

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$
317189 2001 YG₂									489251 2006 RD₆₂								
									<i>(continuation)</i>								
6 20	22 6.79	-10 24.4	1.589	2.262	23.2	21.4	119 W	34* 74	10 18	23 8.70	-3 32.5	0.806	1.705	21.1	20.7	142 E	41 68
6 30	22 10.21	-10 33.6	1.456	2.227	21.2	21.1	128 W	34 75	10 28	23 14.31	-3 48.8	0.893	1.732	24.7	21.1	133 E	41 68
7 10	22 10.95	-11 3.5	1.334	2.192	18.4	20.8	137 W	34 75	11 7	23 22.66	-3 38.8	0.992	1.761	27.4	21.4	125 E	41 68
7 20	22 8.72	-11 56.2	1.228	2.156	14.7	20.4	148 W	33 76	11 17	23 33.28	-3 6.0	1.102	1.792	29.2	21.8	118 E	42 67
7 30	22 3.42	-13 11.9	1.141	2.119	10.0	20.1	159 W	32 77	382625 2002 PC₁₃₀								
8 4	21 59.70	-13 57.2	1.106	2.101	7.4	19.9	165 W	31 78	6 20	22 33.78	-14 7.1	1.125	1.796	31.1	21.3	114 W	29* 78
8 9	21 55.36	-14 46.2	1.076	2.082	4.6	19.7	170 W	30 79	6 25	22 38.69	-12 38.6	1.053	1.766	30.8	21.1	117 W	31* 77
8 14	21 50.53	-15 38.0	1.052	2.064	1.9	19.4	176 W	29 80	6 30	22 43.08	-11 3.3	0.984	1.735	30.4	20.9	120 W	34* 75
8 19	21 45.36	-16 30.9	1.034	2.045	2.1	19.4	176 E	28 81	7 5	22 46.91	-9 19.9	0.917	1.704	29.8	20.7	124 W	36* 73
8 24	21 40.04	-17 23.5	1.023	2.026	5.0	19.5	170 E	28 81	7 10	22 50.10	-7 27.3	0.853	1.674	29.1	20.4	127 W	38 71
8 29	21 34.80	-18 14.2	1.017	2.007	8.0	19.6	164 E	27 82	7 15	22 52.57	-5 24.1	0.792	1.643	28.2	20.2	130 W	40 69
9 3	21 29.85	-19 1.4	1.018	1.988	11.1	19.7	158 E	26 83	7 20	22 54.22	-3 8.9	0.734	1.613	27.1	20.0	134 W	42 67
9 8	21 25.38	-19 44.1	1.024	1.969	14.1	19.8	152 E	25 84	7 25	22 54.94	0 40.2	0.680	1.583	25.9	19.7	137 W	44 65
9 13	21 21.58	-20 21.4	1.034	1.950	16.9	19.9	146 E	25 84	7 30	22 54.64	+2 3.6	0.630	1.554	24.5	19.5	141 W	47 62
9 18	21 18.59	-20 52.6	1.050	1.931	19.5	20.0	140 E	24 85	8 4	22 53.22	+5 3.8	0.585	1.525	23.2	19.3	144 W	50 59
9 28	21 15.49	-21 35.9	1.092	1.894	24.1	20.2	129 E	23 86	8 9	22 50.56	+8 20.8	0.544	1.497	22.0	19.0	146 W	53 56
10 8	21 16.49	-21 53.7	1.145	1.856	27.8	20.4	120 E	23 86	8 14	22 46.56	+11 54.2	0.508	1.469	21.2	18.8	148 W	57 52
10 18	21 21.52	-21 47.6	1.206	1.819	30.7	20.5	111 E	23 86	8 19	22 41.13	+15 41.9	0.477	1.443	21.1	18.6	149 W	61 48
10 28	21 30.27	-21 19.1	1.270	1.783	32.8	20.7	103 E	24 85	8 24	22 34.27	+19 40.1	0.452	1.417	21.7	18.5	149 W	65 44
11 7	21 42.23	-20 30.0	1.337	1.748	34.3	20.8	96 E	25 84*	8 29	22 26.08	+23 43.1	0.432	1.392	23.4	18.4	147 E	69 40
11 17	21 56.89	-19 21.3	1.403	1.714	35.2	20.9	90 E	26 79*	9 3	22 16.70	+27 44.4	0.417	1.368	25.8	18.4	144 E	73 36
11 27	22 13.82	-17 54.2	1.467	1.681	35.7	20.9	84 E	27 72*	9 8	22 6.41	+31 36.4	0.407	1.345	28.8	18.4	140 E	77 32
12 7	22 32.59	-16 9.6	1.529	1.651	35.8	21.0	79 E	29 65*	9 13	21 55.59	+35 12.6	0.402	1.324	32.0	18.4	136 E	80 29
12 17	22 52.88	-14 8.8	1.589	1.622	35.7	21.0	74 E	31 58*	9 18	21 44.72	+38 27.9	0.400	1.305	35.3	18.4	131 E	83 26
12 27	23 14.43	-11 53.0	1.645	1.596	35.3	21.0	70 E	33* 52*	9 23	21 34.39	+41 20.3	0.402	1.287	38.4	18.5	127 E	86 23
1 6	23 37.04	-9 24.3	1.699	1.572	34.7	21.1	66 E	35* 47*	9 28	21 25.15	+43 50.2	0.405	1.270	41.3	18.6	123 E	89 20
1 16	0 0.57	-6 44.5	1.751	1.551	34.0	21.1	62 E	37* 42*	10 3	21 17.43	+45 59.8	0.411	1.256	43.7	18.6	120 E	89 18
18736 1998 NU									10 8	21 11.62	+47 51.9	0.417	1.244	45.8	18.7	117 E	87 16
6 20	22 26.40	-8 27.6	2.742	3.284	16.5	21.5	114 W	35* 72	10 13	21 8.01	+49 29.7	0.423	1.234	47.5	18.8	114 E	85 14
6 30	22 24.65	-8 29.5	2.634	3.306	14.8	21.3	124 W	36* 72	10 18	21 6.87	+50 56.2	0.430	1.226	48.8	18.8	112 E	84 13
7 10	22 20.82	-8 43.3	2.539	3.327	12.7	21.2	134 W	36 73	10 23	21 8.40	+52 14.6	0.436	1.220	49.6	18.9	111 E	83 12
7 20	22 14.97	-9 8.5	2.463	3.347	10.0	21.0	145 W	36 73	10 28	21 12.74	+53 27.0	0.443	1.217	50.2	18.9	110 E	82 11
7 30	22 7.38	-9 43.5	2.410	3.366	6.9	20.9	157 W	35 74	11 2	21 20.01	+54 34.5	0.449	1.216	50.4	19.0	109 E	80 9*
8 9	21 58.53	-10 25.5	2.385	3.384	3.5	20.7	168 W	35 74	11 7	21 30.34	+55 37.2	0.454	1.218	50.2	19.0	109 E	79 8*
8 19	21 49.07	-11 10.8	2.388	3.400	0.6	20.5	178 E	34 75	11 12	21 43.93	+56 34.2	0.459	1.222	49.8	19.0	109 E	78 7*
8 29	21 39.77	-11 55.5	2.423	3.415	3.7	20.7	167 E	33 76	11 17	22 0.92	+57 23.9	0.465	1.228	49.1	19.0	110 E	78 6*
9 8	21 31.37	-12 35.8	2.487	3.429	7.0	21.0	156 E	32 77	11 27	22 45.10	+58 31.1	0.477	1.248	47.1	19.1	112 E	76 5*
9 18	21 24.47	-13 9.1	2.578	3.442	9.9	21.2	144 E	32 77	12 7	23 40.17	+58 30.3	0.494	1.276	44.4	19.1	115 E	76 5*
9 28	21 19.49	-13 33.7	2.692	3.453	12.3	21.4	133 E	31 78	12 17	0 41.67	+56 56.6	0.521	1.311	41.6	19.2	118 E	78 5*
402290 2005 SC₁₉₇									12 19	0 53.80	+56 26.5	0.528	1.319	41.0	19.2	118 E	79 8*
6 20	22 29.61	-7 47.0	0.865	1.568	36.7	21.5	113 W	35* 72	12 21	1 5.78	+55 52.8	0.535	1.327	40.5	19.3	119 E	79 8*
6 30	22 42.50	-6 38.8	0.805	1.572	34.5	21.2	119 W	38* 71	12 23	1 17.54	+55 15.9	0.543	1.335	40.0	19.3	119 E	80 9*
7 10	22 52.15	-5 51.4	0.751	1.578	31.5	21.0	126 W	39 70	12 25	1 29.05	+54 36.0	0.551	1.344	39.5	19.3	120 E	80 9*
7 20	22 58.06	-5 29.5	0.705	1.588	27.5	20.8	134 W	40 69	12 27	1 40.28	+53 53.4	0.561	1.353	39.1	19.4	120 E	81 10*
7 30	22 59.87	-5 36.1	0.668	1.600	22.4	20.5	143 W	39 70	12 29	1 51.20	+53 8.4	0.570	1.362	38.7	19.4	120 E	82 11
8 9	22 57.68	-6 10.5	0.643	1.615	16.4	20.3	153 W	39 70	12 31	2 1.79	+52 21.4	0.581	1.371	38.3	19.4	120 E	83 12
8 14	22 55.25	-6 36.7	0.637	1.623	13.0	20.1	159 W	38 71	1 2	2 12.04	+51 32.7	0.592	1.380	37.9	19.5	120 E	83 12
8 19	22 52.11	-7 7.6	0.634	1.632	9.5	20.0	165 W	38 71	1 4	2 21.96	+50 42.5	0.604	1.390	37.6	19.5	120 E	84 13
8 24	22 48.46	-7 41.4	0.636	1.641	5.9	19.9	170 W	37 72	1 6	2 31.54	+49 51.3	0.616	1.400	37.3	19.6	120 E	85 14
8 29	22 44.55	-8 16.5	0.642	1.651	2.2	19.7	176 W	37 72	1 8	2 40.78	+48 59.4	0.629	1.410	37.0	19.6	120 E	86 15
9 3	22 40.62	-8 51.0	0.654	1.662	1.4	19.7	178 E	36 73	1 10	2 49.71	+48 7.0	0.643	1.420	36.8	19.7	120 E	87 16
9 8	22 36.91	-9 23.3	0.670	1.673	5.0	20.0	172 E	36 73	1 12	2 58.32	+47 14.5	0.658	1.430	36.6	19.8	120 E	88 17
9 13	22 33.63	-9 52.0	0.690	1.684	8.3	20.2	166 E	35 74	1 14	3 6.63	+46 22.0	0.674	1.441	36.4	19.8	120 E	89 18
9 18	22 30.95	-10 16.0	0.716	1.696	11.5	20.4	160 E	35 74	1 16	3 14.67	+45 29.8	0.690	1.451	36.2	19.9	119 E	90 19
9 23	22 29.03	-10 34.4	0.746	1.708	14.4	20.6	155 E	34 75	331722 2002 TR₁₀								
9 28	22 27.95	-10 46.9	0.780	1.721	17.1	20.8	150 E	34 75	6 20	22 34.13	+9 22.0	2.058	2.511	23.1	21.5	104 W	52* 55
10 3	22 27.76	-10 53.3	0.818	1.734	19.5	21.0	145 E	34 75	6 30	22 38.44	+10 5.7	1.907	2.476	22.4	21.2	112 W	55* 54
10 8	22 28.43	-10 53.7	0.860	1.747	21.6	21.2	140 E	34 75	7 10	22 40.68	+10 32.5	1.763	2.441	21.0	21.0	120 W	56 53
10 13	22 29.96	-10 48.4	0.906	1.761	23.5	21.4	135 E	34 75	7 20	22 40.60	+10 37.0	1.629	2.405	19.1	20.7	129 W	56 53
489251 2006 RD₆₂									7 30	22 38.00	+10 13.4	1.509	2.368	16.4	20.4	139 W	55 54
6 20	22 33.29	-2 1.0	0.962	1.616	36.3	21.4	110 W	41* 66	8 9	22 32.94	+9 16.3	1.405	2.331	13.1	20.1	148 W	54 55
6 30	22 48.41	-0 7.7	0.887	1.605	35.1	21.2	115 W	44* 64	8 19	22 25.74	+7 42.3	1.323	2.293	9.5	19.8	158 W	53 56
7 10	23 1.31	+1 30.6	0.818	1.597	33.2	21.0	121 W	47* 62	8 29	22 17.16	+5 32.2	1.265	2.255	6.8	19.6	165 E	51 58
7 20	23 11.52	+2 47.9	0.757	1.592	30.6	20.7	127 W	48 61	9 3	22 12.70	+4 15.6	1.245	2.235	6.6	19.5	165 E	49 60
7 30	23 18.54	+3 37.6	0.704	1.591	27.0	20.5	135 W	49 60	9 8	22 8.32	+2 53.3	1.233	2.				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
331722 2002 TR₁₀ (continuation)										483498 2002 UL₃ (continuation)									
12 7	22 42.57	-12 32.6	1.724	1.869	31.5	20.7	82 E	32	65*	8 19	22 0.21	-35 30.0	1.487	2.451	9.2	20.0	157 W	10	81
12 17	22 59.38	-12 13.6	1.799	1.833	31.4	20.7	76 E	33	59*	8 24	21 52.00	-35 11.3	1.471	2.427	10.0	20.0	155 E	10	81
12 27	23 17.75	-11 35.3	1.870	1.798	31.0	20.8	70 E	33*	53*	8 29	21 43.84	-34 43.9	1.461	2.403	11.2	20.0	152 E	10	81
1 6	23 37.43	-10 40.0	1.935	1.765	30.4	20.8	65 E	34*	48*	9 3	21 35.97	-34 7.6	1.458	2.378	12.8	20.1	149 E	11	82
1 16	23 58.27	-9 29.8	1.995	1.734	29.5	20.8	60 E	34*	43*	9 8	21 28.62	-33 23.0	1.462	2.354	14.5	20.1	144 E	12	83
252089 2000 UQ₂₉										189630 2001 LE₆									
6 20	22 36.69	+19 13.9	2.375	2.728	21.6	21.4	99 W	61*	45	6 20	22 50.28	+0 15.8	1.522	2.034	28.9	21.4	105 W	42*	64
6 30	22 39.09	+20 51.8	2.243	2.710	21.1	21.3	106 W	65*	43	6 30	22 49.62	+1 30.2	1.385	2.022	27.4	21.2	114 W	46*	62
7 10	22 39.32	+22 18.4	2.117	2.692	20.2	21.1	114 W	67	42	7 10	22 45.08	+2 32.9	1.255	2.005	25.0	20.9	124 W	48	61
7 20	22 37.17	+23 28.9	1.999	2.672	19.0	20.9	121 W	68	41	7 20	22 35.88	+3 19.0	1.134	1.984	21.4	20.5	135 W	48	61
7 30	22 32.58	+24 17.3	1.894	2.652	17.3	20.7	129 W	69	40	7 30	22 21.35	+3 41.8	1.030	1.957	16.8	20.1	146 W	49	60
8 9	22 25.73	+24 37.6	1.804	2.630	15.5	20.5	136 W	70	39	8 4	22 12.07	+3 42.4	0.986	1.942	14.2	19.9	152 W	49	60
8 19	22 17.10	+24 24.4	1.732	2.608	13.7	20.4	142 W	69	40	8 9	22 1.52	+3 34.8	0.949	1.925	11.6	19.7	158 W	49	60
8 24	22 12.36	+24 4.1	1.704	2.597	13.0	20.3	145 W	69	40	8 14	21 49.90	+3 18.4	0.918	1.907	9.5	19.5	162 W	48	61
8 29	22 7.51	+23 34.6	1.681	2.585	12.4	20.2	147 E	69	40	8 19	21 37.47	+2 53.2	0.894	1.887	8.6	19.4	164 E	48	61
9 3	22 2.70	+22 56.2	1.665	2.573	12.2	20.2	147 E	68	41	8 24	21 24.61	+2 19.9	0.879	1.867	9.6	19.4	162 E	47	62
9 8	21 58.05	+22 9.6	1.654	2.561	12.2	20.2	147 E	67	42	8 29	21 11.75	+1 39.7	0.871	1.844	12.1	19.5	157 E	47	62
9 13	21 53.71	+21 15.7	1.649	2.549	12.6	20.2	146 E	66	43	9 3	20 59.30	+0 54.3	0.870	1.821	15.4	19.5	151 E	46	63
9 18	21 49.81	+20 15.5	1.650	2.536	13.3	20.2	145 E	65	44	9 8	20 47.64	+0 5.6	0.876	1.796	18.9	19.6	145 E	45	64
9 23	21 46.45	+19 10.5	1.656	2.524	14.2	20.2	142 E	64	45	9 13	20 37.10	+0 44.4	0.888	1.769	22.4	19.8	138 E	44	65
9 28	21 43.73	+18 2.2	1.669	2.511	15.2	20.3	139 E	63	46	9 18	20 27.90	+1 34.2	0.905	1.741	25.7	19.9	131 E	43	66
10 3	21 41.70	+16 52.2	1.686	2.498	16.4	20.3	135 E	62	47	9 23	20 20.18	+2 22.0	0.927	1.711	28.8	20.0	125 E	43	66
10 8	21 40.41	+15 41.7	1.708	2.485	17.6	20.4	131 E	61	48	9 28	20 13.99	+3 6.9	0.951	1.680	31.6	20.1	119 E	42	67
10 13	21 39.86	+14 32.1	1.735	2.471	18.7	20.4	127 E	60	49	10 8	20 6.06	+4 25.1	1.004	1.612	36.3	20.2	107 E	41	68
10 18	21 40.08	+13 24.5	1.766	2.458	19.8	20.5	123 E	58	51	10 18	20 3.54	+5 26.1	1.059	1.538	40.0	20.3	97 E	40	69*
10 23	21 41.05	+12 19.9	1.801	2.444	20.8	20.5	119 E	57	52	10 28	20 5.65	+6 9.4	1.107	1.456	43.0	20.4	88 E	39	66*
10 28	21 42.74	+11 19.1	1.838	2.430	21.8	20.6	115 E	56	53	11 7	20 11.59	+6 35.7	1.145	1.366	45.4	20.4	79 E	38*	60*
11 2	21 45.13	+10 22.6	1.879	2.416	22.6	20.7	111 E	55	54	11 17	20 20.70	+6 46.1	1.167	1.268	47.7	20.3	72 E	38*	52*
11 7	21 48.17	+9 30.9	1.921	2.402	23.3	20.7	107 E	55	54*	11 27	20 32.44	+6 42.0	1.169	1.160	50.1	20.2	64 E	37*	45*
11 12	21 51.83	+8 44.3	1.966	2.387	23.9	20.8	103 E	54	55*	12 7	20 46.29	+6 26.0	1.148	1.042	53.2	20.0	58 E	36*	37*
11 17	21 56.06	+8 2.8	2.011	2.373	24.3	20.8	99 E	53	55*	12 12	20 53.85	+6 14.9	1.127	0.979	55.2	19.9	55 E	36*	34*
11 22	22 0.84	+7 26.6	2.058	2.358	24.7	20.9	95 E	52	53*	12 17	21 1.72	+6 3.1	1.099	0.913	57.7	19.8	52 E	35*	30*
11 27	22 6.11	+6 55.7	2.105	2.343	24.9	20.9	91 E	52	52*	12 22	21 9.76	+5 52.2	1.063	0.844	60.8	19.6	49 E	34*	27*
12 2	22 11.85	+6 30.0	2.153	2.328	25.0	21.0	87 E	52	50*	12 27	21 17.75	+5 45.1	1.018	0.773	65.0	19.5	45 E	32*	24*
12 7	22 18.00	+6 9.3	2.200	2.313	25.1	21.0	84 E	51	48*	1 1	21 25.32	+5 46.4	0.963	0.700	70.5	19.3	42 E	30*	21*
12 12	22 24.54	+5 53.5	2.247	2.298	25.0	21.0	80 E	51	45*	1 6	21 31.81	+6 4.3	0.899	0.625	78.1	19.2	38 E	28*	18*
12 17	22 31.45	+5 42.3	2.294	2.282	24.8	21.0	77 E	51	42*	1 8	21 33.86	+6 19.1	0.870	0.595	82.0	19.1	37 E	27*	17*
12 22	22 38.69	+5 35.6	2.340	2.267	24.6	21.1	74 E	50	40*	1 10	21 35.44	+6 39.9	0.841	0.565	86.5	19.1	35 E	25*	15*
12 27	22 46.23	+5 33.2	2.385	2.251	24.3	21.1	70 E	50	37*	1 12	21 36.39	+7 8.7	0.810	0.535	91.7	19.1	33 E	24*	14*
1 1	22 54.05	+5 34.8	2.428	2.235	23.9	21.1	67 E	49	34*	1 14	21 36.53	+7 47.2	0.778	0.506	97.7	19.2	31 E	22*	12*
1 6	23 2.14	+5 40.1	2.470	2.220	23.4	21.1	64 E	48	32*	1 16	21 35.60	+8 37.9	0.746	0.479	104.8	19.3	28 E	20*	11*
1 11	23 10.47	+5 48.8	2.510	2.204	22.9	21.1	61 E	47	29*	162900 2001 HG₃₁									
1 16	23 19.02	+6 0.9	2.549	2.188	22.3	21.1	58 E	45	27*	6 20	22 51.17	-14 56.4	2.715	3.211	17.3	21.4	110 W	27*	79
6 20	22 46.37	-11 23.1	1.237	1.852	31.0	21.4	110 W	31*	75	6 30	22 52.59	-15 9.5	2.544	3.170	16.2	21.2	119 W	29*	79
6 30	22 58.70	-10 36.2	1.128	1.825	29.9	21.2	117 W	33*	75	7 10	22 51.93	-15 35.3	2.384	3.127	14.6	21.0	129 W	29	80
7 10	23 9.04	-10 2.9	1.026	1.799	28.1	20.9	123 W	35*	74	7 20	22 48.99	-16 13.7	2.240	3.083	12.4	20.7	139 W	29	80
7 20	23 16.92	-9 46.3	0.933	1.775	25.6	20.6	131 W	35	74	7 30	22 43.67	-17 3.2	2.116	3.038	9.6	20.5	150 W	28	81
7 30	23 21.86	-9 48.9	0.852	1.752	22.2	20.2	139 W	35	74	8 9	22 36.07	-18 0.5	2.015	2.992	6.4	20.2	161 W	27	82
8 9	23 23.50	-10 10.9	0.784	1.731	17.8	19.9	149 W	35	74	8 14	22 31.52	-18 30.6	1.975	2.968	4.8	20.0	166 W	26	83
8 19	23 21.70	-10 50.1	0.731	1.713	12.6	19.5	158 W	34	75	8 19	22 26.55	-19 0.6	1.942	2.944	3.4	19.9	170 W	26	83
8 24	23 19.59	-11 14.1	0.711	1.705	9.7	19.4	163 W	34	75	8 24	22 21.29	-19 29.6	1.916	2.919	3.0	19.8	171 W	26	83
8 29	23 16.83	-11 39.5	0.695	1.697	6.9	19.2	168 W	33	76	8 29	22 15.83	-19 56.9	1.897	2.895	3.9	19.9	169 E	25	84
9 3	23 13.58	-12 4.6	0.684	1.689	4.5	19.0	172 W	33	76	9 3	22 10.32	-20 21.7	1.886	2.870	5.5	19.9	164 E	25	84
9 8	23 10.02	-12 28.0	0.678	1.683	4.1	19.0	173 W	33	76	9 8	22 4.89	-20 43.3	1.882	2.844	7.4	20.0	159 E	24	85
9 13	23 6.37	-12 48.0	0.677	1.677	6.0	19.0	170 E	32	77	9 13	21 59.66	-21 1.2	1.884	2.819	9.3	20.0	153 E	24	85
9 18	23 2.88	-13 3.4	0.680	1.672	8.9	19.2	165 E	32	77	9 18	21 54.77	-21 15.0	1.893	2.793	11.2	20.1	147 E	24	85
9 23	22 59.78	-13 12.9	0.688	1.667	11.9	19.3	160 E	32	77	9 28	21 46.47	-21 29.5	1.929	2.740	14.7				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
162900 2001 HG₃₁										369550 2011 AZ₄₇									
<i>(continuation)</i>										<i>(continuation)</i>									
10 28	21 37.75	-20 34.6	2.129	2.574	21.9	20.6	105 E	24	85	10 18	23 2.31	-35 54.6	1.108	1.845	27.1	20.0	122 E	9	80
11 7	21 40.55	-19 48.8	2.210	2.516	23.1	20.6	96 E	25	83*	10 23	23 2.60	-35 57.3	1.136	1.830	28.6	20.0	118 E	9	80
11 17	21 45.92	-18 51.6	2.291	2.456	23.7	20.7	88 E	26	76*	10 28	23 3.88	-35 49.0	1.165	1.815	29.9	20.1	114 E	9	80
11 27	21 53.58	-17 44.0	2.369	2.396	23.9	20.7	80 E	27	67*	11 2	23 6.12	-35 30.6	1.196	1.801	31.1	20.2	110 E	9	80
12 7	22 3.24	-16 26.3	2.440	2.334	23.7	20.7	72 E	29	59*	11 7	23 9.30	-35 3.2	1.227	1.787	32.0	20.3	107 E	10	81
12 17	22 14.64	-14 59.0	2.504	2.271	23.1	20.7	65 E	30*	50*	11 12	23 13.35	-34 27.5	1.259	1.774	32.9	20.3	103 E	11	82
12 27	22 27.58	-13 22.1	2.558	2.207	22.3	20.6	58 E	30*	43*	11 17	23 18.23	-33 44.1	1.292	1.761	33.5	20.4	100 E	11	82
1 6	22 41.87	-11 35.8	2.601	2.142	21.2	20.6	52 E	30*	36*	11 22	23 23.88	-32 53.7	1.324	1.748	34.1	20.4	97 E	12	83
1 16	22 57.38	-9 40.1	2.633	2.077	20.0	20.5	46 E	29*	30*	11 27	23 30.22	-31 57.0	1.356	1.736	34.5	20.5	94 E	13	84
162173 Ryugu										469834 2005 SL₂₄₃									
6 20	23 7.42	+3 5 5.6	0.802	1.396	45.9	21.3	100 W	43*	61	6 20	23 9.32	-2 7 5	1.620	2.074	28.7	21.5	101 W	38*	66
6 30	23 23.55	+6 22.0	0.724	1.384	45.4	21.0	104 W	48*	58	6 30	23 21.89	-1 50.8	1.474	2.032	28.4	21.2	108 W	41*	66
7 10	23 38.38	+9 44.2	0.649	1.370	44.7	20.8	109 W	54*	54	7 10	23 33.39	-1 54.8	1.335	1.989	27.7	21.0	115 W	42*	66
7 20	23 51.63	+13 12.0	0.576	1.352	43.6	20.4	113 W	58*	51	7 20	23 43.56	-2 25.0	1.205	1.947	26.2	20.6	122 W	43	66
7 30	0 2.86	+16 44.6	0.506	1.333	42.0	20.1	118 W	62	47	7 30	23 52.04	-3 27.8	1.085	1.905	24.0	20.3	130 W	42	67
8 9	0 11.59	+20 21.1	0.441	1.311	40.0	19.7	124 W	65	44	8 9	0 23 58.46	-5 8.7	0.978	1.864	21.0	19.9	139 W	40	69
8 14	0 14.76	+22 10.1	0.410	1.299	38.8	19.5	126 W	67	42	8 19	0 2 43	-7 31.3	0.886	1.825	17.1	19.5	148 W	37	72
8 19	0 16.96	+23 58.7	0.380	1.287	37.5	19.3	129 W	69	40	8 29	0 3 70	-10 34.3	0.813	1.787	12.7	19.2	157 W	34	75
8 24	0 18.06	+25 45.9	0.352	1.274	36.1	19.0	132 W	71	38	9 3	0 3 34	-12 17.9	0.783	1.768	10.7	19.0	161 W	33	76
8 29	0 17.91	+27 30.4	0.326	1.261	34.6	18.8	135 W	73	36	9 8	0 2 37	-14 6.9	0.759	1.750	9.2	18.8	164 W	31	78
9 3	0 16.40	+29 10.9	0.301	1.247	33.0	18.6	138 W	74	35	9 13	0 0 86	-15 58.4	0.741	1.732	8.7	18.7	165 W	29	80
9 8	0 13.35	+30 45.1	0.277	1.233	31.5	18.3	140 W	76	33	9 18	23 58.94	-17 49.0	0.728	1.715	9.5	18.7	164 W	27	82
9 13	0 8.62	+32 9.9	0.255	1.219	30.1	18.1	143 W	77	32	9 23	23 56.79	-19 35.0	0.720	1.699	11.5	18.7	160 E	25	84
9 18	0 2.14	+33 21.6	0.235	1.204	29.0	17.8	144 W	78	31	9 28	23 54.60	-21 13.0	0.717	1.683	14.0	18.8	156 E	24	85
9 23	23 54.01	+34 15.9	0.217	1.189	28.3	17.6	146 E	79	30	10 3	23 52.58	-22 40.1	0.719	1.668	16.7	18.9	151 E	22	87
9 28	23 44.47	+34 48.9	0.201	1.174	28.3	17.4	146 E	80	29	10 8	23 50.92	-23 54.0	0.726	1.653	19.5	19.0	146 E	21	88
10 3	23 33.87	+34 57.0	0.186	1.159	29.1	17.2	146 E	80	29	10 13	23 49.80	-24 53.4	0.736	1.640	22.2	19.1	142 E	20	89
10 8	23 22.69	+34 36.8	0.173	1.144	30.7	17.1	144 E	80	29	10 18	23 49.39	-25 37.3	0.750	1.627	24.8	19.2	137 E	19	90
10 13	23 11.54	+33 46.1	0.161	1.128	33.2	17.0	142 E	79	30	10 23	23 49.80	-26 5.5	0.767	1.614	27.1	19.3	132 E	19	90
10 18	23 1.11	+32 24.3	0.150	1.113	36.4	16.9	138 E	77	32	10 28	23 51.13	-26 18.7	0.786	1.603	29.2	19.4	128 E	19	90
