

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
137238 1999 RN₂₉										80250 1999 WW₉ (continuation)									
12 23	18 49.13	-6 47.3	3.854	2.950	6.6	21.4	20 E	14*	-	2 1	20 14.94	-20 27.2	3.165	2.202	4.4	20.2	10 W	-	4*
1 2	19 4.37	-6 37.2	3.857	2.930	5.6	21.3	17 E	9*	-	2 11	20 36.80	-19 21.0	3.106	2.167	6.7	20.2	15 W	-	9*
1 12	19 19.75	-6 18.0	3.843	2.909	5.3	21.3	16 W	7*	-	2 21	20 58.72	-18 4.4	3.038	2.133	8.9	20.3	20 W	1*	14*
1 22	19 35.20	-5 49.8	3.815	2.887	5.7	21.3	17 W	11*	-	3 2	21 20.66	-16 37.9	2.962	2.098	11.2	20.3	24 W	3*	18*
2 1	19 50.64	-5 13.0	3.771	2.864	6.7	21.3	20 W	14*	2*	3 12	21 42.58	-15 2.4	2.879	2.064	13.4	20.2	29 W	4*	23*
2 11	20 5.99	-4 27.9	3.712	2.840	8.2	21.3	24 W	16*	9*	3 22	22 4.51	-13 18.5	2.790	2.029	15.6	20.2	33 W	5*	27*
2 21	20 21.19	-3 35.1	3.639	2.815	9.8	21.3	29 W	18*	16*	4 1	22 26.44	-11 27.2	2.695	1.995	17.7	20.2	37 W	6*	31*
3 2	20 36.18	-2 35.2	3.553	2.789	11.5	21.3	34 W	20*	22*	4 11	22 48.39	-9 29.7	2.597	1.961	19.8	20.1	41 W	7*	35*
3 12	20 50.88	-1 28.9	3.454	2.761	13.3	21.3	40 W	22*	29*	4 21	23 10.40	-7 26.9	2.496	1.928	21.8	20.1	45 W	9*	39*
3 22	21 5.25	-0 17.0	3.343	2.733	15.0	21.2	45 W	24*	34*	5 1	23 32.50	-5 20.2	2.393	1.896	23.7	20.0	49 W	10*	43*
4 1	21 19.22	+0 59.8	3.222	2.704	16.6	21.2	51 W	26*	40*	5 11	23 54.72	-3 10.9	2.289	1.864	25.6	19.9	53 W	12*	47*
4 11	21 32.72	+2 20.4	3.092	2.673	18.2	21.1	57 W	28*	45*	5 21	0 17.13	-1 0.3	2.184	1.834	27.4	19.8	57 W	15*	49*
4 21	21 45.70	+3 43.9	2.954	2.642	19.7	21.1	62 W	31*	49*	5 31	0 39.74	+1 9.8	2.080	1.805	29.2	19.7	60 W	18*	52*
5 1	21 58.07	+5 9.2	2.808	2.609	21.0	21.0	68 W	33*	53*	6 10	1 2.59	+3 17.9	1.978	1.778	30.8	19.7	64 W	21*	53*
5 11	22 9.73	+6 35.0	2.658	2.576	22.2	20.8	74 W	37*	55*	6 20	1 25.69	+5 22.3	1.877	1.752	32.3	19.6	67 W	25*	54*
5 21	22 20.57	+8 0.0	2.503	2.541	23.1	20.7	81 W	40*	56*	6 30	1 49.01	+7 21.0	1.778	1.728	33.7	19.4	70 W	30*	54*
5 31	22 30.44	+9 22.3	2.346	2.506	23.8	20.6	87 W	44*	55	7 10	2 12.52	+9 12.1	1.681	1.707	34.9	19.3	74 W	35*	54*
6 10	22 39.17	+10 39.8	2.189	2.470	24.2	20.4	94 W	48*	53	7 20	2 36.14	+10 54.1	1.587	1.688	36.0	19.2	77 W	41*	53*
6 20	22 46.53	+11 50.1	2.032	2.432	24.3	20.2	101 W	53*	52	7 30	2 59.70	+12 25.2	1.497	1.671	36.9	19.1	81 W	46*	51*
6 30	22 52.26	+12 49.8	1.878	2.394	23.8	20.0	108 W	57*	51	8 9	3 23.03	+13 44.0	1.409	1.657	37.5	19.0	85 W	51*	50*
7 10	22 56.07	+13 34.6	1.730	2.355	22.9	19.7	116 W	59	50	8 19	3 45.87	+14 49.7	1.324	1.647	37.9	18.8	89 W	55*	49
7 15	22 57.17	+13 50.0	1.659	2.336	22.2	19.6	120 W	59	50	8 29	4 7.86	+15 41.8	1.241	1.639	38.0	18.7	93 W	59*	48
7 20	22 57.66	+13 59.5	1.590	2.316	21.4	19.5	124 W	59	50	9 8	4 28.60	+16 20.9	1.163	1.634	37.7	18.5	97 W	61*	48
7 25	22 57.52	+14 2.5	1.523	2.296	20.3	19.3	128 W	59	50	9 18	4 47.62	+16 48.0	1.087	1.633	36.9	18.3	103 W	62	47
7 30	22 56.73	+13 57.9	1.460	2.275	19.1	19.2	133 W	59	50	9 28	5 4.32	+17 5.0	1.015	1.635	35.6	18.2	108 W	62	47
8 4	22 55.29	+13 45.0	1.401	2.255	17.7	19.0	137 W	59	50	10 8	5 18.11	+17 15.1	0.947	1.640	33.6	18.0	115 W	62	47
8 9	22 53.19	+13 22.9	1.345	2.234	16.2	18.9	142 W	58	51	10 18	5 28.30	+17 21.6	0.885	1.648	30.8	17.7	122 W	62	47
8 14	22 50.45	+12 50.7	1.294	2.213	14.4	18.7	147 W	58	51	10 28	5 34.24	+17 28.3	0.831	1.659	27.0	17.5	131 W	62	47
8 19	22 47.12	+12 7.9	1.248	2.192	12.6	18.5	152 W	57	52	11 7	5 35.53	+17 38.9	0.787	1.674	22.2	17.3	140 W	63	46
8 29	22 39.08	+10 9.3	1.172	2.150	9.1	18.2	160 W	55	54	11 17	5 32.11	+17 55.6	0.756	1.691	16.5	17.0	151 W	63	46
9 8	22 30.07	+7 30.0	1.121	2.108	7.6	18.0	164 E	53	56	11 22	5 28.81	+18 6.6	0.747	1.700	13.3	16.9	157 W	63	46
9 18	22 21.40	+4 20.3	1.096	2.065	10.1	18.0	159 E	49	60	11 27	5 24.69	+18 19.3	0.743	1.710	9.9	16.8	163 W	63	46
9 23	22 17.64	+2 39.3	1.093	2.043	12.4	18.1	154 E	48	61	12 2	5 19.96	+18 33.4	0.743	1.721	6.5	16.6	169 W	64	45
9 28	22 14.49	+0 57.5	1.096	2.021	14.8	18.2	149 E	46	63	12 7	5 14.88	+18 48.9	0.749	1.732	3.4	16.5	174 W	64	45
10 3	22 12.07	+0 42.8	1.104	2.000	17.3	18.2	144 E	44	65	12 12	5 9.73	+19 5.2	0.761	1.744	2.4	16.5	176 E	64	45
10 8	22 10.47	-2 19.5	1.118	1.978	19.7	18.3	138 E	43	66	12 17	5 4.80	+19 22.5	0.777	1.756	5.0	16.7	171 E	64	45
10 13	22 9.75	-3 50.9	1.137	1.957	22.0	18.4	133 E	41	68	12 22	5 0.37	+19 40.4	0.800	1.769	8.1	16.9	165 E	65	44
10 18	22 9.97	-5 15.6	1.159	1.935	24.1	18.5	128 E	40	69	12 27	4 56.64	+19 58.9	0.827	1.782	11.1	17.1	160 E	65	44
10 23	22 11.14	-6 32.6	1.185	1.914	26.0	18.6	123 E	38	71	1 1	4 53.78	+20 18.0	0.860	1.796	13.9	17.3	154 E	65	44
10 28	22 13.25	-7 41.4	1.214	1.892	27.7	18.6	118 E	37	72	1 6	4 51.88	+20 37.5	0.897	1.810	16.5	17.5	148 E	66	43
11 7	22 20.13	-9 33.4	1.278	1.850	30.5	18.8	109 E	35	74	1 11	4 50.99	+20 57.4	0.939	1.824	18.8	17.7	143 E	66	43
11 17	22 30.29	-10 51.8	1.346	1.809	32.5	18.9	100 E	34	75*	1 16	4 51.12	+21 17.6	0.985	1.839	20.9	17.9	138 E	66	43
11 27	22 43.35	-11 38.3	1.416	1.768	33.9	19.0	93 E	33	73*	12 23	18 49.69	-21 20.4	2.647	1.692	6.4	18.9	11 E	3*	3*
12 7	22 58.86	-11 56.1	1.486	1.729	34.7	19.1	86 E	33	68*	1 2	19 14.18	-22 8.4	2.658	1.684	3.7	18.8	6 E	-	-
12 17	23 16.46	-11 48.0	1.553	1.691	35.0	19.1	80 E	33	62*	1 12	19 39.08	-22 41.9	2.654	1.672	1.3	18.6	2 E	-	-
12 27	23 35.86	-11 17.0	1.616	1.656	35.0	19.2	75 E	34	57*	1 22	20 4.42	-23 1.3	2.637	1.657	2.2	18.7	4 W	-	-
1 6	23 56.78	-10 25.9	1.675	1.622	34.7	19.2	70 E	35*	52*	2 1	20 30.22	-23 7.2	2.607	1.638	4.9	18.8	8 W	-	2*
1 16	0 19.03	-9 17.5	1.728	1.592	34.2	19.2	65 E	35*	48*	2 11	20 56.51	-23 0.2	2.564	1.615	7.7	18.8	13 W	-	6*
361611 2007 TY₁₈										7889 1994 LX									
12 23	18 49.16	-27 30.0	2.246	1.296	8.6	21.1	11 E	-	5*	12 23	18 49.69	-21 20.4	2.647	1.692	6.4	18.9	11 E	3*	3*
12 28	19 8.96	-26 57.0	2.241	1.288	8.1	21.1	11 E	-	5*	1 2	19 14.18	-22 8.4	2.658	1.684	3.7	18.8	6 E	-	-
1 2	19 28.68	-26 14.0	2.239	1.282	7.7	21.0	10 E	-	4*	1 12	19 39.08	-22 41.9	2.654	1.672	1.3	18.6	2 E	-	-
1 7	19 48.24	-25 21.2	2.237	1.278	7.3	21.0	9 E	-	3*	1 22	20 4.42	-23 1.3	2.637	1.657	2.2	18.7	4 W	-	-
1 12	20 7.58	-24 19.1	2.238	1.275	6.8	21.0	9 E	-	3*	2 1	20 30.22	-23 7.2	2.607	1.638	4.9	18.8	8 W	-	2*
1 17	20 26.62	-23 8.3	2.240	1.275	6.4	21.0	8 E	-	2*	2 11	20 56.51	-23 0.2	2.564	1.615	7.7	18.8	13 W	-	6*
1 22	20 45.32	-21 49.5	2.245	1.276	5.9	21.0	8 E	-	1*	2 21	21 23.37	-22 40.6	2.509	1.589	10.4	18.9	17 W	-	10*
1 27	21 3.65	-20 23.5	2.251	1.279	5.5	20.9	7 E	-	1*	3 2	21 50.88	-22 8.7	2.444	1.559	13.2	18.9	21 W	-	14*
2 1	21 21.57	-18 51.2	2.259	1.284	5.0	20.9	6 E</												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
7889 1994 LX										2100 Ra-Shalom									
(continuation)										(continuation)									
10 3	12 2.30	+15 11.3	1.818	0.953	22.0	17.5	21 W	13*	—	9 23	9 38.76	+4 18.4	1.108	0.654	63.4	17.7	36 W	22*	23*
10 8	12 23.80	+14 18.6	1.836	0.979	22.1	17.5	22 W	14*	—	9 28	10 10.66	+2 27.9	1.139	0.609	61.4	17.5	32 W	20*	21*
10 13	12 44.72	+13 19.8	1.855	1.006	22.1	17.6	22 W	14*	—	10 3	10 43.20	+0 35.8	1.177	0.566	58.0	17.3	29 W	17*	17*
10 18	13 5.02	+12 16.1	1.876	1.033	22.0	17.7	23 W	14*	—	10 8	11 16.44	-1 16.6	1.223	0.528	53.0	17.1	25 W	14*	14*
10 23	13 24.70	+11 8.9	1.897	1.061	21.9	17.8	23 W	14*	—	10 18	12 25.02	-4 58.9	1.326	0.476	38.2	16.6	17 W	9*	7*
10 28	13 43.76	+9 59.6	1.919	1.089	21.8	17.9	24 W	15*	—	10 28	13 35.07	-8 31.3	1.425	0.476	20.6	16.3	10 W	3*	—
11 2	14 2.23	+8 49.2	1.941	1.117	21.6	17.9	24 W	15*	—	11 7	14 43.25	-11 38.2	1.509	0.528	9.1	16.2	5 W	—	—
11 7	14 20.12	+7 38.8	1.965	1.145	21.4	18.0	25 W	16*	—	11 12	15 15.70	-12 56.8	1.546	0.567	8.7	16.4	5 E	—	—
11 12	14 37.47	+6 29.1	1.988	1.173	21.2	18.1	25 W	17*	—	11 17	15 46.85	-14 3.5	1.583	0.610	10.4	16.7	6 E	—	—
11 17	14 54.30	+5 22.1	2.011	1.201	21.0	18.1	26 W	18*	—	11 22	16 16.62	-14 57.8	1.618	0.655	12.2	16.9	8 E	2*	—
11 27	15 26.49	+3 12.1	2.055	1.255	20.7	18.3	27 W	19*	—	11 27	16 45.04	-15 39.7	1.654	0.701	13.5	17.2	10 E	3*	—
12 7	15 56.92	+1 15.5	2.096	1.307	20.5	18.4	28 W	21*	—	12 7	17 37.98	-16 28.7	1.728	0.790	14.8	17.6	12 E	5*	—
12 17	16 25.80	+0 27.1	2.131	1.357	20.6	18.5	29 W	23*	—	12 17	18 26.13	-16 36.4	1.803	0.872	14.6	17.9	13 E	6*	—
12 27	16 53.27	+1 54.6	2.158	1.404	20.9	18.6	31 W	24*	3*	12 27	19 10.05	-16 10.2	1.877	0.946	13.6	18.1	13 E	7*	—
1 6	17 19.48	+3 7.3	2.175	1.447	21.5	18.7	33 W	26*	8*	1 1	19 30.61	-15 46.6	1.913	0.979	12.9	18.2	13 E	6*	—
1 16	17 44.53	+4 5.7	2.181	1.487	22.3	18.8	35 W	26*	14*	1 6	19 50.33	-15 17.1	1.948	1.010	12.1	18.3	12 E	6*	—
462238 2008 CN₁										3199 Nefertiti									
12 23	18 49.79	-24 15.4	1.463	0.531	20.4	21.1	11 E	—	4*	12 23	18 50.71	-40 17.8	2.507	1.615	11.8	18.6	20 E	—	11*
12 28	19 24.40	-22 42.6	1.412	0.513	27.1	21.1	14 E	3*	6*	1 2	19 24.45	-38 15.4	2.489	1.577	10.7	18.5	17 E	—	9*
1 2	19 58.80	-20 36.2	1.356	0.504	34.5	21.2	17 E	7*	8*	1 12	19 57.05	-35 43.8	2.466	1.538	9.6	18.4	15 E	—	6*
1 7	20 32.50	-18 0.1	1.298	0.505	42.1	21.3	20 E	10*	9*	1 22	20 28.38	-32 44.6	2.438	1.498	8.7	18.2	13 E	—	3*
1 12	21 5.17	-15 0.2	1.238	0.515	49.3	21.5	23 E	14*	11*	2 1	20 58.42	-29 19.4	2.407	1.457	8.1	18.1	12 E	—	1*
2100 Ra-Shalom										3199 Nefertiti									
12 23	18 49.83	-47 20.4	0.417	0.634	137.7	19.7	26 E	—	14*	1 2	20 58.42	-29 19.4	2.407	1.457	8.1	18.1	12 E	—	1*
12 25	18 39.03	-46 3.8	0.426	0.616	140.8	20.1	23 E	—	10*	2 11	21 27.23	-25 30.3	2.371	1.417	7.8	18.0	11 W	—	1*
12 27	18 28.91	-44 35.8	0.436	0.598	143.3	20.4	21 E	—	7*	2 21	21 54.97	-21 18.8	2.332	1.376	8.1	17.9	11 W	—	3*
12 29	18 19.70	-42 57.7	0.449	0.581	145.0	20.7	20 W	—	6*	3 2	22 21.89	-16 46.8	2.290	1.337	8.9	17.9	12 W	—	5*
12 31	18 11.64	-41 11.5	0.464	0.564	145.7	20.8	19 W	—	8*	3 12	22 48.25	-11 55.7	2.246	1.299	10.1	17.8	13 W	—	7*
1 2	18 4.87	-39 19.4	0.482	0.548	145.1	20.7	19 W	—	10*	3 22	23 14.39	-6 47.3	2.200	1.263	11.6	17.8	15 W	—	9*
1 4	17 59.51	-37 24.0	0.503	0.533	143.3	20.5	19 W	—	12*	4 1	23 40.70	-1 23.5	2.155	1.229	13.3	17.7	16 W	1*	10*
1 6	17 55.61	-35 27.7	0.526	0.519	140.3	20.1	20 W	—	13*	4 11	0 7.61	+4 12.9	2.111	1.200	15.1	17.7	18 W	3*	12*
1 8	17 53.20	-33 32.8	0.553	0.507	136.3	19.7	21 W	—	15*	4 21	0 35.64	+9 57.9	2.070	1.174	16.8	17.7	20 W	6*	12*
1 10	17 52.24	-31 41.4	0.582	0.495	131.6	19.2	22 W	—	16*	4 26	0 50.26	+12 52.0	2.051	1.163	17.7	17.7	21 W	8*	12*
1 12	17 52.68	-29 55.1	0.614	0.486	126.4	18.8	23 W	2*	17*	5 1	1 5.38	+15 45.9	2.033	1.153	18.5	17.6	21 W	9*	12*
1 14	17 54.44	-28 14.9	0.648	0.478	120.9	18.5	25 W	4*	18*	5 6	1 21.08	+18 38.5	2.017	1.145	19.2	17.6	22 W	10*	12*
1 16	17 57.43	-26 41.4	0.684	0.473	115.2	18.2	26 W	5*	19*	5 11	1 37.46	+21 28.7	2.003	1.138	19.9	17.6	23 W	12*	12*
1 18	18 1.51	-25 15.0	0.723	0.470	109.3	17.9	27 W	7*	20*	5 16	1 54.61	+24 14.9	1.991	1.133	20.5	17.6	23 W	13*	11*
1 20	18 6.58	-23 55.5	0.762	0.469	103.5	17.7	28 W	8*	20*	5 21	2 12.61	+26 55.5	1.981	1.130	21.1	17.6	24 W	14*	10*
1 22	18 12.50	-22 42.7	0.802	0.470	97.8	17.5	28 W	9*	21*	5 26	2 31.52	+29 28.9	1.973	1.128	21.5	17.6	24 W	15*	9*
1 24	18 19.13	-21 36.1	0.843	0.474	92.3	17.4	29 W	10*	21*	5 31	2 51.40	+31 53.0	1.968	1.127	21.9	17.6	25 W	16*	8*
1 26	18 26.35	-20 35.0	0.884	0.480	87.1	17.3	29 W	11*	21*	6 5	3 12.27	+34 6.0	1.966	1.129	22.2	17.6	25 W	17*	7*
1 28	18 34.03	-19 38.8	0.925	0.488	82.1	17.3	29 W	12*	21*	6 10	3 34.12	+36 5.7	1.965	1.132	22.4	17.7	25 W	18*	6*
1 30	18 42.08	-18 46.9	0.965	0.498	77.4	17.2	30 W	12*	21*	6 15	3 56.91	+37 50.4	1.968	1.136	22.5	17.7	25 W	19*	4*
2 1	18 50.37	-17 58.7	1.005	0.510	73.0	17.2	30 W	13*	21*	6 20	4 20.51	+39 18.5	1.972	1.143	22.5	17.7	26 W	19*	3*
2 6	19 11.72	-16 10.5	1.099	0.545	63.6	17.3	30 W	13*	21*	6 25	4 44.76	+40 28.6	1.979	1.150	22.5	17.7	26 W	19*	2*
2 11	19 33.22	-14 35.0	1.185	0.586	56.1	17.4	30 W	13*	21*	6 30	5 9.42	+41 19.7	1.988	1.159	22.4	17.7	26 W	20*	1*
2 16	19 54.30	-13 7.5	1.263	0.630	50.3	17.5	29 W	13*	21*	7 5	5 34.23	+41 51.7	1.999	1.170	22.2	17.8	26 W	20*	—
2 21	20 14.71	-11 45.0	1.334	0.675	45.7	17.6	29 W	13*	21*	7 10	5 58.92	+42 4.6	2.011	1.182	22.0	17.8	26 W	20*	—
3 2	20 53.11	-9 9.2	1.453	0.766	39.6	17.9	29 W	13*	21*	7 15	6 23.23	+41 59.3	2.025	1.194	21.7	17.8	26 W	20*	—
3 12	21 28.44	-6 40.8	1.546	0.850	36.1	18.2	30 W	12*	23*	7 20	6 46.89	+41 36.9	2.040	1.209	21.5	17.8	26 W	20*	—
3 22	22 1.22	-4 17.3	1.616	0.926	34.2	18.4	31 W	12*	24*	7 25	7 9.73	+40 59.0	2.055	1.224	21.2	17.9	26 W	20*	—
4 1	22 31.99	-1 58.3	1.665	0.993	33.4	18.6	33 W	12*	26*	7 30	7 31.58	+40 7.3	2.071	1.240	20.9	17.9	26 W	20*	—
4 11	23 1.28	+0 16.3	1.696	1.050	33.3	18.8	35 W	12*	28*	8 4	7 52.37	+39 3.6	2.087	1.256	20.7	18.0	26 W	20*	—
4 21	23 29.55	+2 26.1	1.710	1.097	33.8	18.9	37 W	13*	30*	8 9	8 12.06	+37 49.9	2.103	1.274	20.5	18.0	26 W	20*	—
5 1	23 57.21	+4 30.7	1.707	1.135	34.7	19.0	40 W	13*	33*	8 14	8 30.67	+36 27.7	2.119	1.292	20.4	18.0	26 W	20*	—
5 11	0 24.62	+6 29.2	1.690	1.164	35.8	19.0	42 W	14*	35*	8 19	8 48.22	+34 58.6	2.133	1.311	20.3	18.1	27 W	20*	—
5 21	0 52.17	+8 21.0	1.659	1.183	37.2	19.1	45 W	15*	37*	8 24	9 4.76	+33 24.1	2.147	1.330	20.3	18.1	27 W	21*	—
5 31	1 20.20	+10 4.8	1.616	1.193	38.7	19.1	47 W	17*	38*	8 29	9 20.36	+31 45.3	2.159	1.349	20.3	18.2	28 W	21*	—
6 10	1 49.11	+11 39.2	1.564	1.195	40.5	19.1	50 W	19*	40*	9 3	9 35.10	+30 3.3	2.170	1.369	20.5	18.2	28 W	22*	—
6 20	2 19.32	+13 2.5	1.502	1.187	42.4	19.0	52 W	21*	41*	9 8	9 49.03	+28 18.8	2.179	1.389	20.7	18.3	29 W	23*	—
6 30	2 51.29	+14 11.9	1.435	1.170	44.5	18.9	54 W	24*	41*	9 13	10 12.25	+26 32.5	2.186	1.409	21.0	18.3	30 W	24*	1*
7 5	3 8.08	+14 40.4	1.399	1.158	45.6	18.9	55 W	26*	41*	9 18	10 14.80	+24 45.1	2.191	1.429	21.3	18.4	31 W	25*	3*
7 10	3 25.52	+15 4.2	1.363	1.144	46.8	18.9	55 W	27*	41*	9 28	10 38.15	+21 8.7	2.194	1.470	22.3	18.5	34 W	28*	5*
7 15																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
430552 2002 HU₁₁										100006 1987 DA₇									
<i>(continuation)</i>																			
12 23	18 51.02	-22 4.4	2.112	1.163	9.5	20.5	11 E	2*	3*	10 8	22 11.62	-7 11.8	1.832	2.654	14.8	20.0	137 E	38	71
12 28	19 12.22	-22 30.9	2.116	1.166	9.2	20.5	11 E	2*	3*	10 18	22 8.25	-7 33.9	1.932	2.649	17.6	20.2	126 E	37	72
1 2	19 33.50	-22 46.6	2.123	1.171	9.0	20.5	11 E	1*	3*	10 28	22 7.67	-7 41.8	2.047	2.642	19.7	20.4	116 E	37	72
1 7	19 54.73	-22 51.7	2.132	1.180	8.8	20.5	11 E	1*	3*	11 7	22 9.71	-7 36.0	2.170	2.635	21.1	20.5	107 E	37	72
1 12	20 15.81	-22 46.3	2.144	1.191	8.7	20.5	11 E	—	4*	11 17	22 14.10	-7 17.0	2.299	2.626	21.9	20.7	98 E	38	70*
1 17	20 36.65	-22 30.9	2.159	1.205	8.5	20.6	10 E	—	4*	11 27	22 20.54	-6 45.9	2.430	2.616	22.2	20.8	90 E	38	65*
1 22	20 57.16	-22 5.9	2.176	1.222	8.4	20.6	10 E	—	4*	12 7	22 28.72	-6 3.5	2.559	2.604	22.0	20.9	82 E	39	58*
1 27	21 17.26	-21 32.2	2.196	1.241	8.3	20.7	10 E	—	4*	12 17	22 38.36	-5 11.0	2.684	2.592	21.4	21.0	74 E	40	51*
2 1	21 36.88	-20 50.7	2.218	1.262	8.2	20.7	10 E	—	4*	12 27	22 49.23	-4 9.3	2.803	2.578	20.5	21.0	67 E	40*	43*
2 6	21 55.99	-20 2.3	2.242	1.285	8.0	20.8	11 E	—	4*	1 6	23 1.13	-2 59.3	2.913	2.562	19.4	21.0	60 E	40*	36*
2 11	22 14.54	-19 8.0	2.268	1.310	7.9	20.8	11 E	—	5*	1 16	23 13.90	-1 42.0	3.014	2.546	18.0	21.1	53 E	38*	30*
2 16	22 32.53	-18 8.8	2.296	1.337	7.8	20.9	11 E	—	5*										
2 21	22 49.95	-17 5.7	2.325	1.365	7.7	21.0	11 E	—	5*										
2 26	23 6.80	-15 59.5	2.356	1.395	7.6	21.0	11 E	—	4*										
3 2	23 23.10	-14 51.2	2.387	1.426	7.5	21.1	11 E	—	4*										
3 7	23 38.86	-13 41.6	2.420	1.458	7.4	21.2	11 E	—	4*										
3 12	23 54.10	-12 31.3	2.453	1.490	7.4	21.2	11 E	—	4*										
3 17	0 8.86	-11 20.9	2.487	1.524	7.4	21.3	11 E	—	3*										
3 22	0 23.15	-10 11.1	2.521	1.558	7.4	21.4	12 E	—	3*										
3 27	0 37.00	-9 2.2	2.554	1.592	7.5	21.5	12 E	—	2*										
3362 Khufu										75567 2000 AK₁									
12 23	18 51.13	-20 17.8	1.702	0.766	15.1	19.7	12 E	4*	2*	12 23	18 51.34	-12 30.8	3.206	2.277	6.8	20.0	16 E	10*	—
12 28	19 18.02	-19 58.3	1.740	0.811	15.6	19.9	13 E	5*	3*	1 2	19 11.58	-12 43.5	3.190	2.237	5.2	19.9	12 E	6*	—
1 2	19 43.41	-19 26.5	1.780	0.857	15.7	20.1	14 E	5*	4*	1 12	19 32.32	-12 44.9	3.162	2.197	4.0	19.8	9 E	1*	—
1 7	20 7.37	-18 44.4	1.821	0.901	15.5	20.2	14 E	6*	4*	1 22	19 53.51	-12 35.4	3.124	2.156	4.0	19.7	9 W	3*	—
1 12	20 29.98	-17 54.0	1.863	0.944	15.1	20.4	14 E	6*	4*	2 1	20 15.10	-12 15.1	3.074	2.115	5.1	19.7	11 W	4*	—
1 17	20 51.33	-16 56.9	1.906	0.985	14.5	20.5	15 E	6*	4*	2 11	20 37.04	-11 44.7	3.015	2.074	6.8	19.7	14 W	6*	5*
1 22	21 11.53	-15 54.6	1.949	1.025	13.8	20.6	14 E	6*	4*	2 21	20 59.31	-11 4.9	2.947	2.033	8.8	19.7	18 W	7*	11*
1 27	21 30.69	-14 48.3	1.991	1.063	13.0	20.7	14 E	6*	4*	3 2	21 21.90	-10 16.4	2.871	1.991	11.0	19.7	22 W	7*	15*
2 1	21 48.90	-13 39.1	2.033	1.100	12.1	20.8	14 E	6*	4*	3 12	21 44.82	-9 20.3	2.787	1.950	13.2	19.6	27 W	8*	20*
2 6	22 6.26	-12 27.7	2.074	1.134	11.1	20.8	13 E	5*	3*	3 22	22 8.10	-8 17.8	2.698	1.909	15.4	19.6	31 W	8*	24*
2 11	22 22.87	-11 14.8	2.114	1.167	10.1	20.9	12 E	4*	3*	4 1	22 31.77	-7 10.1	2.604	1.869	17.7	19.6	35 W	8*	28*
2 16	22 38.80	-10 1.1	2.152	1.198	9.1	21.0	11 E	3*	2*	4 11	22 55.89	-5 58.8	2.506	1.829	19.9	19.5	38 W	9*	32*
