

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
507639 2013 <i>LU</i> ₃₄										511523 2014 <i>QS</i> ₄₃₉ (continuation)																			
12 12	7 4.02	+ 2 55.6	1.980	2.857	10.8	22.6	147 W	48	61	1 16	6 15.13	+31 52.3	0.735	1.683	13.6	20.5	156 E	77	32	1 21	6 5.24	+32 40.9	0.735	1.659	17.7	20.7	149 E	78	31
12 22	6 53.93	+ 2 1.2	1.952	2.873	8.3	22.5	155 W	47	62	8013 Gordonmoore																			
1 1	6 42.97	+ 1 24.6	1.952	2.889	7.2	22.5	158 E	46	63	12 12	7 17.90	+20 56.9	2.011	2.916	9.2	21.5	152 W	66	43	12 22	7 8.02	+21 30.3	1.931	2.890	5.3	21.2	164 W	67	42
1 11	6 32.19	+ 1 7.1	1.981	2.903	8.2	22.6	155 E	46	63	1 1	6 56.34	+22 6.0	1.881	2.863	1.0	20.8	177 W	67	42	1 11	6 47.15	+10 4.6	2.022	2.895	10.7	21.3	147 W	35	74
1 21	6 22.63	+ 1 7.8	2.039	2.917	10.5	22.7	147 E	46	63	1 21	6 32.09	+23 11.3	1.874	2.806	8.0	21.2	157 E	68	41	409256 2004 <i>HO</i> ₁									
211078 2002 <i>EG</i> ₃										12 12	7 19.08	+52 28.0	2.080	2.922	11.9	22.8	142 W	83	12	12 17	7 10.96	+53 12.3	2.077	2.940	11.0	22.8	145 W	82	11
12 12	7 5.80	+ 9 52.8	2.103	2.906	13.2	21.5	137 W	35	74	12 22	7 2.08	+53 49.0	2.080	2.957	10.3	22.8	147 W	81	10	12 27	6 52.69	+54 17.1	2.090	2.974	9.9	22.8	149 W	81	10
12 22	6 57.03	+10 12.5	2.050	2.901	11.6	21.4	144 W	35	74	1 1	6 43.07	+54 35.9	2.108	2.990	9.9	22.8	148 E	80	9	1 1	6 33.54	+54 45.3	2.132	3.006	10.2	22.9	147 E	80	9
1 1	6 47.15	+10 4.6	2.022	2.895	10.7	21.3	147 W	35	74	1 11	6 24.40	+54 45.6	2.164	3.022	10.8	23.0	145 E	80	9	1 16	6 15.92	+54 37.6	2.201	3.037	11.5	23.0	142 E	80	9
1 11	6 37.10	+ 9 28.2	2.019	2.889	10.9	21.3	146 E	36	73	337103 1999 <i>JA</i> ₅																			
1 21	6 27.89	+ 8 25.7	2.043	2.882	12.2	21.4	142 E	37	72	12 12	7 21.38	+ 2 28.9	2.627	3.467	9.8	21.8	143 W	47	62	12 22	7 13.42	+ 1 57.1	2.570	3.470	7.6	21.7	152 W	47	62
494696 2004 <i>RN</i> ₃₃₅										1 1	7 4.41	+ 1 38.9	2.541	3.472	6.1	21.6	158 W	47	62	1 11	6 55.09	+ 1 35.1	2.542	3.474	6.0	21.6	158 E	47	62
12 12	7 8.49	+28 23.2	1.824	2.744	9.0	23.6	154 W	73	36	1 21	6 46.25	+ 1 45.1	2.573	3.474	7.6	21.7	152 E	47	62	523809 2007 <i>TV</i> ₁₈									
12 17	7 2.68	+28 47.2	1.814	2.760	6.9	23.5	160 W	74	35	12 12	7 23.29	+24 11.5	0.724	1.655	16.8	25.1	151 W	69	40	12 17	7 13.56	+24 32.4	0.705	1.660	12.7	24.9	158 W	70	39
12 22	6 56.42	+29 9.5	1.810	2.775	4.9	23.4	166 W	74	35	12 22	7 2.52	+24 51.9	0.692	1.664	8.4	24.7	166 W	70	39	12 27	6 50.56	+25 8.3	0.686	1.666	3.9	24.5	173 W	70	39
12 27	6 49.89	+29 29.5	1.814	2.790	3.1	23.3	171 W	74	35	1 1	6 38.16	+25 20.2	0.686	1.668	1.6	24.3	177 E	70	39	1 1	6 38.16	+25 20.2	0.686	1.668	1.6	24.3	177 E	70	39
1 1	6 43.25	+29 46.6	1.826	2.805	2.4	23.3	173 E	75	34	1 6	6 25.89	+25 27.0	0.692	1.669	5.7	24.6	170 E	70	39	1 11	6 14.31	+25 28.7	0.705	1.670	10.1	24.8	163 E	70	39
1 6	6 36.70	+30 0.7	1.845	2.819	3.5	23.4	170 E	75	34	1 16	6 3.89	+25 26.2	0.724	1.669	14.3	25.0	155 E	70	39	253449 2003 <i>RX</i> ₁₈									
1 11	6 30.41	+30 11.5	1.873	2.833	5.3	23.6	165 E	75	34	12 12	7 24.74	+26 18.9	1.928	2.827	9.8	21.6	151 W	71	38	12 17	7 20.01	+26 31.3	1.902	2.833	7.9	21.5	157 W	72	37
1 16	6 24.55	+30 19.2	1.908	2.847	7.2	23.7	159 E	75	34	12 17	7 13.56	+24 32.4	0.705	1.660	12.7	24.9	158 W	70	39	12 22	7 14.78	+26 43.1	1.883	2.838	5.9	21.4	163 W	72	37
495871 2004 <i>RP</i> ₅₂										12 27	6 50.56	+25 8.3	0.686	1.666	3.9	24.5	173 W	70	39	12 27	7 9.14	+26 53.8	1.872	2.843	3.8	21.3	169 W	72	37
12 12	7 9.13	+19 30.5	1.739	2.656	9.5	22.5	153 W	65	44	1 1	6 37.24	+27 3.0	0.686	1.668	2.0	21.2	174 W	72	37	1 1	6 32.24	+27 6.3	2.537	3.518	1.2	22.0	176 W	72	37
12 22	6 58.49	+19 47.2	1.710	2.675	5.1	22.2	166 W	65	44	1 6	6 46.98	+27 7.6	2.550	3.529	1.8	22.1	174 E	72	37	1 6	6 46.98	+27 7.6	2.550	3.529	1.8	22.1	174 E	72	37
1 1	6 46.68	+20 5.7	1.711	2.693	1.1	22.0	177 W	65	44	1 11	6 41.19	+ 5 33.0	1.976	2.919	6.6	22.2	160 E	51	58	1 11	6 41.85	+27 7.4	2.571	3.539	3.3	22.2	168 E	72	37
1 11	6 35.00	+20 24.0	1.742	2.711	4.5	22.3	167 E	65	44	1 16	6 36.95	+27 5.8	2.600	3.549	4.8	22.3	162 E	72	37	1 16	6 36.95	+27 5.8	2.600	3.549	4.8	22.3	162 E	72	37
1 21	6 24.74	+20 40.8	1.803	2.727	8.8	22.6	155 E	66	43	1 21	6 32.40	+27 2.7	2.636	3.559	6.4	22.5	156 E	72	37	1 21	6 32.40	+27 2.7	2.636	3.559	6.4	22.5	156 E	72	37
378100 2006 <i>UZ</i> ₁₇₁										474441 2003 <i>OE</i> ₁₃																			
12 12	7 11.47	+ 6 6.5	1.978	2.858	10.7	22.3	147 W	51	58	12 12	7 12.22	+26 48.2	2.565	3.474	7.3	22.4	153 W	72	37	12 17	7 7.61	+26 54.2	2.547	3.485	5.7	22.3	159 W	72	37
12 22	7 2.02	+ 5 40.5	1.949	2.879	7.7	22.2	157 W	51	58	12 17	7 7.61	+26 54.2	2.547	3.485	5.7	22.3	159 W	72	37	12 22	7 2.68	+26 59.5	2.536	3.496	4.1	22.2	165 W	72	37
1 1	6 51.59	+ 5 29.3	1.947	2.900	5.9	22.1	162 W	50	59	12 27	6 57.52	+27 3.6	2.532	3.507	2.5	22.1	171 W	72	37	12 27	6 57.52	+27 3.6	2.532	3.507	2.5	22.1	171 W	72	37
1 11	6 41.19	+ 5 33.0	1.976	2.919	6.6	22.2	160 E	51	58	1 1	6 52.24	+27 6.3	2.537	3.518	1.2	22.0	176 W	72	37	1 1	6 52.24	+27 6.3	2.537	3.518	1.2	22.0	176 W	72	37
1 21	6 31.87	+ 5 50.1	2.033	2.938	9.0	22.4	152 E	51	58	1 6	6 46.98	+27 7.6	2.550	3.529	1.8	22.1	174 E	72	37	1 6	6 46.98	+27 7.6	2.550	3.529	1.8	22.1	174 E	72	37
380223 2001 <i>RZ</i> ₆₃										1 11	6 41.85	+27 7.4	2.571	3.539	3.3	22.2	168 E	72	37	1 11	6 41.85	+27 7.4	2.571	3.539	3.3	22.2	168 E	72	37
12 12	7 12.33	+16 4.4	1.622	2.533	10.6	21.8	152 W	61	48	1 16	6 36.95	+27 5.8	2.600	3.549	4.8	22.3	162 E	72	37	1 16	6 36.95	+27 5.8	2.600	3.549	4.8	22.3	162 E	72	37
12 22	7 2.05	+15 56.6	1.609	2.568	6.2	21.7	164 W	61	48	1 21	6 32.40	+27 2.7	2.636	3.559	6.4	22.5	156 E	72	37	1 21	6 32.40	+27 2.7	2.636	3.559	6.4	22.5	156 E	72	37
1 1	6 50.75	+15 55.3	1.624	2.602	2.7	21.5	173 W	61	48	408768 1998 <i>SQ</i> ₄₉																			
1 11	6 39.73	+15 59.4	1.668	2.635	4.8	21.7	167 E	61	48	12 12	7 13.66	+32 46.7	1.952	2.861	9.2	22.2	152 W	78	31	12 17	7 8.00	+33 9.7	1.934	2.870	7.4	22.2	158 W	78	31
1 21	6 30.23	+16 7.6	1.740	2.668	8.7	22.0	156 E	61	48	12 22	7 1.84	+33 30.2	1.923	2.878	5.7	22.1	163 W	79	30	12 27	6 55.33	+33 47.7	1.919	2.886	4.3	22.0	167 W	79	30
408768 1998 <i>SQ</i> ₄₉										1 1	6 52.24	+27 6.3	2.537	3.518	1.2	22.0	176 W	72	37	1 1	6 48.64	+34 1.6	1.923	2.894	3.7	22.0	169 W	79	30
12 12	7 13.66	+32 46.7	1.952	2.861	9.2	22.2	152 W	78	31	1 6	6 41.95	+34 11.4	1.935	2.902	4.3	22.0	167 E	79	30	1 6	6 41.95	+34 11.4	1.935	2.902	4.3	22.0	167 E	79	30
12 17	7 8.00	+33 9.7	1.934	2.870	7.4	22.2	158 W	78	31	1 11	6 35.46	+34 17.3	1.955	2.909	5.7	22.1	163 E	79	30	1 11	6 35.46	+34 17.3	1.955	2.909	5.7	22.1	163 E	79	30
12 22	7 1.84	+33 30.2	1.923	2.878	5.7	22.1	163 W	79	30	1 16	6 29.33	+34 19.2	1.982	2.916	7.3	22.2	158 E	79	30	1 16	6 29.33	+34 19.2	1.982	2.916	7.3	22.2			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
306869 2001 SH ₂₈₈ (continuation)										405399 2004 OJ (continuation)									
1 1	7 5.81	+25 14.2	1.679	2.660	2.0	21.2	175 W	70	39	1 11	7 4.02	+21 58.5	1.353	2.334	2.4	21.1	174 E	67	42
1 6	6 59.54	+25 36.0	1.687	2.669	1.3	21.1	177 E	71	38	1 16	6 58.09	+22 19.2	1.379	2.350	5.0	21.3	168 E	67	42
1 11	6 53.36	+25 55.8	1.703	2.679	3.3	21.3	171 E	71	38	1 21	6 52.64	+22 38.0	1.411	2.365	7.6	21.5	162 E	68	41
1 16	6 47.45	+26 13.2	1.727	2.689	5.5	21.5	165 E	71	38	378959 2008 UY ₁₉₀									
1 21	6 41.96	+26 28.2	1.758	2.698	7.7	21.6	159 E	71	38	12 12	7 41.72	+27 59.5	1.628	2.511	12.4	22.0	147 W	73	36
440009 2002 JP ₂										12 17	7 37.05	+28 25.1	1.604	2.520	10.3	21.9	153 W	73	36
12 12	7 29.85	- 7 37.0	2.595	3.365	11.9	21.8	135 W	37	72	12 22	7 31.68	+28 50.2	1.587	2.529	8.1	21.8	159 W	74	35
12 22	7 22.60	- 7 37.7	2.509	3.348	10.2	21.7	143 W	37	72	12 27	7 25.74	+29 13.9	1.576	2.538	5.9	21.7	165 W	74	35
1 1	7 14.02	- 7 16.8	2.448	3.329	8.8	21.6	149 W	38	71	1 1	7 19.40	+29 35.4	1.572	2.546	3.9	21.6	170 W	75	34
1 11	7 4.79	- 6 32.9	2.415	3.309	8.3	21.5	151 E	38	71	1 6	7 12.84	+29 54.0	1.576	2.554	2.9	21.5	173 W	75	34
1 21	6 55.72	- 5 27.6	2.410	3.289	9.0	21.5	148 E	40	69	1 11	7 6.28	+30 9.3	1.587	2.562	3.7	21.6	170 E	75	34
523626 2008 PH ₉										1 16	6 59.92	+30 20.9	1.606	2.570	5.5	21.7	165 E	75	34
12 12	7 30.29	+66 42.3	2.711	3.443	12.4	22.2	132 W	68	-	1 21	6 53.96	+30 28.9	1.631	2.577	7.6	21.9	160 E	75	34
12 17	7 20.89	+67 10.9	2.669	3.420	12.1	22.1	133 W	68	-	497616 2006 QF ₁₃									
12 22	7 10.21	+67 31.9	2.634	3.397	11.9	22.1	135 W	67	-	12 12	7 48.01	+22 14.6	1.750	2.618	12.5	21.9	145 W	67	42
12 27	6 58.53	+67 44.1	2.604	3.374	11.8	22.0	135 W	67	-	12 22	7 39.17	+22 57.1	1.710	2.644	8.3	21.8	157 W	68	41
1 1	6 46.21	+67 46.4	2.580	3.351	11.9	22.0	135 W	67	-	1 1	7 28.31	+23 40.9	1.696	2.670	3.7	21.5	170 W	69	40
1 6	6 33.73	+67 38.1	2.562	3.327	12.1	22.0	135 E	67	-	1 11	7 16.60	+24 21.5	1.712	2.695	1.3	21.4	176 E	69	40
1 11	6 21.58	+67 19.1	2.549	3.303	12.5	22.0	133 E	68	-	1 21	7 5.40	+24 54.9	1.759	2.718	5.7	21.8	164 E	70	39
1 16	6 10.20	+66 49.9	2.543	3.278	13.0	22.0	132 E	68	-	357510 2004 RD ₁₀									
1 21	5 59.94	+66 11.5	2.541	3.254	13.6	22.0	129 E	69	-	12 12	7 49.73	+18 33.1	1.790	2.650	12.7	21.9	144 W	64	45
363403 2003 OY ₇										12 22	7 41.65	+18 45.7	1.712	2.641	8.7	21.7	156 W	64	45
12 12	7 30.99	+15 32.6	1.574	2.461	12.5	21.6	147 W	61	48	1 1	7 31.25	+19 3.9	1.660	2.630	4.3	21.4	168 W	64	45
12 22	7 21.39	+15 41.2	1.544	2.489	8.0	21.4	159 W	61	48	1 11	7 19.51	+19 25.1	1.637	2.619	1.2	21.1	177 E	64	45
1 1	7 10.16	+15 57.7	1.541	2.517	3.6	21.2	171 W	61	48	1 21	7 7.78	+19 46.3	1.644	2.607	5.6	21.4	165 E	65	44
1 11	6 58.59	+16 19.6	1.567	2.543	3.5	21.2	171 E	61	48	487580 2015 BA ₉₂									
1 21	6 48.09	+16 44.3	1.622	2.569	7.5	21.5	160 E	62	47	12 12	7 50.37	+ 6 31.9	0.721	1.602	23.6	21.4	139 W	52	57
376784 2000 QW ₁₄₄										12 17	7 38.75	+ 7 40.2	0.707	1.623	19.2	21.3	147 W	53	56
12 12	7 32.37	+31 15.6	1.490	2.387	12.4	21.5	149 W	76	33	12 22	7 25.77	+ 8 57.9	0.698	1.643	14.7	21.1	155 W	54	55
12 17	7 27.07	+31 34.8	1.477	2.403	10.1	21.4	155 W	77	32	12 27	7 11.82	+10 22.5	0.697	1.661	10.3	21.0	162 W	55	54
12 22	7 21.12	+31 51.9	1.469	2.418	7.9	21.3	160 W	77	32	1 1	6 57.42	+11 51.0	0.703	1.678	6.8	20.9	168 W	57	52
12 27	7 14.68	+32 6.0	1.469	2.433	5.8	21.2	165 W	77	32	1 6	6 43.17	+13 20.0	0.717	1.693	6.2	20.9	169 E	58	51
1 1	7 7.96	+32 16.5	1.475	2.448	4.2	21.2	169 W	77	32	1 11	6 29.65	+14 46.6	0.739	1.707	8.9	21.1	164 E	60	49
1 6	7 1.18	+32 22.9	1.489	2.463	3.9	21.2	170 E	77	32	1 16	6 17.33	+16 8.4	0.768	1.719	12.6	21.4	158 E	61	48
1 11	6 54.58	+32 25.0	1.509	2.478	5.1	21.3	167 E	77	32	1 21	6 6.56	+17 24.0	0.805	1.730	16.3	21.6	150 E	62	47
1 16	6 48.37	+32 23.0	1.537	2.492	6.9	21.4	162 E	77	32	3671 Dionysus									
1 21	6 42.72	+32 17.3	1.572	2.506	8.9	21.6	157 E	77	32	12 12	7 50.61	+28 14.7	2.536	3.389	9.6	21.7	145 W	73	36
328563 Mosplanetarium										12 22	7 41.50	+29 8.7	2.464	3.389	6.6	21.5	157 W	74	35
12 12	7 34.42	+14 15.6	2.085	2.954	10.7	21.4	146 W	59	50	1 1	7 30.52	+30 0.0	2.422	3.389	3.6	21.3	168 W	75	34
12 22	7 25.62	+14 5.7	2.041	2.975	7.2	21.2	158 W	59	50	1 11	7 18.51	+30 43.8	2.412	3.386	2.6	21.2	171 E	76	33
1 1	7 15.42	+14 2.9	2.025	2.995	3.8	21.1	168 W	59	50	1 21	7 6.55	+31 16.8	2.435	3.383	5.3	21.4	162 E	76	33
1 11	7 4.79	+14 6.2	2.040	3.014	3.1	21.1	170 E	59	50	303449 2005 BE ₂									
1 21	6 54.78	+14 14.5	2.085	3.032	6.1	21.3	161 E	59	50	12 12	7 54.10	+22 45.2	1.861	2.717	12.4	22.5	144 W	68	41
511061 2013 SM ₈₄										12 22	7 44.35	+23 31.8	1.740	2.670	8.6	22.1	156 W	69	40
12 12	7 35.51	- 4 26.7	2.048	2.841	13.9	22.4	136 W	41	68	1 1	7 31.41	+24 23.2	1.647	2.619	4.0	21.7	169 W	69	40
12 22	7 27.10	- 5 20.7	2.004	2.861	11.6	22.3	144 W	40	69	1 11	7 16.13	+25 13.6	1.585	2.567	1.7	21.5	176 E	70	39
1 1	7 17.26	- 5 51.9	1.986	2.880	9.8	22.2	150 W	39	70	1 21	7 0.00	+25 56.8	1.556	2.512	6.7	21.7	163 E	71	38
1 11	7 6.91	- 5 58.2	1.994	2.897	9.3	22.2	152 E	39	70	247087 2000 SC ₁₄₅									
1 21	6 57.08	- 5 40.4	2.029	2.914	10.2	22.3	148 E	39	70	12 12	7 54.37	+18 1.0	1.868	2.717	12.7	21.6	143 W	63	46
318411 2005 AH ₁₄										12 22	7 46.01	+18 13.3	1.813	2.736	8.8	21.4	155 W	63	46
12 12	7 36.97	+33 47.3	2.211	3.086	9.9	21.9	147 W	79	30	1 1	7 35.62	+18 31.2	1.785	2.753	4.5	21.2	167 W	64	45
12 17	7 32.08	+34 20.1	2.156	3.064	8.4	21.8	153 W	79	30	1 11	7 24.22	+18 51.8	1.787	2.769	1.1	20.9	177 E	64	45
12 22	7 26.46	+34 52.1	2.108	3.042	6.9	21.7	158 W	80	29	1 21	7 13.07	+19 12.4	1.819	2.785	4.8	21.2	166 E	64	45
12 27	7 20.19	+35 22.4	2.067	3.020	5.6	21.5	163 W	80	29	494888 2008 SC ₁₈₀									
1 1	7 13.37	+35 50.1	2.034	2.997	4.6	21.4	166 W	81	28	12 12	7 54.80	+28 11.0	1.307	2.182	15.4	21.5	144 W	73	36
1 6	7 6.15	+36 14.3	2.009	2.973	4.5	21.4	166 E	81	28	12 17	7 50.49	+28 42.6	1.288	2.196	13.0	21.4	150 W	74	35
1 11	6 58.72	+36 34.2	1.991	2.949	5.3	21.4	164 E	82	27	12 22	7 45.31	+29 14.0	1.276	2.210	10.5	21.3	156 W	74	35
1 16	6 51.26	+36 49.5	1.982	2.925	6.7	21.4	160 E	82	27	12 27	7 39.41	+29 44.0	1.269	2.224	8.0	21.2	162 W	75	34
1 21	6 43.97	+37 0.0	1.981	2.900	8.4	21.5	155 E	82	27	1 1	7 32.97	+30 11.4	1.269	2.238	5.7	21.1	167 W	75	34
218116 2002 PG ₆₈										1 6	7 26.21	+30 35.3	1.275	2.251	4.0	21.1	171 W	76	33
12 12	7 38.45	+16 49.6	1.998	2.868	11.1	22.2	146 W	62	47	1 11	7 19.41	+30 55.0	1.289	2.265	4.0	21.1	171 E	76	33
12 22	7 30.40	+17 6.4	1.916	2.852	7.4	21.9	158 W												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
85848 1998 YP ₂₉										523607 2005 CS ₆									
12 12	9 46.86	+13 22.3	1.820	2.413	21.6	21.4	115 W	58	51	12 12	10 36.99	+13 21.4	1.467	1.954	29.3	21.5	104 W	58	50*
12 22	9 45.67	+13 2.8	1.730	2.440	19.1	21.2	126 W	58	51	12 17	10 41.94	+12 1.2	1.379	1.920	29.3	21.3	107 W	57	52*
1 1	9 41.27	+12 57.3	1.654	2.466	15.8	21.0	137 W	58	51	12 22	10 46.44	+10 35.9	1.293	1.885	29.2	21.1	111 W	56	53*
1 11	9 33.80	+13 5.3	1.597	2.492	11.8	20.8	149 W	58	51	12 27	10 50.43	+ 9 4.7	1.210	1.850	28.9	20.9	115 W	54	55
1 21	9 23.80	+13 24.1	1.564	2.516	7.2	20.6	161 W	58	51	1 1	10 53.84	+ 7 26.6	1.128	1.815	28.5	20.7	118 W	52	57
42531 McKenna										509280 2006 VQ ₄									
12 12	9 48.48	+14 34.8	2.495	3.051	16.9	21.4	115 W	60	49	12 12	10 40.81	+18 27.6	1.774	2.240	25.1	21.5	105 W	63	44*
12 22	9 47.22	+14 30.3	2.363	3.046	15.2	21.2	126 W	60	49	12 22	10 45.57	+18 44.4	1.690	2.274	23.3	21.3	114 W	64	45*
1 1	9 43.45	+14 36.9	2.245	3.039	12.8	21.0	137 W	60	49	1 1	10 47.18	+19 19.5	1.612	2.308	20.8	21.2	124 W	64	45
1 11	9 37.17	+14 53.8	2.148	3.032	9.7	20.8	149 W	60	49	1 11	10 45.38	+20 11.6	1.547	2.342	17.5	21.0	134 W	65	44
1 21	9 28.69	+15 18.8	2.076	3.023	6.1	20.6	161 W	60	49	1 21	10 40.17	+21 16.4	1.499	2.375	13.7	20.8	145 W	66	43
159928 2005 CV ₆₉										79571 1998 QG ₉₂									
12 12	10 5.09	-10 42.1	1.417	1.882	30.8	21.5	102 W	34	75*	12 12	10 49.56	+10 0.5	2.714	3.042	18.6	21.4	100 W	55	52*
12 17	10 9.52	-11 11.4	1.339	1.858	30.7	21.3	105 W	34	75	12 22	10 52.35	+10 0.2	2.582	3.054	17.7	21.3	109 W	55	54*
12 22	10 13.48	-11 36.1	1.262	1.834	30.5	21.1	109 W	33	76	1 1	10 52.99	+10 13.9	2.458	3.065	16.2	21.2	120 W	55	54
12 27	10 16.93	-11 55.0	1.186	1.809	30.1	21.0	113 W	33	76	1 11	10 51.30	+10 42.4	2.346	3.075	14.1	21.0	130 W	56	53
1 1	10 19.78	-12 6.8	1.111	1.784	29.5	20.8	117 W	33	76	1 21	10 47.26	+11 25.0	2.251	3.084	11.4	20.8	142 W	56	53
1 6	10 21.97	-12 9.5	1.038	1.758	28.7	20.6	121 W	33	76	149223 2002 RM ₆₅									
1 11	10 23.42	-12 1.3	0.966	1.732	27.6	20.3	125 W	33	76	12 12	10 53.67	+16 59.7	2.657	3.012	18.7	21.5	102 W	62	45*
1 16	10 24.05	-11 39.7	0.897	1.705	26.2	20.1	130 W	33	76	12 22	10 56.57	+17 19.8	2.533	3.028	17.7	21.3	111 W	62	47*
1 21	10 23.79	-11 1.9	0.831	1.677	24.5	19.9	135 W	34	75	1 1	10 57.19	+17 54.6	2.417	3.043	16.1	21.2	121 W	63	46