10 23	22 52.07	+30 33.4	0.141	1.098	40.3	16.8	134 E	76	33	11 2	23 53.40	-26 17.6	0.808	1.593	31.0	19.5	124 E	19	90
10 28	22 44.88	+28 16.9	0.132	1.084	44.5	16.8	130 E	73	36	11 7	23 56.59	-26 3.2	0.831	1.583	32.7	19.6	120 E	19	90
11 2	22 39.73	+25 37.3	0.124	1.069	49.1	16.8	125 E	71	38	11 12	0 0 69	-25 36.6	0.856	1.575	34.1	19.7	117 E	19	90
11 7	22 36.71	+22 36.2	0.117	1.055	54.0	16.7	121 E	68	41	11 17	0 5 65	-24 58.7	0.882	1.567	35.3	19.8	114 E	20	89
11 17	22 37.15	+15 29.1	0.103	1.029	64.1	16.7	111 E	60	49*	11 22	0 11 43	-24 10.5	0.909	1.561	36.3	19.8	111 E	21	88
11 27	22 45.93	+6 40.1	0.089	1.007	74.7	16.7	100 E	52	56*	11 27	0 17 95	-23 13.2	0.938	1.555	37.2	19.9	108 E	22	87
12 7	23 2.06	-4 49.7	0.076	0.988	85.8	16.7	90 E	40	63*	12 2	0 25 14	-22 7.8	0.967	1.551	37.8	20.0	105 E	23	86
12 12	23 12.94	-12 1.9	0.071	0.980	91.5	16.7	84 E	33	66*	12 7	0 32 92	-20 55.1	0.997	1.548	38.4	20.2	103 E	24	85
12 17	23 26.11	-20 21.9	0.066	0.974	97.0	16.8	79 E	25	68*	12 12	0 41 24	-19 35.9	1.028	1.546	38.8	20.1	100 E	25	84
12 22	23 42.07	-29 47.1	0.062	0.969	101.8	16.9	75 E	15	68*	12 17	0 50 05	-18 11.1	1.059	1.545	39.1	20.2	98 E	27	82*
12 27	0 1.68	-39 58.4	0.061	0.966	105.3	17.0	71 E	5	65*	12 22	0 59 30	-16 41.4	1.092	1.545	39.3	20.3	96 E	28	79*
12 29	0 10.86	-44 7.7	0.061	0.965	106.3	17.1	70 E	1	63*	12 27	1 8 93	-15 7.7	1.125	1.546	39.4	20.4	94 E	30	77*
12 31	0 21.03	-48 15.0	0.061	0.964	106.9	17.1	70 E	—	61*	1 1	1 18 90	-13 30.7	1.160	1.549	39.4	20.4	92 E	31	74*
1 2	0 32.37	-52 17.0	0.061	0.963	107.2	17.2	69 E	—	58*	1 6	1 29 17	-11 51.2	1.195	1.552	39.3	20.5	90 E	33	71*
1 4	0 45.18	-56 10.2	0.062	0.963	107.2	17.2	69 E	—	56*	1 11	1 39 71	-10 9.9	1.231	1.557	39.2	20.6	89 E	35	68*
1 6	0 59.78	-59 51.5	0.063	0.963	106.8	17.2	70 E	—	53*	1 16	1 50 51	-8 27.4	1.269	1.562	39.0	20.6	87 E	37	65*
1 7	1 7.90	-61 36.9	0.064	0.963	106.5	17.2	70 E	—	51*	268782 2006 TB₄₉									
1 8	1 16.64	-63 18.2	0.064	0.963	106.2	17.2	70 E	—	51*	6 20	23 21.73	-2 49.5	1.500	1.936	31.3	21.4	99 W	36*	67
1 9	1 26.08	-64 55.2	0.065	0.964	105.8	17.2	71 E	—	49*	6 30	23 34.90	-0 59.6	1.376	1.905	31.1	21.1	105 W	40*	65
1 10	1 36.30	-66 27.6	0.066	0.964	105.3	17.2	71 E	—	48*	7 10	23 46.69	+0 46.1	1.257	1.875	30.5	20.9	111 W	45*	63
1 11	1 47.39	-67 55.1	0.067	0.964	104.8	17.2	71 E	—	47*	7 20	23 56.76	+2 25.3	1.145	1.846	29.3	20.6	117 W	47*	62
1 12	1 59.43	-69 17.4	0.068	0.965	104.2	17.2	72 E	—	46*	7 30	0 4 69	+3 55.4	1.041	1.819	27.5	20.3	124 W	49	60
1 13	2 12.52	-70 34.3	0.069	0.965	103.6	17.2	73 E	—	45*	8 9	0 10 03	+5 13.5	0.948	1.793	24.8	20.0	132 W	50	59
1 14	2 26.74	-71 45.5	0.070	0.966	102.9	17.2	73 E	—	44*	8 19	0 12 34	+6 16.1	0.865	1.768	21.3	19.7	141 W	51	58
1 15	2 42.16	-72 50.6	0.071	0.966	102.2	17.2	74 E	—	43*	8 29	0 11 31	+6 59.2	0.797	1.746	16.8	19.3	150 W	52	57
1 16	2 58.83	-73 49.5	0.072	0.967	101.5	17.2	74 E	—	42*	9 8	0 7 10	+7 20.3	0.744	1.726	11.5	18.9	160 W	52	57
6 20	23 8.16	-7 34.2	1.778	2.247	26.1	21.4	104 W	33*	72	9 18	0 0 37	+7 18.7	0.710	1.708	6.0	18.6	170 W	52	57
6 30	23 17.96	-8 19.3	1.632	2.214	25.3	21.2	111 W	35*	72	9 23	23 56.49	+7 10.3	0.700	1.700	4.2	18.5	173 E	52	57
7 10	23 26.23	-9 32.6	1.493	2.179	24.0	20.9	119 W	35*	74	9 28	23 52.58	+6 58.1	0.695	1.692	4.8	18.5	172 E	52	57
7 20	23 32.60	-11 19.0	1.366	2.145	22.0	20.6	128 W	34	75	10 3	23 48.87	+6 43.3	0.694	1.686	7.2	18.6	168 E	52	57
7 30	23 36.67	-13 42.1	1.253	2.111	19.2	20.3	137 W	31	78	10 8	23 45.57	+6 27.1	0.699	1.680	10.1	18.7	163 E	51	58
8 9	23 38.09	-16 42.1	1.157	2.076	15.9	20.0	146 W	28	81	10 13	23 42.90	+6 11.0	0.708	1.674	13.2	18.8	158 E	51	58
8 14	23 37.71	-18 24.5	1.117	2.059	14.1	19.8	150 W	27	82	10 18	23 41.02	+5 56.3	0.722	1.670	16.1	19.0	152 E	51	58
8 19	23 36.58	-20 13.5	1.082	2.042	12.4	19.7	154 W	25	84	10 23									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
268782 2006 TB₄₉ <i>(continuation)</i>										382615 2002 NM₇₁ <i>(continuation)</i>									
12 7	0 14.11	+7 22.0	1.035	1.665	33.5	20.3	111 E	52	57	8 24	1 44.77	+46 24.0	1.097	1.678	35.5	20.3	105 W	89	18
12 17	0 29.82	+8 32.3	1.123	1.673	34.6	20.5	105 E	54	55*	8 29	1 51.65	+48 17.8	1.062	1.670	35.3	20.2	107 W	87	16
12 27	0 47.46	+9 54.4	1.217	1.684	35.2	20.7	99 E	55	52*	9 3	1 58.06	+50 6.8	1.029	1.661	35.0	20.1	109 W	85	14
1 6	1 6.61	+11 24.9	1.315	1.698	35.3	20.9	94 E	56	48*	9 8	2 3.89	+51 50.1	0.997	1.654	34.6	20.0	111 W	83	12
1 16	1 26.99	+13 0.2	1.418	1.714	35.0	21.1	89 E	58	44*	9 13	2 9.01	+53 26.7	0.966	1.647	34.1	19.9	113 W	82	11
337328 2001 DU₄₀										333578 2006 KM₁₀₃									
6 20	23 39.67	-3 29.3	2.201	2.502	23.9	21.3	95 W	33*	67	6 30	0 10.16	+19 32.0	0.551	1.141	63.0	21.4	88 W	55*	44
6 30	23 49.00	-3 5.1	2.037	2.460	23.8	21.1	102 W	37*	67	7 5	0 37.33	+21 1.4	0.533	1.117	65.3	21.4	86 W	55*	43
7 10	23 57.01	-2 55.0	1.877	2.418	23.3	20.9	110 W	40*	67	7 10	1 5.96	+22 14.4	0.519	1.095	67.5	21.4	84 W	56*	42
7 20	0 3.43	-3 1.9	1.725	2.376	22.2	20.6	118 W	42*	67	7 15	1 35.74	+23 7.3	0.509	1.073	69.7	21.3	82 W	55*	41
7 30	0 7.89	-3 29.0	1.582	2.333	20.5	20.3	126 W	42	67	7 20	2 6.21	+23 37.5	0.504	1.054	71.8	21.3	80 W	55*	40
8 9	0 10.08	-4 18.5	1.451	2.289	18.0	20.0	136 W	41	68	7 25	2 36.84	+23 44.0	0.503	1.036	73.5	21.4	78 W	54*	40*
8 19	0 9.69	-5 31.9	1.336	2.246	14.7	19.7	146 W	39	70	8 4	3 36.53	+22 49.4	0.513	1.008	76.0	21.4	75 W	52*	41*
8 29	0 6.56	-7 8.2	1.241	2.202	10.7	19.4	156 W	38	71	8 9	4 4.76	+21 53.9	0.523	0.997	76.7	21.5	73 W	51*	41*
9 3	0 4.01	-8 3.4	1.201	2.181	8.5	19.2	161 W	37	72	190208 2006 AQ									
9 8	0 0.88	-9 2.0	1.167	2.159	6.4	19.0	166 W	36	73	6 30	0 31.09	+3 57.3	1.369	1.701	36.7	21.4	90 W	39*	60
9 13	23 57.24	-10 2.6	1.139	2.137	4.8	18.8	170 W	35	74	7 10	0 52.98	+6 46.0	1.226	1.635	38.4	21.1	93 W	44*	57
9 18	23 53.21	-11 3.6	1.118	2.115	4.5	18.8	170 W	34	75	7 20	1 16.55	+9 46.9	1.091	1.568	40.1	20.9	96 W	50*	54
9 23	23 48.96	-12 3.1	1.102	2.093	5.9	18.8	168 E	33	76	7 30	1 42.38	+13 1.1	0.965	1.501	42.0	20.5	99 W	55*	51
9 28	23 44.66	-12 59.4	1.093	2.072	8.2	18.8	163 E	32	77	8 9	2 11.35	+16 29.5	0.850	1.435	44.0	20.2	100 W	60*	48
10 3	23 40.50	-13 50.8	1.090	2.050	10.8	18.9	157 E	31	78	8 14	2 27.36	+18 18.7	0.797	1.403	45.2	20.1	101 W	63*	46
10 8	23 36.64	-14 35.8	1.093	2.029	13.4	19.0	152 E	30	79	8 19	2 44.60	+20 10.4	0.747	1.371	46.4	19.9	101 W	65*	44
10 13	23 33.25	-15 13.4	1.100	2.008	16.0	19.1	146 E	30	79	8 24	3 3.25	+22 3.6	0.701	1.339	47.8	19.8	101 W	67*	42
10 18	23 30.49	-15 42.9	1.113	1.987	18.5	19.2	141 E	29	80	8 29	3 23.51	+23 56.6	0.658	1.308	49.2	19.6	101 W	69*	40
10 28	23 27.31	-16 15.8	1.149	1.945	22.9	19.3	130 E	29	80	9 3	3 45.58	+25 47.2	0.620	1.278	50.9	19.5	101 W	71*	38
11 7	23 27.61	-16 14.7	1.198	1.905	26.6	19.5	121 E	29	80	9 8	4 9.61	+27 32.0	0.586	1.249	52.6	19.4	100 W	73*	36
11 17	23 31.50	-15 42.5	1.256	1.865	29.5	19.6	112 E	29	80	9 13	4 35.68	+29 6.9	0.556	1.221	54.5	19.2	99 W	74*	35
11 27	23 38.79	-14 42.9	1.318	1.828	31.6	19.8	104 E	30	79	9 18	5 3.72	+30 27.0	0.530	1.195	56.5	19.2	97 W	75*	34
12 7	23 49.11	-13 19.9	1.382	1.792	33.1	19.9	97 E	32	76*	9 23	5 33.48	+31 27.1	0.509	1.170	58.5	19.1	96 W	76*	33
12 17	0 2.06	-11 36.9	1.447	1.758	34.0	19.9	91 E	33	70*	9 28	6 4.54	+32 2.6	0.493	1.147	60.6	19.0	94 W	77*	32*
12 27	0 17.30	-9 36.8	1.511	1.726	34.6	20.0	85 E	35	64*	10 3	6 36.30	+32 10.1	0.481	1.127	62.6	19.0	92 W	77*	31*
1 6	0 34.49	-7 22.8	1.574	1.698	34.7	20.1	80 E	38	58*	10 8	7 8.03	+31 48.6	0.474	1.108	64.4	19.0	90 W	76*	31*
1 16	0 53.38	-4 57.5	1.635	1.672	34.6	20.1	75 E	40*	52*	10 13	7 38.97	+30 59.2	0.470	1.092	66.0	19.0	89 W	75*	31*
435404 2008 AT₂₈										479030 2013 AD₂₀									
6 20	23 55.26	-2 21.2	1.222	1.601	39.4	21.4	91 W	33*	66	6 30	0 33.35	-5 33.6	2.155	2.430	24.7	21.3	93 W	30*	70
6 30	0 22.48	-0 45.5	1.104	1.547	41.0	21.2	94 W	36*	65	7 10	0 40.54	-3 54.6	1.987	2.385	24.8	21.1	100 W	36*	68
7 10	0 51.50	+0 44.9	0.997	1.494	42.6	20.9	96 W	39*	63	7 20	0 46.00	-2 15.4	1.821	2.339	24.5	20.9	108 W	41*	66
7 20	1 22.54	+2 6.7	0.900	1.444	44.2	20.7	98 W	42*	62	7 30	0 49.27	-0 35.5	1.662	2.294	23.5	20.6	116 W	44*	65
7 30	1 55.68	+3 15.6	0.816	1.397	45.9	20.4	99 W	45*	61	12 7	11 19.09	+10 26.0	0.546	1.114	62.1	19.2	89 W	55	46*
8 9	2 30.84	+4 7.7	0.743	1.354	47.5	20.2	100 W	47*	60	12 17	11 38.62	+7 13.2	0.555	1.155	58.3	19.2	93 W	52	52*
8 19	3 7.63	+4 39.4	0.683	1.317	49.2	20.0	100 W	49*	59	12 27	11 52.98	+4 31.2	0.560	1.204	53.8	19.2	99 W	50	57*
8 29	3 45.26	+4 48.2	0.634	1.285	50.6	19.8	100 W	49*	59	1 6	12 2.01	+2 22.1	0.560	1.259	48.7	19.2	106 W	47	62*
9 8	4 22.76	+4 34.9	0.597	1.260	51.8	19.7	100 W	49*	59	1 16	12 5.25	+0 48.6	0.556	1.318	42.6	19.1	115 W	46	63
9 18	4 58.90	+4 2.6	0.568	1.243	52.6	19.6	101 W	49	60	382615 2002 NM₇₁									
9 23	5 16.08	+3 41.2	0.557	1.238	52.7	19.5	101 W	49	60	6 20	23 58.92	+19 24.6	1.696	1.845	33.0	21.4	82 W	50*	45
9 28	5 32.49	+3 17.5	0.547	1.234	52.7	19.5	102 W	48	61	6 30	0 15.87	+23 28.9	1.587	1.814	34.0	21.2	85 W	57*	41
10 3	5 48.03	+2 52.6	0.538	1.233	52.5	19.4	102 W	48	61	7 10	0 32.76	+27 39.3	1.484	1.785	34.7	21.0	89 W	65*	36
10 8	6 2.60	+2 27.5	0.531	1.234	52.0	19.4	103 W	47	62	7 20	0 49.52	+31 53.8	1.386	1.758	35.3	20.9	93 W	72*	32
10 13	6 16.09	+2 3.1	0.524	1.237	51.4	19.4	104 W	47	62	7 30	1 6.03	+36 8.9	1.296	1.732	35.6	20.7	96 W	80*	28
10 18	6 28.41	+1 40.6	0.517	1.242	50.5	19.3	106 W	47	62	8 9	1 22.14	+40 21.2	1.211	1.709	35.8	20.5	100 W	85	24
10 23	6 39.47	+1 21.2	0.511	1.249	49.3	19.3	108 W	46	63	8 19	1 37.52	+44 26.1	1.134	1.688	35.6	20.4	104 W	89	20
10 28	6 49.23	+1 6.0	0.505	1.259	47.9	19.2	110 W	46	63	337328 2001 DU₄₀									
11 2	6 57.62	+0 56.2	0.500	1.270	46.3	19.2	112 W	46	63	6 20	23 39.67	-3 29.3	2.201	2.502	23.9	21.3	95 W	33*	67
11 7	7 4.60	+0 52.8	0.495	1.283	44.3	19.1	115 W	46	63	6 30	23 49.00	-3 5.1	2.037	2.460	23.8	21.1	102 W	37*	67
11 12	7 10.07	+0 57.0	0.490	1.297	42.1	19.1	119 W	46	63	7 10	23 57.01	-2 55.0	1.877	2.418	23.3	20.9	110 W	40*	67
11 17	7 14.00	+1 10.1	0.485	1.314	39.5	19.0	122 W	46	63	7 20	0 3.43	-3 1.9	1.725	2.376	22.2	20.6	118 W	42*	67
11 22	7 16.36	+1 33.2	0.482	1.332	36.6	18.9	126 W	47	62	7 30	0 7.89	-3 29.0	1.582	2.333	20.5	20.3	126 W	42	67
11 27	7 17.19	+2 7.1	0.479	1.351	33.4	18.9	131 W	47	62	8 9	0 10.08	-4 18.5	1.451	2.289	18.0	20.0	136 W	41	68
12 7	7 14.52	+3 49.2																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
479030 2013 AD₂₀										17182 1999 VU									
(continuation)										(continuation)									
8 9	0 49.88	+1 6.5	1.511	2.248	21.8	20.3	125 W	46	63	11 2	23 26.63	+8 1.7	1.185	2.011	20.5	19.9	135 E	53	56
8 19	0 47.25	+2 51.2	1.373	2.202	19.2	20.0	134 W	48	61	11 7	23 22.42	+7 24.8	1.218	1.995	22.8	20.0	129 E	52	57
8 29	0 40.84	+4 39.2	1.252	2.156	15.7	19.6	145 W	50	59	11 17	23 17.44	+6 28.1	1.295	1.959	26.6	20.2	118 E	51	58
9 8	0 30.40	+6 30.1	1.150	2.110	11.3	19.2	156 W	52	57	12 7	23 16.78	+5 56.0	1.378	1.918	29.4	20.4	107 E	51	58*
9 18	0 16.14	+8 21.1	1.073	2.064	6.4	18.8	167 W	53	56	12 17	23 19.88	+5 47.9	1.464	1.874	31.4	20.5	98 E	51	56*
9 23	0 7.86	+9 15.4	1.045	2.042	4.6	18.6	171 W	54	55	12 17	23 26.18	+6 2.0	1.548	1.826	32.6	20.6	89 E	51	51*
9 28	23 59.10	+10 8.1	1.024	2.019	4.7	18.6	171 E	55	54	12 27	23 35.22	+6 36.0	1.626	1.773	33.3	20.7	82 E	52	45*
10 3	23 50.13	+10 58.6	1.010	1.997	6.7	18.6	167 W	56	53	1 6	23 46.60	+7 27.6	1.695	1.717	33.5	20.7	74 E	52*	39*
10 8	23 41.21	+11 46.6	1.003	1.975	9.5	18.7	161 E	57	52	1 16	0 0.04	+8 34.7	1.752	1.655	33.4	20.7	68 E	51*	34*
10 13	23 32.65	+12 31.8	1.003	1.953	12.6	18.8	155 E	58	51	358471 2007 NS₄									
10 18	23 24.72	+13 14.3	1.009	1.931	15.6	18.9	149 E	58	51	6 30	0 59.91	-0 25.7	0.901	1.296	51.4	21.3	85 W	31*	64*
10 23	23 17.67	+13 54.7	1.021	1.910	18.4	19.0	143 E	59	50	7 10	1 44.93	+4 35.7	0.801	1.203	56.8	21.1	82 W	36*	59*
10 28	23 11.66	+14 33.5	1.038	1.889	21.1	19.1	137 E	60	49	7 20	2 38.38	+10 15.4	0.728	1.110	63.2	20.9	77 W	40*	53*
11 7	23 3.18	+15 49.2	1.083	1.848	25.8	19.3	126 E	61	48	7 30	3 40.66	+15 57.5	0.691	1.019	69.9	20.8	70 W	42*	46*
11 17	22 59.63	+17 6.9	1.139	1.808	29.4	19.5	116 E	62	47	8 9	4 49.58	+20 40.6	0.693	0.933	75.5	20.8	63 W	43*	39*
11 27	23 0.84	+18 31.6	1.202	1.771	32.1	19.6	108 E	64	45*	8 19	6 0.07	+23 29.7	0.734	0.858	78.5	20.8	56 W	42*	32*
12 7	23 6.34	+20 6.5	1.267	1.735	34.0	19.7	100 E	65	41*	8 29	7 6.72	+24 10.3	0.808	0.799	77.9	20.9	51 W	40*	26*
12 17	23 15.65	+21 52.9	1.331	1.703	35.2	19.8	93 E	67	36*	9 8	8 6.60	+23 3.5	0.905	0.764	73.7	20.9	47 W	37*	22*
12 27	23 28.41	+23 51.5	1.393	1.673	36.0	19.9	88 E	69	31*	9 18	8 59.27	+20 41.0	1.015	0.757	67.2	20.9	44 W	36*	19*
1 6	23 44.28	+26 1.4	1.452	1.647	36.3	20.0	83 E	70*	25*	9 28	9 45.31	+17 32.2	1.128	0.781	60.1	21.0	43 W	35*	17*
1 16	0 3.11	+28 20.5	1.507	1.624	36.4	20.0	78 E	70*	20*	10 8	10 25.58	+14 1.3	1.235	0.831	53.6	21.1	42 W	34*	17*
										10 18	11 0.96	+10 25.9	1.332	0.901	48.4	21.3	43 W	34*	18*
377127 2003 EV₅₂										455193 2000 RJ₆₀									
6 30	0 45.03	-15 59.1	1.800	2.133	28.4	21.5	94 W	20*	80	6 30	1 7.84	+17 8.7	1.197	1.376	45.9	21.4	76 W	44*	47*
7 10	0 49.56	-15 0.5	1.723	2.175	27.2	21.4	102 W	25*	79	7 5	1 19.58	+20 57.7	1.156	1.359	46.8	21.4	77 W	49*	43*
7 20	0 51.09	-14 14.3	1.648	2.217	25.4	21.3	110 W	29*	78	7 10	1 31.97	+24 55.4	1.118	1.342	47.7	21.3	78 W	53*	39
7 30	0 49.28	-13 39.4	1.577	2.259	23.0	21.2	120 W	31*	78	7 15	1 45.18	+29 0.5	1.084	1.327	48.6	21.2	78 W	58*	35
8 9	0 43.92	-13 13.3	1.517	2.301	19.8	21.0	130 W	32	77	7 20	1 59.39	+33 11.0	1.055	1.312	49.4	21.2	79 W	62*	31
8 19	0 35.00	-12 52.5	1.470	2.343	15.9	20.8	141 W	32	77	7 25	2 14.84	+37 24.1	1.030	1.299	50.1	21.1	79 W	66*	27
8 29	0 22.93	-12 32.3	1.444	2.384	11.4	20.7	152 W	32	77	7 30	2 31.83	+41 36.4	1.010	1.287	50.7	21.1	79 W	69*	22
9 8	0 8.67	-12 7.2	1.443	2.426	6.8	20.5	163 W	33	76	8 4	2 50.73	+45 43.8	0.995	1.276	51.3	21.0	79 W	72*	18
9 18	23 53.56	-11 33.2	1.471	2.466	4.1	20.5	170 W	33	76	8 9	3 11.95	+49 42.0	0.984	1.266	51.7	21.0	79 W	73*	14
9 28	23 39.16	-10 48.0	1.528	2.507	6.4	20.7	164 E	34	75	8 14	3 35.96	+53 25.6	0.977	1.258	52.1	21.0	78 W	72*	11
10 8	23 26.82	-9 52.0	1.615	2.546	10.3	21.0	153 E	35	74	8 19	4 3.20	+56 49.3	0.974	1.251	52.3	21.0	78 W	71*	7*
10 18	23 17.34	-8 47.0	1.728	2.585	13.8	21.3	142 E	36	73	8 24	4 34.01	+59 47.3	0.974	1.245	52.5	20.9	78 W	69*	4*
										8 29	5 8.45	+62 14.2	0.977	1.241	52.5	21.0	77 W	66*	1*
										9 3	5 46.08	+64 5.7	0.982	1.239	52.5	21.0	77 W	64*	—
										9 8	6 25.82	+65 19.2	0.988	1.238	52.4	21.0	77 W	62*	—
										9 13	7 5.99	+65 55.0	0.996	1.238	52.2	21.0	76 W	61*	—
										9 18	7 44.78	+65 56.6	1.004	1.241	51.9	21.0	76 W	60*	—
										9 23	8 20.67	+65 29.4	1.011	1.244	51.6	21.0	76 W	59*	—
										9 28	8 52.84	+64 40.2	1.018	1.250	51.2	21.0	76 W	59*	—
										10 3	9 21.04	+63 35.5	1.024	1.256	50.8	21.0	77 W	59*	—
										10 8	9 45.46	+62 21.0	1.028	1.265	50.4	21.0	77 W	59*	—
										10 13	10 6.47	+61 1.1	1.031	1.274	49.9	21.1	78 W	60*	—
										10 18	10 24.50	+59 39.5	1.031	1.285	49.5	21.1	79 W	61*	—
										10 23	10 39.93	+58 18.7	1.029	1.297	49.0	21.1	80 W	63*	—
										10 28	10 53.11	+57 0.4	1.024	1.310	48.5	21.1	81 W	65*	—
										11 7	11 4.31	+55 46.0	1.016	1.325	48.0	21.0	83 W	67*	—
										11 12	11 13.75	+54 36.5	1.006	1.340	47.4	21.0	84 W	70*	—
										11 17	11 21.55	+53 32.7	0.993	1.356	46.7	21.0	86 W	72*	—
										11 22	11 27.78	+52 35.4	0.978	1.373	46.0	21.0	89 W	76*	2*
										11 27	11 35.53	+51 0.9	0.940	1.410	44.3	20.9	94 W	82*	6*
										12 2	11 36.97	+50 23.8	0.918	1.429	43.2	20.9	97 W	84*	8*
										12 7	11 36.64	+49 53.2	0.894	1.448	41.9	20.8	101 W	85	10*
										12 12	11 34.38	+49 28.7	0.869	1.469	40.4	20.7	105 W	86	12*
										12 17	11 29.99	+49 9.1	0.844	1.489	38.7	20.6	109 W	86	13*
										12 22	11 23.24	+48 52.5	0.818	1.510	36.7	20.5	114 W	86	15*
										12 27	11 13.96	+48 36.0	0.794	1.531	34.3	20.4	119 W	86	15*
										1 1	11 2.06	+48 16.1	0.771	1.553	31.7	20.3	124 W	87	16
										1 6	10 47.54	+47 48.2	0.752	1.574	28.7	20.2	130 W	87	16
										1 11	10 30.63	+47 7.2	0.736	1.596	25.4	20.1	136 W	88	17
										1 16	10 11.87	+46 7.8	0.725	1.618	22.0	20.0	142 W	89	18
										380363 2002 TJ₁₁₈									
										6 30	1 10.22	+11 11.4	1.736	1.820	33.1	21.5</			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
380363 2002 TJ ₁₁₈									326388 2001 QD ₉₆								
<i>(continuation)</i>									<i>(continuation)</i>								
9 28	3 59.44	+28 46.4	0.865	1.627	31.8	19.7	121 W	74 35	9 24	9 26.08	+33 8.5	0.818	0.789	77.3	20.0	50 W	44* 10*
10 3	4 5.17	+29 18.1	0.831	1.623	30.5	19.6	125 W	74 35	9 26	9 39.00	+31 38.3	0.831	0.773	77.3	20.0	49 W	43* 9*
10 8	4 9.98	+29 46.0	0.798	1.620	29.0	19.4	128 W	75 34	9 28	9 51.34	+30 4.0	0.846	0.758	77.1	20.0	48 W	42* 9*
10 13	4 13.74	+30 9.5	0.769	1.618	27.2	19.3	132 W	75 34	9 30	10 3.15	+28 26.4	0.861	0.744	76.8	20.0	46 W	40* 9*
10 18	4 16.39	+30 28.2	0.741	1.616	25.1	19.2	136 W	75 34	10 2	10 14.47	+26 45.9	0.878	0.730	76.3	20.0	45 W	39* 9*
10 23	4 17.86	+30 41.8	0.717	1.616	22.9	19.0	141 W	76 33	10 4	10 25.32	+25 3.1	0.896	0.717	75.7	20.0	44 W	38* 9*
10 28	4 18.15	+30 49.7	0.696	1.616	20.3	18.9	146 W	76 33	10 6	10 35.76	+23 18.4	0.915	0.705	75.0	20.0	43 W	37* 9*
11 2	4 17.30	+30 51.5	0.678	1.618	17.6	18.7	150 W	76 33	10 8	10 45.81	+21 32.3	0.935	0.693	74.0	19.9	42 W	36* 9*
11 7	4 15.39	+30 46.6	0.665	1.620	14.7	18.6	156 W	76 33	10 13	11 9.56	+17 3.0	0.988	0.669	71.1	19.9	39 W	33* 10*
11 12	4 12.58	+30 34.7	0.655	1.623	11.6	18.4	161 W	76 33	10 18	11 31.76	+12 31.7	1.045	0.652	67.4	19.8	37 W	31* 11*
