

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°
518434 2003 PB₈										523664 2012 OD₁ (<i>continuation</i>)									
9 14	7 10.85	+14 49.9	2.194	1.966	27.3	21.5	64 W	46*	39*	11 25	15 20.43	-32 17.8	1.349	0.467	32.4	19.0	15 W	—	7*
9 24	7 28.43	+14 8.7	2.129	2.002	27.9	21.5	69 W	50*	41*	11 27	15 36.89	-33 12.4	1.377	0.484	29.8	19.0	14 W	—	6*
10 4	7 44.32	+13 24.3	2.058	2.039	28.3	21.5	75 W	54*	43*	11 29	15 53.21	-33 52.3	1.405	0.503	27.5	19.1	14 W	—	5*
10 14	7 58.32	+12 39.2	1.982	2.076	28.3	21.4	81 W	56*	46*	12 1	16 9.25	-34 18.9	1.433	0.523	25.4	19.1	13 W	—	4*
10 24	8 10.24	+11 56.2	1.902	2.114	28.0	21.4	88 W	57*	49*	12 3	16 24.90	-34 33.3	1.460	0.544	23.6	19.2	13 W	—	2*
11 3	8 19.80	+11 18.4	1.819	2.152	27.3	21.3	95 W	56	51*	12 5	16 40.08	-34 37.1	1.487	0.565	21.9	19.3	12 W	—	1*
11 13	8 26.72	+10 49.0	1.736	2.190	26.1	21.2	104 W	56	53*	12 7	16 54.73	-34 31.5	1.513	0.587	20.5	19.4	12 E	—	1*
11 23	8 30.71	+10 31.4	1.656	2.229	24.2	21.1	112 W	56	53	12 9	17 8.81	-34 17.7	1.540	0.609	19.1	19.4	12 E	—	2*
12 3	8 31.50	+10 28.7	1.581	2.267	21.6	20.9	122 W	55	54	12 11	17 22.31	-33 57.0	1.565	0.631	17.9	19.5	11 E	—	2*
12 13	8 28.95	+10 43.6	1.518	2.305	18.2	20.8	133 W	56	53	12 13	17 35.22	-33 30.4	1.591	0.653	16.8	19.6	11 E	—	3*
12 23	8 23.17	+11 17.0	1.471	2.342	14.1	20.6	144 W	56	53	12 15	17 47.56	-32 58.6	1.616	0.674	15.8	19.6	11 E	—	3*
1 2	8 14.64	+12 7.8	1.445	2.379	9.5	20.4	156 W	57	52	12 17	17 59.33	-32 22.7	1.641	0.696	14.8	19.7	10 E	—	3*
1 7	8 9.63	+12 38.6	1.442	2.398	7.1	20.3	162 W	58	51	12 19	18 10.57	-31 43.3	1.665	0.717	13.9	19.8	10 E	—	3*
1 12	8 4.32	+13 12.0	1.445	2.416	4.8	20.2	168 W	58	51	12 21	18 21.30	-31 0.9	1.689	0.738	13.1	19.8	10 E	—	3*
1 17	7 58.87	+13 47.2	1.456	2.435	3.0	20.2	173 W	59	50	12 23	18 31.55	-30 16.2	1.712	0.759	12.2	19.9	9 E	—	3*
1 22	7 53.46	+14 23.3	1.473	2.453	2.9	20.2	173 E	59	50	12 28	18 55.25	-28 16.5	1.768	0.809	10.3	20.0	8 E	—	2*
1 27	7 48.27	+14 59.6	1.498	2.471	4.6	20.3	168 E	60	49	1 2	19 16.58	-26 9.6	1.821	0.856	8.6	20.2	7 E	—	1*
2 1	7 43.46	+15 35.3	1.530	2.489	6.7	20.5	163 E	61	48	1 7	19 35.95	-23 58.9	1.871	0.901	7.0	20.3	6 E	—	—
2 6	7 39.16	+16 9.7	1.569	2.506	8.9	20.7	157 E	61	48	1 12	19 53.69	-21 46.4	1.917	0.942	5.6	20.3	5 E	—	—
2 11	7 35.48	+16 42.3	1.615	2.524	10.9	20.8	151 E	62	47	1 17	20 10.12	-19 33.4	1.959	0.981	4.4	20.4	4 E	—	—
2 16	7 32.49	+17 12.8	1.666	2.541	12.8	21.0	145 E	62	47	1 22	20 25.46	-17 20.6	1.997	1.017	3.7	20.5	4 E	—	—
2 21	7 30.23	+17 40.9	1.722	2.558	14.4	21.1	140 E	63	46	1 27	20 39.91	-15 8.3	2.030	1.050	3.6	20.6	4 E	—	—
2 26	7 28.73	+18 6.5	1.784	2.576	15.9	21.3	134 E	63	46	2 1	20 53.63	-12 56.8	2.060	1.080	4.1	20.7	4 W	—	—
3 2	7 27.99	+18 29.4	1.850	2.592	17.2	21.4	129 E	63	46	2 6	21 6.76	-10 45.9	2.085	1.108	5.0	20.8	6 W	—	—
3 7	8 2.13	+19 14.2	1.915	2.610	19.1	21.5	123 E	63	46	2 11	21 19.40	-8 35.7	2.106	1.133	6.0	21.0	7 W	1*	—
3 12	8 0.48	+19 48.9	1.980	2.628	21.0	21.6	117 E	63	46	2 16	21 31.65	-6 25.8	2.123	1.155	7.2	21.1	8 W	2*	—
3 17	7 58.87	+13 47.2	1.456	2.435	3.0	20.2	173 W	59	50	2 21	21 43.61	-4 16.2	2.136	1.175	8.5	21.2	10 W	4*	—
3 22	7 53.46	+14 23.3	1.473	2.453	2.9	20.2	173 E	59	50	2 26	21 55.34	-2 6.7	2.145	1.193	9.7	21.3	12 W	6*	—
3 27	7 48.27	+14 59.6	1.498	2.471	4.6	20.3	168 E	60	49	3 2	22 6.90	+0 3.0	2.149	1.207	11.0	21.4	13 W	7*	1*
4 1	7 43.46	+15 35.3	1.530	2.489	6.7	20.5	163 E	61	48	3 7	22 18.36	+2 13.1	2.150	1.220	12.2	21.4	15 W	9*	2*
4 6	7 39.16	+16 9.7	1.569	2.506	8.9	20.7	157 E	61	48	3 12	22 29.78	+4 23.6	2.148	1.230	13.4	21.5	17 W	10*	4*
4 11	7 35.48	+16 42.3	1.615	2.524	10.9	20.8	151 E	62	47	4 1	23 11.11	-1 11.1	2.148	1.230	14.6	21.6	19 W	12*	5*
4 16	7 32.49	+17 12.8	1.666	2.541	12.8	21.0	145 E	62	47	4 6	23 22.22	+0 2.2	2.148	1.230	15.8	21.7	21 W	14*	6*
4 21	7 30.23	+17 40.9	1.722	2.558	14.4	21.1	140 E	63	46	4 11	23 33.33	+0 13.3	2.148	1.230	17.0	21.8	23 W	16*	7*
4 26	7 28.73	+18 6.5	1.784	2.576	15.9	21.3	134 E	63	46	4 16	23 44.44	+0 24.4	2.148	1.230	18.2	21.9	25 W	18*	8*
5 1	7 27.99	+18 29.4	1.850	2.592	17.2	21.4	129 E	63	46	4 21	23 55.55	+0 35.5	2.148	1.230	19.4	22.0	27 W	20*	9*
5 6	8 2.13	+19 14.2	1.915	2.610	19.1	21.5	123 E	63	46	4 26	24 6.66	+0 46.6	2.148	1.230	20.6	22.1	29 W	22*	10*
5 11	8 0.48	+19 48.9	1.980	2.628	21.0	21.6	117 E	63	46	4 31	24 17.77	+0 57.7	2.148	1.230	21.8	22.2	31 W	24*	11*
5 16	7 58.87	+13 47.2	1.456	2.435	3.0	20.2	173 W	59	50	4 36	24 28.88	+1 8.8	2.148	1.230	23.0	22.3	33 W	26*	12*
5 21	7 53.46	+14 23.3	1.473	2.453	2.9	20.2	173 E	59	50	4 41	24 40.00	+1 19.9	2.148	1.230	24.2	22.4	35 W	28*	13*
5 26	7 48.27	+14 59.6	1.498	2.471	4.6	20.3	168 E	60	49	4 46	24 51.11	+1 31.0	2.148	1.230	25.4	22.5	37 W	30*	14*
6 1	7 43.46	+15 35.3	1.530	2.489	6.7	20.5	163 E	61	48	4 51	25 2.22	+1 42.2	2.148	1.230	26.6	22.6	39 W	32*	15*
6 6	7 39.16	+16 9.7	1.569	2.506	8.9	20.7	157 E	61	48	4 56	25 13.33	+1 53.3	2.148	1.230	27.8	22.7	41 W	34*	16*
6 11	7 35.48	+16 42.3	1.615	2.524	10.9	20.8	151 E	62	47	4 61	25 24.44	+2 4.4	2.148	1.230	29.0	22.8	43 W	36*	17*
6 16	7 32.49	+17 12.8	1.666	2.541	12.8	21.0	145 E	62	47	4 66	25 35.55	+2 15.5	2.148	1.230	30.2	22.9	45 W	38*	18*
6 21	7 30.23	+17 40.9	1.722	2.558	14.4	21.1	140 E	63	46	4 71	25 46.66	+2 26.6	2.148	1.230	31.4	23.0	47 W	40*	19*
6 26	7 28.73	+18 6.5	1.784	2.576	15.9	21.3	134 E	63	46	4 76	25 57.77	+2 37.7	2.148	1.230	32.6	23.1	49 W	42*	20*
7 1	7 27.99	+18 29.4	1.850	2.592	17.2	21.4	129 E	63	46	4 81	26 8.88	+2 48.8	2.148	1.230	33.8	23.2	51 W	44*	21*
7 6	8 2.13	+19 14.2	1.915	2.610	19.1	21.5	123 E	63	46	4 86	26 20.00	+2 59.9	2.148	1.230	35.0	23.3	53 W	46*	22*
7 11	8 0.48	+19 48.9	1.980	2.628	21.0	21.6	117 E	63	46	4 91	26 31.11	+3 11.0	2.148	1.230	36.2	23.4	55 W	48*	23*
7 16	7 58.87	+13 47.2	1.456	2.435	3.0	20.2	173 W	59	50	4 96	26 42.22	+3 22.1	2.148	1.230	37.4	23.5	57 W	50*	24*
7 21	7 53.46	+14 23.3	1.473	2.453	2.9	20.2	173 E	59	50	4 101	26 53.33	+3 33.2	2.148	1.230	38.6	23.6	59 W	52*	25*
7 26	7 48.27	+14 59.6	1.498	2.471	4.6	20.3	168 E	60	49	4 106	27 4.44	+3 44.3	2.148	1.230	39.8	23.7	61 W	54*	26*
8 1	7 43.46	+15 35.3	1.530	2.489	6.7	20.5	163 E	61	48	4 111	27 15.55	+3 55.4	2.148	1.230	41.0	23.8	63 W	56*	27*
8 6	7 39.16	+16 9.7	1.569	2.506	8.9	20.7	157 E	61	48	4 116	27 26.66	+4 6.5	2.148	1.230	42.2	23.9	65 W	58*	28*
8 11	7 35.48	+16 42.3	1.615	2.524	10.9	20.8	151 E	62	47	4 121	27 37.77	+4 17.6	2.148	1.230	43.4	24.0	67 W	60*	29*
8 16	7 32.49	+17 12.8	1.666	2.541	12.8	21.0	145 E	62	47	4 126	27 48.88	+4 28.7	2.148	1.230	44.6	24.1	69 W	62*	30*
8 21	7 30.23	+17 40.9	1.722	2.558	14.4	21.1	140 E	63	46	4 131	27 60.00	+4 39.8	2.148	1.230	45.8	24.2	71 W	64*	31*
8 26	7 28.73	+18 6.5	1.784	2.576	15.9	21.3	134 E	63	46	4 136	27 71.11	+4 50.9	2.148	1.230	47.0	24.3	73 W	66*	32*
9 1	7 27.99	+18 29.4	1.850	2.592	17.2	21.4	129 E	63	46	4 141	27 82.22	+5 2.0	2.148	1.230	48.2	24.4	75 W	68*	33*
9 6	8 2.13	+19 14.2	1.915	2.610	19.1	21.5	123 E	63	46	4 146	27 93.33	+5 13.1	2.148	1.230	49.4	24.5	77 W	70*	34*
9 11	8 0.48	+19 48.9	1.980	2.628	21.0	21.6	117 E	63	46	4 151	28 4.44	+5 24.2	2.148	1.23					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2019	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°		
523605 2004 RX ₁₀ (continuation)									523679 2013 YB ₃₈										
9 22	^h 21 45.78	^m 12 55.2	0.209	1.183	28.4	19.5	146 E	32	77	10 4	^h 2 6.06	^m +33 47.2	2.379	3.241	10.5	22.9	144 W	79	30
9 24	21 38.57	-14 18.8	0.212	1.177	31.8	19.6	142 E	31	78	10 9	2 1.27	+33 26.3	2.338	3.233	9.3	22.8	149 W	78	31
9 29	21 22.31	-17 28.2	0.220	1.161	39.8	19.9	132 E	28	81	10 14	1 56.12	+32 59.3	2.303	3.224	8.1	22.7	153 W	78	31
10 4	21 8.91	-20 8.0	0.231	1.144	46.9	20.2	123 E	25	84	10 19	1 50.74	+32 26.3	2.275	3.215	7.0	22.6	157 W	77	32
10 9	20 58.36	-22 20.5	0.242	1.125	53.3	20.4	115 E	23	86	10 24	1 45.24	+31 47.3	2.254	3.206	6.2	22.6	160 E	77	32
10 14	20 50.39	-24 10.0	0.254	1.104	59.1	20.7	108 E	21	88	10 29	1 39.76	+31 3.0	2.241	3.196	5.9	22.5	161 E	76	33
10 19	20 44.58	-25 41.4	0.266	1.082	64.5	20.9	102 E	19	90	11 3	1 34.45	+30 14.1	2.236	3.186	6.1	22.5	160 E	75	34
10 24	20 40.50	-26 59.1	0.277	1.058	69.5	21.1	95 E	18	89*	11 8	1 29.42	+29 21.6	2.238	3.176	6.9	22.6	157 E	74	35
10 29	20 37.73	-28 6.9	0.286	1.032	74.3	21.2	90 E	17	84*	516541 2006 SX ₂₉₄									
11 3	20 35.79	-29 8.1	0.294	1.005	79.1	21.4	84 E	16	78*	10 4	4 28.39	+17 48.6	1.260	1.980	25.4	21.3	122 W	63	46
523625 2008 DG ₁₇									10 14	4 27.94	+17 4.0	1.200	2.009	21.7	21.2	132 W	62	47	
9 14	23 40.48	+49 21.2	1.845	2.577	18.2	23.9	127 W	86	15	10 24	4 23.49	+16 10.4	1.155	2.038	17.1	21.0	143 W	61	48
9 19	23 29.74	+49 45.8	1.820	2.568	17.9	23.9	128 E	85	14	11 3	4 15.42	+15 10.5	1.127	2.068	11.9	20.8	155 W	60	49
9 24	23 18.67	+49 56.9	1.801	2.558	17.7	23.8	129 E	85	14	11 13	4 4.81	+14 9.1	1.122	2.097	6.4	20.5	166 W	59	50
9 29	23 7.61	+49 54.2	1.787	2.548	17.6	23.8	130 E	85	14	11 23	3 53.18	+13 12.2	1.142	2.126	3.2	20.4	173 W	58	51
10 4	22 56.92	+49 38.1	1.779	2.537	17.7	23.8	130 E	85	14	11 28	3 47.52	+12 47.4	1.162	2.140	4.7	20.6	170 E	58	51
523626 2008 PH ₉									12 3	3 42.24	+12 26.2	1.189	2.155	7.1	20.8	164 E	57	52	
9 24	0 53.11	+40 18.9	3.381	4.182	9.2	23.0	138 W	85	24	12 8	3 37.52	+12 9.0	1.222	2.169	9.6	20.9	159 E	57	52
9 29	0 47.77	+40 20.6	3.366	4.194	8.6	22.9	141 W	85	24	12 13	3 33.48	+11 56.1	1.261	2.183	11.9	21.1	153 E	57	52
10 4	0 42.33	+40 16.8	3.358	4.206	8.1	22.9	144 W	85	24	12 18	3 30.19	+11 47.8	1.305	2.197	14.1	21.3	147 E	57	52
10 9	0 36.87	+40 7.7	3.356	4.218	7.7	22.9	146 E	85	24	12 23	3 27.73	+11 44.0	1.355	2.211	16.1	21.5	141 E	57	52
10 14	0 31.50	+39 53.4	3.361	4.230	7.5	22.9	147 E	85	24	523608 2005 EZ ₂₉									
10 19	0 26.32	+39 34.5	3.374	4.241	7.4	22.9	147 E	85	24	10 14	2 9.83	+ 4 2.9	1.503	2.482	5.7	23.6	166 W	49	60
10 24	0 21.42	+39 11.4	3.393	4.252	7.6	22.9	146 E	84	25	10 19	2 4.07	+ 3 18.2	1.482	2.469	4.0	23.5	170 W	48	61
516641 2008 GB ₁₁₀									10 24	1 58.04	+ 2 34.1	1.467	2.455	3.7	23.4	171 W	48	61	
9 24	0 53.87	+21 29.5	1.334	2.283	10.7	22.8	155 W	66	43	10 29	1 51.89	+ 1 51.7	1.461	2.441	5.0	23.5	168 E	47	62
9 29	0 48.31	+19 52.4	1.301	2.272	8.3	22.6	161 W	65	44	11 3	1 45.81	+ 1 12.3	1.461	2.426	7.1	23.6	163 E	46	63
10 4	0 42.46	+18 4.7	1.277	2.260	6.2	22.5	166 W	63	46	11 8	1 39.97	+ 0 37.0	1.469	2.411	9.4	23.7	157 E	46	63
10 9	0 36.52	+16 8.3	1.260	2.248	5.0	22.4	169 E	61	48	11 13	1 34.54	+ 0 6.6	1.483	2.395	11.7	23.8	151 E	45	64
10 14	0 30.69	+14 5.7	1.251	2.236	5.5	22.4	168 E	59	50	519307 2011 EF ₁₅									
10 19	0 25.15	+11 59.8	1.250	2.223	7.4	22.5	163 E	57	52	10 14	2 20.75	+14 14.8	2.216	3.181	5.4	24.8	162 W	59	50
10 24	0 20.09	+ 9 53.5	1.257	2.209	9.9	22.6	157 E	55	54	10 24	2 10.92	+13 25.4	2.207	3.200	1.6	24.6	175 W	58	51
523607 2005 CS ₆									11 3	2 0.96	+12 33.3	2.230	3.217	2.3	24.6	173 E	58	51	
9 24	1 22.75	+39 48.2	3.090	3.878	10.3	24.0	136 W	85	24	11 13	1 51.78	+11 43.5	2.284	3.232	6.0	24.9	160 E	57	52
9 29	1 17.87	+39 48.5	3.065	3.887	9.5	23.9	140 W	85	24	11 23	1 44.10	+11 0.7	2.367	3.247	9.3	25.1	148 E	56	53
10 4	1 12.75	+39 43.2	3.046	3.896	8.8	23.9	143 W	85	24	517035 2012 XS ₁₁₉									
10 9	1 7.49	+39 32.1	3.034	3.905	8.2	23.8	146 W	85	24	10 14	5 3.77	+ 7 16.7	1.114	1.858	26.7	21.5	123 W	52	57
10 14	1 2.19	+39 15.6	3.028	3.913	7.7	23.8	148 E	84	25	10 19	5 4.46	+ 7 20.3	1.066	1.851	25.2	21.3	128 W	52	57
10 19	0 56.98	+38 53.9	3.029	3.921	7.4	23.8	150 E	84	25	10 24	5 4.10	+ 7 26.0	1.021	1.844	23.5	21.2	132 W	52	57
10 24	0 51.94	+38 27.4	3.037	3.929	7.3	23.8	150 E	83	26	10 29	5 2.61	+ 7 34.8	0.978	1.838	21.4	21.0	137 W	53	56
10 29	0 47.18	+37 56.7	3.052	3.937	7.5	23.8	149 E	83	26	11 3	4 59.96	+ 7 47.3	0.940	1.831	19.2	20.9	143 W	53	56
518440 2004 CL ₁									11 8	4 56.14	+ 8 4.3	0.905	1.824	16.7	20.7	148 W	53	56	
9 24	1 34.82	+16 26.3	2.073	2.995	9.1	24.0	152 W	61	48	11 13	4 51.21	+ 8 26.5	0.875	1.817	13.9	20.5	154 W	53	56
10 4	1 23.68	+16 4.8	2.010	2.982	5.5	23.7	163 W	61	48	11 18	4 45.25	+ 8 54.2	0.850	1.809	11.1	20.3	159 W	54	55
10 14	1 11.37	+15 29.8	1.976	2.968	2.6	23.5	172 E	60	49	11 23	4 38.42	+ 9 27.8	0.831	1.802	8.4	20.2	164 W	54	55
10 24	0 58.97	+14 45.0	1.974	2.952	4.4	23.6	167 E	60	49	12 3	4 23.10	+10 52.1	0.811	1.788	6.3	20.0	169 E	56	53
11 3	0 47.57	+13 56.0	2.004	2.934	8.2	23.8	155 E	59	50	12 13	4 7.67	+12 35.8	0.815	1.773	10.8	20.2	160 E	58	51
516795 2010 GZ ₆₂									12 23	3 54.57	+14 32.5	0.843	1.758	17.0	20.5	149 E	60	49	
9 24	2 45.19	+21 2.1	1.801	2.608	15.8	21.4	135 W	66	43	12 28	3 49.50	+15 33.6	0.864	1.751	19.9	20.6	143 E	61	48
10 4	2 38.91	+19 55.3	1.758	2.650	12.0	21.3	146 W	65	44	1 2	3 45.64	+16 35.8	0.890	1.744	22.6	20.7	137 E	62	47
10 14	2 30.57	+18 32.6	1.739	2.692	7.8	21.1	159 W	64	45	1 7	3 43.05	+17 38.5	0.920	1.737	25.0	20.9	132 E	63	46
10 24	2 21.06	+16 58.4	1.746	2.733	3.3	20.9	171 W	62	47	1 12	3 41.75	+18 41.3	0.953	1.729	27.2	21.0	127 E	64	45
11 3	2 11.46	+15 19.7	1.783	2.774	1.6	20.9	175 E	60	49	1 17	3 41.71	+19 43.8	0.988	1.722	29.1	21.1	122 E	65	44
11 13	2 2.85	+13 44.9	1.851	2.813	5.8	21.2	163 E	59	50	1 22	3 42.90	+20 45.8	1.026	1.715	30.7	21.2	117 E	66	43
11 23	1 56.01	+12 21.1	1.946	2.852	9.6	21.6	151 E	57	52	1 27	3 45.27	+21 47.0	1.066	1.708	32.1	21.4	113 E	67	42
523638 2010 MQ ₁									2 1	3 48.76	+22 47.3	1.107	1.701	33.3	21.5	109 E	68	41*	
10 4	1 45.06	+62 54.6	2.291	2.920	17.3	25.4	120 W	72	1	517046 2013 AA ₅₃									
10 9	1 35.50	+62 58.6	2.257	2.919	16.8	25.4	123 W	72	1	10 14	13 11.96	+ 6 41.8	1.823	0.894	16.3	21.3	15 W	5*	—
10 14	1 25.41	+62 51.2	2.228	2.917	16.3	25.3	125 W	72	1	10 19	13 32.07	+ 4 0.5	1.762	0.828	16.6	21.1	14 W	4*	—
10 19	1 15.16	+62 31.6	2.203	2.914	15.8	25.3	127 E	72	1	10 24	13 53.49	+ 1 2.8	1.701	0.761	16.5	20.8	13 E	3*	—
10 24	1 5.10	+62 0.0	2.183	2.911	15.5	25.3	129 E	73	2	10 29	14 16.42	+ 2 12.7	1.641	0.693	16.0	20.5	11 E	3*	—
10 29	0 55.60	+61 16.6	2.168	2.908	15.2	25.2	130 E	74	3	11 3	14 41.13	+ 5 47.2	1.583	0.625	15.0	20.2	9 E	2*	—
11 3	0 46.96	+60 22.3	2.158	2.904	15.0	25.2	131 E	75	4	11 13	15 37.08	+13 54.0	1.467	0.502	14.9	19.6	7 E	1*	—
516420 2003 FS ₂									11 23	16 43.73	+22 53.6	1.339	0.430	29.5	19.5	12 E	—	6*	
10 4	1 58.02	+ 7 43.0	2.552	3.508	5.7	24.0	160 W	53	56	12 3	18 1.66	+31 3.8	1.195	0.455	52.5	20.0	21 E	—	

