.94	+ 0.4	1.1/25.5	38029
1998 QX	1999 12 25.4	06 13.82	-26 05.9	20.3	-0.94	+ 3.3	14.4/31.1	34301
1997 ER ₂	1999 12 25.4	06 13.84	+28 20.1	16.4	-1.19	+ 2.4	2.2/25.2	38041
1998 QG ₂₁	1999 12 25.4	06 13.85	+23 14.5	18.6	-0.95	+ 0.3	0.1/25.4	38055
2802 P-L	1999 12 25.4	06 13.90	+47 51.4	18.3	-1.30	+ 1.4	11.5/24.9	38004
1999 XB ₁₀₀	1999 12 25.4	06 14.01	+24 00.2	16.8	-1.18	- 1.7	0.3/25.5	37929

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1993 FY ₅₅	1999 12 25.5	06 14.25 +28 25.6 19.8	-1.08 + 1.3	1.6/25.4	33071	1966 PP	1999 12 26.4	06 18.20 +26 05.7 17.0	-1.05 + 1.1	0.9/26.3	37616
1999 XS ₈₂	1999 12 25.5	06 14.26 +22 42.2 16.4	-1.11 + 8.0	0.3/25.6	38148	(13055)	1999 12 26.4	06 18.23 +42 51.2 16.9	-1.27 + 4.1	8.2/25.2	37501
4079 T-2	1999 12 25.5	06 14.39 +31 05.2 18.4	-1.13 + 0.6	2.7/25.4	38007	1998 RC ₁	1999 12 26.4	06 18.27 +10 19.9 18.0	-0.86 - 0.3	4.0/26.7	37744
1998 KX ₆	1999 12 25.5	06 14.51 +20 16.1 17.8	-1.19 + 1.6	1.3/25.7	38051	1998 QW	1999 12 26.4	06 18.39 +03 56.3 17.7	-0.96 - 1.4	6.6/26.7	38054
1994 PH ₉	1999 12 25.6	06 14.71 +21 30.7 18.6	-1.06 + 0.3	0.7/25.7	32457	1999 XP ₁₉₄	1999 12 26.4	06 18.40 +31 21.8 18.3	-0.64 + 0.5	1.6/26.2	37977
1997 EE	1999 12 25.6	06 14.73 +29 20.1 17.0	-1.21 + 2.3	2.9/25.4	37663	1988 DE	1999 12 26.4	06 18.40 +44 41.1 16.7	-1.35 - 0.4	8.3/26.0	38020
(13008)	1999 12 25.6	06 14.78 +28 41.4 17.0	-1.22 + 0.3	2.0/25.5	37489	(9862)	1999 12 26.4	06 18.42 +28 47.9 17.7	-1.19 + 1.7	1.9/26.3	38016
1994 SF ₅	1999 12 25.6	06 14.88 +01 15.8 20.2	-0.94 + 0.4	7.6/26.3	33244	(13309)	1999 12 26.4	06 18.44 +36 25.2 17.4	-1.08 - 0.6	4.4/26.3	37570
1998 RM ₅₈	1999 12 25.6	06 14.91 +25 51.0 18.0	-0.99 + 0.2	0.8/25.6	38060	(13045)	1999 12 26.4	06 18.52 +24 21.0 17.2	-1.07 + 0.3	0.4/26.4	37499
1997 TZ ₂₇	1999 12 25.6	06 14.95 +29 43.2 18.3	-0.64 + 0.8	1.3/25.5	37674	1999 XQ ₁₅₉	1999 12 26.4	06 18.55 +20 14.1 17.1	-1.15 + 4.0	1.3/26.7	37961
(12901)	1999 12 25.6	06 15.02 +14 23.4 16.8	-0.90 + 1.6	3.3/26.0	37092	1979 MY ₇	1999 12 26.4	06 18.59 +25 28.7 19.7	-1.02 - 1.6	0.7/26.5	30779
(12273)	1999 12 25.6	06 15.03 +21 06.3 16.1	-1.04 + 4.6	0.9/25.8	36679	1999 XV ₈₂	1999 12 26.5	06 18.60 +21 07.4 16.5	-1.20 - 5.8	1.0/26.4	38148
1999 XO ₈₇	1999 12 25.6	06 15.07 +19 33.3 17.0	-1.17 - 2.5	1.6/25.7	37917	(12692)	1999 12 26.5	06 18.78 +26 23.6 16.6	-1.15 + 0.1	1.3/26.5	37035
1999 XP ₁₆₉	1999 12 25.6	06 15.09 +30 28.5 16.6	-1.05 + 2.2	3.5/25.4	37968	1998 RP ₈₀	1999 12 26.5	06 18.84 +11 11.2 17.7	-0.82 - 0.1	3.6/26.8	37764
(13039)	1999 12 25.6	06 15.10 +07 53.4 17.6	-0.79 + 0.5	4.2/26.1	37497	1981 EV ₃₅	1999 12 26.5	06 18.89 +46 56.9 19.4	-1.22 - 0.4	6.7/26.3	37256
1998 QU ₉₆	1999 12 25.7	06 15.13 +12 05.1 18.3	-0.95 - 1.4	3.6/25.8	35713	1998 RC ₅₁	1999 12 26.5	06 19.11 +27 30.5 18.3	-1.17 - 0.5	1.5/26.5	38059
1995 YF ₅	1999 12 25.7	06 15.22 +23 57.3 18.1	-1.15 + 1.8	0.2/25.7	37653	1991 LL ₂	1999 12 26.6	06 19.13 +21 05.5 18.6	-0.86 + 0.2	0.6/26.7	38024
(12896)	1999 12 25.7	06 15.35 +29 46.3 17.4	-0.85 + 1.1	1.8/25.6	37090	1999 VX ₅₂	1999 12 26.6	06 19.16 +18 41.2 16.4	-1.14 - 2.6	2.2/26.6	38115
1999 VZ ₅₂	1999 12 25.7	06 15.38 +28 53.7 16.0	-1.01 + 6.0	1.7/25.3	38115	1994 PV ₇	1999 12 26.6	06 19.17 +23 06.0 20.0	-1.07 + 0.8	0.1/26.6	31239
1998 QK ₈₆	1999 12 25.7	06 15.45 +16 58.9 17.8	-0.92 - 2.1	2.1/25.8	38058	1991 SB	1999 12 26.6	06 19.23 +19 35.5 16.1	-1.09 - 0.1	1.7/26.7	38025
1999 VF ₁₃	1999 12 25.7	06 15.47 +62 59.6 16.5	-2.13 +11.1	19.5/19.7	37829	1995 UE ₄	1999 12 26.6	06 19.26 +14 45.5 16.7	-1.07 - 2.0	3.8/26.7	37648
1997 BR ₃	1999 12 25.7	06 15.49 +52 48.5 19.2	-1.59 - 1.5	9.1/25.8	33076	1998 QQ ₃₁	1999 12 26.6	06 19.33 +35 22.2 17.7	-1.28 + 0.6	4.8/26.3	37716
(12181)	1999 12 25.8	06 15.67 +28 39.4 15.8	-1.04 + 3.6	2.5/25.6	36654	1998 SV ₅₆	1999 12 26.6	06 19.38 +22 13.4 18.1	-0.93 + 0.8	0.4/26.7	37771
1991 PU ₁₆	1999 12 25.8	06 15.73 +28 28.1 17.5	-1.19 + 0.7	2.0/25.7	38024	1998 TJ	1999 12 26.6	06 19.48 +33 47.3 16.6	-1.26 - 0.5	4.8/26.6	38021
1994 JU	1999 12 25.8	06 15.81 +14 14.1 18.6	-1.08 - 0.3	3.2/26.0	38031	1997 JZ ₇	1999 12 26.6	06 19.48 +06 03.7 17.9	-0.92 - 0.8	5.4/26.9	38044
1995 UC ₄	1999 12 25.9	06 16.01 +27 57.9 17.6	-1.17 + 1.2	2.1/25.8	37648	1995 XX ₄	1999 12 26.6	06 19.51 +16 05.7 19.1	-1.07 + 0.5	2.6/26.9	35694
1237 T-2	1999 12 25.9	06 16.03 +25 30.9 18.0	-0.97 + 0.3	0.7/25.9	38192	(13282)	1999 12 26.7	06 19.60 +13 15.7 17.0	-0.95 + 3.2	4.0/27.3	37562
(13060)	1999 12 25.9	06 16.10 +27 03.4 16.9	-0.66 - 2.3	0.7/26.0	37503	2135 T-3	1999 12 26.7	06 19.66 +14 43.0 18.6	-0.89 - 0.8	2.9/26.9	33060
1993 HB	1999 12 25.9	06 16.17 +21 47.6 16.8	-1.06 + 0.3	0.8/26.0	37635	(13166)	1999 12 26.7	06 19.81 +39 06.7 15.2	-1.30 + 4.4	6.7/25.6	37531
1999 XO ₁₅₉	1999 12 25.9	06 16.18 +16 39.3 17.0	-1.08 - 5.7	2.7/25.7	38162	1996 GM ₂₀	1999 12 26.7	06 19.86 +24 01.9 18.1	-0.90 + 0.6	0.2/26.8	38038
1998 RU ₁	1999 12 25.9	06 16.30 +36 36.5 18.6	-1.19 - 2.1	4.4/26.0	37744	(12757)	1999 12 26.7	06 19.93 +22 06.6 17.1	-0.95 + 0.3	0.4/26.8	37053
1998 QV ₇₄	1999 12 25.9	06 16.39 +07 34.5 18.0	-1.01 - 3.5	5.8/25.7	38058	1978 VQ ₈	1999 12 26.8	06 19.92 +17 42.5 17.4	-1.04 - 0.8	2.2/26.9	37618
1999 VB ₅₃	1999 12 26.0	06 16.51 +06 10.3 16.0	-1.44 -16.5	8.8/23.7	38115	1998 SY ₅₇	1999 12 26.8	06 19.95 +24 44.9 17.3	-0.97 + 1.3	0.4/26.8	38062
1997 CD ₄	1999 12 26.0	06 16.63 +19 44.1 17.3	-1.15 + 0.1	1.5/26.1	38041	1999 XK ₁₉₅	1999 12 26.8	06 19.98 +37 29.6 17.7	-1.06 + 1.7	4.8/26.2	37978
(13001)	1999 12 26.0	06 16.77 +29 55.4 16.7	-1.22 + 1.0	3.0/25.9	37487	1996 AP	1999 12 26.8	06 20.05 +17 15.4 16.4	-1.06 + 7.7	2.6/27.5	38037
1997 GM ₂₁	1999 12 26.0	06 16.79 +24 55.0 19.9	-0.99 + 0.4	0.5/26.0	32961	1997 JM ₁₄	1999 12 26.8	06 20.25 +16 11.7 17.8	-1.05 - 0.6	2.9/27.0	37671
1998 OV ₄	1999 12 26.0	06 16.81 +13 52.9 17.6	-0.97 + 2.4	3.4/26.5	37699	1997 EF ₄₆	1999 12 26.8	06 20.25 +24 10.9 17.6	-1.15 + 4.0	0.3/26.8	38042
(12402)	1999 12 26.0	06 16.85 +17 28.3 16.8	-1.16 + 3.1	2.7/26.4	36713	1999 VY ₂₅	1999 12 26.8	06 20.31 +23 58.7 17.3	-1.11 + 6.2	0.3/26.8	38106
(12868)	1999 12 26.0	06 16.86 +13 58.0 17.1	-0.92 - 2.4	2.9/26.1	37083	1995 YC ₅	1999 12 26.8	06 20.44 +23 43.7 18.7	-1.14 + 1.5	0.1/26.9	32750
1998 VF ₃₀	1999 12 26.1	06 16.90 +38 43.5 16.9	-0.77 + 3.3	3.2/25.2	37801	1998 TJ ₆	1999 12 26.9	06 20.36 +22 51.7 18.2	-0.85 + 0.8	0.1/26.9	37792
1998 QW ₃₈	1999 12 26.1	06 17.04 +27 11.5 19.1	-1.08 - 1.3	1.2/26.1	32703	(13066)	1999 12 26.9	06 20.92 +29 35.9 18.3	-1.21 + 0.4	2.2/26.8	37504
1997 AT ₂	1999 12 26.1	06 17.17 +31 35.5 17.3	-1.35 + 0.8	3.8/26.0	38040	1998 QW ₂₀	1999 12 27.0	06 20.94 +09 51.9 17.5	-0.92 + 2.4	5.5/27.7	37711
1998 RD ₄₀	1999 12 26.1	06 17.31 +23 05.9 18.8	-1.12 + 1.9	0.1/26.2	38059	4810 P-L	1999 12 27.0	06 20.94 +42 08.6 18.4	-1.12 + 0.5	6.7/26.4	38191
1997 CX	1999 12 26.2	06 17.26 +21 20.9 17.5	-1.20 + 2.6	0.9/26.3	38041	1997 AB ₁₅	1999 12 27.0	06 20.97 -02 36.7 20.3	-1.65 +20.8	12.2/31.4	29926
1998 RB ₅₈	1999 12 26.2	06 17.56 +19 38.8 19.3	-0.95 + 0.7	1.3/26.4	32999	1998 QU ₄₀	1999 12 27.0	06 20.97 +12 42.4 19.3	-0.98 + 0.8	3.5/27.4	32706
1999 XE ₁₀₀	1999 12 26.2	06 17.74 +26 17.2 16.3	-0.94 + 3.8	1.1/26.1	37929	1991 SE ₂	1999 12 27.0	06 21.10 +19 44.1 18.4	-1.12 + 0.9	1.3/27.2	38025
(12395)	1999 12 26.2	06 17.76 +03 06.9 17.0	-0.82 - 3.2	5.8/26.0	36711	1996 DB ₃	1999 12 27.0	06 21.15 +40 01.4 17.7	-1.30 - 3.4	6.5/27.2	38038
1998 KC ₆	1999 12 26.3	06 17.86 +19 48.8 20.3	-1.09 + 1.1	1.2/26.4	32755	1998 SD ₅₈	1999 12 27.0	06 21.23 +08 48.1 16.5	-0.86 + 0.8	4.9/27.6	38062
(13181)	1999 12 26.3	06 17.89 +26 36.6 18.0	-0.64 + 0.3	0.7/26.3	37535	1999 XK ₁₀₀	1999 12 27.0	06 21.31 +24 18.0 16.4	-1.06 + 2.6	0.4/27.0	37929
1998 MO ₅	1999 12 26.3	06 17.90 +10 19.4 17.5	-1.17 + 9.0	4.8/27.8	37692	6639 P-L	1999 12 27.1	06 21.34 +20 12.8 17.2	-0.90 + 1.3	1.2/27.2	38005
1998 VV ₂	1999 12 26.3	06 17.93 +15 58.6 17.9	-0.68 - 0.6	1.6/26.5	37799	1994 PP ₃₇	1999 12 27.1	06 21.38 +23 44.6 18.7	-1.11 + 0.2	0.1/27.1	35691

1985 QL ₅	1999 12 27.1	06 21.52 +28 46.1 18.4	-1.26 + 0.2	2.0/27.0	37622	1981 DF ₁	1999 12 27.8	06 24.82 +34 50.9 18.1	-1.07 - 1.7	3.6/27.8	38018
1998 QL ₂₃	1999 12 27.1	06 21.54 +31 06.7 17.8	-1.00 - 0.1	2.7/27.0	38055	(12798)	1999 12 27.9	06 24.93 +22 13.9 16.1	-1.07 + 3.0	0.5/28.0	37064
1995 BX	1999 12 27.1	06 21.54 +25 25.9 16.8	-0.96 + 0.8	0.8/27.1	38033	1973 QO ₁	1999 12 27.9	06 24.94 +31 55.5 16.9	-1.23 - 2.1	3.3/27.9	38016
1993 MK	1999 12 27.1	06 21.62 +08 08.2 15.7	-1.42 +17.5	7.3/29.8	38029	1996 RF ₃₃	1999 12 27.9	06 25.05 +20 52.8 17.5	-0.59 + 1.1	0.5/28.1	37657
4274 P-L	1999 12 27.1	06 21.71 +23 43.3 17.8	-1.17 - 0.6	0.2/27.2	38190	1995 CC	1999 12 27.9	06 25.08 +23 56.7 17.2	-0.91 + 1.8	0.2/27.9	38034
1997 EJ ₂₆	1999 12 27.1	06 21.77 +33 12.9 20.5	-1.22 + 0.1	3.7/26.9	30786	1999 XH ₉₅	1999 12 27.9	06 25.10 +29 24.8 18.1	-1.03 - 2.5	2.2/28.0	37922
1998 QR ₃₆	1999 12 27.2	06 21.86 +04 35.3 18.4	-0.95 + 1.4	6.2/28.1	37718	(13190)	1999 12 27.9	06 25.11 +30 16.4 17.2	-1.31 - 1.3	3.0/27.9	37537
(12346)	1999 12 27.2	06 21.87 +20 19.6 16.1	-1.06 - 0.2	1.4/27.3	36698	(12755)	1999 12 27.9	06 25.22 +23 07.9 17.0	-1.02 - 0.8	0.1/28.0	37052
1999 XU ₈₂	1999 12 27.2	06 22.00 +21 11.6 16.7	-1.01 - 2.8	0.8/27.2	37912	1999 XZ ₁₅₉	1999 12 27.9	06 25.23 +19 37.3 17.1	-1.18 + 2.4	1.8/28.2	38162
1999 XH ₁₀₀	1999 12 27.2	06 22.03 +27 40.6 16.9	-1.07 + 3.8	1.4/27.0	37929	1998 OO ₃	1999 12 28.0	06 25.28 +19 36.3 19.3	-1.11 + 0.1	1.4/28.1	37699
1998 SE ₁₃₅	1999 12 27.2	06 22.05 +10 39.9 18.6	-0.81 + 0.6	3.4/27.7	38064	2153 T-1	1999 12 28.0	06 25.32 +20 43.5 17.7	-0.93 + 1.3	0.8/28.1	38192
(9828)	1999 12 27.2	06 22.07 +23 11.9 18.0	-0.61 + 0.7	0.0/27.3	33452	1999 XA ₈₃	1999 12 28.0	06 25.51 +20 38.8 17.3	-1.20 - 2.4	1.1/28.1	37912
1997 MO	1999 12 27.2	06 22.08 +06 18.1 21.1	-0.82 + 0.4	4.8/27.8	32967	1998 QK ₉₅	1999 12 28.0	06 25.66 +17 59.7 16.9	-0.95 - 2.4	1.9/28.1	38058
1998 QR ₂₆	1999 12 27.2	06 22.10 +22 14.3 19.2	-1.10 + 0.2	0.4/27.3	35710	1994 PW ₃₈	1999 12 28.0	06 25.78 +22 12.9 20.2	-1.06 + 0.7	0.4/28.1	32748
1997 NA ₃	1999 12 27.3	06 22.21 +22 58.4 18.7	-0.90 - 0.1	0.1/27.3	34015	1998 SK ₁₂₁	1999 12 28.1	06 25.90 +13 00.0 17.3	-0.89 - 1.3	3.4/28.3	38063
(12797)	1999 12 27.3	06 22.21 +19 09.6 16.9	-1.03 + 2.3	2.0/27.5	37063	1998 VU ₃₀	1999 12 28.1	06 25.91 +15 15.9 15.9	-0.59 - 1.4	1.6/28.3	37802
(12752)	1999 12 27.3	06 22.28 +17 48.3 17.2	-1.05 + 1.4	2.5/27.5	37052	1997 HD ₁₃	1999 12 28.1	06 25.93 +24 10.6 17.2	-1.13 + 0.7	0.4/28.1	38044
(13467)	1999 12 27.3	06 22.28 +17 34.3 18.1	-1.11 - 0.1	2.2/27.5	37614	(12415)	1999 12 28.1	06 25.98 +19 39.9 17.0	-1.17 - 0.8	1.4/28.2	36717
(13198)	1999 12 27.3	06 22.31 +19 41.8 17.7	-1.15 + 2.0	1.5/27.5	37539	1999 XY ₈₂	1999 12 28.1	06 26.04 +22 28.5 16.4	-1.04 + 6.4	0.4/28.2	38148
1992 BD	1999 12 27.3	06 22.33 +42 05.3 16.3	-2.07 +26.6	9.7/23.0	38026	1998 SU ₆₂	1999 12 28.1	06 26.08 +24 37.1 17.8	-0.95 + 0.5	0.4/28.1	38063
(13211)	1999 12 27.3	06 22.57 +22 12.4 18.1	-0.95 + 1.8	0.3/27.4	37542	1999 XK ₁₀₂	1999 12 28.1	06 26.09 +28 54.0 16.9	-0.94 + 5.9	3.0/27.7	38152
1999 XJ ₉₅	1999 12 27.3	06 22.59 +33 25.5 16.8	-1.24 + 6.5	4.1/26.5	38151	1998 SS ₅₆	1999 12 28.1	06 26.11 +17 03.0 19.6	-0.99 + 1.1	2.0/28.4	35718
(12995)	1999 12 27.3	06 22.63 +41 05.3 18.0	-1.28 + 0.4	6.0/26.9	37485	1998 QZ ₄₀	1999 12 28.2	06 26.16 +28 22.6 17.3	-1.23 - 0.8	2.1/28.1	37720
1998 QB ₅₀	1999 12 27.4	06 22.59 +36 01.2 18.2	-1.25 + 0.9	4.6/27.0	38057	1998 RW ₄₈	1999 12 28.2	06 26.27 +22 49.8 18.8	-0.96 + 0.2	0.2/28.2	33350
1999 XT ₈₂	1999 12 27.4	06 22.78 +20 25.3 17.5	-0.96 - 1.7	1.0/27.5	37912	1998 QD ₇₂	1999 12 28.2	06 26.40 +13 52.3 19.1	-0.97 - 1.1	2.9/28.5	37732
1998 QE ₉₉	1999 12 27.4	06 23.12 +48 11.8 17.4	-1.17 - 0.6	8.5/27.1	38058	1994 PJ ₁₁	1999 12 28.2	06 26.44 +24 33.9 18.3	-1.11 + 0.3	0.4/28.2	38031
1999 VY ₇₇	1999 12 27.5	06 23.05 +25 43.8 16.5	-1.10 + 3.6	1.0/27.4	38122	1999 XV ₁₇₀	1999 12 28.2	06 26.47 +29 26.3 16.4	-0.96 + 2.9	2.0/27.9	38163
1998 QR ₃₉	1999 12 27.5	06 23.07 +33 08.7 18.5	-1.24 + 0.5	3.7/27.2	38056	1979 MD ₈	1999 12 28.2	06 26.59 +19 15.1 16.8	-1.00 - 2.6	1.6/28.3	38017
1992 YC	1999 12 27.5	06 23.31 +13 06.4 15.8	-1.46 -19.5	5.3/26.1	38028	(12474)	1999 12 28.3	06 26.59 +20 21.0 16.4	-1.14 + 2.6	1.3/28.5	36732
1998 QD ₂₆	1999 12 27.5	06 23.36 +20 11.9 18.4	-1.07 + 0.7	1.1/27.7	32974	(13366)	1999 12 28.3	06 26.89 +23 16.4 17.3	-0.62 + 1.3	0.0/28.4	37586
(13244)	1999 12 27.5	06 23.46 +28 20.5 15.8	-1.01 - 4.4	1.5/27.7	37552	1999 WY ₉	1999 12 28.3	06 26.93 +36 11.4 16.5	-1.79 +20.4	6.5/25.9	38127
1999 XK ₉₅	1999 12 27.5	06 23.46 +32 45.3 17.6	-1.26 + 2.6	3.6/27.1	37922	(13186)	1999 12 28.3	06 26.94 -19 37.6 16.9	-1.12 + 0.3	20.9/31.6	37536
1999 XU ₁₅₉	1999 12 27.5	06 23.48 +16 02.4 17.3	-0.97 - 2.7	3.4/27.6	37961	1996 GT ₁₉	1999 12 28.3	06 26.96 +09 46.0 17.4	-0.86 0.0	4.6/28.8	38038
1999 XX ₈₂	1999 12 27.5	06 23.54 +18 49.3 16.9	-0.93 - 3.0	1.7/27.6	37912	1999 XK ₉₂	1999 12 28.3	06 27.00 +21 17.8 17.1	-1.17 + 2.1	0.9/28.5	37920
1992 YP	1999 12 27.6	06 23.57 +20 08.7 16.3	-1.13 + 4.3	1.5/27.8	37632	1993 UV ₄	1999 12 28.3	06 27.02 +07 26.9 18.2	-0.85 + 1.3	5.4/29.2	38030
1999 XR ₁₅₉	1999 12 27.6	06 23.66 +19 41.1 16.9	-1.00 + 2.8	1.4/27.8	37961	1995 UP	1999 12 28.3	06 27.11 +20 21.9 18.0	-1.17 - 0.8	1.2/28.5	37647
1992 YP ₁	1999 12 27.6	06 23.77 +26 15.3 16.7	-1.18 + 3.2	1.3/27.5	37632	1997 EE ₄₆	1999 12 28.4	06 27.20 +10 59.5 18.9	-1.08 - 0.3	4.7/28.7	38042
1994 UA ₆	1999 12 27.6	06 23.86 +37 00.5 17.6	-1.16 + 1.6	5.6/27.2	37641	1997 CO ₂₆	1999 12 28.4	06 27.26 +23 43.5 19.3	-1.17 + 0.6	0.2/28.4	32752
1998 QK ₄₈	1999 12 27.6	06 23.89 +34 00.8 17.6	-1.06 - 1.6	3.8/27.6	37725	(13379)	1999 12 28.4	06 27.35 +24 00.7 17.7	-0.61 + 1.0	0.1/28.4	37590
5205 T-2	1999 12 27.6	06 23.91 +26 36.0 17.0	-1.19 - 2.1	1.4/27.7	38193	2049 T-2	1999 12 28.4	06 27.45 +25 32.0 19.0	-1.16 + 0.6	0.8/28.4	33384
1998 QA ₃₉	1999 12 27.6	06 23.94 +36 51.4 18.1	-1.18 - 2.0	4.4/27.7	38056	1998 KS ₄₆	1999 12 28.5	06 27.62 +13 37.7 17.5	-1.13 - 0.4	3.9/29.0	38052
1999 XW ₈₂	1999 12 27.6	06 23.97 +21 44.1 17.0	-1.08 - 3.0	0.7/27.7	38148	2048 P-L	1999 12 28.5	06 27.74 +27 17.4 18.9	-1.07 0.0	1.3/28.4	34616
1997 HS ₁₃	1999 12 27.7	06 23.94 +07 39.9 18.9	-0.84 - 0.4	4.4/28.2	38044	(13472)	1999 12 28.5	06 27.85 +07 23.5 17.8	-0.85 + 1.6	5.3/29.5	37616
1999 XE ₁₃₃	1999 12 27.7	06 24.27 +37 32.2 16.9	-1.35 + 2.5	6.3/27.1	37949	1998 QV ₉₆	1999 12 28.5	06 27.93 +28 08.4 17.9	-1.02 - 2.9	1.7/28.6	38058
4613 T-2	1999 12 27.7	06 24.33 -11 42.0 18.7	-0.54 + 0.7	6.3/29.5	38193	1994 YU	1999 12 28.5	06 27.98 +25 58.8 17.7	-0.99 - 2.0	0.9/28.6	38033
1027 T-2	1999 12 27.7	06 24.34 +11 18.4 19.8	-0.88 + 0.8	3.7/28.3	33057	(12663)	1999 12 28.6	06 27.95 +21 54.2 17.1	-0.96 + 0.5	0.5/28.7	37028
1999 XU ₁₇₀	1999 12 27.8	06 24.51 +29 42.1 17.2	-1.01 + 7.2	2.5/27.2	38163	1997 EM ₄	1999 12 28.6	06 28.02 +20 47.3 21.4	-1.10 + 1.0	0.9/28.7	32677
1998 QQ ₄₄	1999 12 27.8	06 24.56 +18 21.0 17.9	-0.91 + 1.4	1.7/28.1	38056	1997 OJ	1999 12 28.6	06 28.27 +24 20.4 18.5	-0.86 + 0.8	0.3/28.6	38045
1997 FC ₁	1999 12 27.8	06 24.72 +16 47.6 17.4	-1.10 + 3.7	2.8/28.3	38042	1998 PR	1999 12 28.7	06 28.39 +28 59.0 17.8	-1.06 - 0.2	2.1/28.5	38054
1998 RR ₆₁	1999 12 27.8	06 24.78 +20 44.2 17.6	-0.84 - 0.1	0.8/28.0	38060	1999 XE ₁₆	1999 12 28.7	06 28.42 +31 10.7 17.0	-1.19 + 5.6	3.7/28.0	37866
1991 PY ₁₈	1999 12 27.8	06 24.79 +27 47.6 17.8	-1.22 - 0.6	1.8/27.8	38024	1993 FQ ₃₈	1999 12 28.7	06 28.59 +18 36.9 19.0	-1.05 + 1.4	1.7/29.0	35687

1997 GQ ₂₄	1999 12 28.7	06 28.75 +26 04.8 18.2	-1.15 + 1.8	1.1/28.6	37669
1998 QY ₁₀	1999 12 28.8	06 28.85 +25 49.4 18.1	-1.10 + 1.5	0.9/28.7	38054
1997 EZ ₂	1999 12 28.8	06 28.93 +33 32.5 18.0	-1.25 + 2.1	4.0/28.3	37663
1998 RF ₄₆	1999 12 28.8	06 28.95 +25 00.7 17.7	-1.05 - 0.2	0.6/28.8	37749
1998 HG ₃	1999 12 28.8	06 29.03 +12 30.4 18.1	-1.17 + 2.2	4.4/29.5	37679
1998 SH ₁₃₃	1999 12 28.8	06 29.10 +04 53.3 17.3	-0.83 - 1.0	5.8/29.2	37784
1990 RO ₇	1999 12 28.8	06 29.14 +18 28.5 17.8	-1.03 + 1.3	1.8/29.1	38022
1998 MP ₂₂	1999 12 28.8	06 29.22 +26 23.6 17.5	-1.22 + 3.3	1.1/28.7	37694
(12778)	1999 12 28.8	06 29.32 +25 43.3 17.1	-1.02 + 2.8	0.9/28.7	37058
1999 VA ₅₃	1999 12 28.8	06 29.32 +20 43.9 16.5	-1.07 + 0.2	1.3/29.0	38115
1995 WT ₆	1999 12 28.9	06 29.47 +29 04.8 17.1	-1.17 - 2.0	2.7/28.9	38036
1999 XX ₂₀₀	1999 12 28.9	06 29.49 +32 49.1 17.8	-1.09 - 0.7	3.1/28.7	37979
1998 VP ₃₁	1999 12 28.9	06 29.53 +16 30.0 17.1	-0.97 - 1.1	2.1/29.0	37802
(12672)	1999 12 28.9	06 29.65 +24 25.5 17.3	-0.95 + 0.6	0.4/28.9	37030
1990 RY ₂	1999 12 28.9	06 29.68 +23 20.8 18.5	-0.77 + 0.2	5.6/18.0	38022
1998 RJ ₅₇	1999 12 29.0	06 29.78 +20 32.3 18.3	-0.90 + 1.0	0.9/29.1	37754
(13249)	1999 12 29.0	06 29.81 +26 40.7 14.6	-1.15 - 6.9	1.5/29.2	37553
1997 TB ₁₂	1999 12 29.0	06 30.10 +12 45.0 18.5	-0.57 - 0.2	2.1/29.5	38045
1999 XZ ₈₇	1999 12 29.0	06 30.12 +20 20.1 17.0	-1.11 + 1.2	1.4/29.2	37917
1995 RD	1999 12 29.0	06 30.14 +26 39.2 16.6	-1.19 + 6.1	1.6/28.8	38034
(12874)	1999 12 29.1	06 30.27 +20 42.1 17.4	-0.95 + 0.8	0.8/29.2	37084
1998 RL ₇₄	1999 12 29.1	06 30.27 +26 15.7 18.6	-0.91 0.0	0.9/29.0	33352
1997 TM ₂	1999 12 29.1	06 30.51 +28 19.7 19.2	-0.64 + 0.3	1.1/29.0	37143
1998 SE ₄₄	1999 12 29.2	06 30.67 +12 39.6 16.6	-0.85 + 1.4	3.7/29.8	37769
1998 XJ ₅	1999 12 29.2	06 30.76 +30 06.6 17.9	-0.69 + 1.6	1.6/28.8	37806
1999 XB ₁₆₀	1999 12 29.2	06 30.86 +17 16.5 16.9	-0.94 + 0.2	2.5/29.5	37961
(12986)	1999 12 29.2	06 31.02 +34 20.6 17.9	-1.09 - 2.1	4.0/29.2	37483
1998 QU ₉₇	1999 12 29.2	06 31.12 +49 14.9 19.5	-1.58 - 3.1	8.5/29.2	34591
1998 SP ₅₆	1999 12 29.3	06 31.06 +28 42.3 17.5	-1.03 + 0.8	1.8/29.1	38062
1999 WS ₉	1999 12 29.3	06 31.26 +27 27.7 15.8	-1.06 + 3.8	1.4/29.0	38126
3567 P-L	1999 12 29.3	06 31.38 +31 54.0 17.4	-1.26 - 2.2	3.9/29.3	38004
1999 XH ₂₀₁	1999 12 29.3	06 31.42 +32 10.4 18.9	-0.97 + 0.7	2.6/29.0	37979
(11769)	1999 12 29.3	06 31.51 +18 24.9 18.2	-1.02 + 0.9	1.8/29.6	35902
1990 SE ₁	1999 12 29.4	06 31.45 +41 29.1 18.5	-1.28 - 0.6	6.0/28.9	38022
1999 XC ₁₉₆	1999 12 29.4	06 31.46 +32 13.0 17.9	-1.04 - 1.8	3.2/29.3	37978
1994 PD ₂	1999 12 29.4	06 31.64 +40 10.3 17.9	-1.30 - 2.1	6.0/29.4	30783
1998 QP ₄₆	1999 12 29.4	06 31.70 +34 15.1 18.7	-1.06 - 0.7	3.5/29.2	37724
1990 OY	1999 12 29.4	06 31.72 +04 31.7 17.5	-0.99 + 3.9	6.8/31.1	37626
1990 QE ₄	1999 12 29.4	06 31.80 +04 03.1 17.9	-1.00 + 3.6	6.7/31.2	38022
(12002)	1999 12 29.4	06 31.87 +11 26.2 18.3	-0.86 - 0.4	3.5/29.9	36273
1998 QX ₇₀	1999 12 29.4	06 31.89 +19 41.2 17.6	-0.96 - 2.4	1.3/29.5	37732
1998 SP ₅₅	1999 12 29.4	06 31.93 +19 15.2 18.9	-0.93 + 1.2	1.2/29.7	33029
1996 CP ₂	1999 12 29.4	06 31.97 +36 33.4 17.7	-1.17 + 2.4	4.7/28.6	38037
1998 OH ₇	1999 12 29.4	06 31.98 +24 28.8 17.7	-1.04 - 1.4	0.4/29.5	33755
1995 TB	1999 12 29.5	06 31.99 +32 55.1 17.5	-1.16 + 0.3	4.9/29.2	38034
9518 P-L	1999 12 29.5	06 32.00 +26 56.2 18.5	-1.13 + 0.9	1.3/29.4	38191
1998 RV ₆₉	1999 12 29.5	06 32.25 +26 50.7 19.1	-1.16 + 1.4	1.3/29.4	35715
1996 RD ₁₂	1999 12 29.5	06 32.37 +35 12.9 19.0	-0.68 + 0.4	2.4/29.0	38039
1998 OC ₇	1999 12 29.5	06 32.41 +11 40.6 19.0	-1.03 + 2.0	4.2/30.3	33346
(11668)	1999 12 29.6	06 32.33 +28 57.4 18.1	-0.64 + 0.6	1.2/29.3	35875
1998 QL ₅₃	1999 12 29.6	06 32.64 +02 31.0 17.8	-0.94 - 0.4	7.2/30.3	37728

1991 PT ₉	1999 12 29.7	06 32.80 +30 06.2 17.5	-1.38 - 6.2	2.4/29.9	38024
1999 XC ₈₈	1999 12 29.7	06 32.91 +18 20.2 17.0	-1.06 - 2.5	2.1/29.8	38149
1998 QW ₁₅	1999 12 29.7	06 32.96 +22 03.2 18.1	-0.95 + 0.6	0.4/29.8	38055
(13291)	1999 12 29.7	06 33.14 +29 49.5 17.1	-0.99 - 3.1	2.1/29.7	37565
1998 QN ₂₅	1999 12 29.8	06 33.23 +41 10.3 18.0	-1.29 - 1.4	6.1/29.5	38055
1997 TB ₂₈	1999 12 29.8	06 33.36 +26 37.9 17.8	-0.63 + 1.4	0.7/29.6	37674
1998 QK ₆	1999 12 29.8	06 33.41 +15 13.8 19.4	-0.71 + 0.3	1.9/30.2	34301
1999 XS ₁₆₉	1999 12 29.8	06 33.43 +28 57.2 16.7	-1.23 - 0.8	2.7/29.7	37969
1998 QW ₁₀₀	1999 12 29.8	06 33.52 +24 27.8 16.4	-1.03 + 1.9	0.5/29.8	38058
1981 EN ₅	1999 12 29.8	06 33.68 +18 14.2 17.6	-1.06 - 1.6	2.2/30.0	38018
1997 GM ₄₀	1999 12 29.8	06 33.76 +32 20.5 15.2	-1.16 + 7.4	4.7/28.8	38044
1998 QW ₃	1999 12 29.9	06 33.77 +14 37.0 21.1	-0.95 + 1.0	2.5/30.4	33080
1999 WT ₉	1999 12 29.9	06 33.81 +28 23.4 16.6	-1.18 + 5.4	2.4/29.5	38126
(12447)	1999 12 29.9	06 33.83 +24 53.1 17.5	-1.24 + 2.8	0.6/29.8	36725
1999 XE ₁₆₀	1999 12 29.9	06 34.06 +18 46.1 17.7	-1.18 + 3.9	2.0/30.3	37961
1998 KA ₆₅	1999 12 29.9	06 34.09 +29 19.9 18.0	-1.30 + 1.0	2.4/29.7	37691
(13462)	1999 12 30.0	06 34.10 +18 06.6 17.9	-1.20 + 1.1	2.2/30.2	37613
(12673)	1999 12 30.0	06 34.10 +10 16.3 17.5	-0.87 + 1.2	4.4/30.7	37031
1997 GZ ₁₄	1999 12 30.0	06 34.21 +27 08.1 19.2	-1.19 + 0.5	1.7/29.9	33077
1999 XD ₁₉₆	1999 12 30.0	06 34.22 +29 53.4 17.4	-1.10 - 2.8	2.5/30.0	37978
1992 EC ₁	1999 12 30.0	06 34.31 -23 10.7 18.0	-0.91 - 2.8	20.3/27.4	20342
1999 XF ₁₆₀	1999 12 30.0	06 34.42 +16 43.6 17.7	-1.16 - 0.2	2.8/30.3	37961
(12883)	1999 12 30.0	06 34.45 +18 15.7 16.5	-1.15 + 0.2	2.1/30.2	37087
1998 RP ₆₄	1999 12 30.0	06 34.47 -09 59.2 18.0	-0.80 + 1.7	10.2/01.7	38060
(11395)	1999 12 30.0	06 34.50 -03 50.9 16.9	-0.53 - 0.5	4.7/31.3	35589
1997 EU ₄₆	1999 12 30.1	06 34.57 +21 58.9 18.1	-1.08 + 0.5	0.4/30.2	38042
1979 MV ₃	1999 12 30.1	06 34.67 +16 48.0 19.8	-1.11 + 1.3	2.5/30.5	30778
1999 WR ₉	1999 12 30.1	06 34.74 +24 34.8 16.6	-0.87 - 1.0	0.4/30.1	37851
1979 MZ ₁	1999 12 30.1	06 34.87 +17 41.5 18.7	-0.96 + 2.3	1.9/30.5	38017
1997 BW ₅	1999 12 30.1	06 34.98 +26 30.8 18.5	-1.22 - 0.2	1.6/30.1	37660
1266 T-2	1999 12 30.1	06 35.01 +33 23.8 17.8	-1.25 + 0.1	4.0/29.8	38192
(11307)	1999 12 30.2	06 35.00 +31 16.5 15.9	-1.17 + 1.3	3.5/29.8	36872
(12735)	1999 12 30.2	06 35.02 +06 20.9 17.0	-1.08 - 2.1	6.6/30.7	37047
1998 QP ₃₇	1999 12 30.2	06 35.03 +24 19.3 16.8	-1.20 - 0.6	0.5/30.2	37718
4587 P-L	1999 12 30.2	06 35.03 +19 20.7 18.5	-1.08 + 0.9	1.4/30.4	38191
2000 AO ₈	1999 12 30.2	06 35.04 +29 38.6 18.1	-0.97 + 2.2	2.2/29.8	37992
(13085)	1999 12 30.2	06 35.18 +23 10.7 17.8	-0.99 + 0.8	0.0/30.2	37509
1998 RZ ₃₄	1999 12 30.2	06 35.23 +20 38.5 18.5	-1.09 + 1.7	0.9/30.4	38059
1997 GW ₆	1999 12 30.2	06 35.28 +00 43.8 18.3	-0.93 - 1.5	7.6/31.0	38042
(13077)	1999 12 30.2	06 35.48 +16 31.7 18.0	-1.07 + 0.8	2.5/30.6	37507
1998 QU ₄₃	1999 12 30.3	06 35.65 +19 27.4 18.7	-1.14 + 3.4	1.4/30.6	38056
1998 QD ₉₉	1999 12 30.3	06 35.76 +23 36.9 16.7	-0.96 + 1.9	0.1/30.3	38058
1999 WV ₉	1999 12 30.3	06 35.79 +28 47.0 15.7	-1.00 + 4.4	2.0/29.9	37851
(13253)	1999 12 30.3	06 35.80 +30 41.1 16.8	-1.28 - 1.9	3.4/30.2	37554
1999 YY ₃	1999 12 30.3	06 35.81 +62 15.0 16.4	-1.92 -10.0	17.7/04.9	38170
1998 QO ₈₄	1999 12 30.3	06 35.87 +25 42.1 19.0	-1.06 - 1.3	0.8/30.3	35712
1994 VR	1999 12 30.4	06 36.13 +36 51.8 17.5	-1.15 + 2.8	4.8/29.5	38033
1998 QC ₃₉	1999 12 30.4	06 36.16 +19 53.8 18.8	-1.07 + 1.5	1.1/30.6	33082
(12837)	1999 12 30.4	06 36.16 +17 25.0 17.7	-1.15 + 3.0	2.2/30.9	37073
1981 EW ₂₅	1999 12 30.4	06 36.24 +47 45.2 17.4	-1.34 - 0.8	12.1/29.4	37620
1997 GR ₂₁	1999 12 30.4	06 36.27 +06 59.3 19.3	-0.92 - 0.2	5.0/31.1	38043

1998 QF ₄₇	1999 12 30.4	06 36.34 +46 46.7 18.1	-1.49 - 0.1	10.0/29.3	38056
1995 UL ₇	1999 12 30.5	06 36.31 +27 11.0 16.6	-1.20 + 1.2	1.7/30.3	38035
1998 RY ₇₈	1999 12 30.5	06 36.37 +21 02.4 17.0	-0.89 + 2.8	0.7/30.7	37763
1998 OF ₁₀	1999 12 30.5	06 36.39 +15 43.9 18.3	-1.14 + 2.4	2.9/31.0	37700
1998 SR ₁₆₂	1999 12 30.5	06 36.43 +13 03.9 17.7	-0.93 - 0.6	3.1/30.9	38065
1998 QZ ₁₀₀	1999 12 30.5	06 36.45 +23 39.6 19.5	-0.93 + 1.4	0.1/30.5	35713
1998 SD ₁₂₂	1999 12 30.5	06 36.77 +11 51.0 17.5	-0.86 - 0.4	3.5/31.0	38063
1998 SR ₂	1999 12 30.5	06 36.85 +55 22.2 18.1	-1.37 - 1.4	8.0/29.4	35716
1993 PU ₅	1999 12 30.6	06 36.81 +17 00.3 18.2	-0.93 + 1.0	2.0/30.9	38029
1978 VO ₅	1999 12 30.6	06 36.84 +22 38.8 16.8	-1.17 - 0.5	0.2/30.6	37618
(12936)	1999 12 30.6	06 36.90 +20 02.6 17.4	-0.96 + 1.1	1.1/30.8	37102
1998 QR ₁	1999 12 30.6	06 36.95 +20 23.4 17.2	-1.10 - 1.4	1.1/30.7	38054
1999 XW ₉₅	1999 12 30.6	06 37.04 +24 02.6 16.0	-1.36 -15.3	0.4/30.7	38151
1999 XG ₁	1999 12 30.6	06 37.18 +20 46.5 16.5	-1.12 + 4.2	0.9/30.9	37855
(13340)	1999 12 30.7	06 37.21 +31 01.6 18.5	-1.10 + 1.2	2.4/30.3	37579
1998 RD ₅₁	1999 12 30.7	06 37.22 +17 37.5 17.2	-1.00 - 0.3	1.9/30.9	38059
1999 VY ₅₂	1999 12 30.7	06 37.33 +10 04.7 14.7	-0.87 -12.2	7.2/29.6	37834
(13116)	1999 12 30.7	06 37.35 +37 15.5 16.9	-1.07 + 2.4	4.8/29.7	37518
(13464)	1999 12 30.7	06 37.41 +35 42.8 16.7	-1.06 - 1.7	5.0/30.4	37613
1999 VF ₅₃	1999 12 30.7	06 37.52 +29 11.7 16.3	-1.07 + 4.0	2.9/30.3	38115
1999 XE ₁	1999 12 30.7	06 37.64 +15 54.6 16.2	-1.02 + 1.0	3.1/31.2	38129
1999 XS ₉₅	1999 12 30.8	06 37.97 +33 34.6 16.7	-1.09 + 4.2	4.4/29.9	37922
1998 RC ₇₇	1999 12 30.8	06 38.10 +22 27.9 18.2	-0.99 + 1.8	0.2/30.9	38061
(13259)	1999 12 30.9	06 38.12 +13 16.6 18.0	-1.07 + 2.5	3.7/31.6	37556
1998 QB ₁₃	1999 12 30.9	06 38.34 +13 42.0 17.0	-1.06 + 3.6	4.2/31.7	37709
1991 VY	1999 12 30.9	06 38.37 +28 22.1 16.1	-1.14 + 3.7	2.3/30.5	38025
1998 QH	1999 12 30.9	06 38.38 +33 06.8 18.4	-1.23 - 0.4	3.7/30.6	38054
(13161)	1999 12 30.9	06 38.44 +26 07.5 16.4	-1.19 + 0.5	1.3/30.8	37529
1978 VX ₆	1999 12 31.0	06 38.57 +35 44.1 16.6	-1.19 + 6.4	5.3/29.6	37618
1998 RL ₅₃	1999 12 31.0	06 38.61 +36 48.8 17.8	-1.06 - 0.5	4.7/30.5	38060
1999 XL ₈₈	1999 12 31.0	06 38.93 +19 47.0 16.5	-1.05 + 2.4	1.6/31.3	37917
1993 UL ₇	1999 12 31.0	06 38.94 +08 58.4 19.7	-0.85 + 1.7	4.7/01.0	33238
1998 QK ₁₉	1999 12 31.0	06 38.98 +18 17.5 17.2	-1.08 + 3.6	1.8/31.5	38055
1998 SA ₁₀	1999 12 31.0	06 39.03 -22 30.1 17.8	-0.93 - 2.1	13.3/03.1	38061
1998 QH ₇₉	1999 12 31.1	06 38.97 +07 33.6 20.0	-0.97 + 0.6	4.9/32.0	32770
1997 GK ₂₅	1999 12 31.1	06 39.31 +19 47.1 18.4	-1.11 + 1.0	1.2/31.3	38043
(13342)	1999 12 31.1	06 39.44 +38 35.3 17.1	-1.05 + 2.6	4.9/30.0	37579
1995 SU ₅₂	1999 12 31.2	06 39.51 +24 31.5 17.2	-1.23 - 1.1	0.6/31.2	38034
1998 MG ₂₉	1999 12 31.2	06 39.57 +24 40.5 18.9	-1.08 + 2.7	0.5/31.1	34921
(13088)	1999 12 31.2	06 39.63 +14 05.7 17.3	-0.85 + 2.3	2.8/31.9	37510
1998 QR ₅₀	1999 12 31.2	06 39.64 +26 43.1 18.0	-0.96 + 1.3	1.2/31.0	37726
1998 MY ₇	1999 12 31.2	06 39.70 +16 51.1 18.5	-1.03 - 1.3	2.0/31.5	33558
1998 QO ₅₁	1999 12 31.2	06 39.91 +29 43.9 21.1	-1.07 - 0.1	1.9/31.0	33560
1999 XJ ₈₈	1999 12 31.2	06 39.93 +19 15.4 17.1	-0.91 + 0.7	1.3/31.5	37917
(12974)	1999 12 31.3	06 39.94 +32 29.8 18.1	-0.64 + 0.6	1.8/30.8	37480
(9712)	1999 12 31.3	06 40.04 +12 35.5 17.1	-0.58 + 0.8	2.3/01.0	33190
1999 XJ ₈₃	1999 12 31.3	06 40.07 +24 27.7 16.8	-1.10 + 3.5	0.7/31.2	38148
1999 VK	1999 12 31.3	06 40.10 +25 20.5 16.5	-1.21 + 3.4	1.1/31.2	38098
1997 EO ₂	1999 12 31.3	06 40.19 +31 51.3 16.9	-1.23 + 2.6	4.1/30.8	37663
1998 RZ ₈	1999 12 31.3	06 40.20 +18 03.2 19.0	-0.93 + 1.4	1.7/31.7	38059
(12826)	1999 12 31.3	06 40.22 +16 39.2 17.6	-1.15 + 2.3	2.5/31.8	37070

1998 QQ ₉₇	1999 12 31.3	06 40.27 +25 06.4 17.7	-1.01 - 3.1	0.7/31.4	37741
1999 XU ₁₀₀	1999 12 31.3	06 40.34 +26 05.5 16.3	-1.11 + 3.1	1.4/31.2	38152
1998 RP ₆₆	1999 12 31.3	06 40.37 +22 00.9 18.2	-0.98 + 0.1	0.4/31.4	38060
1998 QF ₅₅	1999 12 31.4	06 40.33 +22 32.0 17.2	-1.15 + 0.7	0.2/31.4	38057
(12419)	1999 12 31.4	06 40.45 +31 26.3 16.0	-1.20 + 4.4	3.6/30.7	36718
1999 XL ₁₃₃	1999 12 31.4	06 40.53 +37 38.9 17.0	-1.09 - 0.2	5.0/30.8	37949
1991 PM ₄	1999 12 31.4	06 40.57 +27 40.4 17.8	-1.21 - 0.2	1.7/31.3	38024
1997 BV ₃	1999 12 31.4	06 40.59 +21 53.5 17.2	-1.19 + 3.4	0.5/31.5	38040
(11371)	1999 12 31.4	06 40.66 +23 07.9 18.2	-1.18 + 0.3	0.0/31.5	35583
1998 RH ₇₄	1999 12 31.4	06 40.70 +22 47.6 17.1	-0.92 0.0	0.1/31.5	38060
2616 P-L	1999 12 31.4	06 40.72 +29 13.7 18.2	-1.16 + 1.7	2.5/31.1	38190
1998 MP ₂₄	1999 12 31.4	06 40.79 +24 29.8 17.6	-1.12 + 0.1	0.6/31.4	38053
1998 RG ₅₄	1999 12 31.4	06 40.80 +25 30.5 17.9	-1.20 - 0.2	0.9/31.4	37753
3393 T-3	1999 12 31.5	06 41.19 +08 59.6 18.6	-0.85 + 0.7	4.2/01.4	38193
1998 SC ₄₉	1999 12 31.5	06 41.20 +20 02.7 17.4	-0.95 + 1.4	1.1/31.8	38062
1998 RY ₄₇	1999 12 31.5	06 41.24 +18 22.4 18.3	-1.08 + 0.1	1.7/31.8	37751
2077 T-3	1999 12 31.5	06 41.29 +38 11.4 18.5	-1.38 + 1.2	6.0/30.6	38193
1998 QJ ₇₃	1999 12 31.6	06 41.28 +03 48.2 17.4	-0.95 - 0.7	7.9/01.4	37733
1998 QE	1999 12 31.6	06 41.29 +26 28.0 17.4	-1.06 + 0.5	1.3/31.4	38054
1998 SV ₁₂₈	1999 12 31.6	06 41.31 +35 01.9 17.4	-0.99 + 1.8	3.6/30.8	37783
1981 EJ ₁₄	1999 12 31.6	06 41.31 +30 06.9 19.6	-1.18 - 1.0	2.8/31.4	26917
1999 XS ₉₂	1999 12 31.6	06 41.33 +20 52.6 16.6	-1.06 + 1.6	1.1/31.8	37920
1999 XO ₈₈	1999 12 31.6	06 41.37 +21 29.8 17.5	-1.18 + 2.5	0.6/31.7	37918
1991 RF ₁₁	1999 12 31.6	06 41.59 +29 10.6 16.5	-1.19 - 1.4	2.8/31.5	38025
1996 JE ₂	1999 12 31.6	06 41.60 +19 16.1 18.5	-0.91 + 4.9	1.1/01.1	37656
1998 QS ₃₉	1999 12 31.6	06 41.71 +21 49.3 19.2	-1.09 + 2.1	0.4/31.8	34020
9606 P-L	1999 12 31.7	06 41.66 +25 39.7 18.7	-0.96 + 1.5	0.9/31.5	36122
1999 XQ ₉₂	1999 12 31.7	06 41.85 +20 11.3 17.4	-1.08 + 3.8	1.2/32.0	37920
1998 QN ₅₀	1999 12 31.7	06 41.97 +20 19.1 17.5	-1.14 + 3.0	1.0/32.0	38057
1999 XG ₈₈	1999 12 31.7	06 42.08 +21 59.3 17.6	-0.97 + 0.7	0.4/31.8	37917
1999 XL ₁	1999 12 31.7	06 42.11 +17 22.9 16.8	-0.97 - 3.8	2.1/31.8	38129
1999 XU ₁₆₉	1999 12 31.8	06 42.08 +30 38.8 17.3	-0.95 + 3.7	2.2/31.1	37969
1995 WM	1999 12 31.8	06 42.09 +14 37.0 16.8	-1.06 - 1.1	3.7/01.1	37650
1998 SK ₃	1999 12 31.8	06 42.09 +28 18.0 20.0	-1.20 + 3.6	2.1/31.4	33014
1997 AA ₁₇	1999 12 31.8	06 42.25 +21 58.3 18.1	-1.24 + 1.3	0.5/31.9	38040
1999 XK ₈₃	1999 12 31.8	06 42.34 +22 10.6 16.0	-1.05 + 0.2	0.4/31.9	37912
(12833)	1999 12 31.9	06 42.51 +22 15.3 17.5	-1.24 + 2.4	0.3/32.0	37072
(9744)	1999 12 31.9	06 42.58 +19 52.5 17.7	-1.03 + 4.2	1.0/01.2	33198
(13144)	1999 12 31.9	06 42.60 +29 31.3 17.1	-1.01 - 2.2	2.2/31.8	37525
1978 VC ₉	1999 12 31.9	06 42.65 +22 35.6 17.0	-1.05 + 0.3	0.2/32.0	38017
1997 GX ₁₅	1999 12 31.9	06 42.72 +17 07.2 18.8	-1.05 + 1.6	2.3/01.3	38043
3500 T-3	1999 12 31.9	06 42.77 +33 37.3 18.5	-1.27 + 1.9	4.2/31.3	38008
1999 XQ ₈₃	1999 12 31.9	06 42.81 +21 34.0 17.4	-1.12 + 2.2	0.5/01.1	37913
(12238)	2000 01 01.0	06 43.00 +01 23.9 17.5	-0.58 - 1.0	4.4/02.1	36669
1998 WA ₁₅	2000 01 01.0	06 43.10 +10 30.5 17.5	-0.58 - 0.1	2.6/01.8	38067
1994 PJ ₂₇	2000 01 01.0	06 43.20 +23 17.7 19.5	-1.10 + 2.1	0.1/01.0	35921
1998 QG ₄₆	2000 01 01.0	06 43.24 +20 01.1 18.4	-0.90 + 1.4	1.0/01.3	37724
1998 SK ₃₅	2000 01 01.0	06 43.33 +32 54.1 18.7	-1.11 + 0.8	3.3/31.5	37768
(13128)	2000 01 01.0	06 43.33 +17 29.1 17.5	-1.10 + 2.9	2.1/01.5	37521
(9857)	2000 01 01.0	06 43.34 +27 18.7 17.2	-0.64 - 1.3	0.8/31.9	36499
1999 XO ₁₃₃	2000 01 01.0	06 43.42 +36 27.3 17.4	-1.13 - 2.5	4.8/31.8	38158