2 21	22 54.15	-8 46.9	2.188	1.227	8.1	21.0	10 E	2*	2*	4 21	23 20.52	-4 45.4	2.406	1.790	22.1	19.4	42 W	9*	36*
2 26	23 8.98	-7 32.6	2.222	1.254	7.1	21.0	9 E	1*	1*	5 1	23 45.74	-3 31.6	2.305	1.753	24.2	19.4	46 W	9*	39*
3 2	23 23.35	-6 18.5	2.254	1.279	6.0	21.1	8 E	—	—	5 11	0 11.61	-2 19.6	2.204	1.717	26.3	19.3	49 W	10*	43*
3 7	23 37.32	-5 4.9	2.283	1.303	5.0	21.1	7 E	—	—	5 21	0 38.19	-1 11.3	2.105	1.683	28.3	19.2	52 W	11*	45*
3 12	23 50.95	-3 52.0	2.310	1.324	4.1	21.1	5 E	—	—	5 31	1 5.53	-0 9.2	2.009	1.651	30.2	19.1	55 W	12*	48*
3 17	0 4.28	-2 40.0	2.334	1.345	3.3	21.1	4 E	—	—	6 10	1 33.63	+0 44.4	1.916	1.621	32.0	19.0	58 W	14*	50*
3 22	0 17.36	-1 28.9	2.356	1.363	2.6	21.1	4 E	—	—	6 20	2 2.46	+1 26.9	1.829	1.594	33.7	18.9	60 W	16*	52*
3 27	0 30.23	-0 19.0	2.374	1.379	2.4	21.1	3 E	—	—	6 30	2 31.90	+1 56.0	1.748	1.571	35.2	18.8	63 W	19*	54*
4 1	0 42.92	+0 49.6	2.390	1.394	2.7	21.2	4 E	—	—	7 10	3 1.80	+2 9.6	1.673	1.551	36.5	18.8	65 W	22*	55*
4 6	0 55.47	+1 56.8	2.402	1.407	3.3	21.3	5 W	—	—	7 20	3 31.92	+2 6.1	1.606	1.534	37.7	18.7	67 W	25*	56*
4 11	1 7.92	+3 2.5	2.412	1.419	4.2	21.3	6 W	—	—	7 30	4 1.95	+1 44.8	1.544	1.522	38.7	18.6	69 W	28*	57*
4 16	1 20.28	+4 6.6	2.418	1.429	5.1	21.4	7 W	—	—	8 9	4 31.55	+1 5.7	1.489	1.514	39.4	18.5	72 W	31*	58*
4 21	1 32.60	+5 9.1	2.422	1.437	6.1	21.5	9 W	—	—	8 19	5 0.36	+0 9.9	1.440	1.510	40.0	18.5	74 W	34*	59*
										100006 1987 DA₇									
12 23	18 51.13	-24 5.4	3.210	2.253	4.8	20.4	11 E	1*	4*	8 29	5 28.01	-1 0.8	1.395	1.511	40.4	18.4	76 W	36*	60*
1 2	19 12.44	-23 26.6	3.260	2.284	2.5	20.3	6 E	—	—	9 8	5 54.16	-2 23.8	1.353	1.517	40.6	18.4	78 W	37*	62*
1 12	19 33.18	-22 38.6	3.297	2.314	0.4	20.2	1 E	—	—	9 18	6 18.50	-3 56.0	1.313	1.526	40.6	18.3	81 W	38*	64*
1 22	19 53.31	-21 42.2	3.321	2.342	2.1	20.4	5 W	—	—	9 28	6 40.70	-5 33.9	1.273	1.540	40.4	18.3	84 W	38*	66*
2 1	20 12.79	-20 38.5	3.331	2.369	4.3	20.6	10 W	—	—	10 8	7 0.52	-7 13.7	1.233	1.557	39.9	18.2	88 W	38*	68*
2 11	20 31.57	-19 28.6	3.328	2.395	6.5	20.7	16 W	1*	10*	10 13	7 9.44	-8 3.1	1.212	1.568	39.5	18.2	90 W	37	70*
2 21	20 49.64	-18 13.5	3.311	2.421	8.7	20.8	22 W	3*	16*	10 18	7 17.65	-8 51.5	1.191	1.579	39.1	18.1	92 W	36	71*
3 2	21 6.98	-16 54.3	3.281	2.444	10.8	20.9	27 W	5*	21*	10 23	7 25.09	-9 38.0	1.169	1.591	38.6	18.1	94 W	35	73*
3 12	21 23.55	-15 32.1	3.237	2.467	12.7	21.0	33 W	6*	27*	10 28	7 31.73	-10 22.2	1.147	1.604	38.0	18.0	97 W	35	74*
3 22	21 39.33	-14 8.0	3.181	2.488	14.6	21.0	39 W	8*	33*	11 2	7 37.54	-11 3.2	1.125	1.617	37.2	18.0	99 W	34	75*
4 1	21 54.30	-12 43.2	3.112	2.509	16.4	21.0	45 W	10*	39*	11 7	7 42.46	-11 40.4	1.102	1.631	36.4	18.0	102 W	33	76
4 11	22 8.40	-11 18.7	3.031	2.528	18.0	21.1	51 W	12*	45*	11 12	7 46.45	-12 12.7	1.079	1.646	35.4	17.9	105 W	33	76
4 21	22 21.59	-9 55.5	2.940	2.545	19.4	21.1	57 W	15*	51*	11 17	7 49.44	-12 39.3	1.056	1.662	34.3	17.8	109 W	32	77
5 1	22 33.79	-8 35.0	2.839	2.562	20.7	21.0	64 W	17*	57*	11 22	7 51.40	-12 58.8	1.034	1.678	33.0	17.8	112 W	32	77
5 11	22 44.90	-7 18.2	2.730	2.577	21.7	21.0	71 W	20*	63*	11 27	7 52.32	-13 10.0	1.012	1.695	31.6	17.7	116 W	32	77
5 21	22 54.81	-6 6.5	2.614	2.591	22.4	20.9	77 W	24*	67*	12 2									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
406952 2009 KJ										131823 2002 AY₉₇ <i>(continuation)</i>									
12 23	18 51.96	-44 4.6	2.551	1.690	13.1	21.1	23 E	—	13*	6 30	2 58.22	+19 28.9	2.272	1.808	25.8	20.1	51 W	27*	36*
1 2	19 22.45	-42 49.4	2.494	1.616	12.7	21.0	21 E	—	10*	7 10	3 20.15	+21 13.8	2.220	1.833	27.0	20.2	55 W	32*	36*
1 12	19 53.49	-41 9.6	2.423	1.535	12.6	20.8	20 E	—	8*	7 20	3 41.55	+22 46.5	2.163	1.859	28.0	20.2	59 W	38*	37*
1 22	20 25.00	-39 1.2	2.339	1.447	13.0	20.6	19 E	—	6*	7 30	4 2.23	+24 7.3	2.100	1.886	28.9	20.2	64 W	44*	37*
2 1	20 56.93	-36 19.5	2.244	1.350	13.7	20.4	19 E	—	4*	8 9	4 22.00	+25 16.8	2.032	1.914	29.6	20.1	69 W	51*	37*
2 6	21 13.05	-34 44.3	2.192	1.299	14.2	20.3	19 W	—	4*	8 19	4 40.62	+26 15.9	1.960	1.942	30.1	20.1	74 W	57*	36*
2 11	21 29.28	-32 58.5	2.139	1.245	14.7	20.1	19 W	—	4*	8 29	4 57.80	+27 6.1	1.882	1.971	30.3	20.1	80 W	63*	36*
2 16	21 45.64	-31 1.0	2.083	1.188	15.3	20.0	18 W	—	5*	9 8	5 13.22	+27 48.9	1.801	2.000	30.2	20.0	86 W	69*	36*
2 21	22 2.18	-28 50.6	2.026	1.129	15.8	19.9	18 W	—	5*	9 18	5 26.50	+28 26.1	1.717	2.029	29.6	19.9	93 W	73*	36*
2 26	22 18.92	-26 26.0	1.967	1.067	16.3	19.7	18 W	—	5*	9 28	5 37.19	+28 59.6	1.632	2.059	28.6	19.8	100 W	74	35
3 2	22 35.92	-23 45.6	1.908	1.003	16.8	19.5	17 W	—	5*	10 8	5 44.82	+29 30.8	1.549	2.088	27.1	19.7	108 W	75	34
3 7	22 53.25	-20 47.6	1.847	0.935	17.1	19.3	16 W	—	5*	10 18	5 48.90	+30 0.8	1.470	2.117	24.8	19.5	117 W	75	34
3 12	23 11.03	-17 29.9	1.787	0.865	17.1	19.0	15 W	—	4*	10 28	5 48.94	+30 29.2	1.398	2.146	21.8	19.3	127 W	75	34
3 17	23 29.39	-13 50.0	1.726	0.791	16.8	18.8	13 W	—	4*	11 7	5 44.74	+30 53.9	1.339	2.175	17.9	19.2	138 W	76	33
3 22	23 48.53	-9 45.3	1.665	0.715	15.7	18.4	11 W	—	2*	11 17	5 36.42	+31 10.9	1.296	2.203	13.4	19.0	149 W	76	33
3 27	0 8.74	-5 12.8	1.605	0.636	13.7	18.0	9 W	—	1*	12 22	5 30.93	+31 15.1	1.283	2.217	10.9	18.9	155 W	76	33
4 1	0 30.44	-0 9.9	1.543	0.557	9.9	17.5	6 W	—	—	12 27	5 24.79	+31 15.5	1.276	2.231	8.4	18.8	161 W	76	33
4 11	1 21.08	+11 29.4	1.408	0.411	7.9	16.6	3 E	—	—	12 7	5 18.18	+31 12.0	1.275	2.245	5.9	18.7	166 W	76	33
4 21	2 28.36	+23 45.4	1.225	0.352	44.6	17.1	14 E	8*	—	12 7	5 11.36	+31 4.3	1.281	2.259	4.0	18.6	171 W	76	33
5 1	3 56.19	+31 35.5	1.017	0.439	76.3	18.1	25 E	19*	3*	12 12	5 4.55	+30 52.7	1.294	2.272	3.6	18.6	172 E	76	33
5 3	4 15.82	+32 17.6	0.982	0.468	79.6	18.3	27 E	21*	5*	12 17	4 58.01	+30 37.7	1.313	2.286	5.0	18.7	168 E	76	33
5 5	4 35.95	+32 41.3	0.949	0.498	82.0	18.4	29 E	23*	7*	12 22	4 51.96	+30 19.8	1.340	2.299	7.1	18.9	163 E	75	34
5 7	4 56.42	+32 46.7	0.921	0.528	83.6	18.6	31 E	24*	9*	12 27	4 46.59	+30 0.1	1.373	2.312	9.4	19.0	157 E	75	34
5 9	5 17.07	+32 33.9	0.896	0.560	84.5	18.7	34 E	26*	11*	1 1	4 42.03	+29 39.5	1.413	2.325	11.6	19.2	152 E	75	34
5 11	5 37.72	+32 3.4	0.875	0.592	84.7	18.7	36 E	27*	14*	1 6	4 38.36	+29 18.7	1.458	2.338	13.6	19.3	146 E	74	35
5 13	5 58.16	+31 16.2	0.858	0.623	84.4	18.8	38 E	28*	17*	1 11	4 35.63	+28 58.6	1.508	2.351	15.5	19.5	140 E	74	35
5 15	6 18.20	+30 13.4	0.845	0.655	83.7	18.8	40 E	29*	19*	1 16	4 33.86	+28 39.6	1.564	2.363	17.1	19.6	135 E	74	35
5 17	6 37.67	+28 56.8	0.836	0.687	82.6	18.9	42 E	30*	22*	12 23	18 52.82	-19 26.6	2.696	1.748	6.9	20.3	12 E	5*	2*
5 19	6 56.44	+27 28.3	0.831	0.718	81.3	18.9	45 E	31*	25*	1 2	19 20.73	-18 26.9	2.682	1.718	5.2	20.1	9 E	3*	—
5 21	7 14.39	+25 50.1	0.829	0.749	79.7	18.9	47 E	31*	28*	1 12	19 48.89	-17 8.4	2.665	1.691	3.7	20.0	6 E	—	—
5 23	7 31.46	+24 4.3	0.831	0.779	77.9	19.0	49 E	31*	30*	1 22	20 17.16	-15 31.4	2.646	1.666	2.6	19.9	4 E	—	—
5 25	7 47.62	+22 13.2	0.836	0.809	76.0	19.0	51 E	31*	33*	2 1	20 45.41	-13 36.9	2.625	1.645	2.6	19.9	4 W	—	—
5 27	8 2.85	+20 18.8	0.844	0.838	74.1	19.0	53 E	31*	36*	2 11	21 13.53	-11 26.5	2.604	1.626	3.7	19.9	6 W	—	—
5 29	8 17.19	+18 22.9	0.855	0.867	72.1	19.1	55 E	30*	38*	2 21	21 41.46	-9 2.4	2.584	1.612	5.1	19.9	8 W	1*	—
5 31	8 30.66	+16 27.1	0.868	0.896	70.1	19.1	56 E	29*	40*	3 2	22 9.15	-6 27.0	2.564	1.601	6.6	20.0	11 W	2*	3*
6 2	8 43.31	+14 32.7	0.884	0.924	68.2	19.2	58 E	29*	43*	3 12	22 36.58	-3 43.2	2.545	1.593	8.1	20.0	13 W	3*	6*
6 4	8 55.20	+12 40.6	0.903	0.952	66.3	19.2	59 E	28*	45*	3 22	23 3.76	-0 54.0	2.527	1.590	9.7	20.1	16 W	4*	9*
6 6	9 6.37	+10 51.7	0.923	0.979	64.4	19.3	60 E	27*	47*	4 1	23 30.73	+1 57.5	2.511	1.591	11.2	20.1	18 W	5*	11*
6 8	9 16.88	+9 6.3	0.945	1.005	62.6	19.3	62 E	26*	49*	4 11	23 57.50	+4 48.0	2.496	1.596	12.7	20.2	20 W	6*	14*
6 10	9 26.80	+7 25.0	0.968	1.031	60.9	19.4	63 E	25*	50*	4 21	0 24.11	+7 34.7	2.481	1.605	14.1	20.2	23 W	7*	16*
6 15	9 49.30	+3 29.9	1.033	1.095	56.9	19.5	65 E	22*	54*	5 1	0 50.58	+10 14.8	2.467	1.617	15.6	20.3	26 W	8*	18*
6 20	10 9.09	+0 0.5	1.105	1.155	53.4	19.7	66 E	19*	57*	5 11	1 16.91	+12 45.5	2.452	1.634	17.0	20.3	28 W	9*	21*
6 25	10 26.77	-3 5.3	1.181	1.213	50.2	19.8	67 E	16*	59*	5 21	1 43.10	+15 4.9	2.436	1.653	18.4	20.4	31 W	11*	23*
6 30	10 42.78	-5 50.6	1.261	1.269	47.4	20.0	67 E	13*	60*	5 31	2 9.11	+17 10.9	2.418	1.676	19.8	20.4	34 W	13*	25*
7 5	10 57.47	-8 18.4	1.343	1.322	44.9	20.2	66 E	11*	60*	6 10	2 34.87	+19 2.2	2.397	1.702	21.1	20.5	37 W	16*	27*
7 10	11 11.12	-10 31.5	1.426	1.372	42.6	20.3	66 E	9*	60*	6 20	3 0.30	+20 37.7	2.373	1.730	22.4	20.5	40 W	19*	28*
7 15	11 23.93	-12 32.3	1.510	1.421	40.4	20.5	65 E	7*	59*	6 30	3 25.26	+21 56.9	2.345	1.761	23.6	20.6	44 W	23*	30*
7 20	11 36.10	-14 32.0	1.594	1.467	38.5	20.6	64 E	5*	58*	7 10	3 49.62	+22 59.5	2.311	1.794	24.8	20.6	48 W	28*	31*
7 25	11 47.74	-16 5.2	1.678	1.511	36.7	20.7	63 E	3*	56*	7 20	4 13.22	+23 46.0	2.273	1.828	25.9	20.7	52 W	33*	32*
7 30	11 58.96	-17 40.2	1.761	1.554	35.0	20.8	61 E	1*	54*	7 30	4 35.85	+24 16.9	2.228	1.864	26.9	20.7	56 W	39*	33*
8 4	12 9.85	-19 9.2	1.843	1.594	33.3	20.9	60 E	—	52*	8 9	4 57.32	+24 33.3	2.177	1.902	27.7	20.7	61 W	44*	34*
8 9	12 20.46	-20 33.1	1.924	1.633	31.8	21.0	58 E	—	50*	8 19	5 17.44	+24 36.4	2.120	1.940	28.4	20.7	66 W	50*	35*
8 14	12 30.87	-21 52.5	2.003	1.670	30.3	21.1	56 E	—	48*	8 29	5 35.94	+24 27.8	2.056	1.979	28.9	20.7	71 W	55*	36*
8 19	12 41.13	-23 8.2	2.081	1.705	28.9	21.2	54 E	—	46*	9 8	5 52.61	+24 9.3	1.987	2.019	29.1	20.7	77 W	60*	38*
8 24	12 51.27	-24 20.6	2.157	1.739	27.5	21.3	53 E	—	44*	9 18	6 7.18	+23 42.7	1.912	2.059	29.0	20.6	84 W	65*	39*
8 29	13 1.32	-25 30.1	2.230	1.771	26.2	21.4	51 E	—	41*	9 28	6 19.33	+23 10.0	1.834	2.099	28.5	20.6	91 W	67*	40*
9 3	13 11.32	-26 37.0	2.301	1.801	24.8	21.4	49 E	—	39*	10 8	6 28.76	+22 33.1	1.754	2.140					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
251398 2007 XB₂₄										481836 2008 VW₇₈									
(continuation)										(continuation)									
2 11	21 8.91	-16 58.1	2.684	1.709	4.0	20.8	7 W	—	1*	12 27	5 39.13	+25 11.6	1.439	2.413	4.2	19.2	170 E	70	39
2 21	21 36.08	-14 57.1	2.648	1.684	5.9	20.8	10 W	—	4*	1 1	5 33.62	+24 32.9	1.474	2.433	6.6	19.4	163 E	70	39
3 2	22 3.12	-12 42.5	2.610	1.660	7.9	20.8	13 W	—	7*	1 6	5 28.78	+23 55.4	1.516	2.453	8.9	19.6	157 E	69	40
3 12	22 30.02	-10 16.5	2.570	1.640	9.7	20.9	16 W	—	10*	1 11	5 24.70	+23 19.7	1.564	2.472	11.0	19.7	151 E	68	41
3 22	22 56.80	-7 41.0	2.530	1.621	11.6	20.9	19 W	—	13*	1 16	5 21.43	+22 46.4	1.618	2.491	13.0	19.9	145 E	68	41
4 1	23 23.47	-4 58.6	2.490	1.606	13.4	20.9	22 W	1*	16*	152560 1991 BN									
4 11	23 50.06	-2 12.0	2.450	1.593	15.1	20.9	24 W	2*	18*	12 23	18 54.80	-22 3.9	1.929	0.989	12.1	21.2	12 E	3*	4*
4 21	0 16.64	+0 36.3	2.411	1.584	16.8	20.9	27 W	3*	21*	1 2	19 39.80	-20 23.3	1.877	0.942	13.1	21.1	13 E	4*	4*
5 1	0 43.25	+3 23.3	2.373	1.577	18.4	20.9	30 W	4*	23*	1 12	20 25.83	-17 52.4	1.831	0.905	14.8	21.0	14 E	6*	4*
5 11	1 9.92	+6 6.4	2.336	1.574	19.9	20.9	32 W	6*	26*	1 22	21 12.26	-14 34.0	1.793	0.880	16.9	21.0	15 E	7*	4*
5 21	1 36.69	+8 42.8	2.299	1.574	21.4	20.9	35 W	8*	28*	2 1	21 58.52	-10 35.6	1.764	0.869	19.2	21.0	17 E	9*	5*
5 31	2 3.56	+11 9.9	2.263	1.578	22.8	21.0	37 W	10*	30*	2 11	22 44.20	-6 9.4	1.748	0.874	21.4	21.1	19 E	12*	5*
6 10	2 30.49	+13 25.4	2.226	1.585	24.2	21.0	40 W	13*	31*	2 21	23 29.09	+1 29.8	1.746	0.894	23.2	21.2	21 E	14*	6*
6 20	2 57.45	+15 27.3	2.189	1.595	25.5	21.0	42 W	16*	33*	3 2	0 13.09	+3 8.2	1.759	0.927	24.4	21.3	23 E	16*	8*
6 30	3 24.35	+17 14.1	2.151	1.608	26.7	21.0	45 W	20*	34*	3 12	0 56.16	+7 31.0	1.787	0.971	24.9	21.4	24 E	17*	9*
7 10	3 51.05	+18 44.4	2.111	1.623	27.9	21.0	48 W	25*	34*	234312 2001 BV₁									
7 20	4 17.42	+19 57.9	2.069	1.642	29.0	21.0	51 W	30*	35*	12 23	18 55.20	-10 19.3	2.634	1.727	10.2	21.3	18 E	12*	—
7 30	4 43.27	+20 54.3	2.024	1.663	30.0	21.0	55 W	35*	35*	1 2	19 21.02	-11 0.3	2.654	1.720	8.2	21.3	15 E	8*	—
8 9	5 8.38	+21 34.3	1.976	1.686	30.9	21.0	59 W	40*	36*	1 12	19 46.91	-11 25.9	2.668	1.713	6.3	21.2	11 E	4*	—
8 19	5 32.56	+21 58.9	1.923	1.712	31.7	21.0	63 W	45*	36*	1 22	20 12.80	-11 37.2	2.674	1.706	4.8	21.1	8 W	—	—
8 29	5 55.56	+22 9.7	1.866	1.739	32.3	21.0	67 W	50*	37*	2 11	21 4.46	-11 21.3	2.663	1.692	4.7	21.1	8 W	1*	—
9 8	6 17.15	+22 8.7	1.805	1.767	32.7	21.0	72 W	55*	38*	2 21	21 30.18	-10 57.3	2.646	1.685	6.3	21.1	11 W	2*	4*
9 18	6 37.09	+21 58.3	1.740	1.797	33.0	21.0	77 W	60*	38*	3 2	21 55.84	-10 24.6	2.621	1.678	8.4	21.2	14 W	1*	8*
9 28	6 55.10	+21 41.5	1.670	1.828	32.9	20.9	82 W	63*	40*	3 12	22 21.45	-9 45.1	2.588	1.671	10.6	21.2	18 W	1*	12*
10 8	7 10.90	+21 21.2	1.597	1.860	32.5	20.8	88 W	66*	41*	3 22	22 47.05	-9 0.5	2.548	1.665	12.9	21.3	22 W	1*	16*
10 18	7 24.17	+21 0.6	1.521	1.893	31.6	20.7	95 W	66	42*	4 1	23 12.71	-8 12.6	2.501	1.658	15.1	21.3	26 W	1*	20*
10 28	7 34.50	+20 43.4	1.445	1.926	30.2	20.6	103 W	66	43*	4 11	23 38.45	-7 23.5	2.449	1.652	17.4	21.4	30 W	—	23*
11 7	7 41.51	+20 32.7	1.371	1.959	28.2	20.5	111 W	66	43	4 21	0 4.36	-6 34.8	2.392	1.647	19.6	21.4	33 W	—	27*
11 17	7 44.77	+20 31.5	1.301	1.993	25.3	20.3	120 W	66	43	5 1	0 30.47	+5 48.6	2.331	1.642	21.7	21.4	37 W	—	31*
11 27	7 43.93	+20 41.6	1.240	2.027	21.7	20.2	131 W	66	43	5 11	0 56.82	-5 6.8	2.267	1.637	23.6	21.4	41 W	—	34*
12 7	7 38.92	+21 3.0	1.192	2.060	17.1	20.0	142 W	66	43	5 21	1 23.45	-4 31.4	2.201	1.632	25.5	21.3	44 W	1*	38*
12 17	7 30.05	+21 33.4	1.163	2.094	11.7	19.7	154 W	67	42	5 31	1 50.36	-4 4.2	2.134	1.628	27.3	21.3	47 W	2*	41*
12 22	7 24.46	+21 50.5	1.157	2.111	8.8	19.6	161 W	67	42	6 10	2 17.50	-3 47.0	2.068	1.625	28.9	21.3	51 W	3*	45*
12 27	7 18.35	+22 7.9	1.157	2.127	5.8	19.5	167 W	67	42	6 20	2 44.83	-3 41.5	2.003	1.622	30.3	21.3	54 W	5*	48*
1 1	7 11.94	+22 25.0	1.164	2.144	2.8	19.4	174 W	67	42	6 30	3 12.25	-3 49.2	1.939	1.620	31.6	21.2	57 W	8*	50*
1 6	7 5.45	+22 41.1	1.177	2.160	0.2	19.2	179 E	68	41	7 10	3 39.61	-4 10.9	1.878	1.618	32.7	21.2	59 W	11*	53*
1 11	6 59.12	+22 55.7	1.197	2.177	3.2	19.5	173 E	68	41	7 20	4 6.78	-4 47.2	1.819	1.617	33.8	21.2	62 W	14*	55*
1 16	6 53.19	+23 8.6	1.224	2.193	6.0	19.7	166 E	68	41	7 30	4 33.53	-5 38.4	1.763	1.617	34.6	21.1	65 W	17*	57*
481836 2008 VW₇₈										8 9	4 59.69	-6 43.9	1.709	1.617	35.4	21.1	67 W	21*	59*
12 23	18 54.08	-19 54.1	2.822	1.874	6.5	20.2	12 E	5*	3*	8 19	5 25.04	-8 2.7	1.657	1.618	36.0	21.0	70 W	23*	61*
1 1	19 19.61	-18 30.7	2.806	1.841	4.7	20.1	9 E	2*	—	8 29	5 49.36	-9 33.6	1.606	1.619	36.5	21.0	72 W	26*	64*
1 12	19 45.31	-16 50.6	2.785	1.810	3.3	19.9	6 E	—	—	9 8	6 12.46	-11 14.5	1.555	1.621	36.9	20.9	75 W	27*	66*
1 22	20 11.09	-14 53.8	2.759	1.781	2.8	19.8	5 W	—	—	9 18	6 34.13	-13 3.5	1.504	1.624	37.2	20.8	78 W	28*	68*
2 1	20 36.87	-12 41.0	2.730	1.754	3.6	19.8	6 W	—	—	9 28	6 54.14	-14 58.3	1.450	1.627	37.4	20.8	81 W	28*	71*
2 11	21 2.60	-10 13.1	2.698	1.730	5.1	19.9	9 W	3*	—	10 8	7 12.29	-16 56.0	1.395	1.631	37.6	20.7	84 W	28*	74*
2 21	21 28.23	-7 31.7	2.665	1.709	6.8	19.9	12 W	4*	3*	10 18	7 28.31	-18 53.9	1.336	1.635	37.5	20.6	88 W	26	78*
3 2	21 53.78	-4 38.5	2.631	1.691	8.6	19.9	15 W	6*	6*	10 28	7 41.87	-20 48.1	1.274	1.640	37.3	20.5	92 W	24	82*
3 12	22 19.25	+1 35.8	2.597	1.676	10.3	20.0	18 W	8*	9*	11 7	7 52.63	-22 34.0	1.209	1.645	36.8	20.4	96 W	22	86*
3 22	22 44.67	+1 33.8	2.563	1.665	12.0	20.0	20 W	9*	12*	11 12	7 56.82	-23 22.0	1.175	1.647	36.4	20.3	99 W	22	87*
4 1	23 10.11	+4 47.8	2.531	1.657	13.6	20.0	23 W	10*	14*	11 17	8 0.13	-24 5.6	1.141	1.650	36.0	20.2	101 W	21	88
4 11	23 35.59	+8 2.9	2.500	1.653	15.1	20.0	26 W	11*	17*	11 22	8 2.49	-24 43.4	1.106	1.653	35.4	20.2	104 W	20	89
4 21	0 1.19	+11 16.3	2.471	1.653	16.6	20.0	28 W	13*	19*	11 27	8 3.85	-25 14.0	1.071	1.656	34.7	20.1	107 W	20	89
5 1	0 26.94	+14 24.8	2.443	1.657	18.0	20.1	31 W	15*	21*	12 2	8 4.16	-25 36.1	1.036	1.659	33.9	20.0	110 W	19	90
5 11	0 52.88	+17 25.5	2.415	1.664	19.4	20.1	33 W	17*	23*	12 7	8 3.37	-25 47.8	1.002	1.662	32.9	19.9	114 W	19	90
5 21	1 19.03	+20 15.6	2.388	1.675	20.7	20.1	36 W	19*	24*	12 12	8 1.45	-25 47.1	0.969	1.665	31.8	19.8	117 W	19	90
5 31	1 45.36	+22 52.6	2.361	1.690	21.9	20.2	38 W	21*	25*	12 17	7 58.40	-25 31.6	0.936	1.668	30.5	19.7	121 W	19	90
6 10	2 11.80	+25 14.3	2.333	1.707	23.1	20.2	41 W	24*	26*	12 22	7 54.27	-24 58.9	0.906	1.672	29.1	19.6	124 W	20	89
6 20	2 38.26	+27 19.1	2.302	1.728	24.3	20.2	44 W	28*											

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°				
5720 Halweaver (continuation)									441058 2007 PH ₂₅												
5	11	22 48.39	-32 54.8	2.987	2.997	19.4	19.4	81 W	—	70*	12	23	18 55.69	-58 9.9	0.795	0.578	90.1	18.0	36 E	—	19*
5	21	22 59.10	-33 11.3	2.860	2.997	19.7	19.4	88 W	—	76*	12	24	18 50.49	-57 40.9	0.783	0.567	92.2	18.0	35 E	—	17*
5	31	23 8.39	-33 41.5	2.733	2.995	19.7	19.3	95 W	2*	81*	12	25	18 45.16	-57 7.0	0.770	0.555	94.4	18.0	34 E	—	16*
6	10	23 16.04	-34 26.5	2.608	2.993	19.4	19.1	102 W	4*	82	12	26	18 39.73	-56 27.6	0.758	0.545	96.7	18.0	33 E	—	14*
6	20	23 21.75	-35 26.9	2.488	2.989	18.7	19.0	110 W	6*	81	12	27	18 34.25	-55 42.3	0.746	0.534	99.0	18.1	32 E	—	13*