161513 2004 RK ₁₉₅										361094 2006 CJ ₆₀									
12 12	10 7.51	+12 2.3	2.102	2.612	20.7	21.4	110 W	57	52*	12 12	11 0.52	+ 1 21.9	1.079	1.511	40.5	21.5	94 W	46	59*
12 22	10 9.07	+11 42.2	1.967	2.602	19.1	21.2	120 W	57	52	12 22	11 19.72	- 0 23.1	1.000	1.510	40.0	21.3	99 W	45	63*
1 1	10 7.89	+11 35.5	1.843	2.591	16.8	21.0	130 W	57	52	1 1	11 37.21	- 1 53.0	0.924	1.510	39.0	21.1	105 W	43	66*
1 11	10 3.76	+11 43.1	1.736	2.579	13.7	20.7	142 W	57	52	1 11	11 52.54	- 3 2.2	0.850	1.512	37.4	20.9	111 W	42	67
1 21	9 56.76	+12 4.2	1.649	2.567	9.9	20.5	153 W	57	52	1 21	12 5.19	- 3 45.2	0.781	1.515	35.0	20.6	118 W	41	68
516155 2016 DP										484247 2007 FL ₃									
12 12	10 12.58	+34 40.6	0.649	1.393	39.7	21.5	115 W	80	29*	12 12	11 2.08	-10 15.8	1.919	2.144	27.3	21.4	89 W	35	68*
12 17	10 11.01	+36 54.0	0.628	1.411	36.9	21.3	121 W	82	27	12 17	11 6.22	- 9 57.2	1.844	2.139	27.4	21.3	93 W	35	70*
12 22	10 7.15	+39 19.6	0.608	1.428	33.9	21.2	126 W	84	25	12 22	11 9.88	- 9 31.4	1.768	2.133	27.2	21.2	98 W	35	72*
12 27	10 0.59	+41 54.2	0.591	1.444	30.7	21.1	131 W	87	22	12 27	11 13.01	- 8 57.2	1.692	2.127	26.9	21.1	102 W	36	73*
1 1	9 50.90	+44 33.0	0.577	1.457	27.7	21.0	136 W	90	19	1 1	11 15.56	- 8 13.3	1.617	2.121	26.4	21.0	107 W	37	72
1 6	9 37.76	+47 8.4	0.568	1.469	24.9	20.9	141 W	88	17	1 6	11 17.47	- 7 18.4	1.543	2.115	25.6	20.8	112 W	38	71
1 11	9 21.11	+49 30.9	0.565	1.480	22.7	20.8	145 W	85	14	1 11	11 18.66	- 6 11.1	1.471	2.108	24.6	20.7	117 W	39	70
1 16	9 1.31	+51 30.7	0.566	1.489	21.4	20.8	147 W	83	12	1 16	11 19.09	- 4 49.7	1.401	2.101	23.2	20.5	123 W	40	69
1 21	8 39.25	+52 59.4	0.573	1.496	21.2	20.8	147 W	82	11	1 21	11 18.70	- 3 13.0	1.335	2.094	21.6	20.4	128 W	42	67
330825 2008 XE ₃										215144 1999 UV ₅₁									
12 12	10 12.88	+11 33.2	2.424	2.896	18.8	21.5	109 W	57	52*	12 12	11 5.83	+33 34.6	2.413	2.825	19.7	21.5	104 W	79	28*
12 22	10 11.37	+11 26.9	2.337	2.947	16.9	21.4	119 W	56	53	12 22	11 10.92	+34 55.3	2.312	2.842	18.6	21.3	113 W	80	29*
1 1	10 7.28	+11 33.7	2.263	2.997	14.4	21.3	131 W	57	52	1 1	11 13.29	+36 32.2	2.221	2.858	17.1	21.2	121 W	82	27
1 11	10 0.70	+11 52.7	2.207	3.045	11.4	21.1	142 W	57	52	1 11	11 12.57	+38 21.4	2.144	2.873	15.3	21.1	130 W	83	26
1 21	9 52.03	+12 21.7	2.174	3.093	7.8	21.0	155 W	57	52	1 21	11 8.53	+40 15.9	2.086	2.887	13.4	21.0	137 W	85	24
219527 2001 QK ₁₄₂										405044 2001 SB ₁₂₇									
12 12	10 15.29	+18 30.0	2.146	2.658	20.3	21.5	111 W	63	45*	12 12	11 23.80	+ 7 55.1	1.394	1.725	34.8	21.4	91 W	53	50*
12 22	10 14.34	+19 2.3	2.069	2.711	18.1	21.4	121 W	64	45	12 22	11 35.01	+ 6 29.2	1.331	1.766	33.4	21.4	98 W	51	55*
1 1	10 10.43	+19 48.7	2.005	2.764	15.3	21.3	132 W	65	44	1 1	11 43.11	+ 5 20.1	1.267	1.808	31.5	21.2	106 W	50	58*
1 11	10 3.62	+20 46.0	1.959	2.815	11.9	21.1	144 W	66	43	1 11	11 47.67	+ 4 30.4	1.206	1.850	28.8	21.1	115 W	50	59
1 21	9 54.31	+21 48.6	1.937	2.864	8.1	21.0	156 W	67	42	1 21	11 48.36	+ 4 1.9	1.150	1.893	25.3	21.0	125 W	49	60
220911 2005 EY ₁₃₉										134509 1999 FC ₈									
12 12	10 17.24	+18 57.6	2.325	2.823	19.1	21.5	110 W	64	45*	12 12	11 35.96	- 1 19.0	2.251	2.375	24.4	21.5	85 W	44	56*
12 22	10 19.68	+19 30.1	2.181	2.805	17.7	21.3	120 W	65	44	12 22	11 46.55	- 2 27.1	2.097	2.349	24.7	21.3	92 W	43	62*
1 1	10 19.59	+20 19.0	2.049	2.787	15.6	21.0	130 W	65	44	1 1	11 55.78	- 3 25.9	1.943	2.323	24.7	21.1	100 W	42	66*
1 11	10 16.72	+21 23.3	1.934	2.768	12.9	20.8	141 W	66	43	1 11	12 3.33	- 4 12.5	1.793	2.296	24.1	20.9	108 W	41	68
1 21	10 11.03	+22 39.6	1.840	2.748	9.7	20.6	152 W	68	41	1 21	12 8.86	- 4 43.9	1.649	2.268	22.8	20.7	117 W	40	69
266691 2009 PB										106577 2000 WB ₉₅									
12 12	10 18.02	+ 2 42.7	2.520	2.924	19.0	21.4	104 W	48	61*	12 12	11 35.98	+ 6 30.1	2.359	2.523	23.0	21.5	88 W	52	50*
12 22	10 18.42	+ 2 8.8	2.409	2.951	17.7	21.3	114 W	47	62	12 22	11 43.17	+ 6 1.3	2.245	2.548	22.6	21.4	96 W	51	55*
1 1	10 16.45	+ 1 48.4	2.307	2.976	15.8	21.1	124 W	47	62	1 1	11 48.27	+ 5 47.0	2.133	2.572	21.7	21.2	105 W	51	58*
1 11	10 12.06	+ 1 43.4	2.219	3.000	13.3	21.0	135 W	47	62	1 11	11 50.98	+ 5 49.2	2.025	2.595	20.1	21.1	115 W	51	58
1 21	10 5.47	+ 1 54.4	2.152	3.023	10.3	20.8	147 W	47	62	1 21	11 51.08	+ 6 8.6	1.926	2.618	17.9	20.9	125 W	51	58
253446																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
496819 1994 XE										459462 2013 AY₅₂ (continuation)									
12 12	11 45.43	+ 5 55.3	1.466	1.702	35.2	21.4	86 W	51	49*	1 13	7 30.49	+12 53.1	0.169	1.151	7.5	16.9	171 E	58	51
12 22	12 3.60	+ 5 1.2	1.390	1.720	34.9	21.3	91 W	50	53*	1 15	7 24.72	+16 42.8	0.184	1.167	5.6	17.0	173 E	62	47
1 1	12 19.85	+ 4 24.7	1.314	1.740	34.1	21.2	97 W	49	57*	1 17	7 19.71	+19 57.2	0.200	1.182	6.8	17.3	172 E	65	44
1 11	12 33.79	+ 4 9.1	1.240	1.761	32.8	21.1	104 W	49	59*	1 19	7 15.39	+22 41.7	0.217	1.198	9.2	17.6	169 E	68	41
1 21	12 44.99	+ 4 17.2	1.169	1.785	30.8	20.9	112 W	49	60	1 21	7 11.69	+25 1.2	0.235	1.213	11.8	17.9	165 E	70	39
141756 2002 LP₅₈										3102 Krok									
12 12	12 5.71	+ 4 51.8	2.587	2.612	21.8	21.4	81 W	50	46*	12 12	14 4.38	- 9 44.6	3.000	2.446	17.3	21.4	48 W	30*	30*
12 22	12 15.91	+ 4 10.2	2.428	2.588	22.3	21.3	88 W	49	52*	12 22	14 20.76	-10 48.6	2.850	2.401	19.3	21.4	54 W	32*	36*
1 1	12 24.87	+ 3 39.7	2.268	2.564	22.4	21.1	96 W	49	57*	1 1	14 37.27	-11 45.9	2.694	2.355	21.1	21.2	60 W	32*	43*
1 11	12 32.29	+ 3 22.4	2.110	2.538	22.1	20.9	104 W	48	60*	1 11	14 53.86	-12 35.3	2.530	2.307	22.9	21.1	66 W	32*	50*
1 21	12 37.85	+ 3 20.3	1.957	2.511	21.1	20.7	113 W	48	61	1 21	15 10.45	-13 15.6	2.362	2.258	24.5	21.0	72 W	32*	57*
85275 1994 LY										481394 2006 SF₆									
12 12	12 14.19	+ 4 58.7	2.742	2.725	20.7	21.5	79 W	50	45*	12 12	14 40.13	-18 51.2	1.147	0.685	58.7	21.5	37 W	18*	25*
12 22	12 22.71	+ 4 57.4	2.598	2.727	21.1	21.4	87 W	50	50*	12 17	15 7.60	-20 21.4	1.194	0.683	55.5	21.5	35 W	17*	24*
1 1	12 29.75	+ 5 12.1	2.453	2.727	21.0	21.3	95 W	50	55*	12 22	15 35.12	-21 34.3	1.241	0.686	52.2	21.5	33 W	15*	23*
1 11	12 35.01	+ 5 45.0	2.308	2.726	20.4	21.1	104 W	51	58*	12 27	16 2.57	-22 29.5	1.288	0.693	49.0	21.5	32 W	14*	23*
1 21	12 38.18	+ 6 38.3	2.168	2.723	19.3	20.9	114 W	52	57	1 1	16 29.79	-23 7.0	1.334	0.704	45.9	21.5	31 W	12*	22*
65682 1990 QU₂										276703 2004 BL₁₁									
12 12	12 19.07	- 1 57.3	2.849	2.758	20.1	21.5	75 W	43*	48*	12 12	15 7.39	-12 49.4	1.632	0.955	33.3	21.5	32 W	21*	17*
12 22	12 28.42	- 2 40.9	2.706	2.756	20.7	21.4	82 W	42	55*	12 17	15 32.17	-14 20.9	1.564	0.881	35.1	21.2	31 W	19*	17*
1 1	12 36.47	+ 3 13.9	2.561	2.752	20.9	21.3	91 W	42	62*	12 22	15 59.70	-15 50.4	1.502	0.804	36.8	21.0	29 W	17*	16*
1 11	12 42.94	- 3 34.3	2.414	2.748	20.7	21.1	99 W	41	66*	12 27	16 30.38	-17 14.5	1.447	0.723	38.0	20.7	27 W	15*	15*
1 21	12 47.56	- 3 40.3	2.271	2.743	19.9	21.0	108 W	41	68	1 1	17 4.61	-18 28.4	1.402	0.639	38.3	20.4	24 W	12*	13*
218098 2002 MG										456537 2007 BG									
12 12	12 20.69	-21 12.6	3.164	2.934	18.1	21.5	68 W	24*	57*	12 12	15 13.76	-15 7.8	1.471	0.788	38.5	21.4	30 W	18*	16*
12 22	12 29.69	-22 33.1	3.035	2.936	18.9	21.4	75 W	22	65*	12 17	15 41.03	-16 9.8	1.459	0.755	38.3	21.2	28 W	16*	15*
1 1	12 37.41	-23 48.1	2.899	2.936	19.4	21.3	82 W	21	74*	12 22	16 9.64	-17 2.4	1.450	0.722	37.7	21.1	27 W	15*	14*
1 11	12 43.57	-24 55.9	2.760	2.936	19.6	21.2	90 W	20	83*	12 27	16 39.59	-17 43.7	1.446	0.688	36.6	21.0	25 W	13*	13*
1 21	12 47.90	-25 54.0	2.620	2.934	19.4	21.1	99 W	19	90	1 1	17 10.83	-18 11.7	1.445	0.654	35.0	20.8	22 W	12*	11*
7335 1989 JA										413044 2001 QU₁₀₈									
12 12	12 44.78	+11 23.1	2.115	2.084	27.1	21.4	75 W	56*	35*	12 12	15 17.88	-15 26.8	2.768	1.964	14.0	21.5	29 W	17*	15*
12 22	13 1.46	+10 26.7	1.951	2.033	28.5	21.2	80 W	55	40*	12 22	15 42.47	-15 30.1	2.671	1.927	16.3	21.4	33 W	20*	20*
1 1	13 17.99	+ 9 39.0	1.785	1.980	29.7	21.0	86 W	55	45*	1 1	16 7.67	-15 16.5	2.571	1.891	18.6	21.4	38 W	22*	24*
1 11	13 34.31	+ 9 1.6	1.621	1.925	30.7	20.8	92 W	54	50*	1 11	16 33.38	-14 43.6	2.467	1.857	20.8	21.3	42 W	24*	29*
1 21	13 50.32	+ 8 36.1	1.458	1.867	31.5	20.5	98 W	54	53*	1 21	16 59.49	-13 49.3	2.364	1.825	22.9	21.3	46 W	25*	33*
285331 1999 FN₅₃										531899 2013 BE₁₉									
12 12	12 53.01	+18 7.9	1.386	1.498	39.7	21.5	76 W	62*	29*	12 12	15 23.96	-33 15.7	1.450	0.720	37.7	21.4	27 W	1*	21*
12 17	13 8.62	+16 57.2	1.326	1.465	40.9	21.3	77 W	61*	30*	12 17	15 58.37	-34 54.1	1.460	0.697	35.9	21.3	25 W	—	19*
12 22	13 24.64	+15 42.1	1.267	1.431	42.2	21.2	78 W	60*	32*	12 22	16 34.26	-35 48.2	1.475	0.677	33.4	21.2	22 W	—	16*
12 27	13 41.09	+14 22.0	1.211	1.398	43.6	21.1	78 W	59*	34*	12 27	17 10.79	-35 54.4	1.494	0.661	30.5	21.1	20 W	—	14*
1 1	13 58.02	+12 56.5	1.157	1.365	45.0	21.0	79 W	58*	36*	1 1	17 46.96	-35 12.1	1.517	0.649	27.0	21.0	17 W	—	11*
1 6	14 15.45	+11 25.2	1.106	1.331	46.5	20.9	79 W	56*	38*	1 6	18 21.90	-33 44.6	1.541	0.642	23.1	20.9	15 W	—	8*
1 11	14 33.42	+ 9 47.6	1.058	1.298	48.0	20.8	79 W	55*	41*	1 11	18 54.94	-31 37.5	1.566	0.640	19.0	20.8	12 W	—	5*
1 16	14 51.98	+ 8 3.1	1.012	1.265	49.7	20.7	79 W	53*	43*	1 16	19 25.76	-28 58.2	1.592	0.644	14.8	20.7	10 W	—	3*
1 21	15 11.17	+ 6 11.4	0.970	1.233	51.4	20.6	78 W	51*	45*	1 21	19 54.29	-25 54.2	1.618	0.653	10.7	20.6	7 W	—	—
459462 2013 AY₅₂										509352 2007 AG									
12 12	13 23.58	-70 29.3	0.198	0.895	111.3	20.4	58 W	—	37*	12 12	15 48.02	-24 58.9	1.412	0.594	34.8	21.2	20 W	5*	13*
12 13	13 4.11	-70 17.3	0.191	0.903	109.8	20.2	60 W	—	39*	12 17	16 24.20	-25 54.8	1.416	0.554	31.2	20.9	17 W	3*	10*
12 14	12 44.08	-69 55.5	0.185	0.911	108.2	20.1	62 W	—	41*	12 22	17 2.35	-26 12.9	1.421	0.517	26.1	20.6	13 W	—	7*
12 15	12 23.78	-69 23.0	0.178	0.919	106.5	19.9	64 W	—	42*	12 27	17 41.95	-25 47.9	1.428	0.486	19.5	20.3	10 W	—	3*
12 16	12 3.48	-68 38.8	0.172	0.927	104.6	19.8	66 W	—	44*	1 1	18 22.26	-24 37.6	1.433	0.463	11.4	19.9	5 W	—	—
12 17	11 43.48	-67 42.1	0.166	0.935	102.5	19.6	68 W	—	46*	1 6	19 2.38	-22 43.7	1.435	0.452	2.1	19.4	1 W	—	—
12 18	11 24.01	-66 32.0	0.160	0.943	100.3	19.4	70 W	—	48*	1 11	19 41.48	-20 12.7	1.432	0.454	7.6	19.7	3 E	—	—
12 19	11 5.30	-65 7.9	0.155	0.951	97.9	19.3	73 W	—	50*	1 16	20 18.89	-17 14.2	1.424	0.469	16.6	20.1	8 E	1*	—
12 20	10 47.50	-63 29.2	0.149	0.959	95.4	19.1	76 W	—	52*	1 21	20 54.33	-13 58.9	1.414	0.495	24.3	20.5	12 E	5*	—
12 21	10 30.71	-61 35.6	0.144	0.967	92.6	18.9	79 W	—	54	458452 2011 BR₁₅									
12 22	10 14.98	-59 26.7	0.140	0.975	89.6	18.7	82 W	—	57	12 12	15 55.50	-20 26.7	1.607	0.746	25.2	21.5	19 W	8*	9*
12 24	9 46.69	-54 22.5	0.131	0.991	83.1	18.4	89 W	—	62	12 17	16 24.18	-21 1.8	1.600	0.722	23.8	21.3	17 W	7*	8*
12 26	9 22.36	-48 17.7	0.124	1.007	75.7	18.0	97 W	—	68	12 22	16 53.77	-21 19.8	1.595	0.699	22.1	21.2	15 W	5*	6*
12 28	9 1.53	-41 18.2	0.119	1.023	67.4	17.7	106 W	4	75	12 27	17 24.11	-21 19.5	1.593	0.678	20.0	21.1	14 W	4*	5*
12 30	8 43.66	-33 37.0	0.117	1.039	58.6	17.4	116 W	11	82	1 1	17 54.99	-21 0.0	1.593	0.660	17.5	20.9	12 W	3*	3*
1 1	8 28.28	-25 34.1	0.117	1.055	49.5	17.2	125 W	19	90	1 6	18 26.18	-20 21.0	1.594	0.646	14.8	20.8	10 W	2*	1*
1 2	8 21.40	-21 32.0	0.118	1.063	45.0	17.1	130 W	23	86	1 11	18 57.41	-19 23.2	1.598	0.637	11.9	20.7	8 W	1*	—
1 3	8 14.99	-17 33.5	0.120	1.072	40.5	17.0	135 W	27	82	1 16	19 28.45	-18 8.0	1.603	0.632	9.1	20.5	6 W	—	—
1 4	8 9.03	-13 41.2	0.123	1.080	36.2	17.0	140 W	31	78	1 21	19 59.06	-16 37.3	1.609	0.632	6.9	20.5	4 W	—	—
1 5	8 3.47	- 9 57.4	0.126	1.088	32.0	16.9	144 W	35	74										
1 6	7 58.29	+ 6 23.9	0.129	1.096	28.1	16.9	14												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
276770 2004 HC										385247 2000 YD₆₇									
12 12	16 29.58	-14 45.8	1.706	0.786	17.3	21.4	14 W	7*	—	12 12	17 26.18	-26 15.5	3.670	2.688	1.5	21.5	4 E	—	—
12 17	16 54.51	-14 48.0	1.646	0.725	18.3	21.2	13 W	7*	—	12 22	17 44.23	-25 50.2	3.655	2.676	1.6	21.5	4 W	—	—
12 22	17 21.65	-14 42.9	1.585	0.661	18.9	21.0	13 W	7*	—	1 1	18 2.22	-25 17.3	3.625	2.662	3.6	21.6	10 W	—	4*
12 27	17 51.37	-14 30.2	1.523	0.592	19.3	20.7	11 W	5*	—	1 11	18 20.06	-24 36.5	3.579	2.647	5.8	21.6	16 W	2*	9*
1 1	18 24.11	-14 10.6	1.459	0.521	19.3	20.3	10 W	4*	—	1 21	18 37.66	-23 47.3	3.518	2.632	8.1	21.7	22 W	5*	15*
1 6	19 0.34	-13 47.0	1.394	0.449	19.8	19.9	9 W	1*	—	451401 2011 KT₁₂									
1 11	19 40.42	-13 27.2	1.322	0.382	23.5	19.5	9 E	2*	—	12 12	17 28.55	-16 31.2	2.703	1.731	4.1	21.4	7 E	1*	—
1 13	19 57.52	-13 23.7	1.290	0.359	26.9	19.4	10 E	3*	—	12 22	17 56.76	-17 10.6	2.682	1.708	3.6	21.3	6 W	—	—
1 15	20 15.12	-13 24.8	1.256	0.340	31.8	19.4	11 E	5*	—	1 1	18 25.59	-17 32.1	2.658	1.687	4.1	21.3	7 W	1*	—
1 17	20 33.09	-13 32.1	1.219	0.326	38.1	19.4	12 E	6*	—	1 11	18 54.85	-17 35.0	2.633	1.669	5.3	21.3	9 W	2*	—
1 19	20 51.23	-13 47.0	1.180	0.318	45.6	19.5	13 E	7*	1*	1 21	19 24.36	-17 18.9	2.606	1.653	6.8	21.4	11 W	3*	2*
1 21	21 9.30	-14 10.5	1.138	0.317	53.7	19.7	15 E	8*	4*	301991 2000 PM₁									
141484 2002 DB₄										12 12	17 34.48	-24 39.5	2.930	1.950	2.3	21.3	5 E	—	—
12 12	16 57.31	-63 4.1	0.170	0.862	132.5	18.2	40 W	—	17*	12 22	18 0.59	-25 2.7	2.893	1.910	0.8	21.1	2 E	—	—
12 13	16 56.77	-65 49.9	0.169	0.868	129.5	17.9	43 W	—	18*	1 1	18 27.57	-25 9.5	2.849	1.870	2.3	21.2	4 W	—	—
12 14	16 56.14	-68 35.7	0.168	0.875	126.5	17.6	46 W	—	20*	1 11	18 55.28	-24 58.5	2.799	1.831	4.4	21.2	8 W	—	2*
12 15	16 55.37	-71 21.0	0.168	0.882	123.5	17.4	48 W	—	21*	1 21	19 23.56	-24 28.7	2.745	1.793	6.5	21.3	12 W	—	6*
12 16	16 54.43	-74 4.8	0.167	0.889	120.5	17.1	51 W	—	22*	118108 2398 T-3									
12 17	16 53.22	-76 46.6	0.168	0.895	117.6	16.9	54 W	—	23*	12 12	17 35.44	-26 57.2	3.941	2.964	2.0	21.5	6 E	—	—
12 18	16 51.55	-79 25.7	0.169	0.902	114.7	16.8	56 W	—	24*	12 22	17 52.47	-27 2.5	3.924	2.943	1.3	21.4	4 W	—	—
12 19	16 49.00	-82 1.6	0.170	0.908	111.9	16.6	59 W	—	25*	1 1	18 9.67	-27 1.7	3.890	2.922	3.0	21.5	9 W	—	3*
12 20	16 44.40	-84 33.9	0.171	0.914	109.2	16.5	61 W	—	26*	1 11	18 26.96	-26 54.6	3.840	2.900	5.0	21.6	15 W	—	9*
12 21	16 32.83	-87 1.9	0.173	0.921	106.5	16.4	64 W	—	26*	1 21	18 44.23	-26 41.2	3.774	2.877	7.0	21.6	21 W	2*	15*
12 22	14 55.70	-89 21.9	0.174	0.927	104.0	16.3	66 W	—	26*	99799 2002 LJ₃									
12 23	5 37.97	-88 11.2	0.177	0.933	101.5	16.2	68 E	—	28	12 12	17 37.59	-20 47.1	2.427	1.450	3.7	21.4	6 E	—	—
12 24	5 15.06	-85 56.9	0.179	0.939	99.1	16.1	71 E	—	30	12 22	18 9.32	-21 16.3	2.392	1.410	2.1	21.2	3 E	—	—
12 25	5 8.45	-83 46.4	0.182	0.945	96.8	16.1	73 E	—	32	1 1	18 42.28	-21 21.9	2.352	1.370	1.3	21.0	2 W	—	—
12 26	5 5.22	-81 40.2	0.185	0.951	94.7	16.0	75 E	—	34	1 11	19 16.34	-21 1.4	2.310	1.329	2.2	21.0	3 W	—	—
12 27	5 3.26	-79 38.6	0.188	0.957	92.6	16.0	76 E	—	36	1 21	19 51.32	-20 13.2	2.267	1.288	3.6	21.0	5 W	—	—
12 28	5 1.91	-77 41.3	0.191	0.963	90.6	15.9	78 E	—	38	118197 1994 UU₆									
12 29	5 0.92	-75 48.2	0.194	0.969	88.7	15.9	80 E	—	40	12 12	17 41.65	-26 17.5	3.829	2.853	2.3	21.5	7 E	—	1*
12 30	5 0.16	-73 59.3	0.198	0.974	86.8	15.9	82 E	—	42	12 22	17 59.19	-26 22.2	3.819	2.837	1.0	21.3	3 W	—	—
12 31	4 59.55	-72 14.4	0.201	0.980	85.1	15.9	83 E	—	44	1 1	18 16.90	-26 20.1	3.794	2.821	2.5	21.4	7 W	—	1*
1 1	4 59.06	-70 33.2	0.205	0.985	83.5	15.8	85 E	—	45	1 11	18 34.67	-26 11.2	3.753	2.803	4.5	21.5	13 W	—	7*
1 2	4 58.66	-68 55.6	0.209	0.991	81.9	15.8	86 E	—	47	1 21	18 52.41	-25 55.5	3.697	2.785	6.6	21.6	19 W	1*	13*
1 3	4 58.33	-67 21.5	0.213	0.996	80.4	15.8	87 E	—	49	524395 2002 AW₁₇									
1 4	4 58.07	-65 50.7	0.217	1.001	79.0	15.8	89 E	—	50	12 12	17 42.88	-9 23.7	3.386	2.449	6.0	21.5	15 E	8*	—
1 5	4 57.87	-64 23.0	0.221	1.007	77.6	15.8	90 E	—	52	12 22	18 1.55	-9 55.1	3.355	2.409	5.5	21.4	14 E	4*	—