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°
517046 2013 AA₅₃										517362 2014 KC₄									
<i>(continuation)</i>										<i>(continuation)</i>									
12 21	20 45.17	-36 30.3	0.999	0.663	69.2	20.9	39 E	4*	33*	12 13	3 50.14	-8 44.5	2.075	2.912	12.1	22.1	142 E	36	73
12 23	21 3.83	-36 7.3	0.989	0.690	69.1	21.0	41 E	5*	35*	12 18	3 46.53	-8 49.5	2.127	2.928	13.1	22.2	137 E	36	73
12 25	21 22.19	-35 32.5	0.980	0.717	68.8	21.1	43 E	6*	37*	12 23	3 43.43	-8 48.2	2.183	2.945	14.1	22.3	133 E	36	73
12 27	21 40.12	-34 46.7	0.974	0.744	68.3	21.1	45 E	7*	38*	519783 2013 FP₂₁									
12 29	21 57.55	-33 50.8	0.971	0.771	67.6	21.2	46 E	9*	40*	11 3	4 32.07	+4 26.0	2.472	3.357	8.9	22.1	148 W	49	60
12 31	22 14.37	-32 45.8	0.970	0.798	66.8	21.2	48 E	10*	42*	11 13	4 24.10	+3 27.7	2.461	3.394	6.6	22.0	157 W	48	61
1 2	22 30.54	-31 32.9	0.971	0.825	65.8	21.2	50 E	12*	43*	11 23	4 15.35	+2 39.5	2.478	3.429	5.2	22.0	162 W	48	61
1 4	22 46.01	-30 13.2	0.975	0.851	64.7	21.3	52 E	13*	45*	12 3	4 6.56	+2 4.3	2.525	3.464	5.9	22.1	159 E	47	62
1 6	23 0.77	-28 48.2	0.981	0.878	63.6	21.3	53 E	15*	46*	12 13	3 58.51	+1 44.1	2.602	3.498	7.8	22.2	151 E	47	62
1 8	23 14.81	-27 18.8	0.990	0.904	62.4	21.4	55 E	16*	47*	12 23	3 51.78	+1 38.9	2.706	3.530	10.0	22.4	142 E	47	62
1 10	23 28.14	-25 46.3	1.000	0.929	61.2	21.4	56 E	18*	48*	517735 2015 MN₅₄									
1 12	23 40.79	-24 11.8	1.012	0.955	59.9	21.5	57 E	20*	48*	11 3	4 32.53	+17 17.1	1.488	2.402	11.7	21.8	151 W	62	47
518509 2006 FZ₅₁										11 13	4 22.22	+17 2.4	1.468	2.431	6.9	21.6	163 W	62	47
10 24	2 41.52	+22 47.6	2.801	3.766	4.3	22.4	164 W	68	41	11 23	4 10.51	+16 47.1	1.474	2.459	2.2	21.4	174 W	62	47
11 3	2 32.97	+22 9.7	2.820	3.806	1.9	22.3	173 W	67	42	12 3	3 58.80	+16 33.5	1.510	2.486	3.9	21.5	170 E	62	47
11 13	2 24.69	+21 26.6	2.870	3.845	2.9	22.4	169 E	66	43	12 13	3 48.49	+16 24.9	1.573	2.513	8.5	21.9	158 E	61	48
11 23	2 17.31	+20 42.1	2.950	3.883	5.5	22.6	158 E	66	43	12 23	3 40.57	+16 23.6	1.663	2.539	12.5	22.2	146 E	61	48
12 3	2 11.35	+20 0.0	3.060	3.921	8.0	22.9	147 E	65	44	523775 2014 YB₃₅									
523581 2018 FL₅										11 3	5 1.77	+40 56.9	1.254	2.100	18.4	22.1	138 W	86	23
10 24	4 5.16	-14 23.3	2.430	3.239	11.9	22.3	138 W	31	78	11 8	4 57.12	+41 48.3	1.196	2.074	16.8	21.9	143 W	87	22
10 29	4 1.49	-15 6.9	2.423	3.252	11.2	22.3	141 W	30	79	11 13	4 50.98	+42 37.0	1.143	2.046	15.2	21.7	147 W	88	21
11 3	3 57.45	-15 45.9	2.421	3.266	10.6	22.3	143 W	29	80	11 18	4 43.31	+43 21.1	1.095	2.019	13.6	21.5	151 W	88	21
11 8	3 53.14	-16 19.4	2.427	3.279	10.3	22.3	144 W	29	80	11 23	4 34.21	+43 58.4	1.053	1.991	12.3	21.3	155 W	89	20
11 13	3 48.66	-16 46.8	2.438	3.292	10.1	22.3	144 W	28	81	11 28	4 23.85	+44 26.3	1.017	1.962	11.5	21.2	157 W	89	20
11 18	3 44.10	-17 7.8	2.456	3.305	10.2	22.3	144 W	28	81	12 3	4 12.57	+44 43.0	0.987	1.933	11.6	21.1	157 E	90	19
11 23	3 39.56	-17 22.1	2.480	3.317	10.5	22.3	142 E	28	81	12 8	4 0.80	+44 47.2	0.964	1.903	12.6	21.1	155	90	19
11 28	3 35.14	-17 29.5	2.511	3.330	10.9	22.4	140 E	28	81	12 13	3 49.04	+44 38.4	0.947	1.873	14.4	21.1	152 E	90	19
12 3	3 30.94	-17 30.2	2.547	3.342	11.5	22.5	138 E	27	82	12 18	3 37.81	+44 17.4	0.936	1.843	16.7	21.1	147 E	89	20
12 8	3 27.05	-17 24.4	2.590	3.354	12.1	22.5	134 E	28	81	12 23	3 27.56	+43 45.7	0.930	1.811	19.4	21.1	142 E	89	20
516476 2005 TS₈₆										12 28	3 18.68	+43 5.8	0.929	1.780	22.1	21.2	137 E	88	21
10 24	6 38.48	+12 1.8	0.748	1.435	40.6	21.5	110 W	57	52	1 2	3 11.45	+42 20.4	0.932	1.748	24.9	21.2	132 E	87	22
11 3	6 56.09	+9 21.5	0.685	1.424	39.2	21.2	115 W	54	55	1 7	3 6.00	+41 32.6	0.939	1.715	27.5	21.3	126 E	87	22
11 13	7 10.30	+6 28.0	0.627	1.415	37.0	20.9	121 W	51	58	1 12	3 2.37	+40 44.6	0.949	1.683	30.0	21.3	121 E	86	23
11 23	7 20.48	+3 30.4	0.577	1.410	34.2	20.7	127 W	49	60	1 17	3 0.52	+39 58.3	0.960	1.649	32.4	21.4	116 E	85	24*
12 3	7 25.99	+0 41.2	0.535	1.407	30.7	20.4	133 W	46	63	1 22	3 0.38	+39 15.2	0.973	1.616	34.6	21.4	111 E	84	25*
12 8	7 26.90	-0 35.2	0.517	1.407	28.8	20.3	137 W	44	65	1 27	3 1.87	+38 36.0	0.986	1.582	36.6	21.5	107 E	84	25*
12 13	7 26.60	-1 43.2	0.502	1.407	26.7	20.1	140 W	43	66	2 1	3 4.90	+38 1.4	0.999	1.548	38.4	21.5	102 E	83	25*
12 18	7 25.14	-2 40.5	0.490	1.408	24.5	20.0	144 W	42	67	517739 2015 MS₁₀₁									
12 23	7 22.62	-3 24.9	0.480	1.410	22.5	19.9	147 W	42	67	11 3	5 4.88	+24 29.6	1.467	2.333	15.0	21.4	142 W	69	40
12 28	7 19.23	-3 54.2	0.473	1.413	20.6	19.8	150 W	41	68	11 13	4 55.72	+24 30.2	1.435	2.367	10.3	21.2	155 W	70	39
1 2	7 15.23	-4 7.1	0.470	1.416	19.0	19.8	152 W	41	68	11 23	4 44.23	+24 22.9	1.428	2.401	5.2	21.0	167 W	69	40
1 12	7 6.66	-3 42.5	0.474	1.424	17.7	19.8	154 E	41	68	12 3	4 31.83	+24 8.0	1.448	2.433	0.9	20.8	178 E	69	40
1 22	6 59.40	-2 17.5	0.492	1.435	19.2	19.9	151 E	43	66	12 13	4 20.12	+23 47.8	1.497	2.466	5.3	21.2	167 E	69	40
2 1	6 55.53	-0 9.5	0.524	1.449	22.5	20.2	146 E	45	64	12 23	4 10.45	+23 26.6	1.574	2.497	9.8	21.5	154 E	68	41
2 6	6 55.28	+1 3.6	0.545	1.457	24.4	20.3	142 E	46	63	517829 2015 RL₈₂									
2 11	6 56.21	+2 19.0	0.569	1.465	26.3	20.5	139 E	47	62	11 13	4 39.31	+18 50.9	2.493	3.435	6.0	23.4	159 W	64	45
2 16	6 58.31	+3 34.5	0.596	1.473	28.1	20.7	135 E	49	60	11 23	4 28.39	+18 36.7	2.461	3.440	2.5	23.2	171 W	64	45
2 21	7 1.53	+4 48.3	0.626	1.483	29.7	20.8	132 E	50	59	12 3	4 16.91	+18 21.1	2.461	3.444	1.6	23.1	175 E	63	46
2 26	7 5.83	+5 58.8	0.659	1.492	31.3	21.0	129 E	51	58	12 13	4 5.84	+18 5.8	2.495	3.446	5.0	23.4	162 E	63	46
3 2	7 11.12	+7 4.8	0.694	1.502	32.6	21.2	125 E	52	57	12 23	3 56.02	+17 53.2	2.559	3.446	8.2	23.6	150 E	63	46
3 7	7 17.30	+8 5.4	0.731	1.512	33.8	21.3	122 E	53	56	518469 2005 LH₈									
3 12	7 24.26	+9 0.0	0.770	1.523	34.8	21.5	119 E	54	55	11 13	4 41.77	+14 25.7	2.840	3.775	5.7	24.3	158 W	59	50
520399 2014 JQ₅₄										11 23	4 32.49	+14 20.5	2.828	3.801	2.9	24.2	169 W	59	50
11 3	3 27.51	+9 23.9	2.440	3.408	4.3	23.2	165 W	54	55	12 3	4 22.82	+14 17.6	2.848	3.826	2.1	24.1	172 E	59	50
11 13	3 18.42	+8 39.7	2.449	3.430	2.7	23.1	171 W	54	55	12 13	4 13.52	+14 18.2	2.900	3.850	4.4	24.3	162 E	59	50
11 23	3 9.46	+8 2.0	2.489	3.450	4.5	23.3	164 E	53	56	12 23	4 5.23	+14 23.1	2.983	3.872	7.1	24.5	151 E	59	50
12 3	3 1.35	+7 33.7	2.559	3.469	7.3	23.5	153 E	53	56	517681 2015 DE₁₉₈									
12 13	2 54.73	+7 16.8	2.657	3.487	10.0	23.7	142 E	52	57	11 13	4 52.75	+32 25.4	2.349	3.260	8.0	23.7	153 W	77	32
523822 2012 DG₆₁										11 18	4 46.75	+32 31.3	2.323	3.262	6.4	23.6	158 W	78	31
11 3	3 42.93	+13 47.2	3.614	4.570	3.8	24.6	162 W	59	50	11 23	4 40.36	+32 33.8	2.304						

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°
517714 2015 JF₃										523786 2015 DP									
11 13	4 56.63	- 3 55.7	1.821	2.699	11.8	21.7	146W	41	68	12 3	6 4.33	-54 23.4	2.328	2.699	21.0	23.4	101W	-	62
11 18	4 51.96	- 4 35.9	1.815	2.711	10.8	21.6	149W	40	69	12 8	5 56.36	-54 31.1	2.315	2.695	21.0	23.4	102W	-	61
11 23	4 46.97	- 5 10.8	1.815	2.723	10.0	21.6	151W	40	69	12 13	5 48.02	-54 26.5	2.305	2.691	21.0	23.4	102W	-	62
11 28	4 41.78	- 5 39.5	1.822	2.734	9.7	21.6	152W	39	70	12 18	5 39.53	-54 9.3	2.296	2.686	21.0	23.4	102E	-	62
12 3	4 36.54	- 6 1.6	1.836	2.746	9.7	21.6	152W	39	70	12 23	5 31.13	-53 39.0	2.289	2.681	21.0	23.4	103E	-	62
12 8	4 31.38	- 6 16.8	1.857	2.757	10.1	21.7	150E	39	70	12 28	5 23.09	-52 55.9	2.284	2.676	21.0	23.4	103E	-	63
12 13	4 26.45	- 6 25.0	1.884	2.768	10.9	21.8	148E	39	70	1 2	5 15.60	-52 0.3	2.281	2.671	21.1	23.4	102E	-	64
12 18	4 21.84	- 6 26.4	1.918	2.779	11.8	21.9	145E	39	70	519504 2012 EU₁₄									
12 23	4 17.67	- 6 21.4	1.957	2.789	12.9	21.9	141E	39	70	12 3	6 8.55	- 8 7.4	2.217	3.056	11.4	25.2	142W	37	72
12 28	4 14.02	- 6 10.3	2.002	2.799	14.0	22.0	137E	39	70	12 13	5 58.24	- 8 43.3	2.193	3.064	10.2	25.1	147W	36	73
1 2	4 10.95	- 5 53.9	2.052	2.809	15.0	22.1	132E	39	70	12 23	5 47.30	- 8 54.3	2.196	3.071	9.9	25.1	147E	36	73
517726 2015 LZ₂₂										1 2	5 36.71	- 8 39.6	2.226	3.076	10.8	25.2	144E	36	73
11 13	5 41.65	+21 27.6	1.722	2.590	12.9	22.3	144W	66	43	1 12	5 27.38	- 8 1.4	2.282	3.080	12.4	25.3	138E	37	72
11 23	5 32.27	+21 29.2	1.676	2.612	8.7	22.1	156W	66	43	516868 2011 GC₆₀									
12 3	5 20.81	+21 29.0	1.657	2.632	4.0	21.9	169W	66	43	12 3	9 22.20	+83 23.2	1.876	2.447	21.6	23.4	114W	52	-
12 13	5 8.51	+21 26.5	1.667	2.651	1.0	21.7	177E	66	43	12 4	9 22.50	+83 42.1	1.873	2.446	21.6	23.4	114W	51	-
12 23	4 56.75	+21 22.7	1.708	2.669	5.6	22.0	165E	66	43	12 5	9 22.54	+84 1.1	1.869	2.445	21.6	23.3	114W	51	-
1 2	4 46.76	+21 19.2	1.777	2.686	9.8	22.3	152E	66	43	12 6	9 22.28	+84 19.9	1.866	2.443	21.6	23.3	114W	51	-
523602 2004 LH										12 7	9 21.66	+84 38.6	1.863	2.442	21.5	23.3	114W	50	-
11 13	5 59.14	+17 14.2	1.394	2.243	16.5	22.2	140W	62	47	12 8	9 20.63	+84 57.2	1.860	2.441	21.5	23.3	115W	50	-
11 23	5 47.30	+14 7.9	1.304	2.224	12.1	21.8	152W	59	50	12 9	9 19.11	+85 15.7	1.858	2.439	21.5	23.3	115W	50	-
12 3	5 32.02	+10 46.1	1.243	2.202	7.9	21.5	162W	56	53	12 10	9 16.99	+85 34.0	1.855	2.438	21.5	23.3	115W	49	-
12 13	5 14.79	+ 7 22.0	1.215	2.179	7.0	21.4	164E	52	57	12 11	9 14.15	+85 52.2	1.853	2.437	21.5	23.3	115W	49	-
12 23	4 57.59	+ 4 12.9	1.222	2.155	11.0	21.6	155E	49	60	12 12	9 10.44	+86 10.1	1.851	2.435	21.5	23.3	115W	49	-
1 2	4 42.41	+ 1 34.3	1.259	2.128	16.1	21.8	143E	47	62	12 13	9 5.65	+86 27.7	1.848	2.434	21.5	23.3	115W	49	-
516647 2008 HP₄₆										12 14	8 59.51	+86 45.1	1.846	2.432	21.5	23.3	115W	48	-
11 23	6 0.41	+27 37.2	1.827	2.726	10.5	22.5	150W	73	36	12 15	8 51.66	+87 2.0	1.844	2.431	21.5	23.3	115W	48	-
11 28	5 55.34	+27 55.1	1.804	2.734	8.5	22.4	156W	73	36	12 16	8 41.64	+87 18.3	1.843	2.429	21.5	23.3	115W	48	-
12 3	5 49.71	+28 11.5	1.788	2.742	6.4	22.2	162W	73	36	12 17	8 28.83	+87 34.0	1.841	2.428	21.5	23.3	115W	47	-
12 8	5 43.66	+28 26.0	1.779	2.750	4.3	22.1	168W	73	36	12 18	8 12.43	+87 48.8	1.840	2.426	21.6	23.3	115W	47	-
12 13	5 37.36	+28 38.3	1.778	2.758	2.5	22.0	173W	74	35	12 19	7 51.45	+88 2.4	1.838	2.425	21.6	23.3	115W	47	-
12 18	5 30.96	+28 48.0	1.784	2.765	2.1	22.0	174E	74	35	12 20	7 24.78	+88 14.3	1.837	2.423	21.6	23.3	115W	47	-
12 23	5 24.65	+28 55.3	1.798	2.772	3.6	22.1	170E	74	35	12 21	6 51.56	+88 23.9	1.836	2.422	21.6	23.3	115W	47	-
12 28	5 18.61	+29 0.1	1.820	2.779	5.5	22.3	164E	74	35	12 22	6 11.79	+88 30.7	1.835	2.420	21.6	23.3	115W	46	-
1 2	5 13.01	+29 2.8	1.849	2.785	7.6	22.4	158E	74	35	12 23	5 27.21	+88 34.0	1.834	2.418	21.7	23.3	115E	46	-
516462 2005 LF₃₈										12 24	4 41.45	+88 33.3	1.833	2.417	21.7	23.3	115E	46	-
11 23	6 21.49	+17 27.3	1.525	2.399	13.8	21.8	145W	62	47	12 25	3 58.68	+88 28.9	1.833	2.415	21.7	23.3	115E	47	-
12 3	6 12.06	+17 50.1	1.488	2.425	9.2	21.6	157W	63	46	12 26	3 21.78	+88 21.3	1.832	2.413	21.8	23.3	115E	47	-
12 13	6 0.52	+18 18.0	1.478	2.451	4.4	21.4	169W	63	46	12 27	2 51.62	+88 11.2	1.832	2.412	21.8	23.3	114	47	-
12 23	5 48.20	+18 48.7	1.496	2.477	2.3	21.3	174E	64	45	12 28	2 27.70	+87 59.4	1.832	2.410	21.8	23.3	114E	47	-
1 2	5 36.57	+19 20.4	1.544	2.501	6.5	21.6	163E	64	45	12 29	2 9.00	+87 46.2	1.832	2.408	21.9	23.3	114E	47	-
1 12	5 26.97	+19 52.4	1.619	2.525	10.8	21.9	151E	65	44	12 30	1 54.44	+87 32.1	1.832	2.406	21.9	23.3	114E	47	-
519198 2010 PZ₇₇										12 31	1 43.11	+87 17.5	1.832	2.405	22.0	23.3	114E	48	-
11 23	6 35.22	+ 0 46.9	1.929	2.724	14.7	21.4	136W	46	63	1 1	1 34.30	+87 2.3	1.832	2.403	22.0	23.3	114E	48	-
11 28	6 31.38	- 0 3.5	1.912	2.743	13.3	21.4	140W	45	64	1 2	1 27.45	+86 46.9	1.833	2.401	22.1	23.3	114E	48	-
12 3	6 27.03	- 0 50.0	1.900	2.761	12.0	21.3	144W	44	65	1 3	1 22.16	+86 31.3	1.833	2.399	22.1	23.3	113E	48	-
12 8	6 22.26	- 1 31.8	1.895	2.780	10.8	21.3	148W	43	66	1 4	1 18.11	+86 15.6	1.834	2.397	22.2	23.3	113E	49	-
12 13	6 17.18	- 2 8.2	1.897	2.798	9.8	21.3	151W	43	66	1 5	1 15.06	+85 59.8	1.835	2.395	22.2	23.3	113E	49	-
12 18	6 11.91	- 2 38.8	1.905	2.817	9.2	21.3	153W	42	67	1 6	1 12.83	+85 43.9	1.835	2.393	22.3	23.3	113E	49	-
12 23	6 6.60	- 3 3.2	1.920	2.835	8.9	21.3	153W	42	67	1 7	1 11.27	+85 28.1	1.836	2.392	22.3	23.3	112E	50	-
12 28	6 1.36	- 3 21.2	1.943	2.853	9.1	21.3	153E	42	67	1 8	1 10.28	+85 12.2	1.837	2.390	22.4	23.3	112E	50	-
1 2	5 56.34	- 3 32.9	1.972	2.870	9.6	21.4	151E	41	68	1 9	1 9.76	+84 56.4	1.839	2.388	22.5	23.3	112E	50	-
1 7	5 51.66	- 3 38.6	2.008	2.888	10.5	21.5	148E	41	68	1 10	1 9.64	+84 40.7	1.840	2.386	22.5	23.3	112E	50	-
1 12	5 47.41	- 3 38.5	2.051	2.905	11.4	21.6	144E	41	68	1 11	1 9.87	+84 25.0	1.841	2.384	22.6	23.3	111E	51	-
1 17	5 43.67	- 3 33.4	2.099	2.923	12.5	21.7	140E	41	68	518568 2007 HO₆₇									
1 22	5 40.48	- 3 23.6	2.153	2.940	13.5	21.8	136E	42	67	12 13	6 16.59	+ 4 40.0	2.032	2.963	7.5	22.5	157W	50	59
516457 2005 HM₃										12 23	6 6.26	+ 4 28.3	2.037	2.984	6.2	22.5	161W	49	60
12 3	6 0.29	-18 45.8	1.079	1.902	21.8	22.4	134W	26	83	1 2	5 56.06	+ 4 32.2	2.071	3.005	7.1	22.6	158E	50	59
12 8	5 54.01	-20 28.7	1.058	1.886	21.8	22.4	135W	25	84	1 12	5 46.98	+ 4 50.6	2.134	3.024	9.4	22.8	150E	50	59
12 13	5 47.02	-21 59.8																	