6	30	23 25.20	-36 42.3	2.376	2.985	17.6	18.9	117 W	7*	79	12	28	18 28.77	-54 50.6	0.734	0.525	101.5	18.1	32 E	—	11*
7	10	23 26.03	-38 10.5	2.276	2.979	16.2	18.7	125 W	7*	78	12	29	18 23.35	-53 52.0	0.722	0.516	103.9	18.2	31 W	—	11*
7	15	23 25.36	-38 58.3	2.232	2.976	15.4	18.7	129 W	6*	77	12	30	18 18.04	-52 46.2	0.711	0.508	106.4	18.2	30 W	—	12*
7	20	23 23.92	-39 47.5	2.191	2.973	14.6	18.6	132 W	5	76	1	1	18 8.03	-50 11.6	0.690	0.494	111.2	18.4	28 W	—	13*
7	25	23 21.68	-40 37.2	2.155	2.969	13.8	18.5	136 W	4	75	1	2	18 3.43	-48 42.6	0.680	0.489	113.5	18.5	27 W	—	14*
7	30	23 18.65	-41 26.3	2.124	2.965	13.0	18.5	139 W	4	75	1	3	17 59.19	-47 5.8	0.672	0.484	115.6	18.6	26 W	—	15*
8	4	23 14.83	-42 13.6	2.099	2.961	12.3	18.4	141 W	3	74	1	4	17 55.33	-45 21.5	0.664	0.480	117.6	18.7	26 W	—	15*
8	9	23 10.28	-42 57.8	2.079	2.956	11.7	18.4	144 W	2	73	1	5	17 51.90	-43 30.1	0.657	0.478	119.2	18.8	25 W	—	16*
8	14	23 5.06	-43 37.7	2.064	2.952	11.4	18.3	145 W	1	72	1	6	17 48.91	-41 32.2	0.652	0.476	120.5	18.8	25 W	—	17*
8	19	22 59.27	-44 12.1	2.056	2.947	11.2	18.3	146 W	1	72	1	7	17 46.39	-39 28.5	0.648	0.476	121.4	18.9	24 W	—	17*
8	24	22 53.04	-44 39.6	2.053	2.942	11.3	18.3	145 W	—	71	1	8	17 44.34	-37 20.0	0.645	0.476	121.9	18.9	24 W	—	18*
8	29	22 46.55	-44 59.5	2.057	2.936	11.6	18.3	144 W	—	71	1	9	17 42.76	-35 7.8	0.643	0.478	121.9	18.9	24 W	—	18*
9	3	22 39.97	-45 11.1	2.067	2.931	12.1	18.3	142 E	—	71	1	10	17 41.62	-32 52.9	0.643	0.481	121.5	18.9	25 W	—	19*
9	8	22 33.47	-45 14.3	2.082	2.925	12.8	18.4	140 E	—	71	1	11	17 40.92	-30 36.4	0.644	0.484	120.6	18.9	25 W	2*	19*
9	13	22 27.25	-45 8.9	2.103	2.918	13.7	18.4	137 E	—	71	1	12	17 40.63	-28 19.5	0.647	0.489	119.3	18.8	26 W	4*	19*
9	18	22 21.45	-44 55.2	2.129	2.912	14.5	18.5	133 E	—	71	1	13	17 40.73	-26 3.2	0.651	0.494	117.7	18.7	26 W	7*	19*
9	23	22 16.23	-44 33.7	2.160	2.905	15.4	18.5	130 E	—	71	1	14	17 41.17	-23 48.6	0.656	0.501	115.8	18.6	27 W	9*	20*
9	28	22 11.69	-44 5.2	2.195	2.898	16.3	18.6	126 E	1	72	1	15	17 41.94	-21 36.4	0.662	0.508	113.7	18.5	28 W	11*	20*
10	3	22 7.91	-43 30.3	2.234	2.891	17.1	18.7	122 E	1	72	1	16	17 42.99	-19 27.4	0.670	0.517	111.3	18.4	29 W	13*	20*
10	8	22 4.92	-42 50.0	2.277	2.884	17.8	18.7	118 E	2	73	1	17	17 44.30	-17 22.1	0.679	0.525	108.9	18.4	30 W	15*	20*
10	18	22 1.38	-41 16.0	2.372	2.868	19.1	18.8	110 E	4	75	1	18	17 45.84	-15 21.0	0.688	0.535	106.4	18.3	31 W	17*	20*
10	28	22 0.96	-39 28.8	2.476	2.852	19.9	18.9	102 E	6	77	1	19	17 47.58	-13 24.5	0.699	0.545	103.8	18.2	33 W	19*	20*
11	7	22 3.36	-37 32.7	2.585	2.834	20.4	19.0	94 E	7	78	1	20	17 49.49	-11 32.6	0.710	0.556	101.3	18.2	34 W	21*	19*
11	12	22 5.49	-36 32.2	2.641	2.825	20.5	19.1	90 E	8	79*	1	21	17 51.55	-9 45.6	0.722	0.567	98.7	18.1	35 W	23*	19*
11	17	22 8.17	-35 30.6	2.697	2.815	20.5	19.1	87 E	9	79*	1	22	17 53.73	-8 3.4	0.735	0.579	96.2	18.1	36 W	24*	19*
11	22	22 11.37	-34 28.0	2.752	2.806	20.4	19.2	83 E	11	76*	1	24	17 58.39	-4 53.0	0.762	0.604	91.4	18.1	38 W	27*	19*
11	27	22 15.03	-33 24.5	2.808	2.796	20.3	19.2	79 E	12	73*	1	26	18 3.34	-2 0.6	0.790	0.630	87.0	18.0	40 W	30*	19*
12	7	22 23.54	-31 15.7	2.915	2.775	19.7	19.2	72 E	14	66*	1	28	18 8.46	+0 35.4	0.820	0.658	82.8	18.1	42 W	32*	18*
12	17	22 33.42	-29 4.7	3.018	2.754	18.9	19.3	65 E	16*	58*	1	30	18 13.68	+2 56.6	0.850	0.686	79.0	18.1	43 W	34*	18*
12	27	22 44.40	-26 52.0	3.113	2.731	17.9	19.3	59 E	18*	50*	2	1	18 18.92	+5 4.8	0.881	0.715	75.0	18.1	45 W	36*	18*
1	6	22 56.27	-24 38.0	3.200	2.708	16.6	19.3	52 E	18*	43*	2	3	18 24.13	+7 1.4	0.912	0.744	72.2	18.2	46 W	38*	18*
1	16	23 8.86	-22 22.6	3.276	2.684	15.2	19.3	46 E	18*	37*	2	5	18 29.29	+8 48.0	0.942	0.774	69.3	18.2	47 W	39*	18*
12	23	18 55.50	-35 20.0	6.955	6.019	2.7	21.1	17 E	—	10*	2	7	18 34.36	+10 25.9	0.973	0.804	66.6	18.3	48 W	40*	18*
1	2	19 4.69	-35 28.3	6.972	6.019	2.1	21.1	13 E	—	4*	2	9	18 39.33	+11 56.1	1.003	0.834	64.2	18.4	50 W	42*	18*
1	12	19 13.98	-35 37.2	6.967	6.019	2.3	21.1	14 W	—	4*	2	11	18 44.18	+13 19.7	1.032	0.864	62.0	18.5	51 W	43*	19*
1	22	19 23.27	-35 47.1	6.939	6.019	3.1	21.1	19 W	—	11*	2	13	18 48.90	+14 37.6	1.062	0.894	59.9	18.5	52 W	44*	19*
2	1	19 32.46	-35 58.3	6.888	6.019	4.1	21.2	26 W	—	18*	2	15	18 53.49	+15 50.5	1.090	0.924	58.0	18.6	53 W	45*	19*
2	11	19 41.43	-36 11.5	6.817	6.018	5.2	21.2	34 W	—	26*	2	17	18 57.93	+16 59.0	1.118	0.954	56.3	18.7	53 W	46*	19*
2	21	19 50.09	-36 27.1	6.726	6.018	6.2	21.2	41 W	—	33*	2	19	19 2.24	+18 3.7	1.145	0.984	54.7	18.8	54 W	47*	20*
3	2	19 58.33	-36 46.0	6.617	6.018	7.2	21.2	49 W	—	41*	2	21	19 6.39	+19 5.1	1.172	1.013	53.2	18.8	55 W	48*	20*
3	12	20 6.02	-37 8.8	6.494	6.018	8.0	21.2	57 W	—	48*	2	26	19 16.14	+21 26.7	1.235	1.087	50.0	19.0	57 W	50*	21*
3	22	20 13.08	-37 36.0	6.358	6.017	8.7	21.2	66 W	—	56*	3	2	19 24.97	+23 34.8	1.294	1.159	47.3	19.2	59 W	52*	22*
4	1	20 19.38	-38 8.6	6.214	6.017	9.2	21.2	74 W	—	63*	3	7	19 32.90	+25 33.1	1.349	1.230	45.0	19.3	61 W	53*	23*
4	11	20 24.79	-38 46.8	6.063	6.017	9.5	21.1	83 W	1*	69*	3	12	19 39.94	+27 24.0	1.399	1.299	43.0	19.5	63 W	55*	24*
4	21	20 29.19	-39 31.0	5.911	6.016	9.6	21.1	91 W	1*	74*	3	17	19 46.12	+29 9.4	1.445	1.367	41.3	19.6	65 W	57*	24*
5	1	20 32.46	-40 21.5	5.760	6.016	9.5	21.0	100 W	2*	76	3	22	19 51.41	+30 50.5	1.486	1.433	39.9	19.7	67 W	59*	25*
5	11	20 34.48	-41 17.8	5.616	6.015	9.2	21.0	109 W	2*	75	4	1	19 59.31	+34 2.8	1.558	1.562	37.4	19.9	72 W	63*	26*
5	21	20 35.14	-42 19.1	5.481	6.015	8.6	20.9	117 W	2*	74	4	11	20 3.48	+37 3.8	1.616	1.685	35.3	20.1	76 W	67*	26*
5	31	20 34.35	-43 24.3	5.361	6.014	7.8	20.8	126 W	1*	73	4	21	20 3.68	+39 53.2	1.663	1.802	33.4	20.3	81 W	72*	24*
6	10	20 32.09	-44 31.3	5.260	6.013	6.9	20.7	134 W	—	71	4	26	20 2.17	+41 12.5	1.683	1.860	32.5	20.3	83 W	75*	23
6	20	20 28.40	-45 37.7	5.179	6.012	6.0	20.6	142 W	—	70	5	1	19 59.55	+42 27.2	1.701	1.916	31.6	20.4	86 W	78*	22
6	30	20 23.40	-46 40.7	5.124	6.012	5.1	20.6	148 W	—	69	5	6	19 55.79	+43 36.4	1.718	1.971	30.8	20.5	89 W	81*	20
7	10	20 17.34	-47 37.4	5.095	6.011	4.6	20.5	152 W	—	68	5	16	19 50.89	+44 39.0	1.735	2.024	29.9	20.5	91 W	84*	19
7	20	20 10.58	-48 25.4	5.093	6.010	4.5	20.5	152 W	—	68	5	11	19 44.86	+45 34.0	1.751	2.077	29.1	20.6	94 W	88*	18
7	30	20 3.56	-49 2.8	5.118	6.009	5.0	20.6														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	
190788 2001 RT₁₇										334057 2001 OR₄₇										
12 23	18 55.77	-29 9.5	1.560	0.643	20.5	19.3	13 E	-	7*	12 23	18 57.03	-23 6.4	2.697	1.750	7.0	20.5	13 E	2*	5*	
12 25	19 8.86	-28 46.8	1.592	0.680	20.4	19.5	14 E	-	8*	1 2	19 25.47	-21 54.5	2.693	1.728	5.1	20.4	9 E	1*	1*	
12 27	19 21.24	-28 20.2	1.624	0.716	20.2	19.6	15 E	-	8*	1 12	19 53.83	-20 23.3	2.686	1.710	3.2	20.2	6 E	-	-	
12 29	19 32.96	-27 50.5	1.656	0.752	19.9	19.8	15 E	-	9*	2 22	20 21.96	-18 33.6	2.677	1.694	1.4	20.1	2 E	-	-	
12 31	19 44.07	-27 18.2	1.688	0.786	19.5	19.9	16 E	-	9*	2 1	20 49.75	-16 26.8	2.666	1.681	0.9	20.0	2 W	-	-	
1 2	19 54.61	-26 44.0	1.721	0.820	19.1	20.0	16 E	1*	9*	2 11	21 17.08	-14 4.8	2.654	1.671	2.6	20.1	4 W	-	-	
1 7	20 18.70	-25 12.5	1.803	0.901	17.7	20.3	16 E	2*	9*	2 21	21 43.93	-11 30.0	2.640	1.665	4.4	20.2	7 W	-	1*	
1 12	20 40.06	-23 36.5	1.885	0.979	16.2	20.5	16 E	3*	9*	3 2	22 10.28	-8 44.6	2.626	1.661	6.2	20.3	10 W	-	4*	
1 17	20 59.16	-21 58.9	1.965	1.052	14.6	20.7	16 E	3*	8*	3 12	22 36.14	-5 51.5	2.611	1.661	8.0	20.3	13 W	2*	7*	
1 22	21 16.43	-20 21.8	2.044	1.121	12.9	20.9	15 E	3*	7*	3 22	23 1.56	-2 53.2	2.596	1.664	9.7	20.4	16 W	3*	10*	
1 27	21 32.17	-18 46.1	2.121	1.187	11.3	21.0	14 E	3*	6*	4 1	23 26.57	+ 0 7.5	2.580	1.671	11.4	20.5	19 W	4*	13*	
2 1	21 46.64	-17 12.6	2.195	1.250	9.7	21.1	12 E	3*	5*	4 11	23 51.24	+ 3 8.0	2.563	1.680	13.1	20.5	22 W	6*	16*	
2 6	22 0.04	-15 41.5	2.266	1.310	8.1	21.2	11 E	2*	3*	4 21	0 15.62	+ 6 5.9	2.545	1.693	14.7	20.6	25 W	7*	19*	
2 11	22 12.55	-14 13.1	2.333	1.367	6.5	21.3	9 E	-	2*	5 1	0 39.75	+ 8 58.9	2.525	1.708	16.3	20.7	28 W	9*	21*	
2 16	22 24.29	-12 47.1	2.396	1.422	5.0	21.4	7 E	-	-	5 11	1 3.67	+11 45.0	2.503	1.726	17.9	20.7	32 W	11*	24*	
2 21	22 35.39	-11 23.7	2.456	1.474	3.5	21.4	5 E	-	-	5 21	1 27.40	+14 22.4	2.479	1.747	19.4	20.8	35 W	13*	26*	
2 26	22 45.92	-10 2.7	2.511	1.524	2.1	21.5	3 E	-	-	5 31	1 50.94	+16 49.6	2.451	1.770	20.8	20.8	38 W	16*	28*	
3 2	22 55.97	-8 43.9	2.561	1.571	1.1	21.5	2 E	-	-	6 10	2 14.24	+19 5.1	2.419	1.796	22.2	20.9	42 W	20*	30*	
20062 1993 QB₃										31180 1997 YX₃										
12 23	18 56.16	-14 2.5	3.184	2.253	6.8	19.2	16 E	9*	1*	11 12	5 35.70	+31 20.6	1.439	2.316	14.5	20.0	144 W	76	33	
1 2	19 16.74	-14 7.3	3.174	2.219	5.0	19.1	11 E	5*	-	11 17	5 30.94	+31 14.6	1.424	2.333	12.2	19.9	150 W	76	33	
1 12	19 37.76	-14 0.6	3.153	2.184	3.6	18.9	8 E	1*	-	11 22	5 25.47	+31 5.1	1.414	2.351	9.8	19.8	156 W	76	33	
1 22	19 59.16	-13 42.8	3.122	2.148	3.2	18.9	7 W	1*	-	11 27	5 19.47	+30 52.1	1.410	2.368	7.4	19.8	162 W	76	33	
2 1	20 20.89	-13 14.1	3.079	2.113	4.3	18.8	9 W	3*	-	12 2	5 13.15	+30 35.4	1.413	2.385	5.1	19.7	168 W	76	33	
2 11	20 42.88	-12 35.1	3.027	2.077	6.1	18.9	13 W	4*	5*	12 7	5 6.72	+30 15.3	1.423	2.402	3.3	19.6	172 W	75	34	
2 21	21 5.12	-11 46.5	2.966	2.041	8.1	18.9	17 W	5*	10*	12 12	5 0.38	+29 52.2	1.440	2.419	3.1	19.6	172 E	75	34	
3 2	21 27.59	-10 49.3	2.897	2.005	10.3	18.9	21 W	6*	14*	12 17	4 54.35	+29 26.7	1.464	2.436	4.7	19.8	168 E	74	35	
3 12	21 50.27	-9 44.4	2.820	1.969	12.5	18.9	25 W	7*	19*	12 22	4 48.82	+28 59.6	1.495	2.453	6.8	19.9	163 E	74	35	
3 22	22 13.21	-8 33.1	2.737	1.933	14.7	18.8	29 W	7*	23*	12 27	4 43.95	+28 31.8	1.534	2.469	8.9	20.1	157 E	74	35	
4 1	22 36.41	-7 16.5	2.649	1.898	16.9	18.8	34 W	7*	27*	1 1	4 39.82	+28 4.1	1.578	2.485	11.0	20.3	151 E	73	36	
4 11	22 59.92	-5 56.2	2.556	1.863	19.1	18.8	37 W	8*	31*	1 6	4 36.51	+27 37.4	1.628	2.502	12.9	20.4	146 E	73	36	
4 21	23 23.80	-4 33.8	2.461	1.829	21.2	18.7	41 W	9*	35*	1 11	4 34.05	+27 12.0	1.684	2.518	14.6	20.6	140 E	72	37	
5 1	23 48.09	-3 11.0	2.364	1.796	23.3	18.6	45 W	9*	39*	1 16	4 32.46	+26 48.7	1.745	2.534	16.1	20.7	135 E	72	37	
5 11	0 12.86	-1 49.6	2.266	1.764	25.3	18.6	48 W	10*	42*	12 23	18 57.15	-26 54.1	3.394	2.445	5.1	19.4	13 E	-	7*	
5 21	0 38.16	-0 31.8	2.168	1.734	27.3	18.5	52 W	11*	45*	1 2	19 16.57	-25 30.4	3.370	2.397	3.0	19.2	7 E	-	1*	
5 31	1 4.02	+ 0 40.3	2.072	1.705	29.1	18.4	55 W	13*	48*	1 12	19 36.13	-23 56.5	3.332	2.350	1.0	19.0	2 E	-	-	
6 10	1 30.45	+ 1 44.4	1.978	1.678	30.9	18.3	58 W	15*	50*	1 22	19 55.76	-22 11.8	3.282	2.302	2.0	19.0	5 W	-	-	
6 20	1 57.43	+ 2 38.0	1.887	1.654	32.5	18.2	61 W	18*	52*	2 1	20 15.40	-20 15.6	3.219	2.255	4.3	19.1	10 W	-	4*	
6 30	2 24.89	+ 3 18.8	1.801	1.632	34.0	18.2	64 W	21*	54*	2 11	20 35.00	-18 7.5	3.146	2.207	6.6	19.1	15 W	1*	9*	
7 10	2 52.72	+ 3 44.6	1.718	1.612	35.4	18.1	67 W	25*	55*	2 21	20 54.55	-15 46.8	3.062	2.160	9.0	19.1	20 W	4*	14*	
7 20	3 20.74	+ 3 53.7	1.641	1.596	36.6	18.0	69 W	28*	56*	3 2	21 14.05	-13 13.3	2.970	2.113	11.4	19.1	25 W	6*	18*	
7 30	3 48.70	+ 3 44.6	1.568	1.583	37.6	17.9	72 W	32*	57*	3 12	21 33.48	-10 26.7	2.872	2.066	13.7	19.1	30 W	9*	23*	
8 9	4 16.33	+ 3 16.9	1.501	1.573	38.4	17.8	75 W	35*	58*	3 22	21 52.89	-7 26.5	2.767	2.021	16.0	19.0	34 W	11*	27*	
8 19	4 43.32	+ 2 30.7	1.437	1.567	39.1	17.7	77 W	38*	59*	4 1	22 12.33	-4 12.7	2.659	1.976	18.3	18.9	38 W	14*	31*	
8 29	5 9.32	+ 1 27.2	1.378	1.564	39.5	17.6	80 W	40*	60*	4 11	22 31.85	+ 0 45.1	2.548	1.932	20.5	18.9	43 W	17*	35*	
9 8	5 33.98	+ 0 8.4	1.322	1.564	39.7	17.6	83 W	41*	62*	4 21	22 51.56	+ 2 56.4	2.437	1.891	22.7	18.8	46 W	19*	38*	
9 18	5 56.96	- 1 23.1	1.269	1.569	39.7	17.5	86 W	42*	64*	5 1	23 11.55	+ 6 51.3	2.327	1.850	24.7	18.7	50 W	23*	40*	
9 28	6 17.89	- 3 3.9	1.217	1.577	39.5	17.4	90 W	42*	66*	5 11	23 31.98	+10 58.9	2.219	1.812	26.6	18.6	54 W	26*	41*	
10 8	6 36.44	- 4 49.7	1.166	1.588	38.9	17.3	94 W	40*	68*	5 21	23 53.00	+15 18.1	2.116	1.776	28.5	18.5	57 W	30*	41*	
10 13	6 44.70	- 5 43.2	1.140	1.595	38.4	17.2	96 W	39	69*	5 31	0 14.81	+19 46.7	2.018	1.743	30.2	18.4	60 W	35*	40*	
10 18	6 52.21	- 6 36.1	1.115	1.603	37.9	17.2	99 W	38	71*	6 5	0 26.08	+22 3.7	1.972	1.728	30.9	18.4	61 W	38*	39*	
10 23	6 58.92	- 7 27.8	1.090	1.611	37.3	17.1	101 W	38	71	6 10	0 37.65	+24 21.9	1.927	1.714	31.7	18.3	62 W	40*	37*	
10 28	7 4.79	- 8 17.3	1.066	1.620	36.6	17.1	104 W	37	72	6 15	0 49.54	+26 40.8	1.885	1.700	32.4	18.3	63 W	43*	36*	
11 2	7 9.77	- 9 3.9	1.042	1.630	35.7	17.0	107 W	36	73	6 20	1 1.78	+28 59.8	1.844	1.687	33.1	18.3	64 W	46*	34*	
11 7	7 13.80	- 9 46.5	1.018	1.641	34.7	16.9	110 W	35	74	6 25	1 14.42	+31 18.2	1.805	1.675	33.7	18.2	66 W	48*	32*	
11 12	7 16.83	-10 24.1	0.994	1.652	33.5	16.9	113 W	35	74	6 30	1 27.49	+33 35.3	1.768	1.664	34.3	18.2	67 W	51*	30*	
11 17	7 18.81	-10 55.5	0.972	1.664	32.2	16.8	116 W	34	75	7 5	1 41.03	+35 50.2	1.733	1.654	34.8	18.1	68 W	54*	28*	
11 22	7 19.71	-11 19.2	0.951																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
31180 1997 YX₃ (continuation)										310842 2003 AK₁₈ (continuation)									
8 19	4 6.92	+52 7.4	1.488	1.615	37.8	17.8	78 W	72*	12*	1 12	21 10.42	-13 14.8	1.280	0.573	47.0	20.8	25 E	16*	11*
8 24	4 25.28	+53 15.8	1.466	1.617	37.9	17.8	79 W	73*	11*	1 17	21 41.55	-10 12.0	1.241	0.600	51.2	21.0	28 E	19*	13*
8 29	4 43.69	+54 14.5	1.444	1.619	38.0	17.8	80 W	73*	10*	1 22	22 11.79	-7 2.0	1.208	0.632	54.4	21.1	31 E	22*	14*
9 3	5 1.99	+55 3.7	1.422	1.623	38.0	17.7	82 W	74*	9*	1 27	22 41.26	-3 49.6	1.181	0.667	56.5	21.2	34 E	25*	15*
9 8	5 20.00	+55 43.7	1.400	1.628	37.9	17.7	83 W	75*	8*	2 1	23 10.02	-0 39.0	1.160	0.704	57.8	21.3	37 E	28*	16*
9 13	5 37.51	+56 15.2	1.378	1.634	37.8	17.7	85 W	75*	7*	2 6	23 38.15	+2 26.3	1.148	0.742	58.3	21.4	40 E	31*	17*
9 18	5 54.31	+56 38.9	1.355	1.642	37.7	17.7	87 W	76*	7*	178783 2001 BY₂									
9 23	6 10.21	+56 55.5	1.332	1.650	37.4	17.6	89 W	76*	7*	12 23	18 57.78	-15 54.7	3.461	2.524	5.8	21.1	15 E	8*	2*
9 28	6 25.02	+57 5.9	1.309	1.659	37.1	17.6	91 W	77*	7*	1 2	19 16.04	-16 5.5	3.461	2.498	3.8	20.9	10 E	4*	—
10 3	6 38.62	+57 11.2	1.285	1.670	36.8	17.5	93 W	77*	6*	1 12	19 34.61	-16 6.9	3.447	2.471	2.3	20.8	6 E	—	—
10 8	6 50.84	+57 12.3	1.260	1.681	36.3	17.5	95 W	78*	6*	1 22	19 53.44	-15 59.4	3.419	2.443	2.5	20.8	6 W	—	—
10 13	7 1.55	+57 10.2	1.235	1.694	35.7	17.5	98 W	78	7*	2 1	20 12.46	-15 43.3	3.377	2.414	4.2	20.8	10 W	2*	2*
10 18	7 10.63	+57 5.5	1.210	1.707	35.0	17.4	101 W	78	7*	2 11	20 31.62	-15 19.6	3.321	2.385	6.3	20.9	15 W	4*	8*
10 23	7 17.96	+56 58.7	1.184	1.721	34.1	17.4	104 W	78	7*	2 21	20 50.87	-14 48.9	3.254	2.355	8.5	20.9	21 W	5*	14*
10 28	7 23.44	+56 50.1	1.159	1.736	33.1	17.3	107 W	78	7*	3 2	21 10.18	-14 12.1	3.174	2.324	10.8	20.9	26 W	6*	20*
11 2	7 26.99	+56 39.7	1.134	1.752	32.0	17.2	111 W	78	7	3 12	21 29.53	-13 30.4	3.084	2.293	13.0	20.9	31 W	7*	25*
11 7	7 28.54	+56 27.2	1.109	1.768	30.6	17.2	115 W	79	8	3 22	21 48.92	-12 44.9	2.984	2.261	15.2	20.9	36 W	8*	30*
11 12	7 28.02	+56 11.7	1.086	1.786	29.1	17.1	119 W	79	8	4 1	22 8.34	-11 56.8	2.875	2.229	17.3	20.8	42 W	9*	36*
11 17	7 25.39	+55 52.1	1.064	1.804	27.4	17.0	123 W	79	8	4 11	22 27.80	-11 7.7	2.759	2.197	19.4	20.8	47 W	9*	41*
11 22	7 20.73	+55 26.6	1.045	1.822	25.5	17.0	127 W	80	9	4 21	22 47.33	-10 18.9	2.637	2.164	21.4	20.7	52 W	10*	46*
11 27	7 14.19	+54 53.2	1.028	1.841	23.4	16.9	132 W	80	9	5 1	23 6.94	-9 32.3	2.509	2.131	23.3	20.6	57 W	11*	51*
12 2	7 6.03	+54 10.1	1.015	1.861	21.2	16.8	137 W	81	10	5 11	23 26.66	-8 49.6	2.379	2.098	25.1	20.5	62 W	13*	55*
12 7	6 56.60	+53 15.4	1.006	1.881	19.0	16.8	142 W	82	11	5 21	23 46.53	-8 12.8	2.246	2.065	26.7	20.4	67 W	14*	60*
12 12	6 46.35	+52 7.8	1.002	1.901	16.7	16.7	146 W	83	12	5 31	0 6.53	-7 44.3	2.112	2.032	28.2	20.3	72 W	16*	64*
12 17	6 35.80	+50 47.0	1.004	1.922	14.6	16.6	150 W	84	13	6 10	0 26.70	-7 26.6	1.979	1.999	29.6	20.2	76 W	19*	67*
12 22	6 25.46	+49 13.5	1.012	1.944	12.9	16.6	154 W	86	15	6 20	0 47.01	-7 22.3	1.848	1.967	30.7	20.0	81 W	21*	70*
12 27	6 15.80	+47 29.2	1.027	1.966	11.8	16.6	156 E	86	17	6 30	1 7.42	-7 34.4	1.720	1.935	31.6	19.9	86 W	24*	71*
1 1	6 7.17	+45 37.0	1.048	1.988	11.6	16.7	156 E	89	18	7 10	1 27.84	-8 5.9	1.597	1.904	32.3	19.7	91 W	27*	72
1 6	5 59.77	+43 39.9	1.077	2.010	12.1	16.8	155 E	89	20	7 20	1 48.16	-8 59.8	1.480	1.873	32.7	19.5	95 W	30*	73
1 11	5 53.74	+41 41.2	1.112	2.033	13.2	16.9	152 E	87	22	7 30	2 8.15	-10 18.9	1.370	1.844	32.8	19.3	100 W	31*	74
1 16	5 49.10	+39 43.6	1.154	2.055	14.7	17.1	148 E	85	24	8 9	2 27.55	-12 4.9	1.269	1.815	32.7	19.1	105 W	32*	76
8 19	18 57.25	-26 7.9	2.623	1.678	7.4	19.5	13 E	—	6*	8 19	2 45.99	-14 18.7	1.178	1.788	32.3	18.9	109 W	30*	78
1 2	19 27.88	-25 27.8	2.655	1.694	5.6	19.4	10 E	—	3*	8 24	2 54.69	-15 35.7	1.136	1.775	32.0	18.8	111 W	29*	80
1 12	19 57.78	-24 26.8	2.684	1.711	3.9	19.4	7 E	—	1*	8 29	3 2.96	-16 58.9	1.097	1.763	31.7	18.7	114 W	28	81
1 22	20 26.78	-23 7.2	2.711	1.731	2.5	19.3	4 E	—	—	9 3	3 10.74	-18 27.6	1.060	1.751	31.3	18.6	116 W	27	82
2 1	20 54.75	-21 31.8	2.734	1.753	2.3	19.4	4 W	—	—	9 8	3 17.94	-20 1.1	1.027	1.739	30.9	18.5	117 W	25	84
2 11	21 21.64	-19 43.6	2.754	1.777	3.5	19.5	6 W	—	—	9 13	3 24.47	-21 38.4	0.996	1.728	30.5	18.4	119 W	23	86