11 17	4 9.10	+30 16.0	0.650	1.626	8.7	18.3	166 W	75 34	10 23	11 52.90	+8 2.3	1.105	0.643	63.0	19.8	35 W	28* 11*
11 22	4 5.22	+29 50.8	0.650	1.631	6.2	18.2	170 W	75 34	10 28	12 13.33	+3 38.6	1.166	0.642	58.4	19.8	33 W	26* 12*
11 27	4 1.29	+29 20.1	0.654	1.637	5.1	18.2	171 E	74 35	11 2	12 33.33	+0 36.3	1.227	0.651	53.7	19.8	32 W	24* 13*
12 2	3 57.58	+28 45.4	0.664	1.643	6.3	18.3	169 E	74 35	11 7	12 53.07	+4 39.4	1.287	0.668	49.3	19.8	31 W	21* 14*
12 7	3 54.37	+28 8.2	0.678	1.650	8.8	18.4	165 E	73 36	11 12	13 12.63	+8 28.3	1.345	0.692	45.3	19.9	30 W	19* 15*
12 12	3 51.87	+27 30.1	0.698	1.658	11.6	18.6	160 E	73 36	11 17	13 32.07	+12 1.5	1.401	0.722	41.8	20.0	29 W	17* 16*
12 17	3 50.27	+26 52.8	0.721	1.667	14.4	18.8	155 E	72 37	11 27	14 10.63	+18 17.3	1.505	0.795	36.5	20.2	29 W	14* 18*
12 22	3 49.66	+26 17.6	0.750	1.676	17.0	19.0	150 E	71 38	12 7	14 48.78	+23 25.7	1.598	0.878	33.0	20.4	29 W	11* 21*
12 27	3 50.11	+25 45.6	0.783	1.686	19.5	19.2	145 E	71 38	12 17	15 26.39	+27 31.1	1.679	0.965	30.8	20.7	30 W	8* 23*
1 1	3 51.60	+25 17.4	0.819	1.697	21.7	19.4	140 E	70 39	12 27	16 3.24	+30 39.9	1.748	1.051	29.7	20.9	32 W	6* 25*
1 6	3 54.09	+24 53.3	0.859	1.708	23.6	19.5	136 E	70 39	1 6	16 39.09	+32 59.5	1.804	1.136	29.2	21.1	34 W	5* 28*
1 11	3 57.51	+24 33.2	0.902	1.720	25.3	19.7	132 E	70 39	1 16	17 13.67	+34 37.2	1.847	1.217	29.2	21.3	37 W	3* 31*
1 16	4 1.82	+24 17.1	0.949	1.732	26.8	19.9	127 E	69 40									
68359 2001 OZ ₁₃									328508 2009 QH ₉								
6 30	1 17.59	+2 15.2	1.551	1.724	35.7	21.4	81 W	27* 66*	6 30	1 28.24	+9 16.7	1.576	1.632	36.9	21.4	75 W	35* 54*
7 10	1 36.82	+1 22.7	1.445	1.710	36.4	21.2	86 W	32* 65*	7 10	1 50.56	+11 35.7	1.507	1.636	37.5	21.4	78 W	41* 52*
7 20	1 55.51	+0 43.3	1.340	1.694	36.9	21.1	91 W	36* 65	7 20	2 12.13	+13 43.5	1.440	1.643	37.8	21.3	82 W	46* 50*
7 30	2 13.46	+0 19.1	1.236	1.677	37.0	20.9	96 W	40* 64	7 30	2 32.67	+15 38.7	1.372	1.653	37.8	21.2	86 W	52* 48
8 9	2 30.43	+0 11.6	1.133	1.659	36.9	20.7	101 W	43* 64	8 9	2 51.88	+17 20.6	1.306	1.666	37.5	21.1	91 W	58* 47
8 19	2 46.10	+0 22.6	1.033	1.640	36.3	20.4	107 W	44* 64	8 19	3 9.35	+18 48.8	1.240	1.682	36.7	21.0	96 W	62* 45
8 29	2 59.99	+0 53.8	0.937	1.619	35.2	20.2	112 W	44* 65	8 29	3 24.57	+20 3.2	1.176	1.701	35.5	20.9	102 W	65* 44
9 8	3 11.58	+1 45.4	0.846	1.597	33.5	19.9	119 W	43 66	9 8	3 37.00	+21 4.3	1.113	1.723	33.7	20.7	109 W	66 43
9 18	3 20.12	+2 57.1	0.761	1.575	31.2	19.5	126 W	42 67	9 18	3 46.03	+21 52.2	1.054	1.747	31.1	20.6	116 W	67 42
9 28	3 24.79	+4 26.0	0.684	1.552	28.2	19.2	133 W	41 68	9 28	3 51.04	+22 26.9	1.000	1.773	27.7	20.4	125 W	67 42
10 3	3 25.42	+5 14.8	0.649	1.540	26.4	19.0	137 W	40 69	10 8	3 51.61	+22 47.9	0.956	1.801	23.4	20.2	134 W	68 41
10 8	3 24.78	+6 4.8	0.617	1.528	24.5	18.8	141 W	39 70	10 18	3 47.65	+22 53.8	0.923	1.830	18.2	20.0	145 W	68 41
10 13	3 22.80	+6 54.4	0.588	1.516	22.5	18.6	145 W	38 71	10 23	3 44.10	+22 50.7	0.913	1.846	15.3	19.9	151 W	68 41
10 18	3 19.45	+7 41.2	0.562	1.503	20.5	18.5	148 W	37 72	10 28	3 39.70	+22 43.6	0.907	1.861	12.2	19.8	157 W	68 41
10 23	3 14.77	+8 22.4	0.540	1.491	18.7	18.3	151 W	37 72	11 2	3 34.65	+22 32.5	0.907	1.877	9.0	19.7	163 W	68 41
10 28	3 8.90	+8 55.1	0.521	1.479	17.4	18.2	154 W	36 73	11 7	3 29.16	+22 18.0	0.912	1.894	5.8	19.5	169 W	67 42
11 2	3 2.05	+9 16.4	0.507	1.466	16.8	18.1	155 W	36 73	11 12	3 23.49	+22 0.5	0.923	1.910	2.8	19.4	175 W	67 42
11 7	2 54.51	+9 23.8	0.496	1.454	17.2	18.0	154 W	36 73	11 17	3 17.91	+21 41.1	0.939	1.927	2.0	19.4	176 E	67 42
11 12	2 46.62	+9 15.4	0.489	1.442	18.5	18.0	152 E	36 73	11 22	3 12.66	+21 20.7	0.962	1.944	4.5	19.7	171 E	66 43
11 17	2 38.82	+8 49.7	0.487	1.429	20.6	18.0	149 E	36 73	11 27	3 7.98	+21 0.5	0.991	1.961	7.4	19.9	165 E	66 43
11 22	2 31.51	+8 6.8	0.487	1.417	23.1	18.1	146 E	37 72	12 2	3 4.01	+20 41.5	1.026	1.979	10.2	20.1	159 E	66 43
11 27	2 25.09	+7 7.5	0.492	1.405	25.9	18.2	141 E	38 71	12 7	3 0.87	+20 24.6	1.066	1.996	12.8	20.3	153 E	65 44
12 2	2 19.80	+5 53.6	0.499	1.393	28.8	18.3	137 E	39 70	12 17	2 57.30	+19 59.4	1.161	2.031	17.2	20.7	142 E	65 44
12 7	2 15.84	+4 27.3	0.509	1.382	31.6	18.4	133 E	41 68	12 27	2 57.42	+19 48.0	1.274	2.067	20.6	21.0	132 E	65 44
12 12	2 13.31	+2 50.7	0.522	1.370	34.3	18.5	128 E	42 67	1 6	3 0.92	+19 50.3	1.401	2.103	23.1	21.3	123 E	65 44
12 17	2 12.28	+1 5.9	0.536	1.359	36.8	18.6	124 E	44 65	1 16	3 7.35	+20 4.7	1.539	2.139	24.8	21.6	114 E	65 44
12 22	2 12.74	+0 45.3	0.552	1.349	39.1	18.7	120 E	46 63									
12 27	2 14.62	+2 41.1	0.570	1.338	41.1	18.8	116 E	48 61									
1 1	2 17.86	+4 39.8	0.588	1.328	42.9	18.9	113 E	50 59									
1 6	2 22.37	+6 40.4	0.607	1.319	44.6	19.0	110 E	52 57*									
1 11	2 28.07	+8 41.7	0.627	1.310	46.0	19.1	107 E	54 55*									
1 16	2 34.92	+10 42.9	0.647	1.301	47.2	19.2	104 E	56 53*									
326388 2001 QD ₉₆									142348 2002 RX ₂₁₁								
6 30	1 21.31	+12 44.8	1.355	1.466	42.0	21.4	75 W	39* 51*	6 30	1 41.17	+4 10.2	1.407	1.484	41.1	21.3	74 W	29* 58*
7 10	1 47.50	+17 12.9	1.222	1.401	45.0	21.2	77 W	45* 47*	7 10	2 13.38	+6 40.2	1.303	1.425	43.5	21.1	75 W	33* 56*
7 20	2 17.93	+22 9.8	1.097	1.332	48.3	20.9	78 W	52* 42*	7 20	2 48.07	+9 7.3	1.211	1.368	45.9	20.9	75 W	37* 54*
7 30	2 54.77	+27 33.4	0.984	1.257	52.1	20.7	78 W	58* 36*	7 30	3 25.36	+11 26.2	1.132	1.314	48.4	20.8	75 W	41* 51*
8 9	3 41.29	+33 9.3	0.888	1.178	56.7	20.5	76 W	63* 31*	8 9	4 5.22	+13 30.3	1.066	1.264	50.7	20.6	75 W	45* 49*
8 14	4 9.45	+35 50.3	0.848	1.138	59.2	20.3	75 W	64* 28*	8 19	4 47.33	+15 12.2	1.015	1.220	52.9	20.5	74 W	48* 47*
8 19	4 41.49	+38 15.7	0.814	1.096	61.9	20.3	73 W	64* 25*	8 29	5 31.00	+16 24.7	0.977	1.182	54.8	20.4	73 W	50* 44*
8 24	5 17.55	+40 13.5	0.788	1.053	64.8	20.2	70 W	63* 22*	9 3	5 53.14	+16 48.5	0.964	1.166	55.6	20.4	72 W	51* 43*
8 29	5 57.27	+41 30.5	0.770	1.010	67.6	20.1	68 W	61* 19*	9 8	6 15.33	+17 3.4	0.953	1.152	56.2	20.3	72 W	52* 42*
9 8	6 13.96	+41 47.0	0.765	0.993	68.7	20.1	66 W	60* 18*	9 13	6 37.41	+17						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	
216707 2004 XP₁₆₄									296867 2009 XC₉ (<i>continuation</i>)									
6 30	1 51.26	-5 36.2	1.724	1.765	33.9	21.3	75 W	20* 66*	10 18	6 14.53	+27 18.7	1.028	1.674	33.6	19.6	111 W	72	37
7 10	2 17.45	-5 20.4	1.599	1.712	35.6	21.1	78 W	23* 67*	10 23	6 22.51	+27 18.5	0.986	1.668	32.8	19.5	115 W	72	37
7 20	2 44.80	-5 18.2	1.481	1.660	37.2	21.0	81 W	26* 68*	10 28	6 29.73	+27 16.9	0.945	1.663	31.8	19.3	118 W	72	37
7 30	3 13.29	-5 31.1	1.371	1.609	38.8	20.8	83 W	29* 69*	11 2	6 36.10	+27 14.2	0.907	1.658	30.6	19.2	122 W	72	37
8 9	3 42.86	-5 59.5	1.272	1.560	40.4	20.6	85 W	31* 69*	11 7	6 41.54	+27 10.5	0.870	1.655	29.2	19.1	125 W	72	37
8 19	4 13.35	-6 43.0	1.182	1.512	41.9	20.4	87 W	33* 70*	11 17	6 49.24	+27 1.8	0.804	1.650	25.7	18.8	134 W	72	37
8 29	4 44.50	-7 39.9	1.103	1.467	43.5	20.2	88 W	34* 71*	11 27	6 52.27	+26 52.0	0.749	1.648	21.1	18.5	143 W	72	37
9 3	5 0.24	-8 12.4	1.067	1.445	44.2	20.1	88 W	34* 71*	12 7	6 50.55	+26 40.6	0.709	1.650	15.4	18.2	154 W	72	37
9 8	5 16.02	-8 46.9	1.033	1.425	45.0	20.1	89 W	34* 72*	12 12	6 48.05	+26 33.6	0.695	1.652	12.3	18.0	159 W	72	37
9 13	5 31.81	-9 22.8	1.001	1.405	45.7	20.0	89 W	34* 72*	12 17	6 44.66	+26 25.3	0.685	1.655	8.9	17.9	165 W	71	38
9 18	5 47.54	-9 59.5	0.972	1.387	46.4	19.9	89 W	34* 73*	12 22	6 40.63	+26 15.2	0.681	1.659	5.5	17.7	171 W	71	38
9 23	6 3.16	-10 36.2	0.944	1.370	47.1	19.8	89 W	34* 73*	12 27	6 36.25	+26 3.4	0.681	1.664	2.3	17.5	176 W	71	38
9 28	6 18.64	-11 12.1	0.917	1.354	47.8	19.8	90 W	33* 74*	1 1	6 31.82	+25 49.7	0.687	1.669	2.5	17.6	176 E	71	38
10 3	6 33.94	-11 46.4	0.892	1.339	48.4	19.7	90 W	33* 74*	1 6	6 27.62	+25 34.5	0.698	1.675	5.6	17.8	170 E	71	38
10 8	6 49.01	-12 18.3	0.868	1.326	48.9	19.6	90 W	33* 74*	1 11	6 23.93	+25 18.0	0.714	1.682	8.9	18.0	165 E	70	39
10 13	7 3.81	-12 47.2	0.845	1.314	49.4	19.6	91 W	32* 75*	1 16	6 21.00	+25 0.8	0.735	1.690	12.1	18.2	159 E	70	39
10 18	7 18.31	-13 12.2	0.822	1.304	49.8	19.5	91 W	32* 75*	154276 2002 SY₅₀									
10 23	7 32.45	-13 32.4	0.800	1.295	50.2	19.4	92 W	31* 75*	6 30	2 21.47	+9 47.2	1.840	1.635	33.4	21.4	62 W	26*	49*
10 28	7 46.21	-13 46.8	0.778	1.289	50.4	19.4	92 W	31* 76*	7 10	2 48.19	+12 14.8	1.668	1.537	36.7	21.1	65 W	32*	48*
11 2	7 59.58	-13 54.6	0.757	1.284	50.5	19.3	93 W	31* 76*	7 20	3 18.87	+14 49.7	1.501	1.435	40.4	20.9	66 W	37*	46*
11 7	8 12.51	-13 55.1	0.735	1.281	50.5	19.2	95 W	31* 77*	7 30	3 54.98	+17 29.7	1.345	1.327	44.7	20.6	67 W	41*	43*
11 12	8 24.96	-13 47.1	0.713	1.279	50.3	19.2	96 W	31* 77*	8 9	4 38.53	+20 6.7	1.205	1.214	49.6	20.3	66 W	44*	40*
11 17	8 36.88	-13 29.4	0.691	1.280	49.9	19.1	98 W	32* 77*	8 14	5 3.81	+21 18.6	1.143	1.155	52.3	20.1	64 W	45*	38*
11 22	8 48.22	-13 0.7	0.668	1.283	49.4	19.0	100 W	32* 77*	8 19	5 31.73	+22 21.0	1.088	1.095	55.2	20.0	63 W	46*	36*
11 27	8 58.94	-12 19.6	0.646	1.287	48.6	18.9	102 W	33* 76*	8 24	6 2.43	+23 8.5	1.043	1.034	58.3	19.9	60 W	46*	33*
12 2	9 8.99	-11 24.4	0.623	1.293	47.5	18.8	105 W	34* 75	8 29	6 35.82	+23 34.5	1.007	0.972	61.3	19.7	58 W	45*	31*
12 7	9 18.29	-10 13.5	0.601	1.301	46.2	18.7	108 W	35* 74	9 3	7 11.53	+23 32.5	0.983	0.910	64.3	19.6	54 W	43*	28*
12 12	9 26.76	-8 45.0	0.579	1.311	44.5	18.6	111 W	36* 73	9 8	7 48.90	+22 56.7	0.973	0.847	66.8	19.5	51 W	41*	25*
12 17	9 34.30	-6 56.8	0.559	1.322	42.4	18.5	115 W	38* 71	9 13	8 27.04	+21 44.3	0.976	0.785	68.7	19.4	47 W	38*	22*
12 22	9 40.84	-4 47.1	0.539	1.335	39.9	18.4	120 W	40* 69	9 18	9 4.99	+19 55.4	0.994	0.725	69.6	19.3	42 W	34*	19*
12 27	9 46.28	-2 14.5	0.521	1.349	37.0	18.2	124 W	43* 66	9 23	9 41.94	+17 33.8	1.026	0.667	69.0	19.2	38 W	31*	16*
1 1	9 50.58	+0 41.2	0.506	1.364	33.6	18.1	130 W	46* 63	9 28	10 17.43	+14 44.7	1.073	0.616	66.5	19.0	34 W	27*	13*
1 6	9 53.64	+3 59.3	0.494	1.381	29.8	18.0	136 W	49* 60	10 3	10 51.28	+11 34.3	1.131	0.573	62.1	18.9	30 W	24*	10*
1 11	9 55.42	+7 37.0	0.486	1.399	25.6	17.8	142 W	53* 56	10 8	11 23.57	+8 8.2	1.198	0.543	55.7	18.7	27 W	20*	8*
1 16	9 55.92	+11 29.4	0.483	1.419	21.2	17.7	149 W	56* 53	10 13	11 54.43	+4 32.6	1.272	0.529	47.9	18.5	23 W	17*	6*
259753 2004 AY									10 18	12 23.95	+0 54.5	1.348	0.533	39.5	18.5	20 W	13*	4*
6 30	2 12.54	+1 15.5	2.652	2.451	22.5	21.4	68 W	22* 57*	10 23	12 52.15	-2 39.0	1.424	0.555	31.5	18.4	17 W	10*	3*
7 10	2 25.11	+2 39.1	2.508	2.422	23.7	21.3	73 W	28* 59*	11 2	13 19.01	-6 1.5	1.499	0.590	24.7	18.5	14 W	8*	2*
7 20	2 37.00	+3 58.7	2.358	2.392	24.7	21.2	80 W	35* 59*	11 7	14 8.86	-11 57.9	1.640	0.691	15.4	18.7	11 W	4*	1*
7 30	2 48.01	+5 14.4	2.207	2.362	25.4	21.1	86 W	41* 59*	11 17	14 54.07	-16 41.7	1.774	0.811	10.7	19.1	9 W	1*	—
8 9	2 57.90	+6 26.9	2.053	2.331	25.8	20.9	93 W	47* 58	11 27	15 35.29	-20 18.1	1.901	0.937	9.1	19.5	9 W	—	1*
8 19	3 6.36	+7 37.0	1.901	2.300	25.7	20.7	100 W	52* 56	12 7	16 13.08	-22 57.5	2.019	1.060	9.0	19.9	10 W	—	3*
8 29	3 12.99	+8 45.8	1.751	2.268	25.1	20.5	107 W	54* 55	12 12	16 30.84	-23 59.3	2.074	1.121	9.3	20.1	11 W	—	4*
9 8	3 17.34	+9 55.2	1.607	2.236	24.0	20.2	116 W	55* 54	12 17	16 47.89	-24 50.8	2.126	1.180	9.8	20.2	12 W	1*	5*
9 18	3 18.84	+11 6.7	1.470	2.203	22.0	19.9	125 W	56* 53	12 22	17 4.27	-25 33.2	2.176	1.238	10.4	20.4	13 W	1*	6*
9 28	3 16.91	+12 22.1	1.346	2.170	19.2	19.6	135 W	57* 52	12 27	17 20.00	-26 7.5	2.222	1.295	11.1	20.6	15 W	1*	8*
10 8	3 11.06	+13 42.9	1.237	2.137	15.3	19.3	146 W	59* 50	1 1	17 35.13	-26 34.6	2.265	1.351	11.8	20.7	16 W	2*	10*
10 18	3 1.05	+15 8.9	1.148	2.104	10.4	18.9	158 W	60* 49	1 6	17 49.67	-26 55.4	2.304	1.405	12.6	20.9	18 W	2*	12*
10 28	2 47.28	+16 37.8	1.084	2.070	4.6	18.5	170 W	62* 47	1 11	18 3.66	-27 10.6	2.340	1.457	13.5	21.0	20 W	2*	14*
11 2	2 39.35	+17 22.3	1.063	2.054	1.7	18.2	176 W	62* 47	1 16	18 17.11	-27 20.9	2.372	1.508	14.3	21.2	22 W	3*	16*
11 7	2 31.01	+18 6.1	1.048	2.037	2.3	18.2	175 E	63* 46	455192 2000 QN₁₃₀									
11 12	2 22.53	+18 48.7	1.041	2.021	5.4	18.4	169 E	64* 45	6 30	2 25.54	+11 58.4	1.573	1.389	39.5	21.4	60 W	27*	46*
11 17	2 14.22	+19 29.9	1.040	2.004	8.7	18.5	162 E	65* 44	7 5	2 43.48	+13 21.9	1.536	1.364	40.5	21.3	61 W	29*	45*
11 22	2 6.36	+20 9.7	1.047	1.988	11.9	18.6	156 E	65* 44	7 10	3 1.95	+14 41.6	1.502	1.340	41.4	21.2	61 W	31*	44*
11 27	1 59.22	+20 48.3	1.059	1.972	14.9	18.7	149 E	66* 43	7 15	3 20.91	+15 56.7	1.472	1.318	42.3	21.2	61 W	33*	43*
12 2	1 53.00	+21 26.2	1.077	1.956	17.7	18.8	143 E	66* 43	7 20	3 40.32	+17 6.0	1.445	1.297	43.1	21.1	61 W	35*	42*
12 7	1 47.85	+22 3.7	1.100	1.940	20.3	19.0	137 E	67* 42	7 25	4 0.12	+18 8.6	1.422	1.279	43.8	21.1	61 W	36*	41*
12 17	1 41.08	+23 19.9	1.158	1.909	24.7	19.2	126 E	68* 41	7 30	4 20.22	+19 3.6	1.402	1.264	44.4	21.0	61 W	38*	40*
12 27	1 39.19	+24 41.0	1.228	1.878	28.1	19.4	116 E	70* 39*	8 4	4 40.55	+19 50.2	1.385	1.250	44.9	21.0	60 W	39*	38*
1 6	1 41.90	+26 9.1	1.304	1.848	30.6	19.5	107 E	71* 37*	8 9	5 1.00	+20 28.0	1.371	1.239	45.4	21.0	60 W	41*	37*
1 16	1 48.79	+27 44.8	1.383	1.820	32.3	19.7	99 E	73* 33*	8 14	5 21.47	+20 56.5	1.360	1.231	45.7	21.0	60 W	42*	37*
296867 2009 XC₉									8 19	5 41.84	+21 15.7	1.352	1.226	45.9	20.9	60 W	43*	36*
6 30	2 15.73	+15 55.7	2.224	1.953	27.2	21.4	61 W	32* 44*	8 24	6 1.98	+21 25.5	1.346	1.223	46.0	20.9	61 W	44*	35*
7 10	2 37.19	+17 48.5	2.104	1.920	28.8	21.3	65 W	37* 44*	8 29	6 21.79	+21 26.3	1						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
455192 2000 QN₁₃₀ (continuation)										297364 2000 DS₁₆ (continuation)									
10 28	9 30.98	+14 36.2	1.320	1.422	42.3	21.1	74 W	57*	38*	7 30	4 15.99	+43 3.3	2.061	1.779	29.5	21.2	60 W	52*	18*
11 2	9 41.91	+13 52.9	1.313	1.451	41.7	21.1	77 W	57*	39*	8 4	4 32.96	+44 24.5	2.015	1.763	30.2	21.2	61 W	54*	17*
11 7	9 52.06	+13 11.5	1.304	1.481	41.1	21.1	79 W	58*	41*	8 9	4 50.69	+45 40.0	1.971	1.748	30.9	21.1	62 W	56*	15*
11 12	10 1.42	+12 32.9	1.294	1.512	40.4	21.1	82 W	57*	42*	8 14	5 9.15	+46 48.8	1.928	1.733	31.6	21.1	64 W	57*	14*
11 17	10 9.97	+11 57.4	1.282	1.543	39.6	21.2	85 W	57*	44*	8 19	5 28.30	+47 50.1	1.887	1.719	32.2	21.0	65 W	59*	13*
11 22	10 17.70	+11 25.6	1.268	1.576	38.8	21.2	88 W	56	46*	8 24	5 48.08	+48 43.0	1.847	1.706	32.8	21.0	66 W	60*	12*
11 27	10 24.57	+10 58.1	1.254	1.609	37.8	21.1	91 W	56	48*	8 29	6 8.37	+49 26.8	1.808	1.693	33.3	20.9	67 W	61*	11*
12 2	10 30.58	+10 35.3	1.238	1.643	36.7	21.1	95 W	56	49*	9 3	6 29.07	+50 0.8	1.771	1.681	33.9	20.9	68 W	62*	10*
12 7	10 35.68	+10 17.6	1.222	1.677	35.5	21.1	98 W	55	51*	9 8	6 50.03	+50 24.6	1.735	1.671	34.4	20.8	69 W	63*	9*
12 12	10 39.83	+10 5.5	1.205	1.712	34.2	21.1	102 W	55	53*	9 13	7 11.06	+50 38.0	1.700	1.661	34.8	20.8	70 W	64*	8*
12 17	10 43.00	+ 9 59.3	1.187	1.747	32.6	21.1	107 W	55	54*	9 18	7 31.98	+50 41.2	1.666	1.652	35.3	20.7	72 W	64*	8*
12 22	10 45.14	+ 9 59.4	1.170	1.782	30.9	21.0	111 W	55	54*	9 23	7 52.60	+50 34.3	1.634	1.643	35.7	20.7	73 W	65*	8*
12 27	10 46.24	+10 5.9	1.154	1.817	29.0	21.0	116 W	55	54	9 28	8 12.75	+50 18.0	1.602	1.636	36.0	20.7	74 W	66*	7*
1 1	10 46.27	+10 18.7	1.140	1.853	26.9	20.9	121 W	55	54	10 3	8 32.27	+49 52.8	1.571	1.630	36.4	20.6	75 W	67*	7*
1 6	10 45.23	+10 37.9	1.127	1.889	24.6	20.9	127 W	56	53	10 8	8 51.04	+49 19.8	1.540	1.625	36.7	20.6	76 W	68*	7*
1 11	10 43.14	+11 3.0	1.118	1.924	22.1	20.8	133 W	56	53	10 13	9 8.96	+48 40.0	1.510	1.621	37.0	20.5	78 W	70*	7*
1 16	10 40.03	+11 33.5	1.112	1.960	19.4	20.8	138 W	57	52	10 18	9 25.95	+47 54.4	1.480	1.618	37.2	20.5	79 W	71*	8*
										10 23	9 41.94	+47 4.2	1.450	1.616	37.4	20.5	80 W	73*	8*
										10 28	9 56.91	+46 10.3	1.420	1.615	37.5	20.4	82 W	75*	9*
393859 2005 SN₂₂₅										404958 1998 DF₁₁									
6 30	2 36.88	+24 30.7	2.575	2.148	22.6	21.5	54 W	34*	34*	6 30	3 25.90	+40 4.6	2.277	1.689	24.4	21.5	43 W	34*	15*
7 10	2 57.72	+25 24.8	2.448	2.111	24.4	21.4	59 W	39*	35*	7 5	3 42.60	+41 25.8	2.237	1.671	25.2	21.4	45 W	36*	14*
7 20	3 18.84	+26 6.7	2.317	2.075	26.0	21.3	64 W	44*	35*	7 10	4 0.08	+42 41.2	2.197	1.654	26.1	21.4	46 W	38*	14*
7 30	3 40.16	+26 34.4	2.183	2.038	27.6	21.2	68 W	50*	36*	7 15	4 18.35	+43 49.9	2.158	1.637	26.8	21.3	47 W	39*	13*
8 9	4 1.53	+26 45.7	2.048	2.002	29.0	21.0	73 W	55*	36*	7 20	4 37.38	+44 50.9	2.120	1.620	27.6	21.3	48 W	41*	12*
8 19	4 22.80	+26 38.8	1.911	1.967	30.2	20.9	78 W	60*	37*	7 25	4 57.15	+45 43.1	2.083	1.603	28.4	21.3	49 W	42*	11*
8 29	4 43.71	+26 11.4	1.776	1.932	31.2	20.7	83 W	64*	38*	7 30	5 17.58	+46 25.5	2.047	1.587	29.1	21.2	49 W	43*	10*
9 8	5 4.03	+25 21.1	1.642	1.898	32.0	20.5	88 W	67*	39*	8 4	5 38.57	+46 57.1	2.011	1.571	29.8	21.2	50 W	44*	9*
9 18	5 23.42	+24 5.9	1.510	1.866	32.5	20.3	94 W	69*	40*	8 9	6 0.00	+47 17.1	1.977	1.555	30.5	21.2	51 W	45*	8*
9 23	5 32.65	+23 18.1	1.446	1.850	32.6	20.2	96 W	68*	41	8 14	6 21.72	+47 24.9	1.944	1.539	31.1	21.1	52 W	46*	8*
9 28	5 41.49	+22 23.1	1.383	1.834	32.6	20.1	99 W	67	42	8 19	6 43.56	+47 20.1	1.911	1.524	31.8	21.1	52 W	46*	7*
10 3	5 49.91	+21 20.7	1.321	1.819	32.5	20.0	102 W	66	43	8 24	7 5.31	+47 2.4	1.880	1.509	32.4	21.0	53 W	47*	7*
10 8	5 57.85	+20 10.6	1.261	1.805	32.3	19.9	105 W	65	44	8 29	7 26.80	+46 32.1	1.849	1.495	33.1	21.0	54 W	48*	6*
10 13	6 5.23	+18 52.5	1.203	1.791	31.9	19.7	109 W	64	45	9 3	7 47.88	+45 49.2	1.819	1.481	33.7	21.0	54 W	48*	6*
10 18	6 11.99	+17 26.2	1.147	1.777	31.4	19.6	112 W	62	47	9 8	8 8.40	+44 54.5	1.789	1.468	34.3	20.9	55 W	49*	6*
10 28	6 23.37	+14 8.5	1.043	1.751	29.9	19.3	119 W	59	50	9 13	8 28.26	+43 48.5	1.761	1.455	34.9	20.9	56 W	49*	6*
11 7	6 31.51	+10 18.1	0.950	1.727	27.8	19.0	126 W	55	54	9 18	8 47.36	+42 32.0	1.732	1.443	35.4	20.8	56 W	50*	6*