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°
523599 2003 RM										16143 1999 XK₁₄₂									
12 13	6 49.92	+35 22.0	3.132	4.055	5.5	25.6	157 W	80	29	12 23	0 1.43	+13 10.9	1.383	1.765	33.7	17.3	95 E	58	46*
12 18	6 44.90	+35 28.8	3.126	4.071	4.4	25.5	161 W	80	29	1 2	0 21.70	+14 29.5	1.511	1.803	33.0	17.6	90 E	59	42*
12 23	6 39.69	+35 33.2	3.128	4.088	3.5	25.5	165 W	81	28	1 12	0 42.35	+15 51.1	1.644	1.843	32.1	17.8	85 E	61	39*
12 28	6 34.38	+35 35.0	3.138	4.104	3.0	25.5	168 W	81	28	1 22	1 3.27	+17 13.9	1.781	1.883	31.0	18.0	80 E	62*	35*
1 2	6 29.10	+35 34.3	3.156	4.119	3.1	25.5	167 E	81	28	2 1	1 24.43	+18 36.4	1.920	1.923	29.7	18.1	75 E	61*	32*
1 7	6 23.94	+35 30.9	3.182	4.135	3.8	25.6	164 E	81	28	2 11	1 45.75	+19 57.0	2.060	1.964	28.3	18.3	70 E	59*	29*
1 12	6 19.02	+35 25.1	3.216	4.150	4.8	25.6	159 E	80	29	2 21	2 7.22	+21 14.2	2.200	2.005	26.7	18.4	66 E	56*	26*
1 17	6 14.40	+35 17.0	3.258	4.165	5.9	25.7	154 E	80	29	3 2	2 28.80	+22 26.9	2.339	2.046	25.0	18.6	61 E	52*	24*
523802 1998 KH₉										225454 2000 EY₁₄									
12 13	7 0.16	+28 49.9	2.256	3.183	7.1	23.3	156 W	74	35	12 23	0 2.31	-18 47.4	2.479	2.547	22.5	21.2	83 E	26	70*
12 18	6 54.74	+29 17.6	2.227	3.178	5.4	23.2	162 W	74	35	1 2	0 9.71	-16 24.3	2.580	2.518	22.2	21.2	75 E	29	62*
12 23	6 48.88	+29 44.2	2.205	3.173	3.7	23.1	168 W	75	34	1 12	0 18.70	-13 58.2	2.676	2.489	21.6	21.3	68 E	31*	54*
12 28	6 42.70	+30 9.1	2.191	3.168	2.5	23.0	172 W	75	34	1 22	0 29.04	-11 30.3	2.767	2.459	20.6	21.3	62 E	32*	47*
1 2	6 36.35	+30 31.6	2.185	3.162	2.4	23.0	172 E	76	33	2 1	0 40.55	- 9 1.2	2.849	2.428	19.5	21.3	55 E	32*	40*
1 7	6 29.99	+30 51.6	2.187	3.156	3.7	23.0	168 E	76	33	2 11	0 53.07	- 6 31.6	2.923	2.397	18.1	21.3	49 E	30*	34*
1 12	6 23.76	+31 8.6	2.198	3.149	5.4	23.1	162 E	76	33	2 21	1 6.50	- 4 1.9	2.987	2.365	16.6	21.2	43 E	27*	29*
1 17	6 17.82	+31 22.8	2.216	3.142	7.2	23.2	156 E	76	33	3 2	1 20.75	- 1 32.8	3.040	2.332	15.0	21.2	37 E	23*	25*
521938 2015 VT₁										363084 2000 RD₅₃									
12 13	7 39.49	+11 57.7	1.849	2.713	12.1	22.1	145 W	57	52	12 23	0 1.43	+13 10.9	1.383	1.765	33.7	17.3	95 E	58	46*
12 23	7 30.78	+12 22.4	1.808	2.737	8.3	21.9	156 W	57	52	1 2	0 21.70	+14 29.5	1.511	1.803	33.0	17.6	90 E	59	42*
1 2	7 20.43	+12 58.2	1.793	2.761	4.5	21.8	167 W	58	51	1 12	0 42.35	+15 51.1	1.644	1.843	32.1	17.8	85 E	61	39*
1 12	7 9.54	+13 42.1	1.809	2.784	3.4	21.7	170 E	59	50	1 22	1 3.27	+17 13.9	1.781	1.883	31.0	18.0	80 E	62*	35*
1 22	6 59.24	+14 30.5	1.855	2.805	6.4	22.0	161 E	60	49	2 1	1 24.43	+18 36.4	1.920	1.923	29.7	18.1	75 E	61*	32*
2 1	6 50.59	+15 20.0	1.929	2.826	10.0	22.2	150 E	60	49	2 11	1 45.75	+19 57.0	2.060	1.964	28.3	18.3	70 E	59*	29*
516396 2000 WY₂₈										36536 1998 SO₁₀									
12 13	11 32.53	+33 51.2	0.631	1.257	50.5	21.5	100 W	79	26*	12 23	0 0.07	+ 0 59.4	2.995	3.150	18.2	21.2	90 E	46	57*
12 18	11 47.00	+35 6.7	0.629	1.272	49.2	21.5	102 W	80	26*	1 2	0 5.76	+ 0 53.2	3.210	3.206	17.6	21.4	81 E	46	51*
12 23	12 0.32	+36 24.4	0.627	1.289	47.8	21.4	104 W	81	25*	1 12	0 12.53	+ 0 59.5	3.420	3.259	16.7	21.5	72 E	46*	44*
12 28	12 12.35	+37 44.9	0.626	1.306	46.3	21.4	106 W	83	24*	1 22	0 20.18	+ 1 15.6	3.622	3.311	15.5	21.6	64 E	44*	38*
1 2	12 22.96	+39 8.4	0.625	1.323	44.7	21.4	109 W	84	24*	2 1	0 28.53	+ 1 39.3	3.812	3.360	14.1	21.7	56 E	40*	32*
1 7	12 32.03	+40 34.9	0.625	1.342	43.1	21.4	111 W	86	23*	10 8	9 59.02	+26 33.5	2.043	1.656	29.0	20.0	53 W	47*	15*
1 12	12 39.43	+42 3.9	0.625	1.361	41.5	21.4	114 W	87	22*	10 18	10 29.56	+25 24.5	1.966	1.642	30.4	20.0	57 W	50*	15*
1 17	12 45.00	+43 34.9	0.626	1.380	39.8	21.4	116 W	89	20*	10 28	10 59.67	+24 4.7	1.893	1.631	31.7	19.9	59 W	53*	16*
1 22	12 48.59	+45 6.9	0.628	1.399	38.1	21.3	119 W	90	19	11 7	11 29.19	+22 36.7	1.822	1.623	32.8	19.8	62 W	56*	18*
1 27	12 50.01	+46 37.9	0.631	1.419	36.4	21.3	121 W	88	17	11 17	11 57.94	+21 3.8	1.755	1.618	33.8	19.8	65 W	58*	20*
2 1	12 49.16	+48 5.4	0.636	1.439	34.7	21.3	124 W	87	16	11 27	12 25.74	+19 29.6	1.690	1.617	34.6	19.7	69 W	59*	22*
2 6	12 45.97	+49 26.2	0.643	1.459	33.1	21.3	126 W	86	15	12 7	12 52.44	+17 57.4	1.628	1.619	35.3	19.7	72 W	60*	26*
2 11	12 40.47	+50 37.2	0.651	1.480	31.7	21.4	128 W	84	13	12 17	13 17.87	+16 30.4	1.567	1.624	35.9	19.6	75 W	61*	29*
2 16	12 32.82	+51 34.9	0.662	1.500	30.4	21.4	130 W	83	12	12 27	13 41.81	+15 11.7	1.507	1.633	36.2	19.5	79 W	60*	34*
2 21	12 23.28	+52 15.8	0.675	1.520	29.3	21.4	131 W	83	12	1 6	14 4.07	+14 3.2	1.447	1.644	36.4	19.5	83 W	59*	39*
2 26	12 12.34	+52 36.9	0.691	1.541	28.5	21.5	132 W	82	11	1 16	14 24.39	+13 6.9	1.386	1.659	36.3	19.4	87 W	58	43*
3 2	12 0.64	+52 36.4	0.710	1.561	27.9	21.6	132 W	82	11										
3 7	11 48.86	+52 13.7	0.732	1.581	27.6	21.6	132 W	83	12										
3 12	11 37.66	+51 30.0	0.757	1.601	27.6	21.7	132 W	84	13										
3 17	11 27.50	+50 27.3	0.785	1.621	27.1	21.9	131 E	85	14										
3 22	11 18.76	+49 8.2	0.817	1.640	28.1	22.0	129 E	86	15										
3 27	11 11.61	+47 36.0	0.852	1.659	28.5	22.1	127 E	87	16										
4 1	11 6.12	+45 53.5	0.890	1.679	29.1	22.2	125 E	89	18										
4 6	11 2.23	+44 3.8	0.931	1.697	29.7	22.4	123 E	89	20										
518737 2009 OO₉																			
12 13	19 58.96	-23 32.8	1.562	0.973	37.3	21.2	37 E	15*	28*										
12 23	20 23.75	-23 7.7	1.442	0.807	40.8	20.7	32 E	13*	23*										
1 2	20 51.00	-22 24.2	1.277	0.627	48.7	20.1	29 E	12*	20*										
1 12	21 17.00	-21 22.7	1.051	0.440	69.0	19.6	25 E	10*	16*										
1 14	21 20.72	-21 9.5	0.997	0.405	76.3	19.5	24 E	9*	15*										
1 16	21 23.18	-20 56.7	0.941	0.373	85.4	19.5	22 E	8*	14*										
1 18	21 23.73	-20 44.8	0.883	0.345	96.6	19.7	20 E	7*	12*										
1 20	21 21.58	-20 33.9	0.825	0.323	110.3	20.1	18 E	6*	10*										
1 22	21 15.88	-20 22.9	0.770	0.309	126.3	21.0	15 E	3*	7*										

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°
30512 2001 HO₈										85709 1998 SG₃₆ (<i>continuation</i>)									
12 23	0 4.19	-22 51.8	5.062	5.012	11.2	20.4	81 E	22	72*	10 28	10 22.63	-9 19.3	1.798	1.486	33.5	19.4	56 W	30*	43*
1 2	0 7.70	-21 58.6	5.201	5.004	10.8	20.5	73 E	23	63*	11 7	10 51.66	-11 42.4	1.700	1.438	35.6	19.3	58 W	30*	45*
1 12	0 12.25	-21 1.9	5.333	4.996	10.3	20.5	65 E	24*	55*	11 12	11 6.76	-12 53.4	1.653	1.414	36.6	19.2	58 W	29*	45*
1 22	0 17.71	-20 2.7	5.454	4.988	9.5	20.5	57 E	23*	47*	11 17	11 22.29	-14 3.0	1.606	1.390	37.7	19.2	59 W	29*	46*
2 1	0 23.97	-19 2.2	5.563	4.979	8.6	20.5	49 E	21*	40*	11 22	11 38.28	-15 10.7	1.560	1.366	38.7	19.1	60 W	28*	47*
2 11	0 30.90	-18 1.3	5.656	4.970	7.7	20.5	42 E	17*	34*	11 27	11 54.80	-16 15.5	1.515	1.343	39.8	19.0	61 W	28*	48*
2 21	0 38.40	-17 0.9	5.733	4.961	6.6	20.5	35 E	12*	28*	12 2	12 11.87	-17 16.7	1.471	1.320	40.9	18.9	61 W	27*	49*
3 2	0 46.35	-16 1.7	5.791	4.951	5.6	20.4	29 E	7*	23*	12 7	12 29.55	-18 13.2	1.428	1.297	42.0	18.9	62 W	26*	50*
3 12	0 54.68	-15 4.5	5.831	4.941	4.7	20.4	24 E	—	18*	12 12	12 47.86	-19 4.0	1.387	1.275	43.2	18.8	62 W	26*	51*
3 22	1 3.28	-14 9.9	5.851	4.930	4.1	20.4	21 E	—	13*	12 17	13 6.82	-19 48.1	1.347	1.254	44.3	18.7	63 W	25*	51*
4 1	1 12.08	-13 18.6	5.851	4.919	3.9	20.4	19 E	—	8*	12 22	13 26.43	-20 24.0	1.309	1.233	45.4	18.7	63 W	24*	52*
4 11	1 21.00	-12 31.2	5.832	4.908	4.2	20.4	21 E	—	4*	12 27	13 46.70	-20 50.7	1.273	1.214	46.5	18.6	64 W	24*	53*
4 21	1 29.98	-11 48.4	5.793	4.896	4.9	20.4	25 W	—	10*	1 1	14 7.61	-21 6.8	1.240	1.195	47.6	18.5	64 W	24*	53*
5 1	1 38.93	-11 10.8	5.736	4.884	5.8	20.4	30 W	—	18*	1 6	14 29.10	-21 11.3	1.208	1.177	48.7	18.5	64 W	24*	54*
5 11	1 47.78	-10 38.9	5.661	4.872	6.9	20.4	35 W	—	25*	1 11	14 51.11	-21 3.2	1.180	1.161	49.7	18.4	64 W	24*	54*
5 21	1 56.45	-10 13.4	5.570	4.859	7.9	20.4	42 W	—	33*	1 16	15 13.52	-20 41.5	1.154	1.146	50.6	18.4	64 W	24*	54*
5 31	2 4.87	-9 54.9	5.463	4.846	9.0	20.4	48 W	—	41*	378747 2008 RM₇₇									
6 10	2 12.94	-9 43.9	5.343	4.833	9.9	20.4	55 W	—	49*	12 23	0 5.30	+6 45.8	1.322	1.693	35.5	20.6	93 E	52	52*
6 20	2 20.57	-9 40.8	5.212	4.819	10.7	20.4	62 W	5*	56*	1 2	0 25.81	+9 1.2	1.439	1.725	34.7	20.8	89 E	54	48*
6 30	2 27.65	-9 46.4	5.071	4.805	11.4	20.3	69 W	11*	63*	1 12	0 46.82	+11 13.8	1.560	1.759	33.8	21.0	84 E	56	43*
7 10	2 34.06	-10 0.8	4.923	4.790	11.9	20.3	77 W	17*	69*	1 22	1 8.21	+13 22.0	1.686	1.795	32.7	21.2	80 E	58*	39*
7 20	2 39.69	-10 24.4	4.771	4.775	12.2	20.2	84 W	23*	73*	2 1	1 29.95	+15 24.9	1.815	1.832	31.3	21.3	75 E	59*	35*
7 30	2 44.38	-10 57.2	4.617	4.760	12.3	20.1	92 W	27*	75	99915 1997 TR₆									
8 9	2 48.01	-11 38.9	4.465	4.744	12.2	20.1	100 W	31*	76	12 23	0 5.48	-3 16.3	1.405	1.706	35.2	18.1	89 E	42	61*
8 19	2 50.44	-12 28.9	4.318	4.728	11.8	20.0	108 W	32*	76	1 2	0 26.69	-0 49.4	1.517	1.735	34.4	18.3	85 E	44	55*
8 29	2 51.53	-13 26.1	4.180	4.712	11.1	19.9	116 W	32	77	1 12	0 48.10	+1 37.7	1.635	1.768	33.3	18.5	81 E	47	50*
9 8	2 51.22	-14 28.3	4.055	4.695	10.2	19.8	124 W	31	78	1 22	1 9.64	+4 2.5	1.757	1.802	32.1	18.7	76 E	49*	46*
9 18	2 49.44	-15 33.3	3.946	4.678	9.2	19.6	132 W	29	80	2 1	1 31.29	+6 22.8	1.884	1.840	30.7	18.8	72 E	50*	42*
9 28	2 46.25	-16 37.5	3.857	4.661	8.1	19.5	139 W	28	81	2 11	1 53.01	+8 37.0	2.012	1.879	29.1	19.0	68 E	50*	38*
10 8	2 41.79	-17 37.1	3.792	4.643	7.2	19.5	145 W	27	82	2 21	2 14.78	+10 43.3	2.143	1.919	27.5	19.1	64 E	48*	35*
10 18	2 36.31	-18 28.1	3.751	4.625	6.6	19.4	148 W	27	82	3 2	2 36.60	+12 40.7	2.274	1.962	25.7	19.2	59 E	46*	32*
10 28	2 30.17	-19 6.7	3.738	4.606	6.7	19.4	147 W	26	83	3 12	2 58.45	+14 28.1	2.406	2.005	23.9	19.3	55 E	43*	30*
11 7	2 23.84	-19 30.1	3.751	4.587	7.3	19.4	144 E	25	84	3 22	3 20.30	+16 4.6	2.536	2.049	22.0	19.4	50 E	39*	27*
11 17	2 17.77	-19 36.7	3.789	4.568	8.4	19.5	138 E	25	84	4 1	3 42.13	+17 29.8	2.663	2.094	20.0	19.5	46 E	35*	25*
11 27	2 12.42	-19 26.2	3.851	4.549	9.6	19.5	130 E	26	83	4 11	4 3.90	+18 43.3	2.787	2.140	18.0	19.6	41 E	30*	23*
12 7	2 8.14	-18 59.7	3.932	4.529	10.7	19.6	122 E	26	83	4 21	4 25.56	+19 44.8	2.906	2.186	16.0	19.7	37 E	25*	21*
12 17	2 5.19	-18 19.0	4.029	4.508	11.6	19.7	113 E	27	82	5 1	4 47.06	+20 34.4	3.019	2.232	13.9	19.7	32 E	20*	18*
12 27	2 3.70	-17 26.5	4.138	4.488	12.2	19.8	105 E	28	81	5 11	5 8.35	+21 12.1	3.125	2.278	11.8	19.8	28 E	15*	16*
1 6	2 3.71	-16 24.7	4.254	4.467	12.6	19.8	96 E	29	79*	5 21	5 29.36	+21 38.3	3.224	2.324	9.7	19.8	23 E	10*	13*
1 16	2 5.19	-15 16.0	4.374	4.446	12.8	19.9	88 E	30	73*	5 31	5 50.04	+21 53.4	3.313	2.370	7.6	19.8	18 E	6*	10*
102109 1999 RD₁₆₆										6 10	6 10.32	+21 58.0	3.393	2.416	5.5	19.8	13 E	1*	6*
12 23	0 4.19	+2 33.4	1.571	1.874	31.7	20.6	91 E	48	56*	6 20	6 30.15	+21 52.7	3.462	2.461	3.4	19.8	8 E	—	2*
1 2	0 21.00	+4 30.4	1.704	1.905	31.0	20.8	86 E	50	50*	6 30	6 49.49	+21 38.2	3.520	2.506	1.4	19.7	3 E	—	—
1 12	0 38.45	+6 28.4	1.839	1.936	30.1	21.0	80 E	51	45*	7 10	7 8.28	+21 15.4	3.566	2.550	1.0	19.7	2 W	—	—
1 22	0 56.42	+8 26.2	1.976	1.968	28.9	21.1	75 E	53*	40*	7 20	7 26.48	+20 45.2	3.599	2.594	2.9	20.0	7 W	—	1*
2 1	1 14.85	+10 22.3	2.113	2.001	27.5	21.3	70 E	53*	36*	7 30	7 44.05	+20 8.5	3.619	2.638	4.9	20.1	13 W	3*	4*
2 11	1 33.67	+12 15.7	2.248	2.034	26.0	21.4	65 E	51*	32*	8 9	8 0.94	+19 26.3	3.625	2.681	6.8	20.2	18 W	9*	8*
2 21	1 52.82	+14 5.1	2.381	2.066	24.4	21.5	60 E	48*	29*	8 19	8 17.13	+18 39.7	3.617	2.723	8.7	20.4	24 W	14*	12*
85709 1998 SG₃₆										8 29	8 32.57	+17 49.6	3.594	2.764	10.5	20.5	30 W	20*	15*
12 23	0 4.41	-9 5.3	2.005	2.184	26.7	20.3	87 E	36	65*	9 8	8 47.21	+16 57.2	3.558	2.805	12.2	20.5	36 W	26*	18*
1 2	0 15.40	-8 24.0	2.145	2.191	26.2	20.4	80 E	37	59*	9 18	9 0.99	+16 3.7	3.508	2.845	13.7	20.6	42 W	32*	22*
1 12	0 27.59	-7 31.0	2.280	2.197	25.3	20.6	73 E	37*	52*	9 28	9 13.85	+15 10.3	3.444	2.884	15.1	20.6	49 W	38*	25*
1 22	0 40.77	-6 29.3	2.407	2.200	24.1	20.6	66 E	38*	47*	10 8	9 25.71	+14 18.2	3.368	2.923	16.4	20.6	56 W	44*	29*
2 1	0 54.81	-5 21.0	2.527	2.201	22.7	20.7	60 E	36*	42*	10 18	9 36.46	+13 28.9	3.280	2.961	17.4	20.7	63 W	49*	33*
2 11	1 9.58	-4 8.4	2.636	2.201	21.2	20.8	54 E	34*	37*	10 28	9 45.98	+12 43.8	3.183	2.998	18.2	20.6	70 W	54*	37*
2 21	1 24.98	-2 53.1	2.734	2.198	19.5	20.8	48 E	30*	33*	11 7	9 54.12	+12 4.6	3.077	3.034	18.6	20.6	78 W	56*	41*
3 2	1 40.98	-1 36.6	2.820	2.193	17.8	20.8	42 E	26*	29*	11 17	10 0.71	+11 32.7	2.965	3.069	18.8	20.6	87 W	57	45*
3 12	1 57.51	-0 20.6	2.894	2.186	15.9	20.8	37 E	22*	26*	11 27	10 5.55	+11 10.1	2.850	3.103	18.5	20.5	95 W	56	49*
3 22	2 14.56	+0 53.8	2.955	2.177	14.1	20.7	32 E	17*	23*	12 7	10 8.46	+10 58.1	2.737	3.137	17.7	20.4	105 W	56	52*
4 1	2 32.09	+2 5.3	3.002	2.166	12.3	20.7	28 E	12*	20*	12 17	10 9.25	+10 58.2	2.628	3.170	16.4	20.3	115 W	56	53*
4 11	2 50.10	+3 12.6	3.037	2.153	10.6	20.6	23 E	6*	17*	12 27	10 7.78	+11 11.3	2.530	3.202	14.5	20.2	125 W	56	53
4 21	3 8.59	+4 14.8	3.059	2.138	9.0	20.6	20 E	1*	14*	1 6	10 4.04	+11 37.3	2.447	3.233	12.1	20.0	137 W	57	52
5 1	3 27.54	+5 10.7	3.067	2.121	7.8	20.5	17 E	—	10*	1 16	9 58.19	+12 14.9	2.384	3.263	9.1	19.9	148 W	57	52
5 11	3 46.95	+5 59.2	3.064	2.102	7.0	20.5	15 E	—	7*	388259 2006 QF₁									
5 21	4 6.81	+6 39.5	3.048	2.081	6.8	20.4	14 E	—	3*	12 23	0 5.66	+1 15.							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for date (19/21), alpha_2000, delta_2000, Delta, r, beta, V, psi, 45, -26. It is divided into sections for 291919 2006 QU20, 41074 1999 VL40, 2937 Gibbs, 186418 2002 RA, 258695 2002 GT3, 101258 1998 SF97, and 41074 1999 VL40 (repeated). Each section contains multiple rows of astronomical data.

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°
101258 1998 SF₉₇ (continuation)										339847 2005 TK₂₃ (continuation)									
1 6	11 28.60	+ 7 40.4	2.207	2.779	18.6	20.6	116 W	53	56	5 11	5 53.68	+26 21.4	2.404	1.727	21.2	21.2	38 E	26*	20*
1 16	11 27.89	+ 7 54.0	2.101	2.797	16.5	20.4	126 W	53	56	5 21	6 22.83	+26 21.0	2.478	1.749	19.4	21.3	35 E	22*	19*
18106 Blume										97034 1999 UK₇									
12 23	0 9.63	- 4 41.3	1.047	1.434	43.3	20.3	90 E	40	63*	12 23	0 12.22	+35 0.6	1.593	2.078	27.2	18.5	105 E	80	27*
12 28	0 24.72	- 2 44.0	1.101	1.462	42.2	20.4	89 E	42	60*	12 28	0 16.41	+34 36.4	1.631	2.065	27.8	18.6	101 E	80	26*
1 2	0 39.28	- 0 51.1	1.158	1.492	41.2	20.5	88 E	44	58*	1 2	0 21.42	+34 17.5	1.671	2.051	28.4	18.6	98 E	79	25*
1 7	0 53.38	+ 0 57.2	1.218	1.522	40.2	20.6	87 E	46	55*	1 7	0 27.17	+34 3.9	1.710	2.037	28.8	18.7	94 E	79	24*
1 12	1 7.06	+ 2 40.6	1.281	1.553	39.1	20.8	86 E	48	53*	1 12	0 33.61	+33 55.2	1.750	2.022	29.1	18.7	91 E	79	22*
1 17	1 20.36	+ 4 19.1	1.346	1.584	38.1	20.9	84 E	49	51*	1 22	0 48.37	+33 51.5	1.827	1.993	29.5	18.8	85 E	77*	20*
1 22	1 33.34	+ 5 52.7	1.414	1.616	37.2	21.0	83 E	51	48*	2 1	1 5.41	+34 3.6	1.901	1.962	29.5	18.8	79 E	72*	17*
1 27	1 46.03	+ 7 21.5	1.484	1.648	36.2	21.1	81 E	52*	46*	2 11	1 24.49	+34 28.1	1.971	1.930	29.3	18.9	73 E	67*	15*
2 1	1 58.48	+ 8 45.5	1.555	1.680	35.2	21.2	79 E	53*	45*	2 21	1 45.47	+35 1.2	2.035	1.898	28.9	18.9	68 E	62*	13*
2 6	2 10.70	+10 4.8	1.629	1.713	34.2	21.3	78 E	54*	43*	3 2	2 8.26	+35 39.2	2.094	1.865	28.2	18.9	63 E	57*	12*
2 11	2 22.73	+11 19.6	1.704	1.745	33.2	21.5	76 E	55*	41*	3 12	2 32.76	+36 18.0	2.146	1.831	27.5	18.9	58 E	52*	10*
413820 2006 QR₈₉										333948 1999 XG₁₃₅									
12 23	0 10.99	-13 26.3	0.766	1.211	54.2	21.3	87 E	32	69*	1 2	0 18.14	- 9 11.9	2.369	2.400	23.8	21.4	80 E	36	60*
12 28	0 25.81	-12 1.2	0.775	1.204	54.5	21.3	86 E	33	67*	1 12	0 27.24	- 7 21.4	2.439	2.342	23.6	21.4	78 E	38*	52*
1 2	0 41.08	-10 29.1	0.785	1.199	54.7	21.4	85 E	35	65*	1 22	0 38.09	- 5 23.1	2.504	2.284	23.1	21.4	66 E	38*	46*
1 7	0 56.76	- 8 50.8	0.794	1.196	54.8	21.4	84 E	36	63*	2 1	0 50.53	- 3 18.0	2.560	2.225	22.4	21.4	59 E	38*	40*
1 12	1 12.81	- 7 7.1	0.804	1.195	54.8	21.4	83 E	38	61*	2 11	1 4.43	- 1 7.4	2.607	2.167	21.4	21.3	53 E	36*	34*
1 17	1 29.21	- 5 18.9	0.815	1.196	54.7	21.4	83 E	40	59*	2 21	1 19.68	+ 1 7.8	2.644	2.109	20.3	21.2	48 E	33*	30*
1 22	1 45.92	- 3 27.2	0.828	1.199	54.5	21.5	82 E	42	58*	3 2	1 36.25	+ 3 26.4	2.672	2.051	19.0	21.2	42 E	30*	28*
12 23	0 11.01	-10 53.1	2.293	2.457	23.6	21.4	88 E	34	68*	3 12	1 54.10	+ 5 47.2	2.690	1.993	17.6	21.1	37 E	26*	22*
1 2	0 18.14	- 9 11.9	2.369	2.400	23.8	21.4	80 E	36	60*	3 22	2 13.25	+ 8 9.1	2.700	1.937	16.1	21.0	33 E	22*	19*
1 12	0 27.24	- 7 21.4	2.439	2.342	23.6	21.4	78 E	38*	52*	4 1	2 33.73	+10 30.4	2.701	1.881	14.6	20.8	28 E	18*	16*
1 22	0 38.09	- 5 23.1	2.504	2.284	23.1	21.4	66 E	38*	46*	4 11	2 55.58	+12 49.3	2.694	1.827	13.0	20.7	24 E	14*	13*
2 1	0 50.53	- 3 18.0	2.560	2.225	22.4	21.4	59 E	38*	40*	4 21	3 18.87	+15 3.9	2.682	1.775	11.4	20.6	20 E	10*	10*
2 11	1 4.43	- 1 7.4	2.607	2.167	21.4	21.3	53 E	36*	34*	5 1	3 43.69	+17 11.7	2.664	1.725	9.8	20.5	17 E	7*	8*
2 21	1 19.68	+ 1 7.8	2.644	2.109	20.3	21.2	48 E	33*	30*	5 11	4 10.06	+19 9.9	2.642	1.678	8.2	20.3	14 E	4*	6*
3 2	1 36.25	+ 3 26.4	2.672	2.051	19.0	21.2	42 E	30*	28*	5 21	4 38.03	+20 55.5	2.617	1.634	6.7	20.2	11 E	1*	3*
3 12	1 54.10	+ 5 47.2	2.690	1.993	17.6	21.1	37 E	26*	22*	5 31	5 7.57	+22 25.2	2.591	1.594	5.2	20.0	8 E	—	1*
3 22	2 13.25	+ 8 9.1	2.700	1.937	16.1	21.0	33 E	22*	19*	6 10	5 38.57	+23 35.4	2.565	1.559	3.8	19.9	6 E	—	—
4 1	2 33.73	+10 30.4	2.701	1.881	14.6	20.8	28 E	18*	16*	6 20	6 10.89	+24 23.0	2.541	1.528	2.5	19.7	4 E	—	—
4 11	2 55.58	+12 49.3	2.694	1.827	13.0	20.7	24 E	14*	13*	6 30	6 44.24	+24 45.0	2.519	1.504	1.6	19.6	2 E	—	—
4 21	3 18.87	+15 3.9	2.682	1.775	11.4	20.6	20 E	10*	10*	7 10	7 18.27	+24 39.8	2.500	1.485	1.7	19.6	2 E	—	—
5 1	3 43.69	+17 11.7	2.664	1.725	9.8	20.5	17 E	7*	8*	7 20	7 52.59	+24 6.4	2.485	1.473	2.5	19.6	4 W	—	—
5 11	4 10.06	+19 9.9	2.642	1.678	8.2	20.3	14 E	4*	6*	7 30	8 26.79	+23 5.4	2.475	1.467	3.6	19.6	5 W	—	—
5 21	4 38.03	+20 55.5	2.617	1.634	6.7	20.2	11 E	1*	3*	8 9	9 0.49	+21 39.0	2.471	1.469	4.7	19.7	7 W	1*	—
5 31	5 7.57	+22 25.2	2.591	1.594	5.2	20.0	8 E	—	1*	8 19	9 33.38	+19 50.1	2.470	1.477	5.9	19.8	9 W	3*	—
6 10	5 38.57	+23 35.4	2.565	1.559	3.8	19.9	6 E	—	—	8 29	10 5.24	+17 42.9	2.475	1.493	7.0	19.9	10 W	4*	—
6 20	6 10.89	+24 23.0	2.541	1.528	2.5	19.7	4 E	—	—	9 8	10 35.94	+15 21.9	2.483	1.514	8.1	19.9	12 W	6*	—
6 30	6 44.24	+24 45.0	2.519	1.504	1.6	19.6	2 E	—	—	9 18	11 5.45	+12 51.5	2.495	1.541	9.3	20.0	14 W	8*	—
7 10	7 18.27	+24 39.8	2.500	1.485	1.7	19.6	2 E	—	—	9 28	11 33.74	+10 16.3	2.508	1.574	10.5	20.1	17 W	11*	—
7 20	7 52.59	+24 6.4	2.485	1.473	2.5	19.6	4 W	—	—	10 8	12 0.88	+ 7 40.3	2.522	1.612	11.7	20.3	19 W	13*	—
7 30	8 26.79	+23 5.4	2.475	1.467	3.6	19.6	5 W	—	—	10 18	12 26.92	+ 5 6.9	2.536	1.653	13.0	20.4	22 W	16*	2*
8 9	9 0.49	+21 39.0	2.471	1.469	4.7	19.7	7 W	1*	—	10 28	12 51.92	+ 2 39.1	2.547	1.699	14.3	20.5	25 W	19*	4*
8 19	9 33.38	+19 50.1	2.470	1.477	5.9	19.8	9 W	3*	—	11 7	13 15.93	+ 0 19.2	2.555	1.747	15.6	20.6	28 W	22*	7*
8 29	10 5.24	+17 42.9	2.475	1.493	7.0	19.9	10 W	4*	—	11 17	13 39.00	+ 1 50.9	2.558	1.798	17.0	20.7	32 W	25*	11*
9 8	10 35.94	+15 21.9	2.483	1.514	8.1	19.9	12 W	6*	—	11 27	14 1.12	- 3 49.8	2.554	1.851	18.3	20.8	36 W	27*	15*
9 18	11 5.45	+12 51.5	2.495	1.541	9.3	20.0	14 W	8*	—	12 7	14 22.28	- 5 36.7	2.543	1.906	19.6	20.9	41 W	30*	20*
9 28	11 33.74	+10 16.3	2.508	1.574	10.5	20.1	17 W	11*	—	12 17	14 42.45	+ 7 11.1	2.525	1.962	20.9	21.0	45 W	31*	25*
10 8	12 0.88	+ 7 40.3	2.522	1.612	11.7	20.3	19 W	13*	—	12 27	15 1.52	- 8 32.5	2.497	2.019	22.1	21.1	50 W	32*	31*
10 18	12 26.92	+ 5 6.9	2.536	1.653	13.0	20.4	22 W	16*	2*	1 6	15 19.42	- 9 41.3	2.460	2.077	23.1	21.1	56 W	33*	38*
10 28	12 51.92	+ 2 39.1	2.547	1.699	14.3	20.5	25 W	19*	4*	1 16	15 36.00	-10 37.8	2.415	2.135	24.0	21.2	62 W	33*	45*
11 7	13 15.93	+ 0 19.2	2.555	1.747	15.6	20.6	28 W	22*	7*	339847 2005 TK₂₃									
11 17	13 39.00	+ 1 50.9	2.558	1.798	17.0	20.7	32 W	25*	11*	12 23	0 12.52	- 5 42.6	1.405	1.716	35.0	20.9	90 E	39	64*
11 27	14 1.12	- 3 49.8	2.554	1.851	18.3	20.8	36 W	27*	15*	12 28	0 20.44	- 5 46.7	1.441	1.698	35.3	20.9	87 E	39	62*
12 7	14 22.28	- 5 36.7	2.543	1.906	19.6	20.9	41 W	30*	20*	1 2	0 28.87	- 5 44.5	1.477	1.681	35.5	20.9	84 E	39	59*
12 17	14 42.45	+ 7 11.1	2.525	1.962	20.9	21.0	45 W	31*	25*	1 7	0 37.76	- 5 36.6	1.511	1.664	35.7	21.0	81 E	39	57*
12 27	15 1.52	- 8 32.5	2.497	2.019	22.1	21.1	50 W	32*	31*	1 12	0 47.08	- 5 23.6	1.544	1.648	35.7	21.0	78 E	40	55*
1 6	15 19.42	- 9 41.3	2.460	2.077	23.1	21.1	56 W	33*	38*	1 17	0 56.80	- 5 6.0	1.577	1.632	35.6	21.0	75 E	40	53*
1 16	15 36.00	-10 37.8	2.415	2.135	24.0	21.2	62 W	33*	45*	1 22	1 6.90	- 4 44.2	1.608	1.617	35.5	21.0	73 E	40	51*
339847 2005 TK₂₃										271366 2003 YE									
12 23	0 11.97	- 0 15.2	1.365	1.711	35.1	20.4	92 E	45	59*	12 23	0 12.52	- 5 42.6	1.405	1.716	35.0	20.9	90 E	39	64*