1 6	4 57.72	-62 58.2	0.225	1.012	76.4	15.9	91 E	—	53	1 1	18 20.72	-10 16.3	3.311	2.368	5.8	21.3	14 W	7*	—
1 7	4 57.62	-61 36.2	0.229	1.017	75.2	15.9	92 E	—	54	1 11	18 40.31	-10 27.1	3.254	2.326	6.8	21.3	16 W	10*	—
1 8	4 57.57	-60 16.9	0.234	1.022	74.0	15.9	93 E	—	56	1 21	19 0.28	-10 27.5	3.187	2.284	8.3	21.3	20 W	12*	5*
1 9	4 57.55	-59 0.1	0.238	1.027	72.9	15.9	94 E	—	57	193828 2001 QC₃₅									
1 10	4 57.58	-57 45.6	0.243	1.031	71.9	15.9	95 E	—	58	12 12	17 45.63	-25 26.4	2.943	1.970	3.6	21.5	7 E	—	1*
1 11	4 57.64	-56 33.4	0.247	1.036	70.9	15.9	95 E	—	59	12 22	18 11.57	-25 18.2	2.918	1.936	1.6	21.3	3 E	—	—
1 13	4 57.87	-54 15.1	0.256	1.045	69.1	16.0	97 E	—	62	1 1	18 38.01	-24 53.2	2.886	1.904	1.2	21.2	2 W	—	—
1 15	4 58.24	-52 4.3	0.265	1.054	67.4	16.0	98 E	—	64	1 11	19 4.82	-24 10.7	2.847	1.872	3.1	21.2	6 W	—	—
1 17	4 58.74	-50 0.3	0.275	1.063	66.0	16.1	99 E	—	66	1 21	19 31.82	-23 10.3	2.803	1.840	5.2	21.3	10 W	—	4*
1 19	4 59.36	-48 2.2	0.284	1.071	64.7	16.1	100 E	—	68	300281 2007 ME₅									
330809 2008 VK₁₄										12 12	17 51.10	-15 57.0	3.065	2.106	5.1	21.4	11 E	5*	—
12 12	16 59.12	-25 43.1	2.080	1.102	4.2	21.4	5 W	—	—	12 22	18 13.86	-15 51.6	3.038	2.069	3.9	21.3	8 E	2*	—
12 17	17 20.67	-25 55.0	2.039	1.061	4.4	21.3	5 W	—	—	1 1	18 37.17	-15 32.7	3.002	2.032	3.7	21.2	8 W	1*	—
12 22	17 43.12	-25 54.7	1.999	1.022	4.4	21.1	5 W	—	—	1 11	19 0.95	-14 59.8	2.959	1.995	4.6	21.2	9 W	3*	—
12 27	18 6.41	-25 40.8	1.961	0.983	4.3	21.0	4 W	—	—	1 21	19 25.09	-14 12.4	2.908	1.959	6.2	21.2	12 W	6*	1*
1 1	18 30.48	-25 11.8	1.924	0.945	4.0	20.9	4 W	—	—	432226 2009 HU₂									
1 6	18 55.21	-24 26.2	1.890	0.909	3.5	20.7	3 W	—	—	12 12	18 0.05	-13 45.7	2.251	1.318	10.4	21.4	14 E	8*	—
1 11	19 20.48	-23 23.3	1.858	0.876	2.6	20.5	2 W	—	—	12 22	18 34.42	-13 48.3	2.216	1.274	9.7	21.3	13 E	7*	—
1 16	19 46.12	-22 2.4	1.828	0.845	1.6	20.3	1 W	—	—	1 1	19 10.09	-13 27.7	2.182	1.233	9.0	21.2	11 E	5*	—
1 21	20 12.01	-20 23.6	1.803	0.819	0.5	20.1	0 E	—	—	1 11	19 46.88	-12 42.8	2.150	1.195	8.4	21.0	10 E	4*	—
462238 2008 CN₁										1 21	20 24.53	-11 33.3	2.122	1.161	7.7	20.9	9 E	2*	—
12 12	17 0.14	-25 36.9	1.644	0.666	6.5	21.3	4 W	—	—	518482 2005 TZ₄₂									
12 17	17 31.16	-25 55.8	1.611	0.631	4.7	21.0	3 W	—	—	12 12	18 3.35	-18 6.2	2.707	1.757	6.8	21.5	12 E	5*	1*
12 22	18 3.62	-25 46.8	1.577	0.596	4.1	20.8	2 E	—	—	12 22	18 31.08	-18 11.4	2.693	1.728	5.1	21.4	9 E	3*	—
12 27	18 37.25	-25 6.5	1.542	0.564	6.7	20.8	4 E	—	—	1 1	18 59.41	-17 58.3	2.674	1.700	3.6	21.2	6 E	—	—
1 1	19 11.64	-23 52.1	1.504	0.537	11.6	20.8	6 E	—	—	1 11	19 28.18	-17 26.5	2.653	1.675	2.6	21.1	4 W	—	—
1 6	19 46.31	-22 3.1	1.463	0.517	17.7	20.9	9 E	1*	2*	1 21	19 57.21	-16 35.9	2.630	1.651	2.8	21.1	5 W	—	—
1 11	20 20.74	-19 41.2	1.419	0.505	24.8	21.0	12 E	4*	4*	495615 2015 PQ₂₉₁									
1 16	20 54.50	-16 50.6	1.372	0.503	32.2	21.2	16 E	7*	6*	12 12	18 4.03	-58 25.0	0.322	0.750	128.8	20.2	36 E	—	18*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
495615 2015 PQ ₂₉₁ (continuation)										141526 2002 FA ₆ (continuation)									
12 20	17 42.62	-67 54.2	0.387	0.758	114.5	19.5	45 W	—	18*	1 1	20 25.51	-15 38.7	1.442	0.689	37.0	21.4	25 E	15*	12*
12 22	17 36.23	-69 23.8	0.404	0.761	111.4	19.4	46 W	—	20*	1 6	20 54.23	-16 13.6	1.416	0.687	39.1	21.4	26 E	15*	14*
12 23	17 33.01	-70 2.1	0.413	0.763	109.9	19.4	47 W	—	20*	1 11	21 23.08	-16 40.0	1.392	0.690	41.2	21.4	28 E	15*	16*
12 24	17 29.82	-70 36.6	0.422	0.765	108.4	19.3	48 W	—	21*	1 16	21 51.91	-16 56.6	1.369	0.699	43.2	21.5	29 E	15*	18*
12 25	17 26.69	-71 7.5	0.431	0.767	107.0	19.3	48 W	—	22*	189015 1998 QH ₈₃									
12 26	17 23.63	-71 35.1	0.440	0.769	105.6	19.3	49 W	—	23*	12 12	18 36.40	-20 0.6	2.774	1.870	9.8	21.4	19 E	8*	9*
12 27	17 20.68	-71 59.5	0.449	0.771	104.3	19.2	49 W	—	23*	12 22	19 2.18	-19 22.8	2.775	1.842	7.9	21.3	15 E	6*	5*
12 28	17 17.86	-72 21.0	0.458	0.773	103.0	19.2	50 W	—	24*	1 1	19 28.33	-18 28.5	2.770	1.815	6.0	21.2	11 E	4*	1*
12 29	17 15.20	-72 39.9	0.467	0.776	101.8	19.2	51 W	—	25*	1 11	19 54.69	-17 17.6	2.760	1.790	4.2	21.0	8 E	2*	—
12 30	17 12.70	-72 56.4	0.475	0.778	100.6	19.2	51 W	—	25*	1 21	20 21.14	-15 50.5	2.745	1.766	2.7	20.9	5 E	—	—
12 31	17 10.39	-73 10.6	0.484	0.781	99.4	19.2	52 W	—	26*	333510 2005 MD									
1 1	17 8.28	-73 22.7	0.492	0.783	98.3	19.2	52 W	—	26*	12 12	18 43.45	-11 54.4	1.975	1.143	20.2	21.5	24 E	16*	7*
1 3	17 4.68	-73 41.4	0.509	0.789	96.1	19.2	53 W	—	27*	12 22	19 19.06	-12 12.1	1.891	1.044	20.5	21.2	22 E	15*	5*
1 5	17 1.96	-73 53.8	0.525	0.795	94.1	19.2	54 W	—	28*	1 1	19 58.34	-12 9.8	1.801	0.947	21.5	20.9	21 E	14*	4*
1 7	17 0.12	-74 0.7	0.541	0.801	92.2	19.2	54 W	—	29*	1 11	20 41.63	-11 44.6	1.708	0.856	23.4	20.6	20 E	13*	5*
1 9	16 59.13	-74 3.1	0.556	0.807	90.4	19.2	55 W	—	29*	1 21	21 29.05	-10 54.5	1.613	0.776	26.8	20.4	21 E	13*	6*
1 11	16 58.95	-74 1.6	0.570	0.814	88.7	19.2	56 W	—	30*	322913 2002 CM ₁									
1 13	16 59.52	-73 56.9	0.583	0.821	87.2	19.2	56 W	—	31*	12 12	18 48.22	-35 28.1	3.005	2.139	10.6	21.4	24 E	—	17*
1 15	17 0.77	-73 49.3	0.596	0.828	85.7	19.2	57 W	—	31*	12 22	19 9.69	-33 20.6	2.994	2.082	8.5	21.3	18 E	—	12*
1 17	17 2.63	-73 39.2	0.608	0.836	84.3	19.2	58 W	—	32*	1 1	19 31.02	-31 2.6	2.971	2.025	6.3	21.1	13 E	—	7*
1 19	17 5.02	-73 27.1	0.619	0.843	83.0	19.2	58 W	—	32*	1 11	19 52.16	-28 32.6	2.934	1.967	4.3	20.9	9 E	—	2*
1 21	17 7.87	-73 13.1	0.630	0.851	81.8	19.2	59 W	—	33*	1 21	20 13.10	-25 49.5	2.885	1.909	3.0	20.7	6 E	—	—
469356 2001 DR ₈										366455 2002 AZ ₁₂₆									
12 12	18 8.43	-26 15.4	2.077	1.135	10.7	21.3	12 E	—	6*	12 12	18 49.86	-21 52.4	3.068	2.184	9.6	21.5	22 E	9*	13*
12 17	18 27.56	-25 53.4	2.025	1.079	10.5	21.2	12 E	—	5*	12 22	19 11.92	-21 12.0	3.065	2.142	7.6	21.3	17 E	6*	8*
12 22	18 47.61	-25 20.2	1.971	1.022	10.5	21.0	11 E	—	4*	1 1	19 34.49	-20 18.7	3.053	2.101	5.6	21.2	12 E	4*	3*
12 27	19 8.59	-24 34.3	1.916	0.966	10.8	20.8	11 E	—	4*	1 11	19 57.46	-19 12.0	3.032	2.060	3.5	21.0	7 E	1*	—
1 1	19 30.50	-23 33.8	1.860	0.911	11.4	20.6	11 E	1*	3*	1 21	20 20.73	-17 51.7	3.002	2.020	1.5	20.8	3 E	—	—
1 6	19 53.35	-22 17.2	1.803	0.857	12.4	20.5	11 E	1*	3*	376861 2001 TH ₇									
1 11	20 17.08	-20 42.9	1.746	0.806	14.0	20.3	11 E	2*	3*	12 12	18 55.72	-26 54.3	2.716	1.849	12.0	21.4	23 E	5*	16*
1 16	20 41.67	-18 49.5	1.689	0.758	16.1	20.2	12 E	4*	4*	12 22	19 23.45	-26 19.1	2.718	1.817	10.2	21.3	19 E	4*	12*
1 21	21 7.05	-16 36.3	1.632	0.715	19.0	20.1	14 E	5*	4*	1 1	19 51.61	-25 24.5	2.715	1.787	8.4	21.2	15 E	2*	9*
337110 1999 RE ₁₁₀										533722 2014 NE ₅₂									
12 12	18 9.54	-25 37.7	2.751	1.802	6.8	21.4	12 E	—	6*	12 12	18 59.88	-24 55.2	2.221	1.378	16.7	21.3	24 E	7*	16*
12 22	18 37.69	-25 3.0	2.744	1.777	4.8	21.3	9 E	—	2*	12 22	19 31.77	-23 58.7	2.150	1.281	15.9	21.1	21 E	7*	13*
1 1	19 6.06	-24 8.6	2.732	1.754	2.8	21.1	5 E	—	—	1 1	20 6.04	-22 30.2	2.072	1.184	15.5	20.8	19 E	6*	10*
1 11	19 34.46	-22 54.4	2.715	1.733	1.0	20.9	2 E	—	—	1 11	20 42.67	-20 23.5	1.989	1.091	15.6	20.5	17 E	6*	9*
1 21	20 2.69	-21 20.9	2.696	1.713	1.4	20.9	2 W	—	—	1 21	21 21.59	-17 33.4	1.904	1.004	16.5	20.3	17 E	7*	8*
519610 2012 UN ₆₈										206342 2003 PQ ₆									
12 12	18 14.92	-23 5.6	2.344	1.406	9.5	21.4	14 E	3*	6*	12 12	19 0.46	-26 1.3	2.666	1.811	12.7	21.5	24 E	6*	17*
12 22	18 50.39	-22 28.3	2.339	1.390	8.2	21.3	12 E	2*	4*	12 22	19 26.38	-24 32.8	2.699	1.803	10.6	21.4	20 E	6*	12*
1 1	19 25.94	-21 21.0	2.338	1.379	6.9	21.3	10 E	2*	2*	1 1	19 51.91	-22 49.7	2.723	1.795	8.4	21.3	16 E	4*	8*
1 11	20 1.16	-19 44.9	2.341	1.374	5.7	21.2	8 E	1*	—	1 11	20 16.99	-20 52.7	2.741	1.787	6.2	21.2	11 E	2*	3*
1 21	20 35.68	-17 42.9	2.348	1.374	4.5	21.1	6 E	—	—	1 21	20 41.59	-18 42.8	2.750	1.779	4.0	21.1	7 E	—	—
296798 2009 VX ₃₈										511096 2013 TO ₁₃₉									
12 12	18 16.61	-22 45.7	2.684	1.745	7.8	21.4	14 E	3*	6*	12 12	19 1.36	-29 11.1	2.973	2.116	11.1	21.5	24 E	4*	18*
12 22	18 45.09	-22 14.9	2.681	1.723	5.9	21.3	10 E	2*	2*	12 22	19 25.58	-28 36.3	2.970	2.072	9.3	21.4	20 E	2*	13*
1 1	19 13.80	-21 24.4	2.675	1.703	4.0	21.2	7 E	—	—	1 1	19 50.39	-27 46.6	2.959	2.029	7.5	21.2	16 E	—	9*
1 11	19 42.57	-20 14.1	2.665	1.685	2.2	21.0	4 E	—	—	1 11	20 15.67	-26 41.4	2.939	1.986	5.8	21.1	12 E	—	6*
1 21	20 11.21	-18 44.8	2.653	1.669	0.8	20.9	1 W	—	—	1 21	20 41.25	-25 20.5	2.911	1.944	4.4	21.0	9 E	—	3*
285631 2000 RB ₈₄										288638 2004 PJ ₃₂									
12 12	18 23.48	-19 20.0	3.171	2.242	7.0	21.5	16 E	7*	6*	12 12	19 4.07	-24 49.5	2.600	1.755	13.6	21.5	25 E	8*	17*
12 22	18 44.85	-19 1.9	3.164	2.208	5.0	21.3	11 E	4*	1*	12 22	19 32.27	-23 47.3	2.612	1.731	11.8	21.4	21 E	7*	13*
1 1	19 6.67	-18 31.6	3.146	2.173	3.1	21.2	7 E	1*	—	1 1	20 0.59	-22 25.6	2.621	1.709	10.0	21.3	18 E	6*	9*
1 11	19 28.85	-17 48.9	3.119	2.139	1.9	21.0	4 E	—	—	1 11	20 28.85	-20 44.9	2.627	1.690	8.2	21.2	14 E	4*	6*
1 21	19 51.28	-16 53.4	3.081	2.104	2.6	21.0	6 W	—	—	1 21	20 56.89	-18 46.4	2.630	1.673	6.3	21.1	11 E	2*	3*
494726 2005 TF ₃										190736 2001 PM ₄₃									
12 12	18 30.74	-18 31.4	2.892	1.980	8.9	21.5	18 E	9*	7*	12 12	19 5.85	-28 45.0	3.515	2.659	9.1	21.5	25 E	5*	19*
12 22	18 55.13	-18 15.1	2.876	1.935	7.0	21.3	14 E	6*	3*	12 22	19 23.45	-27 33.5	3.545	2.636	7.1	21.4	19 E	3*	13*
1 1	19 20.23	-17 43.5	2.853	1.892	5.1	21.2	10 E	4*	—	1 1	19 41.11	-26 15.9	3.560	2.612	4.9	21.3	13 E	—	7*
1 11	19 45.94	-16 55.8	2.824	1.850	3.4	21.0	6 E	—	—	1 11	19 58.76	-24 51.7	3.560	2.588	2.9	21.1	8 E	—	2*
1 21	20 12.13	-15 51.8	2.789	1.809	2.3	20.9	4 E	—	—	1 21	20 16.32	-23 20.7	3.544	2.563	1.4	21.0	4 E	—	—
407826 2012 BG ₁₃										491007 2011 GL ₆₂									
12 12	18 33.07	-16 33.2	3.335	2.427	7.7	21.4	19 E	11*	7*	12 12	19 6.81	-15 58.0	1.590	0.841	32.1	21.5	27 E	16*	14*
12 22	18 52.09	-16 55.7	3.334	2.390	5.6	21.3	14 E	7*	1*	12 22	19 41.73	-16 33.1	1.448	0.692	36.6	21.0	25 E	14*	12*
1 1	19 11.69	-17 8.0	3.319	2.352	3.6	21.1	9 E	3*	—	1 1	20 21.22	-17 13.0	1.264	0.532	47.2	20.4	23 E	13*	12*
1 11	19 31.79	-17 10.1	3.292	2.314	2.0	20.9	5 E	—	—	1 11	21 1.80	-18 42.8	1.019	0.386	73.8	20.1	22 E	10*	12*
1 21	19 52.31	-17 2.1	3.252	2.275	2.3	20.9	5 W	—	—										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
491007 2011 <i>GL</i> ₆₂ (continuation)										491015 2011 <i>LS</i> ₁₄ (continuation)									
1 13	21 8.50	-19 17.2	0.962	0.364	82.6	20.1	22 E	9*	12*	1 11	6 39.27	+31 52.7	1.873	2.835	5.1	23.1	165 E	77	32
1 15	21 13.89	-20 0.7	0.904	0.348	92.8	20.3	21 E	8*	12*	1 16	6 33.08	+31 48.7	1.898	2.842	6.9	23.2	160 E	77	32
1 17	21 17.40	-20 54.4	0.845	0.337	104.2	20.6	19 E	7*	11*	1 21	6 27.40	+31 41.8	1.931	2.848	8.7	23.3	154 E	77	32
1 19	21 18.48	-21 58.5	0.788	0.334	116.5	21.2	18 E	4*	10*	495856 2003 <i>KM</i> ₁₁									
191964 2005 <i>VF</i> ₇										12 22	7 9.10	+12 3.8	1.769	2.714	7.1	23.4	160 W	57	52
12 12	19 12.66	-28 32.0	3.216	2.379	10.7	21.5	27 E	6*	20*	1 1	6 57.43	+12 12.8	1.780	2.751	4.0	23.3	169 W	57	52
12 22	19 32.23	-27 8.0	3.237	2.346	8.7	21.4	21 E	4*	14*	1 11	6 45.88	+12 30.2	1.821	2.786	4.8	23.4	166 E	58	51
1 1	19 51.92	-25 35.5	3.245	2.313	6.5	21.3	16 E	2*	9*	1 21	6 35.63	+12 53.8	1.893	2.820	8.1	23.7	156 E	58	51
1 11	20 11.65	-23 54.0	3.240	2.279	4.4	21.1	10 E	—	—	1 31	6 27.52	+13 21.3	1.991	2.853	11.5	24.0	145 E	58	51
1 21	20 31.35	-22 3.1	3.223	2.245	2.2	21.0	5 E	—	—	360563 2003 <i>UM</i> ₁₂									
214869 2007 <i>PA</i> ₈										12 22	7 12.40	+24 10.6	2.033	2.989	5.4	23.1	163 W	69	40
12 12	20 16.83	-19 38.9	2.942	2.308	16.6	21.4	42 E	20*	31*	12 27	7 6.69	+24 20.6	2.028	3.001	3.3	22.9	170 W	69	40
12 22	20 33.53	-18 45.7	2.949	2.229	15.0	21.3	36 E	18*	24*	1 1	7 0.79	+24 29.8	2.031	3.013	1.3	22.8	176 W	69	40
1 1	20 51.36	-17 41.8	2.940	2.148	13.3	21.2	30 E	16*	18*	1 6	6 54.86	+24 37.7	2.042	3.025	1.1	22.8	177 E	70	39
1 11	21 10.24	-16 26.4	2.918	2.065	11.5	21.0	25 E	13*	13*	1 11	6 49.05	+24 44.2	2.061	3.036	3.1	23.0	171 E	70	39
1 21	21 30.13	-14 58.9	2.882	1.981	9.5	20.8	19 E	10*	8*	1 16	6 43.51	+24 49.2	2.088	3.047	5.0	23.1	164 E	70	39
139622 2001 <i>QQ</i> ₁₄₂										1 21	6 38.35	+24 52.8	2.122	3.057	6.9	23.3	158 E	70	39
12 12	20 19.99	-25 47.1	1.827	1.275	31.0	21.5	42 E	15*	34*	428223 2006 <i>WW</i>									
12 22	20 52.65	-23 53.4	1.818	1.228	30.5	21.4	39 E	16*	30*	12 22	7 16.84	+33 51.2	4.067	5.004	3.8	23.0	160 W	79	30
1 1	21 25.94	-21 29.0	1.803	1.182	30.3	21.2	37 E	17*	27*	12 27	7 11.99	+34 8.6	4.050	5.005	3.0	22.9	165 W	79	30
1 11	21 59.75	-18 33.7	1.783	1.137	30.2	21.1	36 E	18*	25*	1 1	7 6.97	+34 24.2	4.040	5.005	2.4	22.9	168 W	79	30
1 21	22 33.98	-15 8.3	1.758	1.096	30.4	21.0	34 E	19*	23*	1 6	7 1.86	+34 37.7	4.040	5.006	2.4	22.9	168 E	80	29
524974 2004 <i>PX</i> ₂₇										1 11	6 56.75	+34 49.1	4.048	5.006	2.9	22.9	165 E	80	29
12 12	20 24.97	-16 56.0	1.726	1.237	34.0	21.5	45 E	23*	32*	1 16	6 51.71	+34 58.3	4.065	5.005	3.7	23.0	161 E	80	29
12 22	20 55.55	-12 42.7	1.720	1.202	33.8	21.4	43 E	26*	27*	1 21	6 46.83	+35 5.2	4.089	5.005	4.6	23.1	156 E	80	29
1 1	21 26.49	-8 7.7	1.714	1.176	33.7	21.3	42 E	29*	22*	386454 2008 <i>XM</i>									
1 11	21 57.93	-3 14.7	1.710	1.159	33.7	21.3	41 E	31*	18*	12 22	7 18.24	+15 24.9	0.984	1.938	10.0	22.0	160 W	60	49
1 21	22 30.04	+1 50.6	1.710	1.154	33.6	21.3	40 E	32*	15*	12 27	7 3.33	+15 29.9	0.931	1.903	6.4	21.7	168 W	60	49
398188 Agni										1 1	6 46.47	+15 34.7	0.887	1.866	3.9	21.5	173 W	61	48
12 12	20 31.26	-25 33.8	1.218	0.859	53.3	21.5	44 E	16*	36*	1 6	6 28.04	+15 37.8	0.853	1.827	6.1	21.4	169 E	61	48
12 17	20 50.89	-25 1.6	1.190	0.833	54.9	21.4	44 E	16*	35*	1 11	6 8.65	+15 38.1	0.830	1.787	10.8	21.5	160 E	61	48
12 22	21 10.59	-24 19.2	1.158	0.807	56.8	21.3	43 E	17*	34*	1 16	5 49.02	+15 35.2	0.818	1.744	16.0	21.6	151 E	61	48
12 27	21 30.30	-23 26.4	1.121	0.780	59.1	21.2	43 E	17*	34*	1 21	5 29.90	+15 29.2	0.815	1.699	21.2	21.7	141 E	60	49
1 1	21 49.95	-22 23.0	1.080	0.754	61.9	21.2	43 E	18*	33*	302523 2002 <i>KH</i> ₃									
1 6	22 9.45	-21 8.7	1.034	0.729	65.2	21.1	42 E	19*	32*	12 22	7 18.56	+16 25.5	3.227	4.166	4.6	23.5	160 W	61	48
1 11	22 28.65	-19 43.3	0.983	0.705	69.0	21.0	42 E	19*	32*	1 1	7 9.81	+16 28.6	3.204	4.178	2.1	23.4	171 W	61	48
1 16	22 47.39	-18 6.7	0.929	0.684	73.4	21.0	42 E	20*	31*	1 11	7 0.80	+16 34.1	3.213	4.189	2.0	23.4	172 E	62	47
1 21	23 5.45	-16 18.4	0.870	0.664	78.5	21.0	41 E	21*	30*	1 21	6 52.17	+16 41.0	3.256	4.199	4.4	23.6	161 E	62	47
474443 2003 <i>QJ</i> ₅										1 31	6 44.52	+16 48.9	3.330	4.207	6.9	23.7	149 E	62	47
12 22	6 53.74	-15 15.5	2.639	3.444	10.8	22.5	139 W	30	79	455299 2002 <i>EL</i> ₆									
1 1	6 44.77	-15 11.9	2.636	3.463	10.1	22.5	142 W	30	79	12 22	7 21.07	+26 16.5	2.580	3.527	5.1	23.2	161 W	71	38
1 11	6 35.87	-14 43.1	2.659	3.480	10.2	22.5	141 E	30	79	12 27	7 15.81	+26 34.6	2.552	3.518	3.5	23.1	167 W	72	37
1 21	6 27.81	-13 51.6	2.707	3.497	10.9	22.6	138 E	31	78	1 1	7 10.26	+26 51.9	2.531	3.509	2.0	23.0	173 W	72	37
1 31	6 21.19	-12 41.9	2.778	3.513	12.0	22.7	132 E	32	77	1 6	7 4.53	+27 7.9	2.519	3.500	1.3	22.9	175 E	72	37
344143 2000 <i>JQ</i> ₃										1 11	6 58.74	+27 22.3	2.516	3.491	2.4	23.0	171 E	72	37
12 22	6 58.69	+30 14.2	2.679	3.639	3.9	23.5	165 W	75	34	1 16	6 53.03	+27 34.9	2.520	3.481	4.1	23.1	165 E	73	36
12 27	6 53.42	+30 27.2	2.663	3.635	2.7	23.4	170 W	75	34	1 21	6 47.51	+27 45.5	2.533	3.471	5.7	23.2	159 E	73	36
1 1	6 47.98	+30 38.3	2.654	3.631	2.1	23.4	172 W	76	33	462802 2010 <i>PR</i> ₇₄									
1 6	6 42.49	+30 47.3	2.655	3.627	2.7	23.4	170 E	76	33	12 22	7 22.09	+15 20.7	1.975	2.916	6.9	22.3	159 W	60	49