1998 RM ₇₆	2000 01 01.0	06 43.44 +39 16.3 17.9	-1.08 + 1.6	5.3/31.0	37761	(13447)	2000 01 01.9	06 47.26 +21 31.2 17.8	-1.04 + 1.0	0.6/02.1	37609
1999 XB ₄₀	2000 01 01.0	06 43.45 +13 10.4 17.1	-1.05 + 1.3	3.7/01.7	37888	1997 EB ₆	2000 01 01.9	06 47.28 +27 48.4 17.9	-1.21 + 2.3	1.9/01.6	37664
(12903)	2000 01 01.1	06 43.45 +19 51.3 17.9	-1.07 + 1.6	1.1/01.3	37092	1998 SN ₆₀	2000 01 01.9	06 47.28 +21 27.7 17.9	-0.90 + 1.8	0.5/02.1	38062
(12709)	2000 01 01.1	06 43.47 +03 40.9 17.3	-0.95 - 0.6	7.1/01.9	37040	1996 AT ₁₂	2000 01 01.9	06 47.40 +06 13.9 18.4	-0.96 + 4.2	6.5/03.8	37655
1999 XT ₁₆₉	2000 01 01.1	06 43.47 +31 08.8 16.0	-1.11 + 3.5	4.0/31.4	37969	2186 T-2	2000 01 01.9	06 47.44 +25 47.4 19.4	-0.98 + 1.0	0.9/01.8	32733
1999 XL ₃₁	2000 01 01.1	06 43.51 +13 45.1 16.8	-1.00 + 4.6	3.6/02.0	37878	1998 QB ₈₇	2000 01 02.0	06 47.45 +32 25.6 17.3	-1.06 - 3.7	3.2/01.9	38058
1993 FN ₂₂	2000 01 01.1	06 43.65 +17 32.2 19.7	-1.00 + 1.0	1.7/01.5	35687	1998 SL ₂₂	2000 01 02.0	06 47.51 +22 15.9 18.6	-0.95 + 0.9	0.2/02.1	33018
1998 RZ ₄₅	2000 01 01.1	06 43.68 +16 15.8 19.4	-0.98 + 1.0	2.3/01.6	32993	1998 SY ₄₂	2000 01 02.0	06 47.58 +33 43.1 18.9	-1.09 + 1.3	3.5/01.3	38062
1991 RG ₇	2000 01 01.1	06 43.72 +20 55.4 16.8	-1.09 - 1.1	1.0/01.2	38024	1995 RH	2000 01 02.0	06 47.59 +24 41.4 17.6	-1.35 +12.8	0.7/01.8	37645
1995 WO	2000 01 01.1	06 43.75 +09 59.6 18.7	-1.10 + 1.2	4.9/02.1	38035	1998 VP ₂₀	2000 01 02.0	06 47.76 +20 49.5 17.8	-0.86 + 1.3	0.6/02.2	38066
1999 XH ₁₃₃	2000 01 01.1	06 43.81 +36 18.8 17.5	-0.67 + 0.6	2.5/31.3	37949	1998 QP ₅₇	2000 01 02.0	06 47.79 +17 57.1 16.8	-0.88 + 1.2	1.9/02.4	38057
1998 QY ₅₅	2000 01 01.1	06 43.82 +20 04.8 17.0	-0.94 + 1.6	1.1/01.4	38057	1994 RW ₁₇	2000 01 02.0	06 47.87 +23 04.1 19.1	-1.09 + 1.0	0.0/02.1	38032
1981 EP ₂₅	2000 01 01.1	06 43.85 +21 20.3 17.7	-0.96 + 0.6	0.6/01.3	38018	1999 XT ₈₃	2000 01 02.1	06 47.85 +21 00.3 18.0	-1.08 + 3.3	0.9/02.3	37913
1999 XA ₄₀	2000 01 01.2	06 43.99 +12 46.3 17.2	-1.04 - 0.3	4.7/01.7	37887	1997 EO ₄₂	2000 01 02.1	06 47.86 +21 16.6 19.3	-1.11 + 0.9	0.6/02.2	35699
1988 GQ	2000 01 01.2	06 44.27 +16 26.4 17.0	-1.03 + 4.3	2.3/01.9	38020	4213 T-3	2000 01 02.1	06 47.92 +27 31.1 18.1	-1.20 + 3.9	1.9/01.7	38008
1995 TZ	2000 01 01.2	06 44.32 +26 07.5 18.4	-1.22 + 1.6	1.1/01.1	37267	1998 QH ₇₁	2000 01 02.1	06 48.04 +16 51.0 19.1	-1.07 0.0	2.2/02.5	35712
1998 ST ₆₆	2000 01 01.2	06 44.34 +12 16.0 18.9	-0.89 + 1.2	3.1/02.0	34223	1998 RT ₆₆	2000 01 02.1	06 48.06 +13 09.3 17.4	-0.87 + 0.3	3.1/02.7	38060
1998 SP ₂₂	2000 01 01.3	06 44.32 +33 18.5 16.9	-1.10 + 0.8	3.5/31.7	37767	3337 T-3	2000 01 02.1	06 48.13 +22 58.9 18.1	-1.04 + 1.8	0.0/02.2	38008
1995 UP ₃	2000 01 01.3	06 44.36 +30 19.8 17.3	-1.24 + 1.0	2.9/31.9	38035	(13329)	2000 01 02.1	06 48.28 +13 33.4 17.6	-0.88 + 1.2	2.9/02.9	37576
1998 SU ₁₀	2000 01 01.3	06 44.53 +22 13.5 17.3	-0.92 + 1.0	0.3/01.4	38061	1998 QF ₅₀	2000 01 02.1	06 48.34 +35 26.3 18.5	-1.12 + 0.9	4.1/01.4	37284
1994 EL ₁	2000 01 01.3	06 44.53 +20 50.6 15.0	-1.13 + 5.3	1.1/01.6	38031	1995 WK	2000 01 02.2	06 48.46 +30 39.4 17.3	-1.16 + 4.8	3.4/01.5	37650
(13289)	2000 01 01.3	06 44.56 +14 47.0 16.3	-0.92 - 1.4	2.9/01.7	37564	1993 UW ₆	2000 01 02.2	06 48.51 +23 28.5 17.7	-0.92 + 2.6	0.2/02.2	38030
1998 QA ₁₉	2000 01 01.3	06 44.62 +28 51.5 19.3	-1.20 + 1.5	2.1/32.0	38055	(12772)	2000 01 02.2	06 48.56 +24 21.1 16.6	-1.16 + 3.2	0.5/02.1	37057
(12887)	2000 01 01.3	06 44.67 +23 59.5 17.2	-0.93 + 1.7	0.3/01.3	37088	1998 QR ₁₁	2000 01 02.2	06 48.66 +22 53.8 18.6	-1.12 + 0.2	0.0/02.3	37708
1999 XJ ₁₉₇	2000 01 01.3	06 44.72 +39 13.6 16.7	-1.30 + 8.9	5.9/30.1	37978	(12834)	2000 01 02.2	06 48.77 +19 45.8 17.4	-1.20 + 3.0	1.3/02.6	37073
1979 MS ₄	2000 01 01.4	06 44.76 +19 16.8 19.3	-1.08 + 1.9	1.3/01.7	38017	(13214)	2000 01 02.3	06 48.96 +19 32.3 17.4	-1.07 + 1.6	1.3/02.6	37543
1999 XL ₁₆₀	2000 01 01.4	06 44.80 +18 30.6 17.5	-1.08 + 3.5	1.8/01.8	37962	1998 SO ₆₃	2000 01 02.3	06 49.11 +07 26.5 18.5	-0.87 + 1.2	5.0/03.6	37773
1998 RP ₅₃	2000 01 01.4	06 44.85 +10 54.2 18.1	-1.07 + 0.3	4.9/02.0	38060	1998 RB	2000 01 02.3	06 49.15 -01 17.4 18.0	-0.95 + 0.4	8.9/03.9	33756
1994 PE ₃₉	2000 01 01.4	06 44.95 +14 16.5 19.2	-1.03 + 2.1	3.1/02.1	32748	1998 RA ₇₃	2000 01 02.4	06 49.18 +22 45.2 17.2	-0.95 + 0.9	0.1/02.4	38060
1988 BH ₅	2000 01 01.4	06 45.04 +17 43.9 16.5	-1.09 - 4.0	2.1/01.5	38020	(13159)	2000 01 02.4	06 49.25 +27 28.2 17.4	-1.18 + 1.0	2.0/02.2	37529
1998 ST ₅₀	2000 01 01.4	06 45.06 +28 43.8 17.1	-0.97 + 1.1	1.9/01.1	38062	1998 QB ₇₃	2000 01 02.4	06 49.55 +10 45.6 18.5	-0.89 + 0.2	3.9/03.3	38057
1998 RY ₅₀	2000 01 01.4	06 45.25 +36 07.1 18.4	-1.06 - 0.6	4.4/31.9	37752	4778 P-L	2000 01 02.4	06 49.66 +15 45.4 18.1	-1.17 + 2.0	2.9/03.0	38191
(13318)	2000 01 01.5	06 45.47 +39 00.3 17.8	-1.09 + 1.4	4.9/31.5	37572	1994 PR ₂₂	2000 01 02.5	06 49.87 +24 57.3 17.7	-1.18 + 1.5	0.8/02.4	37639
1999 XC ₉₆	2000 01 01.5	06 45.60 +32 42.8 17.4	-1.30 - 0.9	4.0/01.2	37923	6747 P-L	2000 01 02.5	06 49.92 +46 40.4 21.0	-1.33 + 0.7	7.1/01.0	34267
1985 RJ	2000 01 01.5	06 45.63 +05 59.7 19.4	-0.91 + 1.5	5.0/03.0	33066	1993 TM ₁₅	2000 01 02.5	06 49.93 +25 06.5 18.4	-0.95 + 1.9	0.7/02.4	38030
1998 RC ₅₃	2000 01 01.5	06 45.67 +26 08.0 18.5	-1.01 + 1.2	1.1/01.4	38059	1998 QB ₄₈	2000 01 02.5	06 49.96 +08 14.8 17.4	-0.97 + 1.5	5.5/03.6	37725
1994 RL ₂₃	2000 01 01.6	06 45.66 +16 33.6 18.8	-1.05 + 3.0	2.3/02.1	36515	(13117)	2000 01 02.5	06 50.03 +09 44.0 17.7	-0.86 + 2.1	4.1/03.7	37518
1999 XX ₃₅	2000 01 01.6	06 45.73 +19 19.8 17.5	-1.13 + 2.1	1.6/01.9	37883	(12732)	2000 01 02.6	06 50.04 +23 42.4 16.8	-1.15 + 3.9	0.3/02.5	37047
1998 QN ₄	2000 01 01.6	06 45.92 +33 58.9 17.3	-1.27 + 1.5	4.5/31.9	38054	(12729)	2000 01 02.6	06 50.06 +05 12.9 17.3	-1.03 - 0.5	6.9/03.6	37046
(12747)	2000 01 01.6	06 45.98 +24 47.0 16.4	-1.17 + 2.7	0.8/01.5	37050	A913 CF	2000 01 02.6	06 50.06 +09 24.7 18.9	-0.87 + 1.1	4.3/03.6	38016
1990 QS ₃	2000 01 01.6	06 46.11 +16 07.4 20.0	-1.02 + 2.2	2.3/02.2	32742	(9790)	2000 01 02.6	06 50.17 +17 15.9 18.1	-0.57 + 0.3	1.1/03.0	33209
1998 SJ ₂₄	2000 01 01.7	06 46.17 +25 18.9 17.1	-0.98 + 2.2	0.8/01.6	38061	(12817)	2000 01 02.6	06 50.25 +17 37.9 17.7	-0.88 + 0.7	1.7/03.0	37068
1998 KZ	2000 01 01.7	06 46.35 +57 24.2 17.8	-2.15 + 9.2	16.1/27.4	38051	1998 QJ ₅	2000 01 02.6	06 50.26 +19 48.6 18.0	-1.01 + 0.2	1.1/03.0	37706
1998 SN ₁₃₀	2000 01 01.7	06 46.40 +22 12.9 18.2	-0.88 + 0.9	0.2/01.8	38064	1999 VE ₈	2000 01 02.6	06 50.34 +22 01.0 17.1	-1.14 + 3.0	10.5/23.0	37828
1999 WC ₁₀	2000 01 01.8	06 46.52 +29 09.3 17.2	-0.94 + 2.0	2.2/01.3	37851	1999 XZ ₃₅	2000 01 02.6	06 50.36 +25 28.9 17.1	-1.13 - 2.6	1.0/02.6	37883
(13451)	2000 01 01.8	06 46.72 +31 15.8 17.9	-1.00 + 0.5	3.2/01.4	37610	1997 PF	2000 01 02.6	06 50.38 +16 20.3 19.3	-0.83 + 0.2	1.8/03.1	35700
1996 AX ₃	2000 01 01.8	06 46.97 +29 29.3 17.3	-1.09 + 0.1	2.3/01.5	38037	1998 OE ₁₂	2000 01 02.6	06 50.39 +22 20.3 19.9	-1.05 + 3.0	8.4/23.0	35709
9602 P-L	2000 01 01.9	06 46.93 +16 42.5 18.2	-0.56 + 1.2	1.2/02.4	38191	(10989)	2000 01 02.6	06 50.42 +09 45.4 18.2	-0.56 + 0.8	2.6/03.7	35209
(12894)	2000 01 01.9	06 47.06 +19 52.6 17.1	-1.02 - 1.5	1.0/02.0	37090	3200 T-2	2000 01 02.7	06 50.53 +22 13.9 18.6	-0.94 + 2.1	0.2/02.8	38192
1990 VM ₂	2000 01 01.9	06 47.17 +22 41.2 16.5	-1.05 + 3.4	0.1/02.0	38023	1995 WQ ₁	2000 01 02.7	06 50.71 +20 56.0 16.7	-1.10 - 0.8	0.9/03.0	38035
(13300)	2000 01 01.9	06 47.25 +18 46.4 18.0	-0.99 + 2.3	1.4/02.3	37567	1998 QK ₅	2000 01 02.7	06 50.73 +18 25.5 17.9	-1.14 - 0.2	2.0/03.0	38054

1995 VC	2000 01 02.7	06 50.73 +28 11.9 16.9	-1.11 + 2.2	2.5/02.3	37649	(13387)	2000 01 03.5	06 54.47 +31 29.6 18.7	-0.64 + 0.5	1.6/02.9	37592
1998 QX ₉₄	2000 01 02.7	06 50.85 +29 41.0 18.4	-1.15 - 2.7	2.3/02.6	37740	1998 SB ₇₁	2000 01 03.5	06 54.51 +37 14.9 17.6	-1.05 + 2.2	4.4/02.3	37775
1999 XZ ₉₅	2000 01 02.7	06 50.89 +33 05.9 17.6	-1.02 + 5.4	3.4/01.6	37923	1997 GD ₄₂	2000 01 03.6	06 54.53 +13 12.8 17.3	-1.05 + 2.0	4.0/04.4	38044
1998 RT ₄₉	2000 01 02.8	06 50.92 +40 50.5 19.5	-1.22 + 0.5	5.7/01.7	33350	5030 T-2	2000 01 03.6	06 54.54 +24 42.0 17.3	-0.65 - 0.7	0.4/03.5	38193
1998 RK ₄₅	2000 01 02.8	06 51.06 +11 29.9 19.2	-0.94 + 1.6	3.9/03.7	35714	1998 ST ₁₆₀	2000 01 03.6	06 54.58 +19 17.1 18.4	-0.90 + 1.3	1.1/03.9	38064
1998 RW ₆₁	2000 01 02.8	06 51.07 +22 20.1 18.0	-0.93 + 0.7	0.2/02.9	38060	1998 QJ ₇₀	2000 01 03.6	06 54.65 +26 00.8 16.7	-1.03 - 3.7	1.0/03.6	37731
1998 SL ₁₄₂	2000 01 02.8	06 51.07 +36 11.1 17.4	-1.03 + 3.0	4.2/01.6	37788	(12990)	2000 01 03.6	06 54.68 +27 22.8 17.4	-1.13 + 0.7	1.7/03.3	37484
1998 PG ₁	2000 01 02.8	06 51.10 +34 17.1 18.4	-1.29 + 1.7	4.0/02.0	33346	1989 ST ₄	2000 01 03.6	06 54.78 +30 54.4 17.8	-1.05 + 2.4	2.7/03.0	38021
1999 XB ₈₄	2000 01 02.8	06 51.23 +21 02.2 17.3	-1.07 + 4.0	0.9/03.0	37913	1998 QZ ₁₀₁	2000 01 03.6	06 54.82 +10 00.0 18.5	-0.98 + 3.5	4.7/04.9	38058
1998 SS ₁₄₇	2000 01 02.8	06 51.30 +52 03.3 17.9	-1.26 + 2.7	8.4/30.7	34305	1998 TC ₅	2000 01 03.6	06 54.83 +06 32.3 18.7	-0.82 - 0.3	4.3/04.8	34305
1998 OK ₁₁	2000 01 02.9	06 51.43 +18 04.6 17.5	-1.15 + 3.5	2.1/03.3	37701	1998 JJ ₄	2000 01 03.7	06 54.87 +09 20.6 19.1	-1.10 + 0.3	4.9/04.7	37686
1996 AG ₅	2000 01 02.9	06 51.44 +27 07.7 19.8	-1.08 + 1.8	1.6/02.6	26750	1981 EH ₄₅	2000 01 03.7	06 54.87 +25 04.2 17.4	-1.13 - 2.0	1.0/03.6	37620
1998 RJ ₆	2000 01 02.9	06 51.55 +30 06.2 17.7	-1.24 + 0.6	3.0/02.5	37746	1998 RJ ₁₅	2000 01 03.7	06 55.11 +19 37.2 20.2	-1.09 + 1.6	1.2/04.0	35713
1998 RC ₆₉	2000 01 02.9	06 51.80 +23 38.9 17.5	-0.90 + 1.1	6.9/23.0	38060	1994 PV ₃₉	2000 01 03.7	06 55.16 +22 34.1 17.9	-1.13 + 1.0	0.1/03.8	38032
1997 LT ₄	2000 01 02.9	06 51.81 +20 51.9 18.4	-1.00 + 3.7	0.8/03.2	37672	1998 RR ₅₃	2000 01 03.7	06 55.22 +12 21.9 20.0	-0.96 + 1.0	3.3/04.5	35714
1998 RD ₆₅	2000 01 02.9	06 51.83 +23 12.8 18.1	-0.94 + 0.9	7.7/23.0	37756	2590 P-L	2000 01 03.7	06 55.24 +29 57.1 18.9	-1.16 + 1.4	2.4/03.2	38190
1991 RJ ₂₀	2000 01 03.0	06 52.12 +20 18.7 17.8	-1.14 + 2.8	1.1/03.3	38025	(12991)	2000 01 03.7	06 55.36 +20 07.6 17.8	-0.93 + 1.3	0.9/04.0	37484
1998 OJ ₁	2000 01 03.0	06 52.13 +11 10.2 18.4	-1.02 - 1.4	4.1/03.6	37699	1998 RG ₇₁	2000 01 03.7	06 55.36 +30 23.2 18.3	-0.98 + 1.7	2.3/03.2	37758
3338 T-1	2000 01 03.0	06 52.18 +27 11.7 19.6	-1.18 + 1.9	1.7/02.7	29948	1999 XN ₁₂	2000 01 03.7	06 55.38 +16 15.9 16.1	-1.09 + 4.7	2.9/04.5	37862
1998 QE ₄₉	2000 01 03.0	06 52.28 +25 03.6 17.2	-1.01 + 1.5	0.8/02.9	38057	4219 T-3	2000 01 03.8	06 55.30 +21 44.0 20.3	-1.14 + 2.6	0.4/03.9	26187
2512 P-L	2000 01 03.1	06 52.29 +25 00.8 17.2	-1.06 + 1.1	0.8/03.0	38003	(9907)	2000 01 03.8	06 55.35 +14 58.8 18.4	-0.56 + 1.4	1.5/04.5	33470
1998 PS	2000 01 03.1	06 52.42 +21 09.5 19.0	-0.92 + 1.4	0.6/03.3	38054	1999 XO ₁₂	2000 01 03.8	06 55.48 +10 40.9 17.5	-1.09 - 4.9	5.7/04.0	37862
(13245)	2000 01 03.1	06 52.64 -18 35.9 17.0	-1.13 - 1.2	20.1/05.2	37552	1998 MF ₄₁	2000 01 03.8	06 55.50 +25 14.8 19.5	-1.24 - 1.2	0.9/03.7	34219
1987 RR	2000 01 03.1	06 52.66 +07 32.9 17.6	-0.85 + 3.4	4.8/04.8	38020	1999 XJ ₁₉₇	2000 01 03.8	06 55.64 +37 42.8 17.7	-1.05 + 2.3	5.5/02.4	37978
1998 QC ₅₂	2000 01 03.2	06 52.69 -11 04.6 17.3	-0.92 + 2.3	12.2/06.6	38057	2695 P-L	2000 01 03.9	06 55.78 +24 02.5 17.3	-0.93 + 1.0	0.4/03.8	38190
1998 QG ₁₀₂	2000 01 03.2	06 52.72 +16 52.6 17.2	-0.94 + 3.0	2.2/03.8	37742	(12808)	2000 01 03.9	06 55.81 +16 12.0 15.1	-0.96 + 8.2	3.3/04.9	37066
(11374)	2000 01 03.2	06 52.76 +11 55.9 18.4	-1.07 + 1.3	4.0/04.0	35584	1998 OA ₁₂	2000 01 03.9	06 55.85 +35 47.2 17.8	-1.26 - 4.9	5.3/03.9	38054
1998 RS	2000 01 03.2	06 52.81 -00 21.5 18.0	-0.82 + 1.7	7.4/05.4	37744	1978 UN ₅	2000 01 03.9	06 55.88 +30 28.4 19.0	-1.13 + 1.2	2.5/03.4	38017
1999 XE ₁₈₇	2000 01 03.2	06 52.84 +29 56.0 17.5	-1.42 - 8.6	2.9/03.4	37975	3063 T-2	2000 01 03.9	06 55.92 +47 32.2 17.6	-1.37 + 0.7	9.8/02.0	38192
1998 QM ₇₀	2000 01 03.2	06 53.00 +15 51.2 18.8	-1.03 - 1.7	2.3/03.6	37732	1998 QK ₁₆	2000 01 03.9	06 56.01 +30 37.4 18.1	-1.16 - 2.2	2.7/03.7	38055
1997 EK ₄₁	2000 01 03.2	06 53.11 +19 05.2 18.3	-1.16 + 0.4	1.5/03.5	38042	1998 SY ₁₂	2000 01 03.9	06 56.05 +21 03.0 17.7	-1.05 + 5.7	0.6/04.2	38061
1994 PX ₉	2000 01 03.2	06 53.12 +24 52.3 19.1	-1.09 + 1.4	0.7/03.1	38031	1998 QU ₅₁	2000 01 03.9	06 56.08 +19 58.8 18.8	-0.92 + 0.3	0.9/04.2	37727
1999 XT ₁₃	2000 01 03.2	06 53.17 +14 45.2 16.4	-1.04 + 5.8	3.9/04.3	37864	(13175)	2000 01 03.9	06 56.10 +35 48.8 17.2	-1.13 - 0.1	5.1/03.2	37533
1999 XG ₈₄	2000 01 03.3	06 53.11 +20 46.4 16.8	-1.15 - 4.9	1.0/03.3	37913	1998 QW ₉₀	2000 01 03.9	06 56.10 +25 28.8 18.5	-1.14 + 2.2	0.9/03.7	37739
1999 XG ₁₀₆	2000 01 03.3	06 53.12 +20 54.0 18.0	-0.93 + 0.6	0.8/03.4	37933	2567 P-L	2000 01 03.9	06 56.12 +26 16.6 17.5	-1.01 + 1.4	1.2/03.7	38004
(13079)	2000 01 03.3	06 53.16 +10 14.2 17.7	-0.98 + 3.6	4.5/04.6	37508	1999 XQ ₁₂	2000 01 03.9	06 56.15 +14 20.4 17.3	-1.10 + 1.7	3.7/04.6	37863
1998 MA ₄₇	2000 01 03.3	06 53.36 +22 32.9 18.7	-1.07 + 2.0	0.1/03.4	37697	(12707)	2000 01 04.0	06 56.43 +43 04.1 16.9	-1.29 + 4.9	7.7/01.7	37040
1993 TJ ₂₇	2000 01 03.3	06 53.45 +07 04.3 18.4	-0.86 + 1.5	5.3/04.6	38030	1997 GM ₆	2000 01 04.0	06 56.44 +07 53.4 19.3	-0.92 + 0.6	4.6/05.2	33344
1998 SB ₂₈	2000 01 03.3	06 53.47 +37 12.4 18.5	-1.03 + 1.5	4.1/02.2	38062	(12915)	2000 01 04.0	06 56.49 +20 51.5 16.8	-1.03 + 1.2	0.7/04.2	37096
1989 TP	2000 01 03.3	06 53.59 -16 53.0 17.7	-1.34 - 5.0	19.1/04.4	37625	4517 P-L	2000 01 04.0	06 56.58 +34 04.7 16.8	-1.30 + 1.1	4.4/03.3	38191
1999 XK ₈₄	2000 01 03.3	06 53.63 +17 20.3 16.9	-1.14 - 2.0	2.6/03.6	37913	(13297)	2000 01 04.0	06 56.62 +37 36.6 16.9	-1.03 + 0.3	4.6/03.0	37566
1996 AF ₁₁	2000 01 03.4	06 53.75 +21 09.9 18.6	-1.08 + 0.2	0.7/03.5	38037	(13251)	2000 01 04.0	06 56.63 +17 27.7 18.1	-1.17 + 2.4	2.0/04.5	37554
(13127)	2000 01 03.4	06 53.81 +22 55.2 17.4	-1.13 + 2.4	0.0/03.4	37520	1998 QT ₄₁	2000 01 04.0	06 56.72 +28 55.6 19.0	-1.09 + 1.0	2.1/03.7	38056
1998 OZ ₈	2000 01 03.5	06 54.01 +25 32.1 17.6	-1.21 + 0.3	1.0/03.3	37282	(13381)	2000 01 04.1	06 56.62 +18 44.2 18.5	-0.68 + 0.6	0.9/04.4	37590
1998 RC ₇₆	2000 01 03.5	06 54.16 +17 22.2 18.6	-1.06 + 2.3	1.8/04.0	38061	1999 XP ₁₂	2000 01 04.1	06 56.75 +13 46.7 17.2	-1.05 + 2.1	3.8/04.9	37863
1997 KC	2000 01 03.5	06 54.19 +24 36.8 17.2	-1.14 + 6.2	0.6/03.3	38044	1996 TC ₅₁	2000 01 04.1	06 56.75 +14 14.9 18.3	-0.55 + 0.9	1.6/04.9	37657
1995 SB ₂₅	2000 01 03.5	06 54.29 +36 52.5 18.5	-1.33 + 1.5	5.9/02.6	37646	1996 DJ	2000 01 04.1	06 56.88 +42 30.4 17.3	-1.87 -12.4	8.9/04.9	37655
1996 HY ₁₀	2000 01 03.5	06 54.38 +35 35.4 18.2	-1.02 + 2.4	3.9/02.4	38038	1998 SZ ₇₂	2000 01 04.1	06 57.09 +22 30.3 17.8	-0.88 + 1.8	0.1/04.2	38063
1999 XB ₈₉	2000 01 03.5	06 54.43 +17 47.8 17.6	-0.93 - 1.2	1.6/03.8	37918	1999 XG ₁₄	2000 01 04.2	06 57.14 +12 11.4 17.3	-1.04 - 2.8	3.7/04.6	37865
1997 ES ₁₇	2000 01 03.5	06 54.44 +23 52.3 17.9	-1.10 + 0.4	0.3/03.5	38042	1999 XM ₈₄	2000 01 04.2	06 57.32 +20 04.6 16.6	-1.14 - 0.6	1.1/04.4	37914
1998 QU ₁₈	2000 01 03.5	06 54.45 +23 52.8 17.9	-1.18 - 0.8	0.4/03.5	37710	1998 RG ₆₄	2000 01 04.2	06 57.35 +15 18.3 18.7	-1.09 + 2.4	2.7/04.9	38060

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1999 XU ₁₀₅	2000 01 04.2	06 57.45 +12 52.8	17.7	-0.97	+	4.1	3.7/05.4	37932	(13292)	2000 01 04.9	07 00.67 +29 09.9	17.7	-1.11	+	2.6	2.2/04.4	37565
2168 T-2	2000 01 04.2	06 57.47 +20 16.3	17.6	-0.94	+	1.3	0.9/04.5	38192	1998 SV ₅₅	2000 01 05.0	07 00.70 +20 35.0	17.3	-0.89	+	1.5	0.7/05.2	37771
1998 YW ₁	2000 01 04.2	06 57.51 +27 15.5	18.1	-0.63		0.0	0.9/04.0	38067	(13112)	2000 01 05.0	07 00.71 +25 34.9	17.5	-0.99	+	1.4	1.0/04.8	37517
(11396)	2000 01 04.3	06 57.61 +07 13.0	17.5	-0.54	+	0.7	2.9/05.7	35589	1999 XW ₁₆₀	2000 01 05.0	07 00.82 +17 53.5	18.2	-0.89	+	0.4	1.6/05.4	37962
1994 PH ₁₉	2000 01 04.3	06 57.78 +23 24.2	17.0	-1.11	+	0.9	0.3/04.3	37638	1998 SH ₁₀₆	2000 01 05.0	07 00.88 +38 40.3	18.0	-1.03	+	1.4	4.5/03.7	37777
(13280)	2000 01 04.3	06 57.91 +19 03.7	18.0	-1.11	+	3.1	1.5/04.7	37562	(13016)	2000 01 05.0	07 00.94 +02 21.2	17.9	-0.96	+	0.5	7.4/06.5	37491
2000 AX ₇₉	2000 01 04.3	06 58.01 +18 30.3	18.0	-1.11	+	3.4	1.6/04.8	37996	1998 RE ₂	2000 01 05.0	07 00.97 +14 48.2	16.8	-0.87	+	4.4	2.7/06.0	38059
(12985)	2000 01 04.4	06 58.04 +24 00.3	17.2	-1.17	+	0.9	0.5/04.3	37483	(13281)	2000 01 05.0	07 00.99 +19 31.7	18.1	-1.16	+	1.1	1.2/05.3	37562
1998 QX ₅	2000 01 04.4	06 58.10 +39 38.5	18.7	-1.17	+	1.5	4.9/03.0	33347	1987 SF ₆	2000 01 05.1	07 01.41 +13 54.0	18.0	-1.08	+	2.8	3.4/06.0	37623
1999 XW ₁₃₃	2000 01 04.4	06 58.13 +38 56.7	17.6	-1.08	+	1.5	5.4/03.0	37949	1999 XR ₁₆₀	2000 01 05.1	07 01.42 +17 22.5	17.6	-0.92	-	1.1	1.8/05.5	37962
1998 SQ ₉₇	2000 01 04.4	06 58.20 -01 59.1	18.2	-0.81	+	2.2	7.6/07.1	38063	1999 XH ₁₇₁	2000 01 05.1	07 01.43 +27 45.3	17.2	-1.06	+	3.4	2.1/04.6	37970
1998 QC ₂₆	2000 01 04.4	06 58.34 +27 16.2	18.2	-1.05	+	0.8	1.5/04.1	37714	(12278)	2000 01 05.1	07 01.51 +11 48.8	16.4	-0.96	+	0.3	4.6/06.0	36680
1999 WW ₇	2000 01 04.4	06 58.45 +22 23.7	17.0	-1.06	+	0.9	0.2/04.5	37850	1995 YC ₂	2000 01 05.1	07 01.51 +15 01.9	17.8	-1.08	+	1.0	3.2/05.8	37653
1998 RG ₅₃	2000 01 04.5	06 58.42 +14 20.2	18.0	-0.95	+	2.0	3.0/05.2	37752	1991 NM	2000 01 05.2	07 01.78 +09 22.2	18.0	-0.82	-	1.1	3.4/06.1	38024
1998 SU ₆₁	2000 01 04.5	06 58.60 +35 31.7	18.5	-1.04	-	0.3	3.9/03.7	37773	1998 QN ₄₅	2000 01 05.2	07 01.98 +01 44.0	17.4	-1.01	+	1.5	8.9/07.0	37723
1998 OY ₉	2000 01 04.5	06 58.75 +17 07.8	19.9	-1.16	+	2.4	2.1/05.0	32757	1998 QS ₃₂	2000 01 05.3	07 01.98 +29 39.7	18.7	-1.23	+	0.1	2.5/04.8	37717
1998 SL ₁₂	2000 01 04.5	06 58.76 +20 07.9	17.7	-0.94	+	1.8	0.8/04.8	38061	(13322)	2000 01 05.3	07 02.02 +29 55.2	17.7	-0.95	+	1.9	2.1/04.7	37573
1998 UJ ₁	2000 01 04.6	06 58.85 +28 19.5	18.8	-1.09	+	3.2	1.8/04.1	38065	(11377)	2000 01 05.3	07 02.11 +23 15.3	16.5	-0.89	+	2.2	0.2/05.3	38016
(12827)	2000 01 04.6	06 58.85 +20 03.2	16.7	-1.10	+	4.5	1.0/04.9	37071	(13385)	2000 01 05.3	07 02.20 +09 06.7	17.2	-0.53	+	1.6	2.4/06.8	37591
1021 T-2	2000 01 04.6	06 58.87 +18 25.4	19.0	-1.12	+	1.9	1.7/05.0	23681	2000 AQ ₁₃₄	2000 01 05.3	07 02.20 +28 08.2	18.2	-1.07	+	1.0	1.9/04.9	37999
1999 XF ₈₅	2000 01 04.6	06 58.92 +23 21.4	17.2	-1.23	+	0.9	0.3/04.6	37914	1998 QO ₈₇	2000 01 05.3	07 02.24 +17 22.1	17.8	-0.95	-	1.6	1.8/05.7	38058
1999 XN ₈₄	2000 01 04.6	06 59.05 +20 30.4	16.1	-1.07	+	0.5	1.0/04.8	37914	2132 T-2	2000 01 05.3	07 02.27 +04 48.6	19.1	-0.86	+	1.7	6.1/07.1	33130
1998 SG ₁₆₄	2000 01 04.6	06 59.07 +16 23.0	17.1	-0.84	+	2.6	1.9/05.3	37790	(10847)	2000 01 05.3	07 02.29 +27 13.1	16.5	-1.02	-	1.6	1.6/05.1	34782
1995 SV ₅₀	2000 01 04.6	06 59.14 +26 19.1	17.8	-1.19	+	0.9	1.6/04.4	38034	1999 XH ₈₅	2000 01 05.3	07 02.33 +22 20.8	17.0	-1.18	-	1.3	0.1/05.4	38148
(13185)	2000 01 04.6	06 59.22 +34 02.5	18.0	-0.66	+	0.6	2.2/03.7	37536	1998 WN ₁₁	2000 01 05.3	07 02.38 +22 03.3	17.4	-0.62	+	1.6	0.1/05.5	38067
1998 QM ₉₅	2000 01 04.6	06 59.35 +23 27.6	17.7	-1.00	-	2.0	0.3/04.7	37740	1995 DL	2000 01 05.4	07 02.39 +28 20.6	17.2	-0.94	+	0.9	1.8/04.9	38034
(11385)	2000 01 04.7	06 59.27 +22 05.9	17.4	-0.90	+	1.9	0.2/04.8	35586	(13463)	2000 01 05.4	07 02.41 +31 08.4	18.0	-0.65		0.0	1.6/04.7	37613
1998 RW ₅₀	2000 01 04.7	06 59.27 +23 30.2	17.6	-1.03	+	0.5	0.3/04.6	38059	(12921)	2000 01 05.4	07 02.61 +09 24.0	17.3	-0.56	+	1.8	2.7/06.9	37097
1999 XE ₃₆	2000 01 04.7	06 59.29 +16 12.4	16.8	-0.92	+	0.2	2.8/05.2	37883	4536 T-2	2000 01 05.4	07 02.68 +04 47.5	17.8	-0.56	+	1.5	3.7/07.3	38193
1997 FN ₁	2000 01 04.7	06 59.33 +17 22.8	17.9	-1.13	+	0.6	2.0/05.1	38042	2000 AN ₃₆	2000 01 05.4	07 02.78 +28 06.5	18.1	-1.19	+	1.4	2.3/05.0	37994
4230 T-2	2000 01 04.7	06 59.34 +23 48.1	18.1	-0.95	+	2.2	0.3/04.6	38193	1999 XA ₉₃	2000 01 05.5	07 02.85 +20 59.5	17.8	-1.24	+	3.2	0.7/05.7	37920
1995 FW	2000 01 04.7	06 59.34 +56 05.0	18.9	-2.17	-	4.0	16.2/03.4	30783	1999 XS ₈₄	2000 01 05.5	07 02.87 +20 12.8	16.7	-1.04	-	1.8	1.0/05.6	37914
(12486)	2000 01 04.7	06 59.43 +30 26.1	17.2	-1.18	+	2.5	3.2/04.0	36736	1994 PY ₁₉	2000 01 05.5	07 03.07 +24 08.6	17.2	-1.14	+	0.9	0.6/05.4	38032
1999 XJ ₁₆₂	2000 01 04.7	06 59.55 +43 41.0	17.1	-1.22	-	0.2	9.9/03.4	38162	1998 SW ₂₅	2000 01 05.5	07 03.11 +16 38.9	19.4	-0.87	+	2.2	1.7/06.2	35717
1999 XW ₂₁₁	2000 01 04.7	06 59.55 +38 47.5	17.8	-0.73	-	0.7	3.1/03.6	37980	1992 YY ₁	2000 01 05.6	07 03.23 +24 52.8	16.8	-1.19	+	4.3	1.0/05.4	38028
(13274)	2000 01 04.7	06 59.61 +32 31.5	18.3	-1.21	-	0.3	3.7/04.2	37560	1999 XA ₁₇₂	2000 01 05.6	07 03.35 +28 43.3	16.6	-1.29	-	1.6	2.7/05.3	37970
1998 UX ₂₅	2000 01 04.7	06 59.63 +04 51.4	18.6	-0.82	+	0.9	5.0/06.2	34594	1996 BB ₁	2000 01 05.6	07 03.59 +17 36.3	17.2	-1.05	+	0.4	2.1/06.1	38037
1998 SZ ₅₆	2000 01 04.8	06 59.92 +21 06.9	18.0	-0.94	+	2.4	0.6/05.0	37771	1999 XD ₂₀₃	2000 01 05.7	07 03.66 +35 56.6	17.3	-1.28	-	4.5	5.6/05.4	37979
1990 YP	2000 01 04.8	06 59.93 +31 33.1	16.3	-1.17	-	7.8	4.2/05.0	38023	1988 RK ₆	2000 01 05.7	07 03.68 +11 31.4	17.1	-1.10	+	2.8	4.6/06.8	37624
1998 RV ₄₂	2000 01 04.8	06 59.96 +15 04.2	17.4	-0.95	+	0.2	2.6/05.4	38059	1999 XX ₁₀₅	2000 01 05.7	07 03.71 +15 53.3	17.5	-1.05	+	4.1	2.6/06.5	37932
1995 DG	2000 01 04.8	07 00.17 +03 05.1	15.9	-0.82	+	6.8	7.5/08.0	38034	6202 P-L	2000 01 05.7	07 03.74 +17 31.1	19.1	-0.91	+	0.6	1.7/06.1	36121
1998 RE ₂₄	2000 01 04.8	07 00.23 +28 56.1	18.5	-1.05	+	1.0	2.3/04.4	37748	(12972)	2000 01 05.7	07 03.80 +32 05.1	18.1	-0.65	+	1.3	1.8/04.8	37479
1998 RC ₂₄	2000 01 04.9	07 00.20 +16 30.3	18.1	-0.96	+	2.1	2.4/05.5	38059	(13182)	2000 01 05.7	07 03.86 +24 38.3	17.1	-0.59	+	0.4	0.4/05.6	37535
1995 QH	2000 01 04.9	07 00.24 +21 04.5	15.9	-1.17	-	1.3	0.8/05.0	38034	1988 PV ₁	2000 01 05.7	07 03.95 +23 16.8	16.8	-1.22	-	0.6	0.3/05.7	38020
1998 SC ₂₈	2000 01 04.9	07 00.26 +21 49.2	19.3	-0.88	+	1.4	0.3/05.0	38062	1998 QZ ₆₈	2000 01 05.7	07 03.99 +16 21.9	18.1	-1.08	+	0.4	2.3/06.2	37731
1998 UY ₂₆	2000 01 04.9	07 00.29 +10 25.6	17.9	-0.92	+	1.5	3.7/05.9	38066	1993 RU ₃	2000 01 05.7	07 04.16 +13 19.5	17.0	-0.98	-	1.3	3.1/06.3	37636
1978 VL ₃	2000 01 04.9	07 00.32 +27 28.8	17.7	-1.21	+	2.4	1.8/04.5	38017	3167 T-2	2000 01 05.8	07 04.13 +22 33.4	19.9	-1.11	+	2.3	0.0/05.8	33058
1991 VY ₄	2000 01 04.9	07 00.32 +23 21.2	15.8	-1.07	+	4.0	0.3/04.9	38025	1994 VV ₂	2000 01 05.8	07 04.17 +30 39.9	16.9	-1.07	+	4.2	2.8/04.9	37642
1999 XO ₈₉	2000 01 04.9	07 00.35 +18 46.2	17.5	-0.97	-	0.6	1.2/05.2	37918	1997 NU ₆	2000 01 05.8	07 04.17 +13 15.2	17.7	-0.94	-	0.3	3.1/06.5	38045
(11737)	2000 01 04.9	07 00.57 +16 07.7	16.6	-1.06	+	1.3	2.7/05.5	38016	1998 RX ₁₅	2000 01 05.8	07 04.23 +22 57.9	18.3	-0.97	+	1.2	0.1/05.8	37746
1998 QO ₅₃	2000 01 04.9	07 00.57 -10 44.7	19.5	-0.88	+	0.5	9.3/08.3	37729	(12764)	2000 01 05.8	07 04.27 +36 48.6	17.4	-1.03	+	2.4	4.2/04.4	37055

1999 XM ₁₇₁	2000 01 05.8	07 04.47 +25 06.3 16.9	-1.11 - 2.5	1.1/05.8	37970	1998 SM ₆₂	2000 01 06.5	07 07.22 +07 44.3 18.7	-0.89 - 0.1	4.8/07.7	34536
1998 MR ₃₇	2000 01 05.8	07 04.56 +26 48.7 17.7	-1.17 + 2.7	1.5/05.5	38053	1995 SK	2000 01 06.5	07 07.27 +58 49.9 20.2	-2.05 - 3.5	13.8/05.7	30783
1981 EL ₄₅	2000 01 05.8	07 04.62 +18 28.5 18.2	-1.08 - 0.9	1.7/06.1	26923	1999 VR ₉	2000 01 06.5	07 07.30 +23 30.2 15.5	-1.05 + 6.5	0.5/06.4	38101
2000 AE ₂₅	2000 01 05.9	07 04.57 +22 32.7 17.0	-0.91 + 1.5	0.0/05.9	38175	1998 RA ₆₅	2000 01 06.5	07 07.35 +19 47.5 18.5	-0.94 + 1.7	0.9/06.8	33003
1980 XB	2000 01 05.9	07 04.66 +57 50.6 14.7	-1.08 +29.5	18.5/21.0	37619	1997 FF ₁	2000 01 06.5	07 07.36 +28 22.9 18.4	-1.19 + 2.5	2.3/06.0	38042
1997 GX ₁₄	2000 01 05.9	07 04.69 +39 17.0 19.1	-1.20 + 0.9	5.2/04.6	37273	1998 ST ₆₀	2000 01 06.5	07 07.38 +25 05.2 17.9	-0.97 + 2.3	0.8/06.3	37772
1998 RN ₇₈	2000 01 05.9	07 04.69 +24 45.6 17.4	-1.07 + 3.1	0.8/05.7	38061	1998 SD ₁₄₁	2000 01 06.5	07 07.45 +37 28.4 17.8	-1.04 + 1.5	4.3/05.1	37788
1998 SX ₁₂₆	2000 01 05.9	07 04.69 +31 36.9 17.3	-1.06 + 3.2	3.0/05.0	37782	1998 QU ₅₂	2000 01 06.5	07 07.54 +19 46.7 17.4	-0.94 - 0.6	0.9/06.8	38057
1999 XG ₁₀₁	2000 01 05.9	07 04.80 +26 41.2 17.2	-1.17 + 2.6	1.9/05.6	37929	(13383)	2000 01 06.5	07 07.58 +18 02.0 17.6	-0.59 + 0.3	0.9/07.0	37591
1981 RL ₂	2000 01 05.9	07 04.90 +24 16.7 16.5	-1.16 - 3.1	0.7/05.9	37621	(13123)	2000 01 06.5	07 07.72 +43 40.9 16.5	-1.44 + 6.5	7.1/03.7	37519
1998 RN ₅₃	2000 01 05.9	07 04.96 +18 40.2 18.6	-1.01 + 1.1	1.4/06.3	38060	(13011)	2000 01 06.6	07 07.61 +34 14.4 17.9	-1.04 - 0.6	3.7/05.8	37489
(12881)	2000 01 05.9	07 04.97 +19 50.5 18.1	-1.02 + 2.6	0.9/06.3	37086	1998 RT ₁₅	2000 01 06.6	07 07.66 +30 43.4 18.7	-1.14 - 0.4	2.8/06.0	37746
1999 XK ₁₄₄	2000 01 05.9	07 05.00 +31 40.1 17.0	-1.04 - 1.0	2.9/05.4	37955	1994 TR ₆	2000 01 06.6	07 07.68 +17 34.9 20.0	-1.01 + 2.1	1.6/07.1	33341
1998 QZ ₁₇	2000 01 05.9	07 05.07 +14 20.5 16.8	-1.08 + 0.5	3.7/06.6	37710	1995 SY ₂₇	2000 01 06.6	07 07.73 +35 26.3 17.9	-1.29 + 2.1	5.7/05.4	37646
1999 XK ₂₁₅	2000 01 05.9	07 05.07 +12 36.9 17.8	-1.11 + 0.5	3.9/06.7	37982	(12239)	2000 01 06.6	07 07.83 +13 10.9 16.1	-0.98 + 0.1	4.3/07.4	36670
1998 SV ₃₆	2000 01 06.0	07 05.05 +17 46.8 18.6	-1.10 + 1.8	1.9/06.4	38062	1996 DV ₁	2000 01 06.6	07 07.95 +26 13.5 18.1	-1.04 + 0.3	1.3/06.4	38038
1998 QS ₇₇	2000 01 06.0	07 05.36 +22 46.0 17.5	-0.99 - 1.4	0.1/06.1	38058	1998 QB ₈₆	2000 01 06.6	07 08.00 +22 10.8 18.1	-1.00 - 2.4	0.1/06.7	37736
2703 P-L	2000 01 06.1	07 05.47 +10 20.6 17.3	-1.04 + 2.5	5.7/07.3	38190	1998 UF ₃₁	2000 01 06.6	07 08.00 +28 47.4 17.5	-0.64 + 1.8	1.3/06.0	37797
1975 TE	2000 01 06.1	07 05.56 +29 58.4 17.1	-1.30 + 1.9	3.1/05.5	38017	1998 QK ₃₇	2000 01 06.6	07 08.07 +18 35.2 18.5	-1.12 + 1.3	1.4/07.0	38056
1999 XY ₁₆₀	2000 01 06.1	07 05.66 +18 43.7 18.0	-1.13 + 4.1	1.5/06.6	37962	1998 QV ₁₇	2000 01 06.6	07 08.10 +16 22.7 18.7	-1.10 + 2.0	2.3/07.3	38055
(12906)	2000 01 06.1	07 05.70 +17 31.8 17.1	-0.95 + 2.5	1.8/06.7	37093	1999 XB ₁₀₆	2000 01 06.6	07 08.11 +17 43.5 15.8	-1.06 +11.1	2.2/08.0	37933
1998 SN ₁₅₆	2000 01 06.1	07 05.71 +25 21.7 19.2	-0.96 + 1.3	0.8/05.9	35635	1994 GB ₁	2000 01 06.7	07 08.29 +30 23.1 17.2	-1.23 + 2.6	2.8/06.0	38031
1999 XY ₁₀₅	2000 01 06.1	07 05.73 +16 33.0 16.8	-0.98 + 4.9	2.9/06.9	37932	1998 SB ₁	2000 01 06.7	07 08.37 +30 49.0 19.3	-0.93 + 1.7	2.4/05.9	33276
1998 SK ₂₂	2000 01 06.1	07 05.75 +15 18.1 18.4	-0.87 + 1.7	2.3/06.9	38061	1998 RZ ₇₁	2000 01 06.7	07 08.44 +25 19.7 16.9	-0.97 + 2.2	1.0/06.5	38060
1999 XL ₂₁₅	2000 01 06.1	07 05.92 +13 42.7 17.9	-1.10 + 2.6	3.2/07.1	37982	1998 RL ₇₆	2000 01 06.7	07 08.55 +23 23.9 17.6	-0.95 + 2.5	0.3/06.7	37761
1998 SE ₁₃₀	2000 01 06.2	07 05.94 +19 49.0 17.6	-0.92 + 1.5	0.9/06.5	38064	1998 RE ₇₈	2000 01 06.7	07 08.56 +22 26.5 19.1	-1.08 + 2.8	0.0/06.8	37762
1993 TL ₂₈	2000 01 06.2	07 05.96 +21 24.5 17.2	-0.92 + 2.5	0.4/06.3	38030	1998 RQ ₄₉	2000 01 06.8	07 08.56 +16 26.4 18.5	-1.11 + 3.1	2.2/07.4	37751
1999 XF ₁₄₄	2000 01 06.2	07 06.08 +37 14.1 15.9	-1.19 + 7.3	6.1/03.9	37955	1998 WX ₄	2000 01 06.8	07 08.61 +13 13.4 16.1	-0.57 + 3.8	1.7/08.1	38066
4178 T-1	2000 01 06.2	07 06.17 +26 27.3 18.0	-1.17 + 2.9	1.5/05.9	38192	1999 XD ₈₅	2000 01 06.8	07 08.71 +20 56.8 16.8	-1.07 + 3.9	0.7/07.0	37914
1998 RF ₇₁	2000 01 06.2	07 06.31 +23 02.1 17.9	-0.93 + 2.3	0.2/06.2	38060	1998 QQ ₂₆	2000 01 06.8	07 08.85 +23 34.9 20.1	-1.12 + 3.1	0.4/06.8	37715
1978 SJ ₇	2000 01 06.2	07 06.32 +43 10.7 18.2	-1.17 + 0.3	6.2/04.6	38017	2000 AM ₁₁₀	2000 01 06.9	07 09.09 +18 13.4 18.1	-1.13 + 2.0	1.6/07.3	37998
2000 AD ₅₀	2000 01 06.2	07 06.34 +25 08.5 17.9	-1.12 + 2.8	0.9/06.0	37995	(9807)	2000 01 06.9	07 09.10 +17 19.5 17.2	-0.61 + 0.6	1.1/07.4	33213
(13441)	2000 01 06.2	07 06.38 +04 06.2 16.5	-0.98 + 2.3	6.4/08.4	37608	1998 SY ₁₃₉	2000 01 06.9	07 09.28 +11 06.7 16.9	-0.86 - 0.3	3.5/07.9	37787
1994 PC ₁₃	2000 01 06.3	07 06.37 +21 01.0 18.3	-1.06 + 1.4	0.6/06.4	38032	1999 XA ₉₀	2000 01 06.9	07 09.34 +17 30.2 18.2	-0.73 0.0	1.2/07.4	37918
1995 YA ₇	2000 01 06.3	07 06.41 +19 08.7 19.7	-1.13 + 2.0	1.3/06.6	33075	(13184)	2000 01 06.9	07 09.37 +17 41.7 17.8	-0.56 + 0.7	0.9/07.5	37535
2513 P-L	2000 01 06.3	07 06.49 +25 14.3 17.5	-0.95 + 1.1	1.0/06.1	38004	1999 XZ ₁₀₅	2000 01 07.0	07 09.48 +09 46.8 16.2	-1.01 - 1.0	4.9/08.0	37933
1994 PP ₁₈	2000 01 06.3	07 06.55 +28 06.6 18.6	-1.15 + 0.7	2.1/05.9	34506	1994 RY ₁	2000 01 07.0	07 09.50 -00 03.9 17.7	-0.97 + 4.5	7.7/10.3	38032
1998 VM ₆	2000 01 06.3	07 06.58 +25 58.7 17.5	-0.67 0.0	0.8/06.1	37799	1999 XC ₉₀	2000 01 07.0	07 09.51 +20 44.0 17.8	-0.88 - 1.1	0.5/07.1	37918
2000 AJ ₁₅₀	2000 01 06.3	07 06.61 +11 43.6 17.9	-1.00 - 1.3	3.7/07.1	38001	(13252)	2000 01 07.0	07 09.61 +10 27.3 18.0	-0.96 + 1.9	4.2/08.3	37554
1997 HQ	2000 01 06.3	07 06.64 +12 25.2 16.6	-1.03 + 0.9	4.3/07.2	38044	(13111)	2000 01 07.0	07 09.69 +02 29.3 16.6	-1.33 +18.4	9.0/11.7	37516
1997 JY ₁₃	2000 01 06.3	07 06.75 +21 09.9 16.2	-1.07 + 2.5	0.7/06.5	38044	(13324)	2000 01 07.0	07 09.71 +24 24.9 18.1	-0.91 + 1.5	0.6/06.9	37574
1995 ME ₄	2000 01 06.3	07 06.79 +16 41.9 18.1	-0.60 - 0.1	1.2/06.9	37644	(12054)	2000 01 07.0	07 09.79 +33 37.9 18.2	-0.67 + 1.6	2.3/05.8	36287
(12406)	2000 01 06.4	07 06.73 +22 41.5 16.8	-1.16 + 0.1	0.1/06.4	36714	1999 UW ₁	2000 01 07.0	07 09.82 +36 35.3 18.0	-1.00 + 3.2	4.3/05.4	38092
(12891)	2000 01 06.4	07 06.77 +17 01.1 17.1	-0.95 + 1.7	1.9/06.9	37089	1998 RT ₇₉	2000 01 07.0	07 09.84 +25 38.5 18.7	-1.14 + 2.5	1.1/06.8	37763
1998 QF ₁₀₄	2000 01 06.4	07 06.79 +45 29.5 17.5	-1.35 + 1.3	7.8/04.3	38058	1998 QB ₄₀	2000 01 07.1	07 09.84 +10 09.9 18.0	-0.93 + 3.4	4.0/08.6	38056
1985 PT	2000 01 06.4	07 06.86 +11 36.5 17.6	-0.96 + 5.0	3.7/08.0	38019	1999 XV ₉₀	2000 01 07.1	07 09.87 +18 20.9 17.8	-1.22 - 1.1	1.8/07.4	37919
1997 BM ₈	2000 01 06.4	07 06.87 +25 19.4 17.0	-1.26 0.0	1.1/06.2	38040	1998 RW ₆₅	2000 01 07.1	07 09.90 +22 17.7 18.4	-0.96 + 1.3	0.1/07.1	34592
(13030)	2000 01 06.4	07 06.92 +04 07.4 17.5	-0.92 + 5.4	5.8/09.1	37495	1998 QT ₇₇	2000 01 07.1	07 09.90 +38 06.2 19.9	-1.09 - 1.4	4.4/06.2	32983
1999 XJ ₂₁₅	2000 01 06.4	07 07.04 +14 57.6 17.6	-1.09 + 4.6	3.5/07.3	37982	2000 AW ₈₂	2000 01 07.1	07 09.99 +17 42.2 17.3	-1.05 + 3.6	1.8/08.0	37996
(12945)	2000 01 06.4	07 07.23 +17 46.4 17.6	-1.07 + 2.2	1.8/06.9	37104	1999 XT ₉₀	2000 01 07.1	07 10.05 +16 03.0 17.3	-1.07 - 2.5	2.3/07.5	37919
1998 QR ₇₂	2000 01 06.5	07 07.17 +15 41.7 18.1	-1.10 + 0.2	2.6/07.0	37733	1998 SX ₄	2000 01 07.1	07 10.06 +06 40.0 17.9	-0.81 + 2.6	4.7/09.0	38061

1999 XL ₁₃₇	2000 01 07.1	07 10.12 +25 28.7 15.6	-1.07 - 1.2	1.1/07.0	37952
1991 RO ₃	2000 01 07.1	07 10.34 +29 39.1 18.3	-1.23 0.0	2.8/06.7	38024
1998 QL ₂₆	2000 01 07.2	07 10.32 +19 57.9 17.8	-1.01 + 3.5	1.0/07.5	38055
1995 WR ₈	2000 01 07.2	07 10.43 +16 24.4 17.1	-1.18 - 5.4	2.9/08.0	37651
1998 QH ₄₉	2000 01 07.2	07 10.46 +07 47.5 18.5	-0.87 + 4.7	4.8/09.3	37726
1998 RK ₆₅	2000 01 07.2	07 10.55 +26 02.3 17.2	-1.04 + 1.4	1.2/06.9	37756
1998 MV ₃₇	2000 01 07.2	07 10.63 +23 37.0 17.0	-1.11 + 7.4	0.4/07.1	38053
1999 XL ₁₀₁	2000 01 07.2	07 10.75 +24 57.5 16.8	-0.97 - 1.0	0.8/07.1	37930
1997 SZ ₂₃	2000 01 07.3	07 10.73 +41 13.6 19.7	-0.73 + 1.1	3.7/05.2	31012
1995 SW ₃	2000 01 07.3	07 10.89 +31 27.9 17.9	-1.37 - 0.4	3.7/06.8	37645
(12810)	2000 01 07.3	07 10.91 +20 37.4 17.3	-1.07 + 6.8	0.7/08.0	37066
(12746)	2000 01 07.3	07 10.93 +19 31.8 16.8	-1.21 + 0.2	1.2/08.0	37050
1991 RT ₉	2000 01 07.3	07 10.96 +23 41.8 17.8	-1.16 + 1.4	0.5/07.2	37628
1999 XA ₁₀₆	2000 01 07.3	07 10.97 +13 22.1 17.5	-0.93 + 5.7	3.6/08.6	37933
1995 DR ₁₃	2000 01 07.3	07 11.15 +21 33.6 17.2	-0.90 + 2.0	0.3/07.5	38034
1996 JS ₅	2000 01 07.3	07 11.18 +17 47.5 18.7	-0.84 + 1.8	1.3/07.9	38038
1995 UJ ₂	2000 01 07.3	07 11.22 +28 24.2 17.2	-1.23 + 1.5	2.6/06.9	38035
1998 SR ₆₃	2000 01 07.4	07 11.30 +22 27.5 19.0	-0.90 + 1.9	0.0/07.4	38063
1998 QE ₃₉	2000 01 07.4	07 11.45 +23 07.2 17.8	-0.94 + 1.6	0.2/07.4	38056
(12847)	2000 01 07.5	07 11.65 +17 32.9 16.7	-1.27 - 9.3	1.8/07.4	37076
1999 XT ₁₆₀	2000 01 07.5	07 11.74 +17 54.4 17.9	-0.57 + 1.9	0.9/08.1	37962
1998 SP ₇₅	2000 01 07.5	07 11.98 +05 14.0 19.4	-0.87 + 2.2	5.0/09.5	33039
1991 RF ₁₇	2000 01 07.5	07 12.00 +33 49.6 18.1	-1.24 + 2.7	4.6/06.4	37628
1998 ML ₃₁	2000 01 07.6	07 12.09 +22 30.2 18.5	-1.14 + 4.1	0.0/07.6	38053
(13328)	2000 01 07.6	07 12.16 +19 03.9 17.6	-0.90 + 2.9	1.2/08.0	37576
1998 QC ₈₄	2000 01 07.6	07 12.35 +21 07.7 18.7	-0.98 - 1.2	7.1/28.0	37735
1998 RL ₉	2000 01 07.6	07 12.42 +14 40.6 19.0	-1.03 + 3.2	2.9/08.5	38059
1999 XS ₁₅	2000 01 07.7	07 12.54 +22 13.0 16.3	-0.94 + 5.7	0.1/07.7	37866
1997 HP ₂	2000 01 07.7	07 12.65 +20 39.8 18.8	-1.04 + 2.0	0.6/07.9	38044
1998 SA ₅₅	2000 01 07.7	07 12.70 +19 13.0 18.1	-0.95 + 2.0	1.1/08.1	38062
(13202)	2000 01 07.7	07 12.72 +14 33.5 18.0	-1.11 + 1.1	3.4/08.4	37540
1994 UQ	2000 01 07.7	07 12.77 +36 52.6 17.5	-1.14 + 4.4	4.7/05.8	38033
(13248)	2000 01 07.7	07 12.78 +26 47.2 17.1	-1.06 + 2.3	1.7/07.3	37553
1997 MA ₄	2000 01 07.7	07 12.79 +24 14.7 17.6	-0.98 + 1.4	0.6/07.6	38045
1998 SL ₉	2000 01 07.7	07 12.89 +24 32.2 19.3	-1.06 + 1.5	0.7/07.6	33015
1998 SO ₆₁	2000 01 07.7	07 12.89 +21 20.4 17.1	-0.98 + 0.7	0.4/07.9	38063
1998 RP ₅	2000 01 07.7	07 12.92 -00 07.2 17.2	-0.94 + 2.2	8.7/10.2	38059
1998 SG ₅₇	2000 01 07.8	07 12.90 +26 01.3 17.7	-0.99 + 2.0	1.3/07.4	37771
1998 RH ₇₅	2000 01 07.8	07 12.95 +02 50.2 17.6	-0.99 + 2.6	7.5/09.9	37760
1998 QW ₈₉	2000 01 07.8	07 13.09 +36 16.3 18.0	-1.24 - 1.7	4.6/07.0	38058
1999 XO ₁₀₁	2000 01 07.8	07 13.09 +25 43.4 17.3	-1.01 + 3.9	1.2/07.4	37930
1999 XU ₁₇₉	2000 01 07.8	07 13.11 +31 07.7 18.2	-1.25 + 1.1	3.6/07.0	37974
(13301)	2000 01 07.8	07 13.11 +22 31.6 17.2	-1.02 + 1.4	9.0/28.0	37568
1998 SQ ₈₁	2000 01 07.8	07 13.12 +19 22.0 17.7	-0.94 + 2.1	1.1/08.2	37776
1989 TU ₄	2000 01 07.8	07 13.31 +22 27.9 19.1	-0.97 + 2.8	7.4/19.0	33335
(12867)	2000 01 07.8	07 13.32 +13 20.3 17.3	-1.10 + 3.6	3.4/08.9	37083
1997 LC	2000 01 07.9	07 13.32 +19 46.6 18.7	-0.94 + 1.8	0.8/08.2	37274
1989 TA ₄	2000 01 07.9	07 13.33 +28 48.5 18.1	-1.03 + 2.9	2.4/07.2	38021
1998 SR ₅₅	2000 01 07.9	07 13.35 +26 09.1 19.1	-1.03 + 1.9	1.3/07.5	37770
1994 TO ₄	2000 01 07.9	07 13.35 +01 32.3 19.2	-0.94 + 2.3	7.0/10.3	33073
1998 RU ₅₉	2000 01 07.9	07 13.39 +37 47.2 18.5	-1.26 + 0.1	5.2/06.6	38060