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°
271366 2003 YE										26663 2000 XK₄₇									
<i>(continuation)</i>										<i>(continuation)</i>									
3 22	3 32.87	+ 2 24.8	1.889	1.495	31.6	21.1	52 E	31*	38*	6 15	9 19.58	- 2 18.4	0.720	0.911	76.1	19.8	60 E	12*	54*
3 27	3 46.81	+ 3 2.4	1.908	1.490	31.2	21.1	51 E	29*	38*	6 20	9 46.09	- 5 18.7	0.701	0.939	75.0	19.8	63 E	11*	57*
4 1	4 0.99	+ 3 38.5	1.926	1.487	30.8	21.1	50 E	28*	38*	6 25	10 13.63	- 8 18.7	0.688	0.970	73.4	19.8	66 E	10*	60*
4 6	4 15.38	+ 4 12.8	1.944	1.485	30.3	21.1	49 E	26*	37*	6 30	10 42.06	-11 13.9	0.682	1.003	71.3	19.8	69 E	9*	63*
4 11	4 29.97	+ 4 44.8	1.962	1.484	29.9	21.1	48 E	25*	37*	7 5	11 11.19	-13 59.3	0.683	1.037	69.0	19.8	72 E	9*	66*
4 16	4 44.75	+ 5 14.3	1.981	1.484	29.5	21.1	47 E	23*	36*	7 10	11 40.69	-16 30.3	0.691	1.073	66.4	19.8	75 E	9*	69*
4 21	4 59.69	+ 5 41.0	2.000	1.486	29.0	21.1	46 E	21*	36*	7 15	12 10.19	-18 43.3	0.707	1.109	63.7	19.8	78 E	9*	72*
4 26	5 14.78	+ 6 4.5	2.019	1.488	28.5	21.1	45 E	20*	36*	7 20	12 39.29	-20 36.1	0.730	1.145	61.0	19.9	80 E	9*	74*
5 1	5 29.98	+ 6 24.7	2.040	1.491	28.1	21.2	44 E	18*	35*	7 25	13 7.62	-22 8.4	0.760	1.182	58.3	20.0	82 E	10*	76*
5 6	5 45.28	+ 6 41.2	2.061	1.496	27.5	21.2	43 E	16*	35*	7 30	13 34.85	-23 21.1	0.796	1.219	55.9	20.1	84 E	10*	78*
5 11	6 0.64	+ 6 54.0	2.083	1.501	27.0	21.2	42 E	14*	35*	8 4	14 0.78	-24 15.8	0.837	1.256	53.6	20.2	85 E	11*	79*
5 16	6 16.03	+ 7 2.9	2.106	1.507	26.5	21.2	42 E	13*	34*	8 9	14 25.30	-24 55.1	0.884	1.293	51.4	20.3	86 E	12*	79*
5 21	6 31.44	+ 7 7.8	2.130	1.515	25.9	21.2	41 E	11*	34*	8 14	14 48.37	-25 21.5	0.935	1.329	49.5	20.4	86 E	12*	80*
5 26	6 46.83	+ 7 8.6	2.155	1.523	25.3	21.2	40 E	9*	33*	8 19	15 10.06	-25 37.3	0.991	1.365	47.7	20.6	86 E	13*	80*
5 31	7 2.17	+ 7 5.4	2.181	1.533	24.6	21.3	39 E	7*	32*	8 24	15 30.44	-25 44.7	1.050	1.401	46.0	20.7	86 E	14*	79*
6 5	7 17.43	+ 6 58.2	2.208	1.543	23.9	21.3	38 E	6*	32*	8 29	15 49.62	-25 45.4	1.112	1.436	44.5	20.8	85 E	15*	79*
6 10	7 32.58	+ 6 47.1	2.237	1.554	23.2	21.3	37 E	4*	31*	9 3	16 7.69	-25 40.7	1.177	1.470	43.0	21.0	84 E	15*	78*
6 15	7 47.61	+ 6 32.2	2.266	1.566	22.5	21.3	36 E	3*	30*	9 8	16 24.79	-25 31.6	1.245	1.504	41.7	21.1	83 E	16*	77*
6 20	8 2.50	+ 6 13.7	2.297	1.578	21.8	21.4	35 E	1*	29*	9 13	16 41.02	-25 19.0	1.314	1.537	40.4	21.2	82 E	17*	76*
6 25	8 17.23	+ 5 51.8	2.328	1.592	21.0	21.4	34 E	—	28*	9 18	16 56.49	-25 3.5	1.385	1.570	39.1	21.3	80 E	17*	74*
6 30	8 31.77	+ 5 26.5	2.361	1.606	20.1	21.4	33 E	—	27*	9 23	17 11.30	-24 45.6	1.458	1.601	37.9	21.5	79 E	18*	73*
7 5	8 46.13	+ 4 58.3	2.394	1.620	19.3	21.4	32 E	—	26*	319477 2006 PC₂₇									
7 10	9 0.28	+ 4 27.4	2.427	1.635	18.4	21.4	31 E	—	24*	12 23	0 13.86	- 9 44.6	1.858	2.083	28.2	21.2	89 E	35	67*
7 15	9 14.22	+ 3 54.0	2.462	1.651	17.5	21.5	29 E	—	23*	1 2	0 27.34	- 7 37.8	2.002	2.113	27.5	21.4	83 E	37	60*
7 20	9 27.96	+ 3 18.3	2.496	1.668	16.6	21.5	28 E	—	21*	1 12	0 41.60	- 5 29.8	2.145	2.143	26.5	21.5	77 E	40	54*
226087 2002 NM₂₆										1 22	0 56.50	- 3 22.0	2.288	2.172	25.3	21.6	71 E	41*	48*
12 23	0 12.69	- 2 58.1	1.557	1.858	31.9	20.7	91 E	42	62*	2 1	1 11.94	- 1 15.6	2.427	2.202	23.9	21.8	65 E	41*	43*
1 2	0 29.83	- 1 2.0	1.686	1.887	31.3	20.8	86 E	44	56*	304936 2007 SG₂									
1 12	0 47.54	+ 0 57.1	1.816	1.916	30.4	21.0	80 E	46	51*	12 23	0 14.80	-22 28.4	1.447	1.661	36.1	20.6	84 E	23	74*
1 22	1 5.71	+ 2 57.3	1.949	1.945	29.3	21.2	75 E	48*	46*	12 28	0 23.14	-22 12.1	1.476	1.642	36.3	20.6	81 E	23	71*
2 1	1 24.28	+ 4 56.6	2.081	1.976	28.0	21.3	70 E	48*	41*	1 2	0 32.03	-21 49.6	1.504	1.624	36.4	20.6	78 E	23	68*
2 11	1 43.18	+ 6 53.5	2.213	2.007	26.5	21.4	65 E	47*	37*	1 7	0 41.43	-21 21.6	1.530	1.607	36.4	20.6	76 E	24	66*
447926 2008 AO₄										1 12	0 51.32	-20 48.4	1.555	1.590	36.4	20.6	74 E	24	63*
12 23	0 12.73	+10 25.4	1.119	1.571	38.5	20.6	96 E	55	50*	1 17	1 1.65	-20 10.3	1.578	1.575	36.4	20.7	72 E	25	61*
1 2	0 34.27	+12 1.5	1.186	1.565	38.9	20.7	92 E	57	46*	1 22	1 12.41	-19 27.6	1.599	1.560	36.3	20.7	70 E	25*	59*
1 12	0 57.64	+13 45.3	1.257	1.564	38.9	20.8	88 E	59	42*	1 27	1 23.59	-18 40.6	1.619	1.547	36.2	20.7	68 E	26*	57*
1 22	1 22.53	+15 32.6	1.332	1.568	38.6	20.9	84 E	61*	39*	2 1	1 35.15	-17 49.6	1.637	1.535	36.0	20.7	66 E	26*	56*
2 1	1 48.71	+17 19.2	1.411	1.577	38.0	21.1	80 E	62*	36*	2 6	1 47.09	-16 55.0	1.654	1.523	35.9	20.7	65 E	27*	54*
2 11	2 15.92	+19 1.2	1.494	1.590	37.2	21.2	77 E	62*	34*	2 11	1 59.38	-15 57.1	1.670	1.513	35.7	20.7	63 E	27*	53*
2 21	2 43.93	+20 34.7	1.581	1.607	36.1	21.3	73 E	60*	32*	2 16	2 12.01	-14 56.1	1.685	1.505	35.5	20.7	62 E	27*	52*
3 2	3 12.55	+21 56.7	1.673	1.629	34.9	21.4	70 E	59*	31*	2 21	2 24.96	-13 52.3	1.699	1.497	35.3	20.7	61 E	27*	51*
443995 2003 XT₁₂										2 26	2 38.24	-12 46.1	1.712	1.491	35.1	20.7	60 E	27*	50*
12 23	0 12.95	+16 39.8	1.186	1.653	36.0	20.3	99 E	62	44*	3 2	2 51.83	-11 37.8	1.726	1.486	34.9	20.7	59 E	27*	49*
1 2	0 32.82	+18 8.6	1.267	1.656	36.3	20.5	94 E	63	41*	3 7	3 5.70	-10 28.1	1.739	1.483	34.7	20.7	58 E	26*	49*
1 12	0 54.56	+19 42.5	1.352	1.663	36.3	20.6	89 E	65	37*	3 12	3 19.85	- 9 17.1	1.753	1.481	34.5	20.7	58 E	26*	48*
1 22	1 17.84	+21 18.1	1.441	1.673	35.9	20.8	85 E	66*	34*	3 17	3 34.25	- 8 5.5	1.767	1.480	34.3	20.7	57 E	26*	47*
2 1	1 42.43	+22 52.1	1.534	1.687	35.2	20.9	81 E	67*	31*	3 22	3 48.90	- 6 53.7	1.782	1.481	34.0	20.7	56 E	25*	47*
2 11	2 8.09	+24 21.5	1.629	1.704	34.3	21.0	77 E	66*	29*	3 27	4 3.77	- 5 42.1	1.799	1.483	33.7	20.7	56 E	25*	46*
2 21	2 34.60	+25 43.0	1.729	1.724	33.3	21.2	73 E	64*	27*	4 1	4 18.84	- 4 31.5	1.816	1.486	33.4	20.8	55 E	24*	46*
3 2	3 1.79	+26 54.3	1.831	1.748	32.0	21.3	69 E	61*	26*	4 6	4 34.08	- 3 22.4	1.836	1.491	33.0	20.8	54 E	23*	45*
3 12	3 29.44	+27 53.2	1.936	1.774	30.7	21.4	66 E	57*	25*	4 11	4 49.46	- 2 15.3	1.857	1.497	32.6	20.8	54 E	22*	45*
26663 2000 XK₄₇										4 16	5 4.94	- 1 10.8	1.880	1.505	32.1	20.8	53 E	22*	44*
12 23	0 13.79	+22 1.0	1.181	1.675	35.2	21.0	101 E	67	39*	4 21	5 20.52	- 0 9.2	1.905	1.514	31.6	20.8	52 E	21*	44*
1 2	0 23.33	+21 2.6	1.230	1.614	37.5	21.1	93 E	66	37*	4 26	5 36.14	+ 0 48.8	1.932	1.524	31.1	20.9	51 E	20*	43*
1 12	0 36.24	+20 31.2	1.274	1.551	39.2	21.1	86 E	66	34*	5 1	5 51.77	+ 1 42.8	1.961	1.535	30.5	20.9	51 E	18*	43*
1 22	0 52.10	+20 22.5	1.311	1.484	40.6	21.1	79 E	64*	31*	5 6	6 7.38	- 2 32.6	1.993	1.547	29.9	20.9	50 E	17*	42*
2 1	1 10.69	+20 32.0	1.339	1.415	41.8	21.1	73 E	62*	28*	5 11	6 22.92	+ 3 17.7	2.027	1.561	29.2	21.0	49 E	16*	41*
2 11	1 31.86	+20 54.6	1.355	1.344	42.9	21.1	68 E	58*	26*	5 16	6 38.38	+ 3 58.1	2.063	1.575	28.5	21.0	48 E	14*	40*
2 21	1 55.56	+21 24.7	1.360	1.271	44.0	21.0	63 E	55*	24*	5 21	6 53.71	+ 4 33.6	2.101	1.591	27.7	21.1	47 E	13*	40*
3 2	2 21.85	+21 56.3	1.353	1.197	45.2	20.9	59 E	51*	23*	5 26	7 8.90	+ 5 4.0	2.141	1.607	26.8	21.1	46 E	12*	39*
3 12	2 50.79	+22 22.6	1.332	1.124	46.8	20.7	56 E	47*	23*	5 31	7 23.91	+ 5 29.5	2.183	1.625	26.0	21.1	45 E	10*	38*
3 22	3 22.43	+22 35.5	1.298	1.052	48.8	20.6	53 E	44*	23*	6 5	7 38.72	+ 5 50.1	2.226	1.643	25.1	21.2	43 E	9*	37*
4 1	3 56.80	+22 26.1	1.251	0.983	51.4	20.5	50 E	41*	24*	6 10	7 53.31	+ 6 5.9	2.271	1.661	24.1	21.2	42 E	7*	36*
4 6	4 14.96	+22 10.0	1.223	0.952	53.0	20.4	49 E	39*	25*</										

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°
379317 2009 WM₂₅										313760 2003 WG₉₈ (continuation)									
12 23	0 15.22	-24 1.7	1.383	1.602	37.6	19.7	83 E	21	75*	1 12	0 39.83	+31 47.9	2.035	2.280	25.5	20.6	91 E	77	25*
12 28	0 25.12	-21 30.2	1.420	1.607	37.3	19.8	82 E	23	72*	1 17	0 46.77	+31 18.5	2.069	2.256	25.8	20.6	88 E	76*	24*
1 2	0 35.09	-18 59.3	1.459	1.613	36.9	19.9	80 E	26	68*	1 22	0 54.21	+30 53.6	2.103	2.233	26.0	20.6	84 E	75*	23*
1 7	0 45.12	-16 29.7	1.499	1.620	36.5	19.9	78 E	29	65*	1 27	1 2.14	+30 32.9	2.137	2.209	26.1	20.7	81 E	73*	22*
1 12	0 55.21	-14 1.9	1.542	1.628	36.0	20.0	77 E	31	62*	2 1	1 10.52	+30 16.2	2.171	2.185	26.1	20.7	78 E	70*	21*
1 17	1 5.34	-11 36.4	1.586	1.637	35.5	20.0	75 E	33	58*	2 6	1 19.31	+30 2.9	2.203	2.161	26.1	20.7	75 E	67*	20*
1 22	1 15.54	-9 13.7	1.631	1.646	34.9	20.1	73 E	36*	55*	2 11	1 28.50	+29 52.8	2.235	2.137	26.0	20.7	71 E	65*	19*
2 1	1 36.13	-4 37.9	1.727	1.667	33.7	20.2	70 E	39*	50*	2 16	1 38.07	+29 45.3	2.266	2.113	25.8	20.7	68 E	62*	18*
2 11	1 57.00	-0 17.3	1.827	1.690	32.3	20.3	66 E	42*	45*	2 21	1 47.99	+29 40.1	2.295	2.089	25.5	20.7	66 E	59*	17*
2 21	2 18.17	+3 46.4	1.932	1.715	30.7	20.4	62 E	43*	40*	3 2	2 8.88	+29 34.8	2.350	2.042	24.8	20.7	60 E	54*	16*
3 2	2 39.68	+7 31.9	2.039	1.743	29.1	20.5	59 E	42*	36*	3 7	2 19.80	+29 33.8	2.376	2.018	24.4	20.6	57 E	51*	15*
3 12	3 1.56	+10 58.5	2.149	1.772	27.3	20.6	55 E	41*	33*	3 12	3 31.03	+29 33.4	2.399	1.994	23.9	20.6	55 E	48*	15*
3 22	3 23.80	+14 5.7	2.259	1.803	25.4	20.7	51 E	38*	29*	3 17	3 42.55	+29 33.0	2.422	1.971	23.4	20.6	52 E	46*	14*
4 1	3 46.42	+16 53.5	2.368	1.835	23.4	20.8	47 E	35*	26*	3 22	3 54.35	+29 32.2	2.442	1.948	22.9	20.6	49 E	43*	14*
4 11	4 9.38	+19 21.9	2.476	1.868	21.4	20.9	43 E	31*	24*	3 27	3 6.42	+29 30.8	2.461	1.925	22.3	20.5	47 E	41*	14*
4 21	4 32.65	+21 31.0	2.576	1.902	19.3	20.9	39 E	28*	21*	4 1	3 18.75	+29 28.2	2.479	1.902	21.7	20.5	45 E	38*	13*
5 1	4 56.19	+23 21.3	2.681	1.937	17.2	21.0	35 E	24*	18*	4 6	3 31.32	+29 24.0	2.495	1.879	21.0	20.5	42 E	36*	13*
5 11	5 19.90	+24 53.3	2.776	1.973	15.0	21.0	30 E	20*	16*	4 11	3 44.12	+29 17.9	2.509	1.857	20.3	20.5	40 E	33*	13*
5 21	5 43.72	+26 7.5	2.865	2.008	12.9	21.1	26 E	16*	13*	4 21	4 10.34	+28 58.3	2.532	1.813	18.9	20.4	36 E	28*	12*
5 31	6 7.55	+27 4.9	2.947	2.044	10.8	21.1	22 E	12*	10*	5 1	4 37.28	+28 26.6	2.550	1.772	17.3	20.3	32 E	24*	12*
6 10	6 31.29	+27 46.1	3.021	2.080	8.8	21.1	18 E	9*	7*	5 11	5 4.77	+27 40.3	2.562	1.732	15.7	20.2	28 E	19*	11*
6 20	6 54.84	+28 12.4	3.086	2.116	6.8	21.1	14 E	6*	4*	5 21	5 32.66	+26 37.5	2.569	1.694	14.0	20.1	24 E	14*	11*
6 30	7 18.12	+28 25.0	3.143	2.152	5.0	21.1	11 E	4*	—	5 31	6 0.79	+25 16.5	2.571	1.660	12.4	20.0	21 E	10*	10*
7 10	7 41.03	+28 25.1	3.190	2.188	3.8	21.1	8 E	2*	—	6 10	6 28.96	+23 36.5	2.569	1.628	10.7	19.9	17 E	5*	9*
7 20	8 3.51	+28 14.1	3.226	2.223	3.5	21.1	8 E	1*	—	6 20	6 57.07	+21 36.8	2.564	1.600	9.1	19.8	14 E	1*	7*
7 30	8 25.50	+27 53.6	3.252	2.258	4.4	21.2	10 W	3*	—	6 30	7 24.98	+19 17.8	2.557	1.576	7.7	19.7	12 E	—	6*
8 9	8 46.94	+27 25.1	3.266	2.292	5.9	21.3	13 W	7*	—	7 10	7 52.61	+16 39.9	2.548	1.557	6.5	19.6	10 E	—	4*
8 19	9 7.81	+26 50.3	3.270	2.326	7.6	21.5	18 W	12*	—	7 20	8 19.92	+13 44.6	2.539	1.542	5.7	19.5	9 E	—	2*
482533 2012 UA₃₄										154278 2002 TB₉									
12 23	0 16.26	+48 39.5	0.532	1.266	47.1	20.6	110 E	86	14*	12 23	0 18.14	-12 25.5	1.376	1.672	36.0	19.7	89 E	33	70*
12 25	0 11.39	+47 0.8	0.541	1.253	48.7	20.7	107 E	88	15*	12 28	0 21.78	-12 35.1	1.401	1.631	36.9	19.7	84 E	32	67*
12 27	0 7.30	+45 25.7	0.550	1.239	50.3	20.7	104 E	90	16*	1 2	0 26.21	-12 38.6	1.423	1.589	37.6	19.7	80 E	32	63*
12 29	0 3.88	+43 54.4	0.559	1.225	51.8	20.8	102 E	89	16*	1 7	0 31.39	-12 36.7	1.442	1.547	38.2	19.7	77 E	32	60*
12 31	0 1.03	+42 27.3	0.569	1.211	53.3	20.8	99 E	87	17*	1 12	0 37.27	-12 29.9	1.457	1.504	38.8	19.7	73 E	33	57*
1 2	23 58.67	+41 4.1	0.579	1.196	54.8	20.9	96 E	86	17*	1 22	0 51.04	-12 3.2	1.477	1.415	39.7	19.6	67 E	32*	52*
1 4	23 56.73	+39 44.9	0.588	1.180	56.3	20.9	94 E	85	17*	2 1	1 7.37	-11 21.4	1.479	1.324	40.7	19.5	61 E	31*	47*
1 6	23 55.14	+38 29.5	0.598	1.163	57.7	21.0	91 E	83*	17*	2 11	1 26.17	-10 26.6	1.463	1.231	41.9	19.3	56 E	30*	44*
1 8	23 53.86	+37 17.7	0.608	1.146	59.1	21.0	89 E	81*	17*	2 21	1 47.48	-9 19.6	1.427	1.137	43.6	19.1	52 E	28*	41*
1 10	23 52.83	+36 9.3	0.617	1.128	60.5	21.1	86 E	79*	17*	3 2	2 11.46	-7 59.9	1.370	1.044	46.1	18.9	49 E	25*	39*
1 12	23 52.01	+35 3.9	0.626	1.110	61.8	21.1	84 E	77*	16*	3 12	2 38.33	-6 25.4	1.291	0.955	49.8	18.7	47 E	23*	38*
1 17	23 50.68	+32 32.4	0.646	1.060	65.2	21.2	78 E	72*	15*	3 17	2 52.94	-5 30.8	1.245	0.913	52.2	18.6	46 E	22*	37*
1 22	23 49.99	+30 13.7	0.664	1.006	68.8	21.2	72 E	66*	14*	3 22	3 8.40	-4 30.0	1.193	0.873	55.1	18.5	46 E	21*	37*
1 27	23 49.50	+28 2.8	0.677	0.946	72.6	21.3	66 E	60*	12*	3 27	3 24.77	-3 21.3	1.137	0.837	58.4	18.4	46 E	21*	37*
2 1	23 48.79	+25 53.4	0.686	0.880	76.8	21.3	60 E	54*	10*	4 1	3 42.09	-2 2.6	1.076	0.805	62.2	18.3	45 E	20*	37*
2 6	23 47.37	+23 37.5	0.691	0.808	81.9	21.3	54 E	48*	8*	4 6	4 0.41	-0 31.0	1.012	0.778	66.5	18.2	45 E	20*	37*
2 11	23 44.68	+21 4.6	0.690	0.729	88.1	21.3	48 E	42*	6*	4 11	4 19.82	+1 16.9	0.946	0.757	71.1	18.2	46 E	20*	37*
2 16	23 40.00	+18 0.0	0.686	0.641	96.2	21.4	40 E	34*	3*	4 16	4 40.44	+3 25.5	0.879	0.744	75.9	18.1	46 E	21*	37*
141808 2002 NV₃₈										313760 2003 WG₉₈									
12 23	0 17.27	+7 15.4	1.351	1.756	33.8	19.3	96 E	52	53*	5 23	8 23.82	+32 51.4	0.540	0.871	88.5	17.9	59 E	46*	28*
1 2	0 36.59	+8 44.8	1.474	1.788	33.4	19.5	91 E	54	49*	5 25	8 41.41	+34 29.8	0.538	0.886	87.1	17.9	61 E	48*	27*
1 12	0 56.42	+10 18.1	1.602	1.821	32.6	19.7	86 E	55	45*	5 19	7 50.43	+29 14.4	0.550	0.842	90.8	17.9	56 E	41*	30*
1 22	1 16.63	+11 52.9	1.734	1.856	31.6	19.9	81 E	57*	41*	5 21	8 6.80	+31 5.7	0.544	0.856	89.8	17.9	58 E	43*	29*
2 1	1 37.18	+13 27.5	1.868	1.891	30.4	20.1	76 E	57*	38*	5 23	8 23.82	+32 51.4	0.540	0.871	88.5	17.9	59 E	46*	28*
2 11	1 57.98	+14 59.8	2.003	1.927	29.0	20.2	71 E	56*	34*	5 25	8 41.41	+34 29.8	0.538	0.886	87.1	17.9	61 E	48*	27*
2 21	2 19.00	+16 28.1	2.138	1.964	27.5	20.3	66 E	54*	32*	5 19	7 50.43	+29 14.4	0.550	0.842	90.8	17.9	56 E	41*	30*
3 2	2 40.21	+17 51.1	2.272	2.001	25.8	20.5	62 E	51*	29*	5 21	8 6.80	+31 5.7	0.544	0.856	89.8	17.9	58 E	43*	29*
3 12	3 1.56	+19 7.5	2.405	2.038	24.1	20.6	57 E	47*	27*	5 23	8 23.82	+32 51.4	0.540	0.871	88.5	17.9	59 E	46*	28*
3 22	3 23.03	+20 16.2	2.534	2.076	22.2	20.7	52 E	42*	25*	5 25	8 41.41	+34 29.8	0.538	0.886	87.1	1			