2 21	21 47.44	-17 45.3	2.770	1.802	5.1	19.6	9 W	—	3*	9 18	3 30.24	-23 18.2	0.969	1.717	30.1	18.3	121 W	22	87
3 2	22 12.17	-15 39.7	2.781	1.828	7.0	19.7	13 W	—	7*	9 23	3 35.17	-24 58.8	0.944	1.707	29.7	18.2	122 W	20	89
3 12	22 35.88	-13 29.3	2.786	1.856	8.8	19.9	17 W	—	10*	9 28	3 39.18	-26 38.5	0.922	1.698	29.4	18.2	124 W	18	89
3 22	22 58.63	-11 16.5	2.785	1.884	10.7	20.0	20 W	—	14*	10 3	3 42.21	-28 15.2	0.903	1.689	29.0	18.1	125 W	17	88
4 1	23 20.49	-9 3.1	2.778	1.913	12.5	20.1	24 W	—	18*	10 8	3 44.21	-29 46.9	0.886	1.681	28.8	18.0	126 W	15	86
4 11	23 41.51	-6 51.2	2.763	1.943	14.3	20.2	29 W	—	22*	10 13	3 45.13	-31 11.3	0.873	1.673	28.5	18.0	127 W	14	85
4 21	0 1.74	-4 42.2	2.741	1.974	16.0	20.2	33 W	2*	27*	10 18	3 44.97	-32 26.1	0.861	1.666	28.4	17.9	127 W	13	84
5 1	0 21.24	-2 37.4	2.712	2.004	17.7	20.3	37 W	4*	31*	10 23	3 43.77	-33 28.7	0.853	1.660	28.3	17.9	128 W	12	83
5 11	0 40.00	-0 38.1	2.674	2.035	19.3	20.4	42 W	6*	36*	10 28	3 41.64	-34 17.0	0.847	1.654	28.3	17.9	128 W	11	82
5 21	0 58.04	+1 14.8	2.629	2.066	20.8	20.4	46 W	9*	40*	11 2	3 38.73	-34 49.1	0.843	1.649	28.4	17.9	128 W	10	81
5 31	1 15.33	+3 0.4	2.575	2.097	22.2	20.4	51 W	13*	44*	11 7	3 35.21	-35 3.5	0.841	1.645	28.5	17.9	128 W	10	81
6 10	1 31.83	+4 38.0	2.513	2.128	23.4	20.4	56 W	17*	48*	11 12	3 31.30	-34 59.1	0.842	1.641	28.8	17.9	127 W	10	81
6 20	1 47.48	+6 6.9	2.444	2.159	24.5	20.5	62 W	22*	51*	11 17	3 27.24	-34 35.2	0.846	1.639	29.0	17.9	126 E	10	81
6 30	2 1.13	+7 26.6	2.367	2.189	25.4	20.4	67 W	28*	53*	11 22	3 23.30	-33 51.8	0.851	1.637	29.4	17.9	126 E	11	82
7 10	2 15.67	+8 36.8	2.284	2.219	26.0	20.4	73 W	34*	54*	11 27	3 19.72	-32 49.6	0.859	1.636	29.8	17.9	125 E	12	83
7 20	2 27.91	+9 37.1	2.196	2.249	26.4	20.4	80 W	41*	54*	12 2	3 16.70	-31 29.8	0.870	1.635	30.2	18.0	123 E	14	85
7 30	2 38.60	+10 27.2	2.102	2.278	26.4	20.3	86 W	47*	54	12 7	3 14.39	-29 54.0	0.882	1.636	30.6	18.0	122 E	15	86
8 9	2 47.47	+11 6.9	2.007	2.306	26.0	20.2	94 W	52*	53	12 12	3 12.89	-28 4.0	0.898	1.637	31.1	18.1	121 E	17	88
8 19	2 54.20	+11 36.0	1.910	2.334	25.1	20.1	102 W	56*	52	12 17	3 12.28	-26 1.9	0.916	1.639	31.6	18.1	119 E	19	90
8 29	2 58.43	+11 54.2	1.816	2.362	23.7	20.0	110 W	57	52	12 22	3 12.61	-23 49.8	0.936	1.641	32.1	18.2	117 E	21	88
9 8	2 59.84	+12 1.7	1.727	2.389	21.6	19.8	119 W	57	52	12 27	3 13.86	-21 30.0	0.960	1.645	32.6	18.3	116 E	24	85
9 18	2 58.16	+11 58.3	1.647	2.415	18.7	19.7	129 W	57	52	1 1	3 16.02	-19 4.8	0.986	1.649	33.1	18.3	114 E	26	83
9 28	2 53.30	+11 44.4	1.582	2.440	15.2	19.5	140 W	57	52	1 6	3 19.02	-16 36.0	1.014	1.654	33.5	18.4	112 E	28	81
10 8	2 45.51	+11 21.5	1.536	2.464	10.9	19.3	152 W	56	53	1 11	3 22.83	-14 5.3	1.046	1.659	33.9	18.5	110 E	31	78
10 18	2 35.41	+10 51.8	1.514	2.488	6.2	19.1	164 W	56	53	1 16	3 27.41	-11 34.5	1.080	1.666</					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	
306772 2001 CY₁										5863 Tara										
12	23	18 59.83	-26 20.6	3.685	2.737	4.8	21.0	13 E	7*	10	18	5 42.84	-1 11.6	2.159	2.753	18.9	20.5	117 W	44	65
1	2	19 18.01	-25 47.0	3.674	2.702	2.8	20.9	8 E	2*	10	28	5 39.04	-2 36.4	2.094	2.794	16.8	20.4	126 W	42	67
1	12	19 36.44	-25 5.6	3.647	2.666	1.3	20.7	4 E	—	11	2	5 36.12	-3 16.2	2.068	2.814	15.6	20.4	130 W	42	67
1	22	19 55.02	-24 16.3	3.606	2.630	2.3	20.7	6 W	—	11	7	5 32.56	-3 53.5	2.046	2.833	14.4	20.3	135 W	41	68
2	1	20 13.70	-23 19.1	3.551	2.593	4.3	20.8	11 W	5*	11	12	5 28.42	-4 27.5	2.029	2.852	13.1	20.3	139 W	41	68
2	11	20 32.38	-22 14.3	3.483	2.555	6.4	20.8	17 W	11*	11	17	5 23.76	-4 57.3	2.018	2.871	11.9	20.2	143 W	40	69
2	21	20 51.03	-21 2.0	3.403	2.517	8.6	20.9	22 W	16*	11	27	5 13.29	-5 41.9	2.015	2.907	10.0	20.2	149 W	39	70
3	2	21 9.59	-19 42.7	3.311	2.478	10.8	20.8	28 W	22*	12	7	5 2.12	-6 3.3	2.039	2.942	9.3	20.2	151 W	39	70
3	12	21 28.03	-18 16.8	3.209	2.439	12.9	20.8	33 W	4* 27*	12	17	4 51.25	-6 0.1	2.092	2.975	10.0	20.3	148 E	39	70
3	22	21 46.32	-16 44.8	3.098	2.399	15.0	20.8	38 W	5* 32*	12	27	4 41.64	-5 33.6	2.171	3.006	11.6	20.5	142 E	39	70
4	1	22 4.45	-15 7.3	2.978	2.359	17.0	20.7	44 W	7* 38*	1	6	4 34.01	-4 47.8	2.274	3.037	13.6	20.7	134 E	40	69
4	11	22 22.40	-13 25.0	2.852	2.319	19.0	20.7	49 W	8* 43*	1	16	4 28.72	-3 47.3	2.398	3.065	15.3	20.9	125 E	41	68
4	21	22 40.17	-11 38.4	2.721	2.279	20.9	20.6	54 W	10* 48*	333478 2004 SD₂₀										
5	1	22 57.75	-9 48.4	2.584	2.238	22.7	20.5	59 W	13* 53*	12	23	19 0.71	-33 46.4	2.089	1.179	13.6	20.9	16 E	—	10*
5	11	23 15.14	-7 55.5	2.445	2.198	24.4	20.4	64 W	15* 57*	12	28	19 19.98	-33 32.7	2.114	1.199	13.0	21.0	16 E	—	10*
5	21	23 32.33	-6 0.5	2.304	2.157	26.0	20.3	69 W	18* 61*	1	2	19 38.78	-33 9.3	2.137	1.217	12.3	21.0	15 E	—	9*
5	31	23 49.29	-4 4.2	2.162	2.117	27.4	20.1	74 W	22* 64*	1	7	19 57.09	-32 37.1	2.158	1.232	11.7	21.0	15 E	—	8*
6	10	0 5.99	-2 7.2	2.020	2.077	28.6	20.0	79 W	26* 65*	1	12	20 14.93	-31 56.9	2.176	1.246	11.1	21.1	14 E	—	8*
6	20	0 22.40	-0 10.4	1.880	2.038	29.7	19.8	84 W	31* 64*	1	17	20 32.30	-31 9.3	2.192	1.257	10.6	21.1	14 E	—	7*
6	30	0 38.42	+1 45.5	1.741	1.999	30.6	19.6	89 W	36* 62*	1	22	20 49.21	-30 14.9	2.205	1.266	10.2	21.1	13 E	—	6*
7	10	0 53.93	+3 39.7	1.607	1.962	31.1	19.4	94 W	42* 60*	1	27	21 5.70	-29 14.2	2.215	1.273	9.8	21.1	13 E	—	5*
7	20	1 8.79	+5 31.4	1.476	1.925	31.4	19.2	99 W	47* 58*	2	1	21 21.78	-28 7.8	2.223	1.278	9.5	21.1	12 E	—	5*
7	30	1 22.74	+7 19.8	1.350	1.890	31.2	19.0	105 W	51* 57*	2	6	21 37.47	-26 56.2	2.228	1.281	9.3	21.1	12 E	—	4*
8	9	1 35.51	+9 4.3	1.231	1.856	30.6	18.7	111 W	54* 55*	2	11	21 52.81	-25 39.6	2.231	1.282	9.2	21.1	12 E	—	3*
8	19	1 46.70	+10 44.0	1.119	1.824	29.5	18.4	118 W	56* 53*	2	16	22 7.84	-24 18.4	2.230	1.281	9.2	21.1	12 E	—	2*
8	29	1 55.80	+12 17.9	1.016	1.794	27.6	18.1	125 W	57* 52*	2	21	22 22.59	-22 53.0	2.227	1.277	9.4	21.1	12 E	—	1*
9	8	2 2.30	+13 45.2	0.924	1.766	25.0	17.8	132 W	59* 50*	2	26	22 37.11	-21 23.4	2.221	1.272	9.6	21.1	12 E	—	1*
9	18	2 5.63	+15 4.3	0.843	1.741	21.4	17.5	141 W	60* 49*	3	2	22 51.43	-19 50.0	2.213	1.264	9.9	21.1	13 W	—	—
9	28	2 5.38	+16 12.7	0.776	1.719	16.9	17.1	150 W	61* 48*	3	7	23 5.58	-18 12.8	2.202	1.255	10.2	21.1	13 W	—	1*
10	8	2 1.61	+17 8.2	0.725	1.699	11.5	16.8	160 W	62* 47*	3	12	23 19.62	-16 32.0	2.188	1.243	10.7	21.0	13 W	—	2*
10	18	1 54.99	+17 48.2	0.693	1.683	5.9	16.4	170 W	63* 46*	3	17	23 33.58	-14 47.6	2.172	1.229	11.2	21.0	14 W	—	3*
10	23	1 51.07	+18 2.4	0.684	1.677	3.9	16.3	173 W	63* 46*	3	22	23 47.53	-12 59.5	2.153	1.213	11.7	21.0	14 W	—	4*
10	28	1 47.08	+18 13.0	0.681	1.671	4.5	16.3	172 E	63* 46*	3	27	0 1.50	-11 7.9	2.132	1.194	12.3	21.0	15 W	—	5*
11	2	1 43.27	+18 20.9	0.682	1.666	6.9	16.4	168 E	63* 46*	4	1	0 15.55	-9 12.7	2.108	1.174	12.9	20.9	15 W	—	6*
11	7	1 39.89	+18 26.8	0.688	1.662	9.8	16.5	163 E	63* 46*	4	6	0 29.73	-7 13.8	2.083	1.151	13.6	20.9	16 W	—	7*
11	12	1 37.16	+18 31.5	0.698	1.658	12.9	16.7	158 E	64* 45*	4	11	0 44.11	-5 11.1	2.055	1.126	14.2	20.8	16 W	—	8*
11	17	1 35.28	+18 36.2	0.713	1.656	15.8	16.8	153 E	64* 45*	4	16	0 58.77	-3 4.5	2.025	1.099	14.8	20.8	16 W	—	8*
11	22	1 34.38	+18 41.9	0.733	1.655	18.5	17.0	148 E	64* 45*	4	21	1 13.78	-0 54.0	1.994	1.069	15.5	20.7	16 W	—	9*
11	27	1 34.55	+18 49.4	0.756	1.655	21.0	17.1	143 E	64* 45*	4	26	1 29.24	+1 20.5	1.962	1.037	16.0	20.6	17 W	—	9*
12	7	1 38.12	+19 11.8	0.813	1.657	25.3	17.4	134 E	64* 45*	5	1	1 45.25	+3 39.1	1.928	1.003	16.6	20.5	16 W	—	10*
12	17	1 45.82	+19 45.5	0.881	1.663	28.6	17.7	126 E	65* 44*	5	6	2 1.92	+6 1.6	1.893	0.967	17.0	20.4	16 W	—	10*
12	27	1 57.23	+20 30.5	0.960	1.672	31.0	18.0	119 E	66* 43*	5	11	2 19.42	+8 27.8	1.857	0.928	17.4	20.3	16 W	—	10*
1	6	2 11.74	+21 24.3	1.048	1.686	32.7	18.2	112 E	66* 42*	5	16	2 37.91	+10 57.3	1.820	0.887	17.6	20.2	15 W	—	10*
1	16	2 28.80	+22 23.7	1.143	1.702	33.7	18.5	106 E	67* 41*	5	21	2 57.60	+13 29.5	1.783	0.843	17.6	20.0	15 W	—	9*
5863 Tara										5	26	3 18.73	+16 3.0	1.747	0.798	17.3	19.8	14 W	—	8*
12	23	19 0.47	-14 17.4	2.013	1.105	14.6	18.3	16 E	10*	5	31	3 41.56	+18 36.0	1.710	0.751	16.8	19.6	12 W	—	6*
1	2	19 43.34	-14 3.5	2.037	1.125	14.0	18.3	16 E	10*	6	5	4 6.41	+21 5.5	1.673	0.704	15.8	19.4	11 W	—	4*
1	12	20 25.04	-13 20.2	2.074	1.156	13.1	18.4	15 E	9*	6	10	4 33.64	+23 27.3	1.637	0.655	14.3	19.2	9 W	—	2*
1	22	21 5.01	-12 11.8	2.123	1.196	12.0	18.4	15 E	8*	6	15	5 3.57	+25 35.3	1.601	0.608	12.3	18.9	7 W	—	—
1	27	21 24.24	-11 29.9	2.151	1.219	11.3	18.5	14 E	7*	6	20	5 36.45	+27 21.4	1.565	0.563	10.4	18.6	6 W	—	—
2	1	21 42.93	-10 43.9	2.182	1.244	10.6	18.5	13 E	7*	6	22	5 50.44	+27 55.3	1.550	0.547	10.0	18.5	5 W	—	—
2	6	22 1.07	-9 54.5	2.214	1.271	9.8	18.6	13 E	6*	6	24	6 4.90	+28 23.4	1.535	0.531	10.0	18.4	5 W	—	—
2	11	22 18.66	-9 2.4	2.248	1.299	9.0	18.6	12 E	5*	6	26	6 19.79	+28 44.6	1.520	0.517	10.6	18.3	5 W	—	—
2	16	22 35.71	-8 8.2	2.284	1.328	8.2	18.7	11 E	4*	6	28	6 35.07	+28 58.4	1.504	0.504	12.0	18.3	6 E	—	—
2	21	22 52.23	-7 12.7	2.320	1.358	7.3	18.7	10 E	3*	6	30	6 50.69	+29 3.8	1.488	0.492	13.9	18.3	7 E	1*	
3	2	23 23.78	-5 19.6	2.395	1.421	5.6	18.8	8 E	1*	7	2	7 6.57	+29 0.3	1.471	0.483	16.4	18.3	8 E	2*	
3	12	23 53.47	-3 26.9	2.470	1.486	4.1	18.9	6 E	—	7	4	7 22.63	+28 47.2	1.454	0.476	19.3	18.4	9 E	3*	
3	22	0 21.51	+1 37.7	2.544	1.552	2.9	19.0	5 E	—	7	6	7 38.77	+28 24.2	1.436	0.471	22.5	18.4	10 E	4*	
4	1	0 48.10	+0 5.7	2.614	1.620	2.9	19.1	5 E	—	7	8	7 54.89	+27 51.0	1.418	0.469	25.8	18.5	12 E	5*	
4	11	1 13.39	+1 41.6	2.679	1.688	4.0	19.3	7 W	—	7	10	8 10.89	+27 7.7	1.399	0.469	29.3	18.6	13 E	5*	
4	21	1 37.53	+3 8.7	2.737	1.755	5.6	19.6	10 W	—	7	12	8 26.67	+26 14.5	1.381	0.471	32.7	18.6	15 E	6*	
5	1	2 0.64	+4 26.0	2.787	1.822	7.3	19.8	13 W	—	7	14	8 42.15	+25 11.8	1.362	0.476	36.1	18.7	16 E	7*	
5	11	2 22.79	+5 32.8	2.829	1.888	9.1														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
333478 2004 SD₂₀										257926 2000 WY₇₂									
<i>(continuation)</i>										<i>(continuation)</i>									
10 8	15 53.09	-35 1.6	1.476	1.137	42.5	21.0	50 E	—	42*	8 19	5 16.62	+26 38.3	1.917	1.766	31.6	20.7	66 W	51*	34*
10 18	16 35.11	-37 9.3	1.553	1.183	39.9	21.1	50 E	—	42*	8 29	5 39.19	+26 40.4	1.852	1.790	32.1	20.7	71 W	56*	34*
10 28	17 16.37	-38 19.9	1.629	1.220	37.5	21.2	48 E	—	41*	9 8	6 0.21	+26 28.9	1.783	1.815	32.5	20.6	75 W	61*	35*
11 7	17 56.48	-38 40.4	1.701	1.248	35.2	21.3	47 E	1*	40*	9 18	6 19.37	+26 6.2	1.710	1.842	32.6	20.6	81 W	65*	36*
11 17	18 35.16	-38 17.2	1.768	1.268	33.1	21.3	44 E	2*	38*	9 28	6 36.34	+25 34.5	1.634	1.869	32.4	20.5	87 W	69*	37*
11 27	19 12.19	-37 16.1	1.827	1.279	31.1	21.4	42 E	3*	36*	10 8	6 50.79	+24 56.6	1.556	1.898	31.7	20.4	93 W	70*	38*
12 7	19 47.47	-35 41.8	1.879	1.282	29.3	21.4	39 E	4*	33*	10 18	7 2.34	+24 15.1	1.476	1.927	30.5	20.3	101 W	69	40*
12 17	20 21.06	-33 38.7	1.921	1.277	27.5	21.4	37 E	6*	31*	10 28	7 10.55	+23 32.5	1.398	1.957	28.8	20.2	109 W	69	40
12 27	20 53.08	-31 10.0	1.952	1.263	25.8	21.3	34 E	7*	27*	11 7	7 15.03	+22 51.3	1.325	1.987	26.3	20.0	118 W	68	41
1 6	21 23.72	-28 18.3	1.973	1.240	24.2	21.3	31 E	8*	24*	11 17	7 15.40	+22 13.0	1.258	2.018	22.9	19.8	127 W	67	42
1 16	21 53.25	-25 5.2	1.981	1.210	22.7	21.2	28 E	8*	21*	11 27	7 11.49	+21 38.6	1.204	2.049	18.7	19.6	138 W	67	42
12 23	19 0.75	-22 20.3	2.630	1.689	7.8	20.9	13 E	4*	5*	12 7	7 3.60	+21 7.8	1.166	2.079	13.6	19.4	150 W	66	43
1 2	19 30.12	-22 14.1	2.612	1.653	5.9	20.7	10 E	1*	2*	12 12	6 58.38	+20 53.4	1.155	2.095	10.8	19.3	156 W	66	43
1 12	20 0.19	-21 46.7	2.592	1.620	4.2	20.6	7 E	—	—	12 17	6 52.53	+20 39.7	1.150	2.110	7.9	19.2	163 W	66	43
1 22	20 30.77	-20 57.9	2.570	1.590	2.6	20.4	4 E	—	—	12 22	6 46.26	+20 26.3	1.151	2.126	5.0	19.1	169 W	65	44
2 1	21 1.65	-19 47.9	2.546	1.563	1.8	20.3	3 E	—	—	12 27	6 39.80	+20 13.5	1.160	2.141	2.2	18.9	175 W	65	44
2 11	21 32.65	-18 17.8	2.523	1.540	2.6	20.3	4 W	—	—	1 1	6 33.40	+20 1.1	1.174	2.156	1.9	18.9	176 E	65	44
2 21	22 3.60	-16 29.2	2.500	1.521	4.0	20.4	6 W	—	—	1 6	6 27.27	+19 49.3	1.196	2.171	4.4	19.4	170 E	65	44
3 2	22 34.38	-14 24.6	2.480	1.506	5.5	20.4	8 W	—	1*	1 11	6 21.63	+19 38.3	1.224	2.187	7.1	19.2	164 E	65	44
3 12	23 4.88	-12 6.8	2.461	1.496	7.0	20.5	11 W	—	3*	1 16	6 16.64	+19 28.3	1.259	2.202	9.7	19.5	158 E	64	45
3 22	23 35.04	-9 39.2	2.446	1.491	8.5	20.5	13 W	—	5*	65682 1990 QU₂									
4 1	0 4.84	-7 5.4	2.434	1.490	9.9	20.5	15 W	—	7*	12 23	19 2.52	-18 43.1	2.720	1.786	8.1	19.9	15 E	7*	4*
4 11	0 34.23	-4 29.0	2.424	1.495	11.3	20.6	17 W	—	10*	1 2	19 29.69	-18 10.5	2.719	1.765	6.2	19.8	11 E	4*	—
4 21	1 3.24	-1 53.7	2.418	1.504	12.5	20.6	19 W	—	12*	1 12	19 57.08	-17 20.5	2.714	1.745	4.3	19.7	8 E	2*	—
5 1	1 31.84	+0 37.1	2.415	1.518	13.8	20.7	21 W	—	14*	1 22	20 24.55	-16 13.7	2.706	1.727	2.6	19.5	5 E	—	—
5 11	2 0.01	+3 0.3	2.413	1.536	15.0	20.8	23 W	—	17*	2 1	20 51.99	-14 51.1	2.694	1.711	1.5	19.4	3 W	—	—
5 21	2 27.76	+5 13.5	2.412	1.558	16.1	20.8	25 W	—	19*	2 11	21 19.28	-13 14.2	2.680	1.697	2.3	19.5	4 W	—	—
5 31	2 55.04	+7 14.3	2.411	1.585	17.3	20.9	28 W	—	22*	3 2	21 46.37	-11 24.6	2.663	1.685	4.0	19.5	7 W	—	—
6 10	3 21.78	+9 1.4	2.409	1.614	18.4	21.0	30 W	1*	24*	3 2	22 13.21	-9 24.4	2.644	1.676	5.8	19.6	10 W	—	4*
6 20	3 47.95	+10 33.7	2.405	1.647	19.6	21.1	33 W	4*	27*	3 12	22 39.77	-7 16.0	2.623	1.669	7.6	19.7	13 W	—	7*
6 30	4 13.45	+11 50.8	2.397	1.682	20.7	21.1	36 W	8*	29*	3 22	23 6.07	-5 1.7	2.601	1.665	9.4	19.7	16 W	1*	10*
7 10	4 38.19	+12 52.8	2.385	1.719	21.9	21.2	39 W	13*	31*	4 1	23 32.11	-2 44.0	2.577	1.664	11.2	19.8	19 W	1*	13*
7 20	5 2.08	+13 40.2	2.368	1.758	23.0	21.3	43 W	18*	33*	4 11	23 57.93	-0 25.5	2.552	1.665	13.0	19.8	22 W	2*	16*
7 30	5 25.00	+14 13.9	2.344	1.799	24.1	21.4	46 W	23*	34*	4 21	0 23.54	+1 51.4	2.525	1.669	14.7	19.8	25 W	3*	19*
8 9	5 46.85	+14 35.1	2.313	1.841	25.1	21.4	50 W	29*	36*	5 1	0 48.98	+4 4.5	2.497	1.675	16.4	19.9	28 W	4*	22*
8 19	6 7.52	+14 45.4	2.275	1.884	26.0	21.4	55 W	34*	38*	5 11	1 14.25	+6 11.4	2.467	1.684	18.0	19.9	31 W	5*	25*
8 29	6 26.86	+14 46.7	2.229	1.927	26.9	21.5	60 W	40*	39*	5 21	1 39.36	+8 10.1	2.435	1.696	19.6	20.0	34 W	7*	28*
9 8	6 44.76	+14 40.9	2.176	1.971	27.6	21.5	65 W	45*	41*	5 31	2 4.28	+9 58.9	2.400	1.709	21.1	20.0	37 W	9*	30*
9 18	7 1.06	+14 30.3	2.114	2.016	28.0	21.5	71 W	50*	43*	6 10	2 28.97	+11 36.1	2.362	1.725	22.6	20.0	41 W	12*	33*
9 28	7 15.57	+14 17.3	2.045	2.060	28.3	21.5	77 W	55*	44*	6 20	2 53.38	+13 0.5	2.321	1.743	24.0	20.1	44 W	15*	35*
10 8	7 28.08	+14 4.8	1.970	2.104	28.1	21.4	83 W	58*	46*	6 30	3 17.41	+14 11.1	2.277	1.763	25.3	20.1	48 W	20*	37*
10 18	7 38.35	+13 55.4	1.891	2.149	27.6	21.4	91 W	59*	48*	7 10	3 40.93	+15 7.2	2.228	1.784	26.5	20.1	52 W	24*	39*
10 28	7 46.08	+13 52.6	1.809	2.192	26.6	21.3	99 W	59	49*	7 20	4 3.83	+15 48.7	2.176	1.807	27.6	20.1	56 W	30*	40*
11 7	7 50.95	+13 59.3	1.727	2.236	25.0	21.2	108 W	59	50*	7 30	4 25.93	+16 15.4	2.118	1.831	28.6	20.1	60 W	35*	41*
11 17	7 52.65	+14 18.7	1.650	2.279	22.7	21.1	117 W	59	50	8 9	4 47.05	+16 28.0	2.056	1.857	29.5	20.1	64 W	40*	43*
11 27	7 50.92	+14 53.0	1.581	2.321	19.6	20.9	128 W	60	49	8 19	5 7.00	+16 27.1	1.990	1.883	30.1	20.1	69 W	46*	44*
12 7	7 45.74	+15 43.0	1.527	2.362	15.8	20.7	139 W	61	48	8 29	5 25.54	+16 13.8	1.918	1.911	30.6	20.0	74 W	51*	45*
12 17	7 37.34	+16 47.3	1.492	2.403	11.3	20.6	152 W	62	47	9 8	5 42.43	+15 49.5	1.843	1.939	30.8	20.0	80 W	55*	46*
12 27	7 26.50	+18 1.6	1.482	2.443	6.2	20.4	164 W	63	46	9 18	5 57.40	+15 15.9	1.764	1.967	30.6	19.9	86 W	58*	48*
1 1	7 20.52	+18 40.6	1.487	2.463	3.7	20.3	171 W	64	45	9 28	6 10.13	+14 35.0	1.683	1.996	30.1	19.8	93 W	59*	49*
1 6	7 14.42	+19 19.7	1.500	2.483	1.4	20.1	176 W	64	45	10 8	6 20.29	+13 49.0	1.601	2.026	29.1	19.7	100 W	59	50*
1 11	7 8.36	+19 58.0	1.521	2.502	2.1	20.2	175 E	65	44	10 18	6 27.51	+13 0.6	1.520	2.055	27.5	19.6	108 W	58	51
1 16	7 2.54	+20 35.0	1.549	2.521	4.4	20.4	169 E	66	43	10 28	6 31.39	+12 12.7	1.443	2.085	25.3	19.5	116 W	57	52
12 23	19 2.09	-20 34.7	2.824	1.885	7.3	20.9	14 E	5*	5*	11 7	6 31.66	+11 28.7	1.374	2.114	22.3	19.3	126 W	56	53
1 2	19 27.60	-19 33.8	2.817	1.857	5.3	20.7	10 E	3*	1*	11 17	6 28.17	+10 52.0	1.317	2.144	18.6	19.1	136 W	56	53
1 12	19 53.29	-18 16.7	2.804	1.830	3.4	20.6	6 E	—	—	11 27	6 21.12	+10 26.3	1.277	2.173	14.2	18.9	147 W	55	54
1 22	20 19.06	-16 43.9	2.785	1.804	1.9	20.4	3 E	—	—	12 7	6 11.22	+10 14.4	1.257	2.202	9.7	18.7	158 W	55	54
2 1	20 44.83	-14 55.7	2.761	1.779	1.9	20.4	3 W	—	—	12 17	5 59.66	+10 17.8	1.263	2.230	6.1	18.6	166 W	55	54
2 11	21 10.53	-12 53.3	2.733	1.756	3.5	20.4	6 W	—	—	12 27	5 48.03	+10 36.3	1.295	2.258	6.6	18.7	165 E	56	53
2 21	21 36.12	-10 37.9	2.702	1.734	5.3	20.5	9 W	1*	2*	1 6	5 37.84	+11 8.0	1.354	2.286	10.2	19.0	156 E	56	53
3 2	22 1.59	-8 11.1	2.668	1.714	7.2	20.5	13 W	2*	6*	1 16	5 30.21	+11 49.8	1.437	2.313	14.1	19.3	145 E	57	52
3 12	22 26.94	-5 34.8	2.632	1.697	9.1	20.6	16 W	3*	9*	33060 1997 VY									
3 22	22 52.22	-2 51.2	2.595	1.682	10.9	20.6	19 W	4*	12*	12 23	19 2.53	-21 21.1	2.864	1.925					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
33060 1997 VY										308117 2004 XD₆₁									