1997 GE ₇	2000 01 07.9	07 13.46 +03 54.8 18.9	-0.93 + 1.2	6.2/09.9	38043
(13330)	2000 01 07.9	07 13.50 +22 26.8 17.5	-0.88 + 1.5	6.6/28.0	37576
(12299)	2000 01 07.9	07 13.51 +25 17.6 16.6	-1.15 + 3.3	1.3/08.0	36686
1998 ST ₅₆	2000 01 07.9	07 13.54 +26 27.8 18.0	-1.12 + 1.9	1.4/07.5	38062
1999 XQ ₁₇₉	2000 01 07.9	07 13.62 +27 35.5 18.2	-0.92 + 1.8	1.6/07.4	37974
1993 TN ₃₀	2000 01 07.9	07 13.64 +22 23.4 18.6	-0.91 + 2.5	6.8/28.0	38030
1997 GP ₁₃	2000 01 07.9	07 13.65 +16 20.8 17.7	-1.09 + 1.7	2.5/08.5	38043
1998 OJ ₂	2000 01 07.9	07 13.73 +15 34.8 18.1	-1.05 + 3.6	2.6/08.8	38053
1998 SH ₁₃₅	2000 01 07.9	07 13.79 +07 13.4 17.6	-0.82 + 2.2	4.6/09.7	34593
1993 FJ ₂₀	2000 01 07.9	07 13.84 +20 24.9 18.0	-1.11 + 1.2	0.9/08.0	38028
1997 MV ₄	2000 01 08.0	07 13.84 +21 05.4 17.2	-0.90 + 4.2	0.4/08.2	37673
1998 SA ₂₄	2000 01 08.0	07 13.99 +22 48.5 16.9	-0.97 + 3.9	0.2/08.0	38061
1998 QO ₄₀	2000 01 08.0	07 14.04 +10 32.1 17.8	-1.09 + 1.6	4.8/09.2	37720
(11370)	2000 01 08.0	07 14.27 +22 49.3 18.6	-1.04 + 1.9	0.2/08.0	38016
1998 SR ₁₃₉	2000 01 08.0	07 14.27 +20 23.6 16.9	-1.01 - 0.1	0.7/08.3	38064
1998 RA ₇₈	2000 01 08.1	07 14.56 +23 48.8 17.1	-0.95 + 2.8	0.5/08.0	37761
1998 QD ₂₁	2000 01 08.1	07 14.62 +18 55.7 17.4	-1.07 + 2.2	1.4/08.5	38055
1997 CC ₂₂	2000 01 08.1	07 14.69 +29 15.5 17.7	-1.26 + 1.6	3.0/07.5	37662
1999 XP ₉₅	2000 01 08.2	07 14.77 +18 02.4 17.7	-0.91 + 3.0	1.8/08.7	37922
1998 SU ₇₉	2000 01 08.2	07 14.81 +25 34.3 18.7	-0.96 + 1.7	1.1/07.9	37776
1995 OU ₂	2000 01 08.2	07 14.83 +10 36.9 19.2	-0.53 + 1.3	2.1/09.6	31542
1997 TQ ₁₂	2000 01 08.2	07 14.84 +18 34.8 19.7	-0.58 + 0.8	0.7/08.6	30988
(12690)	2000 01 08.2	07 14.88 +05 48.9 15.9	-0.87 - 0.2	5.8/09.6	37035
1998 TW ₃₄	2000 01 08.2	07 14.91 +07 48.1 17.7	-0.84 + 1.7	4.3/09.8	38065
1999 XH ₈₆	2000 01 08.2	07 14.92 +21 50.5 17.7	-1.09 - 1.8	0.2/08.3	37915
1998 RS ₆₅	2000 01 08.2	07 15.11 +26 51.6 18.5	-1.06 + 1.2	1.5/07.9	38060
1998 SN ₁₀₈	2000 01 08.3	07 15.08 +11 08.8 17.8	-0.83 + 1.1	3.5/09.5	38063
1996 BR ₈	2000 01 08.3	07 15.12 +24 03.7 16.5	-0.99 + 3.5	0.6/08.1	32948
1998 RB ₆₂	2000 01 08.3	07 15.17 +35 32.9 17.8	-1.06 + 0.4	4.3/07.1	38060
(9711)	2000 01 08.3	07 15.21 +17 07.3 16.0	-0.93 - 0.5	1.7/08.8	33190
1998 TK	2000 01 08.3	07 15.37 +08 28.5 17.1	-0.86 + 0.3	4.4/09.6	37791
1995 UA ₁	2000 01 08.3	07 15.40 +30 55.1 17.6	-1.26 - 0.3	3.8/07.7	38035
1997 FR	2000 01 08.3	07 15.52 +28 50.6 18.4	-1.24 + 1.7	2.8/07.7	37665
1997 GO ₂₂	2000 01 08.4	07 15.54 +19 23.0 19.1	-1.09 + 1.6	1.1/08.7	37668
1998 RP ₁	2000 01 08.4	07 15.61 +24 50.7 19.3	-0.99 + 1.7	0.8/08.2	38059
4225 T-1	2000 01 08.4	07 15.61 +35 36.0 17.6	-1.24 + 2.8	5.3/06.9	38005
1998 RR ₆₅	2000 01 08.4	07 15.69 +29 39.8 17.5	-1.05 + 1.0	2.7/07.7	38060
1998 UF ₃₃	2000 01 08.4	07 15.71 +37 01.2 17.5	-1.17 + 3.2	4.7/06.7	37798
1998 QL ₃₇	2000 01 08.4	07 15.74 +14 36.4 17.0	-1.12 + 1.5	3.4/09.2	38056
1998 QT ₁₀	2000 01 08.4	07 15.76 +10 28.6 18.1	-0.96 + 6.1	4.1/10.2	38054
1998 RH ₇₇	2000 01 08.4	07 15.89 +10 10.9 17.7	-0.86 + 3.7	4.2/10.1	37761
1994 PB ₃₆	2000 01 08.4	07 15.91 +20 57.4 17.2	-1.06 + 1.6	0.6/08.6	37639
(13149)	2000 01 08.4	07 15.91 +21 59.3 17.0	-0.90 + 2.8	0.1/08.5	37526
1997 BV ₈	2000 01 08.4	07 15.95 +16 49.0 18.3	-1.16 + 4.4	2.2/09.2	38040
1997 GR ₂₀	2000 01 08.4	07 15.98 +24 04.3 19.2	-1.08 + 2.0	0.6/08.3	38043
1999 XM ₉₀	2000 01 08.5	07 16.01 +20 56.0 16.7	-0.96 - 2.6	0.4/08.6	37918
2104 T-1	2000 01 08.5	07 16.05 +26 28.1 17.9	-1.16 + 2.2	1.6/08.1	38191
(12691)	2000 01 08.5	07 16.11 +34 05.1 17.3	-1.28 + 2.6	4.5/07.3	37035
1997 SV ₁₄	2000 01 08.5	07 16.28 +22 42.2 19.2	-0.62 + 0.6	0.1/08.5	30987
1998 RF ₂₃	2000 01 08.6	07 16.73 +19 33.6 17.9	-0.97 + 4.1	1.0/09.0	38059
1999 XK ₈₆	2000 01 08.6	07 16.75 +21 50.6 16.7	-1.12 - 1.7	0.2/08.7	37915

5565 P-L	2000 01 08.6	07 16.81 +33 49.6 16.5	-1.33 + 2.8	5.5/07.5	38191	1995 BU ₈	2000 01 09.3	07 19.44 +24 44.4 18.4	-0.94 + 2.2	0.9/09.0	38033
1998 SP	2000 01 08.6	07 16.81 +29 19.2 18.4	-0.92 + 1.6	2.0/07.9	37764	1998 QX ₄₉	2000 01 09.3	07 19.89 +29 18.1 18.6	-1.22 + 3.1	2.8/08.6	37726
2000 AT ₂₇	2000 01 08.6	07 16.85 +27 57.8 17.8	-0.99 - 0.4	2.0/08.2	37993	1998 QF ₉₁	2000 01 09.3	07 19.94 +40 48.9 18.9	-1.18 + 1.9	5.7/07.3	35712
1999 YA ₅	2000 01 08.6	07 16.88 +26 41.2 16.3	-1.20 + 3.3	1.9/08.2	37987	(13363)	2000 01 09.4	07 19.87 +23 50.4 17.6	-0.87 + 2.1	0.5/09.2	37585
1999 XA ₁₀₃	2000 01 08.7	07 16.81 +24 20.0 17.4	-0.91 + 1.7	0.7/08.5	37930	4572 P-L	2000 01 09.4	07 19.90 +33 32.3 18.1	-0.65 + 1.0	2.2/08.1	38191
1998 RJ ₅₂	2000 01 08.7	07 16.83 +31 32.1 18.0	-1.07 + 3.0	3.3/07.6	38059	(12479)	2000 01 09.4	07 20.07 +12 16.1 17.7	-1.08 + 3.1	4.2/10.6	36734
1995 WG ₅	2000 01 08.7	07 16.85 +11 51.0 16.7	-1.04 + 2.0	4.6/09.8	38036	1999 XR ₈₅	2000 01 09.4	07 20.08 +19 05.7 16.7	-1.05 + 2.1	1.5/09.8	37914
1994 PK ₃₇	2000 01 08.7	07 16.87 +23 23.3 17.0	-1.17 0.0	0.5/08.6	37639	(12445)	2000 01 09.4	07 20.27 +30 42.1 17.2	-0.94 + 3.8	2.6/08.3	36725
1998 QQ ₅₇	2000 01 08.7	07 16.89 +20 13.8 21.0	-1.01 + 1.9	0.7/08.9	32978	1998 QS ₃₀	2000 01 09.4	07 20.31 +04 11.1 19.5	-0.91 + 4.1	6.1/12.1	33347
1997 BX ₆	2000 01 08.7	07 16.91 +25 31.9 17.5	-1.27 + 0.9	1.4/08.4	37660	1999 XP ₂₁₅	2000 01 09.5	07 20.44 +08 36.6 17.6	-1.04 - 2.9	5.8/10.4	38168
1998 QE ₉₀	2000 01 08.7	07 17.10 +28 38.1 18.6	-1.10 - 1.3	2.0/08.3	37738	1996 AU ₃	2000 01 09.5	07 20.47 +12 30.5 16.4	-0.96 + 5.8	3.1/11.0	37654
(12807)	2000 01 08.7	07 17.11 +22 48.9 17.1	-1.04 + 3.2	0.2/08.7	37066	(12697)	2000 01 09.5	07 20.56 +09 36.0 16.3	-0.89 + 3.1	5.3/11.1	37037
(12788)	2000 01 08.7	07 17.13 +11 24.9 16.9	-1.12 + 2.4	4.6/10.0	37061	(10745)	2000 01 09.5	07 20.65 +19 14.4 18.4	-0.85 + 3.7	0.9/10.0	34756
1998 RT ₇₀	2000 01 08.7	07 17.28 +20 31.0 18.4	-0.97 + 3.9	0.6/09.0	37757	(12438)	2000 01 09.5	07 20.80 +11 00.9 16.3	-0.89 + 0.7	5.6/10.7	36723
1981 UZ ₂₄	2000 01 08.7	07 17.36 +34 15.7 17.8	-1.27 + 3.4	4.6/07.4	38019	1999 XT ₁₇₂	2000 01 09.6	07 20.74 +33 02.8 17.6	-1.10 + 5.3	3.7/08.0	37970
1995 UE ₁₈	2000 01 08.8	07 17.30 +17 41.3 20.0	-1.11 + 1.5	2.1/09.3	30784	1997 HX ₇	2000 01 09.6	07 20.76 +02 07.2 18.7	-0.95 + 0.1	6.6/11.6	38044
1996 BJ ₄	2000 01 08.8	07 17.43 +24 13.3 17.1	-1.05 + 6.1	0.7/08.5	38037	1999 XX ₁₅	2000 01 09.6	07 20.90 +22 45.5 17.1	-1.19 + 3.6	0.3/09.6	37866
1998 QX ₆	2000 01 08.8	07 17.51 +31 05.3 18.7	-1.30 - 2.4	3.3/08.4	37706	(13355)	2000 01 09.6	07 20.92 +19 41.0 16.1	-0.87 + 4.3	0.7/10.0	37583
1998 SZ ₂	2000 01 08.8	07 17.61 +25 46.4 17.9	-1.00 + 5.4	1.1/08.4	38061	1998 QX ₅₀	2000 01 09.6	07 21.13 +32 39.2 17.9	-1.18 + 0.9	3.7/08.6	38057
1998 VR ₁₃	2000 01 08.8	07 17.72 +28 44.2 18.5	-0.79 + 1.1	1.6/08.2	37800	1996 JH ₁₄	2000 01 09.6	07 21.23 +34 06.6 18.5	-0.99 + 3.2	3.7/08.1	38038
1998 SK ₁₃₉	2000 01 08.9	07 17.77 +02 09.2 18.0	-0.82 - 0.1	6.3/10.8	33759	1999 XW ₁₀₄	2000 01 09.7	07 21.29 +30 13.4 16.5	-1.15 + 4.8	4.0/08.6	37931
1998 MK ₅	2000 01 08.9	07 17.83 +17 53.4 15.9	-1.02 + 8.0	1.7/09.6	37692	1996 CW ₃	2000 01 09.7	07 21.33 +31 00.7 17.3	-1.16 - 1.8	3.3/09.1	38037
4406 T-1	2000 01 08.9	07 17.84 +46 12.6 18.0	-1.33 + 1.7	8.7/06.2	38192	1998 QO ₅₄	2000 01 09.7	07 21.40 +20 53.2 19.0	-1.01 + 1.4	0.4/09.9	37284
1998 QN ₄₄	2000 01 08.9	07 17.84 +31 39.0 18.4	-1.23 + 0.9	3.5/08.1	37722	1987 SJ ₂	2000 01 09.7	07 21.49 +19 56.6 18.0	-1.08 + 2.9	0.8/10.0	38020
1994 PS ₃₂	2000 01 08.9	07 17.99 +24 16.0 18.1	-1.10 + 0.4	0.7/08.8	38032	1992 RO ₃	2000 01 09.7	07 21.64 +21 29.8 19.1	-0.88 + 1.7	0.2/09.9	38027
1998 SQ ₅₇	2000 01 08.9	07 17.99 +24 15.8 17.3	-0.92 + 2.9	0.7/08.7	37772	1998 SF ₄₉	2000 01 09.8	07 21.71 +25 38.2 16.7	-0.88 + 1.7	1.1/09.4	37770
1998 SD ₁₃₁	2000 01 08.9	07 18.01 +29 07.6 17.3	-0.96 + 1.1	2.3/08.2	38064	1999 XH ₁₄₄	2000 01 09.8	07 21.75 +40 18.6 16.9	-1.20 + 6.1	7.2/07.1	37955
1999 XH ₁₀₃	2000 01 08.9	07 18.05 +24 43.5 17.9	-1.18 + 1.1	0.9/08.7	37930	1998 QS ₉	2000 01 09.8	07 21.81 +33 56.4 16.9	-1.22 - 1.9	4.4/09.1	38054
1998 SN ₂₄	2000 01 08.9	07 18.05 +23 30.7 19.2	-0.98 + 2.9	0.4/08.8	37768	2000 AW ₁₄₉	2000 01 09.8	07 21.82 +09 29.9 17.6	-0.90 + 3.4	4.6/11.5	38001
1998 HO ₇	2000 01 09.0	07 18.13 +62 50.9 19.1	-2.48 + 9.4	19.1/30.6	37680	1999 XD ₃₆	2000 01 09.8	07 21.86 +29 31.8 16.5	-1.10 + 7.2	2.7/08.6	38137
(13339)	2000 01 09.0	07 18.14 +37 15.8 18.2	-1.06 + 1.4	4.5/07.4	37579	1997 SF ₂₈	2000 01 09.8	07 21.86 +29 18.6 18.8	-0.65 + 0.7	1.5/09.0	38045
1999 XV ₁₃₁	2000 01 09.0	07 18.24 +33 11.0 17.9	-1.29 + 1.6	4.2/07.9	37948	(13146)	2000 01 09.8	07 22.05 +29 22.1 17.1	-0.91 + 3.5	2.1/08.9	37526
1998 SU ₁₂₈	2000 01 09.0	07 18.31 +24 57.0 17.6	-0.96 + 2.4	0.9/08.7	38064	(9773)	2000 01 09.9	07 22.10 +17 57.3 18.8	-0.96 - 0.3	1.1/10.3	33205
1998 QN ₄₂	2000 01 09.0	07 18.38 +30 18.1 18.0	-1.09 - 0.1	2.6/08.4	38056	(12686)	2000 01 09.9	07 22.14 +42 56.9 17.6	-1.32 + 0.5	7.0/08.0	37034
1986 QW ₁	2000 01 09.0	07 18.45 +23 35.7 18.6	-0.85 + 1.8	0.4/08.9	37622	(9721)	2000 01 09.9	07 22.15 +23 31.7 16.5	-1.16 + 6.7	0.6/09.7	33192
1998 XC ₁₇	2000 01 09.1	07 18.55 +27 21.6 18.6	-0.63 + 2.5	1.1/08.4	37807	(12703)	2000 01 09.9	07 22.27 +29 18.6 17.5	-1.13 + 1.6	2.8/09.2	37038
1998 RG ₆₇	2000 01 09.1	07 18.57 +22 44.3 18.0	-0.91 + 0.8	0.2/09.1	37757	1998 QY ₇₄	2000 01 09.9	07 22.29 +18 05.6 17.8	-1.10 - 3.5	1.6/10.2	38058
1998 SY ₁₁₅	2000 01 09.1	07 18.74 +42 44.2 18.0	-1.31 + 1.4	7.0/06.8	38063	1994 PQ ₁	2000 01 09.9	07 22.49 +41 58.0 19.2	-1.37 + 8.0	6.6/06.8	25083
6844 P-L	2000 01 09.1	07 18.75 +32 24.6 20.1	-0.64 + 1.1	2.0/08.0	33996	1995 BE ₂	2000 01 09.9	07 22.51 +15 08.4 17.5	-0.86 + 4.7	2.2/11.0	37642
2000 AU ₂₇	2000 01 09.1	07 18.79 +26 52.1 17.6	-0.66 + 1.0	1.1/08.6	37993	1998 RL ₄	2000 01 10.0	07 22.64 +55 05.0 20.6	-1.82 - 0.8	11.4/06.6	32989
2000 AX ₁₁₁	2000 01 09.1	07 18.81 +13 47.6 17.1	-1.09 0.0	3.8/09.8	37998	1998 WV ₁₈	2000 01 10.0	07 22.66 +10 54.9 17.1	-0.72 - 0.1	2.9/11.1	37805
1998 RQ ₄₇	2000 01 09.1	07 19.00 +24 55.6 17.6	-1.15 + 0.5	1.0/08.9	37750	1995 WK ₄	2000 01 10.0	07 22.70 +22 18.3 17.6	-1.10 + 4.1	0.1/10.0	38036
1993 FY ₄₁	2000 01 09.1	07 19.05 +25 43.5 17.3	-1.11 + 1.9	1.6/08.8	38029	1998 SX ₅₃	2000 01 10.0	07 22.72 +08 17.2 18.3	-0.92 + 2.0	4.8/11.7	37770
1998 OC ₁₄	2000 01 09.2	07 19.23 +10 27.7 17.1	-0.93 + 7.0	4.7/11.2	37703	1999 XN ₈₆	2000 01 10.0	07 22.77 +16 38.6 16.5	-1.15 - 0.5	2.6/10.5	37915
1999 XM ₁₇₇	2000 01 09.2	07 19.24 +28 14.7 17.8	-1.06 + 3.0	2.4/08.5	37973	(13438)	2000 01 10.0	07 22.79 +23 42.6 16.6	-1.14 + 3.7	0.8/09.9	37607
1993 FB ₂₉	2000 01 09.2	07 19.27 +18 58.1 18.2	-1.07 + 0.7	1.1/09.5	37634	1998 SE ₁₃₂	2000 01 10.0	07 22.94 +04 35.2 17.0	-0.88 + 0.5	5.5/11.9	38064
(12965)	2000 01 09.2	07 19.28 +34 43.9 17.0	-1.20 - 0.6	4.5/08.2	37110	1998 SV ₁₀	2000 01 10.0	07 22.99 +19 24.5 19.1	-0.94 + 2.2	0.8/10.4	38061
1998 UY ₁₉	2000 01 09.2	07 19.42 +01 57.2 17.1	-0.84 - 0.8	5.8/10.9	37796	1991 RW ₂₁	2000 01 10.1	07 22.92 +37 51.0 16.4	-1.32 - 3.7	7.8/09.5	38025
2000 AU ₂₈	2000 01 09.2	07 19.42 +29 07.5 18.3	-1.09 + 2.5	2.9/08.5	37993	1999 XJ ₁₅₁	2000 01 10.1	07 22.92 +38 49.3 17.1	-0.92 + 2.4	8.9/07.8	37956
1998 ST ₆₁	2000 01 09.2	07 19.49 +03 31.4 18.2	-0.84 + 0.9	5.9/11.4	38063	(13099)	2000 01 10.1	07 22.95 +25 37.1 15.6	-1.07 + 4.3	1.7/09.6	37514
2000 AL ₅	2000 01 09.2	07 19.50 +23 51.6 17.7	-1.06 + 0.5	0.7/09.1	37992	1998 RM ₈₀	2000 01 10.1	07 22.99 +35 33.8 18.0	-1.00 + 1.4	4.0/08.6	37764

1995 TE ₈	2000 01 10.1	07 23.36 +10 18.7 17.3	-1.09 + 3.7	4.6/11.7	38035
(12684)	2000 01 10.1	07 23.41 +34 05.8 17.4	-1.25 - 0.4	4.4/09.1	37033
(13086)	2000 01 10.1	07 23.42 +24 08.6 17.9	-0.95 + 3.9	0.6/09.9	37510
1998 RD ₄₃	2000 01 10.2	07 23.50 +24 10.2 18.5	-1.02 + 0.8	0.7/10.0	38059
1998 TV ₆	2000 01 10.2	07 23.51 +00 09.0 17.5	-0.80 + 0.4	6.5/12.6	38065
1999 XR ₇	2000 01 10.2	07 23.63 +42 38.5 16.2	-1.14 + 4.8	7.3/07.1	38131
1998 QM ₄₀	2000 01 10.2	07 23.64 +29 10.4 18.2	-1.12 - 0.8	2.3/09.7	33560
1992 LE	2000 01 10.2	07 23.76 +08 23.6 18.9	-0.82 + 3.4	3.5/12.1	38027
1998 QF ₂₃	2000 01 10.2	07 23.82 +36 44.7 18.0	-1.21 - 0.3	5.4/09.0	37712
1997 SY ₃₂	2000 01 10.2	07 23.84 +30 31.6 19.0	-0.62 + 1.2	1.6/09.3	38045
1986 QJ ₂	2000 01 10.2	07 23.85 +28 16.9 18.0	-0.91 + 1.5	1.7/09.6	33066
1999 XG ₁₆₃	2000 01 10.3	07 23.80 +21 32.6 18.1	-1.09 + 4.5	0.2/10.4	37963
1998 SC ₁₂	2000 01 10.3	07 23.81 +07 08.8 18.4	-0.83 + 1.5	4.2/12.1	38061
1998 QP ₁₀₀	2000 01 10.3	07 23.82 +28 44.2 18.1	-1.02 + 2.8	2.4/09.5	38058
1998 SR ₂₂	2000 01 10.3	07 23.95 +31 30.6 18.3	-0.97 + 1.1	2.9/09.3	38061
(13000)	2000 01 10.3	07 23.98 +38 18.4 18.1	-1.24 - 0.7	5.8/09.0	37487
1999 XB ₁₀₂	2000 01 10.3	07 24.12 +27 11.5 17.1	-1.22 + 4.7	2.1/09.7	37930
1995 UN ₈	2000 01 10.3	07 24.18 +32 41.0 18.1	-1.26 + 2.4	3.9/09.2	38035
(9906)	2000 01 10.3	07 24.30 +42 29.0 17.4	-1.28 + 1.1	6.9/08.3	38016
1991 RA	2000 01 10.3	07 24.46 +61 01.1 17.1	-2.51 - 3.9	18.7/08.0	38024
(12051)	2000 01 10.4	07 24.35 +36 31.3 17.5	-1.35 + 1.1	5.7/08.9	36286
1993 FC ₁₃	2000 01 10.4	07 24.35 +23 54.8 17.1	-1.11 + 4.1	0.8/10.2	38028
1998 QM ₂₉	2000 01 10.4	07 24.72 +11 14.1 18.7	-1.01 + 2.0	4.6/11.7	38055
1995 FM ₃	2000 01 10.5	07 24.73 +27 11.1 18.0	-0.90 + 2.2	1.6/09.9	38034
1998 VY ₂₉	2000 01 10.5	07 24.91 +13 35.2 16.7	-0.63 - 0.3	1.9/11.5	38066
1990 SU ₁₆	2000 01 10.5	07 24.93 +21 55.0 17.3	-1.05 + 4.1	0.0/10.6	38022
4543 P-L	2000 01 10.5	07 25.02 +26 04.2 18.2	-1.25 + 2.3	1.6/10.1	38191
1999 XX ₁₅₁	2000 01 10.6	07 25.21 +23 27.4 16.3	-1.13 + 1.4	0.7/10.5	37956
1999 XC ₉₁	2000 01 10.6	07 25.25 +21 06.0 17.8	-1.12 + 2.3	0.4/10.7	38150
(13212)	2000 01 10.6	07 25.31 +16 51.5 17.8	-1.04 + 2.2	1.8/11.2	37543
1995 VH ₂	2000 01 10.6	07 25.33 +18 47.9 17.6	-1.12 + 3.5	1.3/11.0	38035
4564 T-2	2000 01 10.6	07 25.36 +25 13.1 21.1	-1.17 + 2.6	1.2/10.3	33059
(13188)	2000 01 10.6	07 25.44 +24 29.8 17.1	-1.23 + 1.7	1.1/10.4	37536
1995 QC ₆	2000 01 10.6	07 25.56 +24 01.7 18.7	-0.64 - 0.4	0.4/10.5	37645
1998 SE ₁₆₄	2000 01 10.7	07 25.52 +40 34.9 18.6	-1.15 + 3.0	5.4/08.2	34305
1998 QB ₃₅	2000 01 10.7	07 25.55 +33 24.1 16.8	-1.28 - 4.3	5.0/10.2	38056
1995 SE	2000 01 10.7	07 25.57 +25 41.8 18.4	-1.12 + 4.1	1.8/10.2	37645
(12358)	2000 01 10.7	07 25.59 +09 59.0 17.4	-0.92 + 1.3	4.3/12.0	36701
2000 AG ₂	2000 01 10.7	07 25.73 +18 33.8 17.6	-1.08 + 3.7	1.5/11.2	37991
1999 XN ₁₅₃	2000 01 10.7	07 25.74 +14 38.0 16.8	-1.01 - 1.0	2.9/11.4	37957
1999 XW ₁₇₂	2000 01 10.7	07 25.74 +24 05.7 17.0	-1.00 - 3.1	0.7/10.6	37970
1999 XO ₈₆	2000 01 10.7	07 25.93 +18 28.7 17.5	-1.07 + 2.6	1.7/11.2	37915
1999 XG ₂₂₄	2000 01 10.7	07 25.95 +22 07.8 18.2	-0.98 + 1.6	0.1/10.8	37984
1998 QT ₂₄	2000 01 10.8	07 25.96 +24 52.9 17.2	-1.23 - 0.4	1.3/10.6	37714
2000 AE ₂₉	2000 01 10.8	07 26.09 +23 52.3 17.6	-1.20 - 0.2	0.8/10.7	37993
1998 SV ₁₃₄	2000 01 10.8	07 26.23 +21 38.8 17.6	-0.87 + 2.2	0.1/10.9	38064
1999 XL ₁₀₃	2000 01 10.8	07 26.32 +26 49.9 17.9	-1.23 + 4.2	2.0/10.2	37931
1999 XO ₇	2000 01 10.8	07 26.32 +42 50.2 15.7	-1.27 - 0.3	8.7/08.9	38131
1998 SR ₁₃₇	2000 01 10.8	07 26.44 +27 35.8 18.3	-0.93 + 2.9	1.7/10.2	37785
(11387)	2000 01 10.8	07 26.45 +25 05.5 18.3	-1.01 + 1.9	0.9/10.5	35587
1998 QM ₁₀₆	2000 01 10.8	07 26.47 +38 55.5 18.0	-1.16 + 1.4	5.5/09.0	38059

1998 SN ₂₇	2000 01 10.9	07 26.43 +14 38.9 16.3	-1.22 - 6.9	2.7/11.0	38062
1998 QK ₄₃	2000 01 10.9	07 26.47 +20 04.9 17.7	-1.06 + 4.3	0.7/11.2	38056
1999 VJ	2000 01 10.9	07 26.47 +42 48.6 17.9	-1.26 + 5.1	7.8/07.8	38098
1998 SF ₆₇	2000 01 10.9	07 26.49 +24 39.1 18.2	-0.98 + 3.1	0.8/10.6	33282
(12570)	2000 01 10.9	07 26.50 +09 06.5 17.1	-0.88 - 0.8	3.9/12.1	36761
1995 XA	2000 01 10.9	07 26.71 +15 15.2 18.7	-1.10 + 0.9	2.5/11.6	38036
1998 SB ₇₂	2000 01 10.9	07 26.73 +23 32.3 18.5	-0.89 + 2.3	0.5/10.8	37775
1999 XC ₁₀	2000 01 10.9	07 26.82 +32 30.6 18.6	-1.56 +17.3	4.7/08.6	37861
1982 TJ	2000 01 10.9	07 26.84 +22 37.4 17.5	-1.19 + 3.5	0.3/10.9	38019
1981 EA ₁₄	2000 01 10.9	07 26.92 +11 14.5 19.0	-1.01 + 1.7	4.0/12.2	26917
1999 RH ₄₂	2000 01 11.0	07 26.83 +36 21.1 18.0	-1.07 + 0.9	5.0/09.4	38074
(13046)	2000 01 11.0	07 26.87 +23 45.6 19.2	-1.07 + 1.5	0.6/10.8	37499
(12426)	2000 01 11.0	07 26.89 +19 10.9 16.6	-1.12 + 0.7	1.2/11.3	36720
(13216)	2000 01 11.0	07 26.93 -01 10.9 18.0	-0.92 + 3.1	8.6/14.2	37544
1992 AT ₂	2000 01 11.0	07 26.99 +22 14.8 17.7	-1.06 + 1.1	0.1/11.0	38026
1997 FH ₄	2000 01 11.0	07 27.02 +40 23.5 17.4	-1.31 + 1.1	6.9/09.0	37666
(13135)	2000 01 11.0	07 27.09 +32 32.6 17.5	-1.24 - 3.4	4.1/10.5	37523
1999 XG ₁₃₄	2000 01 11.0	07 27.18 +29 52.2 16.0	-1.58 -12.0	3.7/11.3	38158
1999 XJ ₁₆₁	2000 01 11.0	07 27.27 +32 08.3 17.3	-1.18 - 1.4	3.5/10.3	37962
1998 SL ₁₁₅	2000 01 11.0	07 27.32 +25 58.0 18.7	-0.99 + 1.9	1.3/10.6	38063
1999 XQ ₈₆	2000 01 11.0	07 27.33 +24 28.2 15.9	-1.08 + 7.5	1.0/10.7	37915
1998 QG ₇₄	2000 01 11.1	07 27.30 +08 55.3 17.6	-0.87 + 1.2	4.4/13.0	38058
1998 QL ₁	2000 01 11.1	07 27.36 +15 52.1 17.6	-0.98 + 2.0	2.2/11.8	33559
3182 T-2	2000 01 11.1	07 27.36 +14 36.4 17.8	-1.09 + 4.3	2.8/12.1	38192
2110 P-L	2000 01 11.1	07 27.42 +22 24.7 19.5	-1.03 + 1.6	0.2/11.1	37340
(13372)	2000 01 11.1	07 27.45 +24 01.9 17.4	-0.59 + 2.0	0.4/10.8	37588
(12714)	2000 01 11.1	07 27.51 +23 47.4 16.9	-0.61 + 0.2	0.4/10.9	37042
1996 CD ₂	2000 01 11.1	07 27.54 +26 43.2 17.4	-1.09 - 1.1	1.6/10.7	38037
1999 XV ₈₆	2000 01 11.1	07 27.56 +20 59.6 16.6	-1.06 - 0.3	0.3/11.2	38149
(12659)	2000 01 11.2	07 27.70 +27 10.4 17.1	-1.16 + 2.4	2.4/10.6	37027
(12726)	2000 01 11.2	07 27.84 +10 36.1 16.3	-1.03 + 4.4	4.8/13.0	37045
1998 QV ₁₁	2000 01 11.2	07 27.93 +19 51.6 19.5	-1.12 + 1.5	0.7/11.5	37709
1993 FV ₄₅	2000 01 11.2	07 28.11 +14 49.5 18.9	-0.97 + 2.8	2.2/12.2	38029
1999 XA ₁₀	2000 01 11.2	07 28.21 +23 37.9 19.3	-1.20 + 2.6	0.7/11.1	37861
1995 WM ₁₇	2000 01 11.3	07 28.25 +26 01.5 18.1	-1.19 + 1.8	1.8/10.9	37652
2166 T-1	2000 01 11.3	07 28.35 +32 02.5 16.7	-1.30 + 2.2	4.6/10.2	38192
(13271)	2000 01 11.3	07 28.58 +31 30.0 17.7	-1.11 + 0.1	3.3/10.5	37559
(9829)	2000 01 11.3	07 28.61 +18 28.8 17.4	-0.72 + 1.7	0.9/11.8	33452
1252 T-2	2000 01 11.3	07 28.62 +25 10.4 20.1	-1.06 + 2.0	1.2/11.0	26577
1998 QE ₂₆	2000 01 11.4	07 28.61 +36 16.3 18.5	-1.16 - 0.3	4.9/10.1	37714
(13283)	2000 01 11.4	07 28.86 +21 55.2 18.1	-1.09 + 2.2	0.0/11.4	37562
1998 SV ₂₃	2000 01 11.4	07 29.00 +49 27.2 18.4	-1.24 + 1.1	8.9/08.1	38061
1993 TQ ₂₉	2000 01 11.4	07 29.00 +13 59.1 17.9	-0.87 + 2.8	3.0/12.5	38030
1998 QQ ₁₀₁	2000 01 11.4	07 29.02 +01 43.9 17.2	-0.83 + 4.8	6.3/14.9	38058
1998 OQ ₁₄	2000 01 11.5	07 29.02 +24 59.4 17.6	-1.25 + 1.5	1.3/11.2	37703
(12683)	2000 01 11.5	07 29.05 +20 06.4 17.2	-1.07 + 3.5	0.7/11.7	37033
1998 QT ₆₂	2000 01 11.5	07 29.12 +09 00.2 18.3	-0.89 + 2.7	3.7/13.3	33561
1999 XX ₁₀₄	2000 01 11.5	07 29.17 +19 57.6 17.3	-1.08 + 1.6	0.9/11.7	37931
4646 P-L	2000 01 11.5	07 29.22 +05 26.3 16.5	-0.83 + 2.7	5.8/13.8	38191
(10239)	2000 01 11.5	07 29.32 +44 37.1 18.3	-1.08 + 1.8	5.8/08.6	33916
1999 XX ₈₆	2000 01 11.5	07 29.47 +20 43.6 16.3	-1.07 - 1.4	0.4/11.7	37916

(13105)	2000 01 11.6	07 29.44 +17 43.7	17.5	-1.05	+	0.9	1.9/12.0	37515	1998 QQ ₁₂	2000 01 12.6	07 33.85 +12 19.2	20.1	-1.11	+	3.7	3.4/13.9	33080
1998 MN ₁₆	2000 01 11.6	07 29.63 +19 57.3	16.7	-1.03	+	8.7	0.7/12.0	38053	1999 XE ₁₇₈	2000 01 12.6	07 33.91 +29 15.0	17.5	-1.07	-	2.1	2.7/12.0	37973
1999 XK ₁₀₃	2000 01 11.6	07 29.77 +26 44.8	17.3	-1.03	+	3.8	1.9/11.0	37931	1998 QS ₁₃	2000 01 12.6	07 33.91 +22 27.3	19.5	-1.10	+	2.3	0.3/12.5	38055
1999 XS ₈₆	2000 01 11.6	07 29.88 +22 53.8	16.6	-1.13	+	5.1	0.5/11.5	37916	1981 EL ₁₆	2000 01 12.6	07 33.94 +29 57.3	17.9	-1.30	+	0.4	3.3/11.8	38018
1998 SA ₆₁	2000 01 11.6	07 29.92 +25 41.9	17.6	-0.97	+	2.3	1.3/11.2	38063	(13101)	2000 01 12.6	07 34.02 +12 03.8	17.9	-1.00	+	3.5	3.5/14.0	37514
1998 UO ₂	2000 01 11.6	07 29.93 +40 39.6	18.8	-1.16	+	2.3	5.7/09.2	38065	1999 XK ₁₇₃	2000 01 12.6	07 34.02 +30 00.5	17.2	-1.16	+	0.1	3.7/11.8	37971
(13035)	2000 01 11.7	07 29.89 +25 32.0	17.8	-0.70	+	1.7	0.8/11.2	37496	1998 SR ₁₃₅	2000 01 12.6	07 34.10 +23 10.3	18.3	-0.89	+	2.9	0.4/12.5	37785
1999 TX ₉	2000 01 11.7	07 29.99 +67 55.1	16.0	-2.10	+	6.9	22.7/31.8	38086	6245 P-L	2000 01 12.6	07 34.12 +01 00.9	18.0	-0.93	+	2.4	7.6/15.4	38191
(10664)	2000 01 11.7	07 30.08 +13 17.5	17.8	-0.57	+	0.6	1.7/12.8	34479	(12431)	2000 01 12.6	07 34.19 +18 45.9	16.8	-1.02	+	9.4	1.1/13.2	36721
1998 QN ₂₄	2000 01 11.7	07 30.26 +12 31.1	17.9	-1.00	+	3.1	3.6/13.0	37714	1998 SQ ₅₃	2000 01 12.7	07 34.41 +36 59.8	18.9	-1.09	-	0.4	4.7/11.2	38062
1998 QT ₁₈	2000 01 11.7	07 30.27 +18 07.6	17.4	-1.12	+	1.8	1.4/12.2	38055	1997 GL ₁₅	2000 01 12.7	07 34.42 +31 10.7	17.3	-1.19	+	1.5	3.7/11.7	37667
1998 RC ₅₄	2000 01 11.7	07 30.33 +28 54.8	18.1	-1.00	-	0.2	2.4/11.1	37753	1999 XU ₈₆	2000 01 12.7	07 34.55 +19 47.9	17.4	-0.93	-	0.1	0.6/13.0	37916
1997 HD ₉	2000 01 11.7	07 30.33 +20 44.2	19.6	-1.03	+	1.8	0.4/11.9	38044	1999 XM ₈	2000 01 12.7	07 34.57 +17 11.6	18.1	-1.07	-	1.0	1.5/13.2	37861
2000 AA ₄	2000 01 11.7	07 30.36 +26 17.2	17.2	-1.13	+13.4	1.8/10.8	37992	1998 QW ₁₇	2000 01 12.7	07 34.69 +21 46.8	19.5	-1.12	+	1.4	8.7/24.0	32760	
1999 XM ₂₂₄	2000 01 11.7	07 30.37 +21 33.8	17.9	-1.17	+	0.4	0.1/11.8	37985	(11379)	2000 01 12.7	07 34.69 +24 39.2	18.4	-1.00	+	3.1	0.9/12.4	35585
1991 PJ ₁₅	2000 01 11.8	07 30.32 +21 08.4	18.0	-1.13	+	3.5	0.3/11.9	38024	4841 T-1	2000 01 12.7	07 34.73 +41 21.0	18.3	-1.21	+	1.8	6.2/10.3	38192
1998 VW ₁₇	2000 01 11.8	07 30.35 +03 33.9	18.5	-0.81	+	0.3	5.1/13.9	37801	(12356)	2000 01 12.8	07 34.72 +19 13.9	17.1	-0.92	+	2.2	0.8/13.1	36700
1999 XJ ₁₇₃	2000 01 11.8	07 30.44 +29 08.4	16.3	-1.13	-	1.1	2.8/11.2	37971	1998 SL ₄₇	2000 01 12.8	07 34.86 +25 32.4	17.9	-1.20	+	2.6	1.5/12.4	38062
(13347)	2000 01 11.8	07 30.58 +23 44.8	18.9	-1.12	+	3.4	0.7/11.6	37581	4174 T-2	2000 01 12.8	07 34.93 +19 47.1	18.3	-0.91	+	2.9	0.6/13.1	33384
1998 RM ₄₇	2000 01 11.8	07 30.59 +20 32.7	19.1	-1.05	+	1.2	0.4/12.0	37750	1990 SX ₆	2000 01 12.8	07 34.96 +23 41.2	18.5	-1.05	+	3.7	0.7/12.6	38022
1999 XT ₁₀₅	2000 01 11.8	07 30.67 +11 46.1	17.3	-1.18	-	0.1	4.4/12.7	37932	1997 TV ₁₉	2000 01 12.8	07 34.99 +21 32.1	21.2	-0.59	+	1.2	4.4/24.0	37674
1998 QE ₈₉	2000 01 11.8	07 30.76 +14 21.3	18.5	-0.98	0.0	2.4/12.6	37737	1999 XF ₈₇	2000 01 13.0	07 35.59 +21 24.9	17.2	-1.17	-	2.2	0.1/13.0	37917	
1296 T-2	2000 01 11.9	07 30.78 +19 14.1	18.0	-1.03	+	2.7	1.0/12.2	38192	1993 GK ₁	2000 01 13.0	07 35.64 +23 33.2	17.2	-1.13	+	1.6	0.9/12.8	38029
1993 FB ₁₉	2000 01 11.9	07 30.90 +15 29.6	17.2	-1.02	+	5.2	2.6/13.0	23523	1998 RU ₅₆	2000 01 13.0	07 35.71 +16 16.2	16.9	-0.97	+	2.0	2.1/13.7	38060
1997 JU ₁₅	2000 01 11.9	07 30.91 +24 10.6	18.9	-1.13	+	3.8	0.9/11.6	37672	(12793)	2000 01 13.0	07 35.73 +26 33.7	17.9	-1.20	+	2.1	1.9/12.4	37062
1999 XJ ₉₁	2000 01 11.9	07 31.03 +22 10.8	17.3	-0.97	+	1.7	0.1/11.9	37919	3356 T-2	2000 01 13.0	07 35.79 +31 43.4	16.2	-0.95	+	0.9	5.3/11.8	38006
1998 QC ₃₈	2000 01 12.0	07 31.24 +31 46.5	17.2	-1.26	+	0.4	4.3/11.0	37719	(9797)	2000 01 13.0	07 35.82 +20 07.2	18.4	-0.83	+	2.0	0.4/13.3	33210
1993 FS ₄₇	2000 01 12.0	07 31.36 +33 15.9	17.4	-1.20	+	1.5	4.9/10.7	37634	1998 SX ₅₇	2000 01 13.0	07 35.85 +21 05.5	18.6	-0.95	+	3.4	0.2/13.1	37772
1998 QB	2000 01 12.0	07 31.37 +26 10.9	17.1	-1.21	0.0	1.8/11.6	38054	1998 XA ₁₃	2000 01 13.0	07 35.96 +29 11.5	16.9	-0.65	+	3.1	1.7/11.9	37807	
1998 RD ₅₆	2000 01 12.1	07 31.66 +28 08.2	19.8	-1.06	+	1.0	2.0/11.4	32998	2104 T-2	2000 01 13.0	07 36.02 +20 27.2	18.3	-0.93	+	1.9	0.4/13.2	38192
1998 SS ₁₄₆	2000 01 12.1	07 31.68 +07 45.3	17.4	-0.84	+	2.3	4.4/14.0	37789	1998 RZ ₆₃	2000 01 13.1	07 36.01 +21 26.3	17.8	-0.93	+	3.3	0.1/13.1	37756
1984 SZ ₅	2000 01 12.1	07 31.73 +34 20.4	18.5	-1.26	+	2.1	4.3/10.6	38019	1998 MN ₈	2000 01 13.1	07 36.03 +13 37.5	19.9	-1.11	+	5.4	3.0/14.4	32285
1998 RX ₆₂	2000 01 12.1	07 31.74 +21 13.5	18.9	-1.12	+	3.3	0.2/12.2	37755	1998 UM ₁₈	2000 01 13.1	07 36.17 -00 07.9	18.5	-0.54	+	3.7	4.0/17.1	38066
1999 XX ₂₂₃	2000 01 12.1	07 31.79 +22 40.3	18.5	-1.10	+	3.4	0.3/12.0	37984	1999 XZ ₈₆	2000 01 13.1	07 36.26 +19 12.2	16.3	-1.10	-	4.1	1.1/13.3	37916
1999 XL ₁₄₄	2000 01 12.1	07 31.88 +35 45.9	17.1	-1.26	+	0.4	6.3/10.7	38160	1991 SE ₁	2000 01 13.1	07 36.33 +25 14.9	17.8	-1.13	+	5.8	1.5/12.6	38025
(12334)	2000 01 12.1	07 31.90 +15 17.5	15.7	-1.06	+	5.7	3.1/13.2	36695	1999 XZ ₁₄₀	2000 01 13.1	07 36.43 +19 22.0	18.5	-0.94	-	0.4	0.8/13.4	37953
1992 BK ₄	2000 01 12.2	07 32.04 +26 33.1	18.0	-1.09	+	2.3	1.9/11.6	37629	1998 QO ₁₀₀	2000 01 13.2	07 36.40 +19 38.6	18.0	-0.96	+	4.5	0.7/13.5	37742
1990 WO ₄	2000 01 12.2	07 32.08 +12 47.1	16.8	-0.89	+	1.9	4.2/13.3	38023	1992 UH ₁	2000 01 13.2	07 36.43 +28 17.2	16.6	-1.21	+	1.3	3.3/12.5	38027
1999 XU ₂₁₆	2000 01 12.2	07 32.14 +23 24.7	17.2	-1.11	+	5.6	0.7/12.0	37983	1998 SK ₁₃₇	2000 01 13.2	07 36.52 +24 17.2	18.4	-1.02	+	4.1	0.9/12.8	37785
1998 UE ₃₄	2000 01 12.2	07 32.19 +11 28.0	17.5	-0.88	+	0.1	3.3/13.3	37798	1999 XF ₂₀₅	2000 01 13.2	07 36.61 +33 30.7	17.8	-1.23	+	2.2	5.3/11.8	37979
(12841)	2000 01 12.2	07 32.27 +22 16.1	17.3	-1.16	+	2.6	0.2/12.2	37075	1998 SK ₆₃	2000 01 13.2	07 36.81 +24 54.1	16.6	-0.92	+	3.3	1.2/12.8	38063
1999 XZ ₁₇₂	2000 01 12.2	07 32.30 +25 48.0	17.1	-1.07	-	1.5	1.6/11.9	38164	1999 XB ₁₃₄	2000 01 13.2	07 36.88 +29 08.6	16.4	-1.24	-	7.5	3.4/13.1	37949
1999 XJ ₁₇₈	2000 01 12.2	07 32.56 +24 34.0	17.1	-1.22	-	0.3	1.1/12.0	37973	1997 JE ₁₈	2000 01 13.3	07 36.93 +20 28.5	18.1	-1.10	+	3.7	0.4/13.5	38044
1995 YH ₁₂	2000 01 12.3	07 32.70 +25 07.2	17.8	-1.11	+	4.0	1.6/11.9	37654	1999 XY ₂₀₄	2000 01 13.3	07 37.16 +38 39.8	18.3	-1.16	+	4.0	5.7/10.7	37979
6572 P-L	2000 01 12.3	07 32.87 +36 46.8	17.7	-1.33	0.0	7.5/11.1	38005	1998 QK ₃₄	2000 01 13.4	07 37.38 +37 36.6	17.3	-1.27	-	1.5	5.7/12.0	38056	
1998 SA ₂₀	2000 01 12.4	07 32.95 +23 15.2	19.9	-1.18	+	2.3	0.6/12.2	37767	2664 P-L	2000 01 13.4	07 37.39 +33 29.2	19.1	-1.01	+	1.2	3.9/11.9	36120
(12721)	2000 01 12.4	07 33.43 +19 09.0	17.3	-1.12	+	3.2	0.9/13.0	37044	2000 AB ₁₁₄	2000 01 13.4	07 37.46 +11 57.2	17.2	-0.97	+	3.2	4.2/14.9	38184
1998 MG ₄₆	2000 01 12.5	07 33.63 +21 05.7	20.0	-1.18	+	0.6	0.2/12.6	37697	1999 XK ₁₇₈	2000 01 13.4	07 37.48 +27 10.8	17.5	-1.25	+	2.6	2.4/12.7	37974
1998 UQ ₂₅	2000 01 12.5	07 33.85 +19 48.8	18.2	-0.87	+	3.3	0.5/12.9	33574	1998 RA ₅₅	2000 01 13.4	07 37.52 +03 18.2	20.4	-0.90	+	2.4	5.5/16.1	34022
1998 QM ₂	2000 01 12.6	07 33															

1991 SV ₁	2000 01 13.5	07 37.83 +32 35.1 17.7	-1.22 + 2.1	4.1/12.2	38025
(13305)	2000 01 13.5	07 37.89 +14 08.8 18.2	-1.05 + 1.7	2.7/14.4	37569
1998 SV ₁₄₄	2000 01 13.5	07 37.91 +27 25.8 17.8	-1.04 + 2.5	2.0/12.7	38064
2000 AA ₁₁₄	2000 01 13.5	07 37.94 +11 56.2 17.9	-0.86 + 2.1	3.3/14.8	37998
1998 TX ₅	2000 01 13.5	07 38.04 +20 24.0 17.1	-0.95 + 1.8	0.3/13.7	38065
1997 HW ₇	2000 01 13.5	07 38.16 +18 30.0 18.4	-0.99 + 1.9	1.0/14.0	38044
1997 EQ ₂	2000 01 13.5	07 38.18 +18 46.2 16.9	-1.09 + 6.1	1.2/14.0	38041
1998 RD ₄₄	2000 01 13.6	07 38.20 +30 39.4 18.8	-1.06 + 2.3	3.2/12.4	38059
1998 UZ ₂₁	2000 01 13.6	07 38.23 +34 08.5 18.5	-1.07 + 3.4	3.9/11.8	38066
1998 RL ₆₅	2000 01 13.6	07 38.30 +23 13.4 18.0	-0.96 + 1.9	0.6/13.4	38060
1999 XQ ₇	2000 01 13.6	07 38.36 +32 27.7 16.5	-1.26 + 1.2	5.0/12.5	37860
1998 QM ₂₃	2000 01 13.6	07 38.47 +36 02.1 18.0	-1.20 - 1.5	5.6/12.4	37712
1999 XQ ₉₁	2000 01 13.6	07 38.51 +19 45.7 17.3	-1.05 + 3.2	0.6/13.9	37919
(12706)	2000 01 13.6	07 38.66 +43 05.5 17.6	-1.35 + 1.1	7.8/11.4	37039
1998 SR ₁₂₇	2000 01 13.7	07 38.71 +07 26.6 17.5	-0.82 + 3.8	4.6/16.0	37783
1988 VA ₅	2000 01 13.7	07 38.86 +24 44.0 17.7	-1.20 + 2.8	1.3/13.3	38021
(13458)	2000 01 13.7	07 38.91 +16 27.0 17.2	-0.97 + 4.1	2.1/14.5	37612
(13284)	2000 01 13.7	07 38.99 +03 17.0 18.0	-0.91 + 3.5	5.8/16.7	37563
1999 VJ ₁₃	2000 01 13.7	07 39.06 +65 37.5 16.7	-2.46 +11.7	20.9/30.0	38102
1995 ES ₆	2000 01 13.8	07 39.05 +22 52.8 19.0	-0.91 + 2.0	0.5/13.6	37643
(12787)	2000 01 13.8	07 39.18 +27 48.8 16.9	-1.27 + 0.5	2.5/13.2	37061
1999 XP ₉₁	2000 01 13.8	07 39.20 +22 29.7 17.9	-0.98 + 3.4	0.4/13.7	37919
1997 CL ₂₀	2000 01 13.8	07 39.24 +25 31.7 18.6	-1.15 + 3.2	1.4/13.3	38041
1999 XO ₁₄₀	2000 01 13.8	07 39.40 +19 59.8 19.4	-1.02 + 1.9	0.5/14.1	37952
1998 SH ₄₉	2000 01 13.9	07 39.40 +02 30.3 18.8	-0.93 + 2.3	6.0/16.6	37287
(13024)	2000 01 13.9	07 39.43 +25 33.0 17.2	-1.17 + 0.6	1.6/13.5	37493
1999 XN ₁₇₃	2000 01 13.9	07 39.45 +28 37.9 17.8	-1.04 + 3.3	2.7/12.9	37971
1995 QV ₁	2000 01 13.9	07 39.51 +28 07.3 18.0	-1.28 + 1.6	2.7/13.2	37644
1998 QF ₂₄	2000 01 13.9	07 39.66 +22 21.6 18.1	-1.04 - 0.2	0.3/13.9	37713
1997 CF ₂₉	2000 01 13.9	07 39.79 +17 53.5 16.5	-1.11 + 3.3	1.6/14.5	38041
1998 SA ₁₄₄	2000 01 13.9	07 39.82 +19 18.2 17.1	-0.92 + 2.8	0.7/14.3	38064
1999 XY ₁₇₃	2000 01 13.9	07 39.86 +29 19.0 17.5	-1.11 - 1.4	3.2/13.3	37971
1999 XJ ₂₁₇	2000 01 13.9	07 39.91 +21 47.5 18.1	-1.05 + 2.4	0.1/14.0	37983
1995 TD	2000 01 14.0	07 39.98 +11 15.8 18.2	-1.10 + 3.6	3.9/15.5	38034
1999 XD ₂₁₇	2000 01 14.0	07 40.21 +21 45.0 18.7	-0.84 + 2.0	0.1/14.0	37983
1992 EX ₉	2000 01 14.0	07 40.25 +15 10.4 16.8	-0.99 + 3.4	2.7/15.0	38026
(12873)	2000 01 14.0	07 40.37 +22 10.1 17.6	-1.16 + 0.7	0.3/14.0	37084
1997 JD ₁₄	2000 01 14.1	07 40.33 -01 23.3 17.4	-0.95 + 1.6	8.5/17.2	38044
1998 QW ₇₃	2000 01 14.1	07 40.38 +02 55.8 20.0	-0.93 + 1.9	5.6/16.7	35712
1998 QR ₄₃	2000 01 14.1	07 40.42 +29 49.6 18.4	-1.27 + 2.7	3.3/13.0	38056
1998 OP ₈	2000 01 14.1	07 40.45 +20 30.2 16.5	-1.16 - 0.3	0.4/14.2	37700
2000 AB ₃₀	2000 01 14.1	07 40.53 +25 55.6 18.0	-1.14 + 4.9	2.0/13.5	37994
(13460)	2000 01 14.1	07 40.57 +26 40.8 16.5	-1.03 + 1.6	2.4/13.5	37612
(13344)	2000 01 14.1	07 40.58 +18 48.7 17.6	-0.92 + 2.3	0.8/14.5	37580
(12417)	2000 01 14.1	07 40.69 +20 51.1 17.1	-1.14 + 5.2	0.2/14.3	36717
(13327)	2000 01 14.1	07 40.71 +23 41.5 17.9	-0.92 + 3.0	0.7/13.9	37575
1998 SU ₁₃₄	2000 01 14.1	07 40.72 +34 18.2 18.7	-1.24 + 2.8	4.4/12.4	37784
2731 P-L	2000 01 14.1	07 40.75 +06 07.0 18.5	-0.83 + 3.2	4.9/16.6	38190
1990 SC ₈	2000 01 14.1	07 40.77 +14 37.8 18.8	-0.99 + 4.7	2.4/15.3	38022
(12642)	2000 01 14.1	07 40.78 +12 29.7 16.2	-0.98 + 3.1	4.4/15.5	36780
1998 SA ₁₄₁	2000 01 14.2	07 40.69 +23 38.5 19.1	-0.92 + 2.0	0.7/13.9	37788

1998 WJ ₅	2000 01 14.2	07 40.70 +05 28.1 17.1	-0.55 + 4.0	3.1/17.1	37803
1998 RV ₁₂	2000 01 14.2	07 40.71 +12 37.0 18.1	-0.91 + 2.8	3.1/15.5	37746
1998 SP ₅₃	2000 01 14.2	07 40.91 +23 21.5 17.9	-0.99 + 1.0	0.6/14.0	38062
(12218)	2000 01 14.2	07 41.01 +22 12.8 15.2	-1.15 + 6.0	0.4/14.1	36664
1994 PX ₂₄	2000 01 14.2	07 41.18 +22 30.0 19.2	-1.06 + 3.3	0.4/14.1	37639
1973 SC ₂	2000 01 14.3	07 41.15 +25 46.8 18.4	-0.62 + 1.6	0.9/13.7	37617
1996 BS ₉	2000 01 14.3	07 41.19 +17 40.3 20.3	-0.98 + 2.7	1.2/14.8	36073
1998 RO ₃₈	2000 01 14.3	07 41.19 +27 37.9 17.2	-1.25 + 2.5	2.5/13.5	38059
1992 GO	2000 01 14.3	07 41.23 +08 58.8 17.6	-0.90 + 4.8	3.8/16.4	37631
1995 CC ₂	2000 01 14.3	07 41.35 +20 36.4 16.2	-1.60 - 9.0	0.4/14.3	37643
1997 LA ₆	2000 01 14.3	07 41.38 +26 28.7 17.4	-1.02 + 9.1	1.9/13.3	37672
(12992)	2000 01 14.4	07 41.55 +24 59.3 18.1	-1.22 + 2.4	1.4/13.9	37485
1990 VC ₆	2000 01 14.4	07 41.77 +02 21.4 17.6	-0.94 + 1.9	6.3/17.0	38023
1998 SB ₅₉	2000 01 14.4	07 41.95 +16 17.6 19.0	-0.88 + 2.9	1.6/15.2	38062
1999 VY ₇₁	2000 01 14.4	07 41.96 +07 24.9 16.5	-0.90 + 7.1	5.6/17.1	37840
(13229)	2000 01 14.4	07 41.99 +25 07.3 17.9	-0.61 + 1.1	0.7/13.9	37547
1992 UE ₆	2000 01 14.5	07 42.29 +33 05.9 16.1	-1.22 + 5.8	5.5/12.6	38027
2000 AN ₁₄₆	2000 01 14.5	07 42.30 +07 14.9 16.9	-0.58 - 0.2	2.7/16.4	38000
(13183)	2000 01 14.5	07 42.42 +42 56.0 18.2	-0.70 + 0.8	3.7/11.3	37535
1981 EC ₄₇	2000 01 14.5	07 42.46 +15 13.3 19.0	-1.01 + 4.1	2.2/15.5	26923
1992 UJ ₅	2000 01 14.5	07 42.51 +20 24.8 16.5	-1.11 + 2.5	0.5/14.7	38027
1995 SN ₄	2000 01 14.6	07 42.42 +30 22.8 17.3	-1.26 + 2.9	3.7/13.4	37646
1995 BP ₁₅	2000 01 14.6	07 42.48 +15 24.2 17.5	-0.81 + 5.2	1.5/15.7	31106
(9875)	2000 01 14.6	07 42.48 +13 15.9 16.9	-1.02 + 2.6	3.0/15.7	36499
1998 QO ₄₅	2000 01 14.6	07 42.68 +02 42.3 17.7	-0.97 + 4.0	6.8/17.6	37723
1996 DM ₂	2000 01 14.7	07 42.84 +22 30.1 17.2	-0.97 + 4.4	0.4/14.5	38038
1999 XU ₂₂₇	2000 01 14.7	07 42.87 +21 33.2 17.6	-1.06 + 4.2	0.1/14.7	37985
1999 XV ₂₁₈	2000 01 14.7	07 42.99 +20 12.6 18.6	-1.12 + 1.9	0.5/14.9	37984
1999 XQ ₁₄₀	2000 01 14.7	07 43.08 +22 04.6 20.0	-1.01 + 4.0	0.2/14.6	37952
(13104)	2000 01 14.7	07 43.12 +20 23.1 18.9	-1.07 + 2.2	0.3/14.9	37515
1998 SQ ₁₃₇	2000 01 14.7	07 43.18 +25 54.2 17.7	-0.98 + 3.7	1.5/14.1	37785
1998 RJ ₁	2000 01 14.7	07 43.23 +19 48.8 16.5	-0.88 + 2.5	0.6/15.0	38059
1998 QA ₉₁	2000 01 14.7	07 43.25 +05 11.1 17.7	-0.92 + 4.5	5.0/17.5	37739
1994 PL ₁₂	2000 01 14.8	07 43.50 +19 48.8 16.6	-1.08 + 1.9	0.7/15.0	38032
1998 QB ₅₅	2000 01 14.8	07 43.56 +32 01.5 17.8	-1.03 + 0.4	3.6/13.6	37730
1998 SH ₁₃₈	2000 01 14.8	07 43.57 +20 29.4 20.1	-0.88 + 2.2	0.2/15.0	37786
(13097)	2000 01 14.8	07 43.58 +16 50.3 17.6	-1.09 + 2.5	1.9/15.5	37513
1998 SH ₁₂₂	2000 01 14.8	07 43.62 +14 15.8 18.2	-0.84 + 1.8	2.1/15.9	38063
1999 XL ₂₂₇	2000 01 14.8	07 43.70 +22 56.1 18.2	-1.17 + 5.0	0.6/14.6	37985
(12230)	2000 01 14.9	07 43.84 +15 47.8 16.3	-1.03 + 4.8	2.3/15.8	36667
1997 HA ₁₀	2000 01 14.9	07 43.87 +24 17.1 19.2	-0.99 + 3.2	0.9/14.5	38044
1998 SS ₁₂₃	2000 01 14.9	07 43.92 +09 06.0 17.8	-0.85 + 2.8	3.8/16.8	37781
1998 QP ₄₂	2000 01 14.9	07 43.95 +22 19.3 19.7	-1.13 + 1.7	0.4/14.8	38056
(13042)	2000 01 14.9	07 43.95 +28 18.9 17.1	-1.26 - 2.9	2.5/14.4	37498
1993 FU ₂₀	2000 01 14.9	07 44.06 +14 08.1 16.9	-0.97 + 5.9	3.4/16.2	37633
1998 RU ₇₈	2000 01 14.9	07 44.18 +19 34.4 18.2	-0.87 + 3.8	0.5/15.3	37762
1998 QV ₅₄	2000 01 14.9	07 44.20 +25 33.4 18.4	-1.23 + 1.4	1.6/14.5	37730
(13311)	2000 01 15.0	07 44.22 +35 05.0 17.1	-1.09 + 1.0	4.3/13.3	37570
1993 FP ₁₀	2000 01 15.0	07 44.26 +19 10.7 17.0	-1.03 + 4.7	1.0/15.4	38028
1998 QW ₅₀	2000 01 15.0	07 44.29 +43 06.2 17.7	-1.19 - 1.7	8.0/12.9	37727
1998 SY ₃	2000 01 15.0	07 44.39 +14 45.4 19.9	-0.92 + 2.6	2.0/16.0	33707