1 11	6 37.08	+30 54.1	2.663	3.623	3.9	23.5	165 E	76	33	1 1	7 11.59	+15 45.6	1.952	2.926	3.2	22.1	170 W	61	48
1 16	6 31.87	+30 58.7	2.679	3.618	5.4	23.6	160 E	76	33	1 11	7 0.56	+16 15.4	1.959	2.935	2.9	22.1	171 E	61	48
1 21	6 26.96	+31 1.0	2.702	3.613	6.8	23.7	154 E	76	33	1 21	6 50.13	+16 47.5	1.997	2.943	6.4	22.3	161 E	62	47
162210 1999 <i>SM</i> ₅										1 31	6 41.28	+17 19.9	2.064	2.950	10.0	22.6	149 E	62	47
12 22	7 0.69	+27 52.1	2.879	3.839	3.6	24.7	166 W	73	36	510421 2011 <i>UX</i> ₂₈₀									
12 27	6 55.12	+27 59.0	2.871	3.846	2.2	24.6	171 W	73	36	12 22	7 22.47	+11 3.4	2.644	3.569	6.2	22.5	157 W	56	53
1 1	6 49.44	+28 4.5	2.872	3.852	1.3	24.5	175 W	73	36	1 1	7 13.62	+11 10.2	2.634	3.596	3.7	22.3	166 W	56	53
1 6	6 43.75	+28 8.2	2.881	3.858	1.9	24.6	172 E	73	36	1 11	7 4.48	+11 24.1	2.655	3.623	3.2	22.3	168 E	56	53
1 11	6 38.17	+28 10.2	2.899	3.864	3.3	24.7	167 E	73	36	1 21	6 55.83	+11 43.5	2.707	3.648	5.3	22.5	160 E	57	52
1 16	6 32.81	+28 10.5	2.925	3.869	4.7	24.8	161 E	73	36	1 31	6 48.33	+12 6.8	2.790	3.672	7.8	22.7	149 E	57	52
1 21	6 27.77	+28 9.2	2.959	3.873	6.1	24.9	155 E	73	36	430552 2002 <i>HU</i> ₁₁									
438319 2006 <i>JX</i> ₄₈										12 22	7 25.24	+17 13.2	3.205	4.139	4.9	23.9	159 W	62	47
12 22	7 1.85	+12 29.4	2.750	3.697	4.8	22.6	162 W	57	52	1 1	7 16.65	+17 48.4	3.170	4.144	2.2	23.7	171 W	63	46
1 1	6 53.06	+12 50.7	2.721	3.692	2.8	22.5	170 W	58	51	1 11	7 7.60	+18 25.5	3.169	4.148	1.4	23.7	174 E	63	46
1 11	6 44.05	+13 17.7	2.723	3.687	3.6	22.6	166 E	58	51	1 21	6 58.77	+19 2.7	3.201	4.152	4.0	23.9	163 E	64	45
1 21	6 35.60	+13 49.0	2.758	3.680	6.2	22.7	156 E	59	50	1 31	6 50.79	+19 38.4	3.265	4.154	6.6	24.1	151 E	65	44
1 31	6 28.35	+14 22.9	2.821	3.673	8.8	22.9	145 E	59	50	236716 2007 <i>FV</i> ₄₂									
491015 2011 <i>LS</i> ₁₄										12 22	7 28.69	+22 41.3	2.262	3.203	6.1	22.7	160 W	68	41
12 22	7 5.89	+31 34.																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
236716 2007 FV₄₂ (continuation)										281070 2006 OY₁₀									
1 11	7 ^h 6.13 ^m	+24 ^o 0.7'	2.216	3.196	1.7	22.4	174 E	69	40	12 22	7 ^h 53.65 ^m	-26 ^o 16.7'	1.714	2.399	20.1	22.8	123 W	19	90
1 16	7 0.34	+24 18.1	2.225	3.194	3.6	22.5	168 E	69	40	12 27	7 46.52	-27 2.4	1.712	2.421	19.3	22.8	126 W	18	89
1 21	6 54.76	+24 34.1	2.242	3.191	5.5	22.6	162 E	70	39	1 1	7 38.94	-27 36.0	1.715	2.443	18.6	22.8	128 W	17	88
424532 2008 EZ₉₇										294349 2007 VC₉₂									
12 22	7 32.69	+28 42.3	2.456	3.391	6.1	23.0	159 W	74	35	12 22	7 55.05	+32 14.5	1.909	2.823	9.0	21.6	153 W	77	32
12 27	7 27.68	+29 2.8	2.424	3.381	4.5	22.9	164 W	74	35	12 27	7 49.80	+32 35.5	1.885	2.824	7.3	21.5	159 W	78	31
1 1	7 22.32	+29 22.2	2.400	3.371	3.1	22.7	169 W	74	35	1 1	7 44.02	+32 54.4	1.868	2.825	5.6	21.4	164 W	78	31
1 6	7 16.69	+29 39.9	2.383	3.361	2.2	22.7	173 W	75	34	1 6	7 37.86	+33 10.4	1.857	2.825	4.4	21.3	167 W	78	31
1 11	7 10.95	+29 55.5	2.375	3.350	2.6	22.7	171 E	75	34	1 11	7 31.49	+33 22.9	1.855	2.825	4.0	21.3	168 W	78	31
1 16	7 5.22	+30 8.8	2.375	3.339	4.0	22.8	166 E	75	34	1 16	7 25.09	+33 31.4	1.860	2.826	4.7	21.3	166 E	79	30
1 21	6 59.64	+30 19.5	2.383	3.328	5.6	22.8	161 E	75	34	1 21	7 18.85	+33 35.8	1.873	2.825	6.1	21.4	162 E	79	30
347514 1999 SP₁₄										501771 2014 UQ₂₀₄									
12 22	7 33.35	+8 33.4	2.568	3.474	7.3	22.5	153 W	54	55	12 22	7 55.19	+13 14.7	1.636	2.541	10.8	21.7	151 W	58	51
1 1	7 24.43	+8 26.6	2.540	3.491	4.8	22.4	163 W	53	56	1 1	7 45.27	+13 38.1	1.605	2.561	6.5	21.5	163 W	59	50
1 11	7 14.99	+8 29.2	2.544	3.507	3.8	22.3	166 E	53	56	1 11	7 34.07	+14 11.0	1.603	2.580	3.0	21.3	172 W	59	50
1 21	7 5.84	+8 40.2	2.578	3.522	5.3	22.4	161 E	54	55	1 21	7 22.89	+14 49.6	1.630	2.599	4.8	21.4	167 E	60	49
1 31	6 57.71	+8 57.9	2.643	3.536	7.8	22.6	151 E	54	55	1 31	7 12.99	+15 30.1	1.685	2.616	8.8	21.7	156 E	61	48
416584 2004 JB₁₂										158234 2001 SG₂₈₂									
12 22	7 35.69	+12 56.2	2.229	3.148	7.6	23.7	155 W	58	51	12 22	7 56.09	+15 33.9	1.805	2.711	9.9	21.5	152 W	61	48
1 1	7 25.15	+13 22.5	2.205	3.169	4.2	23.5	166 W	58	51	1 1	7 46.33	+15 49.2	1.757	2.715	5.8	21.3	164 W	61	48
1 11	7 13.97	+13 55.2	2.213	3.189	2.7	23.4	171 E	59	50	1 11	7 35.17	+16 11.0	1.737	2.717	2.1	21.0	174 W	61	48
1 21	7 3.17	+14 31.6	2.254	3.207	5.2	23.6	163 E	60	49	1 21	7 23.80	+16 36.3	1.748	2.719	4.2	21.2	168 E	62	47
1 31	6 53.66	+15 9.3	2.325	3.224	8.4	23.9	151 E	60	49	1 31	7 13.46	+17 2.4	1.788	2.719	8.4	21.4	156 E	62	47
437879 2001 RX₁₁										242211 2003 QB₉₀									
12 22	7 36.00	+36 10.3	3.320	4.236	5.5	23.9	156 W	81	28	12 22	7 56.63	+17 52.7	1.653	2.565	10.3	21.9	152 W	63	46
12 27	7 31.28	+36 22.0	3.302	4.240	4.5	23.8	160 W	81	28	12 27	7 51.05	+18 13.4	1.648	2.589	7.9	21.8	159 W	63	46
1 1	7 26.31	+36 31.5	3.291	4.244	3.7	23.8	164 W	82	27	1 1	7 45.07	+18 35.2	1.649	2.612	5.5	21.7	165 W	64	45
1 6	7 21.19	+36 38.5	3.288	4.248	3.3	23.8	166 W	82	27	1 6	7 38.83	+18 57.4	1.658	2.635	3.1	21.6	172 W	64	45
1 11	7 16.03	+36 42.7	3.294	4.251	3.4	23.8	165 E	82	27	1 11	7 32.53	+19 19.5	1.674	2.657	1.0	21.5	177 W	64	45
1 16	7 10.93	+36 44.0	3.307	4.254	4.1	23.8	162 E	82	27	1 16	7 26.34	+19 40.9	1.699	2.679	2.1	21.6	174 E	65	44
1 21	7 5.98	+36 42.5	3.328	4.257	5.0	23.9	158 E	82	27	1 21	7 20.43	+20 1.3	1.731	2.701	4.3	21.8	168 E	65	44
431107 2006 GU										363091 2000 SF₁₀₂									
12 22	7 36.23	+6 37.7	3.327	4.217	6.4	23.8	151 W	52	57	12 22	8 0.09	+18 41.1	1.647	2.556	10.5	21.8	152 W	64	45
1 1	7 28.37	+6 56.9	3.286	4.227	4.4	23.7	161 W	52	57	1 1	7 49.53	+19 4.9	1.625	2.585	5.9	21.6	164 W	64	45
1 11	7 20.01	+7 24.7	3.276	4.235	3.4	23.6	165 E	52	57	1 11	7 37.71	+19 31.3	1.632	2.614	1.2	21.3	177 W	65	44
1 21	7 11.74	+7 59.7	3.299	4.243	4.3	23.7	161 E	53	56	1 21	7 25.99	+19 56.7	1.668	2.642	3.9	21.6	169 E	65	44
1 31	7 4.13	+8 39.8	3.354	4.249	6.2	23.9	152 E	54	55	1 31	7 15.66	+20 18.5	1.734	2.669	8.3	21.9	157 E	65	44
508428 2016 JU₃₆										503848 4702 P-L									
12 22	7 37.77	+16 43.6	1.824	2.752	8.3	22.3	156 W	62	47	12 22	8 0.51	+21 10.7	1.791	2.700	9.8	22.3	152 W	66	43
1 1	7 27.84	+17 11.6	1.767	2.737	4.2	22.0	168 W	62	47	12 27	7 55.70	+21 25.7	1.770	2.709	7.7	22.2	158 W	66	43
1 11	7 16.67	+17 45.0	1.739	2.720	1.8	21.8	175 E	63	46	1 1	7 50.40	+21 41.4	1.756	2.717	5.5	22.0	165 W	67	42
1 21	7 5.47	+18 20.6	1.742	2.703	5.6	22.0	164 E	63	46	1 6	7 44.75	+21 57.1	1.750	2.726	3.2	21.9	171 W	67	42
1 31	6 55.46	+18 55.6	1.774	2.685	9.9	22.2	152 E	64	45	1 11	7 38.91	+22 12.3	1.751	2.734	0.9	21.7	178 W	67	42
468864 2013 PM₅										462102 2007 PN₂₄									
12 22	7 38.05	+18 40.3	1.790	2.721	8.2	22.3	157 W	64	45	12 22	8 0.82	+26 31.9	1.987	2.895	9.0	22.1	153 W	72	37
1 1	7 27.85	+18 55.1	1.734	2.706	3.9	22.0	169 W	64	45	12 27	7 55.65	+26 39.6	1.961	2.899	7.1	22.0	159 W	72	37
1 11	7 16.40	+19 12.7	1.708	2.690	1.4	21.8	176 E	64	45	1 1	7 49.99	+26 46.3	1.942	2.902	5.1	21.9	165 W	72	37
1 21	7 4.98	+19 30.6	1.713	2.674	5.7	22.1	164 E	65	44	1 6	7 43.97	+26 51.7	1.930	2.905	3.2	21.8	170 W	72	37
1 31	6 54.84	+19 47.1	1.746	2.656	10.0	22.3	152 E	65	44	1 11	7 37.76	+26 55.2	1.927	2.907	1.8	21.7	175 W	72	37
366615 2003 LO₆										280244 2002 WP₁₁									
12 22	7 44.30	-8 47.1	2.836	3.635	10.2	22.6	139 W	36	73	12 22	8 1.55	+17 33.1	1.771	2.674	10.3	22.1	151 W	63	46
1 1	7 35.45	-9 44.7	2.743	3.593	9.1	22.5	145 W	35	74	1 1	7 50.08	+17 46.1	1.749	2.707	5.8	21.9	164 W	63	46
1 11	7 25.51	-10 24.0	2.679	3.549	8.5	22.4	148 E	35	74	1 11	7 37.44	+18 2.4	1.757	2.738	1.6	21.7	176 W	63	46
1 21	7 15.20	-10 42.8	2.643	3.505	9.0	22.3	146 E	34	75	1 21	7 24.97	+18 18.9	1.796	2.768	3.9	21.9	169 E	63	46
1 31	7 5.30	-10 41.1	2.636	3.459	10.3	22.4	141 E	34	75	1 31	7 13.89	+18 33.8	1.866	2.797	8.1	22.3	156 E	64	45
414751 2010 FV₉₇										213548 2002 JV₁₁₅									
12 22	7 49.75	+30 5.8	1.711	2.634	9.2	22.6	155 W	75	34	12 22	8 3.78	+13 3.9	2.213	3.098	9.4	22.2	149 W	58	51
12 27	7 44.36	+30 26.2	1.687	2.635	7.2	22.5	160 W	75	34	1 1	7 54.78	+13 24.5	2.170	3.115	6.0	22.0	161 W	58	51
1 1	7 38.42	+30 44.8	1.671	2.635	5.3	22.4	166 W	76	33	1 11	7 44.60	+13 52.7	2.157	3.132	2.8	21.8	171 W	59	50
1 6	7 32.10	+31 0.8	1.661	2.635	3.8	22.3	170 W	76	33	1 21	7 34.21	+14 25.6	2.175	3.148	3.3	21.9	170 E	59	50
1 11	7 25.59	+31 13.5	1.659	2.635	3.5	22.2	171 E	76	33	1 31	7 24.54	+15 0.6	2.224	3.162	6.5	22.1	159 E	60	49
1 16	7 19.09	+31 22.5	1.665	2.634	4.6	22.3	168 E	76	33										
1 21	7 12.79	+31 27.6	1.678	2.633	6.4	22.4	163 E	76	33										
143404 2003 BD₄₄																			
12 22	7 53.09	+17 8.9	2.037	2.947	8.8	21.4	153 W	62	47										
1 1	7 41.74	+17 33.1	1.955	2.918	4.8	21.1	166 W	63	46										
1 11	7 28.68	+18 1.7	1.904	2.886	1.3	20.8	176 W	63	46										
1 21	7 15.08	+18 31.5	1.886	2.853	4.6	21.0	167 E	64	45										
1 31	7 2.21	+18 59.7	1.900	2.817	8.9	21.1	154 E	64	45										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
363421 2003 RG₈										517046 2013 AA₅₃ (continuation)									
12 22	8 4.72	-8 14.7	2.136	2.925	13.5	21.9	136 W	37	72	1 16	7 15.61	+33 54.1	1.169	2.134	6.8	21.9	165 E	79	30
1 1	7 56.13	-8 45.7	2.086	2.937	11.4	21.7	144 W	36	73	1 21	7 3.11	+34 47.7	1.189	2.137	9.5	22.1	159 E	80	29
1 11	7 46.28	-8 51.3	2.061	2.948	9.9	21.7	149 W	36	73	361548 2007 PS₄₂									
1 21	7 36.09	-8 31.0	2.063	2.958	9.5	21.7	150 E	36	73	12 22	8 14.23	+13 50.8	1.766	2.645	11.7	21.9	147 W	59	50
1 31	7 26.54	-7 47.2	2.092	2.967	10.4	21.7	147 E	37	72	1 1	8 5.23	+14 25.6	1.723	2.665	7.6	21.7	159 W	59	50
376968 2002 JJ₁₀₁										1 11	7 54.58	+15 9.6	1.707	2.683	3.3	21.4	171 W	60	49
12 22	8 6.26	+6 4.0	2.187	3.046	10.7	22.0	145 W	51	58	1 21	7 43.42	+15 58.6	1.722	2.700	2.8	21.4	172 E	61	48
1 1	7 58.05	+6 28.3	2.126	3.050	7.6	21.8	156 W	51	58	1 31	7 32.99	+16 48.0	1.766	2.716	6.8	21.7	161 E	62	47
1 11	7 48.49	+7 7.3	2.093	3.052	5.0	21.6	164 W	52	57	497133 2004 PV₆₇									
1 21	7 38.49	+7 58.6	2.091	3.054	4.6	21.6	166 E	53	56	12 22	8 14.35	+29 37.1	1.708	2.603	11.1	22.0	149 W	75	34
1 31	7 28.98	+8 58.4	2.119	3.054	7.0	21.8	158 E	54	55	12 27	8 9.46	+30 0.7	1.685	2.611	9.1	21.9	155 W	75	34
498047 2007 PR₃₀										1 1	8 3.94	+30 23.1	1.669	2.618	7.1	21.8	161 W	75	34
12 22	8 6.38	+15 7.8	1.520	2.418	12.0	21.8	149 W	60	49	1 6	7 57.92	+30 43.4	1.660	2.625	5.2	21.7	166 W	76	33
1 1	7 56.31	+15 15.4	1.492	2.444	7.4	21.5	161 W	60	49	1 11	7 51.59	+31 0.7	1.658	2.631	3.9	21.7	169 W	76	33
1 11	7 44.72	+15 31.0	1.491	2.469	3.0	21.3	173 W	61	48	1 16	7 45.13	+31 14.5	1.664	2.638	3.8	21.7	170 E	76	33
1 21	7 33.03	+15 51.2	1.519	2.494	3.9	21.5	170 E	61	48	1 21	7 38.75	+31 24.3	1.677	2.644	5.0	21.8	166 E	76	33
1 31	7 22.58	+16 13.1	1.575	2.517	8.3	21.8	158 E	61	48	440760 2006 EX₄₁									
231937 2001 FO₃₂										12 22	8 15.24	+53 24.4	2.522	3.342	10.7	21.7	141 W	82	11
12 22	8 7.17	-31 1.3	2.115	2.715	18.7	22.5	118 W	14	85	12 27	8 8.93	+53 50.0	2.488	3.330	10.1	21.6	144 W	81	10
12 27	7 59.84	-31 17.5	2.103	2.738	18.0	22.4	121 W	14	85	1 1	8 1.85	+54 10.4	2.460	3.319	9.6	21.6	146 W	81	10
1 1	7 52.05	-31 23.1	2.096	2.760	17.3	22.4	123 W	14	85	1 6	7 54.15	+54 24.5	2.439	3.307	9.3	21.6	147 W	81	10
1 6	7 43.97	-31 17.3	2.094	2.782	16.7	22.4	125 W	14	85	1 11	7 46.04	+54 31.4	2.424	3.294	9.3	21.5	147 W	80	9
1 11	7 35.80	-30 59.9	2.098	2.803	16.3	22.4	127 W	14	85	1 16	7 37.76	+54 30.6	2.417	3.282	9.5	21.5	146 E	80	9
1 16	7 27.72	-30 31.2	2.107	2.823	15.9	22.4	128 E	14	85	1 21	7 29.54	+54 21.9	2.416	3.269	10.0	21.5	145 E	81	10
483591 2004 JZ₃₁										243100 2007 RQ₃₁									
12 22	8 8.27	+7 45.5	1.227	2.113	15.3	22.4	146 W	53	56	12 22	8 18.10	+10 5.0	1.903	2.763	11.9	22.2	145 W	55	54
1 1	7 59.20	+7 29.6	1.147	2.086	10.9	22.1	156 W	52	57	1 1	8 9.61	+10 9.4	1.841	2.768	8.3	22.0	156 W	55	54
1 11	7 47.29	+7 34.5	1.092	2.057	7.1	21.8	165 W	53	56	1 11	7 59.38	+10 26.2	1.807	2.772	4.8	21.8	166 W	55	54
1 21	7 33.96	+8 0.0	1.062	2.028	7.2	21.7	165 E	53	56	1 21	7 48.45	+10 53.0	1.802	2.775	3.8	21.7	169 E	56	53
1 31	7 21.05	+8 43.2	1.057	1.998	11.6	21.8	156 E	54	55	1 31	7 37.94	+11 26.9	1.827	2.777	6.7	21.9	161 E	56	53
3360 Syrxin										476807 2008 UP₁₈₈									
12 22	8 9.15	-2 8.8	3.412	4.209	8.7	22.3	140 W	43	66	12 22	8 18.71	+39 59.2	2.429	3.295	9.5	22.0	147 W	85	24
1 1	8 1.11	-2 20.4	3.354	4.224	7.0	22.2	148 W	43	66	12 27	8 14.04	+40 35.0	2.410	3.304	8.3	22.0	151 W	86	23
1 11	7 52.24	-2 18.7	3.325	4.237	5.6	22.1	155 W	43	66	1 1	8 8.81	+41 8.1	2.397	3.313	7.3	21.9	155 W	86	23
1 21	7 43.10	-2 4.1	3.327	4.250	5.2	22.1	157 E	43	66	1 6	8 3.14	+41 37.5	2.392	3.322	6.5	21.9	158 W	87	22
1 31	7 34.29	-1 37.8	3.361	4.261	6.1	22.2	153 E	43	66	1 11	7 57.17	+42 2.6	2.394	3.331	6.1	21.9	159 W	87	22
363491 2003 TP										1 16	7 51.05	+42 22.7	2.404	3.340	6.2	21.9	159 W	87	22
12 22	8 11.15	-14 28.9	1.996	2.737	15.9	22.4	130 W	31	78	1 21	7 44.94	+42 37.6	2.421	3.348	6.7	21.9	157 E	88	21
12 27	8 7.01	-14 55.5	1.974	2.750	14.9	22.3	134 W	30	79	399814 2005 SE₁₃₃									
1 1	8 2.42	-15 14.7	1.958	2.762	14.0	22.3	137 W	30	79	12 22	8 19.79	+15 50.8	1.542	2.423	13.0	22.3	146 W	61	48
1 6	7 57.48	-15 25.9	1.947	2.773	13.2	22.2	140 W	30	79	1 1	8 10.51	+16 11.7	1.498	2.440	8.4	22.1	159 W	61	48
1 11	7 52.31	-15 28.9	1.942	2.785	12.5	22.2	142 W	30	79	1 11	7 59.23	+16 40.8	1.480	2.456	3.6	21.8	171 W	62	47
1 16	7 47.04	-15 23.6	1.943	2.796	12.1	22.2	144 E	30	79	1 21	7 47.29	+17 13.7	1.491	2.472	2.5	21.8	174 E	62	47
1 21	7 41.82	-15 10.3	1.950	2.807	11.9	22.2	144 E	30	79	1 31	7 36.10	+17 46.2	1.531	2.486	7.1	22.1	162 E	63	46
498144 2007 TR₇₃										501934 2014 XT₃									
12 22	8 11.53	+28 43.8	1.931	2.827	10.0	22.0	150 W	74	35	12 22	8 19.90	+28 54.9	1.689	2.578	11.6	21.7	148 W	74	35
12 27	8 6.19	+28 52.5	1.910	2.837	8.1	21.9	156 W	74	35	12 27	8 13.90	+29 6.4	1.678	2.600	9.4	21.6	154 W	74	35
1 1	8 0.34	+28 59.9	1.896	2.847	6.1	21.8	162 W	74	35	1 1	8 7.32	+29 16.1	1.675	2.622	7.2	21.5	160 W	74	35
1 6	7 54.09	+29 5.2	1.889	2.857	4.3	21.7	167 W	74	35	1 6	8 0.36	+29 23.4	1.678	2.643	5.1	21.5	166 W	74	35
1 11	7 47.63	+29 8.0	1.890	2.867	2.9	21.7	172 W	74	35	1 11	7 53.20	+29 27.7	1.689	2.664	3.5	21.4	171 W	74	35
1 16	7 41.13	+29 7.9	1.899	2.876	2.8	21.7	172 E	74	35	1 16	7 46.06	+29 28.6	1.708	2.685	3.1	21.4	172 E	74	35
1 21	7 34.76	+29 4.9	1.916	2.885	4.2	21.8	168 E	74	35	1 21	7 39.12	+29 26.0	1.735	2.706	4.3	21.5	168 E	74	35
159367 1977 OX										463671 2014 OJ₂									
12 22	8 11.78	+24 36.6	3.443	4.323	6.5	21.9	150 W	70	39	12 22	8 23.04	+12 52.7	1.479	2.351	14.0	21.8	145 W	58	51
1 1	8 4.79	+25 19.7	3.408	4.352	4.1	21.7	162 W	70	39	1 1	8 14.25	+13 32.4	1.440	2.375	9.4	21.6	157 W	59	50
1 11	7 56.92	+26 1.5	3.403	4.380	1.7	21.6	172 W	71	38	1 11	8 3.40	+14 24.4	1.427	2.399	4.6	21.4	169 W	59	50
1 21	7 48.77	+26 39.2	3.432	4.407	1.9	21.6	172 E	72	37	1 21	7 51.84	+15 23.4	1.442	2.422	2.7	21.3	173 E	60	49
1 31	7 40.93	+27 10.9	3.492	4.434	4.2	21.8	161 E	72	37	1 31	7 40.98	+16 23.4	1.486	2.444	6.9	21.6	163 E	61	48
100908 1998 KH₁₇										490354 2009 FF₁₉									
12 22	8 13.76	-9 39.9	2.573	3.327	12.4	21.4	133 W	35	74	12 22	8 25.27	+19 44.3	0.448	1.378	23.4	21.4	146 W	65	44
1 1	8 5.94	-10 15.1	2.497	3.321	10.7	21.3	141 W	35	74	12 27	8 11.06	+20 35.6	0.451	1.404	17.4	21.2	155 W	66	43
1 11	7 56.78	-10 28.7	2.446	3.314	9.3	21.2	147 W	35	74	1 1	7 55.89	+21 24.1	0.459	1.429	11.3	21.1	163 W	66	43
1 21	7 47.02	-10 19.1	2.422	3.305	8.8	21.1	149 E	35	74	1 6	7 40.51	+22 7.1	0.473	1.453	5.3	20.9	172 W	67	42
1 31	7 37.46	-9 47.3	2.425	3.295	9.4	21.1	147 E	35	74	1 11	7 25.69	+22 42.5	0.493	1.476	0.7	20.7	179 E	68	41
517046 2013 AA₅₃										1 16	7 12.12	+23 9.7	0.518	1.498	5.9	21.2	171 E	68	41
12 22	8 13.92	+27 21.9	1.198	2.106	13.7	22.2	150 W	72	37	1 21	7 0.27	+23 29.5	0.550	1.518	10.8	21.6	163 E	68	41