<i>(continuation)</i>																			
6 10	2 30.10	+16 35.4	2.282	1.622	23.1	19.2	39 W	15*	29*	12 23	19 3.34	-32 58.9	2.797	1.874	8.5	20.0	16 E	—	10*
6 20	2 57.19	+18 31.9	2.248	1.634	24.4	19.3	42 W	19*	30*	1 2	19 32.19	-31 32.3	2.783	1.840	7.0	19.9	13 E	—	7*
6 30	3 24.18	+20 11.7	2.212	1.651	25.6	19.3	45 W	22*	31*	1 12	20 0.82	-29 44.8	2.765	1.807	5.7	19.7	10 E	—	4*
7 10	3 50.91	+21 33.7	2.175	1.670	26.8	19.3	48 W	27*	32*	1 22	20 29.06	-27 37.1	2.743	1.776	4.7	19.6	9 E	—	1*
7 20	4 17.21	+22 37.8	2.135	1.693	27.8	19.3	51 W	32*	33*	2 1	20 56.78	-25 10.2	2.718	1.747	4.4	19.6	8 E	—	—
7 30	4 42.84	+23 23.9	2.092	1.718	28.8	19.3	55 W	37*	33*	2 11	21 23.87	-22 25.7	2.690	1.721	4.9	19.5	9 W	—	—
8 9	5 7.57	+23 52.9	2.046	1.746	29.7	19.4	59 W	42*	34*	2 21	21 50.31	-19 25.4	2.661	1.697	6.0	19.5	10 W	—	3*
8 19	5 31.19	+24 6.1	1.995	1.777	30.4	19.4	63 W	47*	34*	3 2	22 16.12	-16 11.4	2.630	1.677	7.4	19.6	13 W	—	6*
8 29	5 53.43	+24 5.2	1.939	1.809	31.0	19.4	67 W	52*	35*	3 12	22 41.33	-12 46.2	2.599	1.660	9.0	19.6	15 W	—	9*
9 8	6 14.04	+23 52.4	1.879	1.843	31.4	19.3	72 W	57*	36*	3 22	23 6.03	-9 11.9	2.567	1.646	10.7	19.6	18 W	—	12*
9 18	6 32.79	+23 30.1	1.814	1.878	31.5	19.3	78 W	62*	37*	4 1	23 30.30	-5 31.0	2.534	1.637	12.4	19.6	21 W	—	15*
9 28	6 49.37	+23 1.1	1.745	1.915	31.3	19.3	84 W	65*	39*	4 11	23 54.25	-1 46.2	2.502	1.631	14.1	19.7	23 W	2*	17*
10 8	7 3.53	+22 28.2	1.673	1.953	30.8	19.2	90 W	67*	40*	4 21	0 17.98	+2 0.4	2.469	1.628	15.8	19.7	26 W	4*	20*
10 18	7 14.92	+21 54.2	1.599	1.991	29.7	19.1	97 W	67*	42*	5 1	0 41.61	+5 46.3	2.436	1.630	17.4	19.7	29 W	6*	23*
10 28	7 23.18	+21 22.0	1.525	2.030	28.2	19.0	105 W	66	43*	5 11	1 5.21	+9 29.0	2.404	1.636	19.0	19.7	32 W	9*	25*
11 7	7 27.97	+20 54.2	1.455	2.069	25.9	18.9	114 W	66	43	5 21	1 28.91	+13 6.6	2.371	1.646	20.6	19.8	35 W	12*	27*
11 17	7 28.96	+20 32.8	1.390	2.109	22.9	18.7	124 W	66	43	5 31	1 52.74	+16 36.7	2.337	1.659	22.1	19.8	38 W	16*	28*
11 27	7 25.97	+20 19.0	1.337	2.149	19.0	18.6	135 W	65	44	6 10	2 16.77	+19 57.6	2.303	1.676	23.5	19.8	41 W	20*	29*
12 7	7 19.21	+20 12.6	1.299	2.189	14.4	18.4	146 W	65	44	6 20	2 41.03	+23 7.5	2.267	1.696	24.8	19.9	44 W	24*	29*
12 12	7 14.58	+20 11.7	1.288	2.209	11.8	18.3	153 W	65	44	6 30	3 5.47	+26 5.0	2.229	1.719	26.0	19.9	48 W	30*	29*
12 17	7 9.29	+20 12.0	1.282	2.229	9.2	18.2	159 W	65	44	7 10	3 30.05	+28 49.0	2.190	1.745	27.0	19.9	51 W	35*	29*
12 22	7 3.51	+20 13.1	1.283	2.249	6.4	18.1	165 W	65	44	7 20	3 54.66	+31 19.1	2.147	1.773	28.0	19.9	55 W	41*	28*
12 27	6 57.45	+20 14.7	1.291	2.268	3.7	18.0	172 W	65	44	7 30	4 19.13	+33 35.1	2.102	1.804	28.9	20.0	59 W	47*	27*
1 1	6 51.31	+20 16.5	1.306	2.288	1.3	17.9	177 W	65	44	8 9	4 43.24	+35 37.5	2.053	1.837	29.5	20.0	63 W	53*	25*
1 6	6 45.31	+20 18.4	1.327	2.308	2.4	18.0	174 E	65	44	8 19	5 6.75	+37 27.4	2.001	1.872	30.1	20.0	68 W	59*	24*
1 11	6 39.64	+20 20.3	1.356	2.327	4.9	18.2	168 E	65	44	8 29	5 29.30	+39 6.5	1.946	1.908	30.4	20.0	73 W	65*	23*
1 16	6 34.47	+20 22.0	1.391	2.347	7.4	18.4	162 E	65	44	9 3	5 40.11	+39 52.8	1.917	1.926	30.4	19.9	75 W	68*	22*
285290 1998 SS₁₄₀																			
12 23	19 3.01	-21 5.4	2.837	1.899	7.3	21.4	14 E	5*	5*	9 8	5 50.55	+40 37.2	1.887	1.945	30.4	19.9	78 W	71*	22*
1 2	19 28.51	-20 12.5	2.819	1.859	5.3	21.2	10 E	3*	1*	9 13	6 0.56	+41 20.2	1.856	1.964	30.4	19.9	81 W	74*	21*
1 12	19 54.42	-19 3.1	2.795	1.821	3.4	21.1	6 E	—	—	9 18	6 10.08	+42 2.1	1.825	1.983	30.2	19.9	84 W	77*	21*
1 22	20 20.64	-17 36.8	2.766	1.784	1.6	20.9	3 E	—	—	9 23	6 19.05	+42 43.4	1.793	2.003	30.0	19.9	87 W	80*	20*
2 1	20 47.09	-15 54.0	2.732	1.748	1.4	20.8	2 W	—	—	9 28	6 27.40	+43 24.3	1.761	2.023	29.7	19.8	90 W	84*	20*
2 11	21 13.67	-13 55.4	2.694	1.714	3.0	20.8	5 W	—	—	10 3	6 35.08	+44 5.3	1.729	2.042	29.3	19.8	93 W	87*	20*
2 21	21 40.34	-11 42.1	2.654	1.682	4.9	20.9	8 W	—	2*	10 8	6 42.00	+44 46.6	1.696	2.062	28.8	19.8	96 W	90	19*
3 2	22 7.08	-9 15.5	2.613	1.653	6.8	20.9	11 W	—	5*	10 13	6 48.09	+45 28.6	1.664	2.083	28.2	19.7	100 W	90	18*
3 12	22 33.88	-6 37.8	2.571	1.626	8.6	20.9	14 W	1*	8*	10 18	6 53.25	+46 11.4	1.632	2.103	27.4	19.7	104 W	89	18*
3 22	23 0.76	-3 51.0	2.530	1.602	10.4	20.9	17 W	2*	11*	10 23	6 57.39	+46 55.1	1.602	2.123	26.6	19.7	107 W	88	17
4 1	23 27.76	-0 57.8	2.490	1.582	12.1	20.9	19 W	3*	13*	10 28	7 0.42	+47 39.6	1.572	2.143	25.6	19.6	111 W	87	16
4 11	23 54.92	+1 58.7	2.451	1.565	13.7	20.9	22 W	4*	15*	11 2	7 2.27	+48 24.5	1.544	2.164	24.5	19.6	115 W	87	16
4 21	0 22.30	+4 55.7	2.414	1.552	15.3	20.9	24 W	5*	18*	11 7	7 2.84	+49 9.5	1.518	2.184	23.3	19.5	120 W	86	15
5 1	0 49.94	+7 49.6	2.380	1.544	16.9	20.9	26 W	6*	20*	11 12	7 2.04	+49 53.7	1.495	2.205	21.9	19.4	124 W	85	14
5 11	1 17.87	+10 37.3	2.348	1.539	18.3	20.9	29 W	8*	22*	11 17	6 59.83	+50 36.1	1.475	2.225	20.5	19.4	128 W	84	13
5 21	1 46.10	+13 15.5	2.318	1.539	19.7	21.0	31 W	9*	23*	11 22	6 56.20	+51 15.4	1.458	2.246	19.0	19.3	132 W	84	13
5 31	2 14.60	+15 41.1	2.290	1.543	21.0	21.0	33 W	11*	25*	11 27	6 51.18	+51 50.1	1.446	2.266	17.4	19.3	137 W	83	12
6 10	2 43.31	+17 51.5	2.262	1.551	22.3	21.0	35 W	14*	26*	12 2	6 44.90	+52 18.6	1.438	2.286	15.9	19.2	141 W	83	12
6 20	3 12.14	+19 44.3	2.235	1.564	23.5	21.0	38 W	17*	27*	12 7	6 37.53	+52 39.3	1.435	2.307	14.5	19.2	144 W	82	11
6 30	3 40.92	+21 17.9	2.208	1.580	24.7	21.1	41 W	20*	28*	12 12	6 29.31	+52 51.0	1.437	2.327	13.3	19.2	147 W	82	11
7 10	4 9.46	+22 31.3	2.180	1.600	25.8	21.1	43 W	24*	29*	12 17	6 20.58	+52 52.5	1.446	2.347	12.3	19.2	149 W	82	11
7 20	4 37.57	+23 24.3	2.149	1.624	26.9	21.1	46 W	29*	29*	12 22	6 11.71	+52 43.6	1.460	2.367	11.8	19.2	151 W	82	11
7 30	5 4.99	+23 57.1	2.116	1.650	27.9	21.2	50 W	33*	30*	12 27	6 3.07	+52 24.4	1.481	2.387	11.6	19.3	151 E	83	12
8 9	5 31.47	+24 10.9	2.079	1.679	28.9	21.2	53 W	38*	31*	1 1	5 55.01	+51 55.8	1.507	2.407	12.0	19.3	149 E	83	12
8 19	5 56.80	+24 7.4	2.038	1.711	29.7	21.2	57 W	43*	31*	1 6	5 47.78	+51 19.2	1.540	2.427	12.6	19.4	147 E	84	13
8 29	6 20.73	+23 48.6	1.992	1.745	30.4	21.2	61 W	47*	33*	1 11	5 41.58	+50 36.0	1.579	2.446	13.5	19.5	144 E	84	13
9 8	6 43.07	+23 17.0	1.941	1.780	31.0	21.2	66 W	52*	34*	1 16	5 36.54	+49 47.9	1.624	2.466	14.6	19.6	141 E	85	14
9 18	7 3.63	+22 35.4	1.884	1.817	31.4	21.2	71 W	56*	35*	87309 2000 QP									
9 28	7 22.17	+21 46.5	1.822	1.856	31.6	21.2	76 W	60*	37*	12 23	19 3.95	-21 53.6	2.164	1.234	11.3	20.4	14 E	4*	6*
10 8	7 38.52	+20 53.4	1.756	1.895	31.5	21.2	82 W	63*	39*	1 2	19 32.3								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
87309 2000 QP										220240 2002 XF₂₃									
<i>(continuation)</i>										<i>(continuation)</i>									
5 15	4 10.57	+26 24.9	1.421	0.485	26.6	18.0	12 E	6*	—	12 2	6 34.50	+31 16.4	1.303	2.219	12.3	19.7	151 W	76	33
5 17	4 25.14	+25 41.6	1.401	0.474	28.8	18.0	13 E	6*	1*	12 7	6 28.77	+31 13.1	1.294	2.236	9.7	19.6	157 W	76	33
5 19	4 39.56	+24 49.1	1.380	0.466	31.3	18.0	14 E	6*	3*	12 12	6 22.46	+31 6.7	1.292	2.253	7.2	19.5	163 W	76	33
5 21	4 53.76	+23 47.6	1.359	0.460	34.2	18.0	15 E	6*	5*	12 17	6 15.79	+30 56.8	1.296	2.270	4.8	19.5	169 W	76	33
5 26	5 27.87	+20 39.5	1.300	0.455	42.6	18.1	18 E	5*	10*	12 22	6 9.03	+30 43.4	1.308	2.287	3.2	19.4	173 W	76	33
5 31	5 59.49	+16 53.4	1.237	0.468	51.5	18.3	21 E	3*	14*	12 27	6 2.42	+30 26.8	1.326	2.303	3.6	19.5	171 E	75	34
6 5	6 28.62	+12 44.8	1.172	0.494	59.5	18.5	25 E	1*	19*	1 1	5 56.18	+30 7.3	1.351	2.320	5.5	19.6	167 E	75	34
6 10	6 55.77	+ 8 26.9	1.108	0.531	66.0	18.8	29 E	—	23*	1 6	5 50.50	+29 45.7	1.383	2.336	7.8	19.8	161 E	75	34
6 15	7 21.74	+ 4 8.3	1.048	0.574	70.8	19.0	32 E	—	26*	1 11	5 45.53	+29 22.6	1.422	2.352	10.0	20.0	155 E	74	35
6 20	7 47.29	+ 0 6.1	0.993	0.622	74.0	19.1	36 E	—	29*	1 16	5 41.40	+28 58.9	1.467	2.368	12.1	20.1	150 E	74	35
6 25	8 13.09	+ 4 13.3	0.945	0.670	75.9	19.3	40 E	—	32*	302100 2001 FA₉₇									
6 30	8 39.66	+ 8 10.7	0.904	0.719	76.6	19.3	43 E	—	35*	12 23	19 5.49	-29 47.6	2.764	1.835	8.2	20.3	15 E	—	9*
7 5	9 7.38	-11 55.1	0.871	0.766	76.5	19.4	47 E	—	38*	1 2	19 34.90	-28 59.4	2.822	1.873	6.4	20.3	12 E	—	6*
7 10	9 36.42	-15 22.7	0.847	0.812	75.5	19.4	51 E	—	41*	1 12	20 3.09	-27 53.5	2.877	1.914	4.9	20.3	10 E	—	3*
7 15	10 6.79	-18 29.1	0.831	0.856	74.1	19.5	54 E	—	44*	1 22	20 29.96	-26 33.0	2.927	1.956	3.8	20.3	8 E	—	1*
7 20	10 38.26	-21 9.8	0.824	0.898	72.2	19.5	57 E	—	47*	2 1	20 55.48	-25 0.9	2.972	2.000	3.7	20.4	8 E	—	—
7 25	11 10.40	-23 21.3	0.826	0.937	70.0	19.5	60 E	—	50*	2 11	21 19.64	-23 20.2	3.011	2.045	4.7	20.5	10 W	—	2*
7 30	11 42.62	-25 1.9	0.836	0.974	67.7	19.5	63 E	—	53*	2 21	21 42.51	-21 33.5	3.041	2.090	6.1	20.7	13 W	—	6*
8 4	12 14.32	-26 11.8	0.853	1.008	65.4	19.6	65 E	—	55*	3 2	22 4.14	-19 43.2	3.064	2.136	7.8	20.8	17 W	—	10*
8 9	12 44.93	-26 53.4	0.878	1.040	63.1	19.6	66 E	—	57*	3 12	22 24.58	-17 51.3	3.077	2.183	9.6	21.0	21 W	—	15*
8 14	13 14.05	-27 10.6	0.909	1.070	61.0	19.7	67 E	—	59*	3 22	22 43.91	-15 59.7	3.080	2.230	11.4	21.1	26 W	—	19*
8 19	13 41.42	-27 8.0	0.944	1.097	58.9	19.8	68 E	—	2* 60*	4 1	23 2.18	-14 10.0	3.074	2.277	13.1	21.2	31 W	—	24*
8 24	14 6.95	-26 50.3	0.984	1.121	57.0	19.9	68 E	—	4* 61*	4 11	23 19.42	-12 23.6	3.056	2.324	14.7	21.3	36 W	—	30*
8 29	14 30.66	-26 21.3	1.027	1.144	55.1	20.0	68 E	—	6* 61*	4 21	23 35.66	-10 41.6	3.028	2.371	16.3	21.4	41 W	2*	35*
9 3	14 52.67	-25 44.3	1.072	1.164	53.5	20.0	68 E	—	8* 61*	5 1	23 50.91	- 9 5.3	2.990	2.417	17.7	21.4	47 W	4*	41*
9 8	15 13.13	-25 1.7	1.119	1.181	51.9	20.1	67 E	—	10* 61*	5 11	0 5.13	- 7 35.6	2.940	2.464	19.0	21.5	53 W	7*	47*
9 13	15 32.22	-24 15.6	1.167	1.196	50.4	20.2	66 E	—	12* 60*	208879 2002 TF₅₈									
9 18	15 50.13	-23 27.2	1.215	1.209	49.0	20.3	65 E	—	13* 59*	12 23	19 5.68	-41 38.6	2.465	1.601	13.6	20.2	22 E	—	14*
9 23	16 7.01	-22 37.5	1.262	1.220	47.7	20.3	64 E	—	15* 58*	12 28	19 24.72	-40 56.4	2.491	1.618	13.0	20.2	22 E	—	13*
9 28	16 23.03	-21 46.8	1.309	1.228	46.4	20.4	63 E	—	16* 56*	1 2	19 43.09	-40 6.2	2.518	1.636	12.3	20.2	21 E	—	13*
10 3	16 38.29	-20 55.5	1.355	1.234	45.2	20.4	61 E	—	17* 55*	1 7	20 0.77	-39 8.9	2.544	1.654	11.7	20.2	20 E	—	12*
10 8	16 52.93	-20 3.7	1.399	1.238	44.0	20.5	59 E	—	18* 53*	1 12	20 17.74	-38 5.5	2.570	1.673	11.1	20.3	19 E	—	11*
10 18	17 20.75	-18 18.6	1.481	1.239	41.8	20.6	56 E	—	20* 48*	1 17	20 34.00	-36 56.8	2.596	1.691	10.6	20.3	18 E	—	10*
10 28	17 47.15	-16 30.6	1.552	1.232	39.8	20.6	52 E	—	22* 43*	1 22	20 49.58	-35 43.6	2.621	1.709	10.1	20.3	18 E	—	9*
11 7	18 12.64	-14 37.9	1.609	1.215	38.0	20.6	49 E	—	24* 38*	1 27	21 4.50	-34 26.9	2.645	1.728	9.6	20.3	17 E	—	7*
11 17	18 37.63	-12 38.8	1.650	1.189	36.4	20.5	45 E	—	25* 32*	2 1	21 18.78	-33 7.1	2.667	1.746	9.3	20.4	17 E	—	6*
11 27	19 2.50	-10 31.2	1.675	1.154	35.1	20.5	42 E	—	26* 26*	2 6	21 32.46	-31 45.1	2.689	1.765	9.0	20.4	16 E	—	5*
12 7	19 27.56	+ 8 13.4	1.680	1.109	34.2	20.4	39 E	—	27* 21*	2 11	21 45.57	-30 21.2	2.709	1.783	8.9	20.4	16 E	—	4*
12 17	19 53.20	+ 5 43.7	1.664	1.055	33.9	20.2	37 E	—	28* 15*	2 21	22 10.25	-27 30.0	2.745	1.819	8.9	20.5	17 W	—	3*
12 27	20 19.83	+ 3 0.9	1.627	0.991	34.4	20.1	35 E	—	27* 10*	3 2	22 33.10	-24 36.8	2.772	1.855	9.5	20.6	18 W	—	6*
1 6	20 48.00	+ 0 5.2	1.567	0.918	35.9	19.9	33 E	—	27* 5*	3 12	22 54.36	-21 43.8	2.791	1.890	10.5	20.7	20 W	—	10*
1 16	21 18.49	+ 3 1.1	1.482	0.834	38.9	19.6	32 E	—	26* 2*	3 22	23 14.26	-18 52.8	2.800	1.925	11.8	20.8	23 W	—	14*
12 23	19 5.14	-23 46.8	2.773	1.836	7.6	20.8	14 E	3*	7*	4 1	23 32.96	-16 5.1	2.798	1.959	13.3	20.9	27 W	—	18*
1 2	19 32.03	-22 35.0	2.767	1.809	5.6	20.7	10 E	1*	3*	4 11	23 50.59	-13 21.5	2.785	1.992	14.9	21.0	31 W	—	23*
1 12	19 58.98	-21 5.5	2.756	1.783	3.7	20.5	7 E	—	—	4 21	0 7.27	-10 42.5	2.761	2.023	16.6	21.0	35 W	—	28*
1 22	20 25.85	-19 18.7	2.741	1.759	1.7	20.3	3 E	—	—	5 1	0 23.05	- 8 8.5	2.724	2.054	18.3	21.1	40 W	—	33*
2 1	20 52.54	-17 15.5	2.723	1.737	0.3	20.2	1 W	—	—	5 11	0 37.97	- 5 39.8	2.676	2.084	19.9	21.1	45 W	3*	39*
2 11	21 18.98	-14 57.1	2.701	1.718	2.3	20.3	4 W	—	—	5 21	0 52.05	- 3 16.2	2.616	2.112	21.5	21.2	50 W	7*	44*
2 21	21 45.13	-12 25.4	2.677	1.701	4.2	20.4	7 W	—	1*	5 31	1 5.24	- 0 57.9	2.545	2.139	23.0	21.2	55 W	12*	49*
3 2	22 10.97	+ 9 42.2	2.651	1.686	6.1	20.4	10 W	—	4*	6 10	1 17.48	+ 1 15.4	2.464	2.165	24.2	21.2	61 W	17*	53*
3 12	22 36.52	+ 6 49.8	2.624	1.674	8.0	20.5	14 W	1*	7*	6 20	1 28.68	+ 3 24.2	2.373	2.190	25.3	21.1	67 W	23*	56*
3 22	23 1.83	+ 3 50.4	2.596	1.665	9.8	20.5	17 W	2*	10*	6 30	1 38.67	+ 5 28.5	2.274	2.213	26.1	21.1	74 W	30*	57*
4 1	23 26.93	+ 0 46.7	2.568	1.660	11.6	20.6	20 W	3*	13*	7 10	1 47.24	+ 7 29.0	2.168	2.235	26.6	21.0	80 W	38*	56*
4 11	23 51.89	+ 2 18.9	2.539	1.657	13.3	20.6	22 W	5*	16*	7 20	1 54.13	+ 9 26.3	2.057	2.256	26.7	20.9	88 W	45*	55
4 21	0 16.78	+ 5 23.8	2.509	1.657	15.0	20.6	25 W	6*	19*	7 30	1 58.96	+11 20.4	1.943	2.275	26.4	20.8	95 W	52*	53
5 1	0 41.64	+ 8 25.5	2.480	1.661	16.6	20.7	28 W	8*	21*	8 9	2 1.33	+13 11.8	1.829	2.293	25.4	20.7	104 W	58*	51
5 11	1 6.53	+11 21.4	2.449	1.667	18.2	20.7	31 W	10*	24*	8 19	2 0.76	+15 0.0	1.720	2.309	23.8	20.5	113 W		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	
5349 Paulharris										5870 Baltimore										
12	23	19 5.71	-45 0.5	4.717	3.849	6.2	19.8	25 E	15*	9	8	22 23.87	-14 49.6	1.260	2.251	6.2	16.0	166 E	30	79
1	2	19 21.65	-44 23.6	4.718	3.828	5.7	19.7	23 E	11*	9	13	22 19.73	-16 33.0	1.256	2.227	9.1	16.1	160 E	28	81
1	12	19 37.59	-43 46.1	4.700	3.807	5.6	19.7	22 E	7*	9	18	22 15.87	-18 12.3	1.260	2.204	11.9	16.2	153 E	27	82
1	22	19 53.43	-43 8.1	4.665	3.784	6.0	19.7	24 W	9*	9	23	22 12.44	-19 45.7	1.269	2.180	14.5	16.3	147 E	25	84
2	1	20 9.08	-42 30.0	4.612	3.761	6.8	19.7	27 W	14*	9	28	22 9.61	-21 11.7	1.284	2.156	17.1	16.4	141 E	24	85
2	11	20 24.43	-41 52.2	4.542	3.737	7.9	19.7	31 W	19*	10	3	22 7.47	-22 29.4	1.305	2.133	19.4	16.5	135 E	23	86
2	21	20 39.43	-41 15.4	4.456	3.712	9.2	19.7	37 W	25*	10	8	22 6.11	-23 38.0	1.329	2.110	21.5	16.6	129 E	21	88
3	2	20 53.98	-40 40.3	4.354	3.686	10.5	19.7	43 W	31*	10	18	22 5.99	-25 27.8	1.389	2.064	25.0	16.7	119 E	20	89
3	12	21 7.99	-40 7.7	4.238	3.659	11.8	19.7	49 W	36*	10	28	22 9.46	-26 41.8	1.458	2.018	27.7	16.9	109 E	18	89
3	22	21 21.40	-39 38.8	4.110	3.631	13.0	19.6	55 W	42*	11	7	22 16.41	-27 23.4	1.531	1.974	29.5	17.0	101 E	18	89
4	1	21 34.10	-39 14.5	3.970	3.602	14.1	19.6	62 W	48*	11	12	22 21.10	-27 33.1	1.568	1.952	30.2	17.0	97 E	17	88
4	11	21 45.99	-38 56.2	3.821	3.573	15.1	19.5	68 W	55*	11	17	22 26.54	-27 36.0	1.605	1.931	30.8	17.1	93 E	17	87*
4	21	21 56.96	-38 45.1	3.664	3.542	15.9	19.4	75 W	61*	11	22	22 32.68	-27 32.4	1.642	1.910	31.1	17.1	90 E	17	83*
5	1	22 6.86	-38 42.4	3.503	3.511	16.5	19.3	82 W	67*	11	27	22 39.48	-27 22.8	1.678	1.889	31.4	17.1	86 E	18	80*
5	11	22 15.51	-38 49.5	3.339	3.479	16.9	19.2	89 W	73*	12	2	22 46.87	-27 7.4	1.713	1.869	31.6	17.2	83 E	18	76*
5	21	22 22.72	-39 7.5	3.174	3.446	17.0	19.1	97 W	76*	12	7	22 54.82	-26 46.5	1.746	1.850	31.6	17.2	80 E	18	73*
5	31	22 28.21	-39 37.1	3.013	3.411	16.7	19.0	105 W	76	12	12	23 3.28	-26 20.3	1.779	1.830	31.6	17.2	77 E	19	69*
6	10	22 31.69	-40 18.6	2.857	3.376	16.1	18.8	112 W	2* 76	12	17	23 12.21	-25 49.1	1.810	1.812	31.5	17.2	74 E	19	66*
6	20	22 32.81	-41 11.2	2.711	3.340	15.2	18.6	120 W	3* 75	12	22	23 21.57	-25 13.1	1.839	1.794	31.4	17.2	72 E	20	63*
6	25	22 32.38	-41 41.1	2.642	3.322	14.6	18.5	124 W	3* 74	12	27	23 31.33	-24 32.5	1.867	1.777	31.2	17.2	69 E	20	60*
6	30	22 31.22	-42 12.7	2.577	3.304	14.0	18.4	128 W	3* 74	1	1	23 41.44	-23 47.6	1.894	1.760	30.9	17.2	67 E	21	58*
7	5	22 29.31	-42 45.6	2.516	3.285	13.3	18.4	132 W	2 73	1	6	23 51.89	-22 58.4	1.919	1.744	30.7	17.2	65 E	22	55*
7	10	22 26.63	-43 18.9	2.459	3.266	12.5	18.3	136 W	2 73	1	11	0 2.65	-22 5.2	1.942	1.729	30.4	17.2	63 E	23	53*
7	15	22 23.14	-43 51.9	2.407	3.247	11.8	18.2	139 W	1 72	1	16	0 13.70	-21 8.2	1.965	1.715	30.0	17.2	61 E	23	51*
7	20	22 18.87	-44 23.6	2.361	3.227	11.1	18.1	142 W	1 72	287400 2002 VG₉₅										
7	25	22 13.83	-44 52.8	2.320	3.207	10.4	18.0	145 W	1 71	12	23	19 6.05	-23 27.8	2.670	1.736	8.2	21.3	15 E	3*	7*
7	30	22 8.09	-45 18.5	2.286	3.187	9.9	18.0	147 W	1 71	1	2	19 34.51	-22 28.0	2.655	1.700	6.3	21.2	11 E	2*	3*
8	4	22 1.75	-45 39.3	2.257	3.167	9.6	17.9	149 W	1 70	1	12	20 3.29	-21 7.8	2.636	1.666	4.5	21.0	8 E	—	—
8	9	21 54.92	-45 54.5	2.235	3.147	9.6	17.9	149 W	1 70	1	22	20 32.24	-19 27.4	2.614	1.635	2.7	20.8	4 E	—	—
8	14	21 47.76	-46 3.0	2.219	3.126	9.8	17.8	148 W	1 70	2	1	21 1.22	-17 27.6	2.591	1.606	0.9	20.6	1 E	—	—
8	19	21 40.43	-46 4.3	2.210	3.105	10.3	17.8	147 E	1 70	2	11	21 30.10	-15 9.8	2.567	1.581	0.9	20.6	1 W	—	—
8	24	21 33.14	-45 57.8	2.207	3.084	11.1	17.9	144 E	1 70	2	21	21 58.81	-12 36.1	2.543	1.559	2.6	20.7	4 W	—	—
8	29	21 26.07	-45 43.5	2.211	3.063	11.9	17.9	141 E	1 70	3	2	22 27.32	9 48.8	2.520	1.540	4.3	20.7	7 W	—	1*
9	3	21 19.40	-45 21.6	2.220	3.041	12.9	17.9	138 E	1 71	3	12	22 55.61	6 51.1	2.499	1.526	5.9	20.8	9 W	—	3*
9	8	21 13.28	-44 52.7	2.235	3.020	14.0	17.9	134 E	1 71	3	22	23 27.72	3 46.0	2.480	1.516	7.4	20.8	11 W	—	5*