1170 T-2	2000 01 15.0	07 44.46 +02 08.0 18.0	-0.91 + 4.2	7.9/18.4	19329
3039 T-2	2000 01 15.0	07 44.60 +16 50.2 20.3	-0.98 + 3.8	1.5/15.8	27928
(13321)	2000 01 15.1	07 44.57 +10 23.7 17.3	-0.83 + 4.8	3.5/17.0	37573
(12564)	2000 01 15.1	07 44.65 +19 01.1 17.5	-0.93 + 2.5	0.7/15.4	36759
1998 QL ₈₅	2000 01 15.1	07 44.87 +05 33.8 18.3	-0.91 - 0.8	5.0/17.0	37736
1998 QD ₃₂	2000 01 15.1	07 44.92 +08 36.5 17.4	-0.86 + 6.9	4.0/18.0	37717
1999 XA ₁₇₄	2000 01 15.1	07 44.99 +31 46.5 16.8	-1.22 + 2.7	3.9/13.7	37971
1998 SQ ₁₅₄	2000 01 15.1	07 45.07 +22 03.3 17.0	-1.03 + 1.3	0.3/15.1	37789
(12658)	2000 01 15.2	07 45.08 +21 20.5 17.5	-0.59 + 1.7	0.0/15.2	37027
1997 GA	2000 01 15.2	07 45.15 +15 00.8 19.2	-1.08 + 1.5	2.4/16.0	33497
1998 SA ₁₄₀	2000 01 15.2	07 45.18 +04 06.0 19.1	-0.93 + 1.3	5.3/17.5	33759
1999 XU ₂₂₅	2000 01 15.2	07 45.24 +21 51.0 17.0	-1.17 + 1.0	0.3/15.2	38169
3382 T-3	2000 01 15.2	07 45.26 +11 14.4 18.3	-1.06 + 3.1	3.8/16.7	38193
1998 RS ₆₄	2000 01 15.2	07 45.28 +45 01.2 18.2	-1.36 + 0.1	8.9/12.1	38060
1999 XM ₂₂₆	2000 01 15.2	07 45.34 +24 37.3 17.1	-1.05 + 4.5	1.6/14.7	37985
(13158)	2000 01 15.2	07 45.47 +29 35.0 17.6	-1.27 + 0.9	3.7/14.3	37529
(13332)	2000 01 15.2	07 45.48 +18 30.8 17.7	-0.93 + 2.9	0.9/15.7	37577
1999 XV ₁₇₃	2000 01 15.2	07 45.52 +33 03.1 16.7	-1.14 + 7.4	5.3/13.0	37971
(12718)	2000 01 15.3	07 45.47 +24 38.8 17.3	-1.18 + 4.7	1.4/14.8	37043
1998 RG ₇₂	2000 01 15.3	07 45.69 +11 58.8 18.4	-0.95 + 3.8	3.1/16.8	38060
1994 WG ₁	2000 01 15.3	07 45.78 +33 45.4 17.9	-1.08 + 4.1	4.3/13.4	37642
1993 TK ₃₇	2000 01 15.3	07 45.83 +05 17.5 18.2	-0.84 + 3.8	5.2/18.1	38030
1998 OF ₇	2000 01 15.3	07 45.94 +20 14.0 18.9	-1.18 + 1.0	0.4/15.5	33079
1999 XO ₂₁₇	2000 01 15.4	07 45.87 +22 25.1 18.1	-0.88 + 2.8	0.4/15.2	37984
1998 QP ₃₁	2000 01 15.4	07 46.08 +22 39.0 16.5	-1.09 + 6.9	0.6/15.2	37716
1998 QQ ₆₀	2000 01 15.4	07 46.15 +31 00.4 19.1	-1.14 - 2.8	3.4/14.6	37730
1999 XR ₁₄₂	2000 01 15.4	07 46.18 +44 24.1 17.3	-1.66 +17.3	10.8/09.4	37953
1991 CL	2000 01 15.5	07 46.32 +15 42.8 15.6	-0.93 + 8.2	2.1/16.6	38023
(13209)	2000 01 15.5	07 46.33 +23 22.8 16.2	-1.08 + 4.4	1.0/15.2	37542
1992 DM ₉	2000 01 15.5	07 46.54 +07 22.2 18.8	-0.94 + 3.4	5.0/17.7	38026
2000 AY ₃₇	2000 01 15.5	07 46.59 +22 39.6 18.0	-1.10 + 2.0	0.5/15.4	37994
1994 VL ₁	2000 01 15.5	07 46.73 +34 37.5 18.0	-1.10 + 4.3	4.3/13.4	37641
1978 VQ ₉	2000 01 15.5	07 46.80 +35 23.2 18.1	-1.13 + 4.7	4.5/13.2	38017
(12765)	2000 01 15.5	07 46.80 +34 07.4 17.0	-0.98 + 3.3	3.8/13.5	37055
1993 FN ₆	2000 01 15.5	07 46.83 +32 50.1 18.8	-1.20 + 2.6	4.5/13.9	32745
1999 XL ₁₃₄	2000 01 15.6	07 46.72 +31 58.7 18.0	-1.19 - 2.4	4.5/14.6	37950
(13443)	2000 01 15.6	07 46.74 +22 25.4 18.6	-1.01 + 3.2	0.4/15.4	37608
1999 XM ₉₃	2000 01 15.6	07 46.89 +22 08.7 17.6	-1.04 + 1.4	0.4/15.5	37921
1998 RV ₅₈	2000 01 15.6	07 47.03 +20 18.8 19.0	-0.97 + 2.3	0.3/15.8	37754
2192 T-2	2000 01 15.6	07 47.06 +09 08.3 18.3	-1.04 + 4.6	5.1/18.0	38006
1991 RS ₄	2000 01 15.6	07 47.21 +22 27.7 19.4	-1.14 + 2.3	0.5/15.5	37628
1999 YZ ₈	2000 01 15.7	07 47.15 +22 10.2 16.9	-1.08 + 0.7	0.4/15.6	37988
1992 EP ₇	2000 01 15.7	07 47.37 +13 30.0 18.6	-0.92 + 5.2	2.3/17.1	38026
1998 SH ₁₆₃	2000 01 15.7	07 47.53 +32 54.1 20.6	-1.06 + 1.8	3.6/14.1	33300
1993 EJ	2000 01 15.8	07 47.67 +31 56.9 17.7	-1.17 + 4.2	4.3/14.1	38028
1998 SY ₂₂	2000 01 15.8	07 47.81 +06 09.5 19.3	-0.84 + 2.1	4.5/18.1	37767
1998 PL	2000 01 15.8	07 47.86 +19 05.9 17.9	-1.12 + 5.7	0.8/16.2	38054
1993 FP ₂₃	2000 01 15.8	07 47.86 +21 56.7 17.0	-1.10 + 1.6	0.4/15.7	38028
1998 RQ ₆₈	2000 01 15.8	07 47.87 +22 41.1 18.3	-0.96 + 2.1	0.5/15.6	38060
(13350)	2000 01 15.8	07 47.88 +07 37.9 17.6	-0.80 + 2.4	4.1/18.0	37582
1998 SU ₅₆	2000 01 15.8	07 47.89 +30 07.0 19.3	-1.17 + 2.2	3.0/14.6	35718

1999 XT ₁₅₁	2000 01 15.9	07 48.03 +22 27.2 18.8	-0.94 - 0.1	0.4/15.7	37956
1997 GF ₃₆	2000 01 15.9	07 48.12 +26 26.4 18.7	-1.18 + 3.5	2.2/15.1	38043
(12738)	2000 01 15.9	07 48.13 +09 06.2 15.5	-0.94 +11.8	5.5/18.8	37048
(11390)	2000 01 15.9	07 48.21 +21 30.0 18.2	-0.87 + 2.1	0.1/15.9	35588
1993 FT ₄₂	2000 01 15.9	07 48.22 +25 54.1 16.2	-1.07 + 2.8	2.3/15.2	37634
1998 SY ₄₅	2000 01 15.9	07 48.23 +05 52.9 18.5	-0.80 + 2.0	4.7/18.3	37770
1997 CB	2000 01 15.9	07 48.33 +09 09.0 17.6	-1.06 + 6.2	4.3/18.1	38040
1998 RQ ₆₄	2000 01 15.9	07 48.36 +18 44.9 18.5	-0.89 + 2.6	0.7/16.3	38060
2000 AN ₄₈	2000 01 15.9	07 48.47 +20 29.2 17.1	-1.13 + 3.5	0.3/16.1	37994
(12819)	2000 01 16.0	07 48.53 +10 32.3 17.7	-0.82 + 1.8	3.1/17.6	37068
1997 MR ₈	2000 01 16.0	07 48.53 +15 18.5 17.9	-1.00 + 7.1	2.1/17.1	38045
1998 QG ₅₀	2000 01 16.0	07 48.55 +39 07.8 19.4	-1.23 + 0.3	5.8/13.8	37284
1981 EG ₂₀	2000 01 16.0	07 48.89 +28 35.3 18.8	-0.97 + 1.3	2.1/15.1	26918
1998 TG ₃	2000 01 16.0	07 48.93 -10 06.8 18.5	-0.95 + 2.4	9.3/21.3	38065
1999 XR ₁₇₄	2000 01 16.0	07 48.98 +26 17.9 17.3	-1.29 + 0.6	2.3/15.5	37972
(9777)	2000 01 16.1	07 48.90 +21 02.8 17.8	-1.06 + 3.6	0.0/16.1	33205
(13156)	2000 01 16.1	07 48.92 +14 52.1 18.2	-1.16 + 1.7	2.3/16.9	37528
1999 XK ₂₄	2000 01 16.1	07 49.09 +38 07.7 18.0	-1.21 + 7.6	7.5/12.6	37871
1993 FC ₃₇	2000 01 16.1	07 49.12 +12 01.1 18.4	-1.02 + 3.7	3.5/17.5	38029
2000 AL ₁₅₀	2000 01 16.1	07 49.27 +09 33.6 18.2	-0.95 + 0.4	4.5/17.7	38001
1993 DX ₂	2000 01 16.1	07 49.31 +17 51.3 18.0	-1.06 + 5.5	1.2/16.7	38028
1998 QL ₁₉	2000 01 16.2	07 49.33 +25 49.0 17.8	-1.11 + 3.2	1.7/15.5	38055
1999 XY ₂₂₅	2000 01 16.2	07 49.40 +21 18.5 17.5	-0.97 - 0.2	0.1/16.2	37985
1998 RC ₄₈	2000 01 16.2	07 49.47 +15 51.3 19.5	-0.98 + 2.5	1.6/17.0	35714
(12839)	2000 01 16.2	07 49.48 +19 45.6 17.5	-1.02 + 5.7	0.5/16.5	37074
1994 WA ₈	2000 01 16.2	07 49.49 +08 35.6 18.2	-0.92 + 3.5	4.9/18.3	37642
1999 UE ₃	2000 01 16.2	07 49.57 +22 05.2 17.7	-1.05 + 5.6	0.4/16.1	38092
1998 QC ₇₁	2000 01 16.2	07 49.65 +11 53.0 18.8	-0.93 + 1.7	2.8/17.6	38057
1998 QZ ₈₄	2000 01 16.3	07 49.76 +17 15.4 18.7	-1.15 + 0.9	1.5/16.8	35712
(13346)	2000 01 16.3	07 49.85 +19 04.0 18.2	-1.08 + 2.6	0.7/16.6	37581
1998 ST ₇₄	2000 01 16.3	07 49.99 +23 21.2 19.1	-1.13 + 3.8	0.8/16.0	38063
1998 SW ₁₄₀	2000 01 16.3	07 50.03 +20 17.2 17.8	-0.91 + 2.2	0.2/16.5	37788
1998 QQ ₃₇	2000 01 16.3	07 50.16 +22 51.9 19.3	-1.20 + 1.4	0.7/16.2	37718
(13067)	2000 01 16.4	07 50.21 +12 48.6 18.3	-1.07 + 3.5	3.1/17.7	37505
1998 QC ₂₃	2000 01 16.4	07 50.39 +21 11.2 19.3	-1.02 + 4.1	0.1/16.4	33081
1999 YQ ₁₄	2000 01 16.4	07 50.50 +22 40.2 18.2	-1.10 + 4.7	0.7/16.2	37989
1998 MZ ₂₃	2000 01 16.4	07 50.50 +20 39.9 16.3	-1.12 + 0.5	0.1/16.5	38053
(12913)	2000 01 16.4	07 50.53 +12 26.7 17.5	-0.91 + 2.2	2.8/17.7	37095
(13092)	2000 01 16.4	07 50.59 +19 53.3 17.3	-1.19 + 3.1	0.5/16.6	37511
1997 PF ₃	2000 01 16.4	07 50.60 +22 28.2 20.8	-0.85 + 2.5	0.4/16.3	37673
2000 AV ₁₅₈	2000 01 16.4	07 50.69 +23 10.8 17.5	-1.16 - 2.9	0.9/16.3	38001
1991 LU ₁	2000 01 16.5	07 50.64 +13 14.1 18.6	-0.85 + 1.9	2.3/17.7	38024
(12676)	2000 01 16.5	07 50.91 +03 56.9 17.5	-0.91 + 0.2	6.4/18.9	37031
1998 RL ₇₃	2000 01 16.5	07 50.91 +20 48.7 17.8	-1.04 + 2.0	0.1/16.6	37759
1998 SJ ₆₆	2000 01 16.5	07 50.92 +19 41.5 17.7	-0.85 + 3.9	0.4/16.8	37774
1998 QV ₁₂	2000 01 16.5	07 50.97 +21 25.8 17.4	-1.13 + 0.4	0.2/16.5	38055
(11771)	2000 01 16.5	07 50.97 +31 45.3 18.8	-1.00 + 2.4	3.1/15.0	35903
1998 RK ₆₆	2000 01 16.5	07 51.05 +18 40.0 17.8	-0.93 + 2.1	0.8/16.9	38060
1994 QV	2000 01 16.5	07 51.09 +39 52.3 17.1	-1.31 - 0.4	6.7/14.6	38032
2000 AH ₄₂	2000 01 16.6	07 51.07 +19 42.1 17.2	-1.01 + 2.0	0.6/16.8	37994
1979 MM ₂	2000 01 16.6	07 51.14 +15 57.6 19.5	-1.07 + 1.2	1.8/17.3	30778

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1999 XT₂₁₅ 2000 01 16.6 07 51.20 +07 06.7 17.9 -0.94 + 0.8 5.2/18.5 37983
 1997 JA₁₁ 2000 01 16.6 07 51.28 +08 23.6 17.2 -0.86 + 6.6 4.1/19.2 38044
 1979 OZ₉ 2000 01 16.6 07 51.29 +14 34.1 21.2 -1.14 + 4.0 2.4/17.6 27553
 1998 RX₅₉ 2000 01 16.7 07 51.50 +11 35.6 18.3 -1.06 + 2.5 3.6/18.0 38060
 1998 QF₄₈ 2000 01 16.7 07 51.53 +21 28.2 17.4 -1.16 + 0.7 0.2/16.7 38057
 1995 WX₄ 2000 01 16.7 07 51.66 +13 56.8 17.4 -1.07 + 2.4 3.1/18.0 38036
 2000 AM 2000 01 16.7 07 51.78 +20 10.0 16.0 -1.06 + 0.6 0.4/16.9 37990
 1998 SZ₁₁₇ 2000 01 16.7 07 51.83 +30 29.5 18.2 -1.05 + 1.8 3.1/15.4 37780
 1998 SR₉ 2000 01 16.7 07 51.88 +23 24.0 19.2 -0.97 + 3.7 0.8/16.4 37766
 1998 QM₃₇ 2000 01 16.7 07 51.90 +21 34.4 16.5 -1.14 - 0.2 0.3/16.7 37718
 1997 LH₉ 2000 01 16.8 07 51.91 +15 31.3 18.6 -0.99 + 3.1 1.9/17.6 38044
 1999 XG₉₃ 2000 01 16.8 07 51.97 +17 41.8 16.5 -0.99 - 0.3 1.2/17.2 37920
 4253 T-2 2000 01 16.8 07 51.97 +15 18.8 19.5 -1.07 + 4.7 2.0/18.0 29669
 3047 P-L 2000 01 16.8 07 52.09 +33 16.1 17.4 -1.05 - 0.1 3.7/15.2 38004
 (13334) 2000 01 16.8 07 52.10 +37 07.4 18.2 -1.08 + 1.5 5.3/14.5 37577
 1993 TF₆ 2000 01 16.8 07 52.11 +05 21.4 20.7 -0.85 + 1.8 4.6/19.2 32933
 1990 RV₃ 2000 01 16.8 07 52.14 +25 28.3 19.0 -1.09 + 2.0 1.5/16.2 32742
 (12425) 2000 01 16.8 07 52.19 +33 53.6 17.5 -1.25 + 2.8 4.9/15.0 36719
 (11779) 2000 01 16.8 07 52.30 +26 15.9 17.9 -1.04 + 3.7 1.9/16.0 38016
 1998 QM₅₇ 2000 01 16.8 07 52.32 +22 39.3 17.9 -1.00 + 2.0 0.6/16.6 38057
 (13290) 2000 01 16.8 07 52.35 -11 38.1 16.3 -0.88 + 4.5 11.3/23.8 37564
 (12567) 2000 01 16.9 07 52.34 +19 03.1 16.7 -0.85 + 2.9 0.6/17.2 36760
 1993 BD 2000 01 16.9 07 52.40 +21 40.6 16.5 -1.02 + 8.1 0.4/16.8 38028
 1999 XS₂₁₅ 2000 01 16.9 07 52.51 +09 03.6 17.8 -0.82 + 3.4 3.6/18.9 37982
 1993 FM₁₀ 2000 01 16.9 07 52.67 +23 34.9 18.7 -1.10 + 3.6 1.0/16.6 38028
 1998 SR₄₃ 2000 01 16.9 07 52.73 +23 28.8 17.2 -0.94 + 2.2 0.9/16.6 38062
 1998 SL₅₅ 2000 01 16.9 07 52.75 +19 24.3 17.9 -0.99 + 3.0 0.6/17.2 37770
 1999 XS₇ 2000 01 16.9 07 52.83 +43 37.6 16.8 -1.22 + 3.7 8.7/13.2 38131
 1998 QP₇₀ 2000 01 17.0 07 52.99 +02 43.3 19.0 -0.93 + 1.9 6.0/19.9 38057
 1999 YV₄ 2000 01 17.0 07 53.08 +20 45.3 17.2 -1.17 + 1.8 0.1/17.1 37987
 1998 VN₃₁ 2000 01 17.0 07 53.14 +12 33.0 17.9 -0.85 + 1.3 2.6/18.3 37802
 1998 SX₁₆₃ 2000 01 17.1 07 53.53 +36 15.1 18.1 -0.98 + 3.1 4.4/14.6 38065
 1998 QS₉₀ 2000 01 17.2 07 53.77 +30 21.0 18.7 -1.19 + 3.2 3.3/15.8 35712
 1994 TO₁₅ 2000 01 17.2 07 53.78 +34 39.6 17.3 -1.26 + 3.2 5.2/15.0 38033
 (12197) 2000 01 17.2 07 54.04 +12 06.8 16.4 -0.97 + 4.3 3.8/18.8 36658
 1993 TV₁₉ 2000 01 17.3 07 54.02 +23 39.0 17.1 -0.93 + 3.4 0.9/16.8 38030
 1997 GG₈ 2000 01 17.3 07 54.23 +10 33.8 18.0 -1.02 + 2.1 4.4/18.8 37667
 6790 P-L 2000 01 17.3 07 54.49 +22 36.2 19.4 -1.06 + 3.8 0.6/17.1 38191
 1998 QM₄₂ 2000 01 17.4 07 54.63 +16 55.6 18.1 -1.11 + 2.9 1.6/18.0 38056
 1994 PV₃₇ 2000 01 17.4 07 54.72 +17 48.6 18.4 -1.04 + 3.3 1.0/17.9 38032
 1998 UY₂₁ 2000 01 17.4 07 54.91 +06 36.5 17.9 -1.04 + 0.9 5.3/19.3 37796
 1993 RT₆ 2000 01 17.4 07 54.93 +19 35.6 18.9 -0.93 + 2.3 0.4/17.7 32932
 1992 EA₂₆ 2000 01 17.4 07 54.94 +35 53.1 17.4 -1.23 - 1.0 6.5/15.7 38026
 (12801) 2000 01 17.5 07 54.89 +31 02.8 16.9 -1.12 + 4.9 4.3/15.8 37064
 1998 QM₅₃ 2000 01 17.5 07 54.96 +31 26.2 17.9 -1.03 + 0.3 3.5/16.1 37728
 (12803) 2000 01 17.5 07 55.06 +19 51.1 17.8 -1.08 + 4.0 0.3/17.7 37065
 (13107) 2000 01 17.5 07 55.15 +35 55.6 17.6 -1.27 + 0.9 5.3/15.7 37515
 1998 TR₃₀ 2000 01 17.5 07 55.32 +12 46.9 18.0 -0.86 + 2.2 2.5/18.8 38065
 1992 GN₂ 2000 01 17.5 07 55.38 +22 53.1 17.8 -1.02 + 2.5 0.7/17.3 37631
 1998 SA₅₆ 2000 01 17.6 07 55.29 +19 19.0 19.0 -0.89 + 2.8 0.5/18.0 38062
 (13457) 2000 01 17.6 07 55.32 +08 17.7 17.2 -0.82 + 3.9 4.1/19.8 37612

1998 SX₁₄₀ 2000 01 17.6 07 55.32 +22 56.5 17.7 -1.11 + 2.6 0.8/17.3 37788
 1984 BZ₆ 2000 01 17.6 07 55.36 +20 02.9 18.2 -0.92 + 3.1 8.3/07.0 38019
 4326 P-L 2000 01 17.6 07 55.40 +19 36.6 21.4 -1.00 + 2.2 7.5/07.0 34265
 1998 SR₇₀ 2000 01 17.6 07 55.53 +34 36.9 18.5 -0.99 + 2.4 4.2/15.5 38063
 1996 BV₂ 2000 01 17.6 07 55.64 +20 48.0 15.3 -0.98 +11.4 0.0/17.7 37655
 1995 UC₁₇ 2000 01 17.6 07 55.70 +31 03.0 17.4 -1.19 + 4.9 4.1/16.0 37649
 1999 XT₉₃ 2000 01 17.6 07 55.72 +18 43.0 17.2 -0.93 - 1.2 0.7/18.0 37921
 1994 PK₃₅ 2000 01 17.6 07 55.80 +19 15.2 19.8 -1.05 + 2.4 0.5/18.0 32940
 2000 AU₄₄ 2000 01 17.7 07 55.77 +23 23.2 19.4 -1.09 + 3.4 0.9/17.3 37994
 1996 AU₁₃ 2000 01 17.7 07 55.79 +28 34.1 19.8 -1.06 + 2.6 2.7/16.5 31387
 1997 GR₂₄ 2000 01 17.7 07 55.88 +03 20.4 18.4 -0.88 + 3.1 5.3/20.7 38043
 1998 QG₅₂ 2000 01 17.7 07 55.98 +17 28.5 17.8 -1.17 + 1.8 1.4/18.0 37727
 1991 RR₁₆ 2000 01 17.7 07 56.01 +31 58.4 17.7 -0.87 + 2.0 2.9/16.0 38025
 1998 RO₄₅ 2000 01 17.7 07 56.17 +11 50.3 18.6 -1.03 + 3.8 3.3/19.2 38059
 (12982) 2000 01 17.7 07 56.21 +20 22.5 17.9 -1.07 + 5.8 9.7/29.0 37482
 1995 CZ₁ 2000 01 17.8 07 56.41 +09 45.7 18.0 -1.50 - 7.6 5.4/18.3 25432
 1989 GU₃ 2000 01 17.8 07 56.44 +16 45.6 17.7 -1.04 + 1.7 1.4/18.4 38021
 1999 XS₁₇₄ 2000 01 17.8 07 56.54 +27 15.6 16.8 -1.09 + 4.1 2.4/16.8 37972
 1998 QN₂ 2000 01 17.8 07 56.56 +15 50.5 18.0 -1.14 + 1.6 1.8/18.5 38054
 1998 OA₁₅ 2000 01 17.8 07 56.58 +26 03.6 19.0 -1.13 + 1.3 1.9/17.2 32758
 1998 SV₁₃₂ 2000 01 17.9 07 56.58 +12 00.6 17.5 -0.87 + 1.7 2.8/19.2 37784
 (13137) 2000 01 17.9 07 56.64 +42 30.2 17.0 -1.22 + 3.5 7.6/14.3 37523
 1998 ML₂₉ 2000 01 17.9 07 56.71 +25 38.2 19.9 -1.21 + 2.2 1.8/17.2 32487
 1998 SA₁₂₆ 2000 01 17.9 07 56.99 +22 28.3 18.0 -0.90 + 3.9 0.6/17.7 38064
 1998 QK₅₄ 2000 01 17.9 07 57.03 +18 29.8 17.5 -0.96 + 1.7 0.8/18.3 37729
 1999 XF₃₂ 2000 01 18.0 07 57.03 +15 12.0 16.9 -1.03 + 1.6 1.9/18.8 37879
 1991 LJ₃ 2000 01 18.0 07 57.21 +15 57.6 19.0 -1.14 + 3.3 1.8/18.8 38024
 (12235) 2000 01 18.0 07 57.22 +08 52.6 16.6 -0.85 - 0.3 3.4/19.6 36669
 1998 SA₁₀₁ 2000 01 18.0 07 57.31 +28 05.2 17.6 -1.29 + 1.7 2.9/17.0 37776
 1998 QF₈₉ 2000 01 18.0 07 57.34 +05 56.2 18.1 -0.97 + 0.8 4.8/20.2 37738
 1998 QL₈₉ 2000 01 18.1 07 57.69 +02 33.9 19.3 -0.94 + 1.8 5.6/21.0 34302
 1994 TR₁ 2000 01 18.2 07 57.87 +02 59.7 18.9 -0.93 + 2.8 5.3/21.2 33551
 2000 AC₁₁₇ 2000 01 18.2 07 57.92 +10 43.1 17.6 -1.07 + 1.8 3.9/19.6 37998
 1992 EV₈ 2000 01 18.2 07 58.00 +17 44.7 18.5 -0.96 + 6.7 1.1/18.8 33230
 1998 SP₁₁₅ 2000 01 18.2 07 58.01 +20 09.1 18.0 -0.89 + 2.2 0.2/18.3 38063
 1999 VC₇₂ 2000 01 18.2 07 58.07 +16 29.4 17.0 -1.18 + 2.3 1.9/18.8 38122
 1998 QM₉₄ 2000 01 18.3 07 58.33 +16 25.7 17.8 -1.01 + 3.0 1.6/19.0 38058
 1998 TZ₁₈ 2000 01 18.3 07 58.41 +14 53.9 19.0 -0.96 + 2.8 1.8/19.2 38065
 (13276) 2000 01 18.3 07 58.53 +29 29.4 15.9 -1.21 - 3.1 3.7/17.5 37560
 1993 TU₂₉ 2000 01 18.3 07 58.69 +20 36.9 17.5 -0.90 + 3.6 0.0/18.4 38030
 4625 P-L 2000 01 18.3 07 58.70 +24 32.3 17.8 -1.16 + 3.4 1.6/17.8 38191
 1085 T-3 2000 01 18.3 07 58.75 +15 49.3 17.3 -1.12 + 1.0 1.8/19.0 38007
 1993 TS₂₂ 2000 01 18.4 07 58.86 +37 29.5 19.0 -1.06 + 2.5 5.8/15.7 32934
 (13062) 2000 01 18.4 07 58.88 +25 12.2 17.9 -0.59 + 2.4 0.9/17.6 37503
 1998 RH₇₆ 2000 01 18.5 07 59.28 +24 26.9 16.9 -0.94 + 3.3 1.3/17.9 38061
 2000 AA₁₁₇ 2000 01 18.5 07 59.38 +11 59.8 16.1 -0.86 + 9.7 3.8/20.6 37998
 1995 SX₄ 2000 01 18.5 07 59.40 +21 44.9 16.0 -1.24 - 0.1 0.5/18.4 37646
 1993 BV₄ 2000 01 18.5 07 59.45 +17 23.7 17.4 -1.00 + 7.6 1.5/19.2 37632
 1979 MC₈ 2000 01 18.5 07 59.53 +18 14.9 20.4 -1.05 + 2.8 0.8/18.9 30779
 1997 GZ₆ 2000 01 18.5 07 59.55 +26 42.8 18.3 -1.14 + 3.8 2.7/17.6 38042
 1992 SF₁₁ 2000 01 18.5 07 59.56 +18 33.7 17.3 -0.86 + 2.7 0.7/18.9 38027

1998 QP ₁	2000 01 18.5	07 59.58 +28 24.4 19.2	-1.24 + 1.4	2.8/17.5	38054
1999 YC ₉	2000 01 18.5	07 59.61 +22 36.8 18.4	-0.91 + 2.3	0.6/18.3	37988
1998 SQ ₁₁₈	2000 01 18.5	07 59.62 +09 53.6 18.6	-0.94 + 3.2	3.3/20.4	37780
1997 FY ₂	2000 01 18.5	07 59.64 +28 42.1 17.9	-1.22 + 2.0	3.3/17.4	38042
1998 PC	2000 01 18.6	07 59.62 +08 47.2 19.1	-1.05 + 2.1	4.1/20.4	37704
1998 QM ₄₅	2000 01 18.6	07 59.63 +09 08.7 18.9	-0.95 + 3.2	4.0/20.5	37723
(12771)	2000 01 18.6	07 59.78 +24 43.7 17.5	-1.16 + 4.7	1.5/17.9	37057
1995 WV ₆	2000 01 18.6	07 59.83 +26 26.7 17.0	-1.08 + 3.2	2.7/17.7	37651
1996 UX ₃	2000 01 18.6	07 59.92 -05 22.8 17.8	-0.56 + 1.3	5.4/23.5	38039
1998 RJ ₅₁	2000 01 18.7	08 00.12 +17 24.9 18.5	-1.01 + 1.6	1.1/19.2	37752
1998 QZ ₅₀	2000 01 18.7	08 00.14 +16 24.3 18.4	-0.93 + 4.3	1.4/19.5	38057
1996 AP ₂	2000 01 18.7	08 00.15 +24 57.4 16.5	-1.17 - 2.7	1.9/18.3	38037
1998 OC ₁	2000 01 18.7	08 00.21 +12 05.7 19.8	-1.08 + 4.9	3.2/20.2	33078
1998 SA ₁₁₂	2000 01 18.7	08 00.23 +14 51.8 17.4	-0.83 + 4.2	1.9/19.8	37778
1999 XB ₉₄	2000 01 18.7	08 00.37 +26 01.3 17.3	-0.87 + 4.4	1.5/17.8	37921
2000 AX ₈₅	2000 01 18.7	08 00.46 +18 57.5 16.6	-0.99 + 9.6	0.6/19.1	37997
1996 AE ₁₈	2000 01 18.8	08 00.44 +16 25.1 18.9	-1.00 + 4.4	1.4/19.5	38037
1999 XH ₃₂	2000 01 18.8	08 00.51 +17 59.6 18.1	-1.13 + 3.9	0.9/19.2	37879
1981 EV ₄₅	2000 01 18.8	08 00.76 +20 18.5 19.6	-0.91 + 2.0	0.1/18.9	38018
1996 HF ₁₁	2000 01 18.8	08 00.78 +22 50.8 18.7	-0.89 + 3.0	0.7/18.5	38038
1995 WQ ₄₁	2000 01 18.9	08 00.90 +09 48.0 18.5	-1.07 + 3.8	4.1/20.7	37652
1998 MC ₃₂	2000 01 18.9	08 00.96 +20 33.4 17.5	-1.17 + 0.8	0.0/18.9	37696
(12979)	2000 01 18.9	08 01.12 +29 46.0 17.1	-1.26 + 2.4	3.8/17.6	37481
(12742)	2000 01 18.9	08 01.14 +18 52.1 16.9	-0.85 + 4.7	0.5/19.3	37049
1998 SA ₁₄₅	2000 01 18.9	08 01.31 +41 50.5 18.8	-1.05 + 1.7	5.7/15.6	37789
(12331)	2000 01 19.0	08 01.34 +29 08.6 16.5	-1.25 + 4.7	3.5/17.6	36694
1998 QS ₉₃	2000 01 19.0	08 01.34 +11 02.8 18.7	-0.96 + 7.8	3.2/21.0	38058
1998 SG ₆₀	2000 01 19.0	08 01.50 +22 06.0 16.5	-0.88 + 3.3	0.5/18.8	38062
(13359)	2000 01 19.0	08 01.64 +02 03.7 17.5	-0.91 + 2.3	5.8/22.0	37584
1999 WB ₂	2000 01 19.1	08 01.80 +35 40.8 18.2	-0.66 + 2.2	3.0/16.3	37844
1994 GO ₉	2000 01 19.1	08 01.80 +25 48.5 17.1	-1.14 + 6.0	1.9/18.1	37638
(10112)	2000 01 19.1	08 01.81 +01 23.4 17.6	-0.84 + 0.6	5.5/22.0	38016
(13298)	2000 01 19.1	08 01.88 +26 53.1 17.6	-1.12 + 5.0	2.4/18.0	37567
1998 QO ₅	2000 01 19.1	08 02.01 -15 29.0 19.6	-0.91 + 8.4	12.2/29.0	33080
(12391)	2000 01 19.1	08 02.17 +25 30.4 17.0	-1.00 + 5.3	1.7/18.3	36710
(12886)	2000 01 19.2	08 02.24 +30 40.4 17.4	-1.10 + 0.6	3.5/17.8	37088
1999 XJ ₁₆₄	2000 01 19.2	08 02.24 +18 21.8 17.0	-1.46 - 7.2	0.9/19.3	37964
1999 XL ₁₇₅	2000 01 19.2	08 02.30 +28 11.5 17.6	-1.17 + 4.1	2.7/17.9	37973
1996 TQ ₁₂	2000 01 19.2	08 02.34 -26 11.6 18.1	-1.15 + 6.4	21.2/01.9	32054
1997 MR ₉	2000 01 19.2	08 02.38 +04 06.7 18.5	-0.88 + 4.2	5.6/22.2	37673
1997 FQ ₁	2000 01 19.2	08 02.42 +22 11.6 18.2	-1.15 + 1.9	0.7/19.0	38042
1998 RY ₇₉	2000 01 19.2	08 02.46 +04 31.6 18.4	-0.85 + 2.1	5.0/22.0	37763
1998 RY ₅₄	2000 01 19.2	08 02.56 +07 37.0 18.3	-0.91 + 2.4	4.1/21.4	38060
2000 AZ ₅₃	2000 01 19.3	08 02.56 +21 44.2 17.4	-0.94 + 0.3	0.4/19.1	37995
3118 T-2	2000 01 19.3	08 02.58 +13 34.2 19.2	-1.03 + 4.6	2.4/20.5	33130
1998 TR ₃₃	2000 01 19.3	08 02.66 +21 32.3 18.1	-0.91 + 3.2	0.3/19.1	38065
1998 SB ₆₅	2000 01 19.3	08 02.79 +32 04.1 16.9	-1.11 + 5.1	4.3/17.1	37774
1998 SQ ₃₇	2000 01 19.3	08 02.80 +22 54.9 18.8	-0.91 + 2.2	0.7/19.0	38062
1992 RH ₃	2000 01 19.3	08 02.85 +18 27.2 18.2	-1.19 + 3.5	0.8/19.7	38027
(12277)	2000 01 19.3	08 02.85 +36 09.4 16.1	-1.08 + 8.0	6.2/15.9	36680
1998 RK ₇₅	2000 01 19.3	08 02.87 +39 21.5 16.5	-1.20 + 1.6	7.3/16.3	37760

1995 SG ₄	2000 01 19.3	08 02.89 +30 41.9 18.3	-1.51 - 5.1	4.1/18.7	38034
1993 TZ ₂₉	2000 01 19.3	08 02.94 +23 26.9 17.7	-0.93 + 3.5	1.0/18.9	38030
1999 XT ₁₇₄	2000 01 19.3	08 03.05 +26 02.7 18.0	-0.98 + 0.2	1.8/18.6	37972
2000 AD ₁₁₈	2000 01 19.4	08 02.98 +10 41.1 17.4	-0.83 + 1.1	2.9/20.9	37999
(13120)	2000 01 19.4	08 03.03 +15 55.8 17.5	-0.92 +10.0	1.5/20.5	37519
1998 SE ₁₃₈	2000 01 19.4	08 03.08 +28 49.8 18.2	-1.02 + 2.4	2.7/18.1	37786
1989 YO ₂	2000 01 19.4	08 03.23 +22 17.4 16.7	-1.09 + 7.9	0.9/19.1	37625
1999 XK ₁₇₅	2000 01 19.4	08 03.44 +30 01.6 17.7	-1.22 + 3.7	4.1/18.0	37972
1994 PH ₁₈	2000 01 19.4	08 03.45 +17 16.2 19.1	-1.09 + 3.8	1.2/20.0	38032
1986 TV ₆	2000 01 19.4	08 03.46 +25 44.4 17.6	-1.08 + 1.2	1.7/18.7	38020
(9736)	2000 01 19.5	08 03.44 +19 51.9 18.4	-0.82 + 2.8	0.1/19.6	33196
1998 QE ₂₅	2000 01 19.5	08 03.53 +11 17.1 19.3	-0.96 + 6.4	3.1/21.4	32696
1998 QE ₅₇	2000 01 19.5	08 03.56 +13 41.0 18.4	-1.06 + 4.1	2.4/20.7	35711
1998 QN ₆₉	2000 01 19.5	08 03.66 +11 00.1 17.9	-1.08 - 1.9	3.6/20.6	37731
1164 T-3	2000 01 19.5	08 03.81 +06 50.7 18.5	-0.85 + 0.9	4.0/21.6	38193
1998 RM ₁₉	2000 01 19.6	08 03.91 +28 50.8 18.1	-1.07 + 1.0	3.3/18.4	37748
1998 QV ₇₃	2000 01 19.6	08 03.96 +03 10.9 15.8	-1.02 - 4.1	7.6/21.3	38058
1998 SS ₁₁₇	2000 01 19.6	08 04.02 +20 46.5 17.0	-1.14 + 2.3	0.1/19.6	38063
1999 VB ₇₂	2000 01 19.6	08 04.22 +21 49.0 16.7	-1.03 + 6.9	0.6/19.4	38122
2000 AP ₈₆	2000 01 19.7	08 04.26 +18 21.5 17.9	-1.14 + 3.7	0.8/20.0	37997
1992 CS ₂	2000 01 19.7	08 04.42 +15 42.0 17.2	-1.03 + 1.6	1.7/20.4	38026
2000 AY ₂	2000 01 19.7	08 04.43 +21 42.4 16.9	-1.04 + 4.9	0.6/19.5	37991
2000 AB	2000 01 19.7	08 04.44 +18 06.3 17.2	-0.82 + 3.7	0.6/20.1	37989
(12919)	2000 01 19.7	08 04.46 +13 23.1 17.3	-1.11 + 1.9	2.5/20.8	37097
2000 AW ₄	2000 01 19.7	08 04.62 +21 48.6 17.6	-0.89 + 3.6	0.5/19.5	37992
1996 EG ₁	2000 01 19.8	08 04.88 +01 06.7 18.0	-0.83 + 2.7	5.8/23.2	37656
1999 XH ₁₇₅	2000 01 19.8	08 04.96 +21 59.2 15.9	-1.11 - 7.7	0.8/19.8	37972
1998 SN ₆₅	2000 01 19.8	08 04.98 +30 37.9 19.2	-1.00 + 3.5	3.0/18.1	33758
1998 QP ₅₁	2000 01 19.8	08 05.09 +18 06.4 18.0	-1.10 + 2.4	0.9/20.2	38057
1994 PG ₁₈	2000 01 19.8	08 05.11 +13 25.7 16.8	-0.98 + 5.5	2.8/21.2	38032
(13134)	2000 01 19.8	08 05.13 +15 08.3 18.2	-0.99 + 4.6	1.9/20.8	37522
1995 WA ₄₂	2000 01 19.9	08 05.09 +12 24.4 17.5	-1.05 + 3.3	3.4/21.2	38036
1999 XE ₂₀₆	2000 01 19.9	08 05.09 +35 57.8 18.1	-0.99 + 4.0	5.2/16.9	37979
1990 QE ₇	2000 01 19.9	08 05.09 +18 46.2 16.4	-0.99 + 4.1	0.7/20.2	38022
1998 QW ₈₆	2000 01 19.9	08 05.32 +15 00.1 17.7	-1.06 - 0.4	1.8/20.6	38058
(13145)	2000 01 19.9	08 05.41 +26 55.4 18.0	-0.88 + 3.7	1.8/18.7	37525
(10031)	2000 01 19.9	08 05.52 +06 28.3 17.4	-0.96 + 0.6	4.3/22.0	33865
1996 EB	2000 01 19.9	08 05.57 +38 06.4 16.8	-1.14 + 7.3	7.1/16.2	38038
1998 RP ₅₅	2000 01 20.0	08 05.63 +19 58.4 17.6	-1.05 + 1.2	0.1/20.1	37753
2000 AA ₁₉₄	2000 01 20.0	08 05.63 +05 51.4 18.1	-0.78 + 7.2	5.2/23.3	38002
(13337)	2000 01 20.0	08 05.70 +21 26.4 17.1	-0.96 + 3.3	0.4/19.8	37578
1998 SO ₁₂₉	2000 01 20.0	08 05.78 +24 08.1 17.3	-0.93 + 2.9	1.3/19.4	38064
1996 GV ₁₇	2000 01 20.0	08 05.82 +02 18.1 18.3	-0.81 + 2.3	5.2/23.1	38038
1995 WO ₃	2000 01 20.0	08 05.92 +17 34.3 16.9	-1.10 + 3.1	1.1/20.5	38036
2000 AW ₂	2000 01 20.0	08 05.96 +21 11.7 16.3	-0.87 + 1.1	0.3/19.9	37991
(12993)	2000 01 20.0	08 06.00 +03 10.6 18.3	-0.83 + 3.9	5.4/23.3	37485
1998 QO ₈	2000 01 20.0	08 06.03 +18 03.3 17.8	-1.06 + 5.9	0.8/20.5	37707
1998 SA ₂₈	2000 01 20.1	08 05.98 +26 58.7 17.5	-1.00 + 2.8	2.2/19.0	38062
1998 SZ ₁₄₀	2000 01 20.2	08 06.38 +17 37.6 16.9	-0.92 + 2.6	0.9/20.6	38064
2000 AZ ₂	2000 01 20.2	08 06.52 +23 24.8 18.7	-0.95 + 1.5	1.1/19.7	37991
1994 PS ₃₁	2000 01 20.2	08 06.56 +12 45.3 19.9	-0.99 + 3.5	2.5/21.5	35691

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1982 ST₇ 2000 01 20.2 08 06.58 +24 08.5 17.0 -1.15 + 1.4 1.6/19.7 38019
 1997 GH₉ 2000 01 20.2 08 06.61 +27 42.4 19.2 -1.14 + 2.0 2.6/19.1 32960
 (13333) 2000 01 20.2 08 06.65 +13 12.3 17.6 -1.00 + 5.3 2.7/21.6 37577
 1981 EJ₁₃ 2000 01 20.2 08 06.68 +25 32.8 16.9 -1.16 - 1.0 2.3/19.6 38018
 1995 UD 2000 01 20.2 08 06.83 +16 44.9 17.0 -1.13 + 1.9 1.5/20.8 37647
 (9800) 2000 01 20.3 08 06.87 +20 15.6 17.7 -1.06 + 4.1 0.0/20.3 38016
 1997 FR₃ 2000 01 20.3 08 06.90 +08 10.4 19.5 -1.04 + 3.8 4.9/22.4 32958
 2000 AB₁₉₄ 2000 01 20.3 08 06.91 +04 57.8 17.1 -0.82 + 2.9 4.7/23.0 38002
 1998 SV₁₆₃ 2000 01 20.3 08 07.13 +34 03.1 17.1 -0.98 + 4.4 4.4/17.7 38065
 1998 UO₃₂ 2000 01 20.3 08 07.17 +05 45.0 18.9 -0.84 + 1.7 4.3/22.8 37797
 1998 SE₂₂ 2000 01 20.3 08 07.20 +15 55.0 19.2 -0.97 + 3.0 1.4/21.1 35716
 (13313) 2000 01 20.3 08 07.22 +27 27.9 17.7 -0.94 + 2.0 2.4/19.2 37571
 1978 UD₇ 2000 01 20.3 08 07.23 +33 05.8 18.7 -1.28 + 2.4 4.5/18.3 35676
 1999 XG₉₄ 2000 01 20.4 08 07.25 +19 42.0 17.7 -1.13 + 1.1 0.2/20.5 37921
 1998 OT₁ 2000 01 20.4 08 07.50 +20 55.7 18.0 -1.19 + 0.8 0.3/20.4 37699
 1998 RR₇₂ 2000 01 20.4 08 07.51 +18 21.3 17.9 -0.91 + 3.5 0.6/20.8 37758
 1995 BQ₈ 2000 01 20.4 08 07.54 +22 13.7 17.8 -0.90 + 3.6 0.7/20.1 38033
 1998 QA₄ 2000 01 20.4 08 07.54 +34 34.3 21.4 -1.17 + 0.6 4.5/18.5 33080
 1998 RO₇₉ 2000 01 20.4 08 07.64 +29 35.2 19.8 -0.95 + 2.9 3.0/18.9 33275
 1998 RF₇₄ 2000 01 20.5 08 07.97 +25 26.0 17.4 -1.05 + 1.3 1.8/19.8 37760
 1998 QM₂₈ 2000 01 20.5 08 08.02 +20 34.4 18.2 -0.99 + 3.0 0.1/20.5 37715
 2000 AY₁₄₆ 2000 01 20.5 08 08.07 -01 23.5 16.9 -1.46 - 5.4 9.9/22.3 38000
 1981 QD₄ 2000 01 20.6 08 08.06 +31 34.2 16.6 -1.21 - 1.1 4.1/19.2 38019
 1998 ON₁₂ 2000 01 20.6 08 08.16 +17 49.7 18.5 -1.05 + 4.0 0.8/21.0 37701
 1998 QN₁₂ 2000 01 20.6 08 08.30 +13 04.7 18.5 -0.96 + 3.5 2.4/21.9 37709
 1998 TN₅ 2000 01 20.6 08 08.48 -00 03.4 16.9 -0.81 + 1.9 6.6/24.2 37792
 2000 AZ₅₀ 2000 01 20.6 08 08.49 +21 03.9 17.7 -1.13 + 3.6 0.3/20.5 37995
 1998 SO₆₄ 2000 01 20.6 08 08.53 +02 50.6 19.4 -0.90 + 3.9 5.3/23.9 35718
 (12981) 2000 01 20.6 08 08.55 +23 50.5 17.4 -0.91 + 3.9 1.3/20.0 37482
 1998 SC₁₂₇ 2000 01 20.7 08 08.66 +18 59.6 18.4 -0.84 + 4.3 0.4/21.0 37782
 1998 QR₄₈ 2000 01 20.7 08 08.71 +19 42.2 19.8 -0.99 + 2.8 0.1/20.8 33084
 1994 PE₁₆ 2000 01 20.7 08 08.79 +21 39.4 17.8 -1.07 + 1.2 0.6/20.5 38032
 (12355) 2000 01 20.7 08 08.96 +17 36.5 17.1 -0.92 + 3.1 0.9/21.2 36700
 1998 RQ₇₃ 2000 01 20.7 08 08.97 +15 52.4 18.1 -0.89 + 2.4 1.4/21.5 37759
 1995 SH₃₂ 2000 01 20.8 08 09.13 +24 25.6 17.0 -1.19 + 1.4 2.1/20.2 38034
 1998 OJ₇ 2000 01 20.8 08 09.23 +11 57.2 18.3 -1.03 + 2.8 2.9/22.2 37700
 1998 QZ₅₅ 2000 01 20.8 08 09.33 +20 02.4 17.5 -0.98 + 2.1 0.0/20.9 37730
 1986 TG₁ 2000 01 20.8 08 09.38 +41 15.1 17.2 -1.31 0.0 7.5/17.9 38020
 1998 QP₆₉ 2000 01 20.9 08 09.33 +00 50.4 18.2 -0.99 + 0.4 6.8/23.9 38057
 (13308) 2000 01 21.0 08 10.03 +14 31.0 17.4 -0.92 + 3.0 2.0/22.0 37570
 1977 TU₃ 2000 01 21.0 08 10.08 -02 17.3 17.1 -0.84 + 2.4 7.1/25.4 38017
 1997 GJ₂₃ 2000 01 21.0 08 10.15 +39 08.8 19.0 -1.16 + 3.4 5.9/17.6 38043
 1998 OL₁₁ 2000 01 21.0 08 10.16 +25 58.3 18.4 -1.12 - 1.0 2.1/20.3 37701
 1985 RF₃ 2000 01 21.0 08 10.20 +19 42.1 18.1 -0.96 + 4.5 0.1/21.2 38019
 1998 WR₁₅ 2000 01 21.0 08 10.22 +18 37.5 18.3 -0.80 + 3.5 0.4/21.4 36086
 1998 RG 2000 01 21.1 08 10.21 +18 22.1 17.0 -0.90 + 7.7 0.7/21.5 37743
 1998 SE₁₂₃ 2000 01 21.1 08 10.27 +09 59.1 18.4 -0.90 + 3.2 3.3/22.9 37781
 1998 RY₅₁ 2000 01 21.1 08 10.29 +14 50.4 17.2 -0.97 + 2.7 2.1/22.0 37752
 1997 GP₂₇ 2000 01 21.1 08 10.32 +19 21.6 19.1 -1.12 + 2.7 0.3/21.2 32963
 (13294) 2000 01 21.1 08 10.35 +30 04.5 16.6 -1.20 + 4.7 4.3/19.3 37566
 1993 FW₉ 2000 01 21.1 08 10.38 +23 51.6 18.0 -1.06 + 3.8 1.3/20.5 38028

1995 BF₂ 2000 01 21.1 08 10.42 +28 41.4 16.8 -0.98 + 1.0 2.8/19.8 37643
 1994 PL₄ 2000 01 21.1 08 10.54 +12 55.1 18.1 -0.99 + 5.6 2.5/22.5 38031
 1998 RK₅₅ 2000 01 21.1 08 10.55 +23 23.5 18.3 -1.21 + 1.8 1.3/20.7 37753
 1994 PC₁₆ 2000 01 21.1 08 10.59 +15 51.0 19.0 -1.03 + 3.4 1.5/21.9 38032
 1998 SV₁₁₄ 2000 01 21.1 08 10.61 +20 00.0 18.2 -0.86 + 3.2 0.0/21.2 37778
 1994 GR₂ 2000 01 21.1 08 10.64 +21 01.6 19.3 -1.13 + 4.6 0.4/21.0 32747
 1998 RV₇₈ 2000 01 21.2 08 10.60 +36 51.4 18.4 -1.10 + 2.9 5.7/18.2 37762
 1993 FE₈ 2000 01 21.2 08 10.69 +23 50.4 18.1 -1.06 + 4.3 1.3/20.5 38028
 1986 PX 2000 01 21.2 08 10.73 +15 20.5 17.9 -1.18 + 4.2 1.9/22.0 38019
 1999 XK₂₀₆ 2000 01 21.2 08 10.74 +36 50.1 18.0 -1.00 + 2.7 5.3/18.2 37980
 1997 GO₂₈ 2000 01 21.2 08 10.83 +23 16.0 18.4 -1.08 + 4.2 1.1/20.7 37669
 2000 AY₄ 2000 01 21.2 08 10.95 +21 04.3 16.7 -1.05 + 4.5 0.4/21.1 37992
 6106 P-L 2000 01 21.3 08 11.10 +21 42.6 18.2 -1.03 + 2.2 0.6/21.0 38191
 1998 SL₇₅ 2000 01 21.3 08 11.10 +22 01.6 19.0 -0.96 + 3.8 0.6/21.0 35718
 2000 AA₅ 2000 01 21.3 08 11.12 +23 00.9 17.8 -1.06 + 0.4 1.3/20.9 37992
 1998 VJ₅ 2000 01 21.3 08 11.17 +36 11.1 18.4 -1.03 + 2.3 4.4/18.5 38066
 1998 VD₉ 2000 01 21.3 08 11.17 -04 13.1 17.5 -0.83 + 2.4 7.3/25.9 38066
 1998 RS₅₀ 2000 01 21.3 08 11.37 +16 46.0 18.8 -1.10 + 4.0 1.2/21.9 37752
 1998 UX₇ 2000 01 21.3 08 11.43 +03 57.2 17.8 -0.77 + 2.8 4.4/24.4 37795
 1998 SU₁₄₆ 2000 01 21.3 08 11.48 +04 25.0 18.2 -0.80 + 3.3 4.9/24.4 37789
 (12485) 2000 01 21.4 08 11.45 +20 24.9 17.0 -1.11 + 2.5 0.2/21.3 36735
 1998 TT₂₆ 2000 01 21.4 08 11.69 +06 19.9 18.3 -0.85 + 2.0 4.3/23.8 38065
 1991 TX 2000 01 21.4 08 11.90 +46 20.8 17.6 -1.44 + 8.1 9.5/15.8 37261
 1998 SS₂ 2000 01 21.4 08 11.92 +07 03.3 17.6 -0.98 + 0.7 4.1/23.4 38061
 1998 RO₂₀ 2000 01 21.4 08 11.92 +15 58.0 18.9 -1.12 + 4.5 1.5/22.2 36085
 1995 UQ₄ 2000 01 21.5 08 11.90 +41 21.0 16.2 -1.33 + 4.5 8.3/17.6 37648
 1981 EL₁₄ 2000 01 21.5 08 12.05 +33 34.4 19.1 -1.08 + 0.3 4.5/19.5 26917
 1998 SB₁₁₉ 2000 01 21.5 08 12.08 +24 34.4 17.8 -1.11 + 3.4 1.8/20.7 38063
 1984 SS 2000 01 21.5 08 12.32 -15 16.6 17.5 -1.02 + 1.9 11.1/28.7 38019
 4131 T-1 2000 01 21.5 08 12.36 +24 45.1 17.1 -1.13 + 3.9 2.0/20.7 38005
 1998 SZ₅₉ 2000 01 21.6 08 12.31 +13 36.4 17.9 -1.00 + 5.6 2.4/22.8 38062
 1997 EB₅₄ 2000 01 21.6 08 12.34 +23 05.6 18.0 -1.07 + 3.0 1.0/21.1 38042
 (13068) 2000 01 21.6 08 12.54 +02 15.4 18.2 -1.02 + 4.2 6.3/24.9 37505
 1998 QO₂₈ 2000 01 21.6 08 12.64 +16 49.1 18.5 -0.95 + 1.9 1.1/22.2 37715
 2000 AV₁₅₀ 2000 01 21.6 08 12.68 +08 08.9 17.9 -0.84 + 4.9 3.7/24.0 38001
 1991 RA₂₄ 2000 01 21.6 08 12.69 +23 44.6 17.6 -1.16 + 3.0 1.6/21.1 37628
 1998 SL₅₄ 2000 01 21.7 08 12.73 +17 16.1 18.0 -1.04 + 3.2 0.9/22.2 38062
 (13201) 2000 01 21.7 08 12.78 +11 58.7 18.2 -1.10 + 4.1 3.2/23.1 37540
 1993 FE₂₀ 2000 01 21.7 08 12.79 +22 38.5 17.2 -1.04 + 6.0 1.1/21.2 38028
 1995 DN₁ 2000 01 21.7 08 12.79 +30 03.0 17.9 -0.91 + 2.4 2.8/19.9 38034
 1998 RO₆₇ 2000 01 21.7 08 12.85 +09 27.6 18.3 -1.04 + 3.1 3.9/23.5 38060
 1998 RD₆₉ 2000 01 21.7 08 12.91 +21 15.1 17.9 -1.15 + 3.9 0.5/21.5 38060
 1998 SE₄ 2000 01 21.7 08 12.92 +35 05.8 18.0 -1.05 + 1.3 4.8/19.3 37766
 (12493) 2000 01 21.7 08 12.95 +19 01.7 17.2 -0.83 + 4.9 0.3/21.9 36737
 1993 FY₃₄ 2000 01 21.7 08 13.02 +11 59.5 18.3 -1.00 + 4.6 2.9/23.2 38029
 1998 SZ₁₃₈ 2000 01 21.7 08 13.09 +12 11.0 19.3 -1.16 + 3.1 2.8/23.0 37786
 1998 TY₁ 2000 01 21.7 08 13.10 +27 31.9 18.8 -0.99 + 4.7 2.6/20.3 37791
 1997 KH 2000 01 21.7 08 13.15 +16 52.4 18.2 -0.97 + 3.3 1.0/22.3 38044
 1998 SC₄₆ 2000 01 21.8 08 13.16 +15 56.5 17.8 -0.85 + 2.7 1.2/22.5 38062
 1991 PA₅ 2000 01 21.8 08 13.23 +20 32.2 18.6 -1.14 + 2.5 0.2/21.7 38024
 1997 RG₉ 2000 01 21.8 08 13.25 +19 18.0 17.7 -0.91 - 0.3 0.2/21.9 38045