11 17	6 35.89	+ 5 59.0	0.872	1.706	25.1	18.7	133 W	51	58	9 23	9 5.66	+41 6.0	1.704	1.432	36.0	20.8	57 W	51*	7*
11 22	6 36.56	+ 3 41.7	0.839	1.697	23.7	18.6	136 W	49	60	9 28	9 23.13	+39 31.2	1.676	1.421	36.6	20.8	58 W	51*	7*
11 27	6 36.21	+ 1 21.6	0.810	1.688	22.2	18.5	140 W	46	63	10 3	9 39.78	+37 48.6	1.648	1.412	37.2	20.7	58 W	52*	8*
12 2	6 34.88	+ 0 58.6	0.787	1.680	20.9	18.3	143 W	44	65	10 8	9 55.62	+35 58.8	1.620	1.403	37.8	20.7	59 W	53*	9*
12 7	6 32.62	+ 3 16.1	0.768	1.673	19.8	18.2	145 W	42	67	10 13	10 10.68	+34 2.6	1.592	1.395	38.3	20.7	60 W	54*	11*
12 12	6 29.54	+ 5 27.6	0.754	1.666	19.1	18.2	146 W	40	69	10 18	10 25.00	+32 0.8	1.563	1.388	38.9	20.6	61 W	55*	12*
12 17	6 25.80	+ 7 29.8	0.745	1.660	18.8	18.1	147 W	38	71	10 23	10 38.62	+29 53.8	1.534	1.381	39.5	20.6	62 W	56*	14*
12 22	6 21.61	+ 9 19.5	0.742	1.655	19.0	18.1	147 W	36	73	10 28	10 51.57	+27 42.1	1.505	1.376	40.0	20.6	63 W	57*	15*
12 27	6 17.23	+10 54.2	0.743	1.651	19.6	18.1	146 E	34	75	11 2	11 3.91	+25 26.1	1.475	1.372	40.6	20.5	64 W	57*	17*
1 1	6 12.89	+12 12.4	0.748	1.648	20.6	18.2	144 E	32	76	11 7	11 15.68	+23 6.0	1.444	1.369	41.1	20.5	65 W	58*	20*
1 6	6 8.84	+13 13.2	0.758	1.645	21.9	18.2	141 E	32	77	11 17	11 37.64	+18 14.6	1.381	1.366	42.2	20.4	68 W	58*	25*
1 11	6 5.31	+13 56.5	0.771	1.644	23.3	18.3	139 E	31	78	11 27	11 57.69	+13 8.8	1.317	1.367	43.1	20.3	71 W	56*	31*
1 16	6 2.50	+14 22.9	0.788	1.643	24.7	18.4	136 E	31	78	12 7	12 16.01	+ 7 48.3	1.250	1.372	43.8	20.3	75 W	53*	39*
										12 17	12 32.66	+ 2 12.2	1.183	1.382	44.3	20.2	79 W	47	47*
										12 27	12 47.59	+ 3 40.8	1.116	1.395	44.4	20.1	83 W	41	57*
										1 6	13 0.64	+ 9 52.1	1.051	1.412	44.1	20.0	88 W	35	67*
										1 16	13 11.45	+16 22.4	0.990	1.432	43.3	19.8	93 W	29	78*
297364 2000 DS₁₆										443952 2003 BJ₇₃									
6 30	2 48.58	+33 40.6	2.361	1.887	24.6	21.5	51 W	37*	25*	6 30	3 26.62	+25 17.9	2.746	2.121	19.1	21.5	43 W	25*	27*
7 5	3 1.60	+35 19.8	2.309	1.868	25.5	21.4	52 W	40*	24*	7 10	3 49.51	+26 51.2	2.626	2.075	21.1	21.4	47 W	31*	28*
7 10	3 15.18	+36 57.7	2.257	1.849	26.3	21.4	54 W	42*	23*	7 20	4 13.38	+28 15.6	2.504	2.029	23.0	21.3	51 W	36*	28*
7 15	3 29.38	+38 33.7	2.207	1.831	27.2	21.4	55 W	45*	22*	7 30	4 38.21	+29 29.5	2.380	1.984	24.8	21.2	55 W	41*	28*
7 20	3 44.22	+40 7.1	2.157	1.813	28.0	21.3	57 W	47*	20*	8 9	5 3.97	+30 30.9	2.256	1.941	26.6	21.1	59 W	47*	28*
7 25	3 59.75	+41 37.2	2.108	1.796	28.8	21.3	58 W	50*	19*	8 19	5 30.62	+31 18.2	2.133	1.898	28.3	21.0	63 W	52*	28*
										8 29	5 57.99	+31 49.5	2.012	1.857	29.9	20.9	67 W	56*	28*
										9 8	6 25.91	+32 3.4	1.892	1.818	31.4	20.7	70 W	61*	28*
										9 18	6 54.16	+31 58.8	1.776	1.781	32.8	20.6	74 W	64*	28*
										9 28	7 22.42	+31 35.1	1.663	1.746	34.1	20.4	78 W	68*	28*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
443952 2003 BJ₇₃ (continuation)									349928 2009 WD₁₀₆ (continuation)								
10 3	7 36.47	+31 16.2	1.608	1.730	34.6	20.4	79 W	70* 28*	8 4	6 25.63	+29 5.7	1.534	0.939	40.1	21.0	37 W	27* 17*
10 8	7 50.40	+30 52.5	1.554	1.715	35.2	20.3	81 W	71* 29*	8 9	6 38.98	+28 52.3	1.588	1.013	38.4	21.2	38 W	29* 17*
10 13	8 4.18	+30 24.3	1.501	1.700	35.6	20.2	83 W	72* 29*	8 14	6 51.45	+28 35.2	1.634	1.084	37.3	21.3	40 W	31* 18*
10 18	8 17.74	+29 51.8	1.450	1.686	36.1	20.1	85 W	73* 30*	225416 1999 YC								
10 23	8 31.06	+29 15.1	1.399	1.673	36.4	20.0	87 W	73* 31*	6 30	6 5.44	+ 8 1.2	0.732	0.381	129.2	20.1	17 W	— 8*
10 28	8 44.08	+28 34.4	1.350	1.661	36.7	19.9	89 W	73* 31*	7 5	5 47.98	+ 1 8.3	0.763	0.488	106.6	19.0	27 W	— 19*
11 7	9 9.06	+27 2.8	1.255	1.640	37.1	19.8	93 W	72 33*	7 10	5 36.76	- 3 32.1	0.809	0.593	91.6	18.9	36 W	— 28*
11 17	9 32.31	+25 19.7	1.164	1.622	37.2	19.6	97 W	70 36*	7 15	5 29.78	- 6 50.7	0.855	0.693	81.4	18.9	42 W	— 35*
11 27	9 53.40	+23 28.5	1.079	1.610	36.8	19.4	102 W	68 39*	7 20	5 25.42	- 9 21.9	0.896	0.787	74.0	19.0	48 W	— 41*
12 7	10 11.95	+21 32.7	1.000	1.601	35.9	19.2	108 W	67 42*	7 22	5 24.15	-10 13.9	0.911	0.823	71.5	19.1	50 W	— 44*
12 17	10 27.43	+19 36.1	0.926	1.598	34.4	19.0	114 W	65 44*	7 24	5 23.06	-11 2.6	0.925	0.858	69.4	19.1	52 W	— 46*
12 27	10 39.29	+17 42.1	0.858	1.599	32.1	18.7	120 W	63 46	7 26	5 22.12	-11 48.6	0.937	0.892	67.4	19.2	54 W	2* 48*
1 6	10 47.01	+15 53.4	0.799	1.604	28.9	18.5	128 W	61 48	7 28	5 21.29	-12 32.5	0.949	0.926	65.6	19.2	56 W	3* 50*
1 16	10 50.09	+14 12.5	0.750	1.615	24.6	18.3	137 W	59 50	7 30	5 20.53	-13 14.8	0.960	0.959	63.9	19.3	58 W	4* 52*
444929 2008 AD₁₃₈									523603 2004 QJ₇								
6 30	3 35.72	+14 18.1	2.288	1.702	24.3	21.5	44 W	16* 34*	6 30	3 43.64	+19 14.3	1.702	1.137	35.4	21.5	40 W	18* 29*
7 10	4 3.72	+15 27.9	2.210	1.676	26.0	21.4	46 W	21* 35*	7 5	4 3.59	+20 59.4	1.678	1.114	36.1	21.4	40 W	20* 28*
7 20	4 32.31	+16 21.7	2.135	1.653	27.5	21.4	49 W	25* 36*	7 10	4 24.39	+22 37.6	1.657	1.093	36.6	21.4	40 W	22* 26*
7 30	5 1.30	+16 57.7	2.063	1.634	29.0	21.3	51 W	29* 36*	7 15	4 46.06	+24 7.4	1.638	1.072	37.1	21.3	40 W	23* 25*
8 9	5 30.46	+17 14.9	1.994	1.619	30.4	21.3	54 W	34* 36*	7 20	5 8.56	+25 27.0	1.623	1.053	37.5	21.3	39 W	23* 23*
8 19	5 59.56	+17 13.2	1.928	1.609	31.7	21.2	57 W	38* 37*	7 25	5 31.84	+26 34.4	1.611	1.035	37.8	21.2	39 W	26* 22*
8 29	6 28.29	+16 52.8	1.864	1.603	32.8	21.2	59 W	41* 37*	7 30	5 55.81	+27 28.0	1.602	1.019	38.0	21.2	38 W	27* 20*
9 8	6 56.40	+16 15.2	1.802	1.601	33.8	21.1	62 W	45* 38*	8 4	6 20.32	+28 6.3	1.596	1.005	38.0	21.2	38 W	27* 18*
9 18	7 23.63	+15 22.4	1.741	1.604	34.7	21.1	65 W	48* 39*	8 9	6 45.23	+28 28.1	1.593	0.992	37.9	21.1	37 W	28* 17*
9 28	7 49.70	+14 17.2	1.681	1.611	35.4	21.0	68 W	51* 40*	8 14	7 10.32	+28 32.6	1.593	0.983	37.7	21.1	36 W	28* 15*
10 8	8 14.43	+13 2.9	1.621	1.623	35.9	21.0	72 W	53* 42*	8 19	7 35.39	+28 19.6	1.597	0.975	37.3	21.1	36 W	28* 14*
10 18	8 37.61	+11 42.9	1.561	1.639	36.2	20.9	76 W	54* 43*	8 24	8 0.23	+27 49.4	1.603	0.970	36.9	21.1	35 W	28* 12*
10 28	8 59.01	+10 21.4	1.500	1.658	36.2	20.9	81 W	55* 46*	8 29	8 24.63	+27 2.8	1.611	0.967	36.3	21.0	35 W	28* 11*
11 7	9 18.45	+ 9 2.4	1.437	1.682	36.0	20.8	86 W	54* 49*	9 3	8 48.44	+26 0.8	1.622	0.967	35.7	21.0	34 W	27* 10*
11 17	9 35.69	+ 7 50.2	1.374	1.709	35.3	20.7	91 W	53 52*	9 8	9 11.53	+24 45.2	1.634	0.970	35.0	21.0	34 W	27* 9*
11 27	9 50.43	+ 6 49.5	1.310	1.739	34.2	20.6	97 W	52 55*	9 13	9 33.83	+23 17.5	1.648	0.975	34.3	21.0	33 W	27* 8*
12 7	10 2.37	+ 6 4.7	1.247	1.772	32.6	20.5	104 W	51 57*	9 18	9 55.27	+21 39.7	1.664	0.983	33.6	21.1	33 W	27* 8*
12 17	10 11.14	+ 5 40.7	1.186	1.807	30.2	20.4	112 W	51 58	9 23	10 15.85	+19 53.6	1.680	0.993	32.9	21.1	32 W	26* 8*
12 27	10 16.35	+ 5 41.9	1.130	1.844	27.1	20.2	121 W	51 58	9 28	10 35.57	+18 1.2	1.698	1.005	32.2	21.1	32 W	26* 7*
1 6	10 17.79	+ 6 11.5	1.083	1.883	23.1	20.0	131 W	51 58	10 3	10 54.46	+16 3.9	1.715	1.019	31.6	21.2	32 W	26* 7*
1 16	10 15.40	+ 7 10.3	1.048	1.924	18.1	19.9	142 W	52 57	10 8	11 12.59	+14 3.4	1.733	1.036	31.0	21.2	32 W	26* 8*
523603 2004 QJ₇									447755 2007 JX₂								
6 30	3 43.64	+19 14.3	1.702	1.137	35.4	21.5	40 W	18* 29*	6 30	6 14.79	+24 45.4	1.905	0.897	5.9	21.3	5 W	— —
7 5	4 3.59	+20 59.4	1.678	1.114	36.1	21.4	40 W	20* 28*	7 5	6 40.69	+24 36.8	1.881	0.870	4.9	21.2	4 W	— —
7 10	4 24.39	+22 37.6	1.657	1.093	36.6	21.4	40 W	22* 26*	7 10	7 7.12	+24 10.6	1.861	0.848	3.7	21.0	3 W	— —
7 15	4 46.06	+24 7.4	1.638	1.072	37.1	21.3	40 W	23* 25*	7 15	7 33.85	+23 26.1	1.845	0.830	2.6	20.9	2 W	— —
7 20	5 8.56	+25 27.0	1.623	1.053	37.5	21.3	39 W	25* 23*	7 20	8 0.67	+22 23.3	1.832	0.817	2.3	20.8	2 E	— —
7 25	5 31.84	+26 34.4	1.611	1.035	37.8	21.2	39 W	26* 22*	7 25	8 27.33	+21 2.8	1.823	0.810	3.2	20.9	3 E	— —
7 30	5 55.81	+27 28.0	1.602	1.019	38.0	21.2	38 W	27* 20*	7 30	8 53.61	+19 26.0	1.819	0.809	4.9	21.0	4 E	— —
8 4	6 20.32	+28 6.3	1.596	1.005	38.0	21.2	38 W	27* 18*	8 4	9 19.36	+17 34.7	1.818	0.813	6.7	21.1	5 E	— —
8 9	6 45.23	+28 28.1	1.593	0.992	37.9	21.1	37 W	28* 17*	8 9	9 44.43	+15 31.5	1.822	0.824	8.4	21.2	7 E	— —
8 14	7 10.32	+28 32.6	1.593	0.983	37.7	21.1	36 W	28* 15*	8 14	10 8.74	+13 18.9	1.830	0.840	10.0	21.3	8 E	— 2*
8 19	7 35.39	+28 19.6	1.597	0.975	37.3	21.1	36 W	28* 14*	8 19	10 32.24	+10 59.6	1.842	0.861	11.3	21.4	10 E	— 3*
8 24	8 0.23	+27 49.4	1.603	0.970	36.9	21.1	35 W	28* 12*	413577 2005 UL₅								
8 29	8 24.63	+27 2.8	1.611	0.967	36.3	21.0	35 W	28* 11*	6 30	6 26.94	+26 26.1	1.666	0.655	6.1	21.0	4 W	— —
9 3	8 48.44	+26 0.8	1.622	0.967	35.7	21.0	34 W	27* 10*	7 5	6 57.49	+26 27.8	1.605	0.594	6.3	20.7	4 E	— —
9 8	9 11.53	+24 45.2	1.634	0.970	35.0	21.0	34 W	27* 9*	7 10	7 30.37	+25 58.2	1.540	0.534	9.0	20.5	5 E	— —
9 13	9 33.83	+23 17.5	1.648	0.975	34.3	21.0	33 W	27* 8*	7 15	8 5.35	+24 48.4	1.471	0.478	15.2	20.4	7 E	— —
9 18	9 55.27	+21 39.7	1.664	0.983	33.6	21.1	33 W	27* 8*	7 20	8 41.78	+22 49.9	1.393	0.434	24.9	20.4	10 E	2* 2*
9 23	10 15.85	+19 53.6	1.680	0.993	32.9	21.1	32 W	26* 8*	7 22	8 56.51	+21 47.2	1.360	0.421	29.7	20.4	12 E	3* 4*
9 28	10 35.57	+18 1.2	1.698	1.005	32.2	21.1	32 W	26* 7*	7 24	9 11.21	+20 35.7	1.325	0.411	35.0	20.4	13 E	3* 6*
10 3	10 54.46	+16 3.9	1.715	1.019	31.6	21.2	32 W	26* 7*	7 26	9 25.75	+19 15.3	1.288	0.405	40.6	20.5	15 E	4* 7*
10 8	11 12.59	+14 3.4	1.733	1.036	31.0	21.2	32 W	26* 8*	7 28	9 40.05	+17 46.5	1.251	0.403	46.4	20.6	17 E	4* 9*
10 13	11 30.00	+12 0.9	1.750	1.053	30.5	21.2	32 W	26* 8*	7 30	9 54.03	+16 9.9	1.212	0.405	52.2	20.7	18 E	4* 11*
10 18	11 46.75	+ 9 57.6	1.767	1.073	30.1	21.3	33 W	26* 9*	8 4	10 27.26	+11 39.1	1.115	0.427	65.5	21.0	23 E	5* 16*
10 23	12 2.90	+ 7 54.6	1.783	1.093	29.7	21.3	33 W	26* 9*	8 9	10 58.12	+ 6 35.8	1.022	0.469	75.7	21.3	27 E	4* 20*
10 28																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
469445 2002 LT₂₄										285179 1996 TY₁₁									
6 30	6 42.79	+22 53.6	1.383	0.367	4.1	21.0	1 E	—	—	6 30	7 29.62	-18 10.6	0.282	0.834	123.2	21.3	43 E	—	24*
7 2	7 1.16	+22 31.8	1.384	0.375	10.4	21.3	4 E	—	—	7 2	7 30.09	-22 25.9	0.272	0.854	119.8	21.0	47 E	—	23*
7 4	7 19.16	+22 2.9	1.383	0.387	16.2	21.6	6 E	—	—	7 4	7 30.48	-26 52.3	0.263	0.873	116.0	20.7	51 E	—	23*
7 6	7 36.70	+21 27.5	1.380	0.402	21.4	21.9	8 E	—	2*	7 6	7 30.83	-31 28.3	0.256	0.893	111.8	20.4	55 E	—	23*
7 8	7 53.73	+20 46.4	1.377	0.420	26.0	22.1	10 E	—	4*	7 8	7 31.16	-36 11.9	0.251	0.913	107.5	20.1	59 E	—	22*
137052 Tjelvar																			
6 30	6 47.03	+29 12.7	3.177	2.169	3.0	21.4	6 E	—	—	7 10	7 31.50	-41 1.1	0.247	0.932	103.0	19.9	63 E	—	22*
7 10	7 5.33	+28 59.4	3.142	2.137	3.5	21.4	7 W	1*	—	7 12	7 31.88	-45 53.3	0.245	0.952	98.4	19.7	68 E	—	22*
7 20	7 23.94	+28 39.5	3.088	2.100	5.4	21.4	11 W	5*	—	7 14	7 32.35	-50 45.9	0.244	0.971	93.7	19.5	72 W	—	23*
7 30	7 42.89	+28 12.7	3.016	2.058	7.7	21.4	16 W	10*	1*	7 16	7 32.93	-55 36.3	0.245	0.990	89.1	19.4	77 W	—	25*
8 9	8 2.19	+27 38.7	2.925	2.010	10.3	21.4	21 W	14*	4*	7 18	7 33.69	-60 22.1	0.247	1.010	84.5	19.2	81 W	—	26*
8 19	8 21.93	+26 57.3	2.818	1.956	13.0	21.4	26 W	19*	6*	7 20	7 34.69	-65 1.2	0.250	1.029	80.2	19.2	86 W	—	27*
8 29	8 42.18	+26 8.0	2.694	1.896	15.8	21.3	31 W	24*	8*	7 22	7 36.04	-69 31.7	0.255	1.047	75.9	19.1	90 W	—	28*
9 8	9 3.07	+25 10.1	2.556	1.830	18.6	21.2	35 W	29*	11*	7 26	7 37.96	-73 52.0	0.261	1.066	71.9	19.0	94 W	—	28*
9 18	9 24.81	+24 2.6	2.404	1.757	21.6	21.1	40 W	33*	12*	7 28	7 40.92	-78 1.3	0.269	1.085	68.1	19.0	98 W	—	28*
9 28	9 47.63	+22 43.8	2.241	1.677	24.7	20.9	44 W	38*	14*	7 30	7 46.23	-81 58.6	0.277	1.103	64.6	19.0	101 W	—	28*
10 8	10 11.93	+21 11.3	2.069	1.589	28.0	20.7	48 W	41*	16*	7 31	7 53.53	-85 43.3	0.287	1.121	61.4	19.0	104 W	—	27*
10 18	10 38.26	+19 21.1	1.890	1.492	31.6	20.5	52 W	45*	18*	8 1	8 19.44	-87 30.2	0.292	1.130	59.8	19.0	106 W	—	26*
10 23	10 52.41	+18 17.5	1.799	1.441	33.5	20.4	53 W	46*	18*	8 2	8 19.44	-89 8.6	0.297	1.139	58.4	19.0	107 W	—	26*
10 28	11 7.38	+17 6.9	1.708	1.386	35.6	20.2	54 W	47*	19*	8 3	8 19.44	-91 11.7	0.303	1.148	57.0	19.1	109 E	—	27
11 2	11 23.33	+15 47.9	1.617	1.329	37.8	20.1	55 W	47*	20*	8 4	8 19 7.20	-93 41.7	0.315	1.165	54.4	19.1	111 E	—	29
11 7	11 40.44	+14 18.9	1.528	1.269	40.2	19.9	56 W	47*	21*	8 5	8 19 14.78	-95 8.6	0.321	1.174	53.1	19.1	112 E	—	30
11 12	11 58.95	+12 37.7	1.441	1.207	42.8	19.8	56 W	47*	21*	8 6	8 19 22.35	-97 38.0	0.327	1.182	52.0	19.2	113 E	—	32
11 17	12 19.10	+10 41.9	1.356	1.141	45.7	19.6	56 W	46*	22*	8 7	8 19 30.57	-99 10.0	0.334	1.191	50.9	19.2	114 E	—	33
11 22	12 41.20	+8 28.7	1.277	1.071	48.8	19.4	55 W	45*	22*	8 8	8 19 38.74	-100 14.6	0.341	1.200	49.9	19.2	115 E	—	35
11 27	13 5.60	+5 55.1	1.203	0.997	52.3	19.2	53 W	43*	22*	8 9	8 19 47.02	-101 21.6	0.348	1.208	48.9	19.2	116 E	—	36
12 2	13 32.67	+2 58.5	1.139	0.920	56.0	19.0	51 W	40*	22*	8 10	8 19 55.30	-102 11.1	0.355	1.216	48.0	19.3	117 E	—	38
12 7	14 2.80	-0 22.6	1.085	0.837	60.0	18.8	47 W	36*	21*	8 11	8 19 63.58	-103 1.1	0.363	1.225	47.1	19.3	118 E	—	39
12 12	14 36.31	-4 7.0	1.047	0.750	64.0	18.6	43 W	32*	20*	8 12	8 19 71.86	-104 10.0	0.370	1.233	46.3	19.4	118 E	—	40
12 17	15 13.45	-8 9.4	1.026	0.657	67.5	18.4	38 W	27*	19*	8 13	8 19 80.14	-105 19.4	0.378	1.241	45.6	19.4	119 E	—	42
12 19	15 29.36	-9 49.3	1.024	0.618	68.6	18.3	36 W	25*	18*	8 14	8 19 88.42	-106 28.8	0.386	1.250	44.8	19.4	120 E	—	43
12 21	15 45.88	-11 29.6	1.026	0.578	69.3	18.2	33 W	22*	17*	8 15	8 19 96.70	-107 38.2	0.394	1.258	44.2	19.5	120 E	—	44
12 23	16 3.04	-13 9.5	1.031	0.537	69.7	18.1	31 W	20*	15*	8 16	8 19 104.98	-108 47.6	0.403	1.266	43.6	19.5	121 E	—	45
12 25	16 20.86	-14 47.8	1.040	0.496	69.5	17.9	28 W	17*	14*	8 17	8 19 113.26	-109 57.0	0.411	1.274	43.0	19.6	121 E	—	46
12 27	16 39.37	-16 23.6	1.054	0.453	68.5	17.7	25 W	15*	13*	8 18	8 19 121.54	-110 66.4	0.420	1.282	42.4	19.6	121 E	—	47
1 1	17 29.31	-20 3.7	1.106	0.348	60.6	17.0	18 W	8*	8*	8 19	8 19 129.82	-111 75.8	0.429	1.290	41.9	19.6	122 E	—	48
1 6	18 26.44	-22 54.1	1.174	0.261	38.5	15.9	9 W	—	2*	8 20	8 19 138.10	-112 85.2	0.447	1.305	41.0	19.7	122 E	—	49
1 11	19 31.12	-23 58.5	1.223	0.243	8.8	14.9	2 E	—	—	8 21	8 19 146.38	-113 94.6	0.466	1.321	40.3	19.8	122 E	—	51
1 16	20 33.12	-22 38.8	1.231	0.312	32.9	16.2	10 E	—	3*	8 22	8 19 154.66	-114 104.0	0.485	1.336	39.6	19.9	123 E	—	53
417217 2005 YS										307544 2003 EJ₁₆									
6 30	7 4.73	+21 57.1	1.894	0.892	7.6	21.3	7 E	—	—	9 3	9 19 2.06	-54 1.6	0.578	1.401	37.8	20.4	122 E	—	62
7 5	7 23.05	+20 43.3	1.853	0.850	7.6	21.1	6 E	—	—	9 8	9 19 9.34	-55 47.5	0.635	1.436	37.3	20.6	120 E	—	65
7 10	7 41.86	+19 18.7	1.806	0.804	8.1	21.0	6 E	—	—	9 13	9 19 16.62	-57 94.0	0.694	1.469	37.1	20.8	118 E	—	68
7 15	8 1.28	+17 42.4	1.754	0.753	9.0	20.8	7 E	—	1*	9 18	9 19 23.90	-59 17.5	0.755	1.501	36.9	21.1	116 E	—	71
7 20	8 21.45	+15 53.5	1.694	0.698	10.7	20.6	7 E	—	1*	9 23	9 19 31.18	-61 50.2	0.819	1.531	36.8	21.3	114 E	2	73
7 25	8 42.57	+13 51.3	1.627	0.639	13.2	20.5	8 E	—	2*	9 28	9 19 38.46	-64 44.9	0.885	1.560	36.8	21.5	111 E	4	75
7 30	9 4.85	+11 35.5	1.552	0.576	17.0	20.3	10 E	—	3*	31070 2007 TA₁₉									
8 4	9 28.59	+9 7.1	1.465	0.509	22.7	20.0	11 E	—	4*	6 30	7 42.03	+9 21.1	3.620	2.695	7.7	21.5	21 E	—	14*
8 9	9 54.04	+6 30.2	1.365	0.443	31.5	19.8	13 E	—	6*	7 10	7 57.97	+9 7.7	3.617	2.657	6.2	21.4	16 E	—	9*
8 11	10 4.73	+5 27.4	1.320	0.417	36.2	19.8	14 E	—	7*	7 20	8 14.26	+8 45.7	3.600	2.617	4.8	21.3	13 E	—	3*
8 13	10 15.68	+4 26.4	1.271	0.392	41.9	19.7	15 E	—	8*	7 30	8 30.85	+8 15.4	3.568	2.576	4.1	21.2	10 W	—	—
8 15	10 26.85	+3 29.2	1.219	0.370	48.5	19.7	16 E	—	9*	8 9	8 47.70	+7 37.1	3.523	2.535	4.3	21.1	11 W	—	4*
8 17	10 38.13	+2 38.5	1.164	0.350	56.4	19.7	17 E	—	10*	8 19	9 4.78	+6 51.3	3.465	2.492	5.4	21.1	13 W	—	7*
8 19	10 49.34	+1 57.8	1.105	0.335	65.4	19.8	18 E	—	11*	8 29	9 22.08	+5 58.5	3.394	2.448	7.0	21.1	17 W	3*	11*
8 21	11 0.27	+1 31.1	1.043	0.324	75.5	19.9	18 E	—	12*	9 8	9 39.58	+4 59.4	3.310	2.403	8.9	21.1	22 W	9*	14*
8 23	11 10.62	+1 22.7	0.980	0.320	86.4	20.1	18 E	—	12*	9 18	9 57.29	+3 54.6	3.215	2.357	10.9	21.1	26 W	14*	17*
8 25	11 20.09	+1 36.1	0.917	0.322	97.7	20.5	18 E	—	12*	9 28	10 15.21	+2 45.0	3.109	2.311	13.0	21.0	31 W	19*	19*
8 27	11 28.43	+2 13.5	0.855	0.330	108.8	20.9	18 E	—	12*	10 8	10 33.36	+1 31.6	2.993	2.263	15.1	21.0	36 W	24*	22*
145888 1999 TT₁₀₃										10 18	10 51.78	+0 15.4	2.867	2.214	17.2	20.9	41 W	29*	25*
6 30	7 13.80	+19 12.1	3.593	2.595	3.7	21.5	10 E	—	4*	10 28	11 10.49	-1 2.3	2.734	2.165	19.3	20.8	46 W	32*	28*
7 10	7 31.30	+18 34.6	3.626	2.614	1.9	21.4	5 E	—	—	11 7	11 29.56	-2 20.1	2.594	2.115	21.4	20.7	51 W	35*	32*
7 20	7 48.53	+17 50.0	3.645	2.632	1.4	21.4	4 W	—	—	11 17	11 49.03	-3 36.4	2.448	2.065	23.4	20.6	56 W	37*	36*
7 30	8 5.41	+16 58.9	3.650	2.648	3.0	21.5	8 W	—	2*	11 27	12 8.98	-4 49.0	2.298	2.014	25.4	20.5	61 W	38*	40*
8 9	8 21.91	+16 2.0	3.642	2.664	4.9	21.7	13 W	3*	6*	12 7	12 29.47	-5 55.8	2.146	1.963	27.3	20.3	66		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
312070 2007 TA₁₉ (continuation)										285944 2001 RZ₁₁ (continuation)									
8 19	11 52.70	+14 17.2	0.879	0.490	90.8	20.8	29 E	15*	18*	11 17	15 8.22	-49 33.3	2.083	1.335	22.4	19.8	31 W	—	13*
8 24	12 16.53	+14 7.0	0.774	0.522	100.8	21.1	30 E	17*	19*	11 22	15 37.02	-50 15.8	2.059	1.305	22.4	19.7	30 W	—	11*
8 29	12 39.42	+13 40.2	0.675	0.563	108.9	21.4	32 E	19*	20*	11 27	16 7.04	-50 34.6	2.038	1.275	22.4	19.6	29 W	—	10*
32511 2001 NX₁₇										203471 2002 AU₄									
6 30	8 11.43	+17 22.8	7.299	6.376	3.6	21.5	23 E	4*	16*	6 30	9 46.10	+25 48.9	1.171	0.814	58.4	21.4	43 E	26*	27*
7 10	8 18.20	+16 58.1	7.331	6.355	2.4	21.4	15 E	—	9*	7 5	10 1.61	+24 4.3	1.127	0.777	61.3	21.3	42 E	24*	27*