9	13	21 7.83	-44 17.2	2.254	2.998	15.0	18.0	130 E	1 72	4	1	23 51.68	0 37.0	2.463	1.510	9.0	20.9	14 W	—	8*
9	18	21 3.14	-43 36.0	2.279	2.975	16.0	18.0	125 E	1 72	4	11	0 19.53	+ 2 32.3	2.448	1.509	10.4	20.9	16 W	—	10*
9	23	20 59.29	-42 49.8	2.308	2.953	16.9	18.1	121 E	2 73	4	21	0 47.33	+ 5 38.5	2.436	1.512	11.9	21.0	18 W	1*	12*
9	28	20 56.31	-41 59.5	2.341	2.930	17.8	18.1	117 E	3 74	5	1	1 15.13	+ 8 38.2	2.425	1.520	13.2	21.0	20 W	2*	14*
10	8	20 52.89	-40 9.6	2.415	2.884	19.2	18.2	108 E	5 76	5	11	1 42.92	+11 28.3	2.416	1.532	14.6	21.1	22 W	4*	16*
10	18	20 52.73	-38 10.9	2.498	2.837	20.3	18.3	99 E	7 78	5	21	2 10.75	+14 6.1	2.407	1.549	16.0	21.1	25 W	6*	18*
10	28	20 55.48	-36 7.0	2.585	2.790	20.9	18.3	91 E	9 80*	5	31	2 38.55	+16 29.2	2.399	1.569	17.3	21.2	27 W	8*	20*
11	7	21 0.73	-33 59.8	2.674	2.741	21.0	18.4	83 E	11 77*	6	10	3 6.28	+18 35.8	2.389	1.593	18.6	21.3	30 W	10*	21*
11	17	21 8.08	-31 50.3	2.760	2.692	20.8	18.4	76 E	13 70*	6	20	3 33.84	+20 24.6	2.378	1.620	19.9	21.3	33 W	13*	23*
11	27	21 17.20	-29 38.5	2.842	2.641	20.3	18.4	68 E	15* 62*	6	30	4 1.10	+21 55.0	2.364	1.650	21.1	21.4	36 W	17*	24*
12	7	21 27.75	-27 24.2	2.917	2.591	19.5	18.4	61 E	17* 53*	7	10	4 27.91	+23 6.7	2.346	1.683	22.4	21.5	39 W	21*	25*
12	17	21 39.49	-25 6.9	2.983	2.539	18.4	18.3	54 E	19* 45*	185734 1998 WQ₃₂										
12	27	21 52.21	-22 46.1	3.039	2.487	17.0	18.3	48 E	19* 38*	12	23	19 6.84	-29 7.5	2.687	1.759	8.6	20.3	15 E	—	9*
1	6	22 5.74	-20 21.2	3.084	2.434	15.5	18.2	41 E	19* 31*	1	2	19 36.95	-28 28.1	2.684	1.737	7.1	20.2	13 E	—	7*
1	16	22 19.95	-17 51.7	3.116	2.380	13.8	18.1	35 E	17* 24*	1	12	20 7.17	-27 26.2	2.677	1.717	5.7	20.1	10 E	—	4*
12	23	19 5.85	-6 41.0	4.218	3.332	6.5	19.5	23 E	17*	1	22	20 37.26	-26 2.5	2.668	1.700	4.8	20.0	8 E	—	2*
1	2	19 19.26	-6 48.2	4.221	3.300	5.3	19.5	18 E	11*	2	1	21 7.01	-24 18.4	2.658	1.686	4.4	19.9	7 E	—	—
1	12	19 32.91	-6 47.2	4.206	3.266	4.5	19.4	15 E	5*	2	11	21 36.23	-22 15.7	2.646	1.674	4.7	19.9	8 E	—	—
1	22	19 46.73	-6 38.5	4.174	3.232	4.4	19.3	15 W	8*	2	21	22 4.83	-19 57.0	2.634	1.666	5.5	20.0	9 W	—	—
2	1	20 0.63	-6 22.4	4.124	3.197	5.2	19.3	17 W	11*	3	2	22 32.74	-17 25.1	2.621	1.660	6.7	20.0	11 W	—	3*
2	11	20 14.53	-5 59.6	4.058	3.161	6.6	19.3	22 W	14* 8*	3	12	22 59.95	-14 42.9	2.608	1.658	8.0	20.0	13 W	—	5*
2	21	20 28.37	-5 30.7	3.976	3.125	8.2	19.3	27 W	16* 15*	3	22	23 26.47	-11 53.5	2.595	1.659	9.4	20.1	16 W	—	8*
3	2	20 42.06	-4 56.6	3.878	3.087	9.9	19.3	32 W	18* 22*	4	1	23 52.36	-8 59.9	2.582	1.663	10.9	20.1	18 W	—	11*
3	12	20 55.54	-4 18.2	3.765	3.049	11.7	19.3	38 W	19* 29*	4	11	0 17.64	-6 4.9	2.568	1.671	12.4	20.2	21 W	—	14*
3	22	21 8.75	-3 36.3	3.640	3.010	13.4	19.3	44 W	21* 35*	4	21	0 42.41	-3 11.2	2.553	1.681	13.9	20.3	24 W	—	17*
4	1	21 21.63	-2 52.1	3.502	2.970	15.1	19.2	51 W	23* 42*	5	1	1 6.69	0 21.2	2.536	1.695	15.3	20.3	26 W	—	20*
4	11	21 34.09	-2 6.8	3.353	2.930	16.7	19.2	57 W	25* 48*	5										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
185734 1998 WQ ₃₂ (continuation)										31881 2000 FL ₁₅ (continuation)									
11 7	6 9.77	+28 31.5	1.469	2.259	18.9	19.9	132 W	74	35	6 10	1 4.57	+15 16.6	2.288	1.966	26.2	20.9	59 W	29*	43*
11 17	6 3.16	+29 42.5	1.421	2.294	14.8	19.7	144 W	75	34	6 20	1 23.42	+16 25.1	2.186	1.960	27.7	20.8	64 W	34*	44*
11 22	5 58.44	+30 16.8	1.405	2.311	12.5	19.6	149 W	75	34	6 30	1 41.97	+17 22.4	2.078	1.953	29.0	20.7	69 W	39*	45*
11 27	5 52.91	+30 49.2	1.394	2.328	10.2	19.5	155 W	76	33	7 10	2 0.12	+18 6.7	1.966	1.945	30.1	20.6	74 W	44*	45*
12 2	5 46.73	+31 18.9	1.390	2.345	7.8	19.4	161 W	76	33	7 20	2 17.75	+18 35.9	1.851	1.936	31.0	20.5	79 W	49*	45*
12 7	5 40.08	+31 45.0	1.392	2.362	5.6	19.3	166 W	77	32	7 30	2 34.64	+18 47.7	1.732	1.927	31.6	20.4	85 W	55*	45
12 12	5 33.18	+32 6.9	1.402	2.378	4.0	19.3	170 W	77	32	8 9	2 50.55	+18 39.7	1.613	1.917	31.9	20.2	91 W	59*	45
12 17	5 26.26	+32 24.4	1.419	2.395	3.9	19.3	171 E	77	32	8 14	2 58.04	+18 27.3	1.553	1.912	31.9	20.1	94 W	61*	46
12 22	5 19.58	+32 37.3	1.442	2.411	5.3	19.4	167 E	78	31	8 19	3 5.16	+18 8.8	1.493	1.906	31.8	20.0	97 W	62*	46
12 27	5 13.34	+32 46.1	1.473	2.427	7.2	19.6	162 E	78	31	8 24	3 11.85	+17 43.7	1.434	1.901	31.5	19.9	101 W	62*	46
1 1	5 7.73	+32 51.1	1.511	2.443	9.3	19.8	156 E	78	31	8 29	3 18.06	+17 11.6	1.375	1.895	31.1	19.8	104 W	62*	47
1 6	5 2.87	+32 53.2	1.555	2.459	11.3	19.9	151 E	78	31	9 3	3 23.73	+16 32.1	1.318	1.889	30.5	19.7	108 W	62	47
1 11	4 58.88	+32 52.8	1.605	2.475	13.2	20.1	145 E	78	31	9 8	3 28.80	+15 44.7	1.262	1.883	29.8	19.6	112 W	61	48
1 16	4 55.81	+32 50.8	1.660	2.491	14.9	20.2	139 E	78	31	9 13	3 33.18	+14 48.9	1.207	1.877	28.9	19.4	116 W	60	49
										9 18	3 36.81	+13 44.3	1.155	1.871	27.7	19.3	120 W	59	50
79611 1998 RC ₅₂										75017 1999 UE ₅									
12 23	19 7.35	-26 20.3	2.658	1.726	8.5	19.2	15 E	1*	8*	12 23	19 7.78	-37 27.8	2.936	2.936	6.5	21.2	20 E	-	13*
1 2	19 37.05	-25 20.2	2.657	1.706	6.7	19.1	12 E	-	5*	1 2	19 26.41	-36 34.6	3.855	2.923	5.3	21.1	16 E	-	8*
1 12	20 6.68	-23 58.6	2.654	1.688	5.0	19.0	9 E	-	2*	1 12	19 44.89	-35 36.8	3.853	2.909	4.7	21.1	14 E	-	4*
1 22	20 36.04	-22 16.7	2.649	1.673	3.4	18.9	6 E	-	-	1 22	20 3.13	-34 34.5	3.835	2.895	5.0	21.0	15 W	-	3*
2 1	21 4.98	-20 16.0	2.642	1.660	2.2	18.8	4 E	-	-	2 1	20 21.06	-33 27.9	3.802	2.879	6.0	21.1	18 W	-	8*
2 11	21 33.37	-17 58.8	2.635	1.651	2.2	18.7	4 W	-	-	2 11	20 38.60	-32 17.6	3.753	2.863	7.5	21.1	22 W	-	14*
2 21	22 1.15	-15 27.5	2.626	1.645	3.3	18.8	6 W	-	-	2 21	20 55.70	-31 4.0	3.690	2.846	9.1	21.1	27 W	-	19*
3 2	22 28.30	-12 44.9	2.617	1.642	4.9	18.9	8 W	-	2*	3 2	21 12.31	-29 47.8	3.612	2.828	10.9	21.1	33 W	-	25*
3 12	22 54.82	-9 54.0	2.608	1.643	6.5	19.0	11 W	-	5*	3 12	21 28.38	-28 29.8	3.522	2.809	12.6	21.1	38 W	-	30*
3 22	23 20.76	-6 57.6	2.598	1.646	8.1	19.0	14 W	-	7*	3 22	21 43.87	-27 10.7	3.418	2.789	14.4	21.1	44 W	-	36*
4 1	23 46.18	-3 58.6	2.588	1.653	9.8	19.1	16 W	-	10*	4 1	21 58.72	-25 51.3	3.304	2.768	16.0	21.1	50 W	-	42*
4 11	0 11.13	-0 59.8	2.576	1.663	11.4	19.2	19 W	-	13*	4 11	22 12.87	-24 32.6	3.179	2.746	17.6	21.0	56 W	1*	48*
4 21	0 35.68	+1 56.6	2.564	1.677	13.1	19.2	22 W	1*	16*	4 21	22 26.28	-23 15.2	3.045	2.723	19.0	21.0	62 W	3*	55*
5 1	0 59.89	+4 48.1	2.549	1.693	14.7	19.3	25 W	2*	19*	5 1	22 38.84	-22 0.3	2.903	2.700	20.3	20.9	68 W	6*	62*
5 11	1 23.79	+7 32.8	2.532	1.711	16.3	19.4	28 W	4*	22*	5 11	22 50.46	-20 48.8	2.755	2.676	21.4	20.8	75 W	8*	69*
5 21	1 47.42	+10 9.1	2.512	1.733	17.8	19.4	32 W	7*	25*	5 21	23 1.02	-19 41.6	2.602	2.651	22.2	20.7	82 W	11*	76*
5 31	2 10.78	+12 35.5	2.488	1.756	19.3	19.5	35 W	10*	27*	5 31	23 10.32	-18 39.8	2.447	2.625	22.7	20.5	89 W	15*	81*
6 10	2 33.87	+14 50.9	2.461	1.782	20.8	19.5	38 W	13*	30*	6 10	23 18.17	-17 44.4	2.291	2.598	22.9	20.4	96 W	19*	82*
6 20	2 56.64	+16 54.5	2.428	1.809	22.2	19.6	42 W	18*	33*	6 20	23 24.30	-16 56.2	2.136	2.570	22.6	20.2	103 W	23*	81
6 30	3 19.02	+18 45.9	2.391	1.838	23.5	19.6	46 W	22*	33*	6 30	23 28.37	-16 16.1	1.985	2.542	21.8	20.0	112 W	26*	80
7 10	3 40.93	+20 24.8	2.348	1.869	24.7	19.7	50 W	28*	34*	7 10	23 30.04	-15 44.4	1.841	2.513	20.4	19.7	120 W	29*	80
7 20	4 2.24	+21 51.6	2.299	1.901	25.8	19.7	55 W	34*	35*	7 20	23 28.90	-15 21.0	1.707	2.483	18.3	19.5	130 W	30	79
7 30	4 22.80	+23 6.8	2.244	1.933	26.8	19.7	59 W	40*	36*	7 30	23 24.61	-15 4.7	1.587	2.453	15.4	19.2	140 W	30	79
8 9	4 42.43	+24 11.2	2.182	1.967	27.7	19.7	64 W	46*	36*	8 9	23 17.03	-14 52.8	1.486	2.422	11.8	18.9	151 W	30	79
8 19	5 0.93	+25 6.2	2.115	2.001	28.3	19.7	70 W	53*	36*	8 19	23 6.30	-14 41.3	1.406	2.390	7.4	18.6	162 W	30	79
8 29	5 18.03	+25 53.2	2.042	2.036	28.7	19.7	75 W	59*	36*										
9 8	5 33.47	+26 34.2	1.965	2.071	28.8	19.6	81 W	65*	36*										
9 18	5 46.94	+27 11.1	1.883	2.106	28.5	19.5	88 W	70*	36*										
9 28	5 58.03	+27 46.1	1.800	2.142	27.8	19.5	95 W	73*	36*										
10 8	6 6.36	+28 21.1	1.716	2.177	26.5	19.4	103 W	73	36										
10 18	6 11.47	+28 57.8	1.635	2.212	24.7	19.2	112 W	74	35										
10 28	6 12.93	+29 36.7	1.560	2.247	22.1	19.1	122 W	75	34										
11 7	6 10.44	+30 16.6	1.496	2.282	18.8	18.9	132 W	75	34										
11 17	6 3.94	+30 54.6	1.447	2.316	14.8	18.8	143 W	76	33										
11 22	5 59.31	+31 11.4	1.430	2.333	12.6	18.7	149 W	76	33										
11 27	5 53.90	+31 25.7	1.419	2.350	10.2	18.6	155 W	76	33										
12 2	5 47.88	+31 37.1	1.414	2.367	7.9	18.5	161 W	77	32										
12 7	5 41.41	+31 44.8	1.415	2.384	5.6	18.4	166 W	77	32										
12 12	5 34.73	+31 48.7	1.424	2.400	3.9	18.3	170 W	77	32										
12 17	5 28.06	+31 48.7	1.439	2.417	3.6	18.3	171 E	77	32										
12 22	5 21.62	+31 45.0	1.462	2.433	4.9	18.5	168 E	77	32										
12 27	5 15.64	+31 38.0	1.492	2.449	6.8	18.6	163 E	77	32										
1 1	5 10.27	+31 28.5	1.529	2.465	8.9	18.8	157 E	76	33										
1 6	5 5.64	+31 17.0	1.571	2.481	10.9	18.9	152 E	76	33										
1 11	5 1.84	+31 4.4	1.620	2.496	12.8	19.1	146 E	76	33										
1 16	4 58.94	+30 51.3	1.675	2.512	14.5	19.2	140 E	76	33										
31881 2000 FL ₁₅										31881 2000 FL ₁₅									
12 23	19 7.73	-8 11.6	2.824	1.946	10.8	20.8	22 E	16*	1*	8 24	22 59.96	-14 34.0	1.376	2.374	5.1	18.4	168 W	30	79
1 2	19 30.97	-7 38.7	2.859	1.953	9.3	20.8	19 E	13*	-	8 29	22 53.14	-14 24.8	1.353	2.358	3.2	18.2	173 W	31	78
1 12	19 54.00	-6 53.4	2.887	1.960	7.9	20.7	16 E	9*	-	9 3	22 46.02	-14 13.0	1.337	2.342	2.9	18.2	173 E	31	78
1 22	20 16.77	-5 56.8	2.907	1.967	6.9	20.7	14 E	5*	-	9 8	22 38.79	-13 58.2	1.328	2.326	4.6	18.2	169 E	31	78
2 1	20 39.25	-4 49.7	2.919	1.972	6.5	20.7	13 W	6*	-	9 13	22 31.66	-13 40.1	1.326	2.309	7.1	18.4	164 E	31	78
2 11	21 1.39	-3 33.4	2.922	1.977	6.8	20.7	14 W	8*	-	9 18	22 24.83	-13 18.4	1.331	2.2					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
369452 2010 LG₁₄										369452 2010 LG₁₄ (continuation)									
12 23	19 8.24	-11 47.6	2.181	1.296	14.7	21.0	19E	13*	2*	5 27	17 9.64	-68 30.2	0.457	1.363	33.5	18.3	132W	-	47
1 2	19 32.41	-10 16.4	2.103	1.195	13.7	20.7	17E	11*	-	5 28	16 56.01	-67 35.0	0.460	1.371	32.4	18.3	134W	-	48
1 12	19 58.77	-8 24.3	2.001	1.081	13.6	20.4	15E	8*	-	5 29	16 43.56	-66 35.6	0.463	1.380	31.3	18.3	135W	-	49
1 22	20 28.11	-6 7.9	1.876	0.953	14.7	20.0	14E	6*	-	5 30	16 32.24	-65 32.8	0.466	1.388	30.3	18.3	136W	-	50
2 1	21 1.75	-3 24.6	1.728	0.808	17.2	19.5	14E	5*	-	5 31	16 21.97	-64 27.2	0.470	1.397	29.4	18.3	137E	-	52
2 6	21 20.84	-1 53.1	1.645	0.729	19.3	19.3	14E	5*	-	6 1	16 12.68	-63 19.4	0.474	1.405	28.6	18.3	139E	-	53
2 11	21 41.98	-0 16.6	1.554	0.645	22.0	19.0	14E	5*	-	6 2	16 4.27	-62 10.1	0.479	1.413	27.8	18.3	140E	-	54
2 16	22 5.73	+1 20.7	1.457	0.556	26.0	18.6	14E	6*	-	6 3	15 56.67	-60 59.6	0.484	1.421	27.0	18.3	140E	-	55
2 21	22 32.84	+2 49.5	1.348	0.463	32.4	18.2	15E	7*	-	6 4	15 49.80	-59 48.4	0.489	1.429	26.4	18.3	141E	-	56
2 23	22 44.78	+3 18.2	1.301	0.426	36.0	18.1	15E	8*	-	6 5	15 43.59	-58 36.9	0.495	1.437	25.9	18.3	142E	-	57
2 25	22 57.41	+3 39.5	1.252	0.389	40.7	17.9	15E	8*	-	6 6	15 37.97	-57 25.5	0.502	1.445	25.4	18.4	142E	-	59
2 27	23 10.68	+3 49.7	1.199	0.354	46.7	17.8	15E	9*	-	6 7	15 32.89	-56 14.4	0.508	1.453	25.0	18.4	143	-	60
2 29	23 24.47	+3 43.7	1.143	0.323	54.4	17.7	15E	9*	-	6 8	15 28.29	-55 3.8	0.515	1.460	24.7	18.4	143	-	61
3 2	23 38.49	+3 14.6	1.083	0.296	64.2	17.7	16E	10*	-	6 9	15 24.12	-53 54.1	0.523	1.468	24.4	18.5	143	-	62
3 3	23 45.42	+2 49.0	1.052	0.285	69.9	17.7	16E	10*	1*	6 10	15 20.35	-52 45.3	0.531	1.475	24.3	18.5	143	-	63
3 4	23 52.18	+2 14.8	1.021	0.277	76.1	17.8	16E	9*	2*	6 11	15 16.93	-51 37.6	0.539	1.483	24.2	18.5	143	-	64
3 5	23 58.66	+1 31.4	0.989	0.272	82.7	17.9	16E	9*	3*	6 12	15 13.83	-50 31.3	0.547	1.490	24.2	18.6	143	-	65
3 6	0 4.75	+0 38.2	0.958	0.269	89.4	18.1	16E	9*	4*	6 13	15 11.03	-49 26.3	0.556	1.497	24.2	18.6	143	-	67
3 7	0 10.34	-0 24.5	0.927	0.269	96.1	18.3	16E	8*	5*	6 14	15 8.49	-48 22.7	0.565	1.504	24.3	18.7	142E	-	68
3 8	0 15.36	-1 36.3	0.897	0.273	102.6	18.6	16E	7*	6*	6 15	15 6.19	-47 20.7	0.575	1.511	24.5	18.7	142E	-	69
3 9	0 19.74	-2 56.1	0.868	0.279	108.5	18.9	15E	6*	7*	6 16	15 4.12	-46 20.2	0.585	1.518	24.6	18.8	141E	-	70
3 10	0 23.47	-4 22.8	0.841	0.288	113.8	19.2	15E	5*	8*	6 17	15 2.25	-45 21.4	0.595	1.525	24.9	18.8	141E	-	71
3 11	0 26.55	-5 54.8	0.817	0.299	118.2	19.5	15E	3*	9*	6 18	15 0.57	-44 24.2	0.605	1.531	25.1	18.9	140E	1	72
3 12	0 29.02	-7 30.8	0.794	0.312	121.8	19.8	15E	2*	9*	6 19	14 59.06	-43 28.7	0.616	1.538	25.4	18.9	140E	2	73
3 13	0 30.91	-9 9.3	0.773	0.326	124.4	20.1	16E	-	10*	6 20	14 57.71	-42 34.8	0.627	1.544	25.7	19.0	139E	2	73
3 14	0 32.29	-10 49.2	0.754	0.342	126.1	20.3	16E	-	10*	6 22	14 55.44	-40 52.1	0.650	1.557	26.3	19.1	137E	4	75
3 15	0 33.22	-12 29.4	0.736	0.358	127.0	20.4	17E	-	10*	6 24	14 53.68	-39 15.8	0.674	1.570	27.0	19.2	135E	6	77
3 16	0 33.74	-14 9.1	0.721	0.376	127.3	20.5	17E	-	10*	6 26	14 52.36	-37 45.9	0.698	1.582	27.7	19.3	134E	7	78
3 17	0 33.90	-15 47.6	0.707	0.394	127.0	20.5	18E	-	11*	6 28	14 51.41	-36 22.1	0.724	1.593	28.4	19.5	132E	9*	80
3 18	0 33.76	-17 24.4	0.695	0.412	126.2	20.5	20E	-	11*	6 30	14 50.80	-35 4.0	0.750	1.605	29.1	19.6	130E	10*	81
3 19	0 33.35	-18 58.9	0.684	0.430	125.1	20.5	21E	-	11*	7 5	14 50.48	-32 12.1	0.819	1.632	30.6	19.8	125E	13*	84
3 20	0 32.72	-20 31.1	0.674	0.449	123.8	20.4	22E	-	10*	7 10	14 51.52	-29 49.3	0.891	1.657	31.9	20.1	121E	14*	86
3 21	0 31.89	-22 0.5	0.665	0.468	122.2	20.4	23E	-	10*	7 15	14 53.61	-27 50.8	0.965	1.681	32.9	20.3	116E	16*	88
3 22	0 30.89	-23 27.2	0.657	0.486	120.6	20.3	25E	-	10*	7 20	14 56.54	-26 12.8	1.042	1.702	33.7	20.6	112E	17*	90
3 24	0 28.50	-26 11.9	0.643	0.523	117.1	20.2	28E	-	9*	7 25	15 0.15	-24 51.8	1.120	1.722	34.3	20.7	107E	18*	89
3 26	0 25.68	-28 45.3	0.632	0.560	113.5	20.0	31E	-	9*	7 30	15 4.34	-23 44.8	1.199	1.739	34.6	20.9	103E	18*	88
3 28	0 22.57	-31 8.0	0.622	0.596	110.0	19.9	34W	-	10*	8 4	15 9.01	-22 49.5	1.278	1.755	34.8	21.1	99E	19*	87
3 30	0 19.25	-33 20.7	0.614	0.632	106.7	19.8	37W	-	13*	8 9	15 14.08	-22 3.8	1.358	1.769	34.8	21.2	95E	19*	86
4 1	0 15.78	-35 24.6	0.606	0.666	103.4	19.7	40W	-	16*	8 14	15 19.50	-21 26.1	1.436	1.782	34.6	21.4	92E	19*	84*
4 3	0 12.19	-37 20.8	0.599	0.700	100.4	19.7	44W	-	19*	8 19	15 25.25	-20 55.1	1.514	1.793	34.4	21.5	88E	19*	81*
4 5	0 8.51	-39 10.4	0.592	0.733	97.5	19.6	47W	-	22*	12 23	19 9.22	-22 18.3	2.623	1.695	8.9	21.4	15E	5*	7*
4 7	0 4.74	-40 54.6	0.586	0.765	94.7	19.5	50W	-	25*	1 2	19 37.87	-20 59.7	2.621	1.672	7.0	21.3	12E	3*	3*
4 9	0 0.88	-42 34.4	0.579	0.797	92.0	19.5	53W	-	28*	1 12	20 6.49	-19 21.4	2.615	1.650	5.2	21.2	9E	1*	-
4 11	23 56.92	-44 10.8	0.572	0.827	89.5	19.4	56W	-	30*	1 22	20 34.97	-17 24.5	2.608	1.631	3.4	21.1	6E	-	-
4 13	23 52.83	-45 44.7	0.566	0.857	87.1	19.4	59W	-	33*	2 1	21 31.18	-15 10.3	2.598	1.615	1.8	20.9	3E	-	-
4 15	23 48.57	-47 17.1	0.559	0.887	84.7	19.3	62W	-	35*	2 11	21 31.06	-12 40.9	2.587	1.602	1.2	20.9	2W	-	-
4 17	23 44.09	-48 48.6	0.552	0.915	82.4	19.3	65W	-	37*	2 21	21 58.57	-9 58.5	2.576	1.591	2.5	20.9	4W	-	-
4 19	23 39.32	-50 20.1	0.544	0.943	80.1	19.2	68W	-	39*	3 2	22 25.71	-7 5.7	2.565	1.584	4.1	21.0	7W	-	-
4 21	23 34.18	-51 52.2	0.537	0.970	77.9	19.2	71W	-	41*	3 12	22 52.51	-4 5.6	2.554	1.581	5.7	21.1	9W	-	3*
4 23	23 28.57	-53 25.3	0.529	0.996	75.6	19.2	74W	-	43*	3 22	23 19.03	-1 0.8	2.543	1.580	7.4	21.2	12W	1*	5*
4 25	23 22.36	-55 0.0	0.521	1.022	73.4	19.1	77W	-	45*	4 1	23 45.32	+2 5.5	2.532	1.583	9.0	21.2	14W	2*	8*
4 27	23 15.40	-56 36.5	0.513	1.048	71.1	19.0	80W	-	46*	4 11	0 11.43	+5 10.5	2.521	1.590	10.6	21.3	17W	3*	10*
4 29	23 7.49	-58 15.0	0.505	1.072	68.9	19.0	83W	-	47*	4 21	0 37.46	+8 11.3	2.510	1.599	12.2	21.3	20W	5*	13*
5 1	22 58.40	-59 55.4	0.498	1.096	66.5	18.9	87W	-	48*	5 1	1 3.43	+11 5.3	2.498	1.612	13.7	21.4	22W	6*	15*
5 2	22 53.31	-60 46.1	0.494	1.108	65.4	18.9	88W	-	49*	5 11	1 29.38	+13 50.1	2.486	1.628	15.2	21.5	25W	8*	18*
5 3	22 47.81	-61 37.2	0.490	1.120	64.2	18.9	90W	-	49*	12 23	19 9.46	-20 50.1	2.695	1.768	8.7	21.3	16E	6*	6*
5 4	22 41.84	-62 28.4	0.486	1.131	63.0	18.8	92W	-	49*	1 2	19 37.05	-20 5.2	2.698	1.748	6.7	21.2	12E	4*	3*
5 5	22 35.35	-63 19.6	0.483	1.143	61.8	18.8	93W	-	49*	1 12	20 4.76	-19 2.3	2.696	1.730	4.8	21.1	8E	1*	-
5 6	22 28.28	-64 10.7	0.479	1.154	60.6	18.8	95W	-	49*	1 22	20 32.45	-17 42.1	2.691	1.713	2.9	20.9	5E	-	-
5 7	22 20.56	-65 1.5	0.476	1.165	59.3	18.7	97W	-	49*	2 1	21 0.01	-16 5.8	2.683	1.699	1.0	20.7	2E	-	-
5 8	22 12.12	-65 51.6	0.473	1.176	58.1	18.7	99W	-	49*	2 11	21 27.32	-14 15.0	2.672	1.686	1.1	20.7	2W	-	-
5 9	22 2.87	-66 40.8	0.470	1.187	56.8	18.7	100W	-	49*	2 21	21 54.35	-12 11.5	2.659	1.676	3.0	20.8	5W	-	-
5 10	21 52.74	-67 28.7	0.467	1.198	55.5	18.7	102W	-	48*	3 2	22 21.06	-9 57.5	2.643	1.668	4.8	20.9	8W	-	2*
5 11	21 41.65</																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for date (19/21), alpha2000, delta2000, Delta, r, beta, V, psi, 45 to -26 degrees. It is divided into sections for 101610 1999 CW7, 86212 1999 TG21, 236393 2006 DH37, and 435138 2007 GD49. Each section includes a grid of astronomical data points with magnitudes and coordinates.