(12770)	2000 01 21.8	08 13.30 +21 33.0 16.9	-1.14 + 5.7	0.7/21.5	37056
1997 UJ	2000 01 21.8	08 13.37 +05 56.2 18.7	-0.55 + 1.5	2.7/24.5	38045
1998 SR ₆₁	2000 01 21.8	08 13.51 +31 03.2 17.5	-1.11 - 0.3	4.0/20.3	37773
(12892)	2000 01 21.8	08 13.51 +11 28.8 16.0	-0.93 + 1.5	3.3/23.2	37089
1998 RA ₇₇	2000 01 21.9	08 13.65 +27 13.7 20.3	-1.15 + 3.5	2.4/20.7	35716
(12744)	2000 01 21.9	08 13.68 +16 52.6 16.9	-1.17 + 2.4	1.3/22.4	37050
1999 XL ₁₆₄	2000 01 21.9	08 13.74 +28 11.3 17.1	-1.19 + 6.2	3.2/20.3	37964
(12193)	2000 01 21.9	08 13.77 +32 09.5 15.1	-1.06 + 8.6	4.7/19.1	36657
1989 CB ₆	2000 01 21.9	08 13.78 +20 29.3 17.0	-1.02 + 4.8	0.3/21.8	38021
1994 PY ₃₇	2000 01 21.9	08 14.01 +19 54.3 19.9	-1.09 + 2.9	0.0/22.0	35691
1994 PF ₃₇	2000 01 22.0	08 14.17 +13 33.9 16.9	-0.97 + 5.9	2.7/23.3	37639
1999 UG ₁₁	2000 01 22.0	08 14.18 +36 14.1 16.2	-1.46 -12.2	7.4/21.9	38094
1995 BW ₁₁	2000 01 22.0	08 14.22 +21 15.9 17.6	-0.86 + 3.1	0.4/21.8	37643
1998 QO ₁₀	2000 01 22.0	08 14.25 +12 56.0 18.1	-1.07 + 3.9	2.5/23.3	38054
(12233)	2000 01 22.0	08 14.26 +20 16.0 17.1	-1.05 + 5.4	0.2/22.0	36668
1991 RE ₄	2000 01 22.0	08 14.31 +25 20.8 19.9	-1.15 + 2.4	1.9/21.2	35062
1993 FL ₃₃	2000 01 22.0	08 14.36 +27 02.1 17.4	-1.12 + 3.8	2.9/20.8	38029
1998 RV ₇₁	2000 01 22.0	08 14.47 +20 24.8 17.2	-1.00 + 4.0	0.2/22.0	33007
1998 RG ₆₉	2000 01 22.1	08 14.47 +16 42.3 17.7	-0.93 + 3.8	1.1/22.7	37757
1992 RV ₆	2000 01 22.1	08 14.60 +21 50.6 19.3	-0.84 + 3.0	0.5/21.8	35686
1998 QY ₂₀	2000 01 22.1	08 14.63 +18 57.2 19.9	-1.05 + 3.1	0.3/22.3	34591
1999 YE ₉	2000 01 22.1	08 14.66 +14 12.5 17.3	-1.02 + 0.3	1.8/23.0	37988
1090 T-3	2000 01 22.1	08 14.66 +36 36.4 20.4	-1.19 + 0.8	5.4/19.5	36124
1998 SY ₅₉	2000 01 22.1	08 14.69 +17 47.1 17.3	-0.84 + 4.7	0.7/22.6	38062
1998 QH ₅₂	2000 01 22.1	08 14.78 +24 03.8 16.5	-1.15 - 0.2	1.8/21.6	38057
(12836)	2000 01 22.1	08 14.83 +18 10.1 16.9	-1.13 + 4.4	0.8/22.5	37073
1994 PL ₃₅	2000 01 22.2	08 14.87 +14 59.6 18.1	-1.01 + 3.5	1.9/23.1	38032
1996 TN ₄₉	2000 01 22.2	08 15.01 +06 02.3 18.4	-0.55 + 1.9	2.8/24.9	38039
1998 SM ₁₂₉	2000 01 22.2	08 15.03 +16 48.3 18.5	-0.94 + 3.6	1.0/22.8	35719
1997 UY ₂₀	2000 01 22.2	08 15.06 +03 53.8 18.9	-0.77 + 2.6	4.0/25.2	38046
1997 GE ₁	2000 01 22.2	08 15.10 +16 23.5 18.5	-1.11 + 4.0	1.4/23.0	37666
1999 VA ₇₂	2000 01 22.2	08 15.12 +21 16.3 17.2	-0.93 + 4.3	0.5/22.0	37840
5167 T-2	2000 01 22.2	08 15.24 +22 17.1 17.9	-0.61 + 0.7	0.5/21.9	38007
1998 SC ₄₃	2000 01 22.2	08 15.27 +26 21.6 18.6	-1.03 + 3.1	2.1/21.1	38062
4031 T-3	2000 01 22.2	08 15.27 +16 12.7 18.5	-1.07 + 5.1	1.4/23.0	32294
1998 QE ₉₈	2000 01 22.3	08 15.28 +23 53.9 19.5	-1.09 + 4.1	1.3/21.6	33089
1995 UQ ₁	2000 01 22.3	08 15.49 +11 19.1 17.3	-1.08 + 3.9	3.7/23.9	38035
(13356)	2000 01 22.3	08 15.51 +10 38.2 17.5	-0.79 + 3.8	2.8/24.1	37584
(9826)	2000 01 22.3	08 15.56 +06 41.4 17.8	-0.83 + 2.5	3.8/24.8	38016
1998 QE ₅₄	2000 01 22.3	08 15.60 +21 32.0 16.2	-1.18 + 0.9	0.7/22.1	38057
1998 PJ	2000 01 22.3	08 15.63 +20 28.2 19.0	-1.09 + 3.0	0.2/22.3	37704
1998 SJ ₁₂₂	2000 01 22.4	08 15.71 +11 13.0 18.0	-0.83 + 2.7	2.7/24.0	37781
1998 SV ₁₂₆	2000 01 22.4	08 15.82 +22 35.3 17.7	-0.93 + 5.0	1.0/21.9	38064
1998 VH ₃₄	2000 01 22.4	08 15.83 +20 02.9 17.6	-0.87 + 1.2	0.1/22.4	36820
1995 UA ₂	2000 01 22.4	08 15.92 +22 55.7 17.3	-1.07 + 9.5	1.4/21.7	37648
1994 PL ₃	2000 01 22.4	08 15.94 +20 44.0 17.6	-1.06 + 2.3	0.4/22.3	38031
1997 GV ₃	2000 01 22.4	08 15.98 +33 06.6 17.9	-1.24 + 3.3	5.6/20.1	38042
1998 RA ₃₉	2000 01 22.4	08 16.09 +09 53.7 18.3	-0.89 + 6.0	3.4/24.6	38059
1998 UD ₇	2000 01 22.5	08 16.11 +24 13.2 18.7	-0.99 + 3.1	1.3/21.7	38065
1997 CV ₂₁	2000 01 22.5	08 16.11 +27 36.6 17.5	-1.20 + 3.2	3.3/21.2	37661
(9779)	2000 01 22.5	08 16.33 +21 54.0 18.0	-1.10 + 2.9	0.7/22.2	33206

1998 RL ₆₁	2000 01 22.5	08 16.35 +24 56.9 17.6	-1.22 + 2.0	2.0/21.7	38060
1998 QU ₁₀₃	2000 01 22.5	08 16.42 +21 45.2 17.1	-0.94 + 4.9	0.7/22.2	37742
1993 FR ₂₅	2000 01 22.5	08 16.45 +17 05.6 16.7	-1.04 + 2.8	1.2/23.0	37633
1981 QJ ₃	2000 01 22.5	08 16.58 +18 35.0 18.0	-0.83 + 3.2	0.3/22.8	38019
1998 RN ₁₆	2000 01 22.6	08 16.59 +10 42.0 19.5	-1.05 + 4.6	3.1/24.3	35714
(11388)	2000 01 22.6	08 16.79 +08 10.0 16.4	-0.69 + 2.1	3.1/24.8	35587
1998 RL ₅₄	2000 01 22.6	08 16.82 +19 19.5 17.2	-0.92 + 1.3	8.3/12.0	37753
2000 AR ₁₉₄	2000 01 22.6	08 16.86 +05 13.7 17.8	-0.96 + 2.4	5.6/25.3	38002
1998 TM ₅	2000 01 22.6	08 16.89 +24 32.3 19.1	-0.99 + 3.6	1.5/21.8	38065
1981 EH ₃₁	2000 01 22.6	08 16.91 +07 56.9 18.0	-0.95 + 7.2	5.1/25.3	38018
1997 ET ₁₇	2000 01 22.6	08 16.93 +17 45.5 16.3	-1.14 + 3.2	0.9/23.0	37664
4758 P-L	2000 01 22.7	08 16.98 +27 05.1 18.6	-0.95 + 2.1	2.5/21.4	38191
1998 QA ₈₇	2000 01 22.7	08 17.01 +07 02.1 17.1	-0.98 - 1.0	5.0/24.5	37737
(12467)	2000 01 22.7	08 17.09 +25 24.8 17.0	-1.22 + 4.5	2.5/21.7	36731
1990 SX ₃	2000 01 22.7	08 17.18 +22 02.6 17.0	-1.15 - 0.8	0.8/22.4	38022
1998 SN ₂₂	2000 01 22.7	08 17.39 -00 47.8 16.9	-0.86 + 4.6	7.9/27.0	38061
1998 MM ₇	2000 01 22.8	08 17.35 +27 13.8 18.8	-1.12 + 6.9	2.6/21.2	32756
(13089)	2000 01 22.8	08 17.36 +12 26.0 17.8	-0.87 + 1.1	2.1/24.0	37511
1993 FL ₈₁	2000 01 22.8	08 17.40 +17 33.1 17.9	-1.04 + 4.5	0.8/23.0	34501
1998 OQ ₁₀	2000 01 22.8	08 17.52 +19 40.0 16.6	-1.17 + 3.5	11.3/03.0	37700
(12796)	2000 01 22.8	08 17.71 +02 57.0 18.3	-1.08 + 0.6	7.3/25.6	37063
1998 RA ₅₉	2000 01 22.8	08 17.74 +11 58.0 17.2	-1.06 + 3.4	3.2/24.2	38060
(13025)	2000 01 22.8	08 17.77 +58 27.7 15.1	-2.21 -15.0	21.0/23.0	37494
6607 P-L	2000 01 22.8	08 17.85 +18 15.1 16.3	-1.04 + 5.3	0.6/23.0	38191
1995 WX ₂	2000 01 22.9	08 17.78 +11 44.5 17.7	-1.06 + 2.6	3.6/24.2	38036
1998 UF ₄₂	2000 01 22.9	08 17.91 +22 50.6 17.7	-1.02 + 3.6	1.1/22.3	37798
1998 UD ₂₀	2000 01 22.9	08 17.99 +18 34.6 19.0	-0.82 + 3.7	0.3/23.2	34307
1993 FH ₁₆	2000 01 22.9	08 18.08 +21 19.8 16.3	-1.03 + 5.5	0.8/22.6	38028
1998 QG ₉₈	2000 01 23.0	08 18.27 +08 10.7 19.6	-1.05 + 4.5	3.9/25.2	33349
1416 T-2	2000 01 23.0	08 18.28 +04 33.3 19.5	-0.53 + 2.5	2.8/26.2	35672
1998 QE ₅₁	2000 01 23.0	08 18.37 +21 25.2 19.5	-1.17 + 3.2	0.6/22.7	35631
1998 SH ₂₅	2000 01 23.0	08 18.50 +27 15.1 16.6	-0.99 + 4.4	2.6/21.6	38062
1996 JF ₉	2000 01 23.0	08 18.61 +14 19.6 20.8	-0.83 + 4.0	1.5/24.1	27562
1993 FR ₁₃	2000 01 23.0	08 18.71 +30 40.7 17.4	-1.12 + 4.4	4.9/21.0	38028
1078 T-3	2000 01 23.1	08 18.88 -02 36.5 17.4	-0.96 0.0	8.6/26.6	38193
1992 EW ₁₇	2000 01 23.2	08 19.07 +01 35.8 18.1	-0.90 + 5.2	6.1/26.9	38026
1998 SX ₁₃₇	2000 01 23.2	08 19.08 +23 36.8 17.2	-0.94 + 3.7	1.4/22.4	37785
1998 SU ₁₆₃	2000 01 23.2	08 19.09 +33 35.7 17.7	-1.11 + 4.2	4.6/20.4	37790
4858 P-L	2000 01 23.2	08 19.16 +04 54.9 18.2	-0.80 + 4.7	4.9/26.3	38191
1998 SH ₁₃₄	2000 01 23.2	08 19.20 +18 51.4 17.2	-0.84 + 3.1	0.2/23.4	37784
1998 QK ₃₉	2000 01 23.2	08 19.31 +20 20.0 18.3	-0.99 + 5.3	0.3/23.1	38056
(12365)	2000 01 23.2	08 19.32 +27 39.7 17.1	-0.87 + 6.5	2.4/21.4	36703
1998 RC ₇₄	2000 01 23.2	08 19.37 +10 10.6 17.8	-0.92 + 2.4	3.1/24.9	37759
(13461)	2000 01 23.2	08 19.39 +28 41.4 17.2	-1.23 + 0.7	3.7/21.9	37613
1991 PO ₁₈	2000 01 23.2	08 19.43 +25 58.1 17.4	-1.21 + 2.4	2.3/22.2	38024
1998 OY ₁₁	2000 01 23.2	08 19.43 +23 26.4 20.3	-1.10 + 3.9	1.3/22.6	33079
1998 OE ₆	2000 01 23.2	08 19.43 +18 32.9 18.5	-1.11 + 2.2	0.4/23.4	32757
1997 CC ₁₇	2000 01 23.2	08 19.46 +23 09.2 18.0	-1.18 + 3.9	1.4/22.6	38041
1998 SV ₁₆₄	2000 01 23.3	08 19.51 +24 53.7 16.8	-1.07 + 6.4	2.0/22.2	37791
1993 FH ₁₂	2000 01 23.3	08 19.56 +21 12.7 17.1	-1.08 + 5.2	0.7/23.0	37633
1979 QA ₂	2000 01 23.3	08 19.57 +21 46.6 17.0	-1.10 + 3.5	0.9/22.9	38017

2000 JAN. 24

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1999 TD ₁₁	2000 01 23.3	08 19.65 +22 36.5 16.5	-1.04 + 2.1	1.5/22.8	37823	1991 RX ₁₇	2000 01 24.2	08 23.53 +13 35.5 17.4	-1.05 + 4.6	2.1/25.4	38025
1995 UB ₈	2000 01 23.3	08 19.77 +26 17.8 16.5	-1.09 + 4.9	3.1/22.1	38035	(11428)	2000 01 24.3	08 23.70 +39 03.0 18.1	-0.68 + 0.9	3.5/20.4	35598
1981 EU ₁₄	2000 01 23.3	08 19.86 +24 25.5 19.4	-1.12 + 1.9	1.8/22.6	26917	(9801)	2000 01 24.3	08 23.72 +16 07.2 19.3	-0.94 + 3.2	0.9/24.9	38016
1995 DZ ₃	2000 01 23.3	08 19.90 +27 53.6 17.8	-0.97 + 0.1	2.2/22.1	38034	1995 QF	2000 01 24.3	08 23.85 +10 55.9 18.2	-1.10 + 5.2	3.5/26.0	37644
1973 SZ	2000 01 23.4	08 19.90 +16 57.3 18.3	-0.56 + 2.6	0.5/23.9	38017	1991 PQ ₅	2000 01 24.3	08 23.86 +15 50.8 18.4	-1.06 + 6.1	1.3/25.1	38024
1998 QJ ₄₆	2000 01 23.4	08 19.93 +27 29.2 18.7	-1.10 + 1.6	2.6/22.1	37724	1998 SN ₆₄	2000 01 24.3	08 23.94 +03 09.7 18.4	-0.90 + 4.5	5.0/27.7	38063
1998 RZ ₆₇	2000 01 23.4	08 19.94 +13 59.2 17.7	-0.88 + 2.9	2.0/24.4	38060	(13071)	2000 01 24.3	08 23.98 +31 36.9 17.4	-1.19 + 3.4	4.6/22.1	37506
1998 QW ₈₅	2000 01 23.4	08 19.95 +09 16.8 18.0	-1.02 + 2.8	3.7/25.2	38058	1994 UM ₁	2000 01 24.3	08 24.06 +15 10.2 18.0	-0.97 + 2.8	1.3/25.1	38033
1992 PC ₃	2000 01 23.4	08 19.96 +10 58.9 17.2	-0.86 + 0.8	2.4/24.8	38027	1998 SU ₂	2000 01 24.3	08 24.11 +21 29.8 18.2	-0.99 + 2.9	0.8/24.0	37765
1998 SN ₁	2000 01 23.4	08 19.98 +08 52.4 17.8	-0.96 + 4.0	3.9/25.4	37765	1989 SD	2000 01 24.4	08 24.12 +23 40.9 16.8	-1.23 + 3.8	1.9/23.6	38021
1988 XY ₄	2000 01 23.4	08 20.08 +32 20.6 17.3	-0.96 + 4.2	3.9/20.8	38021	(12908)	2000 01 24.4	08 24.15 +41 19.0 16.3	-1.18 + 4.5	8.2/19.5	37094
1996 EB ₁	2000 01 23.4	08 20.21 +24 52.1 17.4	-1.01 + 2.4	1.9/22.5	38038	6276 P-L	2000 01 24.4	08 24.32 +17 43.8 19.2	-0.89 + 3.1	0.5/24.8	36121
(13273)	2000 01 23.4	08 20.25 +23 58.9 16.4	-1.22 + 1.1	2.1/22.8	37560	1998 SU ₁₂₄	2000 01 24.5	08 24.53 +17 56.2 17.1	-0.91 + 4.1	0.5/24.8	37782
1995 UC ₅₀	2000 01 23.4	08 20.33 +17 36.5 20.0	-1.13 + 3.8	0.8/23.8	35694	(13370)	2000 01 24.5	08 24.67 +28 09.1 17.9	-1.21 + 4.5	3.2/22.8	37587
1999 XH ₁₇₆	2000 01 23.4	08 20.39 +24 37.4 17.2	-1.04 + 1.2	1.6/22.7	37973	1997 GR ₂₅	2000 01 24.5	08 24.93 +23 51.1 18.1	-1.07 + 4.2	1.5/23.7	38043
1992 RG ₅	2000 01 23.5	08 20.36 +20 48.5 19.2	-0.86 + 3.3	0.4/23.3	35686	1998 RN ₅₄	2000 01 24.6	08 25.05 +19 47.7 17.7	-1.16 + 1.2	0.2/24.5	38060
1998 SB ₁₂₉	2000 01 23.5	08 20.39 +12 03.0 17.2	-0.99 + 5.2	2.8/25.0	37783	1991 PF ₅	2000 01 24.6	08 25.06 +20 30.0 17.3	-1.19 + 1.9	0.5/24.4	38024
1995 WC ₁	2000 01 23.5	08 20.52 +17 07.5 17.6	-1.11 + 3.6	1.0/24.0	37650	2000 AX ₁	2000 01 24.6	08 25.12 +18 55.4 17.3	-1.05 + 7.3	0.1/24.7	37990
1998 UP ₂₁	2000 01 23.5	08 20.54 +07 52.9 17.7	-0.82 + 4.7	4.0/26.0	38066	1994 PL ₁	2000 01 24.6	08 25.15 +05 14.1 18.2	-1.02 +11.1	5.1/28.0	37638
(13349)	2000 01 23.5	08 20.67 +22 53.0 17.8	-0.99 + 1.9	1.1/23.0	37582	1981 EC ₁₇	2000 01 24.6	08 25.20 +21 09.2 17.1	-1.20 + 1.9	0.8/24.3	37620
1997 GC ₁₉	2000 01 23.5	08 20.67 +28 43.8 18.7	-1.15 + 2.1	3.3/22.0	38043	3097 P-L	2000 01 24.6	08 25.27 +17 24.9 17.8	-0.93 + 1.7	0.5/25.0	38190
1998 QV ₃₃	2000 01 23.5	08 20.69 +16 37.2 19.1	-1.03 + 3.6	1.0/24.1	35710	4216 T-2	2000 01 24.7	08 25.38 +10 47.1 18.5	-0.63 + 3.0	1.8/26.5	38193
1994 PO ₂₈	2000 01 23.6	08 20.79 +22 32.9 18.8	-1.05 + 3.4	1.1/23.1	38032	1994 PA ₃₉	2000 01 24.7	08 25.49 +15 16.3 18.8	-1.08 + 3.6	1.5/25.4	38032
1997 OZ	2000 01 23.6	08 20.87 +21 56.2 19.2	-0.84 + 3.1	0.6/23.2	34016	(13470)	2000 01 24.7	08 25.57 +22 37.6 17.4	-1.02 + 3.4	1.2/24.1	37615
1998 UG ₃₄	2000 01 23.6	08 20.88 +21 04.7 18.1	-1.06 + 2.9	0.5/23.4	38066	1998 SU ₇₄	2000 01 24.7	08 25.76 +27 39.3 17.1	-1.11 + 5.1	3.3/23.0	37776
(13287)	2000 01 23.6	08 20.97 +11 06.9 17.3	-1.02 + 4.9	3.1/25.3	37563	4181 T-3	2000 01 24.8	08 25.91 +20 50.0 19.0	-1.10 + 4.6	0.6/24.5	32538
(13220)	2000 01 23.7	08 21.28 +10 29.0 16.9	-0.81 + 4.9	2.6/25.6	37545	1998 RT ₁	2000 01 24.8	08 25.91 +28 05.7 18.8	-1.21 - 1.3	3.4/23.6	33092
1993 FE ₇₆	2000 01 23.7	08 21.49 +14 02.0 19.5	-0.95 + 3.4	1.6/24.8	34289	(9908)	2000 01 24.8	08 25.95 +23 06.1 16.9	-0.93 + 3.3	1.3/24.1	38016
1998 RK ₄₇	2000 01 23.7	08 21.50 +21 02.8 17.4	-1.14 + 1.6	0.6/23.5	38059	(13160)	2000 01 24.8	08 25.97 +28 27.0 18.1	-1.17 + 4.5	3.3/23.1	37529
1998 RP ₇₄	2000 01 23.7	08 21.51 +23 43.1 17.8	-1.19 + 2.3	1.6/23.1	38061	1998 RX ₇₈	2000 01 24.8	08 26.10 +17 50.2 18.0	-0.92 + 5.8	0.5/25.2	37762
1998 SQ ₃₅	2000 01 23.7	08 21.54 +43 15.4 18.2	-1.09 + 3.2	7.4/18.7	35717	2000 AU ₁	2000 01 24.9	08 26.36 +19 26.9 17.4	-0.88 + 6.2	0.1/24.9	37990
1999 YD ₅	2000 01 23.7	08 21.57 +16 41.8 18.4	-1.12 + 5.6	1.2/24.3	37988	(13044)	2000 01 24.9	08 26.55 +33 21.1 17.0	-1.26 - 2.1	6.1/23.1	37498
(13114)	2000 01 23.8	08 21.60 +34 39.9 17.7	-1.11 + 0.7	5.0/21.3	37517	1998 UX ₈	2000 01 24.9	08 26.63 +06 53.9 18.9	-0.87 + 2.7	3.7/27.4	34594
1997 EF ₃₂	2000 01 23.8	08 21.77 +21 27.8 18.6	-1.11 + 3.3	0.7/23.5	37665	1998 SL ₆₁	2000 01 24.9	08 26.64 +14 25.0 18.1	-1.09 + 2.5	1.7/25.8	38063
1996 BH ₄	2000 01 23.8	08 21.81 +26 11.3 17.9	-1.03 + 7.6	2.2/22.4	27450	(13345)	2000 01 25.0	08 26.83 +04 39.5 17.4	-0.82 + 2.8	4.6/28.0	37580
1998 OD ₁	2000 01 23.9	08 21.98 +13 51.2 18.4	-1.07 + 2.1	2.1/24.8	37698	1998 SA ₁₃₆	2000 01 25.0	08 26.93 +29 33.4 18.4	-1.14 + 3.8	3.4/23.1	34024
1997 GX ₂₂	2000 01 24.0	08 22.56 +18 16.3 18.1	-1.05 + 4.1	0.4/24.2	38043	1993 FV ₄	2000 01 25.0	08 26.97 +17 56.6 17.4	-1.05 + 5.2	0.5/25.3	37633
1998 QY ₃₄	2000 01 24.0	08 22.64 +17 07.2 18.5	-1.10 + 1.4	0.8/24.4	38056	1981 ES ₁₁	2000 01 25.0	08 27.09 +13 54.1 19.2	-1.02 + 2.5	1.8/26.0	38018
1998 QB ₁₀₅	2000 01 24.0	08 22.70 +39 57.8 21.2	-1.26 + 6.9	6.1/19.5	33349	1998 OB ₁₂	2000 01 25.1	08 27.03 +23 07.0 20.0	-1.03 + 4.6	1.3/24.3	33079
1998 SO ₁₂₄	2000 01 24.1	08 22.91 +06 18.1 19.9	-0.82 + 3.9	3.6/26.8	35719	1998 SX ₁₄₇	2000 01 25.1	08 27.20 +19 47.5 18.6	-1.05 + 4.3	0.2/25.0	35720
1998 QV ₉₀	2000 01 24.1	08 22.93 +26 58.9 18.0	-1.22 + 4.9	2.9/22.7	37738	1998 RE ₇₁	2000 01 25.1	08 27.21 +17 19.1 17.4	-0.85 + 5.3	0.7/25.5	37757
1998 QS ₄₅	2000 01 24.1	08 22.96 +15 37.7 18.4	-1.05 + 2.4	1.4/24.8	38056	1998 RY ₆₀	2000 01 25.1	08 27.22 +34 06.0 18.2	-1.19 + 0.6	4.8/22.7	38060
(12339)	2000 01 24.1	08 23.05 +19 15.3 16.2	-1.16 + 1.7	0.1/24.2	36696	1998 RL ₅₆	2000 01 25.1	08 27.25 +32 32.4 18.7	-1.21 + 0.7	4.8/23.0	33565
4142 T-1	2000 01 24.1	08 23.05 +27 30.0 19.4	-1.21 + 4.3	3.1/22.6	34617	1998 SV ₁₄₀	2000 01 25.1	08 27.26 +40 59.5 19.2	-1.23 + 2.0	6.7/21.0	34305
1993 VL ₁	2000 01 24.1	08 23.10 +40 09.8 18.2	-1.08 + 7.9	6.7/19.1	37637	1993 OY ₁₂	2000 01 25.1	08 27.30 +11 41.4 17.0	-1.09 - 1.5	2.8/26.2	37636
1992 AJ ₁	2000 01 24.1	08 23.16 +14 55.7 16.3	-1.04 + 1.6	1.7/24.9	38025	(13013)	2000 01 25.1	08 27.35 +15 34.8 17.7	-0.86 + 3.4	1.1/25.9	37490
1994 VU ₆	2000 01 24.1	08 23.23 -00 30.1 17.9	-0.91 + 3.5	6.3/28.2	38033	1995 WT ₈	2000 01 25.1	08 27.40 +12 29.9 18.6	-1.11 + 2.8	2.5/26.3	38036
4259 T-2	2000 01 24.2	08 23.23 +19 49.4 20.3	-1.07 + 4.1	0.1/24.1	34273	2000 AK ₁₈₅	2000 01 25.1	08 27.43 +07 00.5 16.8	-1.02 - 1.4	5.4/26.9	38002
1998 SR ₁₃₃	2000 01 24.2	08 23.24 +17 06.9 19.2	-1.03 + 3.6	0.7/24.6	35719	1998 ST ₁₄₅	2000 01 25.1	08 27.44 +17 28.4 17.2	-0.85 + 3.8	0.5/25.5	38064
(13056)	2000 01 24.2	08 23.41 +33 20.6 16.9	-1.10 + 3.7	5.1/21.5	37502	1998 MA ₃₆	2000 01 25.2	08 27.42 +25 36.4 20.6	-1.14 + 5.2	2.3/23.9	32756
1998 TU ₆	2000 01 24.2	08 23.42 +21 54.7 18.6	-0.89 + 3.5	0.7/23.7	38065	(13081)	2000 01 25.2	08 27.91 +07 16.1 16.4	-0.91 + 7.9	4.1/28.1	37508

1993 FQ ₁₂	2000 01 25.3	08 27.91 +20 11.8 17.1	-1.06 + 5.4	0.4/25.1	37633
2635 P-L	2000 01 25.3	08 28.00 +14 16.3 18.1	-1.08 + 4.3	1.8/26.2	38190
1991 AK ₁	2000 01 25.3	08 28.02 +15 02.4 16.0	-0.91 + 1.1	1.9/26.0	37627
1993 FC ₄₆	2000 01 25.3	08 28.12 +18 33.5 19.2	-1.04 + 3.6	0.2/25.5	33071
1998 SU ₄₅	2000 01 25.3	08 28.29 +14 23.1 19.6	-1.03 + 4.7	1.7/26.3	35717
1994 PC ₂	2000 01 25.4	08 28.28 +21 45.0 18.1	-1.09 + 3.4	0.9/24.9	38031
2000 AZ ₁	2000 01 25.4	08 28.39 +18 43.2 16.5	-1.09 + 6.9	0.1/25.5	37991
1998 SE ₁₆₁	2000 01 25.4	08 28.48 +03 27.6 18.1	-0.83 + 2.4	5.0/28.5	37790
1998 RB ₆	2000 01 25.4	08 28.52 +09 45.1 19.0	-0.93 + 5.5	3.2/27.5	38059
1998 SX ₂₂	2000 01 25.4	08 28.58 +16 12.5 18.3	-0.91 + 4.7	0.9/26.1	38061
1998 SY ₁₄₅	2000 01 25.4	08 28.63 +22 42.9 19.1	-1.06 + 3.6	1.2/24.8	34593
1991 SA	2000 01 25.5	08 28.72 +13 35.8 18.9	-1.07 + 2.6	1.8/26.5	38025
1998 QN ₅₄	2000 01 25.5	08 28.74 +04 06.2 18.9	-0.90 + 4.3	4.9/28.7	33085
1998 SQ ₁₃₉	2000 01 25.5	08 28.83 +08 18.7 17.6	-0.85 + 1.6	3.5/27.5	37787
1998 SE ₁₆₃	2000 01 25.5	08 28.93 +19 45.3 17.9	-1.08 + 5.7	0.3/25.4	38065
1998 RU ₇₆	2000 01 25.5	08 28.95 +15 06.4 18.6	-1.01 + 5.2	1.3/26.4	38061
1998 QU ₂	2000 01 25.5	08 28.99 +04 17.0 17.6	-0.92 + 7.6	5.0/29.1	38054
1994 RL ₁	2000 01 25.5	08 29.03 +01 35.2 18.6	-0.91 + 5.0	5.6/29.4	38032
1998 QU ₁₀₆	2000 01 25.5	08 29.05 +24 56.9 17.7	-0.96 + 4.0	2.0/24.4	38059
(13138)	2000 01 25.5	08 29.07 +01 44.6 18.0	-0.93 + 2.4	5.2/28.9	37523
1998 QU ₃₇	2000 01 25.5	08 29.15 +17 51.9 18.2	-0.98 + 3.0	0.4/25.8	37718
1995 YT	2000 01 25.6	08 29.09 +16 47.3 18.3	-1.09 + 4.6	0.9/26.0	38036
1998 SB ₂₆	2000 01 25.6	08 29.19 +38 44.6 18.6	-1.13 + 2.5	6.0/21.8	35717
1995 WO ₄₁	2000 01 25.6	08 29.21 +16 13.8 18.1	-1.00 + 2.1	0.9/26.1	38036
1995 WY ₄	2000 01 25.6	08 29.25 +22 20.1 17.3	-1.11 + 5.2	1.4/25.0	37651
1305 T-2	2000 01 25.6	08 29.31 +28 45.1 18.5	-1.20 + 2.1	3.7/24.0	38006
1998 UR ₂₃	2000 01 25.6	08 29.36 +13 25.1 17.6	-1.10 + 6.3	2.2/26.8	37796
1998 SP ₄₉	2000 01 25.6	08 29.57 +12 19.4 21.1	-1.02 + 4.2	2.1/27.0	33356
2000 AQ ₃₄	2000 01 25.7	08 29.53 +27 07.4 17.6	-1.01 + 3.9	3.0/24.1	37994
1993 FW ₇₃	2000 01 25.7	08 29.66 +13 01.3 19.5	-1.01 + 3.5	2.0/26.9	33339
1997 LO ₃	2000 01 25.7	08 29.77 +17 33.2 17.3	-1.09 + 5.1	0.6/26.0	38044
1998 QB ₂₆	2000 01 25.7	08 29.89 +20 37.1 18.5	-1.07 + 3.3	0.5/25.5	38055
(13170)	2000 01 25.7	08 29.90 +22 18.2 17.4	-1.07 + 4.7	1.2/25.1	37532
1997 QG ₄	2000 01 25.7	08 29.91 +12 15.9 17.5	-0.81 + 5.5	1.9/27.3	38045
1998 MD	2000 01 25.7	08 29.97 +16 21.1 18.7	-1.07 + 2.2	0.9/26.2	38052
(13034)	2000 01 25.8	08 29.97 +25 01.8 16.5	-1.23 + 3.2	2.6/24.7	37496
1998 SF ₅₈	2000 01 25.8	08 30.03 +28 45.4 18.8	-1.13 + 2.5	3.3/24.0	38062
1998 SQ ₇₀	2000 01 25.8	08 30.16 +18 20.2 17.5	-0.88 + 3.8	0.2/26.0	38063
1999 XO ₃₂	2000 01 25.8	08 30.22 +17 18.8 16.3	-1.02 + 4.1	0.7/26.2	37880
1998 SG ₅	2000 01 25.8	08 30.37 +02 28.0 17.3	-0.88 + 5.4	5.4/29.6	38061
1998 WJ ₈	2000 01 25.8	08 30.40 +36 04.5 17.5	-0.94 + 5.5	4.8/21.9	38067
1998 SN ₁₂₉	2000 01 25.9	08 30.45 +17 34.2 18.5	-0.95 + 3.9	0.5/26.2	37783
(13065)	2000 01 25.9	08 30.46 +10 38.2 18.4	-1.02 + 4.9	2.8/27.6	37504
1998 QR ₅₃	2000 01 25.9	08 30.65 +26 09.8 17.4	-1.08 + 0.4	2.7/24.8	37729
1998 RZ ₇₉	2000 01 25.9	08 30.65 +23 17.8 16.3	-0.94 + 4.9	1.6/25.0	38061
4525 P-L	2000 01 25.9	08 30.67 +17 10.7 17.6	-0.87 + 3.2	0.6/26.3	38191
1995 YD ₇	2000 01 25.9	08 30.81 +06 44.7 18.8	-1.00 + 2.8	5.5/28.3	38037
1998 QS ₈₅	2000 01 25.9	08 30.83 +19 26.6 18.3	-1.19 - 0.3	0.2/25.9	37736
1997 PC ₁	2000 01 26.0	08 30.81 +20 46.7 19.5	-0.83 + 3.1	0.5/25.6	30788
1996 DO	2000 01 26.0	08 30.81 +23 21.9 17.0	-1.03 + 2.2	1.8/25.2	38037
1998 MC ₃₈	2000 01 26.0	08 30.82 +13 53.7 19.6	-1.07 + 6.6	1.8/27.1	32756

1977 PC ₁	2000 01 26.0	08 30.84 +15 51.5 16.3	-1.16 + 1.7	1.2/26.5	37617
1998 TH ₆	2000 01 26.0	08 30.88 +48 11.8 18.7	-1.19 + 2.2	9.2/19.8	38065
1992 GA	2000 01 26.0	08 30.90 +20 37.6 16.5	-1.12 - 1.2	0.7/25.8	38026
1990 ST ₄	2000 01 26.0	08 30.94 +12 22.6 18.1	-1.02 + 5.2	2.4/28.0	37627
1993 FF ₂₄	2000 01 26.0	08 31.07 +20 20.0 18.8	-1.05 + 3.1	0.5/25.8	33683
1998 VB ₂₆	2000 01 26.0	08 31.11 +20 42.1 18.3	-0.84 + 2.8	0.5/25.7	38066
1996 CE ₅	2000 01 26.1	08 31.27 +25 56.0 17.4	-1.38 - 6.0	2.9/25.5	38037
1997 CT ₁₆	2000 01 26.1	08 31.28 +18 26.4 18.0	-1.13 + 6.1	0.2/26.2	38041
1996 BH ₂	2000 01 26.1	08 31.45 +22 47.1 16.5	-1.09 + 0.3	1.5/25.5	38037
1998 QT ₇₂	2000 01 26.2	08 31.60 +15 02.6 18.9	-1.12 + 1.9	1.4/26.9	35712
(13090)	2000 01 26.2	08 31.65 +11 27.4 17.7	-0.86 + 1.4	2.1/27.6	37511
(12470)	2000 01 26.2	08 31.66 +17 06.5 17.8	-1.09 + 5.3	0.6/26.6	36731
1999 XW ₁₄₁	2000 01 26.2	08 31.69 -01 53.8 15.9	-2.83 -35.3	12.2/23.7	37953
1997 PV ₃	2000 01 26.2	08 31.88 +08 56.1 17.5	-0.83 + 1.8	2.9/28.1	38045
1999 YS ₁₄	2000 01 26.2	08 31.88 +12 15.6 17.8	-1.11 + 3.7	2.4/27.5	37989
1014 T-3	2000 01 26.2	08 31.91 +31 27.0 20.1	-1.15 + 0.7	4.2/24.2	36124
(12782)	2000 01 26.2	08 32.09 +12 56.9 16.9	-0.81 + 4.8	1.9/27.6	37059
1998 QT ₅₁	2000 01 26.3	08 32.45 +20 56.6 17.5	-1.15 + 1.8	0.8/26.0	38057
1998 SK ₁₂₃	2000 01 26.4	08 32.51 +21 35.3 18.1	-0.87 + 2.9	0.8/25.9	38063
2000 AT ₅₈	2000 01 26.4	08 32.74 +22 48.6 17.5	-1.13 + 3.9	1.6/25.7	37996
1994 RP ₅	2000 01 26.4	08 32.74 +15 37.1 20.9	-1.02 + 3.6	1.1/27.1	35691
1998 XO ₈₉	2000 01 26.4	08 32.84 +00 31.0 16.8	-0.57 + 0.3	3.5/30.1	37808
1998 RW ₆₀	2000 01 26.5	08 32.88 +19 48.5 18.3	-1.12 + 2.1	0.4/26.3	37755
1995 CJ	2000 01 26.5	08 32.90 +18 28.8 17.0	-0.84 + 6.7	0.1/26.6	38034
1998 QM ₂₄	2000 01 26.5	08 32.90 +10 11.7 19.5	-0.90 + 5.3	2.8/28.4	35710
1991 TY	2000 01 26.5	08 32.96 +18 07.3 17.8	-1.09 +12.8	0.2/26.7	38025
1997 GF ₁₇	2000 01 26.5	08 33.02 +09 11.4 17.0	-1.08 + 3.7	4.1/28.0	38043
1998 SM ₁₀₇	2000 01 26.5	08 33.07 +20 48.8 17.4	-1.02 + 2.8	0.7/26.2	38063
1997 SG ₇	2000 01 26.5	08 33.09 +20 36.3 18.3	-0.87 + 3.0	0.6/26.2	38045
1995 QB ₂	2000 01 26.5	08 33.10 +18 26.2 17.0	-1.19 + 2.4	0.2/26.6	38034
(13110)	2000 01 26.6	08 33.27 +17 05.5 17.4	-1.07 + 0.3	0.6/26.9	37516
1998 RM ₆	2000 01 26.6	08 33.28 +02 37.4 18.1	-0.90 + 4.7	5.4/30.1	38059
1993 FS ₂₆	2000 01 26.6	08 33.67 +17 09.4 16.3	-1.07 + 2.7	0.6/27.0	38028
1999 YR ₉	2000 01 26.6	08 33.74 +25 09.5 17.4	-0.96 + 5.4	2.5/25.3	37988
1998 RJ ₄₆	2000 01 26.7	08 33.69 +06 16.9 17.3	-0.86 + 4.1	5.2/29.4	37750
1997 QQ ₂	2000 01 26.7	08 33.71 +14 44.1 16.4	-0.97 - 1.9	1.3/27.3	37674
(12569)	2000 01 26.7	08 33.87 +17 16.5 17.2	-0.80 + 4.0	0.4/27.1	36760
1998 OP ₇	2000 01 26.7	08 34.01 +16 14.3 19.0	-1.05 + 3.8	0.9/27.3	38053
1998 QQ ₈₇	2000 01 26.7	08 34.01 +00 11.5 18.0	-0.96 + 0.9	6.6/30.2	37737
1998 RY ₅₇	2000 01 26.7	08 34.13 +19 33.4 18.1	-1.05 + 4.6	0.3/26.6	38060
1998 QN ₂₆	2000 01 26.7	08 34.19 +25 14.8 18.4	-1.15 + 0.4	2.4/25.8	37715
1999 XX ₂₀₆	2000 01 26.8	08 34.15 +36 18.8 18.5	-1.11 + 3.7	5.4/23.2	37980
1999 XS ₃₂	2000 01 26.8	08 34.21 +13 29.6 17.8	-1.08 + 2.5	2.4/28.0	37880
1997 JH ₁₈	2000 01 26.8	08 34.30 +19 19.3 18.8	-0.96 + 4.8	0.2/26.7	38044
1998 QX ₄₀	2000 01 26.8	08 34.31 +12 04.6 19.6	-1.03 + 4.7	2.2/28.2	35711
2000 AO ₁₉₅	2000 01 26.8	08 34.44 +04 46.5 17.6	-0.81 + 4.1	4.6/29.9	38002
2000 AX ₅₀	2000 01 26.8	08 34.45 +25 44.4 18.7	-1.06 + 3.8	2.6/25.5	37995
1978 VM ₁₁	2000 01 26.8	08 34.47 +27 03.1 16.9	-1.00 + 6.1	3.7/25.0	38017
(13208)	2000 01 26.9	08 34.57 +13 27.9 18.1	-0.98 + 4.4	1.7/28.0	37542
1981 EX ₄₂	2000 01 26.9	08 34.59 +24 25.0 18.7	-1.09 + 2.1	2.6/25.9	26922
1998 QN ₂₀	2000 01 26.9	08 34.65 +17 20.9 18.7	-1.09 + 1.9	0.5/27.2	32499

2000 JAN. 24

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1989 EB₁ 2000 01 26.9 08 34.75 +30 41.0 16.2 -1.09 - 1.8 4.1/25.2 37624
 1981 EZ₂₉ 2000 01 26.9 08 34.81 +24 01.1 18.8 -1.22 + 3.1 2.1/26.0 35678
 (12375) 2000 01 26.9 08 34.92 +12 14.7 16.7 -1.13 + 2.2 2.6/28.0 36706
 1998 SK₅₇ 2000 01 26.9 08 34.95 +27 58.8 17.9 -1.23 + 3.3 3.9/25.2 37771
 2000 AA₅₈ 2000 01 26.9 08 35.00 +21 40.2 16.8 -1.04 + 6.5 1.2/26.3 37995
 1993 FX₇₉ 2000 01 26.9 08 35.02 +15 57.5 17.5 -1.01 + 3.9 0.9/27.5 38029
 1998 OZ₉ 2000 01 27.0 08 34.99 +18 50.0 19.4 -1.16 + 2.1 0.1/27.0 32491
 1998 QU₉ 2000 01 27.0 08 35.03 +24 27.9 16.6 -1.25 + 0.9 2.6/26.1 37707
 (13014) 2000 01 27.0 08 35.17 +29 22.7 17.5 -0.92 + 2.8 3.3/24.9 37490
 2000 AA₂₀₅ 2000 01 27.0 08 35.27 +32 02.0 17.7 -1.02 + 1.1 4.2/24.6 38003
 4079 T-3 2000 01 27.0 08 35.30 +35 19.2 18.5 -1.00 + 3.2 5.4/23.5 38193
 1998 UF₄₁ 2000 01 27.1 08 35.35 +05 34.5 17.9 -0.82 + 4.1 3.9/30.0 37798
 1994 PK₈ 2000 01 27.1 08 35.41 +17 20.0 17.6 -1.09 + 3.7 0.5/27.4 38031
 (9786) 2000 01 27.1 08 35.44 +18 38.6 17.5 -0.92 + 3.0 0.0/27.1 33208
 3306 T-2 2000 01 27.1 08 35.45 +27 31.3 18.6 -1.21 + 3.8 4.2/25.4 38193
 1998 SK₁₆₃ 2000 01 27.1 08 35.51 +24 05.7 19.7 -0.98 + 2.7 1.7/26.1 33300
 1998 QF₃₈ 2000 01 27.1 08 35.58 +16 17.8 18.5 -1.05 + 6.8 0.8/27.7 38056
 1998 SV₁ 2000 01 27.1 08 35.61 +25 50.4 17.5 -0.96 + 5.1 2.6/25.6 37765
 1996 HR₂₄ 2000 01 27.1 08 35.66 +22 45.9 18.3 -0.81 + 3.5 1.0/26.3 38038
 1989 EE 2000 01 27.1 08 35.71 -11 01.3 16.3 -0.72 +14.3 11.2/06.6 38021
 1994 TH₁₅ 2000 01 27.2 08 35.76 +01 13.5 18.1 -0.98 + 5.0 6.6/31.3 37641
 1999 XT₁₅₃ 2000 01 27.2 08 36.17 +09 40.5 17.7 -1.04 - 0.2 3.4/28.7 37957
 (13049) 2000 01 27.2 08 36.18 -02 24.3 16.5 -0.90 + 6.1 8.2/01.5 37500
 1998 QA₄₆ 2000 01 27.2 08 36.19 +22 14.1 17.9 -1.21 + 1.6 1.4/26.7 37724
 1997 JL 2000 01 27.3 08 36.48 +18 30.0 18.2 -1.00 + 4.9 0.0/27.4 38044
 1998 RC₇₈ 2000 01 27.3 08 36.55 +17 45.2 17.8 -0.91 + 4.9 0.3/27.6 37762
 1993 BM₃ 2000 01 27.4 08 36.61 +30 14.6 17.9 -1.18 + 3.6 4.7/25.1 33071
 1993 OQ₅ 2000 01 27.4 08 36.90 +16 35.2 18.1 -0.97 + 2.0 0.6/28.0 38029
 1998 QB₄₁ 2000 01 27.4 08 36.94 +13 27.7 19.5 -0.98 + 4.5 1.8/28.5 32706
 1981 EE₂₆ 2000 01 27.4 08 37.00 +11 13.0 18.8 -0.96 + 4.7 3.2/29.0 26919
 1998 SC₁₄₁ 2000 01 27.4 08 37.06 +02 40.5 18.7 -0.87 + 4.1 4.8/31.0 34305
 1998 SA₁ 2000 01 27.5 08 37.12 +17 19.5 17.9 -0.83 + 3.4 0.4/28.0 38061
 1991 TQ₂ 2000 01 27.5 08 37.12 +15 14.4 16.7 -1.04 + 2.4 1.6/28.1 38025
 1998 RM₇₂ 2000 01 27.5 08 37.22 +16 58.2 18.2 -0.99 + 4.5 0.6/27.9 38060
 1998 SD₁₂₄ 2000 01 27.5 08 37.34 +12 34.6 17.6 -1.04 + 5.4 2.4/28.8 37782
 1998 TC₂ 2000 01 27.5 08 37.39 +23 23.0 18.1 -0.89 + 2.0 1.6/26.6 37792
 1998 RG₄₉ 2000 01 27.5 08 37.41 +14 12.9 18.4 -1.10 + 4.8 1.6/28.4 38059
 1998 QM₃₀ 2000 01 27.6 08 37.45 +24 11.8 18.4 -1.11 + 2.5 2.0/26.6 38055
 1998 TG₁₇ 2000 01 27.6 08 37.64 +11 52.7 19.8 -0.99 + 3.6 2.1/29.0 34306
 1998 QV₅₁ 2000 01 27.6 08 37.69 +20 36.3 17.9 -1.12 + 1.4 0.7/27.3 38057
 1993 VU₁ 2000 01 27.6 08 37.72 +04 34.3 18.0 -0.85 + 2.1 4.1/30.5 38030
 1999 XB₁₆ 2000 01 27.6 08 37.92 +36 22.6 17.1 -1.25 + 1.3 7.6/24.2 38132
 1997 JS₁₄ 2000 01 27.7 08 38.06 +15 48.5 18.4 -0.98 + 4.3 0.9/28.3 38044
 1998 QO₄₉ 2000 01 27.7 08 38.11 +09 10.9 17.9 -0.91 + 9.3 3.3/30.2 37726
 (13367) 2000 01 27.9 08 38.71 +38 50.5 18.0 -0.95 + 4.2 5.5/23.1 37586
 1997 GT₁₄ 2000 01 27.9 08 38.75 +06 03.2 18.9 -1.03 + 3.8 4.7/30.4 35699
 1990 TW₁₁ 2000 01 27.9 08 38.76 +21 13.2 17.7 -1.06 + 2.7 1.2/28.0 38023
 (13199) 2000 01 27.9 08 38.80 +30 27.6 17.6 -1.25 + 2.9 5.1/25.6 37539
 1998 SZ₃₆ 2000 01 27.9 08 38.93 +20 37.2 17.7 -1.06 + 4.0 0.9/27.5 38062
 1998 RO₇₈ 2000 01 27.9 08 39.16 +21 41.0 18.7 -1.05 + 4.7 1.1/27.3 38061
 1998 QL₅₅ 2000 01 28.0 08 39.39 +19 38.4 19.3 -0.85 + 3.1 0.3/27.8 34301

1991 RP₃ 2000 01 28.1 08 39.59 +10 31.6 19.9 -1.04 + 4.0 2.7/29.7 33545
 1998 UG₁₅ 2000 01 28.1 08 39.63 +21 25.9 17.3 -1.05 + 7.7 1.2/27.4 37796
 1998 RK₆₂ 2000 01 28.1 08 39.63 +03 17.8 19.2 -0.85 + 6.1 4.8/31.8 33351
 1998 QM₉₉ 2000 01 28.1 08 39.74 +27 47.4 19.5 -1.12 + 2.6 2.9/26.4 35713
 1982 VN₃ 2000 01 28.1 08 39.97 +22 34.6 17.7 -1.02 + 5.2 1.7/27.3 38019
 1998 SA₁₅₅ 2000 01 28.2 08 39.90 +13 42.8 19.5 -0.93 + 3.6 1.4/29.2 33365
 1999 XW₁₆₃ 2000 01 28.2 08 40.02 +18 09.3 16.5 -1.14 - 2.8 0.1/28.3 37963
 (9806) 2000 01 28.2 08 40.06 +18 49.9 17.2 -0.84 + 6.1 0.1/28.1 33213
 1993 FV₅₀ 2000 01 28.2 08 40.09 +15 32.8 17.0 -1.00 + 3.4 1.4/28.8 37635
 (9737) 2000 01 28.2 08 40.15 +00 51.5 17.7 -0.97 + 2.6 5.8/31.6 33196
 1991 RV 2000 01 28.3 08 40.37 +18 19.7 18.5 -1.07 + 5.1 0.0/28.3 37627
 (13452) 2000 01 28.3 08 40.43 +35 31.1 17.9 -1.20 + 1.5 5.9/25.0 37610
 (13021) 2000 01 28.3 08 40.55 +15 46.1 17.2 -0.89 + 3.7 0.8/28.9 37492
 1994 PY₂₁ 2000 01 28.3 08 40.57 +16 57.7 17.6 -1.04 + 5.2 0.5/28.6 38032
 1998 SX₁₆ 2000 01 28.4 08 40.98 +11 45.5 17.8 -1.01 + 5.4 2.6/29.9 38061
 1998 QN₄₀ 2000 01 28.4 08 40.98 +11 51.9 17.7 -1.04 + 2.8 2.6/29.7 37720
 1998 SB₁₃ 2000 01 28.4 08 41.10 +14 45.7 19.2 -1.06 + 6.1 1.2/29.2 33566
 1999 XV₃₂ 2000 01 28.4 08 41.15 +11 41.6 16.6 -1.06 + 0.3 2.5/29.6 37880
 1998 RD₄₉ 2000 01 28.5 08 41.15 +15 08.8 19.9 -1.04 + 4.5 1.1/29.2 36085
 2000 AX₁₄₀ 2000 01 28.5 08 41.18 +07 33.7 17.1 -0.98 + 5.5 4.8/30.9 38186
 1998 VB₄ 2000 01 28.5 08 41.21 +18 37.4 18.2 -0.83 + 3.6 0.1/28.4 38066
 1992 UM₉ 2000 01 28.5 08 41.22 +10 27.8 18.1 -0.77 + 3.7 2.1/30.2 38027
 1991 RN₄ 2000 01 28.5 08 41.23 +12 39.1 17.1 -1.04 + 6.8 2.2/29.8 38024
 1998 ST₇₃ 2000 01 28.5 08 41.37 +16 20.8 17.1 -1.07 + 6.0 0.8/29.0 38063
 1998 QV₃₆ 2000 01 28.5 08 41.52 +21 29.6 20.7 -1.07 + 1.0 1.0/28.0 35710
 1998 SC₁₃₈ 2000 01 28.5 08 41.59 +15 54.8 18.0 -0.88 + 3.8 0.8/29.1 38064
 (13119) 2000 01 28.6 08 41.66 +38 31.3 17.8 -1.02 + 3.6 6.0/24.0 37519
 1995 SO₅₄ 2000 01 28.6 08 41.73 +18 18.1 16.7 -1.09 + 6.1 0.0/28.6 38034
 1998 QH₁₀₃ 2000 01 28.6 08 41.74 +31 48.7 19.5 -1.12 + 2.6 4.3/26.0 35713
 (13299) 2000 01 28.6 08 41.98 +11 50.5 16.9 -1.04 + 5.4 2.5/30.0 37567
 1998 RR₂₉ 2000 01 28.7 08 42.02 +17 04.6 18.9 -0.96 + 5.3 0.4/29.0 38059
 1997 HQ₁ 2000 01 28.7 08 42.05 +24 33.7 17.9 -1.16 + 3.7 2.4/27.5 38044
 (13218) 2000 01 28.7 08 42.05 +21 39.4 16.8 -1.05 + 2.5 1.3/28.1 37545
 (13286) 2000 01 28.7 08 42.06 +21 47.0 16.4 -1.15 + 1.4 1.4/28.1 37563
 (12558) 2000 01 28.7 08 42.08 +12 56.9 17.2 -0.89 + 4.3 1.7/29.9 36757
 1998 QM₄₉ 2000 01 28.7 08 42.42 +26 29.6 19.2 -1.14 + 2.5 2.9/27.2 33084
 1993 TM₃₁ 2000 01 28.7 08 42.43 +19 17.0 17.5 -0.89 + 4.4 0.4/28.6 38030
 1998 SH₁₁₆ 2000 01 28.8 08 42.39 +10 41.2 17.5 -0.91 + 2.8 2.6/30.3 37779
 (13319) 2000 01 28.8 08 42.55 +28 57.3 17.3 -1.21 + 5.3 4.4/26.5 37573
 1998 SS₂₇ 2000 01 28.8 08 42.73 +15 09.0 16.0 -1.27 - 4.6 1.1/29.2 37768
 (12392) 2000 01 28.8 08 42.75 +30 21.1 17.1 -1.03 + 4.9 4.2/26.2 36710
 1998 QY₄₃ 2000 01 28.8 08 42.82 +24 52.6 18.2 -1.19 + 3.6 2.8/27.6 37721
 2294 T-3 2000 01 28.9 08 42.80 +13 44.8 20.0 -0.95 + 3.5 1.4/29.8 35673
 1998 SH₁₁₁ 2000 01 28.9 08 42.83 +00 47.0 19.5 -0.89 + 4.7 5.5/02.0 33568
 1998 SO₅₆ 2000 01 28.9 08 42.94 +21 58.7 19.5 -1.07 + 3.6 1.3/28.2 35718
 4206 T-1 2000 01 28.9 08 43.02 +17 02.4 16.3 -1.00 + 5.8 0.5/29.2 38192
 1998 RO₄₉ 2000 01 28.9 08 43.04 +18 52.8 18.5 -0.86 + 3.8 0.2/28.8 38059
 1987 QH 2000 01 28.9 08 43.04 +20 33.4 18.4 -1.11 + 2.0 0.8/28.5 38020
 1998 QA₅ 2000 01 28.9 08 43.22 +07 27.0 17.3 -1.01 + 2.9 4.5/31.1 37706
 1994 PU₂₉ 2000 01 28.9 08 43.22 +06 45.0 17.8 -0.92 + 7.6 4.2/31.8 38032
 1981 EB₃₆ 2000 01 28.9 08 43.30 +21 39.2 17.3 -1.03 + 2.9 1.6/28.3 38018