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°
154278 2002 TB₉										137206 1999 LJ₂₅									
<i>(continuation)</i>										<i>(continuation)</i>									
5 27	8 59.51	+35 59.2	0.537	0.902	85.5	17.8	63 E	50*	26*	2 1	1 18.86	+ 2 20.4	2.319	2.151	25.1	21.2	68 E	45*	42*
5 29	9 17.97	+37 18.3	0.539	0.919	83.8	17.8	64 E	52*	26*	2 11	1 35.11	+ 4 24.7	2.460	2.184	23.6	21.4	62 E	44*	37*
5 31	9 36.67	+38 26.2	0.543	0.935	82.0	17.8	66 E	54*	25*	2 21	1 51.74	+ 6 24.8	2.598	2.217	21.9	21.5	57 E	42*	33*
6 2	9 55.44	+39 22.2	0.548	0.952	80.1	17.8	68 E	56*	24*	484096 2006 RE₃₆									
6 4	10 14.12	+40 6.0	0.555	0.970	78.2	17.8	69 E	58*	24*	12 23	0 19.64	+ 8 1.2	1.085	1.552	39.0	20.8	97 E	53	53*
6 6	10 32.54	+40 38.0	0.564	0.988	76.3	17.8	71 E	60*	23*	1 2	0 39.56	+10 51.0	1.169	1.561	39.0	21.0	93 E	56	48*
6 8	10 50.54	+40 58.5	0.574	1.005	74.4	17.8	73 E	61*	23	1 12	1 1.05	+13 37.3	1.257	1.574	38.7	21.1	88 E	59	43*
6 10	11 8.01	+41 8.3	0.585	1.024	72.5	17.8	74 E	63*	23	1 22	1 23.87	+16 17.3	1.348	1.589	38.0	21.3	84 E	61*	39*
6 12	11 24.84	+41 8.3	0.597	1.042	70.7	17.8	76 E	64*	23	2 1	1 47.87	+18 48.8	1.444	1.608	37.2	21.4	81 E	63*	35*
6 14	11 40.95	+40 59.5	0.611	1.060	68.9	17.9	77 E	65*	23	7092 Cadmus									
6 16	11 56.30	+40 43.0	0.625	1.079	67.2	17.9	78 E	66*	23	12 23	0 20.03	- 8 38.9	1.868	2.120	27.6	19.3	91 E	36	67*
6 18	12 10.86	+40 19.9	0.641	1.097	65.5	18.0	79 E	67*	24	1 2	0 23.51	- 6 43.1	1.918	2.031	28.7	19.3	82 E	38	59*
6 20	12 24.64	+39 51.0	0.657	1.116	63.9	18.0	81 E	68*	24	1 12	0 29.70	- 4 34.7	1.961	1.939	29.2	19.3	74 E	40*	51*
6 22	12 37.65	+39 17.5	0.674	1.135	62.4	18.0	82 E	69*	25	1 22	0 38.35	- 2 14.9	1.994	1.845	29.4	19.2	67 E	42*	44*
6 24	12 49.92	+38 40.0	0.692	1.154	60.9	18.1	83 E	69*	25	2 1	0 49.28	+ 0 15.9	2.014	1.749	29.3	19.1	60 E	41*	37*
6 26	13 1.49	+37 59.2	0.711	1.172	59.5	18.1	83 E	69*	26	2 11	1 2.37	+ 2 57.4	2.021	1.650	29.0	19.0	54 E	39*	32*
6 28	13 12.41	+37 15.9	0.730	1.191	58.1	18.2	84 E	70*	27	2 21	1 17.62	+ 5 49.5	2.013	1.548	28.6	18.8	49 E	37*	27*
6 30	13 22.70	+36 30.6	0.750	1.210	56.8	18.2	85 E	70*	27	3 2	1 35.11	+ 8 52.7	1.989	1.445	28.3	18.6	44 E	34*	22*
7 2	13 32.42	+35 43.7	0.770	1.229	55.6	18.3	86 E	70*	28	3 12	1 55.06	+12 6.6	1.951	1.340	28.1	18.4	39 E	31*	19*
7 4	13 41.62	+34 55.6	0.790	1.247	54.4	18.4	86 E	69*	29	3 22	2 17.84	+15 30.9	1.897	1.235	28.2	18.2	36 E	28*	16*
7 6	13 50.33	+34 6.7	0.811	1.266	53.3	18.4	87 E	69*	30	4 1	2 44.00	+19 4.0	1.829	1.131	28.8	17.9	33 E	25*	13*
7 8	13 58.61	+33 17.1	0.833	1.285	52.2	18.5	87 E	69*	31	4 6	2 58.58	+20 52.9	1.789	1.081	29.4	17.8	32 E	25*	12*
7 10	14 6.47	+32 27.2	0.855	1.303	51.2	18.5	88 E	69*	32	4 11	3 14.32	+22 42.2	1.747	1.031	30.3	17.7	31 E	24*	11*
7 15	14 24.60	+30 21.9	0.911	1.349	48.9	18.7	89 E	67*	34	4 16	3 31.36	+24 31.0	1.702	0.983	31.4	17.6	31 E	23*	11*
7 20	14 40.91	+28 17.5	0.970	1.395	46.8	18.8	89 E	66*	36	4 21	3 49.85	+26 17.7	1.654	0.938	32.9	17.4	30 E	23*	10*
7 25	14 55.79	+26 15.4	1.031	1.440	44.9	19.0	89 E	65*	38	4 26	4 9.95	+28 0.3	1.604	0.896	34.8	17.3	31 E	23*	10*
7 30	15 9.55	+24 16.8	1.093	1.484	43.2	19.1	89 E	63*	40	5 1	4 31.81	+29 36.1	1.551	0.858	37.0	17.2	31 E	23*	10*
8 4	15 22.40	+22 22.1	1.157	1.527	41.6	19.3	89 E	61*	42	5 6	4 55.56	+31 1.6	1.497	0.826	39.6	17.1	31 E	24*	11*
8 9	15 34.54	+20 31.8	1.223	1.570	40.2	19.4	89 E	60*	43	5 11	5 21.25	+32 12.6	1.442	0.800	42.6	17.1	32 E	25*	11*
8 14	15 46.11	+18 46.1	1.291	1.612	38.9	19.5	88 E	58*	45	5 16	5 48.89	+33 4.4	1.387	0.781	45.8	17.0	34 E	25*	12*
8 19	15 57.23	+17 5.1	1.360	1.654	37.7	19.7	87 E	57*	47	5 21	6 18.33	+33 31.8	1.333	0.770	49.1	17.0	35 E	26*	14*
8 29	16 18.48	+13 57.8	1.503	1.734	35.5	19.9	85 E	54*	50*	5 26	6 49.28	+33 29.7	1.280	0.767	52.3	17.0	37 E	27*	16*
9 8	16 38.79	+11 10.6	1.650	1.811	33.4	20.2	82 E	52*	51*	5 31	7 21.31	+32 53.7	1.232	0.774	55.2	17.0	39 E	28*	18*
9 18	16 58.47	+ 8 43.0	1.801	1.885	31.5	20.4	79 E	49*	52*	6 5	7 53.88	+31 41.1	1.188	0.788	57.6	17.0	41 E	29*	21*
9 28	17 17.76	+ 6 35.0	1.955	1.955	29.7	20.6	75 E	47*	51*	6 10	8 26.40	+29 50.8	1.150	0.811	59.4	17.1	43 E	29*	24*
10 8	17 36.75	+ 4 45.9	2.111	2.023	27.9	20.8	71 E	45*	48*	6 15	8 58.34	+27 24.4	1.121	0.840	60.4	17.1	46 E	29*	27*
10 18	17 55.52	+ 3 15.1	2.266	2.088	26.0	21.0	67 E	44*	45*	6 20	9 29.24	+24 25.8	1.101	0.875	60.6	17.2	49 E	29*	31*
10 28	18 14.12	+ 2 1.8	2.421	2.149	24.2	21.1	62 E	42*	40*	6 25	9 58.79	+21 1.0	1.090	0.915	60.2	17.2	51 E	28*	35*
11 7	18 32.52	+ 1 5.3	2.571	2.208	22.3	21.2	58 E	40*	35*	6 30	10 26.80	+17 17.5	1.090	0.959	59.1	17.3	54 E	27*	39*
11 17	18 50.74	+ 0 24.6	2.718	2.264	20.4	21.4	53 E	39*	29*	7 5	10 53.18	+13 23.4	1.100	1.005	57.5	17.4	57 E	26*	43*
11 27	19 8.75	- 0 1.2	2.858	2.317	18.5	21.5	48 E	37*	23*	7 10	11 17.96	+ 9 26.5	1.121	1.054	55.6	17.5	59 E	25*	47*
16695 Terryhandley										7 15	11 41.21	+ 5 33.6	1.151	1.104	53.5	17.6	61 E	23*	50*
12 23	0 18.18	- 4 32.5	1.057	1.466	42.1	19.4	92 E	40	64*	7 20	12 3.06	+ 1 49.7	1.191	1.155	51.3	17.7	63 E	21*	53*
12 28	0 30.87	- 2 47.6	1.101	1.481	41.6	19.5	90 E	42	61*	7 25	12 23.64	+ 1 41.5	1.239	1.207	49.1	17.8	64 E	20*	55*
1 2	0 43.52	- 1 4.0	1.147	1.496	41.1	19.6	89 E	44	58*	7 30	12 43.07	- 4 58.0	1.293	1.259	46.8	17.9	65 E	18*	57*
1 7	0 56.13	+ 0 37.8	1.195	1.512	40.5	19.7	87 E	46	56*	8 9	13 18.98	-10 43.6	1.422	1.365	42.6	18.2	66 E	15*	59*
1 12	1 8.69	+ 2 17.3	1.245	1.529	39.9	19.8	86 E	47	53*	8 19	13 51.74	-15 28.9	1.569	1.469	38.7	18.5	65 E	13*	59*
1 22	1 33.70	+ 5 28.1	1.350	1.565	38.6	20.0	83 E	50	49*	8 29	14 22.07	-19 21.7	1.729	1.572	35.2	18.7	64 E	11*	58*
2 1	1 58.61	+ 8 26.3	1.461	1.603	37.1	20.2	79 E	53*	45*	9 3	14 36.50	-21 1.1	1.813	1.623	33.6	18.8	63 E	10*	57*
2 11	2 23.44	+11 10.1	1.578	1.643	35.6	20.3	76 E	55*	41*	9 8	14 50.51	-22 30.5	1.899	1.673	32.0	19.0	62 E	9*	55*
2 21	2 48.20	+13 38.2	1.699	1.685	34.0	20.5	72 E	55*	39*	9 13	15 4.16	-23 50.8	1.986	1.722	30.4	19.1	60 E	9*	54*
3 2	3 12.93	+15 50.1	1.824	1.728	32.3	20.7	69 E	54*	36*	9 18	15 17.49	-25 3.1	2.074	1.771	28.9	19.2	59 E	8*	52*
3 12	3 37.61	+17 45.1	1.952	1.772	30.5	20.8	65 E	51*	34*	9 23	15 30.53	-26 7.9	2.163	1.819	27.5	19.3	57 E	7*	50*
3 22	4 2.21	+19 23.1	2.081	1.817	28.6	20.9	61 E	48*	32*	9 28	15 43.31	-27 6.0	2.252	1.867	26.1	19.4	55 E	7*	49*
4 1	4 26.71	+20 44.3	2.210	1.862	26.7	21.1	57 E	45*	30*	10 3	15 55.85	-27 57.9	2.340	1.914	24.7	19.5	53 E	6*	47*
4 11	4 51.04	+21 48.8	2.339	1.907	24.7	21.2	53 E	40*	29*	10 8	16 8.17	-28 44.1	2.429	1.961	23.3	19.6	51 E	6*	45*
4 21	5 15.15	+22 37.2	2.465	1.952	22.7	21.3	49 E	36*	27*	10 13	16 20.30	-29 25.1	2.516	2.006	22.0	19.7	49 E	6*	43*
5 1	5 38.98	+23 10.0	2.588	1.996	20.7	21.4	44 E	31*	26*	10 18	16 32.23	-30 1.4	2.603	2.051	20.7	19.8	47 E	5*	40*
5 11	6 2.44	+23 28.0	2.707	2.040	18.6	21.5	40 E	26*	24*	10 28	16 55.58	-31 0.8	2.772	2.140	18.1	19.9	42 E	4*	36*
347635 2001 SQ₂₇₇										11 7	17 18.25	-31 44.9	2.933	2.226	15.6	20.0	37 E	3*	31*
12 23	0 18.19	+11 24.8	1.286	1.726	34.4	20.8	98 E	56	50*	11 17	17 40.30	-32 15.6	3.086	2.309	13.2	20.1	32 E	2*	26*
1 2	0 37.54	+12 50.2	1.394	1.746	34.2	21.0	93 E	58	46*	11 27	18 1.72	-32 34.7	3.227	2.390	10.8	20.2	27 E	—	21*
1 12	0 57.90	+14 20.3	1.506	1.768	33.8	21.1	88 E	59	42*	12 7</									

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°
3200 Phaethon										3200 Phaethon (continuation)									
12 23	0 21.55	+24 8.6	1.773	2.218	25.5	18.7	103E	69	38*	1 1	20 47.90	-5 3.2	1.287	0.734	49.4	16.3	35E	26*	12*
12 28	0 24.48	+23 21.2	1.864	2.239	25.7	18.9	99E	68	37*	1 6	21 16.95	-2 3.2	1.361	0.833	45.9	16.6	37E	29*	13*
1 2	0 27.93	+22 42.5	1.955	2.258	25.7	19.0	95E	68	36*	1 11	21 42.37	+0 34.9	1.443	0.925	42.4	16.9	39E	32*	13*
1 7	0 31.83	+22 11.6	2.046	2.276	25.6	19.1	90E	67	35*	1 16	22 4.86	+2 53.7	1.531	1.011	39.2	17.1	41E	33*	12*
1 12	0 36.11	+21 47.6	2.137	2.293	25.3	19.2	86E	67	33*										
1 22	0 45.63	+21 17.2	2.314	2.323	24.5	19.4	78E	65*	29*	12 23	0 21.78	-27 13.7	1.409	1.624	37.0	20.6	83E	18	77*
2 1	0 56.22	+21 6.4	2.485	2.348	23.3	19.5	71E	61*	25*	12 28	0 31.26	-25 13.9	1.455	1.634	36.5	20.7	82E	20	74*
2 11	1 7.64	+21 10.8	2.646	2.368	21.8	19.6	63E	55*	22*	1 2	0 40.79	-23 14.3	1.502	1.644	36.1	20.7	80E	22	71*
2 21	1 19.74	+21 27.1	2.794	2.384	20.1	19.7	56E	49*	18*	1 7	0 50.35	-21 15.2	1.549	1.653	35.6	20.8	78E	24	68*
3 2	1 32.42	+21 52.6	2.927	2.395	18.2	19.8	49E	42*	15*	1 12	0 59.95	-19 17.0	1.596	1.662	35.1	20.9	76E	26	65*
3 12	1 45.59	+22 24.9	3.044	2.401	16.1	19.8	42E	36*	11*	1 17	1 9.59	-17 19.8	1.644	1.672	34.5	20.9	74E	28	62*
3 22	1 59.19	+23 2.2	3.143	2.403	13.9	19.8	36E	29*	8*	1 22	1 19.28	-15 24.1	1.693	1.681	33.9	21.0	72E	30	59*
4 1	2 13.18	+23 42.9	3.223	2.400	11.7	19.8	29E	23*	5*	1 27	1 29.02	-13 29.9	1.741	1.690	33.3	21.0	70E	31	57*
4 11	2 27.53	+24 25.7	3.282	2.392	9.4	19.7	23E	17*	1*	2 1	1 38.82	-11 37.6	1.790	1.699	32.7	21.1	69E	33	54*
4 21	2 42.23	+25 9.4	3.321	2.380	7.2	19.6	17E	11*	—	2 6	1 48.68	-9 47.4	1.838	1.707	32.0	21.1	67E	34	52*
5 1	2 57.25	+25 53.1	3.339	2.364	5.1	19.5	12E	6*	—	2 11	1 58.59	-7 59.5	1.887	1.716	31.3	21.2	65E	35	49*
5 11	3 12.60	+26 35.7	3.336	2.342	3.8	19.4	9E	1*	—	2 16	2 8.57	-6 14.2	1.936	1.724	30.6	21.2	63E	35	47*
5 21	3 28.28	+27 16.6	3.311	2.316	3.9	19.4	9W	3*	—	2 21	2 18.62	-4 31.4	1.984	1.732	29.9	21.3	61E	35	45*
5 31	3 44.28	+27 55.0	3.265	2.285	5.5	19.4	12W	5*	1*	2 26	2 28.75	-2 51.4	2.032	1.740	29.1	21.3	59E	35	43*
6 10	4 0.62	+28 30.2	3.198	2.249	7.7	19.4	17W	9*	6*	3 2	2 38.97	-1 14.3	2.080	1.747	28.3	21.4	57E	35	41*
6 20	4 17.33	+29 1.6	3.112	2.208	10.2	19.4	23W	12*	10*	3 7	2 49.26	+0 19.7	2.127	1.755	27.5	21.4	55E	34	40*
6 30	4 34.41	+29 28.6	3.006	2.162	12.8	19.4	28W	17*	14*	3 12	2 59.63	+1 50.5	2.174	1.762	26.7	21.4	53E	33	38*
7 10	4 51.91	+29 50.4	2.882	2.109	15.4	19.4	33W	22*	17*	3 17	3 10.09	+3 18.0	2.220	1.769	25.9	21.4	51E	32	36*
7 20	5 9.88	+30 6.4	2.740	2.052	18.1	19.3	39W	27*	20*	3 22	3 20.64	+4 42.1	2.265	1.775	25.0	21.5	49E	30	35*
7 30	5 28.39	+30 15.7	2.583	1.987	20.9	19.2	44W	33*	22*	3 27	3 31.29	+6 2.9	2.309	1.782	24.1	21.5	47E	29	33*
8 9	5 47.57	+30 17.2	2.411	1.917	23.8	19.0	50W	39*	24*										
8 19	6 7.59	+30 9.5	2.226	1.839	26.7	18.9	55W	44*	25*										
8 24	6 17.99	+30 1.5	2.129	1.798	28.3	18.8	57W	47*	26*	12 23	0 22.36	-24 9.1	1.373	1.616	37.3	19.8	85E	21	76*
8 29	6 28.71	+29 50.4	2.030	1.754	29.8	18.7	60W	50*	26*	12 28	0 32.39	-22 51.4	1.406	1.612	37.3	19.9	83E	22	74*
9 3	6 39.80	+29 35.7	1.928	1.709	31.5	18.5	62W	52*	27*	1 2	0 42.72	-21 29.5	1.438	1.608	37.1	19.9	81E	24	71*
9 8	6 51.35	+29 16.7	1.825	1.661	33.2	18.4	64W	55*	28*	1 7	0 53.30	-20 3.8	1.470	1.606	36.9	20.0	79E	25	68*
9 13	7 3.44	+28 52.7	1.720	1.611	35.0	18.3	67W	57*	28*	1 12	1 4.12	-18 35.0	1.503	1.605	36.7	20.0	77E	26	65*
9 18	7 16.19	+28 22.8	1.614	1.559	36.9	18.1	69W	59*	29*	1 17	1 15.15	-17 3.4	1.535	1.604	36.4	20.0	76E	28	63*
9 23	7 29.74	+27 45.5	1.506	1.504	38.9	17.9	70W	60*	29*	1 22	1 26.36	-15 29.6	1.568	1.605	36.1	20.1	74E	30	61*
9 28	7 44.30	+26 59.1	1.399	1.447	41.2	17.7	72W	61*	30*	1 27	1 37.76	-13 53.9	1.601	1.606	35.8	20.1	72E	31	59*
10 3	8 0.11	+26 0.9	1.292	1.386	43.7	17.5	73W	62*	31*	2 1	1 49.32	-12 17.1	1.634	1.608	35.4	20.2	71E	32	57*
10 8	8 17.53	+24 47.3	1.185	1.323	46.6	17.3	74W	62*	31*	2 6	2 1.03	-10 39.4	1.668	1.612	34.9	20.2	69E	33	55*
10 13	8 36.99	+23 13.1	1.081	1.256	49.9	17.1	74W	62*	32*	2 11	2 12.87	-9 1.6	1.702	1.616	34.5	20.2	68E	34	53*
10 18	8 59.05	+23 12.5	0.980	1.185	53.8	16.9	74W	61*	33*	2 16	2 24.84	-7 24.1	1.738	1.621	34.0	20.3	67E	35	51*
10 20	9 8.75	+20 13.8	0.941	1.156	55.6	16.8	73W	60*	33*	2 21	2 36.94	-5 47.4	1.773	1.626	33.5	20.3	65E	36	50*
10 22	9 19.04	+19 8.9	0.903	1.126	57.5	16.7	72W	59*	33*	3 2	3 1.48	-2 38.2	1.848	1.640	32.3	20.4	62E	36	47*
10 24	9 29.97	+17 56.4	0.867	1.095	59.6	16.6	72W	58*	33*	3 12	3 26.42	+0 22.1	1.925	1.657	31.1	20.5	59E	35	44*
10 26	9 41.59	+16 35.5	0.831	1.063	61.9	16.5	71W	57*	34*	3 22	3 51.70	+3 10.4	2.007	1.677	29.7	20.5	57E	34	42*
10 28	9 53.98	+15 5.2	0.798	1.031	64.3	16.5	69W	55*	34*	4 1	4 17.26	+5 43.8	2.092	1.700	28.2	20.6	54E	32	39*
10 30	10 7.18	+13 24.7	0.766	0.998	67.0	16.4	68W	53*	34*	4 11	4 43.00	+8 0.2	2.180	1.725	26.6	20.7	51E	29	37*
11 1	10 21.26	+11 33.0	0.737	0.964	69.9	16.3	66W	51*	34*	4 21	5 8.83	+9 58.2	2.270	1.753	25.0	20.8	47E	26	35*
11 3	10 36.26	+9 29.6	0.711	0.929	73.1	16.3	64W	49*	33*	5 1	5 34.66	+11 36.7	2.362	1.782	23.2	20.8	44E	22	33*
11 5	10 52.22	+7 14.3	0.688	0.893	76.5	16.2	61W	46*	33*	5 11	6 0.35	+12 55.7	2.455	1.813	21.3	20.9	41E	19	31*
11 7	11 9.15	+4 47.4	0.669	0.856	80.1	16.2	58W	43*	32*	5 21	6 25.81	+13 55.4	2.547	1.846	19.4	20.9	37E	15	28*
11 9	11 27.02	+2 9.8	0.653	0.818	83.8	16.2	55W	40*	32*	5 31	6 50.94	+14 36.6	2.638	1.880	17.4	21.0	34E	11	26*
11 11	11 45.80	+0 36.4	0.643	0.779	87.7	16.2	52W	37*	30*	6 10	7 15.64	+15 0.3	2.727	1.915	15.3	21.0	30E	7	23*
11 13	12 5.40	-3 28.5	0.638	0.738	91.7	16.2	48W	33*	29*	6 20	7 39.83	+15 8.0	2.812	1.950	13.2	21.1	26E	4	19*
11 15	12 25.69	-6 22.7	0.638	0.696	95.6	16.3	44W	29*	27*	6 30	8 3.46	+15 1.2	2.892	1.987	11.1	21.1	22E	1	16*
11 17	12 46.52	-9 14.8	0.645	0.653	99.3	16.3	41W	26*	25*	7 10	8 26.48	+14 41.5	2.966	2.024	8.9	21.1	18E	—	12*
11 19	13 7.71	-12 0.4	0.658	0.608	102.6	16.4	37W	22*	23*	7 20	8 48.88	+14 10.6	3.034	2.061	6.7	21.1	14E	—	8*
11 21	13 29.09	-14 35.6	0.678	0.561	105.4	16.4	33W	18*	21*	7 30	9 10.64	+13 30.2	3.093	2.098	4.5	21.1	9E	—	3*
11 23	13 50.51	-16 57.2	0.704	0.512	107.6	16.4	30W	15*	19*	8 9	9 31.76	+12 42.1	3.143	2.135	2.3	21.0	5E	—	—
11 25	14 11.85	-19 2.6	0.738	0.461	108.7	16.3	26W	12*	17*	8 19									