12 27	8 4.09	+28 48.9	1.175	2.114	10.7	22.0	157 W	74	35	363088 2000 SC₂₆									
1 1	7 53.03	+30 14.6	1.160	2.121	7.7	21.9	163 W	75	34	12 22	8 25.89	+6 25.6	1.674	2.516	14.2	21.8	141 W	51	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
201456 2003 FX₇₉										496874 2000 SN₂₁									
12 22	8 26.10	+18 38.6	2.683	3.540	9.0	21.8	146 W	64	45	12 22	8 37.80	+32 9.5	1.512	2.381	14.0	21.8	144 W	77	32
1 1	8 18.71	+19 7.1	2.609	3.538	6.1	21.6	158 W	64	45	12 27	8 33.00	+32 32.2	1.495	2.397	11.9	21.7	150 W	78	31
1 11	8 9.87	+19 39.3	2.563	3.536	2.8	21.4	170 W	65	44	1 1	8 27.41	+32 53.3	1.484	2.412	9.8	21.6	155 W	78	31
1 21	8 0.30	+20 12.3	2.549	3.533	0.7	21.2	177 E	65	44	1 6	8 21.19	+33 11.5	1.479	2.428	7.8	21.5	160 W	78	31
1 31	7 50.80	+20 43.1	2.568	3.529	4.1	21.5	165 E	66	43	1 11	8 14.52	+33 25.9	1.480	2.443	6.1	21.5	165 W	78	31
464742 2003 PB										358551 2007 TC₁₅₇									
12 22	8 30.80	+10 13.1	2.017	2.855	12.3	22.1	142 W	55	54	12 22	8 39.76	+23 55.6	1.921	2.775	12.1	21.5	144 W	69	40
1 1	8 23.20	+10 20.6	1.941	2.854	8.9	21.9	153 W	55	54	1 1	8 31.02	+24 29.9	1.867	2.792	8.4	21.3	156 W	69	40
1 11	8 13.70	+10 40.2	1.892	2.852	5.3	21.7	164 W	56	53	1 11	8 20.15	+25 4.2	1.840	2.809	4.3	21.0	168 W	70	39
1 21	8 3.16	+11 9.9	1.873	2.849	3.1	21.5	171 E	56	53	1 21	8 8.22	+25 33.1	1.844	2.824	1.9	20.9	174 E	71	38
1 31	7 52.65	+11 46.5	1.884	2.845	5.4	21.7	164 E	57	52	1 31	7 56.49	+25 52.8	1.877	2.839	5.3	21.2	164 E	71	38
275975 2001 XF₁										422646 1996 RW₁₃									
12 22	8 32.55	+33 0.9	1.023	1.916	17.0	21.8	145 W	78	31	12 22	8 40.95	+25 57.5	1.590	2.452	13.8	22.0	144 W	71	38
12 27	8 24.23	+34 45.2	1.014	1.935	14.2	21.7	151 W	80	29	12 27	8 36.79	+26 15.6	1.568	2.466	11.7	22.0	149 W	71	38
1 1	8 14.59	+36 25.3	1.012	1.953	11.6	21.6	156 W	81	28	1 1	8 31.90	+26 33.9	1.552	2.480	9.5	21.9	155 W	72	37
1 6	8 3.89	+37 57.7	1.017	1.971	9.7	21.5	160 W	83	26	1 6	8 26.39	+26 51.5	1.542	2.494	7.2	21.8	161 W	72	37
1 11	7 52.51	+39 19.2	1.029	1.988	8.9	21.6	162 W	84	25	1 11	8 20.44	+27 7.6	1.539	2.508	5.0	21.7	167 W	72	37
1 16	7 40.91	+40 27.4	1.049	2.004	9.4	21.6	160 E	85	24	1 16	8 14.22	+27 21.3	1.544	2.521	3.3	21.6	172 W	72	37
1 21	7 29.54	+41 21.3	1.076	2.019	11.0	21.8	157 E	86	23	1 21	8 7.93	+27 32.2	1.556	2.534	2.9	21.6	172 E	73	36
462811 2010 RY₇₁										396707 2002 UU₃₆									
12 22	8 32.63	+16 7.1	1.974	2.826	11.9	22.4	144 W	61	48	12 22	8 41.02	+27 3.8	0.767	1.665	20.5	21.2	144 W	72	37
1 1	8 24.80	+16 31.9	1.904	2.829	8.3	22.1	156 W	62	47	12 27	8 37.91	+27 39.2	0.740	1.663	17.6	21.1	149 W	73	36
1 11	8 14.98	+17 4.2	1.861	2.831	4.1	21.9	168 W	62	47	1 1	8 33.40	+28 16.7	0.718	1.662	14.5	20.9	155 W	73	36
1 21	8 4.09	+17 40.2	1.848	2.832	1.0	21.6	177 E	63	46	1 6	8 27.62	+28 54.2	0.700	1.660	11.3	20.7	161 W	74	35
1 31	7 53.26	+18 16.2	1.866	2.831	4.9	21.9	166 E	63	46	1 11	8 20.77	+29 29.8	0.687	1.659	8.3	20.6	166 W	74	35
208617 2002 EB₃										422724 2001 FK₅₈									
12 22	8 33.44	+32 38.5	1.995	2.858	11.3	22.2	145 W	78	31	12 22	8 42.80	+22 37.7	1.716	2.568	13.4	21.5	143 W	68	41
12 27	8 27.02	+33 10.5	1.968	2.868	9.6	22.1	151 W	78	31	1 1	8 36.16	+23 29.3	1.606	2.528	9.7	21.2	154 W	68	41
1 1	8 19.89	+33 40.6	1.950	2.879	7.8	22.0	157 W	79	30	1 11	8 26.50	+24 28.1	1.521	2.487	5.3	20.8	166 W	69	40
1 6	8 12.17	+34 7.7	1.938	2.888	6.2	21.9	162 W	79	30	1 21	8 14.60	+25 27.3	1.464	2.445	2.2	20.5	175 W	70	39
1 11	8 4.04	+34 30.7	1.935	2.897	5.0	21.9	165 W	80	29	1 31	8 1.73	+26 19.6	1.436	2.402	6.0	20.7	165 E	71	38
1 16	7 55.71	+34 48.8	1.941	2.905	4.6	21.9	166 W	80	29	456973 2008 BS₂									
1 21	7 47.38	+35 1.5	1.954	2.913	5.3	21.9	164 E	80	29	12 22	8 45.03	+25 55.7	1.437	2.298	15.1	21.4	143 W	71	38
250308 2003 QT₆₇										405793 2006 AU₈₀									
12 22	8 34.62	+13 36.5	1.853	2.699	12.9	21.8	142 W	59	50	12 27	8 38.65	+26 6.7	1.405	2.304	12.7	21.3	149 W	71	38
1 1	8 26.71	+14 0.5	1.799	2.718	9.1	21.6	154 W	59	50	1 1	8 31.29	+26 17.2	1.379	2.310	10.1	21.2	156 W	71	38
1 11	8 16.83	+14 34.5	1.771	2.736	4.9	21.3	166 W	60	49	1 6	8 23.12	+26 26.3	1.360	2.315	7.5	21.0	162 W	71	38
1 21	8 6.01	+15 14.8	1.772	2.754	1.8	21.2	175 E	60	49	1 11	8 14.34	+26 32.9	1.348	2.320	4.8	20.9	169 W	72	37
1 31	7 55.39	+15 57.0	1.804	2.770	4.9	21.4	166 E	61	48	1 16	8 5.20	+26 36.1	1.344	2.324	2.8	20.8	173 W	72	37
390812 2004 JQ₆										422724 2001 FK₅₈									
12 22	8 35.30	+36 42.5	3.211	4.050	8.2	21.9	144 W	82	27	12 22	8 42.80	+22 37.7	1.716	2.568	13.4	21.5	143 W	68	41
12 27	8 31.61	+37 7.4	3.185	4.060	7.2	21.9	149 W	82	27	1 1	8 36.16	+23 29.3	1.606	2.528	9.7	21.2	154 W	68	41
1 1	8 27.49	+37 31.0	3.166	4.070	6.2	21.8	154 W	83	26	1 11	8 26.50	+24 28.1	1.521	2.487	5.3	20.8	166 W	69	40
1 6	8 23.00	+37 52.6	3.154	4.080	5.3	21.8	158 W	83	26	1 21	8 14.60	+25 27.3	1.464	2.445	2.2	20.5	175 W	70	39
1 11	8 18.24	+38 11.8	3.150	4.090	4.6	21.7	160 W	83	26	1 31	8 1.73	+26 19.6	1.436	2.402	6.0	20.7	165 E	71	38
1 16	8 13.31	+38 28.0	3.153	4.099	4.3	21.7	162 W	83	26	456973 2008 BS₂									
1 21	8 8.29	+38 40.9	3.164	4.109	4.4	21.8	161 E	84	25	12 22	8 45.92	+17 47.3	1.160	2.021	17.9	21.4	141 W	63	46
120414 4880 P-L										210012 2006 KT₁									
12 22	8 35.90	+33 52.7	2.330	3.183	10.3	21.5	145 W	79	30	12 22	8 46.33	+13 21.1	2.218	3.034	12.2	21.5	139 W	58	51
12 27	8 31.84	+34 17.8	2.296	3.184	8.9	21.4	150 W	79	30	1 1	8 38.51	+14 0.8	2.163	3.064	8.8	21.3	152 W	59	50
1 1	8 27.18	+34 41.8	2.268	3.185	7.6	21.3	155 W	80	29	1 11	8 28.88	+14 49.6	2.135	3.092	5.0	21.1	164 W	60	49
1 6	8 21.99	+35 3.8	2.247	3.186	6.3	21.3	159 W	80	29	1 16	8 18.27	+15 43.6	2.138	3.119	1.5	20.9	175 W	61	48
1 11	8 16.41	+35 23.1	2.233	3.186	5.2	21.2	163 W	80	29	1 21	8 7.65	+16 38.2	2.172	3.145	3.4	21.1	169 E	62	47
1 16	8 10.56	+35 39.1	2.227	3.186	4.7	21.2	165 W	81	28	144898 2004 VD₁₇									
1 21	8 4.58	+35 51.1	2.228	3.186	4.9	21.2	164 E	81	28	12 22	8 46.67	+11 16.5	1.348	2.186	17.3	22.1	139 W	56	53
423709 2006 BQ₆										468004 2012 XD₁₇									
12 22	8 36.48	+27 57.0	0.961	1.853	17.9	21.9	145 W	73	36	12 27	8 45.49	+42 15.0	1.100	1.987	16.6	21.9	145 W	87	22
12 27	8 30.33	+27 59.7	0.912	1.835	15.1	21.7	151 W	73	36	1 1	8 39.14	+43 45.5	1.089	1.995	14.9	21.8	149 W	89	20
1 1	8 22.58	+28 0.8	0.869	1.816	12.0	21.4	157 W	73	36	1 6	8 31.48	+45 9.8	1.083	2.003	13.5	21.8	152 W	90	19
1 6	8 13.30	+27 58.8	0.831	1.797	8.7	21.2	164 W	73	36	1 11	8 22.73	+46 25.0	1.084	2.011	12.8	21.7	153 W	89	18
1 11	8 2.69	+27 51.7	0.800	1.777	5.4	20.9	170 W	73	36	1 16	8 13.22	+47 28.4	1.092	2.019	12.7	21.8	153 W	88	17
1 16	7 51.07	+27 37.8	0.775	1.756	3.7	20.7	173 W	73	36	1 21	8 3.36	+48 18.4	1.105	2.026	13.3	21.8	152 E	87	16
1 21	7 38.86	+27 15.9	0.757	1.734	5.9	20.8	170 E	72											

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
409263 2004 PN₈₇										409296 2004 SV₅₁									
12 22	8 53.67	+25 43.9	1.530	2.375	15.2	21.4	141 W	71	38	12 22	9 40.18	+22 3.0	1.654	2.403	18.4	21.4	130 W	67	42
12 27	8 49.95	+26 7.2	1.506	2.388	13.1	21.3	146 W	71	38	1 1	9 35.68	+22 58.5	1.590	2.432	14.8	21.3	141 W	68	41
1 1	8 45.42	+26 31.3	1.486	2.401	10.9	21.2	152 W	72	37	1 11	9 27.90	+24 3.1	1.546	2.461	10.7	21.1	152 W	69	40
1 6	8 40.17	+26 55.2	1.473	2.414	8.7	21.1	158 W	72	37	1 21	9 17.49	+25 9.0	1.528	2.488	6.3	20.9	164 W	70	39
1 11	8 34.36	+27 17.9	1.467	2.427	6.4	21.0	164 W	72	37	1 31	9 5.56	+26 7.5	1.537	2.515	3.5	20.8	171 W	71	38
1 16	8 28.16	+27 38.5	1.467	2.440	4.4	21.0	169 W	73	36	424482 2008 DG₅									
1 21	8 21.76	+27 56.0	1.475	2.453	3.3	20.9	172 W	73	36	12 22	9 41.29	+ 4 31.3	0.776	1.553	31.9	21.3	124 W	50	59
511684 2015 BN₅₀₉										12 27	9 39.76	+ 3 51.9	0.740	1.556	29.6	21.1	129 W	49	60
12 22	8 55.92	+14 24.5	0.556	1.444	27.3	21.4	138 W	59	50	1 1	9 36.78	+ 3 18.5	0.706	1.558	27.0	20.9	134 W	48	61
12 27	8 50.20	+14 56.8	0.502	1.421	23.9	21.1	144 W	60	49	1 6	9 32.29	+ 2 52.1	0.675	1.559	24.1	20.7	140 W	48	61
1 1	8 41.60	+15 43.3	0.451	1.396	19.6	20.7	151 W	61	48	1 11	9 26.27	+ 2 33.8	0.647	1.560	20.9	20.5	145 W	48	61
1 6	8 29.49	+16 45.8	0.404	1.370	14.5	20.2	160 W	62	47	1 16	9 18.81	+ 2 24.5	0.623	1.560	17.5	20.4	151 W	47	62
1 11	8 13.18	+18 4.9	0.363	1.341	8.2	19.7	169 W	63	46	1 21	9 10.06	+ 2 24.7	0.604	1.559	14.1	20.2	157 W	47	62
1 16	7 52.06	+19 38.8	0.327	1.310	1.1	19.0	179 W	65	44	307986 2004 QT₂₆									
1 21	7 25.74	+21 21.6	0.298	1.278	8.2	19.2	169 E	66	43	12 22	9 42.63	+21 18.2	2.468	3.179	13.9	21.4	129 W	66	43
158209 2001 SG₅₉										1 1	9 37.51	+21 36.4	2.382	3.200	11.4	21.2	140 W	67	42
12 22	9 0.89	+12 45.0	1.770	2.570	15.4	21.4	136 W	58	51	1 11	9 30.04	+22 0.0	2.319	3.220	8.3	21.0	152 W	67	42
1 1	8 54.53	+13 9.3	1.700	2.585	11.7	21.2	148 W	58	51	1 21	9 20.69	+22 25.0	2.283	3.239	4.9	20.9	164 W	67	42
1 11	8 45.66	+13 46.8	1.654	2.599	7.5	21.0	160 W	59	50	1 31	9 10.21	+22 47.0	2.277	3.257	2.0	20.7	173 W	68	41
1 21	8 35.09	+14 33.5	1.635	2.613	3.0	20.8	172 W	60	49	209949 2006 FH₁₂									
1 31	8 23.98	+15 24.5	1.645	2.625	2.7	20.8	173 E	60	49	12 22	9 43.40	+ 8 55.0	1.809	2.505	18.8	21.3	125 W	54	55
233972 1992 PZ₅										1 1	9 39.76	+ 9 0.4	1.729	2.529	15.7	21.2	136 W	54	55
12 22	9 4.66	+23 3.6	2.071	2.877	13.3	21.4	138 W	68	41	1 11	9 33.25	+ 9 22.7	1.667	2.552	11.9	21.0	148 W	54	55
1 1	8 57.49	+23 37.8	1.981	2.873	10.0	21.2	150 W	69	40	1 21	9 24.35	+10 0.1	1.629	2.575	7.6	20.8	160 W	55	54
1 11	8 47.74	+24 15.5	1.917	2.867	6.2	21.0	162 W	69	40	1 31	9 13.90	+10 48.8	1.618	2.596	3.2	20.5	172 W	56	53
1 21	8 36.14	+24 51.3	1.882	2.861	2.6	20.7	172 W	70	39	511243 2014 BS₃₂									
1 31	8 23.78	+25 19.8	1.878	2.853	3.5	20.8	170 E	70	39	12 22	9 56.09	+26 59.0	0.976	1.754	26.6	21.2	127 W	72	37
159898 2004 TO₂₁₆										12 27	9 56.44	+27 1.3	0.925	1.742	24.9	21.0	132 W	72	37
12 22	9 13.35	+15 27.2	1.998	2.773	14.8	21.3	134 W	60	49	1 1	9 55.46	+27 6.5	0.877	1.730	22.9	20.8	137 W	72	37
1 1	9 7.60	+15 44.0	1.906	2.774	11.6	21.1	146 W	61	48	1 6	9 53.04	+27 13.9	0.832	1.718	20.6	20.6	142 W	72	37
1 11	8 59.28	+16 10.9	1.837	2.773	7.7	20.9	158 W	61	48	1 11	9 49.11	+27 22.5	0.791	1.705	18.0	20.4	148 W	72	37
1 21	8 49.02	+16 44.5	1.796	2.771	3.4	20.6	170 W	62	47	1 16	9 43.64	+27 30.8	0.755	1.692	15.1	20.2	153 W	73	36
1 31	8 37.78	+17 20.5	1.784	2.768	1.3	20.4	176 E	62	47	1 21	9 36.68	+27 37.0	0.723	1.679	12.1	19.9	159 W	73	36
144411 2004 EW₉										307143 2002 CQ₂₁₉									
12 22	9 16.37	+12 44.8	2.165	2.921	14.4	21.3	132 W	58	51	12 22	10 5.77	+20 49.1	1.248	1.970	24.6	21.3	123 W	66	43
1 1	9 9.25	+12 50.1	2.056	2.911	11.4	21.1	144 W	58	51	1 1	10 10.87	+20 29.7	1.130	1.933	22.1	21.0	132 W	65	44
1 11	8 59.50	+13 6.0	1.971	2.900	7.7	20.8	157 W	58	51	1 11	10 12.48	+20 20.6	1.025	1.898	18.7	20.6	142 W	65	44
1 21	8 47.71	+13 30.1	1.914	2.886	3.7	20.6	169 W	59	50	1 21	10 10.26	+20 19.7	0.936	1.863	14.3	20.2	152 W	65	44
1 31	8 34.81	+13 59.2	1.889	2.871	1.9	20.4	174 E	59	50	1 31	10 4.21	+20 22.0	0.866	1.831	9.1	19.8	163 W	65	44
333309 2001 FR₁₁₆										380008 2013 NT₆									
12 22	9 19.74	+10 36.6	1.704	2.462	17.6	21.4	131 W	56	53	12 22	10 5.95	+27 45.2	2.255	2.932	16.0	21.5	125 W	73	36
1 1	9 17.10	+10 57.4	1.583	2.432	14.5	21.1	142 W	56	53	1 1	10 2.44	+28 38.6	2.164	2.946	13.5	21.3	135 W	74	35
1 11	9 11.48	+11 37.5	1.482	2.402	10.6	20.8	153 W	57	52	1 11	9 55.99	+29 38.3	2.092	2.959	10.7	21.1	146 W	75	34
1 21	9 3.22	+12 35.6	1.405	2.371	6.0	20.5	165 W	58	51	1 21	9 46.90	+30 37.4	2.045	2.971	7.7	21.0	156 W	76	33
1 31	8 53.05	+13 47.5	1.355	2.339	1.6	20.1	176 W	59	50	1 31	9 35.85	+31 28.4	2.026	2.982	5.5	20.9	163 W	76	33
467845 2010 VR₁₄										165213 2000 SJ₁₂									
12 22	9 25.18	+45 50.1	2.023	2.791	14.9	21.4	133 W	89	18	12 22	10 8.07	+15 47.9	2.130	2.774	17.6	21.4	122 W	61	48
12 27	9 22.13	+46 50.8	1.997	2.800	13.8	21.3	137 W	88	17	1 1	10 6.11	+16 11.2	2.020	2.778	15.2	21.2	132 W	61	48
1 1	9 18.07	+47 49.9	1.977	2.808	12.8	21.3	141 W	87	16	1 11	10 1.34	+16 47.8	1.927	2.781	12.1	21.0	144 W	62	47
1 6	9 13.03	+48 45.8	1.963	2.816	11.9	21.2	144 W	86	15	1 21	9 53.96	+17 34.8	1.857	2.783	8.4	20.7	156 W	63	46
1 11	9 7.11	+49 37.1	1.954	2.825	11.2	21.2	146 W	85	14	1 31	9 44.47	+18 27.2	1.814	2.784	4.3	20.5	168 W	63	46
1 16	9 0.44	+50 22.1	1.953	2.832	10.7	21.2	148 W	85	14	425755 2011 CP₄									
1 21	8 53.21	+50 59.6	1.958	2.840	10.6	21.2	148 W	84	13	12 22	10 17.89	-11 7.6	0.366	1.152	54.2	21.3	108 W	34	75
112828 2002 QE₁₀										12 27	9 40.20	- 8 38.4	0.353	1.209	43.6	21.0	122 W	36	73
12 22	9 25.67	+21 4.5	2.264	3.018	13.9	21.4	133 W	66	43	1 1	8 59.89	- 5 31.6	0.352	1.261	32.6	20.8	136 W	39	70
1 1	9 21.07	+21 58.0	2.165	3.016	11.1	21.2	144 W	67	42	1 6	8 19.88	- 2 2.7	0.364	1.310	22.3	20.7	150 W	43	66
1 11	9 13.96	+22 59.9	2.089	3.013	7.7	20.9	156 W	68	41	1 11	7 43.29	+ 1 24.9	0.391	1.356	14.9	20.7	159 W	46	63
1 21	9 4.83	+24 4.8	2.042	3.008	4.2	20.7	167 W	69	40	1 16	7 12.15	+ 4 32.0	0.430	1.398	13.2	20.9	161 E	50	59
1 31	8 54.43	+25 6.4	2.024	3.003	2.5	20.6	172 W	70	39	1 21	6 47.07	+ 7 10.3	0.481	1.437	16.2	21.3	156 E	52	57
248298 2005 LX₁₉										474223 2001 CC₃₂									
12 22	9 37.33	+11 8.7	2.419	3.112	14.6	21.4	127 W	56	53	12 22	10 18.99	+66 2.2	0.949	1.686	29.8	21.3	122 W	69	—
1 1	9 29.79	+10 21.0	2.324	3.130	12.0	21.2	139 W	55	54	12 24	10 14.93	+66 23.2	0.928	1.677	29.6	21.2	123 W	69	—
1 11	9 19.86	+ 9 40.6	2.253	3.147	8.8	21.1	151 W	55	54	12 26	10 10.07	+66 43.7	0.907	1.668	29.3	21.2	124 W	68	—
1 21	9 8.12	+ 9 7.3	2.210	3.162	5.4	20.9	162 W	54	55	12 28	10 4.33	+67 3.4	0.886	1.659	29.1	21.1	125 W	68	—
1 31	8 55.40	+ 8 40.6	2.200	3.177	2.7	20.7	171 W	54	55	12 30	9 57.67	+67 21.8	0.867	1.649	28.8	21.0	126 W	68	—
404316 2013 FA₂										1 1	9 50.04	+67 38.3	0.847	1.640	28.6	21.0	127 W	67	—
12 22	9 37.86	+21 28.5	1.742	2.491	17.6	21.4	130 W	66	43	1 3	9 41.40	+67 52.3	0.828	1.631	28.3	20.9	128 W	67	—

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
490581 2009 WZ₁₀₄										226554 2003 WR₂₁									
12 22	12 55.98	-17 29.4	0.639	0.980	71.3	21.5	71 W	28	58*	12 22	14 56.37	-9 45.3	1.148	0.844	56.8	21.5	46 W	30*	28*
12 27	13 17.30	-20 33.7	0.631	0.969	72.4	21.5	70 W	24	59*	12 27	15 20.70	-11 34.1	1.168	0.836	55.8	21.5	45 W	28*	28*
1 1	13 40.12	-23 32.2	0.625	0.957	73.5	21.5	69 W	21	60*	1 1	15 45.05	-13 15.0	1.191	0.830	54.7	21.5	44 W	26*	28*
1 6	14 4.59	-26 21.1	0.621	0.944	74.7	21.4	68 W	19	60*	1 6	16 9.38	-14 46.7	1.216	0.827	53.5	21.5	43 W	24*	29*
1 11	14 30.84	-28 56.0	0.619	0.930	75.9	21.5	66 W	16*	59*	1 11	16 33.65	-16 8.1	1.243	0.826	52.1	21.5	42 W	22*	29*
1 16	14 58.91	-31 12.2	0.620	0.915	77.1	21.5	65 W	14*	59*	1 16	16 57.82	-17 18.5	1.271	0.829	50.7	21.5	41 W	20*	29*
1 21	15 28.75	-33 4.8	0.624	0.899	78.2	21.5	63 W	12*	57*	65909 1998 FH₁₂									
236095 2005 NB										12 22	15 8.11	-17 3.2	0.439	0.711	115.5	21.2	41 W	22*	28*
12 22	13 14.03	-23 22.5	3.257	2.976	17.4	21.4	65 W	22*	55*	12 27	14 57.57	-15 27.0	0.455	0.764	104.7	20.8	49 W	26*	35*
1 1	13 24.17	-24 35.6	3.111	2.961	18.4	21.4	72 W	20	63*	1 1	14 51.01	-14 10.7	0.471	0.816	95.8	20.6	56 W	29*	41*
1 11	13 33.25	-25 43.6	2.958	2.945	19.2	21.3	80 W	19	72*	1 6	14 47.09	-13 9.1	0.484	0.869	88.5	20.4	62 W	31*	47*
1 21	13 41.01	-26 45.4	2.801	2.928	19.6	21.2	87 W	18	81*	1 11	14 44.73	-12 16.8	0.494	0.920	82.3	20.4	68 W	33*	52*
1 31	13 47.19	-27 39.5	2.643	2.910	19.7	21.0	96 W	17	88	1 16	14 43.16	-11 29.7	0.499	0.969	76.8	20.3	74 W	34*	57*
65433 2002 TX₂₃₈										1 21	14 41.78	-10 44.0	0.501	1.018	71.8	20.3	79 W	34	62*
12 22	13 23.25	-1 26.3	3.283	3.096	17.4	21.5	70 W	43*	44*	256155 2006 VO₄₄									