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for date (19/21), right ascension (α2000), declination (δ2000), distance (Δ), semi-major axis (r), orbital inclination (β), magnitude (V), longitude (ψ), and latitude (45° -26°). It is divided into sections for 500638 2012 VS1, 99913 1997 CZ5, 180375 2003 YH129, 163758 2003 OS13, 7474 1992 TC, and 55043 2001 QL59.

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
55043 2001 QL₅₉										181882 1999 RF₁₄									
<i>(continuation)</i>																			
2 1	21 12.46	-16 45.8	2.666	1.685	2.5	18.3	4 E	—	—	12 23	19 20.29	-34 48.5	3.654	2.753	7.2	20.0	20 E	—	14*
2 11	21 40.35	-14 51.8	2.659	1.673	0.8	18.2	1 E	—	—	1 2	19 39.24	-33 44.5	3.667	2.734	5.6	20.0	16 E	—	9*
2 21	22 7.92	-12 45.0	2.652	1.664	1.4	18.2	2 W	—	—	1 12	19 58.10	-32 34.6	3.666	2.714	4.5	19.9	12 E	—	5*
3 2	22 35.13	-10 27.7	2.643	1.659	3.2	18.3	5 W	—	—	1 22	20 16.78	-31 19.0	3.650	2.692	4.2	19.8	11 E	—	—
3 12	23 1.96	-8 2.7	2.633	1.656	4.9	18.4	8 W	—	2*	2 1	20 35.22	-29 57.7	3.619	2.670	4.9	19.8	13 W	—	4*
3 22	23 28.43	-5 32.6	2.623	1.657	6.7	18.5	11 W	—	5*	2 11	20 53.34	-28 31.2	3.574	2.647	6.3	19.9	17 W	—	9*
4 1	23 54.56	-3 0.1	2.612	1.661	8.4	18.6	14 W	—	8*	2 21	21 11.12	-26 59.7	3.515	2.624	8.1	19.9	22 W	—	14*
4 11	0 20.36	+0 28.1	2.601	1.668	10.1	18.6	17 W	—	11*	3 2	21 28.51	-25 23.9	3.443	2.599	10.0	19.9	27 W	—	20*
4 21	0 45.87	+2 1.1	2.588	1.679	11.8	18.7	20 W	—	14*	3 12	21 45.47	-23 44.2	3.358	2.574	11.9	19.9	32 W	—	25*
5 1	1 11.13	+4 25.1	2.574	1.692	13.4	18.8	23 W	—	17*	3 22	22 1.98	-22 1.2	3.262	2.548	13.8	19.9	38 W	—	31*
5 11	1 36.13	+6 41.7	2.558	1.708	15.0	18.8	26 W	2*	20*	4 1	22 18.03	-20 15.3	3.154	2.521	15.7	19.9	43 W	1*	36*
5 21	2 0.88	+8 49.2	2.540	1.727	16.6	18.9	29 W	3*	23*	4 11	22 33.56	-18 27.3	3.037	2.493	17.6	19.8	49 W	3*	42*
5 31	2 25.36	+10 45.9	2.519	1.749	18.1	19.0	32 W	6*	26*	4 21	22 48.58	-16 37.5	2.911	2.464	19.3	19.8	54 W	5*	48*
6 10	2 49.53	+12 30.5	2.494	1.772	19.5	19.0	36 W	9*	28*	5 1	23 3.02	-14 46.5	2.778	2.435	21.0	19.7	60 W	8*	54*
6 20	3 13.33	+14 2.2	2.466	1.798	21.0	19.1	39 W	13*	31*	5 11	23 16.84	-12 54.7	2.638	2.405	22.5	19.6	66 W	11*	60*
6 30	3 36.68	+15 20.5	2.432	1.826	22.3	19.1	43 W	17*	33*	5 21	23 29.97	-11 2.5	2.493	2.375	23.8	19.5	72 W	15*	65*
7 10	3 59.45	+16 25.0	2.394	1.855	23.6	19.1	47 W	22*	35*	5 31	23 42.31	-9 10.2	2.344	2.344	25.0	19.4	78 W	19*	69*
7 20	4 21.55	+17 16.0	2.350	1.885	24.8	19.2	51 W	27*	36*	6 10	23 53.72	-7 18.0	2.192	2.313	25.9	19.2	84 W	23*	71*
7 30	4 42.81	+17 53.9	2.299	1.917	25.9	19.2	56 W	33*	38*	6 20	0 4.05	+5 26.1	2.040	2.281	26.5	19.0	90 W	29*	69
8 9	5 3.08	+18 19.4	2.243	1.950	26.8	19.2	60 W	39*	39*	6 30	0 13.05	+3 34.5	1.888	2.248	26.7	18.8	97 W	34*	68
8 19	5 22.18	+18 33.8	2.181	1.983	27.6	19.2	65 W	45*	40*	7 10	0 20.45	+1 43.2	1.739	2.215	26.5	18.6	104 W	40*	66
8 29	5 39.91	+18 38.3	2.113	2.018	28.2	19.2	71 W	50*	42*	7 20	0 25.86	+0 8.1	1.595	2.182	25.7	18.4	111 W	44*	64
9 8	5 56.04	+18 34.7	2.039	2.053	28.5	19.2	77 W	55*	43*	7 30	0 28.83	+1 59.3	1.458	2.149	24.2	18.1	120 W	47	62
9 18	6 10.34	+18 24.8	1.960	2.088	28.5	19.1	83 W	60*	44*	8 9	0 28.86	+3 50.6	1.331	2.116	22.0	17.8	128 W	49	60
9 28	6 22.50	+18 10.8	1.877	2.123	28.2	19.0	90 W	62*	45*	8 19	0 25.42	+5 41.0	1.217	2.083	19.0	17.5	138 W	51	58
10 8	6 32.24	+17 54.9	1.793	2.159	27.3	19.0	97 W	63	46*	8 29	0 18.15	+7 28.7	1.120	2.049	15.0	17.1	148 W	52	57
10 18	6 39.19	+17 39.6	1.709	2.194	26.0	18.9	105 W	63	46	9 8	0 7.09	+9 10.4	1.044	2.016	10.4	16.8	159 W	54	55
10 28	6 42.99	+17 27.3	1.628	2.230	24.0	18.7	114 W	62	47	9 13	0 0.31	+9 57.6	1.014	2.000	8.2	16.6	164 W	55	54
11 7	6 43.38	+17 20.1	1.555	2.265	21.2	18.6	124 W	62	47	9 18	23 52.91	+10 41.4	0.991	1.984	6.5	16.5	167 W	56	53
11 17	6 40.16	+17 19.7	1.493	2.300	17.7	18.4	135 W	62	47	9 23	23 45.10	+11 21.3	0.975	1.968	6.1	16.4	168 E	56	53
11 27	6 33.49	+17 26.6	1.447	2.334	13.5	18.2	146 W	62	47	9 28	23 37.15	+11 57.2	0.965	1.952	7.3	16.4	166 E	57	52
12 7	6 23.93	+17 40.5	1.424	2.369	8.7	18.0	159 W	63	46	10 3	23 29.34	+12 29.0	0.961	1.936	9.5	16.5	161 E	57	52
12 12	6 18.37	+17 49.5	1.422	2.386	6.2	17.9	165 W	63	46	10 8	23 21.93	+12 56.8	0.964	1.920	12.2	16.6	156 E	58	51
12 17	6 12.52	+17 59.6	1.426	2.402	3.9	17.8	171 W	63	46	10 13	23 15.18	+13 21.2	0.972	1.905	15.0	16.7	150 E	58	51
12 22	6 6.56	+18 10.6	1.438	2.419	2.2	17.8	175 W	63	46	10 18	23 9.29	+13 42.9	0.985	1.889	17.7	16.8	145 E	59	50
12 27	6 0.70	+18 22.2	1.457	2.436	2.9	17.9	173 E	63	46	10 23	23 4.44	+14 2.9	1.003	1.874	20.2	16.9	139 E	59	50
1 1	5 55.11	+18 34.3	1.483	2.452	5.0	18.0	167 E	64	45	10 28	23 0.73	+14 22.2	1.026	1.860	22.6	17.0	134 E	59	50
1 6	5 49.95	+18 46.8	1.516	2.468	7.3	18.2	161 E	64	45	11 2	22 58.20	+14 41.6	1.051	1.845	24.7	17.1	129 E	60	49
1 11	5 45.36	+18 59.5	1.556	2.484	9.5	18.4	155 E	64	45	11 7	22 56.86	+15 2.0	1.080	1.831	26.6	17.2	124 E	60	49
1 16	5 41.45	+19 12.4	1.602	2.500	11.5	18.5	150 E	64	45	11 17	22 57.63	+15 47.9	1.143	1.804	29.7	17.4	115 E	61	48
291877 2006 PB₁₈										86878 2000 HD₂₄									
12 23	19 19.81	-21 10.5	2.567	1.659	10.6	21.1	18 E	7*	9*	11 27	23 2.72	+16 44.2	1.212	1.778	32.0	17.5	107 E	62	47*
1 2	19 49.50	-20 18.2	2.582	1.650	8.8	21.0	15 E	6*	6*	12 7	23 11.57	+17 52.7	1.284	1.754	33.5	17.7	100 E	63	44*
1 12	20 19.02	-19 6.0	2.595	1.644	6.9	21.0	12 E	4*	3*	12 17	23 23.71	+19 13.5	1.357	1.733	34.5	17.8	94 E	64	39*
1 22	20 48.21	-17 35.5	2.608	1.641	5.1	20.9	9 E	1*	—	12 27	23 38.75	+20 46.3	1.429	1.713	35.0	17.9	88 E	66	34*
2 1	21 16.93	-15 48.7	2.619	1.641	3.3	20.8	5 E	—	—	1 6	23 56.35	+22 29.3	1.499	1.696	35.2	18.0	83 E	67*	30*
2 11	21 45.08	-13 48.0	2.629	1.644	1.5	20.7	2 E	—	—	1 16	0 16.28	+24 20.2	1.567	1.681	35.0	18.0	79 E	68*	25*
2 21	22 12.62	-11 36.2	2.638	1.649	0.5	20.6	1 W	—	—	332026 2005 PH									
3 2	22 39.54	-9 16.1	2.645	1.658	2.2	20.8	4 W	—	—	12 23	19 20.04	-16 18.8	2.486	1.594	11.9	20.5	20 E	11*	7*
3 12	23 5.83	-6 50.5	2.652	1.669	4.0	20.9	7 W	—	1*	1 2	19 49.92	-14 52.0	2.502	1.588	10.4	20.5	17 E	10*	3*
3 22	23 31.55	-4 22.0	2.656	1.683	5.8	21.0	10 W	—	4*	1 12	20 19.53	-13 7.2	2.518	1.585	9.0	20.4	15 E	8*	—
4 1	23 56.74	+1 53.4	2.658	1.700	7.6	21.1	13 W	—	7*	1 22	20 48.74	-11 6.5	2.535	1.587	7.6	20.4	12 E	6*	—
4 11	0 21.43	+0 33.2	2.657	1.718	9.4	21.2	16 W	—	10*	2 1	21 17.44	-8 52.2	2.553	1.592	6.2	20.3	10 E	4*	—
4 21	0 45.69	+2 55.4	2.654	1.739	11.1	21.3	20 W	—	14*	2 11	21 45.57	-6 27.3	2.572	1.602	5.1	20.3	8 E	1*	—
5 1	1 9.55	+5 11.6	2.646	1.762	12.8	21.4	23 W	1*	17*	2 21	22 13.10	-3 54.7	2.591	1.615	4.3	20.3	7 W	—	—
5 11	1 33.01	+7 19.9	2.635	1.787	14.5	21.5	26 W	3*	20*	3 2	22 40.04	-1 17.4	2.611	1.631	4.0	20.3	7 W	—	—
3 27	0 9.60	+4 33.6	1.782	0.789	3.2	23.7	—	—	—	3 12	23 6.40	+1 21.7	2.631	1.650	4.4	20.4	7 W	1*	—
4 1	0 33.41	+6 33.4	1.728	0.732	4.1	23.7	—	—	—	3 22	23 32.24	+3 5							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
86878 2000 HD ₂₄										985 Rosina									
(continuation)										(continuation)									
7 20	11 25.68	+ 0 53.0	1.585	1.291	39.8	20.7	54 E	14*	47*	6 30	3 29.76	+22 0.8	2.366	1.763	23.1	16.9	43 W	23*	129*
7 30	11 58.45	- 1 55.4	1.722	1.383	36.1	21.0	53 E	13*	47*	7 10	3 54.50	+23 21.8	2.325	1.786	24.4	16.9	47 W	27*	30*
8 9	12 27.89	- 4 27.2	1.866	1.469	32.7	21.2	52 E	12*	45*	7 20	4 18.81	+24 27.3	2.280	1.811	25.6	17.0	50 W	33*	31*
8 19	12 54.84	- 6 44.1	2.011	1.549	29.6	21.4	49 E	11*	43*	7 30	4 42.50	+25 17.4	2.229	1.837	26.8	17.0	55 W	38*	32*
55760 1992 BL ₁										332056 2005 RM ₄₄									
12 23	19 20.72	-15 25.9	3.599	2.697	7.2	18.7	20 E	12*	7*	12 23	19 21.00	-21 33.3	2.526	1.621	10.9	20.5	18 E	7*	9*
1 2	19 37.52	-15 26.9	3.608	2.665	5.2	18.5	14 E	8*	1*	1 2	19 51.80	-21 3.9	2.542	1.614	9.2	20.5	15 E	5*	6*
1 12	19 54.68	-15 19.2	3.601	2.632	3.2	18.4	9 E	3*	—	1 12	20 22.49	-20 12.7	2.559	1.611	7.4	20.4	12 E	3*	4*
1 22	20 12.14	-15 3.2	3.578	2.599	1.8	18.3	5 W	—	—	1 22	20 52.88	-19 1.3	2.575	1.612	5.7	20.3	9 E	1*	2*
2 1	20 29.84	-14 39.5	3.541	2.565	2.5	18.3	7 W	—	—	2 1	21 22.77	-17 32.0	2.591	1.616	4.0	20.3	7 E	—	—
2 11	20 47.70	-14 8.7	3.489	2.530	4.5	18.3	12 W	2*	4*	2 11	21 52.02	-15 47.5	2.606	1.624	2.6	20.2	4 E	—	—
2 21	21 5.69	-13 31.5	3.423	2.494	6.6	18.4	17 W	4*	10*	2 21	22 20.56	-13 50.7	2.621	1.635	2.0	20.2	3 E	—	—
3 2	21 23.79	-12 48.7	3.344	2.458	8.9	18.4	22 W	5*	16*	3 2	22 48.36	-11 44.8	2.636	1.650	2.8	20.3	5 W	—	—
3 12	21 41.96	-12 1.4	3.253	2.420	11.1	18.4	28 W	6*	22*	3 12	23 15.40	- 9 33.0	2.649	1.667	4.2	20.4	7 W	—	—
3 22	22 0.20	-11 10.5	3.151	2.382	13.3	18.3	33 W	7*	27*	3 22	23 41.71	- 7 18.0	2.661	1.688	5.8	20.5	10 W	—	3*
4 1	22 18.52	-10 17.2	3.039	2.344	15.5	18.3	39 W	8*	33*	4 1	0 7.33	- 5 2.8	2.671	1.712	7.5	20.6	13 W	—	6*
4 11	22 36.91	- 9 22.7	2.918	2.305	17.6	18.3	44 W	9*	38*	4 11	0 32.29	- 2 49.9	2.678	1.738	9.2	20.8	16 W	—	9*
4 21	22 55.41	- 8 28.5	2.790	2.265	19.6	18.2	49 W	10*	43*	4 21	0 52.65	- 0 41.4	2.683	1.766	10.8	20.9	19 W	—	13*
5 1	23 14.03	- 7 35.9	2.655	2.225	21.6	18.1	54 W	12*	48*	5 1	1 20.43	+ 1 20.7	2.683	1.796	12.5	21.0	23 W	—	16*
5 11	23 32.79	- 6 46.8	2.516	2.184	23.5	18.0	59 W	13*	53*	5 11	1 43.66	+ 3 14.7	2.679	1.828	14.1	21.1	26 W	—	20*
5 21	23 51.75	- 6 2.9	2.374	2.144	25.2	17.9	65 W	15*	58*	5 21	2 6.34	+ 4 59.5	2.670	1.861	15.7	21.1	30 W	—	24*
5 31	0 10.91	- 5 26.3	2.231	2.103	26.9	17.8	70 W	17*	62*	5 31	2 28.46	+ 6 33.9	2.655	1.895	17.2	21.2	34 W	2*	28*
6 10	0 30.29	- 4 59.4	2.087	2.062	28.3	17.6	74 W	20*	65*	6 10	2 49.98	+ 7 57.1	2.634	1.931	18.7	21.3	38 W	6*	31*
6 20	0 49.93	- 4 44.7	1.944	2.021	29.6	17.5	79 W	23*	67*	6 20	3 31.07	+ 9 8.6	2.606	1.967	20.1	21.4	42 W	10*	35*
6 30	1 9.78	- 4 45.2	1.804	1.981	30.7	17.3	84 W	26*	68*	6 30	3 31.07	+ 10 8.2	2.571	2.004	21.4	21.4	46 W	14*	38*
7 10	1 29.83	- 5 3.9	1.668	1.940	31.6	17.1	89 W	30*	69	7 10	3 50.46	+ 10 55.8	2.528	2.042	22.7	21.4	51 W	20*	40*
7 20	1 49.99	- 5 44.1	1.539	1.901	32.2	16.9	94 W	32*	70	7 20	4 8.96	+ 11 31.7	2.478	2.079	23.8	21.5	56 W	26*	43*
7 30	2 10.11	- 6 49.2	1.416	1.862	32.6	16.7	99 W	34*	71	7 30	4 26.42	+ 11 56.0	2.420	2.117	24.7	21.5	61 W	32*	45*
8 9	2 30.02	- 8 21.8	1.302	1.825	32.7	16.5	103 W	35*	72	8 9	4 42.68	+ 12 9.6	2.355	2.155	25.5	21.5	66 W	38*	47*
8 19	2 49.41	- 10 23.9	1.197	1.789	32.6	16.2	108 W	34*	74	8 19	4 57.59	+ 12 13.2	2.283	2.193	26.0	21.5	72 W	44*	49*
8 29	3 7.89	- 12 55.9	1.104	1.754	32.3	16.0	112 W	32*	77	8 29	5 10.90	+ 12 7.6	2.205	2.231	26.3	21.5	78 W	49*	50*
9 3	3 16.65	- 14 22.3	1.061	1.737	32.0	15.9	114 W	31	78	9 8	5 22.40	+ 11 54.4	2.122	2.268	26.8	21.4	85 W	53*	51*
9 8	3 25.00	- 15 55.1	1.022	1.721	31.8	15.8	116 W	29	80	9 18	5 31.80	+ 11 34.7	2.035	2.305	25.3	21.3	92 W	56*	52*
9 13	3 32.86	- 17 33.4	0.986	1.705	31.5	15.7	118 W	27	82	9 28	5 38.80	+ 11 10.4	1.948	2.342	24.9	21.2	100 W	56	53
9 18	3 40.14	- 19 16.3	0.952	1.690	31.2	15.6	119 W	26	83	10 8	5 43.09	+ 10 43.4	1.862	2.378	23.5	21.1	109 W	56	53
9 23	3 46.76	- 21 2.3	0.922	1.676	30.9	15.5	121 W	24	85	10 18	5 44.38	+ 10 16.0	1.781	2.414	21.4	21.0	118 W	55	54
9 28	3 52.64	- 22 49.6	0.895	1.662	30.6	15.4	122 W	22	87	10 28	5 42.47	+ 9 50.9	1.709	2.449	18.7	20.9	128 W	55	54
10 3	3 57.70	- 24 36.6	0.871	1.649	30.4	15.3	123 W	20	89	11 7	5 37.37	+ 9 30.9	1.652	2.483	15.3	20.7	139 W	55	54
10 8	4 1.87	- 26 21.2	0.849	1.637	30.2	15.2	124 W	19	90	11 17	5 29.37	+ 9 18.6	1.614	2.517	11.5	20.5	150 W	54	55
10 13	4 5.07	- 28 1.3	0.831	1.625	30.1	15.2	125 W	17	88	11 27	5 19.16	+ 9 16.6	1.600	2.550	7.6	20.4	160 W	54	55
10 18	4 7.25	- 29 34.3	0.815	1.614	30.0	15.1	126 W	15	86	12 7	5 7.86	+ 9 26.2	1.614	2.582	5.1	20.3	166 W	54	55
10 23	4 8.40	- 30 57.9	0.801	1.605	30.0	15.0	126 W	14	85	12 17	4 56.70	+ 9 47.7	1.656	2.613	6.3	20.5	163 E	55	54
10 28	4 8.54	- 32 9.4	0.790	1.596	30.0	15.0	127 W	13	84	12 27	4 46.90	+ 10 20.3	1.727	2.644	9.5	20.7	154 E	55	54
11 2	4 7.74	- 33 6.7	0.781	1.587	30.1	15.0	127 W	12	83	1 6	4 39.37	+ 11 2.1	1.824	2.674	12.8	21.0	143 E	56	53
11 7	4 6.10	- 33 47.8	0.774	1.580	30.2	14.9	127 W	11	82	1 16	4 34.58	+ 11 50.8	1.942	2.703	15.6	21.3	132 E	57	52
11 12	4 3.75	- 34 10.8	0.769	1.574	30.3	14.9	127 W	11	82	143081 2002 XC ₅									
11 17	4 0.90	- 34 14.2	0.766	1.569	30.5	14.9	126 W	11	82	12 23	19 21.40	-22 15.9	2.641	1.734	10.2	19.9	18 E	6*	10*
11 22	3 57.78	- 33 56.8	0.765	1.565	30.8	14.9	126 W	11	82	1 2	19 49.67	-21 41.2	2.632	1.699	8.4	19.7	15 E	4*	6*
11 27	3 54.66	- 33 18.6	0.766	1.561	31.0	14.9	125 E	12	83	1 12	20 18.44	-20 46.7	2.620	1.666	6.6	19.6	11 E	2*	3*
12 2	3 51.75	- 32 19.8	0.770	1.559	31.3	14.9	125 E	13	84	1 22	20 47.56	-19 32.6	2.604	1.635	4.8	19.5	8 E	—	1*
12 7	3 49.27	- 31 1.3	0.775	1.558	31.6	15.0	124 E	14	85	2 1	21 16.88	-17 59.4	2.586	1.608	3.2	19.3	5 E	—	—
12 12	3 47.39	- 29 24.3	0.783	1.558	31.9	15.0	123 E	16	87	2 11	21 46.24	-16 8.5	2.567	1.583	2.0	19.2	3 E	—	—
12 17	3 46.26	- 27 30.5	0.792	1.559	32.2	15.0	122 E	17	88	2 21	22 15.55	-14 1.8	2.548	1.562	2.0	19.1	3 E	—	—
12 22	3 46.00	- 25 22.1	0.805	1.561	32.6	15.1	121 E	20	89	3 2	22 44.75	-11 41.6	2.530	1.544	3.1	19.2	5 W	—	—
12 27	3 46.65	- 23 1.5	0.820	1.564	33.0	15.1	120 E	22	87	3 12	23 13.78	- 9 10.7	2.512	1.531	4.5	19.2	7 W	—	—
1 1	3 48.23	- 20 31.4	0.838	1.568	33.4	15.2	119 E	24	85	3 22	23 42.64	- 6 32.2	2.497	1.522	6.0	19.3	9 W	—	2*
1 6	3 50.72	- 17 54.2	0.859	1.573	33.8	15.3	117 E	27	82	4 1	0 11.32	- 3 49.3	2.484	1.517	7.5	19.3	11 W	—	5*
1 11	3 54.09	- 15 12.4	0.882	1.579	34.2	15.3	116 E	30	79	4 11	0 39.83	- 1 5.6	2.473	1.516	8.9	19.4	13 W	—	7*
1 16	3 58.32	- 12 28.2	0.909	1.586	34.6	15.4	114 E	33	76										
985 Rosina																			
12 23	19 20.83	-21 45.0	2.719	1.810	9.7	16.8	18 E	7*	9*										
1 2	19 47.61	-20 32.8	2.721	1.785	7.8	16.7	14 E	5*	5*										
1 12	20 14.45	-19 3.3	2.720	1.762	5.9	16.6	11 E	3*	2*										
1 22	20 41.25	-17 17.4	2.714	1.741	4.0	16.4	7 E	—	—										
2 1	21 7.91	-15 16.0	2.704	1.722	2.1	16.3	4 E	—	—										
2 11	21 34.35	-13 0.8	2.692	1.706	0.8	16.1	1 W	—	—										
2 21	22 0.54	-10 33.4	2.678	1.692	2.0	16.2	3 W	—	—										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°			
143081 2002 XC₅ (continuation)										452435 2003 GB (continuation)												
4	21	1	8.19	+ 4 35.7	2.464	1.521	10.3	19.4	16 W	—	9*	2	1	20 47.53	+ 0 39.3	3.267	2.351	7.5	21.0	18 W	8*	—
5	1	1	36.41	+ 4 11.4	2.457	1.529	11.6	19.5	18 W	—	11*	2	11	21 6.86	+ 1 34.2	3.324	2.401	7.1	21.0	17 W	10*	—
5	11	2	4.48	+ 6 38.5	2.452	1.542	12.9	19.5	20 W	—	14*	2	21	21 25.37	+ 2 34.6	3.372	2.452	7.2	21.1	18 W	12*	—
5	21	2	32.38	+ 8 54.5	2.448	1.559	14.2	19.6	22 W	—	16*	3	2	21 43.07	+ 3 39.3	3.408	2.502	7.9	21.2	20 W	14*	5*
5	31	3	0.07	+10 57.2	2.443	1.579	15.5	19.7	25 W	—	19*	3	12	21 59.94	+ 4 46.8	3.431	2.553	9.0	21.3	24 W	15*	10*
6	10	3	27.48	+12 44.9	2.438	1.604	16.8	19.8	27 W	3*	21*	3	22	22 15.99	+ 5 56.0	3.441	2.603	10.3	21.4	28 W	17*	16*
6	20	3	54.53	+14 16.8	2.432	1.631	18.1	19.8	30 W	6*	23*	60689 2000 GG₃₇										
6	30	4	21.11	+15 32.1	2.422	1.661	19.3	19.9	33 W	9*	25*	12	23	19 22.53	-21 6.3	2.503	1.603	11.3	19.6	19 E	8*	9*
7	10	4	47.11	+16 31.0	2.409	1.694	20.6	20.0	36 W	14*	27*	1	2	19 53.28	-20 25.3	2.535	1.610	9.5	19.6	16 E	6*	6*
7	20	5	12.40	+17 13.8	2.392	1.728	21.8	20.0	39 W	18*	28*	1	12	20 23.54	-19 23.7	2.565	1.620	7.6	19.5	13 E	4*	4*
7	30	5	36.85	+17 41.5	2.368	1.765	23.0	20.1	43 W	23*	30*	1	22	20 53.14	-18 3.8	2.595	1.633	5.8	19.5	10 E	2*	1*
8	9	6	0.32	+17 55.5	2.339	1.803	24.2	20.2	47 W	29*	31*	2	1	21 21.97	-16 28.2	2.623	1.648	3.9	19.4	7 E	—	—
8	19	6	22.70	+17 57.3	2.303	1.842	25.3	20.2	51 W	34*	33*	2	11	21 49.95	-14 39.9	2.649	1.666	2.1	19.4	4 E	—	—
8	29	6	43.86	+17 48.9	2.260	1.883	26.2	20.2	56 W	39*	34*	2	21	22 17.05	-12 41.8	2.674	1.686	1.1	19.3	2 E	—	—
9	8	7	3.65	+17 32.3	2.210	1.924	27.1	20.3	60 W	45*	36*	3	2	22 43.31	-10 36.7	2.695	1.708	2.3	19.5	4 W	—	—
9	18	7	21.97	+17 10.0	2.151	1.965	27.8	20.3	66 W	49*	38*	3	12	23 8.74	-8 27.4	2.713	1.732	4.1	19.6	7 W	—	1*
9	28	7	38.63	+16 44.3	2.086	2.007	28.3	20.3	71 W	54*	39*	3	22	23 33.42	-6 16.4	2.727	1.757	6.0	19.8	11 W	—	4*
10	8	7	53.49	+16 18.1	2.014	2.049	28.5	20.2	78 W	58*	42*	4	1	23 57.39	-4 5.9	2.737	1.784	7.8	19.9	14 W	—	8*
10	18	8	6.33	+15 54.0	1.937	2.091	28.3	20.2	84 W	60*	44*	4	11	0 20.70	-1 58.1	2.741	1.812	9.7	20.0	18 W	—	12*
10	28	8	16.89	+15 35.4	1.855	2.133	27.7	20.1	92 W	61	46*	4	21	0 43.43	+ 0 5.3	2.740	1.842	11.5	20.1	21 W	—	15*
11	7	8	24.90	+15 25.1	1.772	2.174	26.7	20.0	100 W	60	48*	5	1	1 5.61	+ 2 2.9	2.732	1.872	13.3	20.2	25 W	—	19*
11	17	8	30.04	+15 26.5	1.690	2.215	25.0	19.9	109 W	60	49*	5	11	1 27.25	+ 3 53.1	2.718	1.902	15.0	20.3	29 W	1*	23*
11	27	8	31.98	+15 42.4	1.612	2.256	22.6	19.8	118 W	61	48	5	21	1 48.39	+ 5 35.0	2.697	1.933	16.7	20.4	33 W	3*	27*
12	7	8	30.49	+16 14.5	1.544	2.296	19.5	19.6	129 W	61	48	5	31	2 9.00	+ 7 7.5	2.669	1.965	18.3	20.4	38 W	6*	31*
12	17	8	25.50	+17 3.0	1.490	2.336	15.5	19.5	141 W	62	47	6	10	2 29.07	+ 8 30.0	2.633	1.997	19.9	20.5	42 W	10*	35*
12	27	8	17.31	+18 5.4	1.456	2.375	10.9	19.3	153 W	63	46	6	20	2 48.54	+ 9 41.9	2.589	2.028	21.3	20.5	47 W	14*	38*
1	1	8	12.24	+18 40.3	1.449	2.394	8.3	19.2	159 W	64	45	6	30	3 7.34	+10 42.7	2.537	2.060	22.6	20.6	51 W	19*	41*
1	6	8	6.70	+19 16.4	1.447	2.413	5.7	19.1	166 W	64	45	7	10	3 25.38	+11 32.3	2.477	2.092	23.8	20.6	56 W	25*	44*
1	11	8	0.85	+19 52.9	1.453	2.432	3.1	19.0	172 W	65	44	7	20	3 42.53	+12 10.6	2.410	2.123	24.9	20.6	62 W	31*	46*