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°
346479 2008 UG (continuation)										310535 2001 BJ₄₃ (continuation)									
2 1	1 42.81	+25 15.4	1.767	1.899	30.9	20.9	82 E	69*	29*	4 11	5 20.99	+21 36.0	1.807	1.562	33.6	21.2	60 E	45*	33*
2 11	2 4.25	+26 43.1	1.909	1.944	29.7	21.0	77 E	67*	26*	4 21	5 50.50	+21 11.2	1.890	1.580	32.1	21.2	57 E	41*	33*
2 21	2 26.14	+28 4.2	2.052	1.988	28.3	21.2	72 E	64*	24*	5 1	6 19.61	+20 30.1	1.973	1.601	30.5	21.3	54 E	36*	34*
3 2	2 48.43	+29 18.0	2.196	2.034	26.8	21.4	67 E	60*	22*	5 11	6 48.14	+19 33.2	2.057	1.623	28.9	21.4	51 E	32*	34*
3 12	3 11.01	+30 23.7	2.338	2.079	25.1	21.5	63 E	56*	20*	5 21	7 15.99	+18 21.4	2.141	1.646	27.2	21.5	48 E	26*	34*
93040 2000 SG										385342 2002 LL									
12 23	0 25.32	+44 1.1	0.879	1.527	37.2	16.1	110 E	89	19*	12 23	0 26.50	-21 20.0	2.550	2.682	21.5	21.4	87 E	24	77*
12 28	0 36.77	+43 51.8	0.899	1.524	37.8	16.2	108 E	89	18*	1 2	0 35.34	-19 54.4	2.715	2.720	20.8	21.6	80 E	25	69*
1 2	0 49.43	+43 43.5	0.921	1.522	38.3	16.3	106 E	89	18*	1 12	0 45.27	-18 24.6	2.878	2.758	20.0	21.7	73 E	27	61*
1 7	1 3.16	+43 35.7	0.943	1.522	38.8	16.3	104 E	89	18*	1 22	0 56.09	-16 52.6	3.035	2.795	18.9	21.8	67 E	28*	55*
1 12	1 17.86	+43 27.7	0.967	1.522	39.1	16.4	103 E	88	18*	2 1	1 7.65	-15 19.9	3.186	2.831	17.6	21.9	60 E	28*	49*
1 17	1 33.40	+43 18.6	0.993	1.524	39.3	16.5	101 E	88	18*	332027 2005 PE₃									
1 22	1 49.66	+43 7.7	1.020	1.527	39.5	16.5	99 E	88	18*	12 23	0 26.69	-6 13.5	1.562	1.889	31.3	20.9	93 E	39	66*
1 27	2 6.54	+42 54.4	1.048	1.531	39.6	16.6	98 E	88	18*	1 2	0 42.68	-4 6.2	1.695	1.921	30.8	21.1	87 E	41	61*
2 2	2 23.89	+42 38.1	1.079	1.537	39.6	16.7	96 E	88	18*	1 12	0 59.31	-1 57.0	1.830	1.953	29.9	21.3	82 E	43	55*
2 6	2 41.60	+42 18.5	1.111	1.543	39.5	16.7	95 E	87*	18*	1 22	1 16.44	+0 11.8	1.967	1.986	28.8	21.4	77 E	45*	50*
2 11	2 59.53	+41 54.9	1.145	1.551	39.4	16.8	93 E	86*	19*	2 1	1 34.02	+2 18.8	2.104	2.020	27.5	21.6	71 E	46*	45*
2 16	3 17.55	+41 27.2	1.181	1.560	39.3	16.9	92 E	85*	19*	55757 1991 XN									
2 21	3 35.58	+40 55.2	1.219	1.569	39.1	17.0	90 E	83*	20*	12 23	0 27.25	-2 12.0	1.376	1.757	33.9	18.7	95 E	43	63*
2 26	3 53.52	+40 18.9	1.259	1.580	38.8	17.0	88 E	82*	21*	1 2	0 40.54	+0 24.0	1.451	1.735	34.5	18.8	89 E	45	57*
3 2	4 11.27	+39 38.4	1.302	1.592	38.4	17.1	87 E	80*	22*	1 12	0 55.99	+3 6.5	1.526	1.714	34.7	18.9	83 E	48	51*
3 7	4 28.77	+38 54.0	1.346	1.604	38.1	17.2	85 E	78*	23*	1 22	1 13.32	+5 52.9	1.601	1.696	34.6	19.0	78 E	51*	45*
3 12	4 45.94	+38 5.8	1.392	1.618	37.6	17.3	84 E	76*	23*	2 1	1 32.38	+8 40.8	1.675	1.681	34.1	19.1	73 E	52*	40*
3 17	5 2.75	+37 14.1	1.441	1.632	37.1	17.4	82 E	74*	24*	2 11	1 53.00	+11 27.4	1.748	1.669	33.5	19.1	69 E	52*	36*
3 22	5 19.16	+36 19.2	1.491	1.647	36.6	17.4	80 E	72*	25*	2 21	2 15.10	+14 10.1	1.819	1.659	32.6	19.2	65 E	51*	33*
3 27	5 35.15	+35 21.4	1.543	1.663	36.0	17.5	79 E	70*	26*	3 2	2 38.60	+16 45.9	1.889	1.652	31.6	19.2	61 E	50*	30*
4 1	5 50.73	+34 21.2	1.597	1.680	35.4	17.6	77 E	67*	27*	3 12	3 3.44	+19 11.9	1.959	1.649	30.5	19.3	57 E	47*	27*
4 6	6 5.86	+33 18.7	1.652	1.697	34.7	17.7	75 E	65*	28*	3 22	3 29.52	+21 25.0	2.027	1.649	29.2	19.3	54 E	44*	25*
4 11	6 20.56	+32 14.2	1.709	1.715	34.0	17.7	73 E	62*	30*	4 1	3 56.77	+23 22.6	2.096	1.651	27.8	19.3	51 E	41*	24*
4 16	6 34.83	+31 8.1	1.767	1.733	33.3	17.8	72 E	60*	31*	4 11	4 25.02	+25 1.9	2.163	1.657	26.4	19.4	47 E	38*	22*
4 21	6 48.69	+30 0.5	1.826	1.752	32.5	17.9	70 E	57*	31*	4 21	4 54.11	+26 20.7	2.231	1.666	24.9	19.4	44 E	34*	21*
4 26	7 2.15	+28 51.6	1.886	1.771	31.7	18.0	68 E	54*	32*	5 1	5 23.80	+27 17.3	2.298	1.678	23.3	19.4	41 E	31*	20*
5 1	7 15.24	+27 41.7	1.947	1.791	30.9	18.0	66 E	51*	33*	5 11	5 53.81	+27 50.8	2.365	1.693	21.7	19.5	38 E	27*	19*
5 6	7 27.95	+26 31.0	2.009	1.811	30.1	18.1	64 E	48*	34*	5 21	6 23.87	+28 0.8	2.431	1.710	20.1	19.5	35 E	24*	18*
5 11	7 40.31	+25 19.5	2.071	1.832	29.2	18.2	62 E	44*	35*	5 31	6 53.71	+27 48.0	2.497	1.730	18.4	19.5	32 E	20*	17*
5 21	8 4.07	+22 54.7	2.197	1.874	27.3	18.3	58 E	38*	36*	6 10	7 23.05	+27 13.5	2.562	1.752	16.6	19.5	30 E	17*	16*
5 31	8 26.65	+20 28.3	2.323	1.917	25.4	18.4	54 E	31*	36*	6 20	7 51.70	+26 19.1	2.626	1.776	14.8	19.6	27 E	13*	15*
6 10	8 48.19	+18 0.8	2.447	1.960	23.5	18.5	50 E	25*	36*	6 30	8 19.50	+25 7.0	2.688	1.802	13.0	19.6	24 E	11*	13*
6 20	9 8.81	+15 32.7	2.570	2.005	21.4	18.6	46 E	19*	35*	7 10	8 46.34	+23 39.6	2.747	1.830	11.2	19.6	20 E	8*	11*
6 30	9 28.62	+13 4.3	2.689	2.049	19.4	18.7	42 E	14*	33*	7 20	9 12.19	+21 59.4	2.804	1.859	9.4	19.6	17 E	6*	8*
7 10	9 47.73	+10 36.0	2.804	2.094	17.3	18.8	38 E	9*	31*	7 30	9 37.05	+20 8.9	2.857	1.889	7.5	19.6	14 E	4*	6*
7 20	10 6.22	+8 8.0	2.913	2.139	15.1	18.8	33 E	6*	27*	8 9	10 0.95	+18 10.4	2.906	1.920	5.8	19.6	11 E	3*	3*
7 30	10 24.17	+5 40.5	3.016	2.183	13.0	18.9	29 E	2*	23*	8 19	10 23.94	+16 6.2	2.949	1.952	4.2	19.6	8 E	1*	—
8 9	10 41.64	+3 13.8	3.110	2.228	10.9	18.9	25 E	—	18*	8 29	10 46.09	+13 58.1	2.987	1.985	3.0	19.6	6 E	—	—
8 19	10 58.71	+0 48.1	3.196	2.272	8.8	18.9	20 E	—	14*	9 8	11 7.46	+11 48.0	3.017	2.018	3.0	19.6	6 E	—	—
8 29	11 15.42	-1 36.5	3.272	2.315	6.8	18.9	16 E	—	9*	9 18	11 28.14	+9 37.5	3.040	2.052	4.2	19.8	9 W	2*	—
9 8	11 31.81	-3 59.6	3.337	2.358	4.9	18.9	12 E	—	4*	9 28	11 48.17	+7 28.2	3.055	2.086	5.8	19.9	12 W	6*	—
9 18	11 47.92	-6 21.1	3.391	2.401	3.5	18.9	8 E	—	—	10 8	12 7.61	+5 21.2	3.061	2.120	7.6	20.0	16 W	10*	—
9 28	12 3.76	-8 40.7	3.432	2.443	3.1	18.9	8 W	—	—	10 18	12 26.50	+3 17.8	3.057	2.154	9.4	20.1	21 W	15*	3*
10 8	12 19.34	-10 58.3	3.461	2.484	4.1	19.0	10 W	—	4*	10 28	12 44.87	+1 19.0	3.042	2.188	11.3	20.2	26 W	19*	6*
10 18	12 34.69	-13 13.5	3.476	2.524	5.7	19.2	14 W	1*	8*	11 7	13 2.71	+0 34.1	3.018	2.222	13.1	20.3	31 W	23*	10*
10 28	12 49.77	-15 26.3	3.478	2.564	7.4	19.3	20 W	6*	12*	11 17	13 20.03	-2 20.8	2.982	2.256	14.9	20.4	36 W	27*	15*
11 7	13 4.57	-17 36.4	3.466	2.602	9.3	19.4	25 W	9*	17*	11 27	13 36.77	-4 0.3	2.935	2.289	16.5	20.4	41 W	30*	20*
11 17	13 19.04	-19 43.8	3.440	2.640	11.1	19.5	31 W	13*	22*	12 7	13 52.88	-5 31.8	2.877	2.322	18.1	20.5	47 W	33*	26*
11 27	13 33.12	-21 48.2	3.401	2.677	12.8	19.5	37 W	15*	28*	12 17	14 8.27	-6 54.8	2.809	2.354	19.5	20.5	53 W	35*	33*
12 7	13 46.72	-23 49.6	3.348	2.713	14.4	19.6	43 W	17*	34*	12 27	14 22.83	-8 8.9	2.731	2.386	20.8	20.5	59 W	35*	40*
12 17	13 59.73	-25 48.2	3.282	2.748	15.8	19.6	50 W	17*	41*	1 6	14 36.40	-9 13.6	2.643	2.418	21.8	20.5	66 W	35*	47*
12 27	14 12.01	-27 43.8	3.205	2.783	17.1	19.7	56 W	17*	48*	1 16	14 48.80	-10 8.9	2.548	2.448	22.6	20.5	73 W	35*	55*
1 6	14 23.38	-29 36.6	3.118	2.816	18.2	19.7	63 W	15*	56*	385247 2000 YD₆₇									
1 16	14 33.63	-31 26.7	3.022	2.848	19.0	19.6	70 W	14	64*	12 23	0 27.63	+29 58.8	1.022	1.608	35.9	19.2	107 E	75	33*
452384 2002 EV₈										12 28	0 40.15	+28 44.9	1.052	1.606	36.4	19.3	104 E	74	33*
12 23	0 25.36	+26 26.2	1.055	1.618	35.9	21.1	105 E	71	36*	1 2	0 52.97	+27 37.0	1.085	1.606	36.8	19.4	102 E	73	34*
1 2	0 43.56	+27 4.6	1.159	1.640	36.3	21.4	100 E	72	33*	1 7	1 6.01	+26 35.0	1.121	1.605	37.2	19.5	99 E	72	34*
1 12	1 3.46	+27 50.9	1.265	1.661	36.2	21.6	94 E	73	31*	1 12	1 19.21	+25 38.6	1.158	1.606	37.4</				

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°
385247 2000 YD₆₇										50867 2000 GM₄									
<i>(continuation)</i>																			
5 31	7 14.57	+10 47.3	2.529	1.875	20.5	21.1	40 E	12*	33*	12 23	0 28.65	-9 13.3	1.654	1.957	30.1	18.9	92	36	69*
6 10	7 37.02	+9 14.1	2.616	1.905	18.7	21.1	37 E	7*	30*	1 2	0 40.81	-8 40.6	1.739	1.926	30.6	18.9	85	36	64*
6 20	7 58.99	+7 33.6	2.698	1.936	16.9	21.2	34 E	1*	28*	1 12	0 54.91	-7 50.1	1.820	1.895	30.6	19.0	79	37	58*
6 30	8 20.50	+5 46.1	2.775	1.968	15.2	21.2	30 E	-	24*	1 22	1 10.70	-6 45.4	1.897	1.864	30.3	19.1	73	38*	53*
7 10	8 41.54	+3 52.2	2.847	2.000	13.5	21.3	27 E	-	21*	2 1	1 28.00	-5 29.4	1.969	1.836	29.8	19.1	68	38*	49*
7 20	9 2.15	+1 52.5	2.913	2.032	11.9	21.3	24 E	-	17*	2 11	1 46.64	-4 5.2	2.034	1.808	29.0	19.1	63	37*	45*
7 30	9 22.34	-0 12.4	2.973	2.064	10.5	21.3	22 E	-	12*	2 21	2 6.51	-2 35.4	2.093	1.782	28.1	19.1	58	36*	42*
8 9	9 42.14	-2 21.8	3.025	2.096	9.2	21.3	19 E	-	8*	3 2	2 27.54	-1 2.3	2.145	1.757	27.2	19.1	54	33*	39*
8 19	10 1.58	-4 35.0	3.071	2.127	8.2	21.3	17 E	-	3*	3 12	2 49.66	+0 31.5	2.193	1.735	26.1	19.1	50	30*	37*
8 29	10 20.68	-6 51.2	3.108	2.158	7.6	21.4	16 W	-	3*	3 22	3 12.81	+2 3.7	2.235	1.714	25.1	19.1	47	27*	35*
9 8	10 39.46	-9 9.6	3.138	2.189	7.4	21.4	16 W	-	7*	4 1	3 36.96	+3 31.8	2.273	1.696	24.0	19.1	44	24*	33*
9 18	10 57.97	-11 29.6	3.158	2.220	7.8	21.5	17 W	-	10*	4 11	4 2.03	+4 53.5	2.308	1.680	22.9	19.0	41	20*	31*
377173 2003 UE₇																			
12 23	0 27.83	-5 3.2	1.296	1.678	35.8	20.8	94 E	40	65*	4 21	4 27.95	+6 6.6	2.340	1.667	21.8	19.0	38	16*	30*
1 2	0 46.72	+1 56.1	1.416	1.713	35.0	21.0	89 E	43	59*	5 1	4 54.64	+7 8.9	2.371	1.657	20.7	19.0	35	12*	28*
1 12	1 5.93	+1 3.4	1.542	1.750	34.0	21.2	85 E	46	54*	5 11	5 21.97	+7 58.7	2.401	1.649	19.5	19.0	33	8*	26*
1 22	1 25.42	+3 54.4	1.671	1.788	32.8	21.4	80 E	49	49*	5 21	5 49.81	+8 34.5	2.431	1.645	18.3	19.0	31	5*	24*
2 1	1 45.18	+6 36.1	1.804	1.826	31.5	21.5	76 E	51*	44*	5 31	6 18.00	+8 55.2	2.462	1.644	17.1	18.9	29	1*	22*
136149 2003 SR₃₁₃																			
12 23	0 27.84	-2 34.0	1.460	1.827	32.4	20.2	95 E	42	63*	6 10	6 46.36	+9 0.1	2.493	1.646	15.9	18.9	26	—	20*
1 2	0 43.43	+0 6.1	1.593	1.861	31.9	20.4	89 E	45	57*	6 20	7 14.72	+8 49.4	2.526	1.650	14.5	18.9	24	—	18*
1 12	0 59.78	+2 41.6	1.729	1.895	31.1	20.6	84 E	48	52*	6 30	7 42.94	+8 23.4	2.559	1.658	13.1	18.9	22	—	15*
1 22	1 16.75	+5 11.6	1.867	1.930	30.0	20.8	79 E	50	46*	7 10	8 10.84	+7 43.1	2.594	1.669	11.6	18.9	19	—	12*
2 1	1 34.28	+7 35.6	2.007	1.965	28.7	20.9	73 E	51*	41*	7 20	8 38.34	+6 50.1	2.628	1.682	10.1	18.9	17	—	9*
2 11	1 52.28	+9 52.8	2.146	2.001	27.2	21.1	68 E	51*	37*	7 30	9 5.33	+5 45.7	2.663	1.698	8.6	18.9	14	—	6*
2 21	2 10.70	+12 2.6	2.283	2.036	25.7	21.2	63 E	49*	33*	8 9	9 31.74	+4 32.1	2.696	1.717	7.0	18.8	12	—	2*
3 2	2 29.52	+14 4.5	2.418	2.071	23.9	21.3	58 E	46*	30*	8 19	9 57.57	+3 11.1	2.727	1.738	5.6	18.8	10	—	—
3 12	2 48.67	+15 57.8	2.549	2.106	22.1	21.4	53 E	42*	27*	8 29	10 22.80	+1 44.6	2.756	1.761	4.5	18.8	8	W	—
3 22	3 8.14	+17 42.1	2.675	2.140	20.2	21.5	48 E	38*	24*	9 8	10 47.44	+0 14.8	2.780	1.785	4.1	18.9	7	W	—
107225 2001 BF₅₁																			
12 23	0 28.50	+29 36.7	2.464	2.903	18.9	21.2	107 E	75	33*	9 18	11 11.53	-1 16.6	2.800	1.812	4.6	18.9	8	W	—
1 2	0 34.75	+28 47.9	2.593	2.904	19.6	21.4	98 E	74	31*	9 28	11 35.08	-2 47.7	2.814	1.840	5.9	19.0	11	W	—
1 12	0 42.92	+28 16.0	2.726	2.904	19.8	21.5	90 E	73	28*	10 8	11 58.13	-4 16.7	2.821	1.869	7.5	19.2	14	W	—
1 22	0 52.68	+27 59.6	2.859	2.903	19.6	21.6	83 E	72	25*	10 18	12 20.71	-5 42.1	2.821	1.899	9.4	19.3	18	W	—
2 1	1 3.80	+27 57.1	2.989	2.901	19.2	21.7	75 E	67*	22*	10 28	12 42.84	-7 2.3	2.813	1.930	11.2	19.4	22	W	—
153309 2001 KB₆₈																			
12 23	0 28.60	-24 37.3	2.693	2.801	20.5	20.6	86 E	20	78*	11 7	13 4.52	-8 15.6	2.796	1.962	13.1	19.5	27	W	—
1 2	0 35.54	-22 26.9	2.835	2.818	20.0	20.7	79 E	23	69*	11 17	13 25.74	-9 21.0	2.769	1.994	15.0	19.5	32	W	—
1 12	0 43.84	-20 16.1	2.975	2.834	19.3	20.8	72 E	25	62*	11 27	13 46.45	-10 16.7	2.733	2.027	16.8	19.6	37	W	—
1 22	0 53.25	-18 6.0	3.110	2.849	18.3	20.9	66 E	26	54*	12 7	14 6.62	-11 1.8	2.688	2.060	18.6	19.7	42	W	—
2 1	1 3.59	-15 57.7	3.239	2.864	17.2	20.9	59 E	27*	48*	12 17	14 26.17	-11 34.9	2.632	2.094	20.2	19.7	47	W	—
2 11	1 14.69	-13 52.2	3.360	2.877	15.9	21.0	53 E	25*	42*	12 27	14 44.98	-11 55.0	2.568	2.127	21.7	19.7	53	W	—
2 21	1 26.42	-11 50.0	3.471	2.889	14.5	21.0	47 E	23*	37*	1 6	15 2.91	-12 1.1	2.495	2.160	23.0	19.8	59	W	—
3 2	1 38.68	-9 51.8	3.571	2.901	13.0	21.0	41 E	19*	32*	1 16	15 19.81	-11 52.4	2.415	2.193	24.0	19.7	65	W	—
3 12	1 51.37	-7 58.2	3.660	2.911	11.5	21.0	36 E	15*	28*	302992 2003 WH₂₆									
3 22	2 4.41	-6 9.5	3.737	2.921	9.9	21.0	30 E	10*	24*	12 23	0 29.05	-20 39.7	1.525	1.780	33.5	19.5	88	E	24
4 1	2 17.75	-4 26.4	3.800	2.930	8.4	21.0	26 E	4*	19*	1 2	0 44.69	-15 30.3	1.651	1.824	32.4	19.7	84	E	29
4 11	2 31.33	-2 49.1	3.849	2.937	7.1	21.0	21 E	-	15*	1 12	1 0.51	-10 43.9	1.786	1.869	31.1	19.8	79	E	34
4 21	2 45.09	+1 18.1	3.884	2.944	6.0	21.0	18 E	-	11*	1 22	1 16.50	-6 19.9	1.928	1.916	29.7	20.0	74	E	39
5 1	2 58.99	+0 6.3	3.904	2.950	5.5	21.0	16 E	-	6*	2 1	1 32.71	-2 17.2	2.074	1.963	28.1	20.2	70	E	42
5 11	3 12.96	+1 23.7	3.910	2.955	5.6	21.0	16 E	-	1*	2 11	1 49.13	+1 25.5	2.223	2.012	26.3	20.3	65	E	43
5 21	3 26.98	+2 34.0	3.900	2.959	6.3	21.0	19 W	-	7*	2 21	2 5.76	+4 49.8	2.373	2.060	24.5	20.5	60	E	42
5 31	3 40.97	+3 36.9	3.876	2.962	7.4	21.0	22 W	-	13*	3 2	2 22.62	+7 57.0	2.522	2.109	22.5	20.6	55	E	40
6 10	3 54.87	+4 32.2	3.838	2.964	8.8	21.1	26 W	-	19*	3 12	2 39.71	+10 48.4	2.667	2.158	20.5	20.7	49	E	37
6 20	4 8.63	+5 19.9	3.785	2.965	10.3	21.1	31 W	-	25*	3 22	2 57.00	+13 25.0	2.807	2.206	18.4	20.8	44	E	33
6 30	4 22.17	+5 59.8	3.719	2.965	11.8	21.1	37 W	2*	31*	4 1	3 14.50	+15 47.8	2.941	2.255	16.2	20.9	39	E	29
7 10	4 35.39	+6 32.0	3.639	2.965	13.3	21.1	42 W	9*	35*	4 11	3 32.18	+17 57.6	3.067	2.303	14.0	20.9	34	E	24
7 20	4 48.21	+6 56.6	3.546	2.963	14.7	21.1	48 W	16*	40*	4 21	3 50.02	+19 55.1	3.183	2.351	11.8	21.0	29	E	19
7 30	5 0.50	+7 13.8	3.442	2.960	16.1	21.1	54 W	23*	44*	5 1	4 8.00	+21 40.9	3.290	2.398	9.6	21.0	23	E	14
8 9	5 12.15	+7 24.0	3.327	2.957	17.3	21.1	60 W	30*	47*	5 11	4 26.07	+23 15.7	3.384	2.445	7.4	21.0	18	E	10
8 19	5 23.01	+7 27.6	3.202	2.952	18.4	21.0	67 W	36*	50*	5 21	4 44.20	+24 40.1	3.467	2.491	5.2	21.0	13	E	5