7 20	8 25.12	+16 31.4	7.340	6.335	1.2	21.3	8 E	—	2*	7 10	10 16.63	+22 7.3	1.077	0.740	65.0	21.2	41 E	22*	28*
7 30	8 32.12	+16 2.9	7.328	6.314	0.5	21.2	3 W	—	—	7 15	10 30.94	+19 56.9	1.022	0.703	69.4	21.1	40 E	21*	28*
8 9	8 39.10	+15 32.7	7.292	6.293	1.4	21.3	9 W	—	2*	7 20	10 44.23	+17 32.4	0.961	0.666	74.9	21.0	39 E	19*	28*
8 19	8 46.00	+15 1.1	7.235	6.271	2.6	21.4	17 W	7*	8*	7 25	10 56.00	+14 52.8	0.894	0.631	81.6	21.0	38 E	16*	28*
8 29	8 52.72	+14 28.6	7.155	6.250	3.8	21.4	24 W	14*	13*	7 30	11 11.52	+11 57.6	0.823	0.599	89.7	21.0	36 E	14*	28*
9 8	8 59.18	+13 55.5	7.055	6.228	5.0	21.4	32 W	22*	18*	8 4	11 11.75	+8 47.1	0.749	0.572	99.4	21.2	34 E	10*	27*
9 18	9 5.30	+13 22.3	6.935	6.206	6.0	21.4	41 W	30*	22*	8 9	11 13.32	+5 23.8	0.676	0.552	110.9	21.5	31 E	6*	24*
9 28	9 10.99	+12 49.4	6.796	6.183	7.0	21.4	49 W	37*	27*	469737 2005 NW₄₄									
10 8	9 16.15	+12 17.5	6.643	6.160	7.8	21.4	57 W	44*	32*	6 30	11 36.39	+12 57.1	0.372	0.964	87.3	21.2	71 E	36*	50*
10 18	9 20.67	+11 47.2	6.475	6.137	8.5	21.4	66 W	50*	37*	7 2	11 50.17	+11 4.0	0.377	0.977	85.1	21.2	73 E	36*	52*
10 28	9 24.47	+11 19.1	6.298	6.114	9.0	21.3	75 W	54*	41*	7 4	12 3.28	+9 12.7	0.384	0.990	83.0	21.2	75 E	35*	54*
11 7	9 27.42	+10 53.9	6.113	6.091	9.3	21.3	84 W	56*	46*	7 6	12 15.72	+7 24.2	0.391	1.002	81.0	21.2	77 E	35*	56*
11 17	9 29.45	+10 32.3	5.926	6.067	9.4	21.2	93 W	56*	46*	7 8	12 27.52	+5 39.1	0.400	1.013	79.1	21.2	78 E	34*	58*
11 27	9 30.44	+10 15.1	5.740	6.043	9.1	21.1	103 W	55*	53*	7 10	12 38.72	+3 57.9	0.410	1.024	77.4	21.2	79 E	34*	60*
12 7	9 30.34	+10 2.8	5.561	6.019	8.6	21.0	113 W	55	54	7 15	13 4.33	+0 3.7	0.437	1.050	73.5	21.3	82 E	32*	64*
12 17	9 29.11	+9 55.8	5.393	5.994	7.9	20.9	124 W	55	54	7 20	13 27.02	-3 23.1	0.468	1.073	70.4	21.4	84 E	30*	67*
12 27	9 26.75	+9 54.5	5.241	5.970	6.8	20.8	134 W	55	54	7 25	13 47.36	-6 24.1	0.502	1.093	67.8	21.5	85 E	28*	70*
1 6	9 23.36	+9 58.7	5.111	5.945	5.4	20.7	145 W	55	54	7 30	14 5.84	-9 2.4	0.537	1.110	65.7	21.6	85 E	26*	72*
1 16	9 19.08	+10 8.1	5.006	5.919	3.8	20.5	156 W	55	54	441987 2010 NY₆₅									
53426 1999 SL₅										490636 2010 DP									
6 30	9 17.58	-1 35.1	2.339	1.795	24.2	21.4	46 E	2*	40*	6 30	19 36.33	+30 27.1	1.735	2.458	19.9	22.7	124 W	75	34
7 10	9 37.81	-2 14.6	2.337	1.723	23.3	21.3	42 E	—	36*	7 5	19 30.23	+30 24.6	1.713	2.455	19.5	22.7	126 W	75	34
7 20	9 59.38	-3 6.9	2.325	1.648	22.3	21.2	38 E	—	31*	7 10	19 23.87	+30 10.3	1.695	2.451	19.2	22.7	128 W	75	34
7 30	10 22.36	-4 11.1	2.303	1.572	21.4	21.0	34 E	—	27*	7 15	19 17.40	+29 43.8	1.682	2.447	19.0	22.6	129 E	75	34
8 9	10 46.84	-5 26.2	2.271	1.495	20.4	20.9	31 E	—	24*	7 20	19 11.00	+29 5.1	1.672	2.443	18.9	22.6	129 E	74	35
8 19	11 13.00	-6 50.4	2.230	1.416	19.5	20.7	28 E	—	20*	7 25	19 4.84	+28 14.6	1.668	2.438	18.9	22.6	129 E	73	36
8 29	11 41.03	-8 21.8	2.183	1.337	18.6	20.5	25 E	—	18*	7 30	18 59.07	+27 13.1	1.668	2.433	19.1	22.6	128 E	72	37
9 8	12 11.16	-9 57.2	2.129	1.258	17.8	20.3	22 E	—	15*	285944 2001 RZ₁₁ (continuation)									
9 18	12 43.69	-11 32.8	2.071	1.181	17.2	20.0	20 E	—	13*	6 30	9 22.15	-9 46.7	2.716	2.242	21.0	21.5	52 E	—	45*
9 23	13 0.94	-12 19.0	2.040	1.143	16.9	19.9	19 E	—	13*	7 10	9 33.59	-11 20.4	2.741	2.184	20.0	21.4	47 E	—	39*
9 28	13 18.89	-13 3.2	2.009	1.107	16.8	19.8	19 E	—	12*	7 20	9 46.17	-13 7.8	2.751	2.124	19.0	21.3	43 E	—	33*
10 3	13 37.57	-13 44.4	1.978	1.072	16.7	19.7	18 E	—	12*	7 30	9 59.87	-15 9.6	2.745	2.062	18.2	21.2	39 E	—	27*
10 8	13 57.00	-14 21.8	1.947	1.039	16.8	19.6	17 E	—	11*	8 9	10 14.72	-17 26.3	2.724	1.999	17.5	21.1	36 E	—	21*
10 13	14 17.19	-14 54.4	1.916	1.007	17.1	19.5	17 E	—	11*	8 19	10 30.85	-19 58.5	2.689	1.935	17.0	21.0	34 E	—	16*
10 18	14 38.14	-15 21.1	1.886	0.979	17.5	19.4	17 E	1*	11*	8 29	10 48.42	-22 46.8	2.642	1.870	16.8	20.9	32 E	—	12*
10 23	14 59.84	-15 40.8	1.856	0.954	18.1	19.4	17 E	3*	11*	9 8	11 7.72	-25 51.1	2.583	1.803	17.0	20.7	32 E	—	8*
10 28	15 22.25	-15 52.7	1.827	0.932	19.0	19.3	18 E	4*	11*	9 18	11 29.16	-29 11.1	2.515	1.735	17.5	20.6	31 W	—	10*
11 2	15 45.32	-15 55.8	1.800	0.914	20.0	19.3	18 E	6*	11*	9 28	11 53.28	-32 45.1	2.440	1.667	18.2	20.5	31 W	—	13*
11 7	16 8.97	-15 49.3	1.775	0.900	21.2	19.3	19 E	7*	11*	10 3	12 6.59	-34 36.3	2.401	1.633	18.6	20.4	31 W	—	14*
11 17	16 57.65	-15 6.3	1.732	0.887	23.9	19.3	21 E	11*	11*	10 8	12 20.87	-36 29.4	2.362	1.599	19.1	20.4	32 W	—	14*
11 27	17 47.40	-13 42.7	1.702	0.894	26.6	19.3	24 E	14*	11*	10 13	12 36.29	-38 23.5	2.323	1.565	19.6	20.3	32 W	—	15*
12 7	18 37.17	-11 42.3	1.689	0.921	28.7	19.4	27 E	18*	11*	10 18	12 52.99	-40 17.4	2.284	1.531	20.1	20.2	32 W	—	15*
12 12	19 1.76	-10 30.6	1.689	0.941	29.4	19.5	28 E	19*	11*	10 23	13 11.12	-42 9.5	2.246	1.497	20.6	20.2	32 W	—	15*
12 17	19 25.99	-9 12.6	1.695	0.964	29.9	19.6	29 E	21*	10*	10 28	13 30.86	-43 57.6	2.209	1.464	21.1	20.1	32 W	—	15*
12 22	19 49.77	-7 49.8	1.707	0.991	30.1	19.6	30 E	22*	10*	11 2	13 52.36	-45 39.2	2.174	1.431	21.5	20.0	32 W	—	15*
12 27	20 13.00	-6 23.4	1.724	1.021	30.0	19.7	31 E	24*	10*	11 7	14 15.74	-47 11.3	2.141	1.398	21.9	19.9	32 W	—	14*
1 1	20 35.61	-4 54.7	1.747	1.053	29.8	19.8	32 E	25*	9*	11 12	14 41.05	-48 30.6	2.110	1.366	22.2	19.9	31 W	—	14*
1 6	20 57.56	-3 25.0	1.774	1.087	29.3	19.9	33 E	26*	9*	285944 2001 RZ₁₁ (continuation)									
1 11	21 18.82	-1 55.2	1.807	1.122	28.7	20.0	33 E	26*	9*	6 30	9 22.15	-9 46.7	2.716	2.242	21.0	21.5	52 E	—	45*
1 16	21 39.36	-0 26.3	1.845	1.159	27.9	20.1	33 E	27*	8*	7 10	9 33.59	-11 20.4	2.741	2.184	20.0	21.4	47 E	—	39*
285944 2001 RZ₁₁ (continuation)										490636 2010 DP (continuation)									
6 30	9 22.15	-9 46.7	2.716	2.242	21.0	21.5	52 E	—	45*	7 5	19 30.23	+30 24.6	1.713	2.455	19.5	22.7	126 W	75	34
7 10	9 33.59	-11 20.4	2.741	2.184	20.0	21.4	47 E	—	39*	7 10	19 23.87	+30 10.3	1.695	2.451	19.2	22.7	128 W	75	34
7 20	9 46.17	-13 7.8	2.751	2.124	19.0	21.3	43 E	—	33*	7 15	19 17.40	+29 43.8	1.682	2.447	19.0	22.6	129 E	75	34
7 30	9 59.87	-15 9.6	2.745	2.062	18.2	21.2	39 E	—	27*	7 20	19 11.00	+29 5.1	1.672	2.443	18.9	22.6	129 E	74	35
8 9	10 14.72	-17 26.3	2.724	1.999	17.5	21.1	36 E	—	21*	7 25	19 4.84	+28 14.6	1.668	2.438	18.9	22.6	129 E	73	36
8 19	10 30.85	-19 58.5	2.689	1.935	17.0	21.0	34 E	—	16*	7 30	18 59.07	+27 13.1	1.668	2.433	19.1	22.6	128 E	72	37
8 29	10 48.42	-22 46.8	2.642	1.870	16.8	20.9	32 E	—	12*	285944 2001 RZ₁₁ (continuation)									
9 8	11 7.72	-25 51.1	2.583	1.803	17.0	20.7	32 E	—	8*	6 30	9 22.15	-9 46.7	2.716	2.242	21.0	21.5	52 E	—	45*
9 18	11 29.16	-29 11.1	2.515	1.735	17.5	20.6	31 W	—	10*	7 10	9 33.59	-11 20.4	2.741	2.184	20.0	21.4	47 E	—	39*
9 28	11																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
422717 2000 YA₂₈										337053 1996 XW₁ (continuation)											
6	30	19 47.46	-13 16.0	1.897	2.876	6.8	22.5	160 W	32	77	7	30	19 17.73	+20 40.1	1.449	2.292	17.9	22.6	136 E	66	43
7	10	19 37.63	-13 46.6	1.844	2.851	3.4	22.2	170 W	31	78	8	4	19 11.42	+20 15.7	1.481	2.307	18.3	22.7	134 E	65	44
7	20	19 27.04	-14 24.5	1.819	2.826	3.5	22.2	170 E	31	78	501216 2013 UW										
7	30	19 16.71	-15 6.8	1.823	2.800	7.0	22.4	160 E	30	79	6	30	20 8.66	-59 5.2	2.718	3.562	10.4	22.9	141 W	—	57
8	9	19 7.65	-15 50.6	1.853	2.772	10.8	22.5	149 E	29	80	7	5	20 1.50	-59 31.0	2.707	3.559	10.2	22.9	142 W	—	56
505463 2013 TV₉₂										173232 1998 XC₉											
6	30	19 51.46	-27 33.9	2.168	3.153	5.6	23.0	163 W	17	88	7	10	20 6.29	-25 25.7	2.549	3.551	3.3	23.2	168 W	20	89
7	5	19 46.56	-27 50.7	2.140	3.141	3.9	22.9	168 W	17	88	7	20	19 56.23	-25 41.6	2.501	3.515	1.5	23.0	175 E	19	90
7	10	19 41.37	-28 6.4	2.118	3.128	2.6	22.8	172 W	17	88	7	30	19 45.88	-25 51.8	2.484	3.477	4.1	23.2	166 E	19	90
7	15	19 35.97	-28 20.5	2.104	3.115	2.2	22.7	173 E	17	88	8	9	19 36.11	-25 54.9	2.495	3.439	7.3	23.3	155 E	19	90
7	20	19 30.49	-28 32.6	2.097	3.102	3.3	22.8	170 E	16	87	162566 2000 RJ₃₄										
7	25	19 25.08	-28 42.4	2.097	3.089	4.9	22.9	165 E	16	87	6	30	20 19.99	-30 34.2	3.209	4.157	5.7	21.8	156 W	14	85
7	30	19 19.86	-28 49.7	2.104	3.075	6.7	23.0	159 E	16	87	7	10	20 11.07	-30 57.6	3.166	4.158	3.6	21.6	165 W	14	85
153219 2000 YM₂₉										605266 2000 RJ₃₄											
6	30	19 51.58	-13 42.4	2.001	2.976	6.7	22.8	160 W	31	78	7	20	20 1.41	-31 14.6	3.154	4.157	2.6	21.6	169 W	14	85
7	5	19 45.84	-14 36.4	1.984	2.980	4.8	22.7	166 W	30	79	7	30	19 51.69	-31 23.2	3.172	4.155	4.0	21.7	163 E	14	85
7	10	19 39.82	-15 32.4	1.975	2.984	2.9	22.5	172 W	29	80	8	9	19 42.61	-31 22.7	3.220	4.153	6.2	21.8	154 E	14	85
7	15	19 33.63	-16 29.5	1.973	2.987	1.7	22.5	175 E	29	80	8	19	19 34.76	-31 13.5	3.295	4.150	8.4	22.0	143 E	14	85
7	20	19 27.41	-17 26.8	1.980	2.990	2.7	22.5	172 E	28	81	523656 2011 WO₄										
7	25	19 21.30	-18 23.4	1.995	2.992	4.5	22.7	167 E	27	82	6	30	20 26.86	+64 58.0	2.075	2.300	26.2	23.8	89 W	70	—
7	30	19 15.43	-19 18.7	2.018	2.995	6.5	22.8	161 E	26	83	7	5	20 18.16	+66 16.5	2.049	2.281	26.5	23.7	90 W	69	—
483662 2005 EY₂₂₃										523656 2011 WO₄											
6	30	19 53.48	+15 18.4	1.531	2.379	16.9	23.3	137 W	60	49	7	10	20 7.72	+67 24.3	2.022	2.262	26.7	23.7	90 W	68	—
7	10	19 41.62	+14 12.3	1.500	2.393	14.8	23.2	143 W	59	50	7	15	19 55.63	+68 20.1	1.996	2.242	27.0	23.7	90 W	67	—
7	20	19 29.18	+12 26.3	1.493	2.404	13.6	23.2	146 E	57	52	7	20	19 42.14	+69 2.2	1.970	2.221	27.2	23.6	90 E	66	—
7	30	19 17.49	+10 5.9	1.509	2.414	13.9	23.2	145 E	55	54	7	25	19 27.68	+69 29.7	1.944	2.199	27.5	23.6	90 E	66	—
8	9	19 7.71	+7 22.2	1.551	2.422	15.4	23.3	141 E	52	57	7	30	19 12.83	+69 41.8	1.917	2.177	27.8	23.5	91 E	65	—
450238 2002 XN₄₀										415986 2002 AT₅											
6	30	19 53.84	-6 7.3	2.089	3.039	8.2	22.8	155 W	39	70	6	30	20 27.90	-45 34.2	2.173	3.084	10.0	22.9	148 W	—	70
7	10	19 42.68	-5 33.7	2.067	3.051	5.8	22.7	162 W	39	70	7	5	20 20.68	-45 43.4	2.176	3.107	9.0	22.9	151 W	—	70
7	20	19 31.14	-5 12.2	2.074	3.061	5.5	22.7	163 E	40	69	7	10	20 13.14	-45 47.0	2.185	3.131	8.2	22.8	154 W	—	70
7	30	19 20.18	-5 2.5	2.111	3.070	7.5	22.8	157 E	40	69	7	15	20 5.45	-45 44.7	2.202	3.153	7.8	22.9	155 W	—	70
8	9	19 10.67	-5 2.9	2.175	3.078	10.2	23.0	147 E	40	69	7	20	19 57.81	-45 36.1	2.226	3.176	7.8	22.9	155 E	—	70
419829 2010 XK₅₂										523656 2011 WO₄											
6	30	19 56.40	-20 38.4	2.438	3.417	5.5	23.0	161 W	24	85	7	25	19 50.40	-45 21.4	2.256	3.198	8.1	23.0	154 E	—	71
7	10	19 46.11	-20 38.9	2.437	3.449	2.0	22.9	173 W	24	85	7	30	19 43.40	-45 1.0	2.294	3.221	8.7	23.0	151 E	—	71
7	20	19 35.61	-20 38.3	2.466	3.480	1.5	22.9	175 E	24	85	8	4	19 36.95	-44 35.5	2.338	3.242	9.6	23.1	148 E	—	71
7	30	19 25.73	-20 35.6	2.526	3.509	4.9	23.2	163 E	24	85	323686 2005 GW₂₀										
8	9	19 17.19	-20 30.5	2.614	3.538	7.9	23.4	151 E	24	85	6	30	20 28.21	+10 33.5	2.135	2.957	13.7	21.6	137 W	56	53
446955 2003 SC₁₁										323686 2005 GW₂₀											
6	30	19 57.69	+49 14.4	1.306	1.855	31.9	23.5	105 W	86	15	7	10	20 20.19	+10 58.3	2.077	2.956	11.8	21.5	143 W	56	53
7	5	19 50.07	+49 25.6	1.284	1.854	31.7	23.4	107 W	86	15	7	20	20 11.00	+10 58.3	2.041	2.954	10.4	21.4	148 W	56	53
7	10	19 41.83	+49 20.0	1.263	1.852	31.4	23.4	108 W	86	15	7	30	20 1.45	+10 32.8	2.030	2.951	10.0	21.3	150 E	56	53
7	15	19 33.23	+48 56.4	1.243	1.850	31.2	23.3	110 E	86	15	8	9	19 52.42	+9 44.0	2.044	2.947	10.8	21.4	147 E	55	54
7	20	19 24.58	+48 13.7	1.225	1.847	31.0	23.3	111 E	87	16	8	19	19 44.71	+8 36.5	2.081	2.941	12.4	21.5	141 E	54	55
7	25	19 16.21	+47 11.6	1.208	1.844	30.8	23.3	112 E	88	17	484095 2006 RU₂₀										
7	30	19 8.42	+45 50.3	1.194	1.840	30.6	23.2	113 E	89	18	6	30	20 37.62	-7 54.6	2.086	2.992	10.6	21.5	147 W	37	72
480875 2001 UM₅₂										484095 2006 RU₂₀											
6	30	19 59.24	-45 17.8	2.633	3.564	7.6	23.3	152 W	—	71	7	10	20 30.79	-8 3.8	1.983	2.948	7.6	21.3	157 W	37	72
7	5	19 54.04	-45 46.2	2.604	3.548	7.1	23.3	154 W	—	70	7	20	20 22.32	-8 25.7	1.905	2.903	4.7	21.0	166 W	37	72
7	10	19 48.45	-46 10.8	2.583	3.532	6.9	23.2	155 W	—	70	7	30	20 12.91	-8 59.2	1.854	2.857	4.0	20.9	169 E	36	73
7	15	19 42.58	-46 30.9	2.567	3.515	7.0	23.2	155 W	—	69	8	9	20 3.45	-9 41.6	1.832	2.811	6.7	21.0	161 E	35	74
7	20	19 36.58	-46 46.1	2.559	3.498	7.4	23.2	154 E	—	69	8	19	19 54.89	-10 29.6	1.835	2.763	10.3	21.1	151 E	35	74
7	25	19 30.59	-46 56.0	2.557	3.481	8.1	23.2	151 E	—	69	8	29	19 48.09	-11 19.2	1.863	2.716	13.8	21.2	140 E	34	75
7	30	19 24.76	-47 0.6	2.562	3.464	9.0	23.2	148 E	—	69	9	8	19 43.69	-12 7.1	1.910	2.667	16.9	21.3	130 E	33	76
8	4	19 19.23	-47 0.0	2.573	3.446	9.9	23.3	144 E	—	69	9	18	19 42.02	-12 50.5	1.973	2.618	19.5	21.4	120 E	32	77
523606 2005 CJ										339148 2004 TT₉											
6	30	20 2.87	-22 13.1	1.345	2.327	8.6	23.3	160 W	23	86	6	30	20 43.23	+16 47.5	2.784	3.518	12.9	21.9	129 W	62	47
7	5	19 56.11	-22 33.5	1.306	2.306	5.9	23.1	166 W	22	87	7	10	20 36.54	+17 13.0	2.690	3.494	11.6	21.8	136 W	62	47
7	10	19 48.64	-22 54.1	1.273	2.285	3.2	22.8	173 W	22	87	7	20	20 28.59	+17 16.5	2.617	3.469	10.5	21.7	141 W	62	47
7	15	19 40.62	-23 14.1	1.248	2.264	0.8	22.6	178 W	22	87	7	30	20 19.96	+16 55.8	2.567	3.443	9.9	21.6	144 E	62	47
7	20	19 32.24	-23 32.7	1.229	2.241	3.0	22.7	173 E	21	88	8	9	20 11.32	+16 11.4	2.541	3.415	10.0	21.5	144 E	61	48
7	25	19 23.77	-23 49.0	1.218	2.219	6.0	22.8	167 E	21	88	8	19	20 3.36	+15 5.6	2.540	3.387	10.8	21.6	141 E	60	49
7	30	19 15.45	-24 2.8	1.213	2.195	9.1	22.9	160 E	21	88	508858 2002 PQ₈₈										
8	4	19 7.54	-24 13.7	1.215	2.171	12.0	23.0	154 E	21	88	6	30	20 51.43	-17 38.1	1.285	2.213	14.1	21.3	148 W	27	82
337053 1996 XW₁										508858 2002 PQ₈₈											
6	30	20 3.21	+19 11.7																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
508858 2002 PQ ₈₈									399526 2003 AA ₁₇								
<i>(continuation)</i>																	
8 4	20 22.55	-21 29.6	1.079	2.087	4.4	20.4	171 E	24 85	6 30	21 7.30	-8 13.3	1.615	2.488	14.9	21.5	141 W	37 72
8 9	20 17.35	-22 4.8	1.073	2.069	7.4	20.5	165 E	23 86	7 10	20 57.92	-7 32.7	1.547	2.489	11.1	21.2	152 W	37 72
8 14	20 12.43	-22 37.7	1.073	2.051	10.3	20.6	159 E	22 87	7 20	20 46.24	-7 4.3	1.503	2.489	7.2	21.0	162 W	38 71
8 19	20 7.99	-23 7.5	1.079	2.033	13.1	20.7	153 E	22 87	7 30	20 33.30	-6 48.1	1.486	2.488	4.8	20.8	168 E	38 71
8 24	20 4.23	-23 33.7	1.090	2.015	15.8	20.8	147 E	21 88	8 9	20 20.39	-6 43.0	1.496	2.485	6.6	21.0	164 E	38 71
8 29	20 1.28	-23 55.9	1.105	1.997	18.3	20.9	142 E	21 88	8 19	20 8.82	-6 46.7	1.534	2.481	10.5	21.2	153 E	38 71
9 3	19 59.26	-24 14.0	1.124	1.980	20.6	21.0	136 E	21 88	8 29	19 59.66	-6 56.1	1.596	2.476	14.3	21.4	143 E	38 71
9 8	19 58.21	-24 28.0	1.147	1.962	22.8	21.0	131 E	21 88	366746 2004 LJ								
9 13	19 58.19	-24 37.9	1.173	1.945	24.7	21.1	126 E	20 89	6 30	21 33.57	+19 45.2	0.693	1.483	36.8	21.8	119 W	65 44
9 18	19 59.21	-24 43.8	1.202	1.928	26.4	21.2	122 E	20 89	7 5	21 24.72	+21 16.7	0.679	1.500	34.6	21.7	123 W	66 43
9 23	20 1.25	-24 45.7	1.232	1.911	27.9	21.3	117 E	20 89	7 10	21 14.35	+22 33.9	0.667	1.515	32.4	21.6	127 W	68 41
9 28	20 4.27	-24 43.7	1.265	1.895	29.1	21.4	113 E	20 89	7 15	21 2.63	+23 33.4	0.658	1.528	30.4	21.5	130 W	69 40
10 3	20 8.23	-24 37.9	1.298	1.878	30.3	21.4	109 E	20 89	7 20	20 49.84	+24 12.4	0.654	1.540	28.6	21.5	133 W	69 40
273419 2006 WX ₂₁									7 25	20 36.44	+24 28.6	0.653	1.551	27.3	21.4	136 W	69 40
6 30	20 53.79	-15 45.7	1.948	2.854	11.2	22.2	147 W	29 80	7 30	20 22.93	+24 21.5	0.656	1.560	26.4	21.4	137 E	69 40
7 10	20 46.78	-16 17.2	1.863	2.832	7.7	22.0	158 W	29 80	8 4	20 9.85	+23 52.0	0.664	1.568	26.0	21.5	137 E	69 40
7 20	20 37.89	-16 56.5	1.803	2.810	3.6	21.7	170 W	28 81	8 9	19 57.65	+23 2.4	0.676	1.575	26.2	21.5	137 E	68 41
7 30	20 27.87	-17 39.8	1.771	2.786	0.9	21.4	178 E	27 82	8 14	19 46.72	+21 55.8	0.692	1.580	26.9	21.6	135 E	67 42
8 9	20 17.72	-18 22.9	1.767	2.762	5.2	21.7	166 E	27 82	8 19	19 37.33	+20 36.2	0.713	1.584	28.0	21.7	133 E	66 43
8 19	20 8.49	-19 1.8	1.791	2.736	9.3	21.9	154 E	26 83	8 24	19 29.63	+19 7.5	0.737	1.587	29.3	21.8	130 E	64 45
288807 2004 RW ₁₆₄									406803 2008 UX ₆₄								
6 30	20 55.81	+31 50.6	1.185	1.866	29.4	21.5	116 W	77 32	6 30	21 59.98	-0 2.2	2.176	2.887	16.7	21.3	125 W	45 64
7 5	20 49.80	+31 35.1	1.162	1.881	28.1	21.4	119 W	77 32	7 10	21 58.37	+0 35.1	2.026	2.835	14.8	21.0	135 W	46 63
7 10	20 43.00	+31 4.1	1.141	1.896	26.8	21.4	123 W	76 33	7 20	21 54.56	+0 58.8	1.894	2.782	12.3	20.7	144 W	46 63
7 15	20 35.57	+30 16.4	1.123	1.910	25.4	21.3	126 W	75 34	7 30	21 48.61	+1 6.4	1.782	2.729	9.5	20.5	154 W	46 63
7 20	20 27.73	+29 11.1	1.109	1.924	24.0	21.3	130 W	74 35	8 9	21 40.91	+0 56.5	1.693	2.676	6.7	20.2	162 W	46 63
7 25	20 19.74	+27 48.0	1.099	1.936	22.7	21.2	133 W	73 36	8 19	21 32.09	+0 29.0	1.629	2.622	5.5	20.0	166 E	45 64
7 30	20 11.86	+26 7.7	1.094	1.948	21.7	21.2	135 E	71 38	8 29	21 23.07	+0 13.8	1.592	2.568	7.4	20.0	161 E	45 64
8 4	20 4.34	+24 12.1	1.094	1.960	20.8	21.2	137 E	69 40	9 3	21 18.82	-0 39.6	1.583	2.541	9.1	20.0	157 E	44 65
8 9	19 57.40	+22 3.3	1.100	1.970	20.4	21.2	137 E	67 42	9 8	21 14.91	-1 7.2	1.581	2.514	10.9	20.1	152 E	44 65
8 14	19 51.22	+19 44.2	1.112	1.981	20.3	21.2	137 E	65 44	9 13	21 11.46	-1 36.1	1.584	2.487	12.8	20.1	147 E	43 66
8 19	19 45.94	+17 18.1	1.131	1.990	20.5	21.3	136 E	62 47	9 18	21 8.57	-2 5.5	1.592	2.460	14.7	20.2	142 E	43 66
8 24	19 41.65	+14 48.3	1.155	1.999	21.1	21.4	135 E	60 49	9 23	21 6.32	-2 34.5	1.606	2.433	16.5	20.2	136 E	42 67
8 29	19 38.41	+12 18.1	1.185	2.007	21.9	21.4	132 E	57 52	9 28	21 4.78	-3 2.4	1.623	2.406	18.2	20.3	131 E	42 67
455311 2002 GO ₄									466130 2012 FZ ₂₃								
6 30	20 57.33	-18 32.8	1.214	2.139	15.1	21.5	147 W	26 83	10 8	21 3.97	-3 52.6	1.669	2.352	21.2	20.4	122 E	41 68