1998 SG ₁₅₉	2000 01 29.0	08 43.25 +35 34.6 18.2	-1.04 + 1.0	6.1/25.6	38064
1998 RT ₄₆	2000 01 29.0	08 43.38 +18 38.5 17.8	-1.08 + 2.2	0.2/28.9	37750
1998 UB ₁₆	2000 01 29.0	08 43.44 +38 27.7 17.8	-1.13 + 4.9	7.4/24.1	38065
1998 QK ₁₀₄	2000 01 29.0	08 43.48 +17 37.5 18.7	-1.04 + 6.0	0.2/29.2	37743
(9809)	2000 01 29.0	08 43.49 +23 10.0 19.0	-1.02 + 3.7	1.7/28.0	38016
1998 VU	2000 01 29.0	08 43.61 +34 42.9 19.0	-0.97 + 3.5	4.9/25.4	37798
(12740)	2000 01 29.0	08 43.66 +11 11.6 15.6	-0.89 +10.6	2.6/31.0	37048
1981 UC ₂₃	2000 01 29.1	08 43.74 +05 24.6 18.0	-0.78 + 3.6	3.9/32.0	37621
1998 SF ₄₃	2000 01 29.1	08 43.75 +26 46.1 18.8	-1.18 + 3.2	3.0/27.4	33356
5022 T-2	2000 01 29.1	08 44.13 +05 33.7 20.4	-1.01 + 3.3	4.1/31.7	34274
1998 SH ₁₁₉	2000 01 29.2	08 44.11 +20 00.5 19.5	-0.87 + 3.4	0.6/28.8	33286
1993 FD ₄₄	2000 01 29.2	08 44.13 +22 20.3 19.2	-1.01 + 3.3	1.2/28.4	27714
1995 YC ₈	2000 01 29.2	08 44.15 +14 42.0 20.2	-1.08 + 4.3	1.3/29.9	30784
1998 RM ₇₁	2000 01 29.2	08 44.26 +13 41.9 17.7	-0.88 + 5.9	1.7/30.3	38060
1998 RJ ₅₀	2000 01 29.2	08 44.39 +18 12.4 17.3	-0.88 + 4.1	0.0/29.2	38059
1998 RW ₅	2000 01 29.3	08 44.45 +22 20.2 19.1	-1.16 + 3.6	1.7/28.5	35713
1988 SB ₂	2000 01 29.3	08 44.49 +21 26.5 16.7	-1.09 + 7.0	1.3/28.5	38020
1998 SJ ₁₁₅	2000 01 29.3	08 44.66 +18 14.9 17.5	-0.90 + 3.1	0.1/29.3	37779
1998 SS ₄₃	2000 01 29.3	08 44.69 +06 00.5 18.7	-0.87 + 5.1	3.8/01.2	38062
(9751)	2000 01 29.3	08 44.82 +15 42.5 17.4	-1.00 + 4.7	0.8/29.9	33199
1998 RW ₆₈	2000 01 29.3	08 44.83 +22 24.7 18.6	-1.11 + 3.8	1.5/28.5	35715
1998 UJ ₄₀	2000 01 29.4	08 44.88 -00 35.8 16.7	-0.94 + 1.7	7.2/02.0	37798
(13205)	2000 01 29.4	08 44.89 +05 40.1 17.3	-1.04 + 4.0	4.8/31.9	37541
1991 RO ₂₄	2000 01 29.4	08 44.91 +12 43.2 20.8	-1.01 + 6.4	1.7/30.6	35684
1998 RE ₆₅	2000 01 29.4	08 45.05 +16 59.5 18.1	-0.96 + 3.5	0.4/29.7	37756
1998 QB ₄₃	2000 01 29.4	08 45.11 +03 14.1 16.4	-0.85 + 3.5	6.6/02.0	38056
1979 MW ₆	2000 01 29.4	08 45.17 +14 10.5 18.8	-0.91 + 3.9	1.3/30.3	34572
1998 VL ₃₇	2000 01 29.4	08 45.25 +38 32.5 18.4	-1.15 + 2.8	6.4/25.0	38066
1998 QF ₈₀	2000 01 29.4	08 45.31 +12 55.6 17.3	-1.11 + 1.2	1.7/30.4	37734
4257 T-2	2000 01 29.5	08 45.30 +22 01.3 18.4	-0.90 + 3.9	1.2/28.6	38193
1994 VD	2000 01 29.5	08 45.42 +00 05.2 18.9	-0.93 + 3.3	6.0/02.5	35692
2000 AP ₁₉₆	2000 01 29.5	08 45.42 +05 00.0 17.8	-0.86 + 1.7	4.3/01.1	38003
1994 RT ₂	2000 01 29.5	08 45.44 +13 21.5 20.0	-0.98 + 5.0	1.5/30.6	35691
1998 QO ₅₅	2000 01 29.5	08 45.48 +14 30.1 19.1	-1.02 + 4.4	1.2/30.3	38057
1997 GR ₃₅	2000 01 29.5	08 45.52 -01 15.8 17.3	-0.96 + 4.3	7.0/03.1	37670
1998 ST ₁₃₂	2000 01 29.5	08 45.57 +17 52.0 17.3	-0.95 + 2.4	0.1/29.6	38064
1998 RB ₇₇	2000 01 29.5	08 45.63 +17 51.1 16.5	-0.91 + 5.4	0.1/29.6	38061
1998 SY ₁₄₆	2000 01 29.6	08 45.70 +15 05.9 18.1	-0.90 + 4.1	1.0/30.2	33298
1996 VO ₄	2000 01 29.6	08 45.70 +59 01.3 17.7	-1.99 + 4.7	17.6/18.4	38039
1998 XN	2000 01 29.6	08 45.75 +14 31.7 17.8	-0.83 + 1.0	1.0/30.3	37805
1994 UQ ₁	2000 01 29.6	08 45.91 +12 48.1 17.9	-0.94 + 4.1	1.6/30.8	38033
1998 ST ₅₄	2000 01 29.6	08 45.97 +27 31.0 18.0	-1.15 + 3.0	3.4/27.8	38062
1998 SN ₁₂₁	2000 01 29.6	08 46.06 +16 03.3 18.2	-0.87 + 2.4	0.6/30.1	37781
1998 SX ₁₀₇	2000 01 29.6	08 46.07 +24 59.8 17.8	-1.00 + 2.1	2.4/28.3	37777
(10514)	2000 01 29.6	08 46.13 +20 59.1 17.3	-0.97 + 3.0	1.0/29.1	38016
1999 XD ₁₇₇	2000 01 29.6	08 46.19 +29 49.9 16.5	-1.12 + 6.0	5.5/26.9	37973
1998 RH	2000 01 29.7	08 46.19 +22 50.5 16.9	-1.04 + 7.7	2.0/28.5	37743
1998 OX ₁₁	2000 01 29.7	08 46.32 +20 12.0 20.3	-1.11 + 0.9	0.7/29.4	33079
4203 T-3	2000 01 29.7	08 46.33 -00 12.1 17.1	-0.87 + 6.2	6.9/03.2	38193
1996 XU ₁₄	2000 01 29.7	08 46.51 +25 30.3 17.0	-1.65 - 5.8	3.7/29.1	37658
1998 QO ₉₁	2000 01 29.8	08 46.54 +05 25.7 17.6	-0.90 + 6.7	4.0/01.9	37740

1998 RE ₃₇	2000 01 29.8	08 46.65 +15 07.7 18.1	-0.92 + 2.0	0.9/30.4	37748
1998 SH ₅₈	2000 01 29.8	08 46.68 +08 18.6 17.9	-0.92 + 5.4	3.1/01.1	38062
3310 T-2	2000 01 29.8	08 46.86 +19 27.4 17.7	-1.07 + 5.2	0.6/29.5	38193
6063 P-L	2000 01 29.8	08 46.88 +18 19.0 18.2	-1.17 + 3.6	0.1/29.8	38191
1998 OW ₆	2000 01 29.8	08 46.90 +11 20.8 18.9	-0.93 + 8.9	2.0/31.6	33559
1995 YU	2000 01 29.8	08 46.92 +23 28.2 18.0	-1.07 + 5.6	2.0/28.7	38036
1998 RG ₆₃	2000 01 29.8	08 46.94 +16 52.7 19.7	-0.96 + 5.2	0.3/30.1	37755
1998 SA ₉	2000 01 29.9	08 46.92 +19 18.3 19.0	-0.88 + 3.5	0.4/29.6	37766
(13100)	2000 01 29.9	08 46.93 +18 57.0 17.1	-1.04 + 5.4	0.4/29.7	37514
1992 JL ₁	2000 01 29.9	08 47.05 +22 03.8 18.2	-0.93 + 3.4	1.2/29.0	38026
1997 PG ₃	2000 01 29.9	08 47.06 +16 35.6 18.2	-0.80 + 3.8	0.4/30.2	38045
1998 QE ₄₃	2000 01 29.9	08 47.25 +17 44.1 17.3	-0.91 + 4.9	0.1/30.0	33083
1994 RN ₅	2000 01 29.9	08 47.35 +13 27.1 18.3	-1.01 + 4.3	1.6/30.9	38032
(13365)	2000 01 29.9	08 47.35 +05 49.8 17.2	-0.82 + 2.4	3.4/01.5	37586
1995 VZ	2000 01 30.0	08 47.65 +15 01.6 17.1	-1.07 + 5.0	1.2/30.7	37649
(12429)	2000 01 30.0	08 47.71 +16 45.5 16.5	-1.00 + 5.9	0.5/30.3	36720
1989 RP ₁	2000 01 30.0	08 47.71 +07 43.2 18.1	-0.86 + 5.9	2.9/01.5	37625
1998 SS ₁₄₃	2000 01 30.0	08 47.72 +16 05.4 18.0	-0.89 + 3.5	0.6/30.5	38064
1991 FG	2000 01 30.1	08 47.81 -08 58.5 15.9	-0.73 + 2.9	13.0/05.4	38023
(10761)	2000 01 30.1	08 47.88 +16 43.8 16.5	-0.98 + 3.2	0.5/30.4	34760
1998 RJ ₇₇	2000 01 30.1	08 48.01 +15 13.8 18.0	-0.95 + 5.9	0.9/30.8	38061
1998 QG ₆	2000 01 30.1	08 48.01 -10 52.9 18.6	-0.75 + 4.3	8.3/06.8	33559
1998 SO ₁₃₅	2000 01 30.2	08 48.17 +34 52.6 18.1	-0.96 + 2.8	5.4/26.5	38064
1998 SW ₁₅₆	2000 01 30.2	08 48.23 +22 30.6 18.5	-1.04 + 2.3	1.5/29.3	37790
1998 MW ₁₃	2000 01 30.2	08 48.27 +17 56.5 17.8	-1.13 + 2.3	0.0/30.2	37694
1998 SF ₁₄₁	2000 01 30.2	08 48.50 +20 27.3 17.3	-1.00 + 3.8	0.9/29.7	38064
1998 UU ₂₈	2000 01 30.2	08 48.65 +30 30.3 18.1	-0.90 + 4.6	3.6/27.3	38066
1992 DF ₈	2000 01 30.3	08 48.60 +06 10.6 18.1	-0.92 + 4.6	4.2/01.9	38026
1998 SG ₅₈	2000 01 30.3	08 48.62 +27 04.0 19.4	-1.16 + 2.8	3.3/28.5	34222
1998 VD ₁₃	2000 01 30.3	08 48.76 +22 46.3 17.9	-0.91 + 3.6	1.5/29.3	37800
1998 QN ₈₆	2000 01 30.3	08 48.80 +12 16.7 16.8	-0.99 + 1.2	2.0/31.4	38058
1993 TD ₁₈	2000 01 30.3	08 48.86 +31 08.2 19.6	-0.99 + 2.8	4.4/27.5	33237
1990 SV	2000 01 30.4	08 49.18 +19 05.7 19.5	-1.03 + 2.9	0.4/30.2	33068
1987 SP ₁₁	2000 01 30.4	08 49.18 +16 25.4 19.1	-1.03 + 5.2	0.5/30.7	38020
1996 HF ₁₄	2000 01 30.4	08 49.19 +21 42.3 17.9	-0.91 + 3.5	1.3/29.6	38038
1998 RJ ₆₆	2000 01 30.4	08 49.37 +14 13.0 19.4	-0.95 + 3.9	1.1/31.2	35715
(12749)	2000 01 30.4	08 49.38 +16 52.7 16.2	-1.02 + 7.2	0.4/30.7	37051
(13293)	2000 01 30.4	08 49.44 +26 32.1 17.0	-1.05 + 5.4	3.5/28.5	37565
1997 SN ₁₀	2000 01 30.5	08 49.39 +11 48.4 17.9	-0.78 + 3.5	1.6/31.8	38045
1953 GJ	2000 01 30.5	08 49.48 +11 51.8 17.0	-1.07 + 5.9	2.4/31.8	38016
1996 GP ₁	2000 01 30.5	08 49.49 +49 15.9 17.5	-1.50 - 2.0	11.3/24.8	37269
(12262)	2000 01 30.5	08 49.54 +08 52.4 16.7	-0.90 + 3.8	3.1/01.5	36676
(12397)	2000 01 30.5	08 49.60 +31 15.9 17.1	-0.93 + 3.1	4.3/27.5	36712
1998 UF ₁₄	2000 01 30.5	08 49.69 +21 45.3 17.8	-0.89 + 3.8	1.2/29.7	37795
1979 MZ ₅	2000 01 30.5	08 49.73 +13 44.3 19.5	-0.93 + 3.3	1.3/31.4	30778
1997 GB ₇	2000 01 30.5	08 49.77 +23 32.1 17.4	-1.09 + 4.4	2.3/29.3	38042
1993 RA ₃	2000 01 30.6	08 49.86 +00 22.6 17.6	-0.86 + 4.1	5.2/03.6	37636
(12751)	2000 01 30.6	08 49.87 +21 52.3 16.0	-1.08 + 5.5	1.7/29.7	37051
(12563)	2000 01 30.6	08 49.88 +17 54.4 16.4	-0.93 + 4.3	0.1/30.6	36759
1998 QY ₉₀	2000 01 30.6	08 49.93 +05 29.6 18.1	-0.91 + 6.7	4.1/02.6	37739
1998 QO ₂₂	2000 01 30.6	08 50.02 +23 42.6 18.4	-1.09 + 3.9	2.1/29.4	37712

1982 UD ₄	2000 01 30.6	08 50.15 +20 22.2 18.2	-1.04 + 3.6	0.9/30.1	38019
1998 QZ ₁₁	2000 01 30.6	08 50.21 +13 14.3 17.1	-1.10 - 0.2	1.7/31.4	38054
(9727)	2000 01 30.7	08 50.35 +15 48.1 17.1	-0.87 + 4.1	0.6/31.2	33194
(12568)	2000 01 30.7	08 50.47 +19 39.6 17.3	-0.86 + 3.4	0.6/30.3	36760
1998 VK ₃₃	2000 01 30.7	08 50.50 +25 00.9 18.5	-0.93 + 3.4	2.2/29.1	38066
1998 VL ₁₆	2000 01 30.7	08 50.56 +30 24.1 17.9	-0.91 + 4.5	3.8/27.8	38066
6801 P-L	2000 01 30.8	08 50.67 +17 32.7 19.4	-1.00 + 5.0	0.0/30.8	38191
1998 SP ₆₂	2000 01 30.8	08 50.79 +26 44.0 18.3	-1.00 + 3.0	3.1/28.9	37773
1997 OT	2000 01 30.8	08 50.81 +20 46.7 19.9	-0.86 + 1.8	0.8/30.2	30903
(11254)	2000 01 30.8	08 50.82 +15 40.0 16.4	-0.92 + 7.8	0.9/31.3	38016
1998 QU ₇₀	2000 01 30.8	08 50.90 -00 05.9 18.1	-0.94 + 3.0	6.9/03.8	38057
1998 SN ₇₄	2000 01 30.8	08 50.92 +22 00.7 16.8	-0.94 + 5.3	1.6/29.8	37775
(12875)	2000 01 30.8	08 50.98 +12 21.1 17.4	-0.95 + 4.1	2.0/01.0	37085
1995 VH ₁	2000 01 30.8	08 51.06 +03 51.2 18.2	-1.07 + 3.4	5.4/02.8	37649
1996 EK ₆	2000 01 30.8	08 51.10 +09 56.6 17.9	-0.88 + 5.1	2.4/01.7	38038
1994 PD ₁₈	2000 01 30.9	08 51.06 +12 27.4 17.6	-0.99 + 6.2	1.9/01.1	38032
1997 QD	2000 01 30.9	08 51.23 +14 05.4 20.1	-0.99 + 1.3	1.0/31.6	30904
2000 AT	2000 01 30.9	08 51.25 +16 05.2 19.6	-1.03 + 3.7	0.5/31.3	37990
1993 FQ ₁	2000 01 30.9	08 51.31 +16 01.3 16.7	-1.00 + 6.8	0.6/31.3	38028
1997 PY	2000 01 30.9	08 51.33 +15 26.0 19.1	-0.87 + 3.6	0.7/31.4	38045
1994 AU ₆	2000 01 30.9	08 51.41 +18 03.0 18.4	-0.79 + 3.6	0.1/30.9	38031
1998 TO	2000 01 30.9	08 51.44 +17 31.2 19.1	-0.92 + 8.0	0.0/31.0	37791
(13343)	2000 01 30.9	08 51.46 +13 42.5 17.1	-0.88 + 5.6	1.4/31.9	37580
1999 XQ ₃₄	2000 01 30.9	08 51.51 +14 56.6 17.1	-1.08 + 4.2	1.2/31.6	37882
(13446)	2000 01 31.0	08 51.46 +08 05.5 17.2	-0.83 + 2.1	2.7/02.0	37609
1998 RS ₁₄	2000 01 31.0	08 51.53 +29 38.9 19.0	-1.00 + 1.5	4.1/28.6	35713
1998 SB ₁₃₁	2000 01 31.0	08 51.55 +16 34.8 17.2	-0.94 + 3.2	0.4/31.2	37783
1995 WR ₁₇	2000 01 31.0	08 51.67 +21 59.0 18.1	-1.05 + 2.7	2.2/30.2	38036
1994 PN ₃₇	2000 01 31.0	08 51.70 +13 12.2 18.3	-1.01 + 5.9	1.5/01.1	38032
1998 TX ₂	2000 01 31.0	08 51.72 +23 28.0 17.8	-0.92 + 2.6	2.1/29.8	38065
(12800)	2000 01 31.0	08 51.85 +18 52.6 16.4	-1.08 + 4.0	0.5/30.8	37064
1998 SX ₆₆	2000 01 31.1	08 51.88 +19 18.4 17.7	-0.88 + 4.4	0.5/30.7	38063
(13364)	2000 01 31.1	08 51.88 +40 25.4 16.7	-1.17 + 2.1	7.3/26.0	37586
2000 AP ₆₀	2000 01 31.1	08 52.35 +16 14.4 17.0	-1.15 + 1.5	0.5/31.4	37996
1993 HR ₁	2000 01 31.2	08 52.28 +19 25.3 16.9	-1.05 + 5.7	0.7/30.8	38029
1998 RC ₆₆	2000 01 31.2	08 52.29 +10 53.0 17.6	-1.08 + 4.8	2.9/01.6	38060
(12301)	2000 01 31.2	08 52.37 +23 41.1 17.6	-1.15 + 3.5	2.6/30.0	36686
1995 SP	2000 01 31.2	08 52.55 +33 33.0 17.4	-1.29 + 0.9	7.1/28.4	38034
1997 GL ₁₄	2000 01 31.2	08 52.56 +16 41.3 18.8	-1.08 + 3.4	0.3/31.4	38043
1998 UN ₁₅	2000 01 31.2	08 52.73 +19 23.1 17.9	-0.82 + 3.6	0.5/30.9	37796
2228 P-L	2000 01 31.3	08 52.72 +10 54.6 19.7	-1.02 + 3.5	2.2/01.7	33383
1998 SA ₆₆	2000 01 31.3	08 52.75 +17 09.7 19.1	-1.03 + 5.4	0.1/31.4	37774
1998 SN ₃	2000 01 31.3	08 52.77 +24 07.7 18.0	-0.94 + 5.9	2.5/29.7	37765
1998 RR ₅₉	2000 01 31.3	08 52.78 +17 37.5 18.1	-1.11 + 2.9	0.0/31.3	38060
1998 VQ ₂₇	2000 01 31.3	08 52.89 +19 04.6 17.9	-0.89 + 3.2	0.5/31.0	38066
1998 SA ₁₆₃	2000 01 31.3	08 52.91 +08 29.0 17.2	-0.90 + 4.6	3.4/02.4	37790
1990 VP ₆	2000 01 31.3	08 52.92 -01 38.3 16.8	-0.89 + 4.7	6.5/04.9	38023
1997 HV ₂	2000 01 31.3	08 53.02 +22 48.5 19.6	-1.14 + 3.7	2.0/30.3	32963
1998 QG ₈₆	2000 01 31.3	08 53.03 +07 51.3 16.4	-1.03 - 1.8	4.0/02.0	38058
2158 T-2	2000 01 31.3	08 53.06 +14 28.5 19.4	-1.04 + 5.0	1.1/01.0	33130
1998 SH ₃₄	2000 01 31.3	08 53.07 +51 28.8 19.4	-1.72 - 1.2	12.0/24.6	35717

1998 SK ₁₄	2000 01 31.3	08 53.11 +47 29.3 19.6	-1.39 - 1.4	8.9/26.3	35716
1997 HM ₁₀	2000 01 31.4	08 53.12 +14 39.5 20.3	-0.99 + 4.2	0.9/01.0	33344
1998 UM ₂₄	2000 01 31.4	08 53.17 +03 41.9 18.3	-0.92 + 3.5	4.4/03.4	38066
(13375)	2000 01 31.4	08 53.26 +18 22.0 17.0	-0.90 + 3.3	0.3/31.2	37589
1998 MA ₄₂	2000 01 31.4	08 53.31 +14 05.6 19.7	-1.10 + 3.4	1.2/01.1	33078
1986 QO ₂	2000 01 31.4	08 53.40 +17 57.3 17.8	-0.80 + 3.6	0.1/31.4	38020
1998 QN ₅₅	2000 01 31.4	08 53.44 +11 37.9 19.4	-1.02 + 4.8	1.9/01.8	33268
(12338)	2000 01 31.4	08 53.45 +23 46.1 15.4	-1.04 + 7.9	2.9/29.9	36696
1997 GU ₆	2000 01 31.4	08 53.50 +30 14.5 18.4	-1.13 + 3.3	4.5/28.8	35699
1998 RO ₂₂	2000 01 31.4	08 53.59 +12 38.7 17.3	-1.00 + 5.9	2.1/01.6	38059
1998 RA ₇₂	2000 01 31.5	08 53.62 +18 45.3 17.5	-0.87 + 3.8	0.4/31.2	37758
1998 SM ₁₃₈	2000 01 31.5	08 53.68 +16 45.8 17.9	-0.90 + 3.4	0.2/31.7	38064
(10415)	2000 01 31.5	08 53.73 -04 48.2 16.6	-0.81 + 2.8	7.0/05.7	34163
1998 OB ₄	2000 01 31.5	08 53.78 +12 45.9 18.1	-1.06 + 5.0	2.1/01.6	38053
1998 RL ₂	2000 01 31.5	08 53.79 +18 23.7 18.5	-1.10 + 7.1	0.4/31.3	37745
1996 FJ ₁₈	2000 01 31.6	08 53.90 +24 46.2 17.5	-0.91 + 3.3	2.1/30.0	29114
1997 MJ ₆	2000 01 31.6	08 54.21 +22 51.3 19.9	-0.96 + 5.8	1.8/30.4	33077
1343 T-2	2000 01 31.6	08 54.38 +21 34.1 17.2	-1.11 + 3.2	1.8/30.8	38192
1998 SK ₁₃₀	2000 01 31.7	08 54.34 +27 22.6 18.8	-1.18 + 3.3	3.5/29.6	38064
1998 RY ₇₇	2000 01 31.7	08 54.35 +13 56.5 16.5	-1.02 + 7.1	1.5/01.5	38061
1997 EY ₂	2000 01 31.7	08 54.49 +18 47.2 16.7	-1.07 + 6.6	0.6/31.4	38041
1998 WO ₂₂	2000 01 31.7	08 54.53 +24 57.8 18.8	-0.97 + 4.3	2.1/30.0	35727
(12918)	2000 01 31.7	08 54.62 +34 23.2 16.8	-0.97 + 3.6	5.0/27.7	37097
2000 AD ₂₀₄	2000 01 31.7	08 54.72 +15 57.6 17.1	-1.06 0.0	0.6/01.0	38003
2130 P-L	2000 01 31.8	08 54.80 +26 58.5 20.1	-0.89 + 2.0	2.4/29.8	33735
1064 T-1	2000 01 31.8	08 54.81 +23 16.8 18.1	-1.20 + 2.8	2.6/30.7	38191
1998 QO ₆₀	2000 01 31.8	08 54.94 +32 01.7 17.9	-1.07 + 2.3	4.4/28.7	38057
1998 SN ₅₇	2000 01 31.8	08 55.00 +20 44.8 17.2	-0.95 + 3.9	1.1/31.1	38062
1991 PM ₁₆	2000 01 31.8	08 55.17 +04 05.3 17.8	-0.99 +10.0	4.4/04.4	38024
1998 SF ₁	2000 01 31.8	08 55.22 +08 57.4 18.3	-0.96 + 5.0	3.0/02.8	38061
1998 RN ₆₈	2000 01 31.9	08 55.26 +19 38.7 18.6	-0.97 + 3.3	0.8/31.4	38060
1998 XQ ₁₂	2000 01 31.9	08 55.26 +19 10.4 16.8	-0.83 + 7.0	0.5/31.5	37807
1997 UT ₂	2000 01 31.9	08 55.31 +40 25.9 18.5	-0.99 + 2.2	5.6/26.5	38045
1998 WK ₁₇	2000 01 31.9	08 55.31 -14 11.3 17.1	-0.84 - 0.3	9.9/07.5	38067
1998 SB ₁₃₉	2000 01 31.9	08 55.48 +12 48.4 17.8	-0.91 + 3.2	1.5/02.0	37787
1978 VM ₇	2000 02 01.0	08 55.75 +08 09.0 19.6	-0.93 + 3.4	2.7/03.0	34572
1998 RH ₅₈	2000 02 01.0	08 55.81 +27 25.0 18.8	-1.09 + 2.0	3.5/30.0	33272
1997 RO ₇	2000 02 01.0	08 55.86 +15 25.4 17.6	-0.78 + 5.7	0.5/01.5	38045
(13373)	2000 02 01.0	08 55.97 +15 47.7 17.9	-0.87 + 3.6	0.5/01.4	37588
(13163)	2000 02 01.0	08 55.97 +35 46.0 16.6	-1.25 + 4.0	7.2/28.0	37530
1998 SX ₁₀₁	2000 02 01.0	08 55.97 +23 01.7 19.3	-1.09 + 3.7	1.8/30.9	35719
1998 QU ₄₅	2000 02 01.0	08 56.05 +09 01.0 18.2	-1.09 + 5.3	3.3/02.9	38056
1998 WB ₇	2000 02 01.1	08 56.11 +17 40.6 17.9	-0.86 + 3.3	0.1/01.1	37804
1999 XC ₃₃	2000 02 01.1	08 56.16 +15 45.1 16.4	-1.14 + 1.9	0.7/01.4	37880
(10200)	2000 02 01.1	08 56.18 +23 28.4 19.1	-0.94 + 4.1	1.8/30.7	33906
1494 T-2	2000 02 01.1	08 56.32 +19 29.8 18.2	-0.98 + 4.4	0.8/31.7	38192
1995 UQ ₁₂	2000 02 01.1	08 56.45 +21 30.3 17.1	-1.13 + 3.5	1.9/31.3	37648
2246 T-3	2000 02 01.2	08 56.43 +19 38.0 18.7	-1.13 + 2.2	1.0/31.8	32735
1995 US ₁₂	2000 02 01.2	08 56.44 +22 00.1 17.8	-1.09 + 3.1	2.2/31.3	37649
(11397)	2000 02 01.2	08 56.45 -05 18.3 17.1	-0.55 + 0.7	4.1/06.5	35589
1998 UK ₁	2000 02 01.2	08 56.60 +15 24.4 17.6	-0.83 + 3.7	0.6/01.7	38065

(12231)	2000 02 01.2	08 56.60 +22 11.1 17.0	-1.06 + 3.7	2.0/31.2	36668	1997 JZ	2000 02 02.0	09 00.04 -05 00.1 18.9	-0.96 + 3.8	7.7/07.0	35700
1995 WC	2000 02 01.2	08 56.71 +06 53.8 18.0	-1.06 + 4.4	4.0/03.6	37650	1998 VR ₂₇	2000 02 02.1	09 00.22 +08 56.0 16.5	-0.82 + 2.9	2.7/04.0	38066
(13224)	2000 02 01.3	08 56.97 +19 21.5 16.9	-0.88 + 1.8	0.6/31.9	37546	1998 OS ₁₂	2000 02 02.1	09 00.26 +19 59.0 18.3	-1.11 + 0.2	1.0/01.6	37702
1998 ON ₁₃	2000 02 01.3	08 57.12 +19 15.0 16.6	-1.22 + 0.4	0.8/01.0	38054	1998 SV ₁₃₁	2000 02 02.1	09 00.45 -03 51.0 18.0	-0.90 + 3.4	7.1/07.1	38064
1998 QS ₃₆	2000 02 01.3	08 57.13 +20 10.6 18.2	-1.15 - 1.0	1.1/31.9	37718	1997 GP ₁₀	2000 02 02.1	09 00.46 +09 11.0 19.4	-1.00 + 5.6	2.8/04.0	33497
(13314)	2000 02 01.3	08 57.17 +24 37.5 17.5	-0.97 + 3.6	2.3/30.7	37571	1998 SV ₆₅	2000 02 02.2	09 00.66 -00 33.1 16.3	-0.91 + 6.8	7.0/06.7	38063
1999 VJ ₈	2000 02 01.3	08 57.24 +10 26.6 16.9	-1.03 + 0.8	2.3/02.7	38100	1998 SG ₇₁	2000 02 02.2	09 00.74 +25 01.2 18.9	-0.96 + 3.9	2.6/31.4	35718
1998 SZ ₁₀₆	2000 02 01.4	08 57.18 +13 00.3 17.5	-0.91 + 4.3	1.5/02.4	38063	2674 P-L	2000 02 02.2	09 00.80 +19 41.0 19.0	-0.98 + 4.3	0.9/01.7	36120
1998 SL ₄₂	2000 02 01.4	08 57.27 +17 55.2 17.5	-0.99 + 3.6	0.2/01.3	38062	1997 GA ₁₄	2000 02 02.2	09 00.84 +15 51.1 18.4	-1.03 + 3.9	0.4/02.5	38043
(13017)	2000 02 01.4	08 57.43 +39 05.5 16.9	-1.26 + 1.4	8.4/27.7	37491	1997 GH ₈	2000 02 02.3	09 00.88 +09 53.2 18.4	-1.02 + 4.2	2.8/03.9	38043
(13336)	2000 02 01.4	08 57.52 +18 36.4 17.6	-0.89 + 4.7	0.4/01.1	37578	(13032)	2000 02 02.3	09 00.90 +11 55.1 17.3	-0.89 + 5.3	1.8/03.5	37495
1998 SE ₆₀	2000 02 01.4	08 57.63 +25 08.1 18.5	-1.01 + 3.8	2.7/30.7	37772	(13098)	2000 02 02.3	09 00.90 +19 35.6 17.7	-1.03 + 5.0	0.9/01.7	37513
1998 QH ₄₂	2000 02 01.4	08 57.68 +28 18.2 17.5	-1.20 - 0.7	4.1/30.6	35711	6577 P-L	2000 02 02.3	09 00.97 +17 17.7 17.8	-0.88 + 4.2	0.1/02.3	38191
1998 WX ₂₂	2000 02 01.5	08 57.61 +14 06.4 19.1	-0.90 + 3.8	0.9/02.2	35727	1998 QJ ₄₁	2000 02 02.3	09 01.01 +17 22.1 19.3	-1.06 + 3.8	0.1/02.2	37720
1991 OV	2000 02 01.5	08 57.64 +12 32.8 18.5	-1.03 + 5.8	1.6/02.6	38024	1999 XS ₁₆₅	2000 02 02.3	09 01.08 +22 59.5 16.8	-1.05 + 6.1	2.8/31.9	37965
1998 SQ ₇₂	2000 02 01.5	08 57.69 +00 30.1 18.9	-0.88 + 5.6	5.1/05.7	34304	1998 RN ₇₃	2000 02 02.3	09 01.10 +13 16.7 18.6	-0.98 + 3.8	1.2/03.2	37759
1999 XD ₃₂	2000 02 01.5	08 57.77 +10 32.5 16.8	-1.06 + 2.8	3.0/02.9	37879	1998 UU ₄₀	2000 02 02.3	09 01.11 +15 49.7 18.5	-0.89 + 3.6	0.3/02.6	35723
1998 WE ₃₁	2000 02 01.5	08 57.82 +17 09.3 17.4	-0.78 + 9.3	0.0/01.6	37805	(11320)	2000 02 02.3	09 01.13 +21 02.6 17.4	-0.90 + 3.6	1.3/01.4	35570
(12988)	2000 02 01.5	08 57.83 +09 59.8 18.1	-1.14 + 2.3	3.0/02.9	37484	(12215)	2000 02 02.3	09 01.13 +26 13.2 17.5	-1.12 + 5.8	3.5/31.2	36663
1998 SN ₅₄	2000 02 01.5	08 57.90 +23 23.6 16.6	-1.18 + 1.5	2.6/31.4	38062	(13061)	2000 02 02.3	09 01.20 +27 40.9 17.1	-1.06 + 0.8	3.6/31.3	37503
1992 FC ₂	2000 02 01.5	08 57.95 +19 30.1 16.1	-1.03 + 3.6	1.0/01.1	37631	1997 EJ ₁₁	2000 02 02.3	09 01.32 +12 00.3 19.1	-1.06 + 6.9	2.1/03.6	35699
1990 SG ₁₂	2000 02 01.6	08 58.00 +10 48.1 18.4	-0.97 + 4.5	2.2/03.0	38022	1998 SP ₁₄₃	2000 02 02.4	09 01.33 +23 03.2 17.5	-0.97 + 3.4	2.2/01.1	38064
1998 UG ₇	2000 02 01.6	08 58.10 +19 38.1 17.8	-0.89 + 3.5	0.8/01.1	37795	1998 QJ ₅₃	2000 02 02.4	09 01.43 +19 05.1 18.8	-1.01 + 2.4	0.7/02.0	35711
1994 PQ ₆	2000 02 01.6	08 58.14 +17 56.7 21.0	-1.05 + 4.3	0.3/01.5	35690	1998 QT ₁₆	2000 02 02.4	09 01.43 +19 36.4 18.2	-1.04 + 3.2	0.9/01.9	38055
1999 XA ₃₂	2000 02 01.6	08 58.17 +09 28.5 16.2	-0.89 + 0.3	2.4/03.1	37879	1998 VC ₈	2000 02 02.4	09 01.46 +03 18.4 17.9	-0.80 + 5.3	4.3/05.9	37800
1997 RB ₇	2000 02 01.6	08 58.24 +03 58.4 16.9	-0.80 + 3.7	4.0/04.7	38045	1996 HC ₁₂	2000 02 02.4	09 01.60 +15 11.2 18.4	-0.88 + 3.8	0.6/02.9	38038
1998 ML ₂₄	2000 02 01.6	08 58.26 +23 15.1 20.7	-1.14 + 6.3	2.1/31.2	32756	1978 WU	2000 02 02.5	09 01.81 +03 58.3 18.6	-0.94 + 3.4	4.1/05.4	38017
(11351)	2000 02 01.6	08 58.42 +03 43.7 17.5	-0.53 + 1.6	2.4/04.9	35578	6625 P-L	2000 02 02.5	09 01.87 +16 41.3 18.0	-1.00 + 5.2	0.1/02.6	38191
1998 UC ₂₆	2000 02 01.7	08 58.41 +08 48.5 18.3	-0.86 + 5.1	2.7/03.7	33315	1998 WW ₂₀	2000 02 02.6	09 02.09 +33 02.1 17.8	-0.95 + 4.7	4.9/29.5	37805
4081 T-2	2000 02 01.7	08 58.41 +26 49.4 19.8	-1.02 + 3.6	3.0/30.5	36123	1998 SJ ₁₂₄	2000 02 02.6	09 02.28 +27 49.5 19.0	-1.09 + 3.7	3.6/31.2	35719
1998 QC ₄₅	2000 02 01.7	08 58.44 +08 32.4 18.3	-0.96 + 3.7	3.0/03.6	34301	1993 TH ₂₄	2000 02 02.6	09 02.28 +21 27.2 18.7	-0.90 + 4.0	1.4/01.6	35689
(12710)	2000 02 01.7	08 58.57 +16 50.6 16.5	-0.92 + 7.6	9.2/13.0	37040	1991 PH ₇	2000 02 02.6	09 02.34 +20 49.7 19.6	-1.11 + 4.1	1.4/01.8	35286
1981 ED ₃₀	2000 02 01.7	08 58.61 +06 22.8 18.8	-0.77 + 1.6	3.1/04.1	26920	(13063)	2000 02 02.6	09 02.40 +08 48.5 18.1	-1.06 + 4.8	2.9/04.5	37503
1998 RA ₈₀	2000 02 01.7	08 58.66 +26 43.3 18.0	-1.16 + 5.4	3.7/30.5	38061	2000 AT ₆₁	2000 02 02.6	09 02.54 +18 02.9 16.7	-0.98 + 6.8	0.6/02.4	37996
1998 TD ₃₄	2000 02 01.8	08 58.85 +03 38.6 17.8	-0.80 + 4.7	4.1/05.1	38065	1976 DB ₁	2000 02 02.6	09 02.55 +23 50.5 16.9	-1.79 - 8.9	3.6/02.2	38017
1998 ST ₇₂	2000 02 01.8	08 58.85 +20 04.5 17.7	-0.88 + 4.4	1.0/01.1	38063	1998 SY ₅₃	2000 02 02.7	09 02.76 +03 22.1 18.4	-0.94 + 5.7	4.8/06.1	38062
1996 BM ₁₇	2000 02 01.8	08 58.90 +26 14.4 17.1	-1.04 + 4.0	3.8/30.8	38037	(13219)	2000 02 02.7	09 02.89 +09 25.3 17.1	-0.95 - 1.2	2.2/04.1	37545
1995 VL ₁₅	2000 02 01.8	08 58.99 +25 27.9 18.3	-1.18 + 5.4	3.3/30.9	36341	1998 QV ₈₈	2000 02 02.7	09 02.91 +07 38.0 18.8	-1.01 + 3.2	2.9/04.8	35712
1998 SO ₉	2000 02 01.8	08 59.02 +09 07.7 18.2	-0.87 + 4.4	2.7/03.7	37766	1998 VB ₂₈	2000 02 02.8	09 03.21 +19 09.5 17.9	-0.85 + 2.6	0.6/02.3	38066
1998 QR ₈₆	2000 02 01.8	08 59.06 +14 23.6 18.3	-0.98 + 2.1	0.8/02.4	37737	1140 T-3	2000 02 02.9	09 03.43 +08 39.7 18.3	-0.85 + 2.6	2.4/04.7	38193
(9728)	2000 02 01.8	08 59.09 +09 39.2 18.7	-0.99 + 2.6	2.4/03.4	38016	1998 SK ₁₁₈	2000 02 02.9	09 03.43 +27 10.9 17.0	-1.17 + 3.1	4.0/31.7	37780
1994 AM	2000 02 01.9	08 59.26 +03 11.0 17.4	-0.90 0.0	4.3/04.5	38031	1998 ST ₁₄₃	2000 02 02.9	09 03.47 +13 57.8 18.5	-0.90 + 3.7	0.9/03.6	33760
1211 T-1	2000 02 01.9	08 59.27 +15 11.5 19.6	-1.04 + 3.9	0.7/02.3	36122	(13131)	2000 02 02.9	09 03.57 +10 35.0 17.5	-0.96 + 4.5	2.5/04.4	37522
1998 SM ₂₄	2000 02 01.9	08 59.41 +22 59.6 18.2	-0.99 + 4.0	2.2/31.6	37767	1994 PU ₃₇	2000 02 02.9	09 03.64 +14 37.0 18.0	-0.98 + 5.5	0.8/03.5	32748
1998 TZ ₆	2000 02 01.9	08 59.53 +01 59.5 19.5	-0.84 + 5.5	4.4/05.7	35721	1998 SR ₁₁₄	2000 02 02.9	09 03.67 +18 09.5 18.3	-1.08 + 5.8	0.5/02.7	37778
1998 TY ₆	2000 02 01.9	08 59.63 +23 02.8 19.2	-0.92 + 5.4	1.7/31.5	35721	1991 RF ₁	2000 02 02.9	09 03.71 +15 32.5 18.6	-1.08 + 5.7	0.4/03.3	33228
1998 VM ₁₆	2000 02 01.9	08 59.68 +36 37.6 16.8	-0.93 + 5.0	6.6/27.8	37800	1998 UZ ₂₇	2000 02 03.0	09 03.89 +15 35.2 17.0	-0.91 + 6.2	0.4/03.3	37797
1994 PL ₂₃	2000 02 01.9	08 59.71 +19 21.3 16.8	-0.99 + 4.0	1.0/01.5	38032	1995 BP ₁₁	2000 02 03.0	09 03.95 +17 39.6 19.7	-0.82 + 4.1	0.2/02.8	32943
1998 TA ₃₂	2000 02 02.0	08 59.83 +14 29.8 17.5	-0.96 + 3.2	0.9/02.6	37793	1998 RV ₆₆	2000 02 03.0	09 04.01 +11 49.7 18.0	-1.10 + 4.1	1.8/04.1	38060
1998 QP ₆₀	2000 02 02.0	08 59.85 +08 17.9 18.3	-1.01 + 3.4	3.2/03.9	37730	1997 EO ₁₇	2000 02 03.0	09 04.02 +29 12.4 17.1	-1.17 + 5.3	5.0/31.2	38042
1995 BJ ₁₁	2000 02 02.0	08 59.91 +16 26.3 18.5	-0.81 + 4.4	0.2/02.2	38033	(13360)	2000 02 03.0	09 04.10 +20 42.9 16.7	-0.89 + 4.3	1.2/02.1	37585

1998 OZ ₆	2000 02 03.0	09 04.14 +11 29.9 18.0	-0.97 + 3.4	1.7/04.3	38053
(13141)	2000 02 03.0	09 04.15 +21 11.4 17.2	-0.96 + 3.5	1.5/02.1	37524
(9754)	2000 02 03.1	09 04.22 +15 14.2 18.1	-1.01 + 5.1	0.5/03.5	33200
1993 RM ₁₆	2000 02 03.1	09 04.32 +12 48.6 20.3	-0.87 + 4.8	1.2/04.1	34503
1997 GT ₃₇	2000 02 03.1	09 04.35 +13 07.9 17.4	-1.04 + 5.1	1.4/04.0	38044
1990 VS ₄	2000 02 03.1	09 04.49 -00 39.7 18.8	-0.89 + 4.8	5.4/07.5	38023
(12802)	2000 02 03.1	09 04.50 +23 19.8 16.6	-1.02 + 5.0	3.0/01.6	37064
1998 SR ₅₇	2000 02 03.1	09 04.56 +21 46.3 20.4	-1.16 + 4.9	1.8/02.1	35718
1985 PG	2000 02 03.1	09 04.58 +10 13.1 17.8	-0.91 + 5.8	2.1/04.8	37622
1998 SB ₁₃₅	2000 02 03.2	09 04.54 +16 14.6 18.2	-0.84 + 4.6	0.1/03.3	33759
1998 QP ₅₅	2000 02 03.2	09 04.59 +20 50.1 19.3	-0.95 + 3.8	1.2/02.3	35711
1998 WF ₁	2000 02 03.2	09 04.61 +39 47.8 17.3	-1.14 +12.2	7.0/26.8	37803
1999 XN ₃₃	2000 02 03.2	09 04.74 +14 41.1 17.0	-1.06 + 3.9	0.8/03.7	37881
1992 SB ₁	2000 02 03.2	09 04.88 +36 21.7 17.2	-1.01 + 1.0	5.2/30.0	38027
1988 BY ₃	2000 02 03.3	09 05.04 +10 20.9 16.7	-0.90 + 7.4	2.6/05.0	38020
1998 UW ₁₉	2000 02 03.3	09 05.04 +19 14.2 18.2	-0.85 + 3.4	0.8/02.7	38066
1998 QM ₈₀	2000 02 03.4	09 05.34 +01 13.1 20.8	-0.90 + 6.4	4.6/07.5	33561
1998 YU ₆	2000 02 03.4	09 05.48 +02 03.1 17.2	-0.79 + 1.5	3.9/06.6	38067
1995 YR	2000 02 03.4	09 05.54 +32 31.6 16.7	-1.15 + 6.5	6.6/30.3	38036
1998 SQ ₂	2000 02 03.4	09 05.64 +08 16.6 19.2	-1.01 + 1.1	2.4/05.1	33105
1998 QA ₁₁	2000 02 03.5	09 06.00 +23 19.7 17.4	-1.35 + 2.8	3.0/02.2	37708
1998 QA ₂₀	2000 02 03.5	09 06.07 +13 27.0 17.7	-1.06 + 0.7	1.1/04.2	33559
(12737)	2000 02 03.5	09 06.21 +23 33.5 17.1	-1.04 + 6.4	2.4/01.9	37048
1998 QG ₃₉	2000 02 03.6	09 06.14 +23 51.8 19.7	-1.04 + 2.2	2.2/02.1	33082
1998 SD ₇₂	2000 02 03.6	09 06.16 +20 03.5 19.0	-0.88 + 3.9	1.0/02.8	34304
1997 FN ₃	2000 02 03.6	09 06.39 +24 09.3 19.0	-1.08 + 4.1	2.5/01.9	34296
1998 TM ₃₂	2000 02 03.6	09 06.42 +15 58.5 17.7	-1.03 + 4.0	0.2/03.8	37793
1997 GY ₁₇	2000 02 03.6	09 06.57 +28 38.0 18.0	-1.20 + 3.2	5.3/01.0	35699
1998 QS ₁₈	2000 02 03.7	09 06.62 +14 01.8 18.8	-1.13 + 3.7	0.9/04.3	33081
(9757)	2000 02 03.7	09 06.72 +15 52.3 17.3	-0.87 + 3.6	0.2/03.9	33201
1995 UL ₈	2000 02 03.7	09 06.89 +22 14.5 17.2	-1.06 + 4.1	2.6/02.5	38035
1993 BT ₁₄	2000 02 03.7	09 06.92 +11 33.5 16.8	-1.03 + 4.2	2.2/04.9	38028
1998 SR ₁₁₇	2000 02 03.7	09 06.95 +30 31.0 17.7	-1.07 + 1.6	4.7/31.8	38063
(9903)	2000 02 03.8	09 07.20 +14 25.9 19.6	-0.79 + 3.6	0.5/04.4	38016
1998 UV ₆	2000 02 03.8	09 07.25 +15 19.4 17.8	-0.87 + 3.6	0.4/04.1	38065
1997 JJ ₁₄	2000 02 03.8	09 07.37 +15 24.9 20.5	-1.01 + 5.2	0.4/04.1	30293
1998 WL ₂	2000 02 03.8	09 07.38 -00 50.4 19.0	-0.72 + 7.3	4.6/08.9	35725
1999 XV ₃₃	2000 02 03.8	09 07.42 +14 30.2 16.8	-1.15 + 4.9	0.9/04.3	37882
1993 FB ₂₂	2000 02 03.9	09 07.45 +18 22.1 17.3	-1.04 + 4.0	0.8/03.5	38028
4021 T-3	2000 02 03.9	09 07.64 +22 10.3 19.4	-1.10 + 5.1	2.2/02.7	26417
1997 PJ	2000 02 03.9	09 07.69 +07 38.7 18.8	-0.85 + 4.9	2.7/06.1	33077
1998 WC ₁₆	2000 02 03.9	09 07.76 +30 46.7 17.9	-0.91 + 4.9	4.1/31.3	35726
1998 OS ₁₃	2000 02 03.9	09 07.81 +18 36.8 17.8	-1.12 - 0.4	0.8/03.6	37703
1998 RM ₁₆	2000 02 03.9	09 07.83 +14 36.3 20.6	-1.13 + 4.2	0.7/04.4	35714
(13285)	2000 02 03.9	09 07.84 +07 32.3 17.9	-0.95 + 5.8	3.2/06.2	37563
1991 VA ₅	2000 02 04.0	09 07.98 +39 16.7 15.7	-1.04 + 8.7	10.1/28.1	37629
1999 VO ₂	2000 02 04.1	09 08.25 +30 23.6 17.0	-1.08 +13.7	4.9/30.9	38098
1994 WA ₄	2000 02 04.1	09 08.30 -02 27.0 16.9	-0.85 + 4.9	6.9/09.0	38033
1998 QX ₇₇	2000 02 04.1	09 08.33 +20 26.0 17.2	-1.11 + 0.2	1.4/03.4	38058
1993 TB ₂₆	2000 02 04.1	09 08.37 +21 20.2 16.7	-0.90 + 4.4	1.7/03.0	32232
1998 SB ₁₁₆	2000 02 04.1	09 08.46 +08 18.4 18.6	-0.82 + 4.0	2.4/06.1	37779

1998 RN ₅₈	2000 02 04.1	09 08.49 +15 14.5 17.3	-0.95 + 3.9	0.4/04.4	37754
(13226)	2000 02 04.1	09 08.52 +07 08.8 18.0	-0.87 + 1.8	2.8/06.2	37547
1998 TE ₈	2000 02 04.1	09 08.61 +04 08.9 20.0	-1.00 + 4.6	4.1/07.0	34305
1981 EM ₃₇	2000 02 04.1	09 08.62 +12 05.4 17.8	-1.14 + 4.2	1.8/05.1	38018
1994 PG ₁₉	2000 02 04.1	09 08.65 +19 14.5 17.9	-1.05 + 2.7	1.0/03.6	38032
1989 RX	2000 02 04.2	09 08.61 +05 22.3 17.0	-0.91 + 3.7	3.5/07.0	38021
(9750)	2000 02 04.2	09 08.73 +35 34.2 18.5	-1.10 + 3.6	5.6/30.6	33199
1998 RM ₇₈	2000 02 04.2	09 08.75 +29 28.3 16.4	-1.09 + 4.1	5.3/01.1	38061
1998 XM ₆	2000 02 04.2	09 08.81 +18 02.5 18.1	-0.85 + 4.5	0.5/03.9	38067
2000 AO ₂	2000 02 04.2	09 08.93 +23 51.1 17.0	-1.13 + 4.9	3.3/02.6	37991
1996 HB ₁₂	2000 02 04.2	09 09.04 +36 25.5 17.2	-0.98 + 3.3	5.5/30.2	38038
9548 P-L	2000 02 04.3	09 09.03 +13 40.3 20.9	-0.78 + 4.1	0.7/05.0	36122
1992 EF ₂₂	2000 02 04.3	09 09.05 +24 21.6 17.7	-1.04 + 3.7	3.2/02.5	37630
(13227)	2000 02 04.3	09 09.13 +22 04.7 17.3	-0.89 + 2.5	1.8/03.0	37547
(12766)	2000 02 04.3	09 09.30 +27 50.1 16.8	-0.88 + 5.4	3.6/01.4	37055
9093 P-L	2000 02 04.3	09 09.33 +17 59.7 19.5	-1.03 + 3.9	0.5/04.0	36122
2496 T-3	2000 02 04.4	09 09.38 +02 41.8 18.2	-0.81 + 3.8	4.2/07.7	33590
1998 RV ₇₄	2000 02 04.4	09 09.39 +16 38.5 19.2	-0.97 + 3.8	0.1/04.3	34022
1998 TL ₃₂	2000 02 04.4	09 09.61 +28 17.1 16.8	-1.06 + 2.7	4.7/01.7	38065
1998 SU ₁₄₇	2000 02 04.4	09 09.64 +21 15.3 17.5	-0.95 + 4.6	1.7/03.3	37789
1998 SN ₈	2000 02 04.4	09 09.76 +09 53.5 19.7	-1.06 + 5.9	2.6/06.0	33015
1998 SJ ₄₈	2000 02 04.4	09 09.85 +17 57.5 19.0	-0.90 + 3.6	0.5/04.1	34592
1998 OY ₄	2000 02 04.5	09 09.81 +01 46.4 17.3	-0.95 + 4.0	5.8/08.0	38053
1998 RM ₃₄	2000 02 04.5	09 09.87 +15 08.0 17.0	-1.00 + 8.9	0.5/04.8	38059
1999 XR ₃₃	2000 02 04.5	09 09.88 +14 05.8 16.6	-1.01 + 1.1	0.8/05.0	37881
1998 SB ₆₆	2000 02 04.5	09 10.01 +22 38.6 18.6	-0.97 + 4.8	1.9/03.0	38063
1998 OR	2000 02 04.5	09 10.06 +09 21.9 17.8	-1.06 + 4.6	3.1/06.2	38053
1998 QK ₅₁	2000 02 04.5	09 10.07 +09 24.6 17.0	-0.99 + 6.9	2.9/06.3	37727
1997 NK ₁	2000 02 04.5	09 10.08 +13 20.1 18.1	-0.81 + 3.4	0.9/05.3	38045
(12910)	2000 02 04.5	09 10.09 +18 00.4 17.2	-0.94 + 5.5	0.6/04.1	37094
1998 ST ₅₈	2000 02 04.5	09 10.26 +12 40.9 18.3	-1.08 + 5.9	1.3/05.4	35718
1994 PK ₁₇	2000 02 04.6	09 10.19 +13 10.7 19.6	-0.96 + 5.7	1.1/05.4	32747
1997 EM ₁₅	2000 02 04.6	09 10.48 +24 30.6 18.9	-1.20 + 3.2	3.2/02.9	33344
1994 PM ₂₁	2000 02 04.6	09 10.49 +12 19.6 18.3	-0.94 + 6.7	1.3/05.7	38032
1998 QK ₆₁	2000 02 04.6	09 10.50 +11 24.0 16.9	-0.98 + 8.1	2.1/06.0	37731
1993 FL ₉	2000 02 04.6	09 10.50 +15 18.8 18.0	-0.98 + 6.2	0.3/04.9	30079
1993 FQ ₃₅	2000 02 04.6	09 10.50 +22 18.0 17.4	-1.09 + 4.2	2.3/03.3	37634
1991 PG ₃	2000 02 04.6	09 10.54 +19 14.3 17.3	-0.86 + 4.4	0.9/03.9	38024
(13228)	2000 02 04.7	09 10.74 +19 46.7 17.6	-0.80 + 3.8	0.9/03.9	37547
(9802)	2000 02 04.7	09 10.82 +22 47.7 18.8	-1.01 + 3.8	2.1/03.2	38016
1998 RP ₂₀	2000 02 04.7	09 10.83 +00 45.9 20.4	-0.89 + 2.8	4.6/08.3	33563
1998 RO ₆₆	2000 02 04.7	09 10.91 +21 28.7 17.3	-0.95 + 1.3	1.9/03.7	37756
1998 QH ₄₄	2000 02 04.7	09 10.95 +14 36.9 18.7	-1.06 + 7.5	0.6/05.2	38056
1998 SQ ₁₁₀	2000 02 04.7	09 10.95 +22 20.8 18.0	-1.21 + 3.4	2.3/03.5	37778
1990 QA ₈	2000 02 04.7	09 11.04 +15 05.4 19.7	-0.98 + 5.4	0.4/05.1	32512
1998 OD ₁₅	2000 02 04.8	09 11.04 +17 52.0 19.3	-1.10 + 3.6	0.6/04.5	32758
1997 EM ₅₄	2000 02 04.8	09 11.15 +22 14.3 18.3	-1.14 + 3.8	2.3/03.5	37139
1998 RJ ₄₉	2000 02 04.8	09 11.23 +17 33.7 17.2	-1.00 + 3.6	0.5/04.5	37751
3290 T-1	2000 02 04.8	09 11.29 +23 06.7 17.9	-1.13 + 2.8	2.6/03.4	38192
(9788)	2000 02 04.8	09 11.35 +18 40.9 17.0	-0.85 + 4.1	0.8/04.3	33208
1998 QH ₉₅	2000 02 04.8	09 11.49 +00 02.2 17.9	-1.03 + 0.2	6.3/08.2	37740