1 1	13 31.68	-2 2.3	3.143	3.098	18.1	21.4	78 W	43	52*	12 22	15 8.13	-10 31.7	3.510	2.869	13.5	21.5	43 W	28*	25*
1 11	13 38.88	-2 28.5	2.997	3.099	18.5	21.3	87 W	43	59*	1 1	15 21.85	-11 40.5	3.373	2.834	15.3	21.4	49 W	29*	33*
1 21	13 44.62	-2 44.0	2.850	3.099	18.4	21.2	95 W	42	64*	1 11	15 35.38	-12 44.6	3.225	2.797	17.0	21.4	56 W	30*	41*
1 31	13 48.66	-2 48.2	2.703	3.099	17.9	21.0	104 W	42	67	1 21	15 48.60	-13 44.1	3.068	2.760	18.5	21.3	63 W	30*	49*
267004 1981 UA										1 31	16 1.37	-14 39.2	2.903	2.722	19.8	21.2	70 W	30*	57*
12 22	13 29.72	-1 42.1	2.996	2.796	19.2	21.5	69 W	43*	43*	296318 2009 EN₂									
1 1	13 37.59	-2 55.7	2.880	2.820	19.8	21.4	77 W	42	51*	12 22	15 9.89	+7 34.5	1.569	1.234	38.8	21.5	52 W	44*	17*
1 11	13 43.97	-4 1.7	2.757	2.843	20.2	21.4	85 W	41	59*	12 27	15 32.60	+7 32.3	1.519	1.193	40.3	21.4	52 W	43*	17*
1 21	13 48.60	-4 59.8	2.630	2.865	20.0	21.3	94 W	40	66*	1 1	15 56.40	+7 29.0	1.477	1.152	41.7	21.3	51 W	43*	17*
1 31	13 51.21	-5 49.6	2.503	2.886	19.4	21.2	103 W	39	70*	1 6	16 21.20	+7 23.8	1.441	1.111	42.9	21.2	50 W	42*	16*
354127 2002 BP₂₆										1 11	16 46.85	+7 15.6	1.414	1.071	44.0	21.1	49 W	41*	16*
12 22	13 34.03	+8 21.2	0.966	1.151	54.5	21.4	72 W	53*	36*	1 16	17 13.17	+7 3.4	1.395	1.031	44.8	21.0	48 W	40*	15*
1 1	14 3.81	+0 15.0	0.902	1.109	57.4	21.3	72 W	45*	44*	1 21	17 39.93	+6 46.4	1.384	0.993	45.3	20.9	46 W	38*	15*
1 11	14 35.43	-8 42.1	0.852	1.075	60.1	21.2	71 W	36*	52*	65690 1991 DG									
1 21	15 10.25	-18 13.1	0.819	1.049	62.2	21.1	70 W	27*	59*	12 22	15 19.45	-16 30.7	1.566	1.001	37.5	21.5	38 W	21*	25*
1 31	15 49.93	-27 44.7	0.805	1.033	63.4	21.0	70 W	17*	63*	12 27	15 43.49	-17 17.2	1.554	0.981	37.7	21.4	38 W	20*	25*
378214 Sauron										1 1	16 8.03	-17 53.3	1.546	0.962	37.8	21.4	37 W	19*	25*
12 22	13 35.57	-10 58.2	1.840	1.661	32.1	21.5	64 W	34*	46*	1 6	16 32.94	-18 18.0	1.542	0.946	37.8	21.3	36 W	18*	25*
1 1	13 58.89	-13 10.8	1.771	1.672	33.0	21.4	68 W	32*	52*	1 11	16 58.09	-18 30.9	1.542	0.933	37.5	21.3	35 W	18*	24*
1 11	14 21.57	-15 10.7	1.701	1.687	33.7	21.4	72 W	30	58*	1 16	17 23.33	-18 31.6	1.546	0.923	37.2	21.3	35 W	17*	24*
1 21	14 43.39	-16 56.7	1.630	1.704	34.2	21.3	77 W	28	65*	1 21	17 48.49	-18 20.2	1.553	0.915	36.6	21.3	34 W	16*	24*
1 31	15 4.08	-18 28.1	1.558	1.723	34.5	21.3	82 W	27	71*	323471 2004 LY₁									
510178 2011 BC₄₃										12 22	15 22.57	-8 2.8	3.209	2.546	14.6	21.5	41 W	28*	21*
12 22	13 56.69	-6 36.0	1.931	1.684	30.6	21.5	61 W	37*	40*	1 1	15 40.01	-8 45.9	3.074	2.499	16.5	21.4	46 W	30*	28*
1 1	14 22.05	-9 8.2	1.826	1.652	32.4	21.4	64 W	35*	45*	1 11	15 57.66	-9 20.1	2.931	2.451	18.4	21.3	52 W	32*	34*
1 11	14 48.11	-11 35.8	1.724	1.623	34.0	21.2	67 W	33*	51*	1 21	16 15.46	-9 44.6	2.782	2.403	20.2	21.2	58 W	33*	41*
1 21	15 14.88	-13 56.9	1.626	1.596	35.6	21.1	71 W	31*	56*	1 31	16 33.32	-9 58.9	2.628	2.355	21.9	21.1	63 W	33*	48*
1 31	15 42.32	-16 9.6	1.532	1.573	37.0	21.0	74 W	29*	62*	3361 Orpheus									
173474 2000 RH₁₀₄										12 22	15 29.06	-34 1.1	0.157	0.859	139.5	21.4	35 W	4*	28*
12 22	14 0.50	-17 52.6	3.152	2.726	17.4	21.5	56 W	26*	43*	12 24	15 30.82	-33 0.0	0.169	0.853	137.4	21.3	36 W	6*	30*
1 1	14 13.36	-19 4.8	3.024	2.720	18.8	21.4	63 W	26*	51*	12 26	15 32.90	-32 5.9	0.180	0.847	135.3	21.2	37 W	7*	31*
1 11	14 25.49	-20 11.4	2.889	2.713	19.9	21.4	70 W	25*	59*	12 28	15 35.28	-31 18.0	0.192	0.842	133.1	21.1	39 W	9*	32*
1 21	14 36.68	-21 11.8	2.746	2.705	20.8	21.3	77 W	24	68*	12 30	15 37.95	-30 35.4	0.204	0.837	130.9	21.0	40 W	10*	33*
1 31	14 46.71	-22 5.6	2.599	2.696	21.3	21.2	85 W	23	76*	1 1	15 40.88	-29 57.5	0.217	0.833	128.7	20.9	41 W	11*	34*
101158 1998 RA₇₇										1 3	15 44.06	-29 23.6	0.229	0.830	126.5	20.8	43 W	11*	36*
12 22	14 14.17	-12 10.2	2.763	2.336	20.1	21.5	55 W	31*	38*	1 5	15 47.47	-28 53.4	0.242	0.827	124.3	20.7	44 W	12*	37*
1 1	14 30.93	-13 42.7	2.624	2.304	21.8	21.4	60 W	30*	45*	1 7	15 51.09	-28 26.3	0.255	0.824	122.1	20.6	45 W	13*	38*
1 11	14 47.62	-15 10.2	2.479	2.271	23.4	21.3	66 W	30*	52*	1 9	15 54.92	-28 2.0	0.267	0.822	120.0	20.6	46 W	14*	39*
1 21	15 4.14	-16 32.5	2.331	2.238	24.8	21.1	72 W	28*	60*	1 11	15 58.95	-27 40.2	0.281	0.821	117.8	20.5	48 W	14*	40*
1 31	15 20.38	-17 49.2	2.180	2.205	26.0	21.0	78 W	27	67*	1 13	16 3.16	-27 20.6	0.294	0.820	115.7	20.4	49 W	15*	41*
222956 2002 PF₁₂₉										1 15	16 7.55	-27 2.8	0.307	0.819	113.7	20.4	50 W	15*	42*
12 22	14 17.73	-11 15.2	2.330	1.926	24.4	21.5	54 W	31*	37*	1 17	16 12.10	-26 46.8	0.320	0.820	111.6	20.4	51 W	16*	43*
1 1	14 39.38	-13 25.3	2.210	1.894	26.3	21.4	59 W	30*	43*	1 19	16 16.80	-26 32.2	0.333	0.820	109.6	20.3	52 W	16*	44*
1 11	15 1.53	-15 30.9	2.089	1.862	28.1	21.3	63 W	29*	50*	276409 2002 YN₂									
1 21	15 24.19	-17 31.2	1.968	1.832	29.7	21.2	67 W	27*	56*	12 22	15 43.76	-50 35.0	1.766	1.158	31.4	21.4	38 W	-	29*
1 31	15 47.36	-19 25.3	1.847	1.802	31.3	21.0	72 W	25*	62*	12 27	16 15.05	-50 41.5	1.727	1.109	32.1	21.3	37 W	-	27*
179778 2002 SY₄₇										1 1	16 47.27	-50 16.8	1.691	1.059	32.7	21.1	36 W	-	26*
12 22	14 44.46	-13 49.0	2.892	2.337	18.0	21.5	47 W	27*	32*	1 6	17 19.75	-49 17.8	1.658	1.006	33.1	21.0	34 W	-	24*
1 1	15 2.70	-14 45.9	2.764	2.307	19.9	21.4	53 W	28*	38*	1 11	17 51.76	-47 42.4	1.626	0.953	33.4	20.8	32 W	-	22*
1 11	15 20.98	-15 33.7	2.630	2.277	21.6	21.3	59 W	28*	45*	1 16	18 22.70	-45 29.7	1.598	0.898	33.5	20.7	30 W	-	21*
1 21	15 39.22	-16 11.5	2.490	2.246	23.3	21.2	64 W	28*	52*	1 21	18 52.17	-42 40.1	1.572	0.842	33.4	20.5	28 W	-	19*
1 31	15 57.30	-16 38.4	2.346	2.214	24.7	21.1	70 W	28*	59*	311044 2004 BB₁₀₃									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
526742 2006 WR₁₂₇										220452 2003 YN₁₁₇									
12 22	16 49.23	-26 20.4	1.458	0.584	28.3	21.2	16 W	2*	10*	12 22	18 55.70	-27 14.0	2.844	1.899	6.7	21.4	13 E	—	7*
12 27	17 24.89	-25 39.0	1.481	0.571	23.3	21.0	13 W	1*	7*	1 1	19 22.27	-26 22.9	2.828	1.864	4.8	21.2	9 E	—	3*
1 1	18 0.06	-24 25.5	1.506	0.566	18.0	20.9	10 W	—	4*	1 11	19 49.13	-25 13.9	2.804	1.828	3.1	21.1	6 E	—	—
1 6	18 34.25	-22 43.9	1.531	0.570	12.9	20.8	7 W	—	1*	1 21	20 16.12	-23 47.1	2.774	1.794	2.2	20.9	4 E	—	—
1 11	19 7.10	-20 39.8	1.555	0.582	8.6	20.7	5 W	—	—	1 31	20 43.13	-22 2.4	2.740	1.760	2.8	20.9	5 W	—	—
1 16	19 38.41	-18 19.1	1.580	0.602	6.3	20.7	4 W	—	—	21277 1996 TO₅									
1 21	20 8.10	-15 47.4	1.604	0.627	6.7	20.8	4 W	—	—	12 22	18 57.26	-9 37.7	3.485	2.578	7.3	21.4	19 E	13*	—
527841 2008 CR₁										1 1	19 14.39	-9 36.4	3.460	2.525	5.9	21.3	15 E	9*	—
12 22	16 56.47	-43 5.1	1.539	0.750	31.7	21.3	24 W	—	15*	1 11	19 32.07	-9 25.0	3.421	2.470	4.9	21.2	12 E	4*	—
12 24	17 12.34	-42 48.8	1.538	0.735	31.0	21.2	23 W	—	14*	1 21	19 50.23	-9 3.6	3.367	2.413	4.9	21.1	12 W	5*	—
12 26	17 28.13	-42 23.2	1.537	0.721	30.2	21.1	22 W	—	12*	1 31	20 8.85	-8 32.2	3.299	2.355	5.8	21.0	14 W	8*	—
12 28	17 43.73	-41 48.1	1.538	0.707	29.2	21.1	21 W	—	11*	366833 2005 MC									
12 30	17 59.07	-41 4.0	1.539	0.694	28.1	21.0	19 W	—	9*	12 22	19 9.43	-20 24.6	3.303	2.375	6.7	21.5	16 E	7*	7*
1 1	18 14.06	-40 11.0	1.542	0.682	26.9	20.9	18 W	—	8*	1 1	19 27.26	-19 7.3	3.264	2.306	4.5	21.3	11 E	4*	1*
1 3	18 28.65	-39 9.5	1.545	0.671	25.6	20.8	17 W	—	7*	1 11	19 45.67	-17 38.7	3.211	2.235	2.6	21.1	6 E	—	—
1 5	18 42.78	-38 0.2	1.549	0.660	24.1	20.8	16 W	—	5*	1 21	20 4.60	-15 57.8	3.143	2.163	2.0	20.9	4 W	—	—
1 7	18 56.41	-36 43.4	1.553	0.651	22.4	20.7	15 W	—	4*	1 31	20 24.06	-14 3.2	3.061	2.089	3.6	20.9	8 W	1*	—
1 9	19 9.53	-35 19.9	1.558	0.642	20.7	20.6	13 W	—	3*	390872 2004 TL₁₃₀									
1 11	19 22.14	-33 50.2	1.563	0.635	18.8	20.5	12 W	—	1*	12 22	19 16.95	-18 50.2	2.542	1.639	11.0	21.5	18 E	9*	8*
1 13	19 34.23	-32 15.0	1.568	0.629	16.9	20.5	11 W	—	—	1 1	19 46.81	-18 7.5	2.557	1.630	9.2	21.4	15 E	7*	4*
1 15	19 45.82	-30 35.0	1.574	0.624	14.8	20.4	9 E	—	—	1 11	20 16.59	-17 5.1	2.571	1.624	7.4	21.3	12 E	5*	2*
1 17	19 56.93	-28 50.7	1.579	0.621	12.8	20.3	8 E	—	—	1 21	20 46.08	-15 44.5	2.585	1.622	5.6	21.3	9 E	3*	—
1 19	20 7.58	-27 2.9	1.585	0.619	10.7	20.2	7 E	—	—	1 31	21 15.16	-14 7.8	2.599	1.623	3.8	21.2	6 E	—	—
1 21	20 17.80	-25 12.0	1.591	0.618	8.6	20.2	5 E	—	—	283948 2004 PU₈₅									
185746 1999 LO₁										12 22	19 19.76	-20 19.9	2.741	1.836	9.9	21.5	19 E	8*	9*
12 22	17 56.21	-24 22.4	3.098	2.115	0.6	21.4	1 W	—	—	1 1	19 46.18	-19 38.4	2.741	1.807	8.0	21.3	15 E	6*	5*
1 1	18 19.89	-24 25.9	3.051	2.075	2.7	21.5	6 W	—	—	1 11	20 12.94	-18 39.9	2.736	1.780	6.0	21.2	11 E	3*	2*
1 11	18 44.15	-24 15.7	2.994	2.035	5.0	21.5	10 W	—	4*	1 21	20 39.89	-17 24.8	2.726	1.754	4.1	21.1	7 E	1*	—
1 21	19 8.89	-23 51.3	2.929	1.994	7.3	21.6	15 W	1*	9*	1 31	21 6.93	-15 53.8	2.712	1.730	2.1	20.9	4 E	—	—
1 31	19 34.03	-23 11.9	2.856	1.953	9.6	21.6	19 W	2*	13*	338057 2002 NN₇₈									
436094 2009 SC₂₂₉										12 22	19 19.84	-24 51.8	2.676	1.768	10.0	21.4	18 E	4*	11*
12 22	18 4.49	-24 59.2	2.236	1.254	1.4	21.4	2 E	—	—	1 1	19 48.12	-24 1.8	2.682	1.748	8.2	21.3	15 E	3*	7*
12 27	18 24.41	-24 36.3	2.214	1.232	1.1	21.3	1 E	—	—	1 11	20 16.47	-22 52.6	2.684	1.729	6.3	21.2	11 E	1*	4*
1 1	18 44.58	-24 2.9	2.194	1.211	0.8	21.3	1 E	—	—	1 21	20 44.71	-21 25.0	2.682	1.713	4.6	21.1	8 E	—	2*
1 6	19 4.90	-23 19.1	2.176	1.193	0.7	21.2	1 W	—	—	1 31	21 12.73	-19 40.1	2.677	1.698	3.0	21.0	5 E	—	—
1 11	19 25.29	-22 24.6	2.159	1.176	0.7	21.2	1 W	—	—	162011 Konnohmaru									
1 16	19 45.66	-21 19.8	2.145	1.162	0.9	21.1	1 W	—	—	12 22	19 26.26	-24 32.3	3.249	2.346	8.1	21.5	20 E	6*	12*
1 21	20 5.96	-20 5.0	2.134	1.150	1.1	21.1	1 W	—	—	1 1	19 46.10	-23 49.7	3.216	2.275	6.1	21.3	14 E	3*	7*
337144 1999 TQ₂₃₁										1 11	20 6.74	-22 56.0	3.169	2.203	4.0	21.1	9 E	—	2*
12 22	18 18.27	-21 41.9	2.742	1.763	2.5	21.4	5 E	—	—	1 21	20 28.11	-21 50.4	3.109	2.129	2.0	20.8	4 E	—	—
1 1	18 46.58	-21 35.5	2.718	1.735	0.9	21.2	2 E	—	—	1 31	20 50.19	-20 32.0	3.038	2.055	1.5	20.7	3 W	—	—
1 11	19 15.37	-21 9.7	2.690	1.708	1.8	21.2	3 W	—	—	306826 2001 RZ₁₇									
1 21	19 44.43	-20 24.3	2.658	1.684	3.7	21.3	6 W	—	—	12 22	20 18.71	-28 21.0	3.427	2.638	11.2	21.5	31 E	8*	24*
1 31	20 13.63	-19 19.6	2.625	1.661	5.6	21.3	9 W	—	3*	1 1	20 34.83	-26 33.3	3.450	2.595	9.3	21.4	25 E	7*	18*
285602 2000 QG₁₆₃										1 11	20 51.21	-24 40.1	3.459	2.551	7.3	21.3	19 E	4*	12*
12 22	18 41.49	-18 39.4	3.211	2.252	4.7	21.5	11 E	4*	—	1 21	21 7.75	-22 41.0	3.453	2.506	5.2	21.1	13 E	1*	7*
1 1	19 2.78	-18 7.4	3.192	2.218	2.9	21.3	7 E	1*	—	1 31	21 24.40	-20 35.6	3.433	2.461	3.2	21.0	8 E	—	2*
1 11	19 24.41	-17 23.4	3.163	2.184	2.1	21.2	5 W	—	—	366451 2002 AN₁₈									
1 21	19 46.28	-16 27.0	3.123	2.149	3.2	21.3	7 W	1*	—	12 22	20 38.62	-21 34.7	2.892	2.182	15.6	21.5	37 E	16*	26*
1 31	20 8.33	-15 18.4	3.074	2.115	5.1	21.3	11 W	3*	2*	1 1	20 58.72	-21 10.0	2.912	2.131	13.8	21.4	31 E	14*	21*
351621 2005 WA₁₇₄										1 11	21 19.68	-20 33.5	2.920	2.081	11.9	21.2	26 E	11*	17*
12 22	18 45.90	-22 9.3	3.072	2.113	4.9	21.5	11 E	2*	3*	1 21	21 41.39	-19 45.4	2.917	2.031	10.1	21.1	21 E	8*	13*
1 1	19 9.13	-21 48.2	3.054	2.078	2.8	21.3	6 E	—	—	1 31	22 3.82	-18 45.8	2.902	1.980	8.3	21.0	17 E	4*	10*
1 11	19 32.76	-21 13.5	3.027	2.044	0.6	21.1	1 E	—	—	323308 2003 UH₈₁									
1 21	19 56.71	-20 25.1	2.992	2.010	1.7	21.1	3 W	—	—	12 22	21 58.36	-12 59.0	2.044	1.722	28.7	21.5	57 E	31*	41*
1 31	20 20.88	-19 23.1	2.948	1.976	3.9	21.2	8 W	—	2*	1 1	22 21.76	-11 12.9	2.094	1.694	27.6	21.5	53 E	31*	36*
306399 1996 AX₁										1 11	22 45.82	-9 13.7	2.140	1.669	26.4	21.5	49 E	31*	31*
12 22	18 50.67	-20 26.7	3.747	2.793	4.2	21.4	12 E	4*	3*	1 21	23 10.45	-7 3.0	2.183	1.646	25.1	21.4	45 E	30*	28*
1 1	19 7.25	-19 50.1	3.728	2.753	2.2	21.2	6 E	—	—	1 31	23 35.57	-4 42.7	2.223	1.627	23.8	21.4	42 E	29*	24*
1 11	19 24.12	-19 5.6	3.693	2.711	1.1	21.1	3 W	—	—	531277 2012 MM₁₁									
1 21	19 41.18	-18 12.8	3.642	2.669	2.7	21.1	7 W	—	—	12 22	22 42.18	-8 38.5	0.364	0.917	89.6	21.1	69 E	36*	49*
1 31	19 58.37	-17 11.6	3.576	2.625	4.8	21.2	13 W	3*	5*	12 24	23 0.95	-7 9.0	0.356	0.934	87.2	21.0	72 E	38*	50*
317643 2003 FH₁										12 26	23 20.18	-5 33.9	0.350	0.952	84.7	20.9	75 E	39	52*
12 22	18 50.77	-31 10.8	2.379	1.442	9.3	21.5	14 E	—	8*	12 28	23 39.70	-3 54.5	0.347	0.970	81.9	20.8	78 E	41	53*
1 1	19 22.71	-30 26.9	2.341	1.390	8.0	21.3	11 E	—	5*	12 30	23 59.35	-2 12.4	0.346	0.989	79.0	20.7	81 E	43	54*
1 11	19 55.56	-29 14.4	2.293	1.333	7.0	21.1	10 E	—	3*	1 1	0 18.92	+0 29.4	0.348	1.008	76.0	20.7	84 E	45	54*
1 21	20 29.20	-27 30.4	2.236	1.272	6.6	21.0	9 E	—	1*	1 3	0 38.21	+1 12.4	0.352	1.027	73.0	20.6	87 E	46	55*
1 31	21 3.58	-25 12.1	2.173	1.206	6.6	20.8	8 E	—	—	1 5	0 57.06	+2 51.3	0.359	1.046	70.0	20.6	90 E	48	55*
278576 2008 HS₃₇										1 7	1 15.30	+4 25.9	0.367	1.066					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°														
531277 2012 MM₁₁										468448 2003 LS₃																							
<i>(continuation)</i>																																	
1 11	1 49.55	+ 7 17.7	0.391	1.105	61.9	20.7	98 E	52	54*	1 1	8 1.18	+10 55.9	2.290	3.223	6.5	22.6	158 W	56	53	1 11	7 51.26	+11 32.7	2.295	3.264	3.5	22.5	168 W	57	52				
1 13	2 5.42	+ 8 33.8	0.405	1.125	59.5	20.7	100 E	54	54*	1 21	7 41.20	+12 15.5	2.332	3.304	3.1	22.5	169 E	57	52	1 31	7 31.88	+13 0.9	2.401	3.343	5.8	22.8	160 E	58	51				
1 15	2 20.43	+ 9 43.3	0.422	1.145	57.3	20.8	102 E	55	53*	2 10	7 24.05	+13 46.1	2.499	3.381	8.7	23.0	149 E	59	50														
1 17	2 34.57	+10 46.3	0.440	1.165	55.3	20.9	103 E	56	52*																								
1 19	2 47.87	+11 43.2	0.459	1.185	53.5	20.9	105 E	57	52*																								
1 21	3 0.38	+12 34.4	0.480	1.205	51.8	21.0	106 E	58	51*																								
162783 2000 YJ₁₁										468681 2009 MZ₆																							
12 22	23 31.73	- 3 2.3	0.437	1.021	72.6	21.5	82 E	42	55*	1 1	8 4.32	+17 25.7	2.383	3.326	5.7	25.4	160 W	62	47	1 11	7 54.45	+18 1.7	2.339	3.317	2.1	25.2	173 W	63	46				
12 27	23 51.59	+ 0 47.8	0.438	1.028	71.8	21.5	83 E	46	52*	1 21	7 43.96	+18 39.5	2.327	3.307	2.0	25.2	173 E	64	45	1 31	7 33.77	+19 16.1	2.348	3.296	5.5	25.4	161 E	64	45				
1 1	0 11.79	+ 4 38.6	0.440	1.037	70.7	21.5	84 E	50	49*	2 10	7 24.77	+19 49.4	2.398	3.283	8.9	25.6	149 E	65	44														
1 6	0 32.38	+ 8 26.6	0.446	1.047	69.4	21.5	85 E	53	46*																								
1 11	0 53.41	+12 8.1	0.454	1.058	68.1	21.5	87 E	57	43*																								
153957 2002 AB₂₉										159518 2001 FF₇																							
1 1	1 49.75	-33 28.9	1.564	1.847	32.2	21.5	90 E	12	82*	1 1	8 6.40	-45 53.7	1.962	2.459	22.3	22.4	109 W	-	70	1 6	8 0.46	-46 24.0	1.921	2.438	22.3	22.3	110 W	-	70				
1 6	1 46.89	-31 5.7	1.560	1.794	33.2	21.4	87 E	14	81*	1 11	7 53.89	-46 42.3	1.881	2.417	22.3	22.3	111 W	-	69	1 16	7 46.88	-46 47.5	1.844	2.395	22.4	22.2	112 E	-	69				
1 11	1 45.14	-28 36.0	1.557	1.740	34.1	21.4	83 E	16	77*	1 21	7 39.62	-46 38.8	1.809	2.373	22.4	22.1	113 E	-	69														
1 16	1 44.42	-26 0.6	1.554	1.685	35.1	21.3	80 E	19	72*																								
1 21	1 44.64	-23 20.5	1.551	1.630	35.9	21.3	76 E	22	68*																								
6491 1991 OA										434231 2003 SR₂₈₀																							
1 1	7 39.73	+23 16.3	2.580	3.546	3.5	23.8	167 W	68	41	1 1	8 6.70	+11 50.7	2.543	3.471	6.2	23.2	157 W	57	52	1 11	7 58.01	+12 10.4	2.497	3.465	3.4	23.0	168 W	57	52				
1 6	7 34.44	+23 24.9	2.551	3.530	1.8	23.7	174 W	68	41	1 21	7 48.76	+12 36.6	2.483	3.458	2.6	22.9	171 E	58	51	1 31	7 39.74	+13 6.8	2.501	3.451	5.1	23.1	162 E	58	51				
1 11	7 28.95	+23 32.8	2.530	3.513	0.5	23.5	178 W	69	40	2 10	7 31.73	+13 38.8	2.549	3.442	8.1	23.3	151 E	59	50														
1 16	7 23.38	+23 39.7	2.518	3.497	1.9	23.7	173 E	69	40																								