7 5	20 52.83	-18 47.6	1.206	2.161	12.5	21.4	153 W	26 83	10 18	21 6.26	-4 32.4	1.726	2.298	23.6	20.5	112 E	40 69
7 10	20 47.72	-19 4.1	1.203	2.182	9.7	21.3	159 W	26 83	10 28	21 11.58	-4 59.1	1.790	2.245	25.5	20.6	104 E	40 69
7 15	20 42.12	-19 21.5	1.206	2.204	6.9	21.2	165 W	26 83	11 7	21 19.69	-5 11.0	1.858	2.193	26.7	20.7	96 E	40 68*
7 20	20 36.22	-19 38.9	1.215	2.225	4.1	21.1	171 W	25 84	11 17	21 30.34	-5 7.5	1.926	2.141	27.5	20.7	88 E	40 64*
7 25	20 30.21	-19 55.7	1.231	2.246	1.3	21.0	177 W	25 84	11 27	21 43.24	-4 48.2	1.992	2.090	27.8	20.7	82 E	40 58*
7 30	20 24.31	-20 11.1	1.253	2.267	1.6	21.1	176 E	25 84	12 7	21 58.11	-4 13.3	2.056	2.041	27.8	20.8	75 E	41 51*
8 4	20 18.70	-20 24.7	1.281	2.288	4.2	21.3	170 E	25 84	12 17	22 14.71	-3 23.2	2.116	1.993	27.5	20.8	69 E	41* 45*
8 9	20 13.53	-20 36.2	1.316	2.308	6.8	21.5	164 E	24 85	12 27	22 32.84	-2 18.6	2.171	1.948	26.9	20.7	64 E	42* 39*
8 14	20 8.94	-20 45.4	1.356	2.329	9.2	21.7	159 E	24 85	1 6	22 52.30	-1 0.6	2.221	1.904	26.2	20.7	59 E	41* 33*
8 19	20 5.04	-20 52.3	1.403	2.349	11.4	21.9	153 E	24 85	1 16	23 12.98	+0 29.4	2.267	1.863	25.2	20.7	54 E	40* 28*
8 24	20 1.90	-20 56.8	1.455	2.369	13.3	22.1	147 E	24 85	477051 2009 BD ₂								
6 30	20 59.22	-2 4.1	1.920	2.773	13.8	22.1	140 W	43 66	6 30	20 59.22	-2 4.1	1.920	2.773	13.8	22.1	140 W	43 66
7 10	20 53.21	-2 19.3	1.797	2.722	10.9	21.8	149 W	43 66	7 10	20 53.21	-2 19.3	1.797	2.722	10.9	21.8	149 W	43 66
7 20	20 45.02	-2 55.2	1.697	2.670	7.9	21.5	159 W	42 67	7 20	20 45.02	-2 55.2	1.697	2.670	7.9	21.5	159 W	42 67
7 30	20 35.21	-3 52.2	1.622	2.617	5.6	21.3	165 W	41 68	7 30	20 35.21	-3 52.2	1.622	2.617	5.6	21.3	165 W	41 68
8 9	20 24.66	-5 8.0	1.575	2.563	6.5	21.2	163 E	40 69	8 9	20 24.66	-5 8.0	1.575	2.563	6.5	21.2	163 E	40 69
8 19	20 14.45	-6 37.7	1.555	2.508	9.9	21.3	155 E	38 71	8 19	20 14.45	-6 37.7	1.555	2.508	9.9	21.3	155 E	38 71
8 29	20 5.72	-8 14.6	1.560	2.451	13.9	21.4	144 E	37 72	8 29	20 5.72	-8 14.6	1.560	2.451	13.9	21.4	144 E	37 72
387541 2000 VN ₆₁									332663 2008 WA ₅₅								
6 30	21 0.19	-58 53.8	2.494	3.303	12.3	21.9	136 W	- 57	6 30	21 7.13	-9 41.7	1.248	2.141	17.2	21.4	142 W	35 74
7 5	20 54.18	-59 32.1	2.467	3.293	12.0	21.9	138 W	- 56	7 10	20 58.52	-9 37.6	1.201	2.155	12.5	21.2	153 W	35 74
7 10	20 47.26	-60 5.0	2.446	3.282	11.7	21.8	139 W	- 56	7 20	20 47.35	-9 49.6	1.174	2.169	7.4	21.0	164 W	35 74
7 15	20 39.54	-60 31.5	2.430	3.271	11.6	21.8	140 W	- 55	7 30	20 34.87	-10 14.9	1.172	2.181	3.9	20.8	172 E	35 74
7 20	20 31.22	-60 50.5	2.420	3.260	11.7	21.8	139 W	- 55	8 9	20 22.64	-10 48.5	1.195	2.193	6.4	21.0	166 E	34 75
7 25	20 22.53	-61 1.3	2.416	3.249	11.9	21.8	139 W	- 55	8 19	20 12.15	-11 25.4	1.243	2.203	11.1	21.3	155 E	34 75
7 30	20 13.75	-61 3.5	2.417	3.237	12.3	21.8	137 E	- 55	346763 2009 BZ ₇₃								
8 4	20 5.17	-60 56.9	2.424	3.225	12.8	21.8	135 E	- 55	6 30	22 16.96	-21 54.8	1.840	2.607	17.5	21.3	129 W	23* 86
8 9	19 57.02	-60 41.9	2.436	3.213	13.4	21.8	133 E	- 55	7 10	22 15.95	-22 31.5	1.711	2.566	15.1	21.0	139 W	22 87
8 14	19 49.55	-60 19.0	2.452	3.201	14.0	21.9	130 E	- 56	7 20	22 12.05	-23 19.0	1.599	2.525	12.0	20.8	149 W	22 87
8 19	19 42.94	-59 48.9	2.474	3.189	14.7	21.9	127 E	- 56	7 30	22 5.26	-24 13.2	1.509	2.483	8.5	20.5	159 W	21 88

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
346763 2009 BZ₇₃ (continuation)									440680 2005 YW₃₆ (continuation)								
h m									h m								
8 4	22 0.90	-24 40.6	1.473	2.462	6.8	20.3	163 W	20 89	11 2	0 5.19	-19 49.9	0.504	1.374	33.3	18.5	130 E	25 84
8 9	21 55.99	-25 7.0	1.443	2.441	5.4	20.2	167 W	20 89	11 7	0 14.50	-22 2.8	0.527	1.370	35.8	18.7	126 E	23 86
8 14	21 50.66	-25 31.1	1.419	2.420	4.9	20.1	168 W	19 90	11 12	0 24.50	-23 46.4	0.552	1.367	37.8	18.8	122 E	21 88
8 19	21 45.06	-25 52.1	1.402	2.398	5.5	20.1	167 E	19 90	11 17	0 35.08	-25 2.2	0.580	1.366	39.3	19.0	119 E	20 89
8 24	21 39.36	-26 9.0	1.391	2.377	7.1	20.1	163 E	19 90	11 22	0 46.13	-25 52.6	0.609	1.368	40.5	19.1	116 E	19 90
8 29	21 33.75	-26 20.9	1.387	2.355	9.1	20.2	158 E	19 90	11 27	0 57.54	-26 20.1	0.640	1.371	41.4	19.2	113 E	19 90
9 3	21 28.42	-26 27.4	1.389	2.334	11.3	20.2	153 E	19 90	12 2	1 9.19	-26 27.2	0.673	1.377	42.0	19.4	111 E	19 90
9 8	21 23.53	-26 28.4	1.396	2.312	13.4	20.3	148 E	19 90	12 7	1 20.99	-26 16.4	0.706	1.385	42.3	19.5	109 E	19 90
9 13	21 19.24	-26 23.8	1.409	2.290	15.5	20.4	142 E	19 90	12 12	1 32.89	-25 49.9	0.741	1.394	42.5	19.6	107 E	19 90
9 18	21 15.66	-26 13.7	1.426	2.268	17.5	20.5	137 E	19 90	12 17	1 44.84	-25 9.5	0.777	1.406	42.5	19.7	105 E	20 89
9 28	21 11.02	-25 38.5	1.474	2.225	21.1	20.6	127 E	19 90	12 22	1 56.80	-24 17.3	0.814	1.419	42.3	19.9	104 E	21 88
10 8	21 9.96	-24 45.9	1.533	2.181	24.0	20.7	117 E	20 89	12 27	2 8.76	-23 15.2	0.852	1.434	42.0	20.0	103 E	22 87
10 18	21 12.44	-23 38.8	1.602	2.138	26.2	20.9	108 E	21 88	1 1	2 20.67	-22 4.9	0.891	1.451	41.6	20.1	101 E	23 86
10 28	21 18.22	-22 19.2	1.675	2.094	27.8	21.0	100 E	23 86	1 6	2 32.54	-20 47.9	0.932	1.469	41.2	20.2	100 E	24 85
11 7	21 26.87	-20 48.5	1.750	2.051	28.9	21.0	93 E	24 83*	1 11	2 44.35	-19 25.4	0.974	1.489	40.7	20.3	99 E	26 83
11 17	21 38.01	-19 7.2	1.824	2.009	29.4	21.1	86 E	26 75*	1 16	2 56.11	-17 58.9	1.018	1.510	40.2	20.4	98 E	27 82*
11 27	21 51.25	-17 15.5	1.897	1.968	29.5	21.1	79 E	28 67*	480997 2004 DT₃₉								
12 7	22 6.26	-15 13.4	1.966	1.927	29.3	21.2	73 E	30 59*	6 30	22 37.38	+ 9 31.2	1.976	2.547	21.6	21.5	113 W	54* 54
12 17	22 22.76	-13 1.1	2.030	1.888	28.8	21.2	68 E	32* 51*	7 5	22 38.79	+ 9 35.1	1.893	2.521	21.1	21.3	117 W	55* 54
12 27	22 40.54	-10 38.8	2.090	1.850	28.1	21.2	62 E	34* 44*	7 10	22 39.68	+ 9 33.4	1.811	2.494	20.4	21.2	121 W	55 54
1 6	22 59.41	- 8 7.1	2.144	1.814	27.2	21.2	57 E	35* 38*	7 15	22 40.00	+ 9 25.4	1.732	2.467	19.6	21.0	126 W	54 55
1 16	23 19.27	- 5 26.8	2.194	1.780	26.1	21.1	53 E	35* 33*	7 20	22 39.74	+ 9 10.1	1.656	2.440	18.5	20.9	130 W	54 55
213948 2003 WL₁₂₆									7 25	22 38.86	+ 8 46.6	1.583	2.412	17.3	20.7	135 W	54 55
6 30	22 23.46	-13 3.8	2.261	2.969	16.2	21.4	125 W	32* 77	7 30	22 37.35	+ 8 14.2	1.515	2.385	15.8	20.6	140 W	53 56
7 10	22 21.94	-13 13.8	2.121	2.933	14.1	21.2	135 W	31 78	8 4	22 35.21	+ 7 32.1	1.451	2.357	14.2	20.4	145 W	53 56
7 20	22 18.05	-13 35.4	1.998	2.896	11.3	20.9	146 W	31 78	8 9	22 32.46	+ 6 39.5	1.392	2.329	12.3	20.2	151 W	52 57
7 30	22 11.85	-14 7.3	1.897	2.859	8.0	20.6	157 W	31 78	8 19	22 25.29	+ 4 21.7	1.292	2.273	8.3	19.8	161 W	49 60
8 9	22 3.67	-14 46.3	1.820	2.821	4.1	20.3	168 W	30 79	8 29	22 16.48	+ 1 21.8	1.217	2.216	5.1	19.5	169 E	46 63
8 14	21 59.02	-15 7.2	1.792	2.801	2.1	20.1	174 W	30 79	8 28	22 7.10	- 2 11.0	1.171	2.159	7.1	19.4	165 E	43 66
8 19	21 54.12	-15 28.2	1.770	2.782	1.0	20.0	177 W	30 79	9 13	22 2.61	- 4 4.8	1.159	2.131	9.5	19.5	160 E	41 68
8 24	21 49.10	-15 48.5	1.756	2.762	2.7	20.1	173 E	29 80	9 18	21 58.47	- 6 0.4	1.153	2.102	12.2	19.6	154 E	39 70
8 29	21 44.11	-16 7.6	1.749	2.742	4.8	20.2	167 E	29 80	9 23	21 54.87	- 7 55.0	1.155	2.073	15.0	19.6	148 E	37 72
9 3	21 39.26	-16 24.7	1.749	2.722	7.0	20.3	161 E	29 80	9 28	21 51.95	- 9 46.4	1.162	2.044	17.7	19.7	142 E	35 74
9 8	21 34.70	-16 39.5	1.755	2.702	9.1	20.4	155 E	28 81	10 3	21 49.82	-11 32.6	1.174	2.016	20.3	19.8	136 E	33 76
9 18	21 26.88	-17 0.7	1.786	2.661	13.0	20.5	143 E	28 81	10 8	21 48.56	-13 12.1	1.192	1.987	22.7	19.9	130 E	32 77
9 28	21 21.41	-17 9.2	1.838	2.620	16.4	20.7	132 E	28 81	10 13	21 48.23	-14 43.7	1.213	1.958	24.8	19.9	124 E	30 79
10 8	21 18.72	-17 4.5	1.906	2.578	19.2	20.8	122 E	28 81	10 18	21 48.87	-16 6.8	1.237	1.930	26.8	20.0	119 E	29 80
10 18	21 18.92	-16 47.2	1.986	2.535	21.3	21.0	112 E	28 81	10 28	21 53.08	-18 26.1	1.293	1.873	30.0	20.1	109 E	27 82
10 28	21 21.96	-16 17.8	2.072	2.492	22.9	21.1	103 E	29 80	11 7	22 1.03	-20 10.0	1.354	1.818	32.4	20.2	100 E	25 84
11 7	21 27.58	-15 37.0	2.162	2.449	23.8	21.1	95 E	29 78*	11 17	22 12.42	-21 20.7	1.417	1.763	34.1	20.3	93 E	24 83*
11 17	21 35.50	-14 45.4	2.253	2.405	24.2	21.2	87 E	30 72*	11 22	22 19.29	-21 44.3	1.447	1.736	34.7	20.3	89 E	23 80*
11 27	21 45.44	-13 43.1	2.340	2.361	24.2	21.2	79 E	31 64*	11 27	22 26.87	-22 0.6	1.476	1.710	35.1	20.4	86 E	23 76*
12 7	21 57.11	-12 30.6	2.423	2.317	23.9	21.3	72 E	32 56*	12 2	22 35.13	-22 9.9	1.505	1.685	35.4	20.4	82 E	23 73*
12 17	22 10.28	-11 8.1	2.500	2.272	23.2	21.3	65 E	34* 48*	12 7	22 44.00	-22 12.5	1.532	1.660	35.7	20.4	79 E	23 70*
12 27	22 24.74	- 9 35.9	2.569	2.228	22.2	21.3	59 E	34* 41*	12 12	22 53.45	-22 8.5	1.558	1.635	35.8	20.4	76 E	23 67*
1 6	22 40.31	- 7 54.4	2.629	2.184	21.1	21.2	53 E	33* 34*	12 17	23 3.45	-21 58.3	1.582	1.611	35.9	20.4	74 E	23 64*
1 16	22 56.88	- 6 4.1	2.681	2.140	19.8	21.2	47 E	32* 28*	12 22	23 13.96	-21 42.0	1.604	1.589	35.9	20.4	71 E	23 61*
440680 2005 YW₃₆									12 27	23 24.94	-21 19.9	1.624	1.567	35.8	20.4	69 E	24 58*
6 30	22 35.06	+19 28.1	1.376	1.946	29.8	21.3	108 W	64* 45	1 1	23 36.35	-20 52.2	1.643	1.546	35.8	20.4	67 E	24 56*
7 5	22 40.29	+20 24.1	1.304	1.914	29.8	21.2	111 W	65* 44	1 6	23 48.17	-20 19.1	1.660	1.526	35.6	20.4	65 E	25 54*
7 10	22 45.29	+21 16.8	1.234	1.883	29.7	21.0	113 W	66 43	1 11	0 0.39	-19 40.6	1.676	1.507	35.5	20.4	63 E	25 52*
7 15	22 50.00	+22 5.3	1.166	1.853	29.5	20.9	116 W	67 42	1 16	0 12.97	-18 57.0	1.689	1.489	35.4	20.4	61 E	25 50*
7 20	22 54.41	+22 48.4	1.099	1.822	29.2	20.7	119 W	68 41	523707 2014 JM₂₅								
7 25	22 58.49	+23 25.1	1.035	1.792	28.8	20.5	122 W	68 41	6 30	22 38.40	-18 44.5	0.379	1.267	41.8	21.3	124 W	26* 83
7 30	23 2.23	+23 53.7	0.973	1.762	28.2	20.3	125 W	69 40	7 5	22 50.68	-19 53.9	0.365	1.266	40.6	21.2	126 W	25* 84
8 4	23 5.60	+24 12.7	0.913	1.733	27.5	20.1	128 W	69 40	7 10	23 2.20	-21 11.9	0.353	1.266	39.2	21.1	128 W	24* 85
8 9	23 8.61	+24 20.2	0.855	1.704	26.5	19.9	131 W	69 40	7 15	23 12.79	-22 38.0	0.343	1.266	37.6	21.0	131 W	22 87
8 14	23 11.22	+24 14.1	0.800	1.676	25.4	19.7	135 W	69 40	7 20	23 22.26	-24 11.2	0.334	1.268	35.9	20.9	133 W	21 88
8 19	23 13.44	+23 51.6	0.748	1.648	24.0	19.5	139 W	69 40	7 25	23 30.43	-25 49.8	0.328	1.270	34.1	20.8	135 W	19 90
8 24	23 15.30	+23 10.0	0.698	1.621	22.4	19.2	142 W</										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
488267 2016 SM₆										517103 2013 EM₂₀ (continuation)									
6 30	22 47.35	-17 0.0	1.615	2.312	22.1	21.3	121 W	27*	81	9 10	2 1.60	-45 54.7	0.206	1.139	46.2	18.5	125 W	—	70
7 10	22 46.32	-15 42.9	1.472	2.268	19.9	21.0	130 W	29	80	9 12	2 10.43	-47 8.5	0.199	1.129	47.9	18.5	124 W	—	69
7 20	22 41.74	-14 23.9	1.343	2.223	16.9	20.7	141 W	31	78	9 14	2 19.94	-48 21.8	0.192	1.120	49.6	18.4	122 W	—	68
7 30	22 33.29	-13 0.8	1.232	2.179	12.8	20.3	152 W	32	77	9 16	2 30.21	-49 34.3	0.186	1.111	51.5	18.4	120 W	—	66
8 9	22 21.07	-11 30.9	1.143	2.135	7.7	19.9	164 W	33	76	9 18	2 41.34	-50 45.2	0.179	1.101	53.4	18.3	118 W	—	65
8 19	22 5.80	-9 52.7	1.080	2.091	2.0	19.4	176 W	35	74	9 20	2 53.47	-51 53.7	0.173	1.092	55.5	18.3	116 W	—	64
8 29	21 48.99	-8 6.7	1.046	2.047	5.1	19.5	170 E	37	72	9 22	3 6.70	-52 58.9	0.167	1.083	57.6	18.3	114 W	—	63
9 3	21 40.64	-7 11.7	1.039	2.025	8.3	19.6	163 E	38	71	9 24	3 21.17	-53 59.7	0.161	1.074	59.8	18.2	112 W	—	62
9 8	21 32.68	-6 15.9	1.039	2.004	11.5	19.7	157 E	39	70	9 26	3 37.01	-54 54.7	0.156	1.066	62.2	18.2	110 W	—	61
9 13	21 25.34	-5 20.1	1.045	1.983	14.6	19.8	150 E	40	69	9 28	3 54.31	-55 42.6	0.151	1.057	64.6	18.2	108 W	—	60
9 18	21 18.84	-4 24.8	1.057	1.961	17.5	19.9	144 E	41	68	9 30	4 13.16	-56 21.4	0.145	1.049	67.1	18.2	105 W	—	60
9 28	21 8.92	-2 36.4	1.096	1.920	22.7	20.1	132 E	42	67	10 2	4 33.57	-56 49.1	0.141	1.041	69.7	18.2	103 W	—	59
10 8	21 3.51	-0 51.5	1.149	1.879	26.8	20.3	122 E	44	65	10 4	4 55.47	-57 3.4	0.136	1.033	72.4	18.2	100 W	—	59
10 18	21 2.62	+ 0 51.1	1.212	1.841	30.0	20.4	113 E	46	63	10 6	5 18.69	-57 1.9	0.132	1.025	75.2	18.2	97 W	—	59
10 28	21 5.91	+ 2 34.0	1.281	1.803	32.3	20.6	104 E	48	61	10 8	5 42.94	-56 42.2	0.128	1.018	78.1	18.2	95 W	—	59
11 7	21 12.86	+ 4 20.1	1.350	1.768	33.8	20.7	97 E	49	58*	10 9	5 55.34	-56 24.8	0.126	1.014	79.5	18.2	93 W	—	60
11 17	21 23.01	+ 6 11.6	1.419	1.735	34.7	20.8	90 E	51	53*	10 10	6 7.84	-56 2.0	0.124	1.011	81.0	18.2	92 W	—	60
11 27	21 35.95	+ 8 10.8	1.485	1.705	35.2	20.9	85 E	53	47*	10 11	6 20.40	-55 33.8	0.122	1.007	82.5	18.2	91 W	—	60
12 7	21 51.31	+ 10 18.7	1.547	1.677	35.3	20.9	80 E	55*	40*	10 12	6 32.94	-54 59.9	0.121	1.004	83.9	18.3	89 W	—	61*
12 17	22 8.88	+ 12 35.8	1.606	1.653	35.1	21.0	75 E	57*	34*	10 13	6 45.41	-54 20.2	0.119	1.000	85.4	18.3	88 W	—	62*
12 27	22 28.48	+ 15 2.2	1.661	1.633	34.7	21.0	71 E	58*	28*	10 14	6 57.76	-53 34.7	0.118	0.997	86.9	18.3	86 W	—	62*
1 6	22 50.00	+ 17 36.5	1.712	1.616	34.2	21.0	68 E	58*	22*	10 15	7 9.92	-52 43.4	0.116	0.994	88.4	18.3	85 W	—	63*
1 16	23 13.41	+ 20 16.8	1.761	1.604	33.6	21.1	64 E	57*	17*	10 16	7 21.85	-51 46.3	0.115	0.990	89.9	18.4	83 W	—	63*
										10 17	7 33.52	-50 43.6	0.114	0.987	91.4	18.4	82 W	—	63*
										10 18	7 44.88	-49 35.5	0.113	0.984	92.9	18.4	81 W	—	64*
										10 20	8 6.59	-47 4.0	0.111	0.978	95.8	18.5	78 W	—	64*
6 30	22 57.91	-34 10.1	0.494	1.348	39.5	21.3	123 W	10*	82	10 22	8 26.86	-44 14.3	0.110	0.973	98.5	18.6	75 W	—	64*
7 5	23 4.11	-36 31.8	0.479	1.352	37.7	21.2	126 W	8*	79	10 24	8 45.66	-41 9.6	0.110	0.968	101.0	18.7	73 W	—	64*
7 10	23 9.01	-39 2.5	0.466	1.356	36.0	21.1	128 W	6*	77	10 26	9 3.02	-37 53.8	0.110	0.963	103.3	18.8	70 W	—	63*
7 15	23 12.37	-41 40.1	0.455	1.359	34.4	21.0	131 W	3	74	10 28	9 19.03	-34 30.9	0.111	0.958	105.3	18.9	68 W	—	62*
7 20	23 13.92	-44 21.4	0.446	1.362	32.9	20.9	133 W	1	72	10 30	9 33.79	-31 4.8	0.112	0.954	107.0	19.0	67 W	—	62*
7 25	23 13.41	-47 2.2	0.440	1.364	31.7	20.8	135 W	—	69	11 1	9 47.43	-27 39.6	0.114	0.951	108.3	19.2	65 W	—	61*
7 30	23 10.61	-49 37.0	0.437	1.366	30.8	20.8	136 W	—	66	11 3	10 0.06	-24 18.5	0.117	0.947	109.2	19.2	64 W	—	61*
8 4	23 5.41	-52 0.5	0.437	1.367	30.4	20.8	137 W	—	64	11 5	10 11.79	-21 4.2	0.120	0.944	109.7	19.3	64 W	—	61*
8 9	22 57.77	-54 7.1	0.439	1.368	30.4	20.8	137 W	—	62	11 7	10 22.73	-17 59.1	0.124	0.942	109.9	19.4	63 W	—	61*
8 14	22 47.88	-55 51.6	0.444	1.368	30.8	20.8	136 W	—	60	11 9	10 32.97	-15 4.3	0.128	0.940	109.8	19.5	63 W	—	61*
8 19	22 36.23	-57 9.5	0.451	1.368	31.6	20.9	135 W	—	59	11 11	10 42.58	-12 20.9	0.133	0.938	109.3	19.5	63 W	—	61*
8 24	22 23.61	-57 58.2	0.460	1.367	32.7	21.0	133 W	—	58	11 13	10 51.64	-9 49.2	0.138	0.937	108.6	19.6	64 W	—	61*
8 29	22 11.00	-58 17.0	0.472	1.366	33.9	21.1	131 E	—	58	11 15	11 0.20	-7 29.0	0.144	0.936	107.7	19.6	64 W	—	61*
9 3	21 59.34	-58 7.8	0.485	1.365	35.3	21.2	129 E	—	58	11 17	11 8.32	-5 20.0	0.149	0.935	106.7	19.6	65 W	—	61*
9 8	21 49.32	-57 33.4	0.500	1.362	36.7	21.3	126 E	—	58	11 22	11 26.98	-0 43.0	0.165	0.936	103.4	19.6	67 W	—	61*
9 13	21 41.42	-56 37.5	0.516	1.360	38.2	21.4	123 E	—	59	11 27	11 43.74	+ 2 57.7	0.181	0.940	99.8	19.7	70 W	—	61*
9 18	21 35.85	-55 23.7	0.533	1.357	39.6	21.5	121 E	—	61	12 2	11 59.01	+ 5 53.0	0.198	0.946	95.9	19.7	73 W	—	61*
9 23	21 32.61	-53 55.5	0.552	1.353	40.9	21.6	118 E	—	62	12 7	12 13.03	+ 8 13.3	0.214	0.954	91.9	19.7	76 W	—	61*
										12 12	12 25.89	+ 10 7.7	0.230	0.965	88.0	19.7	79 W	—	61*
										12 17	12 37.65	+ 11 43.6	0.244	0.979	84.1	19.7	82 W	—	61*
										12 22	12 48.30	+ 13 7.0	0.258	0.994	80.3	19.7	85 W	—	61*
										12 27	12 57.84	+ 14 22.2	0.270	1.011	76.5	19.8	88 W	—	61*
										1 1	13 6.26	+ 15 32.9	0.281	1.029	72.7	19.7	91 W	—	61*
										1 6	13 13.46	+ 16 42.2	0.290	1.049	69.0	19.7	95 W	—	61*
										1 11	13 19.33	+ 17 52.6	0.298	1.070	65.2	19.7	99 W	—	61*
										1 16	13 23.70	+ 19 6.1	0.305	1.093	61.4	19.7	103 W	—	61*
										443972 2003 TN₁									
										6 30	23 10.68	-51 9.2	0.761	1.553	34.1	21.4	121 W	—	65
										7 5	23 14.62	-52 14.8	0.733	1.546	33.3	21.3	123 W	—	64
										7 10	23 16.78	-53 23.3	0.706	1.539	32.5	21.2	126 W	—	63
										7 15	23 16.88	-54 33.1	0.682	1.531	31.7	21.0	128 W	—	61
										7 20	23 14.61	-55 42.0	0.659	1.523	31.0	20.9	130 W	—	60
										7 25	23 9.68	-56 46.8	0.638	1.515	30.3	20.8	131 W	—	59
										7 30	23 1.94	-57 43.3	0.620	1.506	29.7	20.7	133 W	—	58
										8 4	22 51.39	-58 26.8	0.604	1.498	29.3	20.7	134 W	—	58
										8 9	22 38.28	-58 52.2	0.591	1.489	29.1	20.6	134 W	—	57
										8 14	22 23.15	-58 54.6	0.581	1.480	29.2	20.5	135 W	—	57
										8 19	22 6.94	-58 29.7	0.573	1.470	29.6	20.5	134 W	—	58
										8 24	21 50.77	-57 35.3	0.568	1.461	30.2	20.5	133 E	—	58
										8 29	21 35.77	-56 11.8	0.567	1.451	31.2	20.5	132 E	—	60
										9 3	21 22.75	-54 21.8	0.568	1.442	32.3	20.5	130 E	—	62
										9 8	21 12.18	-52 9.3	0.572	1.432	33.7	20.6	128 E	—	64
										9 13	21 4.21	-49 39.0	0.579	1.422	35.2</				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°		
7025 1993 QA									438990 2010 SG ₁₃ (continuation)										
6 30	23 26.40	-1 10.9	1.261	1.832	32.1	21.5	107 W	41*	65	8 29	8 47.83	+67 7.8	0.658	0.891	79.8	19.9	60 W	43*	65
7 5	23 31.32	-1 9.3	1.199	1.820	31.6	21.3	110 W	42*	65	8 30	8 57.82	+65 38.4	0.654	0.876	81.2	19.9	59 W	42*	65
7 10	23 35.76	-1 14.2	1.138	1.808	30.9	21.2	114 W	43*	65	8 31	9 6.83	+64 5.3	0.651	0.861	82.5	19.9	58 W	42*	65
7 15	23 39.66	-1 26.6	1.078	1.795	30.0	21.0	118 W	43*	65	9 1	9 15.00	+62 28.7	0.649	0.846	83.8	19.9	56 W	41*	65
7 20	23 42.94	-1 47.4	1.019	1.781	28.9	20.9	122 W	43	66	9 2	9 22.43	+60 49.1	0.647	0.830	85.2	19.9	55 W	40*	66
7 25	23 45.52	-2 17.7	0.963	1.767	27.5	20.7	126 W	43	66	9 3	9 29.20	+59 6.6	0.645	0.815	86.6	19.9	54 W	39*	66