1	16	7	54.88	+20 28.8	1.467	2.450	0.4	18.8	179 W	65	44	7	30	3 58.64	+12 37.6	2.336	2.154	25.7	20.6	67 W	37*	48*
332033 2005 PL₂₃										8	9	4	13.53	+12 53.8	2.255	2.184	26.3	20.6	73 W	43*	49*	
12	23	19	21.58	-23 28.4	2.567	1.660	10.6	20.5	18 E	5*	10*	8	19	4 26.98	+12 59.5	2.168	2.214	26.7	20.5	79 W	49*	50*
1	2	19	51.78	-22 53.2	2.569	1.639	8.9	20.4	15 E	4*	7*	8	29	4 38.72	+12 55.3	2.077	2.244	26.7	20.4	86 W	54*	51*
1	12	20	22.19	-21 55.9	2.570	1.621	7.2	20.3	12 E	2*	5*	9	8	4 48.48	+12 42.1	1.983	2.273	26.3	20.4	93 W	57*	51
1	22	20	52.59	-20 37.5	2.570	1.606	5.6	20.2	9 E	—	2*	9	18	4 55.92	+12 20.9	1.888	2.301	25.4	20.3	101 W	57	52
2	1	21	22.78	-18 59.5	2.569	1.595	4.2	20.1	7 E	—	1*	9	28	5 0.68	+11 53.1	1.795	2.329	23.9	20.1	109 W	57	52
2	11	21	52.60	-17 4.1	2.568	1.588	3.1	20.1	5 E	—	—	10	8	5 2.44	+11 20.3	1.707	2.356	21.9	20.0	119 W	56	53
2	21	22	21.94	-14 54.0	2.568	1.584	2.7	20.0	4 E	—	—	10	18	5 0.94	+10 44.6	1.629	2.382	19.1	19.8	129 W	56	53
3	2	22	50.74	-12 32.4	2.569	1.584	3.3	20.1	5 W	—	—	10	28	4 56.11	+10 8.6	1.566	2.407	15.6	19.6	139 W	55	54
3	12	23	18.97	-10 2.4	2.570	1.589	4.5	20.1	7 W	—	—	11	7	4 48.23	+ 9 35.5	1.521	2.432	11.7	19.5	150 W	55	54
3	22	23	46.63	- 7 27.3	2.572	1.597	5.8	20.2	9 W	—	2*	11	17	4 37.94	+ 9 8.8	1.500	2.455	7.6	19.3	161 W	54	55
4	1	0	13.76	+ 4 50.4	2.574	1.609	7.3	20.3	12 W	—	4*	11	27	4 26.37	+ 8 52.1	1.506	2.478	5.0	19.2	167 W	54	55
4	11	0	40.38	+ 2 14.7	2.576	1.624	8.7	20.4	14 W	—	7*	12	7	4 14.88	+ 8 48.0	1.541	2.500	6.6	19.3	163 E	54	55
4	21	1	6.53	+ 0 17.1	2.579	1.643	10.2	20.5	17 W	—	10*	12	17	4 4.73	+ 8 57.7	1.603	2.521	10.1	19.6	153 E	54	55
5	1	1	32.23	+ 2 42.5	2.580	1.664	11.7	20.6	20 W	—	13*	12	27	3 56.93	+ 9 21.0	1.691	2.541	13.7	19.9	142 E	54	55
5	11	1	57.51	+ 4 59.3	2.579	1.689	13.1	20.7	22 W	—	16*	1	6	3 51.99	+ 9 56.2	1.799	2.560	16.7	20.1	132 E	55	54
5	21	2	22.37	+ 7 5.8	2.576	1.716	14.6	20.7	25 W	—	19*	1	16	3 50.06	+10 41.0	1.924	2.578	19.0	20.3	121 E	56	53
5	31	2	46.81	+ 9 0.8	2.569	1.746	16.1	20.8	28 W	1*	22*	218098 2002 MG										
6	10	3	10.77	+10 43.1	2.559	1.777	17.5	20.9	32 W	4*	25*	12	23	19 22.83	- 6 9.0	2.639	1.806	13.8	19.9	26 E	20*	3*
6	20	3	34.23	+12 12.4	2.543	1.811	18.9	21.0	35 W	8*	28*	1	2	19 48.41	- 5 8.0	2.643	1.782	12.6	19.8	23 E	17*	—
6	30	3	57.11	+13 28.2	2.522	1.845	20.3	21.0	39 W	13*	31*	1	12	20 14.40	- 3 52.9	2.643	1.759	11.5	19.7	21 E	14*	—
7	10	4	19.32	+14 30.7	2.495	1.881	21.6	21.1	43 W	17*	33*	1	22	20 40.70	- 2 24.8	2.642	1.738	10.5	19.7	19 E	11*	—
7	20	4	40.78	+15 20.4	2.460	1.918	22.8	21.2	47 W	23*	35*	2	1	21 7.25	+ 0 44.7	2.638	1.720	9.6	19.6	17 E	8*	—
7	30	5	1.34	+15 57.9	2.419	1.956	24.0	21.2	52 W	29*	37*	2	11	21 33.95	+ 1 5.5	2.634	1.704	8.9	19.6	15 W	5*	—
8	9	5	20.89	+16 24.3	2.370	1.994	25.0	21.2	56 W	35*	38*	2	21	22 0.76	+ 3 3.6	2.630	1.690	8.4	19.5	14 W	6*	—
8	19	5	39.30	+16 40.9	2.313	2.033	25.9	21.2	61 W	41*	40*	3	2	22 27.66	+ 5 7.3	2.625	1.679	8.1	19.5	14 W	7*	—
8	29	5	56.36	+16 49.2	2.249	2.072	26.6	21.2	67 W	46*	41*	3	12	22 54.60	+ 7 13.9	2.620	1.671	8.1	19.5	14 W	8*	—
9	8	6	11.92	+16 50.9	2.178	2.112	27.1	21.2	73 W	52*	43*	3	22	23 21.60	+ 9 20.8	2.614	1.665	8.3	19.5	14 W	8*	—
9	18	6	25.75	+16 48.0	2.101	2.151	27.3	21.2	79 W	57*	44*	4	1	23 48.65	+11 25.1	2.608	1.663	8.9	19.5	15 W	8*	3*
9	28	6	37.60	+16 42.8	2.018	2.190	27.2	21.1	86 W	60*	46*	4	11	0 15.73	+13 24.2	2.601	1.663	9.7	19.5	16 W	8*	6*
10	8	6	47.20	+16 37.7	1.932	2.229	26.6	21.1	93 W	62*	47*	4	21	0 42.86	+15 15.6	2.593	1.667	10.8	19.6	18 W	9*	8*
10	18	6																				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° – 26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° – 26°
218098 2002 MG (continuation)									26858 Misterrogers (continuation)								
11 12	7 20.71	1 27.9	1.553	2.169	24.4	19.5	115 W	44 65	5 21	22 58.98	+12 11.0	2.737	2.578	21.7	18.2	70 W	37* 50*
11 17	7 20.06	2 48.6	1.523	2.185	23.2	19.4	119 W	42 67	5 31	23 10.54	+13 47.0	2.587	2.544	22.8	18.1	76 W	42* 50*
11 22	7 18.54	4 6.9	1.496	2.201	22.0	19.3	124 W	41 68	6 10	23 21.31	+15 20.6	2.434	2.509	23.6	17.9	82 W	47* 49*
11 27	7 16.17	5 21.6	1.473	2.217	20.6	19.3	128 W	40 69	6 20	23 31.13	+16 50.0	2.279	2.473	24.3	17.8	89 W	52* 47
12 2	7 12.99	6 31.6	1.453	2.233	19.3	19.2	132 W	38 71	6 30	23 39.79	+18 13.3	2.124	2.437	24.6	17.6	95 W	58* 46
12 7	7 9.05	7 35.6	1.439	2.249	17.9	19.2	135 W	37 72	7 10	23 47.06	+19 27.6	1.970	2.399	24.5	17.4	102 W	63* 45
12 12	7 4.45	8 32.5	1.429	2.265	16.6	19.1	139 W	36 73	7 20	23 52.63	+20 29.8	1.820	2.361	23.9	17.2	109 W	65* 44
12 17	6 59.30	9 21.1	1.425	2.281	15.4	19.1	142 W	36 73	7 25	23 54.67	+20 55.0	1.747	2.342	23.5	17.1	113 W	66 43
12 22	6 53.76	10 0.5	1.426	2.297	14.5	19.1	144 W	35 74	7 30	23 56.16	+21 15.3	1.676	2.323	22.9	16.9	117 W	66 43
12 27	6 48.00	10 30.0	1.433	2.313	13.9	19.1	146 W	34 75	8 4	23 57.06	+21 30.1	1.606	2.303	22.1	16.8	121 W	67 42
1	6 42.20	10 49.5	1.446	2.328	13.6	19.1	146 E	34 75	8 9	23 57.34	+21 38.5	1.540	2.283	21.2	16.7	126 W	67 42
1	6 36.53	10 58.9	1.465	2.344	13.7	19.2	146 E	34 75	8 14	23 56.96	+21 39.7	1.476	2.263	20.1	16.5	130 W	67 42
1	6 31.16	10 58.7	1.490	2.359	14.1	19.2	144 E	34 75	8 19	23 55.90	+21 32.6	1.415	2.243	18.8	16.4	134 W	67 42
1	6 26.24	10 49.5	1.521	2.374	14.8	19.3	142 E	34 75	8 24	23 54.16	+21 16.3	1.358	2.223	17.3	16.2	139 W	66 43
40245 1998 WO₇									313276 2002 AX₁								
12 23	19 23.25	-44 2.3	2.930	2.095	12.1	21.0	26 E	— 18*	12 23	19 23.89	-10 41.6	1.108	0.438	62.2	20.3	23 E	16* 5*
1	19 51.74	-44 4.2	2.908	2.059	11.6	20.9	25 E	— 16*	12 28	19 53.97	-5 48.9	1.024	0.483	71.5	20.7	28 E	21* 5*
1	20 21.43	-43 48.9	2.876	2.022	11.6	20.8	24 E	— 14*	1	20 23.77	+1 2.9	0.947	0.536	77.6	20.9	32 E	26* 5*
1	20 52.09	-43 14.9	2.835	1.984	12.0	20.8	25 E	— 12*	1	20 54.40	+3 33.2	0.881	0.594	81.1	21.1	37 E	31* 5*
2	21 23.45	-42 20.5	2.787	1.947	12.7	20.7	26 E	— 11*	1	12 21 26.71	+7 56.5	0.827	0.653	82.4	21.2	41 E	35* 6*
2	11 55.21	-41 5.0	2.734	1.909	13.6	20.7	27 E	— 10*	1	17 22 1.16	+12 1.9	0.786	0.711	81.9	21.3	46 E	40* 7*
2	21 27.11	-39 27.8	2.678	1.872	14.7	20.6	29 E	— 10*	1	22 22 37.75	+15 41.8	0.760	0.768	80.2	21.3	50 E	44* 9*
3	22 58.89	-37 29.3	2.621	1.835	15.8	20.6	30 E	— 9*	1	27 23 15.94	+18 47.7	0.749	0.822	77.5	21.4	55 E	48* 12*
3	12 30.30	-35 10.3	2.564	1.798	16.9	20.5	32 E	— 9*	2	1 23 54.76	+21 12.6	0.751	0.873	74.2	21.4	59 E	52* 14*
3	22 0 1.19	-32 32.6	2.510	1.762	18.0	20.5	33 W	— 10*	2	6 0 32.97	+22 53.9	0.767	0.922	70.8	21.4	62 E	55* 17*
4	1 0 31.44	-29 38.4	2.459	1.727	19.0	20.4	34 W	— 11*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
4	1 1 0.95	-26 30.8	2.413	1.694	19.9	20.4	35 W	— 13*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
4	21 1 29.70	-23 12.9	2.372	1.661	20.6	20.3	36 W	— 15*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
5	1 57.69	-19 48.2	2.335	1.631	21.3	20.2	36 W	— 17*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
5	11 2 24.92	-16 20.2	2.303	1.602	21.8	20.2	36 W	— 19*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
5	21 2 51.47	-12 52.0	2.275	1.576	22.3	20.1	36 W	— 22*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
5	31 3 17.38	-9 26.5	2.249	1.553	22.8	20.1	36 W	— 25*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
6	10 3 42.72	-6 5.5	2.224	1.533	23.2	20.1	37 W	— 27*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
6	20 4 7.59	-2 50.6	2.197	1.516	23.8	20.0	37 W	— 30*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
6	30 4 32.07	+0 17.2	2.169	1.502	24.6	20.0	38 W	— 32*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
7	10 4 56.24	+3 18.0	2.136	1.493	25.5	20.0	39 W	— 33*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
7	20 5 20.22	+6 11.8	2.098	1.487	26.6	20.0	41 W	— 34*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
7	30 5 44.11	+8 59.5	2.055	1.485	27.8	20.0	43 W	— 36*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
8	9 6 7.99	+11 42.2	2.005	1.488	29.2	20.0	46 W	— 34*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
8	19 6 32.00	+14 21.5	1.949	1.494	30.7	19.9	49 W	— 30*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
8	29 6 56.21	+16 59.1	1.887	1.505	32.2	19.9	53 W	— 33*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
9	8 7 20.74	+19 37.4	1.820	1.519	33.6	19.9	57 W	— 32*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
9	18 7 45.69	+22 18.7	1.748	1.536	34.9	19.9	61 W	— 30*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
9	28 8 11.14	+25 5.9	1.675	1.557	35.9	19.8	66 W	— 28*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
10	8 8 37.21	+28 1.9	1.600	1.581	36.6	19.8	71 W	— 26*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
10	18 9 3.98	+31 9.5	1.528	1.608	36.9	19.7	76 W	— 24*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
10	28 9 31.50	+34 31.4	1.459	1.636	36.9	19.7	81 W	— 21*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
11	2 9 45.55	+36 18.1	1.427	1.652	36.7	19.7	84 W	— 20*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
11	7 9 59.82	+38 8.8	1.398	1.667	36.4	19.6	87 W	— 19*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
11	12 10 14.27	+40 3.5	1.370	1.683	36.0	19.6	90 W	— 17*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
11	17 10 28.91	+42 1.9	1.345	1.700	35.5	19.6	92 W	— 16*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
11	22 10 43.71	+44 3.7	1.323	1.717	35.0	19.5	95 W	— 14*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
11	27 10 58.64	+46 8.4	1.304	1.734	34.4	19.5	97 W	— 13*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
12	2 11 13.68	+48 15.2	1.289	1.751	33.7	19.5	100 W	— 11*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
12	7 11 28.77	+50 23.6	1.277	1.769	33.0	19.5	102 W	— 10*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
12	12 11 43.86	+52 32.6	1.269	1.787	32.3	19.4	104 W	— 8*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
12	17 11 58.83	+54 41.4	1.264	1.805	31.6	19.4	106 W	— 7*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
12	22 12 13.59	+56 49.0	1.263	1.823	30.9	19.4	108 W	— 5*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
12	27 12 28.01	+58 54.5	1.266	1.842	30.3	19.4	109 W	— 3*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5	65 E	58* 20*
1	1 12 41.94	+60 57.0	1.273	1.860	29.7	19.4	110 W	— 2*	2	11 1 9.44	+23 54.2	0.794	0.968	67.3	21.5		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
468450 2003 OW₁₆										139092 2001 FU₃₂									
<i>(continuation)</i>										<i>(continuation)</i>									
4 1	0 44.64	+13 36.9	2.424	1.446	6.3	20.0	9 E	1*	—	10 8	22 37.28	+19 10.9	1.454	2.337	14.6	18.9	144 E	64	45
4 11	1 15.72	+15 36.0	2.461	1.473	5.0	20.0	7 W	—	—	10 13	22 34.91	+17 50.4	1.464	2.320	16.0	18.9	140 E	63	46
4 21	1 46.38	+17 19.2	2.500	1.504	4.0	20.0	6 W	—	—	10 18	22 33.32	+16 29.4	1.479	2.303	17.5	19.0	136 E	61	48
5 1	2 16.54	+18 44.9	2.539	1.539	3.6	20.1	5 W	—	—	10 23	22 32.54	+15 9.8	1.500	2.286	19.0	19.0	132 E	60	49
5 11	2 46.09	+19 52.4	2.576	1.576	4.2	20.2	6 W	—	—	10 28	22 32.58	+13 52.9	1.524	2.268	20.4	19.1	127 E	59	50
5 21	3 14.99	+20 41.3	2.610	1.616	5.4	20.4	9 W	—	1*	11 2	22 33.45	+12 40.0	1.553	2.251	21.7	19.2	123 E	58	51
5 31	3 43.11	+21 11.9	2.640	1.658	7.0	20.5	11 W	1*	4*	11 7	22 35.10	+11 31.9	1.585	2.233	23.0	19.2	118 E	57	52
6 10	4 10.38	+21 24.4	2.665	1.702	8.7	20.7	15 W	2*	8*	11 17	22 40.68	+ 9 32.6	1.657	2.198	25.1	19.4	110 E	55	54
6 20	4 36.71	+21 19.8	2.683	1.747	10.5	20.8	18 W	4*	11*	11 27	22 49.02	+ 7 58.1	1.738	2.162	26.6	19.5	101 E	53	55*
6 30	5 2.02	+20 58.8	2.695	1.793	12.3	21.0	22 W	6*	14*	12 7	22 59.75	+ 6 48.8	1.822	2.126	27.5	19.6	94 E	52	53*
7 10	5 26.24	+20 22.7	2.699	1.839	14.0	21.1	26 W	10*	17*	12 17	23 12.53	+ 6 3.3	1.908	2.090	28.0	19.6	86 E	51	49*
7 20	5 49.33	+19 32.4	2.694	1.886	15.7	21.2	30 W	14*	20*	12 27	23 27.08	+ 5 39.6	1.993	2.054	28.1	19.7	79 E	51	44*
7 30	6 11.21	+18 29.2	2.680	1.933	17.4	21.3	35 W	18*	23*	1 6	23 43.11	+ 5 35.0	2.076	2.018	27.8	19.7	73 E	50*	40*
8 9	6 31.85	+17 14.3	2.657	1.980	18.9	21.4	39 W	23*	26*	1 16	0 0.46	+ 5 46.9	2.153	1.983	27.1	19.8	67 E	49*	35*
8 19	6 51.20	+15 48.8	2.624	2.026	20.4	21.4	44 W	28*	30*	8013 Gordonmoore									
8 29	7 9.19	+14 13.8	2.582	2.072	21.7	21.5	49 W	32*	33*	12 23	19 26.27	-23 22.2	2.297	1.405	13.3	20.3	19 E	6*	11*
351278 2004 SB₂₀										12 28	19 44.14	-22 57.6	2.328	1.428	12.5	20.4	18 E	6*	10*
12 23	19 25.82	-36 51.0	1.677	0.854	26.0	20.8	22 E	—	16*	1 2	20 1.59	-22 26.1	2.360	1.450	11.6	20.4	17 E	5*	9*
12 28	19 56.83	-35 47.2	1.699	0.888	26.2	20.9	24 E	—	17*	1 7	20 18.57	-21 48.5	2.393	1.474	10.7	20.4	16 E	5*	8*
1 2	20 25.86	-34 16.7	1.725	0.923	26.1	21.0	24 E	—	18*	1 12	20 35.09	-21 5.6	2.427	1.499	9.8	20.4	15 E	4*	7*
1 7	20 52.76	-32 25.2	1.755	0.959	25.7	21.1	25 E	1*	19*	1 17	20 51.12	-20 17.9	2.461	1.524	8.9	20.5	14 E	4*	6*
1 12	21 17.52	-30 18.2	1.789	0.995	25.1	21.2	25 E	2*	19*	1 22	21 6.68	-19 26.0	2.495	1.550	7.9	20.5	13 E	3*	5*
1 17	21 40.27	-28 0.5	1.827	1.031	24.3	21.3	26 E	4*	19*	1 27	21 21.77	-18 30.7	2.530	1.576	7.0	20.5	11 E	2*	4*
1 22	22 1.20	-25 35.9	1.867	1.066	23.4	21.4	25 E	5*	19*	2 1	21 36.40	-17 32.5	2.564	1.602	6.0	20.5	10 E	1*	3*
1 27	22 20.52	-23 7.7	1.910	1.101	22.3	21.5	25 E	7*	18*	2 6	21 50.58	-16 32.0	2.598	1.629	5.1	20.6	8 E	—	2*
476003 2007 RP₅₆										2 11	22 4.33	-15 29.7	2.631	1.656	4.2	20.6	7 E	—	1*
12 23	19 26.11	-12 39.9	2.459	1.596	13.7	20.8	23 E	15*	7*	2 16	22 17.67	-14 26.0	2.663	1.684	3.4	20.6	6 E	—	—
1 2	19 56.62	-11 54.0	2.491	1.603	12.1	20.7	20 E	13*	3*	2 21	22 30.62	-13 21.3	2.695	1.711	2.7	20.6	5 E	—	—
1 12	20 26.72	-10 51.0	2.526	1.614	10.5	20.7	17 E	11*	1*	2 26	22 43.21	-12 16.0	2.725	1.739	2.3	20.6	4 E	—	—
1 22	20 56.23	- 9 32.9	2.563	1.630	8.8	20.7	15 E	9*	—	3 2	22 55.44	-11 10.4	2.754	1.767	2.3	20.7	4 E	—	—
2 1	21 25.03	- 8 2.4	2.601	1.649	7.1	20.7	12 E	6*	—	3 7	23 7.34	-10 5.0	2.781	1.795	2.7	20.8	5 W	—	—
2 11	21 53.02	- 6 22.2	2.639	1.672	5.4	20.7	9 E	3*	—	3 12	23 18.93	- 8 59.9	2.807	1.822	3.4	20.9	6 W	—	—
2 21	22 20.19	- 4 35.2	2.678	1.699	3.8	20.6	7 E	—	—	3 17	23 30.23	- 7 55.3	2.831	1.850	4.2	21.0	8 W	—	1*
3 2	22 46.52	- 2 44.1	2.715	1.729	2.7	20.6	5 W	—	—	3 22	23 41.26	- 6 51.5	2.853	1.878	5.1	21.1	10 W	—	3*
3 12	23 12.03	- 0 51.4	2.749	1.761	2.8	20.7	5 W	—	—	3 27	23 52.02	- 5 48.7	2.872	1.905	6.0	21.2	12 W	—	5*
3 22	23 36.77	+ 1 0.5	2.781	1.796	4.0	20.9	7 W	—	—	4 1	0 2.53	- 4 47.1	2.890	1.933	7.0	21.3	14 W	—	7*
4 1	0 0.76	+ 2 49.6	2.807	1.834	5.7	21.0	10 W	—	4*	4 6	0 12.81	- 3 46.8	2.905	1.960	7.9	21.3	16 W	—	9*
4 11	0 24.05	+ 4 34.2	2.829	1.872	7.5	21.2	14 W	1*	8*	4 11	0 22.86	- 2 48.0	2.917	1.987	8.9	21.4	18 W	—	11*
4 21	0 46.69	+ 6 12.7	2.844	1.913	9.3	21.3	18 W	2*	12*	4 16	0 32.70	- 1 50.8	2.928	2.014	9.8	21.5	20 W	—	14*
5 1	1 8.68	+ 7 43.9	2.852	1.955	11.2	21.4	22 W	3*	16*	24693 1990 SB₂									
139092 2001 FU₃₂										12 23	19 26.51	-13 2.7	3.530	2.648	8.2	19.2	22 E	15*	7*
12 23	19 26.13	- 5 15.0	3.806	2.965	8.7	21.3	27 E	21*	3*	1 2	19 43.56	-12 56.5	3.540	2.614	6.2	19.1	17 E	10*	1*
1 2	19 40.89	- 4 44.3	3.842	2.957	7.3	21.2	22 E	16*	—	1 12	20 0.99	-12 41.0	3.535	2.579	4.4	19.0	12 E	6*	—
1 12	19 55.79	- 4 4.7	3.862	2.947	6.2	21.2	19 E	11*	—	1 22	20 18.74	-12 16.5	3.515	2.544	3.0	18.9	8 E	—	—
1 22	20 10.74	- 3 16.3	3.866	2.937	5.5	21.1	17 W	6*	—	2 1	20 36.73	-11 43.5	3.482	2.507	2.8	18.8	7 W	1*	—
2 1	20 25.68	- 2 19.5	3.856	2.926	5.6	21.1	17 W	10*	—	2 11	20 54.92	-11 2.6	3.434	2.470	4.1	18.8	10 W	3*	1*
2 11	20 40.52	- 1 14.7	3.830	2.913	6.3	21.1	19 W	13*	—	2 21	21 13.26	-10 14.4	3.374	2.432	6.0	18.8	15 W	5*	7*
2 21	20 55.20	- 0 2.5	3.789	2.900	7.5	21.1	22 W	15*	7*	3 2	21 31.74	- 9 19.8	3.301	2.394	8.1	18.9	20 W	6*	13*
3 2	21 9.67	+ 1 16.7	3.734	2.886	8.9	21.2	27 W	18*	13*	3 12	21 50.31	- 8 19.7	3.217	2.355	10.3	18.9	25 W	8*	18*
3 12	21 23.87	+ 2 42.1	3.666	2.870	10.5	21.2	32 W	20*	19*	3 22	22 9.01	- 7 15.0	3.122	2.315	12.5	18.8	30 W	9*	24*
3 22	21 37.75	+ 4 13.1	3.585	2.854	12.2	21.2	37 W	22*	25*	4 1	22 27.81	- 6 6.9	3.018	2.275	14.7	18.8	35 W	10*	29*
4 1	21 51.25	+ 5 49.2	3.491	2.837	13.8	21.2	43 W	25*	31*	4 11	22 46.75	- 4 56.5	2.905	2.235	16.8	18.8	40 W	11*	34*
4 11	22 4.30	+ 7 29.5	3.387	2.819	15.3	21.1	48 W	27*	36*	4 21	23 5.85	- 3 45.0	2.786	2.194	18.9	18.7	45 W	12*	39*
4 21	22 16.87	+ 9 13.3	3.273	2.800	16.8	21.1	54 W	30*	40*	5 1	23 25.15	- 2 33.9	2.660	2.153	21.0	18.6	50 W	14*	43*
5 1	22 28.86	+11 0.0	3.151	2.779	18.2	21.1	60 W	33*	44*	5 11	23 44.68	- 1 24.8	2.530	2.112	22.9	18.5	55 W	15*	47*
5 11	22 40.18	+12 48.5	3.021	2.758	19.5	21.0	65 W	37*	47*	5 21	0 4.50	- 0 19.2	2.397	2.070	24.8	18.4	59 W	17*	51*
5 21	22 50.74	+14 38.1	2.885	2.736	20.5	20.9	71 W	41*	48*	5 31	0 24.64	+ 0 40.9	2.261	2.029	26.6	18.3	64 W	20*	55*
5 31	23 0.40	+16 27.7	2.744	2.713	21.4	20.8	78 W	45*	47*	6 10	0 45.13	+ 1 33.3	2.125	1.989	28.3	18.2	68 W	23*	57*
6 10	23 8.98	+18 15.9	2.600	2.690	22.0	20.7	84 W	51*	46	6 20	1 6.02	+ 2 15.8	1.989	1.949	29.9	18.0	73 W	26*	59*
6 20	23 16.30	+20 1.3	2.454	2.665	22.4	20.6	91 W	57*	44	6 30	1 27.30	+ 2 45.6	1.855	1.909	31.3	17.9	77 W	30*	60*
6 30	23 22.11	+21 41.8	2.309	2.639	22.5	20.4	97 W	63*	42	7 10	1 48.97	+ 2 59.9	1.725	1.870	32.5	17.7	82 W	34*	61*
7 10	23 26.13	+23 14.7	2.167	2.612	22.1	20.2	104 W	68*	41	7 20	2 10.97	+ 2 55.7	1.598	1.833	33.6	17.5	86 W	38*	61
7 20	23 28.09	+24 36.6	2.030	2.585	21.4	20.0	112 W	70	39	7 30	2 33.19	+ 2 29.6	1.477	1.797	34.4	17.3	90 W	41*	62
139092 2001 FU₃₂										8 9	2 55.48	+ 1 38.8	1.363	1.762	35.0	17.1	95 W		