1 21	7 17.84	+23 45.5	2.513	3.479	3.6	23.8	167 E	69	40																								
26817 1987 QB										513497 2009 HB₈₂																							
1 1	7 41.41	+18 16.5	3.177	4.137	3.3	25.1	166 W	63	46	1 1	8 7.50	+26 23.1	2.541	3.485	5.3	22.9	161 W	71	38	1 6	8 2.41	+26 33.4	2.498	3.463	3.7	22.7	167 W	72	37				
1 11	7 32.56	+18 39.2	3.179	4.162	0.8	24.9	177 W	64	45	1 11	7 56.98	+26 42.7	2.464	3.440	2.3	22.6	172 W	72	37	1 16	7 51.31	+26 50.5	2.437	3.417	1.7	22.5	174 W	72	37				
1 21	7 23.75	+19 1.9	3.215	4.185	2.6	25.1	169 E	64	45	1 21	7 45.52	+26 56.5	2.419	3.394	2.6	22.6	171 E	72	37														
1 31	7 15.60	+19 23.2	3.283	4.207	5.3	25.3	157 E	64	45																								
2 10	7 8.67	+19 42.2	3.381	4.229	7.7	25.5	145 E	65	44																								
469359 2001 HX₁₃										411655 2011 WW₄																							
1 1	7 44.06	+16 40.7	2.251	3.210	4.7	23.2	165 W	62	47	1 1	8 7.78	+25 32.7	1.757	2.705	6.8	22.5	161 W	71	38	1 6	8 1.41	+25 43.2	1.753	2.721	4.6	22.4	167 W	71	38				
1 11	7 33.93	+17 3.0	2.221	3.202	1.5	23.0	175 W	62	47	1 11	7 54.80	+25 52.1	1.758	2.736	2.6	22.3	173 W	71	38	1 16	7 48.12	+25 58.7	1.770	2.751	1.8	22.3	175 E	71	38				
1 21	7 23.57	+17 27.5	2.223	3.193	3.5	23.1	168 E	62	47	1 21	7 41.57	+26 2.9	1.790	2.766	3.2	22.4	171 E	71	38														
1 31	7 13.92	+17 52.0	2.256	3.183	7.1	23.3	156 E	63	46																								
2 10	7 5.85	+18 15.0	2.317	3.172	10.4	23.5	145 E	63	46																								
178871 2001 MA₈										322713 2000 KD₄₁																							
1 1	7 45.50	+17 16.6	2.279	3.238	4.6	22.3	165 W	62	47	1 1	8 8.26	+16 24.2	4.343	5.274	3.8	23.9	159 W	61	48	1 11	8 1.73	+16 45.2	4.312	5.285	1.7	23.7	171 W	62	47				
1 11	7 34.87	+17 25.6	2.233	3.214	1.4	22.1	175 W	62	47	1 21	7 54.91	+17 7.6	4.314	5.295	0.9	23.6	175 E	62	47	1 31	7 48.23	+17 30.3	4.348	5.305	2.8	23.8	165 E	63	46				
1 21	7 23.85	+17 36.1	2.218	3.189	3.5	22.2	169 E	63	46	2 10	7 42.11	+17 52.0	4.415	5.314	4.8	24.0	153 E	63	46														
1 31	7 13.43	+17 46.7	2.235	3.162	7.2	22.4	156 E	63	46																								
2 10	7 4.53	+17 56.3	2.281	3.135	10.6	22.5	144 E	63	46																								
396675 2002 RH₁₇₆										423829 2006 ME₁₀																							
1 1	7 48.32	+13 26.2	1.447	2.402	7.2	22.3	162 W	58	51	1 1	8 13.51	+18 13.1	1.965	2.903	7.1	22.3	159 W	63	46	1 11	8 2.87	+18 22.0	1.939	2.914	3.0	22.1	171 W	63	46				
1 6	7 42.41	+13 39.4	1.444	2.414	5.0	22.2	168 W	59	50	1 21	7 51.59	+18 32.0	1.943	2.925	1.6	22.0	175 E	64	45	1 31	7 40.80	+18 40.8	1.979	2.934	5.7	22.3	163 E	64	45				
1 11	7 36.34	+13 54.7	1.448	2.426	3.3	22.2	172 W	59	50	2 10	7 31.55	+18 47.0	2.043	2.943	9.5	22.5	151 E	64	45														
1 16	7 30.29	+14 11.5	1.460	2.438	3.3	22.2	172 E	59	50																								
1 21	7 24.45	+14 29.5	1.479	2.449	5.0	22.3	168 E	59	50																								
279768 1999 RH₁₀₄										509523 2007 XP₃																							
1 1	7 53.91	+15 23.2	1.767	2.719	6.4	23.0	162 W	60	49	1 1	8 14.68	+26 11.5	2.488	3.426	5.8	24.4	159 W	71	38	1 6	8 7.86	+26 39.6	2.492	3.453	4.1	24.3	165 W	72	37				
1 11	7 42.20	+15 47.3	1.758	2.73																													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
504848 2010 SG₃										483423 2000 DO₁									
1 1	8 18.48	+21 20.3	1.664	2.603	8.1	22.6	158 W	66	43	1 1	8 44.96	+22 1.5	1.277	2.196	12.1	23.3	152 W	67	42
1 6	8 12.98	+21 34.8	1.656	2.617	5.7	22.5	165 W	67	42	1 6	8 36.91	+22 33.9	1.228	2.175	9.3	23.1	159 W	68	41
1 11	8 7.16	+21 49.1	1.656	2.632	3.4	22.4	171 W	67	42	1 11	8 27.65	+23 7.6	1.186	2.154	6.2	22.8	166 W	68	41
1 16	8 1.18	+22 2.6	1.663	2.646	1.0	22.3	177 W	67	42	1 16	8 17.35	+23 40.9	1.152	2.132	3.2	22.6	173 W	69	40
1 21	7 55.21	+22 14.9	1.677	2.660	1.6	22.4	176 E	67	42	1 21	8 6.24	+24 12.2	1.126	2.108	2.0	22.4	176 E	69	40
508967 2004 VC₁₇										385342 2002 LL									
1 1	8 22.39	-7 42.6	2.481	3.304	10.8	23.6	141 W	37	72	1 1	8 54.43	-4 11.3	2.416	3.216	11.8	21.4	138 W	41	68
1 11	8 10.90	-7 51.1	2.401	3.280	9.0	23.5	148 W	37	72	1 11	8 47.53	-3 34.8	2.314	3.191	9.4	21.2	148 W	41	68
1 21	7 58.27	-7 37.3	2.350	3.253	8.1	23.4	152 E	37	72	1 21	8 39.14	-2 35.7	2.238	3.164	7.2	21.0	156 W	42	67
1 31	7 45.44	-7 1.4	2.331	3.224	8.7	23.4	150 E	38	71	1 31	8 29.94	-1 15.3	2.191	3.137	6.1	20.9	160 E	44	65
2 10	7 33.41	-6 6.3	2.343	3.193	10.5	23.4	144 E	39	70	2 10	8 20.78	+0 22.6	2.176	3.109	7.1	20.9	157 E	45	64
474181 1999 VP₇₉										248107 2004 RA₁₀₉									
1 1	8 24.31	-18 56.2	2.609	3.342	12.7	22.8	131 W	26	83	1 1	8 57.44	+24 6.6	1.794	2.689	10.7	21.5	150 W	69	40
1 11	8 15.86	-19 19.0	2.574	3.363	11.5	22.7	137 W	26	83	1 6	8 52.79	+24 25.1	1.769	2.695	8.7	21.4	156 W	69	40
1 21	8 6.72	-19 14.5	2.563	3.383	10.6	22.7	141 E	26	83	1 11	8 47.57	+24 43.6	1.750	2.701	6.6	21.3	162 W	70	39
1 31	7 57.67	-18 43.4	2.577	3.402	10.4	22.7	141 E	26	83	1 16	8 41.90	+25 1.3	1.738	2.707	4.5	21.2	167 W	70	39
2 10	7 49.49	-17 48.5	2.615	3.420	11.0	22.7	139 E	27	82	1 21	8 35.94	+25 17.4	1.734	2.713	2.8	21.1	172 W	70	39
504315 2007 RF₂₄										243927 2001 OR₃₃									
1 1	8 26.94	+16 43.9	1.709	2.634	9.0	22.4	155 W	62	47	1 1	9 1.31	+21 48.1	1.792	2.679	11.1	21.4	148 W	67	42
1 11	8 16.40	+17 6.2	1.683	2.652	4.5	22.1	168 W	62	47	1 6	8 57.25	+22 20.6	1.760	2.681	9.1	21.3	154 W	67	42
1 21	8 4.88	+17 31.7	1.686	2.669	1.1	21.9	177 E	63	46	1 11	8 52.58	+22 54.3	1.735	2.683	7.0	21.2	161 W	68	41
1 31	7 53.65	+17 56.9	1.720	2.686	5.1	22.2	166 E	63	46	1 16	8 47.40	+23 28.3	1.718	2.684	4.9	21.0	166 W	68	41
2 10	7 43.94	+18 18.7	1.782	2.701	9.4	22.5	154 E	63	46	1 21	8 41.85	+24 1.7	1.707	2.685	3.0	20.9	172 W	69	40
252091 2000 UP₃₀										427639 2003 UU₂₅₇									
1 1	8 27.13	+6 47.0	2.743	3.631	7.7	22.6	150 W	52	57	1 1	9 1.46	+27 59.7	1.467	2.364	12.4	21.3	149 W	73	36
1 11	8 17.04	+7 12.6	2.717	3.662	5.0	22.5	161 W	52	57	1 6	8 56.90	+28 39.0	1.454	2.379	10.3	21.3	154 W	74	35
1 21	8 6.37	+7 47.2	2.724	3.692	3.3	22.4	168 E	53	56	1 11	8 51.67	+29 17.3	1.447	2.395	8.1	21.2	160 W	74	35
1 31	7 55.90	+8 28.0	2.765	3.720	4.3	22.5	163 E	53	56	1 16	8 45.94	+29 53.1	1.447	2.410	6.2	21.1	165 W	75	34
2 10	7 46.38	+9 12.2	2.838	3.746	6.8	22.7	153 E	54	55	1 21	8 39.87	+30 25.5	1.454	2.425	4.9	21.1	168 W	75	34
511006 2013 OZ₇										313309 2002 EH₈									
1 1	8 28.71	+13 24.6	1.979	2.892	8.7	22.6	154 W	58	51	1 1	9 7.22	+12 18.1	1.646	2.512	13.2	21.3	144 W	57	52
1 11	8 19.19	+13 46.7	1.939	2.901	4.9	22.4	165 W	59	50	1 11	9 0.11	+12 54.0	1.543	2.476	9.2	21.0	156 W	58	51
1 21	8 8.66	+14 15.5	1.928	2.909	2.0	22.2	174 E	59	50	1 21	8 50.43	+13 44.7	1.466	2.438	4.5	20.7	169 W	59	50
1 31	7 58.17	+14 47.5	1.949	2.916	4.5	22.4	167 E	60	49	1 31	8 39.04	+14 46.0	1.417	2.400	1.8	20.4	176 E	60	49
2 10	7 48.79	+15 19.7	1.999	2.922	8.3	22.6	155 E	60	49	2 10	8 27.23	+15 51.6	1.397	2.361	6.6	20.6	164 E	61	48
360433 2002 JR₉										168714 2000 JQ₁₀									
1 1	8 32.31	+17 48.7	2.310	3.224	7.6	22.6	154 W	63	46	1 1	9 28.04	+8 0.8	2.025	2.834	13.4	21.5	138 W	53	56
1 11	8 21.66	+18 41.4	2.301	3.267	3.9	22.4	167 W	64	45	1 11	9 21.05	+8 16.6	1.951	2.843	10.1	21.3	150 W	53	56
1 21	8 10.32	+19 34.1	2.325	3.309	0.1	22.2	180 E	65	44	1 21	9 12.04	+8 45.9	1.901	2.852	6.3	21.1	161 W	54	55
1 31	7 59.24	+20 22.9	2.381	3.349	3.8	22.6	167 E	65	44	1 31	9 1.76	+9 26.1	1.881	2.859	2.9	20.9	172 W	54	55
2 10	7 49.37	+21 4.9	2.470	3.387	7.2	22.8	154 E	66	43	2 10	8 51.25	+10 12.9	1.891	2.865	3.8	20.9	169 E	55	54
481381 2006 OS₅										137504 1999 VO₂₁									
1 1	8 32.74	+15 13.0	1.981	2.893	8.8	22.7	153 W	60	49	1 1	9 35.73	-1 32.6	2.166	2.914	14.6	21.4	132 W	43	66
1 11	8 20.13	+14 50.1	1.989	2.952	4.7	22.5	166 W	60	49	1 11	9 29.46	-1 41.2	2.091	2.930	11.9	21.3	142 W	43	66
1 21	8 7.15	+14 31.6	2.029	3.010	1.8	22.5	174 E	60	49	1 21	9 21.26	-1 30.6	2.038	2.946	8.9	21.1	152 W	43	66
1 31	7 54.96	+14 16.1	2.102	3.066	4.6	22.7	166 E	59	50	1 31	9 11.80	-1 1.2	2.012	2.961	6.3	21.0	161 W	44	65
2 10	7 44.51	+14 3.0	2.206	3.121	8.1	23.1	154 E	59	50	2 10	9 1.96	-0 15.4	2.015	2.974	5.5	20.9	163 E	45	64
467527 2007 LA₁₅										227124 2005 OE₂									
1 1	8 34.00	+9 22.4	1.247	2.158	13.0	22.4	150 W	54	55	1 1	9 42.34	+19 38.3	2.035	2.848	13.2	21.5	139 W	65	44
1 11	8 20.88	+10 28.7	1.228	2.187	7.5	22.2	163 W	55	54	1 11	9 35.89	+20 33.7	1.976	2.872	9.8	21.3	150 W	66	43
1 21	8 6.44	+11 48.9	1.236	2.214	3.7	22.0	172 E	57	52	1 21	9 27.23	+21 34.2	1.943	2.895	6.0	21.1	162 W	67	42
1 31	7 52.47	+13 14.3	1.274	2.239	6.6	22.3	165 E	58	51	1 31	9 17.13	+22 33.4	1.938	2.918	2.6	20.9	172 W	68	41
2 10	7 40.65	+14 36.6	1.340	2.263	11.5	22.6	153 E	60	49	2 10	9 6.62	+23 25.2	1.964	2.939	3.6	21.1	169 E	68	41
162473 2000 LA₁₆										366616 2003 NP₄									
1 1	8 36.46	+13 45.1	1.771	2.679	9.9	21.3	152 W	59	50	1 1	9 51.70	-13 14.7	2.242	2.882	16.9	21.5	122 W	32	77
1 11	8 26.75	+14 29.1	1.739	2.699	5.7	21.1	164 W	59	50	1 11	9 45.92	-14 19.5	2.156	2.893	15.0	21.3	131 W	31	78
1 21	8 15.86	+15 20.0	1.736	2.718	1.7	20.9	175 W	60	49	1 21	9 37.94	-15 1.7	2.089	2.904	12.8	21.2	139 W	30	79
1 31	8 4.96	+16 12.8	1.764	2.736	4.1	21.1	168 E	61	48	1 31	9 28.29	-15 17.6	2.045	2.914	10.9	21.1	146 W	30	79
2 10	7 55.22	+17 2.9	1.821	2.754	8.3	21.4	156 E	62	47	2 10	9 17.83	-15 5.3	2.026	2.923	9.7	21.0	150 E	30	79
411165 2010 DF₁										302531 2002 LL₅₈									
1 1	8 37.48	-5 11.3	1.105	1.966	18.5	24.4	141 W	40	69	1 1	9 58.06	+19 37.3	2.793	3.557	11.3	21.4	135 W	65	44
1 6	8 31.99	-5 0.6	1.049	1.941	16.7	24.2	145 W	40	69	1 11	9 52.71	+20 19.5	2.716	3.576	8.8	21.2	146 W	65	44
1 11	8 25.42	-4 38.1	0.999	1.915	14.9	24.0	150 W	40	69	1 21	9 45.55	+21 6.2	2.664	3.595	5.9	21.1	158 W	66	43
1 16	8 17.84	-4 2.5	0.955	1.889	13.2	23.8	154 W	41	68	1 31	9 37.06	+21 53.2	2.642	3.613	3.1	20.9	169 W	67	42
1 21	8 9.40	-3 13.0	0.916	1.861	12.0	23.7	157 E	42	67	2 10	9 27.93	+22 36.1	2.651	3.630	2.2	20.9	172 E	68	41
422631 4165 P-L										122159 2000 JM₈₁									
1 1	8 39.73	+9 6.4	1.371	2.271	12.8	21.3	149 W	54	55	1 1	10 0.81	+6 1.7	2.540	3.259	13.4	21.5	130 W	51	58
1 11	8 29.86	+9 28.0	1.349	2.301	8.1	21.1	161 W	54	55	1 11	9 55								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
39572 1993 DQ₁									264285 1998 QM								
1 1	10 4.30	+11 38.0	2.187	2.930	14.6	21.4	131 W	57 52	1 1	11 9.04	+1 51.8	2.387	2.911	18.2	21.4	113 W	47 62
1 11	9 58.30	+11 47.3	2.065	2.910	11.8	21.1	143 W	57 52	1 11	11 8.24	+1 10.2	2.244	2.896	16.6	21.3	123 W	46 63
1 21	9 49.65	+12 7.8	1.966	2.889	8.2	20.8	155 W	57 52	1 21	11 4.92	+0 40.4	2.115	2.880	14.4	21.0	133 W	46 63
1 31	9 38.77	+12 37.1	1.895	2.866	4.1	20.5	168 W	58 51	1 31	10 59.05	+0 23.7	2.004	2.864	11.5	20.8	145 W	45 64
2 10	9 26.47	+13 11.1	1.855	2.841	0.7	20.2	178 E	58 51	2 10	10 50.83	+0 20.9	1.916	2.846	8.1	20.5	156 W	45 64
424313 2007 TH₃₇₀									185731 1998 VO₅								
1 1	10 6.13	+6 42.3	2.045	2.771	16.0	21.3	129 W	52 57	1 1	11 9.60	+16 55.2	2.501	3.086	16.4	21.4	118 W	62 47
1 11	10 1.15	+6 34.3	1.950	2.777	13.1	21.1	140 W	52 57	1 11	11 8.47	+17 35.1	2.390	3.097	14.4	21.3	128 W	63 46
1 21	9 53.67	+6 40.5	1.876	2.782	9.6	20.9	152 W	52 57	1 21	11 4.87	+18 27.1	2.295	3.107	12.0	21.1	139 W	63 46
1 31	9 44.19	+6 59.7	1.827	2.787	5.7	20.7	164 W	52 57	1 31	10 58.87	+19 27.4	2.223	3.116	9.1	20.9	150 W	64 45
2 10	9 33.53	+7 29.2	1.808	2.790	2.5	20.5	173 W	52 57	2 10	10 50.81	+20 30.7	2.176	3.124	6.0	20.7	161 W	66 43
283773 2003 NE₅									168378 1997 ET₃₀								
1 1	10 9.38	-17 4.9	3.044	3.584	14.3	21.5	116 W	28 81	1 1	11 27.95	+11 11.7	2.057	2.589	20.6	21.5	112 W	56 53*
1 11	10 4.39	-18 15.4	2.937	3.588	13.0	21.4	125 W	27 82	1 11	11 30.22	+11 17.8	1.895	2.550	19.2	21.2	121 W	56 53
1 21	9 57.50	-19 9.1	2.847	3.591	11.6	21.3	133 W	26 83	1 21	11 29.80	+11 40.4	1.745	2.509	17.0	20.9	132 W	57 52
1 31	9 49.05	-19 42.7	2.779	3.593	10.1	21.1	140 W	25 84	1 31	11 26.32	+12 20.0	1.610	2.467	14.0	20.6	143 W	57 52
2 10	9 39.61	-19 53.5	2.736	3.594	8.9	21.1	146 W	25 84	2 10	11 19.57	+13 14.5	1.497	2.423	10.2	20.3	154 W	58 51
424392 2007 YJ									387648 2002 RT₂₅								
1 1	10 14.99	+26 39.6	0.263	1.177	38.1	20.9	132 W	72 37	1 1	11 36.34	-24 17.4	0.843	1.348	46.6	21.4	95 W	21 87*
1 6	10 28.18	+27 40.1	0.230	1.156	37.5	20.5	134 W	73 36	1 6	11 41.67	-23 23.0	0.823	1.377	44.9	21.4	99 W	22 87
1 11	10 43.30	+28 57.5	0.198	1.134	37.3	20.2	136 W	74 35	1 11	11 45.88	-22 15.2	0.803	1.405	42.9	21.3	103 W	23 86
1 16	11 1.63	+30 35.5	0.168	1.111	37.8	19.8	136 W	76 33	1 16	11 48.93	-20 52.4	0.782	1.435	40.7	21.2	108 W	24 85
1 21	11 25.38	+32 38.0	0.141	1.088	39.7	19.4	135 W	78 31	1 21	11 50.75	-19 13.3	0.761	1.464	38.1	21.2	113 W	26 83
462107 2007 RH₁₁									312979 1999 KT₄								
1 1	10 22.12	+53 26.3	2.061	2.790	15.8	21.5	129 W	82 11	1 1	11 41.23	+3 55.2	1.448	1.963	28.8	21.2	106 W	49 60*
1 6	10 17.86	+54 17.7	2.039	2.797	15.1	21.4	132 W	81 10	1 11	11 52.58	+3 2.8	1.302	1.917	28.1	20.9	113 W	48 61
1 11	10 12.36	+55 5.9	2.022	2.805	14.4	21.4	135 W	80 9	1 21	12 2.28	+2 24.4	1.164	1.872	26.8	20.6	121 W	47 62
1 16	10 5.66	+55 49.0	2.011	2.812	13.8	21.4	137 W	79 8	1 31	12 9.88	+2 3.7	1.036	1.826	24.7	20.2	129 W	47 62
1 21	9 57.88	+56 25.4	2.005	2.819	13.4	21.3	139 W	79 8	2 10	12 14.85	+2 4.3	0.920	1.781	21.7	19.8	138 W	47 62
427624 2003 UN₈₁									182974 2002 NT₂₃								
1 1	10 24.26	+19 35.4	1.810	2.546	17.5	21.4	129 W	65 44	1 1	11 57.08	+4 55.5	2.523	2.904	19.3	21.4	103 W	50 58*
1 11	10 20.63	+20 42.6	1.740	2.572	14.2	21.3	140 W	66 43	1 11	11 59.97	+5 11.3	2.397	2.918	18.2	21.3	112 W	50 59
1 21	10 14.02	+22 0.2	1.692	2.598	10.5	21.1	151 W	67 42	1 21	12 0.63	+5 43.8	2.281	2.930	16.4	21.1	123 W	51 58
1 31	10 4.92	+23 20.6	1.668	2.623	6.6	20.9	162 W	68 41	1 31	11 58.90	+6 33.0	2.177	2.942	14.1	20.9	133 W	52 57
2 10	9 54.25	+24 34.7	1.672	2.647	4.2	20.8	169 W	70 39	2 10	11 54.76	+7 37.3	2.092	2.953	11.2	20.7	145 W	53 56
316857 2000 NH₁₀									215120 1999 JG₄								
1 1	10 28.06	+6 34.8	1.829	2.513	19.0	21.4	124 W	52 57	1 1	11 58.01	-9 34.7	2.149	2.466	23.3	21.4	97 W	35 72*
1 11	10 23.80	+6 47.8	1.759	2.552	15.8	21.2	135 W	52 57	1 11	12 4.21	-10 54.9	1.993	2.438	22.9	21.2	105 W	34 75
1 21	10 16.74	+7 18.3	1.708	2.590	11.9	21.1	147 W	52 57	1 21	12 8.35	-12 5.1	1.843	2.410	22.0	21.0	113 W	33 76
1 31	10 7.39	+8 3.6	1.680	2.626	7.5	20.9	160 W	53 56	1 31	12 10.08	-13 2.4	1.701	2.381	20.4	20.8	123 W	32 77
2 10	9 56.62	+8 58.9	1.681	2.661	2.9	20.7	172 W	54 55	2 10	12 9.05	-13 42.6	1.571	2.351	18.1	20.5	132 W	31 78
125475 2001 WA₁₅									8507 1991 CB₁								
1 1	10 32.66	+6 24.8	1.978	2.643	18.2	21.3	123 W	51 58	1 1	11 59.56	-6 2.7	1.811	2.176	26.6	21.4	98 W	39 69*
1 11	10 30.26	+6 47.8	1.879	2.655	15.6	21.1	134 W	52 57	1 11	12 5.27	-7 56.0	1.629	2.121	26.5	21.1	106 W	37 72
1 21	10 25.16	+7 25.5	1.798	2.666	12.2	20.9	145 W	52 57	1 21	12 8.65	-9 50.1	1.451	2.063	25.7	20.8	114 W	35 74
1 31	10 17.63	+8 21.4	1.739	2.676	8.1	20.7	157 W	53 56	1 31	12 9.00	-11 44.5	1.282	2.002	24.3	20.4	123 W	33 76
2 10	10 8.30	+9 29.5	1.708	2.685	3.6	20.5	170 W	54 55	2 10	12 5.39	-13 37.4	1.125	1.937	21.9	19.9	133 W	31 78
155002 2005 NN₁₀₂									340291 2006 CV								
1 1	10 34.17	+8 25.8	2.484	3.133	15.2	21.5	123 W	53 56	1 1	12 5.72	+19 14.7	0.620	1.299	46.7	21.1	106 W	64 44*
1 11	10 31.13	+8 47.9	2.381	3.147	12.9	21.3	134 W	54 55	1 6	12 16.55	+17 17.4	0.562	1.273	47.4	20.9	108 W	62 46*
1 21	10 25.85	+9 23.4	2.297	3.160	10.1	21.2	146 W	54 55	1 11	12 27.76	+14 59.8	0.506	1.246	48.1	20.6	109 W	60 49*
1 31	10 18.60	+10 10.3	2.238	3.173	6.7	21.0	158 W	55 54	1 16	12 39.60	+12 14.6	0.451	1.218	49.1	20.3	111 W	57 52*
2 10	10 9.93	+11 4.9	2.207	3.184	3.0	20.7	170 W	56 53	1 21	12 52.46	+8 51.3	0.399	1.189	50.4	20.0	111 W	54 55