7 30	23 47.33	-2 58.7	0.909	1.752	25.9	20.5	131 W	42	67	9 4	9 35.41	+57 21.5	0.644	0.799	88.0	20.0	52 W	38*	67
8 4	23 48.30	-3 51.1	0.857	1.737	24.0	20.3	136 W	41	68	9 5	9 41.11	+55 34.0	0.644	0.783	89.3	20.0	51 W	37*	68
8 9	23 48.34	-4 56.0	0.809	1.721	21.7	20.1	141 W	40	69	9 6	9 46.38	+53 44.3	0.644	0.767	90.7	20.0	50 W	36*	69
8 19	23 45.28	-7 45.7	0.724	1.687	16.3	19.6	152 W	37	72	9 7	9 51.27	+51 52.5	0.645	0.751	92.1	20.0	48 W	35*	70
8 29	23 37.77	-11 26.5	0.658	1.651	10.1	19.1	163 W	34	75	9 8	9 55.82	+49 59.0	0.646	0.735	93.5	20.0	47 W	35*	71
9 8	23 26.19	-15 42.6	0.613	1.613	6.9	18.8	169 W	29	80	9 9	10 0.08	+48 3.8	0.648	0.718	94.8	20.0	45 W	34*	72
9 13	23 19.25	-17 54.8	0.598	1.593	8.9	18.8	166 E	27	82	9 10	10 4.07	+46 7.1	0.651	0.702	96.1	20.0	44 W	33*	73
9 18	23 11.91	-20 3.4	0.590	1.573	12.4	18.9	160 E	25	84	9 11	10 7.85	+44 9.2	0.655	0.685	97.4	20.1	42 W	32*	74
9 23	23 4.52	-22 3.6	0.587	1.552	16.5	19.0	154 E	23	86	9 12	10 11.43	+42 10.2	0.659	0.668	98.7	20.1	41 W	31*	75
9 28	22 57.49	-23 51.3	0.588	1.531	20.6	19.1	147 E	21	88	9 13	10 14.83	+40 10.2	0.664	0.651	99.8	20.1	40 W	30*	76
10 3	22 51.15	-25 24.1	0.594	1.510	24.6	19.2	141 E	20	89	9 14	10 18.10	+38 9.6	0.669	0.634	101.0	20.1	38 W	29*	77
10 8	22 45.79	-26 40.4	0.603	1.488	28.4	19.3	135 E	18	89	9 15	10 21.25	+36 8.4	0.676	0.617	102.0	20.1	37 W	28*	78
10 13	22 41.66	-27 40.1	0.615	1.465	31.9	19.4	129 E	17	88	9 16	10 24.29	+34 6.8	0.683	0.600	103.0	20.1	36 W	28*	79
10 18	22 38.91	-28 23.6	0.629	1.443	35.1	19.5	124 E	17	88	9 17	10 27.26	+32 5.0	0.691	0.583	103.8	20.1	34 W	27*	80
10 23	22 37.64	-28 51.8	0.645	1.420	38.0	19.6	118 E	16	87	9 18	10 30.17	+30 3.2	0.701	0.565	104.6	20.1	33 W	26*	81
10 28	22 37.86	-29 6.3	0.661	1.397	40.6	19.7	114 E	16	87	9 20	10 35.89	+26 0.2	0.722	0.531	105.6	20.1	31 W	24*	83
11 2	22 39.50	-29 8.3	0.677	1.373	43.0	19.8	109 E	16	87	9 22	10 41.61	+21 59.1	0.747	0.496	105.9	20.1	28 W	22*	85
11 7	22 42.50	-28 59.1	0.692	1.350	45.1	19.9	105 E	16	87	9 24	10 47.49	+18 1.0	0.777	0.462	105.3	20.0	26 W	20*	87
11 12	22 46.77	-28 39.7	0.708	1.326	47.0	19.9	101 E	16	87	9 26	10 53.72	+14 7.2	0.811	0.429	103.6	19.8	25 W	18*	89
11 17	22 52.21	-28 10.7	0.722	1.303	48.7	20.0	98 E	17	88	9 28	11 0.48	+10 19.0	0.850	0.398	100.5	19.6	23 W	16*	91
11 22	22 58.75	-27 33.0	0.734	1.280	50.3	20.0	95 E	17	88*	9 30	11 8.00	+6 37.5	0.893	0.370	95.9	19.3	22 W	14*	93
11 27	23 6.26	-26 46.9	0.745	1.256	51.7	20.1	92 E	18	86*	10 2	11 16.48	+3 4.5	0.941	0.346	89.7	19.0	20 W	12*	95
12 2	23 14.66	-25 53.1	0.755	1.233	53.1	20.1	89 E	19	82*	10 4	11 26.13	-0 17.9	0.993	0.328	81.8	18.7	19 W	10*	97
12 7	23 23.85	-24 51.6	0.762	1.211	54.3	20.1	87 E	20	79*	10 6	11 37.03	-3 27.2	1.047	0.317	72.7	18.5	18 W	8*	99
12 12	23 33.78	-23 42.6	0.767	1.189	55.5	20.1	84 E	21	76*	10 8	11 49.16	-6 20.6	1.102	0.315	63.0	18.2	16 W	5*	101
12 17	23 44.40	-22 26.1	0.771	1.167	56.7	20.1	82 E	23	73*	10 10	12 2.29	-8 56.1	1.156	0.322	53.4	18.1	15 W	3*	103
12 22	23 55.66	-21 2.2	0.772	1.147	57.8	20.1	81 E	24	70*	10 12	12 16.11	-11 12.7	1.209	0.337	44.7	18.1	14 W	1*	105
12 27	0 7.51	-19 30.9	0.771	1.127	58.9	20.1	79 E	25	67*	10 14	12 30.27	-13 11.0	1.259	0.358	37.1	18.1	13 W	—	107
1 1	0 19.91	-17 52.1	0.768	1.108	60.0	20.1	77 E	27	65*	10 16	12 44.46	-14 52.3	1.306	0.384	31.0	18.1	11 W	—	109
1 6	0 32.84	-16 5.9	0.764	1.090	61.1	20.1	76 E	29	62*	10 18	12 58.47	-16 18.5	1.352	0.414	26.1	18.2	11 W	—	111
1 11	0 46.29	-14 11.9	0.757	1.074	62.1	20.1	75 E	31	60*	10 20	13 12.16	-17 31.7	1.394	0.446	22.2	18.3	10 W	—	113
1 16	1 0.29	-12 10.2	0.750	1.059	63.2	20.0	74 E	33	58*	10 22	13 25.45	-18 33.8	1.436	0.480	19.2	18.5	9 W	—	115
429746 2011 SA ₁₆									10 24	13 38.29	-19 26.3	1.475	0.514	16.9	18.6	9 W	—	117	
6 30	23 29.16	+19 14.0	1.794	2.167	27.8	21.5	97 W	60*	45	10 26	13 50.68	-20 10.6	1.514	0.549	15.0	18.7	8 W	—	119
7 10	23 29.98	+21 27.4	1.747	2.231	26.2	21.4	105 W	66*	43	10 28	14 2.61	-20 48.0	1.551	0.584	13.5	18.9	8 W	—	121
7 20	23 27.75	+23 21.5	1.703	2.294	24.1	21.4	113 W	68	41	10 30	14 14.09	-21 19.3	1.588	0.618	12.3	19.0	8 W	—	123
7 30	23 22.41	+24 50.9	1.668	2.357	21.7	21.3	121 W	70	39	11 1	14 25.14	-21 45.4	1.624	0.652	11.2	19.1	7 W	—	125
8 9	23 14.23	+25 49.8	1.645	2.419	18.9	21.3	129 W	71	38	11 3	14 35.78	-22 6.9	1.659	0.686	10.3	19.2	7 E	—	127
8 19	23 3.83	+26 13.6	1.638	2.479	16.0	21.2	137 W	71	38	11 5	14 46.02	-22 24.6	1.694	0.719	9.5	19.4	7 E	—	129
8 29	22 52.23	+25 59.9	1.650	2.539	13.4	21.2	144 W	71	38	11 7	14 55.89	-22 38.8	1.728	0.752	8.7	19.5	7 E	—	131
9 8	22 40.68	+25 11.4	1.685	2.598	11.7	21.2	148 E	70	39	11 12	15 19.06	-23 1.9	1.810	0.831	6.9	19.7	6 E	—	133
9 18	22 30.37	+23 55.0	1.744	2.655	11.3	21.3	149 E	69	40	11 17	15 40.33	-23 11.0	1.888	0.907	5.3	19.9	5 E	—	135
9 28	22 22.24	+22 20.9	1.828	2.711	12.2	21.5	145 E	67	42	11 22	15 59.94	-23 9.6	1.962	0.979	3.8	20.1	4 E	—	137
438990 2010 SG ₁₃									11 27	16 18.13	-23 0.1	2.033	1.047	2.2	20.2	2 E	—	139	
6 30	23 31.51	+42 40.5	1.286	1.576	40.0	21.4	86 W	76*	21	12 2	16 35.08	-22 44.2	2.099	1.113	0.8	20.3	1 E	—	141
7 5	23 40.27	+45 47.7	1.215	1.532	41.5	21.3	86 W	79*	18	12 7	16 50.96	-22 23.3	2.160	1.176	0.8	20.5	1 W	—	143
7 10	23 49.97	+49 7.4	1.147	1.486	43.1	21.1	87 W	80*	15	12 12	17 5.91	-21 58.1	2.218	1.235	2.2	20.7	3 W	—	145
7 15	0 1.06	+52 40.4	1.081	1.438	44.9	21.0	87 W	80*	11	12 17	17 20.02	-21 29.4	2.270	1.292	3.7	21.0	5 W	—	147
7 20	0 14.26	+56 27.7	1.017	1.388	46.9	20.8	86 W	78*	8	12 22	17 33.40	-20 57.5	2.318	1.347	5.1	21.2	7 W	—	149
7 25	0 30.83	+60 29.2	0.956	1.336	49.3	20.7	85 W	74*	4	12 27	17 46.10	-20 22.9	2.361	1.399	6.4	21.4	9 W	2*	151
7 30	0 53.09	+64 43.2	0.899	1.281	52.0	20.5	84 W	70*	—	480821 1998 WA ₄									
8 4	1 25.57	+69 3.8	0.845	1.223	55.2	20.4	82 W	66*	—	6 30	23 36.54	-6 34.7	1.667	2.183	26.5	21.4	106 W	35*	71
8 9	2 17.43	+73 13.0	0.795	1.163	58.9	20.2	79 W	61*	—	7 10	23 47.65	-6 40.6	1.507	2.126	26.1	21.1	113 W	37*	71
8 10	2 31.45	+73 58.1	0.786	1.150	59.7	20.2	78 W	60*	—	7 20	23 57.63	-7 8.5	1.356	2.068	25.0	20.8	121 W	38*	71
8 11	2 47.02	+74 40.3	0.777	1.138	60.5	20.2	78 W	59*	—	7 30	0 6.14	-8 3.3	1.215	2.010	23.3	20.4	128 W	37	72
8 12	3 4.30	+75 18.8	0.768	1.125	61.3	20.2	77 W	59*	—	8 9	0 12.83	-9 29.1	1.088	1.952	20.9	20.1	137 W	36	73
8 13	3 23.37	+75 52.8	0.759	1.112	62.2	20													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
480821 1998 WA₄										495966 2007 RC₁₄₃									
<i>(continuation)</i>										<i>(continuation)</i>									
11 17	0 9.62	-25 36.0	0.751	1.465	38.0	19.1	114 E	19	90	9 23	0 23.32	+ 6 45.9	0.747	1.745	5.0	19.5	171 W	52	57
11 22	0 14.99	-24 33.1	0.764	1.450	39.4	19.2	111 E	20	89	9 28	0 19.27	+ 6 3.6	0.755	1.756	2.3	19.4	176 W	51	58
11 27	0 21.35	-23 19.1	0.778	1.437	40.7	19.2	108 E	22	87	10 3	0 15.33	+ 5 20.4	0.768	1.766	3.1	19.5	175 E	50	59
12 2	0 28.63	-21 55.0	0.793	1.425	41.7	19.3	106 E	23	86	10 8	0 11.73	+ 4 38.3	0.786	1.778	6.0	19.7	169 E	50	59
12 7	0 36.73	-20 21.6	0.808	1.415	42.6	19.3	104 E	25	84	10 13	0 8.64	+ 3 58.9	0.810	1.789	9.1	19.9	164 E	49	60
12 12	0 45.59	-18 39.7	0.824	1.406	43.3	19.4	102 E	26	83	10 18	0 6.20	+ 3 23.5	0.839	1.801	12.0	20.1	158	48	61
12 17	0 55.15	-16 50.2	0.841	1.400	43.8	19.4	100 E	28	81*	10 23	0 4.53	+ 2 53.5	0.873	1.814	14.7	20.3	152	48	61
12 22	1 5.36	-14 54.0	0.858	1.395	44.3	19.5	98 E	30	78*	10 28	0 3.69	+ 2 29.4	0.911	1.826	17.2	20.5	147 E	47	62
12 27	1 16.14	-12 52.2	0.877	1.391	44.6	19.5	97 E	32	76*	11 2	0 3.69	+ 2 11.8	0.953	1.839	19.4	20.7	142 E	47	62
1 1	1 27.42	-10 45.7	0.897	1.390	44.8	19.6	95 E	34	73*	11 7	0 4.52	+ 2 0.5	0.999	1.852	21.4	20.9	137 E	47	62
1 6	1 39.17	- 8 35.8	0.919	1.390	44.9	19.6	94 E	36	70*	11 12	0 6.15	+ 1 55.6	1.049	1.866	23.1	21.1	132 E	47	62
1 11	1 51.34	- 6 23.5	0.942	1.393	44.9	19.7	93 E	39	67*	11 17	0 8.54	+ 1 56.7	1.102	1.879	24.5	21.2	128 E	47	62
1 16	2 3.91	- 4 9.9	0.967	1.397	44.7	19.8	92 E	41	64*	11 22	0 11.64	+ 2 3.5	1.158	1.893	25.7	21.4	124 E	47	62
484301 2007 TK₂										469727 2005 NK₁									
6 30	23 43.11	-32 54.0	1.036	1.712	33.1	21.3	113 W	9*	83	6 30	23 48.52	-26 8.6	1.765	2.321	24.3	21.4	110 W	16*	90
7 5	23 48.80	-33 12.6	0.996	1.707	32.4	21.2	116 W	10*	83	7 5	23 51.84	-27 23.4	1.682	2.294	23.9	21.3	114 W	16*	89
7 10	23 53.58	-33 35.3	0.957	1.702	31.5	21.1	119 W	10*	82	7 10	23 54.66	-28 48.7	1.602	2.265	23.3	21.1	118 W	15*	87
7 15	23 57.34	-34 2.2	0.920	1.696	30.5	21.0	122 W	11*	82	7 15	23 56.88	-30 25.2	1.526	2.236	22.7	20.9	122 W	14*	86
7 20	23 59.97	-34 32.7	0.885	1.691	29.3	20.9	125 W	10*	81	7 20	23 58.39	-32 13.2	1.453	2.206	22.0	20.8	126 W	13*	84
7 25	0 1.32	-35 6.3	0.852	1.686	28.0	20.7	129 W	10	81	7 25	23 59.07	-34 13.1	1.384	2.174	21.2	20.6	129 W	11	82
7 30	0 1.31	-35 41.7	0.821	1.680	26.6	20.6	132 W	9	80	7 30	23 58.79	-36 24.5	1.321	2.142	20.2	20.5	133 W	9	80
8 4	23 59.83	-36 17.4	0.793	1.675	25.1	20.5	135 W	9	80	8 4	23 57.38	-38 46.7	1.263	2.109	19.8	20.3	135 W	6	77
8 9	23 56.81	-36 51.6	0.767	1.669	23.6	20.3	139 W	8	79	8 9	23 54.65	-41 18.2	1.211	2.074	19.3	20.2	137 W	4	75
8 14	23 52.21	-37 21.8	0.745	1.664	22.1	20.2	142 W	8	79	8 14	23 50.37	-43 56.7	1.165	2.039	19.1	20.0	139 W	1	72
8 19	23 46.05	-37 45.2	0.726	1.659	20.7	20.1	145 W	7	78	8 19	23 44.32	-46 39.1	1.125	2.002	19.4	19.9	139 W	—	69
8 24	23 38.50	-37 58.7	0.711	1.653	19.5	20.0	147 W	7	78	8 24	23 36.27	-49 21.0	1.093	1.964	20.2	19.9	138 W	—	67
8 29	23 29.82	-37 59.2	0.700	1.648	18.7	20.0	148 W	7	78	8 29	23 26.06	-51 57.4	1.067	1.925	21.4	19.8	136 W	—	64
9 3	23 20.37	-37 44.4	0.694	1.643	18.4	19.9	149 W	7	78	9 3	23 13.59	-54 23.1	1.048	1.885	23.1	19.8	133 W	—	62
9 8	23 10.59	-37 12.7	0.692	1.637	18.8	19.9	148 W	8	79	9 8	22 58.95	-56 32.9	1.034	1.844	25.1	19.8	129 E	—	59
9 13	23 0.93	-36 23.7	0.694	1.632	19.6	20.0	147 E	9	80	9 10	22 52.53	-57 19.3	1.030	1.827	25.9	19.8	127 E	—	59
9 18	22 51.84	-35 17.8	0.701	1.627	21.0	20.0	145 E	10	81	9 12	22 45.84	-58 2.2	1.027	1.810	26.8	19.8	126 E	—	58
9 23	22 43.73	-33 56.8	0.712	1.622	22.6	20.1	142 E	11	82	9 14	22 38.92	-58 41.4	1.025	1.792	27.8	19.8	124 E	—	57
9 28	22 36.88	-32 23.0	0.727	1.617	24.5	20.2	138 E	13	84	9 16	22 31.80	-59 16.6	1.023	1.775	28.7	19.8	122 E	—	57
10 3	22 31.44	-30 39.2	0.746	1.613	26.4	20.3	134 E	14	85	9 18	22 24.55	-59 47.9	1.022	1.757	29.6	19.8	120 E	—	56
10 8	22 27.46	-28 48.1	0.769	1.608	28.2	20.4	130 E	16	87	9 20	22 17.23	-60 15.1	1.022	1.739	30.6	19.8	118 E	—	56
10 13	22 24.94	-26 52.0	0.795	1.604	30.0	20.5	127 E	18	89	9 22	22 9.88	-60 38.3	1.022	1.721	31.5	19.8	116 E	—	55
10 18	22 23.81	-24 52.9	0.824	1.599	31.6	20.6	123 E	20	89	9 24	22 2.58	-60 57.5	1.023	1.702	32.5	19.8	114 E	—	55
10 23	22 23.99	-22 52.2	0.855	1.595	33.1	20.8	119 E	22	87	9 26	21 55.37	-61 12.8	1.024	1.684	33.4	19.8	112 E	—	55
10 28	22 25.36	-20 51.2	0.889	1.591	34.4	20.9	115 E	24	85	9 28	21 48.33	-61 24.4	1.026	1.665	34.3	19.8	110 E	—	55
11 2	22 27.79	-18 50.7	0.925	1.587	35.5	21.0	112 E	26	83	9 30	21 41.50	-61 32.5	1.027	1.646	35.3	19.8	108 E	—	54
11 7	22 31.16	-16 51.2	0.962	1.583	36.5	21.1	108 E	28	81	10 2	21 34.92	-61 37.2	1.029	1.626	36.2	19.8	106 E	—	54
11 12	22 35.38	-14 52.9	1.001	1.580	37.2	21.2	105 E	30	79	10 4	21 28.64	-61 38.8	1.031	1.607	37.1	19.8	105 E	—	54
11 17	22 40.34	-12 56.0	1.040	1.576	37.9	21.3	102 E	32	77	10 6	21 22.70	-61 37.6	1.033	1.587	37.9	19.8	103 E	—	54
11 22	22 45.99	-11 0.5	1.081	1.573	38.3	21.4	99 E	34	75*	10 8	21 17.11	-61 33.6	1.036	1.567	38.8	19.8	101 E	—	54
11 27	22 52.23	- 9 6.4	1.123	1.570	38.7	21.5	96 E	36	71*	10 13	21 4.84	-61 13.8	1.041	1.516	40.9	19.8	96 E	—	55
482023 2009 VY										495966 2007 RC₁₄₃									
6 30	23 45.74	-53 49.1	1.098	1.793	30.7	21.4	116 W	—	62	10 18	20 55.09	-60 42.5	1.045	1.463	42.9	19.8	91 E	—	55
7 5	23 53.75	-55 17.5	1.078	1.791	30.2	21.3	118 W	—	61	10 23	20 47.83	-60 2.8	1.048	1.408	44.9	19.8	87 E	—	56
7 10	0 0.65	-56 47.6	1.060	1.789	29.8	21.3	119 W	—	59	10 28	20 42.86	-59 17.3	1.047	1.352	46.8	19.7	83 E	—	57*
7 15	0 6.25	-58 18.4	1.045	1.787	29.4	21.2	120 W	—	58	11 2	20 39.91	-58 27.7	1.044	1.293	48.8	19.7	79 E	—	56*
7 20	0 10.28	-59 48.7	1.033	1.785	29.1	21.2	121 W	—	56	11 7	20 38.70	-57 35.1	1.036	1.233	50.9	19.6	75 E	—	56*
7 25	0 12.50	-61 17.0	1.023	1.783	28.9	21.2	122 W	—	55	11 12	20 38.93	-56 40.0	1.023	1.172	53.1	19.5	71 E	—	55*
7 30	0 12.67	-62 41.3	1.015	1.781	28.7	21.1	123 W	—	53	11 17	20 40.31	-55 42.4	1.005	1.108	55.5	19.5	67 E	—	54*
8 4	0 10.56	-63 59.6	1.010	1.779	28.6	21.1	123 W	—	52	11 22	20 42.50	-54 42.2	0.981	1.042	58.3	19.3	64 E	—	52*
8 9	0 5.98	-65 9.5	1.007	1.777	28.6	21.1	123 W	—	51	11 27	20 45.09	-53 38.5	0.951	0.975	61.6	19.2	60 E	—	50*
8 14	23 58.85	-66 8.2	1.006	1.774	28.6	21.1	123 W	—	50	11 29	20 46.14	-53 11.7	0.937	0.947	63.2	19.2	59 E	—	49*
8 19	23 49.29	-66 52.9	1.008	1.772	28.8	21.1	123 W	—	49	12 1	20 47.14	-52 44.0	0.921	0.919	64.8	19.1	58 E	—	48*
8 24	23 37.66	-67 20.6	1.012	1.769	29.0	21.1	122 W	—	49	12 3	20 48.05	-52 15.1	0.905	0.891	66.6	19.1	56 E	—	47*
8 29	23 24.63	-67 29.1	1.018	1.767	29.3	21.2	121 W	—	49	12 5	20 48.83	-51 45.0	0.887	0.863	68.5	19.0	55 E	—	46*
9 3	23 11.05	-67 17.1	1.026	1.764	29.6	21.2	120 W	—	49	12 7	20 49.42	-51 13.3	0.868	0.834	70.7	19.0	53 E	—	44*
9 8	22 57.81	-66 44.5	1.037	1.761	30.0	21.2	119 E	—	49	12 9	20 49.76	-50 39.6	0.848	0.806	73.0	18.9	51 E	—	43*
9 13	22 45.68	-65 51.9	1.050	1.758	30.5	21.2	118 E	—	50	12 11	20 49.78	-50 3.7	0.827	0.777	75.7	18.9	50 E	—	42*
9 18																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
368565 2004 FE₅ (continuation)									251705 1996 UJ (continuation)								
7 20	1 31.14	+44 1.6	0.481	1.050	72.7	21.0	80 W	72* 20	11 17	22 48.64	-14 3.9	1.488	1.967	29.3	20.6	103 E	31 78
7 22	1 51.92	+45 3.2	0.468	1.028	75.3	20.9	78 W	70* 19	11 27	22 53.36	-11 24.2	1.562	1.924	30.7	20.7	95 E	34 74*
7 24	2 14.47	+45 52.1	0.457	1.007	78.1	20.9	76 W	68* 18	12 7	23 0.96	-8 37.6	1.638	1.882	31.5	20.8	88 E	36 66*
7 26	2 38.65	+46 25.0	0.448	0.985	81.0	21.0	73 W	66* 18*	12 17	23 11.03	-5 44.7	1.712	1.841	31.9	20.8	81 E	39 57*
7 28	3 4.18	+46 38.7	0.440	0.963	83.9	21.0	71 W	63* 17*	12 27	23 23.23	-2 45.8	1.782	1.800	31.9	20.9	75 E	42 49*
7 30	3 30.62	+46 30.5	0.435	0.940	87.0	21.0	68 W	61* 17*	1 6	23 37.27	+0 18.6	1.848	1.760	31.5	20.9	69 E	45* 42*
7 31	3 44.01	+46 17.6	0.434	0.929	88.5	21.0	66 W	59* 17*	1 16	23 52.99	+3 28.2	1.908	1.722	30.9	20.9	64 E	46* 35*
8 1	3 57.42	+45 58.8	0.433	0.918	90.0	21.1	65 W	58* 17*	302830 2003 FB								
8 2	4 10.78	+45 34.1	0.432	0.907	91.5	21.1	63 W	56* 17*	7 10	0 45.41	-25 47.6	0.970	1.591	37.8	21.3	106 W	15* 90
8 3	4 24.00	+45 3.5	0.432	0.895	93.0	21.1	62 W	55* 16*	7 20	1 6.70	-26 9.9	0.850	1.532	38.5	20.9	110 W	17* 90
8 4	4 37.02	+44 27.3	0.433	0.884	94.5	21.2	60 W	53* 16*	8 30	1 28.51	-26 46.9	0.737	1.471	39.4	20.5	113 W	17* 89
8 5	4 49.79	+43 45.8	0.435	0.872	96.0	21.2	59 W	52* 16*	7 9	1 51.23	-27 37.8	0.629	1.407	40.4	20.1	116 W	17* 88
8 6	5 2.25	+42 59.4	0.437	0.861	97.4	21.3	57 W	50* 16*	8 14	2 3.13	-28 8.1	0.578	1.374	41.2	19.9	117 W	17* 88
8 7	5 14.36	+42 8.4	0.439	0.850	98.8	21.3	56 W	49* 16*	8 19	2 15.53	-28 41.1	0.528	1.340	42.0	19.7	117 W	16 87
8 8	5 26.09	+41 13.3	0.443	0.838	100.1	21.4	54 W	47* 16*	8 24	2 28.61	-29 15.9	0.480	1.306	43.1	19.5	118 W	16 87
8 9	5 30.62	+40 14.6	0.447	0.826	101.3	21.4	53 W	46* 16*	8 29	2 42.64	-29 51.3	0.433	1.272	44.5	19.2	118 W	15 86
8 11	5 58.80	+38 8.5	0.457	0.803	103.6	21.5	50 W	43* 17*	9 3	2 58.03	-30 25.4	0.388	1.237	46.2	19.0	118 W	15 86
8 13	6 18.50	+35 54.1	0.470	0.780	105.6	21.6	48 W	40* 17*	9 8	3 15.34	-30 55.9	0.345	1.203	48.4	18.7	117 W	14 85
8 15	6 36.57	+33 55.1	0.485	0.757	107.2	21.7	46 W	38* 17*	9 10	3 22.98	-31 6.2	0.328	1.189	49.5	18.6	116 W	14 85
8 17	6 53.17	+31 14.6	0.503	0.734	108.4	21.8	43 W	35* 17*	9 12	3 31.13	-31 15.0	0.311	1.175	50.6	18.5	116 W	14 85
505977 2015 FY₃₄₄									9 14	3 39.87	-31 21.8	0.294	1.161	51.9	18.4	115 W	14 85
7 10	0 14.87	-26 58.5	1.924	2.506	21.9	21.5	113 W	16* 89	9 16	3 49.30	-31 26.0	0.278	1.147	53.3	18.3	114 W	14 85
7 20	0 18.05	-27 36.7	1.789	2.470	20.7	21.2	121 W	17* 88	9 18	3 59.53	-31 26.7	0.262	1.133	54.9	18.2	113 W	14 85
7 30	0 18.24	-28 27.9	1.664	2.433	19.0	21.0	129 W	17 88	9 20	4 10.71	-31 22.9	0.247	1.119	56.6	18.1	112 W	14 85
8 9	0 14.97	-29 27.8	1.553	2.395	16.8	20.7	137 W	16 87	9 22	4 23.00	-31 13.4	0.232	1.105	58.5	17.9	110 W	14 85
8 19	0 7.88	-30 29.2	1.459	2.357	14.5	20.5	144 W	15 86	9 24	4 36.58	-30 56.4	0.217	1.091	60.7	17.8	108 W	14 85
8 24	0 2.89	-30 57.1	1.420	2.337	13.4	20.4	148 W	14 85	9 26	4 51.66	-30 29.7	0.203	1.078	63.2	17.7	106 W	15 86
8 29	23 57.01	-31 20.9	1.386	2.317	12.5	20.3	150 W	14 85	9 28	5 8.47	-29 50.4	0.189	1.064	66.0	17.6	104 W	15 86
9 3	23 50.34	-31 38.9	1.357	2.297	11.9	20.2	152 W	13 84	9 30	5 27.22	-28 54.9	0.176	1.051	69.1	17.6	101 W	16 87
9 8	23 43.02	-31 49.4	1.335	2.277	11.8	20.1	153 W	13 84	10 2	5 48.12	-27 38.9	0.165	1.037	72.7	17.5	98 W	17 88
9 13	23 35.26	-31 51.2	1.319	2.257	12.1	20.1	152 W	13 84	10 4	6 11.27	-25 57.3	0.154	1.024	76.8	17.5	95 W	19 89*
9 18	23 27.28	-31 42.9	1.309	2.236	13.0	20.1	150 E	13 84	10 6	6 36.67	-23 45.3	0.145	1.011	81.4	17.5	90 W	21* 84*
9 23	23 19.35	-31 23.9	1.305	2.215	14.3	20.1	147 W	14 85	10 8	7 4.11	-20 59.0	0.137	0.998	86.4	17.5	86 W	24* 78*
9 28	23 11.73	-30 54.1	1.307	2.195	15.8	20.1	143 W	14 85	10 10	7 33.11	-17 38.0	0.131	0.986	91.8	17.6	81 W	27* 72*
10 3	23 4.64	-30 13.9	1.314	2.174	17.4	20.2	139 E	15 86	10 12	8 3.00	-13 46.3	0.128	0.974	97.4	17.8	75 W	30* 65*