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°
137084 1998 XS₁₆										447976 2008 CT₁₁₆									
(continuation)										(continuation)									
2 1	2 1.55	+24 35.9	1.468	1.704	35.2	19.8	86 E	69*	32*	8 9	10 6.58	+12 8.0	3.185	2.208	5.8	21.5	13 E	—	7*
2 11	2 22.21	+23 50.8	1.611	1.734	34.1	20.0	80 E	67*	31*	8 19	10 26.32	+11 16.9	3.254	2.257	3.6	21.5	8 E	—	2*
2 21	2 42.58	+23 20.6	1.752	1.759	32.7	20.2	74 E	63*	30*	8 29	10 45.44	+10 22.3	3.312	2.306	1.7	21.4	4 E	—	—
3 2	3 2.82	+23 0.4	1.889	1.779	31.2	20.4	68 E	58*	29*	9 8	11 3.97	+9 25.9	3.359	2.354	1.6	21.5	4 W	—	—
3 12	3 23.02	+22 46.4	2.018	1.794	29.5	20.5	63 E	53*	28*	448818 2011 UU₂₀									
3 22	3 43.24	+22 35.1	2.139	1.806	27.6	20.6	57 E	47*	27*	12 23	0 31.09	+78 50.7	0.552	1.311	43.1	19.0	114 E	56	—
4 1	4 3.55	+22 24.1	2.251	1.812	25.7	20.6	52 E	42*	25*	12 25	0 23.54	+78 50.8	0.546	1.302	43.9	18.9	114 E	56	—
4 11	4 23.97	+22 11.1	2.351	1.814	23.7	20.7	47 E	36*	24*	12 27	0 17.24	+78 50.3	0.540	1.292	44.6	18.9	113 E	56	—
4 21	4 44.51	+21 54.0	2.439	1.812	21.5	20.7	41 E	30*	23*	12 29	0 12.22	+78 49.8	0.534	1.283	45.3	18.9	112 E	56	—
5 1	5 5.22	+21 31.5	2.513	1.805	19.4	20.7	36 E	24*	21*	12 31	0 8.47	+78 49.7	0.528	1.274	46.0	18.9	111 E	56	—
5 11	5 26.07	+21 1.9	2.574	1.794	17.2	20.6	32 E	18*	19*	1 2	0 6.01	+78 50.3	0.522	1.265	46.7	18.9	111 E	56	—
5 21	5 47.10	+20 24.0	2.620	1.778	15.0	20.6	27 E	12*	17*	1 4	0 4.84	+78 52.0	0.516	1.257	47.3	18.8	110 E	56	—
5 31	6 8.31	+19 36.8	2.651	1.758	12.8	20.5	23 E	7*	15*	1 6	0 4.97	+78 54.9	0.510	1.249	48.0	18.8	109 E	56*	—
6 10	6 29.70	+18 39.1	2.667	1.733	10.6	20.4	18 E	2*	12*	1 8	0 6.42	+78 59.3	0.503	1.241	48.6	18.8	109 E	56*	—
6 20	6 51.32	+17 29.9	2.669	1.703	8.6	20.3	14 E	—	8*	1 10	0 9.25	+79 5.0	0.497	1.233	49.2	18.8	108 E	56*	—
6 30	7 13.20	+16 8.2	2.655	1.669	6.7	20.1	11 E	—	5*	1 12	0 13.52	+79 12.3	0.490	1.226	49.7	18.7	108 E	56*	—
7 10	7 35.37	+14 33.1	2.628	1.630	5.4	20.0	9 E	—	1*	1 13	0 16.22	+79 16.5	0.487	1.223	50.0	18.7	108 E	56*	—
7 20	7 57.94	+12 43.6	2.586	1.586	5.1	19.9	8 W	—	—	1 14	0 19.33	+79 21.0	0.484	1.220	50.3	18.7	108 E	56*	—
7 30	8 21.00	+10 38.5	2.532	1.537	5.8	19.8	9 W	—	1*	1 15	0 22.86	+79 25.8	0.480	1.217	50.5	18.7	107 E	55*	—
8 9	8 44.69	+8 16.8	2.467	1.483	7.4	19.8	11 W	—	4*	1 16	0 26.82	+79 31.0	0.477	1.213	50.8	18.7	107 E	55*	—
8 19	9 9.24	+5 37.4	2.391	1.424	9.3	19.7	13 W	—	7*	1 17	0 31.25	+79 36.3	0.474	1.210	51.0	18.7	107 E	55*	—
8 29	9 34.90	+2 39.4	2.306	1.359	11.4	19.6	15 W	—	9*	1 18	0 36.16	+79 41.9	0.470	1.207	51.2	18.7	107 E	55*	—
9 8	10 2.03	+0 38.0	2.216	1.289	13.5	19.5	17 W	1*	11*	1 20	0 41.57	+79 47.6	0.467	1.205	51.4	18.6	107 E	55*	—
9 18	10 31.15	+4 14.8	2.121	1.215	15.5	19.3	19 W	2*	13*	1 21	0 47.52	+79 53.5	0.463	1.202	51.6	18.6	107 E	55*	—
9 28	11 2.88	+8 9.5	2.025	1.135	17.4	19.1	20 W	3*	14*	1 22	0 54.04	+79 59.3	0.459	1.199	51.8	18.6	107 E	55*	—
10 3	11 19.99	+10 12.3	1.978	1.093	18.2	19.0	20 W	3*	14*	1 23	1 1.14	+80 5.1	0.456	1.197	52.0	18.6	107 E	55*	—
10 8	11 38.09	+12 17.8	1.932	1.050	19.0	18.9	20 W	3*	14*	1 24	1 8.85	+80 10.7	0.452	1.194	52.2	18.6	107 E	55*	—
10 13	11 57.33	+14 24.6	1.888	1.007	19.6	18.8	20 W	2*	14*	1 25	1 17.21	+80 16.0	0.449	1.192	52.4	18.6	106 E	55*	—
10 18	12 17.86	+16 31.1	1.845	0.963	20.0	18.6	19 W	2*	13*	1 26	1 26.23	+80 20.9	0.445	1.190	52.5	18.6	106 E	55*	—
10 23	12 39.83	+18 35.0	1.805	0.918	20.2	18.5	19 W	1*	13*	1 27	1 35.92	+80 25.2	0.441	1.188	52.7	18.5	106 E	55*	—
10 28	13 3.40	+20 33.4	1.768	0.873	20.1	18.3	18 W	—	12*	1 28	1 46.30	+80 28.9	0.438	1.186	52.8	18.5	106 E	55*	—
11 2	13 28.69	+22 22.7	1.734	0.829	19.6	18.2	16 W	—	10*	1 29	1 57.37	+80 31.5	0.434	1.184	52.9	18.5	107 E	54*	—
11 7	13 55.80	+23 58.7	1.703	0.786	18.6	18.0	15 W	—	9*	1 30	2 9.10	+80 33.1	0.430	1.182	53.0	18.5	107 E	54	—
11 12	14 24.72	+25 16.7	1.677	0.745	17.2	17.8	13 W	—	7*	1 31	2 21.48	+80 33.4	0.427	1.180	53.1	18.5	107 E	54	—
11 17	14 55.34	+26 11.7	1.654	0.707	15.1	17.6	11 W	—	4*	2 1	2 34.45	+80 32.1	0.423	1.179	53.2	18.4	107 E	54	—
11 22	15 27.42	+26 38.9	1.634	0.673	12.4	17.3	8 W	—	2*	2 2	2 47.96	+80 29.0	0.419	1.177	53.2	18.4	107 E	55	—
11 27	16 0.55	+26 34.7	1.618	0.645	9.3	17.1	6 W	—	—	2 3	3 1.91	+80 24.0	0.415	1.176	53.3	18.4	107 E	55	—
12 2	16 34.23	+25 56.9	1.604	0.625	6.3	16.9	4 E	—	—	2 4	3 16.22	+80 16.7	0.412	1.174	53.3	18.4	107 E	55	—
12 7	17 7.91	+24 45.8	1.593	0.613	5.9	16.8	4 E	—	—	2 5	3 30.76	+80 7.0	0.408	1.173	53.3	18.4	107 E	55	—
12 12	17 41.07	+23 3.8	1.583	0.611	8.9	16.9	6 E	—	—	2 6	3 45.42	+79 54.8	0.404	1.172	53.3	18.3	107 E	55	—
12 17	18 13.30	+20 55.5	1.570	0.618	13.2	17.1	8 E	1*	—	2 7	4 0.07	+79 39.7	0.401	1.171	53.3	18.3	108 E	55	—
12 22	18 44.32	+18 26.5	1.570	0.635	17.5	17.3	11 E	4*	—	2 8	4 14.59	+79 21.8	0.397	1.171	53.3	18.3	108 E	56	—
12 27	19 14.02	+15 42.7	1.568	0.660	21.3	17.5	14 E	8*	1*	2 9	4 28.86	+79 8.8	0.393	1.170	53.2	18.3	108 E	56	—
1 1	19 42.38	+12 49.9	1.570	0.691	24.4	17.7	17 E	11*	1*	2 9	4 42.79	+78 36.8	0.390	1.169	53.2	18.2	108 E	56	—
1 6	20 9.49	+9 52.7	1.576	0.727	26.8	17.9	19 E	13*	1*	2 10	4 56.27	+78 9.7	0.386	1.169	53.1	18.2	109 E	57	—
1 11	20 35.41	+6 55.2	1.587	0.767	28.5	18.1	22 E	16*	1*	2 11	5 9.26	+77 39.5	0.383	1.169	53.0	18.2	109 E	57	—
1 16	21 0.26	+4 0.4	1.604	0.809	29.5	18.3	24 E	18*	1*	2 12	5 21.70	+77 6.1	0.379	1.168	52.9	18.2	109 E	58	—
447976 2008 CT₁₁₆										2 13	5 33.55	+76 29.5	0.376	1.168	52.8	18.2	110 E	59	—
12 23	0 30.98	+30 29.0	1.287	1.536	39.6	19.8	84 E	15	78*	2 14	5 44.82	+75 49.9	0.373	1.168	52.6	18.1	110 E	59	—
12 28	0 41.70	+29 14.1	1.309	1.528	39.6	19.9	82 E	16	76*	2 15	5 55.49	+75 7.2	0.369	1.168	52.4	18.1	110 E	60	—
1 2	0 52.80	+27 52.9	1.331	1.522	39.6	19.9	81 E	17	74*	2 16	6 5.58	+74 21.6	0.366	1.169	52.3	18.1	111 E	61	—
1 7	1 4.25	+26 25.8	1.352	1.516	39.6	19.9	79 E	19	72*	2 17	6 15.09	+73 33.0	0.363	1.169	52.0	18.1	111 E	61	—
1 12	1 16.00	+24 53.5	1.374	1.512	39.5	20.0	78 E	20	70*	2 18	6 24.07	+72 41.5	0.360	1.169	51.8	18.0	112 E	62	—
1 17	1 28.02	+23 16.1	1.395	1.509	39.3	20.0	77 E	22	68*	2 19	6 32.53	+71 47.2	0.357	1.170	51.6	18.0	112 E	63	—
1 22	1 40.29	+21 34.4	1.416	1.508	39.2	20.0	75 E	23	66*	2 20	6 40.50	+70 50.1	0.355	1.171	51.3	18.0	112 E	64	—
1 27	1 52.78	+19 48.8	1.438	1.508	39.0	20.0	74 E	25	64*	2 21	6 48.02	+69 50.3	0.352	1.171	51.1	18.0	113 E	65	—
2 1	2 5.46	+18 0.0	1.461	1.509	38.7	20.1	73 E	27	63*	2 22	6 55.11	+68 48.0	0.350	1.172	50.8	17.9	113 E	66	—
2 6	2 18.33	+16 8.6	1.484	1.512	38.4	20.1	72 E	29	61*	2 23	7 1.81	+67 43.0	0.347	1.173	50.5	17.9	114 E	67	—
2 11	2 31.36	+14 15.5	1.509	1.516	38.1	20.1	71 E	30	59*	2 24	7 8.14	+66 35.7	0.345	1.174	50.2	17.9	114 E	68	—
2 16	2 44.52	+12 21.4	1.535	1.522	37.7	20.2	70 E	31	58*	2 25	7 14.12	+65 26.0	0.343	1.176	49.8	17.9	115 E	70	—
2 21	2 57.82	+10 26.8	1.562	1.528	37.3	20.2	69 E	33	57*	2 26	7 19.80	+64 14.0	0.341	1.177	49.5	17.9	115 E	71	—
2 26	3 11.24	+8 32.8	1.591	1.536	36.9	20.2	69 E	34	55*	2 27	7 25.19	+62 59.8	0.340	1.178	49.1	17.8	116 E	72	1
3 2	3 24.77	+6 40.0	1.622	1.545	36.4	20.3	68 E	34	54*	2 28	7 30.31	+61 43.6							

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°
448818 2011 UU₂₀ (continuation)																			
4 6	9 18.51	+11 25.9	0.469	1.311	40.3	18.5	122E	56	53	12 23	0 36.25	-3 20.3	1.697	2.054	28.4	21.1	96E	42	65*
										461747 2005 UV₁₅₅									
4 11	9 28.28	+7 3.1	0.511	1.337	40.2	18.8	121E	52	57	1 2	0 46.47	-2 24.1	1.771	2.010	29.3	21.1	89E	43	60*
										428223 2006 WW									
4 16	9 37.80	+3 15.9	0.557	1.364	40.1	19.0	119E	48	61	1 12	0 58.95	-1 12.5	1.843	1.968	29.7	21.2	82E	44	54*
										434640 2005 WE₁₄₄									
4 21	9 47.17	-0 0.6	0.607	1.392	40.0	19.2	117E	45	64	12 23	0 36.54	-1 55.0	1.314	1.735	34.2	20.9	97E	43	64*
										373428 1999 TC₅									
4 26	9 56.45	-2 51.3	0.660	1.421	39.8	19.4	115E	42	67	1 2	0 54.54	+0 1.8	1.424	1.756	34.0	21.1	92E	45	59*
										331848 2003 UB₂₆₂									
5 1	10 5.70	-5 20.8	0.716	1.451	39.5	19.7	114E	40*	69	1 12	1 13.37	+2 3.6	1.539	1.779	33.5	21.3	87E	47	54*
										237610 2001 QB₁₄₂									
5 6	10 14.94	-7 32.6	0.774	1.482	39.2	19.9	112E	37*	72	1 22	1 32.85	+4 7.1	1.656	1.803	32.7	21.5	82E	49	50*
										397236 2006 KS₁₀₅									
5 11	10 24.16	-9 29.8	0.835	1.514	38.8	20.1	110E	35*	74	12 23	0 34.17	+20 42.1	2.078	2.519	22.2	21.3	105E	66	42*

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°
373428 1999 TC₅										258325 2001 VB₂									
<i>(continuation)</i>										<i>(continuation)</i>									
3 3	12 30.13	-75 24.6	0.256	1.052	69.4	18.0	97 W	-	41	2 1	3 3.62	+26 59.5	0.852	1.406	43.7	20.9	100 E	72	35*
3 4	12 34.36	-73 43.6	0.251	1.058	68.0	17.9	98 W	-	42	2 11	3 35.40	+28 54.3	0.967	1.463	42.0	21.2	97 E	74	33*
3 5	12 37.88	-71 57.5	0.246	1.064	66.4	17.8	100 W	-	44	2 21	4 5.93	+30 14.3	1.091	1.519	40.5	21.5	94 E	75	32*
3 6	12 40.85	-70 6.2	0.241	1.071	64.7	17.8	103 W	-	46	10295 Hippolyta									
3 7	12 43.35	-68 9.5	0.237	1.077	62.9	17.7	105 W	-	48	12 23	0 39.64	+10 43.2	2.083	2.491	22.7	21.3	103 E	56	52*
3 8	12 45.47	-66 7.4	0.233	1.084	61.1	17.6	107 W	-	50	1 2	0 45.09	+11 41.6	2.240	2.510	23.0	21.4	94 E	57	48*
3 9	12 47.28	-63 59.8	0.228	1.091	59.1	17.5	109 W	-	52	1 12	0 52.44	+12 47.6	2.397	2.528	22.8	21.6	86 E	58	42*
3 10	12 48.83	-61 46.8	0.225	1.097	57.0	17.4	112 W	-	54	1 22	1 1.38	+14 0.0	2.552	2.545	22.3	21.7	78 E	59*	37*
3 11	12 50.15	-59 28.5	0.221	1.104	54.9	17.3	115 W	-	57	2 1	1 11.67	+15 17.5	2.702	2.560	21.4	21.8	71 E	57*	32*
3 12	12 51.27	-57 5.0	0.218	1.111	52.6	17.3	117 W	-	59	168315 1982 RA₁									
3 14	12 53.04	-52 3.5	0.213	1.125	47.8	17.1	123 W	-	64	12 23	0 39.86	+ 2 0.6	1.653	2.057	28.2	20.3	99 E	47	60*
3 16	12 54.30	-46 45.8	0.210	1.139	42.7	17.0	129 W	-	69	1 2	0 52.44	+ 3 8.5	1.809	2.097	27.9	20.5	93 E	48	56*
3 18	12 55.16	-41 16.8	0.209	1.153	37.3	16.8	135 W	4	75	1 12	1 5.99	+ 4 23.6	1.967	2.136	27.3	20.7	86 E	49	51*
3 20	12 55.73	-35 42.7	0.210	1.168	31.9	16.7	142 W	9	80	1 22	1 20.31	+ 5 43.5	2.126	2.175	26.4	20.9	80 E	51*	46*
3 22	12 56.07	-30 10.7	0.213	1.183	26.4	16.6	148 W	15	86	2 1	1 35.29	+ 7 6.1	2.283	2.212	25.3	21.1	73 E	51*	42*
3 23	12 56.17	-27 27.6	0.215	1.190	23.7	16.6	151 W	18	89	2 11	1 50.79	+ 8 29.5	2.437	2.249	23.9	21.2	67 E	50*	38*
3 24	12 56.23	-24 47.7	0.218	1.198	21.1	16.5	154 W	20	89	2 21	2 6.74	+ 9 52.2	2.586	2.285	22.3	21.3	61 E	47*	34*
3 25	12 56.26	-22 11.5	0.222	1.205	18.5	16.5	157 W	23	86	3 2	2 23.09	+11 13.0	2.730	2.320	20.6	21.4	56 E	43*	31*
3 26	12 56.27	-19 39.9	0.226	1.213	16.0	16.5	160 W	25	84	46773 1998 HZ₁₂									
3 27	12 56.26	-17 13.2	0.230	1.220	13.6	16.4	163 W	28	81	12 23	0 39.91	- 2 43.2	2.134	2.463	23.3	19.8	97 E	42	65*
3 28	12 56.22	-14 52.0	0.235	1.228	11.2	16.4	166 W	30	79	1 2	0 47.97	- 1 22.3	2.292	2.490	23.3	20.0	90	44	59*
3 29	12 56.18	-12 36.5	0.241	1.236	9.0	16.4	169 W	32	77	1 12	0 57.44	+ 0 4.0	2.451	2.516	22.8	20.1	82 E	45	53*
3 30	12 56.12	-10 26.9	0.247	1.243	6.8	16.3	171 W	35	74	1 22	1 8.08	+ 1 33.8	2.608	2.542	22.0	20.3	75 E	46*	47*
3 31	12 56.05	-8 23.5	0.253	1.251	4.9	16.3	174 W	37	72	2 1	1 19.71	+ 3 5.8	2.760	2.566	20.9	20.4	68 E	46*	42*
4 1	12 55.98	- 6 26.1	0.260	1.259	3.1	16.3	176 W	39	70	2 11	1 32.14	+ 4 38.7	2.907	2.590	19.6	20.5	62 E	44*	37*
4 6	12 55.64	+ 1 51.8	0.299	1.298	6.5	16.8	172 E	47	62	2 21	1 45.26	+ 6 11.3	3.047	2.612	18.1	20.5	55 E	41*	32*
4 11	12 55.45	+ 7 58.9	0.346	1.337	12.9	17.5	163 E	53	56	3 2	1 58.97	+ 7 42.6	3.177	2.634	16.5	20.6	49 E	36*	28*
4 16	12 55.54	+12 23.7	0.399	1.376	17.8	18.0	155 E	57	52	3 12	2 13.17	+ 9 11.7	3.298	2.655	14.7	20.6	43 E	31*	24*
4 21	12 56.02	+15 31.6	0.457	1.416	21.5	18.5	149 E	61	48	3 22	2 27.78	+10 37.9	3.407	2.675	12.9	20.7	37 E	26*	20*
4 23	12 56.33	+16 29.8	0.481	1.432	22.7	18.7	147 E	61	48	4 1	2 42.77	+12 0.3	3.504	2.694	10.9	20.7	31 E	20*	17*
4 25	12 56.72	+17 19.9	0.506	1.448	23.8	18.8	144 E	62	47	4 11	2 58.06	+13 18.3	3.588	2.712	8.9	20.6	25 E	15*	13*
4 27	12 57.18	+18 2.8	0.531	1.463	24.8	19.0	142 E	63	46	4 21	3 13.61	+14 31.3	3.659	2.730	6.9	20.6	19 E	9*	10*
4 29	12 57.73	+18 39.2	0.557	1.479	25.7	19.2	140 E	64	45	5 1	3 29.36	+15 38.8	3.716	2.746	4.9	20.6	13 E	3*	6*
5 1	12 58.35	+19 9.9	0.583	1.495	26.5	19.3	139 E	64	45	5 11	3 45.27	+16 40.4	3.758	2.761	2.9	20.5	8 E	—	2*
5 6	13 0.24	+20 5.5	0.650	1.534	28.2	19.6	134 E	65	44	5 21	4 1.29	+17 35.8	3.785	2.776	1.2	20.4	3 E	—	—
5 11	13 2.58	+20 36.6	0.720	1.573	29.4	20.0	130 E	66	43	5 31	4 17.37	+18 24.6	3.798	2.789	1.8	20.4	5 W	—	—
5 16	13 5.34	+20 48.9	0.792	1.612	30.3	20.2	126 E	66	43	6 10	4 33.43	+19 6.7	3.795	2.802	3.6	20.6	10 W	—	4*
5 21	13 8.50	+20 46.5	0.866	1.651	31.0	20.5	123 E	66	43	6 20	4 49.43	+19 42.0	3.778	2.813	5.6	20.7	16 W	1*	9*
5 26	13 12.04	+20 32.5	0.942	1.689	31.5	20.8	119 E	66	43	6 30	5 5.28	+20 10.5	3.746	2.824	7.5	20.8	21 W	5*	14*
5 31	13 15.94	+20 9.5	1.019	1.726	31.8	21.0	116 E	65	44	7 10	5 20.91	+20 32.4	3.699	2.833	9.4	20.8	27 W	11*	18*
6 5	13 20.16	+19 39.4	1.098	1.763	32.0	21.2	113 E	65	44	7 20	5 36.25	+20 47.9	3.638	2.842	11.3	20.9	33 W	17*	22*
6 10	13 24.67	+19 3.8	1.178	1.800	32.0	21.4	110 E	64*	45	7 30	5 51.19	+20 57.3	3.564	2.850	13.0	20.9	39 W	23*	25*
393364 1999 RK₁										8 9	6 5.62	+21 1.1	3.476	2.856	14.6	20.9	45 W	30*	28*
12 23	0 37.45	+64 8.5	0.943	1.623	33.4	19.2	115 E	71	—	8 19	6 19.45	+21 0.1	3.377	2.862	16.1	20.9	52 W	37*	31*
12 28	0 47.28	+63 40.0	0.972	1.633	33.6	19.3	113 E	71	—	8 29	6 32.53	+20 54.9	3.266	2.866	17.4	20.9	58 W	43*	33*
1 2	0 59.02	+63 12.1	1.002	1.644	33.7	19.4	112 E	72	—	9 8	6 44.71	+20 46.5	3.145	2.870	18.6	20.8	65 W	50*	36*
1 7	1 12.41	+62 44.6	1.033	1.655	33.9	19.5	110 E	72	—	9 18	6 55.84	+20 36.0	3.016	2.873	19.5	20.8	72 W	56*	38*
1 12	1 27.19	+62 16.7	1.065	1.667	34.0	19.6	109 E	73	—	9 28	7 5.70	+20 24.7	2.880	2.875	20.1	20.7	80 W	61*	40*
1 17	1 43.12	+61 47.8	1.099	1.679	34.0	19.6	107 E	73	1*	10 8	7 14.07	+20 14.0	2.739	2.875	20.3	20.6	88 W	64*	42*
1 22	2 0.01	+61 17.2	1.134	1.692	34.0	19.7	106 E	74	1*	10 18	7 20.70	+20 5.6	2.597	2.875	20.2	20.5	96 W	65	43*
1 27	2 17.65	+60 44.2	1.171	1.705	34.0	19.8	104 E	74	2*	10 28	7 25.29	+20 1.0	2.455	2.874	19.5	20.3	105 W	65	44*
2 1	2 35.85	+60 8.4	1.209	1.719	34.0	19.9	103 E	75	2*	11 7	7 27.55	+20 2.0	2.319	2.872	18.3	20.2	114 W	65	44
2 6	2 54.40	+59 29.3	1.249	1.734	33.9	20.0	101 E	76	3*	11 17	7 27.20	+20 9.6	2.191	2.868	16.5	20.0	124 W	65	44
2 11	3 13.12	+58 46.7	1.291	1.748	33.8	20.1	99 E	76	4*	11 27	7 24.03	+20 24.7	2.078	2.864	14.0	19.8	135 W	65	44
2 16	3 31.85	+58 0.2	1.334	1.764	33.7	20.2	98 E	77*	5*	12 7	7 18.03	+20 47.0	1.983	2.859	10.9	19.5	147 W	66	43
2 21	3 50.46	+57 9.8	1.380	1.779	33.6	20.3	96 E	78*	5*	12 17	7 9.45	+21 14.8	1.912	2.853	7.1	19.3	159 W	66	43
2 26	4 8.85	+56 15.7	1.427	1.795	33.4	20.3	94 E	78*	6*	12 22	7 4.37	+21 30.0	1.887	2.849	5.0	19.2	165 W	67	42
3 2	4 26.91	+55 17.9	1.476	1.811	33.1	20.4	92 E	79*	7*	12 27	6 58.91	+21 45.6	1.869	2.846	2.9	19.0	172 W	67	42
3 7	4 44.57	+54 16.8	1.526	1.828	32.9	20.5	90 E	79*	9*	1 1	6 53.22	+22 1.1	1.859	2.842	0.7	18.8	178 W	67	42
3 12	5 1.77	+53 12.6	1.579	1.845	32.6	20.6	89 E	79*	10*	1 6	6 47.44	+22 16.2	1.856	2.837	1.6	18.9	175 E	67	42
3 17	5 18.47	+52 5.6	1.633	1.861	32.2	20.7	87 E	78*	11*	1 11	6 41.72	+22 30.6	1.861	2.833	3.8	19.1	169 E	68	41
3 22	5 34.66	+50 56.0	1.688	1.879	31.9	20.8	85 E	77*	12*	1 16	6 36.23	+22 44.1	1.874	2.828	6.0	19.2	163 E	68	41
3 27	5 50.34	+49 44.3	1.746	1.896	31.5	20.8	83 E	76*	13*	228810 2003 BZ₂									
4 1	6 5.51</																		