155287 2005 XK₁									10150 1994 PN								
1 1	10 55.27	+5 34.8	2.013	2.614	19.5	21.5	117 W	51 58	1 1	12 5.96	+38 32.3	3.131	3.608	14.7	21.5	111 W	84 25*
1 11	10 54.18	+5 43.5	1.906	2.626	17.2	21.3	128 W	51 58	1 6	12 7.21	+39 38.2	3.083	3.614	14.2	21.4	115 W	85 24*
1 21	10 50.32	+6 10.2	1.813	2.636	14.2	21.1	139 W	51 58	1 11	12 7.87	+40 47.2	3.038	3.619	13.7	21.4	119 W	86 23
1 31	10 43.78	+6 54.2	1.741	2.646	10.4	20.9	151 W	52 57	1 16	12 7.90	+41 58.8	2.998	3.625	13.2	21.4	123 W	87 22
2 10	10 34.99	+7 52.5	1.693	2.654	6.1	20.6	163 W	53 56	1 21	12 7.27	+43 12.1	2.963	3.629	12.7	21.3	126 W	88 21
215167 2000 EL₂₆									455184 2000 ED₁₄								
1 1	10 55.56	-6 39.8	1.134	1.756	31.3	21.4	112 W	38 71	1 1	12 6.90	+41 42.6	0.438	1.216	48.6	21.3	112 W	87 22*
1 6	11 0.42	-6 20.4	1.064	1.736	30.6	21.3	116 W	39 70	1 3	12 3.47	+42 57.8	0.431	1.225	47.1	21.2	114 W	88 21*
1 11	11 4.80	-5 48.8	0.996	1.717	29.7	21.1	120 W	39 70	1 5	11 59.38	+44 15.7	0.424	1.233	45.5	21.1	117 W	89 20*
1 16	11 8.64	-5 2.7	0.931	1.696	28.5	20.8	125 W	40 69	1 7	11 54.54	+45 35.9	0.418	1.241	43.9	21.1	119 W	89 18*
1 21	11 11.89	-3 59.8	0.867	1.676	26.9	20.6	130 W	41 68	1 9	11 48.87	+46 57.9	0.411	1.248	42.3	21.0	121 W	88 17
									1 11	11 42.26	+48 21.0	0.406	1.255	40.7	20.9	124 W	87 16
									1 13	11 34.64	+49 44.3	0.401	1.261	39.2	20.9	126 W	85 14
									1 15	11 25.90	+51 6.8	0.396	1.267	37.7	20.8	128 W	84 13
									1 17	11 15.96	+52 27.1	0.392	1.272	36.2	20.8	130 W	83 12
									1 19	11 4.75	+53 43.8	0.389	1.277	34.9	20.7	132 W	81 10
									1 21	10 52.23	+54 55.4	0.386					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
235124 2003 QS₃₃										438955 2010 LN₁₄											
1	11	12 8.66	-2 32.0	2.122	2.449	23.5	21.5	97 W	42	64*	1	1	13 7.65	-3 45.2	0.324	0.998	78.0	21.3	83 W	41	57*
1	11	12 16.23	-3 35.9	1.959	2.413	23.2	21.3	105 W	41	68*	1	6	12 58.02	-2 55.1	0.324	1.040	71.0	21.1	91 W	42	62*
1	21	12 21.97	-4 29.8	1.802	2.376	22.3	21.0	114 W	41	68	1	11	12 47.61	-1 59.8	0.323	1.081	64.1	21.0	99 W	43	65*
1	31	12 25.50	-5 11.6	1.653	2.339	20.7	20.8	123 W	40	69	1	16	12 35.93	-0 56.3	0.322	1.120	57.2	20.9	107 W	44	65
2	10	12 26.43	-5 38.6	1.516	2.302	18.4	20.5	133 W	39	70	1	21	12 22.62	+0 17.3	0.321	1.159	50.0	20.7	116 W	45	64
171673 2000 QB₃₃										375054 2007 PF₆											
1	1	12 26.87	+5 13.4	2.114	2.424	23.8	21.5	96 W	50	56*	1	1	13 21.32	+6 22.9	0.433	1.033	71.3	21.4	84 W	51	47*
1	11	12 35.11	+4 53.3	1.964	2.402	23.4	21.3	104 W	50	59*	1	6	13 46.37	-1 21.1	0.407	0.999	76.1	21.4	80 W	44	53*
1	21	12 41.45	+4 48.6	1.818	2.378	22.4	21.1	113 W	50	59	1	11	14 14.17	-9 52.9	0.391	0.965	81.1	21.4	76 W	35	57*
1	31	12 45.49	+5 0.8	1.681	2.354	20.8	20.8	122 W	50	59	1	16	14 45.22	-18 41.7	0.388	0.932	85.9	21.5	71 W	26*	60*
2	10	12 46.82	+5 31.2	1.555	2.330	18.5	20.5	132 W	51	58	1	21	15 19.89	-27 4.2	0.397	0.901	89.9	21.6	66 W	18*	59*
353967 1999 XM₁₃₆										276786 2004 KD₁											
1	1	12 29.30	-22 42.3	3.007	3.074	18.6	21.5	85 W	22	75*	1	1	13 21.85	-19 30.5	1.700	1.717	33.4	21.4	74 W	25	63*
1	11	12 31.92	-24 35.4	2.900	3.109	18.4	21.4	93 W	20	86*	1	11	13 44.51	-22 21.3	1.567	1.673	35.1	21.2	78 W	23	69*
1	21	12 32.39	-26 21.3	2.794	3.142	17.9	21.3	102 W	19	90	1	21	14 8.46	-25 11.1	1.438	1.629	36.8	21.0	82 W	20	75*
1	31	12 30.49	-27 57.1	2.694	3.175	16.9	21.3	110 W	17	88	1	31	14 34.01	-27 57.6	1.312	1.583	38.4	20.8	86 W	17	80*
2	10	12 26.08	-29 19.1	2.603	3.206	15.5	21.2	119 W	16	87	2	10	15 1.50	-30 37.3	1.192	1.537	39.9	20.6	89 W	14	83*
310842 2003 AK₁₈										197710 2004 PU₂											
1	1	12 34.38	-7 7.3	0.702	1.204	54.8	21.3	90 W	38	65*	1	1	13 35.90	+5 40.8	2.889	2.894	19.6	21.4	81 W	51	45*
1	11	12 50.14	-10 40.9	0.632	1.212	53.9	21.1	95 W	34	72*	1	11	13 44.03	+5 6.9	2.724	2.868	20.0	21.3	88 W	50	52*
1	21	13 4.94	-14 31.5	0.559	1.213	53.0	20.8	100 W	30	78*	1	21	13 55.76	+4 43.1	2.557	2.841	20.1	21.1	96 W	50	57*
1	31	13 18.66	-18 49.4	0.484	1.207	52.0	20.4	105 W	26	83	1	31	13 50.80	+4 29.7	2.393	2.813	19.8	20.9	105 W	49	59*
2	10	13 31.07	-23 50.7	0.408	1.192	50.9	20.0	110 W	21	88	2	10	13 58.79	+4 27.1	2.233	2.784	18.9	20.7	114 W	49	60
210635 2000 GQ₇										468730 2010 MN₅₁											
1	1	12 35.68	-6 37.0	2.562	2.735	21.1	21.4	89 W	38	65*	1	1	13 40.94	+5 39.1	1.325	1.497	40.2	21.5	79 W	51	45*
1	11	12 42.36	-7 19.8	2.394	2.709	21.1	21.2	98 W	38	70*	1	11	14 13.29	+7 10.4	1.221	1.463	41.8	21.3	82 W	52	46*
1	21	12 47.31	-7 51.2	2.229	2.682	20.6	21.0	107 W	37	72	1	21	14 47.56	+9 13.1	1.130	1.429	43.3	21.1	85 W	54	46*
1	31	12 50.22	-8 8.8	2.069	2.653	19.5	20.8	116 W	37	72	1	31	15 23.63	+11 45.8	1.053	1.396	44.8	21.0	86 W	57	46*
2	10	12 50.73	-8 10.1	1.918	2.623	17.7	20.5	126 W	37	72	2	10	16 1.08	+14 43.2	0.992	1.364	46.3	20.8	87 W	60*	44*
166044 2002 CE₁₄										222073 1999 HY₁											
1	1	12 46.64	-17 45.0	2.605	2.665	21.5	21.5	83 W	27	70*	1	1	13 57.79	-32 42.5	1.652	1.490	36.0	21.4	63 W	12*	57*
1	11	12 51.71	-19 53.0	2.481	2.680	21.5	21.4	91 W	25	79*	1	6	14 12.16	-33 10.7	1.607	1.482	36.8	21.4	65 W	12*	58*
1	21	12 54.67	-21 57.1	2.357	2.694	21.1	21.2	99 W	23	86	1	11	14 26.66	-33 32.0	1.561	1.474	37.7	21.3	66 W	11*	60*
1	31	12 55.18	-23 55.3	2.238	2.707	20.3	21.1	108 W	21	88	1	16	14 41.28	-33 45.8	1.513	1.466	38.5	21.3	68 W	11	62*
2	10	12 52.86	-25 44.5	2.126	2.719	18.9	21.0	117 W	19	90	1	21	14 56.02	-33 51.5	1.464	1.458	39.4	21.2	70 W	11	64*
99915 1997 TR₆										24447 2000 QY₁											
1	1	12 51.93	-3 29.8	3.708	3.784	15.0	21.5	87 W	42	60*	1	1	13 57.83	-6 14.6	1.945	1.867	29.8	21.5	71 W	39*	49*
1	11	12 55.71	-3 45.2	3.550	3.784	15.0	21.4	96 W	41	66*	1	11	14 14.78	-6 41.9	1.858	1.893	30.4	21.4	77 W	38	55*
1	21	12 57.98	-3 50.3	3.395	3.783	14.5	21.3	106 W	41	68	1	21	14 30.33	-6 52.0	1.767	1.918	30.6	21.4	83 W	38	61*
1	31	12 58.58	-3 44.5	3.247	3.781	13.6	21.1	116 W	41	68	1	31	14 44.21	-6 43.6	1.672	1.942	30.5	21.3	90 W	38	67*
2	10	12 57.37	-3 27.2	3.109	3.779	12.1	21.0	126 W	42	67	2	10	14 56.05	-6 15.2	1.576	1.964	29.9	21.2	97 W	39	70*
434187 2003 AN₂										507355 2011 VV₅											
1	1	12 54.05	+13 10.1	1.601	1.922	30.7	21.4	93 W	58	45*	1	1	14 44.59	-37 10.6	1.117	0.943	56.3	21.3	53 W	7*	47*
1	11	13 9.96	+14 45.6	1.497	1.924	30.3	21.2	100 W	60	47*	1	3	14 59.66	-37 59.8	1.103	0.916	57.4	21.2	52 W	6*	46*
1	21	13 24.31	+16 53.1	1.399	1.925	29.4	21.0	106 W	62	47*	1	5	15 15.47	-38 42.5	1.091	0.889	58.5	21.1	50 W	5*	44*
1	31	13 36.63	+19 34.0	1.310	1.925	28.1	20.9	113 W	65	44	1	7	15 32.01	-39 17.7	1.081	0.862	59.6	21.1	49 W	4*	43*
2	10	13 46.34	+22 47.3	1.232	1.925	26.4	20.7	120 W	68	41	1	9	15 49.20	-39 44.2	1.072	0.834	60.6	21.0	48 W	3*	42*
424460 2008 CC₁₂₁										84667 2002 VO₈₂											
1	1	12 56.05	-1 1.8	1.363	1.638	36.8	21.4	87 W	44	57*	1	1	15 10.54	-15 31.4	3.146	2.637	16.8	21.5	51 W	26*	37*
1	11	13 14.14	-3 42.9	1.280	1.640	36.8	21.3	92 W	41	63*	1	11	15 25.73	-16 17.7	3.010	2.613	18.5	21.4	57 W	27*	44*
1	21	13 30.56	-6 18.9	1.199	1.645	36.4	21.2	97 W	39	69*	1	21	15 40.58	-16 56.4	2.866	2.587	20.0	21.3	64 W	27*	52*
1	31	13 44.92	-8 48.9	1.121	1.654	35.4	21.0	103 W	36	73	1	31	15 54.93	-17 27.1	2.716	2.561	21.3	21.3	71 W	27*	60*
2	10	13 56.67	-11 11.9	1.047	1.665	33.9	20.8	110 W	34	75	2	10	16 8.58	-17 49.3	2.560	2.534	22.3	21.1	77 W	27*	67*
101363 1998 UQ										124158 2001 OV₂											
1	1	12 58.20	+1 28.3	2.953	3.071	18.7	21.4	87 W	46	55*	1	1	15 15.32	-22 55.7	3.022	2.473	17.2	21.5	48 W	19*	38*
1	11	13 3.83	+1 3.8	2.797	3.061	18.6	21.3	96 W	46	60*	1	11	15 33.00	-24 4.2	2.885	2.437	19.0	21.4	54 W	19*	45*
1	21	13 7.76	+0 50.5	2.642	3.051	18.1	21.2	105 W	46	63*	1	21	15 50.74	-25 6.5	2.740	2.401	20.7	21.3	60 W	19*	52*
1	31	13 9.73	+0 49.3	2.492	3.040	17.1	21.0	115 W	46	63	1	31	16 8.44	-26 2.2	2.590	2.364	22.3	21.2	66 W	18*	59*
2	10	13 9.47	+1 0.7	2.353	3.028	15.5	20.8	125 W	46	63	2	10	16 25.97	-26 50.9	2.435	2.326	23.8	21.1	72 W	18*	65*
105141 2000 NF₁₁										283389 2000 QV₂₀₂											
1	1	12 58.51	+2 33.0	1.007	1.380	45.4	21.4	88 W	48	54*	1	1	15 22.38	-20 53.3	2.500	1.960	21.4	21.5	47 W	21*	36*
1	11	13 30.01	+2 12.6	0.921	1.352	46.7	21.2	90 W	47	56*	1	11	15 46.40	-22 40.2	2.380	1.920	23.5	21.4	51 W	20*	42*
1	21	14 2.94	+2 13.7	0.842	1.325	47.9	21.0	93 W	47	58*	1	21	16 11.40	-24 18.0	2.258	1.880	25.5	21.3	55 W	19*	47*
1	31	14 37.28	+2 39.2	0.771	1.298	49.2	20.8	95 W	48	59*	1	31	16 37.41	-25 45.2	2.136	1.842	27.4	21.2	59 W	18*	52*
2	10	15 12.80	+3 30.4	0.709	1.272	50.5	20.6	96 W	49	59*	2	10	17 4.40	-2							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2022	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
8034 Akka										427778 2005 BE											
1	1	15 53.73	-20 42.3	2.095	1.476	25.1	21.4	40 W	18*	29*	1	1	17 14.37	-9 7.6	1.357	0.635	42.1	21.4	26 W	18*	7*
1	6	16 10.61	-21 25.4	2.045	1.448	26.3	21.3	41 W	18*	31*	1	6	17 46.03	-11 12.1	1.375	0.597	38.7	21.2	22 W	15*	6*
1	11	16 28.08	-22 2.9	1.995	1.420	27.4	21.3	42 W	17*	32*	1	11	18 18.61	-13 13.7	1.398	0.563	34.1	21.0	19 W	11*	5*
1	16	16 46.14	-22 33.9	1.948	1.392	28.5	21.2	43 W	17*	34*	1	16	18 52.13	-15 8.2	1.423	0.536	28.2	20.8	15 W	8*	3*
1	21	17 4.78	-22 57.8	1.902	1.364	29.6	21.2	43 W	16*	35*	1	21	19 26.52	-16 50.2	1.449	0.518	21.4	20.5	11 W	3*	2*
459451 2012 WG₃₂										534245 2014 SK₂₁₉											
1	1	15 55.12	-23 14.6	2.266	1.621	22.3	21.4	39 W	16*	30*	1	1	17 17.89	-13 14.5	2.808	1.939	11.3	21.5	23 W	15*	8*
1	6	16 9.77	-24 25.1	2.202	1.587	23.7	21.3	40 W	15*	32*	1	11	17 43.37	-12 59.6	2.725	1.897	13.4	21.4	27 W	17*	12*
1	11	16 25.15	-25 33.4	2.138	1.551	25.0	21.3	42 W	14*	34*	1	21	18 9.41	-12 27.8	2.641	1.857	15.4	21.4	30 W	18*	17*
1	16	16 41.31	-26 38.8	2.074	1.516	26.4	21.2	43 W	13*	36*	1	31	18 35.92	-11 38.6	2.555	1.818	17.5	21.4	34 W	20*	21*
1	21	16 58.32	-27 40.6	2.011	1.480	27.8	21.1	44 W	12*	38*	2	10	19 2.78	-10 31.6	2.469	1.781	19.4	21.3	37 W	21*	25*
68347 2001 KB₆₇										311555 2006 BA₁₄₈											
1	1	15 59.44	-34 42.9	0.729	0.603	94.6	21.5	38 W	5*	32*	1	1	17 26.58	-32 8.8	2.100	1.218	15.6	21.3	19 W	—	13*
1	3	16 6.30	-34 41.7	0.759	0.608	91.3	21.5	38 W	5*	32*	1	6	17 48.27	-32 4.5	2.044	1.167	16.6	21.2	20 W	—	14*
1	5	16 13.50	-34 37.9	0.789	0.613	88.1	21.4	39 W	5*	32*	1	11	18 10.95	-31 45.7	1.989	1.116	17.4	21.0	20 W	—	14*
1	7	16 20.96	-34 31.7	0.818	0.620	85.1	21.4	39 W	5*	33*	1	16	18 34.55	-31 10.4	1.937	1.063	18.2	20.9	20 W	—	14*
1	9	16 28.64	-34 23.1	0.847	0.628	82.2	21.4	39 W	5*	33*	1	21	18 58.98	-30 16.4	1.886	1.011	18.7	20.8	19 W	—	13*
1	11	16 36.48	-34 12.3	0.875	0.637	79.5	21.4	40 W	5*	33*	16960 1998 QS₅₂										
1	13	16 44.45	-33 59.4	0.902	0.647	76.9	21.4	40 W	5*	34*	1	1	17 28.17	-29 24.3	0.866	0.315	102.4	15.2	18 W	—	12*
1	15	16 52.50	-33 44.4	0.928	0.657	74.5	21.4	40 W	6*	34*	1	2	17 29.15	-29 24.7	0.900	0.321	95.3	15.0	19 W	—	13*
1	17	17 0.59	-33 27.6	0.954	0.668	72.3	21.5	40 W	6*	34*	1	3	17 30.80	-29 22.5	0.934	0.330	88.6	14.9	20 W	1*	13*
1	19	17 8.71	-33 9.0	0.978	0.680	70.2	21.5	41 W	6*	34*	1	4	17 33.02	-29 17.9	0.968	0.341	82.5	14.8	20 W	1*	14*
295377 2008 HM₆₄										1	5	17 35.70	-29 11.5	1.001	0.353	76.9	14.7	20 W	1*	14*	
1	1	16 0.01	-14 17.8	2.413	1.773	20.8	21.5	40 W	23*	25*	1	6	17 38.76	-29 3.5	1.033	0.367	71.9	14.7	21 W	2*	15*
1	11	16 27.24	-15 18.4	2.314	1.735	22.9	21.4	43 W	24*	30*	1	7	17 42.09	-28 54.3	1.065	0.382	67.3	14.7	21 W	2*	15*
1	21	16 55.36	-16 3.9	2.216	1.698	24.9	21.3	47 W	23*	35*	1	8	17 45.63	-28 44.0	1.096	0.398	63.2	14.7	21 W	2*	15*
1	31	17 24.30	-16 32.5	2.120	1.663	26.9	21.2	50 W	23*	39*	1	9	17 49.32	-28 33.0	1.126	0.415	59.6	14.8	21 W	2*	15*
2	10	17 53.91	-16 42.7	2.026	1.630	28.8	21.2	53 W	23*	43*	1	10	17 53.12	-28 21.2	1.155	0.433	56.3	14.8	21 W	2*	15*
88213 2001 AF₂										1	11	17 56.97	-28 8.9	1.183	0.451	53.4	14.9	22 W	2*	15*	
1	1	16 8.63	-9 45.9	1.314	0.837	48.4	21.4	40 W	26*	22*	1	13	18 4.75	-27 43.0	1.237	0.488	48.4	15.0	22 W	3*	15*
1	6	16 38.09	-11 24.0	1.286	0.777	49.8	21.3	37 W	24*	21*	1	15	18 12.49	-27 16.0	1.287	0.527	44.5	15.2	22 W	3*	16*
1	11	17 9.80	-12 58.4	1.267	0.714	50.6	21.1	34 W	21*	20*	1	17	18 20.08	-26 48.2	1.335	0.565	41.3	15.3	22 W	3*	16*
1	16	17 43.84	-14 25.8	1.259	0.650	50.6	20.8	31 W	18*	18*	1	19	18 27.47	-26 19.9	1.380	0.604	38.7	15.5	23 W	3*	16*
1	21	18 20.21	-15 41.7	1.261	0.585	49.2	20.6	27 W	14*	16*	1	21	18 34.62	-25 51.3	1.422	0.643	36.6	15.6	23 W	4*	17*
534676 2014 VK₂										152564 1992 HF											
1	1	16 27.10	-17 13.2	1.730	1.047	30.5	21.3	33 W	18*	20*	1	1	18 2.43	-18 47.3	1.825	0.878	12.0	21.4	11 W	4*	—
1	6	16 50.60	-18 52.7	1.689	1.000	31.3	21.2	32 W	16*	21*	1	6	18 28.06	-18 19.2	1.780	0.829	11.8	21.3	10 W	3*	—
1	11	17 15.62	-20 24.7	1.654	0.955	32.0	21.0	31 W	14*	21*	1	11	18 54.88	-17 36.7	1.739	0.782	11.3	21.1	9 W	2*	—
1	16	17 42.18	-21 46.0	1.624	0.911	32.3	20.9	30 W	12*	21*	1	16	19 22.84	-16 39.0	1.701	0.738	10.4	20.9	8 W	2*	—
517714 2015 JF₃										1	21	19 51.83	-15 25.6	1.666	0.698	9.2	20.6	7 W	1*	—	
1	1	16 52.36	-11 36.7	2.474	1.683	16.5	21.5	29 W	19*	13*	436568 2011 HB₅₃										
1	11	17 21.46	-11 24.5	2.405	1.656	18.4	21.4	32 W	21*	17*	1	1	18 4.55	+5 54.8	0.289	0.749	138.1	20.7	31 W	22*	—
1	21	17 50.98	-10 53.0	2.339	1.632	20.2	21.4	35 W	22*	20*	1	3	17 56.55	+10 18.7	0.301	0.761	130.6	20.0	36 W	28*	—
1	31	18 20.75	-10 1.9	2.275	1.611	21.9	21.4	38 W	23*	24*	1	5	17 49.23	+14 12.8	0.314	0.774	123.6	19.5	41 W	33*	—
2	10	18 50.55	-8 51.6	2.214	1.593	23.6	21.3	40 W	24*	28*	1	7	17 42.61	+17 37.7	0.330	0.788	117.1	19.1	46 W	38*	—
363027 1998 ST₂₇										1	9	17 36.65	+20 36.0	0.346	0.804	111.2	18.9	50 W	42*	—	
1	1	17 3.94	-27 14.8	0.917	0.386	88.1	20.3	23 W	5*	16*	1	11	17 31.33	+23 10.8	0.363	0.820	105.9	18.7	53 W	46*	—
1	3	17 12.56	-25 55.3	0.967	0.391	80.8	20.2	23 W	6*	16*	1	13	17 26.59	+25 25.3	0.381	0.837	101.0	18.6	57 W	50*	1*
1	5	17 21.95	-24 40.7	1.016	0.400	73.9	20.1	23 W	7*	15*	1	15	17 22.37	+27 22.8	0.400	0.855	96.5	18.5	60 W	53*	2*
1	7	17 31.87	-23 30.7	1.064	0.412	67.5	20.1	23 W	7*	15*	1	17	17 18.61	+29 6.0	0.418	0.873	92.4	18.5	62 W	56*	4*
1	9	17 42.12	-22 24.9	1.110	0.427	61.8	20.1	23 W	8*	14*	1	19	17 15.24	+30 37.5	0.436	0.892	88.7	18.5	65 W	59*	5*
1	11	17 52.54	-21 23.1	1.154	0.445	56.7	20.1	22 W	8*	14*	1	21	17 12.21	+31 59.3	0.454	0.912	85.2	18.5	67 W	61*	7*
1	13	18 3.00	-20 24.7	1.197	0.465	52.3	20.2	22 W	9*	13*	208023 1999 AQ₁₀										
1	15	18 13.39	-19 29.2	1.237	0.486	48.3	20.2	22 W	9*	13*	1	1	18 20.64	-25 44.6	1.684	0.714	8.4	21.5	6 W	—	—
1	17	18 23.64	-18 36.4	1.276	0.508	44.9	20.3	21 W	9*	12*	1	6	18 50.44	-25 4.8	1.692	0.716	6.1	21.4	4 W	—	—
1	19	18 33.72	-17 45.9	1.312	0.531	42.0	20.4	21 W	10*	12*	1	11	19 19.66	-24 2.4	1.701	0.720	4.0	21.3	3 W	—	—
1	21	18 43.59	-16 57.3	1.347	0.555	39.4	20.4	21 W	10*	11*	1	16	19 48.07	-22 39.8	1.711	0.728	2.3	21.2	2 W	—	—
4341 Poseidon										1	21	20 15.52	-20 59.6	1.723	0.739	1.9	21.3	1 E	—	—	
1	1	17 6.64	-20 15.1	0.459	0.588	139.4	19.8	23 W	10*	13*	153267 2001 CB₃₂										
1	3	17 2.96	-18 56.4	0.486	0.587	132.6	19.2	26 W	13*	15*	1	1	18 38.33	-25 31.7	2.766	1.784	1.6	21.5	3 W	—	—
1	5	17 0.62	-17 49.1	0.514	0.588	126.2	18.7	29 W	15*	17*	1	11	19 4.48	-25 18.4	2.677	1.703	3.7	21.4	6 W	—	—
1	7	16 59.47	-16 52.3	0.543	0.591	120.0	18.3	31 W	17*	19*	1	21	19 32.11	-24 47.0	2.578	1.619	6.2	21.4	10 W	—	4*
1	9	16 59.37	-16 5.1	0.574	0.597	114.2	18.0	34 W	19*	21*	1	31	20 1.36	-23 54.6	2.471	1.531	8.7	21.3	14 W	—	8*
1	11	17 0.16	-15 26.3	0.604	0.605	108.8	17.8	36 W	20*	23*	2	10	20 32.31	-22 37.7	2.358	1.440	11.2	21.2	17 W	—	11*
1	13	17 1.71	-14 54.8	0.635	0.																