10 8	22 58.27	-29 24.1	1.327	2.153	19.2	20.3	135 E	16 87	10 14	8 32.92	-9 34.2	0.127	0.961	102.8	18.0	70 W	33* 57*
10 13	22 52.78	-28 25.6	1.345	2.132	20.9	20.3	130 E	17 88	10 16	9 2.02	-5 15.9	0.129	0.950	107.8	18.3	65 W	35* 50*
10 18	22 48.26	-27 19.6	1.366	2.110	22.5	20.4	126 E	18 89	10 18	9 29.59	-1 6.1	0.134	0.938	112.0	18.6	61 W	37* 43*
10 23	22 44.78	-26 7.4	1.392	2.089	24.0	20.4	121 E	19 90	10 19	9 42.63	+0 51.7	0.137	0.933	113.8	18.7	59 W	38* 40*
10 28	22 42.35	-24 50.0	1.420	2.068	25.4	20.5	117 E	20 89	10 20	9 55.13	+2 43.2	0.141	0.927	115.3	18.9	57 W	39* 37*
11 2	22 40.95	-23 28.5	1.451	2.046	26.6	20.6	112 E	22 87	10 21	10 7.06	+4 27.8	0.145	0.922	116.6	19.0	56 W	40* 34*
11 7	22 40.53	-22 3.7	1.485	2.025	27.7	20.6	108 E	23 86	10 22	10 18.41	+6 5.0	0.150	0.917	117.7	19.2	55 W	40* 32*
11 12	22 41.04	-20 36.3	1.520	2.003	28.7	20.7	104 E	24 85	10 23	10 29.18	+7 34.7	0.155	0.911	118.5	19.3	54 W	41* 29*
11 17	22 42.43	-19 6.8	1.556	1.982	29.4	20.7	100 E	26 83	10 24	10 39.40	+8 56.9	0.161	0.906	119.1	19.4	53 W	41* 27*
11 22	22 44.63	-17 35.5	1.593	1.961	30.1	20.8	96 E	27 81*	10 25	10 49.06	+10 11.8	0.167	0.901	119.6	19.5	52 W	42* 25*
11 27	22 47.59	-16 2.8	1.631	1.939	30.6	20.8	92 E	29 77*	10 26	10 58.20	+11 19.7	0.173	0.896	119.8	19.6	51 W	42* 23*
12 2	22 51.22	-14 28.9	1.669	1.918	30.9	20.9	89 E	31 72*	10 27	11 6.85	+12 21.1	0.180	0.892	119.9	19.7	51 W	42* 21*
12 7	22 55.48	-12 53.9	1.706	1.897	31.2	20.9	85 E	32 68*	10 28	11 15.02	+13 16.3	0.187	0.887	119.9	19.7	51 W	43* 20*
12 12	23 0.31	-11 17.8	1.743	1.876	31.3	20.9	82 E	34 63*	10 30	11 30.08	+14 49.9	0.201	0.878	119.5	19.8	50 W	43* 17*
12 17	23 5.68	-9 40.6	1.780	1.855	31.3	20.9	79 E	35 59*	11 1	11 43.59	+16 3.9	0.217	0.870	118.7	19.9	50 W	43* 15*
12 22	23 11.55	-8 2.4	1.815	1.834	31.3	20.9	75 E	37 55*	11 3	11 55.78	+17 1.4	0.233	0.862	117.6	20.0	50 W	44* 13*
12 27	23 17.86	-6 23.2	1.850	1.814	31.1	21.0	72 E	39* 50*	11 5	12 6.84	+17 44.9	0.250	0.855	116.3	20.0	51 W	44* 12*
1 1	23 24.60	-4 43.1	1.883	1.793	30.9	21.0	70 E	40* 46*	11 7	12 16.93	+18 16.7	0.267	0.849	114.9	20.1	51 W	45* 11*
1 6	23 31.73	-3 1.9	1.915	1.773	30.6	21.0	67 E	41* 43*	11 9	12 26.19	+18 38.5	0.285	0.843	113.4	20.1	51 W	45* 10*
1 11	23 39.25	-1 19.7	1.945	1.754	30.3	21.0	64 E	42* 39*	11 11	12 34.76	+18 51.9	0.302	0.837	111.7	20.1	52 W	46* 10*
1 16	23 47.13	+0 23.4	1.975	1.735	29.9	21.0	61 E	43* 36*	11 13	12 42.73	+18 58.0	0.320	0.833	110.0	20.1	52 W	46* 10*
251705 1996 UJ									11 15	12 50.18	+18 57.9	0.339	0.829	108.3	20.1	53 W	47* 10*
7 10	0 15.77	-20 53.6	1.928	2.487	22.4	21.5	111 W	22* 85	11 17	12 57.20	+18 52.5	0.357	0.826	106.5	20.1	53 W	47* 10*
7 20	0 19.32	-21 9.0	1.786	2.451	21.2	21.2	119 W	23* 85	11 19	13 3.85	+18 42.4	0.375	0.824	104.7	20.1	54 W	48* 10*
7 30	0 20.10	-21 37.2	1.654	2.415	19.4	21.0	128 W	23 86	11 21	13 10.17	+18 28.3	0.394	0.822	102.9	20.1	54 W	48* 10*
8 9	0 17.68	-22 15.7	1.534	2.377	17.0	20.7	137 W	23 86	11 23	13 16.21	+18 10.6	0.412	0.822	101.1	20.1	55 W	49* 10*
8 19	0 11.70	-22 59.6	1.432	2.338	14.1	20.4	146 W	22 87	11 25	13 22.02	+17 49.7	0.430	0.822	99.3	20.1	55 W	49* 11*
8 24	0 7.34	-23 21.1	1.388	2.319	12.6	20.3	150 W	22 87	11 27	13 27.63	+17 26.2	0.449	0.822	97.5	20.1	56 W	49* 12*
8 29	0 2.10	-23 40.5	1.349	2.299	11.2	20.2	154 W	21 88	12 2	13 40.91	+16 17.8	0.493	0.828	93.1	20.2	57 W	50* 13*
9 3	23 56.09	-23 56.4	1.317	2.279	10.0	20.0	157 W	21 88	12 7	13 53.38	+14 59.2	0.535	0.838	88.9	20.2	58 W	51* 16*
9 8	23 49.40	-24 7.3	1.290	2.259	9.												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
497094 2004 AH										470976 2009 SU₁₇									
<i>(continuation)</i>																			
8 24	3 26.13	-13 52.3	0.636	1.316	48.3	20.3	104 W	31*	78	7 10	1 0.47	+ 9 12.9	1.337	1.686	37.1	21.4	90 W	46*	55
8 29	3 45.53	-14 23.6	0.611	1.293	49.5	20.2	103 W	30*	78	7 20	1 21.81	+12 8.5	1.226	1.646	38.0	21.2	94 W	52*	52
9 3	4 5.15	-14 53.6	0.588	1.272	50.8	20.2	102 W	30*	79	7 30	1 43.53	+15 5.6	1.121	1.609	38.7	20.9	98 W	57*	49
9 8	4 24.86	-15 21.1	0.568	1.252	52.0	20.1	102 W	30*	79	8 9	2 5.60	+18 2.8	1.025	1.574	39.2	20.7	101 W	62*	46
9 13	4 44.52	-15 44.9	0.551	1.233	53.3	20.0	101 W	29*	80	8 19	2 27.90	+20 57.9	0.935	1.543	39.4	20.5	105 W	66*	43
9 18	5 3.97	-16 3.9	0.535	1.216	54.5	20.0	100 W	29*	80	8 24	2 39.06	+22 23.7	0.893	1.528	39.3	20.3	107 W	67	42
9 23	5 23.09	-16 17.0	0.522	1.201	55.6	19.9	99 W	29	80	8 29	2 50.17	+23 47.9	0.854	1.515	39.2	20.2	108 W	69	40
9 28	5 41.77	-16 23.2	0.510	1.188	56.6	19.9	98 W	29	80	9 3	3 1.20	+25 10.3	0.816	1.503	39.0	20.1	110 W	70	39
10 3	5 59.92	-16 21.9	0.500	1.176	57.5	19.8	98 W	29	80	9 8	3 12.07	+26 30.4	0.780	1.492	38.6	20.0	112 W	72	37
10 8	6 17.45	-16 12.5	0.490	1.167	58.1	19.8	97 W	29	80*	9 13	3 22.71	+27 47.8	0.746	1.482	38.1	19.8	115 W	73	36
10 13	6 34.29	-15 54.9	0.481	1.160	58.6	19.7	97 W	29	80*	9 18	3 33.00	+29 2.1	0.714	1.473	37.5	19.7	117 W	74	35
10 18	6 50.35	-15 28.4	0.472	1.155	58.8	19.7	97 W	30	79*	9 23	3 42.84	+30 12.8	0.685	1.465	36.7	19.6	119 W	75	34
10 23	7 5.58	-14 52.6	0.463	1.153	58.8	19.7	98 W	30	79*	9 28	3 52.12	+31 19.6	0.657	1.459	35.7	19.5	122 W	76	33
10 28	7 19.95	-14 6.8	0.455	1.153	58.5	19.6	99 W	31	78*	10 3	4 0.71	+32 22.0	0.631	1.454	34.5	19.3	125 W	77	32
11 2	7 33.44	-13 10.4	0.446	1.155	57.9	19.5	100 W	32	77*	10 8	4 8.48	+33 19.7	0.607	1.451	33.2	19.2	127 W	78	31
11 7	7 45.97	-12 2.9	0.437	1.159	56.9	19.5	101 W	33	76	10 13	4 15.27	+34 12.2	0.586	1.448	31.6	19.1	131 W	79	30
11 12	7 57.49	-10 43.3	0.428	1.166	55.6	19.4	103 W	34	75	10 18	4 20.93	+34 58.6	0.566	1.448	29.7	19.0	134 W	80	29
11 17	8 7.90	-9 10.3	0.419	1.175	54.0	19.3	106 W	36	73	10 23	4 25.35	+35 38.4	0.549	1.448	27.7	18.8	137 W	81	28
11 22	8 17.13	-7 22.3	0.410	1.186	51.9	19.3	109 W	38	71	10 28	4 28.48	+36 10.8	0.535	1.450	25.4	18.7	141 W	81	28
11 27	8 25.11	-5 18.2	0.401	1.200	49.4	19.2	113 W	40	69	11 2	4 30.28	+36 35.0	0.523	1.453	22.9	18.6	145 W	82	27
12 2	8 31.75	-2 56.7	0.393	1.215	46.5	19.1	117 W	42	67	11 7	4 30.79	+36 50.0	0.514	1.458	20.2	18.5	150 W	82	27
12 7	8 36.97	-0 17.0	0.386	1.231	43.1	19.0	121 W	45	64	11 12	4 30.10	+36 55.2	0.509	1.464	17.4	18.4	154 W	82	27
12 17	8 42.71	+ 5 56.6	0.377	1.270	34.8	18.7	133 W	51	58	11 17	4 28.42	+36 49.9	0.507	1.471	14.6	18.3	158 W	82	27
12 27	8 42.05	+13 6.9	0.378	1.313	25.0	18.5	146 W	58	51	11 22	4 26.03	+36 34.2	0.509	1.480	12.0	18.2	162 W	82	27
1 6	8 35.77	+20 28.8	0.396	1.361	14.7	18.4	159 W	65	44	11 27	4 23.30	+36 8.6	0.514	1.489	10.0	18.2	165 W	81	28
1 16	8 25.82	+27 2.3	0.433	1.412	6.9	18.3	170 W	72	37	12 2	4 20.57	+35 34.6	0.524	1.500	9.1	18.2	166 E	81	28
363226 2001 WQ₁										404108 2012 SF₅₁									
7 10	0 56.54	+ 2 37.6	1.148	1.584	39.8	21.4	94 W	40*	61	7 10	1 8.76	+ 7 41.3	3.397	3.532	16.7	21.4	89 W	43*	56
7 20	1 14.98	+ 4 23.8	1.082	1.590	39.2	21.2	98 W	45*	60	7 20	1 11.58	+ 8 22.6	3.202	3.488	16.8	21.2	98 W	49*	56
7 30	1 31.42	+ 5 55.6	1.019	1.599	38.1	21.1	104 W	49*	58	7 30	1 12.79	+ 8 57.2	3.010	3.444	16.4	21.1	107 W	53*	55
8 9	1 45.41	+ 7 11.4	0.959	1.611	36.4	20.9	110 W	52*	57	8 9	1 12.15	+ 9 23.9	2.823	3.397	15.5	20.9	116 W	54	55
8 19	1 56.38	+ 8 9.5	0.902	1.626	33.9	20.7	116 W	53	56	8 19	1 9.40	+ 9 41.5	2.647	3.350	14.1	20.6	126 W	55	54
8 29	2 3.70	+ 8 48.7	0.851	1.644	30.7	20.5	124 W	54	55	8 29	1 4.33	+ 9 48.7	2.487	3.300	12.0	20.4	137 W	55	54
9 8	2 6.88	+ 9 8.6	0.806	1.664	26.4	20.3	133 W	54	55	9 8	0 56.92	+ 9 44.3	2.347	3.249	9.3	20.1	148 W	55	54
9 18	2 5.59	+ 9 9.3	0.773	1.686	21.2	20.1	143 W	54	55	9 18	0 47.31	+ 9 27.8	2.232	3.196	6.1	19.8	160 W	54	55
9 28	2 0.06	+ 8 52.7	0.752	1.710	15.0	19.9	154 W	54	55	9 28	0 35.97	+ 8 59.9	2.147	3.142	2.6	19.5	172 W	54	55
10 3	1 55.98	+ 8 39.5	0.749	1.723	11.6	19.8	160 W	54	55	10 8	0 23.68	+ 8 23.2	2.093	3.086	2.6	19.4	172 E	53	56
10 8	1 51.28	+ 8 24.1	0.750	1.736	8.1	19.6	166 W	53	56	10 13	0 17.48	+ 8 2.6	2.079	3.057	4.5	19.5	166 E	53	56
10 13	1 46.18	+ 8 7.4	0.756	1.749	4.6	19.5	172 W	53	56	10 18	0 11.41	+ 7 41.5	2.072	3.028	6.5	19.6	160 E	53	56
10 18	1 40.94	+ 7 50.7	0.767	1.763	1.6	19.4	177 W	53	56	10 23	0 5.61	+ 7 20.5	2.073	2.998	8.4	19.6	154 E	52	57
10 23	1 35.82	+ 7 35.2	0.784	1.777	3.0	19.5	175 E	53	56	10 28	0 0.20	+ 7 0.4	2.081	2.968	10.4	19.7	148 E	52	57
10 28	1 31.08	+ 7 22.1	0.807	1.792	6.1	19.8	169 E	52	57	11 7	23 50.90	+ 6 25.2	2.117	2.906	13.9	19.8	135 E	51	58
11 2	1 26.92	+ 7 12.2	0.835	1.807	9.3	20.0	163 E	52	57	11 17	23 44.06	+ 6 0.2	2.173	2.843	16.8	20.0	124 E	51	58
11 7	1 23.48	+ 7 6.2	0.868	1.822	12.2	20.2	157 E	52	57	11 27	23 39.97	+ 5 48.3	2.244	2.777	19.1	20.0	113 E	51	58
11 17	1 19.14	+ 7 7.6	0.948	1.853	17.3	20.6	146 E	52	57	12 7	23 38.62	+ 5 50.9	2.323	2.710	20.8	20.1	102 E	51	57*
11 27	1 18.45	+ 7 27.7	1.045	1.884	21.3	21.0	136 E	52	57	12 17	23 39.87	+ 6 8.4	2.406	2.640	21.9	20.2	93 E	51	53*
12 7	1 21.20	+ 8 4.9	1.157	1.916	24.3	21.4	127 E	53	56	12 27	23 43.51	+ 6 40.6	2.486	2.568	22.4	20.2	84 E	52	46*
12 17	1 26.99	+ 8 56.3	1.280	1.949	26.4	21.7	118 E	54	55	1 6	23 49.29	+ 7 26.4	2.560	2.494	22.4	20.2	75 E	52*	40*
370633 2003 YK₁₂₃										154269 2002 SM									
7 10	0 56.85	+ 8 22.1	1.473	1.813	34.1	21.3	92 W	45*	56	7 10	1 24.18	+ 1 1.9	1.564	1.837	33.6	21.5	88 W	36*	63
7 20	1 14.05	+10 28.4	1.361	1.788	34.4	21.2	96 W	51*	54	7 20	1 30.32	+ 2 7.2	1.505	1.899	32.2	21.4	96 W	42*	62
7 30	1 30.48	+12 28.8	1.254	1.764	34.3	20.9	101 W	56*	52	7 30	1 33.40	+ 2 57.3	1.443	1.958	30.2	21.4	104 W	46*	61
8 9	1 45.87	+14 21.7	1.152	1.741	33.9	20.7	107 W	59*	50	8 9	1 33.04	+ 3 31.6	1.382	2.015	27.4	21.2	114 W	49*	60
8 19	1 59.83	+16 5.3	1.056	1.721	32.9	20.5	113 W	61	48	8 19	1 28.89	+ 3 49.6	1.326	2.070	23.9	21.1	124 W	49	60
8 29	2 11.82	+17 37.5	0.966	1.703	31.2	20.2	119 W	63	46	8 29	1 20.80	+ 3 51.0	1.280	2.123	19.5	21.0	136 W	49	60
9 8	2 21.28	+18 56.2	0.885	1.688	28.8	19.9	126 W	64	45	9 8	1 9.10	+ 3 37.2	1.252	2.174	14.2	20.8	148 W	49	60
9 13	2 24.86	+19 29.6	0.848	1.681	27.3	19.8	130 W	64	45	9 18	0 54.63	+ 3 11.2	1.247	2.222	8.3	20.6	161 W	48	61
9 18	2 27.55	+19 58.5	0.813	1.675	25.5	19.6	134 W	65	44	9 28	0 38.88	+ 2 38.5	1.269	2.269	2.3	20.4	175 W	48	61
9 23	2 29.30	+20 22.5	0.781	1.670	23.5	19.5	138 W	65	44	10 3	0 31.08	+ 2 21.9	1.291	2.291	0.9	20.3	178 E	47	62
9 28	2 30.07	+20 41.1	0.752	1.665	21.3	19.3	143 W	66	43	10 8	0 23.62	+ 2 6.2	1.320	2.313	3.7	20.6	171 E	47	62
10 8	2 28.69	+21 0.6	0.705	1.658	16.1	19.0	153 W	66	43	10 13	0 16.67	+ 1 52.4	1.357	2.334	6.5	20.8	165 E	47	62
10 18	2 23.79	+20 54.8	0.674	1.653	10.1	18.7	163 W	66	43	10 18	0 10.39	+ 1 40.9	1.401	2.355	9.0	21.0	158 E	47	62
10 28	2 16.69	+20 25.1	0.662	1.652	4.5	18.4	173 W	65	44	10 23	0 4.90	+ 1 32.4	1.451	2.375	11.4	21.2	152 E	47	62
11 2	2 12.93	+20 3.4	0.663	1.652	4.0	18.4	1												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
441266 2007 VE₃₂₃									264218 2010 RU₅₂ (<i>continuation</i>)								
7 10	1 47.29	+16 10.2	2.058	2.085	28.4	21.4	77 W	45* 48*	9 18	4 6.21	+19 55.9	1.228	1.854	30.2	20.8	112 W	65 44
7 20	2 4.74	+18 13.1	1.916	2.043	29.5	21.2	82 W	51* 46	9 28	4 11.54	+19 50.6	1.163	1.881	27.3	20.6	120 W	65 44
7 30	2 22.19	+20 13.2	1.776	2.001	30.4	21.1	87 W	57* 44	10 8	4 12.81	+19 33.1	1.105	1.908	23.6	20.4	130 W	65 44
8 9	2 39.55	+22 9.9	1.639	1.960	31.1	20.9	92 W	63* 42	10 18	4 9.80	+19 3.8	1.059	1.936	19.0	20.2	141 W	64 45
8 19	2 56.66	+24 2.4	1.507	1.921	31.5	20.7	97 W	68* 40	10 28	4 2.81	+18 24.1	1.030	1.965	13.6	20.0	152 W	63 46
8 29	3 13.27	+25 50.1	1.380	1.883	31.5	20.4	103 W	71 38	11 2	3 58.11	+18 1.0	1.022	1.979	10.6	19.9	158 W	63 46
9 8	3 29.06	+27 32.2	1.259	1.846	31.1	20.2	109 W	73 36	11 7	3 52.82	+17 36.5	1.020	1.994	7.5	19.8	165 W	63 46
9 13	3 36.53	+28 20.9	1.202	1.829	30.8	20.0	112 W	73 36	11 12	3 47.15	+17 11.2	1.025	2.008	4.4	19.7	171 W	62 47
9 18	3 43.61	+29 8.0	1.146	1.812	30.3	19.9	115 W	74 35	11 17	3 41.34	+16 45.8	1.035	2.023	1.7	19.5	176 W	62 47
9 23	3 50.23	+29 53.1	1.092	1.796	29.6	19.8	118 W	75 34	11 22	3 35.63	+16 21.4	1.052	2.037	2.5	19.6	175 E	61 48
9 28	3 56.33	+30 36.3	1.041	1.780	28.8	19.6	121 W	76 33	11 27	3 30.26	+15 58.9	1.075	2.052	5.3	19.9	169 E	61 48
10 3	4 1.81	+31 17.2	0.992	1.765	27.8	19.5	125 W	76 33	12 2	3 25.41	+15 38.9	1.105	2.067	8.1	20.1	163 E	61 48
10 8	4 6.60	+31 55.7	0.946	1.750	26.6	19.3	128 W	77 32	12 7	3 21.23	+15 22.2	1.140	2.082	10.8	20.3	157 E	60 49
10 13	4 10.60	+32 31.3	0.902	1.736	25.2	19.1	132 W	78 31	12 17	3 15.28	+15 0.2	1.227	2.111	15.5	20.6	145 E	60 49
10 18	4 13.70	+33 3.5	0.861	1.723	23.7	19.0	136 W	78 31	12 27	3 12.84	+14 54.7	1.334	2.140	19.2	21.0	134 E	60 49
10 23	4 15.85	+33 31.7	0.824	1.711	21.9	18.8	140 W	79 30	1 6	3 13.84	+15 4.4	1.456	2.169	21.9	21.3	124 E	60 49
10 28	4 17.00	+33 55.3	0.790	1.700	19.9	18.6	144 W	79 30	1 16	3 17.92	+15 27.1	1.589	2.198	23.8	21.5	115 E	60 49
11 2	4 17.16	+34 13.5	0.760	1.689	17.7	18.5	149 W	79 30	391000 2005 SC₉₉								
11 7	4 16.33	+34 25.4	0.734	1.680	15.4	18.3	153 W	79 30	7 10	2 22.54	+18 40.2	2.255	2.107	26.7	21.5	69 W	40* 44*
11 12	4 14.61	+34 30.2	0.712	1.671	13.0	18.1	158 W	80 29	7 20	2 41.73	+19 8.9	2.114	2.071	28.1	21.4	74 W	46* 44*
11 17	4 12.13	+34 27.1	0.695	1.663	10.7	18.0	162 W	79 30	7 30	3 0.90	+19 21.5	1.973	2.034	29.3	21.2	79 W	51* 45*
11 22	4 9.13	+34 15.8	0.682	1.656	8.7	17.9	165 W	79 30	8 9	3 19.91	+19 15.5	1.832	1.999	30.3	21.0	84 W	56* 45*
11 27	4 5.89	+33 56.5	0.674	1.650	7.7	17.8	167 E	79 30	8 19	3 38.55	+18 47.8	1.692	1.963	31.0	20.8	89 W	60* 45*
12 2	4 2.69	+33 29.9	0.671	1.646	8.0	17.8	167 E	78 31	8 29	3 56.56	+17 55.2	1.556	1.929	31.4	20.6	95 W	62* 46*
12 7	3 59.81	+32 56.9	0.672	1.642	9.5	17.8	164 E	78 31	9 8	4 13.65	+16 34.3	1.424	1.895	31.5	20.4	101 W	62* 47
12 12	3 57.51	+32 19.1	0.678	1.639	11.8	17.9	160 E	77 32	9 13	4 21.72	+15 42.1	1.361	1.879	31.3	20.3	104 W	61 48
12 17	3 56.03	+31 38.1	0.689	1.637	14.3	18.1	156 E	77 32	9 18	4 29.40	+14 41.6	1.299	1.862	31.0	20.1	107 W	60 49
12 22	3 55.54	+30 55.9	0.705	1.637	16.9	18.2	151 E	76 33	9 23	4 36.64	+13 32.2	1.240	1.847	30.6	20.0	110 W	59 50
12 27	3 56.14	+30 14.0	0.724	1.637	19.3	18.3	147 E	75 34	9 28	4 43.36	+12 13.8	1.182	1.831	30.1	19.9	114 W	57 52
1 1	3 57.86	+29 33.7	0.748	1.639	21.7	18.5	142 E	75 34	10 8	4 55.04	+ 9 8.9	1.076	1.802	28.6	19.6	120 W	54 55
1 6	4 0.69	+28 55.9	0.775	1.641	23.8	18.6	138 E	74 35	10 18	5 3.87	+ 5 27.0	0.983	1.774	26.5	19.3	127 W	50 59
1 11	4 4.57	+28 21.2	0.805	1.645	25.7	18.8	133 E	73 36	10 28	5 9.34	+ 1 12.9	0.905	1.748	24.1	19.0	134 W	46 63
1 16	4 9.48	+27 49.9	0.839	1.649	27.4	18.9	130 E	73 36	11 2	5 10.72	- 1 2.9	0.872	1.736	22.9	18.9	137 W	44 65
217837 2001 LC									380359 2002 TV₃₀								
7 10	1 49.39	- 5 15.9	0.860	1.269	52.9	21.4	85 W	27* 69*	7 10	2 35.14	+12 25.3	2.183	2.026	27.6	21.5	68 W	34* 49*
7 15	2 11.50	- 4 48.9	0.794	1.223	55.8	21.3	84 W	28* 68*	7 20	2 53.25	+14 50.2	2.028	1.971	29.4	21.3	72 W	41* 48*
7 20	2 36.50	- 4 19.4	0.733	1.174	59.1	21.1	83 W	28* 68*	7 30	3 11.97	+17 20.1	1.873	1.915	31.1	21.1	77 W	48* 46*
7 25	3 4.92	- 3 45.8	0.679	1.122	63.1	21.0	80 W	28* 66*	8 9	3 31.41	+19 56.8	1.720	1.858	32.6	20.9	81 W	55* 44*
7 30	3 37.22	- 3 6.2	0.632	1.068	67.8	20.8	77 W	28* 64*	8 19	3 51.75	+22 42.2	1.571	1.802	34.1	20.7	86 W	62* 41
8 4	4 13.63	- 2 18.4	0.596	1.010	73.3	20.8	72 W	27* 61*	8 29	4 13.16	+25 38.4	1.427	1.746	35.3	20.4	90 W	68* 38
8 9	4 53.87	- 1 21.4	0.573	0.950	79.3	20.7	67 W	26* 57*	9 8	4 35.98	+28 48.2	1.290	1.691	36.5	20.2	94 W	73* 35
8 14	5 36.98	- 0 15.7	0.564	0.886	85.6	20.8	61 W	24* 51*	9 18	5 0.59	+32 14.0	1.162	1.637	37.5	19.9	98 W	77 32
8 19	6 21.35	- 0 56.0	0.572	0.818	91.7	20.9	54 W	22* 45*	9 23	5 13.72	+34 3.5	1.101	1.610	37.9	19.8	100 W	79 30
8 24	7 5.18	+ 2 9.3	0.598	0.748	96.8	21.0	47 W	20* 39*	9 28	5 27.52	+35 57.5	1.043	1.584	38.3	19.6	101 W	81 28
8 29	7 47.05	+ 3 20.0	0.642	0.674	100.3	21.1	41 W	18* 32*	10 3	5 42.11	+37 56.0	0.988	1.558	38.7	19.5	103 W	83 26
9 3	8 26.38	+ 4 24.4	0.703	0.598	101.4	21.1	36 W	17* 27*	10 8	5 57.60	+39 58.7	0.937	1.533	39.1	19.3	105 W	85 24
9 8	9 3.48	+ 5 18.7	0.783	0.521	99.3	20.9	31 W	15* 21*	10 13	6 14.12	+42 4.9	0.888	1.509	39.4	19.2	106 W	87 22
9 13	9 39.38	+ 5 57.9	0.880	0.447	92.9	20.6	26 W	14* 16*	10 18	6 31.81	+44 13.6	0.843	1.486	39.8	19.1	107 W	89 20
9 18	10 15.59	+ 6 12.8	0.993	0.383	80.7	20.0	22 W	12* 11*	10 23	6 50.83	+46 23.2	0.802	1.463	40.2	18.9	109 W	89 18
9 20	10 30.51	+ 6 9.0	1.041	0.364	74.0	19.8	20 W	12* 9*	10 28	7 11.35	+48 31.7	0.764	1.441	40.6	18.8	109 W	86 15
9 22	10 45.75	+ 5 57.9	1.091	0.350	66.4	19.6	19 W	11* 7*	11 2	7 33.49	+50 36.5	0.731	1.420	41.0	18.7	110 W	84 13*
9 24	11 1.28	+ 5 38.8	1.140	0.342	58.2	19.3	17 W	9* 5*	11 7	7 57.35	+52 34.5	0.700	1.401	41.4	18.6	111 W	82 11*
9 26	11 17.00	+ 5 11.4	1.188	0.340	49.7	19.2	15 W	8* 3*	11 12	8 22.87	+54 22.5	0.674	1.383	41.9	18.5	111 W	81 10*
9 28	11 32.75	+ 4 36.0	1.235	0.346	41.4	19.1	13 W	7* 1*	11 17	8 49.87	+55 57.2	0.651	1.366	42.5	18.4	111 W	79 8*
9 30	11 48.35	+ 3 53.5	1.278	0.358	33.9	19.0	11 W	5* —	11 19	9 1.01	+56 30.6	0.642	1.359	42.7	18.4	111 W	78 7*
10 2	12 3.62	+ 3 5.2	1.319	0.375	27.3	19.0	10 W	4* —	11 21	9 12.29	+57 1.3	0.634	1.353	42.9	18.3	111 W	78 7*
10 4	12 18.44	+ 2 12.8	1.357	0.397	21.9	19.0	9 W	2* —	11 23	9 23.69	+57 29.2	0.627	1.347	43.1	18.3	111 W	78 6*
10 6	12 32.75	+ 1 17.6	1.393	0.422	17.7	19.1	7 W	1* —	11 25	9 35.16	+57 54.0	0.620	1.342	43.3	18.3	111 W	77 6*
10 8	12 46.50	+ 0 21.0	1.427	0.449	14.7	19.2	7 W	— —	11 27	9 46.66	+58 15.8	0.614	1.337	43.5	18.2	111 W	77 5*
10 10	12 59.69	- 0 36.3	1.459	0.478	12.7	19.3											