1998 VQ ₇	2000 02 04.8	09 11.49 +27 20.1 17.0	-1.09 + 5.7	4.0/02.1	38066	4084 P-L	2000 02 05.5	09 14.09 +12 42.0 19.7	-0.93 + 4.3	1.0/06.3	30696
1994 TN ₁₅	2000 02 04.9	09 11.43 +14 30.6 19.5	-0.96 + 4.6	0.6/05.3	32748	1998 WA ₈	2000 02 05.5	09 14.11 +32 08.4 17.2	-0.92 + 4.2	4.6/01.4	34596
1999 XG ₃₃	2000 02 04.9	09 11.53 +09 01.7 15.5	-0.95 + 0.1	3.5/06.4	37880	1999 VH ₈	2000 02 05.5	09 14.28 +20 54.2 16.7	-0.83 + 7.0	1.5/04.2	38100
1998 SC ₁₃₉	2000 02 04.9	09 11.69 +09 12.2 18.3	-1.03 + 4.2	2.6/06.5	37787	(13466)	2000 02 05.6	09 14.21 +01 19.5 17.7	-0.81 + 3.7	4.6/09.3	37614
1998 QT ₇₆	2000 02 04.9	09 11.76 +08 19.5 16.8	-1.12 + 1.6	3.6/06.5	38058	1991 OO	2000 02 05.6	09 14.21 +10 26.9 18.5	-1.04 + 4.7	1.9/07.0	38024
1998 QL ₈₄	2000 02 04.9	09 11.88 +08 43.8 17.1	-1.04 + 0.3	2.7/06.5	37735	(13256)	2000 02 05.6	09 14.23 +14 32.1 16.9	-0.95 + 9.2	0.5/06.0	37555
1999 XZ ₂₁	2000 02 05.0	09 11.81 +15 43.3 16.5	-0.91 + 9.5	0.2/05.1	37869	1998 SL ₁₄₀	2000 02 05.6	09 14.24 +13 51.8 19.7	-0.96 + 3.9	0.7/06.1	35720
1994 PL ₁₁	2000 02 05.0	09 11.94 +14 09.1 18.0	-1.05 + 2.8	0.7/05.5	38032	1989 GN ₃	2000 02 05.6	09 14.26 +00 48.0 16.5	-0.73 + 6.5	5.4/09.9	38021
1996 CX ₈	2000 02 05.0	09 12.07 +25 47.2 17.7	-1.05 + 2.7	3.4/02.9	38037	1995 YY ₅	2000 02 05.6	09 14.27 +20 18.7 19.1	-1.09 + 5.9	1.5/04.6	33075
1998 QN ₃₀	2000 02 05.0	09 12.19 +14 35.3 18.4	-1.09 + 5.5	0.6/05.4	38055	1998 SW ₁₀	2000 02 05.6	09 14.42 +02 52.1 20.6	-0.87 + 5.8	3.7/09.1	35716
1998 UH	2000 02 05.0	09 12.19 +22 19.1 18.9	-0.99 - 0.1	1.6/03.9	37794	1997 GC ₃₃	2000 02 05.6	09 14.43 +18 47.3 17.0	-1.11 + 3.2	1.3/05.0	38043
1998 TH ₅	2000 02 05.0	09 12.22 +16 11.7 18.6	-0.82 + 4.3	0.0/05.1	35721	6297 P-L	2000 02 05.6	09 14.45 +34 28.3 19.3	-1.21 + 0.1	6.6/01.9	32785
1998 UL ₂₅	2000 02 05.0	09 12.25 +10 10.6 19.4	-0.91 + 5.2	1.8/06.6	35723	1981 EE ₄₈	2000 02 05.6	09 14.47 +01 20.7 20.1	-0.81 + 6.4	5.2/09.6	26923
1998 TV ₂₆	2000 02 05.1	09 12.25 +23 14.0 18.5	-1.09 + 4.4	2.6/03.5	37793	1995 WZ ₄₁	2000 02 05.6	09 14.55 -23 04.7 17.6	-1.08 + 2.6	13.7/17.6	38036
1998 RW ₄₂	2000 02 05.1	09 12.26 +08 57.6 19.8	-1.04 + 4.5	2.5/06.8	35714	1980 FQ ₁	2000 02 05.6	09 14.60 +04 00.8 17.9	-0.79 + 5.9	3.7/08.9	38018
1998 RZ ₄₈	2000 02 05.1	09 12.32 +12 23.6 19.8	-0.91 + 4.6	1.2/06.0	35714	1998 WB	2000 02 05.7	09 14.62 +21 04.5 17.9	-0.80 + 9.3	1.5/04.2	37803
1981 EL ₁₁	2000 02 05.1	09 12.34 +08 34.1 20.0	-1.09 + 3.0	3.5/06.7	26917	1998 SY ₂₅	2000 02 05.7	09 14.78 +25 34.6 17.6	-1.00 + 3.6	3.2/03.5	38062
1981 EB ₈	2000 02 05.1	09 12.35 +17 14.9 17.1	-1.13 + 0.4	0.5/04.9	38018	1998 SN ₁₂₃	2000 02 05.7	09 14.83 +19 49.8 18.2	-0.99 + 3.9	1.2/04.8	38063
1998 TT ₃₁	2000 02 05.1	09 12.35 +31 05.2 18.2	-0.92 + 4.5	4.6/01.3	35721	1998 OQ ₁₁	2000 02 05.7	09 14.87 +15 40.4 19.7	-1.03 + 5.5	0.1/05.8	33346
1979 MS ₇	2000 02 05.1	09 12.39 +09 57.6 19.8	-0.89 + 3.5	1.9/06.6	30779	1997 FB	2000 02 05.7	09 14.90 +10 54.2 18.0	-1.08 + 6.2	2.1/07.0	38042
1999 XD ₁₈₀	2000 02 05.1	09 12.47 +33 21.4 16.8	-1.16 + 5.3	7.3/31.6	37974	1998 UP ₈	2000 02 05.7	09 14.93 +14 05.6 18.6	-0.91 + 3.8	0.6/06.2	34306
1989 RD ₁	2000 02 05.1	09 12.48 +30 53.5 17.7	-0.99 + 6.0	4.5/01.3	38021	1998 SA ₇₄	2000 02 05.7	09 15.01 +26 36.5 17.9	-1.03 + 4.4	3.7/03.2	33758
1998 SH ₁₃₆	2000 02 05.1	09 12.64 +18 50.5 19.0	-1.08 + 5.7	0.9/04.5	33759	(12914)	2000 02 05.7	09 15.03 +38 00.3 16.2	-1.17 + 1.8	8.3/31.5	37095
1999 YR ₁₃	2000 02 05.2	09 12.61 +13 07.5 16.4	-1.09 + 3.7	1.1/05.9	37989	(9726)	2000 02 05.7	09 15.10 +14 32.8 18.1	-0.87 + 3.8	0.4/06.1	33193
1998 TJ ₃₄	2000 02 05.2	09 12.68 +10 44.2 18.0	-0.80 + 4.9	1.6/06.6	37794	1997 RJ ₇	2000 02 05.8	09 15.07 +16 48.6 18.6	-0.82 + 2.6	0.2/05.6	38045
1996 HR ₁₀	2000 02 05.2	09 12.68 +16 47.8 17.6	-0.83 + 3.7	0.2/05.1	38038	1998 QN ₆	2000 02 05.8	09 15.08 +26 11.6 18.4	-1.03 + 3.6	3.3/03.4	35709
1995 GW ₂	2000 02 05.2	09 12.69 +39 46.1 18.8	-1.07 + 2.0	8.7/30.1	38034	1997 GC ₁₅	2000 02 05.8	09 15.18 +20 18.6 19.2	-1.10 + 3.7	1.6/04.9	34586
1998 TQ ₃₀	2000 02 05.2	09 12.75 +13 17.7 18.5	-0.95 + 4.2	0.9/05.9	38065	1994 PG	2000 02 05.8	09 15.36 +07 45.2 16.6	-0.89 +11.0	3.4/08.3	38031
(9803)	2000 02 05.2	09 12.77 +23 16.9 18.3	-1.05 + 4.0	2.4/03.6	38016	(12909)	2000 02 05.8	09 15.39 +19 53.3 16.7	-1.00 + 3.5	1.6/05.0	37094
1998 SM ₄₉	2000 02 05.2	09 12.78 +16 41.6 19.2	-0.84 + 3.8	0.2/05.1	33757	1999 XW ₁₆₄	2000 02 05.8	09 15.49 +26 18.7 16.9	-0.97 + 8.6	4.7/03.0	37964
1993 FR ₅₂	2000 02 05.2	09 12.80 +13 21.5 17.8	-0.88 + 7.6	1.4/06.0	26402	(12680)	2000 02 05.8	09 15.49 +22 39.6 17.1	-1.15 + 4.6	3.0/04.3	37032
1998 MM ₃₆	2000 02 05.2	09 13.04 +14 41.4 18.2	-1.15 + 2.9	0.5/05.6	38053	1988 RQ ₄	2000 02 05.9	09 15.61 +14 48.6 19.2	-1.08 + 5.1	0.4/06.2	32511
1993 FZ ₆	2000 02 05.3	09 13.13 +21 00.1 18.2	-1.05 + 5.1	1.7/04.1	33338	1990 RT ₈	2000 02 05.9	09 15.64 +14 30.1 19.4	-0.96 + 5.2	0.4/06.3	33335
3495 T-3	2000 02 05.3	09 13.14 +20 24.1 20.3	-0.95 + 4.1	1.2/04.3	33385	1998 RX ₆₈	2000 02 05.9	09 15.72 +28 24.8 17.6	-1.08 + 2.2	4.1/03.2	38060
1998 RK ₇₄	2000 02 05.3	09 13.18 +06 42.8 20.3	-0.97 + 5.1	2.9/07.6	33352	1991 RH ₁₄	2000 02 05.9	09 15.74 +18 07.1 16.7	-1.14 + 1.2	1.0/05.5	38025
1998 SX ₇₂	2000 02 05.3	09 13.23 +26 44.6 17.8	-1.18 + 4.9	4.1/02.8	35718	1991 RJ ₁₁	2000 02 05.9	09 15.80 +17 41.1 17.8	-0.80 + 4.1	0.5/05.5	38025
1994 PU ₂	2000 02 05.3	09 13.29 +16 10.4 19.4	-1.02 + 3.7	0.0/05.3	32747	1998 UO ₆	2000 02 05.9	09 15.89 +15 48.3 18.6	-0.87 + 4.8	0.0/06.0	37795
1998 QL ₁₀₅	2000 02 05.3	09 13.38 +25 12.4 16.8	-1.10 + 6.3	4.2/03.1	38059	1996 JJ ₁	2000 02 06.0	09 15.96 +06 52.7 17.8	-0.79 + 5.6	2.7/08.4	38038
(12556)	2000 02 05.3	09 13.41 +05 22.8 17.0	-0.95 + 5.8	4.4/08.1	36757	1998 SN ₂₅	2000 02 06.0	09 16.10 +15 19.4 17.0	-0.87 + 6.3	0.2/06.2	38062
1998 SG ₄	2000 02 05.3	09 13.43 +13 50.7 17.9	-1.14 + 3.4	1.0/05.9	37766	3273 T-1	2000 02 06.0	09 16.13 +19 08.6 18.5	-1.07 + 4.4	1.2/05.3	34060
1998 SE ₄₇	2000 02 05.4	09 13.46 +25 07.1 17.4	-0.91 + 3.4	3.0/03.2	38062	1996 DL ₁	2000 02 06.0	09 16.16 +15 59.9 17.1	-1.02 + 1.5	0.1/06.0	38038
1997 FD ₄	2000 02 05.4	09 13.65 +07 34.9 17.8	-0.99 + 7.2	3.6/07.6	38042	1993 QP ₉	2000 02 06.0	09 16.19 +16 11.0 18.1	-0.87 + 5.7	0.1/06.0	38030
1989 SA ₂	2000 02 05.4	09 13.65 +25 36.9 19.9	-0.96 + 4.3	2.9/03.1	34284	5155 T-3	2000 02 06.0	09 16.30 +22 48.5 17.5	-0.84 + 6.5	2.1/04.2	38008
1998 SQ ₁₄₄	2000 02 05.4	09 13.71 +14 58.6 17.4	-0.88 + 4.0	0.4/05.7	38064	1998 RC ₅₂	2000 02 06.0	09 16.33 +24 18.3 20.0	-1.09 + 4.0	2.6/04.1	33564
1998 QO ₇₄	2000 02 05.4	09 13.79 +05 24.0 17.2	-1.03 + 0.5	4.0/07.6	38058	1998 UB ₁	2000 02 06.1	09 16.25 +15 11.1 20.3	-0.87 + 4.0	0.2/06.3	35721
1979 ML ₆	2000 02 05.4	09 13.88 +14 38.7 18.7	-0.98 + 6.0	0.5/05.8	32917	1997 LZ ₄	2000 02 06.1	09 16.62 +08 36.2 18.6	-0.90 + 4.2	2.3/07.9	38044
1996 HT ₁₅	2000 02 05.5	09 13.82 +14 32.3 17.4	-0.85 + 4.5	0.5/05.9	38038	1999 XM ₃₃	2000 02 06.1	09 16.63 +17 22.8 17.3	-0.92 + 6.8	0.7/05.8	37881
(12893)	2000 02 05.5	09 13.84 +13 16.0 17.8	-0.87 + 4.4	0.9/06.2	37090	(12282)	2000 02 06.1	09 16.68 +11 37.8 15.9	-0.89 + 7.6	1.6/07.0	36681
1998 RS ₄₈	2000 02 05.5	09 13.95 +13 03.3 17.7	-0.88 + 4.0	1.0/06.2	38059	1998 US ₇	2000 02 06.2	09 16.82 -07 01.1 17.8	-0.87 + 4.6	8.1/12.2	38065
(12745)	2000 02 05.5	09 13.96 +16 02.0 16.4	-1.17 + 3.7	0.0/05.5	37050	1990 MR	2000 02 06.2	09 17.03 +04 30.4 17.4	-1.05 + 3.2	4.3/08.7	38022
1997 KE ₃	2000 02 05.5	09 13.98 -02 55.0 19.7	-0.87 + 4.2	5.8/10.4	33344	1998 UC ₇	2000 02 06.2	09 17.04 -01 46.4 17.5	-0.81 + 3.9	5.6/10.8	33572

1998 YC ₆	2000 02 06.3	09 17.03 -05 07.8	17.0 -0.90 + 1.5	6.9/10.9	37809
1998 QV ₄₆	2000 02 06.3	09 17.17 +18 56.0	19.1 -1.07 + 1.0	1.0/05.7	33560
1995 WL ₅	2000 02 06.3	09 17.22 +05 12.2	18.2 -1.05 + 3.5	4.0/08.8	38036
(13018)	2000 02 06.3	09 17.24 -05 15.1	16.7 -0.90 + 3.4	6.8/11.4	37491
1997 GL ₁₁	2000 02 06.3	09 17.29 +23 36.4	18.1 -1.16 + 3.1	3.0/04.6	38043
1996 HW ₂₀	2000 02 06.3	09 17.30 +15 19.6	19.1 -0.77 + 3.9	0.1/06.5	27938
1981 ES ₂₆	2000 02 06.3	09 17.42 +11 34.3	18.3 -0.98 + 4.8	1.7/07.4	26920
1998 VW ₈	2000 02 06.3	09 17.52 +16 23.6	17.8 -1.09 + 3.5	0.2/06.3	37800
1999 XY ₁₅	2000 02 06.4	09 17.44 +14 43.4	16.5 -0.95 + 6.3	0.4/06.7	37866
1998 SR ₃₇	2000 02 06.4	09 17.46 +07 19.1	17.9 -0.90 + 4.5	2.8/08.5	37769
1990 VL ₁	2000 02 06.4	09 17.48 +02 46.1	18.2 -0.93 + 3.8	4.1/09.6	38023
(10417)	2000 02 06.4	09 17.53 +16 50.1	16.6 -0.84 + 3.8	0.3/06.2	34164
1997 JY ₄	2000 02 06.4	09 17.58 +34 24.3	19.1 -1.10 + 4.3	6.0/01.7	33498
1998 WN ₅	2000 02 06.4	09 17.59 +16 37.4	18.7 -0.85 + 3.7	0.2/06.2	35725
(13164)	2000 02 06.4	09 17.64 +06 02.3	17.7 -1.05 + 3.8	3.7/08.7	37530
(12922)	2000 02 06.4	09 17.66 +23 08.6	17.9 -0.81 + 5.0	2.1/04.5	37097
1998 OW ₁₃	2000 02 06.4	09 17.72 +17 39.4	19.4 -1.12 + 2.7	0.7/06.0	32757
(12702)	2000 02 06.4	09 17.85 +19 00.3	17.8 -1.00 + 4.7	1.1/05.7	37038
1998 SQ ₁₄₀	2000 02 06.5	09 17.94 +19 58.0	19.4 -1.11 + 4.0	1.4/05.6	35720
1998 SE ₆₆	2000 02 06.5	09 18.34 +33 52.7	17.6 -1.16 + 4.1	6.2/02.1	37774
1992 DU ₅	2000 02 06.6	09 18.26 +12 35.0	17.6 -0.92 + 7.9	1.1/07.5	38026
1998 SX ₉	2000 02 06.6	09 18.29 +09 11.8	19.7 -0.90 + 5.2	1.9/08.3	34022
1998 QO ₄₇	2000 02 06.6	09 18.35 +11 12.4	19.9 -0.84 + 5.4	1.3/07.8	32712
1999 XL ₃₄	2000 02 06.6	09 18.48 +12 30.0	17.3 -0.97 + 5.8	1.4/07.5	37882
(13195)	2000 02 06.6	09 18.50 +31 22.6	16.0 -1.18 + 5.9	6.9/02.5	37538
1998 QU ₄₄	2000 02 06.6	09 18.64 +13 59.3	18.1 -1.03 + 3.8	0.6/07.1	37722
1998 QY ₅₄	2000 02 06.6	09 18.67 +09 04.2	18.0 -0.89 + 4.4	2.2/08.3	38057
1999 XA ₃₄	2000 02 06.6	09 18.69 +15 49.1	16.6 -0.93 + 1.1	0.0/06.7	38137
1991 NV ₆	2000 02 06.6	09 18.70 +14 05.4	18.9 -0.81 + 2.4	0.4/07.1	34181
1999 XQ ₃₃	2000 02 06.7	09 18.89 +40 12.5	17.3 -1.31 +24.0	10.7/28.2	37881
1998 SA ₁₃₉	2000 02 06.7	09 18.91 +17 48.0	17.9 -1.10 + 3.8	0.8/06.3	38064
1998 RV ₄₈	2000 02 06.7	09 19.03 +12 21.3	18.8 -0.97 + 4.4	1.3/07.6	35714
1997 JN ₁₆	2000 02 06.8	09 19.04 +10 05.0	17.8 -0.91 + 4.9	1.7/08.2	38044
1998 QK ₁	2000 02 06.8	09 19.17 +14 18.6	17.9 -1.12 + 2.6	0.5/07.1	38054
1976 QK ₂	2000 02 06.8	09 19.34 +23 34.2	19.8 -0.94 + 4.9	2.2/04.8	30648
1995 WA ₂	2000 02 06.8	09 19.40 +09 05.2	16.7 -0.93 + 5.0	3.2/08.5	38036
1998 SK ₁	2000 02 06.9	09 19.47 +18 06.5	17.1 -0.84 + 4.0	0.8/06.3	38061
1998 RC ₆₂	2000 02 06.9	09 19.48 +07 25.6	19.7 -0.98 + 6.3	2.9/09.0	34022
1998 TH ₂₉	2000 02 06.9	09 19.64 +17 06.2	17.5 -0.88 + 3.6	0.5/06.6	38065
1991 RG ₁₇	2000 02 06.9	09 19.69 +16 34.2	17.6 -1.03 + 6.1	0.4/06.7	38025
1998 RS ₇₉	2000 02 06.9	09 19.70 +11 58.8	21.8 -0.91 + 5.6	1.1/07.9	33275
2565 P-L	2000 02 06.9	09 19.72 +23 21.2	18.0 -1.07 + 3.8	2.9/05.1	38190
1998 UC ₃	2000 02 06.9	09 19.91 +15 56.1	18.0 -0.89 + 3.7	8.0/27.0	37794
1998 TQ ₃₁	2000 02 06.9	09 19.93 +04 31.0	17.5 -1.00 + 5.9	4.3/09.8	37793
1993 TF ₁₆	2000 02 07.0	09 19.99 +03 50.4	20.8 -0.82 + 5.0	3.3/10.1	32933
1998 RC ₁₆	2000 02 07.0	09 20.17 +22 59.9	18.6 -1.07 + 5.0	2.6/05.2	34021
1998 SD ₁₅₉	2000 02 07.0	09 20.31 +16 06.1	16.7 -0.95 + 3.0	0.2/07.0	38064
1998 US ₃₇	2000 02 07.1	09 20.31 +27 43.1	18.5 -1.13 + 5.0	4.5/04.1	34027
1999 XE ₁₆₄	2000 02 07.1	09 20.33 +20 54.6	17.0 -0.97 + 4.2	2.3/05.8	37963
(10068)	2000 02 07.1	09 20.39 +05 48.3	17.7 -0.99 + 4.6	3.5/09.5	33874
4281 T-2	2000 02 07.1	09 20.39 +31 29.8	18.2 -1.01 + 2.6	4.7/03.2	38193

(9805)	2000 02 07.1	09 20.44 +04 31.2	16.6 -0.97 + 1.5	3.5/09.5	33212
1993 QQ ₅	2000 02 07.1	09 20.58 +09 40.2	18.9 -0.86 + 4.8	1.8/08.7	35688
(13096)	2000 02 07.1	09 20.59 +15 11.0	17.2 -0.73 + 2.9	0.1/07.3	37513
(12820)	2000 02 07.1	09 20.65 +17 06.1	17.0 -0.85 + 4.8	0.5/06.8	37069
1998 SG ₃₀	2000 02 07.1	09 20.71 +19 12.3	18.3 -1.13 + 4.6	1.5/06.3	38062
1992 EZ ₂₈	2000 02 07.2	09 20.75 +04 31.0	17.7 -0.87 + 8.2	3.8/10.3	38026
1998 UW ₁₂	2000 02 07.2	09 20.85 +13 04.3	19.9 -1.00 + 4.9	0.8/07.8	35722
1992 EN ₁₂	2000 02 07.2	09 20.89 +19 00.7	17.0 -0.96 + 5.6	1.4/06.4	38026
1997 UC ₂₂	2000 02 07.3	09 21.10 +03 22.0	17.2 -0.83 + 0.8	3.1/10.0	38046
1996 DU	2000 02 07.3	09 21.16 +08 35.1	15.9 -0.82 +11.8	2.9/09.5	37655
1997 GP ₁₂	2000 02 07.3	09 21.32 +20 48.1	17.7 -1.07 + 4.7	1.9/06.1	38043
1998 RX ₇₂	2000 02 07.3	09 21.37 +06 17.4	17.9 -0.81 + 5.7	2.8/09.9	37758
1999 XK ₃₃	2000 02 07.3	09 21.39 +36 58.7	17.7 -1.18 +23.4	9.6/30.0	37881
1999 XY ₁₆₄	2000 02 07.3	09 21.43 +21 27.3	16.8 -1.04 + 3.6	2.6/06.0	37964
1998 SB ₁₄₀	2000 02 07.3	09 21.54 +20 28.2	17.3 -1.11 + 2.6	1.9/06.3	37787
1998 OA ₁₃	2000 02 07.4	09 21.50 +15 46.4	17.9 -1.13 + 2.9	0.1/07.3	37702
1998 VX ₅	2000 02 07.4	09 21.54 +19 28.6	18.2 -0.85 + 3.7	1.1/06.4	38066
1998 TX ₂₈	2000 02 07.4	09 21.63 +26 43.6	18.1 -0.89 + 3.0	3.6/04.6	37288
1981 DN	2000 02 07.5	09 21.89 +12 17.6	17.4 -1.06 - 1.2	1.5/08.1	38018
(9860)	2000 02 07.5	09 21.92 +11 48.5	17.6 -0.75 + 5.7	1.0/08.5	33459
1999 XD ₁₆₅	2000 02 07.5	09 22.04 +17 58.6	16.4 -1.22 - 2.3	1.1/07.1	37964
1999 XU ₁₆₅	2000 02 07.5	09 22.13 +20 00.5	16.8 -1.15 + 0.5	2.2/06.6	37965
1998 OU ₁₂	2000 02 07.5	09 22.16 +17 15.6	19.0 -1.03 + 7.5	0.6/07.1	33079
1998 ST ₂	2000 02 07.6	09 22.27 +06 40.5	18.2 -1.04 + 0.6	3.1/09.4	37765
1998 TN ₃₃	2000 02 07.6	09 22.28 +19 04.2	17.6 -0.87 + 4.6	1.2/06.7	38065
1998 RB ₄₉	2000 02 07.6	09 22.29 +10 00.5	21.0 -0.93 + 5.5	1.7/09.0	35714
1994 PQ ₁₅	2000 02 07.6	09 22.52 +14 52.3	18.4 -1.01 + 3.9	0.2/07.8	38032
1998 RQ ₄₂	2000 02 07.6	09 22.69 +12 42.4	18.0 -1.08 + 3.5	1.0/08.3	38059
1987 WD	2000 02 07.6	09 22.70 +27 44.1	17.6 -1.13 + 3.1	4.2/04.8	38020
1998 TK ₃₄	2000 02 07.6	09 22.73 +08 46.9	19.2 -1.03 + 6.2	2.3/09.3	35721
1995 FA ₈	2000 02 07.7	09 22.70 +15 43.2	17.9 -0.78 + 5.9	0.1/07.6	38034
1994 PF ₂₅	2000 02 07.7	09 22.81 +18 13.9	19.5 -1.00 + 5.0	0.9/07.0	32939
1998 QW ₄₇	2000 02 07.7	09 22.82 +13 34.6	18.8 -1.03 + 4.1	0.6/08.2	35711
1990 OH ₁	2000 02 07.7	09 22.90 -23 42.7	18.1 -0.82 + 1.0	9.8/17.5	31273
1998 WU ₁₀	2000 02 07.7	09 22.94 +12 10.0	17.4 -1.03 + 4.7	1.1/08.5	38067
2000 AM ₁₃₆	2000 02 07.7	09 23.03 +23 43.0	17.6 -0.83 + 8.2	2.8/05.3	37999
(12553)	2000 02 07.7	09 23.09 +19 03.5	16.3 -1.06 + 7.0	1.7/06.8	36756
1998 XL ₅	2000 02 07.7	09 23.10 +14 05.0	16.7 -0.79 + 6.5	0.4/08.1	37806
1998 MU ₇	2000 02 07.8	09 23.06 +08 25.1	17.6 -1.07 + 4.2	2.5/09.4	37693
1998 SQ ₁₂₉	2000 02 07.8	09 23.09 +25 03.3	18.6 -1.12 + 4.1	3.4/05.5	35719
1998 VO ₁₈	2000 02 07.8	09 23.15 +19 30.2	17.0 -0.87 + 2.5	1.3/06.8	38066
1974 QF	2000 02 07.8	09 23.35 +11 48.7	18.2 -1.07 + 4.7	1.3/08.7	38017
(13341)	2000 02 07.8	09 23.44 +02 47.8	17.2 -0.84 + 6.3	4.4/11.3	37579
1994 PF ₂	2000 02 07.8	09 23.45 +14 35.6	19.3 -0.98 + 5.0	0.2/08.1	35690
1998 SC ₁₁₂	2000 02 07.8	09 23.46 +28 03.2	17.3 -1.11 + 4.1	5.1/04.7	37778
1998 TD ₂₇	2000 02 07.9	09 23.72 +25 18.5	17.6 -0.96 + 3.9	3.3/05.4	38065
(13368)	2000 02 07.9	09 23.75 +19 37.0	17.7 -0.87 + 4.1	1.3/06.9	37587
1998 UO ₂₃	2000 02 07.9	09 23.86 -17 03.0	18.6 -0.82 + 1.7	8.4/17.0	34307
1993 QN ₃	2000 02 08.0	09 23.92 +12 30.1	17.2 -0.88 + 5.7	0.9/08.7	38029
1998 SL ₇₄	2000 02 08.0	09 24.26 +35 42.3	17.4 -1.08 + 2.9	7.3/02.9	38063
1997 MS ₃	2000 02 08.0	09 24.32 +15 25.4	19.1 -0.86 + 5.6	0.1/08.0	34296

1998 VU₃₃ 2000 02 08.0 09 24.33 +19 02.4 19.5 -0.90 + 4.3 1.2/07.1 35724
 1998 OD₁₃ 2000 02 08.1 09 24.39 +17 14.7 19.3 -1.03 + 4.7 0.7/07.6 35709
 1998 QE₈₆ 2000 02 08.1 09 24.58 -08 59.5 19.2 -0.89 + 5.9 7.6/15.2 34020
 1984 UR 2000 02 08.1 09 24.70 +27 20.4 17.1 -1.13 + 4.6 4.3/05.3 38019
 1998 QW₂₂ 2000 02 08.1 09 24.71 +21 27.0 16.6 -1.11 + 3.5 2.7/06.8 38055
 1991 RN₂₂ 2000 02 08.2 09 24.72 +21 49.6 18.8 -1.13 + 4.1 2.3/06.7 34837
 1998 OK₁₂ 2000 02 08.2 09 24.76 +28 13.5 19.0 -1.14 + 4.3 4.9/05.1 33559
 1998 QF₄₄ 2000 02 08.2 09 24.76 +19 23.1 18.0 -1.02 + 3.5 1.5/07.2 37722
 1994 PX₂₀ 2000 02 08.2 09 24.77 +16 22.2 18.1 -1.05 + 4.3 0.4/07.9 33340
 1998 QA₅₆ 2000 02 08.2 09 24.98 +08 47.2 19.2 -1.00 + 6.0 2.2/09.9 35711
 1997 MZ₂ 2000 02 08.2 09 25.10 +17 27.8 18.0 -0.95 + 3.6 0.8/07.7 38045
 1998 QT₃₁ 2000 02 08.2 09 25.13 +19 24.0 18.5 -1.01 + 5.3 1.5/07.2 33082
 1998 PL₁ 2000 02 08.3 09 25.08 +06 58.6 16.9 -0.99 + 4.2 3.2/10.3 37704
 1998 TC₁₀ 2000 02 08.3 09 25.19 +17 30.3 17.5 -0.82 + 3.9 0.7/07.7 37793
 1998 QF₄₅ 2000 02 08.3 09 25.25 +00 30.3 18.2 -0.86 + 8.0 5.2/12.7 33560
 1998 SX₂₁ 2000 02 08.3 09 25.25 +14 26.1 18.4 -0.98 + 5.5 0.2/08.5 34592
 1998 SX₁₃₂ 2000 02 08.3 09 25.29 +16 15.5 17.1 -1.01 + 3.4 0.4/08.1 38064
 1998 QJ₄₀ 2000 02 08.3 09 25.33 +06 30.7 17.8 -0.97 + 6.5 3.1/10.6 38056
 1998 SX₂₃ 2000 02 08.3 09 25.42 +17 48.7 18.4 -1.05 + 6.8 1.0/07.7 38061
 1997 GS₂₁ 2000 02 08.4 09 25.48 +28 10.1 18.5 -1.07 + 4.2 4.4/05.2 37274
 1996 GL₃ 2000 02 08.4 09 25.57 +19 43.3 17.9 -0.91 + 5.2 1.6/07.2 38038
 1998 RJ₄₀ 2000 02 08.4 09 25.63 +18 04.2 17.2 -0.97 + 8.8 1.2/07.6 38059
 1998 SE₆₇ 2000 02 08.4 09 25.86 +18 19.7 18.0 -0.99 + 6.0 1.1/07.7 37775
 (9853) 2000 02 08.4 09 25.88 +11 21.3 17.0 -0.87 + 9.0 1.1/09.6 33458
 1998 RL₆ 2000 02 08.4 09 25.91 +18 50.0 17.1 -1.09 + 4.4 1.4/07.6 37746
 1991 VY₁ 2000 02 08.5 09 25.89 -12 47.0 18.0 -1.11 + 0.4 9.2/14.9 38025
 1998 UD₃₈ 2000 02 08.5 09 25.92 +30 11.8 18.9 -0.98 + 4.1 4.5/04.7 35723
 1999 XW₃₄ 2000 02 08.5 09 26.01 +19 02.8 17.1 -1.04 + 6.5 1.4/07.5 37883
 1998 TG₃₄ 2000 02 08.6 09 26.43 +07 37.7 18.1 -0.98 + 6.2 2.5/10.6 38065
 1259 T-2 2000 02 08.6 09 26.60 +18 45.4 16.9 -0.89 + 3.9 1.3/07.7 38192
 1998 SM₁₁₅ 2000 02 08.6 09 26.65 +15 14.3 17.0 -0.84 + 3.8 0.1/08.6 38063
 1998 QK₃₅ 2000 02 08.6 09 26.65 +20 20.1 19.5 -1.00 + 3.8 1.7/07.4 33082
 (13074) 2000 02 08.6 09 26.67 +21 18.5 17.4 -1.11 + 3.7 2.2/07.2 37506
 (12849) 2000 02 08.7 09 26.65 +13 57.4 15.9 -0.79 + 7.1 0.3/09.0 37077
 1998 QK₇₇ 2000 02 08.7 09 26.66 -18 57.2 19.8 -0.84 + 8.2 10.0/20.6 33349
 1991 RR₉ 2000 02 08.7 09 26.75 +17 37.0 18.4 -1.08 + 4.1 0.9/08.1 33545
 1995 VZ₄ 2000 02 08.7 09 26.86 +17 55.6 18.8 -1.07 + 6.5 1.1/08.0 32749
 1990 QT₆ 2000 02 08.7 09 26.96 +17 29.7 17.4 -1.05 + 4.4 0.9/08.2 37626
 1998 RZ₅₅ 2000 02 08.8 09 27.50 +15 14.4 15.8 -1.17 + 3.0 0.1/08.8 38060
 4806 P-L 2000 02 08.9 09 27.45 +13 17.2 17.8 -0.90 + 5.7 0.7/09.4 22701
 2602 P-L 2000 02 08.9 09 27.50 +19 30.8 18.6 -0.86 + 4.2 1.5/07.8 36120
 1993 HL₃ 2000 02 08.9 09 27.57 +16 33.5 17.5 -0.99 + 6.6 0.7/08.5 37635
 1998 SL₅₇ 2000 02 09.0 09 27.87 +22 53.1 16.6 -1.10 + 3.8 3.5/07.1 37772
 1992 BQ₂ 2000 02 09.0 09 27.89 +07 05.0 16.7 -0.95 + 4.2 3.2/10.9 38026
 1993 PS₅ 2000 02 09.0 09 28.00 +07 14.9 19.7 -0.83 + 7.1 2.3/11.2 32932
 1998 SG₁₀ 2000 02 09.0 09 28.10 +27 54.5 15.9 -1.08 + 5.9 5.8/05.5 38061
 1998 OZ₁₁ 2000 02 09.0 09 28.12 +19 19.7 18.0 -1.17 + 2.1 1.7/08.1 37701
 1998 UB₈ 2000 02 09.0 09 28.19 +18 21.7 18.9 -0.93 + 4.4 1.0/08.2 33761
 2000 AE₉₂ 2000 02 09.1 09 28.41 +04 40.1 17.0 -0.94 + 2.8 4.2/11.6 37997
 1993 FS₁₂ 2000 02 09.1 09 28.52 +17 20.7 17.2 -0.99 + 6.7 1.1/08.5 38028
 (9742) 2000 02 09.1 09 28.58 +20 00.3 16.8 -0.81 + 4.9 1.6/07.8 33197

1998 SH₇₉ 2000 02 09.1 09 28.68 +21 55.2 17.6 -1.07 + 5.7 2.5/07.4 38063
 1994 UQ₇ 2000 02 09.2 09 28.81 +22 13.4 19.3 -1.05 + 3.0 2.7/07.5 35692
 1998 RO₆₀ 2000 02 09.2 09 28.85 +08 59.2 18.1 -1.08 + 4.6 2.2/10.6 37755
 1998 RP₄₄ 2000 02 09.2 09 28.91 +14 36.5 16.8 -0.93 + 9.3 0.1/09.3 37749
 1999 XW₃₁ 2000 02 09.2 09 28.92 +11 02.6 16.5 -0.99 + 4.4 1.7/10.2 37879
 2124 T-2 2000 02 09.2 09 28.99 +13 17.8 19.0 -1.05 + 4.5 0.6/09.7 32786
 1998 SB₇₄ 2000 02 09.2 09 29.08 +15 47.9 17.6 -0.82 + 5.2 0.3/09.0 37775
 1998 SM₁₁₆ 2000 02 09.3 09 29.05 +05 53.9 16.9 -0.87 + 4.3 3.1/11.6 37779
 1998 RQ₆₆ 2000 02 09.3 09 29.09 +09 24.2 18.0 -0.97 + 4.7 2.1/10.7 37757
 1993 FS₅₀ 2000 02 09.3 09 29.10 +15 58.9 18.8 -1.03 + 4.2 0.4/09.0 33071
 1997 QS 2000 02 09.3 09 29.10 +18 28.6 19.0 -0.86 + 3.9 1.1/08.4 35701
 1998 QU₇₁ 2000 02 09.3 09 29.11 +02 29.6 17.6 -1.00 + 1.9 4.7/12.2 37732
 1998 QN₉₁ 2000 02 09.3 09 29.24 +30 53.0 18.7 -1.14 + 1.7 4.9/05.7 33089
 1999 XU₃₁ 2000 02 09.3 09 29.25 +08 21.9 16.9 -1.02 + 0.7 2.6/10.7 38136
 1993 FS₃₁ 2000 02 09.3 09 29.26 +22 44.0 17.7 -1.05 + 4.9 2.9/07.4 38028
 1997 HT₁₁ 2000 02 09.3 09 29.34 +22 21.6 19.5 -1.10 + 4.8 2.6/07.5 30691
 1994 YK₂ 2000 02 09.3 09 29.38 +26 49.9 17.1 -0.91 + 5.6 4.5/06.0 38033
 1999 XC₃₄ 2000 02 09.3 09 29.44 +21 29.6 17.2 -1.04 + 7.5 2.5/07.6 37882
 1998 UU₂₂ 2000 02 09.3 09 29.44 -00 03.5 18.4 -0.81 + 3.6 4.5/13.3 35722
 1998 PW 2000 02 09.3 09 29.49 +17 41.5 20.1 -1.06 + 3.7 1.0/08.7 33079
 (13454) 2000 02 09.3 09 29.49 +08 16.4 17.9 -0.94 + 6.7 2.4/11.2 37611
 1998 XE₁₃ 2000 02 09.3 09 29.50 +19 16.9 17.9 -0.88 + 4.4 1.4/08.2 38067
 1998 SP₆₆ 2000 02 09.3 09 29.54 +25 34.4 17.6 -1.17 + 6.4 4.2/06.6 38063
 1997 QK 2000 02 09.4 09 29.63 +09 09.0 18.1 -0.84 + 2.2 1.6/10.8 38045
 1998 WQ₁₄ 2000 02 09.4 09 29.67 +01 55.6 17.7 -0.79 + 3.7 4.1/12.8 37804
 4205 T-3 2000 02 09.4 09 29.68 +18 25.9 17.9 -0.93 + 5.1 1.1/08.5 38193
 1998 SJ₁₃₂ 2000 02 09.4 09 29.71 +14 21.2 17.4 -0.95 + 2.7 0.2/09.6 37784
 1998 UX₁ 2000 02 09.4 09 29.75 +13 59.3 17.3 -0.78 + 6.4 0.2/09.7 37794
 1998 SB₅₁ 2000 02 09.5 09 29.83 +12 48.1 18.9 -1.00 + 4.9 0.6/10.0 35717
 1998 QA₈₉ 2000 02 09.5 09 29.85 +05 27.5 19.5 -1.03 + 4.4 3.2/11.8 35340
 (9795) 2000 02 09.5 09 29.99 +12 56.1 18.1 -0.84 + 4.4 0.6/10.0 38016
 (9725) 2000 02 09.5 09 30.11 +11 52.4 18.3 -0.99 + 5.0 1.0/10.3 33193
 1998 SL₄ 2000 02 09.5 09 30.11 +16 30.4 17.7 -1.14 + 4.7 0.7/09.1 38061
 2000 AJ₆₅ 2000 02 09.6 09 30.55 +20 04.4 16.9 -1.04 + 6.6 2.2/08.3 37996
 1998 QU₄₈ 2000 02 09.6 09 30.59 +10 11.0 17.7 -0.99 + 6.9 1.9/10.9 37726
 1998 XN₃ 2000 02 09.6 09 30.62 +17 10.0 18.4 -0.77 + 3.6 0.6/09.0 35727
 (9784) 2000 02 09.6 09 30.65 +23 27.0 17.0 -0.96 + 3.8 2.9/07.5 33207
 1998 SU₂₅ 2000 02 09.6 09 30.66 +23 11.5 19.2 -1.02 + 4.8 2.7/07.5 34022
 1998 UR₁ 2000 02 09.7 09 30.81 +07 05.1 20.3 -1.06 + 5.7 2.8/11.6 33970
 1998 VR₃₄ 2000 02 09.7 09 30.84 +14 33.2 18.5 -0.87 + 3.9 0.1/09.8 38066
 1998 RG₁₆ 2000 02 09.7 09 30.88 -02 48.7 17.9 -0.94 + 2.0 5.5/14.0 35714
 4672 T-3 2000 02 09.7 09 30.91 +22 53.6 17.2 -0.95 + 5.5 3.3/07.6 38194
 1998 SU₇₃ 2000 02 09.8 09 31.01 +21 40.7 18.3 -1.07 + 5.0 2.4/08.0 34023
 1998 VK₇ 2000 02 09.8 09 31.14 +07 07.5 18.4 -1.04 + 3.9 2.7/11.6 34595
 1998 SA₁₃₃ 2000 02 09.8 09 31.15 +26 10.2 17.8 -1.20 + 2.9 4.3/07.2 38064
 1998 RS₇₃ 2000 02 09.8 09 31.17 +10 46.6 19.1 -0.93 + 4.4 1.2/10.8 34302
 1995 WN₂₀ 2000 02 09.8 09 31.20 +16 24.9 18.1 -1.04 + 6.8 0.7/09.4 35927
 1993 UK 2000 02 09.8 09 31.22 +19 07.6 16.9 -0.87 + 4.6 1.4/08.7 38030
 1996 HT₁₆ 2000 02 09.8 09 31.39 +12 53.2 18.2 -0.84 + 4.5 0.6/10.3 33343
 (13142) 2000 02 09.8 09 31.49 -06 40.4 16.6 -0.87 + 3.9 7.7/15.8 37524
 1992 EW₁₆ 2000 02 09.9 09 31.43 +15 27.7 17.3 -0.97 + 3.4 0.3/09.7 38026

1998 UN ₂₀	2000 02 09.9	09 31.43 +16 58.1 17.4	-1.04 + 5.8	0.8/09.3	38066	3013 P-L	2000 02 11.0	09 35.86 +08 22.1 17.1	-0.92 + 0.6	1.9/12.3	38190
1998 OK ₁₄	2000 02 09.9	09 31.52 +16 54.2 20.8	-0.94 + 5.7	0.7/09.3	33079	1998 SE ₁₅₇	2000 02 11.0	09 35.92 +16 52.1 19.3	-1.01 + 4.7	0.9/10.4	35720
1998 SL ₇₁	2000 02 09.9	09 31.52 +13 40.5 18.2	-0.83 + 4.8	0.3/10.2	33283	1993 LF	2000 02 11.0	09 35.94 +23 13.0 16.1	-0.93 + 9.1	2.9/08.3	38029
1998 SL ₄₅	2000 02 09.9	09 31.56 +23 38.5 18.8	-1.05 + 3.1	3.7/07.8	33278	1991 RZ ₁₁	2000 02 11.0	09 36.05 +15 37.4 19.0	-0.77 + 3.6	0.3/10.7	36879
1993 TC ₂₀	2000 02 09.9	09 31.68 +21 13.3 18.4	-0.92 + 4.1	2.0/08.3	38030	1998 VS ₂₁	2000 02 11.0	09 36.14 +11 27.1 17.9	-0.92 + 3.5	1.0/11.8	37801
1988 RH ₆	2000 02 09.9	09 31.80 +14 14.8 17.0	-1.16 + 2.3	0.2/10.1	38020	1998 QQ ₂₂	2000 02 11.0	09 36.16 +20 49.6 18.0	-1.00 + 5.1	2.3/09.4	37712
(11380)	2000 02 10.0	09 31.97 +12 39.1 16.8	-1.04 + 3.3	0.7/10.5	35585	1997 WW ₇	2000 02 11.0	09 36.21 +07 10.9 17.3	-0.52 + 2.4	1.3/13.1	38046
1981 ER ₄₀	2000 02 10.0	09 32.07 +14 14.4 18.6	-0.99 + 3.9	0.2/10.1	22271	1996 DH ₂	2000 02 11.1	09 36.27 +26 21.7 18.1	-1.07 + 2.5	4.0/08.2	38038
1994 PM ₁₄	2000 02 10.0	09 32.07 +13 21.8 19.4	-0.97 + 5.2	0.4/10.4	35690	1991 UE ₁	2000 02 11.1	09 36.36 +15 49.0 16.9	-1.06 + 4.4	0.6/10.8	26562
1991 PT ₄	2000 02 10.0	09 32.07 +13 18.0 19.2	-0.74 + 3.6	0.3/10.4	33743	1998 SO ₁₄₅	2000 02 11.1	09 36.37 +17 11.7 18.0	-1.01 + 5.1	1.0/10.4	35720
1996 CE ₃	2000 02 10.0	09 32.08 +40 24.8 17.0	-1.39 - 2.4	9.3/05.0	38037	1998 QS ₅	2000 02 11.1	09 36.58 +17 32.9 18.0	-1.00 + 2.5	1.1/10.4	37706
1998 QB ₂₄	2000 02 10.0	09 32.20 +06 54.4 17.7	-1.03 + 3.3	3.0/12.0	37713	(13143)	2000 02 11.2	09 36.68 +05 24.2 17.0	-0.94 + 2.0	2.7/13.3	37525
(9821)	2000 02 10.0	09 32.30 +09 58.3 18.1	-0.96 + 6.3	1.6/11.3	33216	2577 P-L	2000 02 11.2	09 36.78 +14 38.9 18.2	-1.00 + 4.8	0.1/11.1	33588
1989 SK ₁	2000 02 10.1	09 32.25 +21 31.3 19.5	-0.92 + 4.4	2.0/08.3	33741	(10379)	2000 02 11.2	09 36.90 +16 40.9 17.9	-0.72 + 5.1	0.7/10.6	38016
1981 EK ₁₇	2000 02 10.1	09 32.31 +06 05.5 17.8	-0.94 + 5.3	3.0/12.3	38018	1998 VR ₂₃	2000 02 11.2	09 36.98 +24 25.5 19.1	-0.92 + 4.5	3.2/08.6	33516
(12895)	2000 02 10.1	09 32.48 +17 06.3 16.3	-0.97 + 9.3	1.1/09.4	37090	1998 WR ₉	2000 02 11.3	09 37.02 +12 09.2 18.9	-0.87 + 4.5	0.6/11.9	35726
1996 LS ₂	2000 02 10.1	09 32.63 +22 44.8 17.8	-0.80 + 5.2	2.1/07.9	38039	1994 RT ₁	2000 02 11.3	09 37.03 +00 59.3 19.7	-0.88 + 9.8	4.1/15.4	33073
1998 VL ₁₄	2000 02 10.2	09 32.61 -01 03.6 18.6	-0.91 + 3.9	4.7/14.2	35724	1998 QE ₅₃	2000 02 11.3	09 37.23 -03 32.5 18.9	-0.85 + 7.3	5.8/16.7	35711
1998 RQ ₄₆	2000 02 10.2	09 32.63 +13 42.7 20.1	-1.06 + 4.1	0.3/10.4	35714	1998 QT ₄₇	2000 02 11.3	09 37.27 +06 59.1 17.2	-0.84 +10.2	2.7/13.6	37725
1998 UR ₂₀	2000 02 10.2	09 32.78 +13 48.7 17.8	-0.87 + 4.0	0.2/10.4	38066	4882 P-L	2000 02 11.3	09 37.36 +29 20.5 17.5	-1.09 + 2.6	5.5/07.6	38191
1992 DJ ₈	2000 02 10.2	09 32.88 +07 25.9 17.8	-0.92 + 5.1	3.0/12.0	38026	1998 WK ₁	2000 02 11.3	09 37.45 +20 53.4 18.5	-1.12 + 0.8	2.2/10.0	35725
1998 QR ₆	2000 02 10.2	09 32.98 +16 12.7 19.8	-0.92 + 4.5	0.5/09.9	35709	1999 XX ₃₄	2000 02 11.4	09 37.38 +11 42.9 17.1	-1.01 + 2.9	1.0/12.0	37883
1998 TY ₂₀	2000 02 10.2	09 33.03 +13 58.4 17.7	-0.88 + 4.0	0.2/10.4	36085	1978 PG ₄	2000 02 11.4	09 37.47 +10 44.0 17.9	-1.10 + 3.5	1.2/12.2	38017
1998 MQ ₃₇	2000 02 10.3	09 33.08 +10 39.3 20.3	-1.09 + 3.8	1.3/11.2	32756	1994 TK ₁₁	2000 02 11.4	09 37.52 +10 32.9 17.6	-0.96 + 4.8	1.3/12.4	38033
1998 UG ₁₇	2000 02 10.3	09 33.08 +13 10.2 17.9	-0.94 + 3.1	0.5/10.6	33372	1998 QK ₄₄	2000 02 11.4	09 37.55 +17 21.7 18.8	-1.02 + 5.0	1.1/10.6	33083
1998 SK ₁₂₅	2000 02 10.3	09 33.13 +11 59.8 18.2	-0.95 + 6.9	0.9/11.0	33288	1991 PL ₈	2000 02 11.4	09 37.57 +16 06.6 19.0	-0.80 + 3.9	0.5/10.9	35683
1999 XT ₃₁	2000 02 10.3	09 33.28 +12 17.2 17.3	-0.95 + 4.6	0.9/10.9	37878	1994 EW	2000 02 11.4	09 37.62 +13 43.4 20.5	-1.11 + 5.5	0.2/11.6	33072
1998 YR ₈	2000 02 10.4	09 33.44 +14 05.7 17.0	-0.76 + 7.8	0.1/10.5	37809	1993 FD ₂₅	2000 02 11.4	09 37.63 +19 50.9 17.3	-1.09 + 3.1	2.1/10.1	37633
1998 RZ ₆₂	2000 02 10.4	09 33.44 +19 40.1 18.8	-1.01 + 4.8	1.7/09.1	38060	1998 OM ₁₄	2000 02 11.4	09 37.69 +13 00.6 17.8	-0.89 + 8.8	8.8/03.0	34591
(13312)	2000 02 10.4	09 33.82 +07 45.3 16.6	-0.89 + 5.8	2.6/12.3	37571	1998 SN ₄₃	2000 02 11.5	09 37.84 +22 44.1 17.9	-0.95 + 4.4	3.0/09.3	33757
1997 JH ₁₀	2000 02 10.5	09 33.83 +10 22.5 17.5	-0.99 + 5.6	1.8/11.6	38044	1998 SE ₁₄₇	2000 02 11.5	09 38.04 +16 14.7 17.5	-0.83 + 4.3	0.7/11.0	38064
1992 UH ₃	2000 02 10.5	09 33.90 +23 53.3 16.9	-1.21 + 2.9	4.1/08.4	38027	1998 WP ₁₁	2000 02 11.5	09 38.17 +35 03.4 18.0	-1.03 + 5.3	6.3/05.5	37804
1993 QT ₆	2000 02 10.5	09 34.11 +18 30.3 19.4	-0.93 + 3.3	1.3/09.6	33485	1998 SR ₁₁₅	2000 02 11.6	09 38.18 +28 47.2 17.2	-1.05 + 1.2	5.0/08.2	34593
4149 T-2	2000 02 10.5	09 34.17 +19 09.3 19.0	-1.14 + 5.5	1.8/09.4	32787	(11373)	2000 02 11.6	09 38.23 +17 31.0 18.4	-1.11 + 5.1	1.3/10.8	35583
(12978)	2000 02 10.5	09 34.18 +08 24.9 17.9	-1.04 + 5.4	2.1/12.0	37481	1998 QN ₄₆	2000 02 11.6	09 38.34 +12 11.4 18.5	-0.99 + 5.9	0.7/12.1	33083
1998 VH ₂₁	2000 02 10.5	09 34.19 +22 20.9 17.8	-0.96 + 3.6	2.6/08.6	34595	(13037)	2000 02 11.6	09 38.34 +05 20.8 17.4	-1.01 + 5.8	3.5/13.9	37497
1999 XE ₁₆₅	2000 02 10.5	09 34.23 +21 10.9 16.4	-1.08 + 3.1	2.6/09.0	37964	(13376)	2000 02 11.6	09 38.50 +09 17.9 16.9	-0.96 + 2.2	1.5/12.8	37589
1998 QG ₅₄	2000 02 10.7	09 34.58 +04 52.4 18.5	-0.92 + 4.9	3.1/13.2	38057	4391 T-3	2000 02 11.6	09 38.55 +19 47.5 20.0	-1.03 + 5.9	1.8/10.2	33130
(13012)	2000 02 10.7	09 34.80 +21 57.0 16.9	-0.91 + 2.2	2.3/08.9	37490	1998 UL ₁₆	2000 02 11.7	09 38.87 +21 19.0 19.7	-0.95 + 4.8	2.1/09.9	35722
1998 QV ₁₀₄	2000 02 10.7	09 34.95 +22 30.7 18.5	-0.97 + 5.0	2.7/08.7	35713	(9825)	2000 02 11.7	09 38.99 +15 14.0 17.0	-0.91 + 1.9	0.4/11.5	38016
2214 T-1	2000 02 10.7	09 34.97 +10 11.7 17.8	-0.97 + 6.1	1.5/11.9	34617	1998 UE ₇	2000 02 11.8	09 38.99 -03 49.2 20.0	-0.85 + 5.4	4.9/16.9	35722
1998 VR ₁₇	2000 02 10.7	09 34.97 +17 30.5 18.9	-1.01 + 4.5	1.0/10.0	34537	1993 TK ₂₅	2000 02 11.8	09 39.38 +10 57.8 19.3	-0.85 + 5.0	0.9/12.7	35689
1998 RU ₇₃	2000 02 10.8	09 35.00 +03 53.0 19.1	-0.95 + 5.4	3.6/13.6	34022	(13023)	2000 02 11.9	09 39.39 +43 12.7 16.6	-1.15 + 1.4	9.8/04.7	37493
(12004)	2000 02 10.8	09 35.07 +13 35.5 18.0	-0.78 + 4.1	0.2/11.0	36273	1995 VQ ₁₂	2000 02 11.9	09 39.45 +02 22.4 18.3	-0.99 + 7.1	4.6/15.2	38035
1998 VM ₁₈	2000 02 10.8	09 35.12 -08 22.2 16.9	-0.95 + 2.6	8.4/16.4	34595	1996 VG ₉	2000 02 11.9	09 39.53 +55 44.5 18.6	-1.96 + 2.2	16.8/30.6	37270
1994 SM ₈	2000 02 10.8	09 35.15 +22 19.2 20.6	-1.04 + 3.3	2.5/08.9	32668	1997 GK ₁₃	2000 02 11.9	09 39.57 +23 30.6 19.0	-1.06 + 3.7	3.0/09.6	33258
1978 VY ₃	2000 02 10.8	09 35.45 +10 03.6 18.6	-0.96 + 4.1	1.5/12.0	33065	4013 P-L	2000 02 11.9	09 39.73 +04 28.6 19.7	-0.81 + 4.8	2.6/14.6	36120
1998 QY ₁₉	2000 02 10.9	09 35.45 +08 44.0 16.7	-0.90 +10.0	2.5/12.6	38055	1995 UQ ₃	2000 02 11.9	09 39.78 +09 58.2 16.5	-1.08 + 5.1	1.7/13.0	38035
1998 SH ₁₄₆	2000 02 10.9	09 35.65 +05 05.0 18.7	-0.99 + 6.1	3.2/13.4	35720	1998 QL ₃₀	2000 02 12.0	09 39.73 +15 48.8 17.5	-1.00 + 7.0	0.7/11.5	38055
(13106)	2000 02 10.9	09 35.69 +06 40.4 16.8	-0.95 + 7.0	2.9/13.1	37515	1061 T-3	2000 02 12.0	09 39.86 -01 01.2 18.4	-0.82 + 3.2	4.7/16.0	38193
1999 XA ₃₅	2000 02 10.9	09 35.82 +20 26.4 16.4	-0.86 + 8.1	2.7/09.2	37883	1998 SW ₅₃	2000 02 12.0	09 39.92 +10 05.1 18.2	-1.11 + 4.7	1.6/13.0	35717

1996 EW	2000 02 12.0	09 40.05 +05 19.4 17.3	-0.81 +11.4	3.4/14.9	38038
1998 SP ₄₈	2000 02 12.0	09 40.05 +06 52.0 18.1	-0.92 + 4.8	2.7/13.9	33757
1997 PY ₁	2000 02 12.0	09 40.11 +20 19.1 18.4	-0.93 + 1.9	1.9/10.5	38045
1980 SF	2000 02 12.0	09 40.17 +12 58.1 17.7	-1.01 + 6.0	0.3/12.3	38018
(13177)	2000 02 12.1	09 40.13 +17 16.0 17.5	-0.86 + 4.0	1.0/11.2	37534
1998 SX ₁₂₂	2000 02 12.1	09 40.51 +11 28.7 19.9	-0.98 + 5.0	0.8/12.8	34024
1999 WF ₁₈	2000 02 12.2	09 40.53 +24 44.6 16.4	-0.92 +10.5	4.1/08.8	38128
(9789)	2000 02 12.2	09 40.53 +17 00.8 16.2	-0.83 + 4.0	1.0/11.4	38016
(10007)	2000 02 12.2	09 40.58 -07 03.0 15.8	-0.80 + 2.1	6.8/17.8	38016
(13459)	2000 02 12.2	09 40.62 +14 54.6 16.9	-1.02 + 7.9	0.4/11.9	37612
1998 SK ₁₄₆	2000 02 12.2	09 40.68 +07 35.3 16.9	-0.78 + 5.5	2.0/14.0	33760
1988 PL ₂	2000 02 12.2	09 40.69 +17 27.7 19.4	-1.14 + 3.2	1.3/11.4	33067
1993 FV ₁₆	2000 02 12.2	09 40.94 +16 25.0 19.0	-0.98 + 5.5	0.8/11.6	35687
1997 TS ₁₈	2000 02 12.2	09 40.95 +16 40.0 17.6	-0.96 + 2.4	0.9/11.6	37275
(13225)	2000 02 12.2	09 40.96 +12 31.1 17.4	-0.83 + 5.1	0.5/12.7	37546
(12548)	2000 02 12.3	09 40.91 +15 14.7 16.3	-0.95 + 6.7	0.6/11.9	36754
1998 SD ₁₁₈	2000 02 12.3	09 41.04 +11 36.5 18.5	-0.95 + 4.6	0.7/12.9	33759
(13139)	2000 02 12.3	09 41.07 +28 41.0 17.3	-1.01 + 4.3	5.3/08.5	37524
1998 SN ₅₈	2000 02 12.3	09 41.11 +12 22.1 19.1	-0.99 + 5.6	0.5/12.7	35718
1998 UM ₂₀	2000 02 12.3	09 41.17 +17 04.6 17.7	-0.81 + 4.5	1.0/11.5	38066
1994 YC ₂	2000 02 12.3	09 41.22 -01 05.5 17.8	-0.95 + 2.5	5.0/16.1	38033
1998 TG	2000 02 12.3	09 41.35 +15 52.0 19.6	-1.02 + 4.5	0.7/11.9	33366
1998 SS ₁₃₀	2000 02 12.4	09 41.51 +15 37.4 16.9	-1.13 + 4.4	0.7/12.0	38064
4664 P-L	2000 02 12.4	09 41.54 +25 11.9 18.4	-0.96 + 2.8	3.3/09.6	36121
1998 WJ ₁₂	2000 02 12.4	09 41.57 +01 27.5 18.9	-0.80 + 3.9	3.6/15.8	35726
1998 QS ₅₁	2000 02 12.4	09 41.57 +09 16.3 19.2	-1.02 + 5.1	1.7/13.6	33084
1999 XJ ₁₆₅	2000 02 12.4	09 41.64 +14 31.1 16.8	-1.14 - 0.8	0.3/12.3	37965
1998 TW ₃₀	2000 02 12.4	09 41.68 +26 12.4 17.6	-0.94 + 2.5	3.8/09.3	38065
6556 P-L	2000 02 12.5	09 41.86 +06 37.6 18.9	-0.80 + 6.1	2.0/14.6	33384
1991 RA ₁₅	2000 02 12.5	09 41.87 +13 48.1 18.0	-0.78 + 4.0	0.0/12.5	38025
2000 AT ₁₄₂	2000 02 12.5	09 41.94 +03 49.9 16.3	-1.11 - 1.4	4.5/14.4	38000
(9715)	2000 02 12.5	09 41.97 +28 04.4 17.5	-0.90 + 2.9	4.3/08.8	33191
1998 SR ₁₂₄	2000 02 12.5	09 41.99 +13 13.9 17.8	-0.95 + 5.7	0.2/12.7	38064
1088 T-3	2000 02 12.5	09 42.08 +20 45.4 17.6	-1.06 + 1.5	2.5/11.0	38193
(13033)	2000 02 12.5	09 42.15 +09 55.4 17.3	-0.86 + 6.6	1.3/13.7	37496
(12999)	2000 02 12.6	09 42.09 +12 14.3 17.0	-1.01 + 7.4	0.6/13.0	37486
1994 VH ₁	2000 02 12.6	09 42.13 +19 42.0 16.7	-0.93 + 5.6	2.2/11.0	38033
1998 NA	2000 02 12.6	09 42.22 +16 47.5 16.8	-1.04 + 2.1	1.0/11.9	38053
(13075)	2000 02 12.6	09 42.23 +11 52.9 16.9	-1.08 + 2.8	0.7/13.1	37507
1998 SG ₁₃₃	2000 02 12.6	09 42.47 -06 05.4 17.8	-0.84 + 6.3	7.2/18.6	38064
1998 SY ₁₃₈	2000 02 12.7	09 42.56 +23 24.3 17.9	-1.12 + 3.0	3.8/10.4	37786
1084 T-3	2000 02 12.7	09 42.71 +01 10.7 18.6	-0.81 + 3.5	3.7/16.1	34061
1991 PV	2000 02 12.7	09 42.73 +10 43.2 18.9	-1.04 + 5.4	1.0/13.5	35683
1994 SZ ₁	2000 02 12.7	09 42.74 +18 35.0 21.2	-0.99 + 4.8	1.6/11.5	35691
(13207)	2000 02 12.7	09 42.80 +12 38.2 17.2	-0.97 + 7.9	0.5/13.1	37541
1998 UF ₄₀	2000 02 12.7	09 42.85 +16 44.1 18.9	-1.06 + 4.2	1.0/12.0	34594
1982 QP	2000 02 12.8	09 42.87 +06 25.3 17.7	-1.01 + 2.1	2.3/14.5	37621
(10247)	2000 02 12.8	09 42.89 +11 56.9 17.2	-0.51 + 3.1	0.3/13.3	33917
1991 LM ₃	2000 02 12.8	09 42.91 +05 14.2 20.3	-1.07 + 5.3	3.0/14.9	33479
1978 VA	2000 02 12.8	09 42.91 +64 59.4 16.5	-1.29 - 1.8	24.4/28.0	38017
1998 VW ₁₂	2000 02 12.8	09 43.00 +14 05.9 19.4	-0.81 + 4.6	0.1/12.7	34931