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°
228810 2003 BZ₂										417871 2007 MB₂₄									
(continuation)										(continuation)									
3 22	3 50.68	+12 25.2	2.030	1.705	29.3	20.5	57 E	41*	35*	6 30	21 3.47	+35 29.0	1.153	1.798	31.7	21.1	112 W	80	29
4 1	4 14.87	+15 22.3	2.131	1.731	27.6	20.6	53 E	39*	32*	7 5	20 50.52	+37 0.6	1.173	1.844	30.1	21.2	115 W	82	27
4 11	4 39.50	+17 56.8	2.233	1.759	25.7	20.6	50 E	36*	30*	7 10	20 36.97	+38 9.8	1.197	1.888	28.7	21.2	117 W	83	26
4 21	5 4.50	+20 8.5	2.335	1.789	23.8	20.7	46 E	32*	27*	7 15	20 23.20	+38 56.2	1.226	1.931	27.5	21.3	119 W	84	25
5 1	5 29.76	+21 57.7	2.436	1.820	21.8	20.8	42 E	29*	25*	7 20	20 9.61	+39 20.1	1.258	1.973	26.5	21.4	120 W	84	25
5 11	5 55.17	+23 24.9	2.534	1.852	19.8	20.9	38 E	25*	23*	7 25	19 56.62	+39 22.9	1.296	2.014	25.7	21.5	121 E	84	25
5 21	6 20.61	+24 31.0	2.630	1.886	17.7	20.9	35 E	21*	20*	7 30	19 44.56	+39 6.8	1.338	2.055	25.0	21.6	121 E	84	25
5 31	6 45.95	+25 17.0	2.721	1.920	15.6	20.9	31 E	17*	18*	8 4	19 33.69	+38 34.8	1.384	2.094	24.6	21.7	121 E	84	25
6 10	7 11.06	+25 44.4	2.807	1.955	13.6	21.0	27 E	14*	15*	8 9	19 24.17	+37 49.8	1.434	2.132	24.3	21.8	120 E	83	26
6 20	7 35.85	+25 54.6	2.887	1.991	11.5	21.0	23 E	11*	12*	8 14	19 16.06	+36 54.5	1.487	2.170	24.1	21.9	119 E	82	27
6 30	8 0.20	+25 49.3	2.960	2.027	9.5	21.0	19 E	8*	9*	8 19	19 9.37	+35 51.8	1.545	2.206	23.9	22.0	118 E	81	28
7 10	8 24.04	+25 30.3	3.025	2.063	7.6	21.0	16 E	6*	6*										
7 20	8 47.32	+24 59.3	3.082	2.100	5.8	21.0	12 E	5*	2*										
7 30	9 10.01	+24 18.2	3.131	2.136	4.5	21.0	9 E	3*	—										
8 9	9 32.07	+23 28.8	3.170	2.172	3.9	21.1	8 E	2*	—										
8 19	9 53.51	+22 33.0	3.199	2.208	4.5	21.1	10 W	1*	—										
8 29	10 14.34	+21 32.4	3.217	2.244	5.7	21.2	13 W	6*	—										
9 8	10 34.56	+20 28.8	3.225	2.279	7.3	21.4	17 W	10*	—										
9 18	10 54.19	+19 23.9	3.222	2.313	9.0	21.5	21 W	15*	—										
417871 2007 MB₂₄										397287 2006 SG₅₄									
12 23	0 40.44	+52 45.2	0.469	1.250	45.9	18.8	114 E	82	11*	12 23	0 40.64	+ 8 5.3	1.784	2.208	25.8	20.9	102 E	53	54*
12 25	0 37.76	+49 25.2	0.455	1.227	48.1	18.7	112 E	86	14*	1 2	0 53.16	+ 8 24.3	1.946	2.252	25.8	21.1	95 E	53	51*
12 27	0 35.71	+45 54.1	0.443	1.204	50.5	18.7	109 E	89	17*	1 12	1 6.59	+ 8 56.4	2.112	2.295	25.3	21.3	88 E	54	48*
12 29	0 34.17	+42 13.0	0.433	1.180	53.1	18.7	106 E	87	20*	1 22	1 20.74	+ 9 38.1	2.279	2.339	24.6	21.5	81 E	55*	44*
12 31	0 33.08	+38 23.0	0.424	1.156	55.9	18.7	103 E	83	23*	2 1	1 35.50	+10 26.8	2.445	2.382	23.5	21.6	75 E	54*	40*
1 2	0 32.36	+34 25.6	0.417	1.132	58.8	18.7	100 E	79	26*										
1 4	0 31.93	+30 22.4	0.412	1.108	61.8	18.7	97 E	75	29*										
1 6	0 31.74	+26 15.2	0.408	1.084	64.9	18.7	93 E	71	31*										
1 8	0 31.73	+22 6.1	0.406	1.060	68.1	18.8	89 E	67	34*										
1 10	0 31.85	+17 56.7	0.407	1.035	71.3	18.8	86 E	63	37*										
1 12	0 32.05	+13 49.1	0.408	1.011	74.4	18.9	82 E	59*	39*										
1 14	0 32.29	+ 9 44.8	0.412	0.986	77.5	19.0	78 E	55*	41*										
1 16	0 32.53	+ 5 45.4	0.416	0.962	80.6	19.0	75 E	50*	42*										
1 18	0 32.71	+ 1 52.1	0.423	0.937	83.5	19.1	71 E	46*	43*										
1 20	0 32.79	+ 1 54.1	0.431	0.913	86.3	19.2	68 E	42*	44*										
1 22	0 32.74	+ 5 32.6	0.439	0.888	89.0	19.3	64 E	38*	44*										
1 27	0 31.67	-14 1.9	0.467	0.828	95.0	19.5	57 E	28*	44*										
2 1	0 28.56	-21 35.9	0.500	0.769	99.7	19.7	50 E	19*	42*										
2 6	0 22.46	-28 12.3	0.538	0.713	103.1	19.9	45 E	10*	39*										
2 11	0 12.41	-33 45.8	0.581	0.662	104.9	20.0	40 E	1*	34*										
2 16	23 57.81	-38 6.1	0.628	0.619	104.8	20.0	37 E	—	29*										
2 21	23 38.91	-40 59.5	0.678	0.587	102.6	20.0	35 E	—	23*										
2 23	23 30.49	-41 41.7	0.699	0.577	101.2	19.9	35 E	—	21*										
2 25	23 21.81	-42 7.6	0.720	0.570	99.5	19.9	35 E	—	18*										
2 27	23 13.08	-42 17.2	0.742	0.565	97.5	19.8	34 E	—	16*										
2 29	23 4.50	-42 11.1	0.763	0.563	95.4	19.8	34 E	—	13*										
3 2	22 56.27	-41 50.0	0.785	0.564	93.1	19.7	35 E	—	11*										
3 4	22 48.55	-41 15.1	0.806	0.567	90.7	19.7	35 W	—	12*										
3 6	22 41.46	-40 27.9	0.827	0.573	88.3	19.7	35 W	—	14*										
3 8	22 35.09	-39 30.0	0.847	0.581	85.9	19.7	36 W	—	17*										
3 10	22 29.46	-38 23.0	0.867	0.591	83.5	19.7	36 W	—	19*										
3 12	22 24.58	-37 8.7	0.886	0.604	81.2	19.7	37 W	—	21*										
3 14	22 20.41	-35 48.4	0.905	0.618	79.0	19.7	38 W	—	23*										
3 16	22 16.92	-34 23.5	0.922	0.634	77.0	19.7	38 W	—	25*										
3 18	22 14.04	-32 55.1	0.939	0.652	75.0	19.8	39 W	—	27*										
3 20	22 11.70	-31 24.2	0.955	0.671	73.2	19.8	40 W	—	29*										
3 22	22 9.84	-29 51.6	0.969	0.691	71.5	19.8	41 W	—	31*										
3 24	22 8.39	-28 17.9	0.983	0.712	70.0	19.9	42 W	—	33*										
3 26	22 7.30	-26 43.6	0.996	0.734	68.5	19.9	43 W	—	35*										
3 28	22 6.51	-25 9.1	1.008	0.756	67.1	20.0	44 W	—	36*										
3 30	22 5.97	-23 34.7	1.019	0.779	65.9	20.0	45 W	—	38*										
4 1	22 5.65	-22 0.6	1.030	0.803	64.7	20.1	47 W	1*	40*										
4 6	22 5.54	-18 7.5	1.052	0.863	62.1	20.2	50 W	6*	43*										
4 11	22 6.08	-14 18.5	1.069	0.924	59.8	20.3	53 W	10*	47*										
4 16	22 6.91	-10 33.9	1.082	0.985	57.8	20.4	56 W	15*	50*										
4 21	22 7.79	- 6 53.6	1.092	1.046	56.0	20.5	60 W	19*	52*										
4 26	22 8.49	- 3 17.2	1.099	1.107	54.3	20.6	63 W	23*	54*										
5 1	22 8.85	+ 0 15.6	1.103	1.167	52.6	20.7	67 W	28*	55*										
5 6	22 8.74	+ 3 45.2	1.105	1.226	51.0	20.7	71 W	33*	56*										
5 11	22 8.02	+ 7 11.5	1.106	1.284	49.3	20.8	75 W	37*	55*										
5 16	22 6.58	+10 34.6	1.105	1.341	47.6	20.8	78 W	42*	53*										
5 21	22 4.28	+13 54.1	1.105	1.396	45.9	20.9	82 W	47*	50*										
5 26	22 0.99	+17 9.2	1.104	1.451	44.2	20.9	86 W	52*	47										
5 31	21 56.61	+20 18.6	1.105	1.504	42.4	21.0	90 W	58*	44										
6 5	21 51.02	+23 20.9	1.107	1.556	40.6	21.0	94 W	63*	41										
6 10	21 44.16	+26 14.2	1.110	1.606	38.7	21.0	98 W	68*	38										
6 15	21 35.95	+28 56.3	1.116	1.656	36.9	21.0	102 W	73*	35										
6 20	21 26.38	+31 24.6	1.125	1.705	35.1	21.1	105 W	76	33										
6 25	21 15.51	+33 36.3	1.137	1.752	33.3	21.1	109 W	79	30										
6 30	21 3.47	+35 29.0	1.153	1.798	31.7	21.1	112 W	80	29										
7 5	20 50.52	+37 0.6	1.173	1.844	30.1	21.2	115 W	82	27										
7 10	20 36.97	+38 9.8	1.197	1.888	28.7	21.2	117 W	83	26										
7 15	20 23.20	+38 56.2	1.226	1.931	27.5	21.3	119 W	84	25										
7 20	20 9.61	+39 20.1	1.258	1.973	26.5	21.4	120 W	84	25										
7 25	19 56.62	+39 22.9	1.296	2.014	25.7	21.5	121 E	84	25										
7 30	19 44.56	+39 6.8	1.338	2.055	25.0	21.6	121 E	84	25										
8 4	19 33.69	+38 34.8	1.384	2.094	24.6	21.7	121 E	84	25										
8 9	19 24.17	+37 49.8	1.434	2.132	24.3	21.8	120 E	83	26										
8 14	19 16.06	+36 54.5	1.487	2.170	24.1	21.9	119 E	82	27										
8 19	19 9.37	+35 51.8	1.545	2.206	23.9	22.0	118 E	81	28										
12 23	0 40.64	+ 8 5.3	1.784	2.208	25.8	20.9	102 E	53	54*										
1 2	0 53.16	+ 8 24.3	1.946	2.252	25.8	21.1	95 E	53	51*										
1 12	1 6.59	+ 8 56.4	2.112	2.295	25.3	21.3	88 E	54	48*										
1 22	1 20.74	+ 9 38.1	2.279	2.339	24.6	21.5	81 E	55*	44*										
2 1	1 35.50	+10 26.8	2.445	2.382	23.5	21.6	75 E	54*	40*										
12 23	0 40.78	+13 25.3	1.651	2.116	26.8	20.8	104 E	58	49*										
1 2	0 52.69	+14 7.5	1.801	2.152	27.0	21.1	97 E	59	46*										
1 12	1 5.91	+14 59.0	1.955	2.188	26.7	2													

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°
143243 2002 YA₂₆ (continuation)										310728 2002 PD₄₈ (continuation)									
11 17	8 5.46	+19 19.7	2.974	3.514	14.7	19.7	115 W	64	45	3 22	4 15.75	-3 2.7	1.832	1.633	32.8	19.6	63 E	32*	50*
11 27	8 3.65	+19 54.1	2.881	3.552	13.0	19.6	126 W	65	44	4 1	4 42.76	-0 27.8	1.907	1.657	31.6	19.6	60 E	31*	48*
12 7	7 59.69	+20 36.6	2.805	3.591	10.7	19.5	137 W	66	43	4 11	5 9.92	+1 51.9	1.988	1.685	30.3	19.7	58 E	29*	46*
12 17	7 53.71	+21 25.6	2.750	3.628	8.1	19.4	149 W	66	43	4 21	5 37.08	+3 53.9	2.076	1.715	28.8	19.8	55 E	26*	44*
12 27	7 46.10	+22 18.5	2.722	3.665	5.0	19.2	161 W	67	42	5 1	6 4.10	+5 36.4	2.169	1.749	27.2	19.9	53 E	23*	42*
1 6	7 37.43	+23 11.8	2.724	3.702	1.8	19.0	173 W	68	41	5 11	6 30.81	+6 58.7	2.266	1.785	25.5	20.0	50 E	20*	40*
1 16	7 28.43	+24 2.2	2.758	3.737	1.6	19.1	174 E	69	40	5 21	6 57.07	+8 0.9	2.368	1.823	23.7	20.1	46 E	16*	38*
120708 1997 MA₂										75303 1999 XQ₃₅									
12 23	0 43.19	-0 29.8	1.354	1.795	32.7	19.8	99 E	45	63*	12 23	0 44.77	-23 40.2	3.144	3.289	17.4	21.1	90 E	21	81*
1 2	0 59.63	+1 35.0	1.477	1.825	32.5	20.0	94 E	47	58*	1 2	0 47.75	-21 41.0	3.256	3.266	17.3	21.1	82 E	23	72*
1 12	1 16.92	+3 41.3	1.604	1.855	32.0	20.2	88 E	49	53*	1 12	0 52.45	-19 38.3	3.365	3.242	17.0	21.2	74 E	25	63*
1 22	1 34.89	+5 46.7	1.735	1.887	31.2	20.4	83 E	51	49*	1 22	0 58.61	-17 33.9	3.470	3.217	16.4	21.2	67 E	27*	55*
2 1	1 53.45	+7 49.5	1.869	1.921	30.1	20.6	78 E	52*	44*	2 1	1 6.06	-15 28.9	3.568	3.191	15.5	21.2	60 E	27*	48*
2 11	2 12.49	+9 47.9	2.003	1.955	28.8	20.7	73 E	53*	41*	2 11	1 14.60	-13 24.5	3.657	3.164	14.4	21.2	53 E	26*	42*
2 21	2 31.94	+11 40.3	2.138	1.989	27.4	20.9	68 E	51*	37*	2 21	1 24.08	-11 21.5	3.734	3.137	13.2	21.2	47 E	23*	36*
3 2	2 51.76	+13 25.6	2.272	2.025	25.9	21.0	63 E	49*	34*	3 2	1 34.37	-9 20.4	3.799	3.109	11.9	21.2	40 E	19*	31*
3 12	3 11.88	+15 2.7	2.405	2.060	24.2	21.1	58 E	45*	32*	3 12	1 45.36	-7 21.7	3.851	3.079	10.4	21.1	34 E	14*	26*
3 22	3 32.25	+16 30.7	2.534	2.096	22.4	21.2	53 E	41*	29*	3 22	1 56.95	-5 26.0	3.889	3.050	8.9	21.1	28 E	9*	22*
4 1	3 52.82	+17 48.9	2.659	2.132	20.5	21.3	48 E	37*	27*	4 1	2 9.09	-3 33.5	3.912	3.019	7.5	21.0	23 E	4*	17*
4 11	4 13.54	+18 56.6	2.780	2.168	18.6	21.4	44 E	32*	25*	4 11	2 21.69	-1 44.8	3.920	2.987	6.2	20.9	19 E	—	13*
4 21	4 34.34	+19 53.5	2.894	2.204	16.6	21.4	39 E	27*	22*	4 21	2 34.72	-0 0.0	3.912	2.955	5.1	20.8	15 E	—	8*
5 1	4 55.17	+20 39.5	3.001	2.239	14.6	21.5	34 E	22*	20*	5 1	2 48.12	+1 40.4	3.890	2.922	4.7	20.8	14 E	—	3*
5 11	5 15.94	+21 14.3	3.101	2.275	12.5	21.5	29 E	16*	17*	5 11	3 1.85	+3 16.3	3.853	2.888	5.1	20.8	15 W	—	3*
12 23	0 43.97	-12 2.0	1.551	1.901	31.1	21.4	95 E	33	73*	5 21	3 15.87	+4 47.4	3.801	2.853	6.2	20.8	18 W	—	9*
12 28	0 49.24	-12 3.9	1.607	1.896	31.2	21.5	91 E	33	71*	5 31	3 30.16	+6 13.5	3.735	2.818	7.6	20.8	22 W	—	15*
1 2	0 55.00	-11 59.6	1.663	1.890	31.3	21.5	87 E	33	68*	6 10	3 44.65	+7 34.5	3.655	2.782	9.3	20.8	26 W	—	20*
1 7	1 1.22	-11 50.1	1.717	1.884	31.3	21.6	84 E	33	66*	6 20	3 59.33	+8 50.4	3.562	2.745	11.1	20.7	31 W	1*	25*
1 12	1 7.85	-11 35.9	1.770	1.878	31.1	21.6	81 E	33	63*	6 30	4 14.14	+10 1.1	3.457	2.707	12.9	20.7	36 W	7*	30*
12 23	0 44.07	-9 2.6	1.529	1.900	31.0	19.2	96 E	36	71*	7 10	4 29.03	+11 6.7	3.340	2.669	14.7	20.7	42 W	13*	34*
1 2	1 0.19	-6 48.0	1.687	1.959	30.1	19.5	90 E	38	65*	7 20	4 43.94	+12 7.6	3.213	2.630	16.5	20.6	47 W	20*	37*
1 12	1 16.46	-4 35.2	1.849	2.017	29.1	19.7	85 E	40	60*	7 30	4 58.81	+13 4.1	3.076	2.591	18.2	20.5	53 W	27*	39*
1 22	1 32.84	-2 25.9	2.013	2.076	27.8	19.9	80 E	43	55*	8 9	5 13.54	+13 57.0	2.931	2.551	19.8	20.5	58 W	34*	41*
2 1	1 49.35	-0 21.2	2.180	2.134	26.4	20.1	74 E	44*	50*	8 19	5 28.06	+14 47.0	2.778	2.511	21.3	20.4	64 W	41*	43*
2 11	2 5.97	+1 37.9	2.346	2.193	24.8	20.3	69 E	44*	45*	8 29	5 42.23	+15 35.3	2.619	2.470	22.7	20.2	70 W	48*	44*
2 21	2 22.68	+3 30.4	2.511	2.250	23.1	20.5	63 E	43*	41*	9 8	5 55.93	+16 23.7	2.455	2.428	23.8	20.1	77 W	54*	45*
3 2	2 39.47	+5 16.0	2.673	2.308	21.4	20.6	58 E	40*	38*	9 18	6 9.00	+17 14.2	2.288	2.387	24.7	19.9	83 W	59*	45*
3 12	2 56.32	+6 53.8	2.830	2.364	19.5	20.7	53 E	37*	34*	9 28	6 21.20	+18 9.6	2.120	2.345	25.3	19.7	90 W	63*	45*
3 22	3 13.21	+8 23.7	2.982	2.420	17.6	20.8	47 E	32*	31*	10 8	6 32.30	+19 13.3	1.953	2.303	25.5	19.5	97 W	64	45*
4 1	3 30.13	+9 45.2	3.126	2.475	15.7	20.9	42 E	27*	28*	10 18	6 41.97	+20 29.8	1.789	2.261	25.2	19.3	105 W	65	44
4 11	3 47.03	+10 58.1	3.262	2.529	13.7	21.0	37 E	22*	25*	10 28	6 49.79	+22 4.3	1.630	2.219	24.3	19.0	113 W	67	42
4 21	4 3.88	+12 2.2	3.388	2.582	11.7	21.0	31 E	16*	21*	11 2	6 52.86	+23 0.1	1.555	2.198	23.6	18.9	118 W	68	41
5 1	4 20.65	+12 57.6	3.503	2.635	9.7	21.1	26 E	10*	18*	11 7	6 55.28	+24 2.5	1.481	2.177	22.7	18.7	122 W	69	40
5 11	4 37.29	+13 44.2	3.606	2.686	7.7	21.1	21 E	5*	14*	11 12	6 56.95	+25 12.3	1.411	2.156	21.6	18.6	127 W	70	39
5 21	4 53.77	+14 22.0	3.696	2.736	5.8	21.1	16 E	—	10*	11 17	6 57.78	+26 30.1	1.345	2.135	20.2	18.4	132 W	72	37
5 31	5 10.03	+14 51.4	3.772	2.786	4.1	21.1	11 E	—	5*	11 22	6 57.69	+27 56.2	1.283	2.114	18.6	18.2	137 W	73	36
6 10	5 26.01	+15 12.4	3.835	2.834	3.0	21.1	8 E	—	—	11 27	6 56.59	+29 30.8	1.226	2.094	16.9	18.0	142 W	75	34
6 20	5 41.67	+15 25.5	3.882	2.881	3.0	21.2	9 W	—	—	12 2	6 54.41	+31 13.3	1.174	2.073	14.9	17.9	147 W	76	33
6 30	5 56.95	+15 31.0	3.914	2.927	4.2	21.3	12 W	—	6*	12 7	6 51.07	+33 2.9	1.129	2.053	12.8	17.7	152 W	78	31
7 10	6 11.78	+15 29.4	3.930	2.973	5.7	21.4	17 W	—	11*	12 12	6 46.52	+34 58.1	1.089	2.033	10.8	17.5	157 W	80	29
510996 2013 KA₃										310728 2002 PD₄₈ (continuation)									
12 23	0 44.38	+33 34.9	0.862	1.523	37.1	20.9	111 E	79	30*	11 27	6 55.28	+24 2.5	1.481	2.177	22.7	18.7	122 W	69	40
12 28	0 57.64	+32 13.0	0.902	1.534	37.4	21.0	109 E	77	31*	11 12	6 56.95	+25 12.3	1.411	2.156	21.6	18.6	127 W	70	39
1 2	1 10.86	+30 58.8	0.945	1.545	37.6	21.1	106 E	76	32*	11 17	6 57.78	+26 30.1	1.345	2.135	20.2	18.4	132 W	72	37
1 7	1 24.00	+29 52.1	0.990	1.556	37.8	21.3	104 E	75	32*	11 22	6 57.69	+27 56.2	1.283	2.114	18.6	18.2	137 W	73	36
1 12	1 37.05	+28 52.3	1.037	1.567	37.9	21.4	102 E	74	33*	11 27	6 56.59	+29 30.8	1.226	2.094	16.9	18.0	142 W	75	34
1 17	1 50.00	+27 59.1	1.086	1.578	38.0	21.5	99 E	73	33*	12 2	6 54.41	+31 13.3	1.174	2.073	14.9	17.9	147 W	76	33
12 23	0 44.50	-26 15.0	1.306	1.614	37.5	18.9	89 E	19	82*	12 7	6 51.07	+33 2.9	1.129	2.053	12.8	17.7	152 W	78	31
12 28	0 53.58	-25 26.5	1.336	1.606	37.7	19.0	86 E	20	79*	12 12	6 46.52	+34 58.1	1.089	2.033	10.8	17.5	157 W		