1998 QJ ₃₃	2000 02 12.8	09 43.02 +10 03.4 17.9	-1.08 + 3.1	1.4/13.7	33559
1999 VE ₉	2000 02 12.8	09 43.13 +15 38.1 16.5	-0.97 + 5.5	0.9/12.3	37829
(13445)	2000 02 12.8	09 43.16 +07 55.0 17.2	-0.78 + 2.4	1.6/14.3	37609
1998 WO ₁	2000 02 12.8	09 43.18 +13 07.6 18.1	-0.75 + 4.3	0.1/13.0	38066
1998 QJ ₄₅	2000 02 12.9	09 43.27 +01 26.8 18.3	-0.85 + 8.5	4.1/17.0	38056
1995 FX ₁₀	2000 02 12.9	09 43.32 +27 47.5 18.5	-0.98 + 1.1	5.2/09.5	32945
1998 UJ ₄₁	2000 02 12.9	09 43.33 +34 15.3 19.6	-1.02 + 3.6	6.4/07.3	35723
1999 XQ ₁₃₆	2000 02 12.9	09 43.39 +02 42.7 15.1	-1.04 - 1.9	4.5/15.0	37950
1995 VD	2000 02 12.9	09 43.39 +17 24.9 17.2	-1.05 + 3.9	1.6/12.0	38035
4648 P-L	2000 02 12.9	09 43.53 +12 35.3 18.6	-0.99 + 5.3	0.4/13.2	36120
1998 VQ ₂₉	2000 02 13.0	09 43.80 -03 36.1 17.6	-0.90 + 3.2	5.1/17.5	38066
1998 WG ₁₇	2000 02 13.0	09 43.86 +13 19.6 18.4	-0.93 + 4.8	0.1/13.1	34311
4091 P-L	2000 02 13.0	09 43.92 +09 17.5 20.1	-0.92 + 4.9	1.3/14.2	33053
3306 T-1	2000 02 13.0	09 43.98 +12 00.7 18.9	-0.97 + 5.7	0.5/13.5	33589
1993 FH ₇	2000 02 13.0	09 44.12 +18 19.1 18.4	-1.01 + 5.8	1.6/11.8	38028
1998 UD ₂₈	2000 02 13.0	09 44.17 +55 14.0 19.9	-1.32 + 0.6	10.8/31.9	34594
1999 VG ₈₇	2000 02 13.1	09 44.07 +04 35.3 17.7	-1.04 + 2.3	3.2/15.3	37841
1998 RT ₅₆	2000 02 13.1	09 44.15 +08 16.0 17.1	-0.90 + 5.2	2.1/14.6	37753
1998 QK ₉₈	2000 02 13.1	09 44.17 +22 27.5 17.9	-0.93 + 4.8	3.0/10.7	34302
1998 QX ₁	2000 02 13.1	09 44.26 +10 58.3 19.1	-0.94 + 3.3	0.8/13.8	32759
1979 ML ₅	2000 02 13.1	09 44.28 +09 49.2 18.8	-0.85 + 5.9	1.2/14.2	33065
(12669)	2000 02 13.1	09 44.41 -00 54.4 17.2	-0.94 + 1.6	4.8/16.6	37030
1998 QP ₃₆	2000 02 13.1	09 44.53 +10 17.1 21.4	-0.93 + 4.3	0.9/14.1	33348
1996 HY ₁₇	2000 02 13.2	09 44.61 +13 22.1 19.5	-0.77 + 4.3	0.1/13.3	30785
1998 RB ₄₃	2000 02 13.2	09 44.65 +12 11.3 19.6	-1.01 + 3.6	0.5/13.6	33564
(11369)	2000 02 13.2	09 44.81 +06 53.6 17.0	-0.98 + 5.4	2.9/15.0	38016
1998 SJ ₆₂	2000 02 13.2	09 44.92 +01 01.7 19.0	-0.96 + 5.0	4.0/16.6	34023
1998 TA	2000 02 13.3	09 44.87 +21 43.8 16.7	-1.15 + 2.8	3.2/11.4	38065
1998 QA ₆₉	2000 02 13.3	09 44.89 +01 52.0 18.9	-0.89 + 8.3	3.9/17.0	34591
(13288)	2000 02 13.3	09 45.07 -01 43.5 16.9	-0.82 + 9.5	6.0/18.4	37564
1997 MY ₄	2000 02 13.3	09 45.12 +12 44.2 18.1	-0.98 + 6.4	0.3/13.6	35700
1998 QD ₄₄	2000 02 13.4	09 45.42 +17 54.9 18.9	-1.10 + 4.3	1.6/12.3	35711
1995 DR ₆	2000 02 13.5	09 45.63 +16 10.3 19.2	-0.78 + 3.8	0.7/12.8	28087
1998 TV ₃₀	2000 02 13.5	09 45.70 +14 43.3 18.5	-0.95 + 4.2	0.4/13.2	37793
1998 VF ₆	2000 02 13.5	09 45.70 +11 15.8 17.5	-0.83 + 2.9	0.7/14.1	34028
1998 TF ₃₂	2000 02 13.5	09 45.79 +28 10.8 19.4	-1.04 + 2.9	4.5/09.8	34306
4659 P-L	2000 02 13.5	09 45.84 +04 41.4 19.0	-0.76 + 5.9	2.5/16.1	36121
1998 UP ₆	2000 02 13.5	09 46.04 +37 37.2 18.1	-1.13 + 2.3	6.8/07.2	36905
3020 T-2	2000 02 13.6	09 46.06 +28 23.3 18.8	-0.97 + 2.1	4.0/09.8	33589
4231 T-2	2000 02 13.6	09 46.12 +25 08.6 18.2	-1.11 + 3.9	4.2/10.7	38193
2158 P-L	2000 02 13.6	09 46.17 +03 50.5 17.7	-0.92 + 6.4	3.8/16.3	38190
(13335)	2000 02 13.6	09 46.18 +20 38.9 17.3	-1.04 + 1.3	2.4/12.0	37578
1995 UG ₅	2000 02 13.6	09 46.22 +20 14.0 18.5	-1.13 + 4.8	2.5/11.9	35427
1996 TZ ₃₆	2000 02 13.6	09 46.28 +10 28.3 18.9	-0.51 + 2.7	0.5/14.5	28309
1997 GE ₁₇	2000 02 13.7	09 46.48 +19 23.9 17.9	-1.15 + 2.7	2.7/12.3	38043
1994 PE ₂₀	2000 02 13.7	09 46.67 +11 58.9 19.6	-0.97 + 4.7	0.5/14.1	33747
1997 KA	2000 02 13.7	09 46.75 -06 00.8 17.1	-0.89 + 2.9	5.9/18.8	38044
1998 XY ₆	2000 02 13.7	09 46.77 +14 22.3 19.9	-0.86 + 4.9	0.3/13.5	33530
1998 OR ₁₃	2000 02 13.7	09 46.82 +13 07.5 17.8	-0.99 + 5.7	0.1/13.9	38054
1999 XS ₁₃₆	2000 02 13.8	09 46.91 -00 42.1 15.0	-1.13 - 3.3	6.0/16.3	38158
1998 SK ₁₆₄	2000 02 13.8	09 46.96 +21 58.6 16.0	-0.89 + 7.6	3.3/11.2	38065

(9775)	2000 02 13.8	09 47.06 +09 29.5 18.5	-0.90 + 4.5	1.2/14.9	33205
(9823)	2000 02 13.8	09 47.20 +24 31.3 18.8	-1.08 + 4.5	3.9/10.9	33216
1996 HV	2000 02 13.9	09 47.24 +28 25.8 19.3	-0.97 + 5.1	5.1/09.5	33494
1985 RT	2000 02 13.9	09 47.27 +16 04.9 17.6	-1.13 + 4.4	1.1/13.2	37622
1978 PX ₃	2000 02 13.9	09 47.46 +10 57.6 18.5	-1.09 + 3.9	0.8/14.5	38017
1981 EL ₇	2000 02 13.9	09 47.57 -04 51.2 18.4	-0.88 + 8.7	7.2/19.8	26916
1998 ST ₅₉	2000 02 13.9	09 47.61 +17 51.0 19.4	-0.99 + 5.4	1.5/12.8	33758
1997 GM ₈	2000 02 13.9	09 47.65 +03 49.3 18.8	-0.94 + 5.4	3.3/16.6	33344
1998 QY ₃₇	2000 02 14.0	09 47.61 +15 16.7 18.2	-1.10 + 3.5	0.7/13.5	33082
1993 FB ₃₂	2000 02 14.0	09 47.71 +11 39.4 18.5	-0.97 + 6.5	0.6/14.5	33339
1998 SW ₂₃	2000 02 14.0	09 47.74 +27 29.4 17.9	-1.09 + 4.2	5.7/10.3	38061
1997 HY ₉	2000 02 14.0	09 47.88 +27 18.4 18.2	-1.06 + 4.6	4.8/10.3	37670
1998 UA ₇	2000 02 14.0	09 47.99 +38 06.3 17.7	-0.88 + 6.6	6.7/06.0	35722
(12767)	2000 02 14.0	09 47.99 +15 55.3 17.1	-0.83 + 4.1	0.8/13.4	37056
1998 QX ₉₀	2000 02 14.0	09 48.00 +10 55.2 20.1	-0.96 + 7.0	0.7/14.7	32985
1998 RG ₃	2000 02 14.1	09 48.00 +01 14.2 20.6	-0.87 + 4.8	3.4/17.5	33563
(10001)	2000 02 14.1	09 48.18 +26 15.8 17.0	-1.11 + 4.0	5.0/10.8	38016
2861 P-L	2000 02 14.1	09 48.37 +12 51.1 18.4	-0.82 + 4.4	0.1/14.3	36050
1997 MR ₁	2000 02 14.1	09 48.46 -28 29.3 18.5	-1.10 - 1.7	16.3/24.5	34296
1975 VW ₅	2000 02 14.2	09 48.42 +26 34.2 17.3	-1.03 + 5.4	4.4/10.5	38017
(10856)	2000 02 14.2	09 48.48 +35 22.0 18.5	-1.01 + 0.6	5.2/08.6	34785
1998 QL ₉₆	2000 02 14.2	09 48.61 +06 43.9 20.4	-1.01 + 3.5	2.1/15.9	35713
1998 WR ₁₈	2000 02 14.2	09 48.68 +02 52.5 17.7	-0.89 + 3.6	3.4/17.0	37805
1994 TW ₁₅	2000 02 14.2	09 48.69 +07 38.9 19.2	-0.93 + 5.2	1.8/15.8	34291
(13386)	2000 02 14.2	09 48.74 +23 05.4 17.4	-0.77 + 6.5	2.5/11.3	37592
(12897)	2000 02 14.2	09 48.78 +20 15.6 16.5	-1.10 + 3.9	3.2/12.5	37091
1981 EJ ₂	2000 02 14.2	09 48.79 -00 38.3 19.3	-0.82 + 3.5	3.9/18.0	26914
1994 UA ₃	2000 02 14.3	09 48.76 +11 06.1 17.0	-0.92 + 4.8	0.8/14.9	37266
1995 VM ₁	2000 02 14.3	09 48.78 +23 54.4 16.9	-1.09 + 6.0	3.9/11.4	37650
1993 TD ₁₇	2000 02 14.3	09 48.84 +15 37.3 18.6	-0.88 + 4.8	0.8/13.7	35689
1997 GA ₂₆	2000 02 14.3	09 48.86 +26 45.5 17.2	-1.16 + 5.6	5.5/10.6	38043
1998 RP ₄₂	2000 02 14.3	09 49.13 +06 13.8 17.5	-0.95 + 4.0	2.7/16.2	34591
1990 VM ₃	2000 02 14.3	09 49.17 +38 13.9 18.2	-1.10 + 5.5	7.7/07.2	38023
1998 SQ ₁₈	2000 02 14.3	09 49.18 +09 09.4 18.3	-0.95 + 7.0	1.4/15.5	33017
2047 T-2	2000 02 14.3	09 49.19 +16 05.8 19.4	-0.96 + 3.7	0.9/13.6	33326
1998 WA ₂₂	2000 02 14.4	09 49.16 +18 17.3 19.0	-1.00 + 5.5	1.7/13.0	35727
(13038)	2000 02 14.4	09 49.31 +16 04.9 17.2	-0.91 + 2.0	0.9/13.7	37497
1998 SA ₈₀	2000 02 14.4	09 49.37 +07 15.4 18.1	-0.95 + 6.2	2.4/16.1	35634
1998 SR ₂₆	2000 02 14.4	09 49.56 +00 32.1 17.8	-0.84 + 6.2	4.4/18.2	33566
1998 QN ₉₂	2000 02 14.4	09 49.59 +28 39.3 17.8	-0.98 + 1.8	4.5/10.6	38058
1998 SH ₁₀	2000 02 14.5	09 49.65 +14 42.0 17.1	-0.88 + 4.6	0.5/14.1	37287
1996 HX	2000 02 14.5	09 49.72 +18 55.2 18.7	-0.84 + 3.2	1.5/13.0	38038
1999 BN ₅	2000 02 14.5	09 49.72 +13 44.0 18.9	-0.87 + 5.7	0.2/14.4	35731
1998 SR ₁₁₈	2000 02 14.5	09 49.75 +10 19.4 18.0	-0.92 + 5.5	1.0/15.3	38063
1993 OO ₄	2000 02 14.5	09 49.85 +14 54.4 18.8	-0.91 + 6.0	0.6/14.1	35688
1991 PL ₁₈	2000 02 14.5	09 49.96 +10 17.4 18.6	-1.07 + 4.2	1.0/15.3	33336
1998 SR ₁₁₁	2000 02 14.6	09 49.96 +32 57.1 16.7	-1.14 + 0.5	7.6/09.8	38063
1990 UU ₁	2000 02 14.6	09 50.03 -02 11.4 18.5	-0.86 + 7.3	4.8/19.3	38023
1992 OK ₂	2000 02 14.6	09 50.05 +08 14.1 19.5	-0.87 + 2.0	1.3/15.8	35685
1998 SK ₁₂₇	2000 02 14.6	09 50.11 +12 27.1 18.9	-0.98 + 6.6	0.2/14.8	35719
1998 OV ₁₃	2000 02 14.6	09 50.28 +14 30.7 18.3	-0.99 + 8.5	0.5/14.3	32757

1998 MM ₅	2000 02 14.7	09 50.33 +15 24.0 20.0	-0.98 + 3.8	0.7/14.1	35709
(9745)	2000 02 14.7	09 50.35 +10 49.2 17.6	-0.83 + 4.7	0.7/15.3	38016
1997 NE ₁₁	2000 02 14.7	09 50.77 -04 23.9 17.7	-0.86 + 2.3	4.9/19.3	38045
1977 DG ₃	2000 02 14.7	09 50.80 +13 02.4 16.6	-0.90 + 8.3	0.0/14.8	37255
(13378)	2000 02 14.8	09 50.72 +02 22.0 16.2	-0.76 + 6.5	3.4/18.0	37590
1998 QE ₃₂	2000 02 14.8	09 50.80 +15 48.7 18.8	-0.99 + 8.1	1.0/14.0	34924
(13147)	2000 02 14.8	09 50.82 +13 24.0 16.9	-0.82 + 5.3	0.1/14.7	37526
1998 WF ₄	2000 02 14.8	09 50.85 +17 02.5 18.8	-0.81 + 4.1	1.1/13.7	34596
1998 QF ₁₀₀	2000 02 14.8	09 51.15 +09 36.3 17.4	-0.82 +10.8	1.3/16.0	37741
1996 HM ₂	2000 02 14.8	09 51.16 +17 58.7 16.5	-0.92 + 4.5	2.0/13.5	38038
1998 SB ₁₄₄	2000 02 14.8	09 51.16 +13 40.7 18.7	-0.93 + 5.3	0.2/14.7	35720
1998 SE ₁₄₀	2000 02 14.9	09 51.10 +21 58.7 18.2	-1.05 + 2.5	3.0/12.7	35720
3230 T-2	2000 02 14.9	09 51.11 +16 33.8 18.6	-0.76 + 4.6	1.0/13.9	25337
1985 CL ₂	2000 02 14.9	09 51.18 +12 03.3 16.6	-0.94 + 5.9	0.4/15.2	35679
(13172)	2000 02 14.9	09 51.25 +05 07.0 17.2	-1.10 + 1.6	3.0/17.0	37532
1994 NL ₂	2000 02 15.0	09 51.53 -18 58.6 18.1	-0.96 + 3.9	9.2/24.2	33940
1994 RW ₁₁	2000 02 15.0	09 51.60 +06 12.4 18.4	-0.96 + 5.6	2.2/16.8	35691
1999 XH ₃₄	2000 02 15.0	09 51.77 +17 46.4 16.9	-0.81 + 8.1	2.0/13.6	37882
1992 PR ₆	2000 02 15.0	09 51.84 +14 14.7 18.2	-0.83 + 2.6	0.3/14.7	38027
(9882)	2000 02 15.0	09 51.94 +12 51.3 19.5	-0.98 + 5.5	0.0/15.1	33465
1992 RJ ₅	2000 02 15.1	09 51.90 +17 25.5 19.3	-0.80 + 4.4	1.2/13.8	33338
1998 VY ₈	2000 02 15.1	09 51.97 -12 39.1 18.7	-0.79 + 4.3	7.8/23.1	34595
1998 QE ₄₂	2000 02 15.1	09 52.03 +19 49.5 18.1	-1.08 + 5.0	2.5/13.3	33560
1998 SP ₁₀	2000 02 15.1	09 52.13 +02 39.4 20.1	-0.83 + 8.7	3.2/18.4	33354
1998 SG ₁₃₂	2000 02 15.1	09 52.25 +15 22.5 16.2	-1.15 + 2.8	1.0/14.6	38064
1982 UO ₆	2000 02 15.1	09 52.32 -00 46.9 17.7	-0.78 + 3.9	3.8/19.0	38019
1992 OY ₇	2000 02 15.2	09 52.45 +03 08.7 18.6	-0.81 + 3.2	2.5/17.8	38027
1995 YE ₆	2000 02 15.2	09 52.70 +07 54.3 18.6	-1.02 + 5.7	2.2/16.6	29946
1998 UZ ₂₆	2000 02 15.2	09 52.73 +11 27.4 19.4	-0.90 + 5.9	0.4/15.7	33762
1998 QS ₃₅	2000 02 15.3	09 52.93 +18 48.3 18.2	-1.12 + 2.7	2.4/13.9	33082
1998 SZ ₁₁₈	2000 02 15.3	09 52.93 +19 53.4 18.9	-0.95 + 3.5	2.2/13.5	34593
1998 SO ₈	2000 02 15.3	09 52.94 +05 08.8 20.9	-0.88 + 6.3	2.2/17.6	33354
4092 T-2	2000 02 15.3	09 53.14 +24 12.3 19.7	-0.93 + 3.2	3.2/12.4	36581
1998 PU	2000 02 15.4	09 53.06 +14 00.3 18.4	-1.06 + 3.4	0.4/15.1	34301
3161 T-2	2000 02 15.4	09 53.07 +17 56.1 19.3	-0.93 + 5.1	1.6/14.0	36123
1998 WS ₁₆	2000 02 15.4	09 53.24 +17 17.7 17.5	-0.87 + 4.5	1.4/14.2	38067
1995 VP ₁	2000 02 15.4	09 53.35 +21 09.8 17.4	-1.07 + 6.4	3.0/13.2	38035
1995 WT ₁	2000 02 15.5	09 53.50 +03 58.1 17.5	-1.03 + 5.0	3.4/17.9	32465
1989 TN ₁	2000 02 15.5	09 53.54 +18 21.4 18.2	-1.05 + 1.4	1.9/14.2	38021
1998 YL ₁	2000 02 15.5	09 53.60 +10 41.3 16.5	-1.02 + 1.3	0.7/16.0	37808
1996 JK ₁₃	2000 02 15.5	09 53.64 +14 48.2 18.0	-0.84 + 5.2	0.6/15.0	35929
1993 FG ₂₈	2000 02 15.5	09 53.70 +08 54.3 19.1	-0.96 + 5.0	1.2/16.6	35687
1988 PU	2000 02 15.5	09 53.75 -05 36.7 16.8	-0.89 + 3.0	5.9/20.4	38020
1004 T-2	2000 02 15.5	09 53.75 +19 02.8 18.5	-1.02 + 2.8	2.2/14.0	33384
1987 CH	2000 02 15.5	09 53.79 +12 33.8 16.1	-0.96 + 9.2	0.1/15.6	37257
1998 QJ ₂	2000 02 15.5	09 53.88 +15 13.9 17.1	-1.04 + 7.5	0.9/14.9	38054
1998 TU ₃₀	2000 02 15.6	09 53.88 +30 15.4 17.7	-0.94 + 2.3	5.8/10.9	34593
9072 P-L	2000 02 15.6	09 53.92 +03 50.5 18.2	-0.83 + 5.1	3.0/18.1	33589
4597 P-L	2000 02 15.6	09 54.00 +10 09.7 17.2	-1.00 + 7.6	1.1/16.4	38191
(12696)	2000 02 15.6	09 54.25 +09 42.3 17.3	-0.86 + 7.0	1.0/16.6	37037
(11349)	2000 02 15.7	09 54.33 +05 09.0 18.4	-0.95 + 6.1	2.7/17.8	35578

1998 QT ₅₅	2000 02 15.7	09 54.55 +16 16.9 18.3	-1.09 + 5.5	1.3/14.8	38057	1999 XK ₁₆₅	2000 02 16.8	09 58.64 +21 53.4 17.4	-0.97 + 4.9	3.8/14.2	37965
1994 VB	2000 02 15.7	09 54.70 +33 20.3 19.0	-1.09 + 3.2	6.3/10.2	33341	1994 TJ	2000 02 16.8	09 58.69 +15 24.1 18.3	-1.02 + 3.4	1.1/16.1	35691
1993 LW ₁	2000 02 15.8	09 54.66 +33 04.4 17.3	-1.13 + 5.8	6.9/09.7	35688	1992 BP ₂	2000 02 16.8	09 58.89 +02 51.3 17.2	-0.91 + 5.9	3.7/19.6	38026
1996 HX ₁₆	2000 02 15.8	09 54.77 +17 07.7 18.3	-0.86 + 4.5	1.4/14.6	37270	1993 UT	2000 02 16.8	09 58.90 +56 32.5 19.3	-1.34 + 3.4	10.3/31.9	35066
1991 PP ₁₂	2000 02 15.8	09 54.78 +11 46.3 18.6	-1.06 + 4.9	0.3/16.1	32447	(13169)	2000 02 16.8	09 58.91 +09 45.4 17.0	-1.01 + 5.6	1.0/17.6	37532
1998 QD ₄₆	2000 02 15.8	09 55.00 +12 11.3 19.9	-1.04 + 4.8	0.2/16.0	35711	1998 PX	2000 02 16.8	09 58.93 +14 25.6 19.1	-1.10 + 4.0	0.8/16.4	32758
1994 TB ₃	2000 02 15.9	09 55.05 +32 01.0 17.8	-1.16 + 1.1	6.6/11.3	38033	1994 XQ ₄	2000 02 16.8	09 58.94 +18 34.3 17.8	-0.90 + 5.1	2.0/15.1	38033
1981 EZ ₉	2000 02 15.9	09 55.06 -02 42.9 19.2	-0.77 + 6.2	4.3/20.6	26916	(13136)	2000 02 16.9	09 58.94 +14 07.3 17.9	-0.96 + 4.2	0.6/16.4	37523
(9759)	2000 02 15.9	09 55.07 +05 54.3 17.7	-0.78 + 3.5	1.9/17.8	33201	1981 UA	2000 02 16.9	09 59.03 +56 06.6 18.3	-2.16 - 8.0	18.4/12.2	38019
1998 QR ₁₂	2000 02 15.9	09 55.08 +06 14.8 19.6	-1.04 + 3.2	2.2/17.5	32760	1993 FD ₄₀	2000 02 16.9	09 59.06 +06 19.5 18.7	-0.92 + 8.0	2.4/18.7	30471
1998 TR ₁₇	2000 02 15.9	09 55.32 +11 24.8 19.0	-0.90 + 5.1	0.4/16.3	35721	1993 FX ₂₉	2000 02 16.9	09 59.07 +04 27.8 17.7	-0.98 + 4.6	3.2/19.0	32930
1991 AF ₂	2000 02 16.0	09 55.45 -00 05.9 17.8	-0.83 + 9.0	4.6/20.1	38023	(12698)	2000 02 16.9	09 59.07 +10 20.3 16.9	-0.88 + 4.9	0.7/17.5	37037
(12818)	2000 02 16.0	09 55.45 +18 23.6 17.6	-0.89 + 5.1	1.8/14.4	37068	(12756)	2000 02 16.9	09 59.26 +20 45.8 17.0	-0.87 + 8.2	2.5/14.3	37053
(11383)	2000 02 16.0	09 55.47 +15 27.3 16.5	-0.87 + 5.7	1.0/15.2	35586	1998 RO ₈₀	2000 02 16.9	09 59.27 +20 53.0 17.4	-1.11 + 2.6	3.7/14.9	33353
1997 JB ₁₀	2000 02 16.0	09 55.60 +15 38.1 17.2	-0.98 + 7.0	1.3/15.2	35700	4259 P-L	2000 02 16.9	09 59.29 +06 27.9 20.5	-0.77 + 4.4	1.6/18.7	35047
(10500)	2000 02 16.0	09 55.60 +32 08.9 16.3	-1.05 + 4.5	7.2/10.2	34436	1998 SY ₅₈	2000 02 17.0	09 59.35 +16 46.4 18.8	-1.04 + 4.9	1.5/15.8	35718
(13073)	2000 02 16.0	09 55.71 +16 35.0 17.4	-1.12 + 3.3	1.4/15.1	37506	1998 SK ₇₅	2000 02 17.0	09 59.35 +14 42.5 16.6	-0.92 + 7.6	1.0/16.3	37287
1998 QC ₄₀	2000 02 16.0	09 55.78 +10 34.1 18.2	-0.96 + 5.6	0.7/16.6	35710	1993 FT ₇	2000 02 17.0	09 59.40 +10 45.4 18.0	-0.94 + 7.7	0.5/17.5	38028
1998 UR ₇	2000 02 16.1	09 55.84 -00 29.0 20.0	-0.78 + 5.4	3.7/20.0	35722	(13338)	2000 02 17.0	09 59.50 +26 05.2 16.4	-1.01 + 2.2	5.1/13.5	37578
(9798)	2000 02 16.1	09 55.87 +24 44.8 16.5	-0.83 + 5.7	3.4/12.5	33211	1988 VQ ₄	2000 02 17.0	09 59.53 +08 36.3 16.8	-0.77 + 7.2	1.1/18.2	34176
1998 SW ₇₅	2000 02 16.1	09 56.00 +13 51.1 16.8	-1.04 + 7.4	0.5/15.8	35718	1997 OM	2000 02 17.1	09 59.74 +12 28.7 18.9	-0.83 + 5.2	0.1/17.1	35700
1991 UJ ₂	2000 02 16.1	09 56.19 +20 56.4 17.4	-1.09 + 4.7	3.0/14.0	38025	1998 WQ ₁₆	2000 02 17.1	09 59.98 +24 29.6 18.3	-0.82 + 4.1	3.3/13.6	34933
1998 OE ₇	2000 02 16.1	09 56.20 +06 21.0 17.3	-1.08 + 1.3	2.2/17.6	38053	1982 UE ₁₂	2000 02 17.1	10 00.01 +12 30.9 16.5	-1.07 + 1.3	0.1/17.1	38019
1990 UO ₁	2000 02 16.2	09 56.29 +15 27.8 17.7	-0.92 + 6.5	1.0/15.4	38023	1998 UM ₂₆	2000 02 17.2	10 00.13 +15 13.3 17.8	-1.02 + 7.3	1.1/16.4	38066
1996 AP ₃	2000 02 16.2	09 56.52 +03 09.7 17.1	-1.03 + 4.0	3.2/18.7	38037	(12983)	2000 02 17.2	10 00.19 +15 26.1 16.9	-0.74 + 7.2	0.9/16.2	37482
1989 TZ	2000 02 16.3	09 56.67 -06 56.8 17.8	-0.86 + 4.4	5.6/21.8	38021	1998 SS ₁₂₁	2000 02 17.2	10 00.30 +05 09.8 18.7	-0.88 + 4.6	2.4/19.2	33759
(13053)	2000 02 16.3	09 56.68 +17 27.1 17.5	-0.96 + 7.3	2.0/14.9	37501	1993 HX	2000 02 17.2	10 00.41 +13 29.7 16.6	-0.96 + 6.5	0.5/16.9	37264
1998 UJ ₂₆	2000 02 16.3	09 56.79 +14 21.4 18.7	-0.78 + 5.7	0.5/15.8	33574	1998 SB ₁₃₆	2000 02 17.3	10 00.47 +13 15.0 18.6	-0.96 + 6.3	0.3/17.0	35720
1993 FL ₈	2000 02 16.4	09 57.05 +24 47.3 17.3	-1.10 + 4.3	4.6/13.1	34289	1998 SN ₂	2000 02 17.3	10 00.48 +12 21.1 19.1	-0.80 + 4.4	0.0/17.3	35716
1998 SQ ₂₂	2000 02 16.4	09 57.21 +19 51.6 18.9	-0.96 + 2.9	2.2/14.6	33757	1998 RW ₄₆	2000 02 17.3	10 00.52 +06 19.5 19.1	-0.98 + 5.1	1.9/18.9	35714
1997 GV ₃₅	2000 02 16.5	09 57.35 +02 14.4 18.7	-0.96 + 6.2	3.8/19.4	35700	1998 QS ₄₇	2000 02 17.3	10 00.54 +11 16.6 19.1	-0.96 + 6.5	0.3/17.6	37725
1998 XK	2000 02 16.5	09 57.37 +13 21.2 17.5	-0.81 + 3.0	0.2/16.3	38067	1998 TU ₁	2000 02 17.3	10 00.57 -06 53.2 18.2	-0.87 + 6.0	6.0/23.2	38065
1998 SS ₅₅	2000 02 16.5	09 57.48 +08 14.0 17.2	-0.92 + 9.2	1.8/17.8	37287	2311 T-3	2000 02 17.3	10 00.79 -00 16.4 18.4	-0.77 + 5.2	3.8/21.1	30683
1999 XF ₃₄	2000 02 16.5	09 57.73 +32 53.3 16.0	-0.79 +19.7	7.9/07.9	38137	1997 NU ₁	2000 02 17.3	10 00.91 +10 26.3 18.4	-0.84 + 4.6	0.5/17.9	34015
1998 QU ₁₂	2000 02 16.5	09 57.80 +08 44.9 19.5	-1.02 + 6.6	1.3/17.6	33347	1998 UQ	2000 02 17.4	10 00.94 +27 03.6 20.6	-1.10 + 4.2	4.5/13.4	34306
1998 RA ₇₉	2000 02 16.6	09 57.75 +11 35.1 19.3	-0.88 + 7.3	8.3/08.0	35716	1994 WK ₂	2000 02 17.4	10 01.05 +24 56.0 15.5	-0.79 + 8.9	5.4/13.1	37642
2796 P-L	2000 02 16.6	09 57.86 +12 57.9 19.5	-0.92 + 6.0	0.2/16.5	36120	1993 VH ₅	2000 02 17.4	10 01.28 +14 28.6 19.0	-0.83 + 5.2	0.7/16.8	35689
1999 AK ₃	2000 02 16.6	09 57.93 -10 00.0 17.5	-0.87 + 3.9	7.5/23.3	38068	(10153)	2000 02 17.5	10 01.30 +10 18.5 18.1	-0.96 + 8.7	0.6/18.1	33894
1998 WA ₃₂	2000 02 16.6	09 57.94 +10 27.4 17.3	-0.83 + 4.5	0.6/17.2	38067	(13302)	2000 02 17.5	10 01.41 +03 31.8 16.6	-1.02 + 3.8	3.8/19.8	37568
1157 T-3	2000 02 16.6	09 57.99 -00 02.1 18.3	-0.82 + 3.2	3.7/20.1	38193	1998 RF ₁	2000 02 17.5	10 01.51 +12 25.8 19.2	-1.05 + 3.7	0.1/17.5	36085
(12975)	2000 02 16.6	09 58.03 -02 48.7 17.1	-0.83 + 9.0	5.2/21.6	37480	1991 PR ₁₆	2000 02 17.5	10 01.61 +12 29.2 18.3	-1.01 + 6.0	0.1/17.5	34493
1993 YF	2000 02 16.6	09 58.07 +14 39.0 18.0	-0.81 + 4.9	0.7/16.0	38030	1995 WY ₄₁	2000 02 17.6	10 01.62 +06 48.5 17.4	-1.06 + 4.7	2.1/19.0	38036
1998 SU ₃₅	2000 02 16.6	09 58.09 +28 49.5 19.4	-1.08 + 2.6	5.3/12.5	35717	(9846)	2000 02 17.6	10 01.70 +23 24.6 16.3	-1.21 + 1.9	4.7/14.8	33456
(9936)	2000 02 16.6	09 58.17 +05 10.4 16.9	-0.83 + 1.6	1.9/18.5	35414	1998 QB ₇₅	2000 02 17.6	10 02.01 +00 24.9 17.8	-1.02 + 1.9	4.1/20.6	37733
(11190)	2000 02 16.7	09 58.14 +21 29.2 18.8	-1.09 + 4.7	3.2/14.3	35260	1998 QF ₄₉	2000 02 17.7	10 02.01 +12 04.4 16.8	-0.85 + 8.2	0.0/17.7	38057
1998 SS ₆₁	2000 02 16.7	09 58.19 -05 45.9 17.5	-0.85 + 6.8	6.4/22.4	38063	(13275)	2000 02 17.7	10 02.03 +13 14.0 17.1	-0.91 + 7.9	0.4/17.4	37560
1998 QX ₃₉	2000 02 16.7	09 58.27 +12 22.5 18.5	-1.01 + 7.3	9.1/28.0	34020	1998 RE ₄₇	2000 02 17.7	10 02.15 +02 20.3 18.3	-0.96 + 6.2	3.4/20.5	38059
1991 PV ₅	2000 02 16.7	09 58.40 +14 00.2 20.2	-1.01 + 6.7	0.5/16.3	35683	(12779)	2000 02 17.7	10 02.23 +15 59.0 17.2	-0.86 + 6.3	1.4/16.6	37059
1998 SZ ₃₅	2000 02 16.7	09 58.43 +25 37.6 19.6	-1.01 + 4.0	4.1/13.2	34023	1998 QO ₃₆	2000 02 17.7	10 02.24 +06 07.5 18.5	-0.97 + 5.0	2.1/19.4	33082
1998 TW ₃₂	2000 02 16.7	09 58.47 -07 47.2 17.4	-0.84 + 6.8	6.6/23.1	37794	1998 WP ₁₅	2000 02 17.8	10 02.51 +36 44.9 17.7	-0.89 + 4.7	7.1/09.9	37804
4602 P-L	2000 02 16.8	09 58.57 +12 17.7 18.4	-0.81 + 4.6	7.3/08.0	34338	1984 EQ	2000 02 17.8	10 02.51 +19 52.9 16.3	-1.01 0.0	2.7/16.0	38019

1998 SW ₇₃	2000 02 17.8	10 02.59 +24 53.5 18.1	-1.11 + 4.3	4.5/14.4	35718
1998 TP ₂	2000 02 17.8	10 02.62 +10 02.1 17.6	-0.89 + 4.5	0.6/18.4	37792
1997 GA ₃₇	2000 02 17.9	10 02.80 +03 18.1 18.1	-0.99 + 7.1	3.6/20.4	32520
1998 VN ₈	2000 02 17.9	10 02.86 +12 59.5 18.4	-0.98 + 4.4	0.3/17.6	35724
(9824)	2000 02 17.9	10 02.99 +16 27.4 17.6	-0.85 + 4.8	1.4/16.7	33217
1993 TO ₂₂	2000 02 17.9	10 03.06 +15 59.4 18.8	-0.86 + 4.9	1.2/16.8	34191
1998 SF ₁₁₁	2000 02 17.9	10 03.13 +10 08.0 19.4	-0.97 + 5.3	0.6/18.5	37778
1991 PD ₁₁	2000 02 17.9	10 03.23 +13 16.9 17.1	-1.03 + 8.5	0.5/17.6	38024
1994 TX	2000 02 18.0	10 03.43 +17 05.8 18.7	-0.97 + 4.7	1.7/16.7	35691
1996 AV ₁	2000 02 18.0	10 03.47 +13 37.3 17.5	-0.95 + 6.4	0.7/17.6	35694
1998 QE ₂₃	2000 02 18.0	10 03.60 +18 20.8 16.4	-1.00 + 5.1	2.8/16.3	38055
(10179)	2000 02 18.1	10 03.65 +13 12.8 17.0	-0.84 + 9.3	0.4/17.7	33900
1993 FA ₁₅	2000 02 18.1	10 03.65 +25 01.1 17.8	-1.06 + 4.6	4.6/14.5	37263
1998 UR ₈	2000 02 18.2	10 04.08 +11 38.9 18.5	-0.91 + 4.3	0.1/18.3	33310
1997 OK	2000 02 18.2	10 04.26 +03 59.6 20.3	-0.90 + 2.5	2.2/20.3	30788
1991 RA ₁₇	2000 02 18.2	10 04.32 +23 18.6 18.4	-1.10 + 4.4	4.0/15.2	33546
1994 TQ ₃	2000 02 18.3	10 04.43 +29 04.7 17.7	-1.10 + 2.4	5.7/13.8	34507
1998 VG	2000 02 18.3	10 04.46 +17 48.3 17.6	-0.82 + 4.2	1.8/16.6	38066
1998 QN ₃₄	2000 02 18.3	10 04.61 +14 26.3 19.5	-1.09 + 4.2	0.9/17.7	34591
1998 SK ₁₃₂	2000 02 18.3	10 04.71 +09 55.9 16.3	-0.98 + 3.0	0.8/18.9	38064
1998 SP ₁₃₅	2000 02 18.4	10 04.71 +17 05.0 19.0	-1.09 + 6.1	1.9/17.0	34024
1997 RQ ₃	2000 02 18.4	10 04.72 +12 42.7 18.6	-0.74 + 4.4	0.2/18.1	33557
1998 VR ₅	2000 02 18.4	10 04.82 +15 30.1 19.3	-0.92 + 4.0	1.0/17.4	35723
1998 VK ₃₂	2000 02 18.4	10 05.05 -09 53.8 19.4	-0.84 + 4.9	5.7/25.0	35637
7066 P-L	2000 02 18.5	10 05.14 -02 08.4 17.3	-0.73 + 5.2	3.6/22.7	38191
1998 VP ₁₅	2000 02 18.5	10 05.26 +04 15.8 17.0	-0.98 + 6.2	3.2/20.6	38066
1995 DM ₉	2000 02 18.5	10 05.30 +14 20.3 20.1	-0.77 + 4.3	0.7/17.8	32944
(12657)	2000 02 18.5	10 05.47 +09 43.7 16.8	-0.85 + 2.4	0.6/19.1	37026
2589 P-L	2000 02 18.5	10 05.50 +12 08.5 15.8	-0.86 + 6.8	0.2/18.5	38190
(11315)	2000 02 18.6	10 05.49 +08 52.4 17.8	-0.99 + 5.4	1.0/19.4	35569
1991 RB ₁₀	2000 02 18.6	10 05.50 +07 52.3 17.9	-1.04 + 4.2	1.4/19.6	33546
1990 SK ₂₈	2000 02 18.6	10 05.68 +12 59.2 17.4	-0.96 + 4.4	0.4/18.3	38023
1998 QL ₅₇	2000 02 18.6	10 05.76 +09 32.4 17.5	-1.01 + 6.1	0.9/19.3	38057
1984 UJ ₁	2000 02 18.6	10 05.78 +21 12.5 17.8	-1.11 + 4.2	3.4/16.2	38019
1982 JR ₂	2000 02 18.6	10 05.84 +17 15.4 17.3	-0.84 + 6.6	2.0/17.0	34174
(9719)	2000 02 18.7	10 05.85 +16 52.9 16.9	-0.93 + 3.3	1.8/17.3	33192
1999 VO ₇₂	2000 02 18.7	10 06.01 +11 13.9 16.8	-0.86 + 2.3	0.1/18.9	37840
(9738)	2000 02 18.7	10 06.03 +12 04.5 16.0	-1.07 + 0.1	0.1/18.6	33196
(13265)	2000 02 18.8	10 06.60 +14 31.0 17.0	-1.07 + 3.5	1.2/18.1	37558
1997 JC ₁₄	2000 02 18.8	10 06.67 +00 33.1 18.4	-0.85 + 6.5	3.3/22.2	34296
1997 GX ₂₃	2000 02 18.9	10 06.65 +26 45.5 18.6	-1.02 + 5.0	4.6/14.5	35699
1998 SO ₁₄₆	2000 02 18.9	10 06.79 +16 23.8 17.6	-0.89 + 5.2	1.6/17.6	34025
1999 XN ₁₆₅	2000 02 18.9	10 06.99 +29 15.4 16.1	-0.99 + 6.8	6.9/13.4	37965
1996 BY ₂	2000 02 19.0	10 07.13 +10 26.1 16.2	-0.91 + 7.6	0.5/19.4	37269
1996 GG ₂₀	2000 02 19.0	10 07.31 +12 22.4 18.3	-0.81 + 5.1	0.2/18.8	33343
1994 AC ₃	2000 02 19.0	10 07.43 +12 23.0 17.5	-0.79 + 4.2	0.3/18.9	37265
1998 WJ ₁₉	2000 02 19.0	10 07.44 +08 23.9 17.9	-0.96 + 5.7	1.1/20.0	35727
2148 T-2	2000 02 19.1	10 07.59 +00 02.0 18.2	-0.85 + 7.7	3.7/22.8	38192
1998 SB ₆₃	2000 02 19.1	10 07.91 +44 55.3 16.5	-1.36 - 1.2	11.7/10.5	38063
(9834)	2000 02 19.2	10 07.79 -02 09.2 17.4	-0.79 + 4.0	4.1/23.2	33453
(9890)	2000 02 19.2	10 07.86 +12 37.9 17.3	-1.08 + 6.1	0.4/18.9	33466

1994 PB ₃	2000 02 19.2	10 07.93 +09 54.2 18.0	-0.89 + 8.5	0.6/19.7	32666
1998 WO ₁₆	2000 02 19.2	10 07.96 +21 33.4 18.5	-0.81 + 4.3	3.1/16.3	34311
1997 JA ₁₃	2000 02 19.2	10 08.01 +10 31.5 19.9	-0.94 + 6.2	0.3/19.5	33498
1998 QG ₉₂	2000 02 19.2	10 08.06 +15 34.0 19.8	-0.96 + 6.1	1.2/18.1	33562
1068 T-1	2000 02 19.2	10 08.10 -01 06.7 18.9	-0.83 + 5.6	3.5/23.0	36122
1994 PT ₂₀	2000 02 19.2	10 08.20 +10 41.1 19.1	-0.97 + 4.8	0.3/19.5	38032
1998 VG ₃₃	2000 02 19.2	10 08.23 +36 16.8 20.2	-1.07 + 4.7	7.3/11.9	33518
(13222)	2000 02 19.3	10 08.58 +01 30.3 16.7	-0.94 + 1.7	3.6/21.9	37546
1998 SU ₈₅	2000 02 19.4	10 08.77 +17 54.5 19.4	-1.13 + 4.2	2.5/17.8	33039
1998 ST ₁₂₄	2000 02 19.5	10 09.24 +23 01.4 19.5	-1.01 + 3.2	4.2/16.4	33042
1994 PQ ₃₂	2000 02 19.5	10 09.38 +05 30.6 19.2	-0.93 + 6.7	2.0/21.3	33551
(13140)	2000 02 19.6	10 09.34 +19 18.8 17.8	-0.95 + 5.3	2.6/17.4	37524
(11394)	2000 02 19.6	10 09.57 +24 15.4 17.4	-0.79 + 5.8	3.5/15.6	35588
1989 AN ₅	2000 02 19.6	10 09.63 +16 41.5 18.1	-0.77 + 6.9	1.6/18.0	37258
1998 WO ₁₅	2000 02 19.6	10 09.66 +30 28.4 19.7	-0.95 + 5.3	5.5/13.8	35726
(9781)	2000 02 19.6	10 09.69 +24 29.1 17.8	-1.04 + 4.3	4.2/16.0	33207
1994 RA ₁	2000 02 19.6	10 09.74 +10 06.3 19.7	-0.96 + 6.0	0.4/20.0	37640
(13320)	2000 02 19.7	10 09.80 +14 56.0 17.9	-0.99 + 6.5	1.2/18.7	37573
1998 SK ₁₄₅	2000 02 19.7	10 09.82 +09 25.1 19.3	-0.95 + 5.8	0.6/20.3	33297
1998 VN ₄₀	2000 02 19.7	10 09.85 +15 37.5 19.5	-0.82 + 4.9	1.3/18.5	36085
1981 QL ₂	2000 02 19.7	10 09.94 +16 14.1 18.6	-1.11 + 3.9	1.8/18.5	33540
1993 SQ ₁₄	2000 02 19.7	10 10.05 -27 21.6 18.0	-1.13 + 5.6	16.1/04.7	38030
1998 XB ₁₄	2000 02 19.7	10 10.12 +08 09.4 18.9	-0.84 + 5.3	0.9/20.7	36541
1997 GJ ₁₃	2000 02 19.7	10 10.15 +08 15.0 19.5	-0.97 + 5.8	1.0/20.7	34296
1998 TN ₃₀	2000 02 19.8	10 10.15 +10 37.7 19.0	-0.95 + 5.3	0.2/20.0	38065
1996 HC ₂₅	2000 02 19.8	10 10.17 +11 07.4 18.1	-0.83 + 5.5	0.1/19.9	38038
1998 RL ₇₈	2000 02 19.8	10 10.38 +18 57.6 19.7	-1.06 + 5.4	2.7/17.7	34927
1998 QY ₄₇	2000 02 19.8	10 10.38 +05 56.1 17.7	-0.93 + 8.3	2.1/21.5	38057
1998 SF ₁₆₄	2000 02 19.8	10 10.39 +30 29.6 18.7	-1.00 + 3.7	6.3/14.3	34305
1998 SG ₂₄	2000 02 19.8	10 10.42 +18 22.2 17.9	-1.00 + 5.3	2.7/17.9	38061
1981 ED ₁₈	2000 02 19.9	10 10.53 +08 19.1 17.5	-0.83 + 5.3	1.0/20.8	35677
1993 TP ₂₅	2000 02 19.9	10 10.54 +21 42.7 19.8	-0.90 + 4.1	3.2/16.9	33486
1998 XL ₄	2000 02 19.9	10 10.62 +19 39.7 18.2	-0.93 + 5.3	2.7/17.5	36086
1148 T-1	2000 02 19.9	10 10.71 +13 23.4 17.9	-1.10 + 4.9	0.9/19.4	33129
(13357)	2000 02 19.9	10 10.86 -01 02.2 16.4	-0.81 + 5.2	4.9/23.6	37584
1998 SR ₇₄	2000 02 20.0	10 10.87 +24 31.7 17.1	-0.99 + 4.1	4.9/16.2	33758
1992 EZ ₆	2000 02 20.0	10 10.91 +17 25.7 18.4	-0.91 + 8.4	2.0/18.1	30687
1998 ND	2000 02 20.0	10 10.95 -20 08.6 19.8	-1.09 + 1.6	9.4/28.7	33755
2564 P-L	2000 02 20.0	10 11.02 +15 20.5 18.1	-0.94 + 4.6	1.4/18.9	33383
1998 QX ₅₁	2000 02 20.0	10 11.08 +02 33.7 17.4	-0.95 + 6.6	3.6/22.6	38057
1998 SS ₆₇	2000 02 20.0	10 11.15 +19 58.7 18.4	-1.08 + 6.4	3.1/17.6	38063
(13109)	2000 02 20.0	10 11.19 -01 34.8 16.5	-0.86 + 5.1	5.9/23.9	37516
1997 CZ ₂₁	2000 02 20.0	10 11.20 +14 41.7 18.9	-1.12 + 4.8	1.6/19.1	32956
1992 ED ₁₄	2000 02 20.0	10 11.22 +06 07.1 17.3	-0.86 + 6.8	1.5/21.6	38026
1998 QT ₃₇	2000 02 20.0	10 11.28 +08 03.1 19.8	-0.87 + 7.1	0.9/21.0	33082
1998 UO ₁₅	2000 02 20.0	10 11.29 +10 47.8 18.8	-0.94 + 5.1	0.1/20.2	38065
1981 EJ ₂₄	2000 02 20.0	10 11.34 +18 35.3 18.8	-1.05 + 3.7	2.7/18.1	26919
1998 MG ₁₆	2000 02 20.1	10 11.33 +11 14.8 19.9	-0.97 + 6.4	0.0/20.1	33078
1996 BZ	2000 02 20.1	10 11.62 +17 23.8 16.9	-0.87 + 8.7	2.7/18.2	38037
1998 VB ₂₀	2000 02 20.1	10 11.64 +24 19.7 18.9	-1.06 + 5.5	4.6/16.4	34595
1998 UR ₂₄	2000 02 20.1	10 11.64 +14 12.4 19.4	-0.79 + 4.6	0.8/19.3	35723

1997 QF	2000 02 20.2	10 11.66 +15 24.3 17.5	-0.78 + 8.6	1.3/18.8	38045	1995 WY ₇	2000 02 21.1	10 15.12 +12 58.3 17.8	-1.08 + 4.4	0.7/20.5	32241
1997 FW ₃	2000 02 20.2	10 11.80 +13 17.9 18.7	-1.08 + 4.3	0.8/19.7	33344	1998 SN ₁₃₈	2000 02 21.1	10 15.24 +15 56.6 17.2	-0.86 + 3.2	1.9/19.7	38064
1991 VM ₅	2000 02 20.2	10 11.88 +21 23.5 17.5	-1.03 + 5.7	3.4/17.3	38025	(13093)	2000 02 21.1	10 15.29 -01 47.7 16.6	-0.75 + 6.3	4.0/25.1	37512
1993 FH ₁₁	2000 02 20.2	10 11.88 +25 42.3 18.0	-1.12 + 2.9	5.1/16.5	35687	1998 VC ₃₄	2000 02 21.2	10 15.62 +09 54.4 18.5	-0.84 + 4.4	0.3/21.5	38066
1993 FH ₂₀	2000 02 20.2	10 11.88 +08 53.9 17.9	-1.01 + 5.2	0.9/20.9	33071	1998 SO ₄₅	2000 02 21.2	10 15.78 +12 39.2 17.7	-0.95 + 6.0	0.8/20.7	35717
(10240)	2000 02 20.3	10 12.02 +09 11.9 16.9	-0.83 + 4.9	0.6/20.9	38016	1998 UW ₁₈	2000 02 21.3	10 15.86 +19 15.2 18.1	-0.82 + 3.8	2.5/18.8	35722
(12781)	2000 02 20.3	10 12.04 +10 53.8 17.6	-0.83 + 4.9	0.1/20.4	37059	1990 EL ₂	2000 02 21.3	10 15.88 +00 51.9 17.8	-0.95 + 6.8	4.3/24.2	38022
2621 P-L	2000 02 20.3	10 12.10 +21 13.9 19.7	-1.11 + 3.9	3.6/17.6	33383	1992 WX ₁	2000 02 21.3	10 15.91 +06 31.9 17.7	-1.08 + 5.1	1.7/22.5	32515
(10030)	2000 02 20.3	10 12.12 +11 42.4 18.5	-0.77 + 4.1	0.1/20.2	33865	1998 WD ₁	2000 02 21.3	10 16.09 +21 29.3 17.7	-0.74 + 8.3	2.8/17.7	33764
4820 P-L	2000 02 20.3	10 12.13 +23 16.9 18.3	-0.90 + 2.7	3.8/16.9	21121	1998 SV ₇₃	2000 02 21.3	10 16.29 +22 18.3 18.9	-1.08 + 4.8	4.0/18.2	34593
5082 T-3	2000 02 20.4	10 12.60 +17 25.6 18.8	-1.00 + 7.0	2.2/18.6	36125	1981 DH ₃	2000 02 21.3	10 16.32 -04 01.4 18.8	-0.90 + 5.3	4.6/25.7	26914
1995 UX ₄₈	2000 02 20.4	10 12.85 +12 01.3 17.2	-1.04 + 5.4	0.4/20.2	36886	1977 TO ₆	2000 02 21.4	10 16.26 +21 22.2 18.1	-1.03 + 6.3	3.6/18.3	38017
1997 EQ ₃₂	2000 02 20.4	10 12.87 +17 57.4 19.3	-1.11 + 4.0	2.4/18.7	35699	1998 QO ₉₅	2000 02 21.4	10 16.38 +01 03.4 18.1	-0.94 + 7.1	3.5/24.4	35713
1998 WA ₁₈	2000 02 20.5	10 12.81 +06 14.6 17.3	-0.81 + 3.4	1.4/21.9	38067	1998 VG ₂	2000 02 21.4	10 16.53 +14 28.9 19.8	-1.02 + 5.0	1.2/20.4	35723
1998 SJ ₂₆	2000 02 20.5	10 12.92 +35 21.9 17.1	-0.98 + 2.1	8.0/13.5	37768	1998 SC ₁₁₈	2000 02 21.5	10 16.72 +08 38.0 19.8	-0.97 + 5.5	0.7/22.1	34023
1992 EP ₁₀	2000 02 20.5	10 12.96 +05 57.5 17.2	-0.81 +11.5	1.8/22.3	38026	1998 SS ₃₇	2000 02 21.5	10 16.74 +05 04.4 18.8	-1.02 + 6.3	2.1/23.1	35717
1998 TQ ₃₃	2000 02 20.5	10 13.03 +36 28.1 16.6	-1.08 + 2.3	9.5/12.9	35721	1997 TC	2000 02 21.5	10 16.75 +13 15.7 18.1	-0.83 + 4.3	0.8/20.8	35701
(12705)	2000 02 20.5	10 13.07 +19 32.8 16.8	-0.97 + 4.9	3.1/18.1	37039	1997 OJ ₁	2000 02 21.5	10 16.94 +14 39.9 18.9	-0.82 + 5.1	1.2/20.4	33345
1990 VW ₈	2000 02 20.5	10 13.09 -11 07.4 16.7	-0.84 + 6.6	8.6/28.0	38023	(9858)	2000 02 21.5	10 16.96 +13 10.2 18.0	-0.74 + 4.5	0.6/20.8	33459
1998 RG ₆₀	2000 02 20.5	10 13.20 +05 15.1 20.6	-0.90 + 5.7	1.8/22.3	35715	1998 VG ₃₁	2000 02 21.5	10 16.97 +16 54.0 18.1	-0.96 + 3.6	2.0/19.9	34028
1996 BU	2000 02 20.5	10 13.22 +00 43.7 18.1	-1.00 + 3.8	3.8/23.4	38037	1991 QJ	2000 02 21.5	10 17.06 +09 09.1 17.7	-0.98 + 7.6	0.5/22.0	33545
1998 RG ₇₉	2000 02 20.6	10 13.21 +16 48.7 19.0	-1.05 + 6.6	2.0/19.0	34302	1997 QS ₄	2000 02 21.6	10 17.09 +09 17.3 18.6	-0.75 + 4.4	0.3/22.0	38045
6871 P-L	2000 02 20.6	10 13.24 +12 37.3 18.9	-1.01 + 6.7	0.7/20.2	30088	1997 MJ ₂	2000 02 21.7	10 17.54 +22 39.8 17.4	-0.97 + 7.3	4.8/18.0	38045
(9756)	2000 02 20.6	10 13.36 +07 20.7 16.9	-0.84 + 6.4	1.3/21.7	33200	1998 QU ₁₃	2000 02 21.7	10 17.67 +08 20.6 17.2	-1.10 + 3.4	0.9/22.3	38055
(13388)	2000 02 20.6	10 13.53 -13 09.5 16.3	-0.90 + 3.8	8.4/28.0	37592	1994 RH ₉	2000 02 21.7	10 17.73 +16 28.9 19.1	-1.01 + 3.6	1.7/20.2	33551
1994 TJ ₁	2000 02 20.6	10 13.63 +05 54.5 18.8	-0.89 + 6.7	1.6/22.2	35691	1990 QN ₇	2000 02 21.7	10 17.76 +15 03.1 17.2	-1.03 + 5.4	1.7/20.5	38022
1998 QZ ₉₉	2000 02 20.7	10 13.70 +16 44.6 18.6	-0.99 + 5.2	2.0/19.1	34021	1998 WF ₁₁	2000 02 21.8	10 18.11 +12 52.8 18.1	-0.82 + 5.5	0.7/21.2	35726
1997 GX ₃₅	2000 02 20.7	10 13.90 +06 56.2 18.2	-0.94 + 7.0	1.4/22.0	33344	1996 JT ₇	2000 02 21.9	10 18.21 +22 04.2 19.0	-0.82 + 4.7	3.2/18.4	35696
1998 WL ₂₃	2000 02 20.7	10 13.93 +09 36.4 17.9	-0.83 + 4.6	0.4/21.2	35727	1994 BC ₁	2000 02 21.9	10 18.23 +03 48.2 16.8	-0.86 + 1.5	2.0/23.7	38031
1998 SD ₄₉	2000 02 20.7	10 13.96 +09 15.5 19.5	-0.95 + 6.3	0.6/21.3	35717	1993 BB	2000 02 21.9	10 18.25 +12 10.6 16.6	-0.87 + 9.7	0.7/21.4	37632
1994 ST ₇	2000 02 20.7	10 13.99 +10 24.1 18.2	-0.97 + 6.5	0.2/20.9	38032	1998 SZ ₆₄	2000 02 21.9	10 18.60 +13 47.9 16.7	-0.99 + 7.9	1.3/21.0	35718
1998 SO ₁₄₂	2000 02 20.8	10 13.94 +22 49.1 19.5	-1.02 + 5.0	4.0/17.4	33760	1998 QE ₃₅	2000 02 21.9	10 18.62 +11 37.9 18.6	-0.96 + 6.8	0.4/21.7	38056
1998 UQ ₁₈	2000 02 20.8	10 14.01 +28 35.8 16.7	-0.90 + 4.0	5.4/15.5	35722	1998 UW ₁	2000 02 22.0	10 18.59 +26 18.8 17.2	-0.89 + 6.7	4.5/17.0	35721
1988 VN ₇	2000 02 20.8	10 14.03 +25 36.5 18.5	-1.11 + 5.1	5.6/16.7	38021	1998 VN ₅	2000 02 22.0	10 18.73 +23 44.2 17.6	-0.88 + 2.5	3.8/18.3	35723
1998 SX ₁₂	2000 02 20.8	10 14.09 +12 31.4 16.8	-0.82 +15.0	0.5/20.3	37766	1994 RZ	2000 02 22.0	10 18.76 +11 11.9 19.1	-0.97 + 4.7	0.2/21.9	33073
1998 RU ₆₁	2000 02 20.8	10 14.10 +11 47.9 16.7	-1.05 + 3.5	0.4/20.6	35715	1998 SR ₆₅	2000 02 22.0	10 18.89 +14 07.5 18.4	-0.94 + 5.8	1.2/21.0	35718
1997 GK ₂₁	2000 02 20.9	10 14.34 +07 47.6 18.2	-1.02 + 6.7	1.3/21.8	33344	1988 RQ ₈	2000 02 22.1	10 19.01 +18 15.8 18.2	-1.08 + 5.2	2.7/20.0	33741
1991 RW ₁₇	2000 02 20.9	10 14.40 +06 56.3 17.5	-0.99 + 6.6	1.5/22.0	37261	1998 YF ₇	2000 02 22.1	10 19.02 -06 41.9 18.0	-0.70 + 4.3	4.1/27.5	38067
1995 UR	2000 02 20.9	10 14.41 -23 02.1 16.9	-1.47 - 6.7	15.2/27.9	38035	1998 SU ₄₀	2000 02 22.1	10 19.03 +08 03.3 18.1	-0.95 + 5.5	0.9/22.8	35441
1993 FE ₂₂	2000 02 20.9	10 14.45 +09 04.6 19.2	-0.98 + 5.6	0.7/21.4	33683	1998 RU ₆₇	2000 02 22.1	10 19.04 +06 57.0 18.7	-1.03 + 5.8	1.2/23.1	33565
1998 SL ₁₆₄	2000 02 20.9	10 14.46 +18 26.2 20.9	-0.91 + 5.0	2.1/18.8	34593	(13047)	2000 02 22.1	10 19.16 +05 39.1 16.8	-0.94 + 4.8	1.9/23.5	37499
1995 WK ₅	2000 02 20.9	10 14.50 +16 47.5 17.7	-1.05 + 5.1	2.2/19.3	38036	6645 P-L	2000 02 22.1	10 19.22 +21 52.5 20.1	-1.06 + 3.5	3.7/19.1	33384
1995 HY ₂	2000 02 20.9	10 14.58 +12 55.2 17.4	-0.77 + 5.4	0.7/20.3	37267	1998 RG ₇₅	2000 02 22.1	10 19.34 -00 34.4 16.6	-0.78 +10.4	4.1/26.0	37760
1998 SM ₉	2000 02 21.0	10 14.84 +00 19.2 18.2	-0.82 + 6.9	3.4/24.3	35716	1998 WJ ₂	2000 02 22.2	10 19.55 -03 54.5 17.9	-0.82 + 2.5	4.5/26.3	33764
1997 PE ₃	2000 02 21.0	10 14.90 +13 36.7 17.4	-1.05 + 1.2	1.1/20.4	33262	1986 XT	2000 02 22.2	10 19.58 +12 27.8 18.8	-0.96 + 4.5	0.6/21.7	33541
(10063)	2000 02 21.0	10 14.91 +12 47.8 18.2	-0.64 + 4.1	0.5/20.4	33873	1998 RN ₆₁	2000 02 22.3	10 19.73 +07 52.8 18.2	-0.93 + 5.0	0.9/23.0	35715
1992 JQ	2000 02 21.0	10 14.95 -00 22.3 16.7	-0.82 + 8.9	4.1/24.7	38026	1998 SF ₂	2000 02 22.3	10 20.16 +16 58.2 19.3	-1.05 + 7.1	2.3/20.5	33566
1998 QZ ₇₆	2000 02 21.0	10 14.97 -03 46.9 19.6	-0.84 + 7.7	4.5/25.8	34591	1997 OL ₂	2000 02 22.4	10 20.39 +07 31.5 19.0	-0.78 + 4.0	0.8/23.3	35700
1998 QB ₁₄	2000 02 21.0	10 15.10 +06 08.3 19.0	-0.93 + 7.2	1.6/22.5	32692	1998 SR ₁	2000 02 22.4	10 20.43 +16 40.0 18.4	-1.00 + 6.3	2.1/20.6	35716
1996 GG ₁₈	2000 02 21.0	10 15.12 +04 07.4 17.8	-0.83 + 5.5	2.3/23.1	35695	1998 TT ₅	2000 02 22.5	10 20.50 +31 05.9 16.2	-0.87 + 3.8	7.4/15.9	38065
1986 QU	2000 02 21.1	10 15.09 +14 32.8 18.1	-0.78 + 3.8	1.0/20.0	33541	1998 QW ₂₃	2000 02 22.5	10 20.67 +05 55.4 16.9	-0.88 +10.8	1.9/24.0	